Telecommand and Telemetry Formats
Software Maintenance Focus (abridged)

Large Area Telescope (LAT) Flight Software (FSW) Group
Gamma Ray Large Area Space Telescope (GLAST) Project

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0 SCOPE

0.0 Identification

This Interface Control Document (ICD) describes the formats and protocols associated with telecommands and telemetry for the Gamma-ray Large Area Space Telescope's (GLAST) Large Area Telescope (LAT) payload.

0.1 System Overview

GLAST is a high-energy gamma-ray observatory, designed for making observations of celestial sources in the energy band extending from 20 MeV to 300 GeV, with complementary coverage between 10 KeV and 25 MeV for gamma-ray bursts.

The LAT instrument detects both Cosmic Rays (i.e., charged particles) and Gamma Rays (i.e., high-energy photons), capturing the resulting information as "events". The LAT Flight Software (FSW) is tasked with configuring and operating the instrument, as well as deciding which events are Gamma Rays from celestial sources.

The vast majority of communication with the FSW is accomplished by the exchange of telecommand and telemetry packets. Telecommand packets are used to load new software, set configuration values, initiate operations, etc. Telemetry packets are used to report data of various types, including diagnostic, housekeeping, and science.

The FSW receives telecommand packets from the spacecraft (SC) and telemetry packets from the Gamma-ray Burst Monitor (GBM). It sends telemetry packets to the spacecraft, for retransmission to Earth-based installations. On rare occasions, the FSW sends telecommand packets (e.g., repoint requests) to the spacecraft.

0.2 Document Overview

This document details the telecommand and telemetry interfaces between the LAT payload and the GLAST spacecraft bus. It is organized as follows:

0 Scope

Discussion of the general nature of the document.

1 References

Documents, acronyms, and glossary terms referenced in or required for use with this document.

2 Interface Overview

A summary of the telecommand and telemetry interfaces between the LAT payload and the GLAST spacecraft bus and between the LAT payload and the GBM payload.

3 CCSDS Protocol

A summary of the CCSDS protocol.

4 Package Overview

A summary of the packages described in subsequent sections.

5 <package> (e.g., FILE, LCAT, LHK):

Definitions of relevant items (e.g., packets, attributes) for the package in question.

Indexes

Indexes into the package chapters, organized by APID, item name, etc.

0.3 Document Data Sources

The "front matter" for this document was derived, largely, from a set of hand-edited configuration files. Consequently, it may not track all changes in the software, etc.

The telecommand and telemetry descriptions in this document were autogenerated from the following packages/versions in the LAT flight software code management system:

0.4 Document Output Variants

The "Telecommand and Telemetry Formats" document is available in four variant formats, differing in focus ("Software Maintenance", "Instrument Operation") and level of detail ("abridged", detailed").

The Software Maintenance variants are aimed at the needs of software maintainers. Consequently, they discuss data structures (e.g., Bitfields), use LCAT (i.e., C) nomenclature, etc.

The Instrument Operation variants are aimed at the needs of instrument operators. Consequently, they ignore data structures, use ITOS nomenclature, etc.

None of these variants is as complete and navigable, however, as the online (web-based) variants. If online access is available, this should be your first choice.

1 REFERENCES

This section lists documents, acronyms, and glossary terms that either are referenced in this Interface Control Document or provide additional information applicable to the understanding of this document.

1.0 Applicable Documents

LAT Project Documents

LAT Project Documents	
Document Number	**Document Title**

GLAST Project Documents

GLAST Project Documents	
Document Number	**Document Title**

NASA Standards and Guidelines

NASA Standards and Guidelines	
Document Number	**Document Title**
CCSDS 101.0-B-4	Consultative Committee for Space Data Systems (CCSDS) Recommendation for Telemetry Channel Coding, May 1999
CCSDS 102.0-B-4	Consultative Committee for Space Data Systems (CCSDS) Recommendation for Packet Telemetry, November 1995
CCSDS 200.0-G-6	Consultative Committee for Space Data Systems (CCSDS) Report for Telecommand: Summary of Concept and Rationale, January 1987
CCSDS 201.0-B-3	Consultative Committee for Space Data Systems (CCSDS) Recommendation for Telecommand: Part 1, Channel Service, June 2000
CCSDS 202.0-B-2	Consultative Committee for Space Data Systems (CCSDS) Recommendation for Telecommand: Part 2.1, Command Operation Procedures, October 1991
CCSDS 203.0-B-1	Consultative Committee for Space Data Systems (CCSDS) Recommendation for Telecommand: Part 3, Data Management Service Architectural Specification, January 1987
CCSDS 102.0-B-4	Consultative Committee for Space Data Systems (CCSDS) Recommendation for Packet Telemetry, November 1995
CCSDS 102.0-B-4	Consultative Committee for Space Data Systems (CCSDS) Recommendation for Packet Telemetry, November 1995
CCSDS 102.0-B-4	Consultative Committee for Space Data Systems (CCSDS) Recommendation for Packet Telemetry, November 1995
CCSDS 102.0-B-4	Consultative Committee for Space Data Systems (CCSDS) Recommendation for Packet Telemetry, November 1995

Military Standards and Guidelines

Military Standards and Guidelines	
Document Number	**Document Title**

Commercial Standards

Commercial Standards	
Document Number	**Document Title**
RFC-1590	Media Type Registration Procedure
RFC-1591	Domain Name System Structure and Delegation

1.1 Acronyms

Acronyms	
Acronym	**Definition**

1.2 Glossary

Glossary	
Term	**Definition**

2 INTERFACE OVERVIEW

This section provides a summary description of the telecommand and telemetry interfaces between the LAT payload and the GLAST spacecraft bus and between the LAT payload and the GBM payload.

2.0 Data Representation Conventions

Unless otherwise specified, the following data representation conventions are applicable for the entire document:

- Bits are numbered from 0 to N, where 0 represents the least significant bit of the field and N represents the most significant bit in a field. TBR - is this appropriate for the RAD750 and spacecraft bus? (BD)
- The data representations in this document treat bytes as the smallest addressable unit size.
- When multiple bytes are combined to form larger data units, the most significant byte of the field is the byte with the lowest address.
- When data are transferred across a serial interface, the bits flow from the most significant bit to the least significant bit.
- Floating-point values are represented in either a 32-bit IEEE-754 format or a 64-bit IEEE-754 format.

Refer to Figure 1-1 and Figure 1-2 for graphical depictions of the data representation conventions.

TBR - depending on the answer above, these pictures may need to change to reflect the convention for bit number assignments.

>>> fig_01.gif

>>> fig_02.gif

Time is represented as a 64-bit value from a time epoch. The time epoch for LAT and the spacecraft bus is 00:00:00.0 hours of January 1st, 2001. That is, the midnight between December 31st, 2000 and January 1st, 2001. The 64-bit value is represented in Figure 3. The 32-bit Timestamp Seconds represents the number of elapsed seconds since the epoch. The Timestamp Sub-Seconds represents the number of micro-seconds elapsed since the last second.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Timestamp Seconds MSW															
Timestamp Seconds LSW															
Timestamp Sub-Seconds MSW															
Timestamp Sub-Seconds LSW															

2.1 Interface Identification

The LAT interfaces are depicted below.

>>> fig_04.gif

Telecommands to LAT

Interface:	1553
Type:	BC to RT
Source:	Bus Controller - Spacecraft Bus Processor
Destination:	Remote Terminal 3 - LAT SIU
Data Transfer:	Subaddress 27 - 62 Bytes
Transfer Rate:	20 Hz maximum
Transfer Gap:	20 milliseconds minimum

Protocol:	BC to RT data transfer will only take place when a LAT telecommand is ready for transfer.
Message Type:	CCSDS Version 1 Telecommand Packet
Message Size:	62 bytes maximum, even number of bytes, zero filled to 62 bytes
APID Range:	0x640 - 0x69F, directed to LAT 0x701, broadcast from spacecraft bus processor 0x703, broadcast from GBM
Notes:	None

Telecommands from LAT

Interface:	1553
Type:	RT to BC
Source:	Remote Terminal 3 - LAT SIU
Destination:	Bus Controller - Spacecraft Bus Processor
Data Transfer:	Subaddress 29 - 64 Bytes
Transfer Rate:	5 Hz
Transfer Gap:	150 milliseconds minimum to 250 milliseconds maximum
Protocol:	First word of the transfer is a Transfer Request Counter. If the counter has changed since last read by the BC and is non-zero, then the transfer contains a new telecommand from the LAT.
Message Type:	CCSDS Version 1 Telecommand Packet
Message Size:	62 bytes maximum, even number of bytes, zero filled to 62 bytes
APID Range:	0x600 - 0x63F, directed to spacecraft bus processor 0x6A0 - 0x6FF, directed to GBM 0x702, broadcast from LAT
Notes:	The GBM telecommands and LAT broadcast telecommands are routed to the GBM by the spacecraft bus processor.

Housekeeping Telemetry from LAT

Interface:	1553
Type:	RT to BC
Source:	Remote Terminal 3 - LAT SIU
Destination:	Bus Controller - Spacecraft Bus Processor
Data Transfer:	Subaddress 11 through Subaddress 25 - 960 Bytes
Transfer Rate:	4 Hz
Transfer Gap:	500 milliseconds maximum (question - what is the minimum?)
Protocol:	First word of the transfer is a Transfer Request Counter. If the counter has changed since last read by the BC and is non-zero, then the transfer contains new telemetry from the LAT. If the BC successfully reads the 15 subaddresses, then a BC to RT transaction is performed to write one data word to RT-3 subaddress 26. The fifteen BC to RT transactions and the sole RT to BC transactions are all scheduled to occur consecutively. By LAT convention, the housekeeping telemetry will occupy the first 116 bytes available for telemetry transfer (last 62 bytes of SA 11, first 54 bytes of SA 12). Multiple telemetry packets can be transferred during one transaction. The packets must be contiguous. Packets cannot span transactions. If the packet data for a transaction uses 958 or less bytes, then the last packet must be followed by at least two bytes containing zeroes.
Message Type:	CCSDS Advanced Orbital Systems Telemetry Packets
Message Size:	116 bytes
APID Range:	0x200 - 0x25F from LAT

Notes:	LAT Housekeeping telemetry is transmitted when a TDRSS or GN RF link is active. The spacecraft bus processor stores the housekeeping telemetry.

Diagnostic Telemetry from LAT

Interface:	1553
Type:	RT to BC
Source:	Remote Terminal 3 - LAT SIU
Destination:	Bus Controller - Spacecraft Bus Processor
Data Transfer:	Subaddress 11 through Subaddress 25 - 960 Bytes
Transfer Rate:	4 Hz
Transfer Gap:	500 milliseconds maximum
Protocol:	Reference protocol for Housekeeping Telemetry from LAT.
Message Type:	CCSDS Advanced Orbital Systems Telemetry Packets
Message Size:	942 bytes maximum, even number of bytes
APID Range:	0x260 - 0x33F from LAT
Notes:	LAT Diagnostic telemetry is transmitted when a TDRSS or GN RF link is active. The spacecraft bus processor stores the diagnostic telemetry. (question - how does the spacecraft processor rate-control the diagnostic telemetry?)

Alert Telemetry from LAT

Interface:	1553
Type:	RT to BC
Source:	Remote Terminal 3 - LAT SIU
Destination:	Bus Controller - Spacecraft Bus Processor
Data Transfer:	Subaddress 11 through Subaddress 25 - 960 Bytes
Transfer Rate:	4 Hz
Transfer Gap:	500 milliseconds maximum
Protocol:	Reference protocol for Housekeeping Telemetry from LAT.
Message Type:	CCSDS Advanced Orbital Systems Telemetry Packets
Message Size:	942 bytes maximum, even number of bytes
APID Range:	0x340 - 0x39F from LAT
Notes:	LAT Alert telemetry is transmitted when a TDRSS or GN RF link is active. If no RF link is active, then the spacecraft bus will activate the TDRSS link to transmit an alert telemetry packet. The spacecraft bus processor stores the alert telemetry.

Science Telemetry from LAT

Interface:	LVDS
Type:	LAT Protocol (LATp)
Source:	LAT - GASU
Destination:	Spacecraft Bus - Solid State Recorder
Data Transfer:	Contiguous and Encapsulated 128-bit LATp cells. Encapsulation uses a cell announce, cell truncate, and cell parity for each cell. The first cell in contiguous sequence has a cell header.
Transfer Rate:	TBD bits/second
Transfer Gap:	TBD time between LATp transfers
Protocol:	TBD protocol Packets must be a multiple of bytes in length.
Message Type:	CCSDS Advanced Orbital Systems Telemetry Packets
Message Size:	65540 bytes maximum (TBR), must be a multiple of 4 bytes in length
APID Range:	0x3A0 - 0x3FF from LAT

Notes: None

2.2 Unit Identification

The LAT will use the following unit identification codes for external communications (via the 1553 bus) and internal communications (via the LATp bus):

LAT Unit Identification Codes		
LAT Unit	**Description**	**LATp ID**
Not Applicable	SIU(ext): SIU test port.	0x11 (TBR)
0x0	SIU(0): The SIU designated as unit 0. The LAT unit identifier of 0x0 will be used to address the active SIU on the 1553 bus. SIU 0 is active if it is the SIU that is responsive on the 1553 bus. The LATp address for SIU(0) is unique from SIU(1) and is designated as ID 18.	0x12
	SIU(1): The SIU designated as unit 1. The LAT unit identifier of 0x0 will be used to address the active SIU on the 1553 bus. SIU 1 is active if it is the SIU that is responsive on the 1553 bus. The LATp address for SIU(1) is unique from SIU(0) and is designated as ID 19.	0x13
0x1	EPU(0): EPU designated as unit 0.	0x14
0x2	EPU(1): EPU designated as unit 1.	0x15
0x3	EPU(2): EPU designated as unit 2.	0x16
0x6-0xF	Not Assigned	Not Applicable

3 CCSDS PROTOCOL

3.0 Telecommand Packet

The LAT receives CCSDS telecommand packets as input from the SC, across the 1553 bus. The LAT can also send a limited set of telecommands to the SC, across the 1553 bus.

Packet Format

Each Telecommand packet contains three items:

- GLAST CCSDS Telecommand Packet Header
- Packet Command Data
- Packet Checksum (required by Spectrum Astro)

Header Format

The GLAST CCSDS telecommand packets have the standard 6-byte primary header, followed by a 2-byte secondary header. The GLAST CCSDS telecommand header layout is shown below.

Layout:

offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0x00	Version = 0			T=1	SH=1	APID										
0x02	3			Sequence Count												
0x04	Packet Length															
0x06	0	Function Code														

Fields:

APID - The CCSDS-packet application identifier.

Function Code - An indicator of the specific command action to perform.

Packet Length - The CCSDS-packet length. Indicates the length of application data, plus the two bytes of secondary header, minus 1.

Sequence Count - The CCSDS-packet sequence count. This running counter increments for each packet generated for a given application type (indicated by the "APID" member).

SF - The CCSDS-packet sequence flags (’00’ = continuation packet in the middle of a sequence; ’01’ = first packet in a sequence; ’10’ = standalone packet that is not part of a sequence).

SH - The CCSDS-packet secondary-header flag. Always 1, indicating that all GLAST telemetry packets have secondary headers.

T - The CCSDS packet-type identifier (’0’ indicates a telemetry packet; ’1’ indicates a telecommand packet).

Version - The CCSDS-packet version identifier. Always ’0’, indicating a Version 1 packet.

Telecommand Application Identifier (APID) Summary

Telecommand Receive Application ID’s

Telecommand packets with telecommand receive application ID values designate commands or other input for which the LAT is the destination. LAT telecommand receive APID’s are in the range 0x640-0x69F. In addition, the LAT also receives broadcast telecommands as input from the SC.

The LAT utilizes the APID range from 0x710-0x76F for internal LAT FSW master-task to slave-task communications. This APID range is used to address message queues associated with slave tasks. The LAT utilizes the APID range from 0x780-0x7DF for internal LAT FSW slave-task to master-task

communications. This APID range is used to address message queues associated with master tasks. These APIDs are for internal communication use only and are not recognized by any LAT external system. Telecommands from the ground (across the 1553 bus) cannot utilize these APID ranges.

Telecommand Receive APIDs			
APID	**Description**	**M -> S**	**S -> M**
0x640	Boot operational telecommands	N/A	N/A
0x641	File Load telecommands	0x711	0x781
0x642	Memory Load telecommands	0x712	0x782
0x643	File Dump telecommands	0x713	0x783
0x644	Memory Dump telecommands	0x714	0x784
0x645	Task Management telecommands	0x715	0x785
0x646	Diagnostic telecommands	0x716	0x786
0x647	Not Assigned	N/A	N/A
0x648	Front end primitive telecommands	N/A	N/A
0x649	Not Assigned	N/A	N/A
0x650	Science operations telecommands	N/A	N/A
0x650-0x65F	Not Assigned	N/A	N/A
0x660	GBM alert telecommands	N/A	N/A
0x661	SC repoint request reply	N/A	N/A
0x663-0x69F	Not Assigned	N/A	N/A
0x662	SC load shed notification	N/A	N/A
0x701	SC broadcast telecommands	N/A	N/A

Telecommand Transmit Application ID's

Telecommand packets with telecommand transmit application ID values designate commands or other input for which the LAT is the source. The APID assignments for such telecommands depend on the destination. The SC destination is designated by APID's in the range 0x600-0x63F.

Telecommand Transmit APIDs	
APID	**Description**
0x600-0x63F	SC repoint request telecommands

3.1 Telemetry Packet Summary

The LAT outputs CCSDS telemetry packets to the SC on both the 1553 bus and the high-speed science data interface.

Packet Format

Each Telemetry packet contains two items:

- GLAST CCSDS Telecommand Packet Header
- Packet Command Data

Header Format

The LAT CCSDS telemetry packets have the standard 6-byte primary header, followed by an 8-byte secondary header specific to the LAT. The LAT CCSDS telemetry header layout is shown below.

Layout:

offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0x00	Version = 0			T=0	SH=1	APID										
0x02	SF		Sequence Count													
0x04	Packet Length: TBD															
0x06	Timestamp Seconds MSW															
0x08	Timestamp Seconds LSW															
0x0A	Timestamp Sub-Seconds MSW															
0x0C	Timestamp Sub-Seconds LSW															

APID - The CCSDS-packet application identifier.

Packet Length - The CCSDS-packet length. Indicates the length of application data, plus the two bytes of secondary header, minus 1.

Sequence Count - The CCSDS-packet sequence count. This running counter increments for each packet generated for a given application type (indicated by the "APID" member).

SF - The CCSDS-packet sequence flags (’00’ = continuation packet in the middle of a sequence; ’01’ = first packet in a sequence; ’10’ = standalone packet that is not part of a sequence).

SH - The CCSDS-packet secondary-header flag. Always 1, indicating that all GLAST telemetry packets have secondary headers.

T - The CCSDS packet-type identifier (’0’ indicates a telemetry packet; ’1’ indicates a telecommand packet).

Timestamp - Time is represented as a 64-bit offset from a time epoch. The time epoch for LAT and the spacecraft bus is 00:00:00.0 hours of January 1st, 2001. That is the midnight between December 31st, 2000 and January 1st, 2001. Timestamp Seconds represents the number of elapsed seconds since the epoch. Timestamp Sub-Seconds represents the number of microseconds elapsed since the last second.

Version - The CCSDS-packet version identifier. Always ’0’, indicating a Version 1 packet.

Telemetry Application Identifier (APID) Summary

Housekeeping Telemetry Application ID’s

The housekeeping telemetry packets provide critical status information about the current state of the LAT. The SC treats housekeeping telemetry packets specially, so that the packets are downlinked on the real-time channel.

Housekeeping Telemetry APIDs	
APID	**Description**
0x200	Boot housekeeping telemetry
0x20F	Communication test housekeeping telemetry

Diagnostic Telemetry Appication ID’s

Diagnostic telemetry packets provide status responses to particular commands or internal states of the LAT. The diagnostic telemetry may report general success or error reports, in response to telecommands. The diagnostic telemetry may also report data back in response to a telecommand that requests a dump or explicit status of some kind. Internal errors encountered during normal processing will also generate diagnostic telemetry error packets.

Diagnostic Telemetry APIDs	
APID	**Description**
0x260	File data dump telemetry
0x261	File directory dump telemetry
0x262	File system dump telemetry
0x263	Memory data dump telemetry
0x264	Memory symbol lookup telemetry
0x265	Memory pool status dump telemetry
0x266	Task status dump telemetry
0x26F	Communication test diagnostic telemetry
0x270	TEM register read telemetry
0x271	GTIC register read telemetry
0x272	GCCC register read telemetry
0x273	GCRC register read telemetry
0x274	GCFE register read telemetry
0x275	GTCC register read telemetry
0x276	GTRC register read telemetry
0x277	GTFE register read telemetry
0x278	AEM register read telemetry
0x279	GARC register read telemetry
0x27A	GAFE register read telemetry

Alert Telemetry Appication ID's

Alert Telemetry APIDs	
APID	**Description**
0x34F	Communication test alert telemetry

Science Telemetry Appication ID's

Science Telemetry APIDs	
APID	**Description**
0x3AF	Communication test science telemetry

4 PACKAGES

5 CTDB Package

5.0 Overview

The CTDB package contains routines that are specific to the Command and Telemetry Data Bus.

The package supports the following functions:

- 1553 bus communications
- Configure ACD front-end electronics
- Configure by compressed file
- Configure GASU (i.e., CRU, GEM, EBM, AEM)
- Configure PDU
- Configure TKR and CAL front-end electronics
- Emulated event delivery (to science data interface)
- Housekeeping data stream
- RAD750 boot and crate initialization
- Software watchdog
- Telecommand/telemetry database and services
- Wall clock time services (GPS)

5.1 Telemetry Packets

5.1.0 `LCTDBRTDIAG` (526/0x20E)

Context:

Description:

"CTDB 1553 RT Driver Diagnostics" Telemetry Packet

Layout:

CTDB 1553 RT Driver Diagnostics (LCTDBRTDIAG) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x20E**										
002	**SF**			**Sequence Count**												
004	**Packet Length=49**															
006	**Timestamp**															
00E	**CTDBPAD16:** pad_16															
010	**RTERRCNT:** error_count															
014	**RTINTRCNT:** intr_count															
018	**RTCMDRXCNT:** cmd_rx_pkt_count															
01C	**RTCMDRXSIZ:** cmd_rx_byte_count															
020	**RTCMDTXCNT:** cmd_tx_pkt_count															
024	**RTCMDTXSIZ:** cmd_tx_byte_count															

CTDB 1553 RT Driver Diagnostics (LCTDBRTDIAG) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
028	**RTHKPCNT:** hkp_pkt_count															
02C	**RTHKPSIZ:** hkp_byte_count															
030	**RTTLMCNT:** telem_pkt_count															
034	**RTTLMSIZ:** telem_byte_count															

Fields:

CTDBPAD16 **(5.2.0)**

Attribute(s):

Brief: "16 bit spare padding word"

Instance(s): pad_16

RTCMDRXCNT **(5.2.1)**

Attribute(s):

Brief: "RT driver telecommand receive count"

Instance(s): cmd_rx_pkt_count

RTCMDRXSIZ **(5.2.2)**

Attribute(s):

Brief: "RT driver telecommand receive total bytes"

Instance(s): cmd_rx_byte_count

RTCMDTXCNT **(5.2.3)**

Attribute(s):

Brief: "RT driver telecommand send count"

Instance(s): cmd_tx_pkt_count

RTCMDTXSIZ **(5.2.4)**

Attribute(s):

Brief: "RT driver telecommand send total bytes"

Instance(s): `cmd_tx_byte_count`

`RTERRCNT` **(5.2.5)**

Attribute(s):

Brief: "RT driver total error count"

Instance(s): `error_count`

`RTHKPCNT` **(5.2.6)**

Attribute(s):

Brief: "RT driver HKP send count"

Instance(s): `hkp_pkt_count`

`RTHKPSIZ` **(5.2.7)**

Attribute(s):

Brief: "RT driver HKP send total bytes"

Instance(s): `hkp_byte_count`

`RTINTRCNT` **(5.2.8)**

Attribute(s):

Brief: "RT driver total interrupt count"

Instance(s): `intr_count`

`RTTLMCNT` **(5.2.9)**

Attribute(s):

Brief: "RT driver telemetry send count"

Instance(s): `telem_pkt_count`

`RTTLMSIZ` **(5.2.10)**

Attribute(s):

Brief: "RT driver telemetry send total bytes"

Instance(s): `telem_byte_count`

5.2 Telemetry Fields

5.2.0 `CTDBPAD16` (16 bit spare padding word) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`LCTDBRTDIAG (5.1.0)`

5.2.1 `RTCMDRXCNT` (RT driver telecommand receive count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LCTDBRTDIAG (5.1.0)`

5.2.2 `RTCMDRXSIZ` (RT driver telecommand receive total bytes) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LCTDBRTDIAG (5.1.0)`

5.2.3 `RTCMDTXCNT` (RT driver telecommand send count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LCTDBRTDIAG (5.1.0)

5.2.4 RTCMDTXSIZ (RT driver telecommand send total bytes) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

LCTDBRTDIAG (5.1.0)

5.2.5 RTERRCNT (RT driver total error count) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

LCTDBRTDIAG (5.1.0)

5.2.6 RTHKPCNT (RT driver HKP send count) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

LCTDBRTDIAG (5.1.0)

5.2.7 RTHKPSIZ (RT driver HKP send total bytes) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

LCTDBRTDIAG (5.1.0)

5.2.8 RTINTRCNT (RT driver total interrupt count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LCTDBRTDIAG (5.1.0)

5.2.9 RTTLMCNT (RT driver telemetry send count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LCTDBRTDIAG (5.1.0)

5.2.10 RTTLMSIZ (RT driver telemetry send total bytes) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LCTDBRTDIAG (5.1.0)

6 DDT Package

6.0 Overview

The DDT package contains routines that are specific to SUROM write.

6.1 Command Packets

ITOS Mnemonic: `LDDTWRITEFILE`

6.1.0 `LDDTWRITEFILE` (1602/0x642:0)

Context:

Description:

"Write a file to SUROM" Telecommand Packet

Starts the process of writing data from a file into SUROM.

Layout:

Write a file to SUROM (`write_file`) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x642:0**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**	**Function Code=0**														
008	**CLatUnit:** `lat_unit`															
00C	**CFileId:** `file_id`															
010	**Packet Checksum**															

Fields:

`CFileId` **(6.2.0)**

Attribute(s):

Brief: "File ID"

Instance(s): `file_id`

ID of the file containing data to write to the SUROM.

`CLatUnit` **(6.2.1)**

Attribute(s):

Brief: "Target LAT Unit"

Instance(s): `lat_unit`

LAT unit on which the SUROM should be written (0=SIU, 1=EPU0, 2=EPU1, 3=EPU2).

6.2 Command Fields

6.2.0 `CFileId` (File ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

ID of the file containing data to write to the SUROM.

Used by:

`write_file (6.1.0)`

6.2.1 `CLatUnit` (Target LAT Unit) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

LAT unit on which the SUROM should be written (0=SIU, 1=EPU0, 2=EPU1, 3=EPU2).

Used by:

`write_file (6.1.0)`

7 EMP Package

7.0 Overview

The EMP package contains routines that are specific to the Event Monitoring Package.

7.1 Telemetry Packets

7.1.0 `ASCEPU0` (986/0x3DA)

Context:

Description:

"ASC stats from ACD/GEM processed on EPU0" Telemetry Packet

ASC Counters includes CNO statistics (from GEM) and discriminator histogram block from ACD

Layout:

ASC stats from ACD/GEM processed on EPU0 (ASCEPU0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3DA**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

`PADCOUNT` **(7.2.0)**

Attribute(s):

Brief: "Pad byte count after packet"

Instance(s): `padCount`

For proper transfer over SSR, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after payload to do this alignment.

7.1.1 `ASCEPU1` (987/0x3DB)

Context:

Description:

"ASC stats from ACD/GEM processed on EPU1" Telemetry Packet

ASC Counters includes CNO statistics (from GEM) and discriminator histogram block from ACD

Layout:

ASC stats from ACD/GEM processed on EPU1 (ASCEPU1) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3DB**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCOunt															

Fields:

PADCOUNT **(7.2.0)**

Attribute(s):

Brief: "Pad byte count after packet"

Instance(s): padCOunt

For proper transfer over SSR, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after payload to do this alignment.

7.1.2 `ASCEPU2` (988/0x3DC)

Context:

Description:

"ASC stats from ACD/GEM processed on EPU2" Telemetry Packet

ASC Counters includes CNO statistics (from GEM) and discriminator histogram block from ACD

Layout:

ASC stats from ACD/GEM processed on EPU2 (ASCEPU2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3DC**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(7.2.0)**

Attribute(s):

Brief: "Pad byte count after packet"

Instance(s): padCount

For proper transfer over SSR, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after payload to do this alignment.

7.1.3 ASCEPU3 (989/0x3DD)

Context:

Description:

"ASC stats from ACD/GEM processed on EPU3" Telemetry Packet

ASC Counters includes CNO statistics (from GEM) and discriminator histogram block from ACD

Layout:

ASC stats from ACD/GEM processed on EPU3 (ASCEPU3) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3DD**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(7.2.0)**

Attribute(s):

Brief: "Pad byte count after packet"

Instance(s): `padCount`

For proper transfer over SSR, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after payload to do this alignment.

7.1.4 `ASCSIU` (985/0x3D9)

Context:

Description:

"ASC stats from ACD/GEM processed on SIU" Telemetry Packet

ASC Counters includes CNO statistics (from GEM) and discriminator histogram block from ACD

Layout:

ASC stats from ACD/GEM processed on SIU `(ASCSIU)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3D9**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** `padCount`															

Fields:

`PADCOUNT` **(7.2.0)**

Attribute(s):

Brief: "Pad byte count after packet"

Instance(s): `padCount`

For proper transfer over SSR, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after payload to do this alignment.

7.2 Telemetry Fields

7.2.0 `PADCOUNT` (Pad byte count after packet) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	short
Length:	16 bits (2 bytes)

Description:

For proper transfer over SSR, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after payload to do this alignment.

Used by:

`ASCEPU0 (7.1.0)`

8 FILE Package

8.0 Overview

The FILE package contains routines that are specific to the file system.

The package supports the following functions:

- RAD750 boot and crate initialization

8.1 Command Packets

ITOS Mnemonic: `LFILUPLCANCEL`

8.1.0 `LFILUPLCANCEL` (1601/0x641:1)

Context:

Description:

"File Upload Cancel" Telecommand Packet

This command cancels a file upload and resets the file upload state machine to the START state, regardless of the state when the command is received. A new LFILUPLSTART command is needed to begin a new file upload.

Layout:

File Upload Cancel (UploadCancel) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x641:1**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=5**															
006	**0**	**Function Code=1**														
008	**NODEPAD:** `flag`															
00A	**Packet Checksum**															

Fields:

`NODEPAD` **(8.2.0)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): `flag`

Compound of node ID and padding

ITOS Mnemonic: `LFILUPLCOMMIT`

8.1.1 `LFILUPLCOMMIT` (1601/0x641:2)

Context:

Description:

"File Upload Commit" Telecommand Packet

This command indicates that the loaded LFILUPLDATA file data contents should be written to storage. The FILEID paramter indicates the storage location. The complete file data set is first validated before successfully entering the COMMIT state. The validate only flag in the FILEFLAGS parameter indicates that validations errors shoud be reported, but that the file upload state machine will remain in the LOAD state regardless of the validation outcome.

Layout:

File Upload Commit (UploadCommit) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x641:2**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=11**															
006	**0**	**Function Code=2**														
008	**NODEPAD:** flag															
00A	**FILEFLAGS:** fileFlags															
00C	**FILEID:** fileId															
010	**Packet Checksum**															

Fields:

`FILEFLAGS` **(8.3.1)**

Attribute(s):

Brief: "File Commit Flags"

Instance(s): `fileFlags`

`FILEID` **(8.3.2)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileId`

`NODEPAD` **(8.2.0)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): `flag`

Compound of node ID and padding

ITOS Mnemonic: `LFILUPLDATA`

8.1.2 `LFILUPLDATA` (1601/0x641:3)

Context:

Description:

"File Upload Data" Telecommand Packet

Each LFILUPLDATA packet contains a portion of the file data being loaded. The FILEOFFSET parameter is the offset in bytes from the beginning of the file which the first FILEDATA byte in this packet represents. The LFILEUPLDATA packets may be loaded in any order with respect to the offset and may be re-loaded ad many times as wished .

Layout:

File Upload Data (UploadData) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x641:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=55**															
006	**0**	**Function Code=3**														
008	**FILEOFFSET:** fileOffset															
00C	**FILEDATA:** fileData[0-47]															
03C	**Packet Checksum**															

Fields:

`FILEDATA` **(8.3.0)**

Attribute(s):

Brief: "File Data"

Instance(s): `fileData`

`FILEOFFSET` **(8.3.3)**

Attribute(s):

Brief: "File Data Offset"

Instance(s): `fileOffset`

ITOS Mnemonic: `LFILUPLEPU`

8.1.3 `LFILUPLEPU` (1601/0x641:4)

Context:

Description:

"File Upload to EPU" Telecommand Packet

Layout:

File Upload to EPU `(UploadEPU)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x641:4**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**			**Function Code=4**												
008	**NODEPAD:** `flag`															
00A	**PAD16:** `pad16`															
00C	**FILEID:** `fileId`															
010	**Packet Checksum**															

Fields:

`FILEID` **(8.3.2)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileId`

`NODEPAD` **(8.2.0)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): `flag`

Compound of node ID and padding

`PAD16` **(8.3.7)**

Attribute(s):
rng: LFILEMBZ (8.5.0)

Brief: "16-bit padding"

Instance(s): `pad16`

ITOS Mnemonic: `LFILUPLSTART`

8.1.4 `LFILUPLSTART` (1601/0x641:0)

Context:

Description:

"File Upload Start" Telecommand Packet

Announces the start of a new file upload. The FILESIZE parameter sets the maximum offset for incomming LFILUPLDATA packets. Upon completion, the file upload state machine is in the LOAD state.

Layout:

File Upload Start (UploadStart) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x641:0**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**			**Function Code=0**												
008	**FILESIZE:** fileSize															
00C	**Packet Checksum**															

Fields:

`FILESIZE` **(8.3.4)**

Attribute(s):

Brief: "File Size"

Instance(s): `fileSize`

8.2 Command Bitfields

8.2.0 `NODEPAD` (Compound of node ID and padding) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Compound of node ID and padding

Start	Stop	Size	Item Type and Name

Used by:

`UploadCancel (8.1.0)`

8.3 Command Fields

8.3.0 `FILEDATA` (File Data) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`UploadData (8.1.2)`

8.3.1 `FILEFLAGS` (File Commit Flags) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`UploadCommit (8.1.1)`

8.3.2 `FILEID` (File Storage ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`UploadCommit (8.1.1)`

8.3.3 `FILEOFFSET` (File Data Offset) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`UploadData (8.1.2)`

8.3.4 `FILESIZE` (File Size) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`UploadStart (8.1.4)`

8.3.5 `NODE` (Computer to send the command to) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

Computer to send the command to

Used by:

???

8.3.6 `PAD12` (A twelve-bit padding field) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Used by:

???

8.3.7 `PAD16` (16-bit padding) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`UploadEPU (8.1.3)`

8.4 Enumerations

8.4.0 `LFILENODEID` (List of CPU nodes addressable with FILE commands) Enumeration

ITOS Mnemonic: `LFILENODEID`

Description:

List of CPU nodes addressable with FILE commands

Definition:

0 The SIU computer (`SIU`)
The SIU computer

1 The EPU0 computer (`EPU0`)
The EPU0 computer

2 The EPU1 computer (`EPU1`)
The EPU1 computer

3 The EPU2 computer (`EPU2`)
The EPU2 computer

4 The EPU3 computer (external crate) (`EPU3`)
The EPU3 computer (external crate)

Used by:

???

8.5 Ranges

8.5.0 `LFILEMBZ` (A must-be-zero field) Range

ITOS Mnemonic: `LFILEMBZ`

Description:

Used to ensure that padding fields are set to zero.

Definition:

Limits 0 - 0

Used by:

`UploadEPU (8.1.3)`

9 ITC Package

9.0 Overview

The ITC package defines a common communications standard to unify communications between tasks on either the same or different CPUs. It also provides the services to build up tasks that are capable of communicating according to the standard.

The package supports the following functions:

- CPU internal communications/task frameworks

9.1 Telemetry Packets

9.1.0 `CmdConfirm` (720/0x2D0)

Context:

Description:

"Response to command from spacecraft" Telemetry Packet

Command confirmation telemetry packet. When executing spacecraft commands, ITC will autogenerate a diagnostic packet, detailing where and when a command is executed as well as the return code for the execution. To identify the command, ITC reflects the command in toto.

Layout:

Response to command from spacecraft (CmdConfirm) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2D0**										
002	**SF**		**Sequence Count**													
004	**Packet Length=41**															
006	**Timestamp**															
00E	**ITC_NodeID:** nid								**ITC_TaskID:** tid							
010	**Time_msui:** deq_msui															
014	**Time_lsui:** deq_lsui															
018	**Time_msui:** exe_msui															
01C	**Time_lsui:** exe_lsui															
020	**Status:** status															
024	**Drop:** drp															
026	**Flags:** flags															
028	**CmdHeader:** cmd_hdr															

Fields:

`CmdHeader` **(9.2.0)**

Attribute(s):

Brief: "CCSDS telecommand header"

Instance(s): `cmd_hdr`

CCSDS telecommand header

`Drop` **(9.4.2)**

Attribute(s):

Brief: "Number of dropped confirmations"

Instance(s): `drp`

Should memory constraints result in dropped command confirmation packets, the count of dropped packets (on a per task basis) is accumulated and returned in the next successful command confirmation.

`Flags` **(9.3.0)**

Attribute(s):

Brief: "Assorted command confirmation flags"

Instance(s): `flags`

Assorted command confirmation flags (only one currently defined: isTime44)

`ITC_NodeID` **(9.4.5)**

Attribute(s):
dsc: LITCNODEID (9.5.0)

Brief: "ITC node ID"

Instance(s): `nid`

ITC identifies nodes on the communications network by number. These are the numbers.

`ITC_TaskID` **(9.4.6)**

Attribute(s):
dsc: LITCTASKID (9.5.1)

Brief: "ITC task ID"

Instance(s): `tid`

ITC identifies tasks by number. These are the numbers.

`Status` **(9.4.10)**

Attribute(s):

Brief: "MSG status code"

Instance(s): `status`

The return code from the routine that executes the command.

`Time_lsui` **(9.4.11)**

Attribute(s):

Brief: "Time (least significant 32 bits)"

Instance(s): `deq_lsui`, `exe_lsui`

Lower half of a WCT_time object (an 8-byte integer measuring nanoseconds since the LAT epoch).

`Time_msui` **(9.4.12)**

Attribute(s):

Brief: "Time (most significant 32 bits)"

Instance(s): `deq_msui`, `exe_msui`

Upper half of a WCT_time object (an 8-byte integer measuring nanoseconds since the LAT epoch).

9.2 Telemetry Structs

9.2.0 `CmdHeader` (CCSDS telecommand header) Telemetry Struct

Definition:

Alignment: 2 bytes
Length: 64 bits (8 bytes)

Description:

CCSDS telecommand header

CCSDS telecommand header (`CmdHeader`) Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	Hdr0: `hdr0`															
002	Hdr1: `hdr1`															
004	Cmd_len: `cmd_len`															
006	Hdr3: `hdr3`															

Fields:

`Cmd_len` **(9.4.1)**

Attribute(s):

Brief: "CCSDS telecommand packet length"

Instance(s): `cmd_len`

CCSDS packet length (CCSDS definition, which is a little wierd).

`Hdr0` **(9.3.1)**

Attribute(s):

Brief: "CCSDS telecommand header (bytes 0-1)"

Instance(s): `hdr0`

Bitfields for the bytes 0-1 of a standard CCSDS telecommand header

`Hdr1` **(9.3.2)**

Attribute(s):

Brief: "CCSDS telecommand header (bytes 2-3)"

Instance(s): `hdr1`

Bitfileds for bytes 2-3 of a standard CCSDS telecommand header

`Hdr3` **(9.3.3)**

Attribute(s):

Brief: "CCSDS telecommand header (bytes 6-7)"

Instance(s): `hdr3`

Bitfields for bytes 6-7 of a standard CCSDS telecommand header, where a two-byte secondary header containing a function code has been defined.

Used by:

`CmdConfirm (9.1.0)`

9.3 Telemetry Bitfields

9.3.0 `Flags` (Assorted command confirmation flags) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Assorted command confirmation flags (only one currently defined: isTime44)

Start	Stop	Size	Item Type and Name
0	14	15	`pad15 rsv`
15	15	1	`isTime44 isTime44`

Fields:

`isTime44` **(9.4.15)**

Attribute(s):

Brief: "Flag to indicate the format of the time fields"

Instance(s): `isTime44`

Flag to indicate the format of the time fields. If clear, combining the most-significant and least-significant 32 bit fields for a given timestamp (e.g. execution time) yields a sixty-four bit number in the format: nonoseconds since LAT epoch. If set, the timestamps are formatted in "TIME44" format (most-significant 32 bits are seconds since LAT epoch, least-significant 32 bits are microseconds within the second).

`pad15` **(9.4.16)**

Attribute(s):

Brief: "Padding field (15 bits)"

Instance(s): `rsv`

Padding field (15 bits)

Used by:

`CmdConfirm (9.1.0)`

9.3.1 `Hdr0` (CCSDS telecommand header (bytes 0-1)) Telemetry Bitfield

Definition:

Alignment: 2 bytes

C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfields for the bytes 0-1 of a standard CCSDS telecommand header

Start	Stop	Size	Item Type and Name
0	2	3	`Version ver`
3	3	1	`isCmd isCmd`
4	4	1	`Sec_hdr sec_hdr`
5	15	11	`Apid apid`

Fields:

`Apid` **(9.4.0)**

Attribute(s):

Brief: "CCSDS application ID"

Instance(s): `apid`

Standard CCSDS application identifier.

`isCmd` **(9.4.14)**

Attribute(s):

Brief: "CCSDS command bit"

Instance(s): `isCmd`

Set for telecommands, clear for telemetry.

`Sec_hdr` **(9.4.7)**

Attribute(s):

Brief: "CCSDS secondary header flag"

Instance(s): `sec_hdr`

Set when a CCSDS packet includes a secondary header. Clear otherwise. All LAT telemetry/telecommands carry a secondary header.

`Version` **(9.4.13)**

Attribute(s):

Brief: "CCSDS version"

Instance(s): `ver`

Standard CCSDS version code

Used by:

`CmdHeader (9.2.0)`

9.3.2 `Hdr1` (CCSDS telecommand header (bytes 2-3)) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfileds for bytes 2-3 of a standard CCSDS telecommand header

Start	Stop	Size	Item Type and Name
0	1	2	`Seq_flg seq_flg`
2	15	14	`Seq_cnt seq_cnt`

Fields:

`Seq_cnt` **(9.4.8)**

Attribute(s):

Brief: "CCSDS sequencing count"

Instance(s): `seq_cnt`

Standard CCSDS sequencing count (incrementing per APID).

`Seq_flg` **(9.4.9)**

Attribute(s):

Brief: "CCSDS sequencing bits"

Instance(s): `seq_flg`

Standard CCSDS sequencing bits.

Used by:

`CmdHeader (9.2.0)`

9.3.3 `Hdr3` (CCSDS telecommand header (bytes 6-7)) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfields for bytes 6-7 of a standard CCSDS telecommand header, where a two-byte secondary header containing a function code has been defined.

Start	Stop	Size	Item Type and Name
0	0	1	`Fnc_pad fnc_pad`
1	15	15	`Fnc_code fnc`

Fields:

`Fnc_code` **(9.4.3)**

Attribute(s):

Brief: "CCSDS telecommand function code"

Instance(s): `fnc`

CCSDS telecommand function code

`Fnc_pad` **(9.4.4)**

Attribute(s):

Brief: "Padding"

Instance(s): `fnc_pad`

Function codes are not allowed to touch the most significnat bit of the 16-bit function code. This padding places the bit off limits.

Used by:

`CmdHeader (9.2.0)`

9.4 Telemetry Fields

9.4.0 `Apid` (CCSDS application ID) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 11 bits

Description:

Standard CCSDS application identifier.

Used by:

`Hdr0 (9.3.1)`

9.4.1 `Cmd_len` (CCSDS telecommand packet length) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

CCSDS packet length (CCSDS definition, which is a little wierd).

Used by:

`CmdHeader (9.2.0)`

9.4.2 `Drop` (Number of dropped confirmations) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Should memory constraints result in dropped command confirmation packets, the count of dropped packets (on a per task basis) is accumulated and returned in the next successful command confirmation.

Used by:

`CmdConfirm (9.1.0)`

9.4.3 `Fnc_code` (CCSDS telecommand function code) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 15 bits

Description:

CCSDS telecommand function code

Used by:

`Hdr3 (9.3.3)`

9.4.4 `Fnc_pad` (Padding) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	1 bit

Description:

Function codes are not allowed to touch the most significnat bit of the 16-bit function code. This padding places the bit off limits.

Used by:

`Hdr3 (9.3.3)`

9.4.5 `ITC_NodeID` (ITC node ID) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	8 bits (1 byte)

Description:

ITC identifies nodes on the communications network by number. These are the numbers.

Used by:

`CmdConfirm (9.1.0)`

9.4.6 `ITC_TaskID` (ITC task ID) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	8 bits (1 byte)

Description:

ITC identifies tasks by number. These are the numbers.

Used by:

`CmdConfirm (9.1.0)`

9.4.7 `Sec_hdr` (CCSDS secondary header flag) Telemetry Field

Definition:

Alignment: 1 byte
C type: char
Length: 1 bit

Description:

Set when a CCSDS packet includes a secondary header. Clear otherwise. All LAT telemetry/telecommands carry a secondary header.

Used by:

`Hdr0 (9.3.1)`

9.4.8 `Seq_cnt` (CCSDS sequencing count) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 14 bits

Description:

Standard CCSDS sequencing count (incrementing per APID).

Used by:

`Hdr1 (9.3.2)`

9.4.9 `Seq_flg` (CCSDS sequencing bits) Telemetry Field

Definition:

Alignment: 1 byte
C type: char
Length: 2 bits

Description:

Standard CCSDS sequencing bits.

Used by:

`Hdr1 (9.3.2)`

9.4.10 `Status` (MSG status code) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

The return code from the routine that executes the command.

Used by:

`CmdConfirm (9.1.0)`

9.4.11 `Time_lsui` (Time (least significant 32 bits)) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Lower half of a WCT_time object (an 8-byte integer measuring nanoseconds since the LAT epoch).

Used by:

`CmdConfirm (9.1.0)`

9.4.12 `Time_msui` (Time (most significant 32 bits)) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Upper half of a WCT_time object (an 8-byte integer measuring nanoseconds since the LAT epoch).

Used by:

`CmdConfirm (9.1.0)`

9.4.13 `Version` (CCSDS version) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	3 bits

Description:

Standard CCSDS version code

Used by:

`Hdr0 (9.3.1)`

9.4.14 `isCmd` (CCSDS command bit) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	1 bit

Description:

Set for telecommands, clear for telemetry.

Used by:

`Hdr0 (9.3.1)`

9.4.15 `isTime44` (Flag to indicate the format of the time fields) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

Flag to indicate the format of the time fields. If clear, combining the most-significant and least-significant 32 bit fields for a given timestamp (e.g. execution time) yields a sixty-four bit number in the format: nonoseconds since LAT epoch. If set, the timestamps are formatted in "TIME44" format (most-significant 32 bits are seconds since LAT epoch, least-significant 32 bits are microseconds within the second).

Used by:

`Flags (9.3.0)`

9.4.16 `pad15` (Padding field (15 bits)) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	15 bits

Description:

Padding field (15 bits)

Used by:

`Flags (9.3.0)`

9.5 Discretes

9.5.0 `LITCNODEID` (Discrete list of ITC nodes) Discrete

ITOS Mnemonic: `LITCNODEID`

Description:

Discrete list of ITC nodes

Definition:

-1 Unknown node (guard value) (`ITC_NID_UNKNOWN`)

0 SIU (`ITC_NID_SIU`)

1 EPU 0 (`ITC_NID_EPU0`)

2 EPU 1 (`ITC_NID_EPU1`)

3 EPU 2 (`ITC_NID_EPU2`)

4 EPU 3 (external crate) (`ITC_NID_EPU3`)

5 Science Data Interface (to Solid State Recorder) (`ITC_NID_SDI`)

6 Spacecraft (`ITC_NID_SC`)

7 CPU broadcast class (`ITC_NID_BCST`)

Used by:

`CmdConfirm (9.1.0)`

9.5.1 `LITCTASKID` (Discrete list of ITC task IDs) Discrete

ITOS Mnemonic: `LITCTASKID`

Description:

Discrete list of ITC task IDs

Definition:

-1 Unknown task (guard value) (`ITC_TID_UNKNOWN`)

0 The anonymous task (`ITC_TID_ANON`)

1 LAT computer manager task (`ITC_TID_LCM`)

2 LAT file system master task (`ITC_TID_LFS_M`)

3 LAT file system slave task (`LAT_TID_LFS_S`)

4 LAT housekeeping master task (`LAT_TID_LHK_M`)

5 LAT housekeeping slave task (`ITC_TID_LHK_S`)

6 LAT instrument manager master task (`LAT_TID_LIM_M`)

7 LAT instrument manager slave task (`LAT_TID_LIM_S`)

8 LAT spacecraft messages master task (`LAT_TID_LSM_M`)

9 LAT spacecraft messages slave task (`ITC_TID_LSM_S`)

10 LAT software watchdog master task (`ITC_TID_LSW_M`)

11 LAT software watchdog slave task (`ITC_TID_LSW_S`)

12 LAT charge injection calibration master task (`ITC_TID_LCI_M`)

13 LAT charge injection calibration slave task (`ITC_TID_LCI_S`)

14 LAT multiplexed rate counters (`ITC_TID_LMC`)

15 LAT physics aquisision (`ITC_TID_LPA`)

17 LAT register access (`ITC_TID_LRA`)

18 LAT thermal control (`ITC_TID_LTC`)

19 LAT gamma ray burst analysis (`ITC_TID_GRB`)

20 ISIS command task (`ITC_TID_ICT`)

30 LCB Tx service task (`ITS_SID_LCS`)

31 CTDB Tx service task (`ITC_SID_CTS`)

32 LCB Rx driver callback (`ITC_LID_LCX`)

33 CTDB Rx driver callback (`ITC_LID_CTX`)

34 ITC hook into message task (`ITC_LID_MSG`)

Used by:

`CmdConfirm (9.1.0)`

10 LATC Package

10.0 Overview

The LATC package contains routines that are specific to LAT Configuration.

The package supports the following functions:

- Configure by compressed file

10.1 Telemetry Packets

10.1.0 `LATCDATA` (1021/0x3FD)

Context:

Description:

"Returned LATC data" Telemetry Packet

Layout:

Returned LATC data (LATCDATA) **Telemetry Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3FD**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** `thdr`															

Fields:

`THDR` **(10.2.0)**

Attribute(s):

Brief: "Tertiary header"

Instance(s): `thdr`

10.2 Telemetry Fields

10.2.0 `THDR` (Tertiary header) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`LATCDATA (10.1.0)`

11 LCI Package

11.0 Overview

The LCI package provides facilities for subsystems (TKR, CAL, ACD) to perform charge injection calibration of their electronics. LCI runs within the Instrument Physics task.

11.1 Command Packets

ITOS Mnemonic: `LCIABORT`

11.1.0 `LCIABORT` (1660/0x67C:2)

Context:

Description:

"Abort a running calibration" Telecommand Packet

Stops the calibration at the end of the current cycle.

Layout:

Abort a running calibration (ABORT) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x67C:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=2**														

ITOS Mnemonic: `LCICALIBRATE`

11.1.1 `LCICALIBRATE` (1660/0x67C:1)

Context:

Description:

"Initiate the calibration" Telecommand Packet

Starts the calibration process and provides the three file IDs required by LCI.

Layout:

Initiate the calibration (CALIBRATE) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x67C:1**										
002	**SF=3**			**Sequence Count**												

Initiate the calibration (CALIBRATE) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=19**															
006	**0**	**Function Code=1**														
008	**FILEID:** LATCCFG															
00C	**FILEID:** LCICFG															
010	**FILEID:** LATCIGN															
014	**RUNID:** LCIRUNID															
018	**Packet Checksum**															

Fields:

FILEID **(11.2.0)**

Attribute(s):

Brief: "File ID"

Instance(s): LATCCFG, LATCIGN, LCICFG

The ID of a file

RUNID **(11.2.1)**

Attribute(s):

Brief: "Identifier for this calibration"

Instance(s): LCIRUNID

The RUNID is generated by the issuer of the calibrate command and then reflected by LCI in the datagrams generated during the data collection.

ITOS Mnemonic: LCINOOP

11.1.2 LCINOOP (1661/0x67D:0)

Context:

Description:

"No operation" Telecommand Packet

Layout:

No operation (NOOP) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x67D:0**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=3**															
006	**0**	**Function Code=0**														

11.2 Command Fields

11.2.0 `FILEID` (File ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The ID of a file

Used by:

`CALIBRATE (11.1.1)`

11.2.1 `RUNID` (Identifier for this calibration) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The RUNID is generated by the issuer of the calibrate command and then reflected by LCI in the datagrams generated during the data collection.

Used by:

`CALIBRATE (11.1.1)`

11.3 Telemetry Packets

11.3.0 `LCIEPU0EVTDAT` (966/0x3C6)

Context:

Description:

"LCI EPU0 event data." Telemetry Packet

Charge injection events collected by EPU0

Layout:

LCI EPU0 event data. (LCIEPU0EVTDAT) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3C6**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** thdr															

Fields:

THDR **(11.4.1)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): thdr

11.3.1 `LCIEPU1EVTDAT` (967/0x3C7)

Context:

Description:

"LCI EPU1 event data" Telemetry Packet

Charge injection events collected by EPU1

Layout:

LCI EPU1 event data (LCIEPU1EVTDAT) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**

LCI EPU1 event data (LCIEPU1EVTDAT) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3C7**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** thdr															

Fields:

THDR **(11.4.1)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): thdr

11.3.2 LCIEPU2EVTDAT (968/0x3C8)

Context:

Description:

"LCI EPU2 event data" Telemetry Packet

Charge injection events collected by EPU2

Layout:

LCI EPU2 event data (LCIEPU2EVTDAT) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3C8**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** thdr															

Fields:

THDR **(11.4.1)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): `thdr`

11.3.3 `LCISIUEVTDAT` (965/0x3C5)

Context:

Description:

"LCI SIU event data" Telemetry Packet

Charge injection events collected by the SIU

Layout:

LCI SIU event data (LCISIUEVTDAT) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3C5**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** `thdr`															

Fields:

`THDR` **(11.4.1)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): `thdr`

11.3.4 `TERMINATE` (728/0x2D8)

Context:

Description:

"Packet containing status of calibration" Telemetry Packet

Packet containing the MSG code generated by LCI at the end of the calibration.

Layout:

Packet containing status of calibration (TERMINATE) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**

Packet containing status of calibration (TERMINATE) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2D8**										
002	**SF**			**Sequence Count**												
004	**Packet Length=13**															
006	**Timestamp**															
010	**STATUS:** status															

Fields:

STATUS **(11.4.0)**

Attribute(s):

Brief: "Termination status code"

Instance(s): status

MSG code returned by LCI after calibration

11.4 Telemetry Fields

11.4.0 `STATUS` (Termination status code) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

MSG code returned by LCI after calibration

Used by:

`TERMINATE (11.3.4)`

11.4.1 `THDR` (Tertiary Header) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`LCIEPU0EVTDAT (11.3.0)`

12 LCM Package

12.0 Overview

The LCM package handles the management of a single LAT computer.

12.1 Command Packets

ITOS Mnemonic: `LCMCMDRESPONSE`

12.1.0 `LCMCMDRESPONSE` (1685/0x695:1)

Context:

Description:

"Change task command confirmation level" Telecommand Packet

Change the spacecraft command confirmation level of a task

Layout:

Change task command confirmation level (CmdResponse) Telecommand Packet Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x695:1**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=9**															
006	**0**	**Function Code=1**														
008	**ITC_NodeId:** nid								**ITC_TaskId:** tid							
00A	**ITC_CmdClass:** scb								**ITC_CmdAction:** fwd							
00C	**ITC_CmdLevel:** lvl								**PAD8:** pad							
00E	**Packet Checksum**															

Fields:

`ITC_CmdAction` **(12.3.2)**

Attribute(s):
enm: LCMCMDACTION (12.4.0)

Brief: "Actions task can take (forward or execute)"

Instance(s): `fwd`

`ITC_CmdClass` **(12.3.3)**

Attribute(s):
enm: LCMCMDCLASS (12.4.1)

Brief: "Spacecraft command class (normal or broadcast)"

Instance(s): `scb`

`ITC_CmdLevel` **(12.3.4)**

Attribute(s):
enm: LCMCMDLEVEL (12.4.2)

Brief: "Response level"

Instance(s): `lvl`

`ITC_NodeId` **(12.3.5)**

Attribute(s):
enm: LCMNODEID (12.4.9)

Brief: "ITC node ID"

Instance(s): `nid`

`ITC_TaskId` **(12.3.6)**

Attribute(s):
enm: LCMTASKID (12.4.10)

Brief: "ITC task ID"

Instance(s): `tid`

`PAD8` **(12.3.12)**

Attribute(s):
rng: LCMMBZ (12.5.0)

Brief: "One byte of padding"

Instance(s): `pad`

ITOS Mnemonic: `LCMCPURESET`

12.1.1 `LCMCPURESET` (1685/0x695:4)

Context:

Description:

"Reset a CPU" Telecommand Packet

Reset a CPU

Layout:

Reset a CPU `(CpuReset)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x695:4**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=15**															
006	**0**	**Function Code=4**														
008	**NODETRANID:** `flag`															
00A	**PAD16:** `spare0`															
00C	**LCMPRIMARY:** `primary`															
010	**LCMSECONDARY:** `secondary`															
014	**Packet Checksum**															

Fields:

`LCMPRIMARY` **(12.2.0)**

Attribute(s):

Brief: "Primary boot flags"

Instance(s): `primary`

Primary boot flags

`LCMSECONDARY` **(12.2.1)**

Attribute(s):

Brief: "Secondary boot flags"

Instance(s): `secondary`

Secondary boot flags

`NODETRANID` **(12.2.3)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

`PAD16` **(12.3.11)**

Attribute(s):
rng: LCMMBZ (12.5.0)

Brief: "16-bit Padding Word"

Instance(s): `spare0`

ITOS Mnemonic: `LCMERRORCFG`

12.1.2 `LCMERRORCFG` (1684/0x694:2)

Context:

Description:

"Configure CPU error handling" Telecommand Packet

This telecommand configures the error handlers attached to the RAD750 bridge chip interrupts. For each error class (LCMECLPCI, LCMECLMEC, LCMECLMEU), the error reponse level may be set to LCMLEVCNT, LCMLEVDIA, or LCMLEVCRI.

Layout:

Configure CPU error handling `(ErrorCfg)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x694:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=9**															
006	**0**	**Function Code=2**														
008	**NODEPAD:** `flag`															
00A	**ERRORCLASS:** `errClass`															
00C	**ERRORLEVEL:** `errLevel`															
00E	**Packet Checksum**															

Fields:

`ERRORCLASS` **(12.3.0)**

Attribute(s):
enm: LCMERRCLASS (12.4.5)

Brief: "Error Reporting Class"

Instance(s): `errClass`

`ERRORLEVEL` **(12.3.1)**

Attribute(s):
enm: LCMERRLEVEL (12.4.6)

Brief: "Error Reporting Level"

Instance(s): `errLevel`

`NODEPAD` **(12.2.2)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): `flag`

Compound of node ID and padding

ITOS Mnemonic: `LCMIMAGEDUMP`

12.1.3 `LCMIMAGEDUMP` (1685/0x695:8)

Context:

Description:

"Dump complete module/task information (to SDI)" Telecommand Packet

Dump complete module/task information (to SDI)

Layout:

Dump complete module/task information (to SDI) `(ImageDump)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x695:8**										
002	**SF=3**		**Sequence Count**													

Dump complete module/task information (to SDI) `(ImageDump)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=15**															
006	**0**	**Function Code=8**														
008	**uint:** `node`															
00C	**uint:** `reason`															
010	**uint:** `ident`															
014	**Packet Checksum**															

Fields:

`uint` **(12.3.27)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `ident`, `node`, `reason`

Unsigned int

ITOS Mnemonic: `LCMMODDUMP`

12.1.4 `LCMMODDUMP` (1685/0x695:2)

Context:

Description:

"Generate CPU code module listing" Telecommand Packet

When this command is received, a series of LLCMMODLIST telemetry packets is sent to the CTDB interface, one for each loaded module on the target CPU.

Layout:

Generate CPU code module listing `(ModuleDump)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x695:2**										
002	**SF=3**	**Sequence Count**														
004	**Packet Length=5**															
006	**0**	**Function Code=2**														
008	**NODETRANID:** `flag`															
00A	**Packet Checksum**															

Fields:

`NODETRANID` **(12.2.3)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

ITOS Mnemonic: `LCMMSGOUT`

12.1.5 `LCMMSGOUT` (1685/0x695:7)

Context:

Description:

"Configure MSG output interface" Telecommand Packet

Controls the MSG severity level of output to an interface (1553 or SDI). The interface will output MSG's with a severity level greater than or equal to the LCMMSGLEVEL parameter. Setting it to LCMMSGLVLDISB prevents all MSG's from being sent.

Layout:

Configure MSG output interface (`MsgOutCfg`) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x695:7**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=7**														
008	**ITC_NodeId:** `nid`								**MSGOUTINTER:** `inter`							
00A	**MSG_MsgLevel:** `lvl`								**PAD8:** `pad`							
00C	**Packet Checksum**															

Fields:

`ITC_NodeId` **(12.3.5)**

Attribute(s):
enm: LCMNODEID (12.4.9)

Brief: "ITC node ID"

Instance(s): `nid`

`MSG_MsgLevel` **(12.3.8)**

Attribute(s):
enm: LCMMSGLEVEL (12.4.8)

Brief: "Messaging level"

Instance(s): `lvl`

`MSGOUTINTER` **(12.3.7)**

Attribute(s):
enm: LCMMSGINTER (12.4.7)

Brief: "MSG Output Interface"

Instance(s): `inter`

`PAD8` **(12.3.12)**

Attribute(s):
rng: LCMMBZ (12.5.0)

Brief: "One byte of padding"

Instance(s): `pad`

ITOS Mnemonic: `LCMMSGRESPONSE`

12.1.6 `LCMMSGRESPONSE` (1685/0x695:0)

Context:

Description:

"Change task messaging level" Telecommand Packet

Change the severity level at which a task will emit MSG messages.

Layout:

Change task messaging level (MsgResponse) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x695:0**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															

Change task messaging level (MsgResponse) Telecommand Packet Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**0**	**Function Code=0**														
008	**ITC_NodeId:** nid								**ITC_TaskId:** tid							
00A	**MSG_MsgLevel:** lvl								**PAD8:** pad							
00C	**Packet Checksum**															

Fields:

ITC_NodeId **(12.3.5)**

Attribute(s):
enm: LCMNODEID (12.4.9)

Brief: "ITC node ID"

Instance(s): nid

ITC_TaskId **(12.3.6)**

Attribute(s):
enm: LCMTASKID (12.4.10)

Brief: "ITC task ID"

Instance(s): tid

MSG_MsgLevel **(12.3.8)**

Attribute(s):
enm: LCMMSGLEVEL (12.4.8)

Brief: "Messaging level"

Instance(s): lvl

PAD8 **(12.3.12)**

Attribute(s):
rng: LCMMBZ (12.5.0)

Brief: "One byte of padding"

Instance(s): pad

ITOS Mnemonic: LCMNOOP

12.1.7 LCMNOOP (1685/0x695:6)

Context:

Description:

"LCM no-op" Telecommand Packet

This telecommand does nothing except generate a command confirmation response from the LCM task.

Layout:

LCM no-op (Noop)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x695:6										
002	SF=3			Sequence Count												
004	Packet Length=5															
006	0	Function Code=6														
008	NODEPAD: flag															
00A	Packet Checksum															

Fields:

NODEPAD **(12.2.2)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): flag

Compound of node ID and padding
ITOS Mnemonic: LCMSCRUBCFG

12.1.8 LCMSCRUBCFG (1684/0x694:1)

Context:

Description:

"Configure the memory scrubber" Telecommand Packet

Configures the period between runs of the RAD750 memory scrubber. If the LCMSCRUBPER parameter is set to '0', then the periodic scrubber is disabled.

Layout:

Configure the memory scrubber `(ScrubCfg)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x694:1**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=1**														
008	**NODEPAD:** `flag`															
00A	**SCRUBPERIOD:** `period`															
00C	**Packet Checksum**															

Fields:

`NODEPAD` **(12.2.2)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): `flag`

Compound of node ID and padding

`SCRUBPERIOD` **(12.3.17)**

Attribute(s):

Brief: "Memory Scrubber Period"

Instance(s): `period`

The period in minutes between memory scrubs. Set to '0' to disable active scrubber.
ITOS Mnemonic: `LCMSCRUBRUN`

12.1.9 `LCMSCRUBRUN` (1684/0x694:0)

Context:

Description:

"Run memory scrubber" Telecommand Packet

Runs the RAD750 memory scrubber once through the SDRAM memory bank.

Layout:

Run memory scrubber `(ScrubRun)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x694:0**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**	**Function Code=0**														
008	**NODEPAD:** `flag`															
00A	**Packet Checksum**															

Fields:

`NODEPAD` **(12.2.2)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): `flag`

Compound of node ID and padding

ITOS Mnemonic: `LCMSTATS`

12.1.10 `LCMSTATS` (1685/0x695:5)

Context:

Description:

"Set up the SMON statistics monitor" Telecommand Packet

This command sets up a timer to collect statistics data from various hardware at the requested sampling interval, compresses the data, then sends them to the SSR.

Layout:

Set up the SMON statistics monitor `(Stats)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x695:5**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=23**															
006	**0**	**Function Code=5**														
008	**PAD16:** `pad16`															
00A	**ITC_NodeId:** `nodeId`								**STATSID:** `timerID`							

Set up the SMON statistics monitor (Stats) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
00C	**STATSMASK:** statMask															
010	**STATSOPTIONMASK:** optionMask															
014	**STATSTIMELEN:** timeLen															
018	**STATSTIMESAMP:** timeSample															
01C	**Packet Checksum**															

Fields:

ITC_NodeId **(12.3.5)**

Attribute(s):
enm: LCMNODEID (12.4.9)

Brief: "ITC node ID"

Instance(s): nodeId

PAD16 **(12.3.11)**

Attribute(s):
rng: LCMMBZ (12.5.0)

Brief: "16-bit Padding Word"

Instance(s): pad16

STATSID **(12.3.18)**

Attribute(s):

Brief: "Stat Monitor Timer ID (0,1,2)"

Instance(s): timerID

STATSMASK **(12.3.19)**

Attribute(s):

Brief: "Specify which HW to monitor for stats"

Instance(s): statMask

STATSOPTIONMASK **(12.3.20)**

Attribute(s):

Brief: "Specify options in Stat Monitor"

Instance(s): `optionMask`

`STATSTIMELEN` **(12.3.21)**

Attribute(s):
rng: STATSTIMELENLIM (12.5.1)

Brief: "Stat Monitor Time Len (sec)"

Instance(s): `timeLen`

Stat Monitor Time Len (sec)

`STATSTIMESAMP` **(12.3.22)**

Attribute(s):

Brief: "Monitor time sample (milliSec)"

Instance(s): `timeSample`

ITOS Mnemonic: `LCMTASKDUMP`

12.1.11 `LCMTASKDUMP` (1685/0x695:3)

Context:

Description:

"Generate CPU task listing" Telecommand Packet

When this command is received, a series of LLCMTASKLIST telemetry packets is sent to the CTDB interface, one for each spawned task on the target CPU.

Layout:

Generate CPU task listing (`TaskDump`) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x695:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**	**Function Code=3**														
008	**NODETRANID:** `flag`															

Generate CPU task listing (TaskDump) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
00A	**Packet Checksum**															

Fields:

NODETRANID **(12.2.3)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): flag

Compound of node and transaction ID

ITOS Mnemonic: LCMTURBORESET

12.1.12 LCMTURBORESET (1686/0x696:0)

Context:

Description:

"Turbo reset command" Telecommand Packet

Turbo reset command

Layout:

Turbo reset command (TurboReset) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x696:0**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=23**															
006	**0**	**Function Code=0**														
008	**LCMSECONDARY:** sbf[0-4]															
01C	**Packet Checksum**															

Fields:

LCMSECONDARY **(12.2.1)**

Attribute(s):

Brief: "Secondary boot flags"

Instance(s): `sbf`

Secondary boot flags

12.2 Command Bitfields

12.2.0 `LCMPRIMARY` (Primary boot flags) Telecommand Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Primary boot flags

Start Stop Size Item Type and Name

Used by:

`CpuReset (12.1.1)`

12.2.1 `LCMSECONDARY` (Secondary boot flags) Telecommand Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Secondary boot flags

Start Stop Size Item Type and Name

Used by:

`CpuReset (12.1.1)`

12.2.2 `NODEPAD` (Compound of node ID and padding) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Compound of node ID and padding

Start Stop Size Item Type and Name

Used by:

`ErrorCfg (12.1.2)`

12.2.3 `NODETRANID` (Compound of node and transaction ID) Telecommand Bitfield

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Compound of node and transaction ID

Start	Stop	Size	Item Type and Name

Used by:

`CpuReset (12.1.1)`

12.3 Command Fields

12.3.0 `ERRORCLASS` (Error Reporting Class) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`ErrorCfg (12.1.2)`

12.3.1 `ERRORLEVEL` (Error Reporting Level) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`ErrorCfg (12.1.2)`

12.3.2 `ITC_CmdAction` (Actions task can take (forward or execute)) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`CmdResponse (12.1.0)`

12.3.3 `ITC_CmdClass` (Spacecraft command class (normal or broadcast)) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`CmdResponse (12.1.0)`

12.3.4 `ITC_CmdLevel` (Response level) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`CmdResponse (12.1.0)`

12.3.5 `ITC_NodeId` (ITC node ID) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`CmdResponse (12.1.0)`

12.3.6 `ITC_TaskId` (ITC task ID) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`CmdResponse (12.1.0)`

12.3.7 `MSGOUTINTER` (MSG Output Interface) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`MsgOutCfg (12.1.5)`

12.3.8 `MSG_MsgLevel` (Messaging level) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`MsgOutCfg (12.1.5)`

12.3.9 `NODE` (Computer to send the command to) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

Computer to send the command to

Used by:

???

12.3.10 `PAD12` (A twelve-bit padding field) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Used by:

???

12.3.11 `PAD16` (16-bit Padding Word) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`CpuReset (12.1.1)`

12.3.12 `PAD8` (One byte of padding) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Used by:

`CmdResponse (12.1.0)`

12.3.13 `Padui10` (Explicit 10 bit pad in unsigned int) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 10 bits

Description:

Explicit 10 bit pad in unsigned int

Used by:

???

12.3.14 `Padui20` (Explicit 20 bit pad in unsigned int) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 20 bits

Description:

Explicit 20 bit pad in unsigned int

Used by:

???

12.3.15 `Padui3` (Explicit 3 bit pad in unsigned int) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int

Length: 3 bits

Description:

Explicit 3 bit pad in unsigned int

Used by:

???

12.3.16 `Padui8` (Explicit 8 bit pad in unsigned int) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 8 bits

Description:

Explicit 8 bit pad in unsigned int

Used by:

???

12.3.17 `SCRUBPERIOD` (Memory Scrubber Period) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

The period in minutes between memory scrubs. Set to '0' to disable active scrubber.

Used by:

`ScrubCfg (12.1.8)`

12.3.18 `STATSID` (Stat Monitor Timer ID (0,1,2)) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Used by:

`Stats (12.1.10)`

12.3.19 `STATSMASK` (Specify which HW to monitor for stats) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`Stats (12.1.10)`

12.3.20 `STATSOPTIONMASK` (Specify options in Stat Monitor) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`Stats (12.1.10)`

12.3.21 `STATSTIMELEN` (Stat Monitor Time Len (sec)) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	int
Length:	32 bits (4 bytes)

Description:

Stat Monitor Time Len (sec)

Used by:

`Stats (12.1.10)`

12.3.22 `STATSTIMESAMP` (Monitor time sample (milliSec)) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`Stats (12.1.10)`

12.3.23 `TRANID` (Transaction ID to associate with command) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Transaction ID to associate with command

Used by:

???

12.3.24 `device` (A device ID in an unsigned int) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	2 bits

Description:

A device ID in an unsigned int

Used by:

???

12.3.25 `enable` (An enable flag in an unsigned int) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	1 bit

Description:

An enable flag in an unsigned int

Used by:

???

12.3.26 `memory` (Memory column number) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	4 bits

Description:

Memory column number

Used by:

???

12.3.27 `uint` (Unsigned int) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Unsigned int

Used by:

`ImageDump (12.1.3)`

12.4 Enumerations

12.4.0 LCMCMDACTION (ITC Command Actions) Enumeration

ITOS Mnemonic: LCMCMDACTION

Description:

A selector to to distiguish the command confirmation response based on whether the target task executest the command itself, or simply forwards it to another task.

Definition:

0 For execute commands (EXECUTE)
Select the command response level for commands that are executed by the target task.

1 For forward commands (FORWARD)
Select the command response level for commands that are forwarded by the target task.

Used by:

CmdResponse (12.1.0)

12.4.1 LCMCMDCLASS (ITC Command Classes) Enumeration

ITOS Mnemonic: LCMCMDCLASS

Description:

A selector to to distiguish the command confirmation response based on whether the command is a normal command or one of the SC braodcast messages.

Definition:

0 Normal command (NORMAL)
Select the command response level for normal commands.

1 Broadcast command (BROADCAST)
Select the command response level for broadcast commands.

Used by:

CmdResponse (12.1.0)

12.4.2 LCMCMDLEVEL (ITC Command Response Level) Enumeration

ITOS Mnemonic: LCMCMDLEVEL

Description:

Selector for the command response level of a task based on the action being taken by the task (forward or execute) and the type of command (normal or broadcast).

Definition:

0 Respond to all commands (success or failure) (ALL)

1 Respond to errored commands (ERROR)

2 Never respond to commands (NONE)

Used by:

`CmdResponse (12.1.0)`

12.4.3 `LCMDEVICES` (Enumeration of available devices) Enumeration

ITOS Mnemonic: `LCMDEVICES`

Description:

Enumeration of available devices

Definition:

0 The /mem device (`LCMMEM`)
The /mem device

1 The /mm1 device (`LCMMM1`)
The /mm1 device

2 The /mm0 device (`LCMMM0`)
The /mm0 device

Used by:

???

12.4.4 `LCMENABLES` (A disabled/enabled enumeration) Enumeration

ITOS Mnemonic: `LCMENABLES`

Description:

A disabled/enabled enumeration

Definition:

0 Disable (`LCMDISABLE`)
Disable

1 Enable (`LCMENABLE`)
Enable

Used by:

???

12.4.5 `LCMERRCLASS` (LCM Error Configuration Classes) Enumeration

ITOS Mnemonic: `LCMERRCLASS`

Description:

Definition:

1 PCI Bus Error Class (`LCMECLPCI`)

2 Correctable Memory Error Class (`LCMECLMEC`)

3 Uncorretable Memory Error Class (`LCMECLMEU`)

Used by:

ErrorCfg (12.1.2)

12.4.6 LCMERRLEVEL (LCM Error Handling Level) Enumeration

ITOS Mnemonic: LCMERRLEVEL

Description:

Definition:

1 Counted Error Level (LCMLEVCNT)

2 Diagnostic Error Level (LCMLEVDIA)

3 Crititcal Error Level (LCMLEVCRI)

Used by:

ErrorCfg (12.1.2)

12.4.7 LCMMSGINTER (MSG output interfaces) Enumeration

ITOS Mnemonic: LCMMSGINTER

Description:

Definition:

1 CTDB MSG output interface (LCMMINCTDB)

2 SSR MSG Output interface (LCMMINSSR)

Used by:

MsgOutCfg (12.1.5)

12.4.8 LCMMSGLEVEL (MSG output level) Enumeration

ITOS Mnemonic: LCMMSGLEVEL

Description:

Describes the severity level for MSG records being delivered to an ouput interface.

Definition:

1 INFORMATION MSG Level (MSGLVLINFO)

2 MSG WARNING Level (MSGLVLWARNING)

3 MSG ERROR Level (MSGLVLERROR)

4 Disable MSG Output (MSGLVLDISABLE)

Used by:

MsgOutCfg (12.1.5),MsgResponse (12.1.6)

12.4.9 `LCMNODEID` (List of CPU nodes addressable with LCM commands) Enumeration

ITOS Mnemonic: `LCMNODEID`

Description:

List of CPU nodes addressable with LCM commands

Definition:

0 The SIU computer (`SIU`)
The SIU computer

1 The EPU0 computer (`EPU0`)
The EPU0 computer

2 The EPU1 computer (`EPU1`)
The EPU1 computer

3 The EPU2 computer (`EPU2`)
The EPU2 computer

4 The EPU3 computer (external crate) (`EPU3`)
The EPU3 computer (external crate)

Used by:

`CmdResponse (12.1.0), MsgOutCfg (12.1.5), MsgResponse (12.1.6), Stats (12.1.10)`

12.4.10 `LCMTASKID` (Discrete list of task IDs) Enumeration

ITOS Mnemonic: `LCMTASKID`

Description:

Discrete list of task IDs

Definition:

1 LAT computer manager, master task (`LCM_M`)
A task that runs on both SIU and EPU. There is no master/slave relationship between copies of LCM_M. They run as peers.

2 LAT file system, master task (`LFS_M`)
A task that runs on both SIU and EPU. It manages the file system (add new files, delete old files, dump directories, ...). There is no

4 LAT housekeeping system, master task (`LHK_M`)
A task that runs only on the SIU. It manages the collection and delivery of housekeeping data.

5 LAT housekeeping, slave task (`LHK_S`)
A task that runs on EPU only. It gathers CPU based housekeeping information and sends it to the SIU for further processing by the

6 LAT instrument manager, master task (`LIM_M`)
A task run only on the SIU. It manages the mode of the instrument (physics mode, calibration mode, quiescent, ...).

8 LAT spacecraft messages, master task (`LSM_M`)
A task that runs only on the SIU. It receives and redistibutes the spacecraft broadcast messages (attitude, ancillary and timetone).

9 LAT spacecraft messages, slave task (`LSM_S`)
A task that only runs on EPU. It receives and processes spacecraft broadcast messages that have been forwarded by the LSM_M (r

10 LAT software watchdog, master task (`LSW_M`)
A task that runs on both SIU and EPU. This is a very high priority task that tracks CPU activity (using a trace buffer) and manage

12 LAT charge injection calibration, master task (`LCI_M`)
A task that runs only on the SIU. It processes requests for charge injection calibration runs (ACD, CAL, or TKR subsystems).

14 LAT multiplexed rate counters, master task (`LMC_M`)
A task that runs on the SIU only. It is responsible for cycling through the multiplex counters (a set of counters in the instrument h

15 LAT physics aquisition, master task (`LPA_M`)
A task that runs on the SIU only. It is responsible for coordinating the activities of the LPA_S (LPA slave) tasks running on the E

16 LAT physics acquisition, slave task (`LPA_S`)
A task that (currently) only runs on EPU. This task is slaved to the LPA_M task which has overall responsibility for coordinating

17 LAT register access, master task (`LRA_M`)
A task that runs only on the SIU. This task can directly access (read/write) hardware registers, and should be used with extreme c

18 LAT thermal control, master task (`LTC_M`)
A task that runs only on the SIU. This task provides the feedback mechanism for turning the radiators on and off.

19 LAT gamma ray burst analysis, slave task (`GRB_S`)
A task that runs only on the SIU. It is slaved to the LPA task. During physics acquisition, GRB attempts to identify gamma ray bu

20 LAT instrument housekeeping, master task (`LIH_M`)
A task that only runs on the SIU. Responsible for acquiring data for most housekeeping packets. In particaulr, LIH acquires instru

22 CTDB command receive, utility task (`CRXC_U`)
A task that only runs on the SIU. It is responsible for receiving commands from the CTDB bus and distributing them to the corre

25 LCB transmit, utility task (`LTX0_U`)
A task that runs on both SIU and EPU. Basically a message postman. Allows CPUs to send messages to each other across the LC

26 LCB receive result, utility task (`LRXR_U`)
A task that runs on both SIU and EPU. Basically a postman for messages received back from an LCB command list.

27 LCB receive event, utility task (`LRXE_U`)
A task that runs on both SIU and EPU. Basically a postman for unsolicited traffic arriving at a CPUs LCB. Unsolicited traffic is e

29 CTDB transmit, utility task (`CTX_U`)
A task that only runs on the SIU. Basically a postman that delivers telemetry from applications tasks (both SIU and EPU) to the C

30 SDI (transmit), utility task (`STX_U`)
A task run on both SIU and EPU to send data to the science data interface (and thence to the solid state recorder).

Used by:

`CmdResponse (12.1.0), MsgResponse (12.1.6)`

12.5 Ranges

12.5.0 `LCMMBZ` (A must-be-zero field) Range

ITOS Mnemonic: `LCMMBZ`

Description:

Used to ensure that padding fields are set to zero.

Definition:

Limits 0 - 0

Used by:

`CmdResponse (12.1.0), CpuReset (12.1.1), MsgOutCfg (12.1.5), MsgResponse (12.1.6), Stats (12.1.10)`

12.5.1 `STATSTIMELENLIM` (Limits on the Statistics Timer) Range

ITOS Mnemonic: `STATSTIMELENLIM`

Description:

Limit on how long the statistics timer should run. The special value -1 means run forever. The special value 0 means stop the timer.

Definition:

Limits -1 - 2000000

Used by:

`Stats (12.1.10)`

12.6 Telemetry Packets

12.6.0 LCMIMAGEEPU0 (1001/0x3E9)

Context:

Description:

"Dump of EPU0 image information" Telemetry Packet

Dump of EPU0 image information. These are the traditional module and task tables.

Layout:

Dump of EPU0 image information (LCMIMAGEEPU0) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3E9**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(12.9.31)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): padCount

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

12.6.1 LCMIMAGEEPU1 (1002/0x3EA)

Context:

Description:

"Dump of EPU1 image information" Telemetry Packet

Dump of EPU1 image information. These are the traditional module and task tables.

Layout:

Dump of EPU1 image information (LCMIMAGEEPU1) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3EA**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(12.9.31)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): padCount

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

12.6.2 LCMIMAGEEPU2 (1003/0x3EB)

Context:

Description:

"Dump of EPU2 image information" Telemetry Packet

Dump of EPU2 image information. These are the traditional module and task tables.

Layout:

Dump of EPU2 image information (LCMIMAGEEPU2) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3EB**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(12.9.31)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): `padCount`

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

12.6.3 `LCMIMAGEEPU3` (1004/0x3EC)

Context:

Description:

"Dump of EPU3 image information" Telemetry Packet

Dump of EPU3 image information. These are the traditional module and task tables.

Layout:

Dump of EPU3 image information (LCMIMAGEEPU3) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3EC**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** `padCount`															

Fields:

`PADCOUNT` **(12.9.31)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): `padCount`

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

12.6.4 `LCMIMAGESIU` (1000/0x3E8)

Context:

Description:

"Dump of SIU image information" Telemetry Packet

Dump of SIU image information. These are the traditional module and task tables.

Layout:

Dump of SIU image information (LCMIMAGESIU) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3E8**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

`PADCOUNT` **(12.9.31)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): `padCount`

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

12.6.5 `LCMMSGOUTC` (725/0x2D5)

Context:

Description:

"CTDB MSG Output" Telemetry Packet

One LCMMSGOUT telemetry packet is optionally generated for each MSG output record.

Layout:

CTDB MSG Output (LCMMSGOUTC) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2D5**										
002	**SF**		**Sequence Count**													
004	**Packet Length=205**															
006	**Timestamp**															
00E	**MSGPAD16:** msgPad															
010	**MsgStruct:** msgStruct															

Fields:

MSGPAD16 **(12.9.26)**

Attribute(s):

Brief: "Padding"

Instance(s): msgPad

Padding

MsgStruct **(12.7.1)**

Attribute(s):

Brief: "A complete MSG report"

Instance(s): msgStruct

A complete MSG report

12.6.6 LCMMSGSSRE0 (961/0x3C1)

Context:

Description:

"SSR MSG Output EPU0" Telemetry Packet

One LCMMSGSSRE0 telemetry packet is optionally generated for each MSG output record from EPU0. This LCAT definition is minimal; the complete definition of the contained datagram can be found in the QLCM package.

Layout:

SSR MSG Output EPU0 (LCMMSGSSRE0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3C1**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**TLMPAD16:** pad16															

Fields:

TLMPAD16 **(12.9.51)**

Attribute(s):

Brief: "16-bit alignment padding"

Instance(s): pad16

12.6.7 LCMMSGSSRE1 (962/0x3C2)

Context:

Description:

"SSR MSG Output EPU1" Telemetry Packet

One LCMMSGSSRE1 telemetry packet is optionally generated for each MSG output record from EPU1 This LCAT definition is minimal; the complete definition of the contained datagram can be found in the QLCM package.

Layout:

SSR MSG Output EPU1 (LCMMSGSSRE1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3C2**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**TLMPAD16:** pad16															

Fields:

TLMPAD16 **(12.9.51)**

Attribute(s):

Brief: "16-bit alignment padding"

Instance(s): `pad16`

12.6.8 `LCMMSGSSRE2` (963/0x3C3)

Context:

Description:

"SSR MSG Output EPU2" Telemetry Packet

One LCMMSGSSRE2 telemetry packet is optionally generated for each MSG output record from EPU2. This LCAT definition is minimal; the complete definition of the contained datagram can be found in the QLCM package.

Layout:

SSR MSG Output EPU2 (`LCMMSGSSRE2`)
Telemetry Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=0	SH	APID=0x3C3										
002	SF			Sequence Count												
004	Packet Length=9															
006	Timestamp															
00E	TLMPAD16: `pad16`															

Fields:

`TLMPAD16` **(12.9.51)**

Attribute(s):

Brief: "16-bit alignment padding"

Instance(s): `pad16`

12.6.9 `LCMMSGSSRE3` (964/0x3C4)

Context:

Description:

"SSR MSG Output EPU3" Telemetry Packet

One LCMMSGSSRE3 telemetry packet is optionally generated for each MSG output record from EPU3. This LCAT definition is minimal; the complete definition of the contained datagram can be found in the QLCM package.

Layout:

SSR MSG Output EPU3 (LCMMSGSSRE3) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3C4**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**TLMPAD16:** pad16															

Fields:

TLMPAD16 **(12.9.51)**

Attribute(s):

Brief: "16-bit alignment padding"

Instance(s): pad16

12.6.10 LCMMSGSSRSI (960/0x3C0)

Context:

Description:

"SSR MSG Output SIU" Telemetry Packet

One LCMMSGSSRSI telemetry packet is optionally generated for each MSG output record from the SIU. This LCAT definition is minimal; the complete definition of the contained datagram can be found in the QLCM package.

Layout:

SSR MSG Output SIU (LCMMSGSSRSI) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3C0**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**TLMPAD16:** pad16															

Fields:

TLMPAD16 **(12.9.51)**

Attribute(s):

Brief: "16-bit alignment padding"

Instance(s): `pad16`

12.6.11 `LLCMMEMERR` (724/0x2D4)

Context:

Description:

"RAD750 MEM Error Report" Telemetry Packet

One LLCMMEMERR telemetry packet is generated for each RAD750 memory error reported by hardware if the LCMECLMEC or LCMECLMEU error classes are set to the LCMLEVDIA error level.

Layout:

RAD750 MEM Error Report (LLCMMEMERR) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2D4**										
002	**SF**		**Sequence Count**													
004	**Packet Length=25**															
006	**Timestamp**															
00E	**DUMPFLAGS:** `dmpFlags`															
010	**MEMERRSTAT:** `memStat`															
014	**MEMERRCNT:** `memCount`															
018	**MEMERRLOG0:** `memLog0`															
01C	**MEMERRLOG1:** `memLog1`															

Fields:

`DUMPFLAGS` **(12.8.1)**

Attribute(s):

Brief: "Info Dump Flags"

Instance(s): `dmpFlags`

`MEMERRCNT` **(12.9.2)**

Attribute(s):

Brief: "RAD750 MEM Error Count Register"

Instance(s): `memCount`

`MEMERRLOG0` **(12.9.3)**

Attribute(s):

Brief: "RAD750 MEM Error Log Register 0"

Instance(s): `memLog0`

`MEMERRLOG1` **(12.9.4)**

Attribute(s):

Brief: "RAD750 MEM Error Log Register 1"

Instance(s): `memLog1`

`MEMERRSTAT` **(12.9.5)**

Attribute(s):

Brief: "RAD750 MEM Error Status Register"

Instance(s): `memStat`

12.6.12 `LLCMMODLIST` (721/0x2D1)

Context:

Description:

"Module Status Dump" Telemetry Packet

One LLCMMODLIST telemetry packet is sent in reponse to the LCMMODDUMP telecommand for each software module loaded on the target CPU.

Layout:

Module Status Dump (LLCMMODLIST) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2D1**										
002	**SF**		**Sequence Count**													
004	**Packet Length=71**															
006	**Timestamp**															
00E	**DUMPFLAGS:** `dmpFlags`															

Module Status Dump (LLCMMODLIST) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
010	**MODID:** mid															
014	**MODTEXTADDR:** textAddr															
018	**MODTEXTSIZE:** textSize															
01C	**MODDATAADDR:** dataAddr															
020	**MODDATASIZE:** dataSize															
024	**MODBSSADDR:** bssAddr															
028	**MODBSSSIZE:** bssSize															
02C	**MODFILEID:** fileId															
030	**MODCMXMAJ:** majVer															
032	**MODCMXMIN:** minVer															
034	**MODCMXPAT:** patVer															
036	**MODCMXPKG:** package[0-7]															
03E	**MODCMXCON:** constit[0-15]															

Fields:

DUMPFLAGS **(12.8.1)**

Attribute(s):

Brief: "Info Dump Flags"

Instance(s): dmpFlags

MODBSSADDR **(12.9.6)**

Attribute(s):

Brief: "Module BSS Segment Address"

Instance(s): bssAddr

MODBSSSIZE **(12.9.7)**

Attribute(s):

Brief: "Module BSS Segment Size"

Instance(s): bssSize

MODCMXCON **(12.9.8)**

Attribute(s):

Brief: "Module CMX Constituent"

Instance(s): `constit`

`MODCMXMAJ` **(12.9.9)**

Attribute(s):

Brief: "Module CMX Major Version"

Instance(s): `majVer`

`MODCMXMIN` **(12.9.10)**

Attribute(s):

Brief: "Module CMX Minor Version"

Instance(s): `minVer`

`MODCMXPAT` **(12.9.11)**

Attribute(s):

Brief: "Module CMX Patch Version"

Instance(s): `patVer`

`MODCMXPKG` **(12.9.12)**

Attribute(s):

Brief: "Module CMX Package"

Instance(s): `package`

`MODDATAADDR` **(12.9.13)**

Attribute(s):

Brief: "Module Data Segment Address"

Instance(s): `dataAddr`

`MODDATASIZE` **(12.9.14)**

Attribute(s):

Brief: "Module Data Segment Address"

Instance(s): `dataSize`

`MODFILEID` **(12.9.15)**

Attribute(s):

Brief: "Module File ID"

Instance(s): `fileId`

`MODID` **(12.9.16)**

Attribute(s):

Brief: "Module VxWorks ID"

Instance(s): `mid`

`MODTEXTADDR` **(12.9.17)**

Attribute(s):

Brief: "Module Text Segment Address"

Instance(s): `textAddr`

`MODTEXTSIZE` **(12.9.18)**

Attribute(s):

Brief: "Module Text Segment Size"

Instance(s): `textSize`

12.6.13 `LLCMPCIERR` (723/0x2D3)

Context:

Description:

"RAD750 PCI Error Report" Telemetry Packet

One LLCMMEMERR telemetry packet is generated for each RAD750 memory error reported by hardware if the LCMECLPCI error class is set to the LCMLEVDIA error level.

Layout:

RAD750 PCI Error Report (LLCMPCIERR) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2D3**										
002	**SF**		**Sequence Count**													
004	**Packet Length=21**															
006	**Timestamp**															
00E	**DUMPFLAGS:** dmpFlags															
010	**PCIERRSTAT:** pciStatus															
014	**PCIERRBUS:** pciBus															
018	**PCIERRADDR:** pciAddr															

Fields:

DUMPFLAGS **(12.8.1)**

Attribute(s):

Brief: "Info Dump Flags"

Instance(s): dmpFlags

PCIERRADDR **(12.9.32)**

Attribute(s):

Brief: "RAD750 PCI Error Address Register"

Instance(s): pciAddr

PCIERRBUS **(12.9.33)**

Attribute(s):

Brief: "RAD750 PCI Bus Status Register"

Instance(s): pciBus

PCIERRSTAT **(12.9.34)**

Attribute(s):

Brief: "RAD750 PCI Error Status Register"

Instance(s): pciStatus

12.6.14 `LLCMTASKLIST` (722/0x2D2)

Context:

Description:

"Task Status Dump" Telemetry Packet

One LLCMTASKLIST telemetry packet is sent in reponse to the LCMTASKDUMP telecommand for each active task on the target CPU.

Layout:

Task Status Dump (LLCMTASKLIST) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2D2**										
002	**SF**			**Sequence Count**												
004	**Packet Length=85**															
006	**Timestamp**															
00E	**DUMPFLAGS:** `dmpFlags`															
010	**TASKID:** `tid`															
014	**TASKPRI:** `priority`															
018	**TASKSTAT:** `status`															
01C	**TASKENTRY:** `entry`															
020	**TASKERROR:** `error`															
024	**TASKOPT:** `options`															
028	**TASKDELAY:** `delay`															
02C	**TASKSP:** `stackSP`															
030	**TASKSTBASE:** `stackBase`															
034	**TASKSTEND:** `stackEnd`															
038	**TASKSTLIM:** `stackLim`															
03C	**TASKSTSIZE:** `stackSize`															
040	**TASKSTCUR:** `stackCur`															
044	**TASKSTMAR:** `stackMar`															
048	**TASKSTHIGH:** `stackHigh`															
04C	**TASKNAME:** `name[0-15]`															

Fields:

`DUMPFLAGS` **(12.8.1)**

Attribute(s):

Brief: "Info Dump Flags"

Instance(s): `dmpFlags`

`TASKDELAY` **(12.9.35)**

Attribute(s):

Brief: "Task Delay Timeout"

Instance(s): `delay`

`TASKENTRY` **(12.9.36)**

Attribute(s):

Brief: "Task Entry Address"

Instance(s): `entry`

`TASKERROR` **(12.9.37)**

Attribute(s):

Brief: "Task Most Recent Error"

Instance(s): `error`

`TASKID` **(12.9.38)**

Attribute(s):

Brief: "VxWorks Task ID"

Instance(s): `tid`

`TASKNAME` **(12.9.39)**

Attribute(s):

Brief: "Task Name"

Instance(s): `name`

`TASKOPT` **(12.9.40)**

Attribute(s):

Brief: "Task Options"

Instance(s): `options`

`TASKPRI` **(12.9.41)**

Attribute(s):

Brief: "Task Priority"

Instance(s): `priority`

`TASKSP` **(12.9.42)**

Attribute(s):

Brief: "Task Saved SP Value"

Instance(s): `stackSP`

`TASKSTAT` **(12.9.43)**

Attribute(s):

Brief: "Task Status"

Instance(s): `status`

`TASKSTBASE` **(12.9.44)**

Attribute(s):

Brief: "Task Stack Base Address"

Instance(s): `stackBase`

`TASKSTCUR` **(12.9.45)**

Attribute(s):

Brief: "Task Stack Current Usage"

Instance(s): `stackCur`

`TASKSTEND` **(12.9.46)**

Attribute(s):

Brief: "Task Stack End Address"

Instance(s): `stackEnd`

`TASKSTHIGH` **(12.9.47)**

Attribute(s):

Brief: "Task Stack Maximum Usage"

Instance(s): `stackHigh`

`TASKSTLIM` **(12.9.48)**

Attribute(s):

Brief: "Task Stack Limit"

Instance(s): `stackLim`

`TASKSTMAR` **(12.9.49)**

Attribute(s):

Brief: "Task Stack Current Margin"

Instance(s): `stackMar`

`TASKSTSIZE` **(12.9.50)**

Attribute(s):

Brief: "Task Stack Size"

Instance(s): `stackSize`

12.6.15 `MemoryError` (718/0x2CE)

Context:

Description:

"A memory error report" Telemetry Packet

A memory error report

Layout:

A memory error report (`MemoryError`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2CE**										

A memory error report (MemoryError) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF**		**Sequence Count**													
004	**Packet Length=53**															
006	**Timestamp**															
00E	**us:** spare0															
010	**CpuSerial:** serial															
014	**ui:** status															
018	**ui:** count															
01C	**MemoryLog:** log[0-3]															

Fields:

CpuSerial **(12.8.0)**

Attribute(s):

Brief: "Compound CPU serial number"

Instance(s): serial

MSG compound CPU serial number

MemoryLog **(12.7.0)**

Attribute(s):

Brief: "Contents of one row of the memory error log"

Instance(s): log

Contents of one row of the memory error log

ui **(12.9.52)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): count, status

Unsigned int

us **(12.9.53)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `spare0`

Unsigned short

12.6.16 `PciError` (719/0x2CF)

Context:

Description:

"A PCI error report" Telemetry Packet

A PCI error report

Layout:

A PCI error report (`PciError`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2CF**										
002	**SF**		**Sequence Count**													
004	**Packet Length=25**															
006	**Timestamp**															
00E	**us:** `spare0`															
010	**CpuSerial:** `serial`															
014	**ui:** `status`															
018	**ui:** `bus`															
01C	**ui:** `address`															

Fields:

`CpuSerial` **(12.8.0)**

Attribute(s):

Brief: "Compound CPU serial number"

Instance(s): `serial`

MSG compound CPU serial number

`ui` **(12.9.52)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `address`, `bus`, `status`

Unsigned int

`us` **(12.9.53)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `spare0`

Unsigned short

12.6.17 `STATSEPU0` (991/0x3DF)

Context:

Description:

"LCB and other stats processed on EPU0" Telemetry Packet

Statictics and other stats collected on EPU0 and sent over the science interface.

Layout:

LCB and other stats processed on EPU0 (STATSEPU0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3DF**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

`PADCOUNT` **(12.9.31)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): `padCount`

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

12.6.18 `STATSEPU1` (992/0x3E0)

Context:

Description:

"LCB and other stats processed on EPU1" Telemetry Packet

Statictics and other stats collected on EPU1 and sent over the science interface.

Layout:

LCB and other stats processed on EPU1 (STATSEPU1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3E0**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** `padCount`															

Fields:

`PADCOUNT` **(12.9.31)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): `padCount`

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

12.6.19 `STATSEPU2` (993/0x3E1)

Context:

Description:

"LCB and other stats processed on EPU2" Telemetry Packet

Statictics and other stats collected on EPU2 and sent over the science interface.

Layout:

LCB and other stats processed on EPU2 (STATSEPU2) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3E1**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(12.9.31)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): padCount

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

12.6.20 STATSEPU3 (994/0x3E2)

Context:

Description:

"LCB and other stats processed on EPU3" Telemetry Packet

Statictics and other stats collected on EPU3 and sent over the science interface.

Layout:

LCB and other stats processed on EPU3 (STATSEPU3) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3E2**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(12.9.31)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): `padCount`

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

12.6.21 `STATSSIU` (990/0x3DE)

Context:

Description:

"LCB and other stats processed on SIU" Telemetry Packet

Statictics and other stats collected on SIU and sent over the science interface.

Layout:

LCB and other stats processed on SIU (STATSSIU) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3DE**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** `padCount`															

Fields:

`PADCOUNT` **(12.9.31)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): `padCount`

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

12.7 Telemetry Structs

12.7.0 `MemoryLog` (Contents of one row of the memory error log) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 64 bits (8 bytes)

Description:

Contents of one row of the memory error log

Contents of one row of the memory error log (`MemoryLog`) Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	ui: `typ`															
004	ui: `add`															

Fields:

`ui` **(12.9.52)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `add`, `typ`

Unsigned int

Used by:

`MemoryError (12.6.15)`

12.7.1 `MsgStruct` (A complete MSG report) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 1568 bits (196 bytes)

Description:

A complete MSG report

A complete MSG report (`MsgStruct`) Telemetry Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	MSGTIME: `time[0-1]`															
008	MSGCODE: `code`															
00C	CpuSerial: `serial`															
010	MSGTASK: `task[0-7]`															
018	MSGFUNC: `function[0-31]`															
038	MSGFACIL: `facility[0-3]`															
03C	MSGNAME: `mnemonic[0-7]`															
044	MSGTEXT: `text[0-127]`															

Fields:

`CpuSerial` **(12.8.0)**

Attribute(s):

Brief: "Compound CPU serial number"

Instance(s): `serial`

MSG compound CPU serial number

`MSGCODE` **(12.9.19)**

Attribute(s):

Brief: "MSG ID Code"

Instance(s): `code`

`MSGFACIL` **(12.9.21)**

Attribute(s):

Brief: "MSG Facility Name"

Instance(s): `facility`

`MSGFUNC` **(12.9.22)**

Attribute(s):

Brief: "MSG Source Function"

Instance(s): `function`

`MSGNAME` **(12.9.24)**

Attribute(s):

Brief: "MSG Mnemonic"

Instance(s): `mnemonic`

`MSGTASK` **(12.9.28)**

Attribute(s):

Brief: "MSG Source Task"

Instance(s): `task`

`MSGTEXT` **(12.9.29)**

Attribute(s):

Brief: "MSG Text String"

Instance(s): `text`

`MSGTIME` **(12.9.30)**

Attribute(s):

Brief: "MSG Generation Time"

Instance(s): `time`

Used by:

`LCMMSGOUTC (12.6.5)`

12.8 Telemetry Bitfields

12.8.0 `CpuSerial` (Compound CPU serial number) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

MSG compound CPU serial number

Start	Stop	Size	Item Type and Name
0	7	8	`MSGINST instrument`
8	15	8	`MSGEBM address`
16	23	8	`MSGNODE node`
24	31	8	`MSGSN simpleSN`

Fields:

`MSGEBM` **(12.9.20)**

Attribute(s):

Brief: "CPU address on the EBM"

Instance(s): `address`

CPU address on the EBM

`MSGINST` **(12.9.23)**

Attribute(s):

Brief: "Instrument number"

Instance(s): `instrument`

Unique instrument number. The LAT is instrument one. Laboratory instruments have instrument numbers two and higher.

`MSGNODE` **(12.9.25)**

Attribute(s):

Brief: "MSG ITC Source Node"

Instance(s): `node`

`MSGSN` **(12.9.27)**

Attribute(s):

Brief: "Simple CPU serial number"

Instance(s): `simpleSN`

Simple CPU serial number

Used by:

`MsgStruct (12.7.1)`

12.8.1 `DUMPFLAGS` (Info Dump Flags) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	**3**	**4**	`LATUNIT latUnit`
4	**15**	**12**	`LCMXID xactId`

Fields:

`LATUNIT` **(12.9.0)**

Attribute(s):

Brief: "LAT Unit"

Instance(s): `latUnit`

`LCMXID` **(12.9.1)**

Attribute(s):

Brief: "Transaction ID"

Instance(s): `xactId`

Used by:

`LLCMMEMERR (12.6.11)`

12.9 Telemetry Fields

12.9.0 `LATUNIT` (LAT Unit) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 4 bits

Description:

Used by:

`DUMPFLAGS (12.8.1)`

12.9.1 `LCMXID` (Transaction ID) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 12 bits

Description:

Used by:

`DUMPFLAGS (12.8.1)`

12.9.2 `MEMERRCNT` (RAD750 MEM Error Count Register) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`LLCMMEMERR (12.6.11)`

12.9.3 `MEMERRLOG0` (RAD750 MEM Error Log Register 0) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

LLCMMEMERR (12.6.11)

12.9.4 MEMERRLOG1 (RAD750 MEM Error Log Register 1) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMMEMERR (12.6.11)

12.9.5 MEMERRSTAT (RAD750 MEM Error Status Register) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMMEMERR (12.6.11)

12.9.6 MODBSSADDR (Module BSS Segment Address) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.7 MODBSSSIZE (Module BSS Segment Size) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.8 MODCMXCON (Module CMX Constituent) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	8 bits (1 byte)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.9 MODCMXMAJ (Module CMX Major Version) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	short
Length:	16 bits (2 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.10 MODCMXMIN (Module CMX Minor Version) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	short
Length:	16 bits (2 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.11 MODCMXPAT (Module CMX Patch Version) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	short
Length:	16 bits (2 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.12 MODCMXPKG (Module CMX Package) Telemetry Field

Definition:

Alignment: 1 byte
C type: char
Length: 8 bits (1 byte)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.13 MODDATAADDR (Module Data Segment Address) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.14 MODDATASIZE (Module Data Segment Address) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.15 MODFILEID (Module File ID) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.16 MODID (Module VxWorks ID) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.17 MODTEXTADDR (Module Text Segment Address) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.18 MODTEXTSIZE (Module Text Segment Size) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMMODLIST (12.6.12)

12.9.19 MSGCODE (MSG ID Code) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`MsgStruct (12.7.1)`

12.9.20 `MSGEBM` (CPU address on the EBM) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	8 bits

Description:

CPU address on the EBM

Used by:

`CpuSerial (12.8.0)`

12.9.21 `MSGFACIL` (MSG Facility Name) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	8 bits (1 byte)

Description:

Used by:

`MsgStruct (12.7.1)`

12.9.22 `MSGFUNC` (MSG Source Function) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	8 bits (1 byte)

Description:

Used by:

`MsgStruct (12.7.1)`

12.9.23 `MSGINST` (Instrument number) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	8 bits

Description:

Unique instrument number. The LAT is instrument one. Laboratory instruments have instrument numbers two and higher.

Used by:

`CpuSerial (12.8.0)`

12.9.24 `MSGNAME` (MSG Mnemonic) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	8 bits (1 byte)

Description:

Used by:

`MsgStruct (12.7.1)`

12.9.25 `MSGNODE` (MSG ITC Source Node) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	8 bits

Description:

Used by:

`CpuSerial (12.8.0)`

12.9.26 `MSGPAD16` (Padding) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Padding

Used by:

`LCMMSGOUTC (12.6.5)`

12.9.27 `MSGSN` (Simple CPU serial number) Telemetry Field

Definition:

Alignment:	4 bytes

C type: unsigned int
Length: 8 bits

Description:

Simple CPU serial number

Used by:

`CpuSerial (12.8.0)`

12.9.28 `MSGTASK` (MSG Source Task) Telemetry Field

Definition:

Alignment: 1 byte
C type: char
Length: 8 bits (1 byte)

Description:

Used by:

`MsgStruct (12.7.1)`

12.9.29 `MSGTEXT` (MSG Text String) Telemetry Field

Definition:

Alignment: 1 byte
C type: char
Length: 8 bits (1 byte)

Description:

Used by:

`MsgStruct (12.7.1)`

12.9.30 `MSGTIME` (MSG Generation Time) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`MsgStruct (12.7.1)`

12.9.31 `PADCOUNT` (Pad byte count after telemetry header) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

Used by:

`LCMIMAGEEPU0 (12.6.0)`

12.9.32 `PCIERRADDR` (RAD750 PCI Error Address Register) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMPCIERR (12.6.13)`

12.9.33 `PCIERRBUS` (RAD750 PCI Bus Status Register) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMPCIERR (12.6.13)`

12.9.34 `PCIERRSTAT` (RAD750 PCI Error Status Register) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMPCIERR (12.6.13)`

12.9.35 `TASKDELAY` (Task Delay Timeout) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.36 `TASKENTRY` (Task Entry Address) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.37 `TASKERROR` (Task Most Recent Error) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.38 `TASKID` (VxWorks Task ID) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.39 `TASKNAME` (Task Name) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	8 bits (1 byte)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.40 `TASKOPT` (Task Options) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.41 `TASKPRI` (Task Priority) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.42 `TASKSP` (Task Saved SP Value) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.43 `TASKSTAT` (Task Status) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.44 `TASKSTBASE` (Task Stack Base Address) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.45 `TASKSTCUR` (Task Stack Current Usage) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.46 `TASKSTEND` (Task Stack End Address) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLCMTASKLIST (12.6.14)`

12.9.47 TASKSTHIGH (Task Stack Maximum Usage) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMTASKLIST (12.6.14)

12.9.48 TASKSTLIM (Task Stack Limit) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMTASKLIST (12.6.14)

12.9.49 TASKSTMAR (Task Stack Current Margin) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMTASKLIST (12.6.14)

12.9.50 TASKSTSIZE (Task Stack Size) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLCMTASKLIST (12.6.14)

12.9.51 `TLMPAD16` (16-bit alignment padding) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`LCMMSGSSRE0 (12.6.6)`

12.9.52 `ui` (Unsigned int) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Unsigned int

Used by:

`MemoryError (12.6.15),MemoryLog (12.7.0)`

12.9.53 `us` (Unsigned short) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Unsigned short

Used by:

`MemoryError (12.6.15)`

13 LFS Package

13.0 Overview

The LFS package provides the "standard" file operations (copy, delete, move, list directory, ...), plus a few "unusual" operations (file upload and file dump via spacecraft).

13.1 Command Packets

ITOS Mnemonic: `LFSDIRCREATE`

13.1.0 `LFSDIRCREATE` (1608/0x648:2)

Context:

Description:

"Directory Create" Telecommand Packet

Creates a directory specified by the LFSFILEID path. Only the device and directory number portions of the file ID are used. Valid devices for this telecommand are '/ram' (1), '/ee0' (2), and '/ee1' (3).

Layout:

Directory Create `(DirCreate)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x648:2										
002	SF=3			Sequence Count												
004	Packet Length=11															
006	0			Function Code=2												
008	NODETRANID: `flag`															
00A	PAD16: `pad16`															
00C	FILEID: `fileId`															
010	Packet Checksum															

Fields:

`FILEID` **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileId`

`NODETRANID` **(13.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

`PAD16` **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): `pad16`

ITOS Mnemonic: `LFSDIRDELETE`

13.1.1 `LFSDIRDELETE` (1608/0x648:3)

Context:

Description:

"Directory Delete" Telecommand Packet

Deletes a directory specified by the LFSFILEID path. Only the device and directory number portions of the file ID are used. Valid devices for this telecommand are '/ram' (1), '/ee0' (2), and '/ee1' (3).

Layout:

Directory Delete (DirDelete) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x648:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**			**Function Code=3**												
008	**NODETRANID:** `flag`															
00A	**PAD16:** `pad16`															
00C	**FILEID:** `fileId`															
010	**Packet Checksum**															

Fields:

`FILEID` **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileId`

`NODETRANID` **(13.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

`PAD16` **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): `pad16`

ITOS Mnemonic: `LFSDIRDUMP`

13.1.2 `LFSDIRDUMP` (1608/0x648:5)

Context:

Description:

"Directory Dump" Telecommand Packet

Dumps the contents of a directory specified by the LFSFILEID path. Only the device and directory number portions of the file ID are used. If the directory value is '127', a series of LFSROOTLIST telemetry packets are sent, one for each directory in the root directory of the device. Otherwise, a series of LFSDIRLIST telemetry packets are sent, one for each file in the directory. Valid devices for this telecommand are '/boot (0), '/ram' (1), '/ee0' (2), and '/ee1' (3). When the telecommand is directed at the boot partitions (device 0), up to 6 file listings may be produced. The lower and upper EEPROM banks each contain 3 boot file slots, which are reported if the file header contained at the beginning of the slot is valid.

Layout:

Directory Dump `(DirDump)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Directory Dump (DirDump) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x648:5**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**	**Function Code=5**														
008	**NODETRANID:** flag															
00A	**PAD16:** pad16															
00C	**FILEID:** fileId															
010	**Packet Checksum**															

Fields:

FILEID **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): fileId

NODETRANID **(13.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): flag

Compound of node and transaction ID

PAD16 **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): pad16

ITOS Mnemonic: `LFSFILECOPY`

13.1.3 `LFSFILECOPY` (1608/0x648:1)

Context:

Description:

"File Copy Local" Telecommand Packet

Copies a file locally on the same CPU. The LFSSRCFILEID and LFSDESTFILEID values specify the source and destination file locations. Valid devices for this telecommand are '/ram' (1), '/ee0' (2), and '/ee1' (3). This command may be used to copy from one device to another and from one directory to another, as long as the devices are on the same CPU. Copying a file from SIU to and EPU requires using the LFILUPLEPU telecommand.

Layout:

File Copy Local (FileCopy) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x648:1**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=15**															
006	**0**	**Function Code=1**														
008	**NODETRANID:** `flag`															
00A	**PAD16:** `pad16`															
00C	**FILEID:** `srcFileId`															
010	**FILEID:** `destFileId`															
014	**Packet Checksum**															

Fields:

`FILEID` **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `destFileId`, `srcFileId`

`NODETRANID` **(13.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

`PAD16` **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): `pad16`

ITOS Mnemonic: `LFSFILEDELETE`

13.1.4 `LFSFILEDELETE` (1608/0x648:0)

Context:

Description:

"File Delete" Telecommand Packet

Deletes the file specified by LFSFILEID. Valid devices for this telecommand are '/ram' (1), '/ee0' (2), and '/ee1' (3).

Layout:

File Delete (`FileDelete`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x648:0										
002	SF=3			Sequence Count												
004	Packet Length=11															
006	0	Function Code=0														
008	NODETRANID: `flag`															
00A	PAD16: `pad16`															
00C	FILEID: `fileId`															
010	Packet Checksum															

Fields:

`FILEID` **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileId`

`NODETRANID` **(13.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

`PAD16` **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): `pad16`

ITOS Mnemonic: `LFSFILEDUMPC`

13.1.5 `LFSFILEDUMPC` (1608/0x648:4)

Context:

Description:

"File Dump CTDB" Telecommand Packet

Dumps the contents of a file indicated by LFSFILEID to the CTDB interface. The file data is sent as a series of LFSDUMPCTBD telemetery packets. Valid devices for this telecommand are '/boot' (0), '/ram' (1), '/ee0' (2), and '/ee1' (3).

Layout:

File Dump CTDB (`FileDumpCTDB`) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x648:4**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**			**Function Code=4**												
008	**NODETRANID:** `flag`															
00A	**PAD16:** `pad16`															
00C	**FILEID:** `fileId`															
010	**Packet Checksum**															

Fields:

`FILEID` **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileId`

`NODETRANID` **(13.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

`PAD16` **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): `pad16`

ITOS Mnemonic: `LFSFILEDUMPS`

13.1.6 `LFSFILEDUMPS` (1608/0x648:8)

Context:

Description:

"File Dump SSR" Telecommand Packet

Dumps the contents of a file indicated by LFSFILEID to the SSR science interface. The file data is sent as a series of QLFS datagrams embedded in telemetery packets. Valid devices for this telecommand are '/boot' (0), '/ram' (1), '/ee0' (2), and '/ee1' (3).

Layout:

File Dump SSR (`FileDumpSSR`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x648:8										

File Dump SSR (FileDumpSSR) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF=3**		**Sequence Count**													
004	**Packet Length=11**															
006	**0**		**Function Code=8**													
008	**NODETRANID:** flag															
00A	**PAD16:** pad16															
00C	**FILEID:** fileId															
010	**Packet Checksum**															

Fields:

FILEID **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): fileId

NODETRANID **(13.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): flag

Compound of node and transaction ID

PAD16 **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): pad16

ITOS Mnemonic: `LFSNOOP`

13.1.7 `LFSNOOP` (1608/0x648:9)

Context:

Description:

"LFS No-Op" Telecommand Packet

A no-op telecommand for the LFS/FILE task. Does nothing but generate a command confirm reply.

Layout:

LFS No-Op `(Noop)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x648:9										
002	SF=3			Sequence Count												
004	Packet Length=5															
006	0	Function Code=9														
008	NODEPAD: `flag`															
00A	Packet Checksum															

Fields:

`NODEPAD` **(13.2.0)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): `flag`

Compound of node ID and padding

ITOS Mnemonic: `LFSSYSCHECK`

13.1.8 `LFSSYSCHECK` (1608/0x648:7)

Context:

Description:

"File System Check" Telecommand Packet

This telecommand runs the chkdsk utility on the target on-board file system. Valid devices for this telecommand are '/ee0' (2), and '/ee1' (3).

Layout:

File System Check `(SysCheck)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x648:7**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**	**Function Code=7**														
008	**NODEPAD:** `flag`															
00A	**PAD16:** `pad16`															
00C	**FILEID:** `fileID`															
010	**Packet Checksum**															

Fields:

`FILEID` **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileID`

`NODEPAD` **(13.2.0)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): `flag`

Compound of node ID and padding

`PAD16` **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): `pad16`

ITOS Mnemonic: `LFSSYSFORMAT`

13.1.9 `LFSSYSFORMAT` (1609/0x649:0)

Context:

Description:

"File System Format" Telecommand Packet

This telecommand will reformat one of the TFFS file system partitions contained in the SIB board EEPROM banks. The partition will start at the offset into the bank as indicated by the telecommand parameters. The file system partition should not overlap the boot partition contained in the EEPROM bank. Use this command with care, since it will destroy any previous file system partition stored in that bank. Valid devices for this telecommand are '/ee0' (2), and '/ee1' (3).

Layout:

File System Format (SysFormat) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x649:0**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=15**															
006	**0**	**Function Code=0**														
008	**NODEPAD:** flag															
00A	**PAD16:** pad16															
00C	**FILEID:** fileID															
010	**OFFSET:** sysOffset															
014	**Packet Checksum**															

Fields:

`FILEID` **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileID`

`NODEPAD` **(13.2.0)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): `flag`

Compound of node ID and padding

`OFFSET` **(13.3.2)**

Attribute(s):

Brief: "Offset in bytes"

Instance(s): `sysOffset`

`PAD16` **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): `pad16`

ITOS Mnemonic: `LFSSYSMOUNT`

13.1.10 `LFSSYSMOUNT` (1609/0x649:1)

Context:

Description:

"File System Mount" Telecommand Packet

This telecommand performs a manual mount of one of the on-board file systems. Valid devices for this telecommand are '/ee0' (2), and '/ee1' (3).

