



SPECTRUMASTRO

SPECTRUM ASTRO, INC.

HIGH ENERGY SOLAR SPECTROSCOPIC IMAGER (HESSI) PROGRAM

TELECOMMAND AND TELEMETRY DATABASE SPECIFICATION

CONTRACT NO. PPB005884

SPECTRUM ASTRO PROPRIETARY DOCUMENT

THIS DOCUMENT CONTAINS SPECTRUM ASTRO PROPRIETARY INFORMATION. RECIPIENT, BY ACCEPTING THIS DOCUMENT, AGREES THAT NEITHER THE DOCUMENT NOR ANY INFORMATION CONTAINED WITHIN IT SHALL BE REPRODUCED OR TRANSFERRED TO OTHER DOCUMENTS NOR USED OR DISCLOSED TO OTHERS FOR MANUFACTURING OR ANY OTHER PURPOSES EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY SPECTRUM ASTRO.

**SUBMITTED BY:
SPECTRUM ASTRO, INC.
1440 N. Fiesta Boulevard
Gilbert, Arizona 85233
CAGE Code 0T9D1**

INITIAL RELEASE DATE

14 JANUARY 2000

1110-EW-T17552

REV -

14 JANUARY 2000

SPECTRUM ASTRO, INC.

HIGH ENERGY SOLAR SPECTROSCOPIC IMAGER (HESSI) PROGRAM

TELECOMMAND AND TELEMETRY DATABASE SPECIFICATION

CONTRACT NO. PPB005884

REVIEWED BY _____
CONFIGURATION/DATA CONTROL, JOE JURHILL DATE

PREPARED BY _____
ENGINEERING, JONATHAN YOUNT DATE

APPROVED BY _____
QUALITY ASSURANCE, JEFF SQUIRES DATE

APPROVED BY _____
SYSTEM ENGINEERING, JOHN JORDAN DATE

APPROVED BY _____
PROGRAM MANAGER, MIKE MATRANGA DATE

REVISION SUMMARY

REV	RELEASE DATE	BRIEF DESCRIPTION/REASON FOR CHANGE	EFFECTIVE PAGES
-	14 January 2000	Initial release.	All

TABLE OF CONTENTS

	<u>PAGE</u>
1. INTRODUCTION	1
1.1 Purpose.....	1
1.2 Scope.....	1
2. REFERENCED DOCUMENTS.....	1
2.1 Referenced Documents.....	1

APPENDICES CONTENTS

APPENDIX A. HESSI FSW Telecommand Definitions.....	A-1
APPENDIX B. HESSI FSW Telemetry Source Packet Definitions	B-1

LIST OF ACRONYMS

ACS	Attitude Control Subsystem
ADB	Auxiliary Driver Board
APPID	Application Identifier
FSW	Flight Software
GSFC	Goddard Space and Flight Center
HESSI	High Energy Solar Spectroscopic Imager
ITOS	Integration and Test Operations System
PACI	Payload and Attitude Control Interface
PCB	Power Control Board
SOH	State Of Health
SSR	Solid State Recorder
TC	Telecommand
TLM	Telemetry

1. INTRODUCTION

1.1 Purpose

This specification establishes the specification for each HESSI Flight Software (FSW) telecommand, and the telemetry point for each supported telemetry source packet.

1.2 Scope

Appendix A contains a listing of all of the HESSI FSW telecommands, parameters, parameters ranges, and default values, and have been defined using the NASA Goddard Space and Flight Center (GSFC) Integration and Testing Operations System (ITOS) software conventions.

Appendix B contains a listing of HESSI FSW telemetry source packets, and have been defined using the NASA GSFC ITOS software conventions.

2. REFERENCED DOCUMENTS

2.1 Referenced Documents

Unless otherwise specified, the following documents in their current issue form a part of this document to the extent specified herein.

- a. 1110-EU-S17595 HESSI Flight Software Operations Manual

APPENDIX A

HESSI FSW TELECOMMAND DEFINITIONS

Telecommand

HESSI Telecommand Database

AppId	FuncCode	Description	Application ID:
ACS			
ACSNOOP		ACS no operation telecommand.	
2	0		
ACSTCRESET		Resets ACS APIDs TC received/rejected/error counters	
2	1		
ACSSETMODE		Sets the desired ACS operating mode	
2	2	MODE UB The desired ACS mode.	
		Range:	
	0	= AUTO Allows ACS to change modes autonomously (default)	
	1	= ACQUISITION Establishes spin rate, damps transverse rates	
	2	= PRECESSION Establishes Sun-pointing orientation	
	3	= NORMAL Maintains Sun-pointing, nominal spin rate	
	4	= SPIN Establishes desired spin rate	
	5	= IDLE Disables control until ground intervention	
ACSSUNSENSOR		Selects the desired ACS Sun Sensor mode	
2	3	SUNSENSOR UB Sun Sensor Mode	
		Range:	0 1
	0	= FSS Fine Sun Sensor	
	1	= SAS SAS Instrument Telemetry Data	

Telecommand**HESSI Telecommand Database**

AppId	FunctCode	Description	Application ID:
SOH			
SOHNOOP		SOH Task no operation telecommand	
3	0		
SOHTCRESET		Resets SOH APIDs TC received/rejected/error counters	
3	1		
SOHFORCEBLD		Forces FSW to build FSW portion of real-time SOH telemetry	
3	2		

Telecommand		HESSI Telecommand Database		
AppId	FunctCode	Description	Application ID:	
STORAGEMGR				
SMNOOP		Storage management no operation telecommand.		
4	0			
SMTCRESET		Resets Storag Mgr APIDs TC received/rejected/error counters		
4	1			
SMMEMLOAD		Load C&DH Processor Memory		
4	2	ADDRESS	U1234	Starting address of load.
		Range:	0x0	0xFFFFFFFF
		DESTINATION	U12	Destination memory type and data write size.
		Range:	1	2
		2 =		RAM RAM memory type.
		2 =		DEFAULT Default value
		NUMBYTES	UB	Number of bytes to load.
		Range:	1	200
		DATA	UB	An array of <NUMBYTES> bytes of data,
		Range:	0	0xFF
SMMEMDUMP		Dump EPROM, EEPROM, SRAM or VME memory.		
4	3	ADDRESS	U1234	Starting address of dump.
		Range:	0x0	0xFFFFFFFF
		DUMPSIZE	U12	Number of bytes to dump.
		Range:	1	65535
		NUMCOPYS	U12	Number of copies of dump to transmit.
		Range:	1	8
SMMEMCOPY		Copy EPROM, EEPROM, SRAM or VME memory.		
4	4	SOURCEAD	U1234	Starting address of source memory.
		Range:	0x0	0xFFFFFFFF
		DESTINATION	U12	Destination memory type.
		Range:	1	2
		2 =		DESTRAM Selects RAM as destination memory type.
		2 =		DEFAULT Default value
		DESTADD	U1234	Starting address of destination memory.
		Range:	0x0	0xFFFFFFFF
		NUMBYTES	U12	Number of bytes to copy.
		Range:	1	65535
SMTBLSELECT		Select Software Table Operation.		
4	5	TABLEID	U12	Identification number of table to select.
		Range:	0	119
		0 =		DIRECTORY Filesystem Directory
		1 =		FSW00 FSW Object File 0 (Boot Image)
		2 =		FSW01 FSW Object File 1

3 =

FSW02 FSW Object File 2

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
STORAGEMGR			

4	=FSW03	FSW Object File 3
5	=	FSW04 FSW Object File 4
6	=	FSW05 FSW Object File 5
7	=	FSW06 FSW Object File 6
8	=	FSW07 FSW Object File 7
9	=	FSW08 FSW Object File 8
10	=	FSW09 FSW Object File 9
11	=	FSW10 FSW Object File 10
12	=	FSW11 FSW Object File 11
13	=	FSW12 FSW Object File 12
14	=	FSW13 FSW Object File 13
15	=	FSW14 FSW Object File 14
16	=	FSW15 FSW Object File 15
17	=	FSW16 FSW Object File 16
18	=	FSW17 FSW Object File 17
19	=	FSW18 FSW Object File 18
20	=	FSW19 FSW Object File 19
21	=	FSW20 FSW Object File 20
22	=	FSW21 FSW Object File 21
23	=	FSW22 FSW Object File 22
24	=	FSW23 FSW Object File 23
25	=	FSW24 FSW Object File 24
26	=	FSW25 FSW Object File 25
27	=	FSW26 FSW Object File 26
28	=	FSW27 FSW Object File 27
29	=	FSW28 FSW Object File 28
30	=	FSW29 FSW Object File 29
31	=	FSW30 FSW Object File 30
32	=	FSW31 FSW Object File 31
33	=	ATSA ATS A
34	=	ATSB ATS B
35	=	RTS00 RTS 0
36	=	RTS01 RTS 1
37	=	RTS02 RTS 2
38	=	RTS03 RTS 3
39	=	RTS04 RTS 4
40	=	RTS05 RTS 5
41	=	RTS06 RTS 6
42	=	RTS07 RTS 7
43	=	RTS08 RTS 8
44	=	RTS09 RTS 9
45	=	RTS10 RTS 10
46	=	RTS11 RTS 11
47	=	RTS12 RTS 12
48	=	RTS13 RTS 13

Telecommand	HESSI Telecommand Database		Application ID:
AppId	FunctCode	Description	
STORAGEMGR	49 = RTS14	RTS 14	
	50 =	RTS15 RTS 15	
	51 =	RTS16 RTS 16	
	52 =	RTS17 RTS 17	
	53 =	RTS18 RTS 18	
	54 =	RTS19 RTS 19	
	55 =	RTS20 RTS 20	
	56 =	RTS21 RTS 21	
	57 =	RTS22 RTS 22	
	58 =	RTS23 RTS 23	
	59 =	RTS24 RTS 24	
	60 =	RTS25 RTS 25	
	61 =	RTS26 RTS 26	
	62 =	RTS27 RTS 27	
	63 =	RTS28 RTS 28	
	64 =	RTS29 RTS 29	
	65 =	RTS30 RTS 30	
	66 =	RTS31 RTS 31	
	67 =	RTS32 RTS 32	
	68 =	RTS33 RTS 33	
	69 =	RTS34 RTS 34	
	70 =	RTS35 RTS 35	
	71 =	RTS36 RTS 36	
	72 =	RTS37 RTS 37	
	73 =	RTS38 RTS 38	
	74 =	RTS39 RTS 39	
	75 =	RTS40 RTS 40	
	76 =	RTS41 RTS 41	
	77 =	RTS42 RTS 42	
	78 =	RTS43 RTS 43	
	79 =	RTS44 RTS 44	
	80 =	RTS45 RTS 45	
	81 =	RTS46 RTS 46	
	82 =	RTS47 RTS 47	
	83 =	RTS48 RTS 48	
	84 =	RTS49 RTS 49	
	85 =	RTS50 RTS 50	
	86 =	RTS51 RTS 51	
	87 =	RTS52 RTS 52	
	88 =	RTS53 RTS 53	
	89 =	RTS54 RTS 54	
	90 =	RTS55 RTS 55	
	91 =	RTS56 RTS 56	
	92 =	RTS57 RTS 57	
	93 =	RTS58 RTS 58	

Telecommand	HESSI Telecommand Database		
AppId	FunctCode	Description	Application ID:
STORAGEMGR			
	94 =	RTS59 RTS 59	
	95 =	RTS60 RTS 60	
	96 =	RTS61 RTS 61	
	97 =	RTS62 RTS 62	
	98 =	RTS63 RTS 63	
	99 =	FLIGHTPARAMS Flight Parameters	
	100 =	FILE00 General Purpose File 00	
	101 =	FILE01 General Purpose File 01	
	102 =	FILE02 General Purpose File 02	
	103 =	FILE03 General Purpose File 03	
	SOURCE_TABLE	U12 Type of source memory for the table.	
	Range:	1 4	
	1 =	SRCEEPROM1 Source is table from version in read-only EEPROM	
	2 =	SRCSRAM Source is operational version in SRAM	
	3 =	SRCZERO Source is zero-filled version of table	
	4 =	SRCEEPROM2 Source is table from version in read/write EEPROM	
	DEST_TABLE	U12 Type of destination memory for the table.	
	Range:	1 4	
	1 =	DUMPNLY Table data can not be changed	
	2 =	DESTEEPROM2 On commit, change version in R/W EEPROM	
	3 =	DESTSRAM On commit, change operational version in SRAM	
	4 =	DESTEEPROM1 On commit, change version in R/O EEPROM (gnd only)	
SMTBLLOAD		Load software table data.	
4	6	OFFSET	U1234 Byte offset into working table to begin load.
		Range:	0x00000000 0xFFFFFFFF
		DUMMYARG	UB Destination, which is ignored, always 2.
		Range:	This parameter is ignored and may contain anything. It exists only to maintain compatibility with other SMEX missions.
		2 =	DEFAULT Default value of dummy argument
		NUMBYTES	UB Number of bytes to load.
		Range:	1 200
		DATA	UB An array of <NUMBYTES> bytes of data
		Range:	0 0xFF
SMTBLDUMP		Dump software table data.	
4	7	OFFSET	U1234 Byte Offset Into Table to Begin Dump.
		Range:	0x0 0xFFFFFFFF
		NUMBYTES	U12 Number of Bytes to Dump.
		Range:	1 65535
		NUMCOPIES	U12 Number of Copies of Dump to Transmit .
		Range:	1 8
SMTBLCOMMIT		Commit software table data.	

