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):

<table>
<tr><th colspan="3">LAT Unit Identification Codes</th></tr>
<tr><th>LAT Unit</th><th>Description</th><th>LATp ID</th></tr>
<tr><td>Not Applicable</td><td>SIU(ext): SIU test port.</td><td>0x11 (TBR)</td></tr>
<tr><td rowspan="2">0x0</td><td>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.</td><td>0x12</td></tr>
<tr><td>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.</td><td>0x13</td></tr>
<tr><td>0x1</td><td>EPU(0): EPU designated as unit 0.</td><td>0x14</td></tr>
<tr><td>0x2</td><td>EPU(1): EPU designated as unit 1.</td><td>0x15</td></tr>
<tr><td>0x3</td><td>EPU(2): EPU designated as unit 2.</td><td>0x16</td></tr>
<tr><td>0x6-0xF</td><td>Not Assigned</td><td>Not Applicable</td></tr>
</table>

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:

<table>
<tr><th>offset</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>0x00</td><td colspan="3">Version = 0</td><td>T=1</td><td>SH=1</td><td colspan="11">APID</td></tr>
<tr><td>0x02</td><td colspan="2">3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>0x04</td><td colspan="16">Packet Length</td></tr>
<tr><td>0x06</td><td>0</td><td colspan="15">Function Code</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Write a file to SUROM <code>(write_file)</code>
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x642:0</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=11</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=0</td></tr>
<tr><td>008</td><td colspan="16">CLatUnit: <code>lat_unit</code></td></tr>
<tr><td>00C</td><td colspan="16">CFileId: <code>file_id</code></td></tr>
<tr><td>010</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">ASC stats from ACD/GEM processed on SIU (ASCSIU)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x3D9</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=9</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">PADCOUNT: padCount</td></tr>
</table>

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:

<table>
<tr><th colspan="17">File Upload to EPU (UploadEPU)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x641:4</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=11</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=4</td></tr>
<tr><td>008</td><td colspan="16">NODEPAD: flag</td></tr>
<tr><td>00A</td><td colspan="16">PAD16: pad16</td></tr>
<tr><td>00C</td><td colspan="16">FILEID: fileId</td></tr>
<tr><td>010</td><td colspan="16">Packet Checksum</td></tr>
</table>

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 incoming LFILUPLDATA packets. Upon completion, the file upload state machine is in the LOAD state.

Layout:

<table>
<tr><th colspan="17">File Upload Start (UploadStart)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x641:0</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=7</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=0</td></tr>
<tr><td>008</td><td colspan="16">FILESIZE: fileSize</td></tr>
<tr><td>00C</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Returned LATC data (LATCDATA)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x3FD</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=9</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">THDR: thdr</td></tr>
</table>

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

<table>
<tr><th colspan="17">Packet containing status of calibration (TERMINATE)
Telemetry Packet Format</th></tr>
<tr><td>0x</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x2D8</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=13</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>010</td><td colspan="16">STATUS: status</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Change task command confirmation level (CmdResponse)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x695:1</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=9</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=1</td></tr>
<tr><td>008</td><td colspan="8">ITC_NodeId: nid</td><td colspan="8">ITC_TaskId: tid</td></tr>
<tr><td>00A</td><td colspan="8">ITC_CmdClass: scb</td><td colspan="8">ITC_CmdAction: fwd</td></tr>
<tr><td>00C</td><td colspan="8">ITC_CmdLevel: lvl</td><td colspan="8">PAD8: pad</td></tr>
<tr><td>00E</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Configure CPU error handling (ErrorCfg)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x694:2</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=9</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=2</td></tr>
<tr><td>008</td><td colspan="16">NODEPAD: flag</td></tr>
<tr><td>00A</td><td colspan="16">ERRORCLASS: errClass</td></tr>
<tr><td>00C</td><td colspan="16">ERRORLEVEL: errLevel</td></tr>
<tr><td>00E</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Configure MSG output interface (MsgOutCfg)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x695:7</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=7</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=7</td></tr>
<tr><td>008</td><td colspan="8">ITC_NodeId: nid</td><td colspan="8">MSGOUTINTER: inter</td></tr>
<tr><td>00A</td><td colspan="8">MSG_MsgLevel: lvl</td><td colspan="8">PAD8: pad</td></tr>
<tr><td>00C</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Change task messaging level (MsgResponse)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x695:0</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=7</td></tr>
</table>

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 Bit-field

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 (

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:

<table>
<tr><th colspan="17">RAD750 PCI Error Report (LLCMPCIERR)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x2D3</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=21</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">DUMPFLAGS: `dmpFlags`</td></tr>
<tr><td>010</td><td colspan="16">PCIERRSTAT: `pciStatus`</td></tr>
<tr><td>014</td><td colspan="16">PCIERRBUS: `pciBus`</td></tr>
<tr><td>018</td><td colspan="16">PCIERRADDR: `pciAddr`</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Task Status Dump (LLCMTASKLIST)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x2D2</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=85</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">DUMPFLAGS: dmpFlags</td></tr>
<tr><td>010</td><td colspan="16">TASKID: tid</td></tr>
<tr><td>014</td><td colspan="16">TASKPRI: priority</td></tr>
<tr><td>018</td><td colspan="16">TASKSTAT: status</td></tr>
<tr><td>01C</td><td colspan="16">TASKENTRY: entry</td></tr>
<tr><td>020</td><td colspan="16">TASKERROR: error</td></tr>
<tr><td>024</td><td colspan="16">TASKOPT: options</td></tr>
<tr><td>028</td><td colspan="16">TASKDELAY: delay</td></tr>
<tr><td>02C</td><td colspan="16">TASKSP: stackSP</td></tr>
<tr><td>030</td><td colspan="16">TASKSTBASE: stackBase</td></tr>
<tr><td>034</td><td colspan="16">TASKSTEND: stackEnd</td></tr>
<tr><td>038</td><td colspan="16">TASKSTLIM: stackLim</td></tr>
<tr><td>03C</td><td colspan="16">TASKSTSIZE: stackSize</td></tr>
<tr><td>040</td><td colspan="16">TASKSTCUR: stackCur</td></tr>
<tr><td>044</td><td colspan="16">TASKSTMAR: stackMar</td></tr>
<tr><td>048</td><td colspan="16">TASKSTHIGH: stackHigh</td></tr>
<tr><td>04C</td><td colspan="16">TASKNAME: name[0-15]</td></tr>
</table>

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:

`LCMMSGGSSRE0 (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**

<table>
<tr><th colspan="17">Directory Dump (DirDump)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x648:5</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=11</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=5</td></tr>
<tr><td>008</td><td colspan="16">NODETRANID: flag</td></tr>
<tr><td>00A</td><td colspan="16">PAD16: pad16</td></tr>
<tr><td>00C</td><td colspan="16">FILEID: fileId</td></tr>
<tr><td>010</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">LFS No-Op (Noop)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x648:9</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=5</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=9</td></tr>
<tr><td>008</td><td colspan="16">NODEPAD: flag</td></tr>
<tr><td>00A</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">File System Mount (SysMount)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x649:1</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=11</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=1</td></tr>
<tr><td>008</td><td colspan="16">NODEPAD: flag</td></tr>
<tr><td>00A</td><td colspan="16">PAD16: pad16</td></tr>
<tr><td>00C</td><td colspan="16">FILEID: fileID</td></tr>
<tr><td>010</td><td colspan="16">Packet Checksum</td></tr>
</table>

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 LFSFDMPSIZE 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:

<table>
<tr><th colspan="17">File System Status Report (LLFSSYSLIST)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x31A</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=25</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">DUMPSTFLAGS: dmpFlags</td></tr>
<tr><td>010</td><td colspan="16">FILESTID: fileId</td></tr>
<tr><td>014</td><td colspan="16">SYSBLKSIZE: blkSize</td></tr>
<tr><td>018</td><td colspan="16">SYSBLKFREE: blkFree</td></tr>
<tr><td>01C</td><td colspan="16">SYSBLKTOTAL: blkTotal</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Command Statistics Packet 0 (<code>CmdCnt0</code>)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x228</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
</table>

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										

<table>
<tr><th colspan="17">Diagnostic AEM Environmental Monitor Packet 0 (DiagAemEnv0)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: rsv</td></tr>
<tr><td>010</td><td colspan="16">Padus16: spare</td></tr>
<tr><td>012</td><td colspan="16">AEMFREEPWR: freepwr</td></tr>
<tr><td>014</td><td colspan="16">ADC: free[0-47]</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Diagnostic CTDB (1553) counters (DiagCtdbCounts)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x2B2</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: rsv</td></tr>
<tr><td>010</td><td colspan="16">RTSTATS: hsk</td></tr>
<tr><td>038</td><td colspan="16">Padus16: spare0[0-29]</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Diagnostic Low-rate Science/LIM State Packet (DiagLrs0)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x287</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: spares[0-2]</td></tr>
<tr><td>014</td><td colspan="16">TIMESEC: gemsec</td></tr>
<tr><td>018</td><td colspan="16">TIMESUBSEC: gemsub</td></tr>
<tr><td>01C</td><td colspan="16">GEMLRS: gemlrs</td></tr>
<tr><td>030</td><td colspan="16">TIMESEC: ebmsec</td></tr>
<tr><td>034</td><td colspan="16">TIMESUBSEC: ebmsub</td></tr>
<tr><td>038</td><td colspan="16">EBMSTATS: ebmstat</td></tr>
<tr><td>052</td><td colspan="16">ACTION: action</td></tr>
<tr><td>054</td><td colspan="16">STATUS: status</td></tr>
<tr><td>058</td><td colspan="8">OPMODE: op_mode</td><td colspan="8">VIRTMODE: virt_mode</td></tr>
<tr><td>05A</td><td colspan="8">SAATRANSIT: saa_transit</td><td colspan="8">TASKSTATE: lci_state</td></tr>
<tr><td>05C</td><td colspan="8">TASKSTATE: ldf_state</td><td colspan="8">TASKSTATE: lpa_state</td></tr>
</table>

Diagnostic Low-rate Science/LIM State Packet (DiagLrs0) Telemetry Packet Format		
0x	0 – 7	8 – 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:

<table>
<tr><th colspan="17">Diagnostic Thermal Control Data Packet 2 (DiagLtcData2)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x290</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: spares[0-2]</td></tr>
<tr><td>014</td><td colspan="16">TempCelsius: dbDelta[0-11]</td></tr>
<tr><td>02C</td><td colspan="16">RawAdcStatus: rawAdc[0-35]</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Diagnostic Miscellaneous nearly static information (DiagMiscSlow)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x2B3</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: spare0</td></tr>
<tr><td>010</td><td colspan="16">ui: LATCuse</td></tr>
<tr><td>014</td><td colspan="16">ui: LATCignore</td></tr>
<tr><td>018</td><td colspan="16">ui: LPA_DB_file</td></tr>
<tr><td>01C</td><td colspan="16">us: LPA_DB_instance</td></tr>
<tr><td>01E</td><td colspan="8">uc: EPU_enable</td><td colspan="8">uc: GBM_enable</td></tr>
<tr><td>020</td><td colspan="16">ui: LHK_scheduleFile</td></tr>
<tr><td>024</td><td colspan="16">ui: LHK_scheduleInstance</td></tr>
<tr><td>028</td><td colspan="16">ui: LIH_limitFile</td></tr>
<tr><td>02C</td><td colspan="16">ui: LIH_limitInstance</td></tr>
<tr><td>030</td><td colspan="16">ui: LTC_config</td></tr>
<tr><td>034</td><td colspan="16">ui: GRB_config</td></tr>
<tr><td>038</td><td colspan="16">ui: spare2[0-14]</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Diagnostic PDU Environmental Packet 1 (DiagPduEnv1)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x27F</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: rsv</td></tr>
<tr><td>010</td><td colspan="16">Padus16: spare0[0-1]</td></tr>
<tr><td>014</td><td colspan="16">ADC: temPcbTemp[0-15]</td></tr>
<tr><td>034</td><td colspan="16">ADC: calBaseTemp[0-15]</td></tr>
<tr><td>054</td><td colspan="16">Padus16: spare1[0-15]</td></tr>
</table>