Layout:

File System Mount `(SysMount)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x649:1										
002	SF=3			Sequence Count												
004	Packet Length=11															
006	0	Function Code=1														
008	NODEPAD: `flag`															
00A	PAD16: `pad16`															
00C	FILEID: `fileID`															
010	Packet Checksum															

Fields:

`FILEID` **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileID`

`NODEPAD` **(13.2.0)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): `flag`

Compound of node ID and padding

`PAD16` **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): `pad16`

ITOS Mnemonic: `LFSSYSREPAIR`

13.1.11 `LFSSYSREPAIR` (1609/0x649:2)

Context:

Description:

"File System Repair" Telecommand Packet

Run the VxWorks chkdsk utility on the target device with the repair flag set to true. WARNING: This telecommand may result in the deletion of corrupted files for the sake of returning the partition to a consistent state.

Layout:

File System Repair (SysRepair) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x649:2**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=11**															

File System Repair (SysRepair) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**0**	**Function Code=2**														
008	**NODEPAD:** flag															
00A	**PAD16:** pad16															
00C	**FILEID:** fileID															
010	**Packet Checksum**															

Fields:

FILEID **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): fileID

NODEPAD **(13.2.0)**

Attribute(s):

Brief: "Compound of node ID and padding"

Instance(s): flag

Compound of node ID and padding

PAD16 **(13.3.4)**

Attribute(s):

Brief: "16-bit padding"

Instance(s): pad16

ITOS Mnemonic: `LFSSYSSTATUS`

13.1.12 `LFSSYSSTATUS` (1608/0x648:6)

Context:

Description:

"File System Status" Telecommand Packet

Report the current status of a file system partition indicated by LFSFILEID. Only the device number portion of the file storage ID is used. The status is returned as a single LFSSYSLIST telemetry packet. Valid devices for this telecommand are '/ram' (1), '/ee0' (2), and '/ee1' (3).

Layout:

File System Status `(SysStatus)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x648:6**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=11**															
006	**0**	**Function Code=6**														
008	**NODETRANID:** `flag`															
00A	**PAD16:** `pad16`															
00C	**FILEID:** `fileId`															
010	**Packet Checksum**															

Fields:

`FILEID` **(13.3.0)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileId`

`NODETRANID` **(13.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

`PAD16` **(13.3.4)**

Attribute(s):
rng: LFSMBZ (13.5.0)

Brief: "16-bit padding"

Instance(s): `pad16`

13.2 Command Bitfields

13.2.0 `NODEPAD` (Compound of node ID and padding) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Compound of node ID and padding

Start	Stop	Size	Item Type and Name

Used by:

`Noop (13.1.7)`

13.2.1 `NODETRANID` (Compound of node and transaction ID) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Compound of node and transaction ID

Start	Stop	Size	Item Type and Name

Used by:

`DirCreate (13.1.0)`

13.3 Command Fields

13.3.0 `FILEID` (File Storage ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`DirCreate (13.1.0)`

13.3.1 `NODE` (Computer to send the command to) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

Computer to send the command to

Used by:

???

13.3.2 `OFFSET` (Offset in bytes) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`SysFormat (13.1.9)`

13.3.3 `PAD12` (A twelve-bit padding field) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Used by:

???

13.3.4 `PAD16` (16-bit padding) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`DirCreate (13.1.0)`

13.3.5 `TRANID` (Transaction ID to associate with command) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Transaction ID to associate with command

Used by:

???

13.4 Enumerations

13.4.0 `LFSNODEID` (List of CPU nodes addressable with LFS commands) Enumeration

ITOS Mnemonic: `LFSNODEID`

Description:

List of CPU nodes addressable with LCM commands

Definition:

0 The SIU computer (`SIU`)
The SIU computer

1 The EPU0 computer (`EPU0`)
The EPU0 computer

2 The EPU1 computer (`EPU1`)
The EPU1 computer

3 The EPU2 computer (`EPU2`)
The EPU2 computer

4 The EPU3 computer (external crate) (`EPU3`)
The EPU3 computer (external crate)

Used by:

???

13.5 Ranges

13.5.0 `LFSMBZ` (A must-be-zero field) Range

ITOS Mnemonic: `LFSMBZ`

Description:

Used to ensure that padding fields are set to zero.

Definition:

Limits 0 - 0

Used by:

`DirCreate (13.1.0), DirDelete (13.1.1), DirDump (13.1.2), FileCopy (13.1.3), FileDelete (13.1.4), FileDumpCTDB (13.1.5), FileDumpSSR (13.1.6), SysCheck (13.1.8), SysFormat (13.1.9), SysMount (13.1.10), SysStatus (13.1.12)`

13.6 Telemetry Packets

13.6.0 LFSDUMPSSRE0 (976/0x3D0)

Context:

Description:

"File Dump Data SSR EPU0" Telemetry Packet

A series of LFSDUMPSSRE0 telemetry packets is enerated for each LFSFILEDUMPS telecommand sent to EPU0. This LCAT definition is minimal; the complete definition of the contained datagram can be found in the QLFS package.

Layout:

File Dump Data SSR EPU0 (LFSDUMPSSRE0) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3D0**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**LFSPAD16:** pad16															

Fields:

LFSPAD16 **(13.8.15)**

Attribute(s):

Brief: "16-bit Padding Word"

Instance(s): pad16

13.6.1 LFSDUMPSSRE1 (977/0x3D1)

Context:

Description:

"File Dump Data SSR EPU1" Telemetry Packet

A series of LFSDUMPSSRE1 telemetry packets is enerated for each LFSFILEDUMPS telecommand sent to EPU1. This LCAT definition is minimal; the complete definition of the contained datagram can be found in the QLFS package.

Layout:

File Dump Data SSR EPU1 (LFSDUMPSSRE1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3D1**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**LFSPAD16:** pad16															

Fields:

LFSPAD16 **(13.8.15)**

Attribute(s):

Brief: "16-bit Padding Word"

Instance(s): pad16

13.6.2 LFSDUMPSSRE2 (978/0x3D2)

Context:

Description:

"File Dump Data SSR EPU2" Telemetry Packet

A series of LFSDUMPSSRE2 telemetry packets is enerated for each LFSFILEDUMPS telecommand sent to EPU2. This LCAT definition is minimal; the complete definition of the contained datagram can be found in the QLFS package.

Layout:

File Dump Data SSR EPU2 (LFSDUMPSSRE2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3D2**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**LFSPAD16:** pad16															

Fields:

LFSPAD16 **(13.8.15)**

Attribute(s):

Brief: "16-bit Padding Word"

Instance(s): `pad16`

13.6.3 `LFSDUMPSSRE3` (979/0x3D3)

Context:

Description:

"File Dump Data SSR EPU3" Telemetry Packet

A series of LFSDUMPSSRE3 telemetry packets is enerated for each LFSFILEDUMPS telecommand sent to EPU3. This LCAT definition is minimal; the complete definition of the contained datagram can be found in the QLFS package.

Layout:

File Dump Data SSR EPU3 (`LFSDUMPSSRE3`)
Telemetry Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=0	SH	APID=0x3D3										
002	SF		Sequence Count													
004	Packet Length=9															
006	Timestamp															
00E	LFSPAD16: `pad16`															

Fields:

`LFSPAD16` **(13.8.15)**

Attribute(s):

Brief: "16-bit Padding Word"

Instance(s): `pad16`

13.6.4 `LFSDUMPSSRSI` (975/0x3CF)

Context:

Description:

"File Dump Data SSR SIU" Telemetry Packet

A series of LFSDUMPSSRSI telemetry packets is enerated for each LFSFILEDUMPS telecommand sent to the SIU. This LCAT definition is minimal; the complete definition of the contained datagram can be found in the QLFS package.

Layout:

File Dump Data SSR SIU (LFSDUMPSSRSI) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3CF**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**LFSPAD16:** pad16															

Fields:

`LFSPAD16` **(13.8.15)**

Attribute(s):

Brief: "16-bit Padding Word"

Instance(s): `pad16`

13.6.5 `LLFSDIREMPTY` (796/0x31C)

Context:

Description:

"Directory Empty Report" Telemetry Packet

This telemetry packet is sent in response to the LFSDIRDUMP telecommand when the target directory is empty (no files or subdirectories).

Layout:

Directory Empty Report (LLFSDIREMPTY) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x31C**										
002	**SF**			**Sequence Count**												
004	**Packet Length=13**															
006	**Timestamp**															
00E	**DUMPSTFLAGS:** dmpFlags															
010	**FILESTID:** fileId															

Fields:

DUMPSTFLAGS **(13.7.0)**

Attribute(s):

Brief: "File Dump Flags"

Instance(s): dmpFlags

FILESTID **(13.7.2)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): fileId

13.6.6 LLFSDIRLIST (792/0x318)

Context:

Description:

"Directory Listing Report" Telemetry Packet

Lists one file entry in a LAT file system sub-directory. One of these packets is sent in response to a LFSDIRDUMP telecommand for each file in the target directory.

Layout:

Directory Listing Report (LLFSDIRLIST) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x318**										
002	**SF**			**Sequence Count**												
004	**Packet Length=61**															

Directory Listing Report (LLFSDIRLIST) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**Timestamp**															
00E	**DUMPSTFLAGS:** dmpFlags															
010	**FILESTFLAGS:** fileFlags															
012	**LFSPAD16:** pad16															
014	**FILESTID:** fileId															
018	**FILESTTIME:** fileTime															
01C	**FILESTSIZE:** fileSize															
020	**FILESTBLOCK:** fileBlocks															
024	**FILEHDR:** fileHdr[0-31]															

Fields:

DUMPSTFLAGS **(13.7.0)**

Attribute(s):

Brief: "File Dump Flags"

Instance(s): dmpFlags

FILEHDR **(13.8.4)**

Attribute(s):

Brief: "File Header Data"

Instance(s): fileHdr

FILESTBLOCK **(13.8.7)**

Attribute(s):

Brief: "File Storage Blocks"

Instance(s): fileBlocks

FILESTFLAGS **(13.7.1)**

Attribute(s):

Brief: "File Storage Flags"

Instance(s): fileFlags

`FILESTID` **(13.7.2)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileId`

`FILESTSIZE` **(13.8.11)**

Attribute(s):

Brief: "File Storage Size"

Instance(s): `fileSize`

`FILESTTIME` **(13.8.12)**

Attribute(s):

Brief: "File Storage Update Time"

Instance(s): `fileTime`

`LFSPAD16` **(13.8.15)**

Attribute(s):

Brief: "16-bit Padding Word"

Instance(s): `pad16`

13.6.7 `LLFSDUMPCTDB` (795/0x31B)

Context:

Description:

"File Dump Data CTDB" Telemetry Packet

Contains a portion of a file data dump to the CTDB interface. The LFSFDMPOFFSET and LFSFDMP-SIZE members provide the offset into the file and size of the current packet's data contents (LFSFDMPDATAxxx). The LFSFDMPDEV, LFSFDMPDIR, and LFSFDMPFILE members give the storage location of the file.

Layout:

File Dump Data CTDB (LLFSDUMPCTDB) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x31B**										
002	**SF**		**Sequence Count**													
004	**Packet Length=411**															
006	**Timestamp**															
00E	**DUMPSTFLAGS:** dmpFlags															
010	**FILESTID:** fileId															
014	**FILESTOFFSET:** fileOffset															
018	**FILEDUMPSIZE:** dmpSize															
01C	**FILEDATA:** fileData[0-389]															

Fields:

DUMPSTFLAGS **(13.7.0)**

Attribute(s):

Brief: "File Dump Flags"

Instance(s): dmpFlags

FILEDATA **(13.8.0)**

Attribute(s):

Brief: "File Data Contents"

Instance(s): fileData

FILEDUMPSIZE **(13.8.3)**

Attribute(s):

Brief: "File Dump Current Size"

Instance(s): dmpSize

FILESTID **(13.7.2)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): fileId

`FILESTOFFSET` **(13.8.9)**

Attribute(s):

Brief: "File Data Offset"

Instance(s): `fileOffset`

13.6.8 `LLFSROOTLIST` (793/0x319)

Context:

Description:

"Root Listing Report" Telemetry Packet

Lists one file entry in a LAT file system root directory. One of these packets is sent in response to a LFSDIRDUMP (directory = '127') telecommand for each sub-directory in the target device.

Layout:

Root Listing Report (LLFSROOTLIST) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x319**										
002	**SF**		**Sequence Count**													
004	**Packet Length=29**															
006	**Timestamp**															
00E	**DUMPSTFLAGS:** `dmpFlags`															
010	**FILESTFLAGS:** `fileFlags`															
012	**LFSPAD16:** `pad16`															
014	**FILESTID:** `fileId`															
018	**FILESTTIME:** `fileTime`															
01C	**FILESTSIZE:** `fileSize`															
020	**FILESTBLOCK:** `fileBlocks`															

Fields:

`DUMPSTFLAGS` **(13.7.0)**

Attribute(s):

Brief: "File Dump Flags"

Instance(s): `dmpFlags`

`FILESTBLOCK` **(13.8.7)**

Attribute(s):

Brief: "File Storage Blocks"

Instance(s): `fileBlocks`

`FILESTFLAGS` **(13.7.1)**

Attribute(s):

Brief: "File Storage Flags"

Instance(s): `fileFlags`

`FILESTID` **(13.7.2)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileId`

`FILESTSIZE` **(13.8.11)**

Attribute(s):

Brief: "File Storage Size"

Instance(s): `fileSize`

`FILESTTIME` **(13.8.12)**

Attribute(s):

Brief: "File Storage Update Time"

Instance(s): `fileTime`

`LFSPAD16` **(13.8.15)**

Attribute(s):

Brief: "16-bit Padding Word"

Instance(s): `pad16`

13.6.9 `LLFSSYSLIST` (794/0x31A)

Context:

Description:

"File System Status Report" Telemetry Packet

Provides the status of a LAT file system partition. One of these packets is sent in response to the LFSSYSSTATUS telecommand.

Layout:

File System Status Report (LLFSSYSLIST) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x31A**										
002	**SF**			**Sequence Count**												
004	**Packet Length=25**															
006	**Timestamp**															
00E	**DUMPSTFLAGS:** dmpFlags															
010	**FILESTID:** fileId															
014	**SYSBLKSIZE:** blkSize															
018	**SYSBLKFREE:** blkFree															
01C	**SYSBLKTOTAL:** blkTotal															

Fields:

`DUMPSTFLAGS` **(13.7.0)**

Attribute(s):

Brief: "File Dump Flags"

Instance(s): `dmpFlags`

`FILESTID` **(13.7.2)**

Attribute(s):

Brief: "File Storage ID"

Instance(s): `fileId`

`SYSBLKFREE` **(13.8.17)**

Attribute(s):

Brief: "File System Free Blocks"

Instance(s): `blkFree`

`SYSBLKSIZE` **(13.8.18)**

Attribute(s):

Brief: "File System Block Size"

Instance(s): `blkSize`

`SYSBLKTOTAL` **(13.8.19)**

Attribute(s):

Brief: "File System Total Blocks"

Instance(s): `blkTotal`

13.7 Telemetry Bitfields

13.7.0 DUMPSTFLAGS (File Dump Flags) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	**3**	**4**	`LATSTUNIT latUnit`
4	**15**	**12**	`LFSXID xactId`

Fields:

`LATSTUNIT` **(13.8.13)**

Attribute(s):

Brief: "LAT Storage Unit"

Instance(s): `latUnit`

`LFSXID` **(13.8.16)**

Attribute(s):

Brief: "Transaction ID"

Instance(s): `xactId`

Used by:

`LLFSDIREMPTY (13.6.5)`

13.7.1 FILESTFLAGS (File Storage Flags) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	**0**	**1**	`FILESTARCHIVE archiveFlag`
1	**1**	**1**	`FILESTDIR dirFlag`
2	**2**	**1**	`FILESTRDONLY roFlag`

3 **15** **13** `LFSPAD13 pad13`

Fields:

`FILESTARCHIVE` **(13.8.6)**

Attribute(s):

Brief: "File Storage Archive Flag"

Instance(s): `archiveFlag`

`FILESTDIR` **(13.8.8)**

Attribute(s):

Brief: "File Storage Directory Flag"

Instance(s): `dirFlag`

`FILESTRDONLY` **(13.8.10)**

Attribute(s):

Brief: "File Storage Read-Only Flag"

Instance(s): `roFlag`

`LFSPAD13` **(13.8.14)**

Attribute(s):

Brief: "13-bit Padding Word"

Instance(s): `pad13`

Used by:

`LLFSDIRLIST (13.6.6)`

13.7.2 `FILESTID` (File Storage ID) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	**2**	**3**	`FILEDEV dev`
3	**9**	**7**	`FILEDIR dir`
10	**31**	**22**	`FILENUM file`

Fields:

`FILEDEV` **(13.8.1)**

Attribute(s):

Brief: "File ID Device Number"

Instance(s): `dev`

`FILEDIR` **(13.8.2)**

Attribute(s):

Brief: "File ID Directory Number"

Instance(s): `dir`

`FILENUM` **(13.8.5)**

Attribute(s):

Brief: "File ID File Number"

Instance(s): `file`

Used by:

`LLFSDIREMPTY (13.6.5)`

13.8 Telemetry Fields

13.8.0 `FILEDATA` (File Data Contents) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`LLFSDUMPCTDB (13.6.7)`

13.8.1 `FILEDEV` (File ID Device Number) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	3 bits

Description:

Used by:

`FILESTID (13.7.2)`

13.8.2 `FILEDIR` (File ID Directory Number) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	7 bits

Description:

Used by:

`FILESTID (13.7.2)`

13.8.3 `FILEDUMPSIZE` (File Dump Current Size) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLFSDUMPCTDB (13.6.7)

13.8.4 FILEHDR (File Header Data) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LLFSDIRLIST (13.6.6)

13.8.5 FILENUM (File ID File Number) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	22 bits

Description:

Used by:

FILESTID (13.7.2)

13.8.6 FILESTARCHIVE (File Storage Archive Flag) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char
Length:	1 bit

Description:

Used by:

FILESTFLAGS (13.7.1)

13.8.7 FILESTBLOCK (File Storage Blocks) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLFSDIRLIST (13.6.6)

13.8.8 FILESTDIR (File Storage Directory Flag) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

Used by:

FILESTFLAGS (13.7.1)

13.8.9 FILESTOFFSET (File Data Offset) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLFSDUMPCTDB (13.6.7)

13.8.10 FILESTRDONLY (File Storage Read-Only Flag) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

Used by:

FILESTFLAGS (13.7.1)

13.8.11 FILESTSIZE (File Storage Size) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLFSDIRLIST (13.6.6)

13.8.12 FILESTTIME (File Storage Update Time) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLFSDIRLIST (13.6.6)

13.8.13 LATSTUNIT (LAT Storage Unit) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

Used by:

DUMPSTFLAGS (13.7.0)

13.8.14 LFSPAD13 (13-bit Padding Word) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	13 bits

Description:

Used by:

FILESTFLAGS (13.7.1)

13.8.15 LFSPAD16 (16-bit Padding Word) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

LFSDUMPSSRE0 (13.6.0)

13.8.16 LFSXID (Transaction ID) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Used by:

DUMPSTFLAGS (13.7.0)

13.8.17 SYSBLKFREE (File System Free Blocks) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLFSSYSLIST (13.6.9)

13.8.18 SYSBLKSIZE (File System Block Size) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

LLFSSYSLIST (13.6.9)

13.8.19 SYSBLKTOTAL (File System Total Blocks) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`LLFSSYSLIST (13.6.9)`

14 LHK Package

14.0 Overview

The LHK package provides monitoring facilities that are orthogonal and asynchronous to the monitoring that is based on the contents of physics events being read from the instrument. This is much more fundamental monitoring (e.g., temperatures, voltages, currents). LHK runs its own task.

The package supports the following functions:

- Housekeeping data stream

14.1 Command Packets

ITOS Mnemonic: `LHKCANCELDIAG`

14.1.0 `LHKCANCELDIAG` (1616/0x650:4)

Context:

Description:

"Cancel a request for diagnostic packets" Telecommand Packet

Cancel a request for diagnostic packets

Layout:

Cancel a request for diagnostic packets `(CancelDiag)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x650:4										
002	SF=3		Sequence Count													
004	Packet Length=7															
006	0	Function Code=4														
008	APID: `apid`															
00C	Packet Checksum															

Fields:

`APID` **(14.2.0)**

Attribute(s):

Brief: "Application ID parameter"

Instance(s): `apid`

ITOS Mnemonic: `LHKNEWSCHEDFILE`

14.1.1 `LHKNEWSCHEDFILE` (1616/0x650:5)

Context:

Description:

"Request a new housekeeping schedule by file ID" Telecommand Packet

Request a new housekeeping schedule by file ID

Layout:

Request a new housekeeping schedule by file ID `(NewSchedFile)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x650:5**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=7**															
006	**0**	**Function Code=5**														
008	**FileId:** `file`															
00C	**Packet Checksum**															

Fields:

`FileId` **(14.2.3)**

Attribute(s):

Brief: "Configuration File ID"

Instance(s): `file`

32 bit value specifying the configuration file ID, which conforms to the FILE standard convention.

ITOS Mnemonic: `LHKNEWSCHEDINST`

14.1.2 `LHKNEWSCHEDINST` (1616/0x650:6)

Context:

Description:

"Request a new housekeeping schedule by CDM instance number" Telecommand Packet

Request a new housekeeping schedule by CDM instance number

Layout:

Request a new housekeeping schedule by CDM instance number `(NewSchedInst)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x650:6**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=6**														
008	**Instance:** `instance`															
00C	**Packet Checksum**															

Fields:

`Instance` **(14.2.4)**

Attribute(s):

Brief: "CDM instance number"

Instance(s): `instance`

CDM instance number

ITOS Mnemonic: `LHKNOOP`

14.1.3 `LHKNOOP` (1616/0x650:3)

Context:

Description:

"LHK No-Op Command" Telecommand Packet

No-op command.

Layout:

LHK No-Op Command `(Noop)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x650:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=3**														

ITOS Mnemonic: `LHKREQDIAGPKT`

14.1.4 `LHKREQDIAGPKT` (1616/0x650:0)

Context:

Description:

"Request a Housekeeping Diagnostic Packet" Telecommand Packet

Sends a request to the housekeeping system to send a packets using the diagnostic channel.

Layout:

Request a Housekeeping Diagnostic Packet `(ReqDiagPacket)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x650:0**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=15**															
006	**0**	**Function Code=0**														
008	**APID:** `apid`															
00C	**DiagPktCnt:** `count`															
010	**DiagInterval:** `interval`															
014	**Packet Checksum**															

Fields:

`APID` **(14.2.0)**

Attribute(s):
rng: LHKAPIDRNGCMB (14.3.1)

Brief: "Application ID parameter"

Instance(s): `apid`

`DiagInterval` **(14.2.1)**

Attribute(s):

Brief: "Diagnostic sample interval"

Instance(s): `interval`

Specifies interval in milliseconds between diagnostic packet samples.

`DiagPktCnt` **(14.2.2)**

Attribute(s):

Brief: "Diagnostic sample Packet Count"

Instance(s): `count`

Specifies the number of diagnostic packets to sample.

ITOS Mnemonic: `LHKSTOPDIAG`

14.1.5 `LHKSTOPDIAG` (1616/0x650:2)

Context:

Description:

"Stop Diagnostic Sample" Telecommand Packet

Terminates the current diagnostic sample run.

Layout:

Stop Diagnostic Sample (`StopDiag`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x650:2										
002	SF=3			Sequence Count												
004	Packet Length=3															
006	0	Function Code=2														

ITOS Mnemonic: `LHKSYSRESET`

14.1.6 `LHKSYSRESET` (1616/0x650:1)

Context:

Description:

"System Reset" Telecommand Packet

Resets the housekeeping system using configuration file parameters. File IDs can be null, which specifies loading of default configuration.

Layout:

System Reset (SysReset) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x650:1**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**			**Function Code=1**												
008	**FileId:** file0															
00C	**FileId:** file1															
010	**Packet Checksum**															

Fields:

`FileId` **(14.2.3)**

Attribute(s):

Brief: "Configuration File ID"

Instance(s): `file0`, `file1`

32 bit value specifying the configuration file ID, which conforms to the FILE standard convention.

14.2 Command Fields

14.2.0 `APID` (Application ID parameter) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`CancelDiag (14.1.0)`

14.2.1 `DiagInterval` (Diagnostic sample interval) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Specifies interval in milliseconds between diagnostic packet samples.

Used by:

`ReqDiagPacket (14.1.4)`

14.2.2 `DiagPktCnt` (Diagnostic sample Packet Count) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Specifies the number of diagnostic packets to sample.

Used by:

`ReqDiagPacket (14.1.4)`

14.2.3 `FileId` (Configuration File ID) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

32 bit value specifying the configuration file ID, which conforms to the FILE standard convention.

Used by:

`NewSchedFile (14.1.1)`

14.2.4 `Instance` (CDM instance number) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

CDM instance number

Used by:

`NewSchedInst (14.1.2)`

14.3 Ranges

14.3.0 LHKAPDRNGDIA (Valid range for mirror diagnostic APIDs) Range

ITOS Mnemonic: LHKAPDRNGDIA

Description:

A subset of the full diagnostic APID range. APIDs in this subset are used to mirror APIDs in the housekeeping range one-to-one. APIDs in this subset can then be used to schedule a packet on a different cadence.

Definition:

Limits 609 - 703

Used by:

???

14.3.1 LHKAPIDRNGCMB (LHK APID Range (combined housekeeping and diagnostic)) Range

ITOS Mnemonic: LHKAPIDRNGCMB

Description:

Valid range of APIDs for LHK (cobined housekeeping and diagnostic). This is a deprecated range limit. It combines both the housekeeping range proper, and the part of the diagnostic range that mirrors the housekeeping range for purposes of scheduling a packet on a different cadence.

Definition:

Limits 503 - 607

Used by:

ReqDiagPacket (14.1.4)

14.4 Telemetry Packets

14.4.0 `AemEnv0` (550/0x226)

Context:

Description:

"AEM Environmental Monitor Packet 0" Telemetry Packet

AEM Environmental Monitor Packet 0

Layout:

AEM Environmental Monitor Packet 0 (AemEnv0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x226**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare															
012	**AEMFREEPWR:** freepwr															
014	**ADC:** free[0-47]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `free`

A compound of ADC readout and limit evaluation

AEMFREEPWR **(14.6.1)**

Attribute(s):

Brief: "AEM FREE board power state register"

Instance(s): `freepwr`

Contains the state of the FREE board power switches in the AEM.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.1 `AemEnv00` (572/0x23C)

Context:

Description:

"AEM environmental quantities for FREE boards 0-5 and the DAB" Telemetry Packet

AEM environmental quantities for FREE boards 0-5 and the DAB

Layout:

AEM environmental quantities for FREE boards 0-5 and the DAB (AemEnv00) **Telemetry Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x23C**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0`															
012	**AEMFREEPWR:** `freepwr`															
014	**ADC:** `free[0-27]`															
04C	**Padus16:** `spare1[0-19]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `free`

A compound of ADC readout and limit evaluation

`AEMFREEPWR` **(14.6.1)**

Attribute(s):

Brief: "AEM FREE board power state register"

Instance(s): `freepwr`

Contains the state of the FREE board power switches in the AEM.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

14.4.2 `AemEnv01` (573/0x23D)

Context:

Description:

"AEM environmental quantities for FREE boards 6-11 and the DAB" Telemetry Packet

AEM environmental quantities for FREE boards 6-11 and the DAB

Layout:

AEM environmental quantities for FREE boards 6-11 and the DAB (AemEnv01) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x23D**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0`															
012	**AEMFREEPWR:** `freepwr`															
014	**ADC:** `free[0-27]`															
04C	**Padus16:** `spare1[0-19]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `free`

A compound of ADC readout and limit evaluation

`AEMFREEPWR` **(14.6.1)**

Attribute(s):

Brief: "AEM FREE board power state register"

Instance(s): `freepwr`

Contains the state of the FREE board power switches in the AEM.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

14.4.3 `CmdCnt0` (552/0x228)

Context:

Description:

"Command Statistics Packet 0" Telemetry Packet

Contains task level command statistics.

Layout:

Command Statistics Packet 0 (`CmdCnt0`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x228**										
002	**SF**		**Sequence Count**													

Command Statistics Packet 0 (CmdCnt0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spares[0-2]															
014	**CMDCNTRS:** cntrs[0-5]															

Fields:

CMDCNTRS **(14.5.0)**

Attribute(s):

Brief: "Command Counters"

Instance(s): cntrs

Structure to hold per task command count information.

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): spares

Explicit 16 bit pad in unsigned short

14.4.4 CmdCnt1 (553/0x229)

Context:

Description:

"Command Statistics Packet 1" Telemetry Packet

Contains task level command statistics

Layout:

Command Statistics Packet 1 (CmdCnt1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x229**										
002	**SF**		**Sequence Count**													

Command Statistics Packet 1 (CmdCnt1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spares[0-2]															
014	**CMDCNTRS:** cntrs[0-5]															

Fields:

CMDCNTRS **(14.5.0)**

Attribute(s):

Brief: "Command Counters"

Instance(s): cntrs

Structure to hold per task command count information.

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): spares

Explicit 16 bit pad in unsigned short

14.4.5 CtdbCounts (594/0x252)

Context:

Description:

"CTDB (1553) counters" Telemetry Packet

CTDB (1553) counters

Layout:

CTDB (1553) counters (CtdbCounts) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x252**										
002	**SF**		**Sequence Count**													

CTDB (1553) counters (CtdbCounts) Telemetry Packet Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**RTSTATS:** hsk															
038	**Padus16:** spare0[0-29]															

Fields:

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare0

Explicit 16 bit pad in unsigned short

RTSTATS **(14.5.12)**

Attribute(s):

Brief: "1553 Remote Terminal Statistics"

Instance(s): hsk

Contains the 1553 RT driver statistics.

14.4.6 DiagAemEnv0 (646/0x286)

Context:

Description:

"Diagnostic AEM Environmental Monitor Packet 0" Telemetry Packet

Diagnostic AEM Environmental Monitor Packet 0

Layout:

Diagnostic AEM Environmental Monitor Packet 0 (DiagAemEnv0) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x286**										

Diagnostic AEM Environmental Monitor Packet 0 `(DiagAemEnv0)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare`															
012	**AEMFREEPWR:** `freepwr`															
014	**ADC:** `free[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `free`

A compound of ADC readout and limit evaluation

`AEMFREEPWR` **(14.6.1)**

Attribute(s):

Brief: "AEM FREE board power state register"

Instance(s): `freepwr`

Contains the state of the FREE board power switches in the AEM.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.7 `DiagAemEnv00` (668/0x29C)

Context:

Description:

"Diagnostic AEM environmental quantities for FREE boards 0-5 an" Telemetry Packet

Diagnostic AEM environmental quantities for FREE boards 0-5 and the DAB

Layout:

Diagnostic AEM environmental quantities for FREE boards 0-5 an (DiagAemEnv00) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x29C**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0															
012	**AEMFREEPWR:** freepwr															
014	**ADC:** free[0-27]															
04C	**Padus16:** spare1[0-19]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): free

A compound of ADC readout and limit evaluation

AEMFREEPWR **(14.6.1)**

Attribute(s):

Brief: "AEM FREE board power state register"

Instance(s): freepwr

Contains the state of the FREE board power switches in the AEM.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

14.4.8 `DiagAemEnv01` (669/0x29D)

Context:

Description:

"Diagnostic AEM environmental quantities for FREE boards 6-11 a" Telemetry Packet

Diagnostic AEM environmental quantities for FREE boards 6-11 and the DAB

Layout:

Diagnostic AEM environmental quantities for FREE boards 6-11 a (`DiagAemEnv01`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x29D**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0`															
012	**AEMFREEPWR:** `freepwr`															
014	**ADC:** `free[0-27]`															
04C	**Padus16:** `spare1[0-19]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `free`

A compound of ADC readout and limit evaluation

`AEMFREEPWR` **(14.6.1)**

Attribute(s):

Brief: "AEM FREE board power state register"

Instance(s): `freepwr`

Contains the state of the FREE board power switches in the AEM.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

14.4.9 `DiagCmdCnt0` (648/0x288)

Context:

Description:

"Diagnostic Command Statistics Packet 0" Telemetry Packet

Contains task level command statistics

Layout:

Diagnostic Command Statistics Packet 0 (`DiagCmdCnt0`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x288**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**CMDCNTRS:** `cntrs[0-5]`															

Fields:

`CMDCNTRS` **(14.5.0)**

Attribute(s):

Brief: "Command Counters"

Instance(s): `cntrs`

Structure to hold per task command count information.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

14.4.10 `DiagCmdCnt1` (649/0x289)

Context:

Description:

"Diagnostic Command Statistics Packet 1" Telemetry Packet

Contains task level command statistics.

Layout:

Diagnostic Command Statistics Packet 1 (DiagCmdCnt1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x289**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**CMDCNTRS:** `cntrs[0-5]`															

Fields:

`CMDCNTRS` **(14.5.0)**

Attribute(s):

Brief: "Command Counters"

Instance(s): `cntrs`

Structure to hold per task command count information.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

14.4.11 `DiagCtdbCounts` (690/0x2B2)

Context:

Description:

"Diagnostic CTDB (1553) counters" Telemetry Packet

Diagnostic CTDB (1553) counters

Layout:

Diagnostic CTDB (1553) counters (`DiagCtdbCounts`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2B2**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**RTSTATS:** `hsk`															
038	**Padus16:** `spare0[0-29]`															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`

Explicit 16 bit pad in unsigned short

`RTSTATS` **(14.5.12)**

Attribute(s):

Brief: "1553 Remote Terminal Statistics"

Instance(s): `hsk`

Contains the 1553 RT driver statistics.

14.4.12 `DiagEpu0Stats` (651/0x28B)

Context:

Description:

"Diagnostic EPU 0 Statistics" Telemetry Packet

Contains EPU 0 CPU temperature and loading metrics, file statistics, and memory statistics.

Layout:

Diagnostic EPU 0 Statistics (`DiagEpu0Stats`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x28B**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**CPUMETR:** `cpu`															
02C	**FILESTATS:** `file`															
044	**MEMSTATS:** `mem`															

Fields:

`CPUMETR` **(14.5.1)**

Attribute(s):

Brief: "CPU Metrics"

Instance(s): `cpu`

Structure containing metrics for a single CPU including junction temperatue and loading statistics.

`FILESTATS` **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): `file`

Describes the FILE upload current state.

`MEMSTATS` **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

14.4.13 `DiagEpu1Stats` (652/0x28C)

Context:

Description:

"Diagnostic EPU 1 Statistics" Telemetry Packet

Contains EPU 1 CPU temperature and loading metrics, file statistics, and memory statistics.

Layout:

Diagnostic EPU 1 Statistics (DiagEpu1Stats) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x28C**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															

Diagnostic EPU 1 Statistics (DiagEpu1Stats) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
00E	**Padus16:** spares[0-2]															
014	**CPUMETR:** cpu															
02C	**FILESTATS:** file															
044	**MEMSTATS:** mem															

Fields:

CPUMETR **(14.5.1)**

Attribute(s):

Brief: "CPU Metrics"

Instance(s): cpu

Structure containing metrics for a single CPU including junction temperatue and loading statistics.

FILESTATS **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): file

Describes the FILE upload current state.

MEMSTATS **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): mem

Contains statistics for the MEM task.

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

14.4.14 `DiagEpu2Stats` (653/0x28D)

Context:

Description:

"Diagnostic EPU 2 Statistics" Telemetry Packet

Contains EPU 2 CPU temperature and loading metrics, file statistics, and memory statistics.

Layout:

Diagnostic EPU 2 Statistics (DiagEpu2Stats) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x28D**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**CPUMETR:** `cpu`															
02C	**FILESTATS:** `file`															
044	**MEMSTATS:** `mem`															

Fields:

`CPUMETR` **(14.5.1)**

Attribute(s):

Brief: "CPU Metrics"

Instance(s): `cpu`

Structure containing metrics for a single CPU including junction temperatue and loading statistics.

`FILESTATS` **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): `file`

Describes the FILE upload current state.

`MEMSTATS` **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

14.4.15 `DiagGasuCounts` (687/0x2AF)

Context:

Description:

"Diagnostic GASU counter packet (both GEM and EBM)" Telemetry Packet

Diagnostic GASU counter packet (both GEM and EBM)

Layout:

Diagnostic GASU counter packet (both GEM and EBM) `(DiagGasuCounts)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2AF**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**GemCounters:** `gem`															
030	**EbmCounters:** `ebm`															

Fields:

`EbmCounters` **(14.5.3)**

Attribute(s):

Brief: "EBM counters"

Instance(s): `ebm`

EBM counters

`GemCounters` **(14.5.6)**

Attribute(s):

Brief: "GEM counters"

Instance(s): `gem`

GEM counters

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`

Explicit 16 bit pad in unsigned short

14.4.16 `DiagItcCfg` (658/0x292)

Context:

Description:

"Diagnostic ITC Configuration" Telemetry Packet

Contains the configuration for ITC task message and command confirmation levels.

Layout:

Diagnostic ITC Configuration (`DiagItcCfg`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x292**										
002	**SF**			**Sequence Count**												

Diagnostic ITC Configuration `(DiagItcCfg)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare[0-2]`															
014	**ItcConfig:** `siu[0-17]`															
038	**ItcConfig:** `epu0[0-9]`															
04C	**ItcConfig:** `epu1[0-9]`															
060	**ItcConfig:** `epu2[0-9]`															

Fields:

`ItcConfig` **(14.6.22)**

Attribute(s):

Brief: "ITC configuration of a single task"

Instance(s): `epu0`, `epu1`, `epu2`, `siu`

ITC configuration of a single task

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare`

Explicit 16 bit pad in unsigned short

14.4.17 `DiagLatcStatus` (688/0x2B0)

Context:

Description:

"Diagnostic LATC status packet" Telemetry Packet

Current LATC status, with separate entries for the most recent LATC application and the most recent LATC verification.

Layout:

Diagnostic LATC status packet (DiagLatcStatus) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2B0**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Latc:** hsk															

Fields:

Latc **(14.5.7)**

Attribute(s):

Brief: "LATC status"

Instance(s): hsk

Summary information about recent LATC activities (who apllied and/or verified what, when, and why).

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv

Explicit 16 bit pad in unsigned short

14.4.18 DiagLimStatus (689/0x2B1)

Context:

Description:

"Diagnostic LIM status/summary packet (including LPA and LCI status)" Telemetry Packet

Diagnostic LIM status/summary packet (including LPA and LCI status)

Layout:

Diagnostic LIM status/summary packet (including LPA and LCI status) `(DiagLimStatus)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2B1**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**LimContrib:** `lim`															
02C	**LpaContrib:** `lpa`															
050	**LciContrib:** `lci`															

Fields:

`LciContrib` **(14.5.8)**

Attribute(s):

Brief: "LCI's contribution to the LIM status packet"

Instance(s): `lci`

LCI's contribution to the LIM status packet

`LimContrib` **(14.5.9)**

Attribute(s):

Brief: "LIM's contribution to the LIM status packet"

Instance(s): `lim`

LIM's contribution to the LIM status packet

`LpaContrib` **(14.5.10)**

Attribute(s):

Brief: "LPA's contribution to the LIM status packet"

Instance(s): `lpa`

LPA's contribution to the LIM status packet

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`

Explicit 16 bit pad in unsigned short

14.4.19 `DiagLpaDb0Epu0` (683/0x2AB)

Context:

Description:

"Diagnostic LPA filter configuration (based on first LPA_DB ins" Telemetry Packet

Diagnostic LPA filter configuration (based on first LPA_DB instance) (EPU0)

Layout:

Diagnostic LPA filter configuration (based on first LPA_DB ins `(DiagLpaDb0Epu0)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2AB**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare0`															
010	**ui:** `sec`															
014	**ui:** `sub`															
018	**us:** `handlers`															
01A	**uc:** `outMask`								**uc:** `postMask`							
01C	**uc:** `compression`								**uc:** `spare1`							
01E	**us:** `spare2`															
020	**ui:** `spare3`															
024	**us:** `handlersPerMode[0-7]`															
034	**ConfigLPA:** `handlerParams[0-15]`															

Fields:

`ConfigLPA` **(14.6.6)**

Attribute(s):

Brief: "Parameter set associated with a handler, per mode"

Instance(s): `handlerParams`

Parameter set associated with a handler, per mode

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `compression`, `outMask`, `postMask`, `spare1`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `sec`, `spare3`, `sub`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `handlers`, `handlersPerMode`, `spare2`

Unsigned short

14.4.20 `DiagLpaDb0Epu1` (684/0x2AC)

Context:

Description:

"Diagnostic LPA filter configuration (based on first LPA_DB ins" Telemetry Packet

Diagnostic LPA filter configuration (based on first LPA_DB instance) (EPU1)

Layout:

Diagnostic LPA filter configuration (based on first LPA_DB ins `(DiagLpaDb0Epu1)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2AC**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare0`															
010	**ui:** `sec`															
014	**ui:** `sub`															
018	**us:** `handlers`															
01A	**uc:** `outMask`								**uc:** `postMask`							
01C	**uc:** `compression`								**uc:** `spare1`							
01E	**us:** `spare2`															
020	**ui:** `spare3`															
024	**us:** `handlersPerMode[0-7]`															
034	**ConfigLPA:** `handlerParams[0-15]`															

Fields:

`ConfigLPA` **(14.6.6)**

Attribute(s):

Brief: "Parameter set associated with a handler, per mode"

Instance(s): `handlerParams`

Parameter set associated with a handler, per mode

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `compression`, `outMask`, `postMask`, `spare1`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `sec`, `spare3`, `sub`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `handlers`, `handlersPerMode`, `spare2`

Unsigned short

14.4.21 `DiagLpaDb0Epu2` (685/0x2AD)

Context:

Description:

"Diagnostic LPA filter configuration (based on first LPA_DB ins" Telemetry Packet

Diagnostic LPA filter configuration (based on first LPA_DB instance) (EPU2)

Layout:

Diagnostic LPA filter configuration (based on first LPA_DB ins `(DiagLpaDb0Epu2)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2AD**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare0`															
010	**ui:** `sec`															
014	**ui:** `sub`															
018	**us:** `handlers`															
01A	**uc:** `outMask`								**uc:** `postMask`							
01C	**uc:** `compression`								**uc:** `spare1`							
01E	**us:** `spare2`															
020	**ui:** `spare3`															
024	**us:** `handlersPerMode[0-7]`															
034	**ConfigLPA:** `handlerParams[0-15]`															

Fields:

`ConfigLPA` **(14.6.6)**

Attribute(s):

Brief: "Parameter set associated with a handler, per mode"

Instance(s): `handlerParams`

Parameter set associated with a handler, per mode

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `compression`, `outMask`, `postMask`, `spare1`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `sec`, `spare3`, `sub`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `handlers`, `handlersPerMode`, `spare2`

Unsigned short

14.4.22 `DiagLpaDb0Siu` (682/0x2AA)

Context:

Description:

"Diagnostic LPA filter configuration (based on first LPA_DB ins" Telemetry Packet

Diagnostic LPA filter configuration (based on first LPA_DB instance) (SIU)

Layout:

Diagnostic LPA filter configuration (based on first LPA_DB ins `(DiagLpaDb0Siu)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2AA**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare0`															
010	**ui:** `sec`															
014	**ui:** `sub`															
018	**us:** `handlers`															

Diagnostic LPA filter configuration (based on first LPA_DB ins `(DiagLpaDb0Siu)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
01A	**uc:** `outMask`								**uc:** `postMask`							
01C	**uc:** `compression`								**uc:** `spare1`							
01E	**us:** `spare2`															
020	**ui:** `spare3`															
024	**us:** `handlersPerMode[0-7]`															
034	**ConfigLPA:** `handlerParams[0-15]`															

Fields:

`ConfigLPA` **(14.6.6)**

Attribute(s):

Brief: "Parameter set associated with a handler, per mode"

Instance(s): `handlerParams`

Parameter set associated with a handler, per mode

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `compression`, `outMask`, `postMask`, `spare1`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `sec`, `spare3`, `sub`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `handlers`, `handlersPerMode`, `spare2`

Unsigned short

14.4.23 `DiagLrs0` (647/0x287)

Context:

Description:

"Diagnostic Low-rate Science/LIM State Packet" Telemetry Packet

Contains GEM low-rate science counters and LIM state values.

Layout:

Diagnostic Low-rate Science/LIM State Packet (DiagLrs0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x287**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**TIMESEC:** `gemsec`															
018	**TIMESUBSEC:** `gemsub`															
01C	**GEMLRS:** `gemlrs`															
030	**TIMESEC:** `ebmsec`															
034	**TIMESUBSEC:** `ebmsub`															
038	**EBMSTATS:** `ebmstat`															
052	**ACTION:** `action`															
054	**STATUS:** `status`															
058	**OPMODE:** `op_mode`								**VIRTMODE:** `virt_mode`							
05A	**SAATRANSIT:** `saa_transit`								**TASKSTATE:** `lci_state`							
05C	**TASKSTATE:** `ldf_state`								**TASKSTATE:** `lpa_state`							

Diagnostic Low-rate Science/LIM State Packet (DiagLrs0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
05E	**TOOSTATEBF:** too_state								**ARRSTATEBF:** arr_state							
060	**REMAINSEC:** too_remain_sec															
064	**REMAINSEC:** arr_remain_sec															
068	**GBMCONFIGBF:** gbm_config								**HVCONFIGBF:** hv_config							
06A	**Padus16:** pad1															
06C	**REMAINSEC:** gbm_int_dis_remain_sec															
070	**LATCKEY:** latc_key															

Fields:

ACTION **(14.7.0)**

Attribute(s):

Brief: "Most Recent LIM Action"

Instance(s): action

Most recent LIM action.

ARRSTATEBF **(14.6.2)**

Attribute(s):

Brief: "ARR State Bitfield"

Instance(s): arr_state

Bitfield containing the current ARR observation state.

EBMSTATS **(14.5.2)**

Attribute(s):

Brief: "EBM Event Statistics"

Instance(s): ebmstat

Contains event transmit receive statistics from the EBM.

GBMCONFIGBF **(14.6.17)**

Attribute(s):

Brief: "GBM Interface Configuration Bitfield"

Instance(s): `gbm_config`

Bitfield containing the current configuration of the GBM interface.

`GEMLRS` **(14.5.5)**

Attribute(s):

Brief: "GEM Low-Rate Science Counter"

Instance(s): `gemlrs`

Contains 4 GEM low-rate science counter values.

`HVCONFIGBF` **(14.6.18)**

Attribute(s):

Brief: "High-Voltage Interface Configuration Bitfield"

Instance(s): `hv_config`

Bitfield containing the current configuration of the ACD high-voltage interface.

`LATCKEY` **(14.7.38)**

Attribute(s):

Brief: "LATC File Key"

Instance(s): `latc_key`

File key used in most recent LATC configuration.

`OPMODE` **(14.7.56)**

Attribute(s):

Brief: "Operating Mode"

Instance(s): `op_mode`

Current operating mode.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad1`, `spares`

Explicit 16 bit pad in unsigned short

`REMAINSEC` **(14.7.80)**

Attribute(s):

Brief: "Time Remaining"

Instance(s): `arr_remain_sec`, `gbm_int_dis_remain_sec`, `too_remain_sec`

Time remaining, in seconds.

`SAATRANSIT` **(14.7.85)**

Attribute(s):

Brief: "SAA Transit Status"

Instance(s): `saa_transit`

SAA transit status (0 = transit not in progress, 1 = transit in progress).

`STATUS` **(14.7.88)**

Attribute(s):

Brief: "Most Recent Action Status"

Instance(s): `status`

MSG status code of the most recent LIM action.

`TASKSTATE` **(14.7.92)**

Attribute(s):

Brief: "Task State"

Instance(s): `lci_state`, `ldf_state`, `lpa_state`

Current state of an external task.

`TIMESEC` **(14.7.94)**

Attribute(s):

Brief: "Timestamp seconds"

Instance(s): `ebmsec`, `gemsec`

`TIMESUBSEC` **(14.7.95)**

Attribute(s):

Brief: "Timestamp subseconds"

Instance(s): `ebmsub`, `gemsub`

`TOOSTATEBF` **(14.6.30)**

Attribute(s):

Brief: "TOO State Bitfield"

Instance(s): `too_state`

Bitfield containing the current TOO observation state.

`VIRTMODE` **(14.7.105)**

Attribute(s):

Brief: "Virtual Mode"

Instance(s): `virt_mode`

Current virtual mode.

14.4.24 `DiagLtcData0` (654/0x28E)

Context:

Description:

"Diagnostic Thermal Control Data Packet 0" Telemetry Packet

Layout:

Diagnostic Thermal Control Data Packet 0 (DiagLtcData0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x28E**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spares[0-2]															
014	**ResRitSnsrSel:** snsrSel[0-11]															
02C	**ResRitStatus:** snsrStatus[0-11]															
038	**HeaterMode:** actvHp															
03A	**HeaterCommand:** htrCmd															
03C	**HeaterState:** htrReg															
03E	**TempCelsius:** temps[0-23]															
06E	**Padus16:** spare[0-2]															

Fields:

HeaterCommand **(14.6.19)**

Attribute(s):

Brief: "Current heater command and LTC control mode"

Instance(s): htrCmd

For the heater bits, a value of '0' indicates that LTC is commanding the heater off. A value of '1' indicates that LTC is commanding the heater on. These heater commands are applied only when LTC is in active control mode.

HeaterMode **(14.6.20)**

Attribute(s):

Brief: "Control mode for VCHP heaters."

Instance(s): actvHp

A bit value of '0' indicates that the heater is under manual, user control. A bit value of '1' indicates that the heater is under automatic, algorithm control.

HeaterState **(14.6.21)**

Attribute(s):

Brief: "Current heater state and LTC run mode"

Instance(s): `htrReg`

For the heater bits, a value of '0' indicates that the heater is currently off. A value of '1' indicates that the heater is currently on.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare`, `spares`

Explicit 16 bit pad in unsigned short

`ResRitSnsrSel` **(14.6.27)**

Attribute(s):

Brief: "Selected RSVR and RIT sensors"

Instance(s): `snsrSel`

`ResRitStatus` **(14.6.28)**

Attribute(s):

Brief: "Heat pipe RIT and reservoir sensors status"

Instance(s): `snsrStatus`

`TempCelsius` **(14.7.104)**

Attribute(s):

Brief: "Temperature converted to celsius."

Instance(s): `temps`

Fixed point scaled by 8 bits (256).

14.4.25 `DiagLtcData1` (655/0x28F)

Context:

Description:

"Diagnostic Thermal Control Data Packet 1" Telemetry Packet

Layout:

Diagnostic Thermal Control Data Packet 1 (DiagLtcData1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x28F**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spares[0-2]															
014	**TempCelsius:** ritLo[0-11]															
02C	**TempCelsius:** ritHi[0-11]															
044	**TempCelsius:** resLo[0-11]															
05C	**TempCelsius:** resHi[0-11]															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

`TempCelsius` **(14.7.104)**

Attribute(s):

Brief: "Temperature converted to celsius."

Instance(s): `resHi`, `resLo`, `ritHi`, `ritLo`

Fixed point scaled by 8 bits (256).

14.4.26 `DiagLtcData2` (656/0x290)

Context:

Description:

"Diagnostic Thermal Control Data Packet 2" Telemetry Packet

Layout:

Diagnostic Thermal Control Data Packet 2 (DiagLtcData2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x290**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spares[0-2]															
014	**TempCelsius:** dbDelta[0-11]															
02C	**RawAdcStatus:** rawAdc[0-35]															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

`RawAdcStatus` **(14.6.26)**

Attribute(s):

Brief: "Sensor Status and ADC Counts"

Instance(s): `rawAdc`

`TempCelsius` **(14.7.104)**

Attribute(s):

Brief: "Temperature converted to celsius."

Instance(s): `dbDelta`

Fixed point scaled by 8 bits (256).

14.4.27 `DiagLtcData3` (657/0x291)

Context:

Description:

"Diagnostic Thermal Control Data Packet 3" Telemetry Packet

Layout:

Diagnostic Thermal Control Data Packet 3 (DiagLtcData3) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x291**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**RawAdcStatus:** `rawAdc[0-35]`															
05C	**Padus16:** `pad[0-11]`															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `spares`

Explicit 16 bit pad in unsigned short

`RawAdcStatus` **(14.6.26)**

Attribute(s):

Brief: "Sensor Status and ADC Counts"

Instance(s): `rawAdc`

14.4.28 `DiagMiscSlow` (691/0x2B3)

Context:

Description:

"Diagnostic Miscellaneous nearly static information" Telemetry Packet

Diagnostic Miscellaneous nearly static information

Layout:

Diagnostic Miscellaneous nearly static information (DiagMiscSlow) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2B3**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spare0															
010	**ui:** LATCuse															
014	**ui:** LATCignore															
018	**ui:** LPA_DB_file															
01C	**us:** LPA_DB_instance															
01E	**uc:** EPU_enable								**uc:** GBM_enable							
020	**ui:** LHK_scheduleFile															
024	**ui:** LHK_scheduleInstance															
028	**ui:** LIH_limitFile															
02C	**ui:** LIH_limitInstance															
030	**ui:** LTC_config															
034	**ui:** GRB_config															
038	**ui:** spare2[0-14]															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `EPU_enable`, `GBM_enable`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `GRB_config`, `LATCignore`, `LATCuse`, `LHK_scheduleFile`, `LHK_scheduleInstance`, `LIH_limitFile`, `LIH_limitInstance`, `LPA_DB_file`, `LTC_config`, `spare2`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `LPA_DB_instance`

Unsigned short

14.4.29 `DiagPduEnv0` (638/0x27E)

Context:

Description:

"Diagnostic PDU Environmental Packet 0" Telemetry Packet

Diagnostic PDU Environmental Packet 0

Layout:

Diagnostic PDU Environmental Packet 0 (DiagPduEnv0) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x27E**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															

Diagnostic PDU Environmental Packet 0 `(DiagPduEnv0)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0[0-1]`															
014	**PDUTEMPWR:** `tempwr`															
016	**PDUEPUPWR:** `epupwr`															
018	**PDUACDPWR:** `acdpwr`															
01A	**ADC:** `temvolt[0-15]`															
03A	**ADC:** `temtemp[0-15]`															
05A	**ADC:** `epuvolt[0-2]`															
060	**ADC:** `eputemp[0-2]`															
066	**Padus16:** `spare1[0-6]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `eputemp`, `epuvolt`, `temtemp`, `temvolt`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

`PDUACDPWR` **(14.6.23)**

Attribute(s):

Brief: "PDU ADC Power Management Register"

Instance(s): `acdpwr`

`PDUEPUPWR` **(14.6.24)**

Attribute(s):

Brief: "PDU EPU crate power state register"

Instance(s): `epupwr`

Contains the state of the EPU power switches in the PDU.

`PDUTEMPWR` **(14.6.25)**

Attribute(s):

Brief: "PDU TEM power state register"

Instance(s): `tempwr`

Contains the state of the TEM power switches in the PDU.

14.4.30 `DiagPduEnv1` (639/0x27F)

Context:

Description:

"Diagnostic PDU Environmental Packet 1" Telemetry Packet

Diagnostic PDU Environmental Packet 1

Layout:

Diagnostic PDU Environmental Packet 1 (DiagPduEnv1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x27F**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0[0-1]`															
014	**ADC:** `temPcbTemp[0-15]`															
034	**ADC:** `calBaseTemp[0-15]`															
054	**Padus16:** `spare1[0-15]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `calBaseTemp`, `temPcbTemp`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

14.4.31 `DiagPduEnv2` (640/0x280)

Context:

Description:

"Diagnostic PDU Environmental Packet 2" Telemetry Packet

Diagnostic PDU Environmental Packet 2

Layout:

Diagnostic PDU Environmental Packet 2 (DiagPduEnv2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x280**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0[0-1]`															
014	**ADC:** `VchpXlhp[0-11]`															
02C	**ADC:** `VchpDshp[0-11]`															
044	**ADC:** `VchpRsvr[0-11]`															
05C	**Padus16:** `spare1[0-11]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `VchpDshp`, `VchpRsvr`, `VchpXlhp`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

14.4.32 `DiagPduEnv3` (641/0x281)

Context:

Description:

"Diagnostic PDU Environmental Packet 3" Telemetry Packet

Diagnostic PDU Environmental Packet 3

Layout:

Diagnostic PDU Environmental Packet 3 (DiagPduEnv3) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x281**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0[0-1]`															
014	**ADC:** `grid[0-11]`															
02C	**ADC:** `acdShell[0-1]`															
030	**ADC:** `acdPMT[0-3]`															
038	**ADC:** `acdBEA[0-1]`															
03C	**ADC:** `freeze[0-1]`															
040	**ADC:** `gridRad[0-3]`															
048	**ADC:** `radiator[0-11]`															
060	**Padus16:** `spare1[0-9]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `acdBEA`, `acdPMT`, `acdShell`, `freeze`, `grid`, `gridRad`, `radiator`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

14.4.33 `DiagPduEnv4` (642/0x282)

Context:

Description:

"Diagnostic PDU Environmental Packet 4" Telemetry Packet

Diagnostic PDU Environmental Packet 4

Layout:

Diagnostic PDU Environmental Packet 4 `(DiagPduEnv4)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x282**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0[0-1]`															
014	**PDUTEMPWR:** `tempwr`															
016	**PDUEPUPWR:** `epupwr`															
018	**PDUACDPWR:** `acdpwr`															
01A	**ADC:** `temvolt[0-15]`															

Diagnostic PDU Environmental Packet 4 `(DiagPduEnv4)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
03A	**ADC:** `temtemp[0-15]`															
05A	**ADC:** `epuvolt[0-2]`															
060	**ADC:** `eputemp[0-2]`															
066	**Padus16:** `spare1[0-6]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `eputemp`, `epuvolt`, `temtemp`, `temvolt`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

`PDUACDPWR` **(14.6.23)**

Attribute(s):

Brief: "PDU ADC Power Management Register"

Instance(s): `acdpwr`

`PDUEPUPWR` **(14.6.24)**

Attribute(s):

Brief: "PDU EPU crate power state register"

Instance(s): `epupwr`

Contains the state of the EPU power switches in the PDU.

`PDUTEMPWR` **(14.6.25)**

Attribute(s):

Brief: "PDU TEM power state register"

Instance(s): `tempwr`

Contains the state of the TEM power switches in the PDU.

14.4.34 `DiagPduEnv5` (643/0x283)

Context:

Description:

"Diagnostic PDU Environmental Packet 5" Telemetry Packet

Diagnostic PDU Environmental Packet 5

Layout:

Diagnostic PDU Environmental Packet 5 (DiagPduEnv5) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x283**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0[0-1]`															
014	**ADC:** `temPcbTemp[0-15]`															
034	**ADC:** `calBaseTemp[0-15]`															
054	**Padus16:** `spare1[0-15]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `calBaseTemp`, `temPcbTemp`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

14.4.35 `DiagPduEnv6` (644/0x284)

Context:

Description:

"Diagnostic PDU Environmental Packet 6" Telemetry Packet

Diagnostic PDU Environmental Packet 6

Layout:

Diagnostic PDU Environmental Packet 6 (`DiagPduEnv6`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x284**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0[0-1]`															
014	**ADC:** `VchpXlhp[0-11]`															
02C	**ADC:** `VchpDshp[0-11]`															
044	**ADC:** `VchpRsvr[0-11]`															
05C	**Padus16:** `spare1[0-11]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `VchpDshp`, `VchpRsvr`, `VchpXlhp`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

14.4.36 `DiagPduEnv7` (645/0x285)

Context:

Description:

"Diagnostic PDU Environmental Packet 7" Telemetry Packet

Diagnostic PDU Environmental Packet 7

Layout:

Diagnostic PDU Environmental Packet 7 (`DiagPduEnv7`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x285**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0[0-1]`															
014	**ADC:** `grid[0-11]`															
02C	**ADC:** `acdShell[0-1]`															
030	**ADC:** `acdPMT[0-3]`															
038	**ADC:** `acdBEA[0-1]`															
03C	**ADC:** `freeze[0-1]`															
040	**ADC:** `gridRad[0-3]`															
048	**ADC:** `radiator[0-11]`															
060	**Padus16:** `spare1[0-9]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `acdBEA`, `acdPMT`, `acdShell`, `freeze`, `grid`, `gridRad`, `radiator`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

14.4.37 `DiagPigStatus` (692/0x2B4)

Context:

Description:

"Diagnostic PIG configuration information" Telemetry Packet

Diagnostic PIG configuration information, derived from the SIB power control register, three CRU registers (including PPS and GBM selectors), and 8 EBM registers (including SSR selector)

Layout:

Diagnostic PIG configuration information (DiagPigStatus) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2B4**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**SIBconfig:** `SIBconfig`															
014	**CRUconfig:** `CRUconfig`															
018	**CRUcommand:** `CRUcommand`															
01C	**CRUresponse:** `CRUresponse`															
020	**EBMbackConfig:** `EBMbackConfig`															
024	**EBMfrontAConfig:** `EBMfrontAConfig`															
028	**EBMfrontBConfig:** `EBMfrontBConfig`															
02C	**EBMaddress:** `EBMaddress`															
030	**EBMinput:** `EBMinput`															
034	**EBMcontrib:** `EBMcontrib`															

Diagnostic PIG configuration information (DiagPigStatus) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
038	**EBMdestination:** EBMdestination															
03C	**EBMtimeout:** EBMtimeout															
040	**Padui32:** spare0[0-12]															

Fields:

CRUcommand **(14.6.3)**

Attribute(s):

Brief: "Contents of the CRU command enable register"

Instance(s): CRUcommand

Contents of the CRU command enable register

CRUconfig **(14.6.4)**

Attribute(s):

Brief: "Configuration bits read from the CRU"

Instance(s): CRUconfig

Contents of the CRU configuration register

CRUresponse **(14.6.5)**

Attribute(s):

Brief: "Contents of the CRU response enable register"

Instance(s): CRUresponse

Contents of the CRU response enable register

EBMaddress **(14.6.9)**

Attribute(s):

Brief: "Contents of the EBM address register"

Instance(s): EBMaddress

Contents of the EBM address register

`EBMbackConfig` **(14.6.10)**

Attribute(s):

Brief: "Contents of the EBM back-end configuration register"

Instance(s): `EBMbackConfig`

Contents of the EBM back-end configuration register

`EBMcontrib` **(14.6.11)**

Attribute(s):

Brief: "Contents of the EBM contributors register"

Instance(s): `EBMcontrib`

Contents of the EBM contributors register

`EBMdestination` **(14.6.12)**

Attribute(s):

Brief: "Contents of the EBM destination enable register"

Instance(s): `EBMdestination`

Contents of the EBM destination enable register

`EBMfrontAConfig` **(14.6.13)**

Attribute(s):

Brief: "Contents of the EBM front-end A configuration register"

Instance(s): `EBMfrontAConfig`

Contents of the EBM front-end A configuration register

`EBMfrontBConfig` **(14.6.14)**

Attribute(s):

Brief: "Contents of the EBM front-end B configuration register"

Instance(s): `EBMfrontBConfig`

Contents of the EBM front-end B configuration register

`EBMinput` **(14.6.15)**

Attribute(s):

Brief: "Contents of the EBM input enable register"

Instance(s): `EBMinput`

Contents of the EBM input enable register

`EBMtimeout` **(14.6.16)**

Attribute(s):

Brief: "Contents of the EBM timeout register"

Instance(s): `EBMtimeout`

Contents of the EBM timeout register

`Padui32` **(14.7.70)**

Attribute(s):

Brief: "Explicit 32 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 32 bit pad in unsigned int

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`

Explicit 16 bit pad in unsigned short

`SIBconfig` **(14.6.29)**

Attribute(s):

Brief: "Power configuration bits from the SIB"

Instance(s): `SIBconfig`

Power configuration bits from the SIB

14.4.38 `DiagSiuStats` (650/0x28A)

Context:

Description:

"Diagnostic SIU Statistics" Telemetry Packet

Contains SIU CPU temperature and loading metrics, file statistics, and memory statistics.

Layout:

Diagnostic SIU Statistics (DiagSiuStats) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x28A**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spare0[0-1]															
012	**Paduc8:** spare1								**ConfigPID:** pids							
014	**CPUMETR:** cpu															
02C	**FILESTATS:** file															
044	**MEMSTATS:** mem															

Fields:

`ConfigPID` **(14.6.7)**

Attribute(s):

Brief: "Structure to capture rad750 input PID states"

Instance(s): `pids`

Structure to capture rad750 input PID states

`CPUMETR` **(14.5.1)**

Attribute(s):

Brief: "CPU Metrics"

Instance(s): `cpu`

Structure containing metrics for a single CPU including junction temperatue and loading statistics.

`FILESTATS` **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): `file`

Describes the FILE upload current state.

`MEMSTATS` **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Paduc8` **(14.7.64)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned char"

Instance(s): `spare1`

Explicit 8 bit pad in unsigned char

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

14.4.39 `DiagStatusEpu0` (673/0x2A1)

Context:

Description:

"Diagnostic EPU0 status packet" Telemetry Packet

Contains: EPU0 CPU hardware error statistics (PCI errors, correctable and uncorrectable memory errors), CPU junction temperature, memory scrubbing status, file statistics, and memory statistics.

Layout:

Diagnostic EPU0 status packet (`DiagStatusEpu0`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2A1**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**ui:** `uptime`															
014	**us:** `pci`															
016	**us:** `cme`															
018	**us:** `ume`															
01A	**us:** `jt`															
01C	**ScrubStatus:** `scrub`															
028	**ConfigPID:** `pid`								**ConfigTHS:** `ths`							
02A	**Padus16:** `spare1`															
02C	**FILESTATS:** `fil`															
044	**MEMSTATS:** `mem`															

Fields:

`ConfigPID` **(14.6.7)**

Attribute(s):

Brief: "Structure to capture rad750 input PID states"

Instance(s): `pid`

Structure to capture rad750 input PID states

`ConfigTHS` **(14.6.8)**

Attribute(s):

Brief: "Structure to capture the THS imulation bits"

Instance(s): `ths`

Structure to capture the THS imulation bits

`FILESTATS` **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): `fil`

Describes the FILE upload current state.

`MEMSTATS` **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare1`

Explicit 16 bit pad in unsigned short

`ScrubStatus` **(14.5.13)**

Attribute(s):

Brief: "Status of the memory scrubbing subsystem"

Instance(s): `scrub`

Status of the memory scrubbing subsystem

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `uptime`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `cme`, `jt`, `pci`, `ume`

Unsigned short

14.4.40 `DiagStatusEpu1` (674/0x2A2)

Context:

Description:

"Diagnostic EPU1 status packet" Telemetry Packet

Contains: EPU1 CPU hardware error statistics (PCI errors, correctable and uncorrectable memory errors), CPU junction temperature, memory scrubbing status, file statistics, and memory statistics.

Layout:

Diagnostic EPU1 status packet (`DiagStatusEpu1`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2A2**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**ui:** `uptime`															
014	**us:** `pci`															
016	**us:** `cme`															
018	**us:** `ume`															
01A	**us:** `jt`															
01C	**ScrubStatus:** `scrub`															
028	**ConfigPID:** `pid`								**ConfigTHS:** `ths`							
02A	**Padus16:** `spare1`															

Diagnostic EPU1 status packet (DiagStatusEpu1) **Telemetry Packet Format**																
0x 02C	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
	FILESTATS: fil															
044	**MEMSTATS:** mem															

Fields:

ConfigPID **(14.6.7)**

Attribute(s):

Brief: "Structure to capture rad750 input PID states"

Instance(s): pid

Structure to capture rad750 input PID states

ConfigTHS **(14.6.8)**

Attribute(s):

Brief: "Structure to capture the THS imulation bits"

Instance(s): ths

Structure to capture the THS imulation bits

FILESTATS **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): fil

Describes the FILE upload current state.

MEMSTATS **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): mem

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare1`

Explicit 16 bit pad in unsigned short

`ScrubStatus` **(14.5.13)**

Attribute(s):

Brief: "Status of the memory scrubbing subsystem"

Instance(s): `scrub`

Status of the memory scrubbing subsystem

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `uptime`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `cme`, `jt`, `pci`, `ume`

Unsigned short

14.4.41 `DiagStatusEpu2` (675/0x2A3)

Context:

Description:

"Diagnostic EPU2 status packet" Telemetry Packet

Contains: EPU2 CPU hardware error statistics (PCI errors, correctable and uncorrectable memory errors), CPU junction temperature, memory scrubbing status, file statistics, and memory statistics.

Layout:

Diagnostic EPU2 status packet (`DiagStatusEpu2`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2A3**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**ui:** `uptime`															
014	**us:** `pci`															
016	**us:** `cme`															
018	**us:** `ume`															
01A	**us:** `jt`															
01C	**ScrubStatus:** `scrub`															
028	**ConfigPID:** `pid`								**ConfigTHS:** `ths`							
02A	**Padus16:** `spare1`															
02C	**FILESTATS:** `fil`															
044	**MEMSTATS:** `mem`															

Fields:

`ConfigPID` **(14.6.7)**

Attribute(s):

Brief: "Structure to capture rad750 input PID states"

Instance(s): `pid`

Structure to capture rad750 input PID states

`ConfigTHS` **(14.6.8)**

Attribute(s):

Brief: "Structure to capture the THS imulation bits"

Instance(s): `ths`

Structure to capture the THS imulation bits

`FILESTATS` **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): `fil`

Describes the FILE upload current state.

`MEMSTATS` **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare1`

Explicit 16 bit pad in unsigned short

`ScrubStatus` **(14.5.13)**

Attribute(s):

Brief: "Status of the memory scrubbing subsystem"

Instance(s): `scrub`

Status of the memory scrubbing subsystem

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `uptime`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `cme`, `jt`, `pci`, `ume`

Unsigned short

14.4.42 `DiagStatusSiu` (672/0x2A0)

Context:

Description:

"Diagnostic SIU status packet" Telemetry Packet

Contains: SIU CPU hardware error statistics (PCI errors, correctable and uncorrectable memory errors), CPU junction temperature, memory scrubbing status, file statistics, and memory statistics.

Layout:

Diagnostic SIU status packet (`DiagStatusSiu`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2A0**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**ui:** `uptime`															
014	**us:** `pci`															
016	**us:** `cme`															
018	**us:** `ume`															
01A	**us:** `jt`															
01C	**ScrubStatus:** `scrub`															
028	**ConfigPID:** `pid`								**ConfigTHS:** `ths`							
02A	**Padus16:** `spare1`															

Diagnostic SIU status packet (DiagStatusSiu) **Telemetry Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
02C	**FILESTATS:** fil															
044	**MEMSTATS:** mem															

Fields:

ConfigPID **(14.6.7)**

Attribute(s):

Brief: "Structure to capture rad750 input PID states"

Instance(s): pid

Structure to capture rad750 input PID states

ConfigTHS **(14.6.8)**

Attribute(s):

Brief: "Structure to capture the THS imulation bits"

Instance(s): ths

Structure to capture the THS imulation bits

FILESTATS **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): fil

Describes the FILE upload current state.

MEMSTATS **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): mem

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare1`

Explicit 16 bit pad in unsigned short

`ScrubStatus` **(14.5.13)**

Attribute(s):

Brief: "Status of the memory scrubbing subsystem"

Instance(s): `scrub`

Status of the memory scrubbing subsystem

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `uptime`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `cme`, `jt`, `pci`, `ume`

Unsigned short

14.4.43 `DiagTaskCfgEpu0` (678/0x2A6)

Context:

Description:

"Diagnostic ITC/MSG configuration of tasks on EPU0" Telemetry Packet

Diagnostic ITC/MSG configuration of tasks on EPU0

Layout:

Diagnostic ITC/MSG configuration of tasks on EPU0 (DiagTaskCfgEpu0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2A6**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0															
012	**uc:** ctdb								**uc:** ssr							
014	**ItcConfig:** task[0-31]															
054	**Padus16:** pad[0-15]															

Fields:

`ItcConfig` **(14.6.22)**

Attribute(s):

Brief: "ITC configuration of a single task"

Instance(s): `task`

ITC configuration of a single task

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `rsv`, `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `ctdb`, `ssr`

Unsigned char

14.4.44 `DiagTaskCfgEpu1` (679/0x2A7)

Context:

Description:

"Diagnostic ITC/MSG configuration of tasks on EPU1" Telemetry Packet

Diagnostic ITC/MSG configuration of tasks on EPU1

Layout:

Diagnostic ITC/MSG configuration of tasks on EPU1 (`DiagTaskCfgEpu1`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2A7**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0`															
012	**uc:** `ctdb`								**uc:** `ssr`							
014	**ItcConfig:** `task[0-31]`															
054	**Padus16:** `pad[0-15]`															

Fields:

`ItcConfig` **(14.6.22)**

Attribute(s):

Brief: "ITC configuration of a single task"

Instance(s): `task`

ITC configuration of a single task

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `rsv`, `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `ctdb`, `ssr`

Unsigned char

14.4.45 `DiagTaskCfgEpu2` (680/0x2A8)

Context:

Description:

"Diagnostic ITC/MSG configuration of tasks on EPU2" Telemetry Packet

Diagnostic ITC/MSG configuration of tasks on EPU2

Layout:

Diagnostic ITC/MSG configuration of tasks on EPU2 (`DiagTaskCfgEpu2`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2A8**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0`															
012	**uc:** `ctdb`								**uc:** `ssr`							
014	**ItcConfig:** `task[0-31]`															
054	**Padus16:** `pad[0-15]`															

Fields:

`ItcConfig` **(14.6.22)**

Attribute(s):

Brief: "ITC configuration of a single task"

Instance(s): `task`

ITC configuration of a single task

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `rsv`, `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `ctdb`, `ssr`

Unsigned char

14.4.46 `DiagTaskCfgSiu` (677/0x2A5)

Context:

Description:

"Diagnostic ITC/MSG configuration of tasks on SIU" Telemetry Packet

Diagnostic ITC/MSG configuration of tasks on SIU

Layout:

Diagnostic ITC/MSG configuration of tasks on SIU `(DiagTaskCfgSiu)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2A5**										
002	**SF**			**Sequence Count**												

Diagnostic ITC/MSG configuration of tasks on SIU `(DiagTaskCfgSiu)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0`															
012	**uc:** `ctdb`								**uc:** `ssr`							
014	**ItcConfig:** `task[0-31]`															
054	**Padus16:** `pad[0-15]`															

Fields:

`ItcConfig` **(14.6.22)**

Attribute(s):

Brief: "ITC configuration of a single task"

Instance(s): `task`

ITC configuration of a single task

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `rsv`, `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `ctdb`, `ssr`

Unsigned char

14.4.47 `DiagTemEnvPwr0` (624/0x270)

Context:

Description:

"Diagnostic TEM Power Packet 0" Telemetry Packet

Contains power specific ADC values for TEMs 0, 1, and 2

Layout:

Diagnostic TEM Power Packet 0 (DiagTemEnvPwr0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x270**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare[0-1]															
014	**ADC:** adct0m0a0															
016	**Padus16:** adct0m0a1															
018	**ADC:** adct0m0a2															
01A	**Padus16:** adct0m0a3															
01C	**ADC:** adct0m0a4															
01E	**Padus16:** adct0m0a5															
020	**ADC:** adct0m0a6															
022	**Padus16:** adct0m0a7															
024	**ADC:** adct0m1[0-7]															
034	**ADC:** adct1m0a0															
036	**Padus16:** adct1m0a1															
038	**ADC:** adct1m0a2															
03A	**Padus16:** adct1m0a3															
03C	**ADC:** adct1m0a4															
03E	**Padus16:** adct1m0a5															
040	**ADC:** adct1m0a6															
042	**Padus16:** adct1m0a7															
044	**ADC:** adct1m1[0-7]															
054	**ADC:** adct2m0a0															
056	**Padus16:** adct2m0a1															
058	**ADC:** adct2m0a2															
05A	**Padus16:** adct2m0a3															
05C	**ADC:** adct2m0a4															
05E	**Padus16:** adct2m0a5															
060	**ADC:** adct2m0a6															
062	**Padus16:** adct2m0a7															

Diagnostic TEM Power Packet 0 (DiagTemEnvPwr0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
064	**ADC:** adct2m1[0-7]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1, adct1m0a0, adct1m0a2, adct1m0a4, adct1m0a6, adct1m1, adct2m0a0, adct2m0a2, adct2m0a4, adct2m0a6, adct2m1

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): adct0m0a1, adct0m0a3, adct0m0a5, adct0m0a7, adct1m0a1, adct1m0a3, adct1m0a5, adct1m0a7, adct2m0a1, adct2m0a3, adct2m0a5, adct2m0a7, rsv, spare

Explicit 16 bit pad in unsigned short

14.4.48 DiagTemEnvPwr00 (664/0x298)

Context:

Description:

"Diagnostic TEM power ADCs for TEMs 0-3" Telemetry Packet

Diagnostic TEM power ADCs for TEMs 0-3

Layout:

Diagnostic TEM power ADCs for TEMs 0-3 (DiagTemEnvPwr00) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x298**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															

Diagnostic TEM power ADCs for TEMs 0-3 (DiagTemEnvPwr00) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare[0-1]															
014	**ADC:** adc[0-47]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adc

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare

Explicit 16 bit pad in unsigned short

14.4.49 DiagTemEnvPwr01 (665/0x299)

Context:

Description:

"Diagnostic TEM power ADCs for TEMs 4-7" Telemetry Packet

Diagnostic TEM power ADCs for TEMs 4-7

Layout:

Diagnostic TEM power ADCs for TEMs 4-7 (DiagTemEnvPwr01) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x299**										
002	**SF**		**Sequence Count**													

Diagnostic TEM power ADCs for TEMs 4-7 (DiagTemEnvPwr01) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare[0-1]															
014	**ADC:** adc[0-47]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adc

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare

Explicit 16 bit pad in unsigned short

14.4.50 DiagTemEnvPwr02 (666/0x29A)

Context:

Description:

"Diagnostic TEM power ADCs for TEMs 8-11" Telemetry Packet

Diagnostic TEM power ADCs for TEMs 8-11

Layout:

Diagnostic TEM power ADCs for TEMs 8-11 (DiagTemEnvPwr02) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x29A**										

Diagnostic TEM power ADCs for TEMs 8-11 (DiagTemEnvPwr02) Telemetry Packet Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare[0-1]															
014	**ADC:** adc[0-47]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adc

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare

Explicit 16 bit pad in unsigned short

14.4.51 DiagTemEnvPwr03 (667/0x29B)

Context:

Description:

"Diagnostic TEM power ADCs for TEMs 12-15" Telemetry Packet

Diagnostic TEM power ADCs for TEMs 12-15

Layout:

Diagnostic TEM power ADCs for TEMs 12-15 (DiagTemEnvPwr03) Telemetry Packet Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**

Diagnostic TEM power ADCs for TEMs 12-15 (DiagTemEnvPwr03) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x29B**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare[0-1]															
014	**ADC:** adc[0-47]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adc

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare

Explicit 16 bit pad in unsigned short

14.4.52 DiagTemEnvPwr1 (625/0x271)

Context:

Description:

"Diagnostic TEM Power Packet 1" Telemetry Packet

Contains power specific ADC values for TEMs 3, 4, and 5

Layout:

Diagnostic TEM Power Packet 1 (DiagTemEnvPwr1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x271**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare[0-1]															
014	**ADC:** adct0m0a0															
016	**Padus16:** adct0m0a1															
018	**ADC:** adct0m0a2															
01A	**Padus16:** adct0m0a3															
01C	**ADC:** adct0m0a4															
01E	**Padus16:** adct0m0a5															
020	**ADC:** adct0m0a6															
022	**Padus16:** adct0m0a7															
024	**ADC:** adct0m1[0-7]															
034	**ADC:** adct1m0a0															
036	**Padus16:** adct1m0a1															
038	**ADC:** adct1m0a2															
03A	**Padus16:** adct1m0a3															
03C	**ADC:** adct1m0a4															
03E	**Padus16:** adct1m0a5															
040	**ADC:** adct1m0a6															
042	**Padus16:** adct1m0a7															
044	**ADC:** adct1m1[0-7]															
054	**ADC:** adct2m0a0															
056	**Padus16:** adct2m0a1															
058	**ADC:** adct2m0a2															
05A	**Padus16:** adct2m0a3															
05C	**ADC:** adct2m0a4															
05E	**Padus16:** adct2m0a5															
060	**ADC:** adct2m0a6															
062	**Padus16:** adct2m0a7															
064	**ADC:** adct2m1[0-7]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1, adct1m0a0, adct1m0a2, adct1m0a4, adct1m0a6, adct1m1, adct2m0a0, adct2m0a2, adct2m0a4,

`adct2m0a6`, `adct2m1`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `adct0m0a1`, `adct0m0a3`, `adct0m0a5`, `adct0m0a7`, `adct1m0a1`, `adct1m0a3`, `adct1m0a5`, `adct1m0a7`, `adct2m0a1`, `adct2m0a3`, `adct2m0a5`, `adct2m0a7`, `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.53 `DiagTemEnvPwr2` (626/0x272)

Context:

Description:

"Diagnostic TEM Power Packet 2" Telemetry Packet

Contains power specific ADC values for TEMs 6, 7, and 8

Layout:

Diagnostic TEM Power Packet 2 (`DiagTemEnvPwr2`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x272**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adct0m0a0`															
016	**Padus16:** `adct0m0a1`															
018	**ADC:** `adct0m0a2`															
01A	**Padus16:** `adct0m0a3`															
01C	**ADC:** `adct0m0a4`															
01E	**Padus16:** `adct0m0a5`															
020	**ADC:** `adct0m0a6`															
022	**Padus16:** `adct0m0a7`															
024	**ADC:** `adct0m1[0-7]`															
034	**ADC:** `adct1m0a0`															
036	**Padus16:** `adct1m0a1`															

Diagnostic TEM Power Packet 2 (DiagTemEnvPwr2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
038	**ADC:** adct1m0a2															
03A	**Padus16:** adct1m0a3															
03C	**ADC:** adct1m0a4															
03E	**Padus16:** adct1m0a5															
040	**ADC:** adct1m0a6															
042	**Padus16:** adct1m0a7															
044	**ADC:** adct1m1[0-7]															
054	**ADC:** adct2m0a0															
056	**Padus16:** adct2m0a1															
058	**ADC:** adct2m0a2															
05A	**Padus16:** adct2m0a3															
05C	**ADC:** adct2m0a4															
05E	**Padus16:** adct2m0a5															
060	**ADC:** adct2m0a6															
062	**Padus16:** adct2m0a7															
064	**ADC:** adct2m1[0-7]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1, adct1m0a0, adct1m0a2, adct1m0a4, adct1m0a6, adct1m1, adct2m0a0, adct2m0a2, adct2m0a4, adct2m0a6, adct2m1

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): adct0m0a1, adct0m0a3, adct0m0a5, adct0m0a7, adct1m0a1, adct1m0a3, adct1m0a5, adct1m0a7, adct2m0a1, adct2m0a3, adct2m0a5, adct2m0a7, rsv, spare

Explicit 16 bit pad in unsigned short

14.4.54 `DiagTemEnvPwr3` (627/0x273)

Context:

Description:

"Diagnostic TEM Power Packet 3" Telemetry Packet

Contains power specific ADC values for TEMs 9, A, and B

Layout:

Diagnostic TEM Power Packet 3 (DiagTemEnvPwr3) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x273**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare[0-1]															
014	**ADC:** adct0m0a0															
016	**Padus16:** adct0m0a1															
018	**ADC:** adct0m0a2															
01A	**Padus16:** adct0m0a3															
01C	**ADC:** adct0m0a4															
01E	**Padus16:** adct0m0a5															
020	**ADC:** adct0m0a6															
022	**Padus16:** adct0m0a7															
024	**ADC:** adct0m1[0-7]															
034	**ADC:** adct1m0a0															
036	**Padus16:** adct1m0a1															
038	**ADC:** adct1m0a2															
03A	**Padus16:** adct1m0a3															
03C	**ADC:** adct1m0a4															
03E	**Padus16:** adct1m0a5															
040	**ADC:** adct1m0a6															
042	**Padus16:** adct1m0a7															
044	**ADC:** adct1m1[0-7]															
054	**ADC:** adct2m0a0															
056	**Padus16:** adct2m0a1															
058	**ADC:** adct2m0a2															
05A	**Padus16:** adct2m0a3															
05C	**ADC:** adct2m0a4															
05E	**Padus16:** adct2m0a5															
060	**ADC:** adct2m0a6															
062	**Padus16:** adct2m0a7															

Diagnostic TEM Power Packet 3 (DiagTemEnvPwr3) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
064	**ADC:** adct2m1[0-7]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1, adct1m0a0, adct1m0a2, adct1m0a4, adct1m0a6, adct1m1, adct2m0a0, adct2m0a2, adct2m0a4, adct2m0a6, adct2m1

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): adct0m0a1, adct0m0a3, adct0m0a5, adct0m0a7, adct1m0a1, adct1m0a3, adct1m0a5, adct1m0a7, adct2m0a1, adct2m0a3, adct2m0a5, adct2m0a7, rsv, spare

Explicit 16 bit pad in unsigned short

14.4.55 DiagTemEnvPwr4 (628/0x274)

Context:

Description:

"Diagnostic TEM Power Packet 4" Telemetry Packet

Contains power specific ADC values for TEMs C, D, and E

Layout:

Diagnostic TEM Power Packet 4 (DiagTemEnvPwr4) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x274**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															

Diagnostic TEM Power Packet 4 (DiagTemEnvPwr4) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare[0-1]															
014	**ADC:** adct0m0a0															
016	**Padus16:** adct0m0a1															
018	**ADC:** adct0m0a2															
01A	**Padus16:** adct0m0a3															
01C	**ADC:** adct0m0a4															
01E	**Padus16:** adct0m0a5															
020	**ADC:** adct0m0a6															
022	**Padus16:** adct0m0a7															
024	**ADC:** adct0m1[0-7]															
034	**ADC:** adct1m0a0															
036	**Padus16:** adct1m0a1															
038	**ADC:** adct1m0a2															
03A	**Padus16:** adct1m0a3															
03C	**ADC:** adct1m0a4															
03E	**Padus16:** adct1m0a5															
040	**ADC:** adct1m0a6															
042	**Padus16:** adct1m0a7															
044	**ADC:** adct1m1[0-7]															
054	**ADC:** adct2m0a0															
056	**Padus16:** adct2m0a1															
058	**ADC:** adct2m0a2															
05A	**Padus16:** adct2m0a3															
05C	**ADC:** adct2m0a4															
05E	**Padus16:** adct2m0a5															
060	**ADC:** adct2m0a6															
062	**Padus16:** adct2m0a7															
064	**ADC:** adct2m1[0-7]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1, adct1m0a0, adct1m0a2, adct1m0a4, adct1m0a6, adct1m1, adct2m0a0, adct2m0a2, adct2m0a4, adct2m0a6, adct2m1

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `adct0m0a1`, `adct0m0a3`, `adct0m0a5`, `adct0m0a7`, `adct1m0a1`, `adct1m0a3`, `adct1m0a5`, `adct1m0a7`, `adct2m0a1`, `adct2m0a3`, `adct2m0a5`, `adct2m0a7`, `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.56 `DiagTemEnvPwr5` (629/0x275)

Context:

Description:

"Diagnostic TEM Power Packet 5" Telemetry Packet

Contains power specific ADC values for TEM F

Layout:

Diagnostic TEM Power Packet 5 (`DiagTemEnvPwr5`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x275**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0[0-1]`															
014	**ADC:** `adct0m0a0`															
016	**Padus16:** `adct0m0a1`															
018	**ADC:** `adct0m0a2`															
01A	**Padus16:** `adct0m0a3`															
01C	**ADC:** `adct0m0a4`															
01E	**Padus16:** `adct0m0a5`															
020	**ADC:** `adct0m0a6`															
022	**Padus16:** `adct0m0a7`															
024	**ADC:** `adct0m1[0-7]`															
034	**RTSTATS:** `rt`															
05C	**Padus16:** `spare1[0-11]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adct0m0a0`, `adct0m0a2`, `adct0m0a4`, `adct0m0a6`, `adct0m1`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `adct0m0a1`, `adct0m0a3`, `adct0m0a5`, `adct0m0a7`, `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

`RTSTATS` **(14.5.12)**

Attribute(s):

Brief: "1553 Remote Terminal Statistics"

Instance(s): `rt`

Contains the 1553 RT driver statistics.

14.4.57 `DiagTemEnvTemp0` (630/0x276)

Context:

Description:

"TEM temperature ADCs for TEMs 0-1" Telemetry Packet

TEM temperature ADCs for TEMs 0-1

Layout:

TEM temperature ADCs for TEMs 0-1 (DiagTemEnvTemp0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x276**										

TEM temperature ADCs for TEMs 0-1 `(DiagTemEnvTemp0)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.58 `DiagTemEnvTemp1` (631/0x277)

Context:

Description:

"TEM temperature ADCs for TEMs 2-3" Telemetry Packet

TEM temperature ADCs for TEMs 2-3

Layout:

TEM temperature ADCs for TEMs 2-3 `(DiagTemEnvTemp1)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**

TEM temperature ADCs for TEMs 2-3 `(DiagTemEnvTemp1)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x277**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.59 `DiagTemEnvTemp2` (632/0x278)

Context:

Description:

"TEM temperature ADCs for TEMs 4-5" Telemetry Packet

TEM temperature ADCs for TEMs 4-5

Layout:

TEM temperature ADCs for TEMs 4-5 `(DiagTemEnvTemp2)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x278**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.60 `DiagTemEnvTemp3` (633/0x279)

Context:

Description:

"TEM temperature ADCs for TEMs 6-7" Telemetry Packet

TEM temperature ADCs for TEMs 6-7

Layout:

TEM temperature ADCs for TEMs 6-7 `(DiagTemEnvTemp3)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x279**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.61 `DiagTemEnvTemp4` (634/0x27A)

Context:

Description:

"TEM temperature ADCs for TEMs 8-9" Telemetry Packet

TEM temperature ADCs for TEMs 8-9

Layout:

TEM temperature ADCs for TEMs 8-9 `(DiagTemEnvTemp4)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x27A**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.62 `DiagTemEnvTemp5` (635/0x27B)

Context:

Description:

"TEM temperature ADCs for TEMs A-B" Telemetry Packet

TEM temperature ADCs for TEMs A-B

Layout:

TEM temperature ADCs for TEMs A-B `(DiagTemEnvTemp5)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x27B**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.63 `DiagTemEnvTemp6` (636/0x27C)

Context:

Description:

"TEM temperature ADCs for TEMs C-D" Telemetry Packet

TEM temperature ADCs for TEMs C-D

Layout:

TEM temperature ADCs for TEMs C-D `(DiagTemEnvTemp6)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x27C**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.64 `DiagTemEnvTemp7` (637/0x27D)

Context:

Description:

"TEM temperature ADCs for TEMs E-F" Telemetry Packet

TEM temperature ADCs for TEMs E-F

Layout:

TEM temperature ADCs for TEMs E-F `(DiagTemEnvTemp7)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x27D**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.65 `DiagTopEpu0` (660/0x294)

Context:

Description:

"Diagnostic TRC Top EPU 0 Monitor Packet" Telemetry Packet

Contains TRC/LSW EPU0 cpu monitor metrics.

Layout:

Diagnostic TRC Top EPU 0 Monitor Packet (DiagTopEpu0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x294**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spare[0-2]															
014	**TRCTOPS:** mon															
06C	**Padus16:** pad[0-3]															

Fields:

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): pad, spare

Explicit 16 bit pad in unsigned short

TRCTOPS **(14.5.14)**

Attribute(s):

Brief: "TRC Top Monitor Result"

Instance(s): mon

14.4.66 DiagTopEpu1 (661/0x295)

Context:

Description:

"Diagnostic TRC Top EPU 1 Monitor Packet" Telemetry Packet

Contains TRC/LSW EPU 1 cpu monitor metrics.

Layout:

Diagnostic TRC Top EPU 1 Monitor Packet (DiagTopEpu1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x295**										

Diagnostic TRC Top EPU 1 Monitor Packet (DiagTopEpu1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spare[0-2]															
014	**TRCTOPS:** mon															
06C	**Padus16:** pad[0-3]															

Fields:

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): pad, spare

Explicit 16 bit pad in unsigned short

TRCTOPS **(14.5.14)**

Attribute(s):

Brief: "TRC Top Monitor Result"

Instance(s): mon

14.4.67 DiagTopEpu2 (662/0x296)

Context:

Description:

"Diagnostic TRC Top EPU 2 Monitor Packet" Telemetry Packet

Contains TRC/LSW EPU2 cpu monitor metrics.

Layout:

Diagnostic TRC Top EPU 2 Monitor Packet (DiagTopEpu2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x296**										
002	**SF**		**Sequence Count**													

Diagnostic TRC Top EPU 2 Monitor Packet `(DiagTopEpu2)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare[0-2]`															
014	**TRCTOPS:** `mon`															
06C	**Padus16:** `pad[0-3]`															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `spare`

Explicit 16 bit pad in unsigned short

`TRCTOPS` **(14.5.14)**

Attribute(s):

Brief: "TRC Top Monitor Result"

Instance(s): `mon`

14.4.68 `DiagTopSiu` (659/0x293)

Context:

Description:

"Diagnostic TRC Top SIU Monitor Packet" Telemetry Packet

Contains TRC/LSW SIU cpu monitor metrics.

Layout:

Diagnostic TRC Top SIU Monitor Packet `(DiagTopSiu)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x293**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															

Diagnostic TRC Top SIU Monitor Packet (DiagTopSiu) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**Timestamp**															
00E	**Padus16:** spare[0-2]															
014	**TRCTOPS:** mon															
06C	**Padus16:** pad[0-3]															

Fields:

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): pad, spare

Explicit 16 bit pad in unsigned short

TRCTOPS **(14.5.14)**

Attribute(s):

Brief: "TRC Top Monitor Result"

Instance(s): mon

14.4.69 Epu0Stats (555/0x22B)

Context:

Description:

"EPU 0 Statistics" Telemetry Packet

Contains EPU 0 CPU temperature and loading metrics, file statistics, and memory statistics.

Layout:

EPU 0 Statistics (Epu0Stats) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x22B**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															

EPU 0 Statistics (Epu0Stats) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
00E	**Padus16:** spares[0-2]															
014	**CPUMETR:** cpu															
02C	**FILESTATS:** file															
044	**MEMSTATS:** mem															

Fields:

CPUMETR **(14.5.1)**

Attribute(s):

Brief: "CPU Metrics"

Instance(s): cpu

Structure containing metrics for a single CPU including junction temperatue and loading statistics.

FILESTATS **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): file

Describes the FILE upload current state.

MEMSTATS **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): mem

Contains statistics for the MEM task.

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

14.4.70 `Epu1Stats` (556/0x22C)

Context:

Description:

"EPU 1 Statistics" Telemetry Packet

Contains EPU 1 CPU temperature and loading metrics, file statistics, and memory statistics.

Layout:

EPU 1 Statistics (`Epu1Stats`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x22C**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**CPUMETR:** `cpu`															
02C	**FILESTATS:** `file`															
044	**MEMSTATS:** `mem`															

Fields:

`CPUMETR` **(14.5.1)**

Attribute(s):

Brief: "CPU Metrics"

Instance(s): `cpu`

Structure containing metrics for a single CPU including junction temperatue and loading statistics.

`FILESTATS` **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): `file`

Describes the FILE upload current state.

`MEMSTATS` **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

14.4.71 `Epu2Stats` (557/0x22D)

Context:

Description:

"EPU 2 Statistics" Telemetry Packet

Contains EPU 2 CPU temperature and loading metrics, file statistics, and memory statistics.

Layout:

EPU 2 Statistics (`Epu2Stats`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x22D**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**CPUMETR:** `cpu`															
02C	**FILESTATS:** `file`															
044	**MEMSTATS:** `mem`															

Fields:

`CPUMETR` **(14.5.1)**

Attribute(s):

Brief: "CPU Metrics"

Instance(s): `cpu`

Structure containing metrics for a single CPU including junction temperatue and loading statistics.

`FILESTATS` **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): `file`

Describes the FILE upload current state.

`MEMSTATS` **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

14.4.72 `GasuCounts` (591/0x24F)

Context:

Description:

"GASU counter packet (both GEM and EBM)" Telemetry Packet

GASU counter packet (both GEM and EBM)

Layout:

GASU counter packet (both GEM and EBM) `(GasuCounts)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x24F**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**GemCounters:** `gem`															
030	**EbmCounters:** `ebm`															

Fields:

`EbmCounters` **(14.5.3)**

Attribute(s):

Brief: "EBM counters"

Instance(s): `ebm`

EBM counters

`GemCounters` **(14.5.6)**

Attribute(s):

Brief: "GEM counters"

Instance(s): `gem`

GEM counters

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`

Explicit 16 bit pad in unsigned short

14.4.73 `ItcCfg` (562/0x232)

Context:

Description:

"ITC Configuration" Telemetry Packet

Contains the configuration for ITC task message and command confirmation levels.

Layout:

ITC Configuration (`ItcCfg`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x232**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare[0-2]`															
014	**ItcConfig:** `siu[0-17]`															
038	**ItcConfig:** `epu0[0-9]`															
04C	**ItcConfig:** `epu1[0-9]`															
060	**ItcConfig:** `epu2[0-9]`															

Fields:

`ItcConfig` **(14.6.22)**

Attribute(s):

Brief: "ITC configuration of a single task"

Instance(s): `epu0`, `epu1`, `epu2`, `siu`

ITC configuration of a single task

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare`

Explicit 16 bit pad in unsigned short

14.4.74 `LatcStatus` (592/0x250)

Context:

Description:

"LATC status packet" Telemetry Packet

Current LATC status, with separate entries for the most recent LATC application and the most recent LATC verification.

Layout:

LATC status packet (`LatcStatus`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x250**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Latc:** `hsk`															

Fields:

`Latc` **(14.5.7)**

Attribute(s):

Brief: "LATC status"

Instance(s): `hsk`

Summary information about recent LATC activities (who apllied and/or verified what, when, and why).

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`

Explicit 16 bit pad in unsigned short

14.4.75 `LimStatus` (593/0x251)

Context:

Description:

"LIM status/summary packet (including LPA and LCI status)" Telemetry Packet

LIM status/summary packet (including LPA and LCI status)

Layout:

LIM status/summary packet (including LPA and LCI status) (`LimStatus`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x251**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**LimContrib:** `lim`															
02C	**LpaContrib:** `lpa`															
050	**LciContrib:** `lci`															

Fields:

`LciContrib` **(14.5.8)**

Attribute(s):

Brief: "LCI's contribution to the LIM status packet"

Instance(s): `lci`

LCI's contribution to the LIM status packet

`LimContrib` **(14.5.9)**

Attribute(s):

Brief: "LIM's contribution to the LIM status packet"

Instance(s): `lim`

LIM's contribution to the LIM status packet

`LpaContrib` **(14.5.10)**

Attribute(s):

Brief: "LPA's contribution to the LIM status packet"

Instance(s): `lpa`

LPA's contribution to the LIM status packet

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`

Explicit 16 bit pad in unsigned short

14.4.76 `LpaDb0Epu0` (587/0x24B)

Context:

Description:

"LPA filter configuration (based on first LPA_DB instance) (EPU" Telemetry Packet

LPA filter configuration (based on first LPA_DB instance) (EPU0)

Layout:

LPA filter configuration (based on first LPA_DB instance) (EPU `(LpaDb0Epu0)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x24B**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare0`															
010	**ui:** `sec`															
014	**ui:** `sub`															
018	**us:** `handlers`															

LPA filter configuration (based on first LPA_DB instance) (EPU `(LpaDb0Epu0)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
01A	**uc:** `outMask`								**uc:** `postMask`							
01C	**uc:** `compression`								**uc:** `spare1`							
01E	**us:** `spare2`															
020	**ui:** `spare3`															
024	**us:** `handlersPerMode[0-7]`															
034	**ConfigLPA:** `handlerParams[0-15]`															

Fields:

`ConfigLPA` **(14.6.6)**

Attribute(s):

Brief: "Parameter set associated with a handler, per mode"

Instance(s): `handlerParams`

Parameter set associated with a handler, per mode

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `compression`, `outMask`, `postMask`, `spare1`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `sec`, `spare3`, `sub`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `handlers`, `handlersPerMode`, `spare2`

Unsigned short

14.4.77 `LpaDb0Epu1` (588/0x24C)

Context:

Description:

"LPA filter configuration (based on first LPA_DB instance) (EPU" Telemetry Packet

LPA filter configuration (based on first LPA_DB instance) (EPU1)

Layout:

LPA filter configuration (based on first LPA_DB instance) (EPU `(LpaDb0Epu1)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x24C**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare0`															
010	**ui:** `sec`															
014	**ui:** `sub`															
018	**us:** `handlers`															
01A	**uc:** `outMask`								**uc:** `postMask`							
01C	**uc:** `compression`								**uc:** `spare1`							
01E	**us:** `spare2`															
020	**ui:** `spare3`															
024	**us:** `handlersPerMode[0-7]`															
034	**ConfigLPA:** `handlerParams[0-15]`															

Fields:

`ConfigLPA` **(14.6.6)**

Attribute(s):

Brief: "Parameter set associated with a handler, per mode"

Instance(s): `handlerParams`

Parameter set associated with a handler, per mode

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `compression`, `outMask`, `postMask`, `spare1`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `sec`, `spare3`, `sub`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `handlers`, `handlersPerMode`, `spare2`

Unsigned short

14.4.78 `LpaDb0Epu2` (589/0x24D)

Context:

Description:

"LPA filter configuration (based on first LPA_DB instance) (EPU" Telemetry Packet

LPA filter configuration (based on first LPA_DB instance) (EPU2)

Layout:

LPA filter configuration (based on first LPA_DB instance) (EPU `(LpaDb0Epu2)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x24D**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare0`															
010	**ui:** `sec`															
014	**ui:** `sub`															
018	**us:** `handlers`															
01A	**uc:** `outMask`								**uc:** `postMask`							
01C	**uc:** `compression`								**uc:** `spare1`							
01E	**us:** `spare2`															
020	**ui:** `spare3`															
024	**us:** `handlersPerMode[0-7]`															
034	**ConfigLPA:** `handlerParams[0-15]`															

Fields:

`ConfigLPA` **(14.6.6)**

Attribute(s):

Brief: "Parameter set associated with a handler, per mode"

Instance(s): `handlerParams`

Parameter set associated with a handler, per mode

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `compression`, `outMask`, `postMask`, `spare1`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `sec`, `spare3`, `sub`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `handlers`, `handlersPerMode`, `spare2`

Unsigned short

14.4.79 `LpaDb0Siu` (586/0x24A)

Context:

Description:

"LPA filter configuration (based on first LPA_DB instance) (SIU" Telemetry Packet

LPA filter configuration (based on first LPA_DB instance) (SIU)

Layout:

LPA filter configuration (based on first LPA_DB instance) (SIU `(LpaDb0Siu)` Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x24A**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare0`															
010	**ui:** `sec`															
014	**ui:** `sub`															
018	**us:** `handlers`															
01A	**uc:** `outMask`								**uc:** `postMask`							
01C	**uc:** `compression`								**uc:** `spare1`							
01E	**us:** `spare2`															
020	**ui:** `spare3`															
024	**us:** `handlersPerMode[0-7]`															
034	**ConfigLPA:** `handlerParams[0-15]`															

Fields:

`ConfigLPA` **(14.6.6)**

Attribute(s):

Brief: "Parameter set associated with a handler, per mode"

Instance(s): `handlerParams`

Parameter set associated with a handler, per mode

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `compression`, `outMask`, `postMask`, `spare1`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `sec`, `spare3`, `sub`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `handlers`, `handlersPerMode`, `spare2`

Unsigned short

14.4.80 `Lrs0` (551/0x227)

Context:

Description:

"Low-rate Science/LIM State Packet" Telemetry Packet

Contains GEM low-rate science counters and LIM state values.

Layout:

Low-rate Science/LIM State Packet `(Lrs0)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x227**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**TIMESEC:** `gemsec`															
018	**TIMESUBSEC:** `gemsub`															
01C	**GEMLRS:** `gemlrs`															

Low-rate Science/LIM State Packet (Lrs0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
030	**TIMESEC:** ebmsec															
034	**TIMESUBSEC:** ebmsub															
038	**EBMSTATS:** ebmstat															
052	**ACTION:** action															
054	**STATUS:** status															
058	**OPMODE:** op_mode								**VIRTMODE:** virt_mode							
05A	**SAATRANSIT:** saa_transit								**TASKSTATE:** lci_state							
05C	**TASKSTATE:** ldf_state								**TASKSTATE:** lpa_state							
05E	**TOOSTATEBF:** too_state								**ARRSTATEBF:** arr_state							
060	**REMAINSEC:** too_remain_sec															
064	**REMAINSEC:** arr_remain_sec															
068	**GBMCONFIGBF:** gbm_config								**HVCONFIGBF:** hv_config							
06A	**Padus16:** pad1															
06C	**REMAINSEC:** gbm_int_dis_remain_sec															
070	**LATCKEY:** latc_key															

Fields:

ACTION **(14.7.0)**

Attribute(s):

Brief: "Most Recent LIM Action"

Instance(s): action

Most recent LIM action.

ARRSTATEBF **(14.6.2)**

Attribute(s):

Brief: "ARR State Bitfield"

Instance(s): arr_state

Bitfield containing the current ARR observation state.

EBMSTATS **(14.5.2)**

Attribute(s):

Brief: "EBM Event Statistics"

Instance(s): `ebmstat`

Contains event transmit receive statistics from the EBM.

`GBMCONFIGBF` **(14.6.17)**

Attribute(s):

Brief: "GBM Interface Configuration Bitfield"

Instance(s): `gbm_config`

Bitfield containing the current configuration of the GBM interface.

`GEMLRS` **(14.5.5)**

Attribute(s):

Brief: "GEM Low-Rate Science Counter"

Instance(s): `gemlrs`

Contains 4 GEM low-rate science counter values.

`HVCONFIGBF` **(14.6.18)**

Attribute(s):

Brief: "High-Voltage Interface Configuration Bitfield"

Instance(s): `hv_config`

Bitfield containing the current configuration of the ACD high-voltage interface.

`LATCKEY` **(14.7.38)**

Attribute(s):

Brief: "LATC File Key"

Instance(s): `latc_key`

File key used in most recent LATC configuration.

`OPMODE` **(14.7.56)**

Attribute(s):

Brief: "Operating Mode"

Instance(s): `op_mode`

Current operating mode.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad1`, `spares`

Explicit 16 bit pad in unsigned short

`REMAINSEC` **(14.7.80)**

Attribute(s):

Brief: "Time Remaining"

Instance(s): `arr_remain_sec`, `gbm_int_dis_remain_sec`, `too_remain_sec`

Time remaining, in seconds.

`SAATRANSIT` **(14.7.85)**

Attribute(s):

Brief: "SAA Transit Status"

Instance(s): `saa_transit`

SAA transit status (0 = transit not in progress, 1 = transit in progress).

`STATUS` **(14.7.88)**

Attribute(s):

Brief: "Most Recent Action Status"

Instance(s): `status`

MSG status code of the most recent LIM action.

`TASKSTATE` **(14.7.92)**

Attribute(s):

Brief: "Task State"

Instance(s): `lci_state`, `ldf_state`, `lpa_state`

Current state of an external task.

`TIMESEC` **(14.7.94)**

Attribute(s):

Brief: "Timestamp seconds"

Instance(s): `ebmsec`, `gemsec`

`TIMESUBSEC` **(14.7.95)**

Attribute(s):

Brief: "Timestamp subseconds"

Instance(s): `ebmsub`, `gemsub`

`TOOSTATEBF` **(14.6.30)**

Attribute(s):

Brief: "TOO State Bitfield"

Instance(s): `too_state`

Bitfield containing the current TOO observation state.

`VIRTMODE` **(14.7.105)**

Attribute(s):

Brief: "Virtual Mode"

Instance(s): `virt_mode`

Current virtual mode.

14.4.81 `LtcData0` (558/0x22E)

Context:

Description:

"Thermal Control Data Packet 0" Telemetry Packet

Layout:

Thermal Control Data Packet 0 (LtcData0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x22E**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spares[0-2]															
014	**ResRitSnsrSel:** snsrSel[0-11]															
02C	**ResRitStatus:** snsrStatus[0-11]															
038	**HeaterMode:** actvHp															
03A	**HeaterCommand:** htrCmd															
03C	**HeaterState:** htrReg															
03E	**TempCelsius:** temps[0-23]															
06E	**Padus16:** spare[0-2]															

Fields:

`HeaterCommand` **(14.6.19)**

Attribute(s):

Brief: "Current heater command and LTC control mode"

Instance(s): `htrCmd`

For the heater bits, a value of '0' indicates that LTC is commanding the heater off. A value of '1' indicates that LTC is commanding the heater on. These heater commands are applied only when LTC is in active control mode.

`HeaterMode` **(14.6.20)**

Attribute(s):

Brief: "Control mode for VCHP heaters."

Instance(s): `actvHp`

A bit value of '0' indicates that the heater is under manual, user control. A bit value of '1' indicates that the heater is under automatic, algorithm control.

`HeaterState` **(14.6.21)**

Attribute(s):

Brief: "Current heater state and LTC run mode"

Instance(s): `htrReg`

For the heater bits, a value of '0' indicates that the heater is currently off. A value of '1' indicates that the heater is currently on.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare`, `spares`

Explicit 16 bit pad in unsigned short

`ResRitSnsrSel` **(14.6.27)**

Attribute(s):

Brief: "Selected RSVR and RIT sensors"

Instance(s): `snsrSel`

`ResRitStatus` **(14.6.28)**

Attribute(s):

Brief: "Heat pipe RIT and reservoir sensors status"

Instance(s): `snsrStatus`

`TempCelsius` **(14.7.104)**

Attribute(s):

Brief: "Temperature converted to celsius."

Instance(s): `temps`

Fixed point scaled by 8 bits (256).

14.4.82 `LtcData1` (559/0x22F)

Context:

Description:

"Thermal Control Data Packet 1" Telemetry Packet

Layout:

Thermal Control Data Packet 1 (`LtcData1`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x22F**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**TempCelsius:** `ritLo[0-11]`															
02C	**TempCelsius:** `ritHi[0-11]`															
044	**TempCelsius:** `resLo[0-11]`															
05C	**TempCelsius:** `resHi[0-11]`															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

`TempCelsius` **(14.7.104)**

Attribute(s):

Brief: "Temperature converted to celsius."

Instance(s): `resHi`, `resLo`, `ritHi`, `ritLo`

Fixed point scaled by 8 bits (256).

14.4.83 `LtcData2` (560/0x230)

Context:

Description:

"Thermal Control Data Packet 2" Telemetry Packet

Layout:

Thermal Control Data Packet 2 (`LtcData2`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x230**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**TempCelsius:** `dbDelta[0-11]`															
02C	**RawAdcStatus:** `rawAdc[0-35]`															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spares`

Explicit 16 bit pad in unsigned short

`RawAdcStatus` **(14.6.26)**

Attribute(s):

Brief: "Sensor Status and ADC Counts"

Instance(s): `rawAdc`

`TempCelsius` **(14.7.104)**

Attribute(s):

Brief: "Temperature converted to celsius."

Instance(s): `dbDelta`

Fixed point scaled by 8 bits (256).

14.4.84 `LtcData3` (561/0x231)

Context:

Description:

"Thermal Control Data Packet 3" Telemetry Packet

Layout:

Thermal Control Data Packet 3 (`LtcData3`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x231**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spares[0-2]`															
014	**RawAdcStatus:** `rawAdc[0-35]`															
05C	**Padus16:** `pad[0-11]`															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `spares`

Explicit 16 bit pad in unsigned short

`RawAdcStatus` **(14.6.26)**

Attribute(s):

Brief: "Sensor Status and ADC Counts"

Instance(s): `rawAdc`

14.4.85 `MiscSlow` (595/0x253)

Context:

Description:

"Miscellaneous nearly static information" Telemetry Packet

Miscellaneous nearly static information

Layout:

Miscellaneous nearly static information (`MiscSlow`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x253**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare0`															
010	**ui:** `LATCuse`															
014	**ui:** `LATCignore`															
018	**ui:** `LPA_DB_file`															
01C	**us:** `LPA_DB_instance`															
01E	**uc:** `EPU_enable`								**uc:** `GBM_enable`							
020	**ui:** `LHK_scheduleFile`															
024	**ui:** `LHK_scheduleInstance`															
028	**ui:** `LIH_limitFile`															
02C	**ui:** `LIH_limitInstance`															
030	**ui:** `LTC_config`															
034	**ui:** `GRB_config`															
038	**uc:** `LIH_enable`								**Paduc8:** `spare1`							
03A	**Padus16:** `spare2`															
03C	**ui:** `spare3[0-13]`															

Fields:

`Paduc8` **(14.7.64)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned char"

Instance(s): `spare1`

Explicit 8 bit pad in unsigned char

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`, `spare2`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `EPU_enable`, `GBM_enable`, `LIH_enable`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `GRB_config`, `LATCignore`, `LATCuse`, `LHK_scheduleFile`, `LHK_scheduleInstance`, `LIH_limitFile`, `LIH_limitInstance`, `LPA_DB_file`, `LTC_config`, `spare3`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `LPA_DB_instance`

Unsigned short

14.4.86 `PduEnv0` (542/0x21E)

Context:

Description:

"PDU Environmental Packet 0" Telemetry Packet

PDU Environmental Packet 0

Layout:

PDU Environmental Packet 0 (PduEnv0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x21E**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0[0-1]															
014	**PDUTEMPWR:** tempwr															
016	**PDUEPUPWR:** epupwr															
018	**PDUACDPWR:** acdpwr															
01A	**ADC:** temvolt[0-15]															
03A	**ADC:** temtemp[0-15]															
05A	**ADC:** epuvolt[0-2]															
060	**ADC:** eputemp[0-2]															
066	**Padus16:** spare1[0-6]															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `eputemp`, `epuvolt`, `temtemp`, `temvolt`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

`PDUACDPWR` **(14.6.23)**

Attribute(s):

Brief: "PDU ADC Power Management Register"

Instance(s): `acdpwr`

`PDUEPUPWR` **(14.6.24)**

Attribute(s):

Brief: "PDU EPU crate power state register"

Instance(s): `epupwr`

Contains the state of the EPU power switches in the PDU.

`PDUTEMPWR` **(14.6.25)**

Attribute(s):

Brief: "PDU TEM power state register"

Instance(s): `tempwr`

Contains the state of the TEM power switches in the PDU.

14.4.87 `PduEnv1` (543/0x21F)

Context:

Description:

"PDU Environmental Packet 1" Telemetry Packet

PDU Environmental Packet 1

Layout:

PDU Environmental Packet 1 (PduEnv1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x21F**										

PDU Environmental Packet 1 (PduEnv1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0[0-1]															
014	**ADC:** temPcbTemp[0-15]															
034	**ADC:** calBaseTemp[0-15]															
054	**Padus16:** spare1[0-15]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): calBaseTemp, temPcbTemp

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare0, spare1

Explicit 16 bit pad in unsigned short

14.4.88 PduEnv2 (544/0x220)

Context:

Description:

"PDU Environmental Packet 2" Telemetry Packet

PDU Environmental Packet 2

Layout:

PDU Environmental Packet 2 (PduEnv2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x220**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0[0-1]															
014	**ADC:** VchpXlhp[0-11]															
02C	**ADC:** VchpDshp[0-11]															
044	**ADC:** VchpRsvr[0-11]															
05C	**Padus16:** spare1[0-11]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): VchpDshp, VchpRsvr, VchpXlhp

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare0, spare1

Explicit 16 bit pad in unsigned short

14.4.89 PduEnv3 (545/0x221)

Context:

Description:

"PDU Environmental Packet 3" Telemetry Packet

PDU Environmental Packet 3

Layout:

PDU Environmental Packet 3 (PduEnv3) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x221**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0[0-1]															
014	**ADC:** grid[0-11]															
02C	**ADC:** acdShell[0-1]															
030	**ADC:** acdPMT[0-3]															
038	**ADC:** acdBEA[0-1]															
03C	**ADC:** freeze[0-1]															
040	**ADC:** gridRad[0-3]															
048	**ADC:** radiator[0-11]															
060	**Padus16:** spare1[0-9]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): acdBEA, acdPMT, acdShell, freeze, grid, gridRad, radiator

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare0, spare1

Explicit 16 bit pad in unsigned short

14.4.90 `PduEnv4` (546/0x222)

Context:

Description:

"PDU Environmental Packet 4" Telemetry Packet

PDU Environmental Packet 4

Layout:

PDU Environmental Packet 4 (PduEnv4) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x222**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0[0-1]															
014	**PDUTEMPWR:** tempwr															
016	**PDUEPUPWR:** epupwr															
018	**PDUACDPWR:** acdpwr															
01A	**ADC:** temvolt[0-15]															
03A	**ADC:** temtemp[0-15]															
05A	**ADC:** epuvolt[0-2]															
060	**ADC:** eputemp[0-2]															
066	**Padus16:** spare1[0-6]															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `eputemp`, `epuvolt`, `temtemp`, `temvolt`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare0`, `spare1`

Explicit 16 bit pad in unsigned short

`PDUACDPWR` **(14.6.23)**

Attribute(s):

Brief: "PDU ADC Power Management Register"

Instance(s): `acdpwr`

`PDUEPUPWR` **(14.6.24)**

Attribute(s):

Brief: "PDU EPU crate power state register"

Instance(s): `epupwr`

Contains the state of the EPU power switches in the PDU.

`PDUTEMPWR` **(14.6.25)**

Attribute(s):

Brief: "PDU TEM power state register"

Instance(s): `tempwr`

Contains the state of the TEM power switches in the PDU.