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
STORAGEMGR			
4	8	SELECT	U12 Commit table if checksum mismatch control flag.
		Range:	0 1
	0	= CKDISABLE	Disables use of the CHECKSUM parameter
	1	= DEFAULT	Same as CKDISABLE
	1	= CKENABLE	Enables use of the CHECKSUM parameter
	2	= UNCOMPRESS	Uncompress file, then apply CHECKSUM parameter
	CHECKSUM	U12	The checksum to be used with the table.
		Range:	0x0 0xFFFF
SMTBLRESET			Reset Software Table Operations.
4	9		
SMINTERRUPT			
			Enable or disable various interrupts.
4	10	INTERRUPT	UB The interrupt source
		Range:	1 7
	1	= CIBCODEBLOCK	CIB Codeblock received interrupt
	2	= CIBBUFAVAIL	CIB Telemetry Buffer Available interrupt
	3	= PACIBUSTICK	PACI 1 Hz Bus Tick Interrupt
	4	= PACIANALOG	PACI 8 Hz Analog Scan Interrupt
	5	= PACIIDPUDATA	PACI IDPU Data Ready Interrupt
	6	= PACISSRDATA	PACI SSR Data Ready Interrupt
	7	= PACIEDACERR	PACI EDAC Double Bit Error Interrupt
	ENABLE	UB	0=disable interrupt, 1=enable interrupt.
		Range:	0 1
	0	= OFF	Off
	0	= NO	No
	0	= FALSE	False
	1	= YES	Yes
	1	= TRUE	True
	1	= ON	On
SMDUMPABORT			Abort memory or table dump.
4	11		
SMRESET			Reset Memory Manager software statuses.
4	12		
SMTBLDESCDMP			
			Dumps info about each table: timestamp, size, checksum, etc
4	13	TABLE_DEVICE	UB Specifies one of three table devices.
		Range:	1 3
	1	= DEV_EEPROM1	Read-only EEPROM device
	2	= DEV_EEPROM2	Read-write EEPROM device
	3	= DEV_RAM	RAM device
SMREBOOT			Reboots the flight software from the image in EEPROM or RAM
4	14	OSBOOTDEVICE	UB Selectes the device from which load 'vxWorks'
		Range:	0 2

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
STORAGEMGR			
	0 =	OS_EEPROM1 EEPROM1 OS boot: /hessiFs/eprom1/vxWorks	
	2 =	OS_RAM RAM OS boot: /hessiFs/ram/vxWorks	
	FSBOOTDEVICE	UB Selects the device from which to load FSW	
	Range:	0 2	
	0 =	FSW_EEPROM1 EEPROM1 FSW /hessiFs/eprom1/	
	1 =	FSW_EEPROM2 EEPROM2 FSW /hessiFs/eprom2/	
	2 =	FSW_RAM RAM FSW /hessiFs/ram/	
SMCLREVTFLAG	Clears a specific latched event flag		
4 15	EVENTFLAG	UB Identifies the event flag to clear	
	Range:	0 15	
	0 =	EVTSSRWVORD Indicates SSR record pointer overtook read pointer	
	1 =	EVTNORTFRAM Indicates all real-time telemetry frames allocated	
SMEPROMWRITE	Enable/Disable various mechanisms to write to EEPROM		
4 16	ENABLESELECT	UB Select mechanism to enable/disable writing	
	Range:	1 3	
	1 =	FSYS_EEPROM1 Enable writing to EEPROM1 filesystem.	
	2 =	FSYS_EEPROM2 Enable writing to EEPROM2 filesystem.	
	ENABLE	UB 1=enable writing, 0=disable writing to EEPROM	
	Range:	0 1	
	0 =	OFF Off	
	0 =	NO No	
	0 =	FALSE False	
	1 =	YES Yes	
	1 =	TRUE True	
	1 =	ON On	
SMSCLKSET	Set the seconds of the PACI Spacecraft Clock		
4 17	SCLKSECONDS	U1234 Number of seconds for Spacecraft Clock	
	Range:	0 0xFFFFFFFF	
SMSCLKDELTA	Change the PACI Spacecraft Clock by <DELTA> seconds		
4 18	SCLKDELTA	I12 Delta seconds to change Spacecraft Clock.	
	Range:	-32768 32767	
SMEVTFILTER	Sets the Event Message Filter for as specific task		
4 19	TASKNAME	UB A task name	
	Range:	0 12	
	0 =	SCHEDULER Scheduler Task	
	1 =	ACS ACS Task	
	2 =	PCBINTERFACE PCB Interface Task	
	3 =	UPLINK Uplink Task	
	4 =	TCPUPLINK TCP Uplink Task (test only)	
	5 =	CMDPROCESSOR Command Processor Task	
	6 =	SOH SOH Task	

Telecommand		HESSI Telecommand Database		
AppId	FunctCode		Description	Application ID:
STORAGEMGR				
	7 =		PLINTERFACE Payload Interface Task	
	8 =		SSRINTERFACE SSR Interface Task	
	9 =		FAULTMGMT Fault Management Task	
	10 =		TCPDOWNLINK TCP Downlink Task (test only)	
	11 =		DOWNLINK Downlink Task	
	12 =		REPROGRAM Reprogramming Task	
	VOLUME	UB	Volume of Event Messages desired	
	Range:		0 4	
	0 =		NONE Only Error Event Messages will be output	
	1 =		WARNING Error, warning Event Messages will be output	
	2 =		INFO_LOW Error, warning, low volume informational messages	
	3 =		INFO_MEDIUM Error, warning, medium volume informational msgs	
	4 =		INFO_HIGH Error, warning, high volume informational messages	
SMEVTFILTALL Set Event Message Filter for all tasks				
4	20	VOLUME	UB	Event Message Filter Volume
		Range:		0 4
	0 =		NONE Only Error Event Messages will be output	
	1 =		WARNING Error, warning Event Messages will be output	
	2 =		INFO_LOW Error, warning, low volume informational messages	
	3 =		INFO_MEDIUM Error, warning, medium volume informational msgs	
	4 =		INFO_HIGH Error, warning, high volume informational messages	
SMPACIDIGOUT Write to bits in PACI Digital Output Register				
4	21	BITMASK	U12	Selects the bits to which to write
		Range:		0 65535
		BITVALUES	U12	Sets values of the bits selected in BITMASK
		Range:		0 65535
SMTCMMSGDIAG Enable/disable TC message routing event message diagnostics				
4	22	ENABLE	UB	1=enable diagnostics; 0=disable diagnostics
		Range:		0 1
	0 =		OFF Off	
	0 =		NO No	
	0 =		FALSE False	
	1 =		YES Yes	
	1 =		TRUE True	
	1 =		ON On	
SMLOADMODULE Load an object module from a HESSI filesystem				
4	23	FILESYSTEM	UB	The HESSI filesystem from which to load file
		Range:		
	0 =		FSW_EEPROM1 EEPROM1 FSW /hessiFs/EEPROM1/	
	1 =		FSW_EEPROM2 EEPROM2 FSW /hessiFs/EEPROM2/	
	2 =		FSW_RAM RAM FSW /hessiFs/ram/	
	FILENUMBER	UB	The file number to load	

Telecommand

HESSI Telecommand Database

AppId **FunctCode** **Description** **Application ID:**
STORAGEMGR

Range:

0	=	DIRECTORY	Filesystem Directory
1	=		FSW00 FSW Object File 0 (Boot Image)
2	=		FSW01 FSW Object File 1
3	=		FSW02 FSW Object File 2
4	=		FSW03 FSW Object File 3
5	=		FSW04 FSW Object File 4
6	=		FSW05 FSW Object File 5
7	=		FSW06 FSW Object File 6
8	=		FSW07 FSW Object File 7
9	=		FSW08 FSW Object File 8
10	=		FSW09 FSW Object File 9
11	=		FSW10 FSW Object File 10
12	=		FSW11 FSW Object File 11
13	=		FSW12 FSW Object File 12
14	=		FSW13 FSW Object File 13
15	=		FSW14 FSW Object File 14
16	=		FSW15 FSW Object File 15
17	=		FSW16 FSW Object File 16
18	=		FSW17 FSW Object File 17
19	=		FSW18 FSW Object File 18
20	=		FSW19 FSW Object File 19
21	=		FSW20 FSW Object File 20
22	=		FSW21 FSW Object File 21
23	=		FSW22 FSW Object File 22
24	=		FSW23 FSW Object File 23
25	=		FSW24 FSW Object File 24
26	=		FSW25 FSW Object File 25
27	=		FSW26 FSW Object File 26
28	=		FSW27 FSW Object File 27
29	=		FSW28 FSW Object File 28
30	=		FSW29 FSW Object File 29
31	=		FSW30 FSW Object File 30
32	=		FSW31 FSW Object File 31
33	=		ATSA ATS A
34	=		ATSB ATS B
35	=		RTS00 RTS 0
36	=		RTS01 RTS 1
37	=		RTS02 RTS 2
38	=		RTS03 RTS 3
39	=		RTS04 RTS 4
40	=		RTS05 RTS 5
41	=		RTS06 RTS 6
42	=		RTS07 RTS 7
43	=		RTS08 RTS 8

Telecommand	HESSI Telecommand Database		Application ID:
AppId	FunctCode	Description	
STORAGEMGR			
	44 = RTS09	RTS 9	
	45 =	RTS10 RTS 10	
	46 =	RTS11 RTS 11	
	47 =	RTS12 RTS 12	
	48 =	RTS13 RTS 13	
	49 =	RTS14 RTS 14	
	50 =	RTS15 RTS 15	
	51 =	RTS16 RTS 16	
	52 =	RTS17 RTS 17	
	53 =	RTS18 RTS 18	
	54 =	RTS19 RTS 19	
	55 =	RTS20 RTS 20	
	56 =	RTS21 RTS 21	
	57 =	RTS22 RTS 22	
	58 =	RTS23 RTS 23	
	59 =	RTS24 RTS 24	
	60 =	RTS25 RTS 25	
	61 =	RTS26 RTS 26	
	62 =	RTS27 RTS 27	
	63 =	RTS28 RTS 28	
	64 =	RTS29 RTS 29	
	65 =	RTS30 RTS 30	
	66 =	RTS31 RTS 31	
	67 =	RTS32 RTS 32	
	68 =	RTS33 RTS 33	
	69 =	RTS34 RTS 34	
	70 =	RTS35 RTS 35	
	71 =	RTS36 RTS 36	
	72 =	RTS37 RTS 37	
	73 =	RTS38 RTS 38	
	74 =	RTS39 RTS 39	
	75 =	RTS40 RTS 40	
	76 =	RTS41 RTS 41	
	77 =	RTS42 RTS 42	
	78 =	RTS43 RTS 43	
	79 =	RTS44 RTS 44	
	80 =	RTS45 RTS 45	
	81 =	RTS46 RTS 46	
	82 =	RTS47 RTS 47	
	83 =	RTS48 RTS 48	
	84 =	RTS49 RTS 49	
	85 =	RTS50 RTS 50	
	86 =	RTS51 RTS 51	
	87 =	RTS52 RTS 52	
	88 =	RTS53 RTS 53	