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	**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

14.4.41 `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:

<table>
<tr><th colspan="17">EPU 2 Statistics (Epu2Stats)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x22D</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: spares[0-2]</td></tr>
<tr><td>014</td><td colspan="16">CPUMETR: cpu</td></tr>
<tr><td>02C</td><td colspan="16">FILESTATS: file</td></tr>
<tr><td>044</td><td colspan="16">MEMSTATS: mem</td></tr>
</table>

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:

<table>
<tr><th colspan="17">GASU counter packet (both GEM and EBM) (GasuCounts)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x24F</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: rsv</td></tr>
<tr><td>010</td><td colspan="16">GemCounters: gem</td></tr>
<tr><td>030</td><td colspan="16">EbmCounters: ebm</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Low-rate Science/LIM State Packet (Lrs0)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x227</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: spares[0-2]</td></tr>
<tr><td>014</td><td colspan="16">TIMESEC: gemsec</td></tr>
<tr><td>018</td><td colspan="16">TIMESUBSEC: gemsub</td></tr>
<tr><td>01C</td><td colspan="16">GEMLRS: gemlrs</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Thermal Control Data Packet 1 (LtcData1)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x22F</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: spares[0-2]</td></tr>
<tr><td>014</td><td colspan="16">TempCelsius: ritLo[0-11]</td></tr>
<tr><td>02C</td><td colspan="16">TempCelsius: ritHi[0-11]</td></tr>
<tr><td>044</td><td colspan="16">TempCelsius: resLo[0-11]</td></tr>
<tr><td>05C</td><td colspan="16">TempCelsius: resHi[0-11]</td></tr>
</table>

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:

<table>
<tr><th colspan="17">EPU0 status packet (StatusEpu0)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x241</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
</table>

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:

<table>
<tr><th colspan="17">ITC/MSG configuration of tasks on SIU (TaskCfgSiu)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x245</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: rsv</td></tr>
<tr><td>010</td><td colspan="16">Padus16: spare0</td></tr>
<tr><td>012</td><td colspan="8">uc: ctdb</td><td colspan="8">uc: ssr</td></tr>
<tr><td>014</td><td colspan="16">ItcConfig: task[0-31]</td></tr>
<tr><td>054</td><td colspan="16">Padus16: pad[0-15]</td></tr>
</table>

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:

<table>
<tr><th colspan="17">TEM power ADCs for TEMs 0-3 (TemEnvPwr00)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x238</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: rsv</td></tr>
<tr><td>010</td><td colspan="16">Padus16: spare[0-1]</td></tr>
<tr><td>014</td><td colspan="16">ADC: adc[0-47]</td></tr>
</table>

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:

<table>
<tr><th colspan="17">TEM power ADCs for TEMs 12-15 (TemEnvPwr03)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x23B</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: rsv</td></tr>
<tr><td>010</td><td colspan="16">Padus16: spare[0-1]</td></tr>
<tr><td>014</td><td colspan="16">ADC: adc[0-47]</td></tr>
</table>

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:

<table>
<tr><th colspan="17">TEM temperature ADCs for TEMs 2-3 (TemEnvTemp1)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x217</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: rsv</td></tr>
<tr><td>010</td><td colspan="16">Padus16: spare[0-1]</td></tr>
<tr><td>014</td><td colspan="16">ADC: adc[0-47]</td></tr>
</table>

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:

<table>
<tr><th colspan="17">TRC Top SIU Monitor Packet (TopSiu)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x233</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=109</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">Padus16: spare[0-2]</td></tr>
<tr><td>014</td><td colspan="16">TRCTOPS: mon</td></tr>
<tr><td>06C</td><td colspan="16">Padus16: pad[0-3]</td></tr>
</table>

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 Bit-field

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

The LIH package contains routines that are specific to LAT Instrument Housekeeping.

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:

<table>
<tr><th colspan="17">Set actions for a limit transition on an ADC (`SetActionsAdc`)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x654:4</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=13</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=4</td></tr>
<tr><td>008</td><td colspan="16">us: `adx`</td></tr>
<tr><td>00A</td><td colspan="8">uc: `from`</td><td colspan="8">uc: `to`</td></tr>
<tr><td>00C</td><td colspan="16">ss: `alert`</td></tr>
<tr><td>00E</td><td colspan="16">ss: `diag`</td></tr>
<tr><td>010</td><td colspan="16">ss: `msg`</td></tr>
<tr><td>012</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Set CAL Bias Voltages (Bias_CAL)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x663:11</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=39</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=11</td></tr>
<tr><td>008</td><td colspan="16">CPAD16: pad</td></tr>
<tr><td>00A</td><td colspan="16">CTOWERSELBF: valid</td></tr>
<tr><td>00C</td><td colspan="16">CBIAS16: bias[0-15]</td></tr>
<tr><td>02C</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Turn Off CAL Bias Voltages (Bias_CAL_Off)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x663:26</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=7</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=26</td></tr>
<tr><td>008</td><td colspan="16">CTEMS: temmask</td></tr>
<tr><td>00C</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Turn Off TKR Bias Voltages (Bias_TKR_Off)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x663:27</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=7</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=27</td></tr>
<tr><td>008</td><td colspan="16">CTEMS: temmask</td></tr>
<tr><td>00C</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Configure PID Signals (Config_PID)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x663:15</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=5</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=15</td></tr>
<tr><td>008</td><td colspan="16">CPIDPRIMARY: primary_select</td></tr>
<tr><td>00A</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">LIM No-Op (Noop)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x663:18</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=3</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=18</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Call the PIG_record Function (Pig_Record)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x663:16</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=7</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=16</td></tr>
<tr><td>008</td><td colspan="16">CDEST32: dest</td></tr>
<tr><td>00C</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">ACD Tile Counters (All) (acd_tile_all)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x69C:3</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=9</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=3</td></tr>
<tr><td>008</td><td colspan="16">interval: intv</td></tr>
<tr><td>00A</td><td colspan="16">count: cnt</td></tr>
<tr><td>00C</td><td colspan="16">destn: dest</td></tr>
<tr><td>00E</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">LAT Burst Closeout Telecommand (BurstClose)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x6F1:3</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=15</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=3</td></tr>
<tr><td>008</td><td colspan="16">LBD_SEC: sec</td></tr>
<tr><td>00C</td><td colspan="16">LBD_USEC: usec</td></tr>
<tr><td>010</td><td colspan="16">BUR_CLASS: class</td></tr>
<tr><td>014</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Configures Active Event Handlers For a Mode (Configure)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x674:0</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=47</td></tr>
</table>

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 Repornt 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:

<table>
<tr><th colspan="17">Set Default Parameters (SetDefault)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x675:6</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=17</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=6</td></tr>
<tr><td>008</td><td colspan="16">DB_ID: db</td></tr>
<tr><td>00C</td><td colspan="16">LATC_ID: latc</td></tr>
<tr><td>010</td><td colspan="16">LATC_ID: ignore</td></tr>
<tr><td>014</td><td colspan="16">LATCPRMVALID: valid</td></tr>
<tr><td>016</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Stops a Physics Run (Stop)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x674:3</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=3</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=3</td></tr>
</table>

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 Repornt 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:

<table>
<tr><th colspan="17">LAT Burst Trigger Alert Telemetry (ALRTTRG)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x341</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=81</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">RECINFO: info</td></tr>
<tr><td>010</td><td colspan="16">TSEC: dcl_sec</td></tr>
<tr><td>014</td><td colspan="16">TUSEC: dcl_usec</td></tr>
<tr><td>018</td><td colspan="16">BCLASS: bclass</td></tr>
<tr><td>01C</td><td colspan="16">BSIG: temporal</td></tr>
<tr><td>01E</td><td colspan="16">BSIG: spatial</td></tr>
<tr><td>020</td><td colspan="16">BRA: ra</td></tr>
<tr><td>022</td><td colspan="16">BDEC: dec</td></tr>
<tr><td>024</td><td colspan="16">BERR: err</td></tr>
<tr><td>026</td><td colspan="16">GCNT: loc_cnt</td></tr>
<tr><td>028</td><td colspan="16">TSEC: ep_sec</td></tr>
<tr><td>02C</td><td colspan="16">TUSEC: ep_usec</td></tr>
<tr><td>030</td><td colspan="16">TSEC: lp_sec</td></tr>
<tr><td>034</td><td colspan="16">TUSEC: lp_usec</td></tr>
<tr><td>038</td><td colspan="16">GCNT: gam_cnt[0-3]</td></tr>
<tr><td>040</td><td colspan="16">BQUAT: quaternion[0-3]</td></tr>
<tr><td>048</td><td colspan="16">TRGPRM: trg_prm[0-7]</td></tr>
</table>

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"

Instance(s): `last_start`

18.4.4 `EPU0EVTDAT` (956/0x3BC)

Context:

Description:

"LPA EPU0 Event Data" Telemetry Packet

Layout:

<table>
<tr><th colspan="17">LPA EPU0 Event Data (EPU0EVTDAT)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x3BC</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=9</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">THDR: thdr</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Load registers (LOAD)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x680:2</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=19</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=2</td></tr>
<tr><td>008</td><td colspan="8">CMPNT: cmpnt</td><td colspan="8">BLOCK: block</td></tr>
<tr><td>00A</td><td colspan="8">TEM: tem</td><td colspan="8">CC: cc</td></tr>
<tr><td>00C</td><td colspan="8">RC: rc</td><td colspan="8">FE: fe</td></tr>
<tr><td>00E</td><td colspan="8">REG: reg</td><td colspan="8">PAD: pad</td></tr>
<tr><td>010</td><td colspan="16">VALHI: valhi</td></tr>
<tr><td>014</td><td colspan="16">VALLO: vallo</td></tr>
<tr><td>018</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">LRA data returned via the SSR (LRASSRDATA)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x3A0</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=9</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">THDR: thdr</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Output of Magic 7 cmds into Science Data (MAGIC7)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x3FC</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=9</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">PADCOUNT: padCount</td></tr>
</table>

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`								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:

<table>
<tr><th colspan="17">Dump a code trace by numeric identifier (DumpTraceById)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x64C:2</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=7</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=2</td></tr>
<tr><td>008</td><td colspan="16">NODETRANID: flag</td></tr>
<tr><td>00A</td><td colspan="8">DEST: dest</td><td colspan="8">TRACEID: id</td></tr>
<tr><td>00C</td><td colspan="16">Packet Checksum</td></tr>
</table>

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**													

<table>
<tr><th colspan="17">Dump a code trace by name. <code>(DumpTraceByName)</code>
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>004</td><td colspan="16">Packet Length=23</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=3</td></tr>
<tr><td>008</td><td colspan="16">NODETRANID: <code>flag</code></td></tr>
<tr><td>00A</td><td colspan="8">DEST: <code>dest</code></td><td colspan="8">PAD8: <code>pad8</code></td></tr>
<tr><td>00C</td><td colspan="16">TRACENAME: <code>name[0-15]</code></td></tr>
<tr><td>01C</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Memory Pool Status Dump (LMEMDUMPPOOL)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x644:7</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=7</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=7</td></tr>
<tr><td>008</td><td colspan="16">CIDBF: idents</td></tr>
<tr><td>00A</td><td colspan="16">CPOOLID: poolID</td></tr>
<tr><td>00C</td><td colspan="16">Packet Checksum</td></tr>
</table>

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`								CPAD8: `pad1`							
00C	CADDR32: `offset`															
010	CSIZE32: `size`															
014	CNAMESIZE: `nameSize`								CPAD8: `pad2`							
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:** idents															
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:

<table>
<tr><th colspan="17">No-Op (LMEMNOOP)
Telecommand Packet Format</th></tr>
<tr><td>0x</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x644:10</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=5</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=10</td></tr>
<tr><td>008</td><td colspan="16">CIDBF: idents</td></tr>
<tr><td>00A</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">EPU 0 Memory Dump Data (LMEMEPU0DATA)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x315</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=377</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">TIDBF: idents</td></tr>
<tr><td>010</td><td colspan="16">TDUMPADDR: address</td></tr>
<tr><td>014</td><td colspan="16">TDUMPSIZE: wordCount</td></tr>
<tr><td>016</td><td colspan="16">TDUMPCMDFUNC: cmdFuncCode</td></tr>
<tr><td>018</td><td colspan="16">TDUMPDATA: data[0-89]</td></tr>
</table>

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:

<table>
<tr><th colspan="17">EPU 0 Memory Dump Data to SSR (LMEMSSR0DATA)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x3D5</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=9</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">TSSRHDR: ssr_hdr</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Error code pop (LBTERRDUMP)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x640:2</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=5</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=2</td></tr>
<tr><td>008</td><td colspan="16">CUNITBF: ident</td></tr>
<tr><td>00A</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Boot RTOS (LBTRTOSEXEC)
Telecommand Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=1</td><td>SH</td><td colspan="11">APID=0x640:3</td></tr>
<tr><td>002</td><td colspan="2">SF=3</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=11</td></tr>
<tr><td>006</td><td>0</td><td colspan="15">Function Code=3</td></tr>
<tr><td>008</td><td colspan="16">CUNITBF: ident</td></tr>
<tr><td>00A</td><td colspan="16">CPAD16: pad</td></tr>
<tr><td>00C</td><td colspan="16">CFLAGS32: sbcFlags</td></tr>
<tr><td>010</td><td colspan="16">Packet Checksum</td></tr>
</table>

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:

<table>
<tr><th colspan="17">Returned PIG data (PIGDATA)
Telemetry Packet Format</th></tr>
<tr><th>0x</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr>
<tr><td>000</td><td colspan="3">Version=0</td><td>T=0</td><td>SH</td><td colspan="11">APID=0x3FE</td></tr>
<tr><td>002</td><td colspan="2">SF</td><td colspan="14">Sequence Count</td></tr>
<tr><td>004</td><td colspan="16">Packet Length=9</td></tr>
<tr><td>006</td><td colspan="16">Timestamp</td></tr>
<tr><td>00E</td><td colspan="16">THDR: thdr</td></tr>
</table>

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	SDT/cmd/_/P.write_file.shtml:%	Write a file to SUROM
0x644	0	LMEMDUMPMEM	MEM/cmd/_/P.LMEMDUMPMEM.shtml	Memory Data Dump
0x644	1	LMEMDUMPCANCEL	[illegible]	Memory Dump Cancel
0x644	2	LMEMDUMPPCI	[illegible]	PCI Device Header Dump
0x644	3	LMEMDUMPREG	[illegible]	Processor Register Dump
0x644	4	LMEMLOADMEM	[illegible]	Memory Write
0x644	5	LMEMLOADPCI	[illegible]	PCI Device Header Write
0x644	6	LMEMLOADREG	[illegible]	Processor Register Write
[illegible]	[illegible]	[illegible]	[illegible]	Memory Pool Status Dump
[illegible]	[illegible]	[illegible]	[illegible]	Memory Symbol Lookup
[illegible]	[illegible]	[illegible]	[illegible]	Memory Dump Symbol Relative
[illegible]	[illegible]	LMEMNOOP	[illegible]	No-Op
[illegible]	[illegible]	[illegible]	[illegible]	Send Next Dump Packet
[illegible]	[illegible]	[illegible]	[illegible]	File Delete
[illegible]	[illegible]	[illegible]	[illegible]	File Copy Local
[illegible]	[illegible]	[illegible]	[illegible]	Directory Create
[illegible]	[illegible]	[illegible]	[illegible]	Directory Delete
[illegible]	[illegible]	[illegible]	[illegible]	File Dump CTDB
[illegible]	[illegible]	[illegible]	[illegible]	Directory Dump
[illegible]	[illegible]	[illegible]	[illegible]	File System Status
[illegible]	[illegible]	[illegible]	[illegible]	File System Check
[illegible]	[illegible]	[illegible]	[illegible]	File Dump SSR
[illegible]	[illegible]	[illegible]	[illegible]	LFS No-Op
[illegible]	[illegible]	[illegible]	[illegible]	File System Format
[illegible]	[illegible]	[illegible]	[illegible]	File System Mount
[illegible]	[illegible]	[illegible]	[illegible]	File System Repair
[illegible]	[illegible]	[illegible]	[illegible]	No Op
[illegible]	[illegible]	[illegible]	[illegible]	Dump the start time system trace
[illegible]	[illegible]	[illegible]	[illegible]	Dump a code trace [illegible] identif[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	Dump a code trace [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	Set the values of the trace enable bits.
[illegible]	[illegible]	[illegible]	[illegible]	Request a Housekeeping Diagnostic P[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	System Reset
[illegible]	[illegible]	[illegible]	[illegible]	Stop Diagnostic Sample
[illegible]	[illegible]	[illegible]	[illegible]	[illegible] No-Op Command
[illegible]	[illegible]	[illegible]	[illegible]	Cancel a request for diagnostic packet[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	Request a new housekeeping schedule
[illegible]	[illegible]	[illegible]	[illegible]	Request a new housekeeping sche[illegible] number
[illegible]	[illegible]	[illegible]	[illegible]	No operation
[illegible]	[illegible]	[illegible]	[illegible]	Load ADC limit sets from CDM date[illegible]

APID	TC	Cmd(Packet/L)	Section	Description
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

APID	FC	Cmd Packet...	Section	Description
				...icat M... ...ssage

27 Telecommand Packet Index, by Mnemonic (ITOS)

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 le
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 informat
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 packet
LHKNEWSCHEDFILE	0x650	5	LHK/cmd/_/P.NewSchedFile.shtml:%	Request a new housekeeping schedule
LHKNEWSCHEDINST	0x650	6	LHK/cmd/_/P.NewSchedInst.shtml:%	Request a new housekeeping schedul 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 P
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 AD
LIHENABACTION	0x654	2	LIH/cmd/_/P.EnableActions.shtml:%	Enable/disable actions on ADC state c
LIHLOADLIMITS	0x654	1	LIH/cmd/_/P.LoadLimits.shtml:%	Load ADC limit sets from CDM datab
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

Cmd. Packet (I)	APID	FC	Section	Description (I)
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 AD
LIHSETSETTLEADC	0x654	7	LIH/cmd/_/P.SetSettleAdc.shtml:%	Set the maximum settling period (mse
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 Handlin
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, LAT LATC_ignore functions
LIMLATCRECORD	0x663	17	LIM/cmd/_/P.Latc_Record.shtml:%	Call the LATC_capture and LATC_co
LIMLATCVERIFY	0x663	20	LIM/cmd/_/P.Latc_Verify.shtml:%	Call the LATC_capture, LATC_veri sign 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
LMCTEMDEADTIME	0x69C	5	LMC/cmd/_/P.tem_deadtime.shtml:%	TEM Deadtime Low Rate Science Co
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

Cmd. Packet (I)	APID	FC	Section	Description (I)
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
LPACONFIGURE	0x674	0	LPA/cmd/_/P.Configure.shtml:%	Configures Active Event Handlers For
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 t
LSMSSROUTPUTON	0x690	1	LSM/cmd/_/P.SSRoutputOn.shtml:%	Turn on echo of Magic 7 commands to
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 identif
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 (Interna
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 auton
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 p
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.

Cmd. Packet (I)	APID	FC	Section	Description (I)
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
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 packet
CmdResponse	0x695	1	LCM/cmd/_/P.CmdResponse.shtml:%	Change task command confirmation le
CntlProc	0x659	1	LTC/cmd/_/P.CntlProc.shtml:%	LTC Control Start Processing (Interna
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 Handlin
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
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 AD
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 identif
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 c
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
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 auto
ImageDump	0x695	8	LCM/cmd/_/P.ImageDump.shtml:%	Dump complete module/task informat

Cmd. Packet (L)	APID	FC	Section	Description (L)
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, LAT LATC_ignore functions
Latc_Record	0x663	17	LIM/cmd/_/P.Latc_Record.shtml:%	Call the LATC_capture and LATC_co
Latc_Verify	0x663	20	LIM/cmd/_/P.Latc_Verify.shtml:%	Call the LATC_capture, LATC_veri sign 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 datal
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
NewSchedInst	0x650	6	LHK/cmd/_/P.NewSchedInst.shtml:%	Request a new housekeeping schedul 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
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

Cmd. Packet (L)	APID	FC	Section	Description (L)
READ	0x680	1	LRA/cmd/_/P.READ.shtml:%	Read registers
ReqDiagPacket	0x650	0	LHK/cmd/_/P.ReqDiagPacket.shtml:%	Request a Housekeeping Diagnostic P
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
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
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 AD
SetSettleAdc	0x654	7	LIH/cmd/_/P.SetSettleAdc.shtml:%	Set the maximum settling period (mse
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 t
SSRoutputOn	0x690	1	LSM/cmd/_/P.SSRoutputOn.shtml:%	Turn on echo of Magic 7 commands t
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 processin
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
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 Co
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

Cmd. Packet (L)	APID	FC	Section	Description (L)
`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 Activit
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 Bitfiel
CIDBF	LMEMDUMPMEM	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
CIDBF	LMEMDUMPNEXT	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
CIDBF	LMEMDUMPPCI	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
CIDBF	LMEMDUMPPOOL	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
CIDBF	LMEMDUMPREG	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
CIDBF	LMEMDUMPSYMREL	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
CIDBF	LMEMDUMPSYMVAL	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
CIDBF	LMEMLOADMEM	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
CIDBF	LMEMLOADPCI	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
CIDBF	LMEMLOADREG	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
CIDBF	LMEMNOOP	MEM/cmd/_/B.CIDBF.shtml:%	LAT Unit and Transaction ID Bitfiel
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 Addres
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 Selecti
CSELOTHERBF	Power_On	LIM/cmd/_/B.CSELOTHERBF.shtml:%	EPU, PDU, EBM, and GEM Selecti
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
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

Bitfield (L)	Cmd. Packet (L)	Section	Description (L)
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 I
NODETRANID	DirCreate	LFS/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	DirDelete	LFS/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	DirDump	LFS/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	DumpStart	LSW/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	DumpTraceById	LSW/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	DumpTraceByName	LSW/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	FileCopy	LFS/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	FileDelete	LFS/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	FileDumpCTDB	LFS/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	FileDumpSSR	LFS/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	ModuleDump	LCM/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	Noop	LSM/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	Noop	LSW/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	SetTraceConfig	LSW/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	SysStatus	LFS/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I
NODETRANID	TaskDump	LCM/cmd/_/B.NODETRANID.shtml:%	Compound of node and transaction I

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 Selectio
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 (exter tracing
ENABLE_EX9	SetTraceConfig	LSW/cmd/_/F.ENABLE_EX9.shtml:%	Enable exception 0x900 (decreme
ENABLE_FLUSH	SetTraceConfig	LSW/cmd/_/F.ENABLE_FLUSH.shtml:%	Enable cache flushing during task
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
FILEID	DirCreate	LFS/cmd/_/F.FILEID.shtml:%	File Storage ID
FILEID	DirDelete	LFS/cmd/_/F.FILEID.shtml:%	File Storage ID

Field (L)	Cmd. Packet (L)	Section	Description (L)
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 Second
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
ITC_CmdClass	CmdResponse	LCM/cmd/_/F.ITC_CmdClass.shtml:%	Spacecraft command class (norm
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 Sec
LBD_SEC	BurstTrg	LPA/cmd/_/F.LBD_SEC.shtml:%	LAT Burst Declaration Time Sec
LBD_USEC	BurstClose	LPA/cmd/_/F.LBD_USEC.shtml:%	LAT Burst Declaration Time Use
LBD_USEC	BurstTrg	LPA/cmd/_/F.LBD_USEC.shtml:%	LAT Burst Declaration Time Use
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