14.4.91 `PduEnv5` (547/0x223)

Context:

Description:

"PDU Environmental Packet 5" Telemetry Packet

PDU Environmental Packet 5

Layout:

PDU Environmental Packet 5 (`PduEnv5`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x223**										

PDU Environmental Packet 5 (PduEnv5) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0[0-1]															
014	**ADC:** temPcbTemp[0-15]															
034	**ADC:** calBaseTemp[0-15]															
054	**Padus16:** spare1[0-15]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): calBaseTemp, temPcbTemp

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare0, spare1

Explicit 16 bit pad in unsigned short

14.4.92 PduEnv6 (548/0x224)

Context:

Description:

"PDU Environmental Packet 6" Telemetry Packet

PDU Environmental Packet 6

Layout:

PDU Environmental Packet 6 (PduEnv6) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x224**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0[0-1]															
014	**ADC:** VchpXlhp[0-11]															
02C	**ADC:** VchpDshp[0-11]															
044	**ADC:** VchpRsvr[0-11]															
05C	**Padus16:** spare1[0-11]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): VchpDshp, VchpRsvr, VchpXlhp

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare0, spare1

Explicit 16 bit pad in unsigned short

14.4.93 PduEnv7 (549/0x225)

Context:

Description:

"PDU Environmental Packet 7" Telemetry Packet

PDU Environmental Packet 7

Layout:

PDU Environmental Packet 7 (PduEnv7) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x225**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0[0-1]															
014	**ADC:** grid[0-11]															
02C	**ADC:** acdShell[0-1]															
030	**ADC:** acdPMT[0-3]															
038	**ADC:** acdBEA[0-1]															
03C	**ADC:** freeze[0-1]															
040	**ADC:** gridRad[0-3]															
048	**ADC:** radiator[0-11]															
060	**Padus16:** spare1[0-9]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): acdBEA, acdPMT, acdShell, freeze, grid, gridRad, radiator

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare0, spare1

Explicit 16 bit pad in unsigned short

14.4.94 `PigStatus` (596/0x254)

Context:

Description:

"PIG configuration information" Telemetry Packet

PIG configuration information, derived from the SIB power control register, three CRU registers (including PPS and GBM selectors), and 8 EBM registers (including SSR selector)

Layout:

PIG configuration information (PigStatus) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x254**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**SIBconfig:** SIBconfig															
014	**CRUconfig:** CRUconfig															
018	**CRUcommand:** CRUcommand															
01C	**CRUresponse:** CRUresponse															
020	**EBMbackConfig:** EBMbackConfig															
024	**EBMfrontAConfig:** EBMfrontAConfig															
028	**EBMfrontBConfig:** EBMfrontBConfig															
02C	**EBMaddress:** EBMaddress															
030	**EBMinput:** EBMinput															
034	**EBMcontrib:** EBMcontrib															
038	**EBMdestination:** EBMdestination															
03C	**EBMtimeout:** EBMtimeout															
040	**Padui32:** spare0[0-12]															

Fields:

`CRUcommand` **(14.6.3)**

Attribute(s):

Brief: "Contents of the CRU command enable register"

Instance(s): `CRUcommand`

Contents of the CRU command enable register

`CRUconfig` **(14.6.4)**

Attribute(s):

Brief: "Configuration bits read from the CRU"

Instance(s): `CRUconfig`

Contents of the CRU configuration register

`CRUresponse` **(14.6.5)**

Attribute(s):

Brief: "Contents of the CRU response enable register"

Instance(s): `CRUresponse`

Contents of the CRU response enable register

`EBMaddress` **(14.6.9)**

Attribute(s):

Brief: "Contents of the EBM address register"

Instance(s): `EBMaddress`

Contents of the EBM address register

`EBMbackConfig` **(14.6.10)**

Attribute(s):

Brief: "Contents of the EBM back-end configuration register"

Instance(s): `EBMbackConfig`

Contents of the EBM back-end configuration register

`EBMcontrib` **(14.6.11)**

Attribute(s):

Brief: "Contents of the EBM contributors register"

Instance(s): `EBMcontrib`

Contents of the EBM contributors register

`EBMdestination` **(14.6.12)**

Attribute(s):

Brief: "Contents of the EBM destination enable register"

Instance(s): `EBMdestination`

Contents of the EBM destination enable register

`EBMfrontAConfig` **(14.6.13)**

Attribute(s):

Brief: "Contents of the EBM front-end A configuration register"

Instance(s): `EBMfrontAConfig`

Contents of the EBM front-end A configuration register

`EBMfrontBConfig` **(14.6.14)**

Attribute(s):

Brief: "Contents of the EBM front-end B configuration register"

Instance(s): `EBMfrontBConfig`

Contents of the EBM front-end B configuration register

`EBMinput` **(14.6.15)**

Attribute(s):

Brief: "Contents of the EBM input enable register"

Instance(s): `EBMinput`

Contents of the EBM input enable register

`EBMtimeout` **(14.6.16)**

Attribute(s):

Brief: "Contents of the EBM timeout register"

Instance(s): `EBMtimeout`

Contents of the EBM timeout register

`Padui32` **(14.7.70)**

Attribute(s):

Brief: "Explicit 32 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 32 bit pad in unsigned int

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`

Explicit 16 bit pad in unsigned short

`SIBconfig` **(14.6.29)**

Attribute(s):

Brief: "Power configuration bits from the SIB"

Instance(s): `SIBconfig`

Power configuration bits from the SIB

14.4.95 `SiuStats` (554/0x22A)

Context:

Description:

"SIU Statistics" Telemetry Packet

Contains SIU CPU temperature and loading metrics, file statistics, and memory statistics.

Layout:

SIU Statistics (SiuStats) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x22A**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** spare0[0-1]															
012	**Paduc8:** spare1								**ConfigPID:** pids							
014	**CPUMETR:** cpu															
02C	**FILESTATS:** file															
044	**MEMSTATS:** mem															

Fields:

ConfigPID **(14.6.7)**

Attribute(s):

Brief: "Structure to capture rad750 input PID states"

Instance(s): pids

Structure to capture rad750 input PID states

CPUMETR **(14.5.1)**

Attribute(s):

Brief: "CPU Metrics"

Instance(s): cpu

Structure containing metrics for a single CPU including junction temperatue and loading statistics.

FILESTATS **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): file

Describes the FILE upload current state.

MEMSTATS **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Paduc8` **(14.7.64)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned char"

Instance(s): `spare1`

Explicit 8 bit pad in unsigned char

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned short

14.4.96 `StatusEpu0` (577/0x241)

Context:

Description:

"EPU0 status packet" Telemetry Packet

Contains: EPU0 CPU hardware error statistics (PCI errors, correctable and uncorrectable memory errors), CPU junction temperature, memory scrubbing status, file statistics, and memory statistics.

Layout:

EPU0 status packet (`StatusEpu0`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x241**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															

EPU0 status packet (StatusEpu0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**ui:** uptime															
014	**us:** pci															
016	**us:** cme															
018	**us:** ume															
01A	**us:** jt															
01C	**ScrubStatus:** scrub															
028	**ConfigPID:** pid								**ConfigTHS:** ths							
02A	**Padus16:** spare1															
02C	**FILESTATS:** fil															
044	**MEMSTATS:** mem															

Fields:

ConfigPID **(14.6.7)**

Attribute(s):

Brief: "Structure to capture rad750 input PID states"

Instance(s): pid

Structure to capture rad750 input PID states

ConfigTHS **(14.6.8)**

Attribute(s):

Brief: "Structure to capture the THS imulation bits"

Instance(s): ths

Structure to capture the THS imulation bits

FILESTATS **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): fil

Describes the FILE upload current state.

`MEMSTATS` **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare1`

Explicit 16 bit pad in unsigned short

`ScrubStatus` **(14.5.13)**

Attribute(s):

Brief: "Status of the memory scrubbing subsystem"

Instance(s): `scrub`

Status of the memory scrubbing subsystem

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `uptime`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `cme`, `jt`, `pci`, `ume`

Unsigned short

14.4.97 `StatusEpu1` (578/0x242)

Context:

Description:

"EPU1 status packet" Telemetry Packet

Contains: EPU1 CPU hardware error statistics (PCI errors, correctable and uncorrectable memory errors), CPU junction temperature, memory scrubbing status, file statistics, and memory statistics.

Layout:

EPU1 status packet (`StatusEpu1`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x242**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**ui:** `uptime`															
014	**us:** `pci`															
016	**us:** `cme`															
018	**us:** `ume`															
01A	**us:** `jt`															
01C	**ScrubStatus:** `scrub`															
028	**ConfigPID:** `pid`								**ConfigTHS:** `ths`							
02A	**Padus16:** `spare1`															
02C	**FILESTATS:** `fil`															
044	**MEMSTATS:** `mem`															

Fields:

`ConfigPID` **(14.6.7)**

Attribute(s):

Brief: "Structure to capture rad750 input PID states"

Instance(s): `pid`

Structure to capture rad750 input PID states

`ConfigTHS` **(14.6.8)**

Attribute(s):

Brief: "Structure to capture the THS imulation bits"

Instance(s): `ths`

Structure to capture the THS imulation bits

`FILESTATS` **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): `fil`

Describes the FILE upload current state.

`MEMSTATS` **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare1`

Explicit 16 bit pad in unsigned short

`ScrubStatus` **(14.5.13)**

Attribute(s):

Brief: "Status of the memory scrubbing subsystem"

Instance(s): `scrub`

Status of the memory scrubbing subsystem

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `uptime`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `cme`, `jt`, `pci`, `ume`

Unsigned short

14.4.98 `StatusEpu2` (579/0x243)

Context:

Description:

"EPU2 status packet" Telemetry Packet

Contains: EPU2 CPU hardware error statistics (PCI errors, correctable and uncorrectable memory errors), CPU junction temperature, memory scrubbing status, file statistics, and memory statistics.

Layout:

EPU2 status packet (`StatusEpu2`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x243**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**ui:** `uptime`															
014	**us:** `pci`															
016	**us:** `cme`															
018	**us:** `ume`															

EPU2 status packet (StatusEpu2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
01A	**us:** jt															
01C	**ScrubStatus:** scrub															
028	**ConfigPID:** pid								**ConfigTHS:** ths							
02A	**Padus16:** spare1															
02C	**FILESTATS:** fil															
044	**MEMSTATS:** mem															

Fields:

ConfigPID **(14.6.7)**

Attribute(s):

Brief: "Structure to capture rad750 input PID states"

Instance(s): pid

Structure to capture rad750 input PID states

ConfigTHS **(14.6.8)**

Attribute(s):

Brief: "Structure to capture the THS imulation bits"

Instance(s): ths

Structure to capture the THS imulation bits

FILESTATS **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): fil

Describes the FILE upload current state.

MEMSTATS **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare1`

Explicit 16 bit pad in unsigned short

`ScrubStatus` **(14.5.13)**

Attribute(s):

Brief: "Status of the memory scrubbing subsystem"

Instance(s): `scrub`

Status of the memory scrubbing subsystem

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `uptime`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `cme`, `jt`, `pci`, `ume`

Unsigned short

14.4.99 `StatusSiu` (576/0x240)

Context:

Description:

"SIU status packet" Telemetry Packet

Contains: SIU CPU hardware error statistics (PCI errors, correctable and uncorrectable memory errors), CPU junction temperature, memory scrubbing status, file statistics, and memory statistics.

Layout:

SIU status packet (`StatusSiu`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x240**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**ui:** `uptime`															
014	**us:** `pci`															
016	**us:** `cme`															
018	**us:** `ume`															
01A	**us:** `jt`															
01C	**ScrubStatus:** `scrub`															
028	**ConfigPID:** `pid`								**ConfigTHS:** `ths`							
02A	**Padus16:** `spare1`															
02C	**FILESTATS:** `fil`															
044	**MEMSTATS:** `mem`															

Fields:

`ConfigPID` **(14.6.7)**

Attribute(s):

Brief: "Structure to capture rad750 input PID states"

Instance(s): `pid`

Structure to capture rad750 input PID states

`ConfigTHS` **(14.6.8)**

Attribute(s):

Brief: "Structure to capture the THS imulation bits"

Instance(s): `ths`

Structure to capture the THS imulation bits

`FILESTATS` **(14.5.4)**

Attribute(s):

Brief: "FILE Upload Statistics"

Instance(s): `fil`

Describes the FILE upload current state.

`MEMSTATS` **(14.5.11)**

Attribute(s):

Brief: "MEM Statistics"

Instance(s): `mem`

Contains statistics for the MEM task.

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare1`

Explicit 16 bit pad in unsigned short

`ScrubStatus` **(14.5.13)**

Attribute(s):

Brief: "Status of the memory scrubbing subsystem"

Instance(s): `scrub`

Status of the memory scrubbing subsystem

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `uptime`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `cme`, `jt`, `pci`, `ume`

Unsigned short

14.4.100 `TaskCfgEpu0` (582/0x246)

Context:

Description:

"ITC/MSG configuration of tasks on EPU0" Telemetry Packet

ITC/MSG configuration of tasks on EPU0

Layout:

ITC/MSG configuration of tasks on EPU0 (`TaskCfgEpu0`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x246**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0`															
012	**uc:** `ctdb`								**uc:** `ssr`							
014	**ItcConfig:** `task[0-31]`															
054	**Padus16:** `pad[0-15]`															

Fields:

`ItcConfig` **(14.6.22)**

Attribute(s):

Brief: "ITC configuration of a single task"

Instance(s): `task`

ITC configuration of a single task

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `rsv`, `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `ctdb`, `ssr`

Unsigned char

14.4.101 `TaskCfgEpu1` (583/0x247)

Context:

Description:

"ITC/MSG configuration of tasks on EPU1" Telemetry Packet

ITC/MSG configuration of tasks on EPU1

Layout:

ITC/MSG configuration of tasks on EPU1 (`TaskCfgEpu1`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x247**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															

ITC/MSG configuration of tasks on EPU1 `(TaskCfgEpu1)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0`															
012	**uc:** `ctdb`								**uc:** `ssr`							
014	**ItcConfig:** `task[0-31]`															
054	**Padus16:** `pad[0-15]`															

Fields:

`ItcConfig` **(14.6.22)**

Attribute(s):

Brief: "ITC configuration of a single task"

Instance(s): `task`

ITC configuration of a single task

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `rsv`, `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `ctdb`, `ssr`

Unsigned char

14.4.102 `TaskCfgEpu2` (584/0x248)

Context:

Description:

"ITC/MSG configuration of tasks on EPU2" Telemetry Packet

ITC/MSG configuration of tasks on EPU2

Layout:

ITC/MSG configuration of tasks on EPU2 (TaskCfgEpu2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x248**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0															
012	**uc:** ctdb								**uc:** ssr							
014	**ItcConfig:** task[0-31]															
054	**Padus16:** pad[0-15]															

Fields:

`ItcConfig` **(14.6.22)**

Attribute(s):

Brief: "ITC configuration of a single task"

Instance(s): `task`

ITC configuration of a single task

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `rsv`, `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `ctdb`, `ssr`

Unsigned char

14.4.103 `TaskCfgSiu` (581/0x245)

Context:

Description:

"ITC/MSG configuration of tasks on SIU" Telemetry Packet

ITC/MSG configuration of tasks on SIU

Layout:

ITC/MSG configuration of tasks on SIU (TaskCfgSiu) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x245**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare0`															
012	**uc:** `ctdb`								**uc:** `ssr`							
014	**ItcConfig:** `task[0-31]`															
054	**Padus16:** `pad[0-15]`															

Fields:

`ItcConfig` **(14.6.22)**

Attribute(s):

Brief: "ITC configuration of a single task"

Instance(s): `task`

ITC configuration of a single task

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `rsv`, `spare0`

Explicit 16 bit pad in unsigned short

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `ctdb`, `ssr`

Unsigned char

14.4.104 `TemEnvPwr0` (528/0x210)

Context:

Description:

"TEM Power Packet 0" Telemetry Packet

Contains power specific ADC values for TEMs 0, 1, and 2

Layout:

TEM Power Packet 0 (`TemEnvPwr0`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x210**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adct0m0a0`															
016	**Padus16:** `adct0m0a1`															
018	**ADC:** `adct0m0a2`															
01A	**Padus16:** `adct0m0a3`															
01C	**ADC:** `adct0m0a4`															
01E	**Padus16:** `adct0m0a5`															

TEM Power Packet 0 (TemEnvPwr0) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
020	**ADC:** adct0m0a6															
022	**Padus16:** adct0m0a7															
024	**ADC:** adct0m1[0-7]															
034	**ADC:** adct1m0a0															
036	**Padus16:** adct1m0a1															
038	**ADC:** adct1m0a2															
03A	**Padus16:** adct1m0a3															
03C	**ADC:** adct1m0a4															
03E	**Padus16:** adct1m0a5															
040	**ADC:** adct1m0a6															
042	**Padus16:** adct1m0a7															
044	**ADC:** adct1m1[0-7]															
054	**ADC:** adct2m0a0															
056	**Padus16:** adct2m0a1															
058	**ADC:** adct2m0a2															
05A	**Padus16:** adct2m0a3															
05C	**ADC:** adct2m0a4															
05E	**Padus16:** adct2m0a5															
060	**ADC:** adct2m0a6															
062	**Padus16:** adct2m0a7															
064	**ADC:** adct2m1[0-7]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1, adct1m0a0, adct1m0a2, adct1m0a4, adct1m0a6, adct1m1, adct2m0a0, adct2m0a2, adct2m0a4, adct2m0a6, adct2m1

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): adct0m0a1, adct0m0a3, adct0m0a5, adct0m0a7, adct1m0a1, adct1m0a3, adct1m0a5, adct1m0a7, adct2m0a1, adct2m0a3, adct2m0a5, adct2m0a7, rsv, spare

Explicit 16 bit pad in unsigned short

14.4.105 `TemEnvPwr00` (568/0x238)

Context:

Description:

"TEM power ADCs for TEMs 0-3" Telemetry Packet

TEM power ADCs for TEMs 0-3

Layout:

TEM power ADCs for TEMs 0-3 (`TemEnvPwr00`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x238**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.106 `TemEnvPwr01` (569/0x239)

Context:

Description:

"TEM power ADCs for TEMs 4-7" Telemetry Packet

TEM power ADCs for TEMs 4-7

Layout:

TEM power ADCs for TEMs 4-7 (`TemEnvPwr01`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x239**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.107 `TemEnvPwr02` (570/0x23A)

Context:

Description:

"TEM power ADCs for TEMs 8-11" Telemetry Packet

TEM power ADCs for TEMs 8-11

Layout:

TEM power ADCs for TEMs 8-11 (`TemEnvPwr02`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x23A**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.108 `TemEnvPwr03` (571/0x23B)

Context:

Description:

"TEM power ADCs for TEMs 12-15" Telemetry Packet

TEM power ADCs for TEMs 12-15

Layout:

TEM power ADCs for TEMs 12-15 (`TemEnvPwr03`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x23B**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.109 `TemEnvPwr1` (529/0x211)

Context:

Description:

"TEM Power Packet 1" Telemetry Packet

Contains power specific ADC values for TEMs 3, 4, and 5

Layout:

TEM Power Packet 1 (TemEnvPwr1) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x211**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adct0m0a0`															
016	**Padus16:** `adct0m0a1`															
018	**ADC:** `adct0m0a2`															
01A	**Padus16:** `adct0m0a3`															
01C	**ADC:** `adct0m0a4`															
01E	**Padus16:** `adct0m0a5`															
020	**ADC:** `adct0m0a6`															
022	**Padus16:** `adct0m0a7`															
024	**ADC:** `adct0m1[0-7]`															
034	**ADC:** `adct1m0a0`															
036	**Padus16:** `adct1m0a1`															
038	**ADC:** `adct1m0a2`															
03A	**Padus16:** `adct1m0a3`															
03C	**ADC:** `adct1m0a4`															
03E	**Padus16:** `adct1m0a5`															
040	**ADC:** `adct1m0a6`															
042	**Padus16:** `adct1m0a7`															
044	**ADC:** `adct1m1[0-7]`															
054	**ADC:** `adct2m0a0`															
056	**Padus16:** `adct2m0a1`															
058	**ADC:** `adct2m0a2`															
05A	**Padus16:** `adct2m0a3`															
05C	**ADC:** `adct2m0a4`															
05E	**Padus16:** `adct2m0a5`															
060	**ADC:** `adct2m0a6`															
062	**Padus16:** `adct2m0a7`															

TEM Power Packet 1 (TemEnvPwr1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
064	**ADC:** adct2m1[0-7]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1, adct1m0a0, adct1m0a2, adct1m0a4, adct1m0a6, adct1m1, adct2m0a0, adct2m0a2, adct2m0a4, adct2m0a6, adct2m1

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): adct0m0a1, adct0m0a3, adct0m0a5, adct0m0a7, adct1m0a1, adct1m0a3, adct1m0a5, adct1m0a7, adct2m0a1, adct2m0a3, adct2m0a5, adct2m0a7, rsv, spare

Explicit 16 bit pad in unsigned short

14.4.110 TemEnvPwr2 (530/0x212)

Context:

Description:

"TEM Power Packet 2" Telemetry Packet

Contains power specific ADC values for TEMs 6, 7, and 8

Layout:

TEM Power Packet 2 (TemEnvPwr2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x212**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															

TEM Power Packet 2 (TemEnvPwr2) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare[0-1]															
014	**ADC:** adct0m0a0															
016	**Padus16:** adct0m0a1															
018	**ADC:** adct0m0a2															
01A	**Padus16:** adct0m0a3															
01C	**ADC:** adct0m0a4															
01E	**Padus16:** adct0m0a5															
020	**ADC:** adct0m0a6															
022	**Padus16:** adct0m0a7															
024	**ADC:** adct0m1[0-7]															
034	**ADC:** adct1m0a0															
036	**Padus16:** adct1m0a1															
038	**ADC:** adct1m0a2															
03A	**Padus16:** adct1m0a3															
03C	**ADC:** adct1m0a4															
03E	**Padus16:** adct1m0a5															
040	**ADC:** adct1m0a6															
042	**Padus16:** adct1m0a7															
044	**ADC:** adct1m1[0-7]															
054	**ADC:** adct2m0a0															
056	**Padus16:** adct2m0a1															
058	**ADC:** adct2m0a2															
05A	**Padus16:** adct2m0a3															
05C	**ADC:** adct2m0a4															
05E	**Padus16:** adct2m0a5															
060	**ADC:** adct2m0a6															
062	**Padus16:** adct2m0a7															
064	**ADC:** adct2m1[0-7]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1, adct1m0a0, adct1m0a2, adct1m0a4, adct1m0a6, adct1m1, adct2m0a0, adct2m0a2, adct2m0a4, adct2m0a6, adct2m1

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `adct0m0a1`, `adct0m0a3`, `adct0m0a5`, `adct0m0a7`, `adct1m0a1`, `adct1m0a3`, `adct1m0a5`, `adct1m0a7`, `adct2m0a1`, `adct2m0a3`, `adct2m0a5`, `adct2m0a7`, `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.111 `TemEnvPwr3` (531/0x213)

Context:

Description:

"TEM Power Packet 3" Telemetry Packet

Contains power specific ADC values for TEMs 9, A, and B

Layout:

TEM Power Packet 3 (`TemEnvPwr3`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x213**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adct0m0a0`															
016	**Padus16:** `adct0m0a1`															
018	**ADC:** `adct0m0a2`															
01A	**Padus16:** `adct0m0a3`															
01C	**ADC:** `adct0m0a4`															
01E	**Padus16:** `adct0m0a5`															
020	**ADC:** `adct0m0a6`															
022	**Padus16:** `adct0m0a7`															
024	**ADC:** `adct0m1[0-7]`															
034	**ADC:** `adct1m0a0`															
036	**Padus16:** `adct1m0a1`															
038	**ADC:** `adct1m0a2`															
03A	**Padus16:** `adct1m0a3`															

TEM Power Packet 3 (TemEnvPwr3) **Telemetry Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
03C	**ADC:** adct1m0a4															
03E	**Padus16:** adct1m0a5															
040	**ADC:** adct1m0a6															
042	**Padus16:** adct1m0a7															
044	**ADC:** adct1m1[0-7]															
054	**ADC:** adct2m0a0															
056	**Padus16:** adct2m0a1															
058	**ADC:** adct2m0a2															
05A	**Padus16:** adct2m0a3															
05C	**ADC:** adct2m0a4															
05E	**Padus16:** adct2m0a5															
060	**ADC:** adct2m0a6															
062	**Padus16:** adct2m0a7															
064	**ADC:** adct2m1[0-7]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1, adct1m0a0, adct1m0a2, adct1m0a4, adct1m0a6, adct1m1, adct2m0a0, adct2m0a2, adct2m0a4, adct2m0a6, adct2m1

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): adct0m0a1, adct0m0a3, adct0m0a5, adct0m0a7, adct1m0a1, adct1m0a3, adct1m0a5, adct1m0a7, adct2m0a1, adct2m0a3, adct2m0a5, adct2m0a7, rsv, spare

Explicit 16 bit pad in unsigned short

14.4.112 `TemEnvPwr4` (532/0x214)

Context:

Description:

"TEM Power Packet 4" Telemetry Packet

Contains power specific ADC values for TEMs C, D, and E

Layout:

TEM Power Packet 4 (`TemEnvPwr4`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x214**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adct0m0a0`															
016	**Padus16:** `adct0m0a1`															
018	**ADC:** `adct0m0a2`															
01A	**Padus16:** `adct0m0a3`															
01C	**ADC:** `adct0m0a4`															
01E	**Padus16:** `adct0m0a5`															
020	**ADC:** `adct0m0a6`															
022	**Padus16:** `adct0m0a7`															
024	**ADC:** `adct0m1[0-7]`															
034	**ADC:** `adct1m0a0`															
036	**Padus16:** `adct1m0a1`															
038	**ADC:** `adct1m0a2`															
03A	**Padus16:** `adct1m0a3`															
03C	**ADC:** `adct1m0a4`															
03E	**Padus16:** `adct1m0a5`															
040	**ADC:** `adct1m0a6`															
042	**Padus16:** `adct1m0a7`															
044	**ADC:** `adct1m1[0-7]`															
054	**ADC:** `adct2m0a0`															
056	**Padus16:** `adct2m0a1`															
058	**ADC:** `adct2m0a2`															
05A	**Padus16:** `adct2m0a3`															
05C	**ADC:** `adct2m0a4`															
05E	**Padus16:** `adct2m0a5`															
060	**ADC:** `adct2m0a6`															
062	**Padus16:** `adct2m0a7`															

TEM Power Packet 4 (TemEnvPwr4) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
064	**ADC:** adct2m1[0-7]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1, adct1m0a0, adct1m0a2, adct1m0a4, adct1m0a6, adct1m1, adct2m0a0, adct2m0a2, adct2m0a4, adct2m0a6, adct2m1

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): adct0m0a1, adct0m0a3, adct0m0a5, adct0m0a7, adct1m0a1, adct1m0a3, adct1m0a5, adct1m0a7, adct2m0a1, adct2m0a3, adct2m0a5, adct2m0a7, rsv, spare

Explicit 16 bit pad in unsigned short

14.4.113 TemEnvPwr5 (533/0x215)

Context:

Description:

"TEM Power Packet 5" Telemetry Packet

Contains power specific ADC values for TEM F

Layout:

TEM Power Packet 5 (TemEnvPwr5) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x215**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															

TEM Power Packet 5 (TemEnvPwr5) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare0[0-1]															
014	**ADC:** adct0m0a0															
016	**Padus16:** adct0m0a1															
018	**ADC:** adct0m0a2															
01A	**Padus16:** adct0m0a3															
01C	**ADC:** adct0m0a4															
01E	**Padus16:** adct0m0a5															
020	**ADC:** adct0m0a6															
022	**Padus16:** adct0m0a7															
024	**ADC:** adct0m1[0-7]															
034	**RTSTATS:** rt															
05C	**Padus16:** spare1[0-11]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adct0m0a0, adct0m0a2, adct0m0a4, adct0m0a6, adct0m1

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): adct0m0a1, adct0m0a3, adct0m0a5, adct0m0a7, rsv, spare0, spare1

Explicit 16 bit pad in unsigned short

RTSTATS **(14.5.12)**

Attribute(s):

Brief: "1553 Remote Terminal Statistics"

Instance(s): `rt`

Contains the 1553 RT driver statistics.

14.4.114 `TemEnvTemp0` (534/0x216)

Context:

Description:

"TEM temperature ADCs for TEMs 0-1" Telemetry Packet

TEM temperature ADCs for TEMs 0-1

Layout:

TEM temperature ADCs for TEMs 0-1 (`TemEnvTemp0`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x216**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.115 `TemEnvTemp1` (535/0x217)

Context:

Description:

"TEM temperature ADCs for TEMs 2-3" Telemetry Packet

TEM temperature ADCs for TEMs 2-3

Layout:

TEM temperature ADCs for TEMs 2-3 (TemEnvTemp1) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x217**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** rsv															
010	**Padus16:** spare[0-1]															
014	**ADC:** adc[0-47]															

Fields:

ADC **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): adc

A compound of ADC readout and limit evaluation

Padus16 **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): rsv, spare

Explicit 16 bit pad in unsigned short

14.4.116 `TemEnvTemp2` (536/0x218)

Context:

Description:

"TEM temperature ADCs for TEMs 4-5" Telemetry Packet

TEM temperature ADCs for TEMs 4-5

Layout:

TEM temperature ADCs for TEMs 4-5 (`TemEnvTemp2`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x218**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.117 `TemEnvTemp3` (537/0x219)

Context:

Description:

"TEM temperature ADCs for TEMs 6-7" Telemetry Packet

TEM temperature ADCs for TEMs 6-7

Layout:

TEM temperature ADCs for TEMs 6-7 (`TemEnvTemp3`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x219**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.118 `TemEnvTemp4` (538/0x21A)

Context:

Description:

"TEM temperature ADCs for TEMs 8-9" Telemetry Packet

TEM temperature ADCs for TEMs 8-9

Layout:

TEM temperature ADCs for TEMs 8-9 (`TemEnvTemp4`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x21A**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.119 `TemEnvTemp5` (539/0x21B)

Context:

Description:

"TEM temperature ADCs for TEMs A-B" Telemetry Packet

TEM temperature ADCs for TEMs A-B

Layout:

TEM temperature ADCs for TEMs A-B (`TemEnvTemp5`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x21B**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.120 `TemEnvTemp6` (540/0x21C)

Context:

Description:

"TEM temperature ADCs for TEMs C-D" Telemetry Packet

TEM temperature ADCs for TEMs C-D

Layout:

TEM temperature ADCs for TEMs C-D (`TemEnvTemp6`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x21C**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.121 `TemEnvTemp7` (541/0x21D)

Context:

Description:

"TEM temperature ADCs for TEMs E-F" Telemetry Packet

TEM temperature ADCs for TEMs E-F

Layout:

TEM temperature ADCs for TEMs E-F (`TemEnvTemp7`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x21D**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `rsv`															
010	**Padus16:** `spare[0-1]`															
014	**ADC:** `adc[0-47]`															

Fields:

`ADC` **(14.6.0)**

Attribute(s):

Brief: "An ADC result"

Instance(s): `adc`

A compound of ADC readout and limit evaluation

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `rsv`, `spare`

Explicit 16 bit pad in unsigned short

14.4.122 `TopEpu0` (564/0x234)

Context:

Description:

"TRC Top EPU 0 Monitor Packet" Telemetry Packet

Contains TRC/LSW EPU0 cpu monitor metrics.

Layout:

TRC Top EPU 0 Monitor Packet (`TopEpu0`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x234**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare[0-2]`															
014	**TRCTOPS:** `mon`															
06C	**Padus16:** `pad[0-3]`															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `spare`

Explicit 16 bit pad in unsigned short

`TRCTOPS` **(14.5.14)**

Attribute(s):

Brief: "TRC Top Monitor Result"

Instance(s): `mon`

14.4.123 `TopEpu1` (565/0x235)

Context:

Description:

"TRC Top EPU 1 Monitor Packet" Telemetry Packet

Contains TRC/LSW EPU 1 cpu monitor metrics.

Layout:

TRC Top EPU 1 Monitor Packet (`TopEpu1`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x235**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare[0-2]`															
014	**TRCTOPS:** `mon`															
06C	**Padus16:** `pad[0-3]`															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `spare`

Explicit 16 bit pad in unsigned short

`TRCTOPS` **(14.5.14)**

Attribute(s):

Brief: "TRC Top Monitor Result"

Instance(s): `mon`

14.4.124 `TopEpu2` (566/0x236)

Context:

Description:

"TRC Top EPU 2 Monitor Packet" Telemetry Packet

Contains TRC/LSW EPU2 cpu monitor metrics.

Layout:

TRC Top EPU 2 Monitor Packet (`TopEpu2`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x236**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare[0-2]`															
014	**TRCTOPS:** `mon`															
06C	**Padus16:** `pad[0-3]`															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `spare`

Explicit 16 bit pad in unsigned short

`TRCTOPS` **(14.5.14)**

Attribute(s):

Brief: "TRC Top Monitor Result"

Instance(s): `mon`

14.4.125 `TopSiu` (563/0x233)

Context:

Description:

"TRC Top SIU Monitor Packet" Telemetry Packet

Contains TRC/LSW SIU cpu monitor metrics.

Layout:

TRC Top SIU Monitor Packet (`TopSiu`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x233**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**Padus16:** `spare[0-2]`															
014	**TRCTOPS:** `mon`															
06C	**Padus16:** `pad[0-3]`															

Fields:

`Padus16` **(14.7.74)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned short"

Instance(s): `pad`, `spare`

Explicit 16 bit pad in unsigned short

`TRCTOPS` **(14.5.14)**

Attribute(s):

Brief: "TRC Top Monitor Result"

Instance(s): `mon`

14.5 Telemetry Structs

14.5.0 `CMDCNTRS` (Command Counters) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 128 bits (16 bytes)

Description:

Structure to hold per task command count information.

Command Counters (`CMDCNTRS`) Telemetry Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	TIMESEC: `sec`															
004	TIMESUBSEC: `subsec`															
008	CMDCNTS: `sent`															
00C	CMDEXEF: `exef`															

Fields:

`CMDCNTS` **(14.7.9)**

Attribute(s):

Brief: "Commands sent counter"

Instance(s): `sent`

Commands sent to task.

`CMDEXEF` **(14.7.10)**

Attribute(s):

Brief: "Command execution failure counter"

Instance(s): `exef`

Commands failing task execution

`TIMESEC` **(14.7.94)**

Attribute(s):

Brief: "Timestamp seconds"

Instance(s): `sec`

`TIMESUBSEC` **(14.7.95)**

Attribute(s):

Brief: "Timestamp subseconds"

Instance(s): `subsec`

Used by:

`CmdCnt0 (14.4.3)`

14.5.1 `CPUMETR` (CPU Metrics) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 192 bits (24 bytes)

Description:

Structure containing metrics for a single CPU including junction temperatue and loading statistics.

CPU Metrics (`CPUMETR`) Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	LCMCNTR: `lcm[0-2]`															
006	CPUJT: `temp`															
008	AVGLDSEC: `avgsec`															
00C	AVGLDMIN: `avgmin`															
010	MINLDMIN: `min`															
014	MAXLDMIN: `max`															

Fields:

`AVGLDMIN` **(14.7.5)**

Attribute(s):

Brief: "Average CPU Load/Min"

Instance(s): `avgmin`

Average CPU load during previous minute, expressed as a percentage between 0 and 100.

`AVGLDSEC` **(14.7.6)**

Attribute(s):

Brief: "Average CPU Load/Sec"

Instance(s): `avgsec`

Average CPU load during previous second, expressed as a percentage between 0 and 100.

`CPUJT` **(14.7.13)**

Attribute(s):

Brief: "CPU Junction Temperature"

Instance(s): `temp`

The CPU junction temperature, in degress Celcius.

`LCMCNTR` **(14.7.39)**

Attribute(s):

Brief: "LCM RAD750 Counter"

Instance(s): `lcm`

`MAXLDMIN` **(14.7.41)**

Attribute(s):

Brief: "Max CPU Load/Min"

Instance(s): `max`

Largest average CPU load during previous second, expressed as a percentage between 0 and 100, over previous minute.

`MINLDMIN` **(14.7.49)**

Attribute(s):

Brief: "Min CPU Load/Min"

Instance(s): `min`

Smallest average CPU load during previous second, expressed as a percentage between 0 and 100, over previous minute.

Used by:

`DiagEpu0Stats (14.4.12)`

14.5.2 `EBMSTATS` (EBM Event Statistics) Telemetry Struct

Definition:

Alignment: 2 bytes
Length: 208 bits (26 bytes)

Description:

Contains event transmit receive statistics from the EBM.

EBM Event Statistics (`EBMSTATS`) Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	EVTSTAT: `evts[0-12]`															

Fields:

`EVTSTAT` **(14.7.20)**

Attribute(s):

Brief: "Events Statistics"

Instance(s): `evts`

Counts event transmit/receive statistics.

Used by:

`DiagLrs0 (14.4.23)`

14.5.3 `EbmCounters` (EBM counters) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 544 bits (68 bytes)

Description:

EBM counters

EBM counters (EbmCounters) Telemetry Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	ui: sec															
004	ui: sub															
008	ui: gemR															
00C	ui: aemR															
010	ui: siu0R															
014	ui: siu1R															
018	ui: siueR															
01C	ui: epu0R															
020	ui: epu1R															
024	ui: epu2R															
028	ui: siu0S															
02C	ui: siu1S															
030	ui: siueS															
034	ui: epu0S															
038	ui: epu1S															
03C	ui: epu2S															
040	ui: ssrS															

Fields:

ui **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): aemR, epu0R, epu0S, epu1R, epu1S, epu2R, epu2S, gemR, sec, siu0R, siu0S, siu1R, siu1S, siueR, siueS, ssrS, sub

Unsigned int

Used by:

DiagGasuCounts (14.4.15)

14.5.4 FILESTATS (FILE Upload Statistics) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 192 bits (24 bytes)

Description:

Describes the FILE upload current state.

FILE Upload Statistics (FILESTATS) Telemetry Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	FILESTATE: state															
004	FILESIZECUR: cursize															
008	FILEPKTCNT: pktcnt															
00C	FILERRCODE: errcode															
010	FILERRCNT: errcnt															
014	FILEIDCOM: comid															

Fields:

FILEIDCOM **(14.7.21)**

Attribute(s):

Brief: "FILE ID Commit"

Instance(s): comid

The file ID value for commiting the file data to storage.

FILEPKTCNT **(14.7.22)**

Attribute(s):

Brief: "FILE Packet Count"

Instance(s): pktcnt

The number of vaild data packets received for the current file upload.

FILERRCNT **(14.7.23)**

Attribute(s):

Brief: "FILE Error Count"

Instance(s): errcnt

A count of the number of errors reported for the current file upload.

FILERRCODE **(14.7.24)**

Attribute(s):

Brief: "FILE Error Code"

Instance(s): `errcode`

The current file upload error indicator.

`FILESIZECUR` **(14.7.25)**

Attribute(s):

Brief: "File Size Current"

Instance(s): `cursize`

The number of data bytes received for the current file upload.

`FILESTATE` **(14.7.26)**

Attribute(s):
dsc: LHKFILESTATES (14.8.2)

Brief: "FILE Upload State"

Instance(s): `state`

The current file upload state.

Used by:

`DiagEpu0Stats (14.4.12)`

14.5.5 `GEMLRS` (GEM Low-Rate Science Counter) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 160 bits (20 bytes)

Description:

Contains 4 GEM low-rate science counter values.

GEM Low-Rate Science Counter (`GEMLRS`) Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	GEMLRSLIVE: `live`															
004	GEMPRSCL: `presc`															
008	GEMLRSDISC: `disc`															
00C	GEMLRSSENT: `sent`															
010	GEMLRSDEAD: `dead`															

Fields:

`GEMLRSDEAD` **(14.7.28)**

Attribute(s):

Brief: "GEM low-rate science dead zoned counter"

Instance(s): `dead`

The GEM maintains a counter of the number of times that a window failed to open because one or more enabled conditions occurred within the dead zone. If a condition occurs within the dead-zone, but is not enabled, the counter will not increment. If more then one enabled condition occurs simultaneously within the dead-zone, the counter increments by only one.

`GEMLRSDISC` **(14.7.29)**

Attribute(s):

Brief: "GEM low-rate science discarded counter"

Instance(s): `disc`

Window turns discarded due to busy

`GEMLRSLIVE` **(14.7.30)**

Attribute(s):

Brief: "GEM low-rate science livetime counter"

Instance(s): `live`

1/deadtime statistics

`GEMLRSSENT` **(14.7.31)**

Attribute(s):

Brief: "GEM low-rate science sent counter"

Instance(s): `sent`

Window turns which result in a sent message

`GEMPRSCL` **(14.7.32)**

Attribute(s):

Brief: "Low-rate science prescaled counter"

Instance(s): `presc`

Window turns discarded due to prescaling

Used by:

`DiagLrs0 (14.4.23)`

14.5.6 `GemCounters` (GEM counters) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 256 bits (32 bytes)

Description:

GEM counters

GEM counters `(GemCounters)` Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	ui: `sec`															
004	ui: `sub`															
008	ui: `timebase`															
00C	ui: `livetime`															
010	ui: `prescale`															
014	ui: `discard`															
018	ui: `sent`															
01C	ui: `deadZone`															

Fields:

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `deadZone`, `discard`, `livetime`, `prescale`, `sec`, `sent`, `sub`, `timebase`

Unsigned int

Used by:

`DiagGasuCounts (14.4.15)`

14.5.7 `Latc` (LATC status) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 800 bits (100 bytes)

Description:

Summary information about recent LATC activities (who apllied and/or verified what, when, and why).

LATC status (`Latc`) Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	Padui32: `spare1[0-3]`															
010	Paduc8: `spare2[0-2]`															
	uc: `dirty`															
014	uc: `appSource`								Paduc8: `spare3[0-2]`							
018	ui: `appRunId`															
01C	ui: `appTimeSec`															
020	ui: `appTimeSub`															
024	ui: `appStatus`															
028	ui: `appConfig`															
02C	Padui32: `spare4[0-3]`															
03C	uc: `verSource`								Paduc8: `spare5[0-2]`							
040	ui: `verRunId`															
044	ui: `verTimeSec`															
048	ui: `verTimeSub`															
04C	ui: `verStatus`															
050	ui: `verConfig`															
054	ui: `verIgnore`															
058	Padui32: `spare6[0-2]`															

Fields:

`Paduc8` **(14.7.64)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned char"

Instance(s): `spare2`, `spare3`, `spare5`

Explicit 8 bit pad in unsigned char

`Padui32` **(14.7.70)**

Attribute(s):

Brief: "Explicit 32 bit pad in unsigned int"

Instance(s): `spare1`, `spare4`, `spare6`

Explicit 32 bit pad in unsigned int

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `appSource`, `dirty`, `verSource`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `appConfig`, `appRunId`, `appStatus`, `appTimeSec`, `appTimeSub`, `verConfig`, `verIgnore`, `verRunId`, `verStatus`, `verTimeSec`, `verTimeSub`

Unsigned int

Used by:

`DiagLatcStatus (14.4.17)`

14.5.8 `LciContrib` (LCI's contribution to the LIM status packet) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 288 bits (36 bytes)

Description:

LCI's contribution to the LIM status packet

LCI's contribution to the LIM status packet (LciContrib) Telemetry Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	ui: runId															
004	ui: startSec															
008	ui: startSub															
00C	ui: endSec															
010	ui: endSub															
014	ui: status															
018	ui: latcFid															
01C	ui: cfgFid															
020	ui: spare															

Fields:

ui **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): cfgFid, endSec, endSub, latcFid, runId, spare, startSec, startSub, status

Unsigned int

Used by:

DiagLimStatus (14.4.18)

14.5.9 LimContrib (LIM's contribution to the LIM status packet) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 224 bits (28 bytes)

Description:

LIM's contribution to the LIM status packet

LIM's contribution to the LIM status packet (LimContrib) Telemetry Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	ui: status															
004	us: action															
006	uc: opMode								uc: virtMode							
008	uc: saaTransit								uc: LciState							
00A	uc: LdfState								uc: LpaState							
00C	ui: tooSecsLeft															
010	ui: arrSecsLeft															
014	ui: gbmDisableSecsLeft															
018	TOOSTATEBF: too								ARRSTATEBF: arr							
01A	GBMCONFIGBF: gbm								HVCONFIGBF: hv							

Fields:

ARRSTATEBF **(14.6.2)**

Attribute(s):

Brief: "ARR State Bitfield"

Instance(s): arr

Bitfield containing the current ARR observation state.

GBMCONFIGBF **(14.6.17)**

Attribute(s):

Brief: "GBM Interface Configuration Bitfield"

Instance(s): gbm

Bitfield containing the current configuration of the GBM interface.

HVCONFIGBF **(14.6.18)**

Attribute(s):

Brief: "High-Voltage Interface Configuration Bitfield"

Instance(s): hv

Bitfield containing the current configuration of the ACD high-voltage interface.

`TOOSTATEBF` **(14.6.30)**

Attribute(s):

Brief: "TOO State Bitfield"

Instance(s): `too`

Bitfield containing the current TOO observation state.

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `LciState`, `LdfState`, `LpaState`, `opMode`, `saaTransit`, `virtMode`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `arrSecsLeft`, `gbmDisableSecsLeft`, `status`, `tooSecsLeft`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `action`

Unsigned short

Used by:

`DiagLimStatus (14.4.18)`

14.5.10 `LpaContrib` (LPA's contribution to the LIM status packet) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 288 bits (36 bytes)

Description:

LPA's contribution to the LIM status packet

LPA's contribution to the LIM status packet `(LpaContrib)` Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	ui: `runId`															
004	ui: `startSec`															
008	ui: `startSub`															
00C	ui: `endSec`															
010	ui: `endSub`															
014	ui: `status`															
018	ui: `latcUseFid`															
01C	ui: `latcIgnoreFid`															
020	uc: `dbId`								uc: `mode`							
022	us: `spare`															

Fields:

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `dbId`, `mode`

Unsigned char

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `endSec`, `endSub`, `latcIgnoreFid`, `latcUseFid`, `runId`, `startSec`, `startSub`, `status`

Unsigned int

`us` **(14.7.113)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `spare`

Unsigned short

Used by:

`DiagLimStatus (14.4.18)`

14.5.11 `MEMSTATS` (MEM Statistics) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 384 bits (48 bytes)

Description:

Contains statistics for the MEM task.

MEM Statistics (`MEMSTATS`) Telemetry Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	MLDSTAT: `ldstat`															
004	MLDACT: `ldact`															
008	MLDSTADR: `ldstart`															
00C	MLDBYTS: `ldbytes`															
010	MLDOFF: `ldoffset`															
014	MDPSTAT: `dmpstat`															
018	MDPACT: `dmpact`															
01C	MDPSTADR: `dmpstart`															
020	MDPBYTS: `dmpbytes`															
024	MDPADDR: `dmpaddr`															
028	MDPFCD: `dmpfcode`															
02C	MDPTXID: `dmptid`															

Fields:

`MDPACT` **(14.7.42)**

Attribute(s):

Brief: "Memory dump active"

Instance(s): `dmpact`

Nonzero if dump is active.

`MDPADDR` **(14.7.43)**

Attribute(s):

Brief: "Memory dump address"

Instance(s): `dmpaddr`

Current dump address.

`MDPBYTS` **(14.7.44)**

Attribute(s):

Brief: "Memory dump bytes"

Instance(s): `dmpbytes`

Total number of bytes to dump.

`MDPFCD` **(14.7.45)**

Attribute(s):

Brief: "Memory dump function code"

Instance(s): `dmpfcode`

Function code for current dump.

`MDPSTADR` **(14.7.46)**

Attribute(s):

Brief: "Memory dump start address"

Instance(s): `dmpstart`

Starting dump address.

`MDPSTAT` **(14.7.47)**

Attribute(s):

Brief: "Memory dump status"

Instance(s): `dmpstat`

Status of most recent dump action.

`MDPTXID` **(14.7.48)**

Attribute(s):

Brief: "Memory dump transaction ID"

Instance(s): `dmptid`

Transaction ID for current dump.

`MLDACT` **(14.7.50)**

Attribute(s):

Brief: "Memory load active flag"

Instance(s): `ldact`

Nonzero if load is active

`MLDBYTS` **(14.7.51)**

Attribute(s):

Brief: "Memory load total bytes"

Instance(s): `ldbytes`

Total number of bytes to load.

`MLDOFF` **(14.7.52)**

Attribute(s):

Brief: "Memory load offset"

Instance(s): `ldoffset`

Current load offset.

`MLDSTADR` **(14.7.53)**

Attribute(s):

Brief: "Starting memory load address"

Instance(s): `ldstart`

`MLDSTAT` **(14.7.54)**

Attribute(s):

Brief: "Status of most recent load action"

Instance(s): `ldstat`

Used by:

`DiagEpu0Stats (14.4.12)`

14.5.12 `RTSTATS` (1553 Remote Terminal Statistics) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 320 bits (40 bytes)

Description:

Contains the 1553 RT driver statistics.

1553 Remote Terminal Statistics (`RTSTATS`) Telemetry Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	RTERR: `err`															
004	INTRCNT: `intr`															
008	CRXPCNT: `cxp`															
00C	CRXBCNT: `cxb`															
010	CTXPCNT: `txp`															
014	CTXBCNT: `txb`															
018	HKPCNT: `hkp`															
01C	HKBCNT: `hkb`															
020	TLMPCNT: `tlmp`															
024	TLMBCNT: `tlmb`															

Fields:

`CRXBCNT` **(14.7.14)**

Attribute(s):

Brief: "1553 Cmd Rx Byte Count"

Instance(s): `cxb`

A count of the number of CmdRx bytes received by the remote terminal

`CRXPCNT` **(14.7.15)**

Attribute(s):

Brief: "1553 Cmd Rx Packet Count"

Instance(s): `cxp`

A count of the number of CmdRx packets received by the remote terminal

`CTXBCNT` **(14.7.16)**

Attribute(s):

Brief: "1553 Cmd Tx Byte Count"

Instance(s): `txb`

A count of the number of CmdTx bytes sent by the remote terminal.

`CTXPCNT` **(14.7.17)**

Attribute(s):

Brief: "1553 Cmd Tx Packet Count"

Instance(s): `txp`

A count of the number of CmdTx packets sent by the remote terminal

`HKBCNT` **(14.7.34)**

Attribute(s):

Brief: "1553 Housekeeping Byte Count"

Instance(s): `hkb`

A count of the number of HKP bytes sent by the remote terminal

`HKPCNT` **(14.7.35)**

Attribute(s):

Brief: "1553 Housekeeping Packet Count"

Instance(s): `hkp`

A count of the number of HKP packets sent by the remote terminal

`INTRCNT` **(14.7.37)**

Attribute(s):

Brief: "1553 Interrupts"

Instance(s): `intr`

A count of the number of remote terminal device interrupts.

`RTERR` **(14.7.81)**

Attribute(s):

Brief: "1553 Error Count"

Instance(s): `err`

A count of the number of remote terminal errors.

`TLMBCNT` **(14.7.96)**

Attribute(s):

Brief: "1553 Telemertry Byte Count"

Instance(s): `tlmb`

A count of the number of Telem bytes sent by the remote terminal (not HKP).

`TLMPCNT` **(14.7.97)**

Attribute(s):

Brief: "1553 Telemetry Packet Count"

Instance(s): `tlmp`

A count of the number of Telem packets sent by the remote terminal (not HKP).

Used by:

`CtdbCounts (14.4.5)`

14.5.13 `ScrubStatus` (Status of the memory scrubbing subsystem) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 96 bits (12 bytes)

Description:

Status of the memory scrubbing subsystem

Status of the memory scrubbing subsystem (`ScrubStatus`) Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	ui: `start`															
004	ui: `end`															
008	ui: `period`															

Fields:

`ui` **(14.7.112)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `end`, `period`, `start`

Unsigned int

Used by:

`DiagStatusEpu0 (14.4.39)`

14.5.14 `TRCTOPS` (TRC Top Monitor Result) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 704 bits (88 bytes)

Description:

TRC Top Monitor Result (TRCTOPS) Telemetry Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**FREQ:** freq															
004	**SERIAL:** serial															
008	**TRCENDMSW:** endmsw															
00C	**TRCENDLSW:** endlsw															
010	**TRCDTIM:** dtime															
014	**TRCEX5:** ex5															
016	**TRCEX9:** ex9															
018	**TRCTOP:** top[0-63]															

Fields:

FREQ **(14.7.27)**

Attribute(s):

Brief: "Processor Frequency"

Instance(s): freq

SERIAL **(14.7.86)**

Attribute(s):

Brief: "CPU Serial Number"

Instance(s): serial

TRCDTIM **(14.7.98)**

Attribute(s):

Brief: "TRC Sampling Period Duration in usec"

Instance(s): dtime

TRCENDLSW **(14.7.99)**

Attribute(s):

Brief: "TRC Sampling Period End Time LSW"

Instance(s): endlsw

`TRCENDMSW` **(14.7.100)**

Attribute(s):

Brief: "TRC Sampling Period End Time MSW"

Instance(s): `endmsw`

`TRCEX5` **(14.7.101)**

Attribute(s):

Brief: "TRC Exception 5 Interrupt Rate"

Instance(s): `ex5`

`TRCEX9` **(14.7.102)**

Attribute(s):

Brief: "TRC Exception 9 Interrupt Rate"

Instance(s): `ex9`

`TRCTOP` **(14.7.103)**

Attribute(s):

Brief: "TRC CPU Fraction per Task/Exception"

Instance(s): `top`

Used by:

`DiagTopEpu0 (14.4.65)`

14.6 Telemetry Bitfields

14.6.0 `ADC` (An ADC result) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

A compound of ADC readout and limit evaluation

Start	Stop	Size	Item Type and Name
0	2	3	`ADClimit limit`
3	3	1	`status status`
4	15	12	`ADCvalue value`

Fields:

`ADClimit` **(14.7.2)**

Attribute(s):
dsc: LHKADCLMTSTATES (14.8.0)

Brief: "ADC limit evaluation"

Instance(s): `limit`

The result of comparing an ADC value against limits.

`ADCvalue` **(14.7.3)**

Attribute(s):

Brief: "Raw ADC value"

Instance(s): `value`

Raw ADC value

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

Used by:

`AemEnv0 (14.4.0)`

14.6.1 `AEMFREEPWR` (AEM FREE board power state register) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Contains the state of the FREE board power switches in the AEM.

Start	Stop	Size	Item Type and Name
0	2	3	`Paduc3 pad`
3	3	1	`status status`
4	4	1	`switch free11`
5	5	1	`switch free10`
6	6	1	`switch free9`
7	7	1	`switch free8`
8	8	1	`switch free7`
9	9	1	`switch free6`
10	10	1	`switch free5`
11	11	1	`switch free4`
12	12	1	`switch free3`
13	13	1	`switch free2`
14	14	1	`switch free1`
15	15	1	`switch free0`

Fields:

`Paduc3` **(14.7.60)**

Attribute(s):

Brief: "Explicit 3 bit pad in unsigned char"

Instance(s): `pad`

Explicit 3 bit pad in unsigned char

`status` **(14.7.108)**

Attribute(s):

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

`switch` **(14.7.109)**

Attribute(s):
dsc: LHKSWITCHSTATES (14.8.5)

Brief: "A switch (usually a power switch)"

Instance(s): `free0`, `free1`, `free10`, `free11`, `free2`, `free3`, `free4`, `free5`, `free6`, `free7`, `free8`, `free9`

A switch (usually a power switch)

Used by:

`AemEnv0 (14.4.0)`

14.6.2 `ARRSTATEBF` (ARR State Bitfield) Telemetry Bitfield

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Bitfield containing the current ARR observation state.

Start	Stop	Size	Item Type and Name
0	1	2	`Paduc2 pad`
2	2	1	`PENDING rep_req_pending`
3	5	3	`GRBSTATE grb_state`
6	6	1	`ACTIVE active`
7	7	1	`READY ready`

Fields:

`ACTIVE` **(14.7.1)**

Attribute(s):

Brief: "Active Status"

Instance(s): `active`

Flag to indicate that an activity is active.

`GRBSTATE` **(14.7.33)**

Attribute(s):

Brief: "GRB State"

Instance(s): `grb_state`

Current state of the GRB handler (0=idle, 4=GRB0, 5=GRB1, 6=GRB2).

`Paduc2` **(14.7.59)**

Attribute(s):

Brief: "Explicit 2 bit pad in unsigned char"

Instance(s): `pad`

Explicit 3 bit pad in unsigned char

`PENDING` **(14.7.57)**

Attribute(s):

Brief: "Pending Status"

Instance(s): `rep_req_pending`

Flag to indicate that an operation is pending.

`READY` **(14.7.79)**

Attribute(s):

Brief: "Ready Status"

Instance(s): `ready`

Flag to indicate that an activity is ready to be started.

Used by:

`LimContrib (14.5.9)`

14.6.3 `CRUcommand` (Contents of the CRU command enable register) Telemetry Bitfield

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Contents of the CRU command enable register

Start	Stop	Size	Item Type and Name
0	0	1	`status status`
1	1	1	`Padui1 spare0`
2	2	1	`enable epu2`
3	3	1	`enable epu1`
4	4	1	`enable epu0`
5	5	1	`enable siu1`
6	6	1	`enable siu0`
7	7	1	`enable siuE`
8	10	3	`Padui3 spare1`
11	11	1	`enable pdu1`
12	12	1	`enable pdu0`
13	13	1	`enable ebm`
14	14	1	`enable aem`
15	15	1	`enable gem`
16	16	1	`enable temf`
17	17	1	`enable teme`
18	18	1	`enable temd`
19	19	1	`enable temc`
20	20	1	`enable temb`
21	21	1	`enable tema`
22	22	1	`enable tem9`
23	23	1	`enable tem8`
24	24	1	`enable tem7`
25	25	1	`enable tem6`
26	26	1	`enable tem5`
27	27	1	`enable tem4`
28	28	1	`enable tem3`
29	29	1	`enable tem2`
30	30	1	`enable tem1`
31	31	1	`enable tem0`

Fields:

`enable` **(14.7.106)**

Attribute(s):

Brief: "An enable bit (disabled/enabled)"

Instance(s): `tem0`

An enable bit (disabled/enabled)

`enable` **(14.7.106)**

Attribute(s):
dsc: LHKENABLESTATES (14.8.1)

Brief: "An enable bit (disabled/enabled)"

Instance(s): `aem`, `ebm`, `epu0`, `epu1`, `epu2`, `gem`, `pdu0`, `pdu1`, `siu0`, `siu1`, `siuE`, `tem1`, `tem2`, `tem3`, `tem4`, `tem5`, `tem6`, `tem7`, `tem8`, `tem9`, `tema`, `temb`, `temc`, `temd`, `teme`, `temf`

An enable bit (disabled/enabled)

`Padui1` **(14.7.65)**

Attribute(s):

Brief: "Explicit 1 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 1 bit pad in unsigned int

`Padui3` **(14.7.69)**

Attribute(s):
dsc: LHKENABLESTATES (14.8.1)

Brief: "Explicit 3 bit pad in unsigned int"

Instance(s): `spare1`

Explicit 3 bit pad in unsigned int

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

Same as:

`CRUresponse (14.6.5)`

Used by:

`DiagPigStatus (14.4.37)`

14.6.4 `CRUconfig` (Configuration bits read from the CRU) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Contents of the CRU configuration register

Start	Stop	Size	Item Type and Name
0	0	1	`status status`
1	7	7	`Padui7 spare0`
8	15	8	`uc version`
16	23	8	`Padui8 spare1`
24	26	3	`Padui3 spare2`
27	27	1	`enable evenParityCell`
28	28	1	`enable evenParityHeader`
29	29	1	`select gbm`
30	30	1	`select pps`
31	31	1	`enable internal_pps`

Fields:

`enable` **(14.7.106)**

Attribute(s):
dsc: LHKENABLESTATES (14.8.1)

Brief: "An enable bit (disabled/enabled)"

Instance(s): `evenParityCell`, `evenParityHeader`, `internal_pps`

An enable bit (disabled/enabled)

`Padui3` **(14.7.69)**

Attribute(s):

Brief: "Explicit 3 bit pad in unsigned int"

Instance(s): `spare2`

Explicit 3 bit pad in unsigned int

`Padui7` **(14.7.71)**

Attribute(s):

Brief: "Explicit 7 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 7 bit pad in unsigned int

`Padui8` **(14.7.72)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned int"

Instance(s): `spare1`

Explicit 8 bit pad in unsigned int

`select` **(14.7.107)**

Attribute(s):
dsc: LHKSELECTSTATES (14.8.3)

Brief: "Primary/redundant selector"

Instance(s): `gbm`, `pps`

Primary/redundant selector

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `version`

Unsigned char

Used by:

`DiagPigStatus (14.4.37)`

14.6.5 `CRUresponse` (Contents of the CRU response enable register) Telemetry Bitfield

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Contents of the CRU response enable register

Start	Stop	Size	Item Type and Name
0	0	1	`status status`
1	1	1	`Padui1 spare0`
2	2	1	`enable epu2`
3	3	1	`enable epu1`
4	4	1	`enable epu0`
5	5	1	`enable siu1`
6	6	1	`enable siu0`
7	7	1	`enable siuE`
8	10	3	`Padui3 spare1`
11	11	1	`enable pdu1`
12	12	1	`enable pdu0`
13	13	1	`enable ebm`
14	14	1	`enable aem`
15	15	1	`enable gem`
16	16	1	`enable temf`
17	17	1	`enable teme`
18	18	1	`enable temd`
19	19	1	`enable temc`
20	20	1	`enable temb`
21	21	1	`enable tema`
22	22	1	`enable tem9`
23	23	1	`enable tem8`
24	24	1	`enable tem7`
25	25	1	`enable tem6`
26	26	1	`enable tem5`
27	27	1	`enable tem4`
28	28	1	`enable tem3`
29	29	1	`enable tem2`
30	30	1	`enable tem1`
31	31	1	`enable tem0`

Fields:

`enable` **(14.7.106)**

Attribute(s):
dsc: LHKENABLESTATES (14.8.1)

Brief: "An enable bit (disabled/enabled)"

Instance(s): `aem`, `ebm`, `epu0`, `epu1`, `epu2`, `gem`, `pdu0`, `pdu1`, `siu0`, `siu1`, `siuE`, `tem0`, `tem1`, `tem2`, `tem3`, `tem4`, `tem5`, `tem6`, `tem7`, `tem8`, `tem9`, `tema`, `temb`, `temc`, `temd`, `teme`, `temf`

An enable bit (disabled/enabled)

`Padui1` **(14.7.65)**

Attribute(s):

Brief: "Explicit 1 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 1 bit pad in unsigned int

`Padui3` **(14.7.69)**

Attribute(s):

Brief: "Explicit 3 bit pad in unsigned int"

Instance(s): `spare1`

Explicit 3 bit pad in unsigned int

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

Same as:

`CRUcommand (14.6.3)`

Used by:

`DiagPigStatus (14.4.37)`

14.6.6 `ConfigLPA` (Parameter set associated with a handler, per mode) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Parameter set associated with a handler, per mode

Start	Stop	Size	Item Type and Name
0	3	4	`LPAparameter mode0`
4	7	4	`LPAparameter mode1`
8	11	4	`LPAparameter mode2`
12	15	4	`LPAparameter mode3`
16	19	4	`LPAparameter mode4`
20	23	4	`LPAparameter mode5`
24	27	4	`LPAparameter mode6`
28	31	4	`LPAparameter mode7`

Fields:

`LPAparameter` **(14.7.40)**

Attribute(s):

Brief: "Filter handler parameter set"

Instance(s): `mode0`, `mode1`, `mode2`, `mode3`, `mode4`, `mode5`, `mode6`, `mode7`

Filter handler parameter set

Used by:

`DiagLpaDb0Epu0 (14.4.19)`

14.6.7 `ConfigPID` (Structure to capture rad750 input PID states) Telemetry Bitfield

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Structure to capture rad750 input PID states

Start	Stop	Size	Item Type and Name
0	4	5	`Paduc5 rsv`
5	5	1	`PID pid2`

6	6	1	`PID pid1`
7	7	1	`PID pid0`

Fields:

`Paduc5` **(14.7.61)**

Attribute(s):

Brief: "Explicit 5 bit pad in unsigned char"

Instance(s): `rsv`

Explicit 5 bit pad in unsigned char

`PID` **(14.7.58)**

Attribute(s):

Brief: "PID status"

Instance(s): `pid0`, `pid1`, `pid2`

Contains the status of a RAD750 programmable input discrete

Used by:

`DiagSiuStats (14.4.38)`

14.6.8 `ConfigTHS` (Structure to capture the THS imulation bits) Telemetry Bitfield

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Structure to capture the THS imulation bits

Start	Stop	Size	Item Type and Name
0	5	6	`Paduc6 rsv`
6	6	1	`THS pps`
7	7	1	`THS tt`

Fields:

`Paduc6` **(14.7.62)**

Attribute(s):

Brief: "Explicit 6 bit pad in unsigned char"

Instance(s): `rsv`

Explicit 6 bit pad in unsigned char

`THS` **(14.7.93)**

Attribute(s):

Brief: "Status of time-hack services simulation"

Instance(s): `pps`, `tt`

Status of time-hack services simulation

Used by:

`DiagStatusEpu0 (14.4.39)`

14.6.9 `EBMaddress` (Contents of the EBM address register) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Contents of the EBM address register

Start	Stop	Size	Item Type and Name
0	0	1	`status status`
1	7	7	`Padui7 spare0`
8	15	8	`Padui8 spare1`
16	23	8	`Padui8 spare2`
24	31	8	`uc address`

Fields:

`Padui7` **(14.7.71)**

Attribute(s):

Brief: "Explicit 7 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 7 bit pad in unsigned int

`Padui8` **(14.7.72)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned int"

Instance(s): `spare1`, `spare2`

Explicit 8 bit pad in unsigned int

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `address`

Unsigned char

Used by:

`DiagPigStatus (14.4.37)`

14.6.10 `EBMbackConfig` (Contents of the EBM back-end configuration register) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Contents of the EBM back-end configuration register

Start Stop Size Item Type and Name

0	0	1	`status status`
1	7	7	`Padui7 spare0`
8	15	8	`uc version`
16	23	8	`Padui8 spare1`
24	24	1	`enable ssrHeader`
25	25	1	`enable evenParityDatCel`
26	26	1	`enable evenParityDatHdr`
27	27	1	`enable evenParityEvtCel`
28	28	1	`enable evenParityEvtHdr`
29	29	1	`enable evenParityRspCel`
30	30	1	`enable evenParityRspHdr`
31	31	1	`enable ssrSelect`

Fields:

`enable` **(14.7.106)**

Attribute(s):
dsc: LHKENABLESTATES (14.8.1)

Brief: "An enable bit (disabled/enabled)"

Instance(s): `evenParityDatCel`, `evenParityDatHdr`, `evenParityEvtCel`, `evenParityEvtHdr`, `evenParityRspCel`, `evenParityRspHdr`, `ssrHeader`

An enable bit (disabled/enabled)

`enable` **(14.7.106)**

Attribute(s):
dsc: LHKSELECTSTATES (14.8.3)

Brief: "An enable bit (disabled/enabled)"

Instance(s): `ssrSelect`

An enable bit (disabled/enabled)

`Padui7` **(14.7.71)**

Attribute(s):

Brief: "Explicit 7 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 7 bit pad in unsigned int

`Padui8` **(14.7.72)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned int"

Instance(s): `spare1`

Explicit 8 bit pad in unsigned int

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `version`

Unsigned char

Used by:

`DiagPigStatus (14.4.37)`

14.6.11 `EBMcontrib` (Contents of the EBM contributors register) Telemetry Bitfield

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Contents of the EBM contributors register

Start	Stop	Size	Item Type and Name
0	0	1	`status status`
1	7	7	`Paduc7 spare0`

8	8	1	`enable epu2`
9	9	1	`enable epu1`
10	10	1	`enable epu0`
11	11	1	`enable siu1`
12	12	1	`enable siu0`
13	13	1	`enable siuE`
14	14	1	`enable aem`
15	15	1	`enable temf`
16	16	1	`enable teme`
17	17	1	`enable temd`
18	18	1	`enable temc`
19	19	1	`enable temb`
20	20	1	`enable tema`
21	21	1	`enable tem9`
22	22	1	`enable tem8`
23	23	1	`enable tem7`
24	24	1	`enable tem6`
25	25	1	`enable tem5`
26	26	1	`enable tem4`
27	27	1	`enable tem3`
28	28	1	`enable tem2`
29	29	1	`enable tem1`
30	30	1	`enable tem0`
31	31	1	`enable gem`

Fields:

`enable` **(14.7.106)**

Attribute(s):
dsc: LHKENABLESTATES (14.8.1)

Brief: "An enable bit (disabled/enabled)"

Instance(s): `aem`, `epu0`, `epu1`, `epu2`, `gem`, `siu0`, `siu1`, `siuE`, `tem0`, `tem1`, `tem2`, `tem3`, `tem4`, `tem5`, `tem6`, `tem7`, `tem8`, `tem9`, `tema`, `temb`, `temc`, `temd`, `teme`, `temf`

An enable bit (disabled/enabled)

`Paduc7` **(14.7.63)**

Attribute(s):

Brief: "Explicit 7 bit pad in unsigned char"

Instance(s): `spare0`

Explicit 7 bit pad in unsigned char

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

Same as:

`EBMinput (14.6.15)`

Used by:

`DiagPigStatus (14.4.37)`

14.6.12 `EBMdestination` (Contents of the EBM destination enable register) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Contents of the EBM destination enable register

Start	Stop	Size	Item Type and Name
0	0	1	`status status`
1	1	1	`Padui1 spare0`
2	2	1	`enable epu2DatBcst`
3	3	1	`enable epu1DatBcst`
4	4	1	`enable epu0DatBcst`
5	5	1	`enable siu1DatBcst`
6	6	1	`enable siu0DatBcst`
7	7	1	`enable siuEDatBcst`
8	15	8	`Padui8 spare1`
16	17	2	`Padui2 spare2`
18	18	1	`enable epu2EvtBcst`
19	19	1	`enable epu1EvtBcst`
20	20	1	`enable epu0EvtBcst`
21	21	1	`enable siu1EvtBcst`
22	22	1	`enable siu0EvtBcst`
23	23	1	`enable siuEEvtBcst`
24	25	2	`Padui2 spare3`
26	26	1	`enable epu2EvtRR`
27	27	1	`enable epu1EvtRR`
28	28	1	`enable epu0EvtRR`
29	29	1	`enable siu1EvtRR`
30	30	1	`enable siu0EvtRR`
31	31	1	`enable siuEEvtRR`

Fields:

`enable` **(14.7.106)**

Attribute(s):
dsc: LHKENABLESTATES (14.8.1)

Brief: "An enable bit (disabled/enabled)"

Instance(s): `epu0DatBcst`, `epu0EvtBcst`, `epu0EvtRR`, `epu1DatBcst`, `epu1EvtBcst`, `epu1EvtRR`, `epu2DatBcst`, `epu2EvtBcst`, `epu2EvtRR`, `siu0DatBcst`, `siu0EvtBcst`, `siu0EvtRR`, `siu1DatBcst`, `siu1EvtBcst`, `siu1EvtRR`, `siuEDatBcst`, `siuEEvtBcst`, `siuEEvtRR`

An enable bit (disabled/enabled)

`Padui1` **(14.7.65)**

Attribute(s):

Brief: "Explicit 1 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 1 bit pad in unsigned int

`Padui2` **(14.7.68)**

Attribute(s):

Brief: "Explicit 2 bit pad in unsigned int"

Instance(s): `spare2`, `spare3`

Explicit 2 bit pad in unsigned int

`Padui8` **(14.7.72)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned int"

Instance(s): `spare1`

Explicit 8 bit pad in unsigned int

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

Used by:

`DiagPigStatus (14.4.37)`

14.6.13 `EBMfrontAConfig` (Contents of the EBM front-end A configuration register) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Contents of the EBM front-end A configuration register

Start	Stop	Size	Item Type and Name
0	0	1	`status status`
1	7	7	`Padui7 spare0`
8	15	8	`uc version`
16	23	8	`Paduc8 spare1`
24	31	8	`uc reloc`

Fields:

`Paduc8` **(14.7.64)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned char"

Instance(s): `spare1`

Explicit 8 bit pad in unsigned char

`Padui7` **(14.7.71)**

Attribute(s):

Brief: "Explicit 7 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 7 bit pad in unsigned int

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `reloc`, `version`

Unsigned char

Used by:

`DiagPigStatus (14.4.37)`

14.6.14 `EBMfrontBConfig` (Contents of the EBM front-end B configuration register) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Contents of the EBM front-end B configuration register

Start	Stop	Size	Item Type and Name
0	0	1	`status status`
1	7	7	`Padui7 spare0`
8	15	8	`uc version`
16	23	8	`Padui8 spare1`
24	31	8	`uc reloc`

Fields:

`Padui7` **(14.7.71)**

Attribute(s):

Brief: "Explicit 7 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 7 bit pad in unsigned int

`Padui8` **(14.7.72)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned int"

Instance(s): `spare1`

Explicit 8 bit pad in unsigned int

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

`uc` **(14.7.111)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `reloc`, `version`

Unsigned char

Used by:

`DiagPigStatus (14.4.37)`

14.6.15 `EBMinput` (Contents of the EBM input enable register) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Contents of the EBM input enable register

Start	Stop	Size	Item Type and Name
0	0	1	`status status`
1	7	7	`Paduc7 spare0`
8	8	1	`enable epu2`
9	9	1	`enable epu1`
10	10	1	`enable epu0`
11	11	1	`enable siu1`
12	12	1	`enable siu0`
13	13	1	`enable siuE`
14	14	1	`enable aem`
15	15	1	`enable temf`
16	16	1	`enable teme`
17	17	1	`enable temd`
18	18	1	`enable temc`
19	19	1	`enable temb`
20	20	1	`enable tema`
21	21	1	`enable tem9`
22	22	1	`enable tem8`
23	23	1	`enable tem7`
24	24	1	`enable tem6`
25	25	1	`enable tem5`
26	26	1	`enable tem4`
27	27	1	`enable tem3`
28	28	1	`enable tem2`
29	29	1	`enable tem1`
30	30	1	`enable tem0`
31	31	1	`enable gem`

Fields:

`enable` **(14.7.106)**

Attribute(s):
dsc: LHKENABLESTATES (14.8.1)

Brief: "An enable bit (disabled/enabled)"

Instance(s): `aem`, `epu0`, `epu1`, `epu2`, `gem`, `siu0`, `siu1`, `siuE`, `tem0`, `tem1`, `tem2`, `tem3`, `tem4`, `tem5`, `tem6`, `tem7`, `tem8`, `tem9`, `tema`, `temb`, `temc`, `temd`, `teme`, `temf`

An enable bit (disabled/enabled)

`Paduc7` **(14.7.63)**

Attribute(s):

Brief: "Explicit 7 bit pad in unsigned char"

Instance(s): `spare0`

Explicit 7 bit pad in unsigned char

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

Same as:

`EBMcontrib (14.6.11)`

Used by:

`DiagPigStatus (14.4.37)`

14.6.16 `EBMtimeout` (Contents of the EBM timeout register) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Contents of the EBM timeout register

Start	Stop	Size	Item Type and Name
0	0	1	`status status`
1	14	14	`Padui14 spare0`
15	31	17	`timeout timeout`

Fields:

`Padui14` **(14.7.66)**

Attribute(s):

Brief: "Explicit 14 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 14 bit pad in unsigned int

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `status`

Readout status. If set, read out failed for the designated ADC/switch.

`timeout` **(14.7.110)**

Attribute(s):

Brief: "EBM timeout (17 bits)"

Instance(s): `timeout`

EBM timeout (17 bits)

Used by:

`DiagPigStatus (14.4.37)`

14.6.17 `GBMCONFIGBF` (GBM Interface Configuration Bitfield) Telemetry Bitfield

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Bitfield containing the current configuration of the GBM interface.

Start	Stop	Size	Item Type and Name
0	4	5	`Paduc5 pad`
5	5	1	`ALLOWED pri_int_allowed`
6	6	1	`ALLOWED red_int_allowed`
7	7	1	`ALLOWED rep_req_allowed`

Fields:

`ALLOWED` **(14.7.4)**

Attribute(s):

Brief: "Allowed Status"

Instance(s): `pri_int_allowed`, `red_int_allowed`, `rep_req_allowed`

Flag to indicate if an action is allowed.

`Paduc5` **(14.7.61)**

Attribute(s):

Brief: "Explicit 5 bit pad in unsigned char"

Instance(s): `pad`

Explicit 5 bit pad in unsigned char

Used by:

`LimContrib (14.5.9)`

14.6.18 `HVCONFIGBF` (High-Voltage Interface Configuration Bitfield) Telemetry Bitfield

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Bitfield containing the current configuration of the ACD high-voltage interface.

Start	Stop	Size	Item Type and Name
0	6	7	`Paduc7 pad`
7	7	1	`ALLOWED hv_allowed`

Fields:

`ALLOWED` **(14.7.4)**

Attribute(s):

Brief: "Allowed Status"

Instance(s): `hv_allowed`

Flag to indicate if an action is allowed.

`Paduc7` **(14.7.63)**

Attribute(s):

Brief: "Explicit 7 bit pad in unsigned char"

Instance(s): `pad`

Explicit 7 bit pad in unsigned char

Used by:

`LimContrib (14.5.9)`

14.6.19 `HeaterCommand` (Current heater command and LTC control mode) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

For the heater bits, a value of '0' indicates that LTC is commanding the heater off. A value of '1' indicates that LTC is commanding the heater on. These heater commands are applied only when LTC is in active control mode.

Start	Stop	Size	Item Type and Name
0	0	1	`ControlMode cntlMode`
1	3	3	`Padus3 pad3`
4	4	1	`HeaterMask htr11`
5	5	1	`HeaterMask htr10`
6	6	1	`HeaterMask htr9`
7	7	1	`HeaterMask htr8`
8	8	1	`HeaterMask htr7`
9	9	1	`HeaterMask htr6`
10	10	1	`HeaterMask htr5`
11	11	1	`HeaterMask htr4`
12	12	1	`HeaterMask htr3`
13	13	1	`HeaterMask htr2`
14	14	1	`HeaterMask htr1`
15	15	1	`HeaterMask htr0`

Fields:

`ControlMode` **(14.7.18)**

Attribute(s):

Brief: "LTC control mode"

Instance(s): `cntlMode`

A bit value of '0' indicates passive control mode. A bit value of '1' indicates active control mode.

`HeaterMask` **(14.7.36)**

Attribute(s):

Brief: "Mask for VCHP heater control/state"

Instance(s): `htr0`, `htr1`, `htr10`, `htr11`, `htr2`, `htr3`, `htr4`, `htr5`, `htr6`, `htr7`, `htr8`, `htr9`

`Padus3` **(14.7.76)**

Attribute(s):

Brief: "Explicit 3 bit pad in unsigned short"

Instance(s): `pad3`

Explicit 3 bit pad in unsigned short

Used by:

`DiagLtcData0 (14.4.24)`

14.6.20 `HeaterMode` (Control mode for VCHP heaters.) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

A bit value of '0' indicates that the heater is under manual, user control. A bit value of '1' indicates that the heater is under automatic, algorithm control.

Start	Stop	Size	Item Type and Name
0	3	4	`Padus4 pad4`
4	4	1	`HeaterMask htr11`
5	5	1	`HeaterMask htr10`
6	6	1	`HeaterMask htr9`
7	7	1	`HeaterMask htr8`
8	8	1	`HeaterMask htr7`
9	9	1	`HeaterMask htr6`
10	10	1	`HeaterMask htr5`
11	11	1	`HeaterMask htr4`

12	12	1	`HeaterMask htr3`
13	13	1	`HeaterMask htr2`
14	14	1	`HeaterMask htr1`
15	15	1	`HeaterMask htr0`

Fields:

`HeaterMask` **(14.7.36)**

Attribute(s):

Brief: "Mask for VCHP heater control/state"

Instance(s): `htr0`, `htr1`, `htr10`, `htr11`, `htr2`, `htr3`, `htr4`, `htr5`, `htr6`, `htr7`, `htr8`, `htr9`

`Padus4` **(14.7.77)**

Attribute(s):

Brief: "Explicit 4 bit pad in unsigned short"

Instance(s): `pad4`

Explicit 4 bit pad in unsigned short

Used by:

`DiagLtcData0 (14.4.24)`

14.6.21 `HeaterState` (Current heater state and LTC run mode) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

For the heater bits, a value of '0' indicates that the heater is currently off. A value of '1' indicates that the heater is currently on.

Start	Stop	Size	Item Type and Name
0	0	1	`RunMode runMode`
1	3	3	`Padus3 pad3`
4	4	1	`HeaterMask htr11`
5	5	1	`HeaterMask htr10`
6	6	1	`HeaterMask htr9`
7	7	1	`HeaterMask htr8`
8	8	1	`HeaterMask htr7`
9	9	1	`HeaterMask htr6`

10	10	1	`HeaterMask htr5`
11	11	1	`HeaterMask htr4`
12	12	1	`HeaterMask htr3`
13	13	1	`HeaterMask htr2`
14	14	1	`HeaterMask htr1`
15	15	1	`HeaterMask htr0`

Fields:

`HeaterMask` **(14.7.36)**

Attribute(s):

Brief: "Mask for VCHP heater control/state"

Instance(s): `htr0`, `htr1`, `htr10`, `htr11`, `htr2`, `htr3`, `htr4`, `htr5`, `htr6`, `htr7`, `htr8`, `htr9`

`Padus3` **(14.7.76)**

Attribute(s):

Brief: "Explicit 3 bit pad in unsigned short"

Instance(s): `pad3`

Explicit 3 bit pad in unsigned short

`RunMode` **(14.7.84)**

Attribute(s):

Brief: "LTC run mode"

Instance(s): `runMode`

A bit value of '0' indcates that LTC software is stopped. A bit value of '1' indicates that LTC software is running.

Used by:

`DiagLtcData0 (14.4.24)`

14.6.22 `ItcConfig` (ITC configuration of a single task) Telemetry Bitfield

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

ITC configuration of a single task

Start	Stop	Size	Item Type and Name
0	0	1	`DEFINED defined`
1	5	5	`Padus5 spare`
6	7	2	`MSGLVL msg_level`
8	9	2	`CNAE cn_ae`
10	11	2	`CNAF cn_af`
12	13	2	`CBAE cb_ae`
14	15	2	`CBAF cb_af`

Fields:

`CBAE` **(14.7.7)**

Attribute(s):

Brief: "Command Confirm Broadcast Execute"

Instance(s): `cb_ae`

`CBAF` **(14.7.8)**

Attribute(s):

Brief: "Command Confirm Broadcast Forward"

Instance(s): `cb_af`

`CNAE` **(14.7.11)**

Attribute(s):

Brief: "Command Confirm Normal Execute"

Instance(s): `cn_ae`

`CNAF` **(14.7.12)**

Attribute(s):

Brief: "Command Confirm Normal Forward"

Instance(s): `cn_af`

`DEFINED` **(14.7.19)**

Attribute(s):

Brief: "ITC Task Defined"

Instance(s): `defined`

`MSGLVL` **(14.7.55)**

Attribute(s):

Brief: "ITC Task Message Level"

Instance(s): `msg_level`

`Padus5` **(14.7.78)**

Attribute(s):

Brief: "Explicit 5 bit pad in unsigned short"

Instance(s): `spare`

Explicit 5 bit pad in unsigned short

Used by:

`DiagItcCfg (14.4.16)`

14.6.23 `PDUACDPWR` (PDU ADC Power Management Register) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	**2**	**3**	`Padus3 spare0`
3	**3**	**1**	`status temread`
4	**6**	**3**	`Padus3 spare1`
7	**7**	**1**	`status epuread`
8	**10**	**3**	`Padus3 spare2`
11	**11**	**1**	`switch acdread`
12	**13**	**2**	`Padus2 spare3`
14	**14**	**1**	`select supply`
15	**15**	**1**	`switch acd`

Fields:

`Padus2` **(14.7.75)**

Attribute(s):

Brief: "Explicit 2 bit pad in unsigned short"

Instance(s): `spare3`

Explicit 2 bit pad in unsigned short

`Padus3` **(14.7.76)**

Attribute(s):

Brief: "Explicit 3 bit pad in unsigned short"

Instance(s): `spare0`, `spare1`, `spare2`

Explicit 3 bit pad in unsigned short

`select` **(14.7.107)**

Attribute(s):
dsc: LHKSELECTSTATES (14.8.3)

Brief: "Primary/redundant selector"

Instance(s): `supply`

Primary/redundant selector

`status` **(14.7.108)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "Readout status (ADC or switch)"

Instance(s): `epuread`, `temread`

Readout status. If set, read out failed for the designated ADC/switch.

`switch` **(14.7.109)**

Attribute(s):
dsc: LHKSETTLESTATES (14.8.4)

Brief: "A switch (usually a power switch)"

Instance(s): `acdread`

A switch (usually a power switch)

`switch` **(14.7.109)**

Attribute(s):
dsc: LHKSWITCHSTATES (14.8.5)

Brief: "A switch (usually a power switch)"

Instance(s): `acd`

A switch (usually a power switch)

Used by:

`DiagPduEnv0 (14.4.29)`

14.6.24 `PDUEPUPWR` (PDU EPU crate power state register) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Contains the state of the EPU power switches in the PDU.

Start	Stop	Size	Item Type and Name
0	12	13	`Padus13 spare0`
13	13	1	`switch epu2pwr`
14	14	1	`switch epu1pwr`
15	15	1	`switch epu0pwr`

Fields:

`Padus13` **(14.7.73)**

Attribute(s):

Brief: "Explicit 13 bit pad in unsigned short"

Instance(s): `spare0`

Explicit 13 bit pad in unsigned short

`switch` **(14.7.109)**

Attribute(s):
dsc: LHKSWITCHSTATES (14.8.5)

Brief: "A switch (usually a power switch)"

Instance(s): `epu0pwr`, `epu1pwr`, `epu2pwr`

A switch (usually a power switch)

Used by:

`DiagPduEnv0 (14.4.29)`

14.6.25 `PDUTEMPWR` (PDU TEM power state register) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Contains the state of the TEM power switches in the PDU.

Start	Stop	Size	Item Type and Name
0	0	1	`switch temf`
1	1	1	`switch teme`
2	2	1	`switch temd`
3	3	1	`switch temc`
4	4	1	`switch temb`
5	5	1	`switch tema`
6	6	1	`switch tem9`
7	7	1	`switch tem8`
8	8	1	`switch tem7`
9	9	1	`switch tem6`
10	10	1	`switch tem5`
11	11	1	`switch tem4`
12	12	1	`switch tem3`
13	13	1	`switch tem2`
14	14	1	`switch tem1`
15	15	1	`switch tem0`

Fields:

`switch` **(14.7.109)**

Attribute(s):
dsc: LHKSWITCHSTATES (14.8.5)

Brief: "A switch (usually a power switch)"

Instance(s): `tem0`, `tem1`, `tem2`, `tem3`, `tem4`, `tem5`, `tem6`, `tem7`, `tem8`, `tem9`, `tema`, `temb`, `temc`, `temd`, `teme`, `temf`

A switch (usually a power switch)

Used by:

`DiagPduEnv0 (14.4.29)`

14.6.26 `RawAdcStatus` (Sensor Status and ADC Counts) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	**3**	**4**	`RawStatus status`
4	**15**	**12**	`RawAdc adc`

Fields:

`RawAdc` **(14.7.82)**

Attribute(s):

Brief: "Raw Sensor ADC Counts"

Instance(s): `adc`

`RawStatus` **(14.7.83)**

Attribute(s):

Brief: "Raw Sensor Status"

Instance(s): `status`

0-NOT_READ, 1-GOOD, 2-READ_FAIL, 3-BROKEN

Used by:

`DiagLtcData2 (14.4.26)`

14.6.27 `ResRitSnsrSel` (Selected RSVR and RIT sensors) Telemetry Bitfield

Definition:

Alignment: 2 bytes

C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	**3**	**4**	`SensorHpNum resHpNum`
4	**7**	**4**	`SensorType resType`
8	**11**	**4**	`SensorHpNum ritHpNum`
12	**15**	**4**	`SensorType ritType`

Fields:

`SensorHpNum` **(14.7.89)**

Attribute(s):

Brief: "Specifies connected HP number for sensor"

Instance(s): `resHpNum`, `ritHpNum`

`SensorType` **(14.7.91)**

Attribute(s):

Brief: "Specifies Sensor Type"

Instance(s): `resType`, `ritType`

0-DSHP, 1-DSHP Redundant, 2-XLHP, 3-XLHP Redundant, 4-RES, 5-RES Redundant

Used by:

`DiagLtcData0 (14.4.24)`

14.6.28 `ResRitStatus` (Heat pipe RIT and reservoir sensors status) Telemetry Bitfield

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Start	Stop	Size	Item Type and Name
0	**3**	**4**	`SensorStatus ritStatus`
4	**7**	**4**	`SensorStatus resStatus`

Fields:

`SensorStatus` **(14.7.90)**

Attribute(s):

Brief: "Status for HP sensors"

Instance(s): `resStatus`, `ritStatus`

0-NOT_READ, 1-GOOD, 2-READ_FAIL, 3-BROKEN Use for RIT and reservoir sensor status for each heat pipe.

Used by:

`DiagLtcData0 (14.4.24)`

14.6.29 `SIBconfig` (Power configuration bits from the SIB) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Power configuration bits from the SIB

Start	Stop	Size	Item Type and Name
0	15	16	`Padui16 spare0`
16	23	8	`Padui8 spare1`
24	26	3	`Padui3 spare2`
27	27	1	`select mainfeed`
28	28	1	`switch PDUprimary`
29	29	1	`switch PDUredundant`
30	30	1	`switch GASUprimary`
31	31	1	`switch GASUredundant`

Fields:

`Padui16` **(14.7.67)**

Attribute(s):

Brief: "Explicit 16 bit pad in unsigned int"

Instance(s): `spare0`

Explicit 16 bit pad in unsigned int

`Padui3` **(14.7.69)**

Attribute(s):

Brief: "Explicit 3 bit pad in unsigned int"

Instance(s): `spare2`

Explicit 3 bit pad in unsigned int

`Padui8` **(14.7.72)**

Attribute(s):

Brief: "Explicit 8 bit pad in unsigned int"

Instance(s): `spare1`

Explicit 8 bit pad in unsigned int

`select` **(14.7.107)**

Attribute(s):
dsc: LHKSELECTSTATES (14.8.3)

Brief: "Primary/redundant selector"

Instance(s): `mainfeed`

Primary/redundant selector

`switch` **(14.7.109)**

Attribute(s):
dsc: LHKSWITCHSTATES (14.8.5)

Brief: "A switch (usually a power switch)"

Instance(s): `GASUprimary`, `GASUredundant`, `PDUprimary`, `PDUredundant`

A switch (usually a power switch)

Used by:

`DiagPigStatus (14.4.37)`

14.6.30 `TOOSTATEBF` (TOO State Bitfield) Telemetry Bitfield

Definition:

Alignment: 1 byte

C type: unsigned char
Length: 8 bits (1 byte)

Description:

Bitfield containing the current TOO observation state.

Start	Stop	Size	Item Type and Name
0	4	5	`Paduc5 pad`
5	5	1	`STARTED started`
6	6	1	`ACTIVE active`
7	7	1	`READY ready`

Fields:

`ACTIVE` **(14.7.1)**

Attribute(s):

Brief: "Active Status"

Instance(s): `active`

Flag to indicate that an activity is active.

`Paduc5` **(14.7.61)**

Attribute(s):

Brief: "Explicit 5 bit pad in unsigned char"

Instance(s): `pad`

Explicit 5 bit pad in unsigned char

`READY` **(14.7.79)**

Attribute(s):

Brief: "Ready Status"

Instance(s): `ready`

Flag to indicate that an activity is ready to be started.

`STARTED` **(14.7.87)**

Attribute(s):

Brief: "Started Status"

Instance(s): `started`

Flag to indicate that an activity has been started.

Used by:

`LimContrib (14.5.9)`

14.7 Telemetry Fields

14.7.0 `ACTION` (Most Recent LIM Action) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Most recent LIM action.

Used by:

`DiagLrs0 (14.4.23)`

14.7.1 `ACTIVE` (Active Status) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Flag to indicate that an activity is active.

Used by:

`ARRSTATEBF (14.6.2)`, `TOOSTATEBF (14.6.30)`

14.7.2 `ADClimit` (ADC limit evaluation) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	3 bits

Description:

The result of comparing an ADC value against limits.

Used by:

`ADC (14.6.0)`

14.7.3 `ADCvalue` (Raw ADC value) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Raw ADC value

Used by:

`ADC (14.6.0)`

14.7.4 `ALLOWED` (Allowed Status) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Flag to indicate if an action is allowed.

Used by:

`GBMCONFIGBF (14.6.17)`, `HVCONFIGBF (14.6.18)`

14.7.5 `AVGLDMIN` (Average CPU Load/Min) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Average CPU load during previous minute, expressed as a percentage between 0 and 100.

Used by:

`CPUMETR (14.5.1)`

14.7.6 `AVGLDSEC` (Average CPU Load/Sec) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Average CPU load during previous second, expressed as a percentage between 0 and 100.

Used by:

`CPUMETR (14.5.1)`

14.7.7 `CBAE` (Command Confirm Broadcast Execute) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	2 bits

Description:

Used by:

`ItcConfig (14.6.22)`

14.7.8 `CBAF` (Command Confirm Broadcast Forward) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	2 bits

Description:

Used by:

`ItcConfig (14.6.22)`

14.7.9 `CMDCNTS` (Commands sent counter) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Commands sent to task.

Used by:

`CMDCNTRS (14.5.0)`

14.7.10 `CMDEXEF` (Command execution failure counter) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Commands failing task execution

Used by:

`CMDCNTRS (14.5.0)`

14.7.11 `CNAE` (Command Confirm Normal Execute) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	2 bits

Description:

Used by:

`ItcConfig (14.6.22)`

14.7.12 `CNAF` (Command Confirm Normal Forward) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	2 bits

Description:

Used by:

`ItcConfig (14.6.22)`

14.7.13 `CPUJT` (CPU Junction Temperature) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

The CPU junction temperature, in degress Celcius.

Used by:

`CPUMETR (14.5.1)`

14.7.14 `CRXBCNT` (1553 Cmd Rx Byte Count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

A count of the number of CmdRx bytes received by the remote terminal

Used by:

RTSTATS (14.5.12)

14.7.15 CRXPCNT (1553 Cmd Rx Packet Count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

A count of the number of CmdRx packets received by the remote terminal

Used by:

RTSTATS (14.5.12)

14.7.16 CTXBCNT (1553 Cmd Tx Byte Count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

A count of the number of CmdTx bytes sent by the remote terminal.

Used by:

RTSTATS (14.5.12)

14.7.17 CTXPCNT (1553 Cmd Tx Packet Count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

A count of the number of CmdTx packets sent by the remote terminal

Used by:

RTSTATS (14.5.12)

14.7.18 ControlMode (LTC control mode) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

A bit value of '0' indicates passive control mode. A bit value of '1' indicates active control mode.

Used by:

`HeaterCommand (14.6.19)`

14.7.19 `DEFINED` (ITC Task Defined) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Used by:

`ItcConfig (14.6.22)`

14.7.20 `EVTSTAT` (Events Statistics) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Counts event transmit/receive statistics.

Used by:

`EBMSTATS (14.5.2)`

14.7.21 `FILEIDCOM` (FILE ID Commit) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The file ID value for commiting the file data to storage.

Used by:

`FILESTATS (14.5.4)`

14.7.22 `FILEPKTCNT` (FILE Packet Count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The number of vaild data packets received for the current file upload.

Used by:

`FILESTATS (14.5.4)`

14.7.23 `FILERRCNT` (FILE Error Count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

A count of the number of errors reported for the current file upload.

Used by:

`FILESTATS (14.5.4)`

14.7.24 `FILERRCODE` (FILE Error Code) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The current file upload error indicator.

Used by:

`FILESTATS (14.5.4)`

14.7.25 `FILESIZECUR` (File Size Current) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The number of data bytes received for the current file upload.

Used by:

FILESTATS (14.5.4)

14.7.26 FILESTATE (FILE Upload State) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The current file upload state.

Used by:

FILESTATS (14.5.4)

14.7.27 FREQ (Processor Frequency) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

TRCTOPS (14.5.14)

14.7.28 GEMLRSDEAD (GEM low-rate science dead zoned counter) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The GEM maintains a counter of the number of times that a window failed to open because one or more enabled conditions occurred within the dead zone. If a condition occurs within the dead-zone, but is not enabled, the counter will not increment. If more then one enabled condition occurs simultaneously within the dead-zone, the counter increments by only one.

Used by:

GEMLRS (14.5.5)

14.7.29 GEMLRSDISC (GEM low-rate science discarded counter) Telemetry Field

Definition:

Alignment:	4 bytes

C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Window turns discarded due to busy

Used by:

`GEMLRS (14.5.5)`

14.7.30 `GEMLRSLIVE` (GEM low-rate science livetime counter) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

1/deadtime statistics

Used by:

`GEMLRS (14.5.5)`

14.7.31 `GEMLRSSENT` (GEM low-rate science sent counter) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Window turns which result in a sent message

Used by:

`GEMLRS (14.5.5)`

14.7.32 `GEMPRSCL` (Low-rate science prescaled counter) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Window turns discarded due to prescaling

Used by:

`GEMLRS (14.5.5)`

14.7.33 `GRBSTATE` (GRB State) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 3 bits

Description:

Current state of the GRB handler (0=idle, 4=GRB0, 5=GRB1, 6=GRB2).

Used by:

`ARRSTATEBF (14.6.2)`

14.7.34 `HKBCNT` (1553 Housekeeping Byte Count) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

A count of the number of HKP bytes sent by the remote terminal

Used by:

`RTSTATS (14.5.12)`

14.7.35 `HKPCNT` (1553 Housekeeping Packet Count) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

A count of the number of HKP packets sent by the remote terminal

Used by:

`RTSTATS (14.5.12)`

14.7.36 `HeaterMask` (Mask for VCHP heater control/state) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 1 bit

Description:

Used by:

HeaterCommand (14.6.19), HeaterMode (14.6.20), HeaterState (14.6.21)

14.7.37 INTRCNT (1553 Interrupts) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

A count of the number of remote terminal device interrupts.

Used by:

RTSTATS (14.5.12)

14.7.38 LATCKEY (LATC File Key) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

File key used in most recent LATC configuration.

Used by:

DiagLrs0 (14.4.23)

14.7.39 LCMCNTR (LCM RAD750 Counter) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

CPUMETR (14.5.1)

14.7.40 LPAparameter (Filter handler parameter set) Telemetry Field

Definition:

Alignment:	1 byte
C type:	char

Length: 4 bits

Description:

Filter handler parameter set

Used by:

`ConfigLPA (14.6.6)`

14.7.41 `MAXLDMIN` (Max CPU Load/Min) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Largest average CPU load during previous second, expressed as a percentage between 0 and 100, over previous minute.

Used by:

`CPUMETR (14.5.1)`

14.7.42 `MDPACT` (Memory dump active) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Nonzero if dump is active.

Used by:

`MEMSTATS (14.5.11)`

14.7.43 `MDPADDR` (Memory dump address) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Current dump address.

Used by:

`MEMSTATS (14.5.11)`

14.7.44 `MDPBYTS` (Memory dump bytes) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Total number of bytes to dump.

Used by:

`MEMSTATS (14.5.11)`

14.7.45 `MDPFCD` (Memory dump function code) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Function code for current dump.

Used by:

`MEMSTATS (14.5.11)`

14.7.46 `MDPSTADR` (Memory dump start address) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Starting dump address.

Used by:

`MEMSTATS (14.5.11)`

14.7.47 `MDPSTAT` (Memory dump status) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Status of most recent dump action.

Used by:

MEMSTATS (14.5.11)

14.7.48 MDPTXID (Memory dump transaction ID) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Transaction ID for current dump.

Used by:

MEMSTATS (14.5.11)

14.7.49 MINLDMIN (Min CPU Load/Min) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Smallest average CPU load during previous second, expressed as a percentage between 0 and 100, over previous minute.

Used by:

CPUMETR (14.5.1)

14.7.50 MLDACT (Memory load active flag) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Nonzero if load is active

Used by:

MEMSTATS (14.5.11)

14.7.51 MLDBYTS (Memory load total bytes) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Total number of bytes to load.

Used by:

`MEMSTATS (14.5.11)`

14.7.52 `MLDOFF` (Memory load offset) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Current load offset.

Used by:

`MEMSTATS (14.5.11)`

14.7.53 `MLDSTADR` (Starting memory load address) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`MEMSTATS (14.5.11)`

14.7.54 `MLDSTAT` (Status of most recent load action) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`MEMSTATS (14.5.11)`

14.7.55 `MSGLVL` (ITC Task Message Level) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	2 bits

Description:

Used by:

`ItcConfig (14.6.22)`

14.7.56 `OPMODE` (Operating Mode) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Current operating mode.

Used by:

`DiagLrs0 (14.4.23)`

14.7.57 `PENDING` (Pending Status) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Flag to indicate that an operation is pending.

Used by:

`ARRSTATEBF (14.6.2)`

14.7.58 `PID` (PID status) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Contains the status of a RAD750 programmable input discrete

Used by:

ConfigPID (14.6.7)

14.7.59 Paduc2 (Explicit 2 bit pad in unsigned char) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	2 bits

Description:

Explicit 3 bit pad in unsigned char

Used by:

ARRSTATEBF (14.6.2)

14.7.60 Paduc3 (Explicit 3 bit pad in unsigned char) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	3 bits

Description:

Explicit 3 bit pad in unsigned char

Used by:

AEMFREEPWR (14.6.1)

14.7.61 Paduc5 (Explicit 5 bit pad in unsigned char) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	5 bits

Description:

Explicit 5 bit pad in unsigned char

Used by:

GBMCONFIGBF (14.6.17), TOOSTATEBF (14.6.30)

14.7.62 Paduc6 (Explicit 6 bit pad in unsigned char) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	6 bits

Description:

Explicit 6 bit pad in unsigned char

Used by:

`ConfigTHS (14.6.8)`

14.7.63 `Paduc7` (Explicit 7 bit pad in unsigned char) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	7 bits

Description:

Explicit 7 bit pad in unsigned char

Used by:

`HVCONFIGBF (14.6.18)`

14.7.64 `Paduc8` (Explicit 8 bit pad in unsigned char) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Explicit 8 bit pad in unsigned char

Used by:

`Latc (14.5.7)`

14.7.65 `Padui1` (Explicit 1 bit pad in unsigned int) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	1 bit

Description:

Explicit 1 bit pad in unsigned int

Used by:

`CRUcommand (14.6.3)`, `CRUresponse (14.6.5)`, `EBMdestination (14.6.12)`

14.7.66 `Padui14` (Explicit 14 bit pad in unsigned int) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	14 bits

Description:

Explicit 14 bit pad in unsigned int

Used by:

`EBMtimeout (14.6.16)`

14.7.67 `Padui16` (Explicit 16 bit pad in unsigned int) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	16 bits

Description:

Explicit 16 bit pad in unsigned int

Used by:

`SIBconfig (14.6.29)`

14.7.68 `Padui2` (Explicit 2 bit pad in unsigned int) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	2 bits

Description:

Explicit 2 bit pad in unsigned int

Used by:

`EBMdestination (14.6.12)`

14.7.69 `Padui3` (Explicit 3 bit pad in unsigned int) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	3 bits

Description:

Explicit 3 bit pad in unsigned int

Used by:

CRUcommand (14.6.3), CRUconfig (14.6.4), CRUresponse (14.6.5), SIBconfig (14.6.29)

14.7.70 `Padui32` (Explicit 32 bit pad in unsigned int) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Explicit 32 bit pad in unsigned int

Used by:

Latc (14.5.7)

14.7.71 `Padui7` (Explicit 7 bit pad in unsigned int) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	7 bits

Description:

Explicit 7 bit pad in unsigned int

Used by:

CRUconfig (14.6.4), EBMaddress (14.6.9), EBMbackConfig (14.6.10), EBMfrontAConfig (14.6.13), EBMfrontBConfig (14.6.14)

14.7.72 `Padui8` (Explicit 8 bit pad in unsigned int) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	8 bits

Description:

Explicit 8 bit pad in unsigned int

Used by:

CRUconfig (14.6.4), EBMaddress (14.6.9), EBMbackConfig (14.6.10), EBMdestination (14.6.12), EBMfrontBConfig (14.6.14), SIBconfig (14.6.29)

14.7.73 `Padus13` (Explicit 13 bit pad in unsigned short) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 13 bits

Description:

Explicit 13 bit pad in unsigned short

Used by:

`PDUEPUPWR (14.6.24)`

14.7.74 `Padus16` (Explicit 16 bit pad in unsigned short) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Explicit 16 bit pad in unsigned short

Used by:

`AemEnv0 (14.4.0)`

14.7.75 `Padus2` (Explicit 2 bit pad in unsigned short) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 2 bits

Description:

Explicit 2 bit pad in unsigned short

Used by:

`PDUACDPWR (14.6.23)`

14.7.76 `Padus3` (Explicit 3 bit pad in unsigned short) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 3 bits

Description:

Explicit 3 bit pad in unsigned short

Used by:

HeaterCommand (14.6.19), HeaterState (14.6.21)

14.7.77 `Padus4` (Explicit 4 bit pad in unsigned short) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

Explicit 4 bit pad in unsigned short

Used by:

HeaterMode (14.6.20)

14.7.78 `Padus5` (Explicit 5 bit pad in unsigned short) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	5 bits

Description:

Explicit 5 bit pad in unsigned short

Used by:

ItcConfig (14.6.22)

14.7.79 `READY` (Ready Status) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Flag to indicate that an activity is ready to be started.

Used by:

ARRSTATEBF (14.6.2), TOOSTATEBF (14.6.30)

14.7.80 `REMAINSEC` (Time Remaining) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Time remaining, in seconds.

Used by:

`DiagLrs0 (14.4.23)`

14.7.81 `RTERR` (1553 Error Count) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

A count of the number of remote terminal errors.

Used by:

`RTSTATS (14.5.12)`

14.7.82 `RawAdc` (Raw Sensor ADC Counts) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Used by:

`RawAdcStatus (14.6.26)`

14.7.83 `RawStatus` (Raw Sensor Status) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

0-NOT_READ, 1-GOOD, 2-READ_FAIL, 3-BROKEN

Used by:

`RawAdcStatus (14.6.26)`

14.7.84 `RunMode` (LTC run mode) Telemetry Field

Definition:

Alignment: 2 bytes

C type: unsigned short
Length: 1 bit

Description:

A bit value of '0' indcates that LTC software is stopped. A bit value of '1' indicates that LTC software is running.

Used by:

`HeaterState (14.6.21)`

14.7.85 `SAATRANSIT` (SAA Transit Status) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

SAA transit status (0 = transit not in progress, 1 = transit in progress).

Used by:

`DiagLrs0 (14.4.23)`

14.7.86 `SERIAL` (CPU Serial Number) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`TRCTOPS (14.5.14)`

14.7.87 `STARTED` (Started Status) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 1 bit

Description:

Flag to indicate that an activity has been started.

Used by:

`TOOSTATEBF (14.6.30)`

14.7.88 `STATUS` (Most Recent Action Status) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

MSG status code of the most recent LIM action.

Used by:

`DiagLrs0 (14.4.23)`

14.7.89 `SensorHpNum` (Specifies connected HP number for sensor) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	4 bits

Description:

Used by:

`ResRitSnsrSel (14.6.27)`

14.7.90 `SensorStatus` (Status for HP sensors) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	4 bits

Description:

0-NOT_READ, 1-GOOD, 2-READ_FAIL, 3-BROKEN Use for RIT and reservoir sensor status for each heat pipe.

Used by:

`ResRitStatus (14.6.28)`

14.7.91 `SensorType` (Specifies Sensor Type) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	4 bits

Description:

0-DSHP, 1-DSHP Redundant, 2-XLHP, 3-XLHP Redundant, 4-RES, 5-RES Redundant

Used by:

`ResRitSnsrSel (14.6.27)`

14.7.92 `TASKSTATE` (Task State) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Current state of an external task.

Used by:

`DiagLrs0 (14.4.23)`

14.7.93 `THS` (Status of time-hack services simulation) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Status of time-hack services simulation

Used by:

`ConfigTHS (14.6.8)`

14.7.94 `TIMESEC` (Timestamp seconds) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`CMDCNTRS (14.5.0)`

14.7.95 `TIMESUBSEC` (Timestamp subseconds) Telemetry Field

Definition:

Alignment: 4 bytes

C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

CMDCNTRS (14.5.0)

14.7.96 TLMBCNT (1553 Telemertry Byte Count) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

A count of the number of Telem bytes sent by the remote terminal (not HKP).

Used by:

RTSTATS (14.5.12)

14.7.97 TLMPCNT (1553 Telemetry Packet Count) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

A count of the number of Telem packets sent by the remote terminal (not HKP).

Used by:

RTSTATS (14.5.12)

14.7.98 TRCDTIM (TRC Sampling Period Duration in usec) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

TRCTOPS (14.5.14)

14.7.99 TRCENDLSW (TRC Sampling Period End Time LSW) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

TRCTOPS (14.5.14)

14.7.100 TRCENDMSW (TRC Sampling Period End Time MSW) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

TRCTOPS (14.5.14)

14.7.101 TRCEX5 (TRC Exception 5 Interrupt Rate) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

TRCTOPS (14.5.14)

14.7.102 TRCEX9 (TRC Exception 9 Interrupt Rate) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

TRCTOPS (14.5.14)

14.7.103 TRCTOP (TRC CPU Fraction per Task/Exception) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`TRCTOPS (14.5.14)`

14.7.104 `TempCelsius` (Temperature converted to celsius.) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	short
Length:	16 bits (2 bytes)

Description:

Fixed point scaled by 8 bits (256).

Used by:

`DiagLtcData0 (14.4.24)`

14.7.105 `VIRTMODE` (Virtual Mode) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Current virtual mode.

Used by:

`DiagLrs0 (14.4.23)`

14.7.106 `enable` (An enable bit (disabled/enabled)) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

An enable bit (disabled/enabled)

Used by:

CRUcommand (14.6.3), CRUconfig (14.6.4), CRUresponse (14.6.5), EBMbackConfig (14.6.10), EBMcontrib (14.6.11), EBMdestination (14.6.12), EBMinput (14.6.15)

14.7.107 `select` (Primary/redundant selector) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

Primary/redundant selector

Used by:

PDUACDPWR (14.6.23)

14.7.108 `status` (Readout status (ADC or switch)) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

Readout status. If set, read out failed for the designated ADC/switch.

Used by:

ADC (14.6.0), AEMFREEPWR (14.6.1)

14.7.109 `switch` (A switch (usually a power switch)) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

A switch (usually a power switch)

Used by:

AEMFREEPWR (14.6.1)

14.7.110 `timeout` (EBM timeout (17 bits)) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int

Length: 17 bits

Description:

EBM timeout (17 bits)

Used by:

`EBMtimeout (14.6.16)`

14.7.111 `uc` (Unsigned char) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Unsigned char

Used by:

`Latc (14.5.7)`

14.7.112 `ui` (Unsigned int) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Unsigned int

Used by:

`EbmCounters (14.5.3)`, `GemCounters (14.5.6)`

14.7.113 `us` (Unsigned short) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Unsigned short

Used by:

`LimContrib (14.5.9)`, `LpaContrib (14.5.10)`

14.8 Discretes

14.8.0 LHKADCLMTSTATES (Enumeration of ADC limit evaluation states) Discrete

ITOS Mnemonic: LHKADCLMTSTATES

Description:

Enumeration of ADC limit evaluation states

Definition:

0 ADC read failed (Unread)
ADC read failed

1 ADC evaluated below low red limit (Redlow)
ADC evaluated below low red limit

2 ADC evaluated below low yellow limit (Yellowlow)
ADC evaluated below low yellow limit

3 ADC evaluted within green limits (Green)
ADC evaluted within green limits

4 ADC evaluated above high yellow limit (Yellowhigh)
ADC evaluated above high yellow limit

5 ADC evaluated above high red limit (Redhigh)
ADC evaluated above high red limit

6 ADC reading is unphysical (Unphysical)
ADC reading is unphysical (either ridiculously low or ridiculously high)

7 ADC limit status is unstable (Unstable)
Based on a series of ADC readings, the ADC limit status continues to change after the allowed settling period.

Used by:

ADC (14.6.0)

14.8.1 LHKENABLESTATES (A disabled/enabled enumeration) Discrete

ITOS Mnemonic: LHKENABLESTATES

Description:

A disabled/enabled enumeration

Definition:

0 Disabled (Disabled)
Disabled

1 Enabled (Enabled)
Enabled

Used by:

CRUcommand (14.6.3), CRUconfig (14.6.4), CRUresponse (14.6.5), EBMbackConfig (14.6.10), EBMcontrib (14.6.11), EBMdestination (14.6.12), EBMinput (14.6.15)

14.8.2 LHKFILESTATES (FILE States) Discrete

ITOS Mnemonic: LHKFILESTATES

Description:

Definition:

0 FILE Start State (Start)

1 FILE Load State (Load)

2 FILE Commit State (Commit)

3 FILE Error State (Error)

Used by:

FILESTATS (14.5.4)

14.8.3 LHKSELECTSTATES (Enumeration of primary/redundant selections) Discrete

ITOS Mnemonic: LHKSELECTSTATES

Description:

Enumeration of primary/redundant selections

Definition:

0 Primary system selected (Primary)
Primary system selected

1 Redundant system selected (Redundant)
Redundant system selected

Used by:

PDUACDPWR (14.6.23), CRUconfig (14.6.4), EBMbackConfig (14.6.10), SIBconfig (14.6.29)

14.8.4 LHKSETTLESTATES (ADC settling state) Discrete

ITOS Mnemonic: LHKSETTLESTATES

Description:

ADC limit evaluation is varying, but within the allowed settling period

Definition:

0 Limit status evaluation is stable (Stable)
Limit status evaluation is stable (the same value has been obtained for the required persistence time).

1 Limit status evaluation is still settling (`Settling`)
Limit status evaluation is currently unstable, but the maximum settling period has not yet been reached.

Used by:

`ADC (14.6.0), PDUACDPWR (14.6.23), CRUcommand (14.6.3), CRUconfig (14.6.4), CRUresponse (14.6.5), EBMaddress (14.6.9), EBMbackConfig (14.6.10), EBMcontrib (14.6.11), EBMdestination (14.6.12), EBMfrontAConfig (14.6.13), EBMfrontBConfig (14.6.14), EBMinput (14.6.15), EBMtimeout (14.6.16)`

14.8.5 `LHKSWITCHSTATES` (Enumeration of allowed switch states) Discrete

ITOS Mnemonic: `LHKSWITCHSTATES`

Description:

A simple on/off enumeration (zero is off)

Definition:

0 Power is off (`Off`)
Power is off

1 Power is on (`On`)
Power is on

Used by:

`AEMFREEPWR (14.6.1), PDUACDPWR (14.6.23), PDUEPUPWR (14.6.24), PDUTEMPWR (14.6.25), SIBconfig (14.6.29)`

15 LIH Package

15.0 Overview

???

15.1 Command Packets

ITOS Mnemonic: `LIHDUMPLIMITS`

15.1.0 `LIHDUMPLIMITS` (1620/0x654:9)

Context:

Description:

"Dump the complete limits table" Telecommand Packet

Dump the complete limits table. The dump can be very large, so the corresponding telemetry is only sent to the science data interface (on APID 930 (0x3a2)).

Layout:

Dump the complete limits table (DumpLimits) **Telecommand Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x654:9**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**	**Function Code=9**														
008	**ui:** reason															
00C	**ui:** ident															
010	**Packet Checksum**															

Fields:

`ui` **(15.2.4)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `ident`, `reason`

Unsigned int

ITOS Mnemonic: `LIHDUMPLIMITSADC`

15.1.1 `LIHDUMPLIMITSADC` (1620/0x654:8)

Context:

Description:

"Dump the limits table for a single ADC" Telecommand Packet

Dump the limits table for a single ADC. The response is sent in telemetry as a diagnostic packet (APID 710 (0x2c6)) to the CTDB (1553).

Layout:

Dump the limits table for a single ADC `(DumpLimitsAdc)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x654:8**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**			**Function Code=8**												
008	**us:** `adx`															
00A	**Packet Checksum**															

Fields:

`us` **(15.2.5)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `adx`

Unsigned short

ITOS Mnemonic: `LIHENABACTION`

15.1.2 `LIHENABACTION` (1620/0x654:2)

Context:

Description:

"Enable/disable actions on ADC state changes" Telecommand Packet

Enable/disable actions on ADC state changes

Layout:

Enable/disable actions on ADC state changes `(EnableActions)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x654:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**	**Function Code=2**														
008	**us:** `state`															
00A	**Packet Checksum**															

Fields:

`us` **(15.2.5)**

Attribute(s):
enm: LIHENABLESTATES (15.3.3)

Brief: "Unsigned short"

Instance(s): `state`

Unsigned short

ITOS Mnemonic: `LIHLOADLIMITS`

15.1.3 `LIHLOADLIMITS` (1620/0x654:1)

Context:

Description:

"Load ADC limit sets from CDM database" Telecommand Packet

Load ADC limit sets from CDM database

Layout:

Load ADC limit sets from CDM database `(LoadLimits)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x654:1**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=1**														
008	**FILEID:** `fileID`															
00C	**Packet Checksum**															

Fields:

`FILEID` **(15.2.0)**

Attribute(s):

Brief: "File ID"

Instance(s): `fileID`

File ID

ITOS Mnemonic: `LIHNOOP`

15.1.4 `LIHNOOP` (1620/0x654:0)

Context:

Description:

"No operation" Telecommand Packet

No operation

Layout:

No operation `(Noop)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x654:0										
002	SF=3			Sequence Count												
004	Packet Length=3															
006	0	Function Code=0														

ITOS Mnemonic: `LIHSETACTIONSADC`

15.1.5 `LIHSETACTIONSADC` (1620/0x654:4)

Context:

Description:

"Set actions for a limit transition on an ADC" Telecommand Packet

Set actions for a limit transition on an ADC. In all cases, a value of -1 results in the action being left unchanged. The alert and diagnostic flags are simple enable/disable. The value of the message flag can be used to set the severity level of the message.

Layout:

Set actions for a limit transition on an ADC `(SetActionsAdc)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x654:4**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=13**															
006	**0**	**Function Code=4**														
008	**us:** `adx`															
00A	**uc:** `from`								**uc:** `to`							
00C	**ss:** `alert`															
00E	**ss:** `diag`															
010	**ss:** `msg`															
012	**Packet Checksum**															

Fields:

`ss` **(15.2.2)**

Attribute(s):
enm: LIHADCACTENABLES (15.3.0)

Brief: "Signed short"

Instance(s): `alert`, `diag`, `msg`

Signed short

`uc` **(15.2.3)**

Attribute(s):
enm: LIHADCLMTSTATES (15.3.2)

Brief: "Unsigned char"

Instance(s): `from`, `to`

Unsigned char

`us` **(15.2.5)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `adx`

Unsigned short

ITOS Mnemonic: `LIHSETLIMITSADC`

15.1.6 `LIHSETLIMITSADC` (1620/0x654:3)

Context:

Description:

"Set limits boundaries for an ADC" Telecommand Packet

Set limit boundaries for an ADC. A value of -1 will leave the corresponding limit at its existing value. Limits must obey the condition that a given value must be less than or equal to the next higher value. This is enforced by FSW after the -1 values have been substituted with their existing values.

Layout:

Set limits boundaries for an ADC `(SetLimitsAdc)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x654:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=17**															
006	**0**	**Function Code=3**														
008	**us:** `adx`															
00A	**ss:** `limit[0-5]`															
016	**Packet Checksum**															

Fields:

`ss` **(15.2.2)**

Attribute(s):

Brief: "Signed short"

Instance(s): `limit`

Signed short

`us` **(15.2.5)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `adx`

Unsigned short

ITOS Mnemonic: `LIHSETNAGADC`

15.1.7 `LIHSETNAGADC` (1620/0x654:5)

Context:

Description:

"Set the nag periods for an ADC" Telecommand Packet

Set the nag periods for an ADC. A value of zero suppresses nags. A value of -1 will leave the nag period at its existing value. Nag periods are expressed in milliseconds.

Layout:

Set the nag periods for an ADC (SetNagTimesAdc) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x654:5**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=39**															
006	**0**	**Function Code=5**														
008	**us:** spare0															
00A	**us:** adx															
00C	**si:** nag[0-7]															
02C	**Packet Checksum**															

Fields:

`si` **(15.2.1)**

Attribute(s):

Brief: "Signed integer"

Instance(s): `nag`

Signed integer

`us` **(15.2.5)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `adx`, `spare0`

Unsigned short

ITOS Mnemonic: `LIHSETPERSISTADC`

15.1.8 `LIHSETPERSISTADC` (1620/0x654:6)

Context:

Description:

"Set persistence time (msec) on an ADC" Telecommand Packet

Sets the period for which new ADC state must be stable before declaring that the ADC has changed state (milliseconds).