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
STORAGEMGR	89 =	RTS54 RTS 54	
	90 =	RTS55 RTS 55	
	91 =	RTS56 RTS 56	
	92 =	RTS57 RTS 57	
	93 =	RTS58 RTS 58	
	94 =	RTS59 RTS 59	
	95 =	RTS60 RTS 60	
	96 =	RTS61 RTS 61	
	97 =	RTS62 RTS 62	
	98 =	RTS63 RTS 63	
	99 =	FLIGHTPARAMS Flight Parameters	
	100 =	FILE00 General Purpose File 00	
	101 =	FILE01 General Purpose File 01	
	102 =	FILE02 General Purpose File 02	
	103 =	FILE03 General Purpose File 03	
SMRUNSCRIPT	Run a VxWorks script from HESSI filesystem		
4	24	FILESYSTEM UB	The HESSI filesystem from which to load script
		Range:	
	0 =	FSW_EEPROM1 EEPROM1 FSW /hessiFs/eeprom1/	
	1 =	FSW_EEPROM2 EEPROM2 FSW /hessiFs/eeprom2/	
	2 =	FSW_RAM RAM FSW /hessiFs/ram/	
	FILENUMBER UB	The file number of script to run	
		Range:	
	0 =	DIRECTORY Filesystem Directory	
	1 =	FSW00 FSW Object File 0 (Boot Image)	
	2 =	FSW01 FSW Object File 1	
	3 =	FSW02 FSW Object File 2	
	4 =	FSW03 FSW Object File 3	
	5 =	FSW04 FSW Object File 4	
	6 =	FSW05 FSW Object File 5	
	7 =	FSW06 FSW Object File 6	
	8 =	FSW07 FSW Object File 7	
	9 =	FSW08 FSW Object File 8	
	10 =	FSW09 FSW Object File 9	
	11 =	FSW10 FSW Object File 10	
	12 =	FSW11 FSW Object File 11	
	13 =	FSW12 FSW Object File 12	
	14 =	FSW13 FSW Object File 13	
	15 =	FSW14 FSW Object File 14	
	16 =	FSW15 FSW Object File 15	
	17 =	FSW16 FSW Object File 16	
	18 =	FSW17 FSW Object File 17	
	19 =	FSW18 FSW Object File 18	
	20 =	FSW19 FSW Object File 19	

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
STORAGEMGR			

21	= FSW20	FSW Object File 20
22	=	FSW21 FSW Object File 21
23	=	FSW22 FSW Object File 22
24	=	FSW23 FSW Object File 23
25	=	FSW24 FSW Object File 24
26	=	FSW25 FSW Object File 25
27	=	FSW26 FSW Object File 26
28	=	FSW27 FSW Object File 27
29	=	FSW28 FSW Object File 28
30	=	FSW29 FSW Object File 29
31	=	FSW30 FSW Object File 30
32	=	FSW31 FSW Object File 31
33	=	ATSA ATS A
34	=	ATSB ATS B
35	=	RTS00 RTS 0
36	=	RTS01 RTS 1
37	=	RTS02 RTS 2
38	=	RTS03 RTS 3
39	=	RTS04 RTS 4
40	=	RTS05 RTS 5
41	=	RTS06 RTS 6
42	=	RTS07 RTS 7
43	=	RTS08 RTS 8
44	=	RTS09 RTS 9
45	=	RTS10 RTS 10
46	=	RTS11 RTS 11
47	=	RTS12 RTS 12
48	=	RTS13 RTS 13
49	=	RTS14 RTS 14
50	=	RTS15 RTS 15
51	=	RTS16 RTS 16
52	=	RTS17 RTS 17
53	=	RTS18 RTS 18
54	=	RTS19 RTS 19
55	=	RTS20 RTS 20
56	=	RTS21 RTS 21
57	=	RTS22 RTS 22
58	=	RTS23 RTS 23
59	=	RTS24 RTS 24
60	=	RTS25 RTS 25
61	=	RTS26 RTS 26
62	=	RTS27 RTS 27
63	=	RTS28 RTS 28
64	=	RTS29 RTS 29
65	=	RTS30 RTS 30

Telecommand		HESSI Telecommand Database		Application ID:
AppId	FunctCode	Description		
STORAGEMGR	66 =	RTS31	RTS 31	
	67 =	RTS32	RTS 32	
	68 =	RTS33	RTS 33	
	69 =	RTS34	RTS 34	
	70 =	RTS35	RTS 35	
	71 =	RTS36	RTS 36	
	72 =	RTS37	RTS 37	
	73 =	RTS38	RTS 38	
	74 =	RTS39	RTS 39	
	75 =	RTS40	RTS 40	
	76 =	RTS41	RTS 41	
	77 =	RTS42	RTS 42	
	78 =	RTS43	RTS 43	
	79 =	RTS44	RTS 44	
	80 =	RTS45	RTS 45	
	81 =	RTS46	RTS 46	
	82 =	RTS47	RTS 47	
	83 =	RTS48	RTS 48	
	84 =	RTS49	RTS 49	
	85 =	RTS50	RTS 50	
	86 =	RTS51	RTS 51	
	87 =	RTS52	RTS 52	
	88 =	RTS53	RTS 53	
	89 =	RTS54	RTS 54	
	90 =	RTS55	RTS 55	
	91 =	RTS56	RTS 56	
	92 =	RTS57	RTS 57	
	93 =	RTS58	RTS 58	
	94 =	RTS59	RTS 59	
	95 =	RTS60	RTS 60	
	96 =	RTS61	RTS 61	
	97 =	RTS62	RTS 62	
	98 =	RTS63	RTS 63	
	99 =	FLIGHTPARAMS Flight Parameters		
	100 =	FILE00 General Purpose File 00		
	101 =	FILE01 General Purpose File 01		
	102 =	FILE02 General Purpose File 02		
	103 =	FILE03 General Purpose File 03		
SMDLPNVTLM	Downlink one of the three PACI pseudo non-volatile RAM logs			
4	25	LOGNUMBER	UB	The PNVRAM telemetry log index
		Range:	0 2	
SMCLRPNVTLM	Clear one of the three PACI pseudo non-volatile RAM logs			
4	26	LOGNUMBER	UB	The PNVRAM telemetry log index
		Range:	0 2	

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
STORAGEMGR			
SMREINITPNV		Reinitialize the PACI pseudo non-volatile RAM log	
4	27		
SMUNCOMPRESS		Uncompress a previously compressed file in RAM filesystem.	
4	28		

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
UPLINK			
UPNOOP		Uplink Task no operation telecommand	
5	0		
UPTCRESET		Resets Uplink APIDs TC received/rejected/error counters	
5	1		
UPCBTCRESET		Reset counters for CIB codeblocks and telecommands.	
5	2		
UPCRCBITSET		Sets a specific bit on the JPL HCD/CRC ASIC	
5	3		
	BITNUM	UB	The specific CRC bit to set.
	Range:	0	23
	0 =	CRCRESET	The HCD/CRC ASIC Reset Bit
	1 =	CRCCPUPOWER	CPU Power
	2 =	CRCXMITCTRL	Transmitter Control
	3 =	CRCANTENNA	Transmit Antenna Select
	4 =	CRCWINGUPRI	Solar Wing Release Upper Pri Release
	5 =	CRCWINGLPRI	Solar Wing Release Lower Pri Release
	6 =	CRCWINGLURED	Solar Wing Release Upper Red Release
	7 =	CRCWINGLRED	Solar Wing Release Lower Red Release
	8 =	CRCWINGXEN	Solar Wing +/- X Release Enable
	9 =	CRCWINGYEN	Solar Wing +/- Y Release Enable
	10 =	CRCUVTRIPCTL	Undervoltage Trip Control
	11 =	CRCOVTRIPCTL	Overvoltage Trip Control
	12 =	CRCVTCRVSEL1	V/T Curve Select 1 of 4
	13 =	CRCVTCRVSEL2	V/T Curve Select 2 of 4
	14 =	CRCVTCRVSEL3	V/T Curve Select 3 of 4
	15 =	CRCVTCRVSEL4	V/T Curve Select 4 of 4
	16 =	CRCBATMPSEL	Battery Temp Sensor Select
	17 =	CRCISOHRATE	SOH Packet Rate (0 = 1Hz, 1 = 8Hz)
	18 =	CRCDLRATE	Downlink Data Rate (0 = Nominal, 1 = Low Rate)
	19 =	CRCWDTENABLE	CIB Watchdog Timer Enable
UPCRCBITCLR		Clear a specific HCD/CRC bit	
5	4		
	BITNUM	UB	The specific bit to clear
	Range:	0	23
	0 =	CRCRESET	The HCD/CRC ASIC Reset Bit
	1 =	CRCCPUPOWER	CPU Power
	2 =	CRCXMITCTRL	Transmitter Control
	3 =	CRCANTENNA	Transmit Antenna Select
	4 =	CRCWINGUPRI	Solar Wing Release Upper Pri Release
	5 =	CRCWINGLPRI	Solar Wing Release Lower Pri Release
	6 =	CRCWINGLURED	Solar Wing Release Upper Red Release
	7 =	CRCWINGLRED	Solar Wing Release Lower Red Release
	8 =	CRCWINGXEN	Solar Wing +/- X Release Enable
	9 =	CRCWINGYEN	Solar Wing +/- Y Release Enable
	10 =	CRCUVTRIPCTL	Undervoltage Trip Control

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
UPLINK			
	11 =	CRCOVTRIPCTL Overvoltage Trip Control	
	12 =	CRCVTCRVSEL1 V/T Curve Select 1 of 4	
	13 =	CRCVTCRVSEL2 V/T Curve Select 2 of 4	
	14 =	CRCVTCRVSEL3 V/T Curve Select 3 of 4	
	15 =	CRCVTCRVSEL4 V/T Curve Select 4 of 4	
	16 =	CRCBATTMPSEL Battery Temp Sensor Select	
	17 =	CRCISOHRATE SOH Packet Rate (0 = 1Hz, 1 = 8Hz)	
	18 =	CRCDLRATE Downlink Data Rate (0 = Nominal, 1 = Low Rate)	
	19 =	CRCWDTENABLE CIB Watchdog Timer Enable	
UPCRCSET	Set bits in a specific HCD/CRC byte		
5	5	CRCBYTE UB	The specific CRC byte to set.
	Range:	0	2
	BYTEVALUE UB	A '1' in each bit position sets the CRC bit	
	Range:	0	255
UPCRCCLEAR	Clear bits in a specific HCD/CRC byte.		
5	6	CRCBYTE UB	The specific CRC byte to clear.
	Range:	0	2
	BYTEVALUE UB	A '1' in each bit position clears the CRC bit	
	Range:	0	255
UPCIBRESET	Reset one of three FPGAs on the CIB device		
5	7	CIBFPGA UB	FPGA to reset
	Range:	1	3
	1 =	VMEFPGA	Reset the CIB DLCTLR, SSRPACI and STSOH VME FPGAs
	2 =	ULCTLRFPGA	Reset the CIB ULCTLR FPGA
	3 =	HCDASIC	Reset the HCD ASIC
UPSWITCHAB	Switch between CIB Uplink Channel A and B inputs		
5	8		

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
DOWNLINK			
DLNOOP		Dowlink task no operation telecommand	
6 0			
DLTCRESET		Resets Downlink APIDs TC received/rejected/error counters	
6 1			
DLENABLETLM		Enables downlinking of 1 or more stored telemetry types	
6 2			
	TLMTYPE1	UB 1st stored telemetry type	
	Range:		
	0 =	DEFAULT	
	1 =	SSOH Stored State of Health	
	TLMTYPE2	UB 2nd stored telemetry type	
	Range:		
	0 =	DEFAULT	
	2 =	TCLOG Telecommand Log	
	TLMTYPE3	UB 3rd stored telemetry type	
	Range:		
	0 =	DEFAULT	
	3 =	IDPUDIAG IDPU Diagnostics	
	TLMTYPE4	UB 4th stored telemetry type	
	Range:		
	0 =	DEFAULT	
	4 =	EVENTLOG Event Message Log	
	TLMTYPE5	UB 5th stored telemetry type	
	Range:		
	0 =	DEFAULT	
	5 =	SSR SSR Telemetry	
DLDISABLETLM		Disables downlinking of 1 or more stored telemetry types	
6 3			
	TLMTYPE1	UB 1st stored telemetry type	
	Range:		
	0 =	DEFAULT	
	1 =	SSOH Stored State of Health	
	TLMTYPE2	UB 2nd stored telemetry type	
	Range:		
	0 =	DEFAULT	
	2 =	TCLOG Telecommand Log	
	TLMTYPE3	UB 3rd stored telemetry type	
	Range:		
	0 =	DEFAULT	
	3 =	IDPUDIAG IDPU Diagnostics	
	TLMTYPE4	UB 4th stored telemetry type	
	Range:		
	0 =	DEFAULT	

Telecommand

HESSI Telecommand Database

AppId **FunctCode** **Description** **Application ID:**
DOWNLINK

4 = EVENTLOG Event Message Log
 TLMTYPE5 UB 5th stored telemetry type

Range:

0 = DEFAULT

5 = SSR SSR Telemetry

DLSETWEIGHT Sets the transmission weight of a stored telemetry type.