Field (L)	Cmd. Packet (L)	Section	Description (L)
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 Nun
LR_SEQ	GbmClose	LPA/cmd/_/F.LR_SEQ.shtml:%	GRB LAT Record Sequence Nun
LR_SEQ	GbmRpt	LPA/cmd/_/F.LR_SEQ.shtml:%	GRB LAT Record Sequence Nun
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 Are
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 t
NODE	DirCreate	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	DirDelete	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	DirDump	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	DumpStart	LSW/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	DumpTraceById	LSW/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	DumpTraceByName	LSW/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	ErrorCfg	LCM/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	FileCopy	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	FileDelete	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	FileDumpCTDB	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	FileDumpSSR	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	ModuleDump	LCM/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	Noop	LSW/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	Noop	LSM/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	Noop	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	Noop	LCM/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	ScrubCfg	LCM/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	ScrubRun	LCM/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	SetTraceConfig	LSW/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	SysCheck	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	SysFormat	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	SysMount	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	SysRepair	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	SysStatus	LFS/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	TaskDump	LCM/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	UploadCancel	FILE/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	UploadCommit	FILE/cmd/_/F.NODE.shtml:%	Computer to send the command t
NODE	UploadEPU	FILE/cmd/_/F.NODE.shtml:%	Computer to send the command t
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
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

Field (L)	Cmd. Packet (L)	Section	Description (L)
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 in
Padui10	TurboReset	LCM/cmd/_/F.Padui10.shtml:%	Explicit 10 bit pad in unsigned in
Padui20	CpuReset	LCM/cmd/_/F.Padui20.shtml:%	Explicit 20 bit pad in unsigned in
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 Repornt 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
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

Field (L)	Cmd. Packet (L)	Section	Description (L)
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
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 c
TRANID	DirCreate	LFS/cmd/_/F.TRANID.shtml:%	Transaction ID to associate with c
TRANID	DirDelete	LFS/cmd/_/F.TRANID.shtml:%	Transaction ID to associate with c
TRANID	DirDump	LFS/cmd/_/F.TRANID.shtml:%	Transaction ID to associate with c
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 c
TRANID	FileDelete	LFS/cmd/_/F.TRANID.shtml:%	Transaction ID to associate with c
TRANID	FileDumpCTDB	LFS/cmd/_/F.TRANID.shtml:%	Transaction ID to associate with c
TRANID	FileDumpSSR	LFS/cmd/_/F.TRANID.shtml:%	Transaction ID to associate with c
TRANID	ModuleDump	LCM/cmd/_/F.TRANID.shtml:%	Transaction ID to associate with c
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 c
TRANID	TaskDump	LCM/cmd/_/F.TRANID.shtml:%	Transaction ID to associate with c
TRG_ALG_16	GbmCalc	LPA/cmd/_/F.TRG_ALG_16.shtml:%	GRB Trigger Algorithm 16 Bit M
TRG_ALG_8	GbmCalc	LPA/cmd/_/F.TRG_ALG_8.shtml:%	GRB Trigger Algorithm 8 Bit Me
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

Field (L)	Cmd. Packet (L)	Section	Description (L)
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
[illegible]	TemEnvTemp2	LHK/tlm/_/P.TemEnvTemp2.shtml:%	TEM temperature ADCs for TEMs 4-5
[illegible]	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
[illegible]	TemEnvTemp5	LHK/tlm/_/P.TemEnvTemp5.shtml	TEM temperature ADCs for TEMs A-B
[illegible]	TemEnvTemp6	[illegible]	TEM temperature ADCs for TEMs C-D
[illegible]	TemEnvTemp7	[illegible]	TEM temperature ADCs for TEMs E-F
[illegible]	PduEnv0	[illegible]	PDU Environmental Packet 0
[illegible]	PduEnv1	[illegible]	PDU Environmental Packet 1
[illegible]	PduEnv2	[illegible]	PDU Environmental Packet 2
[illegible]	PduEnv3	[illegible]	PDU Environmental Packet 3
[illegible]	[illegible]	[illegible]	PDU Environmental Packet 4
[illegible]	[illegible]	[illegible]	PDU Environmental Packet 5
[illegible]	[illegible]	[illegible]	PDU Environmental Packet 6
[illegible]	[illegible]	[illegible]	PDU Environmental Packet 7
[illegible]	[illegible]	[illegible]	AEM Environmental Monitor Packet 0
[illegible]	[illegible]	[illegible]	Low-rate Science/[illegible] State Packet
[illegible]	[illegible]	[illegible]	Command Statistics Packet 0
[illegible]	[illegible]	[illegible]	Command Statistics Packet 1
[illegible]	[illegible]	[illegible]	SIU Statistics
[illegible]	[illegible]	[illegible]	EPU 0 Statistics
[illegible]	[illegible]	[illegible]	EPU 1 Statistics
[illegible]	[illegible]	[illegible]	EPU 2 Statistics
[illegible]	[illegible]	[illegible]	Thermal Control Data Packet 0
[illegible]	[illegible]	[illegible]	Thermal Control Data Packet 1
[illegible]	[illegible]	[illegible]	Thermal Control Data Packet 2
[illegible]	[illegible]	[illegible]	Thermal Control Data Packet 3
[illegible]	[illegible]	[illegible]	TC Configuration
[illegible]	[illegible]	[illegible]	TRC Top SIU Monitor Packet
[illegible]	[illegible]	[illegible]	TRC Top EPU 0 Monitor Packet
[illegible]	[illegible]	[illegible]	TRC Top EPU 1 Monitor Packet
[illegible]	[illegible]	[illegible]	TRC Top EPU 2 Monitor Packet
[illegible]	[illegible]	[illegible]	TEM power ADCs for TEMs 0-3
[illegible]	[illegible]	[illegible]	TEM power ADCs for TEMs 4-7
[illegible]	[illegible]	[illegible]	TEM power ADCs for TEMs 8-11
[illegible]	[illegible]	[illegible]	TEM power ADCs for TEMs 12-15
[illegible]	AemEnvHk0	[illegible]	AEM environmental quantities for FREE boards 0-[illegible] the DAB
[illegible]	[illegible]	[illegible]	AEM environmental quantities for FREE boards 6-[illegible] the DAB
[illegible]	[illegible]	[illegible]	SIU status packet
[illegible]	[illegible]	[illegible]	EPU0 status packet

APID	Tlm. Packet (L)	Section	Description (L)
[illegible]	[illegible]	[illegible]	[illegible] packet
[illegible]	[illegible]	[illegible]	[illegible] packet
[illegible]	[illegible]	[illegible]	[illegible] configuration of tasks on SIU
[illegible]	[illegible]	[illegible]	[illegible] configuration of tasks on EPU0
[illegible]	[illegible]	[illegible]	[illegible] configuration of tasks on EPU1
[illegible]	[illegible]	[illegible]	[illegible] configuration of tasks on EPU2
[illegible]	[illegible]	[illegible]	LPA filter configuration (based on first LPA_DB in [illegible] (SIU)
[illegible]	[illegible]	[illegible]	LPA filter configuration (based on first LPA_DB in [illegible] (EPU[illegible])
[illegible]	[illegible]	[illegible]	LPA filter configuration (based on first LPA_DB in [illegible] (EPU[illegible])
[illegible]	[illegible]	[illegible]	LPA filter configuration (based on first LPA_DB in [illegible] (EPU[illegible])
[illegible]	[illegible]	[illegible]	[illegible] (GEM and EBM)
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible] packet (including LPA and L[illegible] us)
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Diagnostic EPU 0 Statistics

Telec[redacted]ry Fo[redacted]

APID[redacted]

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 (the DAB
AemEnv01	0x23D	LHK/tlm/_/P.AemEnv01.shtml:%	AEM environmental quantities for FREE boards 6- 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 boards 0-5 an
DiagAemEnv01	0x29D	LHK/tlm/_/P.DiagAemEnv01.shtml:%	Diagnostic AEM environmental quantities for 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 E
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 (includin and LCI status)
DiagLpaDb0Epu0	0x2AB	LHK/tlm/_/P.DiagLpaDb0Epu0.shtml:%	Diagnostic LPA filter configuration (based o LPA_DB ins
DiagLpaDb0Epu1	0x2AC	LHK/tlm/_/P.DiagLpaDb0Epu1.shtml:%	Diagnostic LPA filter configuration (based o LPA_DB ins
DiagLpaDb0Epu2	0x2AD	LHK/tlm/_/P.DiagLpaDb0Epu2.shtml:%	Diagnostic LPA filter configuration (based o LPA_DB ins
DiagLpaDb0Siu	0x2AA	LHK/tlm/_/P.DiagLpaDb0Siu.shtml:%	Diagnostic LPA filter configuration (based o 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
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

Tlm. Packet (L)	APID	Section	Description (L)
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 EPU
DiagTaskCfgEpu1	0x2A7	LHK/tlm/_/P.DiagTaskCfgEpu1.shtml:%	Diagnostic ITC/MSG configuration of tasks on EPU
DiagTaskCfgEpu2	0x2A8	LHK/tlm/_/P.DiagTaskCfgEpu2.shtml:%	Diagnostic ITC/MSG configuration of tasks on EPU
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
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

Tlm. Packet (L)	APID	Section	Description (L)
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 L tus)
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
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

Tlm. Packet (L)	APID	Section	Description (L)
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 in (EPU
LpaDb0Epu1	0x24C	LHK/tlm/_/P.LpaDb0Epu1.shtml:%	LPA filter configuration (based on first LPA_DB in (EPU
LpaDb0Epu2	0x24D	LHK/tlm/_/P.LpaDb0Epu2.shtml:%	LPA filter configuration (based on first LPA_DB in (EPU
LpaDb0Siu	0x24A	LHK/tlm/_/P.LpaDb0Siu.shtml:%	LPA filter configuration (based on first LPA_DB in (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
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

Tlm. Packet (L)	APID	Section	Description (L)
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 p
LciContrib	LimStatus	LHK/tlm/_/S.LciContrib.shtml:%	LCI's contribution to the LIM status p
LimContrib	DiagLimStatus	LHK/tlm/_/S.LimContrib.shtml:%	LIM's contribution to the LIM status
LimContrib	LimStatus	LHK/tlm/_/S.LimContrib.shtml:%	LIM's contribution to the LIM status
LpaContrib	DiagLimStatus	LHK/tlm/_/S.LpaContrib.shtml:%	LPA's contribution to the LIM status
LpaContrib	LimStatus	LHK/tlm/_/S.LpaContrib.shtml:%	LPA's contribution to the LIM status
MemoryLog	MemoryError	LCM/tlm/_/S.MemoryLog.shtml:%	Contents of one row of the memory error lo
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