Layout:

Set persistence time (msec) on an ADC `(SetPersistAdc)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x654:6**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**	**Function Code=6**														
008	**us:** `spare0`															
00A	**us:** `adx`															
00C	**ui:** `persist`															
010	**Packet Checksum**															

Fields:

`ui` **(15.2.4)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `persist`

Unsigned int

`us` **(15.2.5)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `adx`, `spare0`

Unsigned short

ITOS Mnemonic: `LIHSETSETTLEADC`

15.1.9 `LIHSETSETTLEADC` (1620/0x654:7)

Context:

Description:

"Set the maximum settling period (msec) for an ADC" Telecommand Packet

Set the maximum settling period for an ADC (milliseconds).

Layout:

Set the maximum settling period (msec) for an ADC `(SetSettleAdc)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x654:7**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=11**															
006	**0**	**Function Code=7**														
008	**us:** `spare0`															
00A	**us:** `adx`															
00C	**ui:** `settle`															
010	**Packet Checksum**															

Fields:

`ui` **(15.2.4)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `settle`

Unsigned int

`us` **(15.2.5)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `adx`, `spare0`

Unsigned short

15.2 Command Fields

15.2.0 `FILEID` (File ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

File ID

Used by:

`LoadLimits (15.1.3)`

15.2.1 `si` (Signed integer) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	int
Length:	32 bits (4 bytes)

Description:

Signed integer

Used by:

`SetNagTimesAdc (15.1.7)`

15.2.2 `ss` (Signed short) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	short
Length:	16 bits (2 bytes)

Description:

Signed short

Used by:

`SetActionsAdc (15.1.5)`

15.2.3 `uc` (Unsigned char) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Unsigned char

Used by:

`SetActionsAdc (15.1.5)`

15.2.4 `ui` (Unsigned int) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Unsigned int

Used by:

`DumpLimits (15.1.0)`

15.2.5 `us` (Unsigned short) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Unsigned short

Used by:

`DumpLimitsAdc (15.1.1)`

15.3 Enumerations

15.3.0 `LIHADCACTENABLES` (Enumeration of action enables) Enumeration

ITOS Mnemonic: `LIHADCACTENABLES`

Description:

Enumeration of action enables

Definition:

-1 Don't change state of this action (`LIHADCACTNOCHNG`)
Don't change state of this action

0 Disable this action (`LIHADCACTDISABLE`)
Disable this action

1 Enable this action (`LIHADCACTENABLE`)
Enable this action

Used by:

`SetActionsAdc (15.1.5)`

15.3.1 `LIHADCACTMSG` (Enumeration of message severity flags) Enumeration

ITOS Mnemonic: `LIHADCACTMSG`

Description:

Enumeration of message severity flags

Definition:

-1 Don't change the severity (`LIHACTNOCHNG`)
Don't change the severity

0 Disable sending messages (`LIHSEVNONE`)
Disable sending messages

1 Set severity level to information (`LIHSEVINFO`)
Set severity level to information

2 Set severity level warning (`LIHSEVWARN`)
Set severity level warning

3 Set severity level error (`LIHSEVERROR`)
Set severity level error

Used by:

???

15.3.2 `LIHADCLMTSTATES` (Enumeration of ADC limit evaluation states) Enumeration

ITOS Mnemonic: `LIHADCLMTSTATES`

Description:

Enumeration of ADC limit evaluation states

Definition:

0 ADC was not evaluated against limits (`LIHUNKNOWNST`)
ADC was not evaluated against limits

1 ADC evaluated below low red limit (`LIHREDLOWST`)
ADC evaluated below low red limit

2 ADC evaluated below low yellow limit (`LIHYELLOWLOWST`)
ADC evaluated below low yellow limit

3 ADC evaluted within green limits (`LIHGREENST`)
ADC evaluted within green limits

4 ADC evaluated above high yellow limit (`LIHYELLOWHIGHST`)
ADC evaluated above high yellow limit

5 ADC evaluated above high red limit (`LIHREDHIGHST`)
ADC evaluated above high red limit

6 ADC evaluated to a non-physical value (`LIHPURPLEST`)
ADC evaluated to a non-physical value

7 ADC reading is unstable (`LIHUNSTABLEST`)
ADC reading is unstable

Used by:

`SetActionsAdc (15.1.5)`

15.3.3 `LIHENABLESTATES` (A disabled/enabled enumeration) Enumeration

ITOS Mnemonic: `LIHENABLESTATES`

Description:

A disabled/enabled enumeration

Definition:

0 Disable (`LIHDISABLE`)
Disable

1 Enable (`LIHENABLE`)
Enable

Used by:

`EnableActions (15.1.2)`

15.4 Telemetry Packets

15.4.0 `LimitAdc` (710/0x2C6)

Context:

Description:

"Limits/actions associated with a single ADC" Telemetry Packet

Limits/actions associated with a single ADC

Layout:

Limits/actions associated with a single ADC (LimitAdc) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2C6**										
002	**SF**	**Sequence Count**														
004	**Packet Length=129**															
006	**Timestamp**															
00E	**ushort:** spare0															
010	**uint:** adx															
014	**uint:** deltaPersist															
018	**uint:** deltaSettle															
01C	**uint:** deltaNag[0-7]															
03C	**ushort:** limit[0-5]															
048	**uchar:** action[0-63]															

Fields:

`uchar` **(15.5.1)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `action`

Unsigned char

`uint` **(15.5.2)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `adx`, `deltaNag`, `deltaPersist`, `deltaSettle`

Unsigned int

`ushort` **(15.5.3)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `limit`, `spare0`

Unsigned short

15.4.1 `LimitAlert` (852/0x354)

Context:

Description:

"ADC outside limits alert packet" Telemetry Packet

ADC outside limits alert packet

Layout:

ADC outside limits alert packet (`LimitAlert`)
Telemetry Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=0	SH	APID=0x354										
002	SF		Sequence Count													
004	Packet Length=61															
006	Timestamp															
00E	**ushort:** `pad0`															
010	**uint:** `adx`															
014	**ushort:** `value`															
016	**uchar:** `prv`								**uchar:** `cur`							
018	**ushort:** `limit[0-5]`															
024	**schar:** `name[0-31]`															

Fields:

`schar` **(15.5.0)**

Attribute(s):

Brief: "Signed char"

Instance(s): `name`

Signed char

`uchar` **(15.5.1)**

Attribute(s):

Brief: "Unsigned char"

Instance(s): `cur`, `prv`

Unsigned char

`uint` **(15.5.2)**

Attribute(s):

Brief: "Unsigned int"

Instance(s): `adx`

Unsigned int

`ushort` **(15.5.3)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `limit`, `pad0`, `value`

Unsigned short

15.4.2 `LimitAll` (930/0x3A2)

Context:

Description:

"A complete limit table dump (compressed)" Telemetry Packet

A complete limit table dump (compressed)

Layout:

A complete limit table dump (compressed) `(LimitAll)` **Telemetry Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3A2**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**ushort:** `padCount`															

Fields:

`ushort` **(15.5.3)**

Attribute(s):

Brief: "Unsigned short"

Instance(s): `padCount`

Unsigned short

15.5 Telemetry Fields

15.5.0 `schar` (Signed char) Telemetry Field

Definition:

Alignment: 1 byte
C type: char
Length: 8 bits (1 byte)

Description:

Signed char

Used by:

`LimitAlert (15.4.1)`

15.5.1 `uchar` (Unsigned char) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Unsigned char

Used by:

`LimitAdc (15.4.0)`

15.5.2 `uint` (Unsigned int) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Unsigned int

Used by:

`LimitAdc (15.4.0)`

15.5.3 `ushort` (Unsigned short) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Unsigned short

Used by:

`LimitAdc (15.4.0)`

16 LIM Package

16.0 Overview

The LIM package contains functions and command handlers that manage the operating mode of the LAT flight software. LIM is responsible for transitioning between the operating modes and ensuring that the flight software performs only the actions appropriate for the current mode.

16.1 Command Packets

ITOS Mnemonic: `LIMARRABORT`

16.1.0 `LIMARRABORT` (1633/0x661:1)

Context:

Description:

"ARR Abort" Telecommand Packet

Abort a physics observation that was initiated by an Autonomous Repoint Request (ARR).

Layout:

ARR Abort (`ARR_Abort`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x661:1										
002	SF=3		Sequence Count													
004	Packet Length=3															
006	0	Function Code=1														

ITOS Mnemonic: `LIMARRRESPONSE`

16.1.1 `LIMARRRESPONSE` (1633/0x661:0)

Context:

Description:

"ARR Response" Telecommand Packet

Response from the spacecraft to an Autonomous Repoint Request (ARR) from the LAT instrument.

Layout:

ARR Response (`ARR_Response`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x661:0										

ARR Response (ARR_Response) Telecommand Packet Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF=3**		**Sequence Count**													
004	**Packet Length=11**															
006	**0**	**Function Code=0**														
008	**CTRANID32:** tran_id															
00C	**CACCEPT:** accept															
010	**Packet Checksum**															

Fields:

CACCEPT **(16.4.0)**

Attribute(s):

Brief: "Request Acceptance Indication"

Instance(s): accept

Flag that indicates whether a request was accepted. Set to zero if the request was denied, and set to a nonzero value if the request was accepted.

CTRANID32 **(16.4.30)**

Attribute(s):

Brief: "32-Bit Transaction ID"

Instance(s): tran_id

32-bit transaction ID.

ITOS Mnemonic: LIMBIASACD

16.1.2 LIMBIASACD (1635/0x663:10)

Context:

Description:

"Set ACD Bias Voltages" Telecommand Packet

Set the ACD SAA and HV bias voltages.

Layout:

Set ACD Bias Voltages (Bias_ACD) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:10**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=51**															
006	**0**			**Function Code=10**												
008	**CBIASACDBF:** arc[0-11]															
038	**Packet Checksum**															

Fields:

CBIASACDBF **(16.3.2)**

Attribute(s):

Brief: "ACD Bias Voltage Bitfield"

Instance(s): arc

Bitfield containing ACD bias voltages and their 'valid' flags.

ITOS Mnemonic: LIMBIASACDOFF

16.1.3 LIMBIASACDOFF (1635/0x663:25)

Context:

Description:

"Turn Off ACD Bias Voltages" Telecommand Packet

Turn off the ACD bias voltages.

Layout:

Turn Off ACD Bias Voltages (Bias_ACD_Off) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:25**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**			**Function Code=25**												
008	**CACDS:** acdmask															
00C	**Packet Checksum**															

Fields:

`CACDS` **(16.4.1)**

Attribute(s):

Brief: "ACD Mask"

Instance(s): `acdmask`

Mask of ACD FREE boards to participate in the operation

ITOS Mnemonic: `LIMBIASACDON`

16.1.4 `LIMBIASACDON` (1635/0x663:22)

Context:

Description:

"Turn On ACD Bias Voltages" Telecommand Packet

Restore the ACD bias voltages from the cached values after having turned them off.

Layout:

Turn On ACD Bias Voltages (Bias_ACD_On) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:22**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=7**															
006	**0**	**Function Code=22**														
008	**CACDS:** `acdmask`															
00C	**Packet Checksum**															

Fields:

`CACDS` **(16.4.1)**

Attribute(s):

Brief: "ACD Mask"

Instance(s): `acdmask`

Mask of ACD FREE boards to participate in the operation

ITOS Mnemonic: `LIMBIASCAL`

16.1.5 `LIMBIASCAL` (1635/0x663:11)

Context:

Description:

"Set CAL Bias Voltages" Telecommand Packet

Set the CAL bias voltages.

Layout:

Set CAL Bias Voltages (Bias_CAL) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:11**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=39**															
006	**0**	**Function Code=11**														
008	**CPAD16:** `pad`															
00A	**CTOWERSELBF:** `valid`															
00C	**CBIAS16:** `bias[0-15]`															
02C	**Packet Checksum**															

Fields:

`CBIAS16` **(16.4.4)**

Attribute(s):

Brief: "16-Bit Bias Voltage"

Instance(s): `bias`

Bias voltage expressed as a 16-bit value.

`CPAD16` **(16.4.21)**

Attribute(s):

Brief: "16-Bit Padding"

Instance(s): `pad`

Explicit padding of 16 bits.

`CTOWERSELBF` **(16.3.7)**

Attribute(s):

Brief: "Tower Selection Bitfield"

Instance(s): `valid`

Bitfield containing mask of towers to manipulate.

ITOS Mnemonic: `LIMBIASCALOFF`

16.1.6 `LIMBIASCALOFF` (1635/0x663:26)

Context:

Description:

"Turn Off CAL Bias Voltages" Telecommand Packet

Turn off the CAL bias voltages.

Layout:

Turn Off CAL Bias Voltages `(Bias_CAL_Off)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:26**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**			**Function Code=26**												
008	**CTEMS:** `temmask`															
00C	**Packet Checksum**															

Fields:

`CTEMS` **(16.4.29)**

Attribute(s):

Brief: "TEM Mask"

Instance(s): `temmask`

Mask of TEMs to participate in the operation

ITOS Mnemonic: LIMBIASCALON

16.1.7 LIMBIASCALON (1635/0x663:23)

Context:

Description:

"Turn On CAL Bias Voltages" Telecommand Packet

Restore the CAL bias voltages from the cached values after having turned them off.

Layout:

Turn On CAL Bias Voltages (Bias_CAL_On) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:23**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**			**Function Code=23**												
008	**CTEMS:** temmask															
00C	**Packet Checksum**															

Fields:

CTEMS **(16.4.29)**

Attribute(s):

Brief: "TEM Mask"

Instance(s): temmask

Mask of TEMs to participate in the operation

ITOS Mnemonic: LIMBIASTKR

16.1.8 LIMBIASTKR (1635/0x663:12)

Context:

Description:

"Set TKR Bias Voltages" Telecommand Packet

Set the TKR bias voltages.

Layout:

Set TKR Bias Voltages (Bias_TKR) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:12**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=39**															
006	**0**	**Function Code=12**														
008	**CPAD16:** pad															
00A	**CTOWERSELBF:** valid															
00C	**CBIAS16:** bias[0-15]															
02C	**Packet Checksum**															

Fields:

CBIAS16 **(16.4.4)**

Attribute(s):

Brief: "16-Bit Bias Voltage"

Instance(s): bias

Bias voltage expressed as a 16-bit value.

CPAD16 **(16.4.21)**

Attribute(s):

Brief: "16-Bit Padding"

Instance(s): pad

Explicit padding of 16 bits.

CTOWERSELBF **(16.3.7)**

Attribute(s):

Brief: "Tower Selection Bitfield"

Instance(s): valid

Bitfield containing mask of towers to manipulate.

ITOS Mnemonic: LIMBIASTKROFF

16.1.9 LIMBIASTKROFF (1635/0x663:27)

Context:

Description:

"Turn Off TKR Bias Voltages" Telecommand Packet

Turn off the TKR bias voltages.

Layout:

Turn Off TKR Bias Voltages (Bias_TKR_Off) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:27**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**			**Function Code=27**												
008	**CTEMS:** temmask															
00C	**Packet Checksum**															

Fields:

CTEMS **(16.4.29)**

Attribute(s):

Brief: "TEM Mask"

Instance(s): temmask

Mask of TEMs to participate in the operation

ITOS Mnemonic: LIMBIASTKRON

16.1.10 LIMBIASTKRON (1635/0x663:24)

Context:

Description:

"Turn On TKR Bias Voltages" Telecommand Packet

Restore the TKR bias voltages from the cached values after having turned them off.

Layout:

Turn On TKR Bias Voltages (Bias_TKR_On) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:24**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=24**														
008	**CTEMS:** temmask															
00C	**Packet Checksum**															

Fields:

CTEMS **(16.4.29)**

Attribute(s):

Brief: "TEM Mask"

Instance(s): temmask

Mask of TEMs to participate in the operation

ITOS Mnemonic: LIMCONFIGGBM

16.1.11 LIMCONFIGGBM (1635/0x663:13)

Context:

Description:

"Configure GBM Interface Handling" Telecommand Packet

Configure the LIM interface to the GBM, including its handling of commands and interrupts signals from the GBM.

Layout:

Configure GBM Interface Handling (Config_GBM) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:13**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=13**														
008	**CALLOWGBMBF:** allowed															
00C	**Packet Checksum**															

Fields:

`CALLOWGBMBF` **(16.3.0)**

Attribute(s):

Brief: "Allowed GBM Activity Bitfield"

Instance(s): `allowed`

Bitfield of GBM activities that LIM is allowed to perform.

ITOS Mnemonic: `LIMCONFIGHV`

16.1.12 `LIMCONFIGHV` (1635/0x663:14)

Context:

Description:

"Configure ACD High-Voltage Handling" Telecommand Packet

Configure LIM's handling of the ACD high-voltage.

Layout:

Configure ACD High-Voltage Handling (Config_HV) Telecommand Packet Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:14**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=14**														
008	**CALLOWHVBF:** `allowed`															
00C	**Packet Checksum**															

Fields:

`CALLOWHVBF` **(16.3.1)**

Attribute(s):

Brief: "Allowed ACD High-Voltage Activity Bitfield"

Instance(s): `allowed`

Bitfield of ACD high-voltage activities that LIM is allowed to perform.

ITOS Mnemonic: LIMCONFIGPID

16.1.13 LIMCONFIGPID (1635/0x663:15)

Context:

Description:

"Configure PID Signals" Telecommand Packet

Configure the discrete (PID) signals.

Layout:

Configure PID Signals (Config_PID) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:15**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**	**Function Code=15**														
008	**CPIDPRIMARY:** primary_select															
00A	**Packet Checksum**															

Fields:

CPIDPRIMARY **(16.4.23)**

Attribute(s):

Brief: "Primary PID Signal Selection"

Instance(s): primary_select

Select primary discrete (PID) signals from the spacecraft (0=redundant, 1=primary).

ITOS Mnemonic: LIMHOLDENTER

16.1.14 LIMHOLDENTER (1635/0x663:2)

Context:

Description:

"Enter HOLD Mode" Telecommand Packet

Enter the HOLD mode.

Layout:

Enter HOLD Mode (Hold_Enter) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=2**														

ITOS Mnemonic: LIMHOLDEXIT

16.1.15 LIMHOLDEXIT (1635/0x663:3)

Context:

Description:

"Exit HOLD Mode" Telecommand Packet

Exit the HOLD mode.

Layout:

Exit HOLD Mode (Hold_Exit) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=3**														

ITOS Mnemonic: LIMLATCCONFIG

16.1.16 LIMLATCCONFIG (1635/0x663:19)

Context:

Description:

"Call the LATC_cache, LATC_configure, and LATC_ignore functions" Telecommand Packet

Call the LATC_cache(), LATC_configure(), and LATC_ignore() functions to configure the LAT instrument registers.

Layout:

Call the LATC_cache, LATC_configure, and LATC_ignore functions (Latc_Config) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:19**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**			**Function Code=19**												
008	**CLATCID:** latc															
00C	**CIGNOREID:** ignore															
010	**Packet Checksum**															

Fields:

CIGNOREID **(16.4.11)**

Attribute(s):

Brief: "LATC Ignore File ID"

Instance(s): ignore

ID of the LATC 'ignore' file.

CLATCID **(16.4.13)**

Attribute(s):

Brief: "LATC Configuration File ID"

Instance(s): latc

ID of the LATC configuration file.

ITOS Mnemonic: LIMLATCRECORD

16.1.17 LIMLATCRECORD (1635/0x663:17)

Context:

Description:

"Call the LATC_capture and LATC_consign Functions" Telecommand Packet

Call the LATC_capture() and LAT_consign() functions to dump the LAT instrument registers.

Layout:

Call the LATC_capture and LATC_consign Functions `(Latc_Record)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:17**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**			**Function Code=17**												
008	**CDEST32:** `dest`															
00C	**Packet Checksum**															

Fields:

`CDEST32` **(16.4.9)**

Attribute(s):

Brief: "Destination"

Instance(s): `dest`

Destination for dumped data.

ITOS Mnemonic: `LIMLATCVERIFY`

16.1.18 `LIMLATCVERIFY` (1635/0x663:20)

Context:

Description:

"Call the LATC_capture, LATC_verify, and LATC_consign functions" Telecommand Packet

Call the LATC_capture(), LATC_verify(), and LATC_consign() functions to verify and dump the LAT instrument registers.

Layout:

Call the LATC_capture, LATC_verify, and LATC_consign functions `(Latc_Verify)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:20**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**			**Function Code=20**												
008	**CDEST32:** `dest`															
00C	**Packet Checksum**															

Fields:

`CDEST32` **(16.4.9)**

Attribute(s):

Brief: "Destination"

Instance(s): `dest`

Destination for dumped data.

ITOS Mnemonic: `LIMLOADSHED`

16.1.19 `LIMLOADSHED` (1634/0x662:1)

Context:

Description:

"Load Shed" Telecommand Packet

Shed LAT instrument power loads.

Layout:

Load Shed (`Load_Shed`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x662:1										
002	SF=3			Sequence Count												
004	Packet Length=3															
006	0	Function Code=1														

ITOS Mnemonic: `LIMLOOKATME`

16.1.20 `LIMLOOKATME` (1636/0x664:0)

Context:

Description:

"Send The Look-At-Me Command" Telecommand Packet

Send the Look-At-Me command to the CRU.

Layout:

Send The Look-At-Me Command (Look_At_Me) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x664:0**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=0**														

ITOS Mnemonic: LIMMAINFEEDON

16.1.21 LIMMAINFEEDON (1635/0x663:4)

Context:

Description:

"Enable Main Power Feed" Telecommand Packet

Enable the main power feed to the LAT instrument and configure the SIU.

Layout:

Enable Main Power Feed (Main_Feed_On) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:4**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=4**														
008	**CSIUCFGBF:** siu_cfg															
00C	**Packet Checksum**															

Fields:

CSIUCFGBF **(16.3.6)**

Attribute(s):

Brief: "SIU Configuration Bitfield"

Instance(s): siu_cfg

Bitfield containing the SIU configuration word.

ITOS Mnemonic: `LIMNOOP`

16.1.22 `LIMNOOP` (1635/0x663:18)

Context:

Description:

"LIM No-Op" Telecommand Packet

This telecommand does nothing except generate the standard command confirmation reply to verify that the LIM task is running and accepting commands.

Layout:

LIM No-Op `(Noop)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x663:18										
002	SF=3			Sequence Count												
004	Packet Length=3															
006	0	Function Code=18														

ITOS Mnemonic: `LIMPIGRECORD`

16.1.23 `LIMPIGRECORD` (1635/0x663:16)

Context:

Description:

"Call the PIG_record Function" Telecommand Packet

Call the PIG_record() function, which dumps the contents of the PIG-controlled registers.

Layout:

Call the PIG_record Function `(Pig_Record)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x663:16										
002	SF=3			Sequence Count												
004	Packet Length=7															
006	0	Function Code=16														
008	CDEST32: `dest`															
00C	Packet Checksum															

Fields:

CDEST32 **(16.4.9)**

Attribute(s):

Brief: "Destination"

Instance(s): dest

Destination for dumped data.

ITOS Mnemonic: LIMPIGVERIFY

16.1.24 LIMPIGVERIFY (1635/0x663:21)

Context:

Description:

"PIG Verify" Telecommand Packet

Verify the current PIG settings against the cached values by calling PIG_verify.

Layout:

PIG Verify (Pig_Verify)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x663:21										
002	SF=3			Sequence Count												
004	Packet Length=3															
006	0	Function Code=21														

ITOS Mnemonic: LIMPOWEROFF

16.1.25 LIMPOWEROFF (1635/0x663:7)

Context:

Description:

"Disable Instrument Power" Telecommand Packet

Disable power from one or more elements within the LAT instrument.

Layout:

Disable Instrument Power (Power_Off) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:7**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=15**															
006	**0**	**Function Code=7**														
008	**CPOWERCFGST:** power_cfg															
014	**Packet Checksum**															

Fields:

CPOWERCFGST **(16.2.0)**

Attribute(s):

Brief: "Power Configuration Structure"

Instance(s): power_cfg

Structure describing LAT instrument elements for which power can be enabled and disabled.
ITOS Mnemonic: LIMPOWERON

16.1.26 LIMPOWERON (1635/0x663:6)

Context:

Description:

"Enable Instrument Power" Telecommand Packet

Enable power to one or more elements within the LAT instrument.

Layout:

Enable Instrument Power (Power_On) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:6**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=15**															
006	**0**	**Function Code=6**														
008	**CPOWERCFGST:** power_cfg															
014	**Packet Checksum**															

Fields:

`CPOWERCFGST` **(16.2.0)**

Attribute(s):

Brief: "Power Configuration Structure"

Instance(s): `power_cfg`

Structure describing LAT instrument elements for which power can be enabled and disabled.
ITOS Mnemonic: `LIMSAAENTER`

16.1.27 `LIMSAAENTER` (1635/0x663:8)

Context:

Description:

"Enter SAA" Telecommand Packet

Indication that the LAT instrument has entered the South Atlantic Anomaly (SAA).

Layout:

Enter SAA (`SAA_Enter`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x663:8										
002	SF=3			Sequence Count												
004	Packet Length=3															
006	0	Function Code=8														

ITOS Mnemonic: `LIMSAAEXIT`

16.1.28 `LIMSAAEXIT` (1635/0x663:9)

Context:

Description:

"Exit SAA" Telecommand Packet

Indication that the LAT instrument has left the South Atlantic Anomaly (SAA).

Layout:

Exit SAA (SAA_Exit) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:9**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=9**														

ITOS Mnemonic: LIMTOOABORT

16.1.29 LIMTOOABORT (1635/0x663:1)

Context:

Description:

"TOO Abort" Telecommand Packet

Abort a Target of Opportunity (TOO) observation.

Layout:

TOO Abort (TOO_Abort) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:1**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=1**														

ITOS Mnemonic: LIMTOOSTART

16.1.30 LIMTOOSTART (1635/0x663:0)

Context:

Description:

"TOO Start" Telecommand Packet

Start a Target of Opportunity (TOO) observation.

Layout:

TOO Start (TOO_Start) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x663:0**										
002	**SF=3**			**Sequence Count**												

TOO Start (TOO_Start) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=31**															
006	**0**	**Function Code=0**														
008	**CSECONDS:** seconds															
00C	**COBSID:** observation_id															
010	**CLATCID:** latc															
014	**CIGNOREID:** ignore															
018	**CDBID:** db															
01C	**CCONSIGN:** consign															
020	**CCPUS:** cpus															
024	**Packet Checksum**															

Fields:

CCONSIGN **(16.4.5)**

Attribute(s):

Brief: "LATC Consign Flag"

Instance(s): consign

LATC 'consign' flag value.

CCPUS **(16.4.6)**

Attribute(s):

Brief: "CPU Mask"

Instance(s): cpus

Mask of CPUs to use for the observation.

CDBID **(16.4.8)**

Attribute(s):

Brief: "LPA_DB Instance ID"

Instance(s): db

ID of the LPA_DB instance.

`CIGNOREID` **(16.4.11)**

Attribute(s):

Brief: "LATC Ignore File ID"

Instance(s): `ignore`

ID of the LATC 'ignore' file.

`CLATCID` **(16.4.13)**

Attribute(s):

Brief: "LATC Configuration File ID"

Instance(s): `latc`

ID of the LATC configuration file.

`COBSID` **(16.4.15)**

Attribute(s):

Brief: "Observation ID"

Instance(s): `observation_id`

Identifier for an observation run.

`CSECONDS` **(16.4.26)**

Attribute(s):

Brief: "Number of Seconds"

Instance(s): `seconds`

Length of time, in seconds.

16.2 Command Structs

16.2.0 `CPOWERCFGST` (Power Configuration Structure) Telecommand Struct

Definition:

Alignment: 2 bytes
Length: 96 bits (12 bytes)

Description:

Structure describing LAT instrument elements for which power can be enabled and disabled.

Power Configuration Structure (CPOWERCFGST) Telecommand Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**

Used by:

`Power_Off (16.1.25)`

16.3 Command Bitfields

16.3.0 `CALLOWGBMBF` (Allowed GBM Activity Bitfield) Telecommand Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Bitfield of GBM activities that LIM is allowed to perform.

Start	Stop	Size	Item Type and Name

Used by:

`Config_GBM (16.1.11)`

16.3.1 `CALLOWHVBF` (Allowed ACD High-Voltage Activity Bitfield) Telecommand Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Bitfield of ACD high-voltage activities that LIM is allowed to perform.

Start	Stop	Size	Item Type and Name

Used by:

`Config_HV (16.1.12)`

16.3.2 `CBIASACDBF` (ACD Bias Voltage Bitfield) Telecommand Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Bitfield containing ACD bias voltages and their 'valid' flags.

Start	Stop	Size	Item Type and Name

Used by:

`Bias_ACD (16.1.2)`

16.3.3 `CSELACDBF` (ACD Selection Bitfield) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfield containing mask of ACD elements to manipulate.

Start	Stop	Size	Item Type and Name

Used by:

???

16.3.4 `CSELOTHERBF` (EPU, PDU, EBM, and GEM Selection Bitfield) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfield containing mask of EPU, PDU, EBM, and GEM elements to manipulate.

Start	Stop	Size	Item Type and Name

Used by:

???

16.3.5 `CSELTEMBF` (TEM Selection Bitfield) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfield containing mask of TEM elements to manipulate.

Start	Stop	Size	Item Type and Name

Used by:

???

16.3.6 `CSIUCFGBF` (SIU Configuration Bitfield) Telecommand Bitfield

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Bitfield containing the SIU configuration word.

Start	Stop	Size	Item Type and Name

Used by:

`Main_Feed_On (16.1.21)`

16.3.7 `CTOWERSELBF` (Tower Selection Bitfield) Telecommand Bitfield

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Bitfield containing mask of towers to manipulate.

Start	Stop	Size	Item Type and Name

Used by:

`Bias_CAL (16.1.5)`

16.4 Command Fields

16.4.0 `CACCEPT` (Request Acceptance Indication) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Flag that indicates whether a request was accepted. Set to zero if the request was denied, and set to a nonzero value if the request was accepted.

Used by:

`ARR_Response (16.1.1)`

16.4.1 `CACDS` (ACD Mask) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Mask of ACD FREE boards to participate in the operation

Used by:

`Bias_ACD_Off (16.1.3)`

16.4.2 `CALLOWED` (Action Allowed) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 1 bit

Description:

Flag to indicate that an action is allowed (0=not allowed, 1=allowed).

Used by:

???

16.4.3 `CBIAS12` (12-Bit Bias Voltage) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 12 bits

Description:

Bias voltage expressed as a 12-bit value.

Used by:

???

16.4.4 `CBIAS16` (16-Bit Bias Voltage) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Bias voltage expressed as a 16-bit value.

Used by:

`Bias_CAL (16.1.5)`

16.4.5 `CCONSIGN` (LATC Consign Flag) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

LATC 'consign' flag value.

Used by:

`TOO_Start (16.1.30)`

16.4.6 `CCPUS` (CPU Mask) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Mask of CPUs to use for the observation.

Used by:

`TOO_Start (16.1.30)`

16.4.7 `CDABENABLE` (DAB Power Enable) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Enable power to a DAB (0=disable, 1=enable).

Used by:

???

16.4.8 `CDBID` (LPA_DB Instance ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

ID of the LPA_DB instance.

Used by:

`TOO_Start (16.1.30)`

16.4.9 `CDEST32` (Destination) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Destination for dumped data.

Used by:

`Latc_Record (16.1.17)`

16.4.10 `CGBMREDUNDANT` (Redundant GBM Signal Selection) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Select the redundant GBM signal (0=primary, 1=redundant).

Used by:

???

16.4.11 `CIGNOREID` (LATC Ignore File ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

ID of the LATC 'ignore' file.

Used by:

`Latc_Config (16.1.16)`

16.4.12 `CITEMSEL` (Item Selection) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

Select an item.

Used by:

???

16.4.13 `CLATCID` (LATC Configuration File ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

ID of the LATC configuration file.

Used by:

`Latc_Config (16.1.16)`

16.4.14 `CMFPRIMARY` (Primary Main-Feed Selection) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Select the primary main power feed (0=redundant, 1=primary).

Used by:

???

16.4.15 `COBSID` (Observation ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Identifier for an observation run.

Used by:

`TOO_Start (16.1.30)`

16.4.16 `CPAD1` (1-Bit Padding) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Explicit padding of 1 bit.

Used by:

???

16.4.17 `CPAD10` (10-Bit Padding) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	10 bits

Description:

Explicit padding of 10 bits.

Used by:

???

16.4.18 `CPAD11` (11-Bit Padding) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	11 bits

Description:

Explicit padding of 11 bits.

Used by:

???

16.4.19 `CPAD13` (13-Bit Padding) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	13 bits

Description:

Explicit padding of 13 bits.

Used by:

???

16.4.20 `CPAD15` (15-Bit Padding) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	15 bits

Description:

Explicit padding of 15 bits.

Used by:

???

16.4.21 `CPAD16` (16-Bit Padding) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Explicit padding of 16 bits.

Used by:

`Bias_CAL (16.1.5)`

16.4.22 `CPDUENABLE` (PDU Power Enable) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Enable power to a PDU (0=disable, 1=enable).

Used by:

???

16.4.23 `CPIDPRIMARY` (Primary PID Signal Selection) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Select primary discrete (PID) signals from the spacecraft (0=redundant, 1=primary).

Used by:

`Config_PID (16.1.13)`

16.4.24 `CPPSINTERNAL` (Internal PPS Signal Selection) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Select the internal PPS signal (0=external, 1=internal).

Used by:

???

16.4.25 `CPPSREDUNDANT` (Redundant PPS Signal Selection) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Select the redundant PPS signal (0=primary, 1=redundant).

Used by:

???

16.4.26 `CSECONDS` (Number of Seconds) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Length of time, in seconds.

Used by:

`TOO_Start (16.1.30)`

16.4.27 `CSIUID` (SIU ID) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	2 bits

Description:

SIU identifier (0=SIU_0, 1=SIU_1, 2=SIU_EXT).

Used by:

???

16.4.28 `CSSRREDUNDANT` (Redundant SSR Interface Selection) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	1 bit

Description:

Select the redundant SSR interface (0=primary, 1=redundant).

Used by:

???

16.4.29 `CTEMS` (TEM Mask) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Mask of TEMs to participate in the operation

Used by:

`Bias_CAL_Off (16.1.6)`

16.4.30 `CTRANID32` (32-Bit Transaction ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

32-bit transaction ID.

Used by:

`ARR_Response (16.1.1)`

16.5 Telemetry Packets

16.5.0 `Load_Shed_Alert` (838/0x346)

Context:

Description:

"Load Shed Alert" Telemetry Packet

Alert-level notification of LAT instrument load shedding.

Layout:

Load Shed Alert (`Load_Shed_Alert`)
Telemetry Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=0	SH	APID=0x346										
002	SF			Sequence Count												
004	Packet Length=9															
006	Timestamp															
00E	TPAD16: `pad`															

Fields:

`TPAD16` **(16.7.5)**

Attribute(s):

Brief: "16-Bit Padding"

Instance(s): `pad`

Explicit padding of 16 bits.

16.5.1 `Repoint_Request` (836/0x344)

Context:

Description:

"ARR Notification" Telemetry Packet

Notification that the LAT sent a repoint request to the spacecraft.

Layout:

ARR Notification (Repoint_Request) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x344**										
002	**SF**		**Sequence Count**													
004	**Packet Length=33**															
006	**Timestamp**															
00E	**TPAD16:** pad															
010	**TREQTRANID:** tran_id															
014	**TREQDWELLTIME:** dwell_time															
018	**TREQRA:** loc_ra															
020	**TREQDEC:** loc_dec															

Fields:

TPAD16 **(16.7.5)**

Attribute(s):

Brief: "16-Bit Padding"

Instance(s): pad

Explicit padding of 16 bits.

TREQDEC **(16.7.12)**

Attribute(s):

Brief: "ARR Location DEC"

Instance(s): loc_dec

Location DEC value from an autonomous repoint request.

TREQDWELLTIME **(16.7.13)**

Attribute(s):

Brief: "ARR Dwell Time"

Instance(s): dwell_time

Dwell time value from an autonomous repoint request.

TREQRA **(16.7.14)**

Attribute(s):

Brief: "ARR Location RA"

Instance(s): `loc_ra`

Location RA value from an autonomous repoint request.

`TREQTRANID` **(16.7.15)**

Attribute(s):

Brief: "ARR Transaction ID"

Instance(s): `tran_id`

Transaction ID value from an autonomous repoint request.

16.5.2 `Repoint_Response` (837/0x345)

Context:

Description:

"ARR Response Notification" Telemetry Packet

Notification that the LAT received a response to an autonomous repoint request.

Layout:

ARR Response Notification (`Repoint_Response`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x345**										
002	**SF**		**Sequence Count**													
004	**Packet Length=33**															
006	**Timestamp**															
00E	**TRESPACCEPT:** `accept`															
010	**TRESPTRANID:** `tran_id`															
014	**TRESPDWELLTIME:** `dwell_time`															
018	**TRESPRA:** `loc_ra`															
020	**TRESPDEC:** `loc_dec`															

Fields:

`TRESPACCEPT` **(16.7.16)**

Attribute(s):

Brief: "ARR Response Acceptance Indication"

Instance(s): `accept`

Acceptance value from the response to an autonomous repoint request. Zero indicates that the request was denied and a nonzero value indicates that the request was accepted.

`TRESPDEC` **(16.7.17)**

Attribute(s):

Brief: "ARR Response Location DEC"

Instance(s): `loc_dec`

Location DEC value from the response to an autonomous repoint request.

`TRESPDWELLTIME` **(16.7.18)**

Attribute(s):

Brief: "ARR Response Dwell Time"

Instance(s): `dwell_time`

Dwell time value from the response to an autonomous repoint request.

`TRESPRA` **(16.7.19)**

Attribute(s):

Brief: "ARR Response Location RA"

Instance(s): `loc_ra`

Location RA value from the response to an autonomous repoint request.

`TRESPTRANID` **(16.7.20)**

Attribute(s):

Brief: "ARR Response Transaction ID"

Instance(s): `tran_id`

Transaction ID value from the response to an autonomous repoint request.

16.5.3 `State` (783/0x30F)

Context:

Description:

"Current LIM State" Telemetry Packet

Reports the current state of the LIM package, including the operating mode and the most recent action and its status.

Layout:

Current LIM State (`State`)
Telemetry Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	**Version=0**			**T=0**	**SH**	**APID=0x30F**										
002	**SF**		**Sequence Count**													
004	**Packet Length=37**															
006	**Timestamp**															
00E	**TACTION:** `action`															
010	**TSTATUS:** `status`															
014	**TOPMODE:** `op_mode`								**TVIRTMODE:** `virt_mode`							
016	**TSAATRANSIT:** `saa_transit`								**TTASKSTATE:** `lci_state`							
018	**TTASKSTATE:** `ldf_state`								**TTASKSTATE:** `lpa_state`							
01A	**TTOOSTATEBF:** `too_state`								**TARRSTATEBF:** `arr_state`							
01C	**TREMAINSEC:** `too_remain_sec`															
020	**TREMAINSEC:** `arr_remain_sec`															
024	**TGBMCONFIGBF:** `gbm_config`								**THVCONFIGBF:** `hv_config`							
026	**TPAD16:** `pad`															
028	**TREMAINSEC:** `gbm_int_dis_remain_sec`															

Fields:

`TACTION` **(16.7.0)**

Attribute(s):
dsc: LIMACTION (16.8.0)

Brief: "Most Recent LIM Action"

Instance(s): `action`

Most recent LIM action.

`TARRSTATEBF` **(16.6.0)**

Attribute(s):

Brief: "ARR State Bitfield"

Instance(s): `arr_state`

Bitfield containing the current ARR observation state.

`TGBMCONFIGBF` **(16.6.1)**

Attribute(s):

Brief: "GBM Interface Configuration Bitfield"

Instance(s): `gbm_config`

Bitfield containing the current configuration of the GBM interface.

`THVCONFIGBF` **(16.6.2)**

Attribute(s):

Brief: "High-Voltage Interface Configuration Bitfield"

Instance(s): `hv_config`

Bitfield containing the current configuration of the ACD high-voltage interface.

`TOPMODE` **(16.7.4)**

Attribute(s):
dsc: LIMOPMODE (16.8.2)

Brief: "Operating Mode"

Instance(s): `op_mode`

Current operating mode.

`TPAD16` **(16.7.5)**

Attribute(s):

Brief: "16-Bit Padding"

Instance(s): `pad`

Explicit padding of 16 bits.

`TREMAINSEC` **(16.7.11)**

Attribute(s):

Brief: "Time Remaining"

Instance(s): `arr_remain_sec`, `gbm_int_dis_remain_sec`, `too_remain_sec`

Time remaining, in seconds.

`TSAATRANSIT` **(16.7.21)**

Attribute(s):

Brief: "SAA Transit Status"

Instance(s): `saa_transit`

SAA transit status (0 = transit not in progress, 1 = transit in progress).

`TSTATUS` **(16.7.23)**

Attribute(s):

Brief: "Most Recent Action Status"

Instance(s): `status`

MSG status code of the most recent LIM action.

`TTASKSTATE` **(16.7.24)**

Attribute(s):
dsc: LIMOTHERSTATE (16.8.3)

Brief: "Task State"

Instance(s): `lci_state`, `ldf_state`, `lpa_state`

Current state of an external task.

`TTOOSTATEBF` **(16.6.3)**

Attribute(s):

Brief: "TOO State Bitfield"

Instance(s): `too_state`

Bitfield containing the current TOO observation state.

`TVIRTMODE` **(16.7.25)**

Attribute(s):

Brief: "Virtual Mode"

Instance(s): `virt_mode`

Current virtual mode.

16.6 Telemetry Bitfields

16.6.0 `TARRSTATEBF` (ARR State Bitfield) Telemetry Bitfield

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Bitfield containing the current ARR observation state.

Start	Stop	Size	Item Type and Name
0	1	2	`TPAD2 pad`
2	2	1	`TPENDING rep_req_pending`
3	5	3	`TGRBSTATE grb_state`
6	6	1	`TACTIVE active`
7	7	1	`TREADY ready`

Fields:

`TACTIVE` **(16.7.1)**

Attribute(s):

Brief: "Active Status"

Instance(s): `active`

Flag to indicate that an activity is active.

`TGRBSTATE` **(16.7.3)**

Attribute(s):

Brief: "GRB State"

Instance(s): `grb_state`

Current state of the GRB handler (0=idle, 4=GRB0, 5=GRB1, 6=GRB2).

`TPAD2` **(16.7.6)**

Attribute(s):

Brief: "2-Bit Padding"

Instance(s): `pad`

Explicit padding of 2 bits.

`TPENDING` **(16.7.9)**

Attribute(s):

Brief: "Pending Status"

Instance(s): `rep_req_pending`

Flag to indicate that an operation is pending.

`TREADY` **(16.7.10)**

Attribute(s):

Brief: "Ready Status"

Instance(s): `ready`

Flag to indicate that an activity is ready to be started.

Used by:

`State (16.5.3)`

16.6.1 `TGBMCONFIGBF` (GBM Interface Configuration Bitfield) Telemetry Bitfield

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Bitfield containing the current configuration of the GBM interface.

Start	Stop	Size	Item Type and Name
0	4	5	`TPAD5 pad`
5	5	1	`TALLOWED pri_int_allowed`
6	6	1	`TALLOWED red_int_allowed`
7	7	1	`TALLOWED rep_req_allowed`

Fields:

`TALLOWED` **(16.7.2)**

Attribute(s):

Brief: "Allowed Status"

Instance(s): `pri_int_allowed`, `red_int_allowed`, `rep_req_allowed`

Flag to indicate if an action is allowed.

`TPAD5` **(16.7.7)**

Attribute(s):

Brief: "5-Bit Padding"

Instance(s): `pad`

Explicit padding of 5 bits.

Used by:

`State (16.5.3)`

16.6.2 `THVCONFIGBF` (High-Voltage Interface Configuration Bitfield) Telemetry Bitfield

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Bitfield containing the current configuration of the ACD high-voltage interface.

Start	Stop	Size	Item Type and Name
0	6	7	`TPAD7 pad`
7	7	1	`TALLOWED hv_allowed`

Fields:

`TALLOWED` **(16.7.2)**

Attribute(s):

Brief: "Allowed Status"

Instance(s): `hv_allowed`

Flag to indicate if an action is allowed.

`TPAD7` **(16.7.8)**

Attribute(s):

Brief: "7-Bit Padding"

Instance(s): `pad`

Explicit padding of 7 bits.

Used by:

`State (16.5.3)`

16.6.3 `TTOOSTATEBF` (TOO State Bitfield) Telemetry Bitfield

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Bitfield containing the current TOO observation state.

Start	Stop	Size	Item Type and Name
0	4	5	`TPAD5 pad`
5	5	1	`TSTARTED started`
6	6	1	`TACTIVE active`
7	7	1	`TREADY ready`

Fields:

`TACTIVE` **(16.7.1)**

Attribute(s):

Brief: "Active Status"

Instance(s): `active`

Flag to indicate that an activity is active.

`TPAD5` **(16.7.7)**

Attribute(s):

Brief: "5-Bit Padding"

Instance(s): `pad`

Explicit padding of 5 bits.

`TREADY` **(16.7.10)**

Attribute(s):

Brief: "Ready Status"

Instance(s): `ready`

Flag to indicate that an activity is ready to be started.

`TSTARTED` **(16.7.22)**

Attribute(s):

Brief: "Started Status"

Instance(s): `started`

Flag to indicate that an activity has been started.

Used by:

`State (16.5.3)`

16.7 Telemetry Fields

16.7.0 `TACTION` (Most Recent LIM Action) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Most recent LIM action.

Used by:

`State (16.5.3)`

16.7.1 `TACTIVE` (Active Status) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 1 bit

Description:

Flag to indicate that an activity is active.

Used by:

`TARRSTATEBF (16.6.0)`, `TTOOSTATEBF (16.6.3)`

16.7.2 `TALLOWED` (Allowed Status) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 1 bit

Description:

Flag to indicate if an action is allowed.

Used by:

`TGBMCONFIGBF (16.6.1)`, `THVCONFIGBF (16.6.2)`

16.7.3 `TGRBSTATE` (GRB State) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 3 bits

Description:

Current state of the GRB handler (0=idle, 4=GRB0, 5=GRB1, 6=GRB2).

Used by:

`TARRSTATEBF (16.6.0)`

16.7.4 `TOPMODE` (Operating Mode) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Current operating mode.

Used by:

`State (16.5.3)`

16.7.5 `TPAD16` (16-Bit Padding) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Explicit padding of 16 bits.

Used by:

`Load_Shed_Alert (16.5.0)`

16.7.6 `TPAD2` (2-Bit Padding) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	2 bits

Description:

Explicit padding of 2 bits.

Used by:

`TARRSTATEBF (16.6.0)`

16.7.7 `TPAD5` (5-Bit Padding) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 5 bits

Description:

Explicit padding of 5 bits.

Used by:

`TGBMCONFIGBF (16.6.1)`, `TTOOSTATEBF (16.6.3)`

16.7.8 `TPAD7` (7-Bit Padding) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 7 bits

Description:

Explicit padding of 7 bits.

Used by:

`THVCONFIGBF (16.6.2)`

16.7.9 `TPENDING` (Pending Status) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 1 bit

Description:

Flag to indicate that an operation is pending.

Used by:

`TARRSTATEBF (16.6.0)`

16.7.10 `TREADY` (Ready Status) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 1 bit

Description:

Flag to indicate that an activity is ready to be started.

Used by:

TARRSTATEBF (16.6.0), TTOOSTATEBF (16.6.3)

16.7.11 TREMAINSEC (Time Remaining) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Time remaining, in seconds.

Used by:

State (16.5.3)

16.7.12 TREQDEC (ARR Location DEC) Telemetry Field

Definition:

Alignment:	8 bytes
C type:	double
Length:	64 bits (8 bytes)

Description:

Location DEC value from an autonomous repoint request.

Used by:

Repoint_Request (16.5.1)

16.7.13 TREQDWELLTIME (ARR Dwell Time) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Dwell time value from an autonomous repoint request.

Used by:

Repoint_Request (16.5.1)

16.7.14 TREQRA (ARR Location RA) Telemetry Field

Definition:

Alignment:	8 bytes
C type:	double
Length:	64 bits (8 bytes)

Description:

Location RA value from an autonomous repoint request.

Used by:

`Repoint_Request (16.5.1)`

16.7.15 `TREQTRANID` (ARR Transaction ID) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Transaction ID value from an autonomous repoint request.

Used by:

`Repoint_Request (16.5.1)`

16.7.16 `TRESPACCEPT` (ARR Response Acceptance Indication) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Acceptance value from the response to an autonomous repoint request. Zero indicates that the request was denied and a nonzero value indicates that the request was accepted.

Used by:

`Repoint_Response (16.5.2)`

16.7.17 `TRESPDEC` (ARR Response Location DEC) Telemetry Field

Definition:

Alignment:	8 bytes
C type:	double
Length:	64 bits (8 bytes)

Description:

Location DEC value from the response to an autonomous repoint request.

Used by:

`Repoint_Response (16.5.2)`

16.7.18 `TRESPDWELLTIME` (ARR Response Dwell Time) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Dwell time value from the response to an autonomous repoint request.

Used by:

`Repoint_Response (16.5.2)`

16.7.19 `TRESPRA` (ARR Response Location RA) Telemetry Field

Definition:

Alignment:	8 bytes
C type:	double
Length:	64 bits (8 bytes)

Description:

Location RA value from the response to an autonomous repoint request.

Used by:

`Repoint_Response (16.5.2)`

16.7.20 `TRESPTRANID` (ARR Response Transaction ID) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Transaction ID value from the response to an autonomous repoint request.

Used by:

`Repoint_Response (16.5.2)`

16.7.21 `TSAATRANSIT` (SAA Transit Status) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

SAA transit status (0 = transit not in progress, 1 = transit in progress).

Used by:

State (16.5.3)

16.7.22 TSTARTED (Started Status) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 1 bit

Description:

Flag to indicate that an activity has been started.

Used by:

TTOOSTATEBF (16.6.3)

16.7.23 TSTATUS (Most Recent Action Status) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

MSG status code of the most recent LIM action.

Used by:

State (16.5.3)

16.7.24 TTASKSTATE (Task State) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Current state of an external task.

Used by:

State (16.5.3)

16.7.25 TVIRTMODE (Virtual Mode) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Current virtual mode.

Used by:

`State (16.5.3)`

16.8 Discretes

16.8.0 LIMACTION (LIM Action) Discrete

ITOS Mnemonic: LIMACTION

Description:

Valid LIM actions that are reported in the LIMSTATE telemetry packet.

Definition:

0 Unknown Action (LIMACTUNKNOWN)
An unrecognized action occurred.

1 LIM Start Action (LIMACTSTART)
The LIM task started.

2 Operating Mode Change Action (LIMACTOPMODECH)
The operating mode changed.

3 Main Feed On Action (LIMACTMAINFEED)
LIM enabled power to the main feed and initialized the SIU.

4 Power On Action (LIMACTPOWERON)
LIM enabled power to one or more components of the LAT.

5 Power Off Action (LIMACTPOWEROFF)
LIM disabled power from one or more components of the LAT.

7 Event Fabric Insert Action (LIMACTEVENTINS)
LIM added one or more components to the event fabric.

8 Event Fabric Remove Action (LIMACTEVENTREM)
LIM removed one or more components from the event fabric.

9 Load Shed Start Action (LIMACTSHEDBEGIN)
LIM started disabling instrument power in response to a Load-Shed command.

10 Load Shed End Action (LIMACTSHEDEND)
LIM finished disabling instrument power in response to a Load-Shed command.

13 LPA Start Action (LIMACTLPASTART)
LIM sent the LPASTART command to the LPA task.

14 LPA Set Mode Action (LIMACTLPASSETMOD)
LIM called the LPA_set_mode() function to change the observation mode.

15 LPA Stop Action (LIMACTLPASTOP)
LIM sent the LPASTOP command to the LPA task.

16 LTC Stop Action (LIMACTLTCSTOP)
LIM sent the LTCSTOP command to the LTC task.

17 SIU Reboot Action (LIMACTSIUREBOOT)

LIM is about to reboot the SIU.

19 SAA Configure Action (LIMACTSAACFG)
LIM configured the LAT instrument for SAA transit.

21 Non-SAA Configure Action (LIMACTNONSAACFG)
LIM configured the LAT instrument for non-SAA operation.

22 LCI Calibrate Action (LIMACTCALSTART)
LIM sent the LCICALIBRATE command to the LCI task.

23 LCI Abort Action (LIMACTCALABORT)
LIM sent the LCIABORT command to the LCI task.

24 LCI Other Command Action (LIMACTCALOTHER)
LIM sent some 'other' command to the LCI task.

25 Diagnostic Start Action (LIMACTDIAGSTART)
LIM sent the Diagnostic-Start command to the diagnostic task.

26 Diagnostic Abort Action (LIMACTDIAGABORT)
LIM sent the Diagnostic-Abort command to the diagnostic task.

27 Diagnostic Other Command Action (LIMACTDIAGOTHER)
LIM sent some 'other' command to the diagnostic task.

30 LCI Complete Action (LIMACTCALCOMP)
LIM received the LCICOMPLETE message from the LCI task.

31 Diagnostic Complete Action (LIMACTDIAGCOMP)
LIM received the Diagnostic-Complete message from the diagnostic task.

32 LPA Complete Action (LIMACTLPACOMP)
LIM received the LPACOMPLETE message from the LPA task.

33 LCI Task State Change Action (LIMACTLCISTATE)
LIM changed the state of the LCI task.

34 Diagnostic Task State Change Action (LIMACTLDFSTATE)
LIM changed the state of the diagnostic task.

35 LPA Task State Change Action (LIMACTLPASTATE)
LIM changed the state of the LPA task.

37 ARR Mode State Change Action (LIMACTARRSTATE)
The ARR observation mode state changed.

40 TOO Mode State Change Action (LIMACTTOOSTATE)
The TOO observation mode state changed.

42 LPA Active Command Action (LIMACTLPAACTIVE)
LIM sent an 'active' command to the LPA task.

43 LPA Idle Command Action (LIMACTLPAIDLE)
LIM sent an 'idle' command to the LPA task.

44 Virtual Mode Change Action (LIMACTVIRTMODE)
The virtual mode changed.

45 SAA State Change Action (LIMACTSAACHANGE)
The SAA transit state changed.

46 LPA Restart Action (LIMACTLPARESTART)
LIM called the LPA_resume() function to restart an observation.

47 GBM Repoint Recommend Action (LIMACTREPREC)
LIM received a Candidate Repoint Recommendation message from the GBM which recommended a repoint.

48 GBM No-Repoint Recommend Action (LIMACTREPNOREC)
LIM received a Candidate Repoint Recommendation message from the GBM which did not recommend a repoint.

49 GBM Command Forward Action (LIMACTGBMCMD)
LIM forwarded a command from the GBM to the LPA task.

50 Slew Request Action (LIMACTSLEWREQ)
LIM sent a Slew-Request command to the spacecraft.

51 Slew Accept Action (LIMACTSLEWACCEPT)
LIM received a Slew-Request-Reply from the spacecraft which indicated that the request was accepted.

52 Slew Reject Action (LIMACTSLEWREJECT)
LIM received a Slew-Request-Reply from the spacecraft which indicated that the request was rejected.

53 Primary PID Select Action (LIMACTPIDSELPRI)
LIM selected the primary PID input signals.

54 Redundant PID Select Action (LIMACTPIDSELRED)
LIM selected the redundant PID input signals.

55 LIM Stop Action (LIMACTSTOP)
The LIM task was stopped.

56 ACD Bias Configure Action (LIMACTBIASACD)
LIM configured the ACD bias voltages.

57 CAL Bias Configure Action (LIMACTBIASCAL)
LIM configured the CAL bias voltages.

58 TKR Bias Configure Action (LIMACTBIASTKR)
LIM configured the TKR bias voltages.

59 GBM Interface Configure Action (LIMACTGBMSTATE)
The configuration of the GBM interface changed.

60 HV Interface Configure Action (LIMACTHVSTATE)
The configuration of the high-voltage interface changed.

61 LCI Calibrate Status Action (LIMACTCALSTRTST)
LIM received a status code for an LCICALIBRATE command that it sent to the LCI task.

62 Diagnostic Start Status Action (LIMACTDIAGSTRTST)
LIM received a status code for a Diagnostic Start command that it sent to the diagnostic task.

63 LPA Start Status Action (LIMACTLPASTARTST)
LIM received a status code for an LPASTART command that it sent to the LPA task.

64 LCI Abort Status Action (LIMACTCALABRTST)
LIM received a status code for an LCIABORT command that it sent to the LCI task.

65 Diagnostic Abort Status Action (LIMACTDIAGABRTST)
LIM received a status code for a Diagnostic Abort command that it sent to the diagnostic task.

66 LPA Stop Status Action (LIMACTLPASTOPST)
LIM received a status code for an LPASTOP command that it sent to the LPA task.

67 Primary GBM Interrupt Enable Action (LIMACTENGBMPRI)
LIM enabled the primary GBM trigger interrupt signal.

68 Redundant GBM Interrupt Enable Action (LIMACTENGBMRED)
LIM enabled the redundant GBM trigger interrupt signal.

69 Primary GBM Interrupt Action (LIMACTGBMINTPRI)
LIM received an interrupt from the primary GBM trigger interrupt signal.

70 Redundant GBM Interrupt Action (LIMACTGBMINTRED)
LIM received an interrupt from the redundant GBM trigger interrupt signal.

71 Slew Request Pending Status Action (LIMACTREPREQST)
The Slew-Request PENDING status changed.

72 GBM Calculate Information Action (LIMACTCALCINFO)
LIM received a Calculated Information message from the GBM.

73 GBM Closeout Action (LIMACTCLOSEOUT)
LIM received a Closeout message from the GBM.

74 Primary GBM Interrupt Disable Action (LIMACTDISGBMPRI)
LIM disabled the primary GBM trigger interrupt signal.

75 Redundant GBM Interrupt Disable Action (LIMACTDISGBMRED)
LIM disabled the redundant GBM trigger interrupt signal.

76 GRB Suspected Action (LIMACTGRBSUSPECT)
LIM received a GRB-Suspected message from the LPA task.

77 GRB Confirmed Action (LIMACTGRBCONFIRM)
LIM received a GRB-Confirmed message from the LPA task.

78 GRB Finished Action (LIMACTGRBFINISH)
LIM received a GRB-Finished message from the LPA task.

79 LPA GBM Interrupt Action (LIMACTLPAGBMINT)
LIM called the LPA_gbm_int() function to notify LPA of a GBM interrupt.

Used by:

State (16.5.3)

16.8.1 LIMGRBSTATE (LIM GRB State) Discrete

ITOS Mnemonic: LIMGRBSTATE

Description:

Valid GRB states within the LIM ARR operating mode.

Definition:

0 GRB Idle State (LIMGRBIDLE)
The idle GRB state. There is no GRB activity in progress.

4 GRB 0 State (LIMGRB0)
The GRB 0 state. A GRB is suspected, but the spacecraft has not been repointed.

5 GRB 1 State (LIMGRB1)
The GRB 1 state. A GRB has been confirmed and the spacecraft has been repointed.

6 GRB 2 State (LIMGRB2)
The GRB 2 state. A GRB has ended, but the spacecraft is still repointed.

Used by:

???

16.8.2 LIMOPMODE (LIM Operating Mode) Discrete

ITOS Mnemonic: LIMOPMODE

Description:

Valid LIM operating modes.

Definition:

0 TERMINAL Operating Mode (LIMMODETERMINAL)
The TERMINAL operating mode.

1 QUIESCENT Operating Mode (LIMMODEQUIESCENT)
The QUIESCENT operating mode.

2 CALIBRATION Operating Mode (LIMMODECAL)
The CALIBRATION operating mode.

4 PHYSICS Operating Mode (LIMMODEPHYSICS)
The PHYSICS operating mode.

6 TOO Operating Mode (LIMMODETOO)
The TOO operating mode.

8 ARR Operating Mode (LIMMODEARR)
The ARR operating mode.

10 HOLD Operating Mode (LIMMODEHOLD)
The HOLD operating mode.

Used by:

State (16.5.3)

16.8.3 LIMOTHERSTATE (LIM Other Task State) Discrete

ITOS Mnemonic: LIMOTHERSTATE

Description:

Valid states of non-LIM tasks (LCI and LPA) for which LIM intercepts commands.

Definition:

0 IDLE Other Task State (LIMSTATEIDLE)
The other task is idle.

1 RUNNING Other Task State (LIMSTATERUNNING)
The other task is running. A start command was sent to the other task and there has been no indication that the other task has s

2 STOPPING Other Task State (LIMSTATESTOPPING)
The other task is stopping. A stop or abort command was sent to the other task, but a completion response has not been receive

3 UNKNOWN Other Task State (LIMSTATEUNKNOWN)
The state of the other task is unknown.

Used by:

State (16.5.3)

17 LMC Package

17.0 Overview

The LMC package handles the LAT multiplexed counters.

17.1 Command Packets

ITOS Mnemonic: `LMCACDTILEALL`

17.1.0 `LMCACDTILEALL` (1692/0x69C:3)

Context:

Description:

"ACD Tile Counters (All)" Telecommand Packet

Starts collection of all ACD tile counters.

Layout:

ACD Tile Counters (All) (acd_tile_all) Telecommand Packet Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x69C:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=9**															
006	**0**	**Function Code=3**														
008	**interval:** `intv`															
00A	**count:** `cnt`															
00C	**destn:** `dest`															
00E	**Packet Checksum**															

Fields:

`count` **(17.3.1)**

Attribute(s):

Brief: "Sample count"

Instance(s): `cnt`

`destn` **(17.3.3)**

Attribute(s):

Brief: "Output destination"

Instance(s): `dest`

The output destination for the counter data: 0 = diagnostic stream; 1 = science data stream.

`interval` **(17.3.4)**

Attribute(s):

Brief: "Sample interval in milliseconds"

Instance(s): `intv`

Time between read of counters in a duration.

ITOS Mnemonic: `LMCACDTILEPAIR`

17.1.1 `LMCACDTILEPAIR` (1692/0x69C:2)

Context:

Description:

"ACD Tile Counter (Pair)" Telecommand Packet

Starts collection of a pair of ACD tile counters.

Layout:

ACD Tile Counter (Pair) `(acd_tile_pair)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x69C:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=13**															
006	**0**	**Function Code=2**														
008	**interval:** `intv`															
00A	**count:** `cnt`															
00C	**tile_num:** `tile_0`															
00E	**tile_num:** `tile_1`															
010	**destn:** `dest`															
012	**Packet Checksum**															

Fields:

`count` **(17.3.1)**

Attribute(s):

Brief: "Sample count"

Instance(s): `cnt`

`destn` **(17.3.3)**

Attribute(s):

Brief: "Output destination"

Instance(s): `dest`

The output destination for the counter data: 0 = diagnostic stream; 1 = science data stream.

`interval` **(17.3.4)**

Attribute(s):

Brief: "Sample interval in milliseconds"

Instance(s): `intv`

Time between read of counters in a duration.

`tile_num` **(17.3.8)**

Attribute(s):

Brief: "ACD Tile ID"

Instance(s): `tile_0`, `tile_1`

ITOS Mnemonic: `LMCCALLRS`

17.1.2 `LMCCALLRS` (1692/0x69C:0)

Context:

Description:

"CAL Low Rate Science Counters" Telecommand Packet

Start collection of CAL low rate science counter data

Layout:

CAL Low Rate Science Counters `(cal_lrs)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x69C:0**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=15**															
006	**0**			**Function Code=0**												
008	**interval:** `intv`															
00A	**count:** `cnt`															
00C	**cal_mask:** `cal_mask`															
010	**tem_mask:** `tem_mask`															
012	**destn:** `dest`															
014	**Packet Checksum**															

Fields:

`cal_mask` **(17.3.0)**

Attribute(s):

Brief: "CAL LRS Mask"

Instance(s): `cal_mask`

`count` **(17.3.1)**

Attribute(s):

Brief: "Sample count"

Instance(s): `cnt`

`destn` **(17.3.3)**

Attribute(s):

Brief: "Output destination"

Instance(s): `dest`

The output destination for the counter data: 0 = diagnostic stream; 1 = science data stream.

`interval` **(17.3.4)**

Attribute(s):

Brief: "Sample interval in milliseconds"

Instance(s): `intv`

Time between read of counters in a duration.

`tem_mask` **(17.3.7)**

Attribute(s):

Brief: "TEM device mask"

Instance(s): `tem_mask`

ITOS Mnemonic: `LMCNOOP`

17.1.3 `LMCNOOP` (1692/0x69C:6)

Context:

Description:

"No-op" Telecommand Packet

No-op command always returns LMC_SUCCESS.

Layout:

No-op (`noop`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x69C:6										
002	SF=3			Sequence Count												
004	Packet Length=3															
006	0	Function Code=6														

ITOS Mnemonic: `LMCSTOPCOUNT`

17.1.4 `LMCSTOPCOUNT` (1692/0x69C:4)

Context:

Description:

"Stop Active Counter" Telecommand Packet

Stop the active counter

Layout:

Stop Active Counter `(stop_count)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x69C:4**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=4**														
008	**counter_opcode:** `opcode`															
00C	**Packet Checksum**															

Fields:

`counter_opcode` **(17.3.2)**

Attribute(s):

Brief: "Counter type opcode"

Instance(s): `opcode`

Designates the counter type CAL, TKR, or ACD

ITOS Mnemonic: `LMCTEMDEADTIME`

17.1.5 `LMCTEMDEADTIME` (1692/0x69C:5)

Context:

Description:

"TEM Deadtime Low Rate Science Counter" Telecommand Packet

Counts the deadtime incurred by specific trigger primitives.

Layout:

TEM Deadtime Low Rate Science Counter `(tem_deadtime)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x69C:5**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=13**															
006	**0**	**Function Code=5**														
008	**interval:** `intv`															
00A	**count:** `cnt`															
00C	**dead_mask:** `dead_mask`															

TEM Deadtime Low Rate Science Counter (tem_deadtime) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
00E	**tem_mask:** tem_mask															
010	**destn:** dest															
012	**Packet Checksum**															

Fields:

count **(17.3.1)**

Attribute(s):

Brief: "Sample count"

Instance(s): cnt

dead_mask **(17.2.0)**

Attribute(s):

Brief: "TEM Deadtime Mask"

Instance(s): dead_mask

Enables or disables counting deadtime incurred by a TEM.If a bit at a specified offset is clear, the corresponding deadtime contribution is counting. If a bit is set, the corresponding deadtime contribution is masked and not counted. If the bit for "total" is set, then the CAL and TKR bits are interpreted as "don't cares".

destn **(17.3.3)**

Attribute(s):

Brief: "Output destination"

Instance(s): dest

The output destination for the counter data: 0 = diagnostic stream; 1 = science data stream.

interval **(17.3.4)**

Attribute(s):

Brief: "Sample interval in milliseconds"

Instance(s): intv

Time between read of counters in a duration.

`tem_mask` **(17.3.7)**

Attribute(s):

Brief: "TEM device mask"

Instance(s): `tem_mask`

ITOS Mnemonic: `LMCTKRLRS`

17.1.6 `LMCTKRLRS` (1692/0x69C:1)

Context:

Description:

"TKR Low Rate Science Counters" Telecommand Packet

Starts collection of TKR 3-in-a-row counters.

Layout:

TKR Low Rate Science Counters (tkr_lrs) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x69C:1**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=13**															
006	**0**	**Function Code=1**														
008	**interval:** intv															
00A	**count:** cnt															
00C	**tkr_mask:** tkr_mask															
00E	**tem_mask:** tem_mask															
010	**destn:** dest															
012	**Packet Checksum**															

Fields:

`count` **(17.3.1)**

Attribute(s):

Brief: "Sample count"

Instance(s): `cnt`

`destn` **(17.3.3)**

Attribute(s):

Brief: "Output destination"

Instance(s): `dest`

The output destination for the counter data: 0 = diagnostic stream; 1 = science data stream.

`interval` **(17.3.4)**

Attribute(s):

Brief: "Sample interval in milliseconds"

Instance(s): `intv`

Time between read of counters in a duration.

`tem_mask` **(17.3.7)**

Attribute(s):

Brief: "TEM device mask"

Instance(s): `tem_mask`

`tkr_mask` **(17.3.9)**

Attribute(s):

Brief: "TKR LRS Mask"

Instance(s): `tkr_mask`

17.2 Command Bitfields

17.2.0 `dead_mask` (TEM Deadtime Mask) Telecommand Bitfield

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Enables or disables counting deadtime incurred by a TEM.If a bit at a specified offset is clear, the corresponding deadtime contribution is counting. If a bit is set, the corresponding deadtime contribution is masked and not counted. If the bit for "total" is set, then the CAL and TKR bits are interpreted as "don't cares".

Start	Stop	Size	Item Type and Name

Used by:

`tem_deadtime (17.1.5)`

17.3 Command Fields

17.3.0 `cal_mask` (CAL LRS Mask) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`cal_lrs (17.1.2)`

17.3.1 `count` (Sample count) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`acd_tile_all (17.1.0)`

17.3.2 `counter_opcode` (Counter type opcode) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Designates the counter type CAL, TKR, or ACD

Used by:

`stop_count (17.1.4)`

17.3.3 `destn` (Output destination) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

The output destination for the counter data: 0 = diagnostic stream; 1 = science data stream.

Used by:

`acd_tile_all (17.1.0)`

17.3.4 `interval` (Sample interval in milliseconds) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Time between read of counters in a duration.

Used by:

`acd_tile_all (17.1.0)`

17.3.5 `mask_bit` (TEM Deadtime Mask Bit) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

Used by:

???

17.3.6 `spare13` (Spare 13 bits) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	13 bits

Description:

Used by:

???

17.3.7 `tem_mask` (TEM device mask) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`cal_lrs (17.1.2)`

17.3.8 `tile_num` (ACD Tile ID) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`acd_tile_pair (17.1.1)`

17.3.9 `tkr_mask` (TKR LRS Mask) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`tkr_lrs (17.1.6)`

17.4 Telemetry Packets

17.4.0 `lmc_acd` (707/0x2C3)

Context:

Description:

"ACD Tile Counters" Telemetry Packet

Layout:

ACD Tile Counters (lmc_acd) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2C3**										
002	**SF**		**Sequence Count**													
004	**Packet Length=341**															
006	**Timestamp**															
00E	**tspare16:** pad0															
010	**timestamp:** ts															
018	**tile_counter:** cntrs[0-26]															

Fields:

`tile_counter` **(17.5.2)**

Attribute(s):

Brief: "ADC Tile Counter Structure"

Instance(s): `cntrs`

`timestamp` **(17.5.3)**

Attribute(s):

Brief: "Counter start timestamp"

Instance(s): `ts`

`tspare16` **(17.7.10)**

Attribute(s):

Brief: "Spare 16 bits"

Instance(s): `pad0`

17.4.1 `lmc_cal` (705/0x2C1)

Context:

Description:

"CAL Low Rate Science Counters" Telemetry Packet

Layout:

CAL Low Rate Science Counters (`lmc_cal`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2C1**										
002	**SF**		**Sequence Count**													
004	**Packet Length=153**															
006	**Timestamp**															
00E	**tspare16:** `pad0`															
010	**timestamp:** `ts`															
018	**tspare16:** `pad`															
01A	**tenab:** `tenb`															
01C	**lmask:** `lmsk`															
020	**cal_counter:** `cntrs[0-15]`															

Fields:

`cal_counter` **(17.5.0)**

Attribute(s):

Brief: "CAL LRS Counter Structure"

Instance(s): `cntrs`

`lmask` **(17.7.3)**

Attribute(s):

Brief: "Low Rate Science Mask"

Instance(s): `lmsk`

`tenab` **(17.7.6)**

Attribute(s):

Brief: "TEM Enable Word"

Instance(s): `tenb`

16 bit value describing which TEMs should initiate counting of specified low-rate science.

`timestamp` **(17.5.3)**

Attribute(s):

Brief: "Counter start timestamp"

Instance(s): `ts`

`tspare16` **(17.7.10)**

Attribute(s):

Brief: "Spare 16 bits"

Instance(s): `pad`, `pad0`

17.4.2 `lmc_dead` (708/0x2C4)

Context:

Description:

"TEM Deadtime Low Rate Science Counters" Telemetry Packet

Layout:

TEM Deadtime Low Rate Science Counters (`lmc_dead`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2C4**										
002	**SF**		**Sequence Count**													
004	**Packet Length=149**															
006	**Timestamp**															
00E	**tspare16:** `pad0`															
010	**timestamp:** `ts`															
018	**tenab:** `tenb`															
01A	**dtime_msk:** `dmsk`															
01C	**dead_counter:** `cntrs[0-15]`															

Fields:

`dead_counter` **(17.5.1)**

Attribute(s):

Brief: "TEM Deadtime Counter Structure"

Instance(s): `cntrs`

`dtime_msk` **(17.6.1)**

Attribute(s):

Brief: "Deadtime Mask Bitfield"

Instance(s): `dmsk`

`tenab` **(17.7.6)**

Attribute(s):

Brief: "TEM Enable Word"

Instance(s): `tenb`

16 bit value describing which TEMs should initiate counting of specified low-rate science.

`timestamp` **(17.5.3)**

Attribute(s):

Brief: "Counter start timestamp"

Instance(s): `ts`

`tspare16` **(17.7.10)**

Attribute(s):

Brief: "Spare 16 bits"

Instance(s): `pad0`

17.4.3 `lmc_ssr` (929/0x3A1)

Context:

Description:

"Multiplexed counters returned via the SSR" Telemetry Packet

Layout:

Multiplexed counters returned via the SSR (`lmc_ssr`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3A1**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**thdr:** `thdr`															

Fields:

`thdr` **(17.7.7)**

Attribute(s):

Brief: "Tertiary header"

Instance(s): `thdr`

17.4.4 `lmc_tkr` (706/0x2C2)

Context:

Description:

"TKR Low Rate Science Counters" Telemetry Packet

Layout:

TKR Low Rate Science Counters (`lmc_tkr`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2C2**										
002	**SF**			**Sequence Count**												
004	**Packet Length=281**															
006	**Timestamp**															

TKR Low Rate Science Counters (lmc_tkr) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
00E	**tspare16:** pad0															
010	**timestamp:** ts															
018	**tspare16:** pad															
01A	**tenab:** tenb															
01C	**lmask:** lmsk															
020	**tkr_counter:** cntrs[0-31]															

Fields:

lmask **(17.7.3)**

Attribute(s):

Brief: "Low Rate Science Mask"

Instance(s): lmsk

tenab **(17.7.6)**

Attribute(s):

Brief: "TEM Enable Word"

Instance(s): tenb

16 bit value describing which TEMs should initiate counting of specified low-rate science.

timestamp **(17.5.3)**

Attribute(s):

Brief: "Counter start timestamp"

Instance(s): ts

tkr_counter **(17.5.4)**

Attribute(s):

Brief: "TKR LRS Counter Structure"

Instance(s): cntrs

`tspare16` **(17.7.10)**

Attribute(s):

Brief: "Spare 16 bits"

Instance(s): `pad`, `pad0`

17.5 Telemetry Structs

17.5.0 `cal_counter` (CAL LRS Counter Structure) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 64 bits (8 bytes)

Description:

CAL LRS Counter Structure (`cal_counter`) Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**dtime:** `dt`															
004	**counter:** `cnt0`															
006	**counter:** `cnt1`															

Fields:

`counter` **(17.7.0)**

Attribute(s):

Brief: "Counter Data Value"

Instance(s): `cnt0`, `cnt1`

Raw counter value read out from low-rate science counter register.

`dtime` **(17.7.2)**

Attribute(s):

Brief: "Delta Timestamp"

Instance(s): `dt`

Timestamp in microseconds representing elapsed time from start to finish of count operation.

Same as:

`tkr_counter (17.5.4)`

Used by:

`lmc_cal (17.4.1)`

17.5.1 `dead_counter` (TEM Deadtime Counter Structure) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 64 bits (8 bytes)

Description:

TEM Deadtime Counter Structure `(dead_counter)` Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**dtime:** `dt`															
004	**dtime_cntr:** `cnt`															

Fields:

`dtime` **(17.7.2)**

Attribute(s):

Brief: "Delta Timestamp"

Instance(s): `dt`

Timestamp in microseconds representing elapsed time from start to finish of count operation.

`dtime_cntr` **(17.6.0)**

Attribute(s):

Brief: "TEM Deadtime Counter Bitfield"

Instance(s): `cnt`

Used by:

`lmc_dead (17.4.2)`

17.5.2 `tile_counter` (ADC Tile Counter Structure) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 96 bits (12 bytes)

Description:

ADC Tile Counter Structure (tile_counter) Telemetry Field Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**tid:** tile_0															
002	**tid:** tile_1															
004	**dtime:** dt															
008	**counter:** cnt0															
00A	**counter:** cnt1															

Fields:

`counter` **(17.7.0)**

Attribute(s):

Brief: "Counter Data Value"

Instance(s): `cnt0`, `cnt1`

Raw counter value read out from low-rate science counter register.

`dtime` **(17.7.2)**

Attribute(s):

Brief: "Delta Timestamp"

Instance(s): `dt`

Timestamp in microseconds representing elapsed time from start to finish of count operation.

`tid` **(17.7.8)**

Attribute(s):

Brief: "ACD Tile ID"

Instance(s): `tile_0`, `tile_1`

Used by:

`lmc_acd (17.4.0)`

17.5.3 `timestamp` (Counter start timestamp) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 64 bits (8 bytes)

Description:

Counter start timestamp (timestamp) Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**secs:** secs															
004	**usecs:** usecs															

Fields:

secs **(17.7.4)**

Attribute(s):

Brief: "Seconds"

Instance(s): secs

usecs **(17.7.12)**

Attribute(s):

Brief: "Microseconds"

Instance(s): usecs

Used by:

lmc_acd (17.4.0)

17.5.4 tkr_counter (TKR LRS Counter Structure) Telemetry Struct

Definition:

Alignment: 4 bytes
Length: 64 bits (8 bytes)

Description:

TKR LRS Counter Structure (tkr_counter) Telemetry Field Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**dtime:** dt															
004	**counter:** cnt0															
006	**counter:** cnt1															

Fields:

counter **(17.7.0)**

Attribute(s):

Brief: "Counter Data Value"

Instance(s): `cnt0`, `cnt1`

Raw counter value read out from low-rate science counter register.

`dtime` **(17.7.2)**

Attribute(s):

Brief: "Delta Timestamp"

Instance(s): `dt`

Timestamp in microseconds representing elapsed time from start to finish of count operation.

Same as:

`cal_counter (17.5.0)`

Used by:

`lmc_tkr (17.4.4)`

17.6 Telemetry Bitfields

17.6.0 `dtime_cntr` (TEM Deadtime Counter Bitfield) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	7	8	`tspare8 pad`
8	31	24	`tdcntr cntr`

Fields:

`tdcntr` **(17.7.5)**

Attribute(s):

Brief: "TEM Deadtime Counter Data Value"

Instance(s): `cntr`

`tspare8` **(17.7.11)**

Attribute(s):

Brief: "Spare 8 bits"

Instance(s): `pad`

Used by:

`dead_counter (17.5.1)`

17.6.1 `dtime_msk` (Deadtime Mask Bitfield) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	12	13	`tspare13 pad`
13	15	3	`dmask msk`

Fields:

`dmask` **(17.7.1)**

Attribute(s):

Brief: "TEM Deadtime Mask"

Instance(s): `msk`

`tspare13` **(17.7.9)**

Attribute(s):

Brief: "Spare 13 bits"

Instance(s): `pad`

Used by:

`lmc_dead (17.4.2)`

17.7 Telemetry Fields

17.7.0 `counter` (Counter Data Value) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Raw counter value read out from low-rate science counter register.

Used by:

`tile_counter (17.5.2)`

17.7.1 `dmask` (TEM Deadtime Mask) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	3 bits

Description:

Used by:

`dtime_msk (17.6.1)`

17.7.2 `dtime` (Delta Timestamp) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Timestamp in microseconds representing elapsed time from start to finish of count operation.

Used by:

`tile_counter (17.5.2)`

17.7.3 `lmask` (Low Rate Science Mask) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`lmc_cal (17.4.1)`

17.7.4 `secs` (Seconds) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`timestamp (17.5.3)`

17.7.5 `tdcntr` (TEM Deadtime Counter Data Value) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	24 bits

Description:

Used by:

`dtime_cntr (17.6.0)`

17.7.6 `tenab` (TEM Enable Word) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

16 bit value describing which TEMs should initiate counting of specified low-rate science.

Used by:

`lmc_cal (17.4.1)`

17.7.7 `thdr` (Tertiary header) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`lmc_ssr (17.4.3)`

17.7.8 `tid` (ACD Tile ID) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`tile_counter (17.5.2)`

17.7.9 `tspare13` (Spare 13 bits) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	13 bits

Description:

Used by:

`dtime_msk (17.6.1)`

17.7.10 `tspare16` (Spare 16 bits) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`lmc_acd (17.4.0)`

17.7.11 `tspare8` (Spare 8 bits) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	8 bits

Description:

Used by:

`dtime_cntr (17.6.0)`

17.7.12 `usecs` (Microseconds) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`timestamp (17.5.3)`

18 LPA Package

18.0 Overview

The LPA package is the bread and butter function of the instrument. This package provides the ability to set up and run the instrument

The package supports the following functions:

- Configure by compressed file
- Emulated event delivery (to science data interface)
- Real event delivery (instrument to CPU)

18.1 Command Packets

ITOS Mnemonic: `LPAASSOCIATE`

18.1.0 `LPAASSOCIATE` (1653/0x675:0)

Context:

Description:

"Associates a Handler Configuration ID With A Mode" Telecommand Packet

For each of the 8 available modes, an individual handler can take data using one of its 32 available internal configurations. This command associates one of these 32 configuration IDs with a specific mode. Each of the 8 available handler masks maps to a mode. A set bit in any of these 8 masks will take the handler corresponding to that bit position and create an association between the specified configuration ID and the mode.

Layout:

Associates a Handler Configuration ID With A Mode `(Associate)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x675:0**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=47**															
006	**0**	**Function Code=0**														
008	**DB_ID:** `db`															
00C	**CFG_ID:** `cfg`															
010	**CPU_MSK:** `cpus`															
014	**EVH_MSK:** `handlers[0-7]`															
034	**Packet Checksum**															

Fields:

`CFG_ID` **(18.3.1)**

Attribute(s):

Brief: "LPA Configuration ID"

Instance(s): `cfg`

Value that binds a set of event handler configurations to a single unique identifier.

`CPU_MSK` **(18.3.4)**

Attribute(s):

Brief: "CPU Mask"

Instance(s): `cpus`

Mask of logical IDs for target CPUs.

`DB_ID` **(18.3.5)**

Attribute(s):

Brief: "LPA_DB Instance ID"

Instance(s): `db`

Specifies the numerical ID of an LPA configuration database instance. Each instance is generally associated with a distinct LPA category, such as norma or diagnostics.

`EVH_MSK` **(18.3.6)**

Attribute(s):

Brief: "Event Handler Mask"

Instance(s): `handlers`

Mask of event handler IDs as specified in a LPA_DB instance.

ITOS Mnemonic: GFSWLATCLOSEOUT

18.1.1 GFSWLATCLOSEOUT (1777/0x6F1:3)

Context:

Description:

"LAT Burst Closeout Telecommand" Telecommand Packet

One GFSWLATCLOSEOUT Telecommand per burst is sent to the GBM. Note: A corresponding Alert Telemetry packet is sent to the SC for transmission to the ground.

Layout:

LAT Burst Closeout Telecommand (BurstClose) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x6F1:3**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=15**															
006	**0**	**Function Code=3**														
008	**LBD_SEC:** sec															
00C	**LBD_USEC:** usec															
010	**BUR_CLASS:** class															
014	**Packet Checksum**															

Fields:

BUR_CLASS **(18.3.0)**

Attribute(s):

Brief: "LAT Burst Classification"

Instance(s): class

1 = This is a repoint candidate 0= Not a candidate

LBD_SEC **(18.3.14)**

Attribute(s):

Brief: "LAT Burst Declaration Time Seconds"

Instance(s): sec

The LAT specified burst declaration time (identical in all packets related to the same burst). Serves as Burst ID.

`LBD_USEC` **(18.3.15)**

Attribute(s):

Brief: "LAT Burst Declaration Time Usec"

Instance(s): `usec`

The LAT specified burst declaration time (identical in all packets related to the same burst). Serves as Burst ID.

ITOS Mnemonic: `GFSWLATTRIGGER`

18.1.2 `GFSWLATTRIGGER` (1777/0x6F1:1)

Context:

Description:

"LAT Burst Trigger Telecommand" Telecommand Packet

One GFSWLATTRIGGER telecommand per burst is sent to the GBM (and a corresponding Alert Telemetry Packet is sent to the ground).

Layout:

LAT Burst Trigger Telecommand `(BurstTrg)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x6F1:1**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=15**															
006	**0**	**Function Code=1**														
008	**LBD_SEC:** `sec`															
00C	**LBD_USEC:** `usec`															
010	**BUR_CLASS:** `class`															
014	**Packet Checksum**															

Fields:

`BUR_CLASS` **(18.3.0)**

Attribute(s):

Brief: "LAT Burst Classification"

Instance(s): `class`

1 = This is a repoint candidate 0= Not a candidate

`LBD_SEC` **(18.3.14)**

Attribute(s):

Brief: "LAT Burst Declaration Time Seconds"

Instance(s): `sec`

The LAT specified burst declaration time (identical in all packets related to the same burst). Serves as Burst ID.

`LBD_USEC` **(18.3.15)**

Attribute(s):

Brief: "LAT Burst Declaration Time Usec"

Instance(s): `usec`

The LAT specified burst declaration time (identical in all packets related to the same burst). Serves as Burst ID.

ITOS Mnemonic: `LPACONFIGURE`

18.1.3 `LPACONFIGURE` (1652/0x674:0)

Context:

Description:

"Configures Active Event Handlers For a Mode" Telecommand Packet

Configures LPA to activate a specified set of event handlers for each of 8 possible modes. Each of the 8 handler masks corresponds to a mode. A set bit in any of the 8 masks will configure LPA to activate the handler corresponding to that bit position upon entering the appropriate mode. The cfg parameter is unused.

Layout:

Configures Active Event Handlers For a Mode `(Configure)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x674:0**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=47**															

Configures Active Event Handlers For a Mode `(Configure)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
006	**0**	**Function Code=0**														
008	**DB_ID:** `db`															
00C	**CFG_ID:** `cfg`															
010	**CPU_MSK:** `cpus`															
014	**EVH_MSK:** `handlers[0-7]`															
034	**Packet Checksum**															

Fields:

`CFG_ID` **(18.3.1)**

Attribute(s):

Brief: "LPA Configuration ID"

Instance(s): `cfg`

Value that binds a set of event handler configurations to a single unique identifier.

`CPU_MSK` **(18.3.4)**

Attribute(s):

Brief: "CPU Mask"

Instance(s): `cpus`

Mask of logical IDs for target CPUs.

`DB_ID` **(18.3.5)**

Attribute(s):

Brief: "LPA_DB Instance ID"

Instance(s): `db`

Specifies the numerical ID of an LPA configuration database instance. Each instance is generally associated with a distinct LPA category, such as norma or diagnostics.

`EVH_MSK` **(18.3.6)**

Attribute(s):

Brief: "Event Handler Mask"

Instance(s): `handlers`

Mask of event handler IDs as specified in a LPA_DB instance.

ITOS Mnemonic: `LPAGBMCALCINFO`

18.1.4 `LPAGBMCALCINFO` (1632/0x660:1)

Context:

Description:

"GBM Calc Info" Telecommand Packet

The GBM shall be capable of issuing this telecommand periodically during a burst sequence to the LAT. It contains the best available calculated location and reliability parameters.

Layout:

GBM Calc Info (GbmCalc) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x660:1**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=39**															
006	**0**	**Function Code=1**														
008	**TRGID_TSEC:** tsec															
00C	**TRGID_USEC:** usec															
00E	**LR_SEQ:** seq								**LR_VER:** ver							
010	**LOC_RA:** ra															
012	**LOC_DEC:** dec															
014	**TOT_ERR:** err															
016	**LOC_ALG:** lalg															
018	**EVT_CLASS:** class0								**EVT_CLASS:** class1							
01A	**EVT_CLASS:** class2								**EVT_CLASS:** class3							
01C	**TRG_ALG_16:** talg0															
01E	**TRG_ALG_8:** talg1								**TRG_ALG_8:** talg2							
020	**TRG_ALG_8:** talg3								**TRG_ALG_8:** talg4							
022	**TRG_ALG_16:** talg5															
024	**TRG_ALG_16:** talg6															
026	**TRG_ALG_8:** talg7[0-5]															
02C	**Packet Checksum**															

Fields:

`EVT_CLASS` **(18.3.7)**

Attribute(s):

Brief: "GRB Event Class"

Instance(s): `class0`, `class1`, `class2`, `class3`

Byte 0: Most likely Event Type (enum?) Byte 1: 2nd Most likely Event Type Byte 2: Most likely Event Probability (0 255) Byte 3: 2nd Most likely Event s Probability (0 255) RELIABILITY Deleted: Classification and reliability of classification

`LOC_ALG` **(18.3.16)**

Attribute(s):

Brief: "GRB Location Algorithm"

Instance(s): `lalg`

GRB location algorithm used.

`LOC_DEC` **(18.3.17)**

Attribute(s):

Brief: "GRB Declination"

Instance(s): `dec`

GRB calculated declination in arcmin

`LOC_RA` **(18.3.18)**

Attribute(s):

Brief: "GRB Right Ascension"

Instance(s): `ra`

GRB calculated right ascension location in arcmin

`LR_SEQ` **(18.3.20)**

Attribute(s):

Brief: "GRB LAT Record Sequence Number"

Instance(s): `seq`

Record number (1 relative) with respect to the specified TRIGGER ID burst.

`LR_VER` **(18.3.21)**

Attribute(s):

Brief: "GRB Record Type Version"

Instance(s): `ver`

Record Type Version Number

`TOT_ERR` **(18.3.27)**

Attribute(s):

Brief: "GRB Total Error"

Instance(s): `err`

GRB error on location in arcmin

`TRG_ALG_16` **(18.3.30)**

Attribute(s):

Brief: "GRB Trigger Algorithm 16 Bit Member"

Instance(s): `talg0`, `talg5`, `talg6`

Bytes 0-1: uint16 Timescale; Units: msec Byte 2: uint8 Algorithm Number (0 119) Byte 3: uint8 ITIME_ChanLow (0 7) Byte 4: uint8 ITIME_ChanHigh (0 7) Byte 5: uint8 SpareA Bytes 6-7: uint16 ADC_ChanLow (0 4095) Bytes 8-9: uint16 ADC_ChanHigh (0 4095) Bytes 10-15: uint8[6] SparesB Deleted

`TRG_ALG_8` **(18.3.31)**

Attribute(s):

Brief: "GRB Trigger Algorithm 8 Bit Member"

Instance(s): `talg1`, `talg2`, `talg3`, `talg4`, `talg7`

Bytes 0-1: uint16 Timescale; Units: msec Byte 2: uint8 Algorithm Number (0 119) Byte 3: uint8 ITIME_ChanLow (0 7) Byte 4: uint8 ITIME_ChanHigh (0 7) Byte 5: uint8 SpareA Bytes 6-7: uint16 ADC_ChanLow (0 4095) Bytes 8-9: uint16 ADC_ChanHigh (0 4095) Bytes 10-15: uint8[6] SparesB Deleted

`TRGID_TSEC` **(18.3.28)**

Attribute(s):

Brief: "GRB Trigger ID"

Instance(s): `tsec`

Tenths of a second

`TRGID_USEC` **(18.3.29)**

Attribute(s):

Brief: "GBM Trigger ID"

Instance(s): `usec`

Microseconds.

ITOS Mnemonic: `LPAGBMCLOSEOUT`

18.1.5 `LPAGBMCLOSEOUT` (1632/0x660:3)

Context:

Description:

"GBM Closeout" Telecommand Packet

The GBM shall provide exactly one of these telecommands for each burst trigger. It will be the LAST message sent about any particular burst.

Layout:

GBM Closeout (GbmClose) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x660:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**	**Function Code=3**														
008	**TRGID_TSEC:** `tsec`															
00C	**TRGID_USEC:** `usec`															
00E	**LR_SEQ:** `seq`								**LR_VER:** `ver`							
010	**Packet Checksum**															

Fields:

`LR_SEQ` **(18.3.20)**

Attribute(s):

Brief: "GRB LAT Record Sequence Number"

Instance(s): `seq`

Record number (1 relative) with respect to the specified TRIGGER ID burst.

`LR_VER` **(18.3.21)**

Attribute(s):

Brief: "GRB Record Type Version"

Instance(s): `ver`

Record Type Version Number

`TRGID_TSEC` **(18.3.28)**

Attribute(s):

Brief: "GRB Trigger ID"

Instance(s): `tsec`

Tenths of a second

`TRGID_USEC` **(18.3.29)**

Attribute(s):

Brief: "GBM Trigger ID"

Instance(s): `usec`

Microseconds.

ITOS Mnemonic: `LPAGBMCREPRECOM`

18.1.6 `LPAGBMCREPRECOM` (1632/0x660:2)

Context:

Description:

"GBM Repoint" Telecommand Packet

The Candidate Repoint Recommendation telecommand is sent once per burst trigger.

Layout:

GBM Repoint (GbmRpt) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x660:2**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=25**															
006	**0**	**Function Code=2**														
008	**TRGID_TSEC:** tsec															
00C	**TRGID_USEC:** usec															
00E	**LR_SEQ:** seq								**LR_VER:** ver							
010	**LPASPARE8:** pad								**RPT_REC:** rec							
012	**LOC_RA:** ra															
014	**LOC_DEC:** dec															
016	**TOT_ERR:** err															
018	**LOC_ALG:** lalg															
01A	**EVT_CLASS:** class0								**EVT_CLASS:** class1							
01C	**EVT_CLASS:** class2								**EVT_CLASS:** class3							
01E	**Packet Checksum**															

Fields:

`EVT_CLASS` **(18.3.7)**

Attribute(s):

Brief: "GRB Event Class"

Instance(s): `class0`, `class1`, `class2`, `class3`

Byte 0: Most likely Event Type (enum?) Byte 1: 2nd Most likely Event Type Byte 2: Most likely Event Probability (0 255) Byte 3: 2nd Most likely Event s Probability (0 255) RELIABILITY Deleted: Classification and reliability of classification

`LOC_ALG` **(18.3.16)**

Attribute(s):

Brief: "GRB Location Algorithm"

Instance(s): `lalg`

GRB location algorithm used.

`LOC_DEC` **(18.3.17)**

Attribute(s):

Brief: "GRB Declination"

Instance(s): `dec`

GRB calculated declination in arcmin

`LOC_RA` **(18.3.18)**

Attribute(s):

Brief: "GRB Right Ascension"

Instance(s): `ra`

GRB calculated right ascension location in arcmin

`LPASPARE8` **(18.3.19)**

Attribute(s):

Brief: "Spare 8 Bits"

Instance(s): `pad`

`LR_SEQ` **(18.3.20)**

Attribute(s):

Brief: "GRB LAT Record Sequence Number"

Instance(s): `seq`

Record number (1 relative) with respect to the specified TRIGGER ID burst.

`LR_VER` **(18.3.21)**

Attribute(s):

Brief: "GRB Record Type Version"

Instance(s): `ver`

Record Type Version Number

`RPT_REC` **(18.3.24)**

Attribute(s):

Brief: "GBM Reporn Recommendation"

Instance(s): `rec`

0 = Do Not Recommend Repoint 1 = Recommend Repoint

`TOT_ERR` **(18.3.27)**

Attribute(s):

Brief: "GRB Total Error"

Instance(s): `err`

GRB error on location in arcmin

`TRGID_TSEC` **(18.3.28)**

Attribute(s):

Brief: "GRB Trigger ID"

Instance(s): `tsec`

Tenths of a second

`TRGID_USEC` **(18.3.29)**

Attribute(s):

Brief: "GBM Trigger ID"

Instance(s): `usec`

Microseconds.

ITOS Mnemonic: `LPANOOP`

18.1.7 `LPANOOP` (1653/0x675:4)

Context:

Description:

"LPA No-Op Command" Telecommand Packet

No-op command. Execution will always return LPA_SUCESS.

Layout:

LPA No-Op Command `(Noop)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x675:4										
002	SF=3			Sequence Count												
004	Packet Length=3															
006	0	Function Code=4														

ITOS Mnemonic: `LPASETCOMPRESS`

18.1.8 `LPASETCOMPRESS` (1653/0x675:5)

Context:

Description:

"Sets the Data Compression Level" Telecommand Packet

Layout:

Sets the Data Compression Level `(SetCompress)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x675:5										
002	SF=3			Sequence Count												
004	Packet Length=15															
006	0	Function Code=5														
008	DB_ID: `db`															
00C	CPU_MSK: `cpus`															
010	CLEVEL: `level`															
014	Packet Checksum															

Fields:

`CLEVEL` **(18.3.2)**

Attribute(s):

Brief: "Compression Level"

Instance(s): `level`

`CPU_MSK` **(18.3.4)**

Attribute(s):

Brief: "CPU Mask"

Instance(s): `cpus`

Mask of logical IDs for target CPUs.

`DB_ID` **(18.3.5)**

Attribute(s):

Brief: "LPA_DB Instance ID"

Instance(s): `db`

Specifies the numerical ID of an LPA configuration database instance. Each instance is generally associated with a distinct LPA category, such as norma or diagnostics.

ITOS Mnemonic: `LPASETDEFAULT`

18.1.9 `LPASETDEFAULT` (1653/0x675:6)

Context:

Description:

"Set Default Parameters" Telecommand Packet

Sets default parameters for LATC files and LPA_DB instance ID. These defaults can be activated for a physics run by using the value 0xffffffff in the corresponding LPASTART parameters. Validity flags allow for setting of individual parameters without altering others. A set valid bit will allow the parameter to be used.

Layout:

Set Default Parameters (SetDefault) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x675:6**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=17**															
006	**0**		**Function Code=6**													
008	**DB_ID:** db															
00C	**LATC_ID:** latc															
010	**LATC_ID:** ignore															
014	**LATCPRMVALID:** valid															
016	**Packet Checksum**															

Fields:

DB_ID **(18.3.5)**

Attribute(s):

Brief: "LPA_DB Instance ID"

Instance(s): db

Specifies the numerical ID of an LPA configuration database instance. Each instance is generally associated with a distinct LPA category, such as norma or diagnostics.

LATC_ID **(18.3.13)**

Attribute(s):

Brief: "LATC Configuration File ID"

Instance(s): ignore, latc

LATC instrument configuration file ID.

LATCPRMVALID **(18.2.1)**

Attribute(s):

Brief: "LATC Parameter Valid Flags"

Instance(s): valid

Bitfield containing parameter validity flags.

ITOS Mnemonic: `LPASETGRB`

18.1.10 `LPASETGRB` (1653/0x675:3)

Context:

Description:

"Sets the GRB Processing State" Telecommand Packet

Enables or disables processing of GRB messages from the GBM and/or EPUs. A value of 0 will DISABLE the processing, and a value of 1 will ENABLE the processing. Set the coresponding valid parameter to 1 to allow processing of parameter. GRB detection simulation parameters control: type of simulation to execute, interval between states, and a repoint request time in seconds - 0 = no request. When the simulation mode is zero (disabled) , the emaining simlation parameters are ignored. Changes the active GRB processor software executing on the SIU and EPUs. To set the active GRB ID on a cpu, set the bit in the cpu mask parameter corresponding to the cpu node ID. The GRB_ID corresponds to the ID value set for the GRB processor in the LPA_DB GRB schema instance. Set the corresponding valid parameter to 1 to allow processing of parameter.

Layout:

Sets the GRB Processing State `(SetGrb)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x675:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=33**															
006	**0**			**Function Code=3**												
008	**CPU_MSK:** `cpus`															
00C	**GRB_ID:** `grb`															
010	**GRB_ENAB:** `gbm`															
014	**GRB_ENAB:** `epu`															
018	**GRB_SIM_MODE:** `mode`															
01C	**GRB_SIM_INTERVAL:** `intv`															
020	**GRB_SIM_RPT:** `rpt`															
024	**GRBPRMVALID:** `valid`															
026	**Packet Checksum**															

Fields:

`CPU_MSK` **(18.3.4)**

Attribute(s):

Brief: "CPU Mask"

Instance(s): `cpus`

Mask of logical IDs for target CPUs.

`GRB_ENAB` **(18.3.8)**

Attribute(s):

Brief: "GRB Enable Word"

Instance(s): `epu`, `gbm`

`GRB_ID` **(18.3.9)**

Attribute(s):

Brief: "GRB Processor ID"

Instance(s): `grb`

`GRB_SIM_INTERVAL` **(18.3.10)**

Attribute(s):

Brief: "GRB Simulation Interval"

Instance(s): `intv`

`GRB_SIM_MODE` **(18.3.11)**

Attribute(s):

Brief: "GRB Simulation Mode"

Instance(s): `mode`

`GRB_SIM_RPT` **(18.3.12)**

Attribute(s):

Brief: "GRB Simulation Repoint Seconds"

Instance(s): `rpt`

`GRBPRMVALID` **(18.2.0)**

Attribute(s):

Brief: "GRB Parameter Valid Flags"

Instance(s): `valid`

Parameter valid flags.

ITOS Mnemonic: `LPASETOUTPUT`

18.1.11 `LPASETOUTPUT` (1653/0x675:2)

Context:

Description:

"Sets the Output Stream States" Telecommand Packet

Enables or disables event output streams. The output streams are SSR and GRB, corresponding to bit positions 0 and 1, respectively. The LPAEVHOUTMASK parameter will enable/disable the posting of events by an event handler to the LPA output posters. The LPAPOSTOUTMASK parameter will enable/disable writing of data to the physical output, SSR for events and SIU for GRB. A set bit in an output mask will ENABLE that output stage. A bit not set will DISABLE that output stage. The GRB_ID parameter sets the active GRB processor for evet posting.

Layout:

Sets the Output Stream States (SetOutput) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x675:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=19**															
006	**0**	**Function Code=2**														
008	**DB_ID:** db															
00C	**CPU_MSK:** cpus															
010	**OUTPUT_MASK:** evh_mask															
014	**OUTPUT_MASK:** lpa_mask															
018	**Packet Checksum**															

Fields:

`CPU_MSK` **(18.3.4)**

Attribute(s):

Brief: "CPU Mask"

Instance(s): `cpus`

Mask of logical IDs for target CPUs.

`DB_ID` **(18.3.5)**

Attribute(s):

Brief: "LPA_DB Instance ID"

Instance(s): `db`

Specifies the numerical ID of an LPA configuration database instance. Each instance is generally associated with a distinct LPA category, such as norma or diagnostics.

`OUTPUT_MASK` **(18.3.23)**

Attribute(s):

Brief: "Output Disable Mask"

Instance(s): `evh_mask`, `lpa_mask`

Mask of output streams.

ITOS Mnemonic: `LPASTART`

18.1.12 `LPASTART` (1652/0x674:1)

Context:

Description:

"Starts a Physics Run" Telecommand Packet

Starts a physics run using the specifed LATC instrument configuration file(s), observation run ID, operational mode, and event handler configuration.

Layout:

Starts a Physics Run (Start) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x674:1**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=31**															
006	**0**	**Function Code=1**														
008	**LATC_ID:** `latc`															
00C	**LATC_ID:** `ignore`															
010	**RUN_ID:** `run`															
014	**DB_ID:** `db`															
018	**MODE_ID:** `mode`															
01C	**CNS_FLG:** `consign`															
020	**CPU_MSK:** `cpus`															

Starts a Physics Run `(Start)` **Telecommand Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
024	**Packet Checksum**															

Fields:

`CNS_FLG` **(18.3.3)**

Attribute(s):

Brief: "LATC Consign Flag"

Instance(s): `consign`

`CPU_MSK` **(18.3.4)**

Attribute(s):

Brief: "CPU Mask"

Instance(s): `cpus`

Mask of logical IDs for target CPUs.

`DB_ID` **(18.3.5)**

Attribute(s):

Brief: "LPA_DB Instance ID"

Instance(s): `db`

Specifies the numerical ID of an LPA configuration database instance. Each instance is generally associated with a distinct LPA category, such as norma or diagnostics.

`LATC_ID` **(18.3.13)**

Attribute(s):

Brief: "LATC Configuration File ID"

Instance(s): `ignore`, `latc`

LATC instrument configuration file ID.

`MODE_ID` **(18.3.22)**

Attribute(s):

Brief: "Mode ID"

Instance(s): `mode`

LAT operational mode ID.

`RUN_ID` **(18.3.25)**

Attribute(s):

Brief: "Physics Observation Run ID"

Instance(s): `run`

Unique value identifying a single physics observation run.
ITOS Mnemonic: `LPASTOP`

18.1.13 `LPASTOP` (1652/0x674:3)

Context:

Description:

"Stops a Physics Run" Telecommand Packet

Terminates the active physics observation on all EPUs.

Layout:

Stops a Physics Run `(Stop)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x674:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=3**														

18.2 Command Bitfields

18.2.0 `GRBPRMVALID` (GRB Parameter Valid Flags) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Parameter valid flags.

Start	Stop	Size	Item Type and Name

Used by:

`SetGrb (18.1.10)`

18.2.1 `LATCPRMVALID` (LATC Parameter Valid Flags) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfield containing parameter validity flags.

Start	Stop	Size	Item Type and Name

Used by:

`SetDefault (18.1.9)`

18.3 Command Fields

18.3.0 `BUR_CLASS` (LAT Burst Classification) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

1 = This is a repoint candidate 0= Not a candidate

Used by:

`BurstClose (18.1.1)`

18.3.1 `CFG_ID` (LPA Configuration ID) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Value that binds a set of event handler configurations to a single unique identifier.

Used by:

`Associate (18.1.0)`

18.3.2 `CLEVEL` (Compression Level) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`SetCompress (18.1.8)`

18.3.3 `CNS_FLG` (LATC Consign Flag) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`Start (18.1.12)`

18.3.4 `CPU_MSK` (CPU Mask) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Mask of logical IDs for target CPUs.

Used by:

`Associate (18.1.0)`

18.3.5 `DB_ID` (LPA_DB Instance ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Specifies the numerical ID of an LPA configuration database instance. Each instance is generally associated with a distinct LPA category, such as norma or diagnostics.

Used by:

`Associate (18.1.0)`

18.3.6 `EVH_MSK` (Event Handler Mask) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Mask of event handler IDs as specified in a LPA_DB instance.

Used by:

`Associate (18.1.0)`

18.3.7 `EVT_CLASS` (GRB Event Class) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Byte 0: Most likely Event Type (enum?) Byte 1: 2nd Most likely Event Type Byte 2: Most likely Event Probability (0 255) Byte 3: 2nd Most likely Event s Probability (0 255) RELIABILITY Deleted: Classification and reliability of classification

Used by:

`GbmCalc (18.1.4)`

18.3.8 `GRB_ENAB` (GRB Enable Word) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`SetGrb (18.1.10)`

18.3.9 `GRB_ID` (GRB Processor ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`SetGrb (18.1.10)`

18.3.10 `GRB_SIM_INTERVAL` (GRB Simulation Interval) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`SetGrb (18.1.10)`

18.3.11 `GRB_SIM_MODE` (GRB Simulation Mode) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`SetGrb (18.1.10)`

18.3.12 `GRB_SIM_RPT` (GRB Simulation Repoint Seconds) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`SetGrb (18.1.10)`

18.3.13 `LATC_ID` (LATC Configuration File ID) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

LATC instrument configuration file ID.

Used by:

`SetDefault (18.1.9)`

18.3.14 `LBD_SEC` (LAT Burst Declaration Time Seconds) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

The LAT specified burst declaration time (identical in all packets related to the same burst). Serves as Burst ID.

Used by:

BurstClose (18.1.1)

18.3.15 LBD_USEC (LAT Burst Declaration Time Usec) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The LAT specified burst declaration time (identical in all packets related to the same burst). Serves as Burst ID.

Used by:

BurstClose (18.1.1)

18.3.16 LOC_ALG (GRB Location Algorithm) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

GRB location algorithm used.

Used by:

GbmCalc (18.1.4)

18.3.17 LOC_DEC (GRB Declination) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	short
Length:	16 bits (2 bytes)

Description:

GRB calculated declination in arcmin

Used by:

GbmCalc (18.1.4)

18.3.18 LOC_RA (GRB Right Ascension) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short

Length: 16 bits (2 bytes)

Description:

GRB calculated right ascension location in arcmin

Used by:

`GbmCalc (18.1.4)`

18.3.19 `LPASPARE8` (Spare 8 Bits) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Used by:

`GbmRpt (18.1.6)`

18.3.20 `LR_SEQ` (GRB LAT Record Sequence Number) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Record number (1 relative) with respect to the specified TRIGGER ID burst.

Used by:

`GbmCalc (18.1.4)`

18.3.21 `LR_VER` (GRB Record Type Version) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Record Type Version Number

Used by:

`GbmCalc (18.1.4)`

18.3.22 `MODE_ID` (Mode ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

LAT operational mode ID.

Used by:

`Start (18.1.12)`

18.3.23 `OUTPUT_MASK` (Output Disable Mask) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Mask of output streams.

Used by:

`SetOutput (18.1.11)`

18.3.24 `RPT_REC` (GBM Reporn Recommendation) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

0 = Do Not Recommend Repoint 1 = Recommend Repoint

Used by:

`GbmRpt (18.1.6)`

18.3.25 `RUN_ID` (Physics Observation Run ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Unique value identifying a single physics observation run.

Used by:

`Start (18.1.12)`

18.3.26 `SPARE13` (Spare 13 Bits) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	13 bits

Description:

Used by:

???

18.3.27 `TOT_ERR` (GRB Total Error) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

GRB error on location in arcmin

Used by:

`GbmCalc (18.1.4)`

18.3.28 `TRGID_TSEC` (GRB Trigger ID) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Tenths of a second

Used by:

`GbmCalc (18.1.4)`

18.3.29 `TRGID_USEC` (GBM Trigger ID) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Microseconds.

Used by:

GbmCalc (18.1.4)

18.3.30 TRG_ALG_16 (GRB Trigger Algorithm 16 Bit Member) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Bytes 0-1: uint16 Timescale; Units: msec Byte 2: uint8 Algorithm Number (0 119) Byte 3: uint8 ITIME_ChanLow (0 7) Byte 4: uint8 ITIME_ChanHigh (0 7) Byte 5: uint8 SpareA Bytes 6-7: uint16 ADC_ChanLow (0 4095) Bytes 8-9: uint16 ADC_ChanHigh (0 4095) Bytes 10-15: uint8[6] SparesB Deleted

Used by:

GbmCalc (18.1.4)

18.3.31 TRG_ALG_8 (GRB Trigger Algorithm 8 Bit Member) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Bytes 0-1: uint16 Timescale; Units: msec Byte 2: uint8 Algorithm Number (0 119) Byte 3: uint8 ITIME_ChanLow (0 7) Byte 4: uint8 ITIME_ChanHigh (0 7) Byte 5: uint8 SpareA Bytes 6-7: uint16 ADC_ChanLow (0 4095) Bytes 8-9: uint16 ADC_ChanHigh (0 4095) Bytes 10-15: uint8[6] SparesB Deleted

Used by:

GbmCalc (18.1.4)

18.3.32 VALID_FLG (Parameter Valid Flag) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

Used by:

???

18.4 Telemetry Packets

18.4.0 `ALRTCLOSE` (835/0x343)

Context:

Description:

"LAT Burst Closeout Alert Telemetry" Telemetry Packet

The LAT shall provide this Alert Telemetry to the SC when it closes its burst processing for the specified burst. No more than one of these Closeout Records shall be generated per burst ID.

Layout:

LAT Burst Closeout Alert Telemetry (ALRTCLOSE) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x343**										
002	**SF**		**Sequence Count**													
004	**Packet Length=81**															
006	**Timestamp**															
00E	**RECINFO:** info															
010	**TSEC:** dcl_sec															
014	**TUSEC:** dcl_usec															
018	**BCLASS:** bclass															
01C	**BSIG:** temporal															
01E	**BSIG:** spatial															
020	**BRA:** ra															
022	**BDEC:** dec															
024	**BERR:** err															
026	**GCNT:** loc_cnt															
028	**TSEC:** ep_sec															
02C	**TUSEC:** ep_usec															
030	**TSEC:** lp_sec															
034	**TUSEC:** lp_usec															
038	**GCNT:** gam_cnt[0-3]															
040	**BQUAT:** quaternion[0-3]															
048	**TRGPRM:** trg_prm[0-7]															

Fields:

BCLASS **(18.5.0)**

Attribute(s):

Brief: "Burst Classification"

Instance(s): `bclass`

GRB Burst classification.

`BDEC` **(18.6.1)**

Attribute(s):

Brief: "Burst Location DEC"

Instance(s): `dec`

`BERR` **(18.6.2)**

Attribute(s):

Brief: "Burst Error in Arcmin"

Instance(s): `err`

`BQUAT` **(18.6.4)**

Attribute(s):

Brief: "Burst Quaternion"

Instance(s): `quaternion`

`BRA` **(18.6.5)**

Attribute(s):

Brief: "Burst Location RA"

Instance(s): `ra`

`BSIG` **(18.6.7)**

Attribute(s):

Brief: "Burst Significance"

Instance(s): `spatial`, `temporal`

`GCNT` **(18.6.19)**

Attribute(s):

Brief: "Gamma Counts"

Instance(s): `gam_cnt`, `loc_cnt`

`RECINFO` **(18.5.1)**

Attribute(s):

Brief: "Record Info"

Instance(s): `info`

`TRGPRM` **(18.6.37)**

Attribute(s):

Brief: "Trigger Parameter"

Instance(s): `trg_prm`

`TSEC` **(18.6.38)**

Attribute(s):

Brief: "Time Seconds"

Instance(s): `dcl_sec`, `ep_sec`, `lp_sec`

`TUSEC` **(18.6.39)**

Attribute(s):

Brief: "Time Microseconds"

Instance(s): `dcl_usec`, `ep_usec`, `lp_usec`

18.4.1 `ALRTTRG` (833/0x341)

Context:

Description:

"LAT Burst Trigger Alert Telemetry" Telemetry Packet

One LATTRIGGER Alert Telemetry packet per burst is sent to the SC for transmission to the ground.

Layout:

LAT Burst Trigger Alert Telemetry (ALRTTRG) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x341**										
002	**SF**			**Sequence Count**												
004	**Packet Length=81**															
006	**Timestamp**															
00E	**RECINFO:** info															
010	**TSEC:** dcl_sec															
014	**TUSEC:** dcl_usec															
018	**BCLASS:** bclass															
01C	**BSIG:** temporal															
01E	**BSIG:** spatial															
020	**BRA:** ra															
022	**BDEC:** dec															
024	**BERR:** err															
026	**GCNT:** loc_cnt															
028	**TSEC:** ep_sec															
02C	**TUSEC:** ep_usec															
030	**TSEC:** lp_sec															
034	**TUSEC:** lp_usec															
038	**GCNT:** gam_cnt[0-3]															
040	**BQUAT:** quaternion[0-3]															
048	**TRGPRM:** trg_prm[0-7]															

Fields:

BCLASS **(18.5.0)**

Attribute(s):

Brief: "Burst Classification"

Instance(s): bclass

GRB Burst classification.

BDEC **(18.6.1)**

Attribute(s):

Brief: "Burst Location DEC"

Instance(s): dec

`BERR` **(18.6.2)**

Attribute(s):

Brief: "Burst Error in Arcmin"

Instance(s): `err`

`BQUAT` **(18.6.4)**

Attribute(s):

Brief: "Burst Quaternion"

Instance(s): `quaternion`

`BRA` **(18.6.5)**

Attribute(s):

Brief: "Burst Location RA"

Instance(s): `ra`

`BSIG` **(18.6.7)**

Attribute(s):

Brief: "Burst Significance"

Instance(s): `spatial`, `temporal`

`GCNT` **(18.6.19)**

Attribute(s):

Brief: "Gamma Counts"

Instance(s): `gam_cnt`, `loc_cnt`

`RECINFO` **(18.5.1)**

Attribute(s):

Brief: "Record Info"

Instance(s): `info`

`TRGPRM` **(18.6.37)**

Attribute(s):

Brief: "Trigger Parameter"

Instance(s): `trg_prm`

`TSEC` **(18.6.38)**

Attribute(s):

Brief: "Time Seconds"

Instance(s): `dcl_sec`, `ep_sec`, `lp_sec`

`TUSEC` **(18.6.39)**

Attribute(s):

Brief: "Time Microseconds"

Instance(s): `dcl_usec`, `ep_usec`, `lp_usec`

18.4.2 `ALRTUPDATE` (834/0x342)

Context:

Description:

"LAT Burst Update Alert Telemetry" Telemetry Packet

The LAT shall provide this Alert Telemetry to the SC (for transmission to the ground) as updates to its burst processing are available. No more than ten of these Updates shall be generated per burst ID.

Layout:

LAT Burst Update Alert Telemetry (ALRTUPDATE) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x342**										
002	**SF**		**Sequence Count**													
004	**Packet Length=81**															
006	**Timestamp**															
00E	**RECINFO:** `info`															
010	**TSEC:** `dcl_sec`															
014	**TUSEC:** `dcl_usec`															

LAT Burst Update Alert Telemetry (ALRTUPDATE) **Telemetry Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
018	**BCLASS:** bclass															
01C	**BSIG:** temporal															
01E	**BSIG:** spatial															
020	**BRA:** ra															
022	**BDEC:** dec															
024	**BERR:** err															
026	**GCNT:** loc_cnt															
028	**TSEC:** ep_sec															
02C	**TUSEC:** ep_usec															
030	**TSEC:** lp_sec															
034	**TUSEC:** lp_usec															
038	**GCNT:** gam_cnt[0-3]															
040	**BQUAT:** quaternion[0-3]															
048	**TRGPRM:** trg_prm[0-7]															

Fields:

BCLASS **(18.5.0)**

Attribute(s):

Brief: "Burst Classification"

Instance(s): bclass

GRB Burst classification.