6 4 TLMTYPE U12 The stored telemetry type

Range: 1 5

1 = SSOH Stored State of Health

2 = TCLOG Telecommand Log

3 = IDPUDIAG Stored IDPU Diagnostics

4 = EVENTLOG Event Message Log

5 = SSR Stored SSR Telemetry

WEIGHT UB The new transmission weight

Range: 0 255

DLSETRATE Sets the CIB Board's nominal downlink bit rate

6 6 BITRATE UB The nominal downlink bit rate.

Range: 0 5

0 = RATE4MBPS 4 Mbps

1 = RATE2MBPS 2 Mbps

2 = RATE1MBPS 1 Mbps

3 = RATE500KBPS 500 kbps

4 = RATE250KBPS 250 kbps

5 = RATE125KBPS 125 kbps

DLDELETETLM Deletes all stored telemetry of a specific type.

6 7 TLMTYPE1 UB 1st stored telemetry type

Range:

0 = DEFAULT

1 = SSOH Stored State of Health

TLMTYPE2 UB 2nd stored telemetry type

Range:

0 = DEFAULT

2 = TCLOG Telecommand Log

TLMTYPE3 UB 3rd stored telemetry type

Range:

0 = DEFAULT

3 = IDPUDIAG IDPU Diagnostics

TLMTYPE4 UB 4th stored telemetry type

Range:

0 = DEFAULT

4 = EVENTLOG Event Message Log

TLMTYPE5 UB 5th stored telemetry type

Telecommand	HESSI Telecommand Database		Description	Application ID:
AppId	FuncCode			
DOWNLINK				
		Range:		
		0 =	DEFAULT	
		5 =	SSR SSR Telemetry	
DLRTMULTIPKT		Selects downlink multiple source packets per frame mode		
6 8	APPENDSEL	UB	1 = selects multi-packet, 0 = single packet	
		Range:	0 1	
		0 =	OFF	Off
		0 =	NO	No
		0 =	FALSE	False
		1 =	YES	Yes
		1 =	TRUE	True
		1 =	ON	On
DLBYPASSTX		Allows downlinking stored tlm despite status of transmitter		
6 9	ENABLE	UB	1=bypass transmitter status; 0=use tx status	
		Range:	0 1	
		0 =	OFF	Off
		0 =	NO	No
		0 =	FALSE	False
		1 =	YES	Yes
		1 =	TRUE	True
		1 =	ON	On

Telecommand

HESSI Telecommand Database

AppId	FuncCode	Description	Application ID:
PAYLOAD			
PLNOOP		Verifies that the IDPU Subsystem is responding	
7 0			
PLTCRESET		Resets IDPU APIDs TC received/rejected/error counters	
7 1			
PLRESET		Resets the IDPU Device to known state	
7 2			

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
CMDPROCESSOR			

SCNOOP		Sequence no operation command.	
8	0		
SCTCRESET		Resets Stored Cmd APIDs TC received/rejected/error counters	
8	1		
SCATSSTART		Start Stored Command Absolute Time Sequence.	
8	2		
	BUFFER	U12	ATS buffer select.
	Range:	1	2
	1	=	BUFA ATS Buffer A
	2	=	BUFB ATS Buffer B
SCATSSTOP		Stop Stored Command Absolute Time Sequence.	
8	3		
SCATSSWITCH		Switch Absolute Time Sequence Buffers.	
8	4		
SCRTSSTART		Start Stored Command Relative Time Sequence.	
8	5		
	RTSNUM	U12	RTS number to start.
	Range:	0	63
	0	=	RTS00 RTS00
	1	=	RTS01 RTS01
	2	=	RTS02 RTS02
	3	=	RTS03 RTS03
	4	=	RTS04 RTS04
	5	=	RTS05 RTS05
	6	=	RTS06 RTS06
	7	=	RTS07 RTS07
	8	=	RTS08 RTS08
	9	=	RTS09 RTS09
	10	=	RTS10 RTS10
	11	=	RTS11 RTS11
	12	=	RTS12 RTS12
	13	=	RTS13 RTS13
	14	=	RTS14 RTS14
	15	=	RTS15 RTS15
	16	=	RTS16 RTS16
	17	=	RTS17 RTS17
	18	=	RTS18 RTS18
	19	=	RTS19 RTS19
	20	=	RTS20 RTS20
	21	=	RTS21 RTS21
	22	=	RTS22 RTS22
	23	=	RTS23 RTS23
	24	=	RTS24 RTS24
	25	=	RTS25 RTS25

Telecommand		HESSI Telecommand Database		
AppId	FuncCode		Description	Application ID:
CMDPROCESSOR				
	26	=	RTS26 RTS26	
	27	=	RTS27 RTS27	
	28	=	RTS28 RTS28	
	29	=	RTS29 RTS29	
	30	=	RTS30 RTS30	
	31	=	RTS31 RTS31	
	32	=	RTS32 RTS32	
	33	=	RTS33 RTS33	
	34	=	RTS34 RTS34	
	35	=	RTS35 RTS35	
	36	=	RTS36 RTS36	
	37	=	RTS37 RTS37	
	38	=	RTS38 RTS38	
	39	=	RTS39 RTS39	
	40	=	RTS40 RTS40	
	41	=	RTS41 RTS41	
	42	=	RTS42 RTS42	
	43	=	RTS43 RTS43	
	44	=	RTS44 RTS44	
	45	=	RTS45 RTS45	
	46	=	RTS46 RTS46	
	47	=	RTS47 RTS47	
	48	=	RTS48 RTS48	
	49	=	RTS49 RTS49	
	50	=	RTS50 RTS50	
	51	=	RTS51 RTS51	
	52	=	RTS52 RTS52	
	53	=	RTS53 RTS53	
	54	=	RTS54 RTS54	
	55	=	RTS55 RTS55	
	56	=	RTS56 RTS56	
	57	=	RTS57 RTS57	
	58	=	RTS58 RTS58	
	59	=	RTS59 RTS59	
	60	=	RTS60 RTS60	
	61	=	RTS61 RTS61	
	62	=	RTS62 RTS62	
	63	=	RTS63 RTS63	
SCRTSSUSPEND	Suspends a stored command relative time sequence.			
8	6	RTSNUM	UB	The active RTS number to suspend
		Range:	0	63
	0	=	RTS00	RTS00
	1	=	RTS01	RTS01
	2	=	RTS02	RTS02

Telecommand		HESSI Telecommand Database		Application ID:
AppId	FunctCode	Description		
CMDPROCESSOR				
	3 = RTS03	RTS03		
	4 =	RTS04 RTS04		
	5 =	RTS05 RTS05		
	6 =	RTS06 RTS06		
	7 =	RTS07 RTS07		
	8 =	RTS08 RTS08		
	9 =	RTS09 RTS09		
	10 =	RTS10 RTS10		
	11 =	RTS11 RTS11		
	12 =	RTS12 RTS12		
	13 =	RTS13 RTS13		
	14 =	RTS14 RTS14		
	15 =	RTS15 RTS15		
	16 =	RTS16 RTS16		
	17 =	RTS17 RTS17		
	18 =	RTS18 RTS18		
	19 =	RTS19 RTS19		
	20 =	RTS20 RTS20		
	21 =	RTS21 RTS21		
	22 =	RTS22 RTS22		
	23 =	RTS23 RTS23		
	24 =	RTS24 RTS24		
	25 =	RTS25 RTS25		
	26 =	RTS26 RTS26		
	27 =	RTS27 RTS27		
	28 =	RTS28 RTS28		
	29 =	RTS29 RTS29		
	30 =	RTS30 RTS30		
	31 =	RTS31 RTS31		
	32 =	RTS32 RTS32		
	33 =	RTS33 RTS33		
	34 =	RTS34 RTS34		
	35 =	RTS35 RTS35		
	36 =	RTS36 RTS36		
	37 =	RTS37 RTS37		
	38 =	RTS38 RTS38		
	39 =	RTS39 RTS39		
	40 =	RTS40 RTS40		
	41 =	RTS41 RTS41		
	42 =	RTS42 RTS42		
	43 =	RTS43 RTS43		
	44 =	RTS44 RTS44		
	45 =	RTS45 RTS45		
	46 =	RTS46 RTS46		
	47 =	RTS47 RTS47		

Telecommand

HESSI Telecommand Database

AppId FunctCode Description Application ID:
CMDPROCESSOR

48	=	RTS48	RTS48
49	=	RTS49	RTS49
50	=	RTS50	RTS50
51	=	RTS51	RTS51
52	=	RTS52	RTS52
53	=	RTS53	RTS53
54	=	RTS54	RTS54
55	=	RTS55	RTS55
56	=	RTS56	RTS56
57	=	RTS57	RTS57
58	=	RTS58	RTS58
59	=	RTS59	RTS59
60	=	RTS60	RTS60
61	=	RTS61	RTS61
62	=	RTS62	RTS62
63	=	RTS63	RTS63

SCRTSRESUME Resumes a previously suspended RTS.

8 7

RTSNUM UB The suspended RTS to resume.

Range: 0 63

0	=	RTS00	RTS00
1	=	RTS01	RTS01
2	=	RTS02	RTS02
3	=	RTS03	RTS03
4	=	RTS04	RTS04
5	=	RTS05	RTS05
6	=	RTS06	RTS06
7	=	RTS07	RTS07
8	=	RTS08	RTS08
9	=	RTS09	RTS09
10	=	RTS10	RTS10
11	=	RTS11	RTS11
12	=	RTS12	RTS12
13	=	RTS13	RTS13
14	=	RTS14	RTS14
15	=	RTS15	RTS15
16	=	RTS16	RTS16
17	=	RTS17	RTS17
18	=	RTS18	RTS18
19	=	RTS19	RTS19
20	=	RTS20	RTS20
21	=	RTS21	RTS21
22	=	RTS22	RTS22
23	=	RTS23	RTS23
24	=	RTS24	RTS24

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
CMDPROCESSOR			

	25	=	RTS25	RTS25
	26	=	RTS26	RTS26
	27	=	RTS27	RTS27
	28	=	RTS28	RTS28
	29	=	RTS29	RTS29
	30	=	RTS30	RTS30
	31	=	RTS31	RTS31
	32	=	RTS32	RTS32
	33	=	RTS33	RTS33
	34	=	RTS34	RTS34
	35	=	RTS35	RTS35
	36	=	RTS36	RTS36
	37	=	RTS37	RTS37
	38	=	RTS38	RTS38
	39	=	RTS39	RTS39
	40	=	RTS40	RTS40
	41	=	RTS41	RTS41
	42	=	RTS42	RTS42
	43	=	RTS43	RTS43
	44	=	RTS44	RTS44
	45	=	RTS45	RTS45
	46	=	RTS46	RTS46
	47	=	RTS47	RTS47
	48	=	RTS48	RTS48
	49	=	RTS49	RTS49
	50	=	RTS50	RTS50
	51	=	RTS51	RTS51
	52	=	RTS52	RTS52
	53	=	RTS53	RTS53
	54	=	RTS54	RTS54
	55	=	RTS55	RTS55
	56	=	RTS56	RTS56
	57	=	RTS57	RTS57
	58	=	RTS58	RTS58
	59	=	RTS59	RTS59
	60	=	RTS60	RTS60
	61	=	RTS61	RTS61
	62	=	RTS62	RTS62
	63	=	RTS63	RTS63
SCRTSSTOP			Stop Stored Command Relative Time Sequence.	
8	8	RTSNUM	U12	RTS number to stop.
		Range:	0	63
		0	=	RTS00 RTS00
		1	=	RTS01 RTS01