Struct (L)	Tlm. Packet (L)	Section	Description (L)
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 registe
AEMFREEPWR	AemEnv00	LHK/tlm/_/B.AEMFREEPWR.shtml:%	AEM FREE board power state registe
AEMFREEPWR	AemEnv01	LHK/tlm/_/B.AEMFREEPWR.shtml:%	AEM FREE board power state registe
AEMFREEPWR	DiagAemEnv0	LHK/tlm/_/B.AEMFREEPWR.shtml:%	AEM FREE board power state registe
AEMFREEPWR	DiagAemEnv00	LHK/tlm/_/B.AEMFREEPWR.shtml:%	AEM FREE board power state registe
AEMFREEPWR	DiagAemEnv01	LHK/tlm/_/B.AEMFREEPWR.shtml:%	AEM FREE board power state registe
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 handle
ConfigLPA	DiagLpaDb0Epu1	LHK/tlm/_/B.ConfigLPA.shtml:%	Parameter set associated with a handle
ConfigLPA	DiagLpaDb0Epu2	LHK/tlm/_/B.ConfigLPA.shtml:%	Parameter set associated with a handle
ConfigLPA	DiagLpaDb0Siu	LHK/tlm/_/B.ConfigLPA.shtml:%	Parameter set associated with a handle
ConfigLPA	LpaDb0Epu0	LHK/tlm/_/B.ConfigLPA.shtml:%	Parameter set associated with a handle
ConfigLPA	LpaDb0Epu1	LHK/tlm/_/B.ConfigLPA.shtml:%	Parameter set associated with a handle
ConfigLPA	LpaDb0Epu2	LHK/tlm/_/B.ConfigLPA.shtml:%	Parameter set associated with a handle
ConfigLPA	LpaDb0Siu	LHK/tlm/_/B.ConfigLPA.shtml:%	Parameter set associated with a handle
ConfigPID	DiagSiuStats	LHK/tlm/_/B.ConfigPID.shtml:%	Structure to capture rad750 input PID
ConfigPID	DiagStatusEpu0	LHK/tlm/_/B.ConfigPID.shtml:%	Structure to capture rad750 input PID
ConfigPID	DiagStatusEpu1	LHK/tlm/_/B.ConfigPID.shtml:%	Structure to capture rad750 input PID
ConfigPID	DiagStatusEpu2	LHK/tlm/_/B.ConfigPID.shtml:%	Structure to capture rad750 input PID
ConfigPID	DiagStatusSiu	LHK/tlm/_/B.ConfigPID.shtml:%	Structure to capture rad750 input PID
ConfigPID	SiuStats	LHK/tlm/_/B.ConfigPID.shtml:%	Structure to capture rad750 input PID
ConfigPID	StatusEpu0	LHK/tlm/_/B.ConfigPID.shtml:%	Structure to capture rad750 input PID
ConfigPID	StatusEpu1	LHK/tlm/_/B.ConfigPID.shtml:%	Structure to capture rad750 input PID
ConfigPID	StatusEpu2	LHK/tlm/_/B.ConfigPID.shtml:%	Structure to capture rad750 input PID
ConfigPID	StatusSiu	LHK/tlm/_/B.ConfigPID.shtml:%	Structure to capture rad750 input PID
ConfigTHS	DiagStatusEpu0	LHK/tlm/_/B.ConfigTHS.shtml:%	Structure to capture the THS imulation
ConfigTHS	DiagStatusEpu1	LHK/tlm/_/B.ConfigTHS.shtml:%	Structure to capture the THS imulation
ConfigTHS	DiagStatusEpu2	LHK/tlm/_/B.ConfigTHS.shtml:%	Structure to capture the THS imulation
ConfigTHS	DiagStatusSiu	LHK/tlm/_/B.ConfigTHS.shtml:%	Structure to capture the THS imulation
ConfigTHS	StatusEpu0	LHK/tlm/_/B.ConfigTHS.shtml:%	Structure to capture the THS imulation
ConfigTHS	StatusEpu1	LHK/tlm/_/B.ConfigTHS.shtml:%	Structure to capture the THS imulation
ConfigTHS	StatusEpu2	LHK/tlm/_/B.ConfigTHS.shtml:%	Structure to capture the THS imulation
ConfigTHS	StatusSiu	LHK/tlm/_/B.ConfigTHS.shtml:%	Structure to capture the THS imulation
CpuSerial	LCMMSGOUTC	LCM/tlm/_/B.CpuSerial.shtml:%	Compound CPU serial number
CpuSerial	MemoryError	LCM/tlm/_/B.CpuSerial.shtml:%	Compound CPU serial number

Bitfield (L)	Tlm. Packet (L)	Section	Description (L)
CpuSerial	PciError	LCM/tlm/_/B.CpuSerial.shtml:%	Compound CPU serial number
CRUcommand	DiagPigStatus	LHK/tlm/_/B.CRUcommand.shtml:%	Contents of the CRU command enable
CRUcommand	PigStatus	LHK/tlm/_/B.CRUcommand.shtml:%	Contents of the CRU command enable
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
CRUresponse	PigStatus	LHK/tlm/_/B.CRUresponse.shtml:%	Contents of the CRU response enable
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 config
EBMbackConfig	PigStatus	LHK/tlm/_/B.EBMbackConfig.shtml:%	Contents of the EBM back-end config
EBMcontrib	DiagPigStatus	LHK/tlm/_/B.EBMcontrib.shtml:%	Contents of the EBM contributors reg
EBMcontrib	PigStatus	LHK/tlm/_/B.EBMcontrib.shtml:%	Contents of the EBM contributors reg
EBMdestination	DiagPigStatus	LHK/tlm/_/B.EBMdestination.shtml:%	Contents of the EBM destination enab
EBMdestination	PigStatus	LHK/tlm/_/B.EBMdestination.shtml:%	Contents of the EBM destination enab
EBMfrontAConfig	DiagPigStatus	LHK/tlm/_/B.EBMfrontAConfig.shtml:%	Contents of the EBM front-end A con
EBMfrontAConfig	PigStatus	LHK/tlm/_/B.EBMfrontAConfig.shtml:%	Contents of the EBM front-end A con
EBMfrontBConfig	DiagPigStatus	LHK/tlm/_/B.EBMfrontBConfig.shtml:%	Contents of the EBM front-end B con
EBMfrontBConfig	PigStatus	LHK/tlm/_/B.EBMfrontBConfig.shtml:%	Contents of the EBM front-end B con
EBMinput	DiagPigStatus	LHK/tlm/_/B.EBMinput.shtml:%	Contents of the EBM input enable reg
EBMinput	PigStatus	LHK/tlm/_/B.EBMinput.shtml:%	Contents of the EBM input enable reg
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
Hdr1	CmdConfirm	ITC/tlm/_/B.Hdr1.shtml:%	CCSDS telecommand header (bytes 2
Hdr3	CmdConfirm	ITC/tlm/_/B.Hdr3.shtml:%	CCSDS telecommand header (bytes 6
HeaterCommand	DiagLTC	LTC/tlm/_/B.HeaterCommand.shtml:%	Current heater command and LTC con
HeaterCommand	DiagLtcData0	LHK/tlm/_/B.HeaterCommand.shtml:%	Current heater command and LTC con
HeaterCommand	LtcData0	LHK/tlm/_/B.HeaterCommand.shtml:%	Current heater command and LTC con

Bitfield (L)	Tlm. Packet (L)	Section	Description (L)
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 mod
HeaterState	DiagLtcData0	LHK/tlm/_/B.HeaterState.shtml:%	Current heater state and LTC run mod
HeaterState	LtcData0	LHK/tlm/_/B.HeaterState.shtml:%	Current heater state and LTC run mod
HVCONFIGBF	DiagLimStatus	LHK/tlm/_/B.HVCONFIGBF.shtml:%	High-Voltage Interface Configuration
HVCONFIGBF	DiagLrs0	LHK/tlm/_/B.HVCONFIGBF.shtml:%	High-Voltage Interface Configuration
HVCONFIGBF	LimStatus	LHK/tlm/_/B.HVCONFIGBF.shtml:%	High-Voltage Interface Configuration
HVCONFIGBF	Lrs0	LHK/tlm/_/B.HVCONFIGBF.shtml:%	High-Voltage Interface Configuration
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 Regis
PDUACDPWR	DiagPduEnv4	LHK/tlm/_/B.PDUACDPWR.shtml:%	PDU ADC Power Management Regis
PDUACDPWR	PduEnv0	LHK/tlm/_/B.PDUACDPWR.shtml:%	PDU ADC Power Management Regis
PDUACDPWR	PduEnv4	LHK/tlm/_/B.PDUACDPWR.shtml:%	PDU ADC Power Management Regis
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 st
ResRitStatus	DiagLtcData0	LHK/tlm/_/B.ResRitStatus.shtml:%	Heat pipe RIT and reservoir sensors st
ResRitStatus	LtcData0	LHK/tlm/_/B.ResRitStatus.shtml:%	Heat pipe RIT and reservoir sensors st
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
TGBMCONFIGBF	State	LIM/tlm/_/B.TGBMCONFIGBF.shtml:%	GBM Interface Configuration Bitfield
THVCONFIGBF	State	LIM/tlm/_/B.THVCONFIGBF.shtml:%	High-Voltage Interface Configuration
TIDBF	LMEMEPU0DATA	MEM/tlm/_/B.TIDBF.shtml:%	LAT Unit and Transaction ID Bitfield

Bitfield (L)	Tlm. Packet (L)	Section	Description (L)
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 cou
BOOTSCPKTCOUNT	LBTEPU1HKP	PBC/tlm/_/F.BOOTSCPKTCOUNT.shtml:%	Received spacecraft packet cou
BOOTSCPKTCOUNT	LBTEPU2HKP	PBC/tlm/_/F.BOOTSCPKTCOUNT.shtml:%	Received spacecraft packet cou
BOOTSCPKTCOUNT	LBTHKP	PBC/tlm/_/F.BOOTSCPKTCOUNT.shtml:%	Received spacecraft packet cou

Field (L)	Tlm. Packet (L)	Section	Description (L)
BOOTSCRUBADDRHI	LBTEPU0HKP	PBC/tlm/_/F.BOOTSCRUBADDRHI.shtml:%	Hi 16 bits of software scrub ad
BOOTSCRUBADDRHI	LBTEPU1HKP	PBC/tlm/_/F.BOOTSCRUBADDRHI.shtml:%	Hi 16 bits of software scrub ad
BOOTSCRUBADDRHI	LBTEPU2HKP	PBC/tlm/_/F.BOOTSCRUBADDRHI.shtml:%	Hi 16 bits of software scrub ad
BOOTSCRUBADDRHI	LBTHKP	PBC/tlm/_/F.BOOTSCRUBADDRHI.shtml:%	Hi 16 bits of software scrub ad
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 c
BOOTUNSPKTCOUNT	LBTEPU1HKP	PBC/tlm/_/F.BOOTUNSPKTCOUNT.shtml:%	Received unsupported packet c
BOOTUNSPKTCOUNT	LBTEPU2HKP	PBC/tlm/_/F.BOOTUNSPKTCOUNT.shtml:%	Received unsupported packet c
BOOTUNSPKTCOUNT	LBTHKP	PBC/tlm/_/F.BOOTUNSPKTCOUNT.shtml:%	Received unsupported packet c
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
CBAE	DiagTaskCfgEpu0	LHK/tlm/_/F.CBAE.shtml:%	Command Confirm Broadcast
CBAE	DiagTaskCfgEpu1	LHK/tlm/_/F.CBAE.shtml:%	Command Confirm Broadcast
CBAE	DiagTaskCfgEpu2	LHK/tlm/_/F.CBAE.shtml:%	Command Confirm Broadcast
CBAE	DiagTaskCfgSiu	LHK/tlm/_/F.CBAE.shtml:%	Command Confirm Broadcast
CBAE	ItcCfg	LHK/tlm/_/F.CBAE.shtml:%	Command Confirm Broadcast
CBAE	TaskCfgEpu0	LHK/tlm/_/F.CBAE.shtml:%	Command Confirm Broadcast
CBAE	TaskCfgEpu1	LHK/tlm/_/F.CBAE.shtml:%	Command Confirm Broadcast
CBAE	TaskCfgEpu2	LHK/tlm/_/F.CBAE.shtml:%	Command Confirm Broadcast
CBAE	TaskCfgSiu	LHK/tlm/_/F.CBAE.shtml:%	Command Confirm Broadcast
CBAF	DiagItcCfg	LHK/tlm/_/F.CBAF.shtml:%	Command Confirm Broadcast
CBAF	DiagTaskCfgEpu0	LHK/tlm/_/F.CBAF.shtml:%	Command Confirm Broadcast
CBAF	DiagTaskCfgEpu1	LHK/tlm/_/F.CBAF.shtml:%	Command Confirm Broadcast
CBAF	DiagTaskCfgEpu2	LHK/tlm/_/F.CBAF.shtml:%	Command Confirm Broadcast