BDEC **(18.6.1)**

Attribute(s):

Brief: "Burst Location DEC"

Instance(s): dec

BERR **(18.6.2)**

Attribute(s):

Brief: "Burst Error in Arcmin"

Instance(s): err

`BQUAT` **(18.6.4)**

Attribute(s):

Brief: "Burst Quaternion"

Instance(s): `quaternion`

`BRA` **(18.6.5)**

Attribute(s):

Brief: "Burst Location RA"

Instance(s): `ra`

`BSIG` **(18.6.7)**

Attribute(s):

Brief: "Burst Significance"

Instance(s): `spatial`, `temporal`

`GCNT` **(18.6.19)**

Attribute(s):

Brief: "Gamma Counts"

Instance(s): `gam_cnt`, `loc_cnt`

`RECINFO` **(18.5.1)**

Attribute(s):

Brief: "Record Info"

Instance(s): `info`

`TRGPRM` **(18.6.37)**

Attribute(s):

Brief: "Trigger Parameter"

Instance(s): `trg_prm`

`TSEC` **(18.6.38)**

Attribute(s):

Brief: "Time Seconds"

Instance(s): `dcl_sec`, `ep_sec`, `lp_sec`

`TUSEC` **(18.6.39)**

Attribute(s):

Brief: "Time Microseconds"

Instance(s): `dcl_usec`, `ep_usec`, `lp_usec`

18.4.3 `EPU0CFG` (737/0x2E1)

Context:

Description:

"LPA EPU0 Configuration Status Packet" Telemetry Packet

Contains LPA EPU status information for configuration and execution of physics runs.

Layout:

LPA EPU0 Configuration Status Packet `(EPU0CFG)` **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2E1**										
002	**SF**		**Sequence Count**													
004	**Packet Length=113**															
006	**Timestamp**															
00E	**EVHPOST:** `evh_enab`								**LPAPOST:** `lpa_post`							
010	**RUNID:** `last_run`															
014	**MODEID:** `last_mode`															
018	**STARTSECS:** `last_start`															
01C	**DBID:** `last_dbid`															
020	**DBKEY:** `last_dbkey`															
024	**EVHENAB:** `handlers[0-7]`															
044	**CFGID:** `last_cfgid`															
048	**EVHENAB:** `last_assoc[0-7]`															
068	**DGMCNT:** `dgm_cnt`															
06C	**GRBID:** `grb_id`															
070	**GRBCNT:** `grb_cnt`															

LPA EPU0 Configuration Status Packet (EPU0CFG) **Telemetry Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
074	**COMPLVL:** clevel															

Fields:

CFGID **(18.6.10)**

Attribute(s):

Brief: "Event Handler Configuration ID"

Instance(s): last_cfgid

Event handler specific configuration ID.

COMPLVL **(18.6.11)**

Attribute(s):

Brief: "Compression Level"

Instance(s): clevel

DBID **(18.6.12)**

Attribute(s):

Brief: "LPA_DB ID"

Instance(s): last_dbid

DBKEY **(18.6.13)**

Attribute(s):

Brief: "LPA_DB File Key"

Instance(s): last_dbkey

DGMCNT **(18.6.14)**

Attribute(s):

Brief: "Datagram Post Count"

Instance(s): `dgm_cnt`

Count of datagrams posted in last physics run.

`EVHENAB` **(18.6.16)**

Attribute(s):

Brief: "Event Handler Enable Mask"

Instance(s): `handlers`, `last_assoc`

`EVHPOST` **(18.6.17)**

Attribute(s):

Brief: "Event Handler Post Enabled"

Instance(s): `evh_enab`

Event handler event posting enable state. 0 - disabled, 1 - enabled.

`GRBCNT` **(18.6.20)**

Attribute(s):

Brief: "GRB Summary Post Count"

Instance(s): `grb_cnt`

`GRBID` **(18.6.21)**

Attribute(s):

Brief: "GRB Processor ID"

Instance(s): `grb_id`

`LPAPOST` **(18.6.26)**

Attribute(s):

Brief: "LPA Post State"

Instance(s): `lpa_post`

LPA datagram post enable state. 0 - disabled, 1 - enabled.

`MODEID` **(18.6.27)**

Attribute(s):
dsc: LPAMODES (18.7.0)

Brief: "LPA Mode ID"

Instance(s): `last_mode`

`RUNID` **(18.6.31)**

Attribute(s):

Brief: "Last Run ID"

Instance(s): `last_run`

`STARTSECS` **(18.6.35)**

Attribute(s):

Brief: "Last Run Start Time"

18.4.4 `EPU0EVTDAT` (956/0x3BC)

Context:

Description:

"LPA EPU0 Event Data" Telemetry Packet

Layout:

LPA EPU0 Event Data (`EPU0EVTDAT`) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3BC**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** `thdr`															

Fields:

`THDR` **(18.6.36)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): `thdr`

18.4.5 `EPU0EVTSTAT` (951/0x3B7)

Context:

Description:

"EPU0 Event Statistics" Telemetry Packet

Layout:

EPU0 Event Statistics (EPU0EVTSTAT) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3B7**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** `thdr`															

Fields:

`THDR` **(18.6.36)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): `thdr`

18.4.6 `EPU1CFG` (738/0x2E2)

Context:

Description:

"LPA EPU1 Configuration Status Packet" Telemetry Packet

Contains LPA EPU status information for configuration and execution of physics runs.

Layout:

LPA EPU1 Configuration Status Packet (EPU1CFG) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2E2**										
002	**SF**			**Sequence Count**												
004	**Packet Length=113**															
006	**Timestamp**															
00E	**EVHPOST:** evh_enab								**LPAPOST:** lpa_post							
010	**RUNID:** last_run															
014	**MODEID:** last_mode															
018	**STARTSECS:** last_start															
01C	**DBID:** last_dbid															
020	**DBKEY:** last_dbkey															
024	**EVHENAB:** handlers[0-7]															
044	**CFGID:** last_cfgid															
048	**EVHENAB:** last_assoc[0-7]															
068	**DGMCNT:** dgm_cnt															
06C	**GRBID:** grb_id															
070	**GRBCNT:** grb_post															
074	**COMPLVL:** clevel															

Fields:

CFGID **(18.6.10)**

Attribute(s):

Brief: "Event Handler Configuration ID"

Instance(s): last_cfgid

Event handler specific configuration ID.

COMPLVL **(18.6.11)**

Attribute(s):

Brief: "Compression Level"

Instance(s): clevel

DBID **(18.6.12)**

Attribute(s):

Brief: "LPA_DB ID"

Instance(s): `last_dbid`

`DBKEY` **(18.6.13)**

Attribute(s):

Brief: "LPA_DB File Key"

Instance(s): `last_dbkey`

`DGMCNT` **(18.6.14)**

Attribute(s):

Brief: "Datagram Post Count"

Instance(s): `dgm_cnt`

Count of datagrams posted in last physics run.

`EVHENAB` **(18.6.16)**

Attribute(s):

Brief: "Event Handler Enable Mask"

Instance(s): `handlers`, `last_assoc`

`EVHPOST` **(18.6.17)**

Attribute(s):

Brief: "Event Handler Post Enabled"

Instance(s): `evh_enab`

Event handler event posting enable state. 0 - disabled, 1 - enabled.

`GRBCNT` **(18.6.20)**

Attribute(s):

Brief: "GRB Summary Post Count"

Instance(s): `grb_post`

`GRBID` **(18.6.21)**

Attribute(s):

Brief: "GRB Processor ID"

Instance(s): `grb_id`

`LPAPOST` **(18.6.26)**

Attribute(s):

Brief: "LPA Post State"

Instance(s): `lpa_post`

LPA datagram post enable state. 0 - disabled, 1 - enabled.

`MODEID` **(18.6.27)**

Attribute(s):
dsc: LPAMODES (18.7.0)

Brief: "LPA Mode ID"

Instance(s): `last_mode`

`RUNID` **(18.6.31)**

Attribute(s):

Brief: "Last Run ID"

Instance(s): `last_run`

`STARTSECS` **(18.6.35)**

Attribute(s):

Brief: "Last Run Start Time"

Instance(s): `last_start`

18.4.7 `EPU1EVTDAT` (957/0x3BD)

Context:

Description:

"LPA EPU1 Event Data" Telemetry Packet

Layout:

LPA EPU1 Event Data (EPU1EVTDAT) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3BD**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** `thdr`															

Fields:

`THDR` **(18.6.36)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): `thdr`

18.4.8 `EPU1EVTSTAT` (952/0x3B8)

Context:

Description:

"EPU1 Event Statistics" Telemetry Packet

Layout:

EPU1 Event Statistics (EPU1EVTSTAT) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3B8**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															

EPU1 Event Statistics (EPU1EVTSTAT) Telemetry Packet Format																
0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
00E	THDR: thdr															

Fields:

THDR **(18.6.36)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): thdr

18.4.9 EPU2CFG (739/0x2E3)

Context:

Description:

"LPA EPU2 Configuration Status Packet" Telemetry Packet

Contains LPA EPU status information for configuration and execution of physics runs.

Layout:

LPA EPU2 Configuration Status Packet (EPU2CFG) Telemetry Packet Format																
0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=0	SH	APID=0x2E3										
002	SF		Sequence Count													
004	Packet Length=113															
006	Timestamp															
00E	EVHPOST: evh_enab										LPAPOST: lpa_post					
010	RUNID: last_run															
014	MODEID: last_mode															
018	STARTSECS: last_start															
01C	DBID: last_dbid															
020	DBKEY: last_dbkey															
024	EVHENAB: handlers[0-7]															
044	CFGID: last_cfgid															
048	EVHENAB: last_assoc[0-7]															
068	DGMCNT: dgm_cnt															
06C	GRBID: grb_id															
070	GRBCNT: grb_cnt															
074	COMPLVL: clevel															

Fields:

`CFGID` **(18.6.10)**

Attribute(s):

Brief: "Event Handler Configuration ID"

Instance(s): `last_cfgid`

Event handler specific configuration ID.

`COMPLVL` **(18.6.11)**

Attribute(s):

Brief: "Compression Level"

Instance(s): `clevel`

`DBID` **(18.6.12)**

Attribute(s):

Brief: "LPA_DB ID"

Instance(s): `last_dbid`

`DBKEY` **(18.6.13)**

Attribute(s):

Brief: "LPA_DB File Key"

Instance(s): `last_dbkey`

`DGMCNT` **(18.6.14)**

Attribute(s):

Brief: "Datagram Post Count"

Instance(s): `dgm_cnt`

Count of datagrams posted in last physics run.

`EVHENAB` **(18.6.16)**

Attribute(s):

Brief: "Event Handler Enable Mask"

Instance(s): `handlers`, `last_assoc`

`EVHPOST` **(18.6.17)**

Attribute(s):

Brief: "Event Handler Post Enabled"

Instance(s): `evh_enab`

Event handler event posting enable state. 0 - disabled, 1 - enabled.

`GRBCNT` **(18.6.20)**

Attribute(s):

Brief: "GRB Summary Post Count"

Instance(s): `grb_cnt`

`GRBID` **(18.6.21)**

Attribute(s):

Brief: "GRB Processor ID"

Instance(s): `grb_id`

`LPAPOST` **(18.6.26)**

Attribute(s):

Brief: "LPA Post State"

Instance(s): `lpa_post`

LPA datagram post enable state. 0 - disabled, 1 - enabled.

`MODEID` **(18.6.27)**

Attribute(s):
dsc: LPAMODES (18.7.0)

Brief: "LPA Mode ID"

Instance(s): `last_mode`

`RUNID` **(18.6.31)**

Attribute(s):

Brief: "Last Run ID"

Instance(s): `last_run`

`STARTSECS` **(18.6.35)**

Attribute(s):

Brief: "Last Run Start Time"

Instance(s): `last_start`

18.4.10 `EPU2EVTDAT` (958/0x3BE)

Context:

Description:

"LPA EPU2 Event Data" Telemetry Packet

Layout:

LPA EPU2 Event Data (EPU2EVTDAT) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3BE**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** `thdr`															

Fields:

`THDR` **(18.6.36)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): `thdr`

18.4.11 `EPU2EVTSTAT` (953/0x3B9)

Context:

Description:

"EPU2 Event Statistics" Telemetry Packet

Layout:

EPU2 Event Statistics (EPU2EVTSTAT) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3B9**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** `thdr`															

Fields:

`THDR` **(18.6.36)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): `thdr`

18.4.12 `SIUCFG` (736/0x2E0)

Context:

Description:

"LPA SIU Configuration Status Packet" Telemetry Packet

Contains LPA SIU status information for configuration and execution of physics runs.

Layout:

LPA SIU Configuration Status Packet (SIUCFG) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2E0**										

LPA SIU Configuration Status Packet (SIUCFG) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF**		**Sequence Count**													
004	**Packet Length=69**															
006	**Timestamp**															
00E	**GBMENAB:** gbm								**EPUENAB:** epu							
010	**RUNID:** last_run															
014	**MODEID:** last_mode															
018	**STARTSECS:** last_start															
01C	**LATCKEY:** last_latckey															
020	**IGNKEY:** last_ignkey															
024	**DBID:** last_dbid															
028	**LATCID:** last_latcid															
02C	**IGNID:** last_ignid															
030	**LATCID:** def_latcid															
034	**IGNID:** def_ignid															
038	**DBID:** def_dbid															
03C	**GRBID:** grb_id															
040	**SIMMODE:** sim_mode															
044	**SIMINTV:** sim_intv															
048	**SIMRPT:** sim_rpt															

Fields:

DBID **(18.6.12)**

Attribute(s):

Brief: "LPA_DB ID"

Instance(s): def_dbid, last_dbid

EPUENAB **(18.6.15)**

Attribute(s):

Brief: "EPU GRB Enabled"

Instance(s): epu

Enable state of EPU GRB summary message processing by SIU. 0 - disabled, 1 - enabled.

GBMENAB **(18.6.18)**

Attribute(s):

Brief: "GBM Commands Enabled"

Instance(s): `gbm`

GBM telecommand processing enable state. 0 - disabled, 1 - enabled.

`GRBID` **(18.6.21)**

Attribute(s):

Brief: "GRB Processor ID"

Instance(s): `grb_id`

`IGNID` **(18.6.22)**

Attribute(s):

Brief: "LATC Ignore Map File ID"

Instance(s): `def_ignid`, `last_ignid`

`IGNKEY` **(18.6.23)**

Attribute(s):

Brief: "LATC Ignore File Key"

Instance(s): `last_ignkey`

`LATCID` **(18.6.24)**

Attribute(s):

Brief: "LATC File ID"

Instance(s): `def_latcid`, `last_latcid`

`LATCKEY` **(18.6.25)**

Attribute(s):

Brief: "LATC File Key"

Instance(s): `last_latckey`

`MODEID` **(18.6.27)**

Attribute(s):
dsc: LPAMODES (18.7.0)

Brief: "LPA Mode ID"

Instance(s): `last_mode`

`RUNID` **(18.6.31)**

Attribute(s):

Brief: "Last Run ID"

Instance(s): `last_run`

`SIMINTV` **(18.6.32)**

Attribute(s):

Brief: "GRB Simulation Interval"

Instance(s): `sim_intv`

`SIMMODE` **(18.6.33)**

Attribute(s):

Brief: "GRB Simulation Mode"

Instance(s): `sim_mode`

`SIMRPT` **(18.6.34)**

Attribute(s):

Brief: "GRB Simulation Repoint Time"

Instance(s): `sim_rpt`

`STARTSECS` **(18.6.35)**

Attribute(s):

Brief: "Last Run Start Time"

Instance(s): `last_start`

18.4.13 SIUEVTDAT (955/0x3BB)

Context:

Description:

"LPA SIU Event Data" Telemetry Packet

Layout:

LPA SIU Event Data (SIUEVTDAT) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3BB**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** thdr															

Fields:

THDR **(18.6.36)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): thdr

18.4.14 SIUEVTSTAT (950/0x3B6)

Context:

Description:

"SIU Event Statistics" Telemetry Packet

Layout:

SIU Event Statistics (SIUEVTSTAT) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3B6**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															

SIU Event Statistics (SIUEVTSTAT) **Telemetry Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
00E	**THDR:** thdr															

Fields:

THDR **(18.6.36)**

Attribute(s):

Brief: "Tertiary Header"

Instance(s): thdr

18.5 Telemetry Bitfields

18.5.0 BCLASS (Burst Classification) Telemetry Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

GRB Burst classification.

Start	Stop	Size	Item Type and Name
0	11	12	BRSVD rsvd
12	12	1	BCNF confirmed
13	13	1	BTYPE type
14	15	2	BMETH method
16	31	16	BSIZE size

Fields:

BCNF **(18.6.0)**

Attribute(s):

Brief: "Burst Confirmed"

Instance(s): confirmed

BMETH **(18.6.3)**

Attribute(s):

Brief: "Burst Location Method"

Instance(s): method

BRSVD **(18.6.6)**

Attribute(s):

Brief: "Burst Reserved"

Instance(s): rsvd

BSIZE **(18.6.8)**

Attribute(s):

Brief: "Burst Window Size"

Instance(s): `size`

`BTYPE` **(18.6.9)**

Attribute(s):

Brief: "Burst Type"

Instance(s): `type`

0 = LAT 1 = GBM

Used by:

`ALRTCLOSE (18.4.0)`

18.5.1 `RECINFO` (Record Info) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	**3**	**4**	`RECVER ver`
4	**7**	**4**	`RECTYP typ`
8	**15**	**8**	`RECSEQ seq`

Fields:

`RECSEQ` **(18.6.28)**

Attribute(s):

Brief: "Record Sequence Count"

Instance(s): `seq`

`RECTYP` **(18.6.29)**

Attribute(s):

Brief: "Record Type"

Instance(s): `typ`

Must be 2

`RECVER` **(18.6.30)**

Attribute(s):

Brief: "Record Version"

Instance(s): `ver`

Must be 0

Used by:

`ALRTCLOSE (18.4.0)`

18.6 Telemetry Fields

18.6.0 BCNF (Burst Confirmed) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 1 bit

Description:

Used by:

BCLASS (18.5.0)

18.6.1 BDEC (Burst Location DEC) Telemetry Field

Definition:

Alignment: 2 bytes
C type: short
Length: 16 bits (2 bytes)

Description:

Used by:

ALRTCLOSE (18.4.0)

18.6.2 BERR (Burst Error in Arcmin) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Used by:

ALRTCLOSE (18.4.0)

18.6.3 BMETH (Burst Location Method) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 2 bits

Description:

Used by:

BCLASS (18.5.0)

18.6.4 BQUAT (Burst Quaternion) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

ALRTCLOSE (18.4.0)

18.6.5 BRA (Burst Location RA) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

ALRTCLOSE (18.4.0)

18.6.6 BRSVD (Burst Reserved) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	12 bits

Description:

Used by:

BCLASS (18.5.0)

18.6.7 BSIG (Burst Significance) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

ALRTCLOSE (18.4.0)

18.6.8 BSIZE (Burst Window Size) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	16 bits

Description:

Used by:

BCLASS (18.5.0)

18.6.9 BTYPE (Burst Type) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	1 bit

Description:

0 = LAT 1 = GBM

Used by:

BCLASS (18.5.0)

18.6.10 CFGID (Event Handler Configuration ID) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Event handler specific configuration ID.

Used by:

EPU0CFG (18.4.3)

18.6.11 COMPLVL (Compression Level) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

EPU0CFG (18.4.3)

18.6.12 DBID (LPA_DB ID) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

EPU0CFG (18.4.3)

18.6.13 DBKEY (LPA_DB File Key) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

EPU0CFG (18.4.3)

18.6.14 DGMCNT (Datagram Post Count) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Count of datagrams posted in last physics run.

Used by:

EPU0CFG (18.4.3)

18.6.15 EPUENAB (EPU GRB Enabled) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Enable state of EPU GRB summary message processing by SIU. 0 - disabled, 1 - enabled.

Used by:

SIUCFG (18.4.12)

18.6.16 EVHENAB (Event Handler Enable Mask) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

EPU0CFG (18.4.3)

18.6.17 EVHPOST (Event Handler Post Enabled) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Event handler event posting enable state. 0 - disabled, 1 - enabled.

Used by:

EPU0CFG (18.4.3)

18.6.18 GBMENAB (GBM Commands Enabled) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

GBM telecommand processing enable state. 0 - disabled, 1 - enabled.

Used by:

SIUCFG (18.4.12)

18.6.19 GCNT (Gamma Counts) Telemetry Field

Definition:

Alignment: 2 bytes

C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Used by:

ALRTCLOSE (18.4.0)

18.6.20 GRBCNT (GRB Summary Post Count) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

EPU0CFG (18.4.3)

18.6.21 GRBID (GRB Processor ID) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

EPU0CFG (18.4.3)

18.6.22 IGNID (LATC Ignore Map File ID) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

SIUCFG (18.4.12)

18.6.23 IGNKEY (LATC Ignore File Key) Telemetry Field

Definition:

Alignment: 4 bytes

C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

SIUCFG (18.4.12)

18.6.24 LATCID (LATC File ID) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

SIUCFG (18.4.12)

18.6.25 LATCKEY (LATC File Key) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

SIUCFG (18.4.12)

18.6.26 LPAPOST (LPA Post State) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

LPA datagram post enable state. 0 - disabled, 1 - enabled.

Used by:

EPU0CFG (18.4.3)

18.6.27 MODEID (LPA Mode ID) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

EPU0CFG (18.4.3)

18.6.28 RECSEQ (Record Sequence Count) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	8 bits

Description:

Used by:

RECINFO (18.5.1)

18.6.29 RECTYP (Record Type) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

Must be 2

Used by:

RECINFO (18.5.1)

18.6.30 RECVER (Record Version) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

Must be 0

Used by:

RECINFO (18.5.1)

18.6.31 `RUNID` (Last Run ID) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`EPU0CFG (18.4.3)`

18.6.32 `SIMINTV` (GRB Simulation Interval) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`SIUCFG (18.4.12)`

18.6.33 `SIMMODE` (GRB Simulation Mode) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`SIUCFG (18.4.12)`

18.6.34 `SIMRPT` (GRB Simulation Repoint Time) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`SIUCFG (18.4.12)`

18.6.35 `STARTSECS` (Last Run Start Time) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`EPU0CFG (18.4.3)`

18.6.36 `THDR` (Tertiary Header) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Used by:

`EPU0EVTDAT (18.4.4)`

18.6.37 `TRGPRM` (Trigger Parameter) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Used by:

`ALRTCLOSE (18.4.0)`

18.6.38 `TSEC` (Time Seconds) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`ALRTCLOSE (18.4.0)`

18.6.39 `TUSEC` (Time Microseconds) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`ALRTCLOSE (18.4.0)`

18.7 Discretes

18.7.0 LPAMODES (LPA Mode ID) Discrete

ITOS Mnemonic: LPAMODES

Description:

Definition:

0 LPA Normal Mode (LPANORMAL)

1 LPA TOO Mode (LPATOO)

2 LPA GRB0 Suspect Mode (LPAGRB0)

3 LPA GRB1 Confirm Mode (LPAGRB1)

4 LPA GRB2 Closeout Mode (LPAGRB2)

5 LPA Solar Mode (LPASOLAR)

6 LPA Calibration Mode (LPACALIBRATION)

7 LPA Diagnostic Mode (LPADIAGNOSTIC)

Used by:

EPU0CFG (18.4.3), EPU1CFG (18.4.6), EPU2CFG (18.4.9), SIUCFG (18.4.12)

19 LRA Package

19.0 Overview

The LRA package provides the most primitive access to all registers that configure and control the instrument. LRA runs within the Instrument Physics task.

The package supports the following functions:

- Configure ACD front-end electronics
- Configure GASU (i.e., CRU, GEM, EBM, AEM)
- Configure PDU
- Configure TKR and CAL front-end electronics

19.1 Command Packets

ITOS Mnemonic: `LRACONTROL`

19.1.0 `LRACONTROL` (1664/0x680:3)

Context:

Description:

"Control operation" Telecommand Packet

Perform a control operation on a LAT component.

Layout:

Control operation (CONTROL) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x680:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**	**Function Code=3**														
008	**CMPNT:** `cmpnt`								**BLOCK:** `block`							
00A	**TEM:** `tem`								**CC:** `cc`							
00C	**RC:** `rc`								**FE:** `fe`							
00E	**REG:** `reg`								**PAD:** `pad`							
010	**Packet Checksum**															

Fields:

`BLOCK` **(19.2.0)**

Attribute(s):
enm: BLOCKS (19.3.0)

Brief: "Register block"

Instance(s): `block`

The register block number to access, for components that have more than one such block.

`CC` **(19.2.1)**

Attribute(s):

Brief: "Cable controller"

Instance(s): `cc`

The cable controller number, for those components accessed via a CC.

`CMPNT` **(19.2.2)**

Attribute(s):
enm: CMPNTS (19.3.1)

Brief: "Component"

Instance(s): `cmpnt`

The LRA component number of the detector component (GEM, EBM, TEM, etc) to access.

`FE` **(19.2.4)**

Attribute(s):

Brief: "Front-end number"

Instance(s): `fe`

The front-end number, for those components located on a front-end.

`PAD` **(19.2.8)**

Attribute(s):

Brief: "Padding"

Instance(s): `pad`

Padding field to make length an even number of bytes.

`RC` **(19.2.10)**

Attribute(s):

Brief: "Readout controller"

Instance(s): `rc`

The readout controller number, for those components accessed via an RC.

`REG` **(19.2.11)**

Attribute(s):

Brief: "Register"

Instance(s): `reg`

The number of the register to access.

`TEM` **(19.2.12)**

Attribute(s):

Brief: "TEM number"

Instance(s): `tem`

The TEM number to access, for those components that are TEM-based.

ITOS Mnemonic: `LRAESRSEND`

19.1.1 `LRAESRSEND` (1664/0x680:11)

Context:

Description:

"Send ESR data to the SSR" Telecommand Packet

Read the error and status register data and send it to the SSR.

Layout:

Send ESR data to the SSR `(ESRSEND)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x680:11**										

Send ESR data to the SSR (ESRSEND) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF=3**		**Sequence Count**													
004	**Packet Length=3**															
006	**0**	**Function Code=11**														

ITOS Mnemonic: LRALAM

19.1.2 LRALAM (1664/0x680:5)

Context:

Description:

"Look-at-me operation" Telecommand Packet

Perform a look-at-me operation on the specified component.

Layout:

Look-at-me operation (LAM) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x680:5**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=5**															
006	**0**	**Function Code=5**														
008	**CMPNT:** cmpnt								**TEM:** tem							
00A	**Packet Checksum**															

Fields:

CMPNT **(19.2.2)**

Attribute(s):
enm: CMPNTS (19.3.1)

Brief: "Component"

Instance(s): cmpnt

The LRA component number of the detector component (GEM, EBM, TEM, etc) to access.

TEM **(19.2.12)**

Attribute(s):

Brief: "TEM number"

Instance(s): `tem`

The TEM number to access, for those components that are TEM-based.
ITOS Mnemonic: `LRALAMLCB`

19.1.3 `LRALAMLCB` (1664/0x680:6)

Context:

Description:

"Look-at-me LCB" Telecommand Packet

Perform a LAM look-at-me operation on the specified slave LCB.

Layout:

Look-at-me LCB `(LAMLCB)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x680:6										
002	SF=3			Sequence Count												
004	Packet Length=15															
006	0	Function Code=6														
008	LAMCPT: `cmpnt`															
00C	LAMVAL: `value`															
010	LAMMSK: `mask`															
014	Packet Checksum															

Fields:

`LAMCPT` **(19.2.5)**

Attribute(s):
enm: CPUS (19.3.2)

Brief: "LAMLCB component"

Instance(s): `cmpnt`

The LCB address of the LCB master (SIU0, EPU1, etc) to be accessed.

`LAMMSK` **(19.2.6)**

Attribute(s):

Brief: "LAMLCB mask"

Instance(s): `mask`

The mask field to be used in the LAMLCB operation.

`LAMVAL` **(19.2.7)**

Attribute(s):

Brief: "LAMLCB value"

Instance(s): `value`

The value field to be used in the LAMLCB operation.

ITOS Mnemonic: `LRALATRESET`

19.1.4 `LRALATRESET` (1664/0x680:4)

Context:

Description:

"Reset the LAT" Telecommand Packet

Perform a LAT reset operation.

Layout:

Reset the LAT `(LATRESET)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x680:4**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=4**														

ITOS Mnemonic: `LRALOAD`

19.1.5 `LRALOAD` (1664/0x680:2)

Context:

Description:

"Load registers" Telecommand Packet

Load register(s) with the specified value.

Layout:

Load registers (LOAD) **Telecommand Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x680:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=19**															
006	**0**	**Function Code=2**														
008	**CMPNT:** cmpnt								**BLOCK:** block							
00A	**TEM:** tem								**CC:** cc							
00C	**RC:** rc								**FE:** fe							
00E	**REG:** reg								**PAD:** pad							
010	**VALHI:** valhi															
014	**VALLO:** vallo															
018	**Packet Checksum**															

Fields:

BLOCK **(19.2.0)**

Attribute(s):
enm: BLOCKS (19.3.0)

Brief: "Register block"

Instance(s): block

The register block number to access, for components that have more than one such block.

CC **(19.2.1)**

Attribute(s):

Brief: "Cable controller"

Instance(s): cc

The cable controller number, for those components accessed via a CC.

CMPNT **(19.2.2)**

Attribute(s):
enm: CMPNTS (19.3.1)

Brief: "Component"

Instance(s): `cmpnt`

The LRA component number of the detector component (GEM, EBM, TEM, etc) to access.

`FE` **(19.2.4)**

Attribute(s):

Brief: "Front-end number"

Instance(s): `fe`

The front-end number, for those components located on a front-end.

`PAD` **(19.2.8)**

Attribute(s):

Brief: "Padding"

Instance(s): `pad`

Padding field to make length an even number of bytes.

`RC` **(19.2.10)**

Attribute(s):

Brief: "Readout controller"

Instance(s): `rc`

The readout controller number, for those components accessed via an RC.

`REG` **(19.2.11)**

Attribute(s):

Brief: "Register"

Instance(s): `reg`

The number of the register to access.

`TEM` **(19.2.12)**

Attribute(s):

Brief: "TEM number"

Instance(s): `tem`

The TEM number to access, for those components that are TEM-based.

`VALHI` **(19.2.14)**

Attribute(s):

Brief: "Register value high"

Instance(s): `valhi`

The high order 32 bits of the value to be loaded into the specified registers.

`VALLO` **(19.2.15)**

Attribute(s):

Brief: "Register value low"

Instance(s): `vallo`

The low order 32 bits of the value to be loaded into the specified registers.

ITOS Mnemonic: `LRANOOP`

19.1.6 `LRANOOP` (1664/0x680:0)

Context:

Description:

"No-op" Telecommand Packet

Perform a no-op to check that the LRA task is alive.

Layout:

No-op `(NOOP)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x680:0										
002	SF=3			Sequence Count												
004	Packet Length=3															
006	0	Function Code=0														

ITOS Mnemonic: LRAREAD

19.1.7 LRAREAD (1664/0x680:1)

Context:

Description:

"Read registers" Telecommand Packet

Read the register(s) specified by the command parameters.

Layout:

Read registers (READ) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x680:1**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=11**															
006	**0**	**Function Code=1**														
008	**CMPNT:** cmpnt								**BLOCK:** block							
00A	**TEM:** tem								**CC:** cc							
00C	**RC:** rc								**FE:** fe							
00E	**REG:** reg								**DEST:** dest							
010	**Packet Checksum**															

Fields:

BLOCK **(19.2.0)**

Attribute(s):
enm: BLOCKS (19.3.0)

Brief: "Register block"

Instance(s): block

The register block number to access, for components that have more than one such block.

CC **(19.2.1)**

Attribute(s):

Brief: "Cable controller"

Instance(s): cc

The cable controller number, for those components accessed via a CC.

`CMPNT` **(19.2.2)**

Attribute(s):
enm: CMPNTS (19.3.1)

Brief: "Component"

Instance(s): `cmpnt`

The LRA component number of the detector component (GEM, EBM, TEM, etc) to access.

`DEST` **(19.2.3)**

Attribute(s):

Brief: "Output destination"

Instance(s): `dest`

The destination for the generated register data. 0 = diagnostic stream (1552), 1 = science stream (SSR).

`FE` **(19.2.4)**

Attribute(s):

Brief: "Front-end number"

Instance(s): `fe`

The front-end number, for those components located on a front-end.

`RC` **(19.2.10)**

Attribute(s):

Brief: "Readout controller"

Instance(s): `rc`

The readout controller number, for those components accessed via an RC.

`REG` **(19.2.11)**

Attribute(s):

Brief: "Register"

Instance(s): `reg`

The number of the register to access.

`TEM` **(19.2.12)**

Attribute(s):

Brief: "TEM number"

Instance(s): `tem`

The TEM number to access, for those components that are TEM-based.

ITOS Mnemonic: `LRASTATCLEAR`

19.1.8 `LRASTATCLEAR` (1664/0x680:8)

Context:

Description:

"Clear statistics data" Telecommand Packet

Clear the LRA statistics data.

Layout:

Clear statistics data `(STATCLEAR)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x680:8**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=3**															
006	**0**	**Function Code=8**														

ITOS Mnemonic: LRASTATPERIOD

19.1.9 LRASTATPERIOD (1664/0x680:7)

Context:

Description:

"Set the statistics update period" Telecommand Packet

Set the LRA statistics data update period. If zero is specified, the default value of 100 (1 second) is used.

Layout:

Set the statistics update period (STATPERIOD) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x680:7**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**			**Function Code=7**												
008	**PERIOD:** period															
00C	**Packet Checksum**															

Fields:

PERIOD **(19.2.9)**

Attribute(s):

Brief: "Statistics update period"

Instance(s): period

The period between register statistics updates in units of 1/100 sec.

ITOS Mnemonic: LRASTATSEND

19.1.10 LRASTATSEND (1664/0x680:9)

Context:

Description:

"Send statistics data to the SSR" Telecommand Packet

Send the accumulated LRA statistics data to the SSR.

Layout:

Send statistics data to the SSR (STATSEND) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x680:9**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=9**														

ITOS Mnemonic: LRASTATTEMS

19.1.11 LRASTATTEMS (1664/0x680:10)

Context:

Description:

"Set the mask of TEMs for EBM stats" Telecommand Packet

Set the bit mask of TEMs to be used in turn when collecting the counts of events read by the EBM. If a value of zero is specified, the default value of 0xffff (all TEMs) is used.

Layout:

Set the mask of TEMs for EBM stats (STATTEMS) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x680:10**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=10**														
008	**TEMMSK:** temmask															
00C	**Packet Checksum**															

Fields:

TEMMSK **(19.2.13)**

Attribute(s):

Brief: "Mask of TEMs for EBM stats"

Instance(s): temmask

The bit mask of TEMs to be used in turn when collecting counts of events read by the EBM.

19.2 Command Fields

19.2.0 `BLOCK` (Register block) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

The register block number to access, for components that have more than one such block.

Used by:

`CONTROL (19.1.0)`

19.2.1 `CC` (Cable controller) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

The cable controller number, for those components accessed via a CC.

Used by:

`CONTROL (19.1.0)`

19.2.2 `CMPNT` (Component) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

The LRA component number of the detector component (GEM, EBM, TEM, etc) to access.

Used by:

`CONTROL (19.1.0)`

19.2.3 `DEST` (Output destination) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

The destination for the generated register data. 0 = diagnostic stream (1552), 1 = science stream (SSR).

Used by:

READ (19.1.7)

19.2.4 FE (Front-end number) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

The front-end number, for those components located on a front-end.

Used by:

CONTROL (19.1.0)

19.2.5 LAMCPT (LAMLCB component) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The LCB address of the LCB master (SIU0, EPU1, etc) to be accessed.

Used by:

LAMLCB (19.1.3)

19.2.6 LAMMSK (LAMLCB mask) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The mask field to be used in the LAMLCB operation.

Used by:

LAMLCB (19.1.3)

19.2.7 LAMVAL (LAMLCB value) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The value field to be used in the LAMLCB operation.

Used by:

`LAMLCB (19.1.3)`

19.2.8 `PAD` (Padding) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Padding field to make length an even number of bytes.

Used by:

`CONTROL (19.1.0)`

19.2.9 `PERIOD` (Statistics update period) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The period between register statistics updates in units of 1/100 sec.

Used by:

`STATPERIOD (19.1.9)`

19.2.10 `RC` (Readout controller) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

The readout controller number, for those components accessed via an RC.

Used by:

CONTROL (19.1.0)

19.2.11 REG (Register) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

The number of the register to access.

Used by:

CONTROL (19.1.0)

19.2.12 TEM (TEM number) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

The TEM number to access, for those components that are TEM-based.

Used by:

CONTROL (19.1.0)

19.2.13 TEMMSK (Mask of TEMs for EBM stats) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	int
Length:	32 bits (4 bytes)

Description:

The bit mask of TEMs to be used in turn when collecting counts of events read by the EBM.

Used by:

STATTEMS (19.1.11)

19.2.14 VALHI (Register value high) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The high order 32 bits of the value to be loaded into the specified registers.

Used by:

LOAD (19.1.5)

19.2.15 VALLO (Register value low) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

The low order 32 bits of the value to be loaded into the specified registers.

Used by:

LOAD (19.1.5)

19.3 Enumerations

19.3.0 BLOCKS (Register block numbers) Enumeration

ITOS Mnemonic: BLOCKS

Description:

The possible values that can be used for a register block number.

Definition:

0 Common controller registers (CC)

1 GEM TAM generator registers (TAM)

1 AEM & PDU environmental monitor registers (ENV)

1 EBM statistics registers (EST)

2 GEM statistics registers (STAT)

3 GEM scheduler registers (SCH)

4 GEM region of interest registers (ROI)

5 GEM input enable registers (TIE)

6 GEM window registers (WIN)

Used by:

CONTROL (19.1.0), LOAD (19.1.5), READ (19.1.7)

19.3.1 CMPNTS (Component codes) Enumeration

ITOS Mnemonic: CMPNTS

Description:

Codes to be used when specifying a LAT component in the LOAD, READ, CONTROL and LAM commands.

Definition:

1 GEM (GEM)

2 EBM (EBM)

3 PDU0 (PDU0)

4 PDU1 (PDU1)

5 CRU (CRU)

6 TEM (TEM)

7 TIC (TIC)

8 CCC (CCC)

9 CRC (CRC)

10 CFE (CFE)

11 TCC (TCC)

12 TRC (TRC)

13 TFE (TFE)

14 AEM (AEM)

15 ARC (ARC)

16 AFE (AFE)

255 Broadcast value (BCAST)
Causes the operation to be performed on all slave components. Valid only for the LOAD command.

Used by:

CONTROL (19.1.0), LAM (19.1.2), LOAD (19.1.5), READ (19.1.7)

19.3.2 CPUS (CPU component values) Enumeration

ITOS Mnemonic: CPUS

Description:

The allowed values for the (CPU) component field of the LAMLCB command.

Definition:

33 External SIU (SIUE)

34 SIU 0 (SIU0)

35 SIU 1 (SIU1)

36 EPU 0 (EPU0)

37 EPU 1 (EPU1)

38 EPU 2 (EPU2)

255 Broadcast value (BCAST)
Used to broadcast to all CPUs.

Used by:

LAMLCB (19.1.3)

19.4 Telemetry Packets

19.4.0 `LRAREGDATA` (753/0x2F1)

Context:

Description:

"Register data" Telemetry Packet

Returned register data

Layout:

Register data (LRAREGDATA) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2F1**										
002	**SF**		**Sequence Count**													
004	**Packet Length=27**															
006	**Timestamp**															
00E	**SEQN:** `seqn`								**COUNT:** `count`							
010	**RCMPNT:** `cmpnt`								**RBLOCK:** `block`							
012	**RTEM:** `tem`								**RCC:** `cc`							
014	**RRC:** `rc`								**RFE:** `fe`							
016	**RREG:** `reg`								**FILL:** `fill`							
018	**TMASK:** `tmask`															
01A	**NTEM:** `ntem`								**NCC:** `ncc`							
01C	**NRC:** `nrc`								**NFE:** `nfe`							
01E	**NREG:** `nreg`								**WIDTH:** `width`							
020	**VALUE:** `value`															

Fields:

`COUNT` **(19.5.0)**

Attribute(s):

Brief: "Packet count"

Instance(s): `count`

`FILL` **(19.5.1)**

Attribute(s):

Brief: "Filler"

Instance(s): `fill`

`NCC` **(19.5.2)**

Attribute(s):

Brief: "Number of CCs"

Instance(s): `ncc`

`NFE` **(19.5.3)**

Attribute(s):

Brief: "Number of FEs"

Instance(s): `nfe`

`NRC` **(19.5.4)**

Attribute(s):

Brief: "Number of RCs"

Instance(s): `nrc`

`NREG` **(19.5.5)**

Attribute(s):

Brief: "Number of registers"

Instance(s): `nreg`

`NTEM` **(19.5.6)**

Attribute(s):

Brief: "Number of TEMs"

Instance(s): `ntem`

`RBLOCK` **(19.5.7)**

Attribute(s):

Brief: "Register block"

Instance(s): `block`

`RCC` **(19.5.8)**

Attribute(s):

Brief: "Cable controller"

Instance(s): `cc`

`RCMPNT` **(19.5.9)**

Attribute(s):

Brief: "Component"

Instance(s): `cmpnt`

`RFE` **(19.5.10)**

Attribute(s):

Brief: "Front-end number"

Instance(s): `fe`

`RRC` **(19.5.11)**

Attribute(s):

Brief: "Readout controller"

Instance(s): `rc`

`RREG` **(19.5.12)**

Attribute(s):

Brief: "Register"

Instance(s): `reg`

`RTEM` **(19.5.13)**

Attribute(s):

Brief: "TEM number"

Instance(s): `tem`

`SEQN` **(19.5.14)**

Attribute(s):

Brief: "Sequence number"

Instance(s): `seqn`

`TMASK` **(19.5.16)**

Attribute(s):

Brief: "TEM mask"

Instance(s): `tmask`

`VALUE` **(19.5.17)**

Attribute(s):

Brief: "Word of register values"

Instance(s): `value`

One word of register values data out of many.

`WIDTH` **(19.5.18)**

Attribute(s):

Brief: "Register width"

Instance(s): `width`

19.4.1 `LRASSRDATA` (928/0x3A0)

Context:

Description:

"LRA data returned via the SSR" Telemetry Packet

Layout:

LRA data returned via the SSR (LRASSRDATA) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3A0**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**THDR:** thdr															

Fields:

THDR **(19.5.15)**

Attribute(s):

Brief: "Tertiary header"

Instance(s): thdr

19.5 Telemetry Fields

19.5.0 `COUNT` (Packet count) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`LRAREGDATA (19.4.0)`

19.5.1 `FILL` (Filler) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`LRAREGDATA (19.4.0)`

19.5.2 `NCC` (Number of CCs) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`LRAREGDATA (19.4.0)`

19.5.3 `NFE` (Number of FEs) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.4 NRC (Number of RCs) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.5 NREG (Number of registers) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.6 NTEM (Number of TEMs) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.7 RBLOCK (Register block) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.8 RCC (Cable controller) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.9 RCMPNT (Component) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.10 RFE (Front-end number) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.11 RRC (Readout controller) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.12 RREG (Register) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.13 RTEM (TEM number) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.14 SEQN (Sequence number) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.15 THDR (Tertiary header) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

LRASSRDATA (19.4.1)

19.5.16 TMASK (TEM mask) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

LRAREGDATA (19.4.0)

19.5.17 VALUE (Word of register values) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

One word of register values data out of many.

Used by:

LRAREGDATA (19.4.0)

19.5.18 WIDTH (Register width) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

LRAREGDATA (19.4.0)

20 LSM Package

20.0 Overview

The LSM package processes the seven telecommands per second that the spacecraft sends the LAT continuously to inform the LAT of things like orbital position, time, etc. LSM runs in its own task.

The package supports the following functions:

- Wall clock time services (GPS)

20.1 Command Packets

ITOS Mnemonic: `LSMNOOP`

20.1.0 `LSMNOOP` (1680/0x690:2)

Context:

Description:

"No operation" Telecommand Packet

This telecommand does nothing except generate a command confirmation response from the LSM task.

Layout:

No operation (`Noop`) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x690:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**	**Function Code=2**														
008	**NODETRANID:** `flag`															
00A	**Packet Checksum**															

Fields:

`NODETRANID` **(20.2.0)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

ITOS Mnemonic: `LSMSIANCILLARY`

20.1.1 `LSMSIANCILLARY` (1793/0x701:2)

Context:

Description:

"SC Ancillary Broadcast Message" Telecommand Packet

The SC sends this message once a second on the CTDB bus. It contains a variety of ancillary information about the SC status.

Layout:

SC Ancillary Broadcast Message (`SIANCILLARY`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x701:2										
002	SF=3			Sequence Count												
004	Packet Length=39															
006	0	Function Code=2														
008	TIMESEC: `sec`															
00C	TIMESUB: `sub`															
010	ANCPOS: `pos[0-2]`															
01C	ANCVEL: `vel[0-2]`															
028	ANCMODE: `mode`								ANCSSR: `ssr`							
02A	ANCFLAGS: `flags`															
02C	Packet Checksum															

Fields:

`ANCFLAGS` **(20.3.0)**

Attribute(s):

Brief: "Ancillary SC flags"

Instance(s): `flags`

`ANCMODE` **(20.3.1)**

Attribute(s):

Brief: "Ancillary GNC mode"

Instance(s): `mode`

`ANCPOS` **(20.3.2)**

Attribute(s):

Brief: "Ancillary position element"

Instance(s): `pos`

`ANCSSR` **(20.3.3)**

Attribute(s):

Brief: "Ancillary SSR usage"

Instance(s): `ssr`

`ANCVEL` **(20.3.4)**

Attribute(s):

Brief: "Ancillary velocity element"

Instance(s): `vel`

`TIMESEC` **(20.3.9)**

Attribute(s):

Brief: "Timestamp seconds"

Instance(s): `sec`

`TIMESUB` **(20.3.10)**

Attribute(s):

Brief: "Timestamp microseconds"

Instance(s): `sub`

ITOS Mnemonic: `LSMSIATTITUDE`

20.1.2 `LSMSIATTITUDE` (1793/0x701:1)

Context:

Description:

"SC Attitude Broadcast Message" Telecommand Packet

The SC sends this message 5 times a second on the CTDB bus. It contains information about the SC-J2000 attitude.

Layout:

SC Attitude Broadcast Message `(SIATTITUDE)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x701:1**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=55**															
006	**0**	**Function Code=1**														
008	**TIMESEC:** `sec`															
00C	**TIMESUB:** `sub`															
010	**ATTQUAT:** `quat[0-3]`															
030	**ATTAVEC:** `avel[0-2]`															
03C	**Packet Checksum**															

Fields:

`ATTAVEC` **(20.3.5)**

Attribute(s):

Brief: "Attitude angular velocity element"

Instance(s): `avel`

`ATTQUAT` **(20.3.6)**

Attribute(s):

Brief: "Attitude quaternion element"

Instance(s): `quat`

`TIMESEC` **(20.3.9)**

Attribute(s):

Brief: "Timestamp seconds"

Instance(s): `sec`

`TIMESUB` **(20.3.10)**

Attribute(s):

Brief: "Timestamp microseconds"

Instance(s): `sub`

ITOS Mnemonic: `LSMSITIMETONE`

20.1.3 `LSMSITIMETONE` (1793/0x701:3)

Context:

Description:

"SC Timetone Broadcast Message" Telecommand Packet

The SC sends this message once a second on the CTDB bus. It contains the GPS time information to associate with the next GPS time hack.

Layout:

SC Timetone Broadcast Message `(SITIMETONE)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x701:3**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=9**															
006	**0**	**Function Code=3**														
008	**TIMESEC:** `sec`															
00C	**TIMEFLAGS:** `flags`															
00E	**Packet Checksum**															

Fields:

`TIMEFLAGS` **(20.3.8)**

Attribute(s):

Brief: "Timetone SC flags"

Instance(s): `flags`

`TIMESEC` **(20.3.9)**

Attribute(s):

Brief: "Timestamp seconds"

Instance(s): `sec`

ITOS Mnemonic: `LSMSSROUTPUTOFF`

20.1.4 `LSMSSROUTPUTOFF` (1680/0x690:0)

Context:

Description:

"Turn off echo of Magic 7 commands to SSR" Telecommand Packet

Turns off the output of Magic 7 commands to the SSR. These originate as commands from the spacecraft and can be echoed to the science output.

Layout:

Turn off echo of Magic 7 commands to SSR (`SSRoutputOff`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x690:0										
002	SF=3		Sequence Count													
004	Packet Length=3															
006	0	Function Code=0														

ITOS Mnemonic: `LSMSSROUTPUTON`

20.1.5 `LSMSSROUTPUTON` (1680/0x690:1)

Context:

Description:

"Turn on echo of Magic 7 commands to the SSR" Telecommand Packet

Turns on the output of Magic 7 commands to the SSR. These originate as commands from the spacecraft and can be echoed to the science output.

Layout:

Turn on echo of Magic 7 commands to the SSR `(SSRoutputOn)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x690:1**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=1**														

20.2 Command Bitfields

20.2.0 `NODETRANID` (Compound of node and transaction ID) Telecommand Bitfield

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Compound of node and transaction ID

Start	Stop	Size	Item Type and Name

Used by:

`Noop (20.1.0)`

20.3 Command Fields

20.3.0 `ANCFLAGS` (Ancillary SC flags) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`SIANCILLARY (20.1.1)`

20.3.1 `ANCMODE` (Ancillary GNC mode) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

`SIANCILLARY (20.1.1)`

20.3.2 `ANCPOS` (Ancillary position element) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	float
Length:	32 bits (4 bytes)

Description:

Used by:

`SIANCILLARY (20.1.1)`

20.3.3 `ANCSSR` (Ancillary SSR usage) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Used by:

SIANCILLARY (20.1.1)

20.3.4 ANCVEL (Ancillary velocity element) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	float
Length:	32 bits (4 bytes)

Description:

Used by:

SIANCILLARY (20.1.1)

20.3.5 ATTAVEC (Attitude angular velocity element) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	float
Length:	32 bits (4 bytes)

Description:

Used by:

SIATTITUDE (20.1.2)

20.3.6 ATTQUAT (Attitude quaternion element) Telecommand Field

Definition:

Alignment:	8 bytes
C type:	double
Length:	64 bits (8 bytes)

Description:

Used by:

SIATTITUDE (20.1.2)

20.3.7 NODE (Computer to send the command to) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

Computer to send the command to

Used by:

???

20.3.8 `TIMEFLAGS` (Timetone SC flags) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`SITIMETONE (20.1.3)`

20.3.9 `TIMESEC` (Timestamp seconds) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`SIANCILLARY (20.1.1)`

20.3.10 `TIMESUB` (Timestamp microseconds) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`SIANCILLARY (20.1.1)`

20.3.11 `TRANID` (Transaction ID) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Transaction identifier for the LSM telecommand. This ID is echoed back in the telemetry that is sent in response to the telecommand. It can be used to match telecommands to telemetry.

Used by:

???

20.4 Enumerations

20.4.0 `LSMNODEID` (List of CPU nodes addressable with LSM commands) Enumeration

ITOS Mnemonic: `LSMNODEID`

Description:

List of CPU nodes addressable with LSM commands

Definition:

0 The SIU computer (`SIU`)
The SIU computer

1 The EPU0 computer (`EPU0`)
The EPU0 computer

2 The EPU1 computer (`EPU1`)
The EPU1 computer

3 The EPU2 computer (`EPU2`)
The EPU2 computer

4 The EPU3 computer (external crate) (`EPU3`)
The EPU3 computer (external crate)

Used by:

???

20.5 Telemetry Packets

20.5.0 MAGIC7 (1020/0x3FC)

Context:

Description:

"Output of Magic 7 cmds into Science Data" Telemetry Packet

Layout:

Output of Magic 7 cmds into Science Data (MAGIC7) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3FC**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(20.6.0)**

Attribute(s):

Brief: "Pad byte count after packet"

Instance(s): padCount

For proper transfer over SSR, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after payload to do this alignment.

20.6 Telemetry Fields

20.6.0 `PADCOUNT` (Pad byte count after packet) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	short
Length:	16 bits (2 bytes)

Description:

For proper transfer over SSR, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after payload to do this alignment.

Used by:

`MAGIC7 (20.5.0)`

21 LSW Package

21.0 Overview

The LSW package checks to see that assorted tasks are "alive".

The package supports the following functions:

- Software watchdog

21.1 Command Packets

ITOS Mnemonic: `LSWDUMPSTART`

21.1.0 `LSWDUMPSTART` (1612/0x64C:1)

Context:

Description:

"Dump the start line system trace" Telecommand Packet

Dump the start line system trace

Layout:

Dump the start line system trace `(DumpStart)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x64C:1										
002	SF=3			Sequence Count												
004	Packet Length=7															
006	0	Function Code=1														
008	NODETRANID: `flag`															
00A	DEST: `dest`															
00C	PAD8: `pad`															
00C	Packet Checksum															

Fields:

`DEST` **(21.3.0)**

Attribute(s):
enm: LSWDEST (21.4.0)

Brief: "Destination for a dump"

Instance(s): `dest`

Destination for a dump

`NODETRANID` **(21.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

`PAD8` **(21.3.7)**

Attribute(s):
rng: LSWMBZ (21.5.0)

Brief: "8 bits of padding"

Instance(s): `pad`

8 bits of padding

ITOS Mnemonic: `LSWDUMPTRACEID`

21.1.1 `LSWDUMPTRACEID` (1612/0x64C:2)

Context:

Description:

"Dump a code trace by numeric identifier" Telecommand Packet

Dump a code trace by numeric identifier. The value zero is reserved for the system trace.

Layout:

Dump a code trace by numeric identifier (DumpTraceById) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x64C:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=2**														
008	**NODETRANID:** `flag`															
00A	**DEST:** `dest`								**TRACEID:** `id`							
00C	**Packet Checksum**															

Fields:

`DEST` **(21.3.0)**

Attribute(s):
enm: LSWDEST (21.4.0)

Brief: "Destination for a dump"

Instance(s): `dest`

Destination for a dump

`NODETRANID` **(21.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

`TRACEID` **(21.3.8)**

Attribute(s):

Brief: "Trace identifier"

Instance(s): `id`

All traces are identified by a (small) number and a (short) name, and can be dumped using either identification method. For dumps by identifier, this is the identifier.

ITOS Mnemonic: `LSWDUMPTRACENAME`

21.1.2 `LSWDUMPTRACENAME` (1612/0x64C:3)

Context:

Description:

"Dump a code trace by name." Telecommand Packet

Dump a code trace by name. The name 'system' is reserved for the system trace.

Layout:

Dump a code trace by name. `(DumpTraceByName)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x64C:3**										
002	**SF=3**		**Sequence Count**													

Dump a code trace by name. (DumpTraceByName) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=23**															
006	**0**	**Function Code=3**														
008	**NODETRANID:** flag															
00A	**DEST:** dest								**PAD8:** pad8							
00C	**TRACENAME:** name[0-15]															
01C	**Packet Checksum**															

Fields:

DEST **(21.3.0)**

Attribute(s):
enm: LSWDEST (21.4.0)

Brief: "Destination for a dump"

Instance(s): dest

Destination for a dump

NODETRANID **(21.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): flag

Compound of node and transaction ID

PAD8 **(21.3.7)**

Attribute(s):
rng: LSWMBZ (21.5.0)

Brief: "8 bits of padding"

Instance(s): pad8

8 bits of padding

TRACENAME **(21.3.9)**

Attribute(s):

Brief: "Trace name"

Instance(s): `name`

All traces are identified by a (small) number and a (short) name, and can be dumped using either identification method. For dumps by name, this is the name.

ITOS Mnemonic: `LSWNOOP`

21.1.3 `LSWNOOP` (1612/0x64C:0)

Context:

Description:

"No-Op" Telecommand Packet

This telecommand does nothing except generate a command confirmation response from the LCM task.

Layout:

No-Op (Noop) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x64C:0**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**	**Function Code=0**														
008	**NODETRANID:** `flag`															
00A	**Packet Checksum**															

Fields:

`NODETRANID` **(21.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

ITOS Mnemonic: `LSWSETTRACECFG`

21.1.4 `LSWSETTRACECFG` (1612/0x64C:4)

Context:

Description:

"Set the values of the trace enable bits." Telecommand Packet

Set the values of the trace enable bits. Each enable is controlled by one bit (bit set means enable). The CONFIGMASK and CONFIGVALU fields operate as a selective set and clear pair. Only bits set in CONFIGMASK will be touched. For those bits, the enable will be set to the equivalent bit in CONFIGVALU.

Layout:

Set the values of the trace enable bits. (`SetTraceConfig`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x64C:4										
002	SF=3		Sequence Count													
004	Packet Length=15															
006	0	Function Code=4														
008	NODETRANID: `flag`															
00A	PAD16: `pad`															
00C	CONFIGBITS: `mask`															
010	CONFIGBITS: `valu`															
014	Packet Checksum															

Fields:

`CONFIGBITS` **(21.2.0)**

Attribute(s):

Brief: "Definition of trace enable bits"

Instance(s): `mask`, `valu`

Definition of trace enable bits

`NODETRANID` **(21.2.1)**

Attribute(s):

Brief: "Compound of node and transaction ID"

Instance(s): `flag`

Compound of node and transaction ID

`PAD16` **(21.3.6)**

Attribute(s):
rng: LSWMBZ (21.5.0)

Brief: "16 bits of padding"

Instance(s): `pad`

16 bits of padding

21.2 Command Bitfields

21.2.0 `CONFIGBITS` (Definition of trace enable bits) Telecommand Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Definition of trace enable bits

Start	Stop	Size	Item Type and Name

Used by:

`SetTraceConfig (21.1.4)`

21.2.1 `NODETRANID` (Compound of node and transaction ID) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Compound of node and transaction ID

Start	Stop	Size	Item Type and Name

Used by:

`DumpStart (21.1.0)`

21.3 Command Fields

21.3.0 `DEST` (Destination for a dump) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Destination for a dump

Used by:

`DumpStart (21.1.0)`

21.3.1 `ENABLE_EX5` (Enable exception 0x500 (external hardware interrupt) tracing) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 1 bit

Description:

Enable exception 0x500 (external hardware interrupt) tracing

Used by:

???

21.3.2 `ENABLE_EX9` (Enable exception 0x900 (decrementer) tracing) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 1 bit

Description:

Enable exception 0x900 (decrementer) tracing

Used by:

???

21.3.3 `ENABLE_FLUSH` (Enable cache flushing during task switches) Telecommand Field

Definition:

Alignment: 4 bytes

C type: unsigned int
Length: 1 bit

Description:

Enable cache flushing during task switches

Used by:

???

21.3.4 `ENABLE_PAD` (Pad bitfield out to 32 bits) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 29 bits

Description:

Pad bitfield out to 32 bits

Used by:

???

21.3.5 `NODE` (Computer to send the command to) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 4 bits

Description:

Computer to send the command to

Used by:

???

21.3.6 `PAD16` (16 bits of padding) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

16 bits of padding

Used by:

`SetTraceConfig (21.1.4)`

21.3.7 `PAD8` (8 bits of padding) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

8 bits of padding

Used by:

`DumpStart (21.1.0)`

21.3.8 `TRACEID` (Trace identifier) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

All traces are identified by a (small) number and a (short) name, and can be dumped using either identification method. For dumps by identifier, this is the identifier.

Used by:

`DumpTraceById (21.1.1)`

21.3.9 `TRACENAME` (Trace name) Telecommand Field

Definition:

Alignment:	1 byte
C type:	char
Length:	8 bits (1 byte)

Description:

All traces are identified by a (small) number and a (short) name, and can be dumped using either identification method. For dumps by name, this is the name.

Used by:

`DumpTraceByName (21.1.2)`

21.3.10 `TRANID` (Transaction ID) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Transaction identifier for the LSW telecommand. This ID is echoed back in the telemetry that is sent in response to the telecommand. It can be used to match telecommands to telemetry.

Used by:

???

21.4 Enumerations

21.4.0 LSWDEST (Enumerate the possible destinations of a trace dump) Enumeration

ITOS Mnemonic: LSWDEST

Description:

Enumerate the possible destinations of a trace dump

Definition:

0 Command and telemetry data bus (CTDB)
Command and telemetry data bus (otherwise known as 1553)

1 Science data interface (SDI)
Science data interface. Also referred to as the SSR.

Used by:

DumpStart (21.1.0), DumpTraceById (21.1.1), DumpTraceByName (21.1.2)

21.4.1 LSWNODEID (List of CPU nodes addressable with LSW commands) Enumeration

ITOS Mnemonic: LSWNODEID

Description:

List of CPU nodes addressable with LSW commands

Definition:

0 The SIU computer (SIU)
The SIU computer

1 The EPU0 computer (EPU0)
The EPU0 computer

2 The EPU1 computer (EPU1)
The EPU1 computer

3 The EPU2 computer (EPU2)
The EPU2 computer

4 The EPU3 computer (external crate) (EPU3)
The EPU3 computer (external crate)

Used by:

???

21.5 Ranges

21.5.0 `LSWMBZ` (A must-be-zero field) Range

ITOS Mnemonic: `LSWMBZ`

Description:

Used to ensure that padding fields are set to zero.

Definition:

Limits 0 - 0

Used by:

`DumpStart (21.1.0), DumpTraceByName (21.1.2), SetTraceConfig (21.1.4)`

21.6 Telemetry Packets

21.6.0 LSWSNAPEPU0 (996/0x3E4)

Context:

Description:

"Dump of a code trace" Telemetry Packet

Dump of a code trace

Layout:

Dump of a code trace (LSWSNAPEPU0) Telemetry Packet Format																
0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=0	SH	APID=0x3E4										
002	SF		Sequence Count													
004	Packet Length=9															
006	Timestamp															
00E	PADCOUNT: padCount															

Fields:

PADCOUNT **(21.7.0)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): padCount

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

21.6.1 LSWSNAPEPU1 (997/0x3E5)

Context:

Description:

"Dump of a code trace" Telemetry Packet

Dump of a code trace

Layout:

Dump of a code trace (LSWSNAPEPU1) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3E5**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(21.7.0)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): padCount

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

21.6.2 LSWSNAPEPU2 (998/0x3E6)

Context:

Description:

"Dump of a code trace" Telemetry Packet

Dump of a code trace

Layout:

Dump of a code trace (LSWSNAPEPU2) Telemetry Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3E6**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(21.7.0)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): `padCount`

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

21.6.3 `LSWSNAPEPU3` (999/0x3E7)

Context:

Description:

"Dump of a code trace" Telemetry Packet

Dump of a code trace

Layout:

Dump of a code trace (LSWSNAPEPU3) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3E7**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** `padCount`															

Fields:

`PADCOUNT` **(21.7.0)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): `padCount`

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

21.6.4 `LSWSNAPSIU` (995/0x3E3)

Context:

Description:

"Dump of a code trace" Telemetry Packet

Dump of a code trace

Layout:

Dump of a code trace (LSWSNAPSIU) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3E3**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**PADCOUNT:** padCount															

Fields:

PADCOUNT **(21.7.0)**

Attribute(s):

Brief: "Pad byte count after telemetry header"

Instance(s): padCount

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

21.7 Telemetry Fields

21.7.0 `PADCOUNT` (Pad byte count after telemetry header) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

For proper transfer over SDI, packets must be rounded up to multiple of 16 bytes. This is the number of bytes added after the payload to do this alignment.

Used by:

`LSWSNAPEPU0 (21.6.0)`

22 LTC Package

22.0 Overview

The LTC package provides the LAT thermal control mechanism. It reads temperatures from within the instrument, and on that basis, decides how much heat to dump. LTC runs as its own task.

22.1 Command Packets

ITOS Mnemonic: LTCCNTLPROC

22.1.0 LTCCNTLPROC (1625/0x659:1)

Context:

Description:

"LTC Control Start Processing (Internal)" Telecommand Packet

Layout:

LTC Control Start Processing (Internal) (CntlProc) Telecommand Packet Format															
0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x659:1										
002	SF=3			Sequence Count												
004	Packet Length=19															
006	0	Function Code=1														
008	MEASPTR: mr															
00C	PDUNUM: pdu															
010	GRPNUM: grp															
014	CLNUM: ncl															
018	Packet Checksum															

Fields:

CLNUM **(22.2.0)**

Attribute(s):

Brief: "PDU Command List Index"

Instance(s): ncl

GRPNUM **(22.2.2)**

Attribute(s):

Brief: "ADC Group Index"

Instance(s): `grp`

`MEASPTR` **(22.2.3)**

Attribute(s):

Brief: "Pointer to LTC Measurement Area"

Instance(s): `mr`

`PDUNUM` **(22.2.4)**

Attribute(s):

Brief: "PDU Index"

Instance(s): `pdu`

ITOS Mnemonic: `LTCCNTLSTART`

22.1.1 `LTCCNTLSTART` (1625/0x659:0)

Context:

Description:

"LTC Control Start Readout (Internal)" Telecommand Packet

Layout:

LTC Control Start Readout (Internal) `(CntlStart)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x659:0**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**			**Function Code=0**												
008	**WORD16:** `spare`															
00A	**Packet Checksum**															

Fields:

`WORD16` **(22.2.6)**

Attribute(s):

Brief: "Unsigned 16-bit word"

Instance(s): `spare`

ITOS Mnemonic: `LTCHTRONOFFCNTL`

22.1.2 `LTCHTRONOFFCNTL` (1624/0x658:5)

Context:

Description:

"Set heater to always on, or off or automatic control." Telecommand Packet

Sets a specified heater to on, or off or automatic control.

Layout:

Set heater to always on, or off or automatic control. (HtrOnOffCtl) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x658:5**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**		**Function Code=5**													
008	**WORD16:** HtrNum															
00A	**WORD16:** OnOffCtl															
00C	**Packet Checksum**															

Fields:

`WORD16` **(22.2.6)**

Attribute(s):

Brief: "Unsigned 16-bit word"

Instance(s): `HtrNum`, `OnOffCtl`

ITOS Mnemonic: `LTCNOOP`

22.1.3 `LTCNOOP` (1624/0x658:8)

Context:

Description:

"LTC Task No-op" Telecommand Packet

This telecommand does nothing more than generate a command confirm reply from the LTC task.

Layout:

LTC Task No-op (Noop) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x658:8**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**	**Function Code=8**														

ITOS Mnemonic: `LTCRESTART`

22.1.4 `LTCRESTART` (1624/0x658:1)

Context:

Description:

"Restart and initialize Thermal Control" Telecommand Packet

Restart thermal control by reading configuration files and initializing. Depending on paramter may start active control or passive operation.

Layout:

Restart and initialize Thermal Control (ReStart) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x658:1**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=15**															
006	**0**	**Function Code=1**														
008	**WORD16:** `fidType`															
00A	**WORD16:** `pad16`															
00C	**FileId:** `cnfgFileId`															
010	**FileId:** `spare`															
014	**Packet Checksum**															

Fields:

`FileId` **(22.2.1)**

Attribute(s):

Brief: "File identification number"

Instance(s): `cnfgFileId`, `spare`

`WORD16` **(22.2.6)**

Attribute(s):

Brief: "Unsigned 16-bit word"

Instance(s): `fidType`, `pad16`

ITOS Mnemonic: `LTCSETMODE`

22.1.5 `LTCSETMODE` (1624/0x658:4)

Context:

Description:

"Set thermal control mode to active or passive." Telecommand Packet

Sets thermal control processing to active or processing. Active is normal control by turning on or off heat pipe reservoir heaters to keep termperature within specified limits. Passive does all normal control processing, but does not send commands to heaters.

Layout:

Set thermal control mode to active or passive. `(SetMode)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x658:4**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**	**Function Code=4**														
008	**WORD16:** `ActiveOrPassive`															
00A	**Packet Checksum**															

Fields:

`WORD16` **(22.2.6)**

Attribute(s):

Brief: "Unsigned 16-bit word"

Instance(s): `ActiveOrPassive`

ITOS Mnemonic: `LTCSETPARAM`

22.1.6 `LTCSETPARAM` (1624/0x658:6)

Context:

Description:

"Set control parameters to new values." Telecommand Packet

Sets reservoir and RIT temperature control limits to new values for all or a specified heat pipe. New values are used immediately.

Layout:

Set control parameters to new values. (SetParam) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x658:6**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=15**															
006	**0**	**Function Code=6**														
008	**WORD16:** `HtPipeSel`															
00A	**SWORD:** `ResLoLimit`															
00C	**SWORD:** `ResHiLimit`															
00E	**SWORD:** `RitLoLimit`															
010	**SWORD:** `RitHiLimit`															
012	**SWORD:** `RitDbDelta`															
014	**Packet Checksum**															

Fields:

`SWORD` **(22.2.5)**

Attribute(s):

Brief: "Signed word"

Instance(s): `ResHiLimit`, `ResLoLimit`, `RitDbDelta`, `RitHiLimit`, `RitLoLimit`

SIgned short for temperature values scaled by 256

`WORD16` **(22.2.6)**

Attribute(s):

Brief: "Unsigned 16-bit word"

Instance(s): `HtPipeSel`

ITOS Mnemonic: `LTCSETTLMFREQ`

22.1.7 `LTCSETTLMFREQ` (1624/0x658:7)

Context:

Description:

"Set LTC telemetry frequency, 0 is off." Telecommand Packet

Set rate of LTC diagnostic telemetry output. Period is in seconds, with '0' disabling diagnostic telemetry output.

Layout:

Set LTC telemetry frequency, 0 is off. `(SetTlmFreq)`
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x658:7										
002	SF=3			Sequence Count												
004	Packet Length=5															
006	0	Function Code=7														
008	WORD16: `TlmFreq`															
00A	Packet Checksum															

Fields:

`WORD16` **(22.2.6)**

Attribute(s):

Brief: "Unsigned 16-bit word"

Instance(s): `TlmFreq`

ITOS Mnemonic: LTCSTART

22.1.8 LTCSTART (1624/0x658:2)

Context:

Description:

"Start control" Telecommand Packet

Start active or passive control.

Layout:

Start control (Start) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x658:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**	**Function Code=2**														
008	**WORD16:** ActiveOrPassive															
00A	**Packet Checksum**															

Fields:

WORD16 **(22.2.6)**

Attribute(s):

Brief: "Unsigned 16-bit word"

Instance(s): ActiveOrPassive

ITOS Mnemonic: LTCSTOP

22.1.9 LTCSTOP (1624/0x658:3)

Context:

Description:

"Terminate Thermal Control processing" Telecommand Packet

Terminates thermal control processing tasks, but message processing remains.

Layout:

Terminate Thermal Control processing (Stop) Telecommand Packet Format															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x658:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=3**															
006	**0**			**Function Code=3**												

22.2 Command Fields

22.2.0 `CLNUM` (PDU Command List Index) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`CntlProc (22.1.0)`

22.2.1 `FileId` (File identification number) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`ReStart (22.1.4)`

22.2.2 `GRPNUM` (ADC Group Index) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`CntlProc (22.1.0)`

22.2.3 `MEASPTR` (Pointer to LTC Measurement Area) Telecommand Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Used by:

`CntlProc (22.1.0)`

22.2.4 `PDUNUM` (PDU Index) Telecommand Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Used by:

`CntlProc (22.1.0)`

22.2.5 `SWORD` (Signed word) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	short
Length:	16 bits (2 bytes)

Description:

SIgned short for temperature values scaled by 256

Used by:

`SetParam (22.1.6)`

22.2.6 `WORD16` (Unsigned 16-bit word) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`CntlStart (22.1.1)`

22.3 Telemetry Packets

22.3.0 `DiagLTC` (730/0x2DA)

Context:

Description:

"LAT Thermal Control diagnostic telemetry" Telemetry Packet

Layout:

LAT Thermal Control diagnostic telemetry (DiagLTC) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x2DA**										
002	**SF**		**Sequence Count**													
004	**Packet Length=361**															
006	**Timestamp**															
00E	**ResRitSnsrSel:** snsrSel[0-11]															
026	**ResRitStatus:** snsrStatus[0-11]															
032	**HeaterMode:** actvHp															
034	**RawAdcStatus:** rawAdc[0-71]															
0C4	**TempCelsius:** temps[0-23]															
0F4	**TempCelsius:** ritLo[0-11]															
10C	**TempCelsius:** ritHi[0-11]															
124	**TempCelsius:** resLo[0-11]															
13C	**TempCelsius:** resHi[0-11]															
154	**TempCelsius:** dbDelta[0-11]															
16C	**HeaterCommand:** htrCmd															
16E	**HeaterState:** htrReg															

Fields:

`HeaterCommand` **(22.4.0)**

Attribute(s):

Brief: "Current heater command and LTC control mode"

Instance(s): `htrCmd`

For the heater bits, a value of '0' indicates that LTC is commanding the heater off. A value of '1' indicates that LTC is commanding the heater on. These heater commands are applied only when LTC is in active control mode.

`HeaterMode` **(22.4.1)**

Attribute(s):

Brief: "Control mode for VCHP heaters."

Instance(s): `actvHp`

A bit value of '0' indicates that the heater is under manual, user control. A bit value of '1' indicates that the heater is under automatic, algorithm control.

`HeaterState` **(22.4.2)**

Attribute(s):

Brief: "Current heater state and LTC run mode"

Instance(s): `htrReg`

For the heater bits, a value of '0' indicates that the heater is currently off. A value of '1' indicates that the heater is currently on.

`RawAdcStatus` **(22.4.3)**

Attribute(s):

Brief: "Sensor Status and ADC Counts"

Instance(s): `rawAdc`

`ResRitSnsrSel` **(22.4.4)**

Attribute(s):

Brief: "Selected RSVR and RIT sensors"

Instance(s): `snsrSel`

`ResRitStatus` **(22.4.5)**

Attribute(s):

Brief: "Heat pipe RIT and reservoir sensors status"

Instance(s): `snsrStatus`

`TempCelsius` **(22.5.10)**

Attribute(s):

Brief: "Temperature converted to celsius."

Instance(s): `dbDelta`, `resHi`, `resLo`, `ritHi`, `ritLo`, `temps`

Fixed point scaled by 8 bits (256).

22.4 Telemetry Bitfields

22.4.0 `HeaterCommand` (Current heater command and LTC control mode) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

For the heater bits, a value of '0' indicates that LTC is commanding the heater off. A value of '1' indicates that LTC is commanding the heater on. These heater commands are applied only when LTC is in active control mode.

Start	Stop	Size	Item Type and Name
0	0	1	`ControlMode cntlMode`
1	3	3	`Pad3 pad3`
4	4	1	`HeaterMask htr11`
5	5	1	`HeaterMask htr10`
6	6	1	`HeaterMask htr9`
7	7	1	`HeaterMask htr8`
8	8	1	`HeaterMask htr7`
9	9	1	`HeaterMask htr6`
10	10	1	`HeaterMask htr5`
11	11	1	`HeaterMask htr4`
12	12	1	`HeaterMask htr3`
13	13	1	`HeaterMask htr2`
14	14	1	`HeaterMask htr1`
15	15	1	`HeaterMask htr0`

Fields:

`ControlMode` **(22.5.0)**

Attribute(s):

Brief: "LTC control mode"

Instance(s): `cntlMode`

A bit value of '0' indicates passive control mode. A bit value of '1' indicates active control mode.

`HeaterMask` **(22.5.1)**

Attribute(s):

Brief: "Mask for VCHP heater control/state"

Instance(s): `htr0`, `htr1`, `htr10`, `htr11`, `htr2`, `htr3`, `htr4`, `htr5`, `htr6`, `htr7`, `htr8`, `htr9`

`Pad3` **(22.5.2)**

Attribute(s):

Brief: "Padding bits"

Instance(s): `pad3`

Used by:

`DiagLTC (22.3.0)`

22.4.1 `HeaterMode` (Control mode for VCHP heaters.) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

A bit value of '0' indicates that the heater is under manual, user control. A bit value of '1' indicates that the heater is under automatic, algorithm control.

Start	Stop	Size	Item Type and Name
0	3	4	`Pad4 pad4`
4	4	1	`HeaterMask htr11`
5	5	1	`HeaterMask htr10`
6	6	1	`HeaterMask htr9`
7	7	1	`HeaterMask htr8`
8	8	1	`HeaterMask htr7`
9	9	1	`HeaterMask htr6`
10	10	1	`HeaterMask htr5`
11	11	1	`HeaterMask htr4`
12	12	1	`HeaterMask htr3`
13	13	1	`HeaterMask htr2`
14	14	1	`HeaterMask htr1`
15	15	1	`HeaterMask htr0`

Fields:

`HeaterMask` **(22.5.1)**

Attribute(s):

Brief: "Mask for VCHP heater control/state"

Instance(s): `htr0`, `htr1`, `htr10`, `htr11`, `htr2`, `htr3`, `htr4`, `htr5`, `htr6`, `htr7`, `htr8`, `htr9`

`Pad4` **(22.5.3)**

Attribute(s):

Brief: "Padding bits."

Instance(s): `pad4`

Used by:

`DiagLTC (22.3.0)`

22.4.2 `HeaterState` (Current heater state and LTC run mode) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

For the heater bits, a value of '0' indicates that the heater is currently off. A value of '1' indicates that the heater is currently on.

Start	Stop	Size	Item Type and Name
0	0	1	`RunMode runMode`
1	3	3	`Pad3 pad3`
4	4	1	`HeaterMask htr11`
5	5	1	`HeaterMask htr10`
6	6	1	`HeaterMask htr9`
7	7	1	`HeaterMask htr8`
8	8	1	`HeaterMask htr7`
9	9	1	`HeaterMask htr6`
10	10	1	`HeaterMask htr5`
11	11	1	`HeaterMask htr4`
12	12	1	`HeaterMask htr3`
13	13	1	`HeaterMask htr2`
14	14	1	`HeaterMask htr1`
15	15	1	`HeaterMask htr0`

Fields:

`HeaterMask` **(22.5.1)**

Attribute(s):

Brief: "Mask for VCHP heater control/state"

Instance(s): `htr0`, `htr1`, `htr10`, `htr11`, `htr2`, `htr3`, `htr4`, `htr5`, `htr6`, `htr7`, `htr8`, `htr9`

`Pad3` **(22.5.2)**

Attribute(s):

Brief: "Padding bits"

Instance(s): `pad3`

`RunMode` **(22.5.6)**

Attribute(s):

Brief: "LTC run mode"

Instance(s): `runMode`

A bit value of '0' indcates that LTC software is stopped. A bit value of '1' indicates that LTC software is running.

Used by:

`DiagLTC (22.3.0)`

22.4.3 `RawAdcStatus` (Sensor Status and ADC Counts) Telemetry Bitfield

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	**3**	**4**	`RawStatus status`
4	**15**	**12**	`RawAdc adc`

Fields:

`RawAdc` **(22.5.4)**

Attribute(s):

Brief: "Raw Sensor ADC Counts"

Instance(s): `adc`

Raw 12-bit count value from ADC.

`RawStatus` **(22.5.5)**

Attribute(s):

Brief: "Raw Sensor Status"

Instance(s): `status`

0-NOT_READ, 1-GOOD, 2-READ_FAIL, 3-BROKEN

Used by:

`DiagLTC (22.3.0)`

22.4.4 `ResRitSnsrSel` (Selected RSVR and RIT sensors) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Start	Stop	Size	Item Type and Name
0	**3**	**4**	`SensorHpNum resHpNum`
4	**7**	**4**	`SensorType resType`
8	**11**	**4**	`SensorHpNum ritHpNum`
12	**15**	**4**	`SensorType ritType`

Fields:

`SensorHpNum` **(22.5.7)**

Attribute(s):

Brief: "Specifies connected HP number for sensor"

Instance(s): `resHpNum`, `ritHpNum`

Should be in range 0-11.

`SensorType` **(22.5.9)**

Attribute(s):

Brief: "Specifies Sensor Type"

Instance(s): `resType`, `ritType`

0-DSHP, 1-DSHP Redundant, 2-XLHP, 3-XLHP Redundant, 4-RES, 5-RES Redundant

Used by:

`DiagLTC (22.3.0)`

22.4.5 `ResRitStatus` (Heat pipe RIT and reservoir sensors status) Telemetry Bitfield

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Start	Stop	Size	Item Type and Name
0	**3**	**4**	`SensorStatus ritStatus`
4	**7**	**4**	`SensorStatus resStatus`

Fields:

`SensorStatus` **(22.5.8)**

Attribute(s):

Brief: "Status for HP sensors"

Instance(s): `resStatus`, `ritStatus`

0-NOT_READ, 1-GOOD, 2-READ_FAIL, 3-BROKEN Use for RIT and reservoir sensor status for each heat pipe.

Used by:

`DiagLTC (22.3.0)`

22.5 Telemetry Fields

22.5.0 `ControlMode` (LTC control mode) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 1 bit

Description:

A bit value of '0' indicates passive control mode. A bit value of '1' indicates active control mode.

Used by:

`HeaterCommand (22.4.0)`

22.5.1 `HeaterMask` (Mask for VCHP heater control/state) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 1 bit

Description:

Used by:

`HeaterCommand (22.4.0)`, `HeaterMode (22.4.1)`, `HeaterState (22.4.2)`

22.5.2 `Pad3` (Padding bits) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 3 bits

Description:

Used by:

`HeaterCommand (22.4.0)`, `HeaterState (22.4.2)`

22.5.3 `Pad4` (Padding bits.) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 4 bits

Description:

Used by:

HeaterMode (22.4.1)

22.5.4 RawAdc (Raw Sensor ADC Counts) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 12 bits

Description:

Raw 12-bit count value from ADC.

Used by:

RawAdcStatus (22.4.3)

22.5.5 RawStatus (Raw Sensor Status) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 4 bits

Description:

0-NOT_READ, 1-GOOD, 2-READ_FAIL, 3-BROKEN

Used by:

RawAdcStatus (22.4.3)

22.5.6 RunMode (LTC run mode) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 1 bit

Description:

A bit value of '0' indcates that LTC software is stopped. A bit value of '1' indicates that LTC software is running.

Used by:

HeaterState (22.4.2)

22.5.7 SensorHpNum (Specifies connected HP number for sensor) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	4 bits

Description:

Should be in range 0-11.

Used by:

`ResRitSnsrSel (22.4.4)`

22.5.8 `SensorStatus` (Status for HP sensors) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	4 bits

Description:

0-NOT_READ, 1-GOOD, 2-READ_FAIL, 3-BROKEN Use for RIT and reservoir sensor status for each heat pipe.

Used by:

`ResRitStatus (22.4.5)`

22.5.9 `SensorType` (Specifies Sensor Type) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	4 bits

Description:

0-DSHP, 1-DSHP Redundant, 2-XLHP, 3-XLHP Redundant, 4-RES, 5-RES Redundant

Used by:

`ResRitSnsrSel (22.4.4)`

22.5.10 `TempCelsius` (Temperature converted to celsius.) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	short
Length:	16 bits (2 bytes)

Description:

Fixed point scaled by 8 bits (256).

Used by:

`DiagLTC (22.3.0)`

23 MEM Package

23.0 Overview

The MEM package contains routines that are specific to the Memory Dump/Load facility.

23.1 Command Packets

ITOS Mnemonic: LMEMDUMPCANCEL

23.1.0 LMEMDUMPCANCEL (1604/0x644:1)

Context:

Description:

"Memory Dump Cancel" Telecommand Packet

Cancel a memory dump operation.

Layout:

Memory Dump Cancel (LMEMDUMPCANCEL) Telecommand Packet Format															
0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x644:1										
002	SF=3			Sequence Count												
004	Packet Length=5															
006	0	Function Code=1														
008	CIDBF: idents															
00A	Packet Checksum															

Fields:

CIDBF **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): idents

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

ITOS Mnemonic: LMEMDUMPMEM

23.1.1 LMEMDUMPMEM (1604/0x644:0)

Context:

Description:

"Memory Data Dump" Telecommand Packet

Dump data from a region of memory.

Layout:

Memory Data Dump (LMEMDUMPMEM)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x644:0										
002	SF=3		Sequence Count													
004	Packet Length=15															
006	0	Function Code=0														
008	CIDBF: idents															
00A	CDEST: dest								CPAD8: pad							
00C	CADDR32: addr															
010	CSIZE32: size															
014	Packet Checksum															

Fields:

CADDR32 **(23.2.0)**

Attribute(s):

Brief: "32-Bit Address/Offset Bitfield"

Instance(s): addr

Bitfield containing the full 32 bits of the starting address or offset.

CDEST **(23.3.3)**

Attribute(s):

Brief: "Dump Telemetry Destination"

Instance(s): dest

Destination for the dump telemetry (0=1553, 1=SSR).

`CIDBF` **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

`CPAD8` **(23.3.8)**

Attribute(s):

Brief: "8-bit padding"

Instance(s): `pad`

Explicit padding of 8 bits.

`CSIZE32` **(23.2.4)**

Attribute(s):

Brief: "32-Bit Word Count Bitfield"

Instance(s): `size`

Bitfield containing the full 32-bit word count value.

ITOS Mnemonic: `LMEMDUMPNEXT`

23.1.2 `LMEMDUMPNEXT` (1604/0x644:100)

Context:

Description:

"Send Next Dump Packet" Telecommand Packet

Send the next chunk of memory dump data.

Layout:

Send Next Dump Packet (LMEMDUMPNEXT) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x644:100**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**			**Function Code=100**												
008	**CIDBF:** idents															
00A	**Packet Checksum**															

Fields:

CIDBF **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): idents

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

ITOS Mnemonic: LMEMDUMPPCI

23.1.3 LMEMDUMPPCI (1604/0x644:2)

Context:

Description:

"PCI Device Header Dump" Telecommand Packet

Dump data from a PCI device header.

Layout:

PCI Device Header Dump (LMEMDUMPPCI) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x644:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**			**Function Code=2**												
008	**CIDBF:** idents															
00A	**CPCIFNADDRBF:** addr															
00C	**Packet Checksum**															

Fields:

`CIDBF` **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

`CPCIFNADDRBF` **(23.2.3)**

Attribute(s):

Brief: "PCI Device Header Function Address Bitfield"

Instance(s): `addr`

Bitfield containing PCI device header function address.

ITOS Mnemonic: `LMEMDUMPPOOL`

23.1.4 `LMEMDUMPPOOL` (1604/0x644:7)

Context:

Description:

"Memory Pool Status Dump" Telecommand Packet

Dump the statistics for a memory pool.

Layout:

Memory Pool Status Dump (`LMEMDUMPPOOL`) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x644:7**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=7**															
006	**0**	**Function Code=7**														
008	**CIDBF:** `idents`															
00A	**CPOOLID:** `poolID`															
00C	**Packet Checksum**															

Fields:

`CIDBF` **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

`CPOOLID` **(23.3.13)**

Attribute(s):

Brief: "Memory Pool ID"

Instance(s): `poolID`

Identifier for the memory pool for which statistics should be dumped.

ITOS Mnemonic: `LMEMDUMPREG`

23.1.5 `LMEMDUMPREG` (1604/0x644:3)

Context:

Description:

"Processor Register Dump" Telecommand Packet

Dump CPU register values.

Layout:

Processor Register Dump (LMEMDUMPREG) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x644:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**		**Function Code=3**													
008	**CIDBF:** `idents`															
00A	**Packet Checksum**															

Fields:

`CIDBF` **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

ITOS Mnemonic: `LMEMDUMPSYMREL`

23.1.6 `LMEMDUMPSYMREL` (1604/0x644:9)

Context:

Description:

"Memory Dump Symbol Relative" Telecommand Packet

Dump memory data starting at an offset relative to a symbol.

Layout:

Memory Dump Symbol Relative (`LMEMDUMPSYMREL`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x644:9										
002	SF=3			Sequence Count												
004	Packet Length=55															
006	0	Function Code=9														
008	CIDBF: `idents`															
00A	CDEST: `dest`															
00C	CADDR32: `offset`															
010	CSIZE32: `size`															
014	CNAMESIZE: `nameSize`															
016	CPAD16: `pad3`															
018	CNAMECHAR: `name[0-35]`															
03C	Packet Checksum															

Fields:

`CADDR32` **(23.2.0)**

Attribute(s):

Brief: "32-Bit Address/Offset Bitfield"

Instance(s): `offset`

Bitfield containing the full 32 bits of the starting address or offset.

`CDEST` **(23.3.3)**

Attribute(s):

Brief: "Dump Telemetry Destination"

Instance(s): `dest`

Destination for the dump telemetry (0=1553, 1=SSR).

`CIDBF` **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

`CNAMECHAR` **(23.3.5)**

Attribute(s):

Brief: "Symbol Name Character"

Instance(s): `name`

Character within a symbol name.

`CNAMESIZE` **(23.3.6)**

Attribute(s):

Brief: "Symbol Name Length"

Instance(s): `nameSize`

Length of symbol name, in bytes.

`CPAD16` **(23.3.7)**

Attribute(s):

Brief: "16-bit padding"

Instance(s): `pad3`

Explicit padding of 16 bits.

`CPAD8` **(23.3.8)**

Attribute(s):

Brief: "8-bit padding"

Instance(s): `pad1`, `pad2`

Explicit padding of 8 bits.

`CSIZE32` **(23.2.4)**

Attribute(s):

Brief: "32-Bit Word Count Bitfield"

Instance(s): `size`

Bitfield containing the full 32-bit word count value.

ITOS Mnemonic: `LMEMDUMPSYMVAL`

23.1.7 `LMEMDUMPSYMVAL` (1604/0x644:8)

Context:

Description:

"Memory Symbol Lookup" Telecommand Packet

Dump the value of a symbol.

Layout:

Memory Symbol Lookup (`LMEMDUMPSYMVAL`) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x644:8**										

Memory Symbol Lookup (LMEMDUMPSYMVAL) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
002	**SF=3**		**Sequence Count**													
004	**Packet Length=55**															
006	**0**	**Function Code=8**														
008	**CIDBF:** idents															
00A	**CNAMESIZE:** nameSize								**CPAD8:** pad							
00C	**CNAMECHAR:** name[0-47]															
03C	**Packet Checksum**															

Fields:

CIDBF **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): idents

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

CNAMECHAR **(23.3.5)**

Attribute(s):

Brief: "Symbol Name Character"

Instance(s): name

Character within a symbol name.

CNAMESIZE **(23.3.6)**

Attribute(s):

Brief: "Symbol Name Length"

Instance(s): nameSize

Length of symbol name, in bytes.

CPAD8 **(23.3.8)**

Attribute(s):

Brief: "8-bit padding"

Instance(s): `pad`

Explicit padding of 8 bits.

ITOS Mnemonic: `LMEMLOADMEM`

23.1.8 `LMEMLOADMEM` (1604/0x644:4)

Context:

Description:

"Memory Write" Telecommand Packet

Load data to a region in memory.

Layout:

Memory Write (`LMEMLOADMEM`) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x644:4**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=55**															
006	**0**	**Function Code=4**														
008	**CIDBF:** `idents`															
00A	**CSIZE16:** `wordCount`															
00C	**CADDR32:** `addr`															
010	**CDATA16:** `data[0-21]`															
03C	**Packet Checksum**															

Fields:

`CADDR32` **(23.2.0)**

Attribute(s):

Brief: "32-Bit Address/Offset Bitfield"

Instance(s): `addr`

Bitfield containing the full 32 bits of the starting address or offset.

`CDATA16` **(23.3.2)**

Attribute(s):

Brief: "16-Bit Data Value"

Instance(s): `data`

16-bit data value.

`CIDBF` **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

`CSIZE16` **(23.3.14)**

Attribute(s):

Brief: "16-Bit Word count"

Instance(s): `wordCount`

Number of 32-bit words to load/dump.

ITOS Mnemonic: `LMEMLOADPCI`

23.1.9 `LMEMLOADPCI` (1604/0x644:5)

Context:

Description:

"PCI Device Header Write" Telecommand Packet

Load data to a PCI device header.

Layout:

PCI Device Header Write (LMEMLOADPCI) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x644:5**										
002	**SF=3**			**Sequence Count**												

PCI Device Header Write (LMEMLOADPCI) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
004	**Packet Length=9**															
006	**0**	**Function Code=5**														
008	**CIDBF:** ident s															
00A	**CPCIADDRBF:** addr															
00C	**CDATA16:** data															
00E	**Packet Checksum**															

Fields:

CDATA16 **(23.3.2)**

Attribute(s):

Brief: "16-Bit Data Value"

Instance(s): data

16-bit data value.

CIDBF **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): idents

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

CPCIADDRBF **(23.2.2)**

Attribute(s):

Brief: "PCI Device Header Address Bitfield"

Instance(s): addr

Bitfield containing PCI device header address.

ITOS Mnemonic: LMEMLOADREG

23.1.10 LMEMLOADREG (1604/0x644:6)

Context:

Description:

"Processor Register Write" Telecommand Packet

Load data to CPU registers.

Layout:

Processor Register Write (LMEMLOADREG) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x644:6**										
002	**SF=3**		**Sequence Count**													
004	**Packet Length=55**															
006	**0**	**Function Code=6**														
008	**CIDBF:** idents															
00A	**CSIZE16:** wordCount															
00C	**CADDR32:** offset															
010	**CDATA16:** data[0-21]															
03C	**Packet Checksum**															

Fields:

CADDR32 **(23.2.0)**

Attribute(s):

Brief: "32-Bit Address/Offset Bitfield"

Instance(s): offset

Bitfield containing the full 32 bits of the starting address or offset.

CDATA16 **(23.3.2)**

Attribute(s):

Brief: "16-Bit Data Value"

Instance(s): data

16-bit data value.

`CIDBF` **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

`CSIZE16` **(23.3.14)**

Attribute(s):

Brief: "16-Bit Word count"

Instance(s): `wordCount`

Number of 32-bit words to load/dump.

ITOS Mnemonic: `LMEMNOOP`

23.1.11 `LMEMNOOP` (1604/0x644:10)

Context:

Description:

"No-Op" Telecommand Packet

A no-op telecommand which does nothing but generate a command confirm reply from the specified CPU.

Layout:

No-Op (`LMEMNOOP`)
Telecommand Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=1	SH	APID=0x644:10										
002	SF=3			Sequence Count												
004	Packet Length=5															
006	0	Function Code=10														
008	CIDBF: `idents`															
00A	Packet Checksum															

Fields:

`CIDBF` **(23.2.1)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

23.2 Command Bitfields

23.2.0 `CADDR32` (32-Bit Address/Offset Bitfield) Telecommand Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Bitfield containing the full 32 bits of the starting address or offset.

Start	Stop	Size	Item Type and Name

Used by:

`LMEMDUMPMEM (23.1.1)`

23.2.1 `CIDBF` (LAT Unit and Transaction ID Bitfield) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfield to contain the LAT unit that is the target of a MEM telecommand and the transaction ID for the MEM telecommand.

Start	Stop	Size	Item Type and Name

Used by:

`LMEMDUMPCANCEL (23.1.0)`

23.2.2 `CPCIADDRBF` (PCI Device Header Address Bitfield) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfield containing PCI device header address.

Start	Stop	Size	Item Type and Name

Used by:

`LMEMLOADPCI (23.1.9)`

23.2.3 `CPCIFNADDRBF` (PCI Device Header Function Address Bitfield) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfield containing PCI device header function address.

Start	Stop	Size	Item Type and Name

Used by:

`LMEMDUMPPCI (23.1.3)`

23.2.4 `CSIZE32` (32-Bit Word Count Bitfield) Telecommand Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Bitfield containing the full 32-bit word count value.

Start	Stop	Size	Item Type and Name

Used by:

`LMEMDUMPMEM (23.1.1)`

23.3 Command Fields

23.3.0 `CADDRHI` (Upper 16 Bits of Address/Offset) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits

Description:

Upper 16 bits of the 32-bit starting address or offset.

Used by:

???

23.3.1 `CADDRLO` (Lower 16 Bits of Address/Offset) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits

Description:

Lower 16 bits of the 32-bit starting address or offset.

Used by:

???

23.3.2 `CDATA16` (16-Bit Data Value) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

16-bit data value.

Used by:

`LMEMLOADMEM (23.1.8)`

23.3.3 `CDEST` (Dump Telemetry Destination) Telecommand Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Destination for the dump telemetry (0=1553, 1=SSR).

Used by:

`LMEMDUMPMEM (23.1.1)`

23.3.4 `CLATUNIT` (Target LAT Unit) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

LAT unit that is the target of the MEM telecommand.

Used by:

???

23.3.5 `CNAMECHAR` (Symbol Name Character) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Character within a symbol name.

Used by:

`LMEMDUMPSYMREL (23.1.6)`

23.3.6 `CNAMESIZE` (Symbol Name Length) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Length of symbol name, in bytes.

Used by:

`LMEMDUMPSYMREL (23.1.6)`

23.3.7 `CPAD16` (16-bit padding) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Explicit padding of 16 bits.

Used by:

`LMEMDUMPSYMREL (23.1.6)`

23.3.8 `CPAD8` (8-bit padding) Telecommand Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Explicit padding of 8 bits.

Used by:

`LMEMDUMPMEM (23.1.1)`

23.3.9 `CPCIBUS` (PCI Bus Address) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	1 bit

Description:

Bus portion of a PCI device header address.

Used by:

???

23.3.10 `CPCIDEVICE` (PCI Device Address) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	5 bits

Description:

Device portion of PCI device header address.

Used by:

???

23.3.11 `CPCIFUNCTION` (PCI Function Address) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	2 bits

Description:

Function portion of PCI device header address.

Used by:

???

23.3.12 `CPCIOFFSET` (PCI Offset Address) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	8 bits

Description:

Offset portion of PCI device header address.

Used by:

???

23.3.13 `CPOOLID` (Memory Pool ID) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Identifier for the memory pool for which statistics should be dumped.

Used by:

`LMEMDUMPPOOL (23.1.4)`

23.3.14 `CSIZE16` (16-Bit Word count) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Number of 32-bit words to load/dump.

Used by:

`LMEMLOADMEM (23.1.8)`

23.3.15 `CSIZEHI` (Upper 16 Bits of Word Count) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits

Description:

Upper 16 bits of the 32-bit word count.

Used by:

???

23.3.16 `CSIZELO` (Lower 16 Bits of Word Count) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits

Description:

Lower 16 bits of the 32-bit word count.

Used by:

???

23.3.17 `CTRANID` (Transaction ID) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	12 bits

Description:

Transaction identifier for the MEM telecommand. This ID is echoed back in the telemetry that is sent in response to the telecommand. It can be used to match telecommands to telemetry.

Used by:

???

23.4 Telemetry Packets

23.4.0 LMEMEPU0DATA (789/0x315)

Context:

Description:

"EPU 0 Memory Dump Data" Telemetry Packet

Memory dump data from EPU 0.

Layout:

EPU 0 Memory Dump Data (LMEMEPU0DATA) Telemetry Packet Format																
0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=0	SH	APID=0x315										
002	SF			Sequence Count												
004	Packet Length=377															
006	Timestamp															
00E	TIDBF: idents															
010	TDUMPADDR: address															
014	TDUMPSIZE: wordCount															
016	TDUMPCMDFUNC: cmdFuncCode															
018	TDUMPDATA: data[0-89]															

Fields:

TDUMPADDR **(23.6.0)**

Attribute(s):

Brief: "Starting Address"

Instance(s): address

Address of first 32-bit word of dumped data.

TDUMPCMDFUNC **(23.6.1)**

Attribute(s):

Brief: "Dump Type"

Instance(s): cmdFuncCode

Function code of telecommand that initiated the dump, which indicates the type of data contained in the dump.

`TDUMPDATA` **(23.6.2)**

Attribute(s):

Brief: "Dump Data Word"

Instance(s): `data`

Memory dump data word.

`TDUMPSIZE` **(23.6.3)**

Attribute(s):

Brief: "Word Count"

Instance(s): `wordCount`

Number of valid 32-bit words of dumped data.

`TIDBF` **(23.5.0)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield containing the ID of the LAT unit that sent the telemetry and the transaction identifier of the telecommand that requested the telemetry.

23.4.1 `LMEMEPU1DATA` (790/0x316)

Context:

Description:

"EPU 1 Memory Dump Data" Telemetry Packet

Memory dump data from EPU 1.

Layout:

EPU 1 Memory Dump Data (LMEMEPU1DATA) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x316**										
002	**SF**		**Sequence Count**													
004	**Packet Length=377**															
006	**Timestamp**															
00E	**TIDBF:** idents															
010	**TDUMPADDR:** address															
014	**TDUMPSIZE:** wordCount															
016	**TDUMPCMDFUNC:** cmdFuncCode															
018	**TDUMPDATA:** data[0-89]															

Fields:

TDUMPADDR **(23.6.0)**

Attribute(s):

Brief: "Starting Address"

Instance(s): address

Address of first 32-bit word of dumped data.

TDUMPCMDFUNC **(23.6.1)**

Attribute(s):

Brief: "Dump Type"

Instance(s): cmdFuncCode

Function code of telecommand that initiated the dump, which indicates the type of data contained in the dump.

TDUMPDATA **(23.6.2)**

Attribute(s):

Brief: "Dump Data Word"

Instance(s): data

Memory dump data word.

`TDUMPSIZE` **(23.6.3)**

Attribute(s):

Brief: "Word Count"

Instance(s): `wordCount`

Number of valid 32-bit words of dumped data.

`TIDBF` **(23.5.0)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield containing the ID of the LAT unit that sent the telemetry and the transaction identifier of the telecommand that requested the telemetry.

23.4.2 `LMEMEPU2DATA` (791/0x317)

Context:

Description:

"EPU 2 Memory Dump Data" Telemetry Packet

Memory dump data from EPU 2.

Layout:

EPU 2 Memory Dump Data (LMEMEPU2DATA) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x317**										
002	**SF**			**Sequence Count**												
004	**Packet Length=377**															
006	**Timestamp**															
00E	**TIDBF:** `idents`															
010	**TDUMPADDR:** `address`															
014	**TDUMPSIZE:** `wordCount`															
016	**TDUMPCMDFUNC:** `cmdFuncCode`															
018	**TDUMPDATA:** `data[0-89]`															

Fields:

`TDUMPADDR` **(23.6.0)**

Attribute(s):

Brief: "Starting Address"

Instance(s): `address`

Address of first 32-bit word of dumped data.

`TDUMPCMDFUNC` **(23.6.1)**

Attribute(s):

Brief: "Dump Type"

Instance(s): `cmdFuncCode`

Function code of telecommand that initiated the dump, which indicates the type of data contained in the dump.

`TDUMPDATA` **(23.6.2)**

Attribute(s):

Brief: "Dump Data Word"

Instance(s): `data`

Memory dump data word.

`TDUMPSIZE` **(23.6.3)**

Attribute(s):

Brief: "Word Count"

Instance(s): `wordCount`

Number of valid 32-bit words of dumped data.

`TIDBF` **(23.5.0)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield containing the ID of the LAT unit that sent the telemetry and the transaction identifier of the telecommand that requested the telemetry.

23.4.3 `LMEMPOOLDATA` (785/0x311)

Context:

Description:

"Memory Pool Statistics Dump" Telemetry Packet

Dump of memory pool statistics.

Layout:

Memory Pool Statistics Dump (LMEMPOOLDATA) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x311**										
002	**SF**		**Sequence Count**													
004	**Packet Length=33**															
006	**Timestamp**															
00E	**TIDBF:** `idents`															
010	**TPOOLID:** `poolID`															
012	**TPAD16:** `pad`															
014	**TPOOLFREEBYTES:** `freeBytes`															
018	**TPOOLFREEBLOCKS:** `freeBlocks`															
01C	**TPOOLMAXBLKBYTES:** `maxBlockBytes`															
020	**TPOOLALLOCBYTES:** `allocBytes`															
024	**TPOOLALLOCBLOCKS:** `allocBlocks`															

Fields:

`TIDBF` **(23.5.0)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield containing the ID of the LAT unit that sent the telemetry and the transaction identifier of the telecommand that requested the telemetry.

`TPAD16` **(23.6.5)**

Attribute(s):

Brief: "16-Bit Padding"

Instance(s): `pad`

Explicit padding of 16 bits.

`TPOOLALLOCBLOCKS` **(23.6.7)**

Attribute(s):

Brief: "Memory Pool Allocated Blocks"

Instance(s): `allocBlocks`

Number of blocks allocated within the memory pool.

`TPOOLALLOCBYTES` **(23.6.8)**

Attribute(s):

Brief: "Memory Pool Allocated Bytes"

Instance(s): `allocBytes`

Number of bytes allocated within the memory pool.

`TPOOLFREEBLOCKS` **(23.6.9)**

Attribute(s):

Brief: "Memory Pool Free Blocks"

Instance(s): `freeBlocks`

Number of free blocks within the memory pool.

`TPOOLFREEBYTES` **(23.6.10)**

Attribute(s):

Brief: "Memory Pool Free Bytes"

Instance(s): `freeBytes`

Number of free bytes within the memory pool.

`TPOOLID` **(23.6.11)**

Attribute(s):

Brief: "Memory Pool ID"

Instance(s): `poolID`

Identifier for the memory pool for which the statistics were dumped.

`TPOOLMAXBLKBYTES` **(23.6.12)**

Attribute(s):

Brief: "Memory Pool Maximum Block Size"

Instance(s): `maxBlockBytes`

Size, in bytes, of the largest free block within the memory pool.

23.4.4 `LMEMSIUDATA` (788/0x314)

Context:

Description:

"SIU Memory Dump Data to 1553" Telemetry Packet

Memory dump data from the SIU to the 1553 bus.

Layout:

SIU Memory Dump Data to 1553 (LMEMSIUDATA) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x314**										
002	**SF**		**Sequence Count**													
004	**Packet Length=377**															
006	**Timestamp**															
00E	**TIDBF:** `idents`															
010	**TDUMPADDR:** `address`															
014	**TDUMPSIZE:** `wordCount`															
016	**TDUMPCMDFUNC:** `cmdFuncCode`															
018	**TDUMPDATA:** `data[0-89]`															

Fields:

`TDUMPADDR` **(23.6.0)**

Attribute(s):

Brief: "Starting Address"

Instance(s): `address`

Address of first 32-bit word of dumped data.

`TDUMPCMDFUNC` **(23.6.1)**

Attribute(s):

Brief: "Dump Type"

Instance(s): `cmdFuncCode`

Function code of telecommand that initiated the dump, which indicates the type of data contained in the dump.

`TDUMPDATA` **(23.6.2)**

Attribute(s):

Brief: "Dump Data Word"

Instance(s): `data`

Memory dump data word.

`TDUMPSIZE` **(23.6.3)**

Attribute(s):

Brief: "Word Count"

Instance(s): `wordCount`

Number of valid 32-bit words of dumped data.

`TIDBF` **(23.5.0)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield containing the ID of the LAT unit that sent the telemetry and the transaction identifier of the telecommand that requested the telemetry.

23.4.5 `LMEMSSR0DATA` (981/0x3D5)

Context:

Description:

"EPU 0 Memory Dump Data to SSR" Telemetry Packet

Memory dump data from EPU 0 to the SSR.

Layout:

EPU 0 Memory Dump Data to SSR (LMEMSSR0DATA) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3D5**										
002	**SF**		**Sequence Count**													
004	**Packet Length=9**															
006	**Timestamp**															
00E	**TSSRHDR:** ssr_hdr															

Fields:

`TSSRHDR` **(23.6.13)**

Attribute(s):

Brief: "SSR Packet Header"

Instance(s): `ssr_hdr`

Header for data sent to the SSR.

23.4.6 `LMEMSSR1DATA` (982/0x3D6)

Context:

Description:

"EPU 1 Memory Dump Data to SSR" Telemetry Packet

Memory dump data from EPU 1 to the SSR.

Layout:

EPU 1 Memory Dump Data to SSR (LMEMSSR1DATA) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3D6**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**TSSRHDR:** ssr_hdr															

Fields:

`TSSRHDR` **(23.6.13)**

Attribute(s):

Brief: "SSR Packet Header"

Instance(s): `ssr_hdr`

Header for data sent to the SSR.

23.4.7 `LMEMSSR2DATA` (983/0x3D7)

Context:

Description:

"EPU 2 Memory Dump Data to SSR" Telemetry Packet

Memory dump data from EPU 2 to the SSR.

Layout:

EPU 2 Memory Dump Data to SSR (LMEMSSR2DATA) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3D7**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**TSSRHDR:** ssr_hdr															

Fields:

TSSRHDR **(23.6.13)**

Attribute(s):

Brief: "SSR Packet Header"

Instance(s): ssr_hdr

Header for data sent to the SSR.

23.4.8 LMEMSSRSDATA (980/0x3D4)

Context:

Description:

"SIU Memory Dump Data to SSR" Telemetry Packet

Memory dump data from the SIU to the SSR.

Layout:

SIU Memory Dump Data to SSR (LMEMSSRSDATA) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x3D4**										
002	**SF**			**Sequence Count**												
004	**Packet Length=9**															
006	**Timestamp**															
00E	**TSSRHDR:** ssr_hdr															

Fields:

TSSRHDR **(23.6.13)**

Attribute(s):

Brief: "SSR Packet Header"

Instance(s): `ssr_hdr`

Header for data sent to the SSR.

23.4.9 `LMEMSYMVAL` (786/0x312)

Context:

Description:

"Symbol Value Dump" Telemetry Packet

Dump of a symbol's 32-bit value.

Layout:

Symbol Value Dump (LMEMSYMVAL) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x312**										
002	**SF**		**Sequence Count**													
004	**Packet Length=65**															
006	**Timestamp**															
00E	**TIDBF:** `idents`															
010	**TSYMVAL:** `symValue`															
014	**TSYMNAMESIZE:** `nameSize`								**TPAD8:** `pad8`							
016	**TPAD16:** `pad16`															
018	**TSYMNAMECHAR:** `name[0-47]`															

Fields:

`TIDBF` **(23.5.0)**

Attribute(s):

Brief: "LAT Unit and Transaction ID Bitfield"

Instance(s): `idents`

Bitfield containing the ID of the LAT unit that sent the telemetry and the transaction identifier of the telecommand that requested the telemetry.

`TPAD16` **(23.6.5)**

Attribute(s):

Brief: "16-Bit Padding"

Instance(s): `pad16`

Explicit padding of 16 bits.

`TPAD8` **(23.6.6)**

Attribute(s):

Brief: "8-Bit Padding"

Instance(s): `pad8`

Explicit padding of 8 bits.

`TSYMNAMECHAR` **(23.6.14)**

Attribute(s):

Brief: "Symbol Name Character"

Instance(s): `name`

Character within a symbol name.

`TSYMNAMESIZE` **(23.6.15)**

Attribute(s):

Brief: "Symbol Name Length"

Instance(s): `nameSize`

Length of symbol name, in bytes.

`TSYMVAL` **(23.6.16)**

Attribute(s):

Brief: "Symbol Value"

Instance(s): `symValue`

Value of symbol.

23.5 Telemetry Bitfields

23.5.0 `TIDBF` (LAT Unit and Transaction ID Bitfield) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfield containing the ID of the LAT unit that sent the telemetry and the transaction identifier of the telecommand that requested the telemetry.

Start	Stop	Size	Item Type and Name
0	3	4	`TLATUNIT latUnit`
4	15	12	`TTRANID tranID`

Fields:

`TLATUNIT` **(23.6.4)**

Attribute(s):

Brief: "Source LAT Unit"

Instance(s): `latUnit`

LAT unit that sent the telemetry.

`TTRANID` **(23.6.17)**

Attribute(s):

Brief: "Transaction ID"

Instance(s): `tranID`

Transaction identifier from the telecommand that requested the telemetry.

Used by:

`LMEMEPU0DATA (23.4.0)`

23.6 Telemetry Fields

23.6.0 `TDUMPADDR` (Starting Address) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Address of first 32-bit word of dumped data.

Used by:

`LMEMEPU0DATA (23.4.0)`

23.6.1 `TDUMPCMDFUNC` (Dump Type) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Function code of telecommand that initiated the dump, which indicates the type of data contained in the dump.

Used by:

`LMEMEPU0DATA (23.4.0)`

23.6.2 `TDUMPDATA` (Dump Data Word) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Memory dump data word.

Used by:

`LMEMEPU0DATA (23.4.0)`

23.6.3 `TDUMPSIZE` (Word Count) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Number of valid 32-bit words of dumped data.

Used by:

`LMEMEPU0DATA (23.4.0)`

23.6.4 `TLATUNIT` (Source LAT Unit) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	4 bits

Description:

LAT unit that sent the telemetry.

Used by:

`TIDBF (23.5.0)`

23.6.5 `TPAD16` (16-Bit Padding) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Explicit padding of 16 bits.

Used by:

`LMEMPOOLDATA (23.4.3)`

23.6.6 `TPAD8` (8-Bit Padding) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char
Length:	8 bits (1 byte)

Description:

Explicit padding of 8 bits.

Used by:

`LMEMSYMVAL (23.4.9)`

23.6.7 `TPOOLALLOCBLOCKS` (Memory Pool Allocated Blocks) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Number of blocks allocated within the memory pool.

Used by:

`LMEMPOOLDATA (23.4.3)`

23.6.8 `TPOOLALLOCBYTES` (Memory Pool Allocated Bytes) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Number of bytes allocated within the memory pool.

Used by:

`LMEMPOOLDATA (23.4.3)`

23.6.9 `TPOOLFREEBLOCKS` (Memory Pool Free Blocks) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Number of free blocks within the memory pool.

Used by:

`LMEMPOOLDATA (23.4.3)`

23.6.10 `TPOOLFREEBYTES` (Memory Pool Free Bytes) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Number of free bytes within the memory pool.

Used by:

LMEMPOOLDATA (23.4.3)

23.6.11 TPOOLID (Memory Pool ID) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Identifier for the memory pool for which the statistics were dumped.

Used by:

LMEMPOOLDATA (23.4.3)

23.6.12 TPOOLMAXBLKBYTES (Memory Pool Maximum Block Size) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Size, in bytes, of the largest free block within the memory pool.

Used by:

LMEMPOOLDATA (23.4.3)

23.6.13 TSSRHDR (SSR Packet Header) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Header for data sent to the SSR.

Used by:

LMEMSSR0DATA (23.4.5)

23.6.14 TSYMNAMECHAR (Symbol Name Character) Telemetry Field

Definition:

Alignment:	1 byte
C type:	unsigned char

Length: 8 bits (1 byte)

Description:

Character within a symbol name.

Used by:

LMEMSYMVAL (23.4.9)

23.6.15 TSYMNAMESIZE (Symbol Name Length) Telemetry Field

Definition:

Alignment: 1 byte
C type: unsigned char
Length: 8 bits (1 byte)

Description:

Length of symbol name, in bytes.

Used by:

LMEMSYMVAL (23.4.9)

23.6.16 TSYMVAL (Symbol Value) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Value of symbol.

Used by:

LMEMSYMVAL (23.4.9)

23.6.17 TTRANID (Transaction ID) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 12 bits

Description:

Transaction identifier from the telecommand that requested the telemetry.

Used by:

TIDBF (23.5.0)

24 PBC Package

24.0 Overview

The PBC package contains routines that are specific to the Primary Boot Code.

The package supports the following functions:

- RAD750 boot and crate initialization

24.1 Command Packets

ITOS Mnemonic: `LPBCBADCMD`

24.1.0 `LPBCBADCMD` (1600/0x640:4)

Context:

Description:

"Invalid boot command" Telecommand Packet

Boot command with an invalid function code. This is used for testing the PBC.

Layout:

Invalid boot command (LBTBAD) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x640:4**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**			**Function Code=4**												
008	**CUNITBF:** ident															
00A	**Packet Checksum**															

Fields:

`CUNITBF` **(24.2.1)**

Attribute(s):

Brief: "LAT Unit Bitfield"

Instance(s): `ident`

Bitfield containing target LAT unit and some padding.

ITOS Mnemonic: LPBCERRDUMP

24.1.1 LPBCERRDUMP (1600/0x640:2)

Context:

Description:

"Error code pop" Telecommand Packet

Pop the next error code from the PBC error queue.

Layout:

Error code pop (LBTERRDUMP) Telecommand Packet Format																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x640:2**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**	**Function Code=2**														
008	**CUNITBF:** ident															
00A	**Packet Checksum**															

Fields:

CUNITBF **(24.2.1)**

Attribute(s):

Brief: "LAT Unit Bitfield"

Instance(s): ident

Bitfield containing target LAT unit and some padding.

ITOS Mnemonic: LPBCRESET

24.1.2 LPBCRESET (1600/0x640:1)

Context:

Description:

"Warm reboot" Telecommand Packet

Initiate a warm reboot of the unit.

Layout:

Warm reboot (LBTRESET) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x640:1**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**	**Function Code=1**														
008	**CUNITBF:** ident															
00A	**CPAD16:** pad															
00C	**CFLAGS32:** bootFlags															
010	**Packet Checksum**															

Fields:

CFLAGS32 **(24.2.0)**

Attribute(s):

Brief: "32-Bit Boot Flags Bitfield"

Instance(s): bootFlags

Bitfield containing the full 32 bits of the boot flags parameter.

CPAD16 **(24.3.4)**

Attribute(s):

Brief: "16-bit Padding"

Instance(s): pad

Explicit padding of 16 bits.

CUNITBF **(24.2.1)**

Attribute(s):

Brief: "LAT Unit Bitfield"

Instance(s): ident

Bitfield containing target LAT unit and some padding.

ITOS Mnemonic: `LPBCRTOSEXEC`

24.1.3 `LPBCRTOSEXEC` (1600/0x640:3)

Context:

Description:

"Boot RTOS" Telecommand Packet

Start the RTOS.

Layout:

Boot RTOS (LBTRTOSEXEC) **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x640:3**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=11**															
006	**0**	**Function Code=3**														
008	**CUNITBF:** `ident`															
00A	**CPAD16:** `pad`															
00C	**CFLAGS32:** `sbcFlags`															
010	**Packet Checksum**															

Fields:

`CFLAGS32` **(24.2.0)**

Attribute(s):

Brief: "32-Bit Boot Flags Bitfield"

Instance(s): `sbcFlags`

Bitfield containing the full 32 bits of the boot flags parameter.

`CPAD16` **(24.3.4)**

Attribute(s):

Brief: "16-bit Padding"

Instance(s): `pad`

Explicit padding of 16 bits.

`CUNITBF` **(24.2.1)**

Attribute(s):

Brief: "LAT Unit Bitfield"

Instance(s): `ident`

Bitfield containing target LAT unit and some padding.

ITOS Mnemonic: `LPBCSTART`

24.1.4 `LPBCSTART` (1600/0x640:0)

Context:

Description:

"Boot code no-op" Telecommand Packet

No-op command for the PBC.

Layout:

Boot code no-op `(LBTSTART)` **Telecommand Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=1**	**SH**	**APID=0x640:0**										
002	**SF=3**			**Sequence Count**												
004	**Packet Length=5**															
006	**0**			**Function Code=0**												
008	**CUNITBF:** `ident`															
00A	**Packet Checksum**															

Fields:

`CUNITBF` **(24.2.1)**

Attribute(s):

Brief: "LAT Unit Bitfield"

Instance(s): `ident`

Bitfield containing target LAT unit and some padding.

24.2 Command Bitfields

24.2.0 `CFLAGS32` (32-Bit Boot Flags Bitfield) Telecommand Bitfield

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Bitfield containing the full 32 bits of the boot flags parameter.

Start	Stop	Size	Item Type and Name

Used by:

`LBTRESET (24.1.2)`

24.2.1 `CUNITBF` (LAT Unit Bitfield) Telecommand Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfield containing target LAT unit and some padding.

Start	Stop	Size	Item Type and Name

Used by:

`LBTBAD (24.1.0)`

24.3 Command Fields

24.3.0 `CFLAGSHI` (Upper 16 Bits of Boot Flags) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits

Description:

Upper 16 bits of the 32-bit boot flags parameter.

Used by:

???

24.3.1 `CFLAGSLO` (Lower 16 Bits of Boot Flags) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits

Description:

Lower 16 bits of the 32-bit boot flags parameter.