Telecommand		HESSI Telecommand Database		Application ID:
AppId	FunctCode	Description		
CMDPROCESSOR				
	2 = RTS02	RTS02		
	3 =	RTS03 RTS03		
	4 =	RTS04 RTS04		
	5 =	RTS05 RTS05		
	6 =	RTS06 RTS06		
	7 =	RTS07 RTS07		
	8 =	RTS08 RTS08		
	9 =	RTS09 RTS09		
	10 =	RTS10 RTS10		
	11 =	RTS11 RTS11		
	12 =	RTS12 RTS12		
	13 =	RTS13 RTS1 3		
	14 =	RTS14 RTS14		
	15 =	RTS15 RTS15		
	16 =	RTS16 RTS16		
	17 =	RTS17 RTS17		
	18 =	RTS18 RTS18		
	19 =	RTS19 RTS19		
	20 =	RTS20 RTS20		
	21 =	RTS21 RTS21		
	22 =	RTS22 RTS22		
	23 =	RTS23 RTS23		
	24 =	RTS24 RTS24		
	25 =	RTS25 RTS25		
	26 =	RTS26 RTS26		
	27 =	RTS27 RTS27		
	28 =	RTS28 RTS28		
	29 =	RTS29 RTS29		
	30 =	RTS30 RTS30		
	31 =	RTS31 RTS31		
	32 =	RTS32 RTS32		
	33 =	RTS33 RTS33		
	34 =	RTS34 RTS34		
	35 =	RTS35 RTS35		
	36 =	RTS36 RTS36		
	37 =	RTS37 RTS37		
	38 =	RTS38 RTS38		
	39 =	RTS39 RTS39		
	40 =	RTS40 RTS40		
	41 =	RTS41 RTS41		
	42 =	RTS42 RTS42		
	43 =	RTS43 RTS43		
	44 =	RTS44 RTS44		
	45 =	RTS45 RTS45		
	46 =	RTS46 RTS46		

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
CMDPROCESSOR			

	47	=		RTS47	RTS47
	48	=		RTS48	RTS48
	49	=		RTS49	RTS49
	50	=		RTS50	RTS50
	51	=		RTS51	RTS51
	52	=		RTS52	RTS52
	53	=		RTS53	RTS53
	54	=		RTS54	RTS54
	55	=		RTS55	RTS55
	56	=		RTS56	RTS56
	57	=		RTS57	RTS57
	58	=		RTS58	RTS58
	59	=		RTS59	RTS59
	60	=		RTS60	RTS60
	61	=		RTS61	RTS61
	62	=		RTS62	RTS62
	63	=		RTS63	RTS63
SCRTSDISABLE	Disable Stored Command Relative Time Sequence.				
8	9	RTSNUM	U12	RTS number to disable.	
		Range:	0	63	
	0	=		RTS00	RTS00
	1	=		RTS01	RTS01
	2	=		RTS02	RTS02
	3	=		RTS03	RTS03
	4	=		RTS04	RTS04
	5	=		RTS05	RTS05
	6	=		RTS06	RTS06
	7	=		RTS07	RTS07
	8	=		RTS08	RTS08
	9	=		RTS09	RTS09
	10	=		RTS10	RTS10
	11	=		RTS11	RTS11
	12	=		RTS12	RTS12
	13	=		RTS13	RTS13
	14	=		RTS14	RTS14
	15	=		RTS15	RTS15
	16	=		RTS16	RTS16
	17	=		RTS17	RTS17
	18	=		RTS18	RTS18
	19	=		RTS19	RTS19
	20	=		RTS20	RTS20
	21	=		RTS21	RTS21
	22	=		RTS22	RTS22
	23	=		RTS23	RTS23

Telecommand		HESSI Telecommand Database		Application ID:
AppId	FunctCode	Description		
CMDPROCESSOR	24 =	RTS24	RTS24	
	25 =	RTS25	RTS25	
	26 =	RTS26	RTS26	
	27 =	RTS27	RTS27	
	28 =	RTS28	RTS28	
	29 =	RTS29	RTS29	
	30 =	RTS30	RTS30	
	31 =	RTS31	RTS31	
	32 =	RTS32	RTS32	
	33 =	RTS33	RTS33	
	34 =	RTS34	RTS34	
	35 =	RTS35	RTS35	
	36 =	RTS36	RTS36	
	37 =	RTS37	RTS37	
	38 =	RTS38	RTS38	
	39 =	RTS39	RTS39	
	40 =	RTS40	RTS40	
	41 =	RTS41	RTS41	
	42 =	RTS42	RTS42	
	43 =	RTS43	RTS43	
	44 =	RTS44	RTS44	
	45 =	RTS45	RTS45	
	46 =	RTS46	RTS46	
	47 =	RTS47	RTS47	
	48 =	RTS48	RTS48	
	49 =	RTS49	RTS49	
	50 =	RTS50	RTS50	
	51 =	RTS51	RTS51	
	52 =	RTS52	RTS52	
	53 =	RTS53	RTS53	
	54 =	RTS54	RTS54	
	55 =	RTS55	RTS55	
	56 =	RTS56	RTS56	
	57 =	RTS57	RTS57	
	58 =	RTS58	RTS58	
	59 =	RTS59	RTS59	
	60 =	RTS60	RTS60	
	61 =	RTS61	RTS61	
	62 =	RTS62	RTS62	
	63 =	RTS63	RTS63	
SCRTSENABLE	Enable Stored Command Relative Time Sequence.			
8	10	RTSNUM	U12	RTS number to enable.
		Range:	0	63
		0 =	RTS00	RTS00

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
CMDPROCESSOR			

1	= RTS01	RTS01	
2	=	RTS02 RTS02	
3	=	RTS03 RTS03	
4	=	RTS04 RTS04	
5	=	RTS05 RTS05	
6	=	RTS06 RTS06	
7	=	RTS07 RTS07	
8	=	RTS08 RTS08	
9	=	RTS09 RTS09	
10	=	RTS10 RTS10	
11	=	RTS11 RTS11	
12	=	RTS12 RTS12	
13	=	RTS13 RTS13	
14	=	RTS14 RTS14	
15	=	RTS15 RTS15	
16	=	RTS16 RTS16	
17	=	RTS17 RTS17	
18	=	RTS18 RTS18	
19	=	RTS19 RTS19	
20	=	RTS20 RTS20	
21	=	RTS21 RTS21	
22	=	RTS22 RTS22	
23	=	RTS23 RTS23	
24	=	RTS24 RTS24	
25	=	RTS25 RTS25	
26	=	RTS26 RTS26	
27	=	RTS27 RTS27	
28	=	RTS28 RTS28	
29	=	RTS29 RTS29	
30	=	RTS30 RTS30	
31	=	RTS31 RTS31	
32	=	RTS32 RTS32	
33	=	RTS33 RTS33	
34	=	RTS34 RTS34	
35	=	RTS35 RTS35	
36	=	RTS36 RTS36	
37	=	RTS37 RTS37	
38	=	RTS38 RTS38	
39	=	RTS39 RTS39	
40	=	RTS40 RTS40	
41	=	RTS41 RTS41	
42	=	RTS42 RTS42	
43	=	RTS43 RTS43	
44	=	RTS44 RTS44	
45	=	RTS45 RTS45	

Telecommand		HESSI Telecommand Database		Description	Application ID:
AppId	FunctCode				
CMDPROCESSOR					
	46	=	RTS46	RTS46	
	47	=	RTS47	RTS47	
	48	=	RTS48	RTS48	
	49	=	RTS49	RTS49	
	50	=	RTS50	RTS50	
	51	=	RTS51	RTS51	
	52	=	RTS52	RTS52	
	53	=	RTS53	RTS53	
	54	=	RTS54	RTS54	
	55	=	RTS55	RTS55	
	56	=	RTS56	RTS56	
	57	=	RTS57	RTS57	
	58	=	RTS58	RTS58	
	59	=	RTS59	RTS59	
	60	=	RTS60	RTS60	
	61	=	RTS61	RTS61	
	62	=	RTS62	RTS62	
	63	=	RTS63	RTS63	
SCRESET				Reset Stored Command software statuses.	
8	11				
SCATSVERIFY				Verifies that an ATS table has the correct format.	
8	12				
			UB	ATS buffer select.	
				Range:	1 2
			1	=	BUFA ATS Buffer A
			2	=	BUFB ATS Buffer B
SCRTSVERIFY				Verifies that an RTS table has the correct format.	
8	13				
			UB	RTS number of verify.	
				Range:	0 63
			0	=	RTS00 RTS00
			1	=	RTS01 RTS01
			2	=	RTS02 RTS02
			3	=	RTS03 RTS03
			4	=	RTS04 RTS04
			5	=	RTS05 RTS05
			6	=	RTS06 RTS06
			7	=	RTS07 RTS07
			8	=	RTS08 RTS08
			9	=	RTS09 RTS09
			10	=	RTS10 RTS10
			11	=	RTS11 RTS11
			12	=	RTS12 RTS12
			13	=	RTS13 RTS13
			14	=	RTS14 RTS14

Telecommand		HESSI Telecommand Database		Application ID:
AppId	FunctCode	Description		
CMDPROCESSOR	15 = RTS15	RTS15		
	16 =	RTS16	RTS16	
	17 =	RTS17	RTS17	
	18 =	RTS18	RTS18	
	19 =	RTS19	RTS19	
	20 =	RTS20	RTS20	
	21 =	RTS21	RTS21	
	22 =	RTS22	RTS22	
	23 =	RTS23	RTS23	
	24 =	RTS24	RTS24	
	25 =	RTS25	RTS25	
	26 =	RTS26	RTS26	
	27 =	RTS27	RTS27	
	28 =	RTS28	RTS28	
	29 =	RTS29	RTS29	
	30 =	RTS30	RTS30	
	31 =	RTS31	RTS31	
	32 =	RTS32	RTS32	
	33 =	RTS33	RTS33	
	34 =	RTS34	RTS34	
	35 =	RTS35	RTS35	
	36 =	RTS36	RTS36	
	37 =	RTS37	RTS37	
	38 =	RTS38	RTS38	
	39 =	RTS39	RTS39	
	40 =	RTS40	RTS40	
	41 =	RTS41	RTS41	
	42 =	RTS42	RTS42	
	43 =	RTS43	RTS43	
	44 =	RTS44	RTS44	
	45 =	RTS45	RTS45	
	46 =	RTS46	RTS46	
	47 =	RTS47	RTS47	
	48 =	RTS48	RTS48	
	49 =	RTS49	RTS49	
	50 =	RTS50	RTS50	
	51 =	RTS51	RTS51	
	52 =	RTS52	RTS52	
	53 =	RTS53	RTS53	
	54 =	RTS54	RTS54	
	55 =	RTS55	RTS55	
	56 =	RTS56	RTS56	
	57 =	RTS57	RTS57	
	58 =	RTS58	RTS58	
	59 =	RTS59	RTS59	

Telecommand**HESSI Telecommand Database**

AppId	FunctCode	Description	Application ID:
CMDPROCESSOR	60 =	RTS60 RTS60	
	61 =	RTS61 RTS61	
	62 =	RTS62 RTS62	
	63 =	RTS63 RTS63	

Telecommand	HESSI Telecommand Database			Application ID:
AppId	FunctCode	Description		
SSR				
SSRNOOP		Verifies that SSR subsystem is responding		
9	0			
SSRTCRESET		Resets SSR APIDs TC received/rejected/error counters		
9	1			
SSRPLAY		Starts the playback of SSR stored science data		
9	2			
	BYPASSEDAC	UB	Indicates whether EDAC should be bypassed	
	Range:	0	1	
	0 =	OFF	Off	
	0 =	NO	No	
	0 =	FALSE	False	
	1 =	YES	Yes	
	1 =	TRUE	True	
	1 =	ON	On	
SSRSTOPPLAY		Stops the playback of IDPU science data		
9	3			
SSRRECORD		Starts the recording of IDPU science data		
9	4			
	STARTOFFSET	U1234	The start offset at which to begin recording	
	Range:	0	0xffffffff	
SSRSTOPREC		Stops the recording of IDPU science data		
9	5			
SSRPLAYRTSCI		Playback of real-time science data		
9	6			
	NUMPACKETS	U12	Number of real-time tlm packets to playback	
	Range:	1	65535	
	BYPASSEDAC	UB	Indicates whether EDAC should be bypassed	
	Range:	0	1	
	0 =	OFF	Off	
	0 =	NO	No	
	0 =	FALSE	False	
	1 =	YES	Yes	
	1 =	TRUE	True	
	1 =	ON	On	
SSRPASSTHRU		Transmits the specified 16-byte command to the SSR.		
9	7			
	COMMANDCODE	UB		
	Range:			
	COMMANDID	UB		
	Range:			
	WORD1	U12		
	Range:			
	WORD2	U12		
	Range:			