Field (L)	Tlm. Packet (L)	Section	Description (L)
CBAF	DiagTaskCfgSiu	LHK/tlm/_/F.CBAF.shtml:%	Command Confirm Broadcast
CBAF	ItcCfg	LHK/tlm/_/F.CBAF.shtml:%	Command Confirm Broadcast
CBAF	TaskCfgEpu0	LHK/tlm/_/F.CBAF.shtml:%	Command Confirm Broadcast
CBAF	TaskCfgEpu1	LHK/tlm/_/F.CBAF.shtml:%	Command Confirm Broadcast
CBAF	TaskCfgEpu2	LHK/tlm/_/F.CBAF.shtml:%	Command Confirm Broadcast
CBAF	TaskCfgSiu	LHK/tlm/_/F.CBAF.shtml:%	Command Confirm Broadcast
CFGID	EPU0CFG	LPA/tlm/_/F.CFGID.shtml:%	Event Handler Configuration I
CFGID	EPU1CFG	LPA/tlm/_/F.CFGID.shtml:%	Event Handler Configuration I
CFGID	EPU2CFG	LPA/tlm/_/F.CFGID.shtml:%	Event Handler Configuration I
Cmd_len	CmdConfirm	ITC/tlm/_/F.Cmd_len.shtml:%	CCSDS telecommand packet l
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 co
CMDEXEF	CmdCnt1	LHK/tlm/_/F.CMDEXEF.shtml:%	Command execution failure co
CMDEXEF	DiagCmdCnt0	LHK/tlm/_/F.CMDEXEF.shtml:%	Command execution failure co
CMDEXEF	DiagCmdCnt1	LHK/tlm/_/F.CMDEXEF.shtml:%	Command execution failure co
CNAE	DiagItcCfg	LHK/tlm/_/F.CNAE.shtml:%	Command Confirm Normal Ex
CNAE	DiagTaskCfgEpu0	LHK/tlm/_/F.CNAE.shtml:%	Command Confirm Normal Ex
CNAE	DiagTaskCfgEpu1	LHK/tlm/_/F.CNAE.shtml:%	Command Confirm Normal Ex
CNAE	DiagTaskCfgEpu2	LHK/tlm/_/F.CNAE.shtml:%	Command Confirm Normal Ex
CNAE	DiagTaskCfgSiu	LHK/tlm/_/F.CNAE.shtml:%	Command Confirm Normal Ex
CNAE	ItcCfg	LHK/tlm/_/F.CNAE.shtml:%	Command Confirm Normal Ex
CNAE	TaskCfgEpu0	LHK/tlm/_/F.CNAE.shtml:%	Command Confirm Normal Ex
CNAE	TaskCfgEpu1	LHK/tlm/_/F.CNAE.shtml:%	Command Confirm Normal Ex
CNAE	TaskCfgEpu2	LHK/tlm/_/F.CNAE.shtml:%	Command Confirm Normal Ex
CNAE	TaskCfgSiu	LHK/tlm/_/F.CNAE.shtml:%	Command Confirm Normal Ex
CNAF	DiagItcCfg	LHK/tlm/_/F.CNAF.shtml:%	Command Confirm Normal Fo
CNAF	DiagTaskCfgEpu0	LHK/tlm/_/F.CNAF.shtml:%	Command Confirm Normal Fo
CNAF	DiagTaskCfgEpu1	LHK/tlm/_/F.CNAF.shtml:%	Command Confirm Normal Fo
CNAF	DiagTaskCfgEpu2	LHK/tlm/_/F.CNAF.shtml:%	Command Confirm Normal Fo
CNAF	DiagTaskCfgSiu	LHK/tlm/_/F.CNAF.shtml:%	Command Confirm Normal Fo
CNAF	ItcCfg	LHK/tlm/_/F.CNAF.shtml:%	Command Confirm Normal Fo
CNAF	TaskCfgEpu0	LHK/tlm/_/F.CNAF.shtml:%	Command Confirm Normal Fo
CNAF	TaskCfgEpu1	LHK/tlm/_/F.CNAF.shtml:%	Command Confirm Normal Fo
CNAF	TaskCfgEpu2	LHK/tlm/_/F.CNAF.shtml:%	Command Confirm Normal Fo
CNAF	TaskCfgSiu	LHK/tlm/_/F.CNAF.shtml:%	Command Confirm Normal Fo
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 confirmati
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/enable
enable	PigStatus	LHK/tlm/_/F.enable.shtml:%	An enable bit (disabled/enable
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 functio
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 zo
GEMLRSDEAD	Lrs0	LHK/tlm/_/F.GEMLRSDEAD.shtml:%	GEM low-rate science dead zo
GEMLRSDISC	DiagLrs0	LHK/tlm/_/F.GEMLRSDISC.shtml:%	GEM low-rate science discard
GEMLRSDISC	Lrs0	LHK/tlm/_/F.GEMLRSDISC.shtml:%	GEM low-rate science discard
GEMLRSLIVE	DiagLrs0	LHK/tlm/_/F.GEMLRSLIVE.shtml:%	GEM low-rate science livetim
GEMLRSLIVE	Lrs0	LHK/tlm/_/F.GEMLRSLIVE.shtml:%	GEM low-rate science livetim
GEMLRSSENT	DiagLrs0	LHK/tlm/_/F.GEMLRSSENT.shtml:%	GEM low-rate science sent co
GEMLRSSENT	Lrs0	LHK/tlm/_/F.GEMLRSSENT.shtml:%	GEM low-rate science sent co

Field (L)	Tlm. Packet (L)	Section	Description (L)
GEMPRSCL	DiagLrs0	LHK/tlm/_/F.GEMPRSCL.shtml:%	Low-rate science prescaled co
GEMPRSCL	Lrs0	LHK/tlm/_/F.GEMPRSCL.shtml:%	Low-rate science prescaled co
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
HeaterMask	DiagLtcData0	LHK/tlm/_/F.HeaterMask.shtml:%	Mask for VCHP heater control
HeaterMask	LtcData0	LHK/tlm/_/F.HeaterMask.shtml:%	Mask for VCHP heater control
HKBCNT	CtdbCounts	LHK/tlm/_/F.HKBCNT.shtml:%	1553 Housekeeping Byte Cour
HKBCNT	DiagCtdbCounts	LHK/tlm/_/F.HKBCNT.shtml:%	1553 Housekeeping Byte Cour
HKBCNT	DiagTemEnvPwr5	LHK/tlm/_/F.HKBCNT.shtml:%	1553 Housekeeping Byte Cour
HKBCNT	TemEnvPwr5	LHK/tlm/_/F.HKBCNT.shtml:%	1553 Housekeeping Byte Cour
HKPCNT	CtdbCounts	LHK/tlm/_/F.HKPCNT.shtml:%	1553 Housekeeping Packet Co
HKPCNT	DiagCtdbCounts	LHK/tlm/_/F.HKPCNT.shtml:%	1553 Housekeeping Packet Co
HKPCNT	DiagTemEnvPwr5	LHK/tlm/_/F.HKPCNT.shtml:%	1553 Housekeeping Packet Co
HKPCNT	TemEnvPwr5	LHK/tlm/_/F.HKPCNT.shtml:%	1553 Housekeeping Packet Co
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 t
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
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

Field (L)	Tlm. Packet (L)	Section	Description (L)
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
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

Field (L)	Tlm. Packet (L)	Section	Description (L)
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
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

Field (L)	Tlm. Packet (L)	Section	Description (L)
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
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 R
MEMERRLOG0	LLCMMEMERR	LCM/tlm/_/F.MEMERRLOG0.shtml:%	RAD750 MEM Error Log Reg

Field (L)	Tlm. Packet (L)	Section	Description (L)
MEMERRLOG1	LLCMMEMERR	LCM/tlm/_/F.MEMERRLOG1.shtml:%	RAD750 MEM Error Log Reg
MEMERRSTAT	LLCMMEMERR	LCM/tlm/_/F.MEMERRSTAT.shtml:%	RAD750 MEM Error Status R
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
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

Field (L)	Tlm. Packet (L)	Section	Description (L)
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 acti
MLDSTAT	DiagEpu1Stats	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	DiagEpu2Stats	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	DiagSiuStats	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	DiagStatusEpu0	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	DiagStatusEpu1	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	DiagStatusEpu2	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	DiagStatusSiu	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	Epu0Stats	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	Epu1Stats	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	Epu2Stats	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	SiuStats	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	StatusEpu0	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	StatusEpu1	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	StatusEpu2	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
MLDSTAT	StatusSiu	LHK/tlm/_/F.MLDSTAT.shtml:%	Status of most recent load acti
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 Addres
MODDATASIZE	LLCMMODLIST	LCM/tlm/_/F.MODDATASIZE.shtml:%	Module Data Segment Addres
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

Field (L)	Tlm. Packet (L)	Section	Description (L)
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
PADCOUNT	ASCSIU	EMP/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after packet
PADCOUNT	LCMIMAGEEPU0	LCM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	LCMIMAGEEPU1	LCM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	LCMIMAGEEPU2	LCM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	LCMIMAGEEPU3	LCM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry

Field (L)	Tlm. Packet (L)	Section	Description (L)
PADCOUNT	LCMIMAGESIU	LCM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	LSWSNAPEPU0	LSW/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	LSWSNAPEPU1	LSW/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	LSWSNAPEPU2	LSW/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	LSWSNAPEPU3	LSW/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	LSWSNAPSIU	LSW/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	MAGIC7	LSM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after packet
PADCOUNT	STATSEPU0	LCM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	STATSEPU1	LCM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	STATSEPU2	LCM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	STATSEPU3	LCM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
PADCOUNT	STATSSIU	LCM/tlm/_/F.PADCOUNT.shtml:%	Pad byte count after telemetry
Paduc2	DiagLimStatus	LHK/tlm/_/F.Paduc2.shtml:%	Explicit 2 bit pad in unsigned
Paduc2	DiagLrs0	LHK/tlm/_/F.Paduc2.shtml:%	Explicit 2 bit pad in unsigned
Paduc2	LimStatus	LHK/tlm/_/F.Paduc2.shtml:%	Explicit 2 bit pad in unsigned
Paduc2	Lrs0	LHK/tlm/_/F.Paduc2.shtml:%	Explicit 2 bit pad in unsigned
Paduc3	AemEnv0	LHK/tlm/_/F.Paduc3.shtml:%	Explicit 3 bit pad in unsigned
Paduc3	AemEnv00	LHK/tlm/_/F.Paduc3.shtml:%	Explicit 3 bit pad in unsigned
Paduc3	AemEnv01	LHK/tlm/_/F.Paduc3.shtml:%	Explicit 3 bit pad in unsigned
Paduc3	DiagAemEnv0	LHK/tlm/_/F.Paduc3.shtml:%	Explicit 3 bit pad in unsigned
Paduc3	DiagAemEnv00	LHK/tlm/_/F.Paduc3.shtml:%	Explicit 3 bit pad in unsigned
Paduc3	DiagAemEnv01	LHK/tlm/_/F.Paduc3.shtml:%	Explicit 3 bit pad in unsigned
Paduc5	DiagLimStatus	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	DiagLrs0	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	DiagSiuStats	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	DiagStatusEpu0	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	DiagStatusEpu1	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	DiagStatusEpu2	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	DiagStatusSiu	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	LimStatus	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	Lrs0	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	SiuStats	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	StatusEpu0	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	StatusEpu1	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	StatusEpu2	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc5	StatusSiu	LHK/tlm/_/F.Paduc5.shtml:%	Explicit 5 bit pad in unsigned
Paduc6	DiagStatusEpu0	LHK/tlm/_/F.Paduc6.shtml:%	Explicit 6 bit pad in unsigned
Paduc6	DiagStatusEpu1	LHK/tlm/_/F.Paduc6.shtml:%	Explicit 6 bit pad in unsigned
Paduc6	DiagStatusEpu2	LHK/tlm/_/F.Paduc6.shtml:%	Explicit 6 bit pad in unsigned
Paduc6	DiagStatusSiu	LHK/tlm/_/F.Paduc6.shtml:%	Explicit 6 bit pad in unsigned
Paduc6	StatusEpu0	LHK/tlm/_/F.Paduc6.shtml:%	Explicit 6 bit pad in unsigned
Paduc6	StatusEpu1	LHK/tlm/_/F.Paduc6.shtml:%	Explicit 6 bit pad in unsigned
Paduc6	StatusEpu2	LHK/tlm/_/F.Paduc6.shtml:%	Explicit 6 bit pad in unsigned
Paduc6	StatusSiu	LHK/tlm/_/F.Paduc6.shtml:%	Explicit 6 bit pad in unsigned
Paduc7	DiagLimStatus	LHK/tlm/_/F.Paduc7.shtml:%	Explicit 7 bit pad in unsigned
Paduc7	DiagLrs0	LHK/tlm/_/F.Paduc7.shtml:%	Explicit 7 bit pad in unsigned
Paduc7	DiagPigStatus	LHK/tlm/_/F.Paduc7.shtml:%	Explicit 7 bit pad in unsigned
Paduc7	LimStatus	LHK/tlm/_/F.Paduc7.shtml:%	Explicit 7 bit pad in unsigned
Paduc7	Lrs0	LHK/tlm/_/F.Paduc7.shtml:%	Explicit 7 bit pad in unsigned
Paduc7	PigStatus	LHK/tlm/_/F.Paduc7.shtml:%	Explicit 7 bit pad in unsigned
Paduc8	DiagLatcStatus	LHK/tlm/_/F.Paduc8.shtml:%	Explicit 8 bit pad in unsigned
Paduc8	DiagPigStatus	LHK/tlm/_/F.Paduc8.shtml:%	Explicit 8 bit pad in unsigned