Used by:

???

24.3.2 `CLATUNIT` (Target LAT Unit) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 4 bits

Description:

LAT unit that is the target of the telecommand.

Used by:

???

24.3.3 `CPAD12` (12-bit padding) Telecommand Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 12 bits

Description:

Explicit padding of 12 bits.

Used by:

???

24.3.4 `CPAD16` (16-bit Padding) Telecommand Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Explicit padding of 16 bits.

Used by:

`LBTRESET (24.1.2)`

24.4 Telemetry Packets

24.4.0 `LBTEPU0HKP` (609/0x261)

Context:

Description:

"EPU 0 Boot Housekeeping Telemetry" Telemetry Packet

Boot housekeeping telemetry from EPU 0.

Layout:

EPU 0 Boot Housekeeping Telemetry (LBTEPU0HKP) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x261**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**BOOTSWMODE:** swMode															
010	**BOOTTOTALERR:** errCount															
012	**BOOTQERR:** qerrCount															
014	**BOOTERRWORD:** qerrWord															
018	**BOOTPKTCOUNT:** tcRcvCount															
01A	**BOOTPKTACCEPT:** tcAccCount															
01C	**BOOTLASTERR:** errWord															
020	**BOOTCOMMAND:** tcLast															
022	**BOOTSCPKTCOUNT:** tcPktScCount															
024	**BOOTUNSPKTCOUNT:** tcPktUnsupportCount															
026	**BOOTFILESTATE:** fileState															
028	**BOOTFILEPKT:** filePktCount															
02A	**BOOTSCRUBADDRHI:** addrScrubHi															
02C	**BOOTTYPE:** bootType															
02E	**BOOTDUMPCOUNT:** dumpCount															
030	**BOOTDUMPADDR:** dumpAddr															
034	**BOOTDUMPDATA:** dumpData[0-15]															

Fields:

BOOTCOMMAND **(24.5.0)**

Attribute(s):

Brief: "Last boot command bitfield"

Instance(s): `tcLast`

Bitfield to hold APID and function code of command most recently received by the PBC.

`BOOTDUMPADDR` **(24.6.0)**

Attribute(s):

Brief: "Memory dump address"

Instance(s): `dumpAddr`

Address of first memory dump word.

`BOOTDUMPCOUNT` **(24.6.1)**

Attribute(s):

Brief: "Memory dump word count"

Instance(s): `dumpCount`

Number of valid 32-bit memory dump words.

`BOOTDUMPDATA` **(24.6.2)**

Attribute(s):

Brief: "Memory dump data"

Instance(s): `dumpData`

Memory dump data word.

`BOOTERRWORD` **(24.6.3)**

Attribute(s):

Brief: "Error code"

Instance(s): `qerrWord`

Error code at the head of the boot error queue.

`BOOTFILEPKT` **(24.6.4)**

Attribute(s):

Brief: "File upload packet count"

Instance(s): `filePktCount`

Number of file upload packets received by the PBC.

`BOOTFILESTATE` **(24.6.5)**

Attribute(s):

Brief: "File upload state"

Instance(s): `fileState`

State of the PBC's file upload state machine.

`BOOTLASTERR` **(24.6.7)**

Attribute(s):

Brief: "Most recent boot error code"

Instance(s): `errWord`

Error code for the most recent error encountered by the PBC.

`BOOTPKTACCEPT` **(24.6.9)**

Attribute(s):

Brief: "Accepted packet count"

Instance(s): `tcAccCount`

Number of packets accepted by the PBC.

`BOOTPKTCOUNT` **(24.6.10)**

Attribute(s):

Brief: "Received packet count"

Instance(s): `tcRcvCount`

Number of packets received by the PBC.

`BOOTQERR` **(24.6.11)**

Attribute(s):

Brief: "Number of queued errors"

Instance(s): `qerrCount`

Number of errors in the boot error queue.

`BOOTSCPKTCOUNT` **(24.6.12)**

Attribute(s):

Brief: "Received spacecraft packet count"

Instance(s): `tcPktScCount`

Total number of spacecraft packets received.

`BOOTSCRUBADDRHI` **(24.6.13)**

Attribute(s):

Brief: "Hi 16 bits of software scrub address"

Instance(s): `addrScrubHi`

Upper 16 bits of PBC software scrub address.

`BOOTSWMODE` **(24.6.14)**

Attribute(s):

Brief: "Current PBC operating mode"

Instance(s): `swMode`

Current PBC operating mode.

`BOOTTOTALERR` **(24.6.15)**

Attribute(s):

Brief: "Number of errors encountered"

Instance(s): `errCount`

Total number of errors encountered by the PBC.

`BOOTTYPE` **(24.6.16)**

Attribute(s):

Brief: "Boot type"

Instance(s): `bootType`

Type of boot.

`BOOTUNSPKTCOUNT` **(24.6.17)**

Attribute(s):

Brief: "Received unsupported packet count"

Instance(s): `tcPktUnsupportCount`

Total number of unsupported packets received.

24.4.1 `LBTEPU1HKP` (610/0x262)

Context:

Description:

"EPU 1 Boot Housekeeping Telemetry" Telemetry Packet

Boot housekeeping telemetry from EPU 1.

Layout:

EPU 1 Boot Housekeeping Telemetry (LBTEPU1HKP) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x262**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**BOOTSWMODE:** `swMode`															
010	**BOOTTOTALERR:** `errCount`															
012	**BOOTQERR:** `qerrCount`															
014	**BOOTERRWORD:** `qerrWord`															
018	**BOOTPKTCOUNT:** `tcRcvCount`															
01A	**BOOTPKTACCEPT:** `tcAccCount`															
01C	**BOOTLASTERR:** `errWord`															
020	**BOOTCOMMAND:** `tcLast`															

EPU 1 Boot Housekeeping Telemetry (LBTEPU1HKP) **Telemetry Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
022	**BOOTSCPKTCOUNT:** tcPktScCount															
024	**BOOTUNSPKTCOUNT:** tcPktUnsupportCount															
026	**BOOTFILESTATE:** fileState															
028	**BOOTFILEPKT:** filePktCount															
02A	**BOOTSCRUBADDRHI:** addrScrubHi															
02C	**BOOTTYPE:** bootType															
02E	**BOOTDUMPCOUNT:** dumpCount															
030	**BOOTDUMPADDR:** dumpAddr															
034	**BOOTDUMPDATA:** dumpData[0-15]															

Fields:

BOOTCOMMAND **(24.5.0)**

Attribute(s):

Brief: "Last boot command bitfield"

Instance(s): tcLast

Bitfield to hold APID and function code of command most recently received by the PBC.

BOOTDUMPADDR **(24.6.0)**

Attribute(s):

Brief: "Memory dump address"

Instance(s): dumpAddr

Address of first memory dump word.

BOOTDUMPCOUNT **(24.6.1)**

Attribute(s):

Brief: "Memory dump word count"

Instance(s): dumpCount

Number of valid 32-bit memory dump words.

BOOTDUMPDATA **(24.6.2)**

Attribute(s):

Brief: "Memory dump data"

Instance(s): `dumpData`

Memory dump data word.

`BOOTERRWORD` **(24.6.3)**

Attribute(s):

Brief: "Error code"

Instance(s): `qerrWord`

Error code at the head of the boot error queue.

`BOOTFILEPKT` **(24.6.4)**

Attribute(s):

Brief: "File upload packet count"

Instance(s): `filePktCount`

Number of file upload packets received by the PBC.

`BOOTFILESTATE` **(24.6.5)**

Attribute(s):

Brief: "File upload state"

Instance(s): `fileState`

State of the PBC's file upload state machine.

`BOOTLASTERR` **(24.6.7)**

Attribute(s):

Brief: "Most recent boot error code"

Instance(s): `errWord`

Error code for the most recent error encountered by the PBC.

`BOOTPKTACCEPT` **(24.6.9)**

Attribute(s):

Brief: "Accepted packet count"

Instance(s): `tcAccCount`

Number of packets accepted by the PBC.

`BOOTPKTCOUNT` **(24.6.10)**

Attribute(s):

Brief: "Received packet count"

Instance(s): `tcRcvCount`

Number of packets received by the PBC.

`BOOTQERR` **(24.6.11)**

Attribute(s):

Brief: "Number of queued errors"

Instance(s): `qerrCount`

Number of errors in the boot error queue.

`BOOTSCPKTCOUNT` **(24.6.12)**

Attribute(s):

Brief: "Received spacecraft packet count"

Instance(s): `tcPktScCount`

Total number of spacecraft packets received.

`BOOTSCRUBADDRHI` **(24.6.13)**

Attribute(s):

Brief: "Hi 16 bits of software scrub address"

Instance(s): `addrScrubHi`

Upper 16 bits of PBC software scrub address.

`BOOTSWMODE` **(24.6.14)**

Attribute(s):

Brief: "Current PBC operating mode"

Instance(s): `swMode`

Current PBC operating mode.

`BOOTTOTALERR` **(24.6.15)**

Attribute(s):

Brief: "Number of errors encountered"

Instance(s): `errCount`

Total number of errors encountered by the PBC.

`BOOTTYPE` **(24.6.16)**

Attribute(s):

Brief: "Boot type"

Instance(s): `bootType`

Type of boot.

`BOOTUNSPKTCOUNT` **(24.6.17)**

Attribute(s):

Brief: "Received unsupported packet count"

Instance(s): `tcPktUnsupportCount`

Total number of unsupported packets received.

24.4.2 `LBTEPU2HKP` (611/0x263)

Context:

Description:

"EPU 2 Boot Housekeeping Telemetry" Telemetry Packet

Boot housekeeping telemetry from EPU 2.

Layout:

EPU 2 Boot Housekeeping Telemetry (LBTEPU2HKP) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x263**										
002	**SF**			**Sequence Count**												
004	**Packet Length=109**															
006	**Timestamp**															
00E	**BOOTSWMODE:** swMode															
010	**BOOTTOTALERR:** errCount															
012	**BOOTQERR:** qerrCount															
014	**BOOTERRWORD:** qerrWord															
018	**BOOTPKTCOUNT:** tcRcvCount															
01A	**BOOTPKTACCEPT:** tcAccCount															
01C	**BOOTLASTERR:** errWord															
020	**BOOTCOMMAND:** tcLast															
022	**BOOTSCPKTCOUNT:** tcPktScCount															
024	**BOOTUNSPKTCOUNT:** tcPktUnsupportCount															
026	**BOOTFILESTATE:** fileState															
028	**BOOTFILEPKT:** filePktCount															
02A	**BOOTSCRUBADDRHI:** addrScrubHi															
02C	**BOOTTYPE:** bootType															
02E	**BOOTDUMPCOUNT:** dumpCount															
030	**BOOTDUMPADDR:** dumpAddr															
034	**BOOTDUMPDATA:** dumpData[0-15]															

Fields:

BOOTCOMMAND **(24.5.0)**

Attribute(s):

Brief: "Last boot command bitfield"

Instance(s): tcLast

Bitfield to hold APID and function code of command most recently received by the PBC.

`BOOTDUMPADDR` **(24.6.0)**

Attribute(s):

Brief: "Memory dump address"

Instance(s): `dumpAddr`

Address of first memory dump word.

`BOOTDUMPCOUNT` **(24.6.1)**

Attribute(s):

Brief: "Memory dump word count"

Instance(s): `dumpCount`

Number of valid 32-bit memory dump words.

`BOOTDUMPDATA` **(24.6.2)**

Attribute(s):

Brief: "Memory dump data"

Instance(s): `dumpData`

Memory dump data word.

`BOOTERRWORD` **(24.6.3)**

Attribute(s):

Brief: "Error code"

Instance(s): `qerrWord`

Error code at the head of the boot error queue.

`BOOTFILEPKT` **(24.6.4)**

Attribute(s):

Brief: "File upload packet count"

Instance(s): `filePktCount`

Number of file upload packets received by the PBC.

`BOOTFILESTATE` **(24.6.5)**

Attribute(s):

Brief: "File upload state"

Instance(s): `fileState`

State of the PBC's file upload state machine.

`BOOTLASTERR` **(24.6.7)**

Attribute(s):

Brief: "Most recent boot error code"

Instance(s): `errWord`

Error code for the most recent error encountered by the PBC.

`BOOTPKTACCEPT` **(24.6.9)**

Attribute(s):

Brief: "Accepted packet count"

Instance(s): `tcAccCount`

Number of packets accepted by the PBC.

`BOOTPKTCOUNT` **(24.6.10)**

Attribute(s):

Brief: "Received packet count"

Instance(s): `tcRcvCount`

Number of packets received by the PBC.

`BOOTQERR` **(24.6.11)**

Attribute(s):

Brief: "Number of queued errors"

Instance(s): `qerrCount`

Number of errors in the boot error queue.

`BOOTSCPKTCOUNT` **(24.6.12)**

Attribute(s):

Brief: "Received spacecraft packet count"

Instance(s): `tcPktScCount`

Total number of spacecraft packets received.

`BOOTSCRUBADDRHI` **(24.6.13)**

Attribute(s):

Brief: "Hi 16 bits of software scrub address"

Instance(s): `addrScrubHi`

Upper 16 bits of PBC software scrub address.

`BOOTSWMODE` **(24.6.14)**

Attribute(s):

Brief: "Current PBC operating mode"

Instance(s): `swMode`

Current PBC operating mode.

`BOOTTOTALERR` **(24.6.15)**

Attribute(s):

Brief: "Number of errors encountered"

Instance(s): `errCount`

Total number of errors encountered by the PBC.

`BOOTTYPE` **(24.6.16)**

Attribute(s):

Brief: "Boot type"

Instance(s): `bootType`

Type of boot.

`BOOTUNSPKTCOUNT` **(24.6.17)**

Attribute(s):

Brief: "Received unsupported packet count"

Instance(s): `tcPktUnsupportCount`

Total number of unsupported packets received.

24.4.3 `LBTHKP` (512/0x200)

Context:

Description:

"Boot housekeeping telemetry" Telemetry Packet

Boot housekeeping telemetry.

Layout:

Boot housekeeping telemetry (LBTHKP) **Telemetry Packet Format**																
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
000	**Version=0**			**T=0**	**SH**	**APID=0x200**										
002	**SF**		**Sequence Count**													
004	**Packet Length=109**															
006	**Timestamp**															
00E	**BOOTSWMODE:** `bootSoftwareMode`															
010	**BOOTTOTALERR:** `totalErrorCount`															
012	**BOOTQERR:** `queuedErrorCount`															
014	**BOOTERRWORD:** `errorWord`															
018	**BOOTPKTCOUNT:** `tcPktReceiveCount`															
01A	**BOOTPKTACCEPT:** `tcPktAcceptCount`															
01C	**BOOTLASTERR:** `latestErrorWord`															
020	**BOOTCOMMAND:** `lastCommand`															
022	**BOOTSCPKTCOUNT:** `tcPktScCount`															
024	**BOOTUNSPKTCOUNT:** `tcPktUnsupportCount`															

Boot housekeeping telemetry (LBTHKP) **Telemetry Packet Format**															
0x	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
026	**BOOTFILESTATE:** fileUploadState															
028	**BOOTFILEPKT:** fileUploadPktCnt															
02A	**BOOTSCRUBADDRHI:** scrubAddrHi															
02C	**BOOTTYPE:** bootType															
02E	**BOOTDUMPCOUNT:** memDumpWordCount															
030	**BOOTDUMPADDR:** memDumpAddress															
034	**BOOTDUMPDATA:** memDumpData[0-15]															

Fields:

BOOTCOMMAND **(24.5.0)**

Attribute(s):

Brief: "Last boot command bitfield"

Instance(s): lastCommand

Bitfield to hold APID and function code of command most recently received by the PBC.

BOOTDUMPADDR **(24.6.0)**

Attribute(s):

Brief: "Memory dump address"

Instance(s): memDumpAddress

Address of first memory dump word.

BOOTDUMPCOUNT **(24.6.1)**

Attribute(s):

Brief: "Memory dump word count"

Instance(s): memDumpWordCount

Number of valid 32-bit memory dump words.

BOOTDUMPDATA **(24.6.2)**

Attribute(s):

Brief: "Memory dump data"

Instance(s): `memDumpData`

Memory dump data word.

`BOOTERRWORD` **(24.6.3)**

Attribute(s):

Brief: "Error code"

Instance(s): `errorWord`

Error code at the head of the boot error queue.

`BOOTFILEPKT` **(24.6.4)**

Attribute(s):

Brief: "File upload packet count"

Instance(s): `fileUploadPktCnt`

Number of file upload packets received by the PBC.

`BOOTFILESTATE` **(24.6.5)**

Attribute(s):

Brief: "File upload state"

Instance(s): `fileUploadState`

State of the PBC's file upload state machine.

`BOOTLASTERR` **(24.6.7)**

Attribute(s):

Brief: "Most recent boot error code"

Instance(s): `latestErrorWord`

Error code for the most recent error encountered by the PBC.

`BOOTPKTACCEPT` **(24.6.9)**

Attribute(s):

Brief: "Accepted packet count"

Instance(s): `tcPktAcceptCount`

Number of packets accepted by the PBC.

`BOOTPKTCOUNT` **(24.6.10)**

Attribute(s):

Brief: "Received packet count"

Instance(s): `tcPktReceiveCount`

Number of packets received by the PBC.

`BOOTQERR` **(24.6.11)**

Attribute(s):

Brief: "Number of queued errors"

Instance(s): `queuedErrorCount`

Number of errors in the boot error queue.

`BOOTSCPKTCOUNT` **(24.6.12)**

Attribute(s):

Brief: "Received spacecraft packet count"

Instance(s): `tcPktScCount`

Total number of spacecraft packets received.

`BOOTSCRUBADDRHI` **(24.6.13)**

Attribute(s):

Brief: "Hi 16 bits of software scrub address"

Instance(s): `scrubAddrHi`

Upper 16 bits of PBC software scrub address.

`BOOTSWMODE` **(24.6.14)**

Attribute(s):

Brief: "Current PBC operating mode"

Instance(s): `bootSoftwareMode`

Current PBC operating mode.

`BOOTTOTALERR` **(24.6.15)**

Attribute(s):

Brief: "Number of errors encountered"

Instance(s): `totalErrorCount`

Total number of errors encountered by the PBC.

`BOOTTYPE` **(24.6.16)**

Attribute(s):

Brief: "Boot type"

Instance(s): `bootType`

Type of boot.

`BOOTUNSPKTCOUNT` **(24.6.17)**

Attribute(s):

Brief: "Received unsupported packet count"

Instance(s): `tcPktUnsupportCount`

Total number of unsupported packets received.

24.5 Telemetry Bitfields

24.5.0 BOOTCOMMAND (Last boot command bitfield) Telemetry Bitfield

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Bitfield to hold APID and function code of command most recently received by the PBC.

Start	Stop	Size	Item Type and Name
0	4	5	BOOTLASTFUNC func
5	15	11	BOOTLASTAPID apid

Fields:

BOOTLASTAPID **(24.6.6)**

Attribute(s):

Brief: "Last APID"

Instance(s): apid

APID of last command received by the PBC.

BOOTLASTFUNC **(24.6.8)**

Attribute(s):

Brief: "Last Function Code"

Instance(s): func

Function code of the last command received by the PBC.

Used by:

LBTEPU0HKP (24.4.0)

24.6 Telemetry Fields

24.6.0 `BOOTDUMPADDR` (Memory dump address) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Address of first memory dump word.

Used by:

`LBTEPU0HKP (24.4.0)`

24.6.1 `BOOTDUMPCOUNT` (Memory dump word count) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Number of valid 32-bit memory dump words.

Used by:

`LBTEPU0HKP (24.4.0)`

24.6.2 `BOOTDUMPDATA` (Memory dump data) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Memory dump data word.

Used by:

`LBTEPU0HKP (24.4.0)`

24.6.3 `BOOTERRWORD` (Error code) Telemetry Field

Definition:

Alignment: 4 bytes
C type: unsigned int
Length: 32 bits (4 bytes)

Description:

Error code at the head of the boot error queue.

Used by:

LBTEPU0HKP (24.4.0)

24.6.4 BOOTFILEPKT (File upload packet count) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

Number of file upload packets received by the PBC.

Used by:

LBTEPU0HKP (24.4.0)

24.6.5 BOOTFILESTATE (File upload state) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 16 bits (2 bytes)

Description:

State of the PBC's file upload state machine.

Used by:

LBTEPU0HKP (24.4.0)

24.6.6 BOOTLASTAPID (Last APID) Telemetry Field

Definition:

Alignment: 2 bytes
C type: unsigned short
Length: 11 bits

Description:

APID of last command received by the PBC.

Used by:

BOOTCOMMAND (24.5.0)

24.6.7 BOOTLASTERR (Most recent boot error code) Telemetry Field

Definition:

Alignment:	4 bytes
C type:	unsigned int
Length:	32 bits (4 bytes)

Description:

Error code for the most recent error encountered by the PBC.

Used by:

`LBTEPU0HKP (24.4.0)`

24.6.8 `BOOTLASTFUNC` (Last Function Code) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	5 bits

Description:

Function code of the last command received by the PBC.

Used by:

`BOOTCOMMAND (24.5.0)`

24.6.9 `BOOTPKTACCEPT` (Accepted packet count) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Number of packets accepted by the PBC.

Used by:

`LBTEPU0HKP (24.4.0)`

24.6.10 `BOOTPKTCOUNT` (Received packet count) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Number of packets received by the PBC.

Used by:

LBTEPU0HKP (24.4.0)

24.6.11 BOOTQERR (Number of queued errors) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Number of errors in the boot error queue.

Used by:

LBTEPU0HKP (24.4.0)

24.6.12 BOOTSCPKTCOUNT (Received spacecraft packet count) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Total number of spacecraft packets received.

Used by:

LBTEPU0HKP (24.4.0)

24.6.13 BOOTSCRUBADDRHI (Hi 16 bits of software scrub address) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Upper 16 bits of PBC software scrub address.

Used by:

LBTEPU0HKP (24.4.0)

24.6.14 BOOTSWMODE (Current PBC operating mode) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Current PBC operating mode.

Used by:

LBTEPU0HKP (24.4.0)

24.6.15 BOOTTOTALERR (Number of errors encountered) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Total number of errors encountered by the PBC.

Used by:

LBTEPU0HKP (24.4.0)

24.6.16 BOOTTYPE (Boot type) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Type of boot.

Used by:

LBTEPU0HKP (24.4.0)

24.6.17 BOOTUNSPKTCOUNT (Received unsupported packet count) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Total number of unsupported packets received.

Used by:

LBTEPU0HKP (24.4.0)

25 PIG Package

25.0 Overview

The PIG package is a utility that powers on and initializes the GASU.

25.1 Telemetry Packets

25.1.0 PIGDATA (1022/0x3FE)

Context:

Description:

"Returned PIG data" Telemetry Packet

Layout:

Returned PIG data (PIGDATA)
Telemetry Packet Format

0x	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
000	Version=0			T=0	SH	APID=0x3FE										
002	SF			Sequence Count												
004	Packet Length=9															
006	Timestamp															
00E	THDR: thdr															

Fields:

THDR **(25.2.0)**

Attribute(s):

Brief: "Tertiary header"

Instance(s): thdr

25.2 Telemetry Fields

25.2.0 `THDR` (Tertiary header) Telemetry Field

Definition:

Alignment:	2 bytes
C type:	unsigned short
Length:	16 bits (2 bytes)

Description:

Used by:

`PIGDATA (25.1.0)`

26 Telecommand Packet Index, by APID

APID	FC	Cmd. Packet (L)	Section	Description (L)
0x640	0	LBTSTART	PBC/cmd/_/P.LBTSTART.shtml	Boot code no-op
0x640	1	LBTRESET	PBC/cmd/_/P.LBTRESET.shtml	Warm reboot
0x640	2	LBTERRDUMP	PBC/cmd/_/P.LBTERRDUMP.shtml	Error code pop
0x640	3	LBTRTOSEXEC	PBC/cmd/_/P.LBTRTOSEXEC.shtml	Boot RTOS
0x640	4	LBTBAD	PBC/cmd/_/P.LBTBAD.shtml	Invalid boot command
0x641	0	UploadStart	FILE/cmd/_/P.UploadStart.shtml	File Upload Start
0x641	1	UploadCancel	FILE/cmd/_/P.UploadCancel.shtml	File Upload Cancel
0x641	2	UploadCommit	FILE/cmd/_/P.UploadCommit.shtml	File Upload Commit
0x641	3	UploadData	FILE/cmd/_/P.UploadData.shtml	File Upload Data
0x641	4	UploadEPU	FILE/cmd/_/P.UploadEPU.shtml	File Upload to EPU
0x642	0	write_file	DDT/cmd/_/P.write_file.shtml	Write a file to SUROM
0x644	0	LMEMDUMPMEM	MEM/cmd/_/P.LMEMDUMPMEM.shtml	Memory Data Dump
0x644	1	LMEMDUMPCANCEL	MEM/cmd/_/P.LMEMDUMPCANCEL.shtml	Memory Dump Cancel
0x644	2	LMEMDUMPPCI	MEM/cmd/_/P.LMEMDUMPPCI.shtml	PCI Device Header Dump
0x644	3	LMEMDUMPREG	MEM/cmd/_/P.LMEMDUMPREG.shtml	Processor Register Dump
0x644	4	LMEMLOADMEM	MEM/cmd/_/P.LMEMLOADMEM.shtml	Memory Write
0x644	5	LMEMLOADPCI	MEM/cmd/_/P.LMEMLOADPCI.shtml	PCI Device Header Write
0x644	6	LMEMLOADREG	MEM/cmd/_/P.LMEMLOADREG.shtml	Processor Register Write
0x644	7	LMEMDUMPPOOL	MEM/cmd/_/P.LMEMDUMPPOOL.shtml	Memory Pool Status Dump
0x644	8	LMEMDUMPSYMVAL	MEM/cmd/_/P.LMEMDUMPSYMVAL.shtml	Memory Symbol Lookup
0x644	9	LMEMDUMPSYMREL	MEM/cmd/_/P.LMEMDUMPSYMREL.shtml	Memory Dump Symbol Relative
0x644	10	LMEMNOOP	MEM/cmd/_/P.LMEMNOOP.shtml	No-Op
0x644	100	LMEMDUMPNEXT	MEM/cmd/_/P.LMEMDUMPNEXT.shtml	Send Next Dump Packet
0x648	0	FileDelete	LFS/cmd/_/P.FileDelete.shtml	File Delete
0x648	1	FileCopy	LFS/cmd/_/P.FileCopy.shtml	File Copy Local
0x648	2	DirCreate	LFS/cmd/_/P.DirCreate.shtml	Directory Create
0x648	3	DirDelete	LFS/cmd/_/P.DirDelete.shtml	Directory Delete
0x648	4	FileDumpCTDB	LFS/cmd/_/P.FileDumpCTDB.shtml	File Dump CTDB
0x648	5	DirDump	LFS/cmd/_/P.DirDump.shtml	Directory Dump
0x648	6	SysStatus	LFS/cmd/_/P.SysStatus.shtml	File System Status
0x648	7	SysCheck	LFS/cmd/_/P.SysCheck.shtml	File System Check
0x648	8	FileDumpSSR	LFS/cmd/_/P.FileDumpSSR.shtml	File Dump SSR
0x648	9	Noop	LFS/cmd/_/P.Noop.shtml	LFS No-Op
0x649	0	SysFormat	LFS/cmd/_/P.SysFormat.shtml	File System Format
0x649	1	SysMount	LFS/cmd/_/P.SysMount.shtml	File System Mount
0x649	2	SysRepair	LFS/cmd/_/P.SysRepair.shtml	File System Repair
0x64C	0	Noop	LSW/cmd/_/P.Noop.shtml	No-Op
0x64C	1	DumpStart	LSW/cmd/_/P.DumpStart.shtml	Dump the start line system trace
0x64C	2	DumpTraceById	LSW/cmd/_/P.DumpTraceById.shtml	Dump a code trace by numeric identifier
0x64C	3	DumpTraceByName	LSW/cmd/_/P.DumpTraceByName.shtml	Dump a code trace by name.
0x64C	4	SetTraceConfig	LSW/cmd/_/P.SetTraceConfig.shtml	Set the values of the trace enable bits.
0x650	0	ReqDiagPacket	LHK/cmd/_/P.ReqDiagPacket.shtml	Request a Housekeeping Diagnostic Packet
0x650	1	SysReset	LHK/cmd/_/P.SysReset.shtml	System Reset
0x650	2	StopDiag	LHK/cmd/_/P.StopDiag.shtml	Stop Diagnostic Sample
0x650	3	Noop	LHK/cmd/_/P.Noop.shtml	LHK No-Op Command
0x650	4	CancelDiag	LHK/cmd/_/P.CancelDiag.shtml	Cancel a request for diagnostic packets
0x650	5	NewSchedFile	LHK/cmd/_/P.NewSchedFile.shtml	Request a new housekeeping schedule by file ID
0x650	6	NewSchedInst	LHK/cmd/_/P.NewSchedInst.shtml	Request a new housekeeping schedule by CDM instance number

APID	FC	Cmd. Packet (L)	Section	Description (L)
0x654	0	Noop	LIH/cmd/_/P.Noop.shtml	No operation
0x654	1	LoadLimits	LIH/cmd/_/P.LoadLimits.shtml	Load ADC limit sets from CDM database
0x654	2	EnableActions	LIH/cmd/_/P.EnableActions.shtml	Enable/disable actions on ADC state changes
0x654	3	SetLimitsAdc	LIH/cmd/_/P.SetLimitsAdc.shtml	Set limits boundaries for an ADC
0x654	4	SetActionsAdc	LIH/cmd/_/P.SetActionsAdc.shtml	Set actions for a limit transition on an ADC
0x654	5	SetNagTimesAdc	LIH/cmd/_/P.SetNagTimesAdc.shtml	Set the nag periods for an ADC
0x654	6	SetPersistAdc	LIH/cmd/_/P.SetPersistAdc.shtml	Set persistence time (msec) on an ADC
0x654	7	SetSettleAdc	LIH/cmd/_/P.SetSettleAdc.shtml	Set the maximum settling period (msec) for an ADC
0x654	8	DumpLimitsAdc	LIH/cmd/_/P.DumpLimitsAdc.shtml	Dump the limits table for a single ADC
0x654	9	DumpLimits	LIH/cmd/_/P.DumpLimits.shtml	Dump the complete limits table
0x658	1	ReStart	LTC/cmd/_/P.ReStart.shtml	Restart and initialize Thermal Control
0x658	2	Start	LTC/cmd/_/P.Start.shtml	Start control
0x658	3	Stop	LTC/cmd/_/P.Stop.shtml	Terminate Thermal Control processing
0x658	4	SetMode	LTC/cmd/_/P.SetMode.shtml	Set thermal control mode to active or passive.
0x658	5	HtrOnOffCtl	LTC/cmd/_/P.HtrOnOffCtl.shtml	Set heater to always on, or off or automatic control.
0x658	6	SetParam	LTC/cmd/_/P.SetParam.shtml	Set control parameters to new values.
0x658	7	SetTlmFreq	LTC/cmd/_/P.SetTlmFreq.shtml	Set LTC telemetry frequency, 0 is off.
0x658	8	Noop	LTC/cmd/_/P.Noop.shtml	LTC Task No-op
0x659	0	CntlStart	LTC/cmd/_/P.CntlStart.shtml	LTC Control Start Readout (Internal)
0x659	1	CntlProc	LTC/cmd/_/P.CntlProc.shtml	LTC Control Start Processing (Internal)
0x660	1	GbmCalc	LPA/cmd/_/P.GbmCalc.shtml	GBM Calc Info
0x660	2	GbmRpt	LPA/cmd/_/P.GbmRpt.shtml	GBM Repoint
0x660	3	GbmClose	LPA/cmd/_/P.GbmClose.shtml	GBM Closeout
0x661	0	ARR_Response	LIM/cmd/_/P.ARR_Response.shtml	ARR Response
0x661	1	ARR_Abort	LIM/cmd/_/P.ARR_Abort.shtml	ARR Abort
0x662	1	Load_Shed	LIM/cmd/_/P.Load_Shed.shtml	Load Shed
0x663	0	TOO_Start	LIM/cmd/_/P.TOO_Start.shtml	TOO Start
0x663	1	TOO_Abort	LIM/cmd/_/P.TOO_Abort.shtml	TOO Abort
0x663	2	Hold_Enter	LIM/cmd/_/P.Hold_Enter.shtml	Enter HOLD Mode
0x663	3	Hold_Exit	LIM/cmd/_/P.Hold_Exit.shtml	Exit HOLD Mode
0x663	4	Main_Feed_On	LIM/cmd/_/P.Main_Feed_On.shtml	Enable Main Power Feed
0x663	6	Power_On	LIM/cmd/_/P.Power_On.shtml	Enable Instrument Power
0x663	7	Power_Off	LIM/cmd/_/P.Power_Off.shtml	Disable Instrument Power
0x663	8	SAA_Enter	LIM/cmd/_/P.SAA_Enter.shtml	Enter SAA
0x663	9	SAA_Exit	LIM/cmd/_/P.SAA_Exit.shtml	Exit SAA
0x663	10	Bias_ACD	LIM/cmd/_/P.Bias_ACD.shtml	Set ACD Bias Voltages
0x663	11	Bias_CAL	LIM/cmd/_/P.Bias_CAL.shtml	Set CAL Bias Voltages
0x663	12	Bias_TKR	LIM/cmd/_/P.Bias_TKR.shtml	Set TKR Bias Voltages
0x663	13	Config_GBM	LIM/cmd/_/P.Config_GBM.shtml	Configure GBM Interface Handling
0x663	14	Config_HV	LIM/cmd/_/P.Config_HV.shtml	Configure ACD High-Voltage Handling
0x663	15	Config_PID	LIM/cmd/_/P.Config_PID.shtml	Configure PID Signals
0x663	16	Pig_Record	LIM/cmd/_/P.Pig_Record.shtml	Call the PIG_record Function
0x663	17	Latc_Record	LIM/cmd/_/P.Latc_Record.shtml	Call the LATC_capture and LATC_consign Functions
0x663	18	Noop	LIM/cmd/_/P.Noop.shtml	LIM No-Op

APID	FC	Cmd. Packet (L)	Section	Description (L)
0x663	19	Latc_Config	LIM/cmd/_/P.Latc_Config.shtml	Call the LATC_cache, LATC_configure, and LATC_ignore functions
0x663	20	Latc_Verify	LIM/cmd/_/P.Latc_Verify.shtml	Call the LATC_capture, LATC_verify, and LATC_consign functions
0x663	21	Pig_Verify	LIM/cmd/_/P.Pig_Verify.shtml	PIG Verify
0x663	22	Bias_ACD_On	LIM/cmd/_/P.Bias_ACD_On.shtml	Turn On ACD Bias Voltages
0x663	23	Bias_CAL_On	LIM/cmd/_/P.Bias_CAL_On.shtml	Turn On CAL Bias Voltages
0x663	24	Bias_TKR_On	LIM/cmd/_/P.Bias_TKR_On.shtml	Turn On TKR Bias Voltages
0x663	25	Bias_ACD_Off	LIM/cmd/_/P.Bias_ACD_Off.shtml	Turn Off ACD Bias Voltages
0x663	26	Bias_CAL_Off	LIM/cmd/_/P.Bias_CAL_Off.shtml	Turn Off CAL Bias Voltages
0x663	27	Bias_TKR_Off	LIM/cmd/_/P.Bias_TKR_Off.shtml	Turn Off TKR Bias Voltages
0x664	0	Look_At_Me	LIM/cmd/_/P.Look_At_Me.shtml	Send The Look-At-Me Command
0x674	0	Configure	LPA/cmd/_/P.Configure.shtml	Configures Active Event Handlers For a Mode
0x674	1	Start	LPA/cmd/_/P.Start.shtml	Starts a Physics Run
0x674	3	Stop	LPA/cmd/_/P.Stop.shtml	Stops a Physics Run
0x675	0	Associate	LPA/cmd/_/P.Associate.shtml	Associates a Handler Configuration ID With A Mode
0x675	2	SetOutput	LPA/cmd/_/P.SetOutput.shtml	Sets the Output Stream States
0x675	3	SetGrb	LPA/cmd/_/P.SetGrb.shtml	Sets the GRB Processing State
0x675	4	Noop	LPA/cmd/_/P.Noop.shtml	LPA No-Op Command
0x675	5	SetCompress	LPA/cmd/_/P.SetCompress.shtml	Sets the Data Compression Level
0x675	6	SetDefault	LPA/cmd/_/P.SetDefault.shtml	Set Default Parameters
0x67C	1	CALIBRATE	LCI/cmd/_/P.CALIBRATE.shtml	Initiate the calibration
0x67C	2	ABORT	LCI/cmd/_/P.ABORT.shtml	Abort a running calibration
0x67D	0	NOOP	LCI/cmd/_/P.NOOP.shtml	No operation
0x680	0	NOOP	LRA/cmd/_/P.NOOP.shtml	No-op
0x680	1	READ	LRA/cmd/_/P.READ.shtml	Read registers
0x680	2	LOAD	LRA/cmd/_/P.LOAD.shtml	Load registers
0x680	3	CONTROL	LRA/cmd/_/P.CONTROL.shtml	Control operation
0x680	4	LATRESET	LRA/cmd/_/P.LATRESET.shtml	Reset the LAT
0x680	5	LAM	LRA/cmd/_/P.LAM.shtml	Look-at-me operation
0x680	6	LAMLCB	LRA/cmd/_/P.LAMLCB.shtml	Look-at-me LCB
0x680	7	STATPERIOD	LRA/cmd/_/P.STATPERIOD.shtml	Set the statistics update period
0x680	8	STATCLEAR	LRA/cmd/_/P.STATCLEAR.shtml	Clear statistics data
0x680	9	STATSEND	LRA/cmd/_/P.STATSEND.shtml	Send statistics data to the SSR
0x680	10	STATTEMS	LRA/cmd/_/P.STATTEMS.shtml	Set the mask of TEMs for EBM stats
0x680	11	ESRSEND	LRA/cmd/_/P.ESRSEND.shtml	Send ESR data to the SSR
0x690	0	SSRoutputOff	LSM/cmd/_/P.SSRoutputOff.shtml	Turn off echo of Magic 7 commands to SSR
0x690	1	SSRoutputOn	LSM/cmd/_/P.SSRoutputOn.shtml	Turn on echo of Magic 7 commands to the SSR
0x690	2	Noop	LSM/cmd/_/P.Noop.shtml	No operation
0x694	0	ScrubRun	LCM/cmd/_/P.ScrubRun.shtml	Run memory scrubber
0x694	1	ScrubCfg	LCM/cmd/_/P.ScrubCfg.shtml	Configure the memory scrubber
0x694	2	ErrorCfg	LCM/cmd/_/P.ErrorCfg.shtml	Configure CPU error handling
0x695	0	MsgResponse	LCM/cmd/_/P.MsgResponse.shtml	Change task messaging level
0x695	1	CmdResponse	LCM/cmd/_/P.CmdResponse.shtml	Change task command confirmation level
0x695	2	ModuleDump	LCM/cmd/_/P.ModuleDump.shtml	Generate CPU code module listing
0x695	3	TaskDump	LCM/cmd/_/P.TaskDump.shtml	Generate CPU task listing
0x695	4	CpuReset	LCM/cmd/_/P.CpuReset.shtml	Reset a CPU

APID	FC	Cmd. Packet (L)	Section	Description (L)
0x695	5	Stats	LCM/cmd/_/P.Stats.shtml	Set up the SMON statistics monitor
0x695	6	Noop	LCM/cmd/_/P.Noop.shtml	LCM no-op
0x695	7	MsgOutCfg	LCM/cmd/_/P.MsgOutCfg.shtml	Configure MSG output interface
0x695	8	ImageDump	LCM/cmd/_/P.ImageDump.shtml	Dump complete module/task information (to SDI)
0x696	0	TurboReset	LCM/cmd/_/P.TurboReset.shtml	Turbo reset command
0x69C	0	cal_lrs	LMC/cmd/_/P.cal_lrs.shtml	CAL Low Rate Science Counters
0x69C	1	tkr_lrs	LMC/cmd/_/P.tkr_lrs.shtml	TKR Low Rate Science Counters
0x69C	2	acd_tile_pair	LMC/cmd/_/P.acd_tile_pair.shtml	ACD Tile Counter (Pair)
0x69C	3	acd_tile_all	LMC/cmd/_/P.acd_tile_all.shtml	ACD Tile Counters (All)
0x69C	4	stop_count	LMC/cmd/_/P.stop_count.shtml	Stop Active Counter
0x69C	5	tem_deadtime	LMC/cmd/_/P.tem_deadtime.shtml	TEM Deadtime Low Rate Science Counter
0x69C	6	noop	LMC/cmd/_/P.noop.shtml	No-op
0x6F1	1	BurstTrg	LPA/cmd/_/P.BurstTrg.shtml	LAT Burst Trigger Telecommand
0x6F1	3	BurstClose	LPA/cmd/_/P.BurstClose.shtml	LAT Burst Closeout Telecommand
0x701	1	SIATTITUDE	LSM/cmd/_/P.SIATTITUDE.shtml	SC Attitude Broadcast Message
0x701	2	SIANCILLARY	LSM/cmd/_/P.SIANCILLARY.shtml	SC Ancillary Broadcast Message
0x701	3	SITIMETONE	LSM/cmd/_/P.SITIMETONE.shtml	SC Timetone Broadcast Message

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Cmd. Packet (I)	APID	FC	Section	Description (I)
GFSWLATCLOSEOUT	0x6F1	3	LPA/cmd/_/P.BurstClose.shtml	LAT Burst Closeout Telecommand
GFSWLATTRIGGER	0x6F1	1	LPA/cmd/_/P.BurstTrg.shtml	LAT Burst Trigger Telecommand
LCIABORT	0x67C	2	LCI/cmd/_/P.ABORT.shtml	Abort a running calibration
LCICALIBRATE	0x67C	1	LCI/cmd/_/P.CALIBRATE.shtml	Initiate the calibration
LCINOOP	0x67D	0	LCI/cmd/_/P.NOOP.shtml	No operation
LCMCMDRESPONSE	0x695	1	LCM/cmd/_/P.CmdResponse.shtml	Change task command confirmation level
LCMCPURESET	0x695	4	LCM/cmd/_/P.CpuReset.shtml	Reset a CPU
LCMERRORCFG	0x694	2	LCM/cmd/_/P.ErrorCfg.shtml	Configure CPU error handling
LCMIMAGEDUMP	0x695	8	LCM/cmd/_/P.ImageDump.shtml	Dump complete module/task information (to SDI)
LCMMODDUMP	0x695	2	LCM/cmd/_/P.ModuleDump.shtml	Generate CPU code module listing
LCMMSGOUT	0x695	7	LCM/cmd/_/P.MsgOutCfg.shtml	Configure MSG output interface
LCMMSGRESPONSE	0x695	0	LCM/cmd/_/P.MsgResponse.shtml	Change task messaging level
LCMNOOP	0x695	6	LCM/cmd/_/P.Noop.shtml	LCM no-op
LCMSCRUBCFG	0x694	1	LCM/cmd/_/P.ScrubCfg.shtml	Configure the memory scrubber
LCMSCRUBRUN	0x694	0	LCM/cmd/_/P.ScrubRun.shtml	Run memory scrubber
LCMSTATS	0x695	5	LCM/cmd/_/P.Stats.shtml	Set up the SMON statistics monitor
LCMTASKDUMP	0x695	3	LCM/cmd/_/P.TaskDump.shtml	Generate CPU task listing
LCMTURBORESET	0x696	0	LCM/cmd/_/P.TurboReset.shtml	Turbo reset command
LDDTWRITEFILE	0x642	0	DDT/cmd/_/P.write_file.shtml	Write a file to SUROM
LFILUPLCANCEL	0x641	1	FILE/cmd/_/P.UploadCancel.shtml	File Upload Cancel
LFILUPLCOMMIT	0x641	2	FILE/cmd/_/P.UploadCommit.shtml	File Upload Commit
LFILUPLDATA	0x641	3	FILE/cmd/_/P.UploadData.shtml	File Upload Data
LFILUPLEPU	0x641	4	FILE/cmd/_/P.UploadEPU.shtml	File Upload to EPU
LFILUPLSTART	0x641	0	FILE/cmd/_/P.UploadStart.shtml	File Upload Start
LFSDIRCREATE	0x648	2	LFS/cmd/_/P.DirCreate.shtml	Directory Create
LFSDIRDELETE	0x648	3	LFS/cmd/_/P.DirDelete.shtml	Directory Delete
LFSDIRDUMP	0x648	5	LFS/cmd/_/P.DirDump.shtml	Directory Dump
LFSFILECOPY	0x648	1	LFS/cmd/_/P.FileCopy.shtml	File Copy Local
LFSFILEDELETE	0x648	0	LFS/cmd/_/P.FileDelete.shtml	File Delete
LFSFILEDUMPC	0x648	4	LFS/cmd/_/P.FileDumpCTDB.shtml	File Dump CTDB
LFSFILEDUMPS	0x648	8	LFS/cmd/_/P.FileDumpSSR.shtml	File Dump SSR
LFSNOOP	0x648	9	LFS/cmd/_/P.Noop.shtml	LFS No-Op
LFSSYSCHECK	0x648	7	LFS/cmd/_/P.SysCheck.shtml	File System Check
LFSSYSFORMAT	0x649	0	LFS/cmd/_/P.SysFormat.shtml	File System Format
LFSSYSMOUNT	0x649	1	LFS/cmd/_/P.SysMount.shtml	File System Mount
LFSSYSREPAIR	0x649	2	LFS/cmd/_/P.SysRepair.shtml	File System Repair
LFSSYSSTATUS	0x648	6	LFS/cmd/_/P.SysStatus.shtml	File System Status
LHKCANCELDIAG	0x650	4	LHK/cmd/_/P.CancelDiag.shtml	Cancel a request for diagnostic packets
LHKNEWSCHEDFILE	0x650	5	LHK/cmd/_/P.NewSchedFile.shtml	Request a new housekeeping schedule by file ID
LHKNEWSCHEDINST	0x650	6	LHK/cmd/_/P.NewSchedInst.shtml	Request a new housekeeping schedule by CDM instance number
LHKNOOP	0x650	3	LHK/cmd/_/P.Noop.shtml	LHK No-Op Command
LHKREQDIAGPKT	0x650	0	LHK/cmd/_/P.ReqDiagPacket.shtml	Request a Housekeeping Diagnostic Packet
LHKSTOPDIAG	0x650	2	LHK/cmd/_/P.StopDiag.shtml	Stop Diagnostic Sample
LHKSYSRESET	0x650	1	LHK/cmd/_/P.SysReset.shtml	System Reset
LIHDUMPLIMITS	0x654	9	LIH/cmd/_/P.DumpLimits.shtml	Dump the complete limits table
LIHDUMPLIMITSADC	0x654	8	LIH/cmd/_/P.DumpLimitsAdc.shtml	Dump the limits table for a single ADC

Cmd. Packet (I)	APID	FC	Section	Description (I)
LIHENABACTION	0x654	2	LIH/cmd/_/P.EnableActions.shtml	Enable/disable actions on ADC state changes
LIHLOADLIMITS	0x654	1	LIH/cmd/_/P.LoadLimits.shtml	Load ADC limit sets from CDM database
LIHNOOP	0x654	0	LIH/cmd/_/P.Noop.shtml	No operation
LIHSETACTIONSADC	0x654	4	LIH/cmd/_/P.SetActionsAdc.shtml	Set actions for a limit transition on an ADC
LIHSETLIMITSADC	0x654	3	LIH/cmd/_/P.SetLimitsAdc.shtml	Set limits boundaries for an ADC
LIHSETNAGADC	0x654	5	LIH/cmd/_/P.SetNagTimesAdc.shtml	Set the nag periods for an ADC
LIHSETPERSISTADC	0x654	6	LIH/cmd/_/P.SetPersistAdc.shtml	Set persistence time (msec) on an ADC
LIHSETSETTLEADC	0x654	7	LIH/cmd/_/P.SetSettleAdc.shtml	Set the maximum settling period (msec) for an ADC
LIMARRABORT	0x661	1	LIM/cmd/_/P.ARR_Abort.shtml	ARR Abort
LIMARRRESPONSE	0x661	0	LIM/cmd/_/P.ARR_Response.shtml	ARR Response
LIMBIASACD	0x663	10	LIM/cmd/_/P.Bias_ACD.shtml	Set ACD Bias Voltages
LIMBIASACDOFF	0x663	25	LIM/cmd/_/P.Bias_ACD_Off.shtml	Turn Off ACD Bias Voltages
LIMBIASACDON	0x663	22	LIM/cmd/_/P.Bias_ACD_On.shtml	Turn On ACD Bias Voltages
LIMBIASCAL	0x663	11	LIM/cmd/_/P.Bias_CAL.shtml	Set CAL Bias Voltages
LIMBIASCALOFF	0x663	26	LIM/cmd/_/P.Bias_CAL_Off.shtml	Turn Off CAL Bias Voltages
LIMBIASCALON	0x663	23	LIM/cmd/_/P.Bias_CAL_On.shtml	Turn On CAL Bias Voltages
LIMBIASTKR	0x663	12	LIM/cmd/_/P.Bias_TKR.shtml	Set TKR Bias Voltages
LIMBIASTKROFF	0x663	27	LIM/cmd/_/P.Bias_TKR_Off.shtml	Turn Off TKR Bias Voltages
LIMBIASTKRON	0x663	24	LIM/cmd/_/P.Bias_TKR_On.shtml	Turn On TKR Bias Voltages
LIMCONFIGGBM	0x663	13	LIM/cmd/_/P.Config_GBM.shtml	Configure GBM Interface Handling
LIMCONFIGHV	0x663	14	LIM/cmd/_/P.Config_HV.shtml	Configure ACD High-Voltage Handling
LIMCONFIGPID	0x663	15	LIM/cmd/_/P.Config_PID.shtml	Configure PID Signals
LIMHOLDENTER	0x663	2	LIM/cmd/_/P.Hold_Enter.shtml	Enter HOLD Mode
LIMHOLDEXIT	0x663	3	LIM/cmd/_/P.Hold_Exit.shtml	Exit HOLD Mode
LIMLATCCONFIG	0x663	19	LIM/cmd/_/P.Latc_Config.shtml	Call the LATC_cache, LATC_configure, and LATC_ignore functions
LIMLATCRECORD	0x663	17	LIM/cmd/_/P.Latc_Record.shtml	Call the LATC_capture and LATC_consign Functions
LIMLATCVERIFY	0x663	20	LIM/cmd/_/P.Latc_Verify.shtml	Call the LATC_capture, LATC_verify, and LATC_consign functions
LIMLOADSHED	0x662	1	LIM/cmd/_/P.Load_Shed.shtml	Load Shed
LIMLOOKATME	0x664	0	LIM/cmd/_/P.Look_At_Me.shtml	Send The Look-At-Me Command
LIMMAINFEEDON	0x663	4	LIM/cmd/_/P.Main_Feed_On.shtml	Enable Main Power Feed
LIMNOOP	0x663	18	LIM/cmd/_/P.Noop.shtml	LIM No-Op
LIMPIGRECORD	0x663	16	LIM/cmd/_/P.Pig_Record.shtml	Call the PIG_record Function
LIMPIGVERIFY	0x663	21	LIM/cmd/_/P.Pig_Verify.shtml	PIG Verify
LIMPOWEROFF	0x663	7	LIM/cmd/_/P.Power_Off.shtml	Disable Instrument Power
LIMPOWERON	0x663	6	LIM/cmd/_/P.Power_On.shtml	Enable Instrument Power
LIMSAAENTER	0x663	8	LIM/cmd/_/P.SAA_Enter.shtml	Enter SAA
LIMSAAEXIT	0x663	9	LIM/cmd/_/P.SAA_Exit.shtml	Exit SAA
LIMTOOABORT	0x663	1	LIM/cmd/_/P.TOO_Abort.shtml	TOO Abort
LIMTOOSTART	0x663	0	LIM/cmd/_/P.TOO_Start.shtml	TOO Start
LMCACDTILEALL	0x69C	3	LMC/cmd/_/P.acd_tile_all.shtml	ACD Tile Counters (All)
LMCACDTILEPAIR	0x69C	2	LMC/cmd/_/P.acd_tile_pair.shtml	ACD Tile Counter (Pair)
LMCCALLRS	0x69C	0	LMC/cmd/_/P.cal_lrs.shtml	CAL Low Rate Science Counters
LMCNOOP	0x69C	6	LMC/cmd/_/P.noop.shtml	No-op
LMCSTOPCOUNT	0x69C	4	LMC/cmd/_/P.stop_count.shtml	Stop Active Counter

Cmd. Packet (I)	APID	FC	Section	Description (I)
LMCTEMDEADTIME	0x69C	5	LMC/cmd/_/P.tem_deadtime.shtml	TEM Deadtime Low Rate Science Counter
LMCTKRLRS	0x69C	1	LMC/cmd/_/P.tkr_lrs.shtml	TKR Low Rate Science Counters
LMEMDUMPCANCEL	0x644	1	MEM/cmd/_/P.LMEMDUMPCANCEL.shtml	Memory Dump Cancel
LMEMDUMPMEM	0x644	0	MEM/cmd/_/P.LMEMDUMPMEM.shtml	Memory Data Dump
LMEMDUMPNEXT	0x644	100	MEM/cmd/_/P.LMEMDUMPNEXT.shtml	Send Next Dump Packet
LMEMDUMPPCI	0x644	2	MEM/cmd/_/P.LMEMDUMPPCI.shtml	PCI Device Header Dump
LMEMDUMPPOOL	0x644	7	MEM/cmd/_/P.LMEMDUMPPOOL.shtml	Memory Pool Status Dump
LMEMDUMPREG	0x644	3	MEM/cmd/_/P.LMEMDUMPREG.shtml	Processor Register Dump
LMEMDUMPSYMREL	0x644	9	MEM/cmd/_/P.LMEMDUMPSYMREL.shtml	Memory Dump Symbol Relative
LMEMDUMPSYMVAL	0x644	8	MEM/cmd/_/P.LMEMDUMPSYMVAL.shtml	Memory Symbol Lookup
LMEMLOADMEM	0x644	4	MEM/cmd/_/P.LMEMLOADMEM.shtml	Memory Write
LMEMLOADPCI	0x644	5	MEM/cmd/_/P.LMEMLOADPCI.shtml	PCI Device Header Write
LMEMLOADREG	0x644	6	MEM/cmd/_/P.LMEMLOADREG.shtml	Processor Register Write
LMEMNOOP	0x644	10	MEM/cmd/_/P.LMEMNOOP.shtml	No-Op
LPAASSOCIATE	0x675	0	LPA/cmd/_/P.Associate.shtml	Associates a Handler Configuration ID With A Mode
LPACONFIGURE	0x674	0	LPA/cmd/_/P.Configure.shtml	Configures Active Event Handlers For a Mode
LPAGBMCALCINFO	0x660	1	LPA/cmd/_/P.GbmCalc.shtml	GBM Calc Info
LPAGBMCLOSEOUT	0x660	3	LPA/cmd/_/P.GbmClose.shtml	GBM Closeout
LPAGBMCREPRECOM	0x660	2	LPA/cmd/_/P.GbmRpt.shtml	GBM Repoint
LPANOOP	0x675	4	LPA/cmd/_/P.Noop.shtml	LPA No-Op Command
LPASETCOMPRESS	0x675	5	LPA/cmd/_/P.SetCompress.shtml	Sets the Data Compression Level
LPASETDEFAULT	0x675	6	LPA/cmd/_/P.SetDefault.shtml	Set Default Parameters
LPASETGRB	0x675	3	LPA/cmd/_/P.SetGrb.shtml	Sets the GRB Processing State
LPASETOUTPUT	0x675	2	LPA/cmd/_/P.SetOutput.shtml	Sets the Output Stream States
LPASTART	0x674	1	LPA/cmd/_/P.Start.shtml	Starts a Physics Run
LPASTOP	0x674	3	LPA/cmd/_/P.Stop.shtml	Stops a Physics Run
LPBCBADCMD	0x640	4	PBC/cmd/_/P.LBTBAD.shtml	Invalid boot command
LPBCERRDUMP	0x640	2	PBC/cmd/_/P.LBTERRDUMP.shtml	Error code pop
LPBCRESET	0x640	1	PBC/cmd/_/P.LBTRESET.shtml	Warm reboot
LPBCRTOSEXEC	0x640	3	PBC/cmd/_/P.LBTRTOSEXEC.shtml	Boot RTOS
LPBCSTART	0x640	0	PBC/cmd/_/P.LBTSTART.shtml	Boot code no-op
LRACONTROL	0x680	3	LRA/cmd/_/P.CONTROL.shtml	Control operation
LRAESRSEND	0x680	11	LRA/cmd/_/P.ESRSEND.shtml	Send ESR data to the SSR
LRALAM	0x680	5	LRA/cmd/_/P.LAM.shtml	Look-at-me operation
LRALAMLCB	0x680	6	LRA/cmd/_/P.LAMLCB.shtml	Look-at-me LCB
LRALATRESET	0x680	4	LRA/cmd/_/P.LATRESET.shtml	Reset the LAT
LRALOAD	0x680	2	LRA/cmd/_/P.LOAD.shtml	Load registers
LRANOOP	0x680	0	LRA/cmd/_/P.NOOP.shtml	No-op
LRAREAD	0x680	1	LRA/cmd/_/P.READ.shtml	Read registers
LRASTATCLEAR	0x680	8	LRA/cmd/_/P.STATCLEAR.shtml	Clear statistics data
LRASTATPERIOD	0x680	7	LRA/cmd/_/P.STATPERIOD.shtml	Set the statistics update period
LRASTATSEND	0x680	9	LRA/cmd/_/P.STATSEND.shtml	Send statistics data to the SSR
LRASTATTEMS	0x680	10	LRA/cmd/_/P.STATTEMS.shtml	Set the mask of TEMs for EBM stats
LSMNOOP	0x690	2	LSM/cmd/_/P.Noop.shtml	No operation
LSMSIANCILLARY	0x701	2	LSM/cmd/_/P.SIANCILLARY.shtml	SC Ancillary Broadcast Message
LSMSIATTITUDE	0x701	1	LSM/cmd/_/P.SIATTITUDE.shtml	SC Attitude Broadcast Message
LSMSITIMETONE	0x701	3	LSM/cmd/_/P.SITIMETONE.shtml	SC Timetone Broadcast Message
LSMSSROUTPUTOFF	0x690	0	LSM/cmd/_/P.SSRoutputOff.shtml	Turn off echo of Magic 7 commands to SSR

Cmd. Packet (I)	APID	FC	Section	Description (I)
LSMSSROUTPUTON	0x690	1	LSM/cmd/_/P.SSRoutputOn.shtml	Turn on echo of Magic 7 commands to the SSR
LSWDUMPSTART	0x64C	1	LSW/cmd/_/P.DumpStart.shtml	Dump the start line system trace
LSWDUMPTRACEID	0x64C	2	LSW/cmd/_/P.DumpTraceById.shtml	Dump a code trace by numeric identifier
LSWDUMPTRACENAME	0x64C	3	LSW/cmd/_/P.DumpTraceByName.shtml	Dump a code trace by name.
LSWNOOP	0x64C	0	LSW/cmd/_/P.Noop.shtml	No-Op
LSWSETTRACECFG	0x64C	4	LSW/cmd/_/P.SetTraceConfig.shtml	Set the values of the trace enable bits.
LTCCNTLPROC	0x659	1	LTC/cmd/_/P.CntlProc.shtml	LTC Control Start Processing (Internal)
LTCCNTLSTART	0x659	0	LTC/cmd/_/P.CntlStart.shtml	LTC Control Start Readout (Internal)
LTCHTRONOFFCNTL	0x658	5	LTC/cmd/_/P.HtrOnOffCtl.shtml	Set heater to always on, or off or automatic control.
LTCNOOP	0x658	8	LTC/cmd/_/P.Noop.shtml	LTC Task No-op
LTCRESTART	0x658	1	LTC/cmd/_/P.ReStart.shtml	Restart and initialize Thermal Control
LTCSETMODE	0x658	4	LTC/cmd/_/P.SetMode.shtml	Set thermal control mode to active or passive.
LTCSETPARAM	0x658	6	LTC/cmd/_/P.SetParam.shtml	Set control parameters to new values.
LTCSETTLMFREQ	0x658	7	LTC/cmd/_/P.SetTlmFreq.shtml	Set LTC telemetry frequency, 0 is off.
LTCSTART	0x658	2	LTC/cmd/_/P.Start.shtml	Start control
LTCSTOP	0x658	3	LTC/cmd/_/P.Stop.shtml	Terminate Thermal Control processing

28 Telecommand Packet Index, by Name (LCAT)

Cmd. Packet (L)	APID	FC	Section	Description (L)
ABORT	0x67C	2	LCI/cmd/_/P.ABORT.shtml	Abort a running calibration
acd_tile_all	0x69C	3	LMC/cmd/_/P.acd_tile_all.shtml	ACD Tile Counters (All)
acd_tile_pair	0x69C	2	LMC/cmd/_/P.acd_tile_pair.shtml	ACD Tile Counter (Pair)
ARR_Abort	0x661	1	LIM/cmd/_/P.ARR_Abort.shtml	ARR Abort
ARR_Response	0x661	0	LIM/cmd/_/P.ARR_Response.shtml	ARR Response
Associate	0x675	0	LPA/cmd/_/P.Associate.shtml	Associates a Handler Configuration ID With A Mode
Bias_ACD	0x663	10	LIM/cmd/_/P.Bias_ACD.shtml	Set ACD Bias Voltages
Bias_ACD_Off	0x663	25	LIM/cmd/_/P.Bias_ACD_Off.shtml	Turn Off ACD Bias Voltages
Bias_ACD_On	0x663	22	LIM/cmd/_/P.Bias_ACD_On.shtml	Turn On ACD Bias Voltages
Bias_CAL	0x663	11	LIM/cmd/_/P.Bias_CAL.shtml	Set CAL Bias Voltages
Bias_CAL_Off	0x663	26	LIM/cmd/_/P.Bias_CAL_Off.shtml	Turn Off CAL Bias Voltages
Bias_CAL_On	0x663	23	LIM/cmd/_/P.Bias_CAL_On.shtml	Turn On CAL Bias Voltages
Bias_TKR	0x663	12	LIM/cmd/_/P.Bias_TKR.shtml	Set TKR Bias Voltages
Bias_TKR_Off	0x663	27	LIM/cmd/_/P.Bias_TKR_Off.shtml	Turn Off TKR Bias Voltages
Bias_TKR_On	0x663	24	LIM/cmd/_/P.Bias_TKR_On.shtml	Turn On TKR Bias Voltages
BurstClose	0x6F1	3	LPA/cmd/_/P.BurstClose.shtml	LAT Burst Closeout Telecommand
BurstTrg	0x6F1	1	LPA/cmd/_/P.BurstTrg.shtml	LAT Burst Trigger Telecommand
cal_lrs	0x69C	0	LMC/cmd/_/P.cal_lrs.shtml	CAL Low Rate Science Counters
CALIBRATE	0x67C	1	LCI/cmd/_/P.CALIBRATE.shtml	Initiate the calibration
CancelDiag	0x650	4	LHK/cmd/_/P.CancelDiag.shtml	Cancel a request for diagnostic packets
CmdResponse	0x695	1	LCM/cmd/_/P.CmdResponse.shtml	Change task command confirmation level
CntlProc	0x659	1	LTC/cmd/_/P.CntlProc.shtml	LTC Control Start Processing (Internal)
CntlStart	0x659	0	LTC/cmd/_/P.CntlStart.shtml	LTC Control Start Readout (Internal)
Config_GBM	0x663	13	LIM/cmd/_/P.Config_GBM.shtml	Configure GBM Interface Handling
Config_HV	0x663	14	LIM/cmd/_/P.Config_HV.shtml	Configure ACD High-Voltage Handling
Config_PID	0x663	15	LIM/cmd/_/P.Config_PID.shtml	Configure PID Signals
Configure	0x674	0	LPA/cmd/_/P.Configure.shtml	Configures Active Event Handlers For a Mode
CONTROL	0x680	3	LRA/cmd/_/P.CONTROL.shtml	Control operation
CpuReset	0x695	4	LCM/cmd/_/P.CpuReset.shtml	Reset a CPU
DirCreate	0x648	2	LFS/cmd/_/P.DirCreate.shtml	Directory Create
DirDelete	0x648	3	LFS/cmd/_/P.DirDelete.shtml	Directory Delete
DirDump	0x648	5	LFS/cmd/_/P.DirDump.shtml	Directory Dump
DumpLimits	0x654	9	LIH/cmd/_/P.DumpLimits.shtml	Dump the complete limits table
DumpLimitsAdc	0x654	8	LIH/cmd/_/P.DumpLimitsAdc.shtml	Dump the limits table for a single ADC
DumpStart	0x64C	1	LSW/cmd/_/P.DumpStart.shtml	Dump the start line system trace
DumpTraceById	0x64C	2	LSW/cmd/_/P.DumpTraceById.shtml	Dump a code trace by numeric identifier
DumpTraceByName	0x64C	3	LSW/cmd/_/P.DumpTraceByName.shtml	Dump a code trace by name.
EnableActions	0x654	2	LIH/cmd/_/P.EnableActions.shtml	Enable/disable actions on ADC state changes
ErrorCfg	0x694	2	LCM/cmd/_/P.ErrorCfg.shtml	Configure CPU error handling
ESRSEND	0x680	11	LRA/cmd/_/P.ESRSEND.shtml	Send ESR data to the SSR
FileCopy	0x648	1	LFS/cmd/_/P.FileCopy.shtml	File Copy Local
FileDelete	0x648	0	LFS/cmd/_/P.FileDelete.shtml	File Delete
FileDumpCTDB	0x648	4	LFS/cmd/_/P.FileDumpCTDB.shtml	File Dump CTDB
FileDumpSSR	0x648	8	LFS/cmd/_/P.FileDumpSSR.shtml	File Dump SSR
GbmCalc	0x660	1	LPA/cmd/_/P.GbmCalc.shtml	GBM Calc Info
GbmClose	0x660	3	LPA/cmd/_/P.GbmClose.shtml	GBM Closeout
GbmRpt	0x660	2	LPA/cmd/_/P.GbmRpt.shtml	GBM Repoint

Cmd. Packet (L)	APID	FC	Section	Description (L)
Hold_Enter	0x663	2	LIM/cmd/_/P.Hold_Enter.shtml	Enter HOLD Mode
Hold_Exit	0x663	3	LIM/cmd/_/P.Hold_Exit.shtml	Exit HOLD Mode
HtrOnOffCtl	0x658	5	LTC/cmd/_/P.HtrOnOffCtl.shtml	Set heater to always on, or off or automatic control.
ImageDump	0x695	8	LCM/cmd/_/P.ImageDump.shtml	Dump complete module/task information (to SDI)
LAM	0x680	5	LRA/cmd/_/P.LAM.shtml	Look-at-me operation
LAMLCB	0x680	6	LRA/cmd/_/P.LAMLCB.shtml	Look-at-me LCB
Latc_Config	0x663	19	LIM/cmd/_/P.Latc_Config.shtml	Call the LATC_cache, LATC_configure, and LATC_ignore functions
Latc_Record	0x663	17	LIM/cmd/_/P.Latc_Record.shtml	Call the LATC_capture and LATC_consign Functions
Latc_Verify	0x663	20	LIM/cmd/_/P.Latc_Verify.shtml	Call the LATC_capture, LATC_verify, and LATC_consign functions
LATRESET	0x680	4	LRA/cmd/_/P.LATRESET.shtml	Reset the LAT
LBTBAD	0x640	4	PBC/cmd/_/P.LBTBAD.shtml	Invalid boot command
LBTERRDUMP	0x640	2	PBC/cmd/_/P.LBTERRDUMP.shtml	Error code pop
LBTRESET	0x640	1	PBC/cmd/_/P.LBTRESET.shtml	Warm reboot
LBTRTOSEXEC	0x640	3	PBC/cmd/_/P.LBTRTOSEXEC.shtml	Boot RTOS
LBTSTART	0x640	0	PBC/cmd/_/P.LBTSTART.shtml	Boot code no-op
LMEMDUMPCANCEL	0x644	1	MEM/cmd/_/P.LMEMDUMPCANCEL.shtml	Memory Dump Cancel
LMEMDUMPMEM	0x644	0	MEM/cmd/_/P.LMEMDUMPMEM.shtml	Memory Data Dump
LMEMDUMPNEXT	0x644	100	MEM/cmd/_/P.LMEMDUMPNEXT.shtml	Send Next Dump Packet
LMEMDUMPPCI	0x644	2	MEM/cmd/_/P.LMEMDUMPPCI.shtml	PCI Device Header Dump
LMEMDUMPPOOL	0x644	7	MEM/cmd/_/P.LMEMDUMPPOOL.shtml	Memory Pool Status Dump
LMEMDUMPREG	0x644	3	MEM/cmd/_/P.LMEMDUMPREG.shtml	Processor Register Dump
LMEMDUMPSYMREL	0x644	9	MEM/cmd/_/P.LMEMDUMPSYMREL.shtml	Memory Dump Symbol Relative
LMEMDUMPSYMVAL	0x644	8	MEM/cmd/_/P.LMEMDUMPSYMVAL.shtml	Memory Symbol Lookup
LMEMLOADMEM	0x644	4	MEM/cmd/_/P.LMEMLOADMEM.shtml	Memory Write
LMEMLOADPCI	0x644	5	MEM/cmd/_/P.LMEMLOADPCI.shtml	PCI Device Header Write
LMEMLOADREG	0x644	6	MEM/cmd/_/P.LMEMLOADREG.shtml	Processor Register Write
LMEMNOOP	0x644	10	MEM/cmd/_/P.LMEMNOOP.shtml	No-Op
LOAD	0x680	2	LRA/cmd/_/P.LOAD.shtml	Load registers
Load_Shed	0x662	1	LIM/cmd/_/P.Load_Shed.shtml	Load Shed
LoadLimits	0x654	1	LIH/cmd/_/P.LoadLimits.shtml	Load ADC limit sets from CDM database
Look_At_Me	0x664	0	LIM/cmd/_/P.Look_At_Me.shtml	Send The Look-At-Me Command
Main_Feed_On	0x663	4	LIM/cmd/_/P.Main_Feed_On.shtml	Enable Main Power Feed
ModuleDump	0x695	2	LCM/cmd/_/P.ModuleDump.shtml	Generate CPU code module listing
MsgOutCfg	0x695	7	LCM/cmd/_/P.MsgOutCfg.shtml	Configure MSG output interface
MsgResponse	0x695	0	LCM/cmd/_/P.MsgResponse.shtml	Change task messaging level
NewSchedFile	0x650	5	LHK/cmd/_/P.NewSchedFile.shtml	Request a new housekeeping schedule by file ID
NewSchedInst	0x650	6	LHK/cmd/_/P.NewSchedInst.shtml	Request a new housekeeping schedule by CDM instance number
NOOP	0x67D	0	LCI/cmd/_/P.NOOP.shtml	No operation
NOOP	0x680	0	LRA/cmd/_/P.NOOP.shtml	No-op
Noop	0x648	9	LFS/cmd/_/P.Noop.shtml	LFS No-Op
Noop	0x654	0	LIH/cmd/_/P.Noop.shtml	No operation
Noop	0x675	4	LPA/cmd/_/P.Noop.shtml	LPA No-Op Command
Noop	0x695	6	LCM/cmd/_/P.Noop.shtml	LCM no-op
Noop	0x650	3	LHK/cmd/_/P.Noop.shtml	LHK No-Op Command

Cmd. Packet (L)	APID	FC	Section	Description (L)
Noop	0x663	18	LIM/cmd/_/P.Noop.shtml	LIM No-Op
Noop	0x64C	0	LSW/cmd/_/P.Noop.shtml	No-Op
Noop	0x690	2	LSM/cmd/_/P.Noop.shtml	No operation
Noop	0x658	8	LTC/cmd/_/P.Noop.shtml	LTC Task No-op
noop	0x69C	6	LMC/cmd/_/P.noop.shtml	No-op
Pig_Record	0x663	16	LIM/cmd/_/P.Pig_Record.shtml	Call the PIG_record Function
Pig_Verify	0x663	21	LIM/cmd/_/P.Pig_Verify.shtml	PIG Verify
Power_Off	0x663	7	LIM/cmd/_/P.Power_Off.shtml	Disable Instrument Power
Power_On	0x663	6	LIM/cmd/_/P.Power_On.shtml	Enable Instrument Power
READ	0x680	1	LRA/cmd/_/P.READ.shtml	Read registers
ReqDiagPacket	0x650	0	LHK/cmd/_/P.ReqDiagPacket.shtml	Request a Housekeeping Diagnostic Packet
ReStart	0x658	1	LTC/cmd/_/P.ReStart.shtml	Restart and initialize Thermal Control
SAA_Enter	0x663	8	LIM/cmd/_/P.SAA_Enter.shtml	Enter SAA
SAA_Exit	0x663	9	LIM/cmd/_/P.SAA_Exit.shtml	Exit SAA
ScrubCfg	0x694	1	LCM/cmd/_/P.ScrubCfg.shtml	Configure the memory scrubber
ScrubRun	0x694	0	LCM/cmd/_/P.ScrubRun.shtml	Run memory scrubber
SetActionsAdc	0x654	4	LIH/cmd/_/P.SetActionsAdc.shtml	Set actions for a limit transition on an ADC
SetCompress	0x675	5	LPA/cmd/_/P.SetCompress.shtml	Sets the Data Compression Level
SetDefault	0x675	6	LPA/cmd/_/P.SetDefault.shtml	Set Default Parameters
SetGrb	0x675	3	LPA/cmd/_/P.SetGrb.shtml	Sets the GRB Processing State
SetLimitsAdc	0x654	3	LIH/cmd/_/P.SetLimitsAdc.shtml	Set limits boundaries for an ADC
SetMode	0x658	4	LTC/cmd/_/P.SetMode.shtml	Set thermal control mode to active or passive.
SetNagTimesAdc	0x654	5	LIH/cmd/_/P.SetNagTimesAdc.shtml	Set the nag periods for an ADC
SetOutput	0x675	2	LPA/cmd/_/P.SetOutput.shtml	Sets the Output Stream States
SetParam	0x658	6	LTC/cmd/_/P.SetParam.shtml	Set control parameters to new values.
SetPersistAdc	0x654	6	LIH/cmd/_/P.SetPersistAdc.shtml	Set persistence time (msec) on an ADC
SetSettleAdc	0x654	7	LIH/cmd/_/P.SetSettleAdc.shtml	Set the maximum settling period (msec) for an ADC
SetTlmFreq	0x658	7	LTC/cmd/_/P.SetTlmFreq.shtml	Set LTC telemetry frequency, 0 is off.
SetTraceConfig	0x64C	4	LSW/cmd/_/P.SetTraceConfig.shtml	Set the values of the trace enable bits.
SIANCILLARY	0x701	2	LSM/cmd/_/P.SIANCILLARY.shtml	SC Ancillary Broadcast Message
SIATTITUDE	0x701	1	LSM/cmd/_/P.SIATTITUDE.shtml	SC Attitude Broadcast Message
SITIMETONE	0x701	3	LSM/cmd/_/P.SITIMETONE.shtml	SC Timetone Broadcast Message
SSRoutputOff	0x690	0	LSM/cmd/_/P.SSRoutputOff.shtml	Turn off echo of Magic 7 commands to SSR
SSRoutputOn	0x690	1	LSM/cmd/_/P.SSRoutputOn.shtml	Turn on echo of Magic 7 commands to the SSR
Start	0x674	1	LPA/cmd/_/P.Start.shtml	Starts a Physics Run
Start	0x658	2	LTC/cmd/_/P.Start.shtml	Start control
STATCLEAR	0x680	8	LRA/cmd/_/P.STATCLEAR.shtml	Clear statistics data
STATPERIOD	0x680	7	LRA/cmd/_/P.STATPERIOD.shtml	Set the statistics update period
Stats	0x695	5	LCM/cmd/_/P.Stats.shtml	Set up the SMON statistics monitor
STATSEND	0x680	9	LRA/cmd/_/P.STATSEND.shtml	Send statistics data to the SSR
STATTEMS	0x680	10	LRA/cmd/_/P.STATTEMS.shtml	Set the mask of TEMs for EBM stats
Stop	0x674	3	LPA/cmd/_/P.Stop.shtml	Stops a Physics Run
Stop	0x658	3	LTC/cmd/_/P.Stop.shtml	Terminate Thermal Control processing
stop_count	0x69C	4	LMC/cmd/_/P.stop_count.shtml	Stop Active Counter
StopDiag	0x650	2	LHK/cmd/_/P.StopDiag.shtml	Stop Diagnostic Sample
SysCheck	0x648	7	LFS/cmd/_/P.SysCheck.shtml	File System Check

Cmd. Packet (L)	APID	FC	Section	Description (L)
SysFormat	0x649	0	LFS/cmd/_/P.SysFormat.shtml	File System Format
SysMount	0x649	1	LFS/cmd/_/P.SysMount.shtml	File System Mount
SysRepair	0x649	2	LFS/cmd/_/P.SysRepair.shtml	File System Repair
SysReset	0x650	1	LHK/cmd/_/P.SysReset.shtml	System Reset
SysStatus	0x648	6	LFS/cmd/_/P.SysStatus.shtml	File System Status
TaskDump	0x695	3	LCM/cmd/_/P.TaskDump.shtml	Generate CPU task listing
tem_deadtime	0x69C	5	LMC/cmd/_/P.tem_deadtime.shtml	TEM Deadtime Low Rate Science Counter
tkr_lrs	0x69C	1	LMC/cmd/_/P.tkr_lrs.shtml	TKR Low Rate Science Counters
TOO_Abort	0x663	1	LIM/cmd/_/P.TOO_Abort.shtml	TOO Abort
TOO_Start	0x663	0	LIM/cmd/_/P.TOO_Start.shtml	TOO Start
TurboReset	0x696	0	LCM/cmd/_/P.TurboReset.shtml	Turbo reset command
UploadCancel	0x641	1	FILE/cmd/_/P.UploadCancel.shtml	File Upload Cancel
UploadCommit	0x641	2	FILE/cmd/_/P.UploadCommit.shtml	File Upload Commit
UploadData	0x641	3	FILE/cmd/_/P.UploadData.shtml	File Upload Data
UploadEPU	0x641	4	FILE/cmd/_/P.UploadEPU.shtml	File Upload to EPU
UploadStart	0x641	0	FILE/cmd/_/P.UploadStart.shtml	File Upload Start
write_file	0x642	0	DDT/cmd/_/P.write_file.shtml	Write a file to SUROM

29 Telecommand Struct Index, by Name (LCAT)

Struct (L)	Cmd. Packet (L)	Section	Description (L)
CPOWERCFGST	Power_Off	LIM/cmd/_/S.CPOWERCFGST.shtml	Power Configuration Structure
CPOWERCFGST	Power_On	LIM/cmd/_/S.CPOWERCFGST.shtml	Power Configuration Structure

30 Telecommand Bitfield Index, by Name (LCAT)

Bitfield (L)	Cmd. Packet (L)	Section	Description (L)
CADDR32	LMEMDUMPMEM	MEM/cmd/_/B.CADDR32.shtml	32-Bit Address/Offset Bitfield
CADDR32	LMEMDUMPSYMREL	MEM/cmd/_/B.CADDR32.shtml	32-Bit Address/Offset Bitfield
CADDR32	LMEMLOADMEM	MEM/cmd/_/B.CADDR32.shtml	32-Bit Address/Offset Bitfield
CADDR32	LMEMLOADREG	MEM/cmd/_/B.CADDR32.shtml	32-Bit Address/Offset Bitfield
CALLOWGBMBF	Config_GBM	LIM/cmd/_/B.CALLOWGBMBF.shtml	Allowed GBM Activity Bitfield
CALLOWHVBF	Config_HV	LIM/cmd/_/B.CALLOWHVBF.shtml	Allowed ACD High-Voltage Activity Bitfield
CBIASACDBF	Bias_ACD	LIM/cmd/_/B.CBIASACDBF.shtml	ACD Bias Voltage Bitfield
CFLAGS32	LBTRESET	PBC/cmd/_/B.CFLAGS32.shtml	32-Bit Boot Flags Bitfield
CFLAGS32	LBTRTOSEXEC	PBC/cmd/_/B.CFLAGS32.shtml	32-Bit Boot Flags Bitfield
CIDBF	LMEMDUMPCANCEL	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMDUMPMEM	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMDUMPNEXT	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMDUMPPCI	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMDUMPPOOL	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMDUMPREG	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMDUMPSYMREL	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMDUMPSYMVAL	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMLOADMEM	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMLOADPCI	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMLOADREG	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CIDBF	LMEMNOOP	MEM/cmd/_/B.CIDBF.shtml	LAT Unit and Transaction ID Bitfield
CONFIGBITS	SetTraceConfig	LSW/cmd/_/B.CONFIGBITS.shtml	Definition of trace enable bits
CPCIADDRBF	LMEMLOADPCI	MEM/cmd/_/B.CPCIADDRBF.shtml	PCI Device Header Address Bitfield
CPCIFNADDRBF	LMEMDUMPPCI	MEM/cmd/_/B.CPCIFNADDRBF.shtml	PCI Device Header Function Address Bitfield
CSELACDBF	Power_Off	LIM/cmd/_/B.CSELACDBF.shtml	ACD Selection Bitfield
CSELACDBF	Power_On	LIM/cmd/_/B.CSELACDBF.shtml	ACD Selection Bitfield
CSELOTHERBF	Power_Off	LIM/cmd/_/B.CSELOTHERBF.shtml	EPU, PDU, EBM, and GEM Selection Bitfield
CSELOTHERBF	Power_On	LIM/cmd/_/B.CSELOTHERBF.shtml	EPU, PDU, EBM, and GEM Selection Bitfield
CSELTEMBF	Power_Off	LIM/cmd/_/B.CSELTEMBF.shtml	TEM Selection Bitfield
CSELTEMBF	Power_On	LIM/cmd/_/B.CSELTEMBF.shtml	TEM Selection Bitfield
CSIUCFGBF	Main_Feed_On	LIM/cmd/_/B.CSIUCFGBF.shtml	SIU Configuration Bitfield
CSIZE32	LMEMDUMPMEM	MEM/cmd/_/B.CSIZE32.shtml	32-Bit Word Count Bitfield
CSIZE32	LMEMDUMPSYMREL	MEM/cmd/_/B.CSIZE32.shtml	32-Bit Word Count Bitfield
CTOWERSELBF	Bias_CAL	LIM/cmd/_/B.CTOWERSELBF.shtml	Tower Selection Bitfield
CTOWERSELBF	Bias_TKR	LIM/cmd/_/B.CTOWERSELBF.shtml	Tower Selection Bitfield
CUNITBF	LBTBAD	PBC/cmd/_/B.CUNITBF.shtml	LAT Unit Bitfield
CUNITBF	LBTERRDUMP	PBC/cmd/_/B.CUNITBF.shtml	LAT Unit Bitfield
CUNITBF	LBTRESET	PBC/cmd/_/B.CUNITBF.shtml	LAT Unit Bitfield
CUNITBF	LBTRTOSEXEC	PBC/cmd/_/B.CUNITBF.shtml	LAT Unit Bitfield
CUNITBF	LBTSTART	PBC/cmd/_/B.CUNITBF.shtml	LAT Unit Bitfield
dead_mask	tem_deadtime	LMC/cmd/_/B.dead_mask.shtml	TEM Deadtime Mask
GRBPRMVALID	SetGrb	LPA/cmd/_/B.GRBPRMVALID.shtml	GRB Parameter Valid Flags
LATCPRMVALID	SetDefault	LPA/cmd/_/B.LATCPRMVALID.shtml	LATC Parameter Valid Flags
LCMPRIMARY	CpuReset	LCM/cmd/_/B.LCMPRIMARY.shtml	Primary boot flags
LCMSECONDARY	CpuReset	LCM/cmd/_/B.LCMSECONDARY.shtml	Secondary boot flags
LCMSECONDARY	TurboReset	LCM/cmd/_/B.LCMSECONDARY.shtml	Secondary boot flags
NODEPAD	ErrorCfg	LCM/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding

Bitfield (L)	Cmd. Packet (L)	Section	Description (L)
NODEPAD	Noop	LFS/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODEPAD	Noop	LCM/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODEPAD	ScrubCfg	LCM/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODEPAD	ScrubRun	LCM/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODEPAD	SysCheck	LFS/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODEPAD	SysFormat	LFS/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODEPAD	SysMount	LFS/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODEPAD	SysRepair	LFS/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODEPAD	UploadCancel	FILE/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODEPAD	UploadCommit	FILE/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODEPAD	UploadEPU	FILE/cmd/_/B.NODEPAD.shtml	Compound of node ID and padding
NODETRANID	CpuReset	LCM/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	DirCreate	LFS/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	DirDelete	LFS/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	DirDump	LFS/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	DumpStart	LSW/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	DumpTraceById	LSW/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	DumpTraceByName	LSW/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	FileCopy	LFS/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	FileDelete	LFS/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	FileDumpCTDB	LFS/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	FileDumpSSR	LFS/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	ModuleDump	LCM/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	Noop	LSM/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	Noop	LSW/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	SetTraceConfig	LSW/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	SysStatus	LFS/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID
NODETRANID	TaskDump	LCM/cmd/_/B.NODETRANID.shtml	Compound of node and transaction ID

31 Telecommand Field Index, by Name (LCAT)

Field (L)	Cmd. Packet (L)	Section	Description (L)
ANCFLAGS	SIANCILLARY	LSM/cmd/_/F.ANCFLAGS.shtml	Ancillary SC flags
ANCMODE	SIANCILLARY	LSM/cmd/_/F.ANCMODE.shtml	Ancillary GNC mode
ANCPOS	SIANCILLARY	LSM/cmd/_/F.ANCPOS.shtml	Ancillary position element
ANCSSR	SIANCILLARY	LSM/cmd/_/F.ANCSSR.shtml	Ancillary SSR usage
ANCVEL	SIANCILLARY	LSM/cmd/_/F.ANCVEL.shtml	Ancillary velocity element
APID	CancelDiag	LHK/cmd/_/F.APID.shtml	Application ID parameter
APID	ReqDiagPacket	LHK/cmd/_/F.APID.shtml	Application ID parameter
ATTAVEC	SIATTITUDE	LSM/cmd/_/F.ATTAVEC.shtml	Attitude angular velocity element
ATTQUAT	SIATTITUDE	LSM/cmd/_/F.ATTQUAT.shtml	Attitude quaternion element
BLOCK	CONTROL	LRA/cmd/_/F.BLOCK.shtml	Register block
BLOCK	LOAD	LRA/cmd/_/F.BLOCK.shtml	Register block
BLOCK	READ	LRA/cmd/_/F.BLOCK.shtml	Register block
BUR_CLASS	BurstClose	LPA/cmd/_/F.BUR_CLASS.shtml	LAT Burst Classification
BUR_CLASS	BurstTrg	LPA/cmd/_/F.BUR_CLASS.shtml	LAT Burst Classification
CACCEPT	ARR_Response	LIM/cmd/_/F.CACCEPT.shtml	Request Acceptance Indication
CACDS	Bias_ACD_Off	LIM/cmd/_/F.CACDS.shtml	ACD Mask
CACDS	Bias_ACD_On	LIM/cmd/_/F.CACDS.shtml	ACD Mask
CADDRHI	LMEMDUMPMEM	MEM/cmd/_/F.CADDRHI.shtml	Upper 16 Bits of Address/Offset
CADDRHI	LMEMDUMPSYMREL	MEM/cmd/_/F.CADDRHI.shtml	Upper 16 Bits of Address/Offset
CADDRHI	LMEMLOADMEM	MEM/cmd/_/F.CADDRHI.shtml	Upper 16 Bits of Address/Offset
CADDRHI	LMEMLOADREG	MEM/cmd/_/F.CADDRHI.shtml	Upper 16 Bits of Address/Offset
CADDRLO	LMEMDUMPMEM	MEM/cmd/_/F.CADDRLO.shtml	Lower 16 Bits of Address/Offset
CADDRLO	LMEMDUMPSYMREL	MEM/cmd/_/F.CADDRLO.shtml	Lower 16 Bits of Address/Offset
CADDRLO	LMEMLOADMEM	MEM/cmd/_/F.CADDRLO.shtml	Lower 16 Bits of Address/Offset
CADDRLO	LMEMLOADREG	MEM/cmd/_/F.CADDRLO.shtml	Lower 16 Bits of Address/Offset
cal_mask	cal_lrs	LMC/cmd/_/F.cal_mask.shtml	CAL LRS Mask
CALLOWED	Config_GBM	LIM/cmd/_/F.CALLOWED.shtml	Action Allowed
CALLOWED	Config_HV	LIM/cmd/_/F.CALLOWED.shtml	Action Allowed
CBIAS12	Bias_ACD	LIM/cmd/_/F.CBIAS12.shtml	12-Bit Bias Voltage
CBIAS16	Bias_CAL	LIM/cmd/_/F.CBIAS16.shtml	16-Bit Bias Voltage
CBIAS16	Bias_TKR	LIM/cmd/_/F.CBIAS16.shtml	16-Bit Bias Voltage
CC	CONTROL	LRA/cmd/_/F.CC.shtml	Cable controller
CC	LOAD	LRA/cmd/_/F.CC.shtml	Cable controller
CC	READ	LRA/cmd/_/F.CC.shtml	Cable controller
CCONSIGN	TOO_Start	LIM/cmd/_/F.CCONSIGN.shtml	LATC Consign Flag
CCPUS	TOO_Start	LIM/cmd/_/F.CCPUS.shtml	CPU Mask
CDABENABLE	Main_Feed_On	LIM/cmd/_/F.CDABENABLE.shtml	DAB Power Enable
CDATA16	LMEMLOADMEM	MEM/cmd/_/F.CDATA16.shtml	16-Bit Data Value
CDATA16	LMEMLOADPCI	MEM/cmd/_/F.CDATA16.shtml	16-Bit Data Value
CDATA16	LMEMLOADREG	MEM/cmd/_/F.CDATA16.shtml	16-Bit Data Value
CDBID	TOO_Start	LIM/cmd/_/F.CDBID.shtml	LPA_DB Instance ID
CDEST32	Latc_Record	LIM/cmd/_/F.CDEST32.shtml	Destination
CDEST32	Latc_Verify	LIM/cmd/_/F.CDEST32.shtml	Destination
CDEST32	Pig_Record	LIM/cmd/_/F.CDEST32.shtml	Destination
CDEST	LMEMDUMPMEM	MEM/cmd/_/F.CDEST.shtml	Dump Telemetry Destination
CDEST	LMEMDUMPSYMREL	MEM/cmd/_/F.CDEST.shtml	Dump Telemetry Destination
CFG_ID	Associate	LPA/cmd/_/F.CFG_ID.shtml	LPA Configuration ID
CFG_ID	Configure	LPA/cmd/_/F.CFG_ID.shtml	LPA Configuration ID
CFileId	write_file	DDT/cmd/_/F.CFileId.shtml	File ID
CFLAGSHI	LBTRESET	PBC/cmd/_/F.CFLAGSHI.shtml	Upper 16 Bits of Boot Flags
CFLAGSHI	LBTRTOSEXEC	PBC/cmd/_/F.CFLAGSHI.shtml	Upper 16 Bits of Boot Flags

Field (L)	Cmd. Packet (L)	Section	Description (L)
CFLAGSLO	LBTRESET	PBC/cmd/_/F.CFLAGSLO.shtml	Lower 16 Bits of Boot Flags
CFLAGSLO	LBTRTOSEXEC	PBC/cmd/_/F.CFLAGSLO.shtml	Lower 16 Bits of Boot Flags
CGBMREDUNDANT	Main_Feed_On	LIM/cmd/_/F.CGBMREDUNDANT.shtml	Redundant GBM Signal Selection
CIGNOREID	Latc_Config	LIM/cmd/_/F.CIGNOREID.shtml	LATC Ignore File ID
CIGNOREID	TOO_Start	LIM/cmd/_/F.CIGNOREID.shtml	LATC Ignore File ID
CITEMSEL	Bias_ACD	LIM/cmd/_/F.CITEMSEL.shtml	Item Selection
CITEMSEL	Bias_CAL	LIM/cmd/_/F.CITEMSEL.shtml	Item Selection
CITEMSEL	Bias_TKR	LIM/cmd/_/F.CITEMSEL.shtml	Item Selection
CITEMSEL	Config_GBM	LIM/cmd/_/F.CITEMSEL.shtml	Item Selection
CITEMSEL	Config_HV	LIM/cmd/_/F.CITEMSEL.shtml	Item Selection
CITEMSEL	Power_Off	LIM/cmd/_/F.CITEMSEL.shtml	Item Selection
CITEMSEL	Power_On	LIM/cmd/_/F.CITEMSEL.shtml	Item Selection
CLATCID	Latc_Config	LIM/cmd/_/F.CLATCID.shtml	LATC Configuration File ID
CLATCID	TOO_Start	LIM/cmd/_/F.CLATCID.shtml	LATC Configuration File ID
CLATUNIT	LBTBAD	PBC/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LBTERRDUMP	PBC/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LBTRESET	PBC/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LBTRTOSEXEC	PBC/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LBTSTART	PBC/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMDUMPCANCEL	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMDUMPMEM	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMDUMPNEXT	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMDUMPPCI	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMDUMPPOOL	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMDUMPREG	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMDUMPSYMREL	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMDUMPSYMVAL	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMLOADMEM	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMLOADPCI	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMLOADREG	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLATUNIT	LMEMNOOP	MEM/cmd/_/F.CLATUNIT.shtml	Target LAT Unit
CLatUnit	write_file	DDT/cmd/_/F.CLatUnit.shtml	Target LAT Unit
CLEVEL	SetCompress	LPA/cmd/_/F.CLEVEL.shtml	Compression Level
CLNUM	CntlProc	LTC/cmd/_/F.CLNUM.shtml	PDU Command List Index
CMFPRIMARY	Main_Feed_On	LIM/cmd/_/F.CMFPRIMARY.shtml	Primary Main-Feed Selection
CMPNT	CONTROL	LRA/cmd/_/F.CMPNT.shtml	Component
CMPNT	LAM	LRA/cmd/_/F.CMPNT.shtml	Component
CMPNT	LOAD	LRA/cmd/_/F.CMPNT.shtml	Component
CMPNT	READ	LRA/cmd/_/F.CMPNT.shtml	Component
CNAMECHAR	LMEMDUMPSYMREL	MEM/cmd/_/F.CNAMECHAR.shtml	Symbol Name Character
CNAMECHAR	LMEMDUMPSYMVAL	MEM/cmd/_/F.CNAMECHAR.shtml	Symbol Name Character
CNAMESIZE	LMEMDUMPSYMREL	MEM/cmd/_/F.CNAMESIZE.shtml	Symbol Name Length
CNAMESIZE	LMEMDUMPSYMVAL	MEM/cmd/_/F.CNAMESIZE.shtml	Symbol Name Length
CNS_FLG	Start	LPA/cmd/_/F.CNS_FLG.shtml	LATC Consign Flag
COBSID	TOO_Start	LIM/cmd/_/F.COBSID.shtml	Observation ID
count	acd_tile_all	LMC/cmd/_/F.count.shtml	Sample count
count	acd_tile_pair	LMC/cmd/_/F.count.shtml	Sample count
count	cal_lrs	LMC/cmd/_/F.count.shtml	Sample count
count	tem_deadtime	LMC/cmd/_/F.count.shtml	Sample count
count	tkr_lrs	LMC/cmd/_/F.count.shtml	Sample count
counter_opcode	stop_count	LMC/cmd/_/F.counter_opcode.shtml	Counter type opcode
CPAD10	Main_Feed_On	LIM/cmd/_/F.CPAD10.shtml	10-Bit Padding

Field (L)	Cmd. Packet (L)	Section	Description (L)
CPAD10	Power_Off	LIM/cmd/_/F.CPAD10.shtml	10-Bit Padding
CPAD10	Power_On	LIM/cmd/_/F.CPAD10.shtml	10-Bit Padding
CPAD11	Main_Feed_On	LIM/cmd/_/F.CPAD11.shtml	11-Bit Padding
CPAD12	LBTBAD	PBC/cmd/_/F.CPAD12.shtml	12-bit padding
CPAD12	LBTERRDUMP	PBC/cmd/_/F.CPAD12.shtml	12-bit padding
CPAD12	LBTRESET	PBC/cmd/_/F.CPAD12.shtml	12-bit padding
CPAD12	LBTRTOSEXEC	PBC/cmd/_/F.CPAD12.shtml	12-bit padding
CPAD12	LBTSTART	PBC/cmd/_/F.CPAD12.shtml	12-bit padding
CPAD13	Config_GBM	LIM/cmd/_/F.CPAD13.shtml	13-Bit Padding
CPAD15	Config_HV	LIM/cmd/_/F.CPAD15.shtml	15-Bit Padding
CPAD16	Bias_CAL	LIM/cmd/_/F.CPAD16.shtml	16-Bit Padding
CPAD16	Bias_TKR	LIM/cmd/_/F.CPAD16.shtml	16-Bit Padding
CPAD16	LBTRESET	PBC/cmd/_/F.CPAD16.shtml	16-bit Padding
CPAD16	LBTRTOSEXEC	PBC/cmd/_/F.CPAD16.shtml	16-bit Padding
CPAD16	LMEMDUMPSYMREL	MEM/cmd/_/F.CPAD16.shtml	16-bit padding
CPAD1	Bias_ACD	LIM/cmd/_/F.CPAD1.shtml	1-Bit Padding
CPAD8	LMEMDUMPMEM	MEM/cmd/_/F.CPAD8.shtml	8-bit padding
CPAD8	LMEMDUMPPCI	MEM/cmd/_/F.CPAD8.shtml	8-bit padding
CPAD8	LMEMDUMPSYMREL	MEM/cmd/_/F.CPAD8.shtml	8-bit padding
CPAD8	LMEMDUMPSYMVAL	MEM/cmd/_/F.CPAD8.shtml	8-bit padding
CPCIBUS	LMEMDUMPPCI	MEM/cmd/_/F.CPCIBUS.shtml	PCI Bus Address
CPCIBUS	LMEMLOADPCI	MEM/cmd/_/F.CPCIBUS.shtml	PCI Bus Address
CPCIDEVICE	LMEMDUMPPCI	MEM/cmd/_/F.CPCIDEVICE.shtml	PCI Device Address
CPCIDEVICE	LMEMLOADPCI	MEM/cmd/_/F.CPCIDEVICE.shtml	PCI Device Address
CPCIFUNCTION	LMEMDUMPPCI	MEM/cmd/_/F.CPCIFUNCTION.shtml	PCI Function Address
CPCIFUNCTION	LMEMLOADPCI	MEM/cmd/_/F.CPCIFUNCTION.shtml	PCI Function Address
CPCIOFFSET	LMEMLOADPCI	MEM/cmd/_/F.CPCIOFFSET.shtml	PCI Offset Address
CPDUENABLE	Main_Feed_On	LIM/cmd/_/F.CPDUENABLE.shtml	PDU Power Enable
CPIDPRIMARY	Config_PID	LIM/cmd/_/F.CPIDPRIMARY.shtml	Primary PID Signal Selection
CPOOLID	LMEMDUMPPOOL	MEM/cmd/_/F.CPOOLID.shtml	Memory Pool ID
CPPSINTERNAL	Main_Feed_On	LIM/cmd/_/F.CPPSINTERNAL.shtml	Internal PPS Signal Selection
CPPSREDUNDANT	Main_Feed_On	LIM/cmd/_/F.CPPSREDUNDANT.shtml	Redundant PPS Signal Selection
CPU_MSK	Associate	LPA/cmd/_/F.CPU_MSK.shtml	CPU Mask
CPU_MSK	Configure	LPA/cmd/_/F.CPU_MSK.shtml	CPU Mask
CPU_MSK	SetCompress	LPA/cmd/_/F.CPU_MSK.shtml	CPU Mask
CPU_MSK	SetGrb	LPA/cmd/_/F.CPU_MSK.shtml	CPU Mask
CPU_MSK	SetOutput	LPA/cmd/_/F.CPU_MSK.shtml	CPU Mask
CPU_MSK	Start	LPA/cmd/_/F.CPU_MSK.shtml	CPU Mask
CSECONDS	TOO_Start	LIM/cmd/_/F.CSECONDS.shtml	Number of Seconds
CSIUID	Main_Feed_On	LIM/cmd/_/F.CSIUID.shtml	SIU ID
CSIZE16	LMEMLOADMEM	MEM/cmd/_/F.CSIZE16.shtml	16-Bit Word count
CSIZE16	LMEMLOADREG	MEM/cmd/_/F.CSIZE16.shtml	16-Bit Word count
CSIZEHI	LMEMDUMPMEM	MEM/cmd/_/F.CSIZEHI.shtml	Upper 16 Bits of Word Count
CSIZEHI	LMEMDUMPSYMREL	MEM/cmd/_/F.CSIZEHI.shtml	Upper 16 Bits of Word Count
CSIZELO	LMEMDUMPMEM	MEM/cmd/_/F.CSIZELO.shtml	Lower 16 Bits of Word Count
CSIZELO	LMEMDUMPSYMREL	MEM/cmd/_/F.CSIZELO.shtml	Lower 16 Bits of Word Count
CSSRREDUNDANT	Main_Feed_On	LIM/cmd/_/F.CSSRREDUNDANT.shtml	Redundant SSR Interface Selection
CTEMS	Bias_CAL_Off	LIM/cmd/_/F.CTEMS.shtml	TEM Mask
CTEMS	Bias_CAL_On	LIM/cmd/_/F.CTEMS.shtml	TEM Mask
CTEMS	Bias_TKR_Off	LIM/cmd/_/F.CTEMS.shtml	TEM Mask
CTEMS	Bias_TKR_On	LIM/cmd/_/F.CTEMS.shtml	TEM Mask
CTRANID32	ARR_Response	LIM/cmd/_/F.CTRANID32.shtml	32-Bit Transaction ID

Field (L)	Cmd. Packet (L)	Section	Description (L)
CTRANID	LMEMDUMPCANCEL	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMDUMPMEM	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMDUMPNEXT	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMDUMPPCI	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMDUMPPOOL	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMDUMPREG	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMDUMPSYMREL	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMDUMPSYMVAL	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMLOADMEM	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMLOADPCI	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMLOADREG	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
CTRANID	LMEMNOOP	MEM/cmd/_/F.CTRANID.shtml	Transaction ID
DB_ID	Associate	LPA/cmd/_/F.DB_ID.shtml	LPA_DB Instance ID
DB_ID	Configure	LPA/cmd/_/F.DB_ID.shtml	LPA_DB Instance ID
DB_ID	SetCompress	LPA/cmd/_/F.DB_ID.shtml	LPA_DB Instance ID
DB_ID	SetDefault	LPA/cmd/_/F.DB_ID.shtml	LPA_DB Instance ID
DB_ID	SetOutput	LPA/cmd/_/F.DB_ID.shtml	LPA_DB Instance ID
DB_ID	Start	LPA/cmd/_/F.DB_ID.shtml	LPA_DB Instance ID
DEST	DumpStart	LSW/cmd/_/F.DEST.shtml	Destination for a dump
DEST	DumpTraceById	LSW/cmd/_/F.DEST.shtml	Destination for a dump
DEST	DumpTraceByName	LSW/cmd/_/F.DEST.shtml	Destination for a dump
DEST	READ	LRA/cmd/_/F.DEST.shtml	Output destination
destn	acd_tile_all	LMC/cmd/_/F.destn.shtml	Output destination
destn	acd_tile_pair	LMC/cmd/_/F.destn.shtml	Output destination
destn	cal_lrs	LMC/cmd/_/F.destn.shtml	Output destination
destn	tem_deadtime	LMC/cmd/_/F.destn.shtml	Output destination
destn	tkr_lrs	LMC/cmd/_/F.destn.shtml	Output destination
device	CpuReset	LCM/cmd/_/F.device.shtml	A device ID in an unsigned int
device	TurboReset	LCM/cmd/_/F.device.shtml	A device ID in an unsigned int
DiagInterval	ReqDiagPacket	LHK/cmd/_/F.DiagInterval.shtml	Diagnostic sample interval
DiagPktCnt	ReqDiagPacket	LHK/cmd/_/F.DiagPktCnt.shtml	Diagnostic sample Packet Count
enable	CpuReset	LCM/cmd/_/F.enable.shtml	An enable flag in an unsigned int
enable	TurboReset	LCM/cmd/_/F.enable.shtml	An enable flag in an unsigned int
ENABLE_EX5	SetTraceConfig	LSW/cmd/_/F.ENABLE_EX5.shtml	Enable exception 0x500 (external hardware interrupt) tracing
ENABLE_EX9	SetTraceConfig	LSW/cmd/_/F.ENABLE_EX9.shtml	Enable exception 0x900 (decrementer) tracing
ENABLE_FLUSH	SetTraceConfig	LSW/cmd/_/F.ENABLE_FLUSH.shtml	Enable cache flushing during task switches
ENABLE_PAD	SetTraceConfig	LSW/cmd/_/F.ENABLE_PAD.shtml	Pad bitfield out to 32 bits
ERRORCLASS	ErrorCfg	LCM/cmd/_/F.ERRORCLASS.shtml	Error Reporting Class
ERRORLEVEL	ErrorCfg	LCM/cmd/_/F.ERRORLEVEL.shtml	Error Reporting Level
EVH_MSK	Associate	LPA/cmd/_/F.EVH_MSK.shtml	Event Handler Mask
EVH_MSK	Configure	LPA/cmd/_/F.EVH_MSK.shtml	Event Handler Mask
EVT_CLASS	GbmCalc	LPA/cmd/_/F.EVT_CLASS.shtml	GRB Event Class
EVT_CLASS	GbmRpt	LPA/cmd/_/F.EVT_CLASS.shtml	GRB Event Class
FE	CONTROL	LRA/cmd/_/F.FE.shtml	Front-end number
FE	LOAD	LRA/cmd/_/F.FE.shtml	Front-end number
FE	READ	LRA/cmd/_/F.FE.shtml	Front-end number
FILEDATA	UploadData	FILE/cmd/_/F.FILEDATA.shtml	File Data
FILEFLAGS	UploadCommit	FILE/cmd/_/F.FILEFLAGS.shtml	File Commit Flags
FILEID	CALIBRATE	LCI/cmd/_/F.FILEID.shtml	File ID

Field (L)	Cmd. Packet (L)	Section	Description (L)
FILEID	DirCreate	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	DirDelete	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	DirDump	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	FileCopy	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	FileDelete	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	FileDumpCTDB	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	FileDumpSSR	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	LoadLimits	LIH/cmd/_/F.FILEID.shtml	File ID
FileId	NewSchedFile	LHK/cmd/_/F.FileId.shtml	Configuration File ID
FileId	ReStart	LTC/cmd/_/F.FileId.shtml	File identification number
FILEID	SysCheck	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	SysFormat	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	SysMount	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	SysRepair	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FileId	SysReset	LHK/cmd/_/F.FileId.shtml	Configuration File ID
FILEID	SysStatus	LFS/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	UploadCommit	FILE/cmd/_/F.FILEID.shtml	File Storage ID
FILEID	UploadEPU	FILE/cmd/_/F.FILEID.shtml	File Storage ID
FILEOFFSET	UploadData	FILE/cmd/_/F.FILEOFFSET.shtml	File Data Offset
FILESIZE	UploadStart	FILE/cmd/_/F.FILESIZE.shtml	File Size
GRB_ENAB	SetGrb	LPA/cmd/_/F.GRB_ENAB.shtml	GRB Enable Word
GRB_ID	SetGrb	LPA/cmd/_/F.GRB_ID.shtml	GRB Processor ID
GRB_SIM_INTERVAL	SetGrb	LPA/cmd/_/F.GRB_SIM_INTERVAL.shtml	GRB Simulation Interval
GRB_SIM_MODE	SetGrb	LPA/cmd/_/F.GRB_SIM_MODE.shtml	GRB Simulation Mode
GRB_SIM_RPT	SetGrb	LPA/cmd/_/F.GRB_SIM_RPT.shtml	GRB Simulation Repoint Seconds
GRPNUM	CntlProc	LTC/cmd/_/F.GRPNUM.shtml	ADC Group Index
Instance	NewSchedInst	LHK/cmd/_/F.Instance.shtml	CDM instance number
interval	acd_tile_all	LMC/cmd/_/F.interval.shtml	Sample interval in milliseconds
interval	acd_tile_pair	LMC/cmd/_/F.interval.shtml	Sample interval in milliseconds
interval	cal_lrs	LMC/cmd/_/F.interval.shtml	Sample interval in milliseconds
interval	tem_deadtime	LMC/cmd/_/F.interval.shtml	Sample interval in milliseconds
interval	tkr_lrs	LMC/cmd/_/F.interval.shtml	Sample interval in milliseconds
ITC_CmdAction	CmdResponse	LCM/cmd/_/F.ITC_CmdAction.shtml	Actions task can take (forward or execute)
ITC_CmdClass	CmdResponse	LCM/cmd/_/F.ITC_CmdClass.shtml	Spacecraft command class (normal or broadcast)
ITC_CmdLevel	CmdResponse	LCM/cmd/_/F.ITC_CmdLevel.shtml	Response level
ITC_NodeId	CmdResponse	LCM/cmd/_/F.ITC_NodeId.shtml	ITC node ID
ITC_NodeId	MsgOutCfg	LCM/cmd/_/F.ITC_NodeId.shtml	ITC node ID
ITC_NodeId	MsgResponse	LCM/cmd/_/F.ITC_NodeId.shtml	ITC node ID
ITC_NodeId	Stats	LCM/cmd/_/F.ITC_NodeId.shtml	ITC node ID
ITC_TaskId	CmdResponse	LCM/cmd/_/F.ITC_TaskId.shtml	ITC task ID
ITC_TaskId	MsgResponse	LCM/cmd/_/F.ITC_TaskId.shtml	ITC task ID
LAMCPT	LAMLCB	LRA/cmd/_/F.LAMCPT.shtml	LAMLCB component
LAMMSK	LAMLCB	LRA/cmd/_/F.LAMMSK.shtml	LAMLCB mask
LAMVAL	LAMLCB	LRA/cmd/_/F.LAMVAL.shtml	LAMLCB value
LATC_ID	SetDefault	LPA/cmd/_/F.LATC_ID.shtml	LATC Configuration File ID
LATC_ID	Start	LPA/cmd/_/F.LATC_ID.shtml	LATC Configuration File ID
LBD_SEC	BurstClose	LPA/cmd/_/F.LBD_SEC.shtml	LAT Burst Declaration Time Seconds
LBD_SEC	BurstTrg	LPA/cmd/_/F.LBD_SEC.shtml	LAT Burst Declaration Time Seconds
LBD_USEC	BurstClose	LPA/cmd/_/F.LBD_USEC.shtml	LAT Burst Declaration Time Usec
LBD_USEC	BurstTrg	LPA/cmd/_/F.LBD_USEC.shtml	LAT Burst Declaration Time Usec

Field (L)	Cmd. Packet (L)	Section	Description (L)
LOC_ALG	GbmCalc	LPA/cmd/_/F.LOC_ALG.shtml	GRB Location Algorithm
LOC_ALG	GbmRpt	LPA/cmd/_/F.LOC_ALG.shtml	GRB Location Algorithm
LOC_DEC	GbmCalc	LPA/cmd/_/F.LOC_DEC.shtml	GRB Declination
LOC_DEC	GbmRpt	LPA/cmd/_/F.LOC_DEC.shtml	GRB Declination
LOC_RA	GbmCalc	LPA/cmd/_/F.LOC_RA.shtml	GRB Right Ascension
LOC_RA	GbmRpt	LPA/cmd/_/F.LOC_RA.shtml	GRB Right Ascension
LPASPARE8	GbmRpt	LPA/cmd/_/F.LPASPARE8.shtml	Spare 8 Bits
LR_SEQ	GbmCalc	LPA/cmd/_/F.LR_SEQ.shtml	GRB LAT Record Sequence Number
LR_SEQ	GbmClose	LPA/cmd/_/F.LR_SEQ.shtml	GRB LAT Record Sequence Number
LR_SEQ	GbmRpt	LPA/cmd/_/F.LR_SEQ.shtml	GRB LAT Record Sequence Number
LR_VER	GbmCalc	LPA/cmd/_/F.LR_VER.shtml	GRB Record Type Version
LR_VER	GbmClose	LPA/cmd/_/F.LR_VER.shtml	GRB Record Type Version
LR_VER	GbmRpt	LPA/cmd/_/F.LR_VER.shtml	GRB Record Type Version
mask_bit	tem_deadtime	LMC/cmd/_/F.mask_bit.shtml	TEM Deadtime Mask Bit
MEASPTR	CntlProc	LTC/cmd/_/F.MEASPTR.shtml	Pointer to LTC Measurement Area
memory	CpuReset	LCM/cmd/_/F.memory.shtml	Memory column number
MODE_ID	Start	LPA/cmd/_/F.MODE_ID.shtml	Mode ID
MSG_MsgLevel	MsgOutCfg	LCM/cmd/_/F.MSG_MsgLevel.shtml	Messaging level
MSG_MsgLevel	MsgResponse	LCM/cmd/_/F.MSG_MsgLevel.shtml	Messaging level
MSGOUTINTER	MsgOutCfg	LCM/cmd/_/F.MSGOUTINTER.shtml	MSG Output Interface
NODE	CpuReset	LCM/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	DirCreate	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	DirDelete	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	DirDump	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	DumpStart	LSW/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	DumpTraceById	LSW/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	DumpTraceByName	LSW/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	ErrorCfg	LCM/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	FileCopy	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	FileDelete	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	FileDumpCTDB	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	FileDumpSSR	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	ModuleDump	LCM/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	Noop	LSW/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	Noop	LSM/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	Noop	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	Noop	LCM/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	ScrubCfg	LCM/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	ScrubRun	LCM/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	SetTraceConfig	LSW/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	SysCheck	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	SysFormat	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	SysMount	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	SysRepair	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	SysStatus	LFS/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	TaskDump	LCM/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	UploadCancel	FILE/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	UploadCommit	FILE/cmd/_/F.NODE.shtml	Computer to send the command to
NODE	UploadEPU	FILE/cmd/_/F.NODE.shtml	Computer to send the command to
OFFSET	SysFormat	LFS/cmd/_/F.OFFSET.shtml	Offset in bytes
OUTPUT_MASK	SetOutput	LPA/cmd/_/F.OUTPUT_MASK.shtml	Output Disable Mask
PAD12	ErrorCfg	LCM/cmd/_/F.PAD12.shtml	A twelve-bit padding field

Field (L)	Cmd. Packet (L)	Section	Description (L)
PAD12	Noop	LCM/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD12	Noop	LFS/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD12	ScrubCfg	LCM/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD12	ScrubRun	LCM/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD12	SysCheck	LFS/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD12	SysFormat	LFS/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD12	SysMount	LFS/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD12	SysRepair	LFS/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD12	UploadCancel	FILE/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD12	UploadCommit	FILE/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD12	UploadEPU	FILE/cmd/_/F.PAD12.shtml	A twelve-bit padding field
PAD16	CpuReset	LCM/cmd/_/F.PAD16.shtml	16-bit Padding Word
PAD16	DirCreate	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	DirDelete	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	DirDump	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	FileCopy	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	FileDelete	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	FileDumpCTDB	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	FileDumpSSR	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	SetTraceConfig	LSW/cmd/_/F.PAD16.shtml	16 bits of padding
PAD16	Stats	LCM/cmd/_/F.PAD16.shtml	16-bit Padding Word
PAD16	SysCheck	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	SysFormat	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	SysMount	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	SysRepair	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	SysStatus	LFS/cmd/_/F.PAD16.shtml	16-bit padding
PAD16	UploadEPU	FILE/cmd/_/F.PAD16.shtml	16-bit padding
PAD8	CmdResponse	LCM/cmd/_/F.PAD8.shtml	One byte of padding
PAD8	DumpStart	LSW/cmd/_/F.PAD8.shtml	8 bits of padding
PAD8	DumpTraceByName	LSW/cmd/_/F.PAD8.shtml	8 bits of padding
PAD8	MsgOutCfg	LCM/cmd/_/F.PAD8.shtml	One byte of padding
PAD8	MsgResponse	LCM/cmd/_/F.PAD8.shtml	One byte of padding
PAD	CONTROL	LRA/cmd/_/F.PAD.shtml	Padding
PAD	LOAD	LRA/cmd/_/F.PAD.shtml	Padding
Padui10	CpuReset	LCM/cmd/_/F.Padui10.shtml	Explicit 10 bit pad in unsigned int
Padui10	TurboReset	LCM/cmd/_/F.Padui10.shtml	Explicit 10 bit pad in unsigned int
Padui20	CpuReset	LCM/cmd/_/F.Padui20.shtml	Explicit 20 bit pad in unsigned int
Padui3	CpuReset	LCM/cmd/_/F.Padui3.shtml	Explicit 3 bit pad in unsigned int
Padui8	CpuReset	LCM/cmd/_/F.Padui8.shtml	Explicit 8 bit pad in unsigned int
Padui8	TurboReset	LCM/cmd/_/F.Padui8.shtml	Explicit 8 bit pad in unsigned int
PDUNUM	CntlProc	LTC/cmd/_/F.PDUNUM.shtml	PDU Index
PERIOD	STATPERIOD	LRA/cmd/_/F.PERIOD.shtml	Statistics update period
RC	CONTROL	LRA/cmd/_/F.RC.shtml	Readout controller
RC	LOAD	LRA/cmd/_/F.RC.shtml	Readout controller
RC	READ	LRA/cmd/_/F.RC.shtml	Readout controller
REG	CONTROL	LRA/cmd/_/F.REG.shtml	Register
REG	LOAD	LRA/cmd/_/F.REG.shtml	Register
REG	READ	LRA/cmd/_/F.REG.shtml	Register
RPT_REC	GbmRpt	LPA/cmd/_/F.RPT_REC.shtml	GBM Reporn Recommendation
RUN_ID	Start	LPA/cmd/_/F.RUN_ID.shtml	Physics Observation Run ID
RUNID	CALIBRATE	LCI/cmd/_/F.RUNID.shtml	Identifier for this calibration
SCRUBPERIOD	ScrubCfg	LCM/cmd/_/F.SCRUBPERIOD.shtml	Memory Scrubber Period