Telecommand		HESSI Telecommand Database		
AppId	FunctCode	Description	Application ID:	
SSR	WORD3	U12		
	Range:			
	WORD4	U12		
	Range:			
	WORD5	U12		
	Range:			
	WORD6	U12		
	Range:			
SSRSETPLYPTR	Set the SSR Playback Pointer			
9	8	PLAYPOINTER	U1234	The new value of the SSR play pointer
	Range:		0	0xFFFFFFFF
SSRDLERRHIS	Requests SSR Error History			
9	9			
SSRMAKEPART	Creates a new partition in the SSR DRAM.			
9	10			
SSRPORTRESET	Resets SSR Data Ports; restarts previous record/playback			
9	11			
SSRCMDRSPTLM	Enables SSR cmd response telemetry for non-SSRPASSTHRU TCs			
9	12	ENABLE	UB	1=Enables SSR cmd response telemetry; 0=Disable
	Range:		0	1
	0 =		OFF	Off
	0 =		NO	No
	0 =		FALSE	False
	1 =		YES	Yes
	1 =		TRUE	True
	1 =		ON	On
SSRWORK1HZ	Enable/Disable SSR 1Hz Processing			
9	13	ENABLE	UB	1=Enable, 0=Disable
	Range:			
	0 =		OFF	Off
	0 =		NO	No
	0 =		FALSE	False
	1 =		YES	Yes
	1 =		TRUE	True
	1 =		ON	On
SSRSTATEINIT	Reinitialize the state of the SSR task.			
9	14			

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
PCB			
PCBNOOP		PCB Task no operation telecommand	
10	0		
PCBTCRESET		Resets PCB APIDs TC received/rejected/error counters	
10	1		
PCBSETSWITCH		Set a specific power switch on the Power Converter Board	
10	2		
	PCBSWITCH	UB	The ID of the switch to set.
	Range:	0	24
	0 =	PCBNEB1	Primary Bus - Non-essential bus #1
	1 =	PCBIDPUH	Primary Bus - IDPU heater bus
	2 =	PCBNEB2	Primary Bus - Non-essential bus #2
	3 =	PCBCRYO	Primary Bus - Cryocoller bus
	4 =	PCBIDPU	Primary Bus - IDPU bus
	5 =	PCBIDPU28	Primary Bus - +28V bus
	6 =	PCBSSR	Primary Bus - Solid State Recorder bus
	7 =	PCBRF	Primary Bus - RF Antenna (on=forward, off=aft)
	8 =	PCBFSSHTR	Secondary Bus - Fine Sun Sensor heater
	9 =	PCBSADHTR	Secondary Bus - Solar Array Damper Heater
	10 =	PCBTQHTR	Secondary Bus - Torque Rod heater
	11 =	PCBXPHTTR	Secondary Bus - Transponder heater
	12 =	PCBSSRHTR	Secondary Bus - Solid State Recorder heater
	13 =	PCBSPARE1	Secondary Bus - Spare secondary switch #1
	14 =	PCBSEMHTR	Secondary Bus - SEM heater
	15 =	PCBBATHTR	Secondary Bus - Battery heater
	16 =	PCBXZTQ	Secondary Bus - Torque Rod XZ
	17 =	PCBYZTQ	Secondary Bus - Torque Rod YZ
	18 =	PCBSPARE2	Secondary Bus - Spare secondary switch #2
	19 =	PCBIAD1	Secondary Bus - Inertia Adjustment Device #1
	20 =	PCBIAD2	Secondary Bus - Inertia Adjustment Device #2
	21 =	PCBBATHTR2	Secondary Bus - Battery heater #2
	22 =	PCBFSS	Secondary Bus - Fine Sun Sensor
	23 =	PCBXMIT	Secondary Bus - Transmitter
	24 =	PCBMAG	Secondary Bus - Magnetometer
	SWITCH_VALUE	UB	The desired switch value.
	Range:	0	1
	0 =	OFF	Off
	0 =	NO	No
	0 =	FALSE	False
	1 =	YES	Yes
	1 =	TRUE	True
	1 =	ON	On
PCBCMDTORQUE		Command the torque rods	
10	3		
	XTORQUEROD	SFP	Desired X torque rod current in amps
	Range:	-0.25	0.25

Telecommand

HESSI Telecommand Database

AppId PCB	FunctCode	Description	Application ID:
	YTORQUEROD	SFP Desired Y torque rod current in amps Range: -0.25 0.25	
	Z1TORQUEROD	SFP Desired Z torque rod #1 current in amps Range: -0.25 0.25	
	Z2TORQUEROD	SFP Desired Z torque rod #2 current in amps Range: -0.25 0.25	
PCBDRIVEIAD	Drive the Inertial Adjustment Device		
10 4	DRIVE_NUMBER	UB	
	Range:		
	1 =	IAD1 Inertial Adjustment Device 1	
	2 =	IAD2 Inertial Adjustment Device 2	
	STEPS	U12 Number of IAD motor steps. Range: 0 1023	
	IADIRECTION	UB Direction of motor movement. Range: 0 1	
	0 =	CLOCKWISE Drive IAD motor clockwise (+Z Wingtip Travel)	
	1 =	COUNTERCLOCK Drive IAD motor counter-clockwise (-Z Wingtip)	
PCBCLRLATCH	Clears the PCB latched outputs OC, LUV1, LUV2, and LUV3		
10 5			
PCBFPGARESET	Resets the PCB FPGA Logic. Does not affect switch states.		
10 6			
PCBSETUVLEVEL	Sets/clears the degrade bit for undervoltage trip levels		
10 7	UVTRIPSELECT	UB Selects the UV trip level to operate upon Range: 1 3	
	1 =	UV1 Under Voltage trip level 1	
	2 =	UV2 Under Voltage trip level 2	
	3 =	UV3 Under Voltage trip level 3	
	BITSTATE	UB When set, degrades UV trip level. Clear=nominal Range: 0 1	
	0 =	OFF Off	
	0 =	NO No	
	0 =	FALSE False	
	1 =	YES Yes	
	1 =	TRUE True	
	1 =	ON On	
PCBSAENABLE	Enable a Solar Array Release		
10 8	RELEASE_P	UB Primary Solar Array Release Mechanism Range:	
	0 =	PRIMARY Primary Solar Array Release	
	255 =	DEFAULT	
	RELEASE_S	UB Secondary Solar Array Release Mechanism	

Telecommand

HESSI Telecommand Database

AppId	FuncCode	Description	Application ID:	
PCB	Range:			
	1 =	SECONDARY	Secondary Solar Array Release	
	255 = DEFAULT			
	RELEASE_XU	UB	X-Axis Upper Solar Array Release Mechanism	
	Range:			
	2 =	XUPPER	ADB X-Axis Upper Solar Array Release Mechanism	
	255 = DEFAULT			
	RELEASE_YU	UB	Y-Axis Upper Solar Array Release Mechanism	
	Range:			
	3 =	YUPPER	ADB Y-Axis Upper Solar Array Release Mechanism	
	255 = DEFAULT			
	RELEASE_XL	UB	X-Axis Lower Solar Array Release Mechanism	
	Range:			
	4 =	XLOWER	ADB X-Axis Lower Solar Array Release Mechanism	
	255 = DEFAULT			
RELEASE_YL	UB	Y-Axis Lower Solar Array Release Mechanism		
Range:				
5 =	YLOWER	ADB Y-Axis Lower Solar Array Release Mechanism		
255 = DEFAULT				
PCBSADISABLE	Enable a Solar Array Release			
	10 9	RELEASE_P	UB	Primary Solar Array Release Mechanism
	Range:			
	0 =	PRIMARY	Primary Solar Array Release	
	255 = DEFAULT			
	RELEASE_S	UB	Secondary Solar Array Release Mechanism	
	Range:			
	1 =	SECONDARY	Secondary Solar Array Release	
	255 = DEFAULT			
	RELEASE_XU	UB	X-Axis Upper Solar Array Release Mechanism	
	Range:			
	2 =	XUPPER	ADB X-Axis Upper Solar Array Release Mechanism	
	255 = DEFAULT			
	RELEASE_YU	UB	Y-Axis Upper Solar Array Release Mechanism	
	Range:			
3 =	YUPPER	ADB Y-Axis Upper Solar Array Release Mechanism		
255 = DEFAULT				
RELEASE_XL	UB	X-Axis Lower Solar Array Release Mechanism		
Range:				
4 =	XLOWER	ADB X-Axis Lower Solar Array Release Mechanism		
255 = DEFAULT				
RELEASE_YL	UB	Y-Axis Lower Solar Array Release Mechanism		
Range:				

Telecommand

HESSI Telecommand Database

AppId	FunctCode	Description	Application ID:
PCB	5 =	YLOWER	ADB Y-Axis Lower Solar Array Release Mechanism
	255 =	DEFAULT	
PCBMISSNMODE	Sets mission mode which determines the bootup sequence.		
10	10	MODEPARAM	UB Mission mode is either launch or nominal.
	Range:	0	1
	0 =	LAUNCH	Use launch bootup sequence
	1 =	NOMINAL	Use post-launch, or nominal bootup sequence
PCBENABLTXS	Enable the transmitter power switch to be turned on		
10	11	ENABLE	UB 1=enableTx switch to be turned on; 0 = disable
	Range:	0	1
	0 =	OFF	Off
	0 =	NO	No
	0 =	FALSE	False
	1 =	YES	Yes
	1 =	TRUE	True
	1 =	ON	On

Telecommand		HESSI Telecommand Database		
AppId	FunctCode	Description	Application ID:	
FAULTMGMT				
FMNOOP		Fault Management no operation telecommand		
11	0			
FMTCRESET		Resets FM APIDs TC received/rejected/error counters		
11	1			
FMCLEAR		Clear the Fault Management telemetry counters and flags		
11	2	FAULTID	UB	ID of fault response to clear.
		Range:		
		1 =	HITNEB1	Clear NEB1 fault response indicator
		2 =	HITNEB2	Clear NEB2 fault response indicator
		3 =	HITLOBAT1	Clear Low Battery 1 fault response indicator
		4 =	HITLOBAT2	Clear Low Battery 2 fault response indicator
		5 =	HITCRYO	Clear CRYO fault response indicator
		6 =	HITIDPU	Clear IDPU fault response indicator
		7 =	HITIDPUH	Clear IDPU Heater fault response indicator
		8 =	HITSUNPT	Clear ACS Sun Pointing fault response indicator
		9 =	HITTCLOSS	Clear telecommand loss fault response indicator
		10 =	INTERRUPTCNT	Clear all interrupt loss counters
FMCLRWDTCNT		Clear the CIB Watchdog SysReset counter		
11	3			