Field (L)	Tlm. Packet (L)	Section	Description (L)
Paduc8	DiagSiuStats	LHK/tlm/_/F.Paduc8.shtml:%	Explicit 8 bit pad in unsigned
Paduc8	LatcStatus	LHK/tlm/_/F.Paduc8.shtml:%	Explicit 8 bit pad in unsigned
Paduc8	MiscSlow	LHK/tlm/_/F.Paduc8.shtml:%	Explicit 8 bit pad in unsigned
Paduc8	PigStatus	LHK/tlm/_/F.Paduc8.shtml:%	Explicit 8 bit pad in unsigned
Paduc8	SiuStats	LHK/tlm/_/F.Paduc8.shtml:%	Explicit 8 bit pad in unsigned
Padui14	DiagPigStatus	LHK/tlm/_/F.Padui14.shtml:%	Explicit 14 bit pad in unsigned
Padui14	PigStatus	LHK/tlm/_/F.Padui14.shtml:%	Explicit 14 bit pad in unsigned
Padui16	DiagPigStatus	LHK/tlm/_/F.Padui16.shtml:%	Explicit 16 bit pad in unsigned
Padui16	PigStatus	LHK/tlm/_/F.Padui16.shtml:%	Explicit 16 bit pad in unsigned
Padui1	DiagPigStatus	LHK/tlm/_/F.Padui1.shtml:%	Explicit 1 bit pad in unsigned
Padui1	PigStatus	LHK/tlm/_/F.Padui1.shtml:%	Explicit 1 bit pad in unsigned
Padui2	DiagPigStatus	LHK/tlm/_/F.Padui2.shtml:%	Explicit 2 bit pad in unsigned
Padui2	PigStatus	LHK/tlm/_/F.Padui2.shtml:%	Explicit 2 bit pad in unsigned
Padui32	DiagLatcStatus	LHK/tlm/_/F.Padui32.shtml:%	Explicit 32 bit pad in unsigned
Padui32	DiagPigStatus	LHK/tlm/_/F.Padui32.shtml:%	Explicit 32 bit pad in unsigned
Padui32	LatcStatus	LHK/tlm/_/F.Padui32.shtml:%	Explicit 32 bit pad in unsigned
Padui32	PigStatus	LHK/tlm/_/F.Padui32.shtml:%	Explicit 32 bit pad in unsigned
Padui3	DiagPigStatus	LHK/tlm/_/F.Padui3.shtml:%	Explicit 3 bit pad in unsigned
Padui3	PigStatus	LHK/tlm/_/F.Padui3.shtml:%	Explicit 3 bit pad in unsigned
Padui7	DiagPigStatus	LHK/tlm/_/F.Padui7.shtml:%	Explicit 7 bit pad in unsigned
Padui7	PigStatus	LHK/tlm/_/F.Padui7.shtml:%	Explicit 7 bit pad in unsigned
Padui8	DiagPigStatus	LHK/tlm/_/F.Padui8.shtml:%	Explicit 8 bit pad in unsigned
Padui8	PigStatus	LHK/tlm/_/F.Padui8.shtml:%	Explicit 8 bit pad in unsigned
Padus13	DiagPduEnv0	LHK/tlm/_/F.Padus13.shtml:%	Explicit 13 bit pad in unsigned
Padus13	DiagPduEnv4	LHK/tlm/_/F.Padus13.shtml:%	Explicit 13 bit pad in unsigned
Padus13	PduEnv0	LHK/tlm/_/F.Padus13.shtml:%	Explicit 13 bit pad in unsigned
Padus13	PduEnv4	LHK/tlm/_/F.Padus13.shtml:%	Explicit 13 bit pad in unsigned
Padus16	AemEnv0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	AemEnv00	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	AemEnv01	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	CmdCnt0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	CmdCnt1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	CtdbCounts	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagAemEnv0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagAemEnv00	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagAemEnv01	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagCmdCnt0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagCmdCnt1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagCtdbCounts	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagEpu0Stats	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagEpu1Stats	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagEpu2Stats	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagGasuCounts	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagItcCfg	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagLatcStatus	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagLimStatus	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagLpaDb0Epu0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagLpaDb0Epu1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagLpaDb0Epu2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagLpaDb0Siu	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagLrs0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagLtcData0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned

Field (L)	Tlm. Packet (L)	Section	Description (L)
Padus16	DiagLtcData1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagLtcData2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagLtcData3	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagMiscSlow	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagPduEnv0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagPduEnv1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagPduEnv2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagPduEnv3	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagPduEnv4	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagPduEnv5	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagPduEnv6	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagPduEnv7	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagPigStatus	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagSiuStats	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagStatusEpu0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagStatusEpu1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagStatusEpu2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagStatusSiu	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTaskCfgEpu0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTaskCfgEpu1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTaskCfgEpu2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTaskCfgSiu	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvPwr0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvPwr00	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvPwr01	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvPwr02	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvPwr03	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvPwr1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvPwr2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvPwr3	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvPwr4	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvPwr5	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvTemp0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvTemp1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvTemp2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvTemp3	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvTemp4	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvTemp5	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvTemp6	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTemEnvTemp7	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTopEpu0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTopEpu1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTopEpu2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	DiagTopSiu	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	Epu0Stats	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	Epu1Stats	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	Epu2Stats	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	GasuCounts	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	ItcCfg	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	LatcStatus	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	LimStatus	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	LpaDb0Epu0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned

Field (L)	Tlm. Packet (L)	Section	Description (L)
Padus16	LpaDb0Epu1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	LpaDb0Epu2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	LpaDb0Siu	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	Lrs0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	LtcData0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	LtcData1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	LtcData2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	LtcData3	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	MiscSlow	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	PduEnv0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	PduEnv1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	PduEnv2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	PduEnv3	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	PduEnv4	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	PduEnv5	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	PduEnv6	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	PduEnv7	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	PigStatus	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	SiuStats	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	StatusEpu0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	StatusEpu1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	StatusEpu2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	StatusSiu	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TaskCfgEpu0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TaskCfgEpu1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TaskCfgEpu2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TaskCfgSiu	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvPwr0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvPwr00	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvPwr01	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvPwr02	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvPwr03	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvPwr1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvPwr2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvPwr3	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvPwr4	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvPwr5	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvTemp0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvTemp1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvTemp2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvTemp3	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvTemp4	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvTemp5	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvTemp6	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TemEnvTemp7	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TopEpu0	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TopEpu1	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TopEpu2	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus16	TopSiu	LHK/tlm/_/F.Padus16.shtml:%	Explicit 16 bit pad in unsigned
Padus2	DiagPduEnv0	LHK/tlm/_/F.Padus2.shtml:%	Explicit 2 bit pad in unsigned
Padus2	DiagPduEnv4	LHK/tlm/_/F.Padus2.shtml:%	Explicit 2 bit pad in unsigned
Padus2	PduEnv0	LHK/tlm/_/F.Padus2.shtml:%	Explicit 2 bit pad in unsigned

Field (L)	Tlm. Packet (L)	Section	Description (L)
Padus2	PduEnv4	LHK/tlm/_/F.Padus2.shtml:%	Explicit 2 bit pad in unsigned s
Padus3	DiagLtcData0	LHK/tlm/_/F.Padus3.shtml:%	Explicit 3 bit pad in unsigned s
Padus3	DiagPduEnv0	LHK/tlm/_/F.Padus3.shtml:%	Explicit 3 bit pad in unsigned s
Padus3	DiagPduEnv4	LHK/tlm/_/F.Padus3.shtml:%	Explicit 3 bit pad in unsigned s
Padus3	LtcData0	LHK/tlm/_/F.Padus3.shtml:%	Explicit 3 bit pad in unsigned s
Padus3	PduEnv0	LHK/tlm/_/F.Padus3.shtml:%	Explicit 3 bit pad in unsigned s
Padus3	PduEnv4	LHK/tlm/_/F.Padus3.shtml:%	Explicit 3 bit pad in unsigned s
Padus4	DiagLtcData0	LHK/tlm/_/F.Padus4.shtml:%	Explicit 4 bit pad in unsigned s
Padus4	LtcData0	LHK/tlm/_/F.Padus4.shtml:%	Explicit 4 bit pad in unsigned s
Padus5	DiagItcCfg	LHK/tlm/_/F.Padus5.shtml:%	Explicit 5 bit pad in unsigned s
Padus5	DiagTaskCfgEpu0	LHK/tlm/_/F.Padus5.shtml:%	Explicit 5 bit pad in unsigned s
Padus5	DiagTaskCfgEpu1	LHK/tlm/_/F.Padus5.shtml:%	Explicit 5 bit pad in unsigned s
Padus5	DiagTaskCfgEpu2	LHK/tlm/_/F.Padus5.shtml:%	Explicit 5 bit pad in unsigned s
Padus5	DiagTaskCfgSiu	LHK/tlm/_/F.Padus5.shtml:%	Explicit 5 bit pad in unsigned s
Padus5	ItcCfg	LHK/tlm/_/F.Padus5.shtml:%	Explicit 5 bit pad in unsigned s
Padus5	TaskCfgEpu0	LHK/tlm/_/F.Padus5.shtml:%	Explicit 5 bit pad in unsigned s
Padus5	TaskCfgEpu1	LHK/tlm/_/F.Padus5.shtml:%	Explicit 5 bit pad in unsigned s
Padus5	TaskCfgEpu2	LHK/tlm/_/F.Padus5.shtml:%	Explicit 5 bit pad in unsigned s
Padus5	TaskCfgSiu	LHK/tlm/_/F.Padus5.shtml:%	Explicit 5 bit pad in unsigned s
PCIERRADDR	LLCMPCIERR	LCM/tlm/_/F.PCIERRADDR.shtml:%	RAD750 PCI Error Address R
PCIERRBUS	LLCMPCIERR	LCM/tlm/_/F.PCIERRBUS.shtml:%	RAD750 PCI Bus Status Regi
PCIERRSTAT	LLCMPCIERR	LCM/tlm/_/F.PCIERRSTAT.shtml:%	RAD750 PCI Error Status Reg
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
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

Field (L)	Tlm. Packet (L)	Section	Description (L)
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 receiv
RTCMDRXSIZ	LCTDBRTDIAG	CTDB/tlm/_/F.RTCMDRXSIZ.shtml:%	RT driver telecommand receiv
RTCMDTXCNT	LCTDBRTDIAG	CTDB/tlm/_/F.RTCMDTXCNT.shtml:%	RT driver telecommand send c
RTCMDTXSIZ	LCTDBRTDIAG	CTDB/tlm/_/F.RTCMDTXSIZ.shtml:%	RT driver telecommand send to
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 byte
RTINTRCNT	LCTDBRTDIAG	CTDB/tlm/_/F.RTINTRCNT.shtml:%	RT driver total interrupt count
RTTLMCNT	LCTDBRTDIAG	CTDB/tlm/_/F.RTTLMCNT.shtml:%	RT driver telemetry send coun
RTTLMSIZ	LCTDBRTDIAG	CTDB/tlm/_/F.RTTLMSIZ.shtml:%	RT driver telemetry send total
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
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 numbe