Field (L)	Cmd. Packet (L)	Section	Description (L)
si	SetNagTimesAdc	LIH/cmd/_/F.si.shtml	Signed integer
SPARE13	SetDefault	LPA/cmd/_/F.SPARE13.shtml	Spare 13 Bits
SPARE13	SetGrb	LPA/cmd/_/F.SPARE13.shtml	Spare 13 Bits
spare13	tem_deadtime	LMC/cmd/_/F.spare13.shtml	Spare 13 bits
ss	SetActionsAdc	LIH/cmd/_/F.ss.shtml	Signed short
ss	SetLimitsAdc	LIH/cmd/_/F.ss.shtml	Signed short
STATSID	Stats	LCM/cmd/_/F.STATSID.shtml	Stat Monitor Timer ID (0,1,2)
STATSMASK	Stats	LCM/cmd/_/F.STATSMASK.shtml	Specify which HW to monitor for stats
STATSOPTIONMASK	Stats	LCM/cmd/_/F.STATSOPTIONMASK.shtml	Specify options in Stat Monitor
STATSTIMELEN	Stats	LCM/cmd/_/F.STATSTIMELEN.shtml	Stat Monitor Time Len (sec)
STATSTIMESAMP	Stats	LCM/cmd/_/F.STATSTIMESAMP.shtml	Monitor time sample (milliSec)
SWORD	SetParam	LTC/cmd/_/F.SWORD.shtml	Signed word
TEM	CONTROL	LRA/cmd/_/F.TEM.shtml	TEM number
TEM	LAM	LRA/cmd/_/F.TEM.shtml	TEM number
TEM	LOAD	LRA/cmd/_/F.TEM.shtml	TEM number
TEM	READ	LRA/cmd/_/F.TEM.shtml	TEM number
tem_mask	cal_lrs	LMC/cmd/_/F.tem_mask.shtml	TEM device mask
tem_mask	tem_deadtime	LMC/cmd/_/F.tem_mask.shtml	TEM device mask
tem_mask	tkr_lrs	LMC/cmd/_/F.tem_mask.shtml	TEM device mask
TEMMSK	STATTEMS	LRA/cmd/_/F.TEMMSK.shtml	Mask of TEMs for EBM stats
tile_num	acd_tile_pair	LMC/cmd/_/F.tile_num.shtml	ACD Tile ID
TIMEFLAGS	SITIMETONE	LSM/cmd/_/F.TIMEFLAGS.shtml	Timetone SC flags
TIMESEC	SIANCILLARY	LSM/cmd/_/F.TIMESEC.shtml	Timestamp seconds
TIMESEC	SIATTITUDE	LSM/cmd/_/F.TIMESEC.shtml	Timestamp seconds
TIMESEC	SITIMETONE	LSM/cmd/_/F.TIMESEC.shtml	Timestamp seconds
TIMESUB	SIANCILLARY	LSM/cmd/_/F.TIMESUB.shtml	Timestamp microseconds
TIMESUB	SIATTITUDE	LSM/cmd/_/F.TIMESUB.shtml	Timestamp microseconds
tkr_mask	tkr_lrs	LMC/cmd/_/F.tkr_mask.shtml	TKR LRS Mask
TOT_ERR	GbmCalc	LPA/cmd/_/F.TOT_ERR.shtml	GRB Total Error
TOT_ERR	GbmRpt	LPA/cmd/_/F.TOT_ERR.shtml	GRB Total Error
TRACEID	DumpTraceById	LSW/cmd/_/F.TRACEID.shtml	Trace identifier
TRACENAME	DumpTraceByName	LSW/cmd/_/F.TRACENAME.shtml	Trace name
TRANID	CpuReset	LCM/cmd/_/F.TRANID.shtml	Transaction ID to associate with command
TRANID	DirCreate	LFS/cmd/_/F.TRANID.shtml	Transaction ID to associate with command
TRANID	DirDelete	LFS/cmd/_/F.TRANID.shtml	Transaction ID to associate with command
TRANID	DirDump	LFS/cmd/_/F.TRANID.shtml	Transaction ID to associate with command
TRANID	DumpStart	LSW/cmd/_/F.TRANID.shtml	Transaction ID
TRANID	DumpTraceById	LSW/cmd/_/F.TRANID.shtml	Transaction ID
TRANID	DumpTraceByName	LSW/cmd/_/F.TRANID.shtml	Transaction ID
TRANID	FileCopy	LFS/cmd/_/F.TRANID.shtml	Transaction ID to associate with command
TRANID	FileDelete	LFS/cmd/_/F.TRANID.shtml	Transaction ID to associate with command
TRANID	FileDumpCTDB	LFS/cmd/_/F.TRANID.shtml	Transaction ID to associate with command
TRANID	FileDumpSSR	LFS/cmd/_/F.TRANID.shtml	Transaction ID to associate with command

Field (L)	Cmd. Packet (L)	Section	Description (L)
TRANID	ModuleDump	LCM/cmd/_/F.TRANID.shtml	Transaction ID to associate with command
TRANID	Noop	LSW/cmd/_/F.TRANID.shtml	Transaction ID
TRANID	Noop	LSM/cmd/_/F.TRANID.shtml	Transaction ID
TRANID	SetTraceConfig	LSW/cmd/_/F.TRANID.shtml	Transaction ID
TRANID	SysStatus	LFS/cmd/_/F.TRANID.shtml	Transaction ID to associate with command
TRANID	TaskDump	LCM/cmd/_/F.TRANID.shtml	Transaction ID to associate with command
TRG_ALG_16	GbmCalc	LPA/cmd/_/F.TRG_ALG_16.shtml	GRB Trigger Algorithm 16 Bit Member
TRG_ALG_8	GbmCalc	LPA/cmd/_/F.TRG_ALG_8.shtml	GRB Trigger Algorithm 8 Bit Member
TRGID_TSEC	GbmCalc	LPA/cmd/_/F.TRGID_TSEC.shtml	GRB Trigger ID
TRGID_TSEC	GbmClose	LPA/cmd/_/F.TRGID_TSEC.shtml	GRB Trigger ID
TRGID_TSEC	GbmRpt	LPA/cmd/_/F.TRGID_TSEC.shtml	GRB Trigger ID
TRGID_USEC	GbmCalc	LPA/cmd/_/F.TRGID_USEC.shtml	GBM Trigger ID
TRGID_USEC	GbmClose	LPA/cmd/_/F.TRGID_USEC.shtml	GBM Trigger ID
TRGID_USEC	GbmRpt	LPA/cmd/_/F.TRGID_USEC.shtml	GBM Trigger ID
uc	SetActionsAdc	LIH/cmd/_/F.uc.shtml	Unsigned char
ui	DumpLimits	LIH/cmd/_/F.ui.shtml	Unsigned int
ui	SetPersistAdc	LIH/cmd/_/F.ui.shtml	Unsigned int
ui	SetSettleAdc	LIH/cmd/_/F.ui.shtml	Unsigned int
uint	ImageDump	LCM/cmd/_/F.uint.shtml	Unsigned int
us	DumpLimitsAdc	LIH/cmd/_/F.us.shtml	Unsigned short
us	EnableActions	LIH/cmd/_/F.us.shtml	Unsigned short
us	SetActionsAdc	LIH/cmd/_/F.us.shtml	Unsigned short
us	SetLimitsAdc	LIH/cmd/_/F.us.shtml	Unsigned short
us	SetNagTimesAdc	LIH/cmd/_/F.us.shtml	Unsigned short
us	SetPersistAdc	LIH/cmd/_/F.us.shtml	Unsigned short
us	SetSettleAdc	LIH/cmd/_/F.us.shtml	Unsigned short
VALHI	LOAD	LRA/cmd/_/F.VALHI.shtml	Register value high
VALID_FLG	SetDefault	LPA/cmd/_/F.VALID_FLG.shtml	Parameter Valid Flag
VALID_FLG	SetGrb	LPA/cmd/_/F.VALID_FLG.shtml	Parameter Valid Flag
VALLO	LOAD	LRA/cmd/_/F.VALLO.shtml	Register value low
WORD16	CntlStart	LTC/cmd/_/F.WORD16.shtml	Unsigned 16-bit word
WORD16	HtrOnOffCtl	LTC/cmd/_/F.WORD16.shtml	Unsigned 16-bit word
WORD16	ReStart	LTC/cmd/_/F.WORD16.shtml	Unsigned 16-bit word
WORD16	SetMode	LTC/cmd/_/F.WORD16.shtml	Unsigned 16-bit word
WORD16	SetParam	LTC/cmd/_/F.WORD16.shtml	Unsigned 16-bit word
WORD16	SetTlmFreq	LTC/cmd/_/F.WORD16.shtml	Unsigned 16-bit word
WORD16	Start	LTC/cmd/_/F.WORD16.shtml	Unsigned 16-bit word

32 Telecommand Enumeration Index, by Name

Enumeration	Section	Description
BLOCKS	LRA/att/_/E.BLOCKS.shtml	Register block numbers
CMPNTS	LRA/att/_/E.CMPNTS.shtml	Component codes
CPUS	LRA/att/_/E.CPUS.shtml	CPU component values
LCMCMDACTION	LCM/att/_/E.LCMCMDACTION.shtml	ITC Command Actions
LCMCMDCLASS	LCM/att/_/E.LCMCMDCLASS.shtml	ITC Command Classes
LCMCMDLEVEL	LCM/att/_/E.LCMCMDLEVEL.shtml	ITC Command Response Level
LCMDEVICES	LCM/att/_/E.LCMDEVICES.shtml	Enumeration of available devices
LCMENABLES	LCM/att/_/E.LCMENABLES.shtml	A disabled/enabled enumeration
LCMERRCLASS	LCM/att/_/E.LCMERRCLASS.shtml	LCM Error Configuration Classes
LCMERRLEVEL	LCM/att/_/E.LCMERRLEVEL.shtml	LCM Error Handling Level
LCMMSGINTER	LCM/att/_/E.LCMMSGINTER.shtml	MSG output interfaces
LCMMSGLEVEL	LCM/att/_/E.LCMMSGLEVEL.shtml	MSG output level
LCMNODEID	LCM/att/_/E.LCMNODEID.shtml	List of CPU nodes addressable with LCM commands
LCMTASKID	LCM/att/_/E.LCMTASKID.shtml	Discrete list of task IDs
LFILENODEID	FILE/att/_/E.LFILENODEID.shtml	List of CPU nodes addressable with FILE commands
LFSNODEID	LFS/att/_/E.LFSNODEID.shtml	List of CPU nodes addressable with LFS commands
LIHADCACTENABLES	LIH/att/_/E.LIHADCACTENABLES.shtml	Enumeration of action enables
LIHADCACTMSG	LIH/att/_/E.LIHADCACTMSG.shtml	Enumeration of message severity flags
LIHADCLMTSTATES	LIH/att/_/E.LIHADCLMTSTATES.shtml	Enumeration of ADC limit evaluation states
LIHENABLESTATES	LIH/att/_/E.LIHENABLESTATES.shtml	A disabled/enabled enumeration
LSMNODEID	LSM/att/_/E.LSMNODEID.shtml	List of CPU nodes addressable with LSM commands
LSWDEST	LSW/att/_/E.LSWDEST.shtml	Enumerate the possible destinations of a trace dump
LSWNODEID	LSW/att/_/E.LSWNODEID.shtml	List of CPU nodes addressable with LSW commands

33 Telecommand Range Index, by Name

Range	Section	Description
LCMMBZ	LCM/att/_/R.LCMMBZ.shtml	A must-be-zero field
LFILEMBZ	FILE/att/_/R.LFILEMBZ.shtml	A must-be-zero field
LFSMBZ	LFS/att/_/R.LFSMBZ.shtml	A must-be-zero field
LHKAPDRNGDIA	LHK/att/_/R.LHKAPDRNGDIA.shtml	Valid range for mirror diagnostic APIDs
LHKAPIDRNGCMB	LHK/att/_/R.LHKAPIDRNGCMB.shtml	LHK APID Range (combined housekeeping and diagnostic)
LSWMBZ	LSW/att/_/R.LSWMBZ.shtml	A must-be-zero field
STATSTIMELENLIM	LCM/att/_/R.STATSTIMELENLIM.shtml	Limits on the Statistics Timer

34 Telemetry Packet Index, by APID

APID	Tlm. Packet (L)	Section	Description (L)
0x200	LBTHKP	PBC/tlm/_/P.LBTHKP.shtml	Boot housekeeping telemetry
0x20E	LCTDBRTDIAG	CTDB/tlm/_/P.LCTDBRTDIAG.shtml	CTDB 1553 RT Driver Diagnostics
0x210	TemEnvPwr0	LHK/tlm/_/P.TemEnvPwr0.shtml	TEM Power Packet 0
0x211	TemEnvPwr1	LHK/tlm/_/P.TemEnvPwr1.shtml	TEM Power Packet 1
0x212	TemEnvPwr2	LHK/tlm/_/P.TemEnvPwr2.shtml	TEM Power Packet 2
0x213	TemEnvPwr3	LHK/tlm/_/P.TemEnvPwr3.shtml	TEM Power Packet 3
0x214	TemEnvPwr4	LHK/tlm/_/P.TemEnvPwr4.shtml	TEM Power Packet 4
0x215	TemEnvPwr5	LHK/tlm/_/P.TemEnvPwr5.shtml	TEM Power Packet 5
0x216	TemEnvTemp0	LHK/tlm/_/P.TemEnvTemp0.shtml	TEM temperature ADCs for TEMs 0-1
0x217	TemEnvTemp1	LHK/tlm/_/P.TemEnvTemp1.shtml	TEM temperature ADCs for TEMs 2-3
0x218	TemEnvTemp2	LHK/tlm/_/P.TemEnvTemp2.shtml	TEM temperature ADCs for TEMs 4-5
0x219	TemEnvTemp3	LHK/tlm/_/P.TemEnvTemp3.shtml	TEM temperature ADCs for TEMs 6-7
0x21A	TemEnvTemp4	LHK/tlm/_/P.TemEnvTemp4.shtml	TEM temperature ADCs for TEMs 8-9
0x21B	TemEnvTemp5	LHK/tlm/_/P.TemEnvTemp5.shtml	TEM temperature ADCs for TEMs A-B
0x21C	TemEnvTemp6	LHK/tlm/_/P.TemEnvTemp6.shtml	TEM temperature ADCs for TEMs C-D
0x21D	TemEnvTemp7	LHK/tlm/_/P.TemEnvTemp7.shtml	TEM temperature ADCs for TEMs E-F
0x21E	PduEnv0	LHK/tlm/_/P.PduEnv0.shtml	PDU Environmental Packet 0
0x21F	PduEnv1	LHK/tlm/_/P.PduEnv1.shtml	PDU Environmental Packet 1
0x220	PduEnv2	LHK/tlm/_/P.PduEnv2.shtml	PDU Environmental Packet 2
0x221	PduEnv3	LHK/tlm/_/P.PduEnv3.shtml	PDU Environmental Packet 3
0x222	PduEnv4	LHK/tlm/_/P.PduEnv4.shtml	PDU Environmental Packet 4
0x223	PduEnv5	LHK/tlm/_/P.PduEnv5.shtml	PDU Environmental Packet 5
0x224	PduEnv6	LHK/tlm/_/P.PduEnv6.shtml	PDU Environmental Packet 6
0x225	PduEnv7	LHK/tlm/_/P.PduEnv7.shtml	PDU Environmental Packet 7
0x226	AemEnv0	LHK/tlm/_/P.AemEnv0.shtml	AEM Environmental Monitor Packet 0
0x227	Lrs0	LHK/tlm/_/P.Lrs0.shtml	Low-rate Science/LIM State Packet
0x228	CmdCnt0	LHK/tlm/_/P.CmdCnt0.shtml	Command Statistics Packet 0
0x229	CmdCnt1	LHK/tlm/_/P.CmdCnt1.shtml	Command Statistics Packet 1
0x22A	SiuStats	LHK/tlm/_/P.SiuStats.shtml	SIU Statistics
0x22B	Epu0Stats	LHK/tlm/_/P.Epu0Stats.shtml	EPU 0 Statistics
0x22C	Epu1Stats	LHK/tlm/_/P.Epu1Stats.shtml	EPU 1 Statistics
0x22D	Epu2Stats	LHK/tlm/_/P.Epu2Stats.shtml	EPU 2 Statistics
0x22E	LtcData0	LHK/tlm/_/P.LtcData0.shtml	Thermal Control Data Packet 0
0x22F	LtcData1	LHK/tlm/_/P.LtcData1.shtml	Thermal Control Data Packet 1
0x230	LtcData2	LHK/tlm/_/P.LtcData2.shtml	Thermal Control Data Packet 2
0x231	LtcData3	LHK/tlm/_/P.LtcData3.shtml	Thermal Control Data Packet 3
0x232	ItcCfg	LHK/tlm/_/P.ItcCfg.shtml	ITC Configuration
0x233	TopSiu	LHK/tlm/_/P.TopSiu.shtml	TRC Top SIU Monitor Packet
0x234	TopEpu0	LHK/tlm/_/P.TopEpu0.shtml	TRC Top EPU 0 Monitor Packet
0x235	TopEpu1	LHK/tlm/_/P.TopEpu1.shtml	TRC Top EPU 1 Monitor Packet
0x236	TopEpu2	LHK/tlm/_/P.TopEpu2.shtml	TRC Top EPU 2 Monitor Packet
0x238	TemEnvPwr00	LHK/tlm/_/P.TemEnvPwr00.shtml	TEM power ADCs for TEMs 0-3
0x239	TemEnvPwr01	LHK/tlm/_/P.TemEnvPwr01.shtml	TEM power ADCs for TEMs 4-7
0x23A	TemEnvPwr02	LHK/tlm/_/P.TemEnvPwr02.shtml	TEM power ADCs for TEMs 8-11
0x23B	TemEnvPwr03	LHK/tlm/_/P.TemEnvPwr03.shtml	TEM power ADCs for TEMs 12-15
0x23C	AemEnv00	LHK/tlm/_/P.AemEnv00.shtml	AEM environmental quantities for FREE boards 0-5 and the DAB
0x23D	AemEnv01	LHK/tlm/_/P.AemEnv01.shtml	AEM environmental quantities for FREE boards 6-11 and the DAB
0x240	StatusSiu	LHK/tlm/_/P.StatusSiu.shtml	SIU status packet
0x241	StatusEpu0	LHK/tlm/_/P.StatusEpu0.shtml	EPU0 status packet

APID	Tlm. Packet (L)	Section	Description (L)
0x242	StatusEpu1	LHK/tlm/_/P.StatusEpu1.shtml	EPU1 status packet
0x243	StatusEpu2	LHK/tlm/_/P.StatusEpu2.shtml	EPU2 status packet
0x245	TaskCfgSiu	LHK/tlm/_/P.TaskCfgSiu.shtml	ITC/MSG configuration of tasks on SIU
0x246	TaskCfgEpu0	LHK/tlm/_/P.TaskCfgEpu0.shtml	ITC/MSG configuration of tasks on EPU0
0x247	TaskCfgEpu1	LHK/tlm/_/P.TaskCfgEpu1.shtml	ITC/MSG configuration of tasks on EPU1
0x248	TaskCfgEpu2	LHK/tlm/_/P.TaskCfgEpu2.shtml	ITC/MSG configuration of tasks on EPU2
0x24A	LpaDb0Siu	LHK/tlm/_/P.LpaDb0Siu.shtml	LPA filter configuration (based on first LPA_DB instance) (SIU
0x24B	LpaDb0Epu0	LHK/tlm/_/P.LpaDb0Epu0.shtml	LPA filter configuration (based on first LPA_DB instance) (EPU
0x24C	LpaDb0Epu1	LHK/tlm/_/P.LpaDb0Epu1.shtml	LPA filter configuration (based on first LPA_DB instance) (EPU
0x24D	LpaDb0Epu2	LHK/tlm/_/P.LpaDb0Epu2.shtml	LPA filter configuration (based on first LPA_DB instance) (EPU
0x24F	GasuCounts	LHK/tlm/_/P.GasuCounts.shtml	GASU counter packet (both GEM and EBM)
0x250	LatcStatus	LHK/tlm/_/P.LatcStatus.shtml	LATC status packet
0x251	LimStatus	LHK/tlm/_/P.LimStatus.shtml	LIM status/summary packet (including LPA and LCI status)
0x252	CtdbCounts	LHK/tlm/_/P.CtdbCounts.shtml	CTDB (1553) counters
0x253	MiscSlow	LHK/tlm/_/P.MiscSlow.shtml	Miscellaneous nearly static information
0x254	PigStatus	LHK/tlm/_/P.PigStatus.shtml	PIG configuration information
0x261	LBTEPU0HKP	PBC/tlm/_/P.LBTEPU0HKP.shtml	EPU 0 Boot Housekeeping Telemetry
0x262	LBTEPU1HKP	PBC/tlm/_/P.LBTEPU1HKP.shtml	EPU 1 Boot Housekeeping Telemetry
0x263	LBTEPU2HKP	PBC/tlm/_/P.LBTEPU2HKP.shtml	EPU 2 Boot Housekeeping Telemetry
0x270	DiagTemEnvPwr0	LHK/tlm/_/P.DiagTemEnvPwr0.shtml	Diagnostic TEM Power Packet 0
0x271	DiagTemEnvPwr1	LHK/tlm/_/P.DiagTemEnvPwr1.shtml	Diagnostic TEM Power Packet 1
0x272	DiagTemEnvPwr2	LHK/tlm/_/P.DiagTemEnvPwr2.shtml	Diagnostic TEM Power Packet 2
0x273	DiagTemEnvPwr3	LHK/tlm/_/P.DiagTemEnvPwr3.shtml	Diagnostic TEM Power Packet 3
0x274	DiagTemEnvPwr4	LHK/tlm/_/P.DiagTemEnvPwr4.shtml	Diagnostic TEM Power Packet 4
0x275	DiagTemEnvPwr5	LHK/tlm/_/P.DiagTemEnvPwr5.shtml	Diagnostic TEM Power Packet 5
0x276	DiagTemEnvTemp0	LHK/tlm/_/P.DiagTemEnvTemp0.shtml	TEM temperature ADCs for TEMs 0-1
0x277	DiagTemEnvTemp1	LHK/tlm/_/P.DiagTemEnvTemp1.shtml	TEM temperature ADCs for TEMs 2-3
0x278	DiagTemEnvTemp2	LHK/tlm/_/P.DiagTemEnvTemp2.shtml	TEM temperature ADCs for TEMs 4-5
0x279	DiagTemEnvTemp3	LHK/tlm/_/P.DiagTemEnvTemp3.shtml	TEM temperature ADCs for TEMs 6-7
0x27A	DiagTemEnvTemp4	LHK/tlm/_/P.DiagTemEnvTemp4.shtml	TEM temperature ADCs for TEMs 8-9
0x27B	DiagTemEnvTemp5	LHK/tlm/_/P.DiagTemEnvTemp5.shtml	TEM temperature ADCs for TEMs A-B
0x27C	DiagTemEnvTemp6	LHK/tlm/_/P.DiagTemEnvTemp6.shtml	TEM temperature ADCs for TEMs C-D
0x27D	DiagTemEnvTemp7	LHK/tlm/_/P.DiagTemEnvTemp7.shtml	TEM temperature ADCs for TEMs E-F
0x27E	DiagPduEnv0	LHK/tlm/_/P.DiagPduEnv0.shtml	Diagnostic PDU Environmental Packet 0
0x27F	DiagPduEnv1	LHK/tlm/_/P.DiagPduEnv1.shtml	Diagnostic PDU Environmental Packet 1
0x280	DiagPduEnv2	LHK/tlm/_/P.DiagPduEnv2.shtml	Diagnostic PDU Environmental Packet 2
0x281	DiagPduEnv3	LHK/tlm/_/P.DiagPduEnv3.shtml	Diagnostic PDU Environmental Packet 3
0x282	DiagPduEnv4	LHK/tlm/_/P.DiagPduEnv4.shtml	Diagnostic PDU Environmental Packet 4
0x283	DiagPduEnv5	LHK/tlm/_/P.DiagPduEnv5.shtml	Diagnostic PDU Environmental Packet 5
0x284	DiagPduEnv6	LHK/tlm/_/P.DiagPduEnv6.shtml	Diagnostic PDU Environmental Packet 6
0x285	DiagPduEnv7	LHK/tlm/_/P.DiagPduEnv7.shtml	Diagnostic PDU Environmental Packet 7
0x286	DiagAemEnv0	LHK/tlm/_/P.DiagAemEnv0.shtml	Diagnostic AEM Environmental Monitor Packet 0
0x287	DiagLrs0	LHK/tlm/_/P.DiagLrs0.shtml	Diagnostic Low-rate Science/LIM State Packet
0x288	DiagCmdCnt0	LHK/tlm/_/P.DiagCmdCnt0.shtml	Diagnostic Command Statistics Packet 0
0x289	DiagCmdCnt1	LHK/tlm/_/P.DiagCmdCnt1.shtml	Diagnostic Command Statistics Packet 1
0x28A	DiagSiuStats	LHK/tlm/_/P.DiagSiuStats.shtml	Diagnostic SIU Statistics

APID	Tlm. Packet (L)	Section	Description (L)
0x28B	DiagEpu0Stats	LHK/tlm/_/P.DiagEpu0Stats.shtml	Diagnostic EPU 0 Statistics
0x28C	DiagEpu1Stats	LHK/tlm/_/P.DiagEpu1Stats.shtml	Diagnostic EPU 1 Statistics
0x28D	DiagEpu2Stats	LHK/tlm/_/P.DiagEpu2Stats.shtml	Diagnostic EPU 2 Statistics
0x28E	DiagLtcData0	LHK/tlm/_/P.DiagLtcData0.shtml	Diagnostic Thermal Control Data Packet 0
0x28F	DiagLtcData1	LHK/tlm/_/P.DiagLtcData1.shtml	Diagnostic Thermal Control Data Packet 1
0x290	DiagLtcData2	LHK/tlm/_/P.DiagLtcData2.shtml	Diagnostic Thermal Control Data Packet 2
0x291	DiagLtcData3	LHK/tlm/_/P.DiagLtcData3.shtml	Diagnostic Thermal Control Data Packet 3
0x292	DiagItcCfg	LHK/tlm/_/P.DiagItcCfg.shtml	Diagnostic ITC Configuration
0x293	DiagTopSiu	LHK/tlm/_/P.DiagTopSiu.shtml	Diagnostic TRC Top SIU Monitor Packet
0x294	DiagTopEpu0	LHK/tlm/_/P.DiagTopEpu0.shtml	Diagnostic TRC Top EPU 0 Monitor Packet
0x295	DiagTopEpu1	LHK/tlm/_/P.DiagTopEpu1.shtml	Diagnostic TRC Top EPU 1 Monitor Packet
0x296	DiagTopEpu2	LHK/tlm/_/P.DiagTopEpu2.shtml	Diagnostic TRC Top EPU 2 Monitor Packet
0x298	DiagTemEnvPwr00	LHK/tlm/_/P.DiagTemEnvPwr00.shtml	Diagnostic TEM power ADCs for TEMs 0-3
0x299	DiagTemEnvPwr01	LHK/tlm/_/P.DiagTemEnvPwr01.shtml	Diagnostic TEM power ADCs for TEMs 4-7
0x29A	DiagTemEnvPwr02	LHK/tlm/_/P.DiagTemEnvPwr02.shtml	Diagnostic TEM power ADCs for TEMs 8-11
0x29B	DiagTemEnvPwr03	LHK/tlm/_/P.DiagTemEnvPwr03.shtml	Diagnostic TEM power ADCs for TEMs 12-15
0x29C	DiagAemEnv00	LHK/tlm/_/P.DiagAemEnv00.shtml	Diagnostic AEM environmental quantities for FREE boards 0-5 an
0x29D	DiagAemEnv01	LHK/tlm/_/P.DiagAemEnv01.shtml	Diagnostic AEM environmental quantities for FREE boards 6-11 a
0x2A0	DiagStatusSiu	LHK/tlm/_/P.DiagStatusSiu.shtml	Diagnostic SIU status packet
0x2A1	DiagStatusEpu0	LHK/tlm/_/P.DiagStatusEpu0.shtml	Diagnostic EPU0 status packet
0x2A2	DiagStatusEpu1	LHK/tlm/_/P.DiagStatusEpu1.shtml	Diagnostic EPU1 status packet
0x2A3	DiagStatusEpu2	LHK/tlm/_/P.DiagStatusEpu2.shtml	Diagnostic EPU2 status packet
0x2A5	DiagTaskCfgSiu	LHK/tlm/_/P.DiagTaskCfgSiu.shtml	Diagnostic ITC/MSG configuration of tasks on SIU
0x2A6	DiagTaskCfgEpu0	LHK/tlm/_/P.DiagTaskCfgEpu0.shtml	Diagnostic ITC/MSG configuration of tasks on EPU0
0x2A7	DiagTaskCfgEpu1	LHK/tlm/_/P.DiagTaskCfgEpu1.shtml	Diagnostic ITC/MSG configuration of tasks on EPU1
0x2A8	DiagTaskCfgEpu2	LHK/tlm/_/P.DiagTaskCfgEpu2.shtml	Diagnostic ITC/MSG configuration of tasks on EPU2
0x2AA	DiagLpaDb0Siu	LHK/tlm/_/P.DiagLpaDb0Siu.shtml	Diagnostic LPA filter configuration (based on first LPA_DB ins
0x2AB	DiagLpaDb0Epu0	LHK/tlm/_/P.DiagLpaDb0Epu0.shtml	Diagnostic LPA filter configuration (based on first LPA_DB ins
0x2AC	DiagLpaDb0Epu1	LHK/tlm/_/P.DiagLpaDb0Epu1.shtml	Diagnostic LPA filter configuration (based on first LPA_DB ins
0x2AD	DiagLpaDb0Epu2	LHK/tlm/_/P.DiagLpaDb0Epu2.shtml	Diagnostic LPA filter configuration (based on first LPA_DB ins
0x2AF	DiagGasuCounts	LHK/tlm/_/P.DiagGasuCounts.shtml	Diagnostic GASU counter packet (both GEM and EBM)
0x2B0	DiagLatcStatus	LHK/tlm/_/P.DiagLatcStatus.shtml	Diagnostic LATC status packet
0x2B1	DiagLimStatus	LHK/tlm/_/P.DiagLimStatus.shtml	Diagnostic LIM status/summary packet (including LPA and LCI status)
0x2B2	DiagCtdbCounts	LHK/tlm/_/P.DiagCtdbCounts.shtml	Diagnostic CTDB (1553) counters
0x2B3	DiagMiscSlow	LHK/tlm/_/P.DiagMiscSlow.shtml	Diagnostic Miscellaneous nearly static information
0x2B4	DiagPigStatus	LHK/tlm/_/P.DiagPigStatus.shtml	Diagnostic PIG configuration information
0x2C1	lmc_cal	LMC/tlm/_/P.lmc_cal.shtml	CAL Low Rate Science Counters
0x2C2	lmc_tkr	LMC/tlm/_/P.lmc_tkr.shtml	TKR Low Rate Science Counters
0x2C3	lmc_acd	LMC/tlm/_/P.lmc_acd.shtml	ACD Tile Counters

APID	Tlm. Packet (L)	Section	Description (L)
0x2C4	lmc_dead	LMC/tlm/_/P.lmc_dead.shtml	TEM Deadtime Low Rate Science Counters
0x2C6	LimitAdc	LIH/tlm/_/P.LimitAdc.shtml	Limits/actions associated with a single ADC
0x2CE	MemoryError	LCM/tlm/_/P.MemoryError.shtml	A memory error report
0x2CF	PciError	LCM/tlm/_/P.PciError.shtml	A PCI error report
0x2D0	CmdConfirm	ITC/tlm/_/P.CmdConfirm.shtml	Response to command from spacecraft
0x2D1	LLCMMODLIST	LCM/tlm/_/P.LLCMMODLIST.shtml	Module Status Dump
0x2D2	LLCMTASKLIST	LCM/tlm/_/P.LLCMTASKLIST.shtml	Task Status Dump
0x2D3	LLCMPCIERR	LCM/tlm/_/P.LLCMPCIERR.shtml	RAD750 PCI Error Report
0x2D4	LLCMMEMERR	LCM/tlm/_/P.LLCMMEMERR.shtml	RAD750 MEM Error Report
0x2D5	LCMMSGOUTC	LCM/tlm/_/P.LCMMSGOUTC.shtml	CTDB MSG Output
0x2D8	TERMINATE	LCI/tlm/_/P.TERMINATE.shtml	Packet containing status of calibration
0x2DA	DiagLTC	LTC/tlm/_/P.DiagLTC.shtml	LAT Thermal Control diagnostic telemetry
0x2E0	SIUCFG	LPA/tlm/_/P.SIUCFG.shtml	LPA SIU Configuration Status Packet
0x2E1	EPU0CFG	LPA/tlm/_/P.EPU0CFG.shtml	LPA EPU0 Configuration Status Packet
0x2E2	EPU1CFG	LPA/tlm/_/P.EPU1CFG.shtml	LPA EPU1 Configuration Status Packet
0x2E3	EPU2CFG	LPA/tlm/_/P.EPU2CFG.shtml	LPA EPU2 Configuration Status Packet
0x2F1	LRAREGDATA	LRA/tlm/_/P.LRAREGDATA.shtml	Register data
0x30F	State	LIM/tlm/_/P.State.shtml	Current LIM State
0x311	LMEMPOOLDATA	MEM/tlm/_/P.LMEMPOOLDATA.shtml	Memory Pool Statistics Dump
0x312	LMEMSYMVAL	MEM/tlm/_/P.LMEMSYMVAL.shtml	Symbol Value Dump
0x314	LMEMSIUDATA	MEM/tlm/_/P.LMEMSIUDATA.shtml	SIU Memory Dump Data to 1553
0x315	LMEMEPU0DATA	MEM/tlm/_/P.LMEMEPU0DATA.shtml	EPU 0 Memory Dump Data
0x316	LMEMEPU1DATA	MEM/tlm/_/P.LMEMEPU1DATA.shtml	EPU 1 Memory Dump Data
0x317	LMEMEPU2DATA	MEM/tlm/_/P.LMEMEPU2DATA.shtml	EPU 2 Memory Dump Data
0x318	LLFSDIRLIST	LFS/tlm/_/P.LLFSDIRLIST.shtml	Directory Listing Report
0x319	LLFSROOTLIST	LFS/tlm/_/P.LLFSROOTLIST.shtml	Root Listing Report
0x31A	LLFSSYSLIST	LFS/tlm/_/P.LLFSSYSLIST.shtml	File System Status Report
0x31B	LLFSDUMPCTDB	LFS/tlm/_/P.LLFSDUMPCTDB.shtml	File Dump Data CTDB
0x31C	LLFSDIREMPTY	LFS/tlm/_/P.LLFSDIREMPTY.shtml	Directory Empty Report
0x341	ALRTTRG	LPA/tlm/_/P.ALRTTRG.shtml	LAT Burst Trigger Alert Telemetry
0x342	ALRTUPDATE	LPA/tlm/_/P.ALRTUPDATE.shtml	LAT Burst Update Alert Telemetry
0x343	ALRTCLOSE	LPA/tlm/_/P.ALRTCLOSE.shtml	LAT Burst Closeout Alert Telemetry
0x344	Repoint_Request	LIM/tlm/_/P.Repoint_Request.shtml	ARR Notification
0x345	Repoint_Response	LIM/tlm/_/P.Repoint_Response.shtml	ARR Response Notification
0x346	Load_Shed_Alert	LIM/tlm/_/P.Load_Shed_Alert.shtml	Load Shed Alert
0x354	LimitAlert	LIH/tlm/_/P.LimitAlert.shtml	ADC outside limits alert packet
0x3A0	LRASSRDATA	LRA/tlm/_/P.LRASSRDATA.shtml	LRA data returned via the SSR
0x3A1	lmc_ssr	LMC/tlm/_/P.lmc_ssr.shtml	Multiplexed counters returned via the SSR
0x3A2	LimitAll	LIH/tlm/_/P.LimitAll.shtml	A complete limit table dump (compressed)
0x3B6	SIUEVTSTAT	LPA/tlm/_/P.SIUEVTSTAT.shtml	SIU Event Statistics
0x3B7	EPU0EVTSTAT	LPA/tlm/_/P.EPU0EVTSTAT.shtml	EPU0 Event Statistics
0x3B8	EPU1EVTSTAT	LPA/tlm/_/P.EPU1EVTSTAT.shtml	EPU1 Event Statistics
0x3B9	EPU2EVTSTAT	LPA/tlm/_/P.EPU2EVTSTAT.shtml	EPU2 Event Statistics
0x3BB	SIUEVTDAT	LPA/tlm/_/P.SIUEVTDAT.shtml	LPA SIU Event Data
0x3BC	EPU0EVTDAT	LPA/tlm/_/P.EPU0EVTDAT.shtml	LPA EPU0 Event Data
0x3BD	EPU1EVTDAT	LPA/tlm/_/P.EPU1EVTDAT.shtml	LPA EPU1 Event Data
0x3BE	EPU2EVTDAT	LPA/tlm/_/P.EPU2EVTDAT.shtml	LPA EPU2 Event Data
0x3C0	LCMMSGSSRSI	LCM/tlm/_/P.LCMMSGSSRSI.shtml	SSR MSG Output SIU
0x3C1	LCMMSGSSRE0	LCM/tlm/_/P.LCMMSGSSRE0.shtml	SSR MSG Output EPU0
0x3C2	LCMMSGSSRE1	LCM/tlm/_/P.LCMMSGSSRE1.shtml	SSR MSG Output EPU1
0x3C3	LCMMSGSSRE2	LCM/tlm/_/P.LCMMSGSSRE2.shtml	SSR MSG Output EPU2
0x3C4	LCMMSGSSRE3	LCM/tlm/_/P.LCMMSGSSRE3.shtml	SSR MSG Output EPU3

APID	Tlm. Packet (L)	Section	Description (L)
0x3C5	LCISIUEVTDAT	LCI/tlm/_/P.LCISIUEVTDAT.shtml	LCI SIU event data
0x3C6	LCIEPU0EVTDAT	LCI/tlm/_/P.LCIEPU0EVTDAT.shtml	LCI EPU0 event data.
0x3C7	LCIEPU1EVTDAT	LCI/tlm/_/P.LCIEPU1EVTDAT.shtml	LCI EPU1 event data
0x3C8	LCIEPU2EVTDAT	LCI/tlm/_/P.LCIEPU2EVTDAT.shtml	LCI EPU2 event data
0x3CF	LFSDUMPSSRSI	LFS/tlm/_/P.LFSDUMPSSRSI.shtml	File Dump Data SSR SIU
0x3D0	LFSDUMPSSRE0	LFS/tlm/_/P.LFSDUMPSSRE0.shtml	File Dump Data SSR EPU0
0x3D1	LFSDUMPSSRE1	LFS/tlm/_/P.LFSDUMPSSRE1.shtml	File Dump Data SSR EPU1
0x3D2	LFSDUMPSSRE2	LFS/tlm/_/P.LFSDUMPSSRE2.shtml	File Dump Data SSR EPU2
0x3D3	LFSDUMPSSRE3	LFS/tlm/_/P.LFSDUMPSSRE3.shtml	File Dump Data SSR EPU3
0x3D4	LMEMSSRSDATA	MEM/tlm/_/P.LMEMSSRSDATA.shtml	SIU Memory Dump Data to SSR
0x3D5	LMEMSSR0DATA	MEM/tlm/_/P.LMEMSSR0DATA.shtml	EPU 0 Memory Dump Data to SSR
0x3D6	LMEMSSR1DATA	MEM/tlm/_/P.LMEMSSR1DATA.shtml	EPU 1 Memory Dump Data to SSR
0x3D7	LMEMSSR2DATA	MEM/tlm/_/P.LMEMSSR2DATA.shtml	EPU 2 Memory Dump Data to SSR
0x3D9	ASCSIU	EMP/tlm/_/P.ASCSIU.shtml	ASC stats from ACD/GEM processed on SIU
0x3DA	ASCEPU0	EMP/tlm/_/P.ASCEPU0.shtml	ASC stats from ACD/GEM processed on EPU0
0x3DB	ASCEPU1	EMP/tlm/_/P.ASCEPU1.shtml	ASC stats from ACD/GEM processed on EPU1
0x3DC	ASCEPU2	EMP/tlm/_/P.ASCEPU2.shtml	ASC stats from ACD/GEM processed on EPU2
0x3DD	ASCEPU3	EMP/tlm/_/P.ASCEPU3.shtml	ASC stats from ACD/GEM processed on EPU3
0x3DE	STATSSIU	LCM/tlm/_/P.STATSSIU.shtml	LCB and other stats processed on SIU
0x3DF	STATSEPU0	LCM/tlm/_/P.STATSEPU0.shtml	LCB and other stats processed on EPU0
0x3E0	STATSEPU1	LCM/tlm/_/P.STATSEPU1.shtml	LCB and other stats processed on EPU1
0x3E1	STATSEPU2	LCM/tlm/_/P.STATSEPU2.shtml	LCB and other stats processed on EPU2
0x3E2	STATSEPU3	LCM/tlm/_/P.STATSEPU3.shtml	LCB and other stats processed on EPU3
0x3E3	LSWSNAPSIU	LSW/tlm/_/P.LSWSNAPSIU.shtml	Dump of a code trace
0x3E4	LSWSNAPEPU0	LSW/tlm/_/P.LSWSNAPEPU0.shtml	Dump of a code trace
0x3E5	LSWSNAPEPU1	LSW/tlm/_/P.LSWSNAPEPU1.shtml	Dump of a code trace
0x3E6	LSWSNAPEPU2	LSW/tlm/_/P.LSWSNAPEPU2.shtml	Dump of a code trace
0x3E7	LSWSNAPEPU3	LSW/tlm/_/P.LSWSNAPEPU3.shtml	Dump of a code trace
0x3E8	LCMIMAGESIU	LCM/tlm/_/P.LCMIMAGESIU.shtml	Dump of SIU image information
0x3E9	LCMIMAGEEPU0	LCM/tlm/_/P.LCMIMAGEEPU0.shtml	Dump of EPU0 image information
0x3EA	LCMIMAGEEPU1	LCM/tlm/_/P.LCMIMAGEEPU1.shtml	Dump of EPU1 image information
0x3EB	LCMIMAGEEPU2	LCM/tlm/_/P.LCMIMAGEEPU2.shtml	Dump of EPU2 image information
0x3EC	LCMIMAGEEPU3	LCM/tlm/_/P.LCMIMAGEEPU3.shtml	Dump of EPU3 image information
0x3FC	MAGIC7	LSM/tlm/_/P.MAGIC7.shtml	Output of Magic 7 cmds into Science Data
0x3FD	LATCDATA	LATC/tlm/_/P.LATCDATA.shtml	Returned LATC data
0x3FE	PIGDATA	PIG/tlm/_/P.PIGDATA.shtml	Returned PIG data

35 Telemetry Packet Index, by Name (LCAT)

Tlm. Packet (L)	APID	Section	Description (L)
AemEnv00	0x23C	LHK/tlm/_/P.AemEnv00.shtml	AEM environmental quantities for FREE boards 0-5 and the DAB
AemEnv01	0x23D	LHK/tlm/_/P.AemEnv01.shtml	AEM environmental quantities for FREE boards 6-11 and the DAB
AemEnv0	0x226	LHK/tlm/_/P.AemEnv0.shtml	AEM Environmental Monitor Packet 0
ALRTCLOSE	0x343	LPA/tlm/_/P.ALRTCLOSE.shtml	LAT Burst Closeout Alert Telemetry
ALRTTRG	0x341	LPA/tlm/_/P.ALRTTRG.shtml	LAT Burst Trigger Alert Telemetry
ALRTUPDATE	0x342	LPA/tlm/_/P.ALRTUPDATE.shtml	LAT Burst Update Alert Telemetry
ASCEPU0	0x3DA	EMP/tlm/_/P.ASCEPU0.shtml	ASC stats from ACD/GEM processed on EPU0
ASCEPU1	0x3DB	EMP/tlm/_/P.ASCEPU1.shtml	ASC stats from ACD/GEM processed on EPU1
ASCEPU2	0x3DC	EMP/tlm/_/P.ASCEPU2.shtml	ASC stats from ACD/GEM processed on EPU2
ASCEPU3	0x3DD	EMP/tlm/_/P.ASCEPU3.shtml	ASC stats from ACD/GEM processed on EPU3
ASCSIU	0x3D9	EMP/tlm/_/P.ASCSIU.shtml	ASC stats from ACD/GEM processed on SIU
CmdCnt0	0x228	LHK/tlm/_/P.CmdCnt0.shtml	Command Statistics Packet 0
CmdCnt1	0x229	LHK/tlm/_/P.CmdCnt1.shtml	Command Statistics Packet 1
CmdConfirm	0x2D0	ITC/tlm/_/P.CmdConfirm.shtml	Response to command from spacecraft
CtdbCounts	0x252	LHK/tlm/_/P.CtdbCounts.shtml	CTDB (1553) counters
DiagAemEnv00	0x29C	LHK/tlm/_/P.DiagAemEnv00.shtml	Diagnostic AEM environmental quantities for FREE boards 0-5 an
DiagAemEnv01	0x29D	LHK/tlm/_/P.DiagAemEnv01.shtml	Diagnostic AEM environmental quantities for FREE boards 6-11 a
DiagAemEnv0	0x286	LHK/tlm/_/P.DiagAemEnv0.shtml	Diagnostic AEM Environmental Monitor Packet 0
DiagCmdCnt0	0x288	LHK/tlm/_/P.DiagCmdCnt0.shtml	Diagnostic Command Statistics Packet 0
DiagCmdCnt1	0x289	LHK/tlm/_/P.DiagCmdCnt1.shtml	Diagnostic Command Statistics Packet 1
DiagCtdbCounts	0x2B2	LHK/tlm/_/P.DiagCtdbCounts.shtml	Diagnostic CTDB (1553) counters
DiagEpu0Stats	0x28B	LHK/tlm/_/P.DiagEpu0Stats.shtml	Diagnostic EPU 0 Statistics
DiagEpu1Stats	0x28C	LHK/tlm/_/P.DiagEpu1Stats.shtml	Diagnostic EPU 1 Statistics
DiagEpu2Stats	0x28D	LHK/tlm/_/P.DiagEpu2Stats.shtml	Diagnostic EPU 2 Statistics
DiagGasuCounts	0x2AF	LHK/tlm/_/P.DiagGasuCounts.shtml	Diagnostic GASU counter packet (both GEM and EBM)
DiagItcCfg	0x292	LHK/tlm/_/P.DiagItcCfg.shtml	Diagnostic ITC Configuration
DiagLatcStatus	0x2B0	LHK/tlm/_/P.DiagLatcStatus.shtml	Diagnostic LATC status packet
DiagLimStatus	0x2B1	LHK/tlm/_/P.DiagLimStatus.shtml	Diagnostic LIM status/summary packet (including LPA and LCI status)
DiagLpaDb0Epu0	0x2AB	LHK/tlm/_/P.DiagLpaDb0Epu0.shtml	Diagnostic LPA filter configuration (based on first LPA_DB ins
DiagLpaDb0Epu1	0x2AC	LHK/tlm/_/P.DiagLpaDb0Epu1.shtml	Diagnostic LPA filter configuration (based on first LPA_DB ins
DiagLpaDb0Epu2	0x2AD	LHK/tlm/_/P.DiagLpaDb0Epu2.shtml	Diagnostic LPA filter configuration (based on first LPA_DB ins
DiagLpaDb0Siu	0x2AA	LHK/tlm/_/P.DiagLpaDb0Siu.shtml	Diagnostic LPA filter configuration (based on first LPA_DB ins
DiagLrs0	0x287	LHK/tlm/_/P.DiagLrs0.shtml	Diagnostic Low-rate Science/LIM State Packet
DiagLTC	0x2DA	LTC/tlm/_/P.DiagLTC.shtml	LAT Thermal Control diagnostic telemetry
DiagLtcData0	0x28E	LHK/tlm/_/P.DiagLtcData0.shtml	Diagnostic Thermal Control Data Packet 0
DiagLtcData1	0x28F	LHK/tlm/_/P.DiagLtcData1.shtml	Diagnostic Thermal Control Data Packet 1
DiagLtcData2	0x290	LHK/tlm/_/P.DiagLtcData2.shtml	Diagnostic Thermal Control Data Packet 2
DiagLtcData3	0x291	LHK/tlm/_/P.DiagLtcData3.shtml	Diagnostic Thermal Control Data Packet 3
DiagMiscSlow	0x2B3	LHK/tlm/_/P.DiagMiscSlow.shtml	Diagnostic Miscellaneous nearly static information

Tlm. Packet (L)	APID	Section	Description (L)
DiagPduEnv0	0x27E	LHK/tlm/_/P.DiagPduEnv0.shtml	Diagnostic PDU Environmental Packet 0
DiagPduEnv1	0x27F	LHK/tlm/_/P.DiagPduEnv1.shtml	Diagnostic PDU Environmental Packet 1
DiagPduEnv2	0x280	LHK/tlm/_/P.DiagPduEnv2.shtml	Diagnostic PDU Environmental Packet 2
DiagPduEnv3	0x281	LHK/tlm/_/P.DiagPduEnv3.shtml	Diagnostic PDU Environmental Packet 3
DiagPduEnv4	0x282	LHK/tlm/_/P.DiagPduEnv4.shtml	Diagnostic PDU Environmental Packet 4
DiagPduEnv5	0x283	LHK/tlm/_/P.DiagPduEnv5.shtml	Diagnostic PDU Environmental Packet 5
DiagPduEnv6	0x284	LHK/tlm/_/P.DiagPduEnv6.shtml	Diagnostic PDU Environmental Packet 6
DiagPduEnv7	0x285	LHK/tlm/_/P.DiagPduEnv7.shtml	Diagnostic PDU Environmental Packet 7
DiagPigStatus	0x2B4	LHK/tlm/_/P.DiagPigStatus.shtml	Diagnostic PIG configuration information
DiagSiuStats	0x28A	LHK/tlm/_/P.DiagSiuStats.shtml	Diagnostic SIU Statistics
DiagStatusEpu0	0x2A1	LHK/tlm/_/P.DiagStatusEpu0.shtml	Diagnostic EPU0 status packet
DiagStatusEpu1	0x2A2	LHK/tlm/_/P.DiagStatusEpu1.shtml	Diagnostic EPU1 status packet
DiagStatusEpu2	0x2A3	LHK/tlm/_/P.DiagStatusEpu2.shtml	Diagnostic EPU2 status packet
DiagStatusSiu	0x2A0	LHK/tlm/_/P.DiagStatusSiu.shtml	Diagnostic SIU status packet
DiagTaskCfgEpu0	0x2A6	LHK/tlm/_/P.DiagTaskCfgEpu0.shtml	Diagnostic ITC/MSG configuration of tasks on EPU0
DiagTaskCfgEpu1	0x2A7	LHK/tlm/_/P.DiagTaskCfgEpu1.shtml	Diagnostic ITC/MSG configuration of tasks on EPU1
DiagTaskCfgEpu2	0x2A8	LHK/tlm/_/P.DiagTaskCfgEpu2.shtml	Diagnostic ITC/MSG configuration of tasks on EPU2
DiagTaskCfgSiu	0x2A5	LHK/tlm/_/P.DiagTaskCfgSiu.shtml	Diagnostic ITC/MSG configuration of tasks on SIU
DiagTemEnvPwr00	0x298	LHK/tlm/_/P.DiagTemEnvPwr00.shtml	Diagnostic TEM power ADCs for TEMs 0-3
DiagTemEnvPwr01	0x299	LHK/tlm/_/P.DiagTemEnvPwr01.shtml	Diagnostic TEM power ADCs for TEMs 4-7
DiagTemEnvPwr02	0x29A	LHK/tlm/_/P.DiagTemEnvPwr02.shtml	Diagnostic TEM power ADCs for TEMs 8-11
DiagTemEnvPwr03	0x29B	LHK/tlm/_/P.DiagTemEnvPwr03.shtml	Diagnostic TEM power ADCs for TEMs 12-15
DiagTemEnvPwr0	0x270	LHK/tlm/_/P.DiagTemEnvPwr0.shtml	Diagnostic TEM Power Packet 0
DiagTemEnvPwr1	0x271	LHK/tlm/_/P.DiagTemEnvPwr1.shtml	Diagnostic TEM Power Packet 1
DiagTemEnvPwr2	0x272	LHK/tlm/_/P.DiagTemEnvPwr2.shtml	Diagnostic TEM Power Packet 2
DiagTemEnvPwr3	0x273	LHK/tlm/_/P.DiagTemEnvPwr3.shtml	Diagnostic TEM Power Packet 3
DiagTemEnvPwr4	0x274	LHK/tlm/_/P.DiagTemEnvPwr4.shtml	Diagnostic TEM Power Packet 4
DiagTemEnvPwr5	0x275	LHK/tlm/_/P.DiagTemEnvPwr5.shtml	Diagnostic TEM Power Packet 5
DiagTemEnvTemp0	0x276	LHK/tlm/_/P.DiagTemEnvTemp0.shtml	TEM temperature ADCs for TEMs 0-1
DiagTemEnvTemp1	0x277	LHK/tlm/_/P.DiagTemEnvTemp1.shtml	TEM temperature ADCs for TEMs 2-3
DiagTemEnvTemp2	0x278	LHK/tlm/_/P.DiagTemEnvTemp2.shtml	TEM temperature ADCs for TEMs 4-5
DiagTemEnvTemp3	0x279	LHK/tlm/_/P.DiagTemEnvTemp3.shtml	TEM temperature ADCs for TEMs 6-7
DiagTemEnvTemp4	0x27A	LHK/tlm/_/P.DiagTemEnvTemp4.shtml	TEM temperature ADCs for TEMs 8-9
DiagTemEnvTemp5	0x27B	LHK/tlm/_/P.DiagTemEnvTemp5.shtml	TEM temperature ADCs for TEMs A-B
DiagTemEnvTemp6	0x27C	LHK/tlm/_/P.DiagTemEnvTemp6.shtml	TEM temperature ADCs for TEMs C-D
DiagTemEnvTemp7	0x27D	LHK/tlm/_/P.DiagTemEnvTemp7.shtml	TEM temperature ADCs for TEMs E-F
DiagTopEpu0	0x294	LHK/tlm/_/P.DiagTopEpu0.shtml	Diagnostic TRC Top EPU 0 Monitor Packet
DiagTopEpu1	0x295	LHK/tlm/_/P.DiagTopEpu1.shtml	Diagnostic TRC Top EPU 1 Monitor Packet
DiagTopEpu2	0x296	LHK/tlm/_/P.DiagTopEpu2.shtml	Diagnostic TRC Top EPU 2 Monitor Packet
DiagTopSiu	0x293	LHK/tlm/_/P.DiagTopSiu.shtml	Diagnostic TRC Top SIU Monitor Packet
EPU0CFG	0x2E1	LPA/tlm/_/P.EPU0CFG.shtml	LPA EPU0 Configuration Status Packet
EPU0EVTDAT	0x3BC	LPA/tlm/_/P.EPU0EVTDAT.shtml	LPA EPU0 Event Data
EPU0EVTSTAT	0x3B7	LPA/tlm/_/P.EPU0EVTSTAT.shtml	EPU0 Event Statistics
Epu0Stats	0x22B	LHK/tlm/_/P.Epu0Stats.shtml	EPU 0 Statistics
EPU1CFG	0x2E2	LPA/tlm/_/P.EPU1CFG.shtml	LPA EPU1 Configuration Status Packet
EPU1EVTDAT	0x3BD	LPA/tlm/_/P.EPU1EVTDAT.shtml	LPA EPU1 Event Data
EPU1EVTSTAT	0x3B8	LPA/tlm/_/P.EPU1EVTSTAT.shtml	EPU1 Event Statistics
Epu1Stats	0x22C	LHK/tlm/_/P.Epu1Stats.shtml	EPU 1 Statistics

Tlm. Packet (L)	APID	Section	Description (L)
EPU2CFG	0x2E3	LPA/tlm/_/P.EPU2CFG.shtml	LPA EPU2 Configuration Status Packet
EPU2EVTDAT	0x3BE	LPA/tlm/_/P.EPU2EVTDAT.shtml	LPA EPU2 Event Data
EPU2EVTSTAT	0x3B9	LPA/tlm/_/P.EPU2EVTSTAT.shtml	EPU2 Event Statistics
Epu2Stats	0x22D	LHK/tlm/_/P.Epu2Stats.shtml	EPU 2 Statistics
GasuCounts	0x24F	LHK/tlm/_/P.GasuCounts.shtml	GASU counter packet (both GEM and EBM)
ItcCfg	0x232	LHK/tlm/_/P.ItcCfg.shtml	ITC Configuration
LATCDATA	0x3FD	LATC/tlm/_/P.LATCDATA.shtml	Returned LATC data
LatcStatus	0x250	LHK/tlm/_/P.LatcStatus.shtml	LATC status packet
LBTEPU0HKP	0x261	PBC/tlm/_/P.LBTEPU0HKP.shtml	EPU 0 Boot Housekeeping Telemetry
LBTEPU1HKP	0x262	PBC/tlm/_/P.LBTEPU1HKP.shtml	EPU 1 Boot Housekeeping Telemetry
LBTEPU2HKP	0x263	PBC/tlm/_/P.LBTEPU2HKP.shtml	EPU 2 Boot Housekeeping Telemetry
LBTHKP	0x200	PBC/tlm/_/P.LBTHKP.shtml	Boot housekeeping telemetry
LCIEPU0EVTDAT	0x3C6	LCI/tlm/_/P.LCIEPU0EVTDAT.shtml	LCI EPU0 event data.
LCIEPU1EVTDAT	0x3C7	LCI/tlm/_/P.LCIEPU1EVTDAT.shtml	LCI EPU1 event data
LCIEPU2EVTDAT	0x3C8	LCI/tlm/_/P.LCIEPU2EVTDAT.shtml	LCI EPU2 event data
LCISIUEVTDAT	0x3C5	LCI/tlm/_/P.LCISIUEVTDAT.shtml	LCI SIU event data
LCMIMAGEEPU0	0x3E9	LCM/tlm/_/P.LCMIMAGEEPU0.shtml	Dump of EPU0 image information
LCMIMAGEEPU1	0x3EA	LCM/tlm/_/P.LCMIMAGEEPU1.shtml	Dump of EPU1 image information
LCMIMAGEEPU2	0x3EB	LCM/tlm/_/P.LCMIMAGEEPU2.shtml	Dump of EPU2 image information
LCMIMAGEEPU3	0x3EC	LCM/tlm/_/P.LCMIMAGEEPU3.shtml	Dump of EPU3 image information
LCMIMAGESIU	0x3E8	LCM/tlm/_/P.LCMIMAGESIU.shtml	Dump of SIU image information
LCMMSGOUTC	0x2D5	LCM/tlm/_/P.LCMMSGOUTC.shtml	CTDB MSG Output
LCMMSGSSRE0	0x3C1	LCM/tlm/_/P.LCMMSGSSRE0.shtml	SSR MSG Output EPU0
LCMMSGSSRE1	0x3C2	LCM/tlm/_/P.LCMMSGSSRE1.shtml	SSR MSG Output EPU1
LCMMSGSSRE2	0x3C3	LCM/tlm/_/P.LCMMSGSSRE2.shtml	SSR MSG Output EPU2
LCMMSGSSRE3	0x3C4	LCM/tlm/_/P.LCMMSGSSRE3.shtml	SSR MSG Output EPU3
LCMMSGSSRSI	0x3C0	LCM/tlm/_/P.LCMMSGSSRSI.shtml	SSR MSG Output SIU
LCTDBRTDIAG	0x20E	CTDB/tlm/_/P.LCTDBRTDIAG.shtml	CTDB 1553 RT Driver Diagnostics
LFSDUMPSSRE0	0x3D0	LFS/tlm/_/P.LFSDUMPSSRE0.shtml	File Dump Data SSR EPU0
LFSDUMPSSRE1	0x3D1	LFS/tlm/_/P.LFSDUMPSSRE1.shtml	File Dump Data SSR EPU1
LFSDUMPSSRE2	0x3D2	LFS/tlm/_/P.LFSDUMPSSRE2.shtml	File Dump Data SSR EPU2
LFSDUMPSSRE3	0x3D3	LFS/tlm/_/P.LFSDUMPSSRE3.shtml	File Dump Data SSR EPU3
LFSDUMPSSRSI	0x3CF	LFS/tlm/_/P.LFSDUMPSSRSI.shtml	File Dump Data SSR SIU
LimitAdc	0x2C6	LIH/tlm/_/P.LimitAdc.shtml	Limits/actions associated with a single ADC
LimitAlert	0x354	LIH/tlm/_/P.LimitAlert.shtml	ADC outside limits alert packet
LimitAll	0x3A2	LIH/tlm/_/P.LimitAll.shtml	A complete limit table dump (compressed)
LimStatus	0x251	LHK/tlm/_/P.LimStatus.shtml	LIM status/summary packet (including LPA and LCI status)
LLCMMEMERR	0x2D4	LCM/tlm/_/P.LLCMMEMERR.shtml	RAD750 MEM Error Report
LLCMMODLIST	0x2D1	LCM/tlm/_/P.LLCMMODLIST.shtml	Module Status Dump
LLCMPCIERR	0x2D3	LCM/tlm/_/P.LLCMPCIERR.shtml	RAD750 PCI Error Report
LLCMTASKLIST	0x2D2	LCM/tlm/_/P.LLCMTASKLIST.shtml	Task Status Dump
LLFSDIREMPTY	0x31C	LFS/tlm/_/P.LLFSDIREMPTY.shtml	Directory Empty Report
LLFSDIRLIST	0x318	LFS/tlm/_/P.LLFSDIRLIST.shtml	Directory Listing Report
LLFSDUMPCTDB	0x31B	LFS/tlm/_/P.LLFSDUMPCTDB.shtml	File Dump Data CTDB
LLFSROOTLIST	0x319	LFS/tlm/_/P.LLFSROOTLIST.shtml	Root Listing Report
LLFSSYSLIST	0x31A	LFS/tlm/_/P.LLFSSYSLIST.shtml	File System Status Report
lmc_acd	0x2C3	LMC/tlm/_/P.lmc_acd.shtml	ACD Tile Counters
lmc_cal	0x2C1	LMC/tlm/_/P.lmc_cal.shtml	CAL Low Rate Science Counters
lmc_dead	0x2C4	LMC/tlm/_/P.lmc_dead.shtml	TEM Deadtime Low Rate Science Counters
lmc_ssr	0x3A1	LMC/tlm/_/P.lmc_ssr.shtml	Multiplexed counters returned via the SSR
lmc_tkr	0x2C2	LMC/tlm/_/P.lmc_tkr.shtml	TKR Low Rate Science Counters

Tlm. Packet (L)	APID	Section	Description (L)
LMEMEPU0DATA	0x315	MEM/tlm/_/P.LMEMEPU0DATA.shtml	EPU 0 Memory Dump Data
LMEMEPU1DATA	0x316	MEM/tlm/_/P.LMEMEPU1DATA.shtml	EPU 1 Memory Dump Data
LMEMEPU2DATA	0x317	MEM/tlm/_/P.LMEMEPU2DATA.shtml	EPU 2 Memory Dump Data
LMEMPOOLDATA	0x311	MEM/tlm/_/P.LMEMPOOLDATA.shtml	Memory Pool Statistics Dump
LMEMSIUDATA	0x314	MEM/tlm/_/P.LMEMSIUDATA.shtml	SIU Memory Dump Data to 1553
LMEMSSR0DATA	0x3D5	MEM/tlm/_/P.LMEMSSR0DATA.shtml	EPU 0 Memory Dump Data to SSR
LMEMSSR1DATA	0x3D6	MEM/tlm/_/P.LMEMSSR1DATA.shtml	EPU 1 Memory Dump Data to SSR
LMEMSSR2DATA	0x3D7	MEM/tlm/_/P.LMEMSSR2DATA.shtml	EPU 2 Memory Dump Data to SSR
LMEMSSRSDATA	0x3D4	MEM/tlm/_/P.LMEMSSRSDATA.shtml	SIU Memory Dump Data to SSR
LMEMSYMVAL	0x312	MEM/tlm/_/P.LMEMSYMVAL.shtml	Symbol Value Dump
Load_Shed_Alert	0x346	LIM/tlm/_/P.Load_Shed_Alert.shtml	Load Shed Alert
LpaDb0Epu0	0x24B	LHK/tlm/_/P.LpaDb0Epu0.shtml	LPA filter configuration (based on first LPA_DB instance) (EPU
LpaDb0Epu1	0x24C	LHK/tlm/_/P.LpaDb0Epu1.shtml	LPA filter configuration (based on first LPA_DB instance) (EPU
LpaDb0Epu2	0x24D	LHK/tlm/_/P.LpaDb0Epu2.shtml	LPA filter configuration (based on first LPA_DB instance) (EPU
LpaDb0Siu	0x24A	LHK/tlm/_/P.LpaDb0Siu.shtml	LPA filter configuration (based on first LPA_DB instance) (SIU
LRAREGDATA	0x2F1	LRA/tlm/_/P.LRAREGDATA.shtml	Register data
LRASSRDATA	0x3A0	LRA/tlm/_/P.LRASSRDATA.shtml	LRA data returned via the SSR
Lrs0	0x227	LHK/tlm/_/P.Lrs0.shtml	Low-rate Science/LIM State Packet
LSWSNAPEPU0	0x3E4	LSW/tlm/_/P.LSWSNAPEPU0.shtml	Dump of a code trace
LSWSNAPEPU1	0x3E5	LSW/tlm/_/P.LSWSNAPEPU1.shtml	Dump of a code trace
LSWSNAPEPU2	0x3E6	LSW/tlm/_/P.LSWSNAPEPU2.shtml	Dump of a code trace
LSWSNAPEPU3	0x3E7	LSW/tlm/_/P.LSWSNAPEPU3.shtml	Dump of a code trace
LSWSNAPSIU	0x3E3	LSW/tlm/_/P.LSWSNAPSIU.shtml	Dump of a code trace
LtcData0	0x22E	LHK/tlm/_/P.LtcData0.shtml	Thermal Control Data Packet 0
LtcData1	0x22F	LHK/tlm/_/P.LtcData1.shtml	Thermal Control Data Packet 1
LtcData2	0x230	LHK/tlm/_/P.LtcData2.shtml	Thermal Control Data Packet 2
LtcData3	0x231	LHK/tlm/_/P.LtcData3.shtml	Thermal Control Data Packet 3
MAGIC7	0x3FC	LSM/tlm/_/P.MAGIC7.shtml	Output of Magic 7 cmds into Science Data
MemoryError	0x2CE	LCM/tlm/_/P.MemoryError.shtml	A memory error report
MiscSlow	0x253	LHK/tlm/_/P.MiscSlow.shtml	Miscellaneous nearly static information
PciError	0x2CF	LCM/tlm/_/P.PciError.shtml	A PCI error report
PduEnv0	0x21E	LHK/tlm/_/P.PduEnv0.shtml	PDU Environmental Packet 0
PduEnv1	0x21F	LHK/tlm/_/P.PduEnv1.shtml	PDU Environmental Packet 1
PduEnv2	0x220	LHK/tlm/_/P.PduEnv2.shtml	PDU Environmental Packet 2
PduEnv3	0x221	LHK/tlm/_/P.PduEnv3.shtml	PDU Environmental Packet 3
PduEnv4	0x222	LHK/tlm/_/P.PduEnv4.shtml	PDU Environmental Packet 4
PduEnv5	0x223	LHK/tlm/_/P.PduEnv5.shtml	PDU Environmental Packet 5
PduEnv6	0x224	LHK/tlm/_/P.PduEnv6.shtml	PDU Environmental Packet 6
PduEnv7	0x225	LHK/tlm/_/P.PduEnv7.shtml	PDU Environmental Packet 7
PIGDATA	0x3FE	PIG/tlm/_/P.PIGDATA.shtml	Returned PIG data
PigStatus	0x254	LHK/tlm/_/P.PigStatus.shtml	PIG configuration information
Repoint_Request	0x344	LIM/tlm/_/P.Repoint_Request.shtml	ARR Notification
Repoint_Response	0x345	LIM/tlm/_/P.Repoint_Response.shtml	ARR Response Notification
SIUCFG	0x2E0	LPA/tlm/_/P.SIUCFG.shtml	LPA SIU Configuration Status Packet
SIUEVTDAT	0x3BB	LPA/tlm/_/P.SIUEVTDAT.shtml	LPA SIU Event Data
SIUEVTSTAT	0x3B6	LPA/tlm/_/P.SIUEVTSTAT.shtml	SIU Event Statistics
SiuStats	0x22A	LHK/tlm/_/P.SiuStats.shtml	SIU Statistics
State	0x30F	LIM/tlm/_/P.State.shtml	Current LIM State

Tlm. Packet (L)	APID	Section	Description (L)
STATSEPU0	0x3DF	LCM/tlm/_/P.STATSEPU0.shtml	LCB and other stats processed on EPU0
STATSEPU1	0x3E0	LCM/tlm/_/P.STATSEPU1.shtml	LCB and other stats processed on EPU1
STATSEPU2	0x3E1	LCM/tlm/_/P.STATSEPU2.shtml	LCB and other stats processed on EPU2
STATSEPU3	0x3E2	LCM/tlm/_/P.STATSEPU3.shtml	LCB and other stats processed on EPU3
STATSSIU	0x3DE	LCM/tlm/_/P.STATSSIU.shtml	LCB and other stats processed on SIU
StatusEpu0	0x241	LHK/tlm/_/P.StatusEpu0.shtml	EPU0 status packet
StatusEpu1	0x242	LHK/tlm/_/P.StatusEpu1.shtml	EPU1 status packet
StatusEpu2	0x243	LHK/tlm/_/P.StatusEpu2.shtml	EPU2 status packet
StatusSiu	0x240	LHK/tlm/_/P.StatusSiu.shtml	SIU status packet
TaskCfgEpu0	0x246	LHK/tlm/_/P.TaskCfgEpu0.shtml	ITC/MSG configuration of tasks on EPU0
TaskCfgEpu1	0x247	LHK/tlm/_/P.TaskCfgEpu1.shtml	ITC/MSG configuration of tasks on EPU1
TaskCfgEpu2	0x248	LHK/tlm/_/P.TaskCfgEpu2.shtml	ITC/MSG configuration of tasks on EPU2
TaskCfgSiu	0x245	LHK/tlm/_/P.TaskCfgSiu.shtml	ITC/MSG configuration of tasks on SIU
TemEnvPwr00	0x238	LHK/tlm/_/P.TemEnvPwr00.shtml	TEM power ADCs for TEMs 0-3
TemEnvPwr01	0x239	LHK/tlm/_/P.TemEnvPwr01.shtml	TEM power ADCs for TEMs 4-7
TemEnvPwr02	0x23A	LHK/tlm/_/P.TemEnvPwr02.shtml	TEM power ADCs for TEMs 8-11
TemEnvPwr03	0x23B	LHK/tlm/_/P.TemEnvPwr03.shtml	TEM power ADCs for TEMs 12-15
TemEnvPwr0	0x210	LHK/tlm/_/P.TemEnvPwr0.shtml	TEM Power Packet 0
TemEnvPwr1	0x211	LHK/tlm/_/P.TemEnvPwr1.shtml	TEM Power Packet 1
TemEnvPwr2	0x212	LHK/tlm/_/P.TemEnvPwr2.shtml	TEM Power Packet 2
TemEnvPwr3	0x213	LHK/tlm/_/P.TemEnvPwr3.shtml	TEM Power Packet 3
TemEnvPwr4	0x214	LHK/tlm/_/P.TemEnvPwr4.shtml	TEM Power Packet 4
TemEnvPwr5	0x215	LHK/tlm/_/P.TemEnvPwr5.shtml	TEM Power Packet 5
TemEnvTemp0	0x216	LHK/tlm/_/P.TemEnvTemp0.shtml	TEM temperature ADCs for TEMs 0-1
TemEnvTemp1	0x217	LHK/tlm/_/P.TemEnvTemp1.shtml	TEM temperature ADCs for TEMs 2-3
TemEnvTemp2	0x218	LHK/tlm/_/P.TemEnvTemp2.shtml	TEM temperature ADCs for TEMs 4-5
TemEnvTemp3	0x219	LHK/tlm/_/P.TemEnvTemp3.shtml	TEM temperature ADCs for TEMs 6-7
TemEnvTemp4	0x21A	LHK/tlm/_/P.TemEnvTemp4.shtml	TEM temperature ADCs for TEMs 8-9
TemEnvTemp5	0x21B	LHK/tlm/_/P.TemEnvTemp5.shtml	TEM temperature ADCs for TEMs A-B
TemEnvTemp6	0x21C	LHK/tlm/_/P.TemEnvTemp6.shtml	TEM temperature ADCs for TEMs C-D
TemEnvTemp7	0x21D	LHK/tlm/_/P.TemEnvTemp7.shtml	TEM temperature ADCs for TEMs E-F
TERMINATE	0x2D8	LCI/tlm/_/P.TERMINATE.shtml	Packet containing status of calibration
TopEpu0	0x234	LHK/tlm/_/P.TopEpu0.shtml	TRC Top EPU 0 Monitor Packet
TopEpu1	0x235	LHK/tlm/_/P.TopEpu1.shtml	TRC Top EPU 1 Monitor Packet
TopEpu2	0x236	LHK/tlm/_/P.TopEpu2.shtml	TRC Top EPU 2 Monitor Packet
TopSiu	0x233	LHK/tlm/_/P.TopSiu.shtml	TRC Top SIU Monitor Packet

36 Telemetry Struct Index, by Name (LCAT)

Struct (L)	Tlm. Packet (L)	Section	Description (L)
cal_counter	lmc_cal	LMC/tlm/_/S.cal_counter.shtml	CAL LRS Counter Structure
CMDCNTRS	CmdCnt0	LHK/tlm/_/S.CMDCNTRS.shtml	Command Counters
CMDCNTRS	CmdCnt1	LHK/tlm/_/S.CMDCNTRS.shtml	Command Counters
CMDCNTRS	DiagCmdCnt0	LHK/tlm/_/S.CMDCNTRS.shtml	Command Counters
CMDCNTRS	DiagCmdCnt1	LHK/tlm/_/S.CMDCNTRS.shtml	Command Counters
CmdHeader	CmdConfirm	ITC/tlm/_/S.CmdHeader.shtml	CCSDS telecommand header
CPUMETR	DiagEpu0Stats	LHK/tlm/_/S.CPUMETR.shtml	CPU Metrics
CPUMETR	DiagEpu1Stats	LHK/tlm/_/S.CPUMETR.shtml	CPU Metrics
CPUMETR	DiagEpu2Stats	LHK/tlm/_/S.CPUMETR.shtml	CPU Metrics
CPUMETR	DiagSiuStats	LHK/tlm/_/S.CPUMETR.shtml	CPU Metrics
CPUMETR	Epu0Stats	LHK/tlm/_/S.CPUMETR.shtml	CPU Metrics
CPUMETR	Epu1Stats	LHK/tlm/_/S.CPUMETR.shtml	CPU Metrics
CPUMETR	Epu2Stats	LHK/tlm/_/S.CPUMETR.shtml	CPU Metrics
CPUMETR	SiuStats	LHK/tlm/_/S.CPUMETR.shtml	CPU Metrics
dead_counter	lmc_dead	LMC/tlm/_/S.dead_counter.shtml	TEM Deadtime Counter Structure
EbmCounters	DiagGasuCounts	LHK/tlm/_/S.EbmCounters.shtml	EBM counters
EbmCounters	GasuCounts	LHK/tlm/_/S.EbmCounters.shtml	EBM counters
EBMSTATS	DiagLrs0	LHK/tlm/_/S.EBMSTATS.shtml	EBM Event Statistics
EBMSTATS	Lrs0	LHK/tlm/_/S.EBMSTATS.shtml	EBM Event Statistics
FILESTATS	DiagEpu0Stats	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	DiagEpu1Stats	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	DiagEpu2Stats	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	DiagSiuStats	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	DiagStatusEpu0	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	DiagStatusEpu1	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	DiagStatusEpu2	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	DiagStatusSiu	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	Epu0Stats	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	Epu1Stats	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	Epu2Stats	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	SiuStats	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	StatusEpu0	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	StatusEpu1	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	StatusEpu2	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
FILESTATS	StatusSiu	LHK/tlm/_/S.FILESTATS.shtml	FILE Upload Statistics
GemCounters	DiagGasuCounts	LHK/tlm/_/S.GemCounters.shtml	GEM counters
GemCounters	GasuCounts	LHK/tlm/_/S.GemCounters.shtml	GEM counters
GEMLRS	DiagLrs0	LHK/tlm/_/S.GEMLRS.shtml	GEM Low-Rate Science Counter
GEMLRS	Lrs0	LHK/tlm/_/S.GEMLRS.shtml	GEM Low-Rate Science Counter
Latc	DiagLatcStatus	LHK/tlm/_/S.Latc.shtml	LATC status
Latc	LatcStatus	LHK/tlm/_/S.Latc.shtml	LATC status
LciContrib	DiagLimStatus	LHK/tlm/_/S.LciContrib.shtml	LCI's contribution to the LIM status packet
LciContrib	LimStatus	LHK/tlm/_/S.LciContrib.shtml	LCI's contribution to the LIM status packet
LimContrib	DiagLimStatus	LHK/tlm/_/S.LimContrib.shtml	LIM's contribution to the LIM status packet
LimContrib	LimStatus	LHK/tlm/_/S.LimContrib.shtml	LIM's contribution to the LIM status packet
LpaContrib	DiagLimStatus	LHK/tlm/_/S.LpaContrib.shtml	LPA's contribution to the LIM status packet

Struct (L)	Tlm. Packet (L)	Section	Description (L)
LpaContrib	LimStatus	LHK/tlm/_/S.LpaContrib.shtml	LPA's contribution to the LIM status packet
MemoryLog	MemoryError	LCM/tlm/_/S.MemoryLog.shtml	Contents of one row of the memory error log
MEMSTATS	DiagEpu0Stats	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	DiagEpu1Stats	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	DiagEpu2Stats	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	DiagSiuStats	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	DiagStatusEpu0	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	DiagStatusEpu1	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	DiagStatusEpu2	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	DiagStatusSiu	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	Epu0Stats	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	Epu1Stats	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	Epu2Stats	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	SiuStats	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	StatusEpu0	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	StatusEpu1	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	StatusEpu2	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MEMSTATS	StatusSiu	LHK/tlm/_/S.MEMSTATS.shtml	MEM Statistics
MsgStruct	LCMMSGOUTC	LCM/tlm/_/S.MsgStruct.shtml	A complete MSG report
RTSTATS	CtdbCounts	LHK/tlm/_/S.RTSTATS.shtml	1553 Remote Terminal Statistics
RTSTATS	DiagCtdbCounts	LHK/tlm/_/S.RTSTATS.shtml	1553 Remote Terminal Statistics
RTSTATS	DiagTemEnvPwr5	LHK/tlm/_/S.RTSTATS.shtml	1553 Remote Terminal Statistics
RTSTATS	TemEnvPwr5	LHK/tlm/_/S.RTSTATS.shtml	1553 Remote Terminal Statistics
ScrubStatus	DiagStatusEpu0	LHK/tlm/_/S.ScrubStatus.shtml	Status of the memory scrubbing subsystem
ScrubStatus	DiagStatusEpu1	LHK/tlm/_/S.ScrubStatus.shtml	Status of the memory scrubbing subsystem
ScrubStatus	DiagStatusEpu2	LHK/tlm/_/S.ScrubStatus.shtml	Status of the memory scrubbing subsystem
ScrubStatus	DiagStatusSiu	LHK/tlm/_/S.ScrubStatus.shtml	Status of the memory scrubbing subsystem
ScrubStatus	StatusEpu0	LHK/tlm/_/S.ScrubStatus.shtml	Status of the memory scrubbing subsystem
ScrubStatus	StatusEpu1	LHK/tlm/_/S.ScrubStatus.shtml	Status of the memory scrubbing subsystem
ScrubStatus	StatusEpu2	LHK/tlm/_/S.ScrubStatus.shtml	Status of the memory scrubbing subsystem
ScrubStatus	StatusSiu	LHK/tlm/_/S.ScrubStatus.shtml	Status of the memory scrubbing subsystem
tile_counter	lmc_acd	LMC/tlm/_/S.tile_counter.shtml	ADC Tile Counter Structure
timestamp	lmc_acd	LMC/tlm/_/S.timestamp.shtml	Counter start timestamp
timestamp	lmc_cal	LMC/tlm/_/S.timestamp.shtml	Counter start timestamp
timestamp	lmc_dead	LMC/tlm/_/S.timestamp.shtml	Counter start timestamp
timestamp	lmc_tkr	LMC/tlm/_/S.timestamp.shtml	Counter start timestamp
tkr_counter	lmc_tkr	LMC/tlm/_/S.tkr_counter.shtml	TKR LRS Counter Structure
TRCTOPS	DiagTopEpu0	LHK/tlm/_/S.TRCTOPS.shtml	TRC Top Monitor Result
TRCTOPS	DiagTopEpu1	LHK/tlm/_/S.TRCTOPS.shtml	TRC Top Monitor Result
TRCTOPS	DiagTopEpu2	LHK/tlm/_/S.TRCTOPS.shtml	TRC Top Monitor Result
TRCTOPS	DiagTopSiu	LHK/tlm/_/S.TRCTOPS.shtml	TRC Top Monitor Result
TRCTOPS	TopEpu0	LHK/tlm/_/S.TRCTOPS.shtml	TRC Top Monitor Result
TRCTOPS	TopEpu1	LHK/tlm/_/S.TRCTOPS.shtml	TRC Top Monitor Result
TRCTOPS	TopEpu2	LHK/tlm/_/S.TRCTOPS.shtml	TRC Top Monitor Result
TRCTOPS	TopSiu	LHK/tlm/_/S.TRCTOPS.shtml	TRC Top Monitor Result

37 Telemetry Bitfield Index, by Name (LCAT)

Bitfield (L)	Tlm. Packet (L)	Section	Description (L)
ADC	AemEnv0	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	AemEnv00	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	AemEnv01	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagAemEnv0	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagAemEnv00	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagAemEnv01	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagPduEnv0	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagPduEnv1	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagPduEnv2	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagPduEnv3	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagPduEnv4	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagPduEnv5	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagPduEnv6	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagPduEnv7	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvPwr0	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvPwr00	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvPwr01	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvPwr02	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvPwr03	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvPwr1	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvPwr2	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvPwr3	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvPwr4	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvPwr5	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvTemp0	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvTemp1	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvTemp2	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvTemp3	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvTemp4	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvTemp5	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvTemp6	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	DiagTemEnvTemp7	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	PduEnv0	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	PduEnv1	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	PduEnv2	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	PduEnv3	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	PduEnv4	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	PduEnv5	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	PduEnv6	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	PduEnv7	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvPwr0	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvPwr00	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvPwr01	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvPwr02	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvPwr03	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvPwr1	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvPwr2	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvPwr3	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvPwr4	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvPwr5	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvTemp0	LHK/tlm/_/B.ADC.shtml	An ADC result

Bitfield (L)	Tlm. Packet (L)	Section	Description (L)
ADC	TemEnvTemp1	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvTemp2	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvTemp3	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvTemp4	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvTemp5	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvTemp6	LHK/tlm/_/B.ADC.shtml	An ADC result
ADC	TemEnvTemp7	LHK/tlm/_/B.ADC.shtml	An ADC result
AEMFREEPWR	AemEnv0	LHK/tlm/_/B.AEMFREEPWR.shtml	AEM FREE board power state register
AEMFREEPWR	AemEnv00	LHK/tlm/_/B.AEMFREEPWR.shtml	AEM FREE board power state register
AEMFREEPWR	AemEnv01	LHK/tlm/_/B.AEMFREEPWR.shtml	AEM FREE board power state register
AEMFREEPWR	DiagAemEnv0	LHK/tlm/_/B.AEMFREEPWR.shtml	AEM FREE board power state register
AEMFREEPWR	DiagAemEnv00	LHK/tlm/_/B.AEMFREEPWR.shtml	AEM FREE board power state register
AEMFREEPWR	DiagAemEnv01	LHK/tlm/_/B.AEMFREEPWR.shtml	AEM FREE board power state register
ARRSTATEBF	DiagLimStatus	LHK/tlm/_/B.ARRSTATEBF.shtml	ARR State Bitfield
ARRSTATEBF	DiagLrs0	LHK/tlm/_/B.ARRSTATEBF.shtml	ARR State Bitfield
ARRSTATEBF	LimStatus	LHK/tlm/_/B.ARRSTATEBF.shtml	ARR State Bitfield
ARRSTATEBF	Lrs0	LHK/tlm/_/B.ARRSTATEBF.shtml	ARR State Bitfield
BCLASS	ALRTCLOSE	LPA/tlm/_/B.BCLASS.shtml	Burst Classification
BCLASS	ALRTTRG	LPA/tlm/_/B.BCLASS.shtml	Burst Classification
BCLASS	ALRTUPDATE	LPA/tlm/_/B.BCLASS.shtml	Burst Classification
BOOTCOMMAND	LBTEPU0HKP	PBC/tlm/_/B.BOOTCOMMAND.shtml	Last boot command bitfield
BOOTCOMMAND	LBTEPU1HKP	PBC/tlm/_/B.BOOTCOMMAND.shtml	Last boot command bitfield
BOOTCOMMAND	LBTEPU2HKP	PBC/tlm/_/B.BOOTCOMMAND.shtml	Last boot command bitfield
BOOTCOMMAND	LBTHKP	PBC/tlm/_/B.BOOTCOMMAND.shtml	Last boot command bitfield
ConfigLPA	DiagLpaDb0Epu0	LHK/tlm/_/B.ConfigLPA.shtml	Parameter set associated with a handler, per mode
ConfigLPA	DiagLpaDb0Epu1	LHK/tlm/_/B.ConfigLPA.shtml	Parameter set associated with a handler, per mode
ConfigLPA	DiagLpaDb0Epu2	LHK/tlm/_/B.ConfigLPA.shtml	Parameter set associated with a handler, per mode
ConfigLPA	DiagLpaDb0Siu	LHK/tlm/_/B.ConfigLPA.shtml	Parameter set associated with a handler, per mode
ConfigLPA	LpaDb0Epu0	LHK/tlm/_/B.ConfigLPA.shtml	Parameter set associated with a handler, per mode
ConfigLPA	LpaDb0Epu1	LHK/tlm/_/B.ConfigLPA.shtml	Parameter set associated with a handler, per mode
ConfigLPA	LpaDb0Epu2	LHK/tlm/_/B.ConfigLPA.shtml	Parameter set associated with a handler, per mode
ConfigLPA	LpaDb0Siu	LHK/tlm/_/B.ConfigLPA.shtml	Parameter set associated with a handler, per mode
ConfigPID	DiagSiuStats	LHK/tlm/_/B.ConfigPID.shtml	Structure to capture rad750 input PID states
ConfigPID	DiagStatusEpu0	LHK/tlm/_/B.ConfigPID.shtml	Structure to capture rad750 input PID states
ConfigPID	DiagStatusEpu1	LHK/tlm/_/B.ConfigPID.shtml	Structure to capture rad750 input PID states
ConfigPID	DiagStatusEpu2	LHK/tlm/_/B.ConfigPID.shtml	Structure to capture rad750 input PID states
ConfigPID	DiagStatusSiu	LHK/tlm/_/B.ConfigPID.shtml	Structure to capture rad750 input PID states
ConfigPID	SiuStats	LHK/tlm/_/B.ConfigPID.shtml	Structure to capture rad750 input PID states

Bitfield (L)	Tlm. Packet (L)	Section	Description (L)
ConfigPID	StatusEpu0	LHK/tlm/_/B.ConfigPID.shtml	Structure to capture rad750 input PID states
ConfigPID	StatusEpu1	LHK/tlm/_/B.ConfigPID.shtml	Structure to capture rad750 input PID states
ConfigPID	StatusEpu2	LHK/tlm/_/B.ConfigPID.shtml	Structure to capture rad750 input PID states
ConfigPID	StatusSiu	LHK/tlm/_/B.ConfigPID.shtml	Structure to capture rad750 input PID states
ConfigTHS	DiagStatusEpu0	LHK/tlm/_/B.ConfigTHS.shtml	Structure to capture the THS imulation bits
ConfigTHS	DiagStatusEpu1	LHK/tlm/_/B.ConfigTHS.shtml	Structure to capture the THS imulation bits
ConfigTHS	DiagStatusEpu2	LHK/tlm/_/B.ConfigTHS.shtml	Structure to capture the THS imulation bits
ConfigTHS	DiagStatusSiu	LHK/tlm/_/B.ConfigTHS.shtml	Structure to capture the THS imulation bits
ConfigTHS	StatusEpu0	LHK/tlm/_/B.ConfigTHS.shtml	Structure to capture the THS imulation bits
ConfigTHS	StatusEpu1	LHK/tlm/_/B.ConfigTHS.shtml	Structure to capture the THS imulation bits
ConfigTHS	StatusEpu2	LHK/tlm/_/B.ConfigTHS.shtml	Structure to capture the THS imulation bits
ConfigTHS	StatusSiu	LHK/tlm/_/B.ConfigTHS.shtml	Structure to capture the THS imulation bits
CpuSerial	LCMMSGOUTC	LCM/tlm/_/B.CpuSerial.shtml	Compound CPU serial number
CpuSerial	MemoryError	LCM/tlm/_/B.CpuSerial.shtml	Compound CPU serial number
CpuSerial	PciError	LCM/tlm/_/B.CpuSerial.shtml	Compound CPU serial number
CRUcommand	DiagPigStatus	LHK/tlm/_/B.CRUcommand.shtml	Contents of the CRU command enable register
CRUcommand	PigStatus	LHK/tlm/_/B.CRUcommand.shtml	Contents of the CRU command enable register
CRUconfig	DiagPigStatus	LHK/tlm/_/B.CRUconfig.shtml	Configuration bits read from the CRU
CRUconfig	PigStatus	LHK/tlm/_/B.CRUconfig.shtml	Configuration bits read from the CRU
CRUresponse	DiagPigStatus	LHK/tlm/_/B.CRUresponse.shtml	Contents of the CRU response enable register
CRUresponse	PigStatus	LHK/tlm/_/B.CRUresponse.shtml	Contents of the CRU response enable register
dtime_cntr	lmc_dead	LMC/tlm/_/B.dtime_cntr.shtml	TEM Deadtime Counter Bitfield
dtime_msk	lmc_dead	LMC/tlm/_/B.dtime_msk.shtml	Deadtime Mask Bitfield
DUMPFLAGS	LLCMMEMERR	LCM/tlm/_/B.DUMPFLAGS.shtml	Info Dump Flags
DUMPFLAGS	LLCMMODLIST	LCM/tlm/_/B.DUMPFLAGS.shtml	Info Dump Flags
DUMPFLAGS	LLCMPCIERR	LCM/tlm/_/B.DUMPFLAGS.shtml	Info Dump Flags
DUMPFLAGS	LLCMTASKLIST	LCM/tlm/_/B.DUMPFLAGS.shtml	Info Dump Flags
DUMPSTFLAGS	LLFSDIREMPTY	LFS/tlm/_/B.DUMPSTFLAGS.shtml	File Dump Flags
DUMPSTFLAGS	LLFSDIRLIST	LFS/tlm/_/B.DUMPSTFLAGS.shtml	File Dump Flags
DUMPSTFLAGS	LLFSDUMPCTDB	LFS/tlm/_/B.DUMPSTFLAGS.shtml	File Dump Flags
DUMPSTFLAGS	LLFSROOTLIST	LFS/tlm/_/B.DUMPSTFLAGS.shtml	File Dump Flags
DUMPSTFLAGS	LLFSSYSLIST	LFS/tlm/_/B.DUMPSTFLAGS.shtml	File Dump Flags
EBMaddress	DiagPigStatus	LHK/tlm/_/B.EBMaddress.shtml	Contents of the EBM address register
EBMaddress	PigStatus	LHK/tlm/_/B.EBMaddress.shtml	Contents of the EBM address register
EBMbackConfig	DiagPigStatus	LHK/tlm/_/B.EBMbackConfig.shtml	Contents of the EBM back-end configuration register

Bitfield (L)	Tlm. Packet (L)	Section	Description (L)
EBMbackConfig	PigStatus	LHK/tlm/_/B.EBMbackConfig.shtml	Contents of the EBM back-end configuration register
EBMcontrib	DiagPigStatus	LHK/tlm/_/B.EBMcontrib.shtml	Contents of the EBM contributors register
EBMcontrib	PigStatus	LHK/tlm/_/B.EBMcontrib.shtml	Contents of the EBM contributors register
EBMdestination	DiagPigStatus	LHK/tlm/_/B.EBMdestination.shtml	Contents of the EBM destination enable register
EBMdestination	PigStatus	LHK/tlm/_/B.EBMdestination.shtml	Contents of the EBM destination enable register
EBMfrontAConfig	DiagPigStatus	LHK/tlm/_/B.EBMfrontAConfig.shtml	Contents of the EBM front-end A configuration register
EBMfrontAConfig	PigStatus	LHK/tlm/_/B.EBMfrontAConfig.shtml	Contents of the EBM front-end A configuration register
EBMfrontBConfig	DiagPigStatus	LHK/tlm/_/B.EBMfrontBConfig.shtml	Contents of the EBM front-end B configuration register
EBMfrontBConfig	PigStatus	LHK/tlm/_/B.EBMfrontBConfig.shtml	Contents of the EBM front-end B configuration register
EBMinput	DiagPigStatus	LHK/tlm/_/B.EBMinput.shtml	Contents of the EBM input enable register
EBMinput	PigStatus	LHK/tlm/_/B.EBMinput.shtml	Contents of the EBM input enable register
EBMtimeout	DiagPigStatus	LHK/tlm/_/B.EBMtimeout.shtml	Contents of the EBM timeout register
EBMtimeout	PigStatus	LHK/tlm/_/B.EBMtimeout.shtml	Contents of the EBM timeout register
FILESTFLAGS	LLFSDIRLIST	LFS/tlm/_/B.FILESTFLAGS.shtml	File Storage Flags
FILESTFLAGS	LLFSROOTLIST	LFS/tlm/_/B.FILESTFLAGS.shtml	File Storage Flags
FILESTID	LLFSDIREMPTY	LFS/tlm/_/B.FILESTID.shtml	File Storage ID
FILESTID	LLFSDIRLIST	LFS/tlm/_/B.FILESTID.shtml	File Storage ID
FILESTID	LLFSDUMPCTDB	LFS/tlm/_/B.FILESTID.shtml	File Storage ID
FILESTID	LLFSROOTLIST	LFS/tlm/_/B.FILESTID.shtml	File Storage ID
FILESTID	LLFSSYSLIST	LFS/tlm/_/B.FILESTID.shtml	File Storage ID
Flags	CmdConfirm	ITC/tlm/_/B.Flags.shtml	Assorted command confirmation flags
GBMCONFIGBF	DiagLimStatus	LHK/tlm/_/B.GBMCONFIGBF.shtml	GBM Interface Configuration Bitfield
GBMCONFIGBF	DiagLrs0	LHK/tlm/_/B.GBMCONFIGBF.shtml	GBM Interface Configuration Bitfield
GBMCONFIGBF	LimStatus	LHK/tlm/_/B.GBMCONFIGBF.shtml	GBM Interface Configuration Bitfield
GBMCONFIGBF	Lrs0	LHK/tlm/_/B.GBMCONFIGBF.shtml	GBM Interface Configuration Bitfield
Hdr0	CmdConfirm	ITC/tlm/_/B.Hdr0.shtml	CCSDS telecommand header (bytes 0-1)
Hdr1	CmdConfirm	ITC/tlm/_/B.Hdr1.shtml	CCSDS telecommand header (bytes 2-3)
Hdr3	CmdConfirm	ITC/tlm/_/B.Hdr3.shtml	CCSDS telecommand header (bytes 6-7)
HeaterCommand	DiagLTC	LTC/tlm/_/B.HeaterCommand.shtml	Current heater command and LTC control mode
HeaterCommand	DiagLtcData0	LHK/tlm/_/B.HeaterCommand.shtml	Current heater command and LTC control mode
HeaterCommand	LtcData0	LHK/tlm/_/B.HeaterCommand.shtml	Current heater command and LTC control mode
HeaterMode	DiagLTC	LTC/tlm/_/B.HeaterMode.shtml	Control mode for VCHP heaters.
HeaterMode	DiagLtcData0	LHK/tlm/_/B.HeaterMode.shtml	Control mode for VCHP heaters.
HeaterMode	LtcData0	LHK/tlm/_/B.HeaterMode.shtml	Control mode for VCHP heaters.
HeaterState	DiagLTC	LTC/tlm/_/B.HeaterState.shtml	Current heater state and LTC run mode

Bitfield (L)	Tlm. Packet (L)	Section	Description (L)
HeaterState	DiagLtcData0	LHK/tlm/_/B.HeaterState.shtml	Current heater state and LTC run mode
HeaterState	LtcData0	LHK/tlm/_/B.HeaterState.shtml	Current heater state and LTC run mode
HVCONFIGBF	DiagLimStatus	LHK/tlm/_/B.HVCONFIGBF.shtml	High-Voltage Interface Configuration Bitfield
HVCONFIGBF	DiagLrs0	LHK/tlm/_/B.HVCONFIGBF.shtml	High-Voltage Interface Configuration Bitfield
HVCONFIGBF	LimStatus	LHK/tlm/_/B.HVCONFIGBF.shtml	High-Voltage Interface Configuration Bitfield
HVCONFIGBF	Lrs0	LHK/tlm/_/B.HVCONFIGBF.shtml	High-Voltage Interface Configuration Bitfield
ItcConfig	DiagItcCfg	LHK/tlm/_/B.ItcConfig.shtml	ITC configuration of a single task
ItcConfig	DiagTaskCfgEpu0	LHK/tlm/_/B.ItcConfig.shtml	ITC configuration of a single task
ItcConfig	DiagTaskCfgEpu1	LHK/tlm/_/B.ItcConfig.shtml	ITC configuration of a single task
ItcConfig	DiagTaskCfgEpu2	LHK/tlm/_/B.ItcConfig.shtml	ITC configuration of a single task
ItcConfig	DiagTaskCfgSiu	LHK/tlm/_/B.ItcConfig.shtml	ITC configuration of a single task
ItcConfig	ItcCfg	LHK/tlm/_/B.ItcConfig.shtml	ITC configuration of a single task
ItcConfig	TaskCfgEpu0	LHK/tlm/_/B.ItcConfig.shtml	ITC configuration of a single task
ItcConfig	TaskCfgEpu1	LHK/tlm/_/B.ItcConfig.shtml	ITC configuration of a single task
ItcConfig	TaskCfgEpu2	LHK/tlm/_/B.ItcConfig.shtml	ITC configuration of a single task
ItcConfig	TaskCfgSiu	LHK/tlm/_/B.ItcConfig.shtml	ITC configuration of a single task
PDUACDPWR	DiagPduEnv0	LHK/tlm/_/B.PDUACDPWR.shtml	PDU ADC Power Management Register
PDUACDPWR	DiagPduEnv4	LHK/tlm/_/B.PDUACDPWR.shtml	PDU ADC Power Management Register
PDUACDPWR	PduEnv0	LHK/tlm/_/B.PDUACDPWR.shtml	PDU ADC Power Management Register
PDUACDPWR	PduEnv4	LHK/tlm/_/B.PDUACDPWR.shtml	PDU ADC Power Management Register
PDUEPUPWR	DiagPduEnv0	LHK/tlm/_/B.PDUEPUPWR.shtml	PDU EPU crate power state register
PDUEPUPWR	DiagPduEnv4	LHK/tlm/_/B.PDUEPUPWR.shtml	PDU EPU crate power state register
PDUEPUPWR	PduEnv0	LHK/tlm/_/B.PDUEPUPWR.shtml	PDU EPU crate power state register
PDUEPUPWR	PduEnv4	LHK/tlm/_/B.PDUEPUPWR.shtml	PDU EPU crate power state register
PDUTEMPWR	DiagPduEnv0	LHK/tlm/_/B.PDUTEMPWR.shtml	PDU TEM power state register
PDUTEMPWR	DiagPduEnv4	LHK/tlm/_/B.PDUTEMPWR.shtml	PDU TEM power state register
PDUTEMPWR	PduEnv0	LHK/tlm/_/B.PDUTEMPWR.shtml	PDU TEM power state register
PDUTEMPWR	PduEnv4	LHK/tlm/_/B.PDUTEMPWR.shtml	PDU TEM power state register
RawAdcStatus	DiagLTC	LTC/tlm/_/B.RawAdcStatus.shtml	Sensor Status and ADC Counts
RawAdcStatus	DiagLtcData2	LHK/tlm/_/B.RawAdcStatus.shtml	Sensor Status and ADC Counts
RawAdcStatus	DiagLtcData3	LHK/tlm/_/B.RawAdcStatus.shtml	Sensor Status and ADC Counts
RawAdcStatus	LtcData2	LHK/tlm/_/B.RawAdcStatus.shtml	Sensor Status and ADC Counts
RawAdcStatus	LtcData3	LHK/tlm/_/B.RawAdcStatus.shtml	Sensor Status and ADC Counts
RECINFO	ALRTCLOSE	LPA/tlm/_/B.RECINFO.shtml	Record Info
RECINFO	ALRTTRG	LPA/tlm/_/B.RECINFO.shtml	Record Info
RECINFO	ALRTUPDATE	LPA/tlm/_/B.RECINFO.shtml	Record Info
ResRitSnsrSel	DiagLTC	LTC/tlm/_/B.ResRitSnsrSel.shtml	Selected RSVR and RIT sensors
ResRitSnsrSel	DiagLtcData0	LHK/tlm/_/B.ResRitSnsrSel.shtml	Selected RSVR and RIT sensors
ResRitSnsrSel	LtcData0	LHK/tlm/_/B.ResRitSnsrSel.shtml	Selected RSVR and RIT sensors
ResRitStatus	DiagLTC	LTC/tlm/_/B.ResRitStatus.shtml	Heat pipe RIT and reservoir sensors status
ResRitStatus	DiagLtcData0	LHK/tlm/_/B.ResRitStatus.shtml	Heat pipe RIT and reservoir sensors status
ResRitStatus	LtcData0	LHK/tlm/_/B.ResRitStatus.shtml	Heat pipe RIT and reservoir sensors status
SIBconfig	DiagPigStatus	LHK/tlm/_/B.SIBconfig.shtml	Power configuration bits from the SIB
SIBconfig	PigStatus	LHK/tlm/_/B.SIBconfig.shtml	Power configuration bits from the SIB
TARRSTATEBF	State	LIM/tlm/_/B.TARRSTATEBF.shtml	ARR State Bitfield

Bitfield (L)	Tlm. Packet (L)	Section	Description (L)
TGBMCONFIGBF	State	LIM/tlm/_/B.TGBMCONFIGBF.shtml	GBM Interface Configuration Bitfield
THVCONFIGBF	State	LIM/tlm/_/B.THVCONFIGBF.shtml	High-Voltage Interface Configuration Bitfield
TIDBF	LMEMEPU0DATA	MEM/tlm/_/B.TIDBF.shtml	LAT Unit and Transaction ID Bitfield
TIDBF	LMEMEPU1DATA	MEM/tlm/_/B.TIDBF.shtml	LAT Unit and Transaction ID Bitfield
TIDBF	LMEMEPU2DATA	MEM/tlm/_/B.TIDBF.shtml	LAT Unit and Transaction ID Bitfield
TIDBF	LMEMPOOLDATA	MEM/tlm/_/B.TIDBF.shtml	LAT Unit and Transaction ID Bitfield
TIDBF	LMEMSIUDATA	MEM/tlm/_/B.TIDBF.shtml	LAT Unit and Transaction ID Bitfield
TIDBF	LMEMSYMVAL	MEM/tlm/_/B.TIDBF.shtml	LAT Unit and Transaction ID Bitfield
TOOSTATEBF	DiagLimStatus	LHK/tlm/_/B.TOOSTATEBF.shtml	TOO State Bitfield
TOOSTATEBF	DiagLrs0	LHK/tlm/_/B.TOOSTATEBF.shtml	TOO State Bitfield
TOOSTATEBF	LimStatus	LHK/tlm/_/B.TOOSTATEBF.shtml	TOO State Bitfield
TOOSTATEBF	Lrs0	LHK/tlm/_/B.TOOSTATEBF.shtml	TOO State Bitfield
TTOOSTATEBF	State	LIM/tlm/_/B.TTOOSTATEBF.shtml	TOO State Bitfield

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Field (L)	Tlm. Packet (L)	Section	Description (L)
ACTION	DiagLrs0	LHK/tlm/_/F.ACTION.shtml	Most Recent LIM Action
ACTION	Lrs0	LHK/tlm/_/F.ACTION.shtml	Most Recent LIM Action
ACTIVE	DiagLimStatus	LHK/tlm/_/F.ACTIVE.shtml	Active Status
ACTIVE	DiagLrs0	LHK/tlm/_/F.ACTIVE.shtml	Active Status
ACTIVE	LimStatus	LHK/tlm/_/F.ACTIVE.shtml	Active Status
ACTIVE	Lrs0	LHK/tlm/_/F.ACTIVE.shtml	Active Status
ADClimit	AemEnv0	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	AemEnv00	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	AemEnv01	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagAemEnv0	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagAemEnv00	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagAemEnv01	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagPduEnv0	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagPduEnv1	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagPduEnv2	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagPduEnv3	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagPduEnv4	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagPduEnv5	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagPduEnv6	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagPduEnv7	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvPwr0	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvPwr00	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvPwr01	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvPwr02	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvPwr03	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvPwr1	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvPwr2	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvPwr3	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvPwr4	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvPwr5	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvTemp0	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvTemp1	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvTemp2	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvTemp3	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvTemp4	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvTemp5	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvTemp6	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	DiagTemEnvTemp7	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	PduEnv0	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	PduEnv1	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	PduEnv2	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	PduEnv3	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	PduEnv4	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	PduEnv5	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	PduEnv6	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	PduEnv7	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvPwr0	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvPwr00	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvPwr01	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvPwr02	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvPwr03	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation

Field (L)	Tlm. Packet (L)	Section	Description (L)
ADClimit	TemEnvPwr1	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvPwr2	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvPwr3	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvPwr4	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvPwr5	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvTemp0	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvTemp1	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvTemp2	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvTemp3	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvTemp4	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvTemp5	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvTemp6	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADClimit	TemEnvTemp7	LHK/tlm/_/F.ADClimit.shtml	ADC limit evaluation
ADCvalue	AemEnv0	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	AemEnv00	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	AemEnv01	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagAemEnv0	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagAemEnv00	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagAemEnv01	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagPduEnv0	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagPduEnv1	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagPduEnv2	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagPduEnv3	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagPduEnv4	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagPduEnv5	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagPduEnv6	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagPduEnv7	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvPwr0	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvPwr00	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvPwr01	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvPwr02	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvPwr03	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvPwr1	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvPwr2	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvPwr3	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvPwr4	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvPwr5	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvTemp0	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvTemp1	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvTemp2	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvTemp3	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvTemp4	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvTemp5	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvTemp6	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	DiagTemEnvTemp7	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	PduEnv0	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	PduEnv1	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	PduEnv2	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	PduEnv3	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	PduEnv4	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	PduEnv5	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	PduEnv6	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value

Field (L)	Tlm. Packet (L)	Section	Description (L)
ADCvalue	PduEnv7	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvPwr0	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvPwr00	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvPwr01	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvPwr02	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvPwr03	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvPwr1	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvPwr2	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvPwr3	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvPwr4	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvPwr5	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvTemp0	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvTemp1	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvTemp2	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvTemp3	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvTemp4	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvTemp5	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvTemp6	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ADCvalue	TemEnvTemp7	LHK/tlm/_/F.ADCvalue.shtml	Raw ADC value
ALLOWED	DiagLimStatus	LHK/tlm/_/F.ALLOWED.shtml	Allowed Status
ALLOWED	DiagLrs0	LHK/tlm/_/F.ALLOWED.shtml	Allowed Status
ALLOWED	LimStatus	LHK/tlm/_/F.ALLOWED.shtml	Allowed Status
ALLOWED	Lrs0	LHK/tlm/_/F.ALLOWED.shtml	Allowed Status
Apid	CmdConfirm	ITC/tlm/_/F.Apid.shtml	CCSDS application ID
AVGLDMIN	DiagEpu0Stats	LHK/tlm/_/F.AVGLDMIN.shtml	Average CPU Load/Min
AVGLDMIN	DiagEpu1Stats	LHK/tlm/_/F.AVGLDMIN.shtml	Average CPU Load/Min
AVGLDMIN	DiagEpu2Stats	LHK/tlm/_/F.AVGLDMIN.shtml	Average CPU Load/Min
AVGLDMIN	DiagSiuStats	LHK/tlm/_/F.AVGLDMIN.shtml	Average CPU Load/Min
AVGLDMIN	Epu0Stats	LHK/tlm/_/F.AVGLDMIN.shtml	Average CPU Load/Min
AVGLDMIN	Epu1Stats	LHK/tlm/_/F.AVGLDMIN.shtml	Average CPU Load/Min
AVGLDMIN	Epu2Stats	LHK/tlm/_/F.AVGLDMIN.shtml	Average CPU Load/Min
AVGLDMIN	SiuStats	LHK/tlm/_/F.AVGLDMIN.shtml	Average CPU Load/Min
AVGLDSEC	DiagEpu0Stats	LHK/tlm/_/F.AVGLDSEC.shtml	Average CPU Load/Sec
AVGLDSEC	DiagEpu1Stats	LHK/tlm/_/F.AVGLDSEC.shtml	Average CPU Load/Sec
AVGLDSEC	DiagEpu2Stats	LHK/tlm/_/F.AVGLDSEC.shtml	Average CPU Load/Sec
AVGLDSEC	DiagSiuStats	LHK/tlm/_/F.AVGLDSEC.shtml	Average CPU Load/Sec
AVGLDSEC	Epu0Stats	LHK/tlm/_/F.AVGLDSEC.shtml	Average CPU Load/Sec
AVGLDSEC	Epu1Stats	LHK/tlm/_/F.AVGLDSEC.shtml	Average CPU Load/Sec
AVGLDSEC	Epu2Stats	LHK/tlm/_/F.AVGLDSEC.shtml	Average CPU Load/Sec
AVGLDSEC	SiuStats	LHK/tlm/_/F.AVGLDSEC.shtml	Average CPU Load/Sec
BCNF	ALRTCLOSE	LPA/tlm/_/F.BCNF.shtml	Burst Confirmed
BCNF	ALRTTRG	LPA/tlm/_/F.BCNF.shtml	Burst Confirmed
BCNF	ALRTUPDATE	LPA/tlm/_/F.BCNF.shtml	Burst Confirmed
BDEC	ALRTCLOSE	LPA/tlm/_/F.BDEC.shtml	Burst Location DEC
BDEC	ALRTTRG	LPA/tlm/_/F.BDEC.shtml	Burst Location DEC
BDEC	ALRTUPDATE	LPA/tlm/_/F.BDEC.shtml	Burst Location DEC
BERR	ALRTCLOSE	LPA/tlm/_/F.BERR.shtml	Burst Error in Arcmin
BERR	ALRTTRG	LPA/tlm/_/F.BERR.shtml	Burst Error in Arcmin
BERR	ALRTUPDATE	LPA/tlm/_/F.BERR.shtml	Burst Error in Arcmin
BMETH	ALRTCLOSE	LPA/tlm/_/F.BMETH.shtml	Burst Location Method
BMETH	ALRTTRG	LPA/tlm/_/F.BMETH.shtml	Burst Location Method
BMETH	ALRTUPDATE	LPA/tlm/_/F.BMETH.shtml	Burst Location Method

Field (L)	Tlm. Packet (L)	Section	Description (L)
BOOTDUMPADDR	LBTEPU0HKP	PBC/tlm/_/F.BOOTDUMPADDR.shtml	Memory dump address
BOOTDUMPADDR	LBTEPU1HKP	PBC/tlm/_/F.BOOTDUMPADDR.shtml	Memory dump address
BOOTDUMPADDR	LBTEPU2HKP	PBC/tlm/_/F.BOOTDUMPADDR.shtml	Memory dump address
BOOTDUMPADDR	LBTHKP	PBC/tlm/_/F.BOOTDUMPADDR.shtml	Memory dump address
BOOTDUMPCOUNT	LBTEPU0HKP	PBC/tlm/_/F.BOOTDUMPCOUNT.shtml	Memory dump word count
BOOTDUMPCOUNT	LBTEPU1HKP	PBC/tlm/_/F.BOOTDUMPCOUNT.shtml	Memory dump word count
BOOTDUMPCOUNT	LBTEPU2HKP	PBC/tlm/_/F.BOOTDUMPCOUNT.shtml	Memory dump word count
BOOTDUMPCOUNT	LBTHKP	PBC/tlm/_/F.BOOTDUMPCOUNT.shtml	Memory dump word count
BOOTDUMPDATA	LBTEPU0HKP	PBC/tlm/_/F.BOOTDUMPDATA.shtml	Memory dump data
BOOTDUMPDATA	LBTEPU1HKP	PBC/tlm/_/F.BOOTDUMPDATA.shtml	Memory dump data
BOOTDUMPDATA	LBTEPU2HKP	PBC/tlm/_/F.BOOTDUMPDATA.shtml	Memory dump data
BOOTDUMPDATA	LBTHKP	PBC/tlm/_/F.BOOTDUMPDATA.shtml	Memory dump data
BOOTERRWORD	LBTEPU0HKP	PBC/tlm/_/F.BOOTERRWORD.shtml	Error code
BOOTERRWORD	LBTEPU1HKP	PBC/tlm/_/F.BOOTERRWORD.shtml	Error code
BOOTERRWORD	LBTEPU2HKP	PBC/tlm/_/F.BOOTERRWORD.shtml	Error code
BOOTERRWORD	LBTHKP	PBC/tlm/_/F.BOOTERRWORD.shtml	Error code
BOOTFILEPKT	LBTEPU0HKP	PBC/tlm/_/F.BOOTFILEPKT.shtml	File upload packet count
BOOTFILEPKT	LBTEPU1HKP	PBC/tlm/_/F.BOOTFILEPKT.shtml	File upload packet count
BOOTFILEPKT	LBTEPU2HKP	PBC/tlm/_/F.BOOTFILEPKT.shtml	File upload packet count
BOOTFILEPKT	LBTHKP	PBC/tlm/_/F.BOOTFILEPKT.shtml	File upload packet count
BOOTFILESTATE	LBTEPU0HKP	PBC/tlm/_/F.BOOTFILESTATE.shtml	File upload state
BOOTFILESTATE	LBTEPU1HKP	PBC/tlm/_/F.BOOTFILESTATE.shtml	File upload state
BOOTFILESTATE	LBTEPU2HKP	PBC/tlm/_/F.BOOTFILESTATE.shtml	File upload state
BOOTFILESTATE	LBTHKP	PBC/tlm/_/F.BOOTFILESTATE.shtml	File upload state
BOOTLASTAPID	LBTEPU0HKP	PBC/tlm/_/F.BOOTLASTAPID.shtml	Last APID
BOOTLASTAPID	LBTEPU1HKP	PBC/tlm/_/F.BOOTLASTAPID.shtml	Last APID
BOOTLASTAPID	LBTEPU2HKP	PBC/tlm/_/F.BOOTLASTAPID.shtml	Last APID
BOOTLASTAPID	LBTHKP	PBC/tlm/_/F.BOOTLASTAPID.shtml	Last APID
BOOTLASTERR	LBTEPU0HKP	PBC/tlm/_/F.BOOTLASTERR.shtml	Most recent boot error code
BOOTLASTERR	LBTEPU1HKP	PBC/tlm/_/F.BOOTLASTERR.shtml	Most recent boot error code
BOOTLASTERR	LBTEPU2HKP	PBC/tlm/_/F.BOOTLASTERR.shtml	Most recent boot error code
BOOTLASTERR	LBTHKP	PBC/tlm/_/F.BOOTLASTERR.shtml	Most recent boot error code
BOOTLASTFUNC	LBTEPU0HKP	PBC/tlm/_/F.BOOTLASTFUNC.shtml	Last Function Code
BOOTLASTFUNC	LBTEPU1HKP	PBC/tlm/_/F.BOOTLASTFUNC.shtml	Last Function Code
BOOTLASTFUNC	LBTEPU2HKP	PBC/tlm/_/F.BOOTLASTFUNC.shtml	Last Function Code
BOOTLASTFUNC	LBTHKP	PBC/tlm/_/F.BOOTLASTFUNC.shtml	Last Function Code
BOOTPKTACCEPT	LBTEPU0HKP	PBC/tlm/_/F.BOOTPKTACCEPT.shtml	Accepted packet count
BOOTPKTACCEPT	LBTEPU1HKP	PBC/tlm/_/F.BOOTPKTACCEPT.shtml	Accepted packet count
BOOTPKTACCEPT	LBTEPU2HKP	PBC/tlm/_/F.BOOTPKTACCEPT.shtml	Accepted packet count
BOOTPKTACCEPT	LBTHKP	PBC/tlm/_/F.BOOTPKTACCEPT.shtml	Accepted packet count
BOOTPKTCOUNT	LBTEPU0HKP	PBC/tlm/_/F.BOOTPKTCOUNT.shtml	Received packet count
BOOTPKTCOUNT	LBTEPU1HKP	PBC/tlm/_/F.BOOTPKTCOUNT.shtml	Received packet count
BOOTPKTCOUNT	LBTEPU2HKP	PBC/tlm/_/F.BOOTPKTCOUNT.shtml	Received packet count
BOOTPKTCOUNT	LBTHKP	PBC/tlm/_/F.BOOTPKTCOUNT.shtml	Received packet count
BOOTQERR	LBTEPU0HKP	PBC/tlm/_/F.BOOTQERR.shtml	Number of queued errors
BOOTQERR	LBTEPU1HKP	PBC/tlm/_/F.BOOTQERR.shtml	Number of queued errors
BOOTQERR	LBTEPU2HKP	PBC/tlm/_/F.BOOTQERR.shtml	Number of queued errors
BOOTQERR	LBTHKP	PBC/tlm/_/F.BOOTQERR.shtml	Number of queued errors
BOOTSCPKTCOUNT	LBTEPU0HKP	PBC/tlm/_/F.BOOTSCPKTCOUNT.shtml	Received spacecraft packet count
BOOTSCPKTCOUNT	LBTEPU1HKP	PBC/tlm/_/F.BOOTSCPKTCOUNT.shtml	Received spacecraft packet count
BOOTSCPKTCOUNT	LBTEPU2HKP	PBC/tlm/_/F.BOOTSCPKTCOUNT.shtml	Received spacecraft packet count
BOOTSCPKTCOUNT	LBTHKP	PBC/tlm/_/F.BOOTSCPKTCOUNT.shtml	Received spacecraft packet count