APPENDIX B

HESSI FSW TELEMETRY SOURCE PACKET DEFINITIONS

AppId 0 HW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
H000APID	0	0	11	BOOL	APID 0 Packet ID Application ID
H000SHDF	0	11	1	BOOL	APID 0 Packet ID Secondary Header Flag
H000PCKT	0	12	1	BOOL	APID 0 Packet ID Type
H000PVNO	0	13	3	BOOL	APID 0 Packet ID Version Number
H000CNT	2	0	14	BOOL	APID 0 Packet Sequence Control Source Sequence
H000SEGF	2	14	2	BOOL	APID 0 Packet Sequence Control Segmentation Flag
H000PLEN	4	0	1	U12	APID 0 Packet Length
H000SECONDS	6	0	1	U1234	APID 0 System Time
H000TIME	6	0	1	TIME42	APID 0 System Time when packet was formed
H000SUBSECS	10	0	1	U12	APID 0 System Time Subseconds
TPADIN16TO31	12	0	1	U12	Digital Input Channels 15 to 31
TPADINBIT16	12	0	1	BOOL	SSR COMMAND READY STATUS
TPADINBIT17	12	1	1	BOOL	FSS SUN PRESENCE
TPADINBIT18	12	2	1	BOOL	RCV CARRIER LOCK STATUS
TPADINBIT19	12	3	1	BOOL	RCV SUB-CARRIER LOCK STATUS
TPADINBIT20	12	4	1	BOOL	XMT ON/OFF STATUS
TPADINBIT21	12	5	1	BOOL	XMIT SWITCH POSITION STATUS
TPADINBIT22	12	6	1	BOOL	PACI Digital Input Bit 22
TPADINBIT23	12	7	1	BOOL	PACI Digital Input Bit 23
TPADINBIT24	12	8	1	BOOL	PACI Digital Input Bit 24
TPADINBIT25	12	9	1	BOOL	PACI Digital Input Bit 25
TPADINBIT26	12	10	1	BOOL	PACI Digital Input Bit 26
TPADINBIT27	12	11	1	BOOL	PACI Digital Input Bit 27
TPADINBIT28	12	12	1	BOOL	PACI Digital Input Bit 28
TPADINBIT29	12	13	1	BOOL	PACI Digital Input Bit 29
TPADINBIT30	12	14	1	BOOL	PACI Digital Input Bit 30
TPADINBIT31	12	15	1	BOOL	PACI Digital Input Bit 31
TPADINBIT00	14	0	1	BOOL	CCB BATT TEMP A/B SEL STAT
TPADIN1TO15	14	0	1	U12	Digital Input Channels 0 to 15
TPADINBIT01	14	1	1	BOOL	CPU PWR STATUS
TPADINBIT02	14	2	1	BOOL	PCB UNDERVOLTAGE TRIP STATUS
TPADINBIT03	14	3	1	BOOL	PCB OVERCURRENT TRIP STATUS
TPADINBIT04	14	4	1	BOOL	PCB IDPU POWER STATUS
TPADINBIT05	14	5	1	BOOL	CCB MISSION MODE STATUS 1
TPADINBIT06	14	6	1	BOOL	CCB MISSION MODE STATUS 2
TPADINBIT07	14	7	1	BOOL	PACI Digital Input Bit 07
TPADINBIT08	14	8	1	BOOL	PACI Digital Input Bit 08
TPADINBIT09	14	9	1	BOOL	PACI Digital Input Bit 09
TPADINBIT10	14	10	1	BOOL	PACI Digital Input Bit 10
TPADINBIT11	14	11	1	BOOL	PACI Digital Input Bit 11

AppId 0 HW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TPADINBIT12	14	12	1	BOOL	PACI Digital Input Bit 12
TPADINBIT13	14	13	1	BOOL	PACI Digital Input Bit 13
TPADINBIT14	14	14	1	BOOL	PACI Digital Input Bit 14
TPADINBIT15	14	15	1	BOOL	PACI Digital Input Bit 15
TPAMATTSTSIN	16	0	1	U12	MATT_STS_IN field in SOH
TPAFSSSIN1	18	0	1	U12	Fine Sun Sensor Sine 1
TPAFSSCOSIN1	20	0	1	U12	Fine Sun Sensor Cosine 1
TPAGPACH03	22	0	1	U12	BAT PRESS 1
TPAGPACH04	24	0	1	U12	BAT PRESS 2
TPAGPACH05	26	0	1	U12	MAG X OUTPUT
TPAGPACH06	28	0	1	U12	MAG Z OUTPUT
TPAGPACH07	30	0	1	U12	MAG Y OUTPUT
TPAGPACH08	32	0	1	U12	RCV CARRIER LOOP STRESS
TPAGPACH09	34	0	1	U12	RCV SIGNAL STRENGTH
TPAGPACH10	36	0	1	U12	XMT CONVERTER VOLTAGE
TPAGPACH11	38	0	1	U12	XMT PWR AMP TEMP
TPAGPACH12	40	0	1	U12	XMT PWR SPLY TEMP
TPAGPACH13	42	0	1	U12	XMT RF OUTPUT PWR
TPAGPACH14	44	0	1	U12	MAGNETOMETER TEMP
TPAGPACH15	46	0	1	U12	FSE SOH MONITOR
TPAGPACH16	48	0	1	U12	SSR +5V SOH
TPAGPACH17	50	0	1	U12	SSR +3.3V SOH
TPAGPACH18	52	0	1	U12	ESSENTIAL +5V MONITOR
TPAGPACH19	54	0	1	U12	CPU +5V MONITOR
TPAGPACH20	56	0	1	U12	TORQ ROD Z RED CURR
TPAGPACH21	58	0	1	U12	BAT CURRENT
TPAGPACH22	60	0	1	U12	BAT MID VOLTAGE
TPAGPACH23	62	0	1	U12	BAT TEMP 1
TPAGPACH24	64	0	1	U12	BAT TEMP 2
TPAGPACH25	66	0	1	U12	BAT VOLTAGE
TPAGPACH26	68	0	1	U12	CCB TRANSISTORS ON
TPAGPACH27	70	0	1	U12	SOLAR ARRAY CURRENT
TPAGPACH28	72	0	1	U12	VT CURVE SELECTED
TPAGPACH29	74	0	1	U12	ESSENTIAL BUS CURRENT
TPAGPACH30	76	0	1	U12	ESSENTIAL +15V MONITOR
TPAGPACH31	78	0	1	U12	NEB1 BUS CURRENT
TPAGPACH32	80	0	1	U12	IDPU HEATER BUS CURRENT
TPAGPACH33	82	0	1	U12	NEB2 BUS CURRENT
TPAGPACH34	84	0	1	U12	IDPU CURRENT
TPAGPACH35	86	0	1	U12	CRYO CURRENT

AppId 0 HW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TPAGPACH36	88	0	1	U12	IDPU SWITCHED LOADS CURRENT
TPAGPACH37	90	0	1	U12	TORQ ROD X CURRENT
TPAGPACH38	92	0	1	U12	TORQ ROD Y CURRENT
TPAGPACH39	94	0	1	U12	TORQ ROD Z PRI CURR
TPAGPACH40	96	0	1	U12	ESSENTIAL +15V MONITOR
TPAAD590CH01	98	0	1	U12	FSE TEMP
TPAAD590CH02	100	0	1	U12	INERTIA ADJUST DEVICE 1 TEMP
TPAAD590CH03	102	0	1	U12	INERTIA ADJUST DEVICE 2 TEMP
TPAAD590CH04	104	0	1	U12	SEM CHASSIS TEMP
TPAAD590CH05	106	0	1	U12	SEM DC-DC CONV TEMP
TPAAD590CH06	108	0	1	U12	SEM PRECISION CLK TEMP
TPAAD590CH07	110	0	1	U12	SSR TEMP
TPAAD590CH08	112	0	1	U12	TORQ ROD X TEMP
TPAAD590CH09	114	0	1	U12	TORQ ROD Y TEMP
TPAAD590CH10	116	0	1	U12	TORQ ROD Z TEMP
TPAAD590CH11	118	0	1	U12	TRANSPONDER EXT TEMP
TPAAD590CH12	120	0	1	U12	DECK MLI TEMP
TPAAD590CH13	122	0	1	U12	IDPU TEMP
TPAAD590CH14	124	0	1	U12	IPC TEMP
TPAAD590CH15	126	0	1	U12	CPC TEMP
TPAAD590CH16	128	0	1	U12	SPECTROMETER TEMP
TPAAD590CH17	130	0	1	U12	RAS TEMP
TPAAD590CH18	132	0	1	U12	AD590 Channel 18
TPAAD590CH19	134	0	1	U12	AD590 Channel 19
TPAAD590CH20	136	0	1	U12	AD590 Channel 20
TPAAD590CH21	138	0	1	U12	AD590 Channel 21
TPAAD590CH22	140	0	1	U12	AD590 Channel 22
TPAAD590CH23	142	0	1	U12	AD590 Channel 23
TPAAD590CH24	144	0	1	U12	AD590 Channel 24
TPACSSCH1	146	0	1	U12	Coarse Sun Sensor Channel 1
TPACSSCH2	148	0	1	U12	Coarse Sun Sensor Channel 2
TPACSSCH3	150	0	1	U12	Coarse Sun Sensor Channel 3
TPACSSCH4	152	0	1	U12	Coarse Sun Sensor Channel 4
TPACSSCH5	154	0	1	U12	Coarse Sun Sensor Channel 5
TPACSSCH6	156	0	1	U12	Coarse Sun Sensor Channel 6
TPACSSCH7	158	0	1	U12	Coarse Sun Sensor Channel 7
TPACSSCH8	160	0	1	U12	Coarse Sun Sensor Channel 8
TPAPRTCH1	162	0	1	U12	BAT CHASSIS TEMP
TPAPRTCH2	164	0	1	U12	SOLAR WING 1 FRONT TEMP
TPAPRTCH3	166	0	1	U12	SOLAR WING 2 FRONT TEMP

AppId 0 HW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TPAPRTCH4	168	0	1	U12	SOLAR WING 3 FRONT TEMP
TPAPRTCH5	170	0	1	U12	SOLAR WING 4 FRONT TEMP
TPAPRTCH6	172	0	1	U12	IAD 1 POSITION
TPAPRTCH7	174	0	1	U12	IAD 2 POSITION
TPAPRTCH8	176	0	1	U12	Spare
TPAA2DGAIN	178	0	1	U12	PACI A2D_GAIN_SET Telemetry Channel
TPAFSSSIN2	180	0	1	U12	Fine Sun Sensor Sine 2
TPAFSSCOSIN2	182	0	1	U12	Fine Sun Sensor Cosine 2
TPAFSSDIG1	184	0	1	U12	Fine Sun Sensor Digital 1
TPAFSSDIG2	186	0	0	U12	Fine Sun Sensor Digital 2

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
H001APID	0	0	11	BOOL	APID 1 Packet ID Application ID
H001SHDF	0	11	1	BOOL	APID 1 Packet ID Secondary Header Flag
H001PCKT	0	12	1	BOOL	APID 1 Packet ID Type
H001PVNO	0	13	3	BOOL	APID 1 Packet ID Version Number
H001CNT	2	0	14	BOOL	APID 1 Packet Sequence Control Source Sequence
H001SEGF	2	14	2	BOOL	APID 1 Packet Sequence Control Segmentation Flag
H001PLEN	4	0	1	U12	APID 1 Packet Length
H001TIME	6	0	1	TIME42	APID 1 System Time when packet was formed
H001SECONDS	6	0	1	U1234	APID 1 System Time
H001SUBSECS	10	0	1	U12	APID 1 System Time Subseconds
TPADIN16TO31	12	0	1	U12	Digital Input Channels 15 to 31
TPADINBIT16	12	0	1	BOOL	SSR COMMAND READY STATUS
TPADINBIT17	12	1	1	BOOL	FSS SUN PRESENCE
TPADINBIT18	12	2	1	BOOL	RCV CARRIER LOCK STATUS
TPADINBIT19	12	3	1	BOOL	RCV SUB-CARRIER LOCK STATUS
TPADINBIT20	12	4	1	BOOL	XMT ON/OFF STATUS
TPADINBIT21	12	5	1	BOOL	XMIT SWITCH POSITION STATUS
TPADINBIT22	12	6	1	BOOL	PACI Digital Input Bit 22
TPADINBIT23	12	7	1	BOOL	PACI Digital Input Bit 23
TPADINBIT24	12	8	1	BOOL	PACI Digital Input Bit 24
TPADINBIT25	12	9	1	BOOL	PACI Digital Input Bit 25
TPADINBIT26	12	10	1	BOOL	PACI Digital Input Bit 26
TPADINBIT27	12	11	1	BOOL	PACI Digital Input Bit 27
TPADINBIT28	12	12	1	BOOL	PACI Digital Input Bit 28
TPADINBIT29	12	13	1	BOOL	PACI Digital Input Bit 29
TPADINBIT30	12	14	1	BOOL	PACI Digital Input Bit 30
TPADINBIT31	12	15	1	BOOL	PACI Digital Input Bit 31
TPADIN1TO15	14	0	1	U12	Digital Input Channels 0 to 15
TPADINBIT00	14	0	1	BOOL	CCB BATT TEMP A/B SEL STAT
TPADINBIT01	14	1	1	BOOL	CPU PWR STATUS
TPADINBIT02	14	2	1	BOOL	PCB UNDERVOLTAGE TRIP STATUS
TPADINBIT03	14	3	1	BOOL	PCB OVERCURRENT TRIP STATUS
TPADINBIT04	14	4	1	BOOL	PCB IDPU POWER STATUS
TPADINBIT05	14	5	1	BOOL	CCB MISSION MODE STATUS 1
TPADINBIT06	14	6	1	BOOL	CCB MISSION MODE STATUS 2
TPADINBIT07	14	7	1	BOOL	PACI Digital Input Bit 07
TPADINBIT08	14	8	1	BOOL	PACI Digital Input Bit 08
TPADINBIT09	14	9	1	BOOL	PACI Digital Input Bit 09
TPADINBIT10	14	10	1	BOOL	PACI Digital Input Bit 10
TPADINBIT11	14	11	1	BOOL	PACI Digital Input Bit 11