Field (L)	Tlm. Packet (L)	Section	Description (L)
SensorHpNum	DiagLtcData0	LHK/tlm/_/F.SensorHpNum.shtml:%	Specifies connected HP numbe
SensorHpNum	LtcData0	LHK/tlm/_/F.SensorHpNum.shtml:%	Specifies connected HP numbe
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 switcl
status	AemEnv00	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	AemEnv01	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
Status	CmdConfirm	ITC/tlm/_/F.Status.shtml:%	MSG status code
status	DiagAemEnv0	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagAemEnv00	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagAemEnv01	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
STATUS	DiagLrs0	LHK/tlm/_/F.STATUS.shtml:%	Most Recent Action Status
status	DiagPduEnv0	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagPduEnv1	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagPduEnv2	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagPduEnv3	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagPduEnv4	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagPduEnv5	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagPduEnv6	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagPduEnv7	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagPigStatus	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvPwr0	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvPwr00	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvPwr01	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvPwr02	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvPwr03	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl

Field (L)	Tlm. Packet (L)	Section	Description (L)
status	DiagTemEnvPwr1	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvPwr2	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvPwr3	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvPwr4	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvPwr5	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvTemp0	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvTemp1	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvTemp2	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvTemp3	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvTemp4	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvTemp5	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvTemp6	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	DiagTemEnvTemp7	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
STATUS	Lrs0	LHK/tlm/_/F.STATUS.shtml:%	Most Recent Action Status
status	PduEnv0	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	PduEnv1	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	PduEnv2	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	PduEnv3	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	PduEnv4	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	PduEnv5	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	PduEnv6	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	PduEnv7	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	PigStatus	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvPwr0	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvPwr00	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvPwr01	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvPwr02	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvPwr03	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvPwr1	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvPwr2	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvPwr3	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvPwr4	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvPwr5	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvTemp0	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvTemp1	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvTemp2	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvTemp3	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvTemp4	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvTemp5	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvTemp6	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
status	TemEnvTemp7	LHK/tlm/_/F.status.shtml:%	Readout status (ADC or switcl
STATUS	TERMINATE	LCI/tlm/_/F.STATUS.shtml:%	Termination status code
switch	AemEnv0	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
switch	AemEnv00	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
switch	AemEnv01	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
switch	DiagAemEnv0	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
switch	DiagAemEnv00	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
switch	DiagAemEnv01	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
switch	DiagPduEnv0	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
switch	DiagPduEnv4	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
switch	DiagPigStatus	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
switch	PduEnv0	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi

Field (L)	Tlm. Packet (L)	Section	Description (L)
switch	PduEnv4	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
switch	PigStatus	LHK/tlm/_/F.switch.shtml:%	A switch (usually a power swi
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
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
TempCelsius	DiagLTC	LTC/tlm/_/F.TempCelsius.shtml:%	Temperature converted to celsi
TempCelsius	DiagLtcData0	LHK/tlm/_/F.TempCelsius.shtml:%	Temperature converted to celsi
TempCelsius	DiagLtcData1	LHK/tlm/_/F.TempCelsius.shtml:%	Temperature converted to celsi
TempCelsius	DiagLtcData2	LHK/tlm/_/F.TempCelsius.shtml:%	Temperature converted to celsi
TempCelsius	LtcData0	LHK/tlm/_/F.TempCelsius.shtml:%	Temperature converted to celsi
TempCelsius	LtcData1	LHK/tlm/_/F.TempCelsius.shtml:%	Temperature converted to celsi
TempCelsius	LtcData2	LHK/tlm/_/F.TempCelsius.shtml:%	Temperature converted to celsi
tenab	lmc_cal	LMC/tlm/_/F.tenab.shtml:%	TEM Enable Word
tenab	lmc_dead	LMC/tlm/_/F.tenab.shtml:%	TEM Enable Word

Field (L)	Tlm. Packet (L)	Section	Description (L)
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 si
THS	DiagStatusEpu1	LHK/tlm/_/F.THS.shtml:%	Status of time-hack services si
THS	DiagStatusEpu2	LHK/tlm/_/F.THS.shtml:%	Status of time-hack services si
THS	DiagStatusSiu	LHK/tlm/_/F.THS.shtml:%	Status of time-hack services si
THS	StatusEpu0	LHK/tlm/_/F.THS.shtml:%	Status of time-hack services si
THS	StatusEpu1	LHK/tlm/_/F.THS.shtml:%	Status of time-hack services si
THS	StatusEpu2	LHK/tlm/_/F.THS.shtml:%	Status of time-hack services si
THS	StatusSiu	LHK/tlm/_/F.THS.shtml:%	Status of time-hack services si
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
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

Field (L)	Tlm. Packet (L)	Section	Description (L)
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 Block
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
TRCDTIM	DiagTopEpu0	LHK/tlm/_/F.TRCDTIM.shtml:%	TRC Sampling Period Duratio
TRCDTIM	DiagTopEpu1	LHK/tlm/_/F.TRCDTIM.shtml:%	TRC Sampling Period Duratio
TRCDTIM	DiagTopEpu2	LHK/tlm/_/F.TRCDTIM.shtml:%	TRC Sampling Period Duratio
TRCDTIM	DiagTopSiu	LHK/tlm/_/F.TRCDTIM.shtml:%	TRC Sampling Period Duratio
TRCDTIM	TopEpu0	LHK/tlm/_/F.TRCDTIM.shtml:%	TRC Sampling Period Duratio
TRCDTIM	TopEpu1	LHK/tlm/_/F.TRCDTIM.shtml:%	TRC Sampling Period Duratio
TRCDTIM	TopEpu2	LHK/tlm/_/F.TRCDTIM.shtml:%	TRC Sampling Period Duratio
TRCDTIM	TopSiu	LHK/tlm/_/F.TRCDTIM.shtml:%	TRC Sampling Period Duratio
TRCENDLSW	DiagTopEpu0	LHK/tlm/_/F.TRCENDLSW.shtml:%	TRC Sampling Period End Tin
TRCENDLSW	DiagTopEpu1	LHK/tlm/_/F.TRCENDLSW.shtml:%	TRC Sampling Period End Tin
TRCENDLSW	DiagTopEpu2	LHK/tlm/_/F.TRCENDLSW.shtml:%	TRC Sampling Period End Tin
TRCENDLSW	DiagTopSiu	LHK/tlm/_/F.TRCENDLSW.shtml:%	TRC Sampling Period End Tin
TRCENDLSW	TopEpu0	LHK/tlm/_/F.TRCENDLSW.shtml:%	TRC Sampling Period End Tin
TRCENDLSW	TopEpu1	LHK/tlm/_/F.TRCENDLSW.shtml:%	TRC Sampling Period End Tin
TRCENDLSW	TopEpu2	LHK/tlm/_/F.TRCENDLSW.shtml:%	TRC Sampling Period End Tin
TRCENDLSW	TopSiu	LHK/tlm/_/F.TRCENDLSW.shtml:%	TRC Sampling Period End Tin
TRCENDMSW	DiagTopEpu0	LHK/tlm/_/F.TRCENDMSW.shtml:%	TRC Sampling Period End Tin
TRCENDMSW	DiagTopEpu1	LHK/tlm/_/F.TRCENDMSW.shtml:%	TRC Sampling Period End Tin
TRCENDMSW	DiagTopEpu2	LHK/tlm/_/F.TRCENDMSW.shtml:%	TRC Sampling Period End Tin
TRCENDMSW	DiagTopSiu	LHK/tlm/_/F.TRCENDMSW.shtml:%	TRC Sampling Period End Tin
TRCENDMSW	TopEpu0	LHK/tlm/_/F.TRCENDMSW.shtml:%	TRC Sampling Period End Tin
TRCENDMSW	TopEpu1	LHK/tlm/_/F.TRCENDMSW.shtml:%	TRC Sampling Period End Tin
TRCENDMSW	TopEpu2	LHK/tlm/_/F.TRCENDMSW.shtml:%	TRC Sampling Period End Tin
TRCENDMSW	TopSiu	LHK/tlm/_/F.TRCENDMSW.shtml:%	TRC Sampling Period End Tin

Field (L)	Tlm. Packet (L)	Section	Description (L)
TRCEX5	DiagTopEpu0	LHK/tlm/_/F.TRCEX5.shtml:%	TRC Exception 5 Interrupt Ra
TRCEX5	DiagTopEpu1	LHK/tlm/_/F.TRCEX5.shtml:%	TRC Exception 5 Interrupt Ra
TRCEX5	DiagTopEpu2	LHK/tlm/_/F.TRCEX5.shtml:%	TRC Exception 5 Interrupt Ra
TRCEX5	DiagTopSiu	LHK/tlm/_/F.TRCEX5.shtml:%	TRC Exception 5 Interrupt Ra
TRCEX5	TopEpu0	LHK/tlm/_/F.TRCEX5.shtml:%	TRC Exception 5 Interrupt Ra
TRCEX5	TopEpu1	LHK/tlm/_/F.TRCEX5.shtml:%	TRC Exception 5 Interrupt Ra
TRCEX5	TopEpu2	LHK/tlm/_/F.TRCEX5.shtml:%	TRC Exception 5 Interrupt Ra
TRCEX5	TopSiu	LHK/tlm/_/F.TRCEX5.shtml:%	TRC Exception 5 Interrupt Ra
TRCEX9	DiagTopEpu0	LHK/tlm/_/F.TRCEX9.shtml:%	TRC Exception 9 Interrupt Ra
TRCEX9	DiagTopEpu1	LHK/tlm/_/F.TRCEX9.shtml:%	TRC Exception 9 Interrupt Ra
TRCEX9	DiagTopEpu2	LHK/tlm/_/F.TRCEX9.shtml:%	TRC Exception 9 Interrupt Ra
TRCEX9	DiagTopSiu	LHK/tlm/_/F.TRCEX9.shtml:%	TRC Exception 9 Interrupt Ra
TRCEX9	TopEpu0	LHK/tlm/_/F.TRCEX9.shtml:%	TRC Exception 9 Interrupt Ra
TRCEX9	TopEpu1	LHK/tlm/_/F.TRCEX9.shtml:%	TRC Exception 9 Interrupt Ra
TRCEX9	TopEpu2	LHK/tlm/_/F.TRCEX9.shtml:%	TRC Exception 9 Interrupt Ra
TRCEX9	TopSiu	LHK/tlm/_/F.TRCEX9.shtml:%	TRC Exception 9 Interrupt Ra
TRCTOP	DiagTopEpu0	LHK/tlm/_/F.TRCTOP.shtml:%	TRC CPU Fraction per Task/E
TRCTOP	DiagTopEpu1	LHK/tlm/_/F.TRCTOP.shtml:%	TRC CPU Fraction per Task/E
TRCTOP	DiagTopEpu2	LHK/tlm/_/F.TRCTOP.shtml:%	TRC CPU Fraction per Task/E
TRCTOP	DiagTopSiu	LHK/tlm/_/F.TRCTOP.shtml:%	TRC CPU Fraction per Task/E
TRCTOP	TopEpu0	LHK/tlm/_/F.TRCTOP.shtml:%	TRC CPU Fraction per Task/E
TRCTOP	TopEpu1	LHK/tlm/_/F.TRCTOP.shtml:%	TRC CPU Fraction per Task/E
TRCTOP	TopEpu2	LHK/tlm/_/F.TRCTOP.shtml:%	TRC CPU Fraction per Task/E
TRCTOP	TopSiu	LHK/tlm/_/F.TRCTOP.shtml:%	TRC CPU Fraction per Task/E
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 In
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
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

Field (L)	Tlm. Packet (L)	Section	Description (L)
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
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

Field (L)	Tlm. Packet (L)	Section	Description (L)
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
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

39 Telemetry Analog Conv. Index, by Name

Analog Conv.	Section	Description

40 Telemetry Discrete Conv. Index, by Name

41 Telemetry Limit Set Index, by Name

Limit Set	Section	Description