Field (L)	Tlm. Packet (L)	Section	Description (L)
BOOTSCRUBADDRHI	LBTEPU0HKP	PBC/tlm/_/F.BOOTSCRUBADDRHI.shtml	Hi 16 bits of software scrub address
BOOTSCRUBADDRHI	LBTEPU1HKP	PBC/tlm/_/F.BOOTSCRUBADDRHI.shtml	Hi 16 bits of software scrub address
BOOTSCRUBADDRHI	LBTEPU2HKP	PBC/tlm/_/F.BOOTSCRUBADDRHI.shtml	Hi 16 bits of software scrub address
BOOTSCRUBADDRHI	LBTHKP	PBC/tlm/_/F.BOOTSCRUBADDRHI.shtml	Hi 16 bits of software scrub address
BOOTSWMODE	LBTEPU0HKP	PBC/tlm/_/F.BOOTSWMODE.shtml	Current PBC operating mode
BOOTSWMODE	LBTEPU1HKP	PBC/tlm/_/F.BOOTSWMODE.shtml	Current PBC operating mode
BOOTSWMODE	LBTEPU2HKP	PBC/tlm/_/F.BOOTSWMODE.shtml	Current PBC operating mode
BOOTSWMODE	LBTHKP	PBC/tlm/_/F.BOOTSWMODE.shtml	Current PBC operating mode
BOOTTOTALERR	LBTEPU0HKP	PBC/tlm/_/F.BOOTTOTALERR.shtml	Number of errors encountered
BOOTTOTALERR	LBTEPU1HKP	PBC/tlm/_/F.BOOTTOTALERR.shtml	Number of errors encountered
BOOTTOTALERR	LBTEPU2HKP	PBC/tlm/_/F.BOOTTOTALERR.shtml	Number of errors encountered
BOOTTOTALERR	LBTHKP	PBC/tlm/_/F.BOOTTOTALERR.shtml	Number of errors encountered
BOOTTYPE	LBTEPU0HKP	PBC/tlm/_/F.BOOTTYPE.shtml	Boot type
BOOTTYPE	LBTEPU1HKP	PBC/tlm/_/F.BOOTTYPE.shtml	Boot type
BOOTTYPE	LBTEPU2HKP	PBC/tlm/_/F.BOOTTYPE.shtml	Boot type
BOOTTYPE	LBTHKP	PBC/tlm/_/F.BOOTTYPE.shtml	Boot type
BOOTUNSPKTCOUNT	LBTEPU0HKP	PBC/tlm/_/F.BOOTUNSPKTCOUNT.shtml	Received unsupported packet count
BOOTUNSPKTCOUNT	LBTEPU1HKP	PBC/tlm/_/F.BOOTUNSPKTCOUNT.shtml	Received unsupported packet count
BOOTUNSPKTCOUNT	LBTEPU2HKP	PBC/tlm/_/F.BOOTUNSPKTCOUNT.shtml	Received unsupported packet count
BOOTUNSPKTCOUNT	LBTHKP	PBC/tlm/_/F.BOOTUNSPKTCOUNT.shtml	Received unsupported packet count
BQUAT	ALRTCLOSE	LPA/tlm/_/F.BQUAT.shtml	Burst Quaternion
BQUAT	ALRTTRG	LPA/tlm/_/F.BQUAT.shtml	Burst Quaternion
BQUAT	ALRTUPDATE	LPA/tlm/_/F.BQUAT.shtml	Burst Quaternion
BRA	ALRTCLOSE	LPA/tlm/_/F.BRA.shtml	Burst Location RA
BRA	ALRTTRG	LPA/tlm/_/F.BRA.shtml	Burst Location RA
BRA	ALRTUPDATE	LPA/tlm/_/F.BRA.shtml	Burst Location RA
BRSVD	ALRTCLOSE	LPA/tlm/_/F.BRSVD.shtml	Burst Reserved
BRSVD	ALRTTRG	LPA/tlm/_/F.BRSVD.shtml	Burst Reserved
BRSVD	ALRTUPDATE	LPA/tlm/_/F.BRSVD.shtml	Burst Reserved
BSIG	ALRTCLOSE	LPA/tlm/_/F.BSIG.shtml	Burst Significance
BSIG	ALRTTRG	LPA/tlm/_/F.BSIG.shtml	Burst Significance
BSIG	ALRTUPDATE	LPA/tlm/_/F.BSIG.shtml	Burst Significance
BSIZE	ALRTCLOSE	LPA/tlm/_/F.BSIZE.shtml	Burst Window Size
BSIZE	ALRTTRG	LPA/tlm/_/F.BSIZE.shtml	Burst Window Size
BSIZE	ALRTUPDATE	LPA/tlm/_/F.BSIZE.shtml	Burst Window Size
BTYPE	ALRTCLOSE	LPA/tlm/_/F.BTYPE.shtml	Burst Type
BTYPE	ALRTTRG	LPA/tlm/_/F.BTYPE.shtml	Burst Type
BTYPE	ALRTUPDATE	LPA/tlm/_/F.BTYPE.shtml	Burst Type
CBAE	DiagItcCfg	LHK/tlm/_/F.CBAE.shtml	Command Confirm Broadcast Execute
CBAE	DiagTaskCfgEpu0	LHK/tlm/_/F.CBAE.shtml	Command Confirm Broadcast Execute
CBAE	DiagTaskCfgEpu1	LHK/tlm/_/F.CBAE.shtml	Command Confirm Broadcast Execute
CBAE	DiagTaskCfgEpu2	LHK/tlm/_/F.CBAE.shtml	Command Confirm Broadcast Execute
CBAE	DiagTaskCfgSiu	LHK/tlm/_/F.CBAE.shtml	Command Confirm Broadcast Execute
CBAE	ItcCfg	LHK/tlm/_/F.CBAE.shtml	Command Confirm Broadcast Execute
CBAE	TaskCfgEpu0	LHK/tlm/_/F.CBAE.shtml	Command Confirm Broadcast Execute
CBAE	TaskCfgEpu1	LHK/tlm/_/F.CBAE.shtml	Command Confirm Broadcast Execute
CBAE	TaskCfgEpu2	LHK/tlm/_/F.CBAE.shtml	Command Confirm Broadcast Execute
CBAE	TaskCfgSiu	LHK/tlm/_/F.CBAE.shtml	Command Confirm Broadcast Execute
CBAF	DiagItcCfg	LHK/tlm/_/F.CBAF.shtml	Command Confirm Broadcast Forward
CBAF	DiagTaskCfgEpu0	LHK/tlm/_/F.CBAF.shtml	Command Confirm Broadcast Forward
CBAF	DiagTaskCfgEpu1	LHK/tlm/_/F.CBAF.shtml	Command Confirm Broadcast Forward
CBAF	DiagTaskCfgEpu2	LHK/tlm/_/F.CBAF.shtml	Command Confirm Broadcast Forward

Field (L)	Tlm. Packet (L)	Section	Description (L)
CBAF	DiagTaskCfgSiu	LHK/tlm/_/F.CBAF.shtml	Command Confirm Broadcast Forward
CBAF	ItcCfg	LHK/tlm/_/F.CBAF.shtml	Command Confirm Broadcast Forward
CBAF	TaskCfgEpu0	LHK/tlm/_/F.CBAF.shtml	Command Confirm Broadcast Forward
CBAF	TaskCfgEpu1	LHK/tlm/_/F.CBAF.shtml	Command Confirm Broadcast Forward
CBAF	TaskCfgEpu2	LHK/tlm/_/F.CBAF.shtml	Command Confirm Broadcast Forward
CBAF	TaskCfgSiu	LHK/tlm/_/F.CBAF.shtml	Command Confirm Broadcast Forward
CFGID	EPU0CFG	LPA/tlm/_/F.CFGID.shtml	Event Handler Configuration ID
CFGID	EPU1CFG	LPA/tlm/_/F.CFGID.shtml	Event Handler Configuration ID
CFGID	EPU2CFG	LPA/tlm/_/F.CFGID.shtml	Event Handler Configuration ID
Cmd_len	CmdConfirm	ITC/tlm/_/F.Cmd_len.shtml	CCSDS telecommand packet length
CMDCNTS	CmdCnt0	LHK/tlm/_/F.CMDCNTS.shtml	Commands sent counter
CMDCNTS	CmdCnt1	LHK/tlm/_/F.CMDCNTS.shtml	Commands sent counter
CMDCNTS	DiagCmdCnt0	LHK/tlm/_/F.CMDCNTS.shtml	Commands sent counter
CMDCNTS	DiagCmdCnt1	LHK/tlm/_/F.CMDCNTS.shtml	Commands sent counter
CMDEXEF	CmdCnt0	LHK/tlm/_/F.CMDEXEF.shtml	Command execution failure counter
CMDEXEF	CmdCnt1	LHK/tlm/_/F.CMDEXEF.shtml	Command execution failure counter
CMDEXEF	DiagCmdCnt0	LHK/tlm/_/F.CMDEXEF.shtml	Command execution failure counter
CMDEXEF	DiagCmdCnt1	LHK/tlm/_/F.CMDEXEF.shtml	Command execution failure counter
CNAE	DiagItcCfg	LHK/tlm/_/F.CNAE.shtml	Command Confirm Normal Execute
CNAE	DiagTaskCfgEpu0	LHK/tlm/_/F.CNAE.shtml	Command Confirm Normal Execute
CNAE	DiagTaskCfgEpu1	LHK/tlm/_/F.CNAE.shtml	Command Confirm Normal Execute
CNAE	DiagTaskCfgEpu2	LHK/tlm/_/F.CNAE.shtml	Command Confirm Normal Execute
CNAE	DiagTaskCfgSiu	LHK/tlm/_/F.CNAE.shtml	Command Confirm Normal Execute
CNAE	ItcCfg	LHK/tlm/_/F.CNAE.shtml	Command Confirm Normal Execute
CNAE	TaskCfgEpu0	LHK/tlm/_/F.CNAE.shtml	Command Confirm Normal Execute
CNAE	TaskCfgEpu1	LHK/tlm/_/F.CNAE.shtml	Command Confirm Normal Execute
CNAE	TaskCfgEpu2	LHK/tlm/_/F.CNAE.shtml	Command Confirm Normal Execute
CNAE	TaskCfgSiu	LHK/tlm/_/F.CNAE.shtml	Command Confirm Normal Execute
CNAF	DiagItcCfg	LHK/tlm/_/F.CNAF.shtml	Command Confirm Normal Forward
CNAF	DiagTaskCfgEpu0	LHK/tlm/_/F.CNAF.shtml	Command Confirm Normal Forward
CNAF	DiagTaskCfgEpu1	LHK/tlm/_/F.CNAF.shtml	Command Confirm Normal Forward
CNAF	DiagTaskCfgEpu2	LHK/tlm/_/F.CNAF.shtml	Command Confirm Normal Forward
CNAF	DiagTaskCfgSiu	LHK/tlm/_/F.CNAF.shtml	Command Confirm Normal Forward
CNAF	ItcCfg	LHK/tlm/_/F.CNAF.shtml	Command Confirm Normal Forward
CNAF	TaskCfgEpu0	LHK/tlm/_/F.CNAF.shtml	Command Confirm Normal Forward
CNAF	TaskCfgEpu1	LHK/tlm/_/F.CNAF.shtml	Command Confirm Normal Forward
CNAF	TaskCfgEpu2	LHK/tlm/_/F.CNAF.shtml	Command Confirm Normal Forward
CNAF	TaskCfgSiu	LHK/tlm/_/F.CNAF.shtml	Command Confirm Normal Forward
COMPLVL	EPU0CFG	LPA/tlm/_/F.COMPLVL.shtml	Compression Level
COMPLVL	EPU1CFG	LPA/tlm/_/F.COMPLVL.shtml	Compression Level
COMPLVL	EPU2CFG	LPA/tlm/_/F.COMPLVL.shtml	Compression Level
ControlMode	DiagLTC	LTC/tlm/_/F.ControlMode.shtml	LTC control mode
ControlMode	DiagLtcData0	LHK/tlm/_/F.ControlMode.shtml	LTC control mode
ControlMode	LtcData0	LHK/tlm/_/F.ControlMode.shtml	LTC control mode
COUNT	LRAREGDATA	LRA/tlm/_/F.COUNT.shtml	Packet count
counter	lmc_acd	LMC/tlm/_/F.counter.shtml	Counter Data Value
counter	lmc_cal	LMC/tlm/_/F.counter.shtml	Counter Data Value
counter	lmc_tkr	LMC/tlm/_/F.counter.shtml	Counter Data Value
CPUJT	DiagEpu0Stats	LHK/tlm/_/F.CPUJT.shtml	CPU Junction Temperature
CPUJT	DiagEpu1Stats	LHK/tlm/_/F.CPUJT.shtml	CPU Junction Temperature
CPUJT	DiagEpu2Stats	LHK/tlm/_/F.CPUJT.shtml	CPU Junction Temperature
CPUJT	DiagSiuStats	LHK/tlm/_/F.CPUJT.shtml	CPU Junction Temperature

Field (L)	Tlm. Packet (L)	Section	Description (L)
CPUJT	Epu0Stats	LHK/tlm/_/F.CPUJT.shtml	CPU Junction Temperature
CPUJT	Epu1Stats	LHK/tlm/_/F.CPUJT.shtml	CPU Junction Temperature
CPUJT	Epu2Stats	LHK/tlm/_/F.CPUJT.shtml	CPU Junction Temperature
CPUJT	SiuStats	LHK/tlm/_/F.CPUJT.shtml	CPU Junction Temperature
CRXBCNT	CtdbCounts	LHK/tlm/_/F.CRXBCNT.shtml	1553 Cmd Rx Byte Count
CRXBCNT	DiagCtdbCounts	LHK/tlm/_/F.CRXBCNT.shtml	1553 Cmd Rx Byte Count
CRXBCNT	DiagTemEnvPwr5	LHK/tlm/_/F.CRXBCNT.shtml	1553 Cmd Rx Byte Count
CRXBCNT	TemEnvPwr5	LHK/tlm/_/F.CRXBCNT.shtml	1553 Cmd Rx Byte Count
CRXPCNT	CtdbCounts	LHK/tlm/_/F.CRXPCNT.shtml	1553 Cmd Rx Packet Count
CRXPCNT	DiagCtdbCounts	LHK/tlm/_/F.CRXPCNT.shtml	1553 Cmd Rx Packet Count
CRXPCNT	DiagTemEnvPwr5	LHK/tlm/_/F.CRXPCNT.shtml	1553 Cmd Rx Packet Count
CRXPCNT	TemEnvPwr5	LHK/tlm/_/F.CRXPCNT.shtml	1553 Cmd Rx Packet Count
CTDBPAD16	LCTDBRTDIAG	CTDB/tlm/_/F.CTDBPAD16.shtml	16 bit spare padding word
CTXBCNT	CtdbCounts	LHK/tlm/_/F.CTXBCNT.shtml	1553 Cmd Tx Byte Count
CTXBCNT	DiagCtdbCounts	LHK/tlm/_/F.CTXBCNT.shtml	1553 Cmd Tx Byte Count
CTXBCNT	DiagTemEnvPwr5	LHK/tlm/_/F.CTXBCNT.shtml	1553 Cmd Tx Byte Count
CTXBCNT	TemEnvPwr5	LHK/tlm/_/F.CTXBCNT.shtml	1553 Cmd Tx Byte Count
CTXPCNT	CtdbCounts	LHK/tlm/_/F.CTXPCNT.shtml	1553 Cmd Tx Packet Count
CTXPCNT	DiagCtdbCounts	LHK/tlm/_/F.CTXPCNT.shtml	1553 Cmd Tx Packet Count
CTXPCNT	DiagTemEnvPwr5	LHK/tlm/_/F.CTXPCNT.shtml	1553 Cmd Tx Packet Count
CTXPCNT	TemEnvPwr5	LHK/tlm/_/F.CTXPCNT.shtml	1553 Cmd Tx Packet Count
DBID	EPU0CFG	LPA/tlm/_/F.DBID.shtml	LPA_DB ID
DBID	EPU1CFG	LPA/tlm/_/F.DBID.shtml	LPA_DB ID
DBID	EPU2CFG	LPA/tlm/_/F.DBID.shtml	LPA_DB ID
DBID	SIUCFG	LPA/tlm/_/F.DBID.shtml	LPA_DB ID
DBKEY	EPU0CFG	LPA/tlm/_/F.DBKEY.shtml	LPA_DB File Key
DBKEY	EPU1CFG	LPA/tlm/_/F.DBKEY.shtml	LPA_DB File Key
DBKEY	EPU2CFG	LPA/tlm/_/F.DBKEY.shtml	LPA_DB File Key
DEFINED	DiagItcCfg	LHK/tlm/_/F.DEFINED.shtml	ITC Task Defined
DEFINED	DiagTaskCfgEpu0	LHK/tlm/_/F.DEFINED.shtml	ITC Task Defined
DEFINED	DiagTaskCfgEpu1	LHK/tlm/_/F.DEFINED.shtml	ITC Task Defined
DEFINED	DiagTaskCfgEpu2	LHK/tlm/_/F.DEFINED.shtml	ITC Task Defined
DEFINED	DiagTaskCfgSiu	LHK/tlm/_/F.DEFINED.shtml	ITC Task Defined
DEFINED	ItcCfg	LHK/tlm/_/F.DEFINED.shtml	ITC Task Defined
DEFINED	TaskCfgEpu0	LHK/tlm/_/F.DEFINED.shtml	ITC Task Defined
DEFINED	TaskCfgEpu1	LHK/tlm/_/F.DEFINED.shtml	ITC Task Defined
DEFINED	TaskCfgEpu2	LHK/tlm/_/F.DEFINED.shtml	ITC Task Defined
DEFINED	TaskCfgSiu	LHK/tlm/_/F.DEFINED.shtml	ITC Task Defined
DGMCNT	EPU0CFG	LPA/tlm/_/F.DGMCNT.shtml	Datagram Post Count
DGMCNT	EPU1CFG	LPA/tlm/_/F.DGMCNT.shtml	Datagram Post Count
DGMCNT	EPU2CFG	LPA/tlm/_/F.DGMCNT.shtml	Datagram Post Count
dmask	lmc_dead	LMC/tlm/_/F.dmask.shtml	TEM Deadtime Mask
Drop	CmdConfirm	ITC/tlm/_/F.Drop.shtml	Number of dropped confirmations
dtime	lmc_acd	LMC/tlm/_/F.dtime.shtml	Delta Timestamp
dtime	lmc_cal	LMC/tlm/_/F.dtime.shtml	Delta Timestamp
dtime	lmc_dead	LMC/tlm/_/F.dtime.shtml	Delta Timestamp
dtime	lmc_tkr	LMC/tlm/_/F.dtime.shtml	Delta Timestamp
enable	DiagPigStatus	LHK/tlm/_/F.enable.shtml	An enable bit (disabled/enabled)
enable	PigStatus	LHK/tlm/_/F.enable.shtml	An enable bit (disabled/enabled)
EPUENAB	SIUCFG	LPA/tlm/_/F.EPUENAB.shtml	EPU GRB Enabled
EVHENAB	EPU0CFG	LPA/tlm/_/F.EVHENAB.shtml	Event Handler Enable Mask
EVHENAB	EPU1CFG	LPA/tlm/_/F.EVHENAB.shtml	Event Handler Enable Mask

Field (L)	Tlm. Packet (L)	Section	Description (L)
EVHENAB	EPU2CFG	LPA/tlm/_/F.EVHENAB.shtml	Event Handler Enable Mask
EVHPOST	EPU0CFG	LPA/tlm/_/F.EVHPOST.shtml	Event Handler Post Enabled
EVHPOST	EPU1CFG	LPA/tlm/_/F.EVHPOST.shtml	Event Handler Post Enabled
EVHPOST	EPU2CFG	LPA/tlm/_/F.EVHPOST.shtml	Event Handler Post Enabled
EVTSTAT	DiagLrs0	LHK/tlm/_/F.EVTSTAT.shtml	Events Statistics
EVTSTAT	Lrs0	LHK/tlm/_/F.EVTSTAT.shtml	Events Statistics
FILEDATA	LLFSDUMPCTDB	LFS/tlm/_/F.FILEDATA.shtml	File Data Contents
FILEDEV	LLFSDIREMPTY	LFS/tlm/_/F.FILEDEV.shtml	File ID Device Number
FILEDEV	LLFSDIRLIST	LFS/tlm/_/F.FILEDEV.shtml	File ID Device Number
FILEDEV	LLFSDUMPCTDB	LFS/tlm/_/F.FILEDEV.shtml	File ID Device Number
FILEDEV	LLFSROOTLIST	LFS/tlm/_/F.FILEDEV.shtml	File ID Device Number
FILEDEV	LLFSSYSLIST	LFS/tlm/_/F.FILEDEV.shtml	File ID Device Number
FILEDIR	LLFSDIREMPTY	LFS/tlm/_/F.FILEDIR.shtml	File ID Directory Number
FILEDIR	LLFSDIRLIST	LFS/tlm/_/F.FILEDIR.shtml	File ID Directory Number
FILEDIR	LLFSDUMPCTDB	LFS/tlm/_/F.FILEDIR.shtml	File ID Directory Number
FILEDIR	LLFSROOTLIST	LFS/tlm/_/F.FILEDIR.shtml	File ID Directory Number
FILEDIR	LLFSSYSLIST	LFS/tlm/_/F.FILEDIR.shtml	File ID Directory Number
FILEDUMPSIZE	LLFSDUMPCTDB	LFS/tlm/_/F.FILEDUMPSIZE.shtml	File Dump Current Size
FILEHDR	LLFSDIRLIST	LFS/tlm/_/F.FILEHDR.shtml	File Header Data
FILEIDCOM	DiagEpu0Stats	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	DiagEpu1Stats	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	DiagEpu2Stats	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	DiagSiuStats	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	DiagStatusEpu0	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	DiagStatusEpu1	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	DiagStatusEpu2	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	DiagStatusSiu	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	Epu0Stats	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	Epu1Stats	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	Epu2Stats	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	SiuStats	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	StatusEpu0	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	StatusEpu1	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	StatusEpu2	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILEIDCOM	StatusSiu	LHK/tlm/_/F.FILEIDCOM.shtml	FILE ID Commit
FILENUM	LLFSDIREMPTY	LFS/tlm/_/F.FILENUM.shtml	File ID File Number
FILENUM	LLFSDIRLIST	LFS/tlm/_/F.FILENUM.shtml	File ID File Number
FILENUM	LLFSDUMPCTDB	LFS/tlm/_/F.FILENUM.shtml	File ID File Number
FILENUM	LLFSROOTLIST	LFS/tlm/_/F.FILENUM.shtml	File ID File Number
FILENUM	LLFSSYSLIST	LFS/tlm/_/F.FILENUM.shtml	File ID File Number
FILEPKTCNT	DiagEpu0Stats	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	DiagEpu1Stats	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	DiagEpu2Stats	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	DiagSiuStats	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	DiagStatusEpu0	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	DiagStatusEpu1	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	DiagStatusEpu2	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	DiagStatusSiu	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	Epu0Stats	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	Epu1Stats	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	Epu2Stats	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	SiuStats	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count

Field (L)	Tlm. Packet (L)	Section	Description (L)
FILEPKTCNT	StatusEpu0	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	StatusEpu1	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	StatusEpu2	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILEPKTCNT	StatusSiu	LHK/tlm/_/F.FILEPKTCNT.shtml	FILE Packet Count
FILERRCNT	DiagEpu0Stats	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	DiagEpu1Stats	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	DiagEpu2Stats	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	DiagSiuStats	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	DiagStatusEpu0	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	DiagStatusEpu1	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	DiagStatusEpu2	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	DiagStatusSiu	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	Epu0Stats	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	Epu1Stats	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	Epu2Stats	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	SiuStats	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	StatusEpu0	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	StatusEpu1	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	StatusEpu2	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCNT	StatusSiu	LHK/tlm/_/F.FILERRCNT.shtml	FILE Error Count
FILERRCODE	DiagEpu0Stats	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	DiagEpu1Stats	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	DiagEpu2Stats	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	DiagSiuStats	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	DiagStatusEpu0	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	DiagStatusEpu1	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	DiagStatusEpu2	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	DiagStatusSiu	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	Epu0Stats	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	Epu1Stats	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	Epu2Stats	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	SiuStats	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	StatusEpu0	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	StatusEpu1	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	StatusEpu2	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILERRCODE	StatusSiu	LHK/tlm/_/F.FILERRCODE.shtml	FILE Error Code
FILESIZECUR	DiagEpu0Stats	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	DiagEpu1Stats	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	DiagEpu2Stats	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	DiagSiuStats	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	DiagStatusEpu0	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	DiagStatusEpu1	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	DiagStatusEpu2	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	DiagStatusSiu	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	Epu0Stats	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	Epu1Stats	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	Epu2Stats	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	SiuStats	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	StatusEpu0	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	StatusEpu1	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	StatusEpu2	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current
FILESIZECUR	StatusSiu	LHK/tlm/_/F.FILESIZECUR.shtml	File Size Current

Field (L)	Tlm. Packet (L)	Section	Description (L)
FILESTARCHIVE	LLFSDIRLIST	LFS/tlm/_/F.FILESTARCHIVE.shtml	File Storage Archive Flag
FILESTARCHIVE	LLFSROOTLIST	LFS/tlm/_/F.FILESTARCHIVE.shtml	File Storage Archive Flag
FILESTATE	DiagEpu0Stats	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	DiagEpu1Stats	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	DiagEpu2Stats	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	DiagSiuStats	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	DiagStatusEpu0	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	DiagStatusEpu1	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	DiagStatusEpu2	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	DiagStatusSiu	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	Epu0Stats	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	Epu1Stats	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	Epu2Stats	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	SiuStats	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	StatusEpu0	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	StatusEpu1	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	StatusEpu2	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTATE	StatusSiu	LHK/tlm/_/F.FILESTATE.shtml	FILE Upload State
FILESTBLOCK	LLFSDIRLIST	LFS/tlm/_/F.FILESTBLOCK.shtml	File Storage Blocks
FILESTBLOCK	LLFSROOTLIST	LFS/tlm/_/F.FILESTBLOCK.shtml	File Storage Blocks
FILESTDIR	LLFSDIRLIST	LFS/tlm/_/F.FILESTDIR.shtml	File Storage Directory Flag
FILESTDIR	LLFSROOTLIST	LFS/tlm/_/F.FILESTDIR.shtml	File Storage Directory Flag
FILESTOFFSET	LLFSDUMPCTDB	LFS/tlm/_/F.FILESTOFFSET.shtml	File Data Offset
FILESTRDONLY	LLFSDIRLIST	LFS/tlm/_/F.FILESTRDONLY.shtml	File Storage Read-Only Flag
FILESTRDONLY	LLFSROOTLIST	LFS/tlm/_/F.FILESTRDONLY.shtml	File Storage Read-Only Flag
FILESTSIZE	LLFSDIRLIST	LFS/tlm/_/F.FILESTSIZE.shtml	File Storage Size
FILESTSIZE	LLFSROOTLIST	LFS/tlm/_/F.FILESTSIZE.shtml	File Storage Size
FILESTTIME	LLFSDIRLIST	LFS/tlm/_/F.FILESTTIME.shtml	File Storage Update Time
FILESTTIME	LLFSROOTLIST	LFS/tlm/_/F.FILESTTIME.shtml	File Storage Update Time
FILL	LRAREGDATA	LRA/tlm/_/F.FILL.shtml	Filler
Fnc_code	CmdConfirm	ITC/tlm/_/F.Fnc_code.shtml	CCSDS telecommand function code
Fnc_pad	CmdConfirm	ITC/tlm/_/F.Fnc_pad.shtml	Padding
FREQ	DiagTopEpu0	LHK/tlm/_/F.FREQ.shtml	Processor Frequency
FREQ	DiagTopEpu1	LHK/tlm/_/F.FREQ.shtml	Processor Frequency
FREQ	DiagTopEpu2	LHK/tlm/_/F.FREQ.shtml	Processor Frequency
FREQ	DiagTopSiu	LHK/tlm/_/F.FREQ.shtml	Processor Frequency
FREQ	TopEpu0	LHK/tlm/_/F.FREQ.shtml	Processor Frequency
FREQ	TopEpu1	LHK/tlm/_/F.FREQ.shtml	Processor Frequency
FREQ	TopEpu2	LHK/tlm/_/F.FREQ.shtml	Processor Frequency
FREQ	TopSiu	LHK/tlm/_/F.FREQ.shtml	Processor Frequency
GBMENAB	SIUCFG	LPA/tlm/_/F.GBMENAB.shtml	GBM Commands Enabled
GCNT	ALRTCLOSE	LPA/tlm/_/F.GCNT.shtml	Gamma Counts
GCNT	ALRTTRG	LPA/tlm/_/F.GCNT.shtml	Gamma Counts
GCNT	ALRTUPDATE	LPA/tlm/_/F.GCNT.shtml	Gamma Counts
GEMLRSDEAD	DiagLrs0	LHK/tlm/_/F.GEMLRSDEAD.shtml	GEM low-rate science dead zoned counter
GEMLRSDEAD	Lrs0	LHK/tlm/_/F.GEMLRSDEAD.shtml	GEM low-rate science dead zoned counter
GEMLRSDISC	DiagLrs0	LHK/tlm/_/F.GEMLRSDISC.shtml	GEM low-rate science discarded counter
GEMLRSDISC	Lrs0	LHK/tlm/_/F.GEMLRSDISC.shtml	GEM low-rate science discarded counter

Field (L)	Tlm. Packet (L)	Section	Description (L)
GEMLRSLIVE	DiagLrs0	LHK/tlm/_/F.GEMLRSLIVE.shtml	GEM low-rate science livetime counter
GEMLRSLIVE	Lrs0	LHK/tlm/_/F.GEMLRSLIVE.shtml	GEM low-rate science livetime counter
GEMLRSSENT	DiagLrs0	LHK/tlm/_/F.GEMLRSSENT.shtml	GEM low-rate science sent counter
GEMLRSSENT	Lrs0	LHK/tlm/_/F.GEMLRSSENT.shtml	GEM low-rate science sent counter
GEMPRSCL	DiagLrs0	LHK/tlm/_/F.GEMPRSCL.shtml	Low-rate science prescaled counter
GEMPRSCL	Lrs0	LHK/tlm/_/F.GEMPRSCL.shtml	Low-rate science prescaled counter
GRBCNT	EPU0CFG	LPA/tlm/_/F.GRBCNT.shtml	GRB Summary Post Count
GRBCNT	EPU1CFG	LPA/tlm/_/F.GRBCNT.shtml	GRB Summary Post Count
GRBCNT	EPU2CFG	LPA/tlm/_/F.GRBCNT.shtml	GRB Summary Post Count
GRBID	EPU0CFG	LPA/tlm/_/F.GRBID.shtml	GRB Processor ID
GRBID	EPU1CFG	LPA/tlm/_/F.GRBID.shtml	GRB Processor ID
GRBID	EPU2CFG	LPA/tlm/_/F.GRBID.shtml	GRB Processor ID
GRBID	SIUCFG	LPA/tlm/_/F.GRBID.shtml	GRB Processor ID
GRBSTATE	DiagLimStatus	LHK/tlm/_/F.GRBSTATE.shtml	GRB State
GRBSTATE	DiagLrs0	LHK/tlm/_/F.GRBSTATE.shtml	GRB State
GRBSTATE	LimStatus	LHK/tlm/_/F.GRBSTATE.shtml	GRB State
GRBSTATE	Lrs0	LHK/tlm/_/F.GRBSTATE.shtml	GRB State
HeaterMask	DiagLTC	LTC/tlm/_/F.HeaterMask.shtml	Mask for VCHP heater control/state
HeaterMask	DiagLtcData0	LHK/tlm/_/F.HeaterMask.shtml	Mask for VCHP heater control/state
HeaterMask	LtcData0	LHK/tlm/_/F.HeaterMask.shtml	Mask for VCHP heater control/state
HKBCNT	CtdbCounts	LHK/tlm/_/F.HKBCNT.shtml	1553 Housekeeping Byte Count
HKBCNT	DiagCtdbCounts	LHK/tlm/_/F.HKBCNT.shtml	1553 Housekeeping Byte Count
HKBCNT	DiagTemEnvPwr5	LHK/tlm/_/F.HKBCNT.shtml	1553 Housekeeping Byte Count
HKBCNT	TemEnvPwr5	LHK/tlm/_/F.HKBCNT.shtml	1553 Housekeeping Byte Count
HKPCNT	CtdbCounts	LHK/tlm/_/F.HKPCNT.shtml	1553 Housekeeping Packet Count
HKPCNT	DiagCtdbCounts	LHK/tlm/_/F.HKPCNT.shtml	1553 Housekeeping Packet Count
HKPCNT	DiagTemEnvPwr5	LHK/tlm/_/F.HKPCNT.shtml	1553 Housekeeping Packet Count
HKPCNT	TemEnvPwr5	LHK/tlm/_/F.HKPCNT.shtml	1553 Housekeeping Packet Count
IGNID	SIUCFG	LPA/tlm/_/F.IGNID.shtml	LATC Ignore Map File ID
IGNKEY	SIUCFG	LPA/tlm/_/F.IGNKEY.shtml	LATC Ignore File Key
INTRCNT	CtdbCounts	LHK/tlm/_/F.INTRCNT.shtml	1553 Interrupts
INTRCNT	DiagCtdbCounts	LHK/tlm/_/F.INTRCNT.shtml	1553 Interrupts
INTRCNT	DiagTemEnvPwr5	LHK/tlm/_/F.INTRCNT.shtml	1553 Interrupts
INTRCNT	TemEnvPwr5	LHK/tlm/_/F.INTRCNT.shtml	1553 Interrupts
isCmd	CmdConfirm	ITC/tlm/_/F.isCmd.shtml	CCSDS command bit
isTime44	CmdConfirm	ITC/tlm/_/F.isTime44.shtml	Flag to indicate the format of the time fields
ITC_NodeID	CmdConfirm	ITC/tlm/_/F.ITC_NodeID.shtml	ITC node ID
ITC_TaskID	CmdConfirm	ITC/tlm/_/F.ITC_TaskID.shtml	ITC task ID
LATCID	SIUCFG	LPA/tlm/_/F.LATCID.shtml	LATC File ID
LATCKEY	DiagLrs0	LHK/tlm/_/F.LATCKEY.shtml	LATC File Key
LATCKEY	Lrs0	LHK/tlm/_/F.LATCKEY.shtml	LATC File Key
LATCKEY	SIUCFG	LPA/tlm/_/F.LATCKEY.shtml	LATC File Key
LATSTUNIT	LLFSDIREMPTY	LFS/tlm/_/F.LATSTUNIT.shtml	LAT Storage Unit
LATSTUNIT	LLFSDIRLIST	LFS/tlm/_/F.LATSTUNIT.shtml	LAT Storage Unit
LATSTUNIT	LLFSDUMPCTDB	LFS/tlm/_/F.LATSTUNIT.shtml	LAT Storage Unit
LATSTUNIT	LLFSROOTLIST	LFS/tlm/_/F.LATSTUNIT.shtml	LAT Storage Unit
LATSTUNIT	LLFSSYSLIST	LFS/tlm/_/F.LATSTUNIT.shtml	LAT Storage Unit
LATUNIT	LLCMMEMERR	LCM/tlm/_/F.LATUNIT.shtml	LAT Unit
LATUNIT	LLCMMODLIST	LCM/tlm/_/F.LATUNIT.shtml	LAT Unit
LATUNIT	LLCMPCIERR	LCM/tlm/_/F.LATUNIT.shtml	LAT Unit
LATUNIT	LLCMTASKLIST	LCM/tlm/_/F.LATUNIT.shtml	LAT Unit

Field (L)	Tlm. Packet (L)	Section	Description (L)
LCMCNTR	DiagEpu0Stats	LHK/tlm/_/F.LCMCNTR.shtml	LCM RAD750 Counter
LCMCNTR	DiagEpu1Stats	LHK/tlm/_/F.LCMCNTR.shtml	LCM RAD750 Counter
LCMCNTR	DiagEpu2Stats	LHK/tlm/_/F.LCMCNTR.shtml	LCM RAD750 Counter
LCMCNTR	DiagSiuStats	LHK/tlm/_/F.LCMCNTR.shtml	LCM RAD750 Counter
LCMCNTR	Epu0Stats	LHK/tlm/_/F.LCMCNTR.shtml	LCM RAD750 Counter
LCMCNTR	Epu1Stats	LHK/tlm/_/F.LCMCNTR.shtml	LCM RAD750 Counter
LCMCNTR	Epu2Stats	LHK/tlm/_/F.LCMCNTR.shtml	LCM RAD750 Counter
LCMCNTR	SiuStats	LHK/tlm/_/F.LCMCNTR.shtml	LCM RAD750 Counter
LCMXID	LLCMMEMERR	LCM/tlm/_/F.LCMXID.shtml	Transaction ID
LCMXID	LLCMMODLIST	LCM/tlm/_/F.LCMXID.shtml	Transaction ID
LCMXID	LLCMPCIERR	LCM/tlm/_/F.LCMXID.shtml	Transaction ID
LCMXID	LLCMTASKLIST	LCM/tlm/_/F.LCMXID.shtml	Transaction ID
LFSPAD13	LLFSDIRLIST	LFS/tlm/_/F.LFSPAD13.shtml	13-bit Padding Word
LFSPAD13	LLFSROOTLIST	LFS/tlm/_/F.LFSPAD13.shtml	13-bit Padding Word
LFSPAD16	LFSDUMPSSRE0	LFS/tlm/_/F.LFSPAD16.shtml	16-bit Padding Word
LFSPAD16	LFSDUMPSSRE1	LFS/tlm/_/F.LFSPAD16.shtml	16-bit Padding Word
LFSPAD16	LFSDUMPSSRE2	LFS/tlm/_/F.LFSPAD16.shtml	16-bit Padding Word
LFSPAD16	LFSDUMPSSRE3	LFS/tlm/_/F.LFSPAD16.shtml	16-bit Padding Word
LFSPAD16	LFSDUMPSSRSI	LFS/tlm/_/F.LFSPAD16.shtml	16-bit Padding Word
LFSPAD16	LLFSDIRLIST	LFS/tlm/_/F.LFSPAD16.shtml	16-bit Padding Word
LFSPAD16	LLFSROOTLIST	LFS/tlm/_/F.LFSPAD16.shtml	16-bit Padding Word
LFSXID	LLFSDIREMPTY	LFS/tlm/_/F.LFSXID.shtml	Transaction ID
LFSXID	LLFSDIRLIST	LFS/tlm/_/F.LFSXID.shtml	Transaction ID
LFSXID	LLFSDUMPCTDB	LFS/tlm/_/F.LFSXID.shtml	Transaction ID
LFSXID	LLFSROOTLIST	LFS/tlm/_/F.LFSXID.shtml	Transaction ID
LFSXID	LLFSSYSLIST	LFS/tlm/_/F.LFSXID.shtml	Transaction ID
lmask	lmc_cal	LMC/tlm/_/F.lmask.shtml	Low Rate Science Mask
lmask	lmc_tkr	LMC/tlm/_/F.lmask.shtml	Low Rate Science Mask
LPAparameter	DiagLpaDb0Epu0	LHK/tlm/_/F.LPAparameter.shtml	Filter handler parameter set
LPAparameter	DiagLpaDb0Epu1	LHK/tlm/_/F.LPAparameter.shtml	Filter handler parameter set
LPAparameter	DiagLpaDb0Epu2	LHK/tlm/_/F.LPAparameter.shtml	Filter handler parameter set
LPAparameter	DiagLpaDb0Siu	LHK/tlm/_/F.LPAparameter.shtml	Filter handler parameter set
LPAparameter	LpaDb0Epu0	LHK/tlm/_/F.LPAparameter.shtml	Filter handler parameter set
LPAparameter	LpaDb0Epu1	LHK/tlm/_/F.LPAparameter.shtml	Filter handler parameter set
LPAparameter	LpaDb0Epu2	LHK/tlm/_/F.LPAparameter.shtml	Filter handler parameter set
LPAparameter	LpaDb0Siu	LHK/tlm/_/F.LPAparameter.shtml	Filter handler parameter set
LPAPOST	EPU0CFG	LPA/tlm/_/F.LPAPOST.shtml	LPA Post State
LPAPOST	EPU1CFG	LPA/tlm/_/F.LPAPOST.shtml	LPA Post State
LPAPOST	EPU2CFG	LPA/tlm/_/F.LPAPOST.shtml	LPA Post State
MAXLDMIN	DiagEpu0Stats	LHK/tlm/_/F.MAXLDMIN.shtml	Max CPU Load/Min
MAXLDMIN	DiagEpu1Stats	LHK/tlm/_/F.MAXLDMIN.shtml	Max CPU Load/Min
MAXLDMIN	DiagEpu2Stats	LHK/tlm/_/F.MAXLDMIN.shtml	Max CPU Load/Min
MAXLDMIN	DiagSiuStats	LHK/tlm/_/F.MAXLDMIN.shtml	Max CPU Load/Min
MAXLDMIN	Epu0Stats	LHK/tlm/_/F.MAXLDMIN.shtml	Max CPU Load/Min
MAXLDMIN	Epu1Stats	LHK/tlm/_/F.MAXLDMIN.shtml	Max CPU Load/Min
MAXLDMIN	Epu2Stats	LHK/tlm/_/F.MAXLDMIN.shtml	Max CPU Load/Min
MAXLDMIN	SiuStats	LHK/tlm/_/F.MAXLDMIN.shtml	Max CPU Load/Min
MDPACT	DiagEpu0Stats	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	DiagEpu1Stats	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	DiagEpu2Stats	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	DiagSiuStats	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	DiagStatusEpu0	LHK/tlm/_/F.MDPACT.shtml	Memory dump active

Field (L)	Tlm. Packet (L)	Section	Description (L)
MDPACT	DiagStatusEpu1	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	DiagStatusEpu2	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	DiagStatusSiu	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	Epu0Stats	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	Epu1Stats	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	Epu2Stats	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	SiuStats	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	StatusEpu0	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	StatusEpu1	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	StatusEpu2	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPACT	StatusSiu	LHK/tlm/_/F.MDPACT.shtml	Memory dump active
MDPADDR	DiagEpu0Stats	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	DiagEpu1Stats	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	DiagEpu2Stats	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	DiagSiuStats	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	DiagStatusEpu0	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	DiagStatusEpu1	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	DiagStatusEpu2	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	DiagStatusSiu	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	Epu0Stats	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	Epu1Stats	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	Epu2Stats	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	SiuStats	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	StatusEpu0	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	StatusEpu1	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	StatusEpu2	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPADDR	StatusSiu	LHK/tlm/_/F.MDPADDR.shtml	Memory dump address
MDPBYTS	DiagEpu0Stats	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	DiagEpu1Stats	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	DiagEpu2Stats	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	DiagSiuStats	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	DiagStatusEpu0	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	DiagStatusEpu1	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	DiagStatusEpu2	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	DiagStatusSiu	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	Epu0Stats	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	Epu1Stats	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	Epu2Stats	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	SiuStats	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	StatusEpu0	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	StatusEpu1	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	StatusEpu2	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPBYTS	StatusSiu	LHK/tlm/_/F.MDPBYTS.shtml	Memory dump bytes
MDPFCD	DiagEpu0Stats	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	DiagEpu1Stats	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	DiagEpu2Stats	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	DiagSiuStats	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	DiagStatusEpu0	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	DiagStatusEpu1	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	DiagStatusEpu2	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	DiagStatusSiu	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	Epu0Stats	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code

Field (L)	Tlm. Packet (L)	Section	Description (L)
MDPFCD	Epu1Stats	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	Epu2Stats	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	SiuStats	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	StatusEpu0	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	StatusEpu1	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	StatusEpu2	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPFCD	StatusSiu	LHK/tlm/_/F.MDPFCD.shtml	Memory dump function code
MDPSTADR	DiagEpu0Stats	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	DiagEpu1Stats	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	DiagEpu2Stats	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	DiagSiuStats	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	DiagStatusEpu0	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	DiagStatusEpu1	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	DiagStatusEpu2	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	DiagStatusSiu	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	Epu0Stats	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	Epu1Stats	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	Epu2Stats	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	SiuStats	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	StatusEpu0	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	StatusEpu1	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	StatusEpu2	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTADR	StatusSiu	LHK/tlm/_/F.MDPSTADR.shtml	Memory dump start address
MDPSTAT	DiagEpu0Stats	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	DiagEpu1Stats	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	DiagEpu2Stats	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	DiagSiuStats	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	DiagStatusEpu0	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	DiagStatusEpu1	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	DiagStatusEpu2	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	DiagStatusSiu	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	Epu0Stats	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	Epu1Stats	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	Epu2Stats	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	SiuStats	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	StatusEpu0	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	StatusEpu1	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	StatusEpu2	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPSTAT	StatusSiu	LHK/tlm/_/F.MDPSTAT.shtml	Memory dump status
MDPTXID	DiagEpu0Stats	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	DiagEpu1Stats	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	DiagEpu2Stats	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	DiagSiuStats	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	DiagStatusEpu0	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	DiagStatusEpu1	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	DiagStatusEpu2	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	DiagStatusSiu	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	Epu0Stats	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	Epu1Stats	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	Epu2Stats	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	SiuStats	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	StatusEpu0	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID

Field (L)	Tlm. Packet (L)	Section	Description (L)
MDPTXID	StatusEpu1	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	StatusEpu2	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MDPTXID	StatusSiu	LHK/tlm/_/F.MDPTXID.shtml	Memory dump transaction ID
MEMERRCNT	LLCMMEMERR	LCM/tlm/_/F.MEMERRCNT.shtml	RAD750 MEM Error Count Register
MEMERRLOG0	LLCMMEMERR	LCM/tlm/_/F.MEMERRLOG0.shtml	RAD750 MEM Error Log Register 0
MEMERRLOG1	LLCMMEMERR	LCM/tlm/_/F.MEMERRLOG1.shtml	RAD750 MEM Error Log Register 1
MEMERRSTAT	LLCMMEMERR	LCM/tlm/_/F.MEMERRSTAT.shtml	RAD750 MEM Error Status Register
MINLDMIN	DiagEpu0Stats	LHK/tlm/_/F.MINLDMIN.shtml	Min CPU Load/Min
MINLDMIN	DiagEpu1Stats	LHK/tlm/_/F.MINLDMIN.shtml	Min CPU Load/Min
MINLDMIN	DiagEpu2Stats	LHK/tlm/_/F.MINLDMIN.shtml	Min CPU Load/Min
MINLDMIN	DiagSiuStats	LHK/tlm/_/F.MINLDMIN.shtml	Min CPU Load/Min
MINLDMIN	Epu0Stats	LHK/tlm/_/F.MINLDMIN.shtml	Min CPU Load/Min
MINLDMIN	Epu1Stats	LHK/tlm/_/F.MINLDMIN.shtml	Min CPU Load/Min
MINLDMIN	Epu2Stats	LHK/tlm/_/F.MINLDMIN.shtml	Min CPU Load/Min
MINLDMIN	SiuStats	LHK/tlm/_/F.MINLDMIN.shtml	Min CPU Load/Min
MLDACT	DiagEpu0Stats	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	DiagEpu1Stats	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	DiagEpu2Stats	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	DiagSiuStats	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	DiagStatusEpu0	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	DiagStatusEpu1	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	DiagStatusEpu2	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	DiagStatusSiu	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	Epu0Stats	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	Epu1Stats	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	Epu2Stats	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	SiuStats	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	StatusEpu0	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	StatusEpu1	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	StatusEpu2	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDACT	StatusSiu	LHK/tlm/_/F.MLDACT.shtml	Memory load active flag
MLDBYTS	DiagEpu0Stats	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	DiagEpu1Stats	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	DiagEpu2Stats	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	DiagSiuStats	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	DiagStatusEpu0	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	DiagStatusEpu1	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	DiagStatusEpu2	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	DiagStatusSiu	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	Epu0Stats	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	Epu1Stats	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	Epu2Stats	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	SiuStats	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	StatusEpu0	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	StatusEpu1	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	StatusEpu2	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDBYTS	StatusSiu	LHK/tlm/_/F.MLDBYTS.shtml	Memory load total bytes
MLDOFF	DiagEpu0Stats	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	DiagEpu1Stats	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	DiagEpu2Stats	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	DiagSiuStats	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	DiagStatusEpu0	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset

Field (L)	Tlm. Packet (L)	Section	Description (L)
MLDOFF	DiagStatusEpu1	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	DiagStatusEpu2	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	DiagStatusSiu	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	Epu0Stats	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	Epu1Stats	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	Epu2Stats	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	SiuStats	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	StatusEpu0	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	StatusEpu1	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	StatusEpu2	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDOFF	StatusSiu	LHK/tlm/_/F.MLDOFF.shtml	Memory load offset
MLDSTADR	DiagEpu0Stats	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	DiagEpu1Stats	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	DiagEpu2Stats	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	DiagSiuStats	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	DiagStatusEpu0	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	DiagStatusEpu1	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	DiagStatusEpu2	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	DiagStatusSiu	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	Epu0Stats	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	Epu1Stats	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	Epu2Stats	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	SiuStats	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	StatusEpu0	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	StatusEpu1	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	StatusEpu2	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTADR	StatusSiu	LHK/tlm/_/F.MLDSTADR.shtml	Starting memory load address
MLDSTAT	DiagEpu0Stats	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	DiagEpu1Stats	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	DiagEpu2Stats	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	DiagSiuStats	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	DiagStatusEpu0	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	DiagStatusEpu1	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	DiagStatusEpu2	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	DiagStatusSiu	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	Epu0Stats	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	Epu1Stats	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	Epu2Stats	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	SiuStats	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	StatusEpu0	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	StatusEpu1	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	StatusEpu2	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MLDSTAT	StatusSiu	LHK/tlm/_/F.MLDSTAT.shtml	Status of most recent load action
MODBSSADDR	LLCMMODLIST	LCM/tlm/_/F.MODBSSADDR.shtml	Module BSS Segment Address
MODBSSSIZE	LLCMMODLIST	LCM/tlm/_/F.MODBSSSIZE.shtml	Module BSS Segment Size
MODCMXCON	LLCMMODLIST	LCM/tlm/_/F.MODCMXCON.shtml	Module CMX Constituent
MODCMXMAJ	LLCMMODLIST	LCM/tlm/_/F.MODCMXMAJ.shtml	Module CMX Major Version
MODCMXMIN	LLCMMODLIST	LCM/tlm/_/F.MODCMXMIN.shtml	Module CMX Minor Version
MODCMXPAT	LLCMMODLIST	LCM/tlm/_/F.MODCMXPAT.shtml	Module CMX Patch Version
MODCMXPKG	LLCMMODLIST	LCM/tlm/_/F.MODCMXPKG.shtml	Module CMX Package
MODDATAADDR	LLCMMODLIST	LCM/tlm/_/F.MODDATAADDR.shtml	Module Data Segment Address
MODDATASIZE	LLCMMODLIST	LCM/tlm/_/F.MODDATASIZE.shtml	Module Data Segment Address

Field (L)	Tlm. Packet (L)	Section	Description (L)
MODEID	EPU0CFG	LPA/tlm/_/F.MODEID.shtml	LPA Mode ID
MODEID	EPU1CFG	LPA/tlm/_/F.MODEID.shtml	LPA Mode ID
MODEID	EPU2CFG	LPA/tlm/_/F.MODEID.shtml	LPA Mode ID
MODEID	SIUCFG	LPA/tlm/_/F.MODEID.shtml	LPA Mode ID
MODFILEID	LLCMMODLIST	LCM/tlm/_/F.MODFILEID.shtml	Module File ID
MODID	LLCMMODLIST	LCM/tlm/_/F.MODID.shtml	Module VxWorks ID
MODTEXTADDR	LLCMMODLIST	LCM/tlm/_/F.MODTEXTADDR.shtml	Module Text Segment Address
MODTEXTSIZE	LLCMMODLIST	LCM/tlm/_/F.MODTEXTSIZE.shtml	Module Text Segment Size
MSGCODE	LCMMSGOUTC	LCM/tlm/_/F.MSGCODE.shtml	MSG ID Code
MSGEBM	LCMMSGOUTC	LCM/tlm/_/F.MSGEBM.shtml	CPU address on the EBM
MSGEBM	MemoryError	LCM/tlm/_/F.MSGEBM.shtml	CPU address on the EBM
MSGEBM	PciError	LCM/tlm/_/F.MSGEBM.shtml	CPU address on the EBM
MSGFACIL	LCMMSGOUTC	LCM/tlm/_/F.MSGFACIL.shtml	MSG Facility Name
MSGFUNC	LCMMSGOUTC	LCM/tlm/_/F.MSGFUNC.shtml	MSG Source Function
MSGINST	LCMMSGOUTC	LCM/tlm/_/F.MSGINST.shtml	Instrument number
MSGINST	MemoryError	LCM/tlm/_/F.MSGINST.shtml	Instrument number
MSGINST	PciError	LCM/tlm/_/F.MSGINST.shtml	Instrument number
MSGLVL	DiagItcCfg	LHK/tlm/_/F.MSGLVL.shtml	ITC Task Message Level
MSGLVL	DiagTaskCfgEpu0	LHK/tlm/_/F.MSGLVL.shtml	ITC Task Message Level
MSGLVL	DiagTaskCfgEpu1	LHK/tlm/_/F.MSGLVL.shtml	ITC Task Message Level
MSGLVL	DiagTaskCfgEpu2	LHK/tlm/_/F.MSGLVL.shtml	ITC Task Message Level
MSGLVL	DiagTaskCfgSiu	LHK/tlm/_/F.MSGLVL.shtml	ITC Task Message Level
MSGLVL	ItcCfg	LHK/tlm/_/F.MSGLVL.shtml	ITC Task Message Level
MSGLVL	TaskCfgEpu0	LHK/tlm/_/F.MSGLVL.shtml	ITC Task Message Level
MSGLVL	TaskCfgEpu1	LHK/tlm/_/F.MSGLVL.shtml	ITC Task Message Level
MSGLVL	TaskCfgEpu2	LHK/tlm/_/F.MSGLVL.shtml	ITC Task Message Level
MSGLVL	TaskCfgSiu	LHK/tlm/_/F.MSGLVL.shtml	ITC Task Message Level
MSGNAME	LCMMSGOUTC	LCM/tlm/_/F.MSGNAME.shtml	MSG Mnemonic
MSGNODE	LCMMSGOUTC	LCM/tlm/_/F.MSGNODE.shtml	MSG ITC Source Node
MSGNODE	MemoryError	LCM/tlm/_/F.MSGNODE.shtml	MSG ITC Source Node
MSGNODE	PciError	LCM/tlm/_/F.MSGNODE.shtml	MSG ITC Source Node
MSGPAD16	LCMMSGOUTC	LCM/tlm/_/F.MSGPAD16.shtml	Padding
MSGSN	LCMMSGOUTC	LCM/tlm/_/F.MSGSN.shtml	Simple CPU serial number
MSGSN	MemoryError	LCM/tlm/_/F.MSGSN.shtml	Simple CPU serial number
MSGSN	PciError	LCM/tlm/_/F.MSGSN.shtml	Simple CPU serial number
MSGTASK	LCMMSGOUTC	LCM/tlm/_/F.MSGTASK.shtml	MSG Source Task
MSGTEXT	LCMMSGOUTC	LCM/tlm/_/F.MSGTEXT.shtml	MSG Text String
MSGTIME	LCMMSGOUTC	LCM/tlm/_/F.MSGTIME.shtml	MSG Generation Time
NCC	LRAREGDATA	LRA/tlm/_/F.NCC.shtml	Number of CCs
NFE	LRAREGDATA	LRA/tlm/_/F.NFE.shtml	Number of FEs
NRC	LRAREGDATA	LRA/tlm/_/F.NRC.shtml	Number of RCs
NREG	LRAREGDATA	LRA/tlm/_/F.NREG.shtml	Number of registers
NTEM	LRAREGDATA	LRA/tlm/_/F.NTEM.shtml	Number of TEMs
OPMODE	DiagLrs0	LHK/tlm/_/F.OPMODE.shtml	Operating Mode
OPMODE	Lrs0	LHK/tlm/_/F.OPMODE.shtml	Operating Mode
pad15	CmdConfirm	ITC/tlm/_/F.pad15.shtml	Padding field (15 bits)
Pad3	DiagLTC	LTC/tlm/_/F.Pad3.shtml	Padding bits
Pad4	DiagLTC	LTC/tlm/_/F.Pad4.shtml	Padding bits.
PADCOUNT	ASCEPU0	EMP/tlm/_/F.PADCOUNT.shtml	Pad byte count after packet
PADCOUNT	ASCEPU1	EMP/tlm/_/F.PADCOUNT.shtml	Pad byte count after packet
PADCOUNT	ASCEPU2	EMP/tlm/_/F.PADCOUNT.shtml	Pad byte count after packet
PADCOUNT	ASCEPU3	EMP/tlm/_/F.PADCOUNT.shtml	Pad byte count after packet

Field (L)	Tlm. Packet (L)	Section	Description (L)
PADCOUNT	ASCSIU	EMP/tlm/_/F.PADCOUNT.shtml	Pad byte count after packet
PADCOUNT	LCMIMAGEEPU0	LCM/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	LCMIMAGEEPU1	LCM/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	LCMIMAGEEPU2	LCM/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	LCMIMAGEEPU3	LCM/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	LCMIMAGESIU	LCM/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	LSWSNAPEPU0	LSW/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	LSWSNAPEPU1	LSW/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	LSWSNAPEPU2	LSW/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	LSWSNAPEPU3	LSW/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	LSWSNAPSIU	LSW/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	MAGIC7	LSM/tlm/_/F.PADCOUNT.shtml	Pad byte count after packet
PADCOUNT	STATSEPU0	LCM/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	STATSEPU1	LCM/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	STATSEPU2	LCM/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	STATSEPU3	LCM/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
PADCOUNT	STATSSIU	LCM/tlm/_/F.PADCOUNT.shtml	Pad byte count after telemetry header
Paduc2	DiagLimStatus	LHK/tlm/_/F.Paduc2.shtml	Explicit 2 bit pad in unsigned char
Paduc2	DiagLrs0	LHK/tlm/_/F.Paduc2.shtml	Explicit 2 bit pad in unsigned char
Paduc2	LimStatus	LHK/tlm/_/F.Paduc2.shtml	Explicit 2 bit pad in unsigned char
Paduc2	Lrs0	LHK/tlm/_/F.Paduc2.shtml	Explicit 2 bit pad in unsigned char
Paduc3	AemEnv0	LHK/tlm/_/F.Paduc3.shtml	Explicit 3 bit pad in unsigned char
Paduc3	AemEnv00	LHK/tlm/_/F.Paduc3.shtml	Explicit 3 bit pad in unsigned char
Paduc3	AemEnv01	LHK/tlm/_/F.Paduc3.shtml	Explicit 3 bit pad in unsigned char
Paduc3	DiagAemEnv0	LHK/tlm/_/F.Paduc3.shtml	Explicit 3 bit pad in unsigned char
Paduc3	DiagAemEnv00	LHK/tlm/_/F.Paduc3.shtml	Explicit 3 bit pad in unsigned char
Paduc3	DiagAemEnv01	LHK/tlm/_/F.Paduc3.shtml	Explicit 3 bit pad in unsigned char
Paduc5	DiagLimStatus	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	DiagLrs0	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	DiagSiuStats	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	DiagStatusEpu0	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	DiagStatusEpu1	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	DiagStatusEpu2	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	DiagStatusSiu	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	LimStatus	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	Lrs0	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	SiuStats	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	StatusEpu0	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	StatusEpu1	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	StatusEpu2	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc5	StatusSiu	LHK/tlm/_/F.Paduc5.shtml	Explicit 5 bit pad in unsigned char
Paduc6	DiagStatusEpu0	LHK/tlm/_/F.Paduc6.shtml	Explicit 6 bit pad in unsigned char
Paduc6	DiagStatusEpu1	LHK/tlm/_/F.Paduc6.shtml	Explicit 6 bit pad in unsigned char
Paduc6	DiagStatusEpu2	LHK/tlm/_/F.Paduc6.shtml	Explicit 6 bit pad in unsigned char
Paduc6	DiagStatusSiu	LHK/tlm/_/F.Paduc6.shtml	Explicit 6 bit pad in unsigned char
Paduc6	StatusEpu0	LHK/tlm/_/F.Paduc6.shtml	Explicit 6 bit pad in unsigned char
Paduc6	StatusEpu1	LHK/tlm/_/F.Paduc6.shtml	Explicit 6 bit pad in unsigned char
Paduc6	StatusEpu2	LHK/tlm/_/F.Paduc6.shtml	Explicit 6 bit pad in unsigned char
Paduc6	StatusSiu	LHK/tlm/_/F.Paduc6.shtml	Explicit 6 bit pad in unsigned char
Paduc7	DiagLimStatus	LHK/tlm/_/F.Paduc7.shtml	Explicit 7 bit pad in unsigned char
Paduc7	DiagLrs0	LHK/tlm/_/F.Paduc7.shtml	Explicit 7 bit pad in unsigned char
Paduc7	DiagPigStatus	LHK/tlm/_/F.Paduc7.shtml	Explicit 7 bit pad in unsigned char

Field (L)	Tlm. Packet (L)	Section	Description (L)
Paduc7	LimStatus	LHK/tlm/_/F.Paduc7.shtml	Explicit 7 bit pad in unsigned char
Paduc7	Lrs0	LHK/tlm/_/F.Paduc7.shtml	Explicit 7 bit pad in unsigned char
Paduc7	PigStatus	LHK/tlm/_/F.Paduc7.shtml	Explicit 7 bit pad in unsigned char
Paduc8	DiagLatcStatus	LHK/tlm/_/F.Paduc8.shtml	Explicit 8 bit pad in unsigned char
Paduc8	DiagPigStatus	LHK/tlm/_/F.Paduc8.shtml	Explicit 8 bit pad in unsigned char
Paduc8	DiagSiuStats	LHK/tlm/_/F.Paduc8.shtml	Explicit 8 bit pad in unsigned char
Paduc8	LatcStatus	LHK/tlm/_/F.Paduc8.shtml	Explicit 8 bit pad in unsigned char
Paduc8	MiscSlow	LHK/tlm/_/F.Paduc8.shtml	Explicit 8 bit pad in unsigned char
Paduc8	PigStatus	LHK/tlm/_/F.Paduc8.shtml	Explicit 8 bit pad in unsigned char
Paduc8	SiuStats	LHK/tlm/_/F.Paduc8.shtml	Explicit 8 bit pad in unsigned char
Padui14	DiagPigStatus	LHK/tlm/_/F.Padui14.shtml	Explicit 14 bit pad in unsigned int
Padui14	PigStatus	LHK/tlm/_/F.Padui14.shtml	Explicit 14 bit pad in unsigned int
Padui16	DiagPigStatus	LHK/tlm/_/F.Padui16.shtml	Explicit 16 bit pad in unsigned int
Padui16	PigStatus	LHK/tlm/_/F.Padui16.shtml	Explicit 16 bit pad in unsigned int
Padui1	DiagPigStatus	LHK/tlm/_/F.Padui1.shtml	Explicit 1 bit pad in unsigned int
Padui1	PigStatus	LHK/tlm/_/F.Padui1.shtml	Explicit 1 bit pad in unsigned int
Padui2	DiagPigStatus	LHK/tlm/_/F.Padui2.shtml	Explicit 2 bit pad in unsigned int
Padui2	PigStatus	LHK/tlm/_/F.Padui2.shtml	Explicit 2 bit pad in unsigned int
Padui32	DiagLatcStatus	LHK/tlm/_/F.Padui32.shtml	Explicit 32 bit pad in unsigned int
Padui32	DiagPigStatus	LHK/tlm/_/F.Padui32.shtml	Explicit 32 bit pad in unsigned int
Padui32	LatcStatus	LHK/tlm/_/F.Padui32.shtml	Explicit 32 bit pad in unsigned int
Padui32	PigStatus	LHK/tlm/_/F.Padui32.shtml	Explicit 32 bit pad in unsigned int
Padui3	DiagPigStatus	LHK/tlm/_/F.Padui3.shtml	Explicit 3 bit pad in unsigned int
Padui3	PigStatus	LHK/tlm/_/F.Padui3.shtml	Explicit 3 bit pad in unsigned int
Padui7	DiagPigStatus	LHK/tlm/_/F.Padui7.shtml	Explicit 7 bit pad in unsigned int
Padui7	PigStatus	LHK/tlm/_/F.Padui7.shtml	Explicit 7 bit pad in unsigned int
Padui8	DiagPigStatus	LHK/tlm/_/F.Padui8.shtml	Explicit 8 bit pad in unsigned int
Padui8	PigStatus	LHK/tlm/_/F.Padui8.shtml	Explicit 8 bit pad in unsigned int
Padus13	DiagPduEnv0	LHK/tlm/_/F.Padus13.shtml	Explicit 13 bit pad in unsigned short
Padus13	DiagPduEnv4	LHK/tlm/_/F.Padus13.shtml	Explicit 13 bit pad in unsigned short
Padus13	PduEnv0	LHK/tlm/_/F.Padus13.shtml	Explicit 13 bit pad in unsigned short
Padus13	PduEnv4	LHK/tlm/_/F.Padus13.shtml	Explicit 13 bit pad in unsigned short
Padus16	AemEnv0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	AemEnv00	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	AemEnv01	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	CmdCnt0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	CmdCnt1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	CtdbCounts	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagAemEnv0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagAemEnv00	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagAemEnv01	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagCmdCnt0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagCmdCnt1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagCtdbCounts	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagEpu0Stats	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagEpu1Stats	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagEpu2Stats	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagGasuCounts	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagItcCfg	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagLatcStatus	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagLimStatus	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagLpaDb0Epu0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short

Field (L)	Tlm. Packet (L)	Section	Description (L)
Padus16	DiagLpaDb0Epu1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagLpaDb0Epu2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagLpaDb0Siu	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagLrs0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagLtcData0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagLtcData1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagLtcData2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagLtcData3	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagMiscSlow	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagPduEnv0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagPduEnv1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagPduEnv2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagPduEnv3	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagPduEnv4	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagPduEnv5	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagPduEnv6	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagPduEnv7	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagPigStatus	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagSiuStats	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagStatusEpu0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagStatusEpu1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagStatusEpu2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagStatusSiu	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTaskCfgEpu0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTaskCfgEpu1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTaskCfgEpu2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTaskCfgSiu	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvPwr0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvPwr00	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvPwr01	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvPwr02	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvPwr03	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvPwr1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvPwr2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvPwr3	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvPwr4	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvPwr5	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvTemp0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvTemp1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvTemp2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvTemp3	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvTemp4	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvTemp5	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvTemp6	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTemEnvTemp7	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTopEpu0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTopEpu1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTopEpu2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	DiagTopSiu	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	Epu0Stats	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	Epu1Stats	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	Epu2Stats	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short

Field (L)	Tlm. Packet (L)	Section	Description (L)
Padus16	GasuCounts	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	ItcCfg	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	LatcStatus	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	LimStatus	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	LpaDb0Epu0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	LpaDb0Epu1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	LpaDb0Epu2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	LpaDb0Siu	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	Lrs0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	LtcData0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	LtcData1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	LtcData2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	LtcData3	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	MiscSlow	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	PduEnv0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	PduEnv1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	PduEnv2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	PduEnv3	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	PduEnv4	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	PduEnv5	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	PduEnv6	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	PduEnv7	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	PigStatus	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	SiuStats	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	StatusEpu0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	StatusEpu1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	StatusEpu2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	StatusSiu	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TaskCfgEpu0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TaskCfgEpu1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TaskCfgEpu2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TaskCfgSiu	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvPwr0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvPwr00	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvPwr01	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvPwr02	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvPwr03	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvPwr1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvPwr2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvPwr3	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvPwr4	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvPwr5	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvTemp0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvTemp1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvTemp2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvTemp3	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvTemp4	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvTemp5	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvTemp6	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TemEnvTemp7	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TopEpu0	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TopEpu1	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short

Field (L)	Tlm. Packet (L)	Section	Description (L)
Padus16	TopEpu2	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus16	TopSiu	LHK/tlm/_/F.Padus16.shtml	Explicit 16 bit pad in unsigned short
Padus2	DiagPduEnv0	LHK/tlm/_/F.Padus2.shtml	Explicit 2 bit pad in unsigned short
Padus2	DiagPduEnv4	LHK/tlm/_/F.Padus2.shtml	Explicit 2 bit pad in unsigned short
Padus2	PduEnv0	LHK/tlm/_/F.Padus2.shtml	Explicit 2 bit pad in unsigned short
Padus2	PduEnv4	LHK/tlm/_/F.Padus2.shtml	Explicit 2 bit pad in unsigned short
Padus3	DiagLtcData0	LHK/tlm/_/F.Padus3.shtml	Explicit 3 bit pad in unsigned short
Padus3	DiagPduEnv0	LHK/tlm/_/F.Padus3.shtml	Explicit 3 bit pad in unsigned short
Padus3	DiagPduEnv4	LHK/tlm/_/F.Padus3.shtml	Explicit 3 bit pad in unsigned short
Padus3	LtcData0	LHK/tlm/_/F.Padus3.shtml	Explicit 3 bit pad in unsigned short
Padus3	PduEnv0	LHK/tlm/_/F.Padus3.shtml	Explicit 3 bit pad in unsigned short
Padus3	PduEnv4	LHK/tlm/_/F.Padus3.shtml	Explicit 3 bit pad in unsigned short
Padus4	DiagLtcData0	LHK/tlm/_/F.Padus4.shtml	Explicit 4 bit pad in unsigned short
Padus4	LtcData0	LHK/tlm/_/F.Padus4.shtml	Explicit 4 bit pad in unsigned short
Padus5	DiagItcCfg	LHK/tlm/_/F.Padus5.shtml	Explicit 5 bit pad in unsigned short
Padus5	DiagTaskCfgEpu0	LHK/tlm/_/F.Padus5.shtml	Explicit 5 bit pad in unsigned short
Padus5	DiagTaskCfgEpu1	LHK/tlm/_/F.Padus5.shtml	Explicit 5 bit pad in unsigned short
Padus5	DiagTaskCfgEpu2	LHK/tlm/_/F.Padus5.shtml	Explicit 5 bit pad in unsigned short
Padus5	DiagTaskCfgSiu	LHK/tlm/_/F.Padus5.shtml	Explicit 5 bit pad in unsigned short
Padus5	ItcCfg	LHK/tlm/_/F.Padus5.shtml	Explicit 5 bit pad in unsigned short
Padus5	TaskCfgEpu0	LHK/tlm/_/F.Padus5.shtml	Explicit 5 bit pad in unsigned short
Padus5	TaskCfgEpu1	LHK/tlm/_/F.Padus5.shtml	Explicit 5 bit pad in unsigned short
Padus5	TaskCfgEpu2	LHK/tlm/_/F.Padus5.shtml	Explicit 5 bit pad in unsigned short
Padus5	TaskCfgSiu	LHK/tlm/_/F.Padus5.shtml	Explicit 5 bit pad in unsigned short
PCIERRADDR	LLCMPCIERR	LCM/tlm/_/F.PCIERRADDR.shtml	RAD750 PCI Error Address Register
PCIERRBUS	LLCMPCIERR	LCM/tlm/_/F.PCIERRBUS.shtml	RAD750 PCI Bus Status Register
PCIERRSTAT	LLCMPCIERR	LCM/tlm/_/F.PCIERRSTAT.shtml	RAD750 PCI Error Status Register
PENDING	DiagLimStatus	LHK/tlm/_/F.PENDING.shtml	Pending Status
PENDING	DiagLrs0	LHK/tlm/_/F.PENDING.shtml	Pending Status
PENDING	LimStatus	LHK/tlm/_/F.PENDING.shtml	Pending Status
PENDING	Lrs0	LHK/tlm/_/F.PENDING.shtml	Pending Status
PID	DiagSiuStats	LHK/tlm/_/F.PID.shtml	PID status
PID	DiagStatusEpu0	LHK/tlm/_/F.PID.shtml	PID status
PID	DiagStatusEpu1	LHK/tlm/_/F.PID.shtml	PID status
PID	DiagStatusEpu2	LHK/tlm/_/F.PID.shtml	PID status
PID	DiagStatusSiu	LHK/tlm/_/F.PID.shtml	PID status
PID	SiuStats	LHK/tlm/_/F.PID.shtml	PID status
PID	StatusEpu0	LHK/tlm/_/F.PID.shtml	PID status
PID	StatusEpu1	LHK/tlm/_/F.PID.shtml	PID status
PID	StatusEpu2	LHK/tlm/_/F.PID.shtml	PID status
PID	StatusSiu	LHK/tlm/_/F.PID.shtml	PID status
RawAdc	DiagLTC	LTC/tlm/_/F.RawAdc.shtml	Raw Sensor ADC Counts
RawAdc	DiagLtcData2	LHK/tlm/_/F.RawAdc.shtml	Raw Sensor ADC Counts
RawAdc	DiagLtcData3	LHK/tlm/_/F.RawAdc.shtml	Raw Sensor ADC Counts
RawAdc	LtcData2	LHK/tlm/_/F.RawAdc.shtml	Raw Sensor ADC Counts
RawAdc	LtcData3	LHK/tlm/_/F.RawAdc.shtml	Raw Sensor ADC Counts
RawStatus	DiagLTC	LTC/tlm/_/F.RawStatus.shtml	Raw Sensor Status
RawStatus	DiagLtcData2	LHK/tlm/_/F.RawStatus.shtml	Raw Sensor Status
RawStatus	DiagLtcData3	LHK/tlm/_/F.RawStatus.shtml	Raw Sensor Status
RawStatus	LtcData2	LHK/tlm/_/F.RawStatus.shtml	Raw Sensor Status
RawStatus	LtcData3	LHK/tlm/_/F.RawStatus.shtml	Raw Sensor Status
RBLOCK	LRAREGDATA	LRA/tlm/_/F.RBLOCK.shtml	Register block

Field (L)	Tlm. Packet (L)	Section	Description (L)
RCC	LRAREGDATA	LRA/tlm/_/F.RCC.shtml	Cable controller
RCMPNT	LRAREGDATA	LRA/tlm/_/F.RCMPNT.shtml	Component
READY	DiagLimStatus	LHK/tlm/_/F.READY.shtml	Ready Status
READY	DiagLrs0	LHK/tlm/_/F.READY.shtml	Ready Status
READY	LimStatus	LHK/tlm/_/F.READY.shtml	Ready Status
READY	Lrs0	LHK/tlm/_/F.READY.shtml	Ready Status
RECSEQ	ALRTCLOSE	LPA/tlm/_/F.RECSEQ.shtml	Record Sequence Count
RECSEQ	ALRTTRG	LPA/tlm/_/F.RECSEQ.shtml	Record Sequence Count
RECSEQ	ALRTUPDATE	LPA/tlm/_/F.RECSEQ.shtml	Record Sequence Count
RECTYP	ALRTCLOSE	LPA/tlm/_/F.RECTYP.shtml	Record Type
RECTYP	ALRTTRG	LPA/tlm/_/F.RECTYP.shtml	Record Type
RECTYP	ALRTUPDATE	LPA/tlm/_/F.RECTYP.shtml	Record Type
RECVER	ALRTCLOSE	LPA/tlm/_/F.RECVER.shtml	Record Version
RECVER	ALRTTRG	LPA/tlm/_/F.RECVER.shtml	Record Version
RECVER	ALRTUPDATE	LPA/tlm/_/F.RECVER.shtml	Record Version
REMAINSEC	DiagLrs0	LHK/tlm/_/F.REMAINSEC.shtml	Time Remaining
REMAINSEC	Lrs0	LHK/tlm/_/F.REMAINSEC.shtml	Time Remaining
RFE	LRAREGDATA	LRA/tlm/_/F.RFE.shtml	Front-end number
RRC	LRAREGDATA	LRA/tlm/_/F.RRC.shtml	Readout controller
RREG	LRAREGDATA	LRA/tlm/_/F.RREG.shtml	Register
RTCMDRXCNT	LCTDBRTDIAG	CTDB/tlm/_/F.RTCMDRXCNT.shtml	RT driver telecommand receive count
RTCMDRXSIZ	LCTDBRTDIAG	CTDB/tlm/_/F.RTCMDRXSIZ.shtml	RT driver telecommand receive total bytes
RTCMDTXCNT	LCTDBRTDIAG	CTDB/tlm/_/F.RTCMDTXCNT.shtml	RT driver telecommand send count
RTCMDTXSIZ	LCTDBRTDIAG	CTDB/tlm/_/F.RTCMDTXSIZ.shtml	RT driver telecommand send total bytes
RTEM	LRAREGDATA	LRA/tlm/_/F.RTEM.shtml	TEM number
RTERR	CtdbCounts	LHK/tlm/_/F.RTERR.shtml	1553 Error Count
RTERR	DiagCtdbCounts	LHK/tlm/_/F.RTERR.shtml	1553 Error Count
RTERR	DiagTemEnvPwr5	LHK/tlm/_/F.RTERR.shtml	1553 Error Count
RTERR	TemEnvPwr5	LHK/tlm/_/F.RTERR.shtml	1553 Error Count
RTERRCNT	LCTDBRTDIAG	CTDB/tlm/_/F.RTERRCNT.shtml	RT driver total error count
RTHKPCNT	LCTDBRTDIAG	CTDB/tlm/_/F.RTHKPCNT.shtml	RT driver HKP send count
RTHKPSIZ	LCTDBRTDIAG	CTDB/tlm/_/F.RTHKPSIZ.shtml	RT driver HKP send total bytes
RTINTRCNT	LCTDBRTDIAG	CTDB/tlm/_/F.RTINTRCNT.shtml	RT driver total interrupt count
RTTLMCNT	LCTDBRTDIAG	CTDB/tlm/_/F.RTTLMCNT.shtml	RT driver telemetry send count
RTTLMSIZ	LCTDBRTDIAG	CTDB/tlm/_/F.RTTLMSIZ.shtml	RT driver telemetry send total bytes
RUNID	EPU0CFG	LPA/tlm/_/F.RUNID.shtml	Last Run ID
RUNID	EPU1CFG	LPA/tlm/_/F.RUNID.shtml	Last Run ID
RUNID	EPU2CFG	LPA/tlm/_/F.RUNID.shtml	Last Run ID
RUNID	SIUCFG	LPA/tlm/_/F.RUNID.shtml	Last Run ID
RunMode	DiagLTC	LTC/tlm/_/F.RunMode.shtml	LTC run mode
RunMode	DiagLtcData0	LHK/tlm/_/F.RunMode.shtml	LTC run mode
RunMode	LtcData0	LHK/tlm/_/F.RunMode.shtml	LTC run mode
SAATRANSIT	DiagLrs0	LHK/tlm/_/F.SAATRANSIT.shtml	SAA Transit Status
SAATRANSIT	Lrs0	LHK/tlm/_/F.SAATRANSIT.shtml	SAA Transit Status
schar	LimitAlert	LIH/tlm/_/F.schar.shtml	Signed char
Sec_hdr	CmdConfirm	ITC/tlm/_/F.Sec_hdr.shtml	CCSDS secondary header flag
secs	lmc_acd	LMC/tlm/_/F.secs.shtml	Seconds
secs	lmc_cal	LMC/tlm/_/F.secs.shtml	Seconds
secs	lmc_dead	LMC/tlm/_/F.secs.shtml	Seconds
secs	lmc_tkr	LMC/tlm/_/F.secs.shtml	Seconds
select	DiagPduEnv0	LHK/tlm/_/F.select.shtml	Primary/redundant selector

Field (L)	Tlm. Packet (L)	Section	Description (L)
select	DiagPduEnv4	LHK/tlm/_/F.select.shtml	Primary/redundant selector
select	DiagPigStatus	LHK/tlm/_/F.select.shtml	Primary/redundant selector
select	PduEnv0	LHK/tlm/_/F.select.shtml	Primary/redundant selector
select	PduEnv4	LHK/tlm/_/F.select.shtml	Primary/redundant selector
select	PigStatus	LHK/tlm/_/F.select.shtml	Primary/redundant selector
SensorHpNum	DiagLTC	LTC/tlm/_/F.SensorHpNum.shtml	Specifies connected HP number for sensor
SensorHpNum	DiagLtcData0	LHK/tlm/_/F.SensorHpNum.shtml	Specifies connected HP number for sensor
SensorHpNum	LtcData0	LHK/tlm/_/F.SensorHpNum.shtml	Specifies connected HP number for sensor
SensorStatus	DiagLTC	LTC/tlm/_/F.SensorStatus.shtml	Status for HP sensors
SensorStatus	DiagLtcData0	LHK/tlm/_/F.SensorStatus.shtml	Status for HP sensors
SensorStatus	LtcData0	LHK/tlm/_/F.SensorStatus.shtml	Status for HP sensors
SensorType	DiagLTC	LTC/tlm/_/F.SensorType.shtml	Specifies Sensor Type
SensorType	DiagLtcData0	LHK/tlm/_/F.SensorType.shtml	Specifies Sensor Type
SensorType	LtcData0	LHK/tlm/_/F.SensorType.shtml	Specifies Sensor Type
Seq_cnt	CmdConfirm	ITC/tlm/_/F.Seq_cnt.shtml	CCSDS sequencing count
Seq_flg	CmdConfirm	ITC/tlm/_/F.Seq_flg.shtml	CCSDS sequencing bits
SEQN	LRAREGDATA	LRA/tlm/_/F.SEQN.shtml	Sequence number
SERIAL	DiagTopEpu0	LHK/tlm/_/F.SERIAL.shtml	CPU Serial Number
SERIAL	DiagTopEpu1	LHK/tlm/_/F.SERIAL.shtml	CPU Serial Number
SERIAL	DiagTopEpu2	LHK/tlm/_/F.SERIAL.shtml	CPU Serial Number
SERIAL	DiagTopSiu	LHK/tlm/_/F.SERIAL.shtml	CPU Serial Number
SERIAL	TopEpu0	LHK/tlm/_/F.SERIAL.shtml	CPU Serial Number
SERIAL	TopEpu1	LHK/tlm/_/F.SERIAL.shtml	CPU Serial Number
SERIAL	TopEpu2	LHK/tlm/_/F.SERIAL.shtml	CPU Serial Number
SERIAL	TopSiu	LHK/tlm/_/F.SERIAL.shtml	CPU Serial Number
SIMINTV	SIUCFG	LPA/tlm/_/F.SIMINTV.shtml	GRB Simulation Interval
SIMMODE	SIUCFG	LPA/tlm/_/F.SIMMODE.shtml	GRB Simulation Mode
SIMRPT	SIUCFG	LPA/tlm/_/F.SIMRPT.shtml	GRB Simulation Repoint Time
STARTED	DiagLimStatus	LHK/tlm/_/F.STARTED.shtml	Started Status
STARTED	DiagLrs0	LHK/tlm/_/F.STARTED.shtml	Started Status
STARTED	LimStatus	LHK/tlm/_/F.STARTED.shtml	Started Status
STARTED	Lrs0	LHK/tlm/_/F.STARTED.shtml	Started Status
STARTSECS	EPU0CFG	LPA/tlm/_/F.STARTSECS.shtml	Last Run Start Time
STARTSECS	EPU1CFG	LPA/tlm/_/F.STARTSECS.shtml	Last Run Start Time
STARTSECS	EPU2CFG	LPA/tlm/_/F.STARTSECS.shtml	Last Run Start Time
STARTSECS	SIUCFG	LPA/tlm/_/F.STARTSECS.shtml	Last Run Start Time
status	AemEnv0	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	AemEnv00	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	AemEnv01	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
Status	CmdConfirm	ITC/tlm/_/F.Status.shtml	MSG status code
status	DiagAemEnv0	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagAemEnv00	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagAemEnv01	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
STATUS	DiagLrs0	LHK/tlm/_/F.STATUS.shtml	Most Recent Action Status
status	DiagPduEnv0	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagPduEnv1	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagPduEnv2	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagPduEnv3	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagPduEnv4	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)

Field (L)	Tlm. Packet (L)	Section	Description (L)
status	DiagPduEnv5	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagPduEnv6	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagPduEnv7	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagPigStatus	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvPwr0	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvPwr00	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvPwr01	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvPwr02	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvPwr03	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvPwr1	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvPwr2	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvPwr3	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvPwr4	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvPwr5	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvTemp0	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvTemp1	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvTemp2	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvTemp3	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvTemp4	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvTemp5	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvTemp6	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	DiagTemEnvTemp7	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
STATUS	Lrs0	LHK/tlm/_/F.STATUS.shtml	Most Recent Action Status
status	PduEnv0	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	PduEnv1	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	PduEnv2	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	PduEnv3	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	PduEnv4	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	PduEnv5	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	PduEnv6	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	PduEnv7	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	PigStatus	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvPwr0	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvPwr00	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvPwr01	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvPwr02	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvPwr03	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvPwr1	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvPwr2	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvPwr3	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvPwr4	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvPwr5	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvTemp0	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvTemp1	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvTemp2	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvTemp3	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvTemp4	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvTemp5	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvTemp6	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
status	TemEnvTemp7	LHK/tlm/_/F.status.shtml	Readout status (ADC or switch)
STATUS	TERMINATE	LCI/tlm/_/F.STATUS.shtml	Termination status code
switch	AemEnv0	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)

Field (L)	Tlm. Packet (L)	Section	Description (L)
switch	AemEnv00	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
switch	AemEnv01	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
switch	DiagAemEnv0	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
switch	DiagAemEnv00	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
switch	DiagAemEnv01	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
switch	DiagPduEnv0	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
switch	DiagPduEnv4	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
switch	DiagPigStatus	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
switch	PduEnv0	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
switch	PduEnv4	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
switch	PigStatus	LHK/tlm/_/F.switch.shtml	A switch (usually a power switch)
SYSBLKFREE	LLFSSYSLIST	LFS/tlm/_/F.SYSBLKFREE.shtml	File System Free Blocks
SYSBLKSIZE	LLFSSYSLIST	LFS/tlm/_/F.SYSBLKSIZE.shtml	File System Block Size
SYSBLKTOTAL	LLFSSYSLIST	LFS/tlm/_/F.SYSBLKTOTAL.shtml	File System Total Blocks
TACTION	State	LIM/tlm/_/F.TACTION.shtml	Most Recent LIM Action
TACTIVE	State	LIM/tlm/_/F.TACTIVE.shtml	Active Status
TALLOWED	State	LIM/tlm/_/F.TALLOWED.shtml	Allowed Status
TASKDELAY	LLCMTASKLIST	LCM/tlm/_/F.TASKDELAY.shtml	Task Delay Timeout
TASKENTRY	LLCMTASKLIST	LCM/tlm/_/F.TASKENTRY.shtml	Task Entry Address
TASKERROR	LLCMTASKLIST	LCM/tlm/_/F.TASKERROR.shtml	Task Most Recent Error
TASKID	LLCMTASKLIST	LCM/tlm/_/F.TASKID.shtml	VxWorks Task ID
TASKNAME	LLCMTASKLIST	LCM/tlm/_/F.TASKNAME.shtml	Task Name
TASKOPT	LLCMTASKLIST	LCM/tlm/_/F.TASKOPT.shtml	Task Options
TASKPRI	LLCMTASKLIST	LCM/tlm/_/F.TASKPRI.shtml	Task Priority
TASKSP	LLCMTASKLIST	LCM/tlm/_/F.TASKSP.shtml	Task Saved SP Value
TASKSTAT	LLCMTASKLIST	LCM/tlm/_/F.TASKSTAT.shtml	Task Status
TASKSTATE	DiagLrs0	LHK/tlm/_/F.TASKSTATE.shtml	Task State
TASKSTATE	Lrs0	LHK/tlm/_/F.TASKSTATE.shtml	Task State
TASKSTBASE	LLCMTASKLIST	LCM/tlm/_/F.TASKSTBASE.shtml	Task Stack Base Address
TASKSTCUR	LLCMTASKLIST	LCM/tlm/_/F.TASKSTCUR.shtml	Task Stack Current Usage
TASKSTEND	LLCMTASKLIST	LCM/tlm/_/F.TASKSTEND.shtml	Task Stack End Address
TASKSTHIGH	LLCMTASKLIST	LCM/tlm/_/F.TASKSTHIGH.shtml	Task Stack Maximum Usage
TASKSTLIM	LLCMTASKLIST	LCM/tlm/_/F.TASKSTLIM.shtml	Task Stack Limit
TASKSTMAR	LLCMTASKLIST	LCM/tlm/_/F.TASKSTMAR.shtml	Task Stack Current Margin
TASKSTSIZE	LLCMTASKLIST	LCM/tlm/_/F.TASKSTSIZE.shtml	Task Stack Size
tdcntr	lmc_dead	LMC/tlm/_/F.tdcntr.shtml	TEM Deadtime Counter Data Value
TDUMPADDR	LMEMEPU0DATA	MEM/tlm/_/F.TDUMPADDR.shtml	Starting Address
TDUMPADDR	LMEMEPU1DATA	MEM/tlm/_/F.TDUMPADDR.shtml	Starting Address
TDUMPADDR	LMEMEPU2DATA	MEM/tlm/_/F.TDUMPADDR.shtml	Starting Address
TDUMPADDR	LMEMSIUDATA	MEM/tlm/_/F.TDUMPADDR.shtml	Starting Address
TDUMPCMDFUNC	LMEMEPU0DATA	MEM/tlm/_/F.TDUMPCMDFUNC.shtml	Dump Type
TDUMPCMDFUNC	LMEMEPU1DATA	MEM/tlm/_/F.TDUMPCMDFUNC.shtml	Dump Type
TDUMPCMDFUNC	LMEMEPU2DATA	MEM/tlm/_/F.TDUMPCMDFUNC.shtml	Dump Type
TDUMPCMDFUNC	LMEMSIUDATA	MEM/tlm/_/F.TDUMPCMDFUNC.shtml	Dump Type
TDUMPDATA	LMEMEPU0DATA	MEM/tlm/_/F.TDUMPDATA.shtml	Dump Data Word
TDUMPDATA	LMEMEPU1DATA	MEM/tlm/_/F.TDUMPDATA.shtml	Dump Data Word
TDUMPDATA	LMEMEPU2DATA	MEM/tlm/_/F.TDUMPDATA.shtml	Dump Data Word
TDUMPDATA	LMEMSIUDATA	MEM/tlm/_/F.TDUMPDATA.shtml	Dump Data Word
TDUMPSIZE	LMEMEPU0DATA	MEM/tlm/_/F.TDUMPSIZE.shtml	Word Count
TDUMPSIZE	LMEMEPU1DATA	MEM/tlm/_/F.TDUMPSIZE.shtml	Word Count
TDUMPSIZE	LMEMEPU2DATA	MEM/tlm/_/F.TDUMPSIZE.shtml	Word Count
TDUMPSIZE	LMEMSIUDATA	MEM/tlm/_/F.TDUMPSIZE.shtml	Word Count

Field (L)	Tlm. Packet (L)	Section	Description (L)
TempCelsius	DiagLTC	LTC/tlm/_/F.TempCelsius.shtml	Temperature converted to celsius.
TempCelsius	DiagLtcData0	LHK/tlm/_/F.TempCelsius.shtml	Temperature converted to celsius.
TempCelsius	DiagLtcData1	LHK/tlm/_/F.TempCelsius.shtml	Temperature converted to celsius.
TempCelsius	DiagLtcData2	LHK/tlm/_/F.TempCelsius.shtml	Temperature converted to celsius.
TempCelsius	LtcData0	LHK/tlm/_/F.TempCelsius.shtml	Temperature converted to celsius.
TempCelsius	LtcData1	LHK/tlm/_/F.TempCelsius.shtml	Temperature converted to celsius.
TempCelsius	LtcData2	LHK/tlm/_/F.TempCelsius.shtml	Temperature converted to celsius.
tenab	lmc_cal	LMC/tlm/_/F.tenab.shtml	TEM Enable Word
tenab	lmc_dead	LMC/tlm/_/F.tenab.shtml	TEM Enable Word
tenab	lmc_tkr	LMC/tlm/_/F.tenab.shtml	TEM Enable Word
TGRBSTATE	State	LIM/tlm/_/F.TGRBSTATE.shtml	GRB State
THDR	EPU0EVTDAT	LPA/tlm/_/F.THDR.shtml	Tertiary Header
THDR	EPU0EVTSTAT	LPA/tlm/_/F.THDR.shtml	Tertiary Header
THDR	EPU1EVTDAT	LPA/tlm/_/F.THDR.shtml	Tertiary Header
THDR	EPU1EVTSTAT	LPA/tlm/_/F.THDR.shtml	Tertiary Header
THDR	EPU2EVTDAT	LPA/tlm/_/F.THDR.shtml	Tertiary Header
THDR	EPU2EVTSTAT	LPA/tlm/_/F.THDR.shtml	Tertiary Header
THDR	LATCDATA	LATC/tlm/_/F.THDR.shtml	Tertiary header
THDR	LCIEPU0EVTDAT	LCI/tlm/_/F.THDR.shtml	Tertiary Header
THDR	LCIEPU1EVTDAT	LCI/tlm/_/F.THDR.shtml	Tertiary Header
THDR	LCIEPU2EVTDAT	LCI/tlm/_/F.THDR.shtml	Tertiary Header
THDR	LCISIUEVTDAT	LCI/tlm/_/F.THDR.shtml	Tertiary Header
thdr	lmc_ssr	LMC/tlm/_/F.thdr.shtml	Tertiary header
THDR	LRASSRDATA	LRA/tlm/_/F.THDR.shtml	Tertiary header
THDR	PIGDATA	PIG/tlm/_/F.THDR.shtml	Tertiary header
THDR	SIUEVTDAT	LPA/tlm/_/F.THDR.shtml	Tertiary Header
THDR	SIUEVTSTAT	LPA/tlm/_/F.THDR.shtml	Tertiary Header
THS	DiagStatusEpu0	LHK/tlm/_/F.THS.shtml	Status of time-hack services simulation
THS	DiagStatusEpu1	LHK/tlm/_/F.THS.shtml	Status of time-hack services simulation
THS	DiagStatusEpu2	LHK/tlm/_/F.THS.shtml	Status of time-hack services simulation
THS	DiagStatusSiu	LHK/tlm/_/F.THS.shtml	Status of time-hack services simulation
THS	StatusEpu0	LHK/tlm/_/F.THS.shtml	Status of time-hack services simulation
THS	StatusEpu1	LHK/tlm/_/F.THS.shtml	Status of time-hack services simulation
THS	StatusEpu2	LHK/tlm/_/F.THS.shtml	Status of time-hack services simulation
THS	StatusSiu	LHK/tlm/_/F.THS.shtml	Status of time-hack services simulation
tid	lmc_acd	LMC/tlm/_/F.tid.shtml	ACD Tile ID
Time_lsui	CmdConfirm	ITC/tlm/_/F.Time_lsui.shtml	Time (least significant 32 bits)
Time_msui	CmdConfirm	ITC/tlm/_/F.Time_msui.shtml	Time (most significant 32 bits)
timeout	DiagPigStatus	LHK/tlm/_/F.timeout.shtml	EBM timeout (17 bits)
timeout	PigStatus	LHK/tlm/_/F.timeout.shtml	EBM timeout (17 bits)
TIMESEC	CmdCnt0	LHK/tlm/_/F.TIMESEC.shtml	Timestamp seconds
TIMESEC	CmdCnt1	LHK/tlm/_/F.TIMESEC.shtml	Timestamp seconds
TIMESEC	DiagCmdCnt0	LHK/tlm/_/F.TIMESEC.shtml	Timestamp seconds
TIMESEC	DiagCmdCnt1	LHK/tlm/_/F.TIMESEC.shtml	Timestamp seconds
TIMESEC	DiagLrs0	LHK/tlm/_/F.TIMESEC.shtml	Timestamp seconds
TIMESEC	Lrs0	LHK/tlm/_/F.TIMESEC.shtml	Timestamp seconds
TIMESUBSEC	CmdCnt0	LHK/tlm/_/F.TIMESUBSEC.shtml	Timestamp subseconds
TIMESUBSEC	CmdCnt1	LHK/tlm/_/F.TIMESUBSEC.shtml	Timestamp subseconds
TIMESUBSEC	DiagCmdCnt0	LHK/tlm/_/F.TIMESUBSEC.shtml	Timestamp subseconds
TIMESUBSEC	DiagCmdCnt1	LHK/tlm/_/F.TIMESUBSEC.shtml	Timestamp subseconds
TIMESUBSEC	DiagLrs0	LHK/tlm/_/F.TIMESUBSEC.shtml	Timestamp subseconds
TIMESUBSEC	Lrs0	LHK/tlm/_/F.TIMESUBSEC.shtml	Timestamp subseconds

Field (L)	Tlm. Packet (L)	Section	Description (L)
TLATUNIT	LMEMEPU0DATA	MEM/tlm/_/F.TLATUNIT.shtml	Source LAT Unit
TLATUNIT	LMEMEPU1DATA	MEM/tlm/_/F.TLATUNIT.shtml	Source LAT Unit
TLATUNIT	LMEMEPU2DATA	MEM/tlm/_/F.TLATUNIT.shtml	Source LAT Unit
TLATUNIT	LMEMPOOLDATA	MEM/tlm/_/F.TLATUNIT.shtml	Source LAT Unit
TLATUNIT	LMEMSIUDATA	MEM/tlm/_/F.TLATUNIT.shtml	Source LAT Unit
TLATUNIT	LMEMSYMVAL	MEM/tlm/_/F.TLATUNIT.shtml	Source LAT Unit
TLMBCNT	CtdbCounts	LHK/tlm/_/F.TLMBCNT.shtml	1553 Telemertry Byte Count
TLMBCNT	DiagCtdbCounts	LHK/tlm/_/F.TLMBCNT.shtml	1553 Telemertry Byte Count
TLMBCNT	DiagTemEnvPwr5	LHK/tlm/_/F.TLMBCNT.shtml	1553 Telemertry Byte Count
TLMBCNT	TemEnvPwr5	LHK/tlm/_/F.TLMBCNT.shtml	1553 Telemertry Byte Count
TLMPAD16	LCMMSGSSRE0	LCM/tlm/_/F.TLMPAD16.shtml	16-bit alignment padding
TLMPAD16	LCMMSGSSRE1	LCM/tlm/_/F.TLMPAD16.shtml	16-bit alignment padding
TLMPAD16	LCMMSGSSRE2	LCM/tlm/_/F.TLMPAD16.shtml	16-bit alignment padding
TLMPAD16	LCMMSGSSRE3	LCM/tlm/_/F.TLMPAD16.shtml	16-bit alignment padding
TLMPAD16	LCMMSGSSRSI	LCM/tlm/_/F.TLMPAD16.shtml	16-bit alignment padding
TLMPCNT	CtdbCounts	LHK/tlm/_/F.TLMPCNT.shtml	1553 Telemetry Packet Count
TLMPCNT	DiagCtdbCounts	LHK/tlm/_/F.TLMPCNT.shtml	1553 Telemetry Packet Count
TLMPCNT	DiagTemEnvPwr5	LHK/tlm/_/F.TLMPCNT.shtml	1553 Telemetry Packet Count
TLMPCNT	TemEnvPwr5	LHK/tlm/_/F.TLMPCNT.shtml	1553 Telemetry Packet Count
TMASK	LRAREGDATA	LRA/tlm/_/F.TMASK.shtml	TEM mask
TOPMODE	State	LIM/tlm/_/F.TOPMODE.shtml	Operating Mode
TPAD16	LMEMPOOLDATA	MEM/tlm/_/F.TPAD16.shtml	16-Bit Padding
TPAD16	LMEMSYMVAL	MEM/tlm/_/F.TPAD16.shtml	16-Bit Padding
TPAD16	Load_Shed_Alert	LIM/tlm/_/F.TPAD16.shtml	16-Bit Padding
TPAD16	Repoint_Request	LIM/tlm/_/F.TPAD16.shtml	16-Bit Padding
TPAD16	State	LIM/tlm/_/F.TPAD16.shtml	16-Bit Padding
TPAD2	State	LIM/tlm/_/F.TPAD2.shtml	2-Bit Padding
TPAD5	State	LIM/tlm/_/F.TPAD5.shtml	5-Bit Padding
TPAD7	State	LIM/tlm/_/F.TPAD7.shtml	7-Bit Padding
TPAD8	LMEMSYMVAL	MEM/tlm/_/F.TPAD8.shtml	8-Bit Padding
TPENDING	State	LIM/tlm/_/F.TPENDING.shtml	Pending Status
TPOOLALLOCBLOCKS	LMEMPOOLDATA	MEM/tlm/_/F.TPOOLALLOCBLOCKS.shtml	Memory Pool Allocated Blocks
TPOOLALLOCBYTES	LMEMPOOLDATA	MEM/tlm/_/F.TPOOLALLOCBYTES.shtml	Memory Pool Allocated Bytes
TPOOLFREEBLOCKS	LMEMPOOLDATA	MEM/tlm/_/F.TPOOLFREEBLOCKS.shtml	Memory Pool Free Blocks
TPOOLFREEBYTES	LMEMPOOLDATA	MEM/tlm/_/F.TPOOLFREEBYTES.shtml	Memory Pool Free Bytes
TPOOLID	LMEMPOOLDATA	MEM/tlm/_/F.TPOOLID.shtml	Memory Pool ID
TPOOLMAXBLKBYTES	LMEMPOOLDATA	MEM/tlm/_/F.TPOOLMAXBLKBYTES.shtml	Memory Pool Maximum Block Size
TRCDTIM	DiagTopEpu0	LHK/tlm/_/F.TRCDTIM.shtml	TRC Sampling Period Duration in usec
TRCDTIM	DiagTopEpu1	LHK/tlm/_/F.TRCDTIM.shtml	TRC Sampling Period Duration in usec
TRCDTIM	DiagTopEpu2	LHK/tlm/_/F.TRCDTIM.shtml	TRC Sampling Period Duration in usec
TRCDTIM	DiagTopSiu	LHK/tlm/_/F.TRCDTIM.shtml	TRC Sampling Period Duration in usec
TRCDTIM	TopEpu0	LHK/tlm/_/F.TRCDTIM.shtml	TRC Sampling Period Duration in usec
TRCDTIM	TopEpu1	LHK/tlm/_/F.TRCDTIM.shtml	TRC Sampling Period Duration in usec
TRCDTIM	TopEpu2	LHK/tlm/_/F.TRCDTIM.shtml	TRC Sampling Period Duration in usec
TRCDTIM	TopSiu	LHK/tlm/_/F.TRCDTIM.shtml	TRC Sampling Period Duration in usec
TRCENDLSW	DiagTopEpu0	LHK/tlm/_/F.TRCENDLSW.shtml	TRC Sampling Period End Time LSW
TRCENDLSW	DiagTopEpu1	LHK/tlm/_/F.TRCENDLSW.shtml	TRC Sampling Period End Time LSW
TRCENDLSW	DiagTopEpu2	LHK/tlm/_/F.TRCENDLSW.shtml	TRC Sampling Period End Time LSW
TRCENDLSW	DiagTopSiu	LHK/tlm/_/F.TRCENDLSW.shtml	TRC Sampling Period End Time LSW
TRCENDLSW	TopEpu0	LHK/tlm/_/F.TRCENDLSW.shtml	TRC Sampling Period End Time LSW
TRCENDLSW	TopEpu1	LHK/tlm/_/F.TRCENDLSW.shtml	TRC Sampling Period End Time LSW
TRCENDLSW	TopEpu2	LHK/tlm/_/F.TRCENDLSW.shtml	TRC Sampling Period End Time LSW

Field (L)	Tlm. Packet (L)	Section	Description (L)
TRCENDLSW	TopSiu	LHK/tlm/_/F.TRCENDLSW.shtml	TRC Sampling Period End Time LSW
TRCENDMSW	DiagTopEpu0	LHK/tlm/_/F.TRCENDMSW.shtml	TRC Sampling Period End Time MSW
TRCENDMSW	DiagTopEpu1	LHK/tlm/_/F.TRCENDMSW.shtml	TRC Sampling Period End Time MSW
TRCENDMSW	DiagTopEpu2	LHK/tlm/_/F.TRCENDMSW.shtml	TRC Sampling Period End Time MSW
TRCENDMSW	DiagTopSiu	LHK/tlm/_/F.TRCENDMSW.shtml	TRC Sampling Period End Time MSW
TRCENDMSW	TopEpu0	LHK/tlm/_/F.TRCENDMSW.shtml	TRC Sampling Period End Time MSW
TRCENDMSW	TopEpu1	LHK/tlm/_/F.TRCENDMSW.shtml	TRC Sampling Period End Time MSW
TRCENDMSW	TopEpu2	LHK/tlm/_/F.TRCENDMSW.shtml	TRC Sampling Period End Time MSW
TRCENDMSW	TopSiu	LHK/tlm/_/F.TRCENDMSW.shtml	TRC Sampling Period End Time MSW
TRCEX5	DiagTopEpu0	LHK/tlm/_/F.TRCEX5.shtml	TRC Exception 5 Interrupt Rate
TRCEX5	DiagTopEpu1	LHK/tlm/_/F.TRCEX5.shtml	TRC Exception 5 Interrupt Rate
TRCEX5	DiagTopEpu2	LHK/tlm/_/F.TRCEX5.shtml	TRC Exception 5 Interrupt Rate
TRCEX5	DiagTopSiu	LHK/tlm/_/F.TRCEX5.shtml	TRC Exception 5 Interrupt Rate
TRCEX5	TopEpu0	LHK/tlm/_/F.TRCEX5.shtml	TRC Exception 5 Interrupt Rate
TRCEX5	TopEpu1	LHK/tlm/_/F.TRCEX5.shtml	TRC Exception 5 Interrupt Rate
TRCEX5	TopEpu2	LHK/tlm/_/F.TRCEX5.shtml	TRC Exception 5 Interrupt Rate
TRCEX5	TopSiu	LHK/tlm/_/F.TRCEX5.shtml	TRC Exception 5 Interrupt Rate
TRCEX9	DiagTopEpu0	LHK/tlm/_/F.TRCEX9.shtml	TRC Exception 9 Interrupt Rate
TRCEX9	DiagTopEpu1	LHK/tlm/_/F.TRCEX9.shtml	TRC Exception 9 Interrupt Rate
TRCEX9	DiagTopEpu2	LHK/tlm/_/F.TRCEX9.shtml	TRC Exception 9 Interrupt Rate
TRCEX9	DiagTopSiu	LHK/tlm/_/F.TRCEX9.shtml	TRC Exception 9 Interrupt Rate
TRCEX9	TopEpu0	LHK/tlm/_/F.TRCEX9.shtml	TRC Exception 9 Interrupt Rate
TRCEX9	TopEpu1	LHK/tlm/_/F.TRCEX9.shtml	TRC Exception 9 Interrupt Rate
TRCEX9	TopEpu2	LHK/tlm/_/F.TRCEX9.shtml	TRC Exception 9 Interrupt Rate
TRCEX9	TopSiu	LHK/tlm/_/F.TRCEX9.shtml	TRC Exception 9 Interrupt Rate
TRCTOP	DiagTopEpu0	LHK/tlm/_/F.TRCTOP.shtml	TRC CPU Fraction per Task/Exception
TRCTOP	DiagTopEpu1	LHK/tlm/_/F.TRCTOP.shtml	TRC CPU Fraction per Task/Exception
TRCTOP	DiagTopEpu2	LHK/tlm/_/F.TRCTOP.shtml	TRC CPU Fraction per Task/Exception
TRCTOP	DiagTopSiu	LHK/tlm/_/F.TRCTOP.shtml	TRC CPU Fraction per Task/Exception
TRCTOP	TopEpu0	LHK/tlm/_/F.TRCTOP.shtml	TRC CPU Fraction per Task/Exception
TRCTOP	TopEpu1	LHK/tlm/_/F.TRCTOP.shtml	TRC CPU Fraction per Task/Exception
TRCTOP	TopEpu2	LHK/tlm/_/F.TRCTOP.shtml	TRC CPU Fraction per Task/Exception
TRCTOP	TopSiu	LHK/tlm/_/F.TRCTOP.shtml	TRC CPU Fraction per Task/Exception
TREADY	State	LIM/tlm/_/F.TREADY.shtml	Ready Status
TREMAINSEC	State	LIM/tlm/_/F.TREMAINSEC.shtml	Time Remaining
TREQDEC	Repoint_Request	LIM/tlm/_/F.TREQDEC.shtml	ARR Location DEC
TREQDWELLTIME	Repoint_Request	LIM/tlm/_/F.TREQDWELLTIME.shtml	ARR Dwell Time
TREQRA	Repoint_Request	LIM/tlm/_/F.TREQRA.shtml	ARR Location RA
TREQTRANID	Repoint_Request	LIM/tlm/_/F.TREQTRANID.shtml	ARR Transaction ID
TRESPACCEPT	Repoint_Response	LIM/tlm/_/F.TRESPACCEPT.shtml	ARR Response Acceptance Indication
TRESPDEC	Repoint_Response	LIM/tlm/_/F.TRESPDEC.shtml	ARR Response Location DEC
TRESPDWELLTIME	Repoint_Response	LIM/tlm/_/F.TRESPDWELLTIME.shtml	ARR Response Dwell Time
TRESPRA	Repoint_Response	LIM/tlm/_/F.TRESPRA.shtml	ARR Response Location RA
TRESPTRANID	Repoint_Response	LIM/tlm/_/F.TRESPTRANID.shtml	ARR Response Transaction ID
TRGPRM	ALRTCLOSE	LPA/tlm/_/F.TRGPRM.shtml	Trigger Parameter
TRGPRM	ALRTTRG	LPA/tlm/_/F.TRGPRM.shtml	Trigger Parameter
TRGPRM	ALRTUPDATE	LPA/tlm/_/F.TRGPRM.shtml	Trigger Parameter
TSAATRANSIT	State	LIM/tlm/_/F.TSAATRANSIT.shtml	SAA Transit Status
TSEC	ALRTCLOSE	LPA/tlm/_/F.TSEC.shtml	Time Seconds
TSEC	ALRTTRG	LPA/tlm/_/F.TSEC.shtml	Time Seconds
TSEC	ALRTUPDATE	LPA/tlm/_/F.TSEC.shtml	Time Seconds
tspare13	lmc_dead	LMC/tlm/_/F.tspare13.shtml	Spare 13 bits

Field (L)	Tlm. Packet (L)	Section	Description (L)
tspare16	lmc_acd	LMC/tlm/_/F.tspare16.shtml	Spare 16 bits
tspare16	lmc_cal	LMC/tlm/_/F.tspare16.shtml	Spare 16 bits
tspare16	lmc_dead	LMC/tlm/_/F.tspare16.shtml	Spare 16 bits
tspare16	lmc_tkr	LMC/tlm/_/F.tspare16.shtml	Spare 16 bits
tspare8	lmc_dead	LMC/tlm/_/F.tspare8.shtml	Spare 8 bits
TSSRHDR	LMEMSSR0DATA	MEM/tlm/_/F.TSSRHDR.shtml	SSR Packet Header
TSSRHDR	LMEMSSR1DATA	MEM/tlm/_/F.TSSRHDR.shtml	SSR Packet Header
TSSRHDR	LMEMSSR2DATA	MEM/tlm/_/F.TSSRHDR.shtml	SSR Packet Header
TSSRHDR	LMEMSSRSDATA	MEM/tlm/_/F.TSSRHDR.shtml	SSR Packet Header
TSTARTED	State	LIM/tlm/_/F.TSTARTED.shtml	Started Status
TSTATUS	State	LIM/tlm/_/F.TSTATUS.shtml	Most Recent Action Status
TSYMNAMECHAR	LMEMSYMVAL	MEM/tlm/_/F.TSYMNAMECHAR.shtml	Symbol Name Character
TSYMNAMESIZE	LMEMSYMVAL	MEM/tlm/_/F.TSYMNAMESIZE.shtml	Symbol Name Length
TSYMVAL	LMEMSYMVAL	MEM/tlm/_/F.TSYMVAL.shtml	Symbol Value
TTASKSTATE	State	LIM/tlm/_/F.TTASKSTATE.shtml	Task State
TTRANID	LMEMEPU0DATA	MEM/tlm/_/F.TTRANID.shtml	Transaction ID
TTRANID	LMEMEPU1DATA	MEM/tlm/_/F.TTRANID.shtml	Transaction ID
TTRANID	LMEMEPU2DATA	MEM/tlm/_/F.TTRANID.shtml	Transaction ID
TTRANID	LMEMPOOLDATA	MEM/tlm/_/F.TTRANID.shtml	Transaction ID
TTRANID	LMEMSIUDATA	MEM/tlm/_/F.TTRANID.shtml	Transaction ID
TTRANID	LMEMSYMVAL	MEM/tlm/_/F.TTRANID.shtml	Transaction ID
TUSEC	ALRTCLOSE	LPA/tlm/_/F.TUSEC.shtml	Time Microseconds
TUSEC	ALRTTRG	LPA/tlm/_/F.TUSEC.shtml	Time Microseconds
TUSEC	ALRTUPDATE	LPA/tlm/_/F.TUSEC.shtml	Time Microseconds
TVIRTMODE	State	LIM/tlm/_/F.TVIRTMODE.shtml	Virtual Mode
uc	DiagLatcStatus	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagLimStatus	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagLpaDb0Epu0	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagLpaDb0Epu1	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagLpaDb0Epu2	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagLpaDb0Siu	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagMiscSlow	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagPigStatus	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagTaskCfgEpu0	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagTaskCfgEpu1	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagTaskCfgEpu2	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	DiagTaskCfgSiu	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	LatcStatus	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	LimStatus	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	LpaDb0Epu0	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	LpaDb0Epu1	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	LpaDb0Epu2	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	LpaDb0Siu	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	MiscSlow	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	PigStatus	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	TaskCfgEpu0	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	TaskCfgEpu1	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	TaskCfgEpu2	LHK/tlm/_/F.uc.shtml	Unsigned char
uc	TaskCfgSiu	LHK/tlm/_/F.uc.shtml	Unsigned char
uchar	LimitAdc	LIH/tlm/_/F.uchar.shtml	Unsigned char
uchar	LimitAlert	LIH/tlm/_/F.uchar.shtml	Unsigned char
ui	DiagGasuCounts	LHK/tlm/_/F.ui.shtml	Unsigned int

Field (L)	Tlm. Packet (L)	Section	Description (L)
ui	DiagLatcStatus	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	DiagLimStatus	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	DiagLpaDb0Epu0	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	DiagLpaDb0Epu1	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	DiagLpaDb0Epu2	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	DiagLpaDb0Siu	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	DiagMiscSlow	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	DiagStatusEpu0	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	DiagStatusEpu1	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	DiagStatusEpu2	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	DiagStatusSiu	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	GasuCounts	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	LatcStatus	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	LimStatus	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	LpaDb0Epu0	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	LpaDb0Epu1	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	LpaDb0Epu2	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	LpaDb0Siu	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	MemoryError	LCM/tlm/_/F.ui.shtml	Unsigned int
ui	MiscSlow	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	PciError	LCM/tlm/_/F.ui.shtml	Unsigned int
ui	StatusEpu0	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	StatusEpu1	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	StatusEpu2	LHK/tlm/_/F.ui.shtml	Unsigned int
ui	StatusSiu	LHK/tlm/_/F.ui.shtml	Unsigned int
uint	LimitAdc	LIH/tlm/_/F.uint.shtml	Unsigned int
uint	LimitAlert	LIH/tlm/_/F.uint.shtml	Unsigned int
us	DiagLimStatus	LHK/tlm/_/F.us.shtml	Unsigned short
us	DiagLpaDb0Epu0	LHK/tlm/_/F.us.shtml	Unsigned short
us	DiagLpaDb0Epu1	LHK/tlm/_/F.us.shtml	Unsigned short
us	DiagLpaDb0Epu2	LHK/tlm/_/F.us.shtml	Unsigned short
us	DiagLpaDb0Siu	LHK/tlm/_/F.us.shtml	Unsigned short
us	DiagMiscSlow	LHK/tlm/_/F.us.shtml	Unsigned short
us	DiagStatusEpu0	LHK/tlm/_/F.us.shtml	Unsigned short
us	DiagStatusEpu1	LHK/tlm/_/F.us.shtml	Unsigned short
us	DiagStatusEpu2	LHK/tlm/_/F.us.shtml	Unsigned short
us	DiagStatusSiu	LHK/tlm/_/F.us.shtml	Unsigned short
us	LimStatus	LHK/tlm/_/F.us.shtml	Unsigned short
us	LpaDb0Epu0	LHK/tlm/_/F.us.shtml	Unsigned short
us	LpaDb0Epu1	LHK/tlm/_/F.us.shtml	Unsigned short
us	LpaDb0Epu2	LHK/tlm/_/F.us.shtml	Unsigned short
us	LpaDb0Siu	LHK/tlm/_/F.us.shtml	Unsigned short
us	MemoryError	LCM/tlm/_/F.us.shtml	Unsigned short
us	MiscSlow	LHK/tlm/_/F.us.shtml	Unsigned short
us	PciError	LCM/tlm/_/F.us.shtml	Unsigned short
us	StatusEpu0	LHK/tlm/_/F.us.shtml	Unsigned short
us	StatusEpu1	LHK/tlm/_/F.us.shtml	Unsigned short
us	StatusEpu2	LHK/tlm/_/F.us.shtml	Unsigned short
us	StatusSiu	LHK/tlm/_/F.us.shtml	Unsigned short
usecs	lmc_acd	LMC/tlm/_/F.usecs.shtml	Microseconds
usecs	lmc_cal	LMC/tlm/_/F.usecs.shtml	Microseconds
usecs	lmc_dead	LMC/tlm/_/F.usecs.shtml	Microseconds

Field (L)	Tlm. Packet (L)	Section	Description (L)
usecs	lmc_tkr	LMC/tlm/_/F.usecs.shtml	Microseconds
ushort	LimitAdc	LIH/tlm/_/F.ushort.shtml	Unsigned short
ushort	LimitAlert	LIH/tlm/_/F.ushort.shtml	Unsigned short
ushort	LimitAll	LIH/tlm/_/F.ushort.shtml	Unsigned short
VALUE	LRAREGDATA	LRA/tlm/_/F.VALUE.shtml	Word of register values
Version	CmdConfirm	ITC/tlm/_/F.Version.shtml	CCSDS version
VIRTMODE	DiagLrs0	LHK/tlm/_/F.VIRTMODE.shtml	Virtual Mode
VIRTMODE	Lrs0	LHK/tlm/_/F.VIRTMODE.shtml	Virtual Mode
WIDTH	LRAREGDATA	LRA/tlm/_/F.WIDTH.shtml	Register width

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Analog Conv. Section Description

40 Telemetry Discrete Conv. Index, by Name

Discrete Conv.	Section	Description
LHKADCLMTSTATES	LHK/att/_/D.LHKADCLMTSTATES.shtml	Enumeration of ADC limit evaluation states
LHKENABLESTATES	LHK/att/_/D.LHKENABLESTATES.shtml	A disabled/enabled enumeration
LHKFILESTATES	LHK/att/_/D.LHKFILESTATES.shtml	FILE States
LHKSELECTSTATES	LHK/att/_/D.LHKSELECTSTATES.shtml	Enumeration of primary/redundant selections
LHKSETTLESTATES	LHK/att/_/D.LHKSETTLESTATES.shtml	ADC settling state
LHKSWITCHSTATES	LHK/att/_/D.LHKSWITCHSTATES.shtml	Enumeration of allowed switch states
LIMACTION	LIM/att/_/D.LIMACTION.shtml	LIM Action
LIMGRBSTATE	LIM/att/_/D.LIMGRBSTATE.shtml	LIM GRB State
LIMOPMODE	LIM/att/_/D.LIMOPMODE.shtml	LIM Operating Mode
LIMOTHERSTATE	LIM/att/_/D.LIMOTHERSTATE.shtml	LIM Other Task State
LITCNODEID	ITC/att/_/D.LITCNODEID.shtml	Discrete list of ITC nodes
LITCTASKID	ITC/att/_/D.LITCTASKID.shtml	Discrete list of ITC task IDs
LPAMODES	LPA/att/_/D.LPAMODES.shtml	LPA Mode ID

41 Telemetry Limit Set Index, by Name

Limit Set Section Description