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TPADINBIT12	14	12	1	BOOL	PACI Digital Input Bit 12
TPADINBIT13	14	13	1	BOOL	PACI Digital Input Bit 13
TPADINBIT14	14	14	1	BOOL	PACI Digital Input Bit 14
TPADINBIT15	14	15	1	BOOL	PACI Digital Input Bit 15
TPAMATTSTSIN	16	0	1	U12	MATT_STS_IN field in SOH
TPAFSSSIN1	18	0	1	U12	Fine Sun Sensor Sine 1
TPAFSSCOSIN1	20	0	1	U12	Fine Sun Sensor Cosine 1
TPAGPACH03	22	0	1	U12	BAT PRESS 1
TPAGPACH04	24	0	1	U12	BAT PRESS 2
TPAGPACH05	26	0	1	U12	MAG X OUTPUT
TPAGPACH06	28	0	1	U12	MAG Z OUTPUT
TPAGPACH07	30	0	1	U12	MAG Y OUTPUT
TPAGPACH08	32	0	1	U12	RCV CARRIER LOOP STRESS
TPAGPACH09	34	0	1	U12	RCV SIGNAL STRENGTH
TPAGPACH10	36	0	1	U12	XMT CONVERTER VOLTAGE
TPAGPACH11	38	0	1	U12	XMT PWR AMP TEMP
TPAGPACH12	40	0	1	U12	XMT PWR SPLY TEMP
TPAGPACH13	42	0	1	U12	XMT RF OUTPUT PWR
TPAGPACH14	44	0	1	U12	MAGNETOMETER TEMP
TPAGPACH15	46	0	1	U12	FSE SOH MONITOR
TPAGPACH16	48	0	1	U12	SSR +5V SOH
TPAGPACH17	50	0	1	U12	SSR +3.3V SOH
TPAGPACH18	52	0	1	U12	ESSENTIAL +5V MONITOR
TPAGPACH19	54	0	1	U12	CPU +5V MONITOR
TPAGPACH20	56	0	1	U12	TORQ ROD Z RED CURR
TPAGPACH21	58	0	1	U12	BAT CURRENT
TPAGPACH22	60	0	1	U12	BAT MID VOLTAGE
TPAGPACH23	62	0	1	U12	BAT TEMP 1
TPAGPACH24	64	0	1	U12	BAT TEMP 2
TPAGPACH25	66	0	1	U12	BAT VOLTAGE
TPAGPACH26	68	0	1	U12	CCB TRANSISTORS ON
TPAGPACH27	70	0	1	U12	SOLAR ARRAY CURRENT
TPAGPACH28	72	0	1	U12	VT CURVE SELECTED
TPAGPACH29	74	0	1	U12	ESSENTIAL BUS CURRENT
TPAGPACH30	76	0	1	U12	ESSENTIAL +15V MONITOR
TPAGPACH31	78	0	1	U12	NEB1 BUS CURRENT
TPAGPACH32	80	0	1	U12	IDPU HEATER BUS CURRENT
TPAGPACH33	82	0	1	U12	NEB2 BUS CURRENT
TPAGPACH34	84	0	1	U12	IDPU CURRENT
TPAGPACH35	86	0	1	U12	CRYO CURRENT

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TPAGPACH36	88	0	1	U12	IDPU SWITCHED LOADS CURRENT
TPAGPACH37	90	0	1	U12	TORQ ROD X CURRENT
TPAGPACH38	92	0	1	U12	TORQ ROD Y CURRENT
TPAGPACH39	94	0	1	U12	TORQ ROD Z PRI CURR
TPAGPACH40	96	0	1	U12	ESSENTIAL +15V MONITOR
TPAAD590CH01	98	0	1	U12	FSE TEMP
TPAAD590CH02	100	0	1	U12	INERTIA ADJUST DEVICE 1 TEMP
TPAAD590CH03	102	0	1	U12	INERTIA ADJUST DEVICE 2 TEMP
TPAAD590CH04	104	0	1	U12	SEM CHASSIS TEMP
TPAAD590CH05	106	0	1	U12	SEM DC-DC CONV TEMP
TPAAD590CH06	108	0	1	U12	SEM PRECISION CLK TEMP
TPAAD590CH07	110	0	1	U12	SSR TEMP
TPAAD590CH08	112	0	1	U12	TORQ ROD X TEMP
TPAAD590CH09	114	0	1	U12	TORQ ROD Y TEMP
TPAAD590CH10	116	0	1	U12	TORQ ROD Z TEMP
TPAAD590CH11	118	0	1	U12	TRANSPONDER EXT TEMP
TPAAD590CH12	120	0	1	U12	DECK MLI TEMP
TPAAD590CH13	122	0	1	U12	IDPU TEMP
TPAAD590CH14	124	0	1	U12	IPC TEMP
TPAAD590CH15	126	0	1	U12	CPC TEMP
TPAAD590CH16	128	0	1	U12	SPECTROMETER TEMP
TPAAD590CH17	130	0	1	U12	RAS TEMP
TPAAD590CH18	132	0	1	U12	AD590 Channel 18
TPAAD590CH19	134	0	1	U12	AD590 Channel 19
TPAAD590CH20	136	0	1	U12	AD590 Channel 20
TPAAD590CH21	138	0	1	U12	AD590 Channel 21
TPAAD590CH22	140	0	1	U12	AD590 Channel 22
TPAAD590CH23	142	0	1	U12	AD590 Channel 23
TPAAD590CH24	144	0	1	U12	AD590 Channel 24
TPACSSCH1	146	0	1	U12	Coarse Sun Sensor Channel 1
TPACSSCH2	148	0	1	U12	Coarse Sun Sensor Channel 2
TPACSSCH3	150	0	1	U12	Coarse Sun Sensor Channel 3
TPACSSCH4	152	0	1	U12	Coarse Sun Sensor Channel 4
TPACSSCH5	154	0	1	U12	Coarse Sun Sensor Channel 5
TPACSSCH6	156	0	1	U12	Coarse Sun Sensor Channel 6
TPACSSCH7	158	0	1	U12	Coarse Sun Sensor Channel 7
TPACSSCH8	160	0	1	U12	Coarse Sun Sensor Channel 8
TPAPRTCH1	162	0	1	U12	BAT CHASSIS TEMP
TPAPRTCH2	164	0	1	U12	SOLAR WING 1 FRONT TEMP
TPAPRTCH3	166	0	1	U12	SOLAR WING 2 FRONT TEMP

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TPAPRTCH4	168	0	1	U12	SOLAR WING 3 FRONT TEMP
TPAPRTCH5	170	0	1	U12	SOLAR WING 4 FRONT TEMP
TPAPRTCH6	172	0	1	U12	IAD 1 POSITION
TPAPRTCH7	174	0	1	U12	IAD 2 POSITION
TPAPRTCH8	176	0	1	U12	Spare
TPAA2DGAIN	178	0	1	U12	PACI A2D_GAIN_SET Telemetry Channel
TPAFSSSIN2	180	0	1	U12	Fine Sun Sensor Sine 2
TPAFSSCOSIN2	182	0	1	U12	Fine Sun Sensor Cosine 2
TPAFSSDIG1	184	0	1	U12	Fine Sun Sensor Digital 1
TPAFSSDIG2	186	0	1	U12	Fine Sun Sensor Digital 2
TFSWVERSL2	200	0	12	BOOL	Flight Software Version Level 2
TFSWVERSION	200	0	1	U1234	Flight Software Version
TFSWVERSL1	200	12	4	BOOL	Flight Software Version Level 1
TFSWVERSL4	202	0	12	BOOL	Flight Software Version Level 4
TFSWVERSL3	202	12	4	BOOL	Flight Software Version Level 3
TFMRCVCBINT	204	0	1	BOOL	Currently receiving CIB Codeblock Received interrupt
TFMFLAGBYTE2	204	0	1	UB	Fault Management Flag byte 2
TFMRCVTLMINT	204	1	1	BOOL	Currently receiving CIB Telemetry Buffer Available
TFMRCV1HZINT	204	2	1	BOOL	Currently receiving PACI 1 Hz Bus Tick interrupt
TFMRCV8HZINT	204	3	1	BOOL	Currently receiving PACI 8 Hz Analog Scan interrupt
TFMRCVPLINT	204	4	1	BOOL	Currently receiving PACI IDPU Data Ready interrupt
TFMRCVSSRINT	204	5	1	BOOL	Currently receiving PACI SSR Data Ready interrupt
TFMRCVCPUINT	204	6	1	BOOL	Currently receiving CPU 64Hz Interrupt.
TACTCRECVD	205	0	1	UB	# of ACS TCs received
TACTCREJECT	206	0	1	UB	# of ACS TCs that failed verification
TACTCERRORS	207	0	1	UB	# of ACS TCs that failed to execute
TDLTCRECVD	208	0	1	UB	# of Downlink TCs received
TDLTCREJECT	209	0	1	UB	# of Downlink TCs that failed verification
TDLTCERRORS	210	0	1	UB	# of Downlink TCs that failed to execute
TFMTCRECVD	211	0	1	UB	# of Fault Management TCs received
TFMTCREJECT	212	0	1	UB	# of Fault Management TCs that failed verification
TFMTCERRORS	213	0	1	UB	# of Fault Management TCs that failed to execute
TPLTCRECVD	214	0	1	UB	# of IDPU Task TCs received
TPLTCREJECT	215	0	1	UB	# of IDPU Task TCs that failed verification
TPLTCERRORS	216	0	1	UB	# of IDPU Task TCs that failed to execute
TPCTCRECVD	217	0	1	UB	# of PCB Task TCs received
TPCTCREJECT	218	0	1	UB	# of PCB Task TCs that failed verification
TPCTCERRORS	219	0	1	UB	# of PCB Task TCs that failed to execute
TSCTCRECVD	220	0	1	UB	# of Command Processor TCs received
TSCTCREJECT	221	0	1	UB	# of Command Processor TCs that failed verification

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSCTCERRORS	222	0	1	UB	# of Command Processor TCs that failed to execute
TSMTCRECV	223	0	1	UB	# of Storage Manager TCs received
TSMTCREJECT	224	0	1	UB	# of Storage Manager TCs that failed verification
TSMTCERRORS	225	0	1	UB	# of Storage Manager TCs that failed to execute
TSOTCRECV	226	0	1	UB	# of SOH Task TCs received
TSOTCREJECT	227	0	1	UB	# of SOH Task TCs that failed verification
TSOTCERRORS	228	0	1	UB	# of SOH Task TCs that failed to execute
TSSTCRECV	229	0	1	UB	# of SSR Task TCs received
TSSTCREJECT	230	0	1	UB	# of SSR Task TCs that failed verification
TSSTCERRORS	231	0	1	UB	# of SSR Task TCs that failed to execute
TUPTCRECV	232	0	1	UB	# of Uplink Task TCs received.
TUPTCREJECT	233	0	1	UB	# of Uplink Task TCs that failed verification.
TUPTCERRORS	234	0	1	UB	# of Uplink Task TCs that failed to execute.
TCBTCRECV	235	0	1	UB	Total number of telecommands received from CIB.
TCBTCREJECT	236	0	1	UB	Total number of telecommands rejected from CIB.
TCBTCERRORS	237	0	1	UB	Total number of telecommand errors received from
TOTTCRECV	238	0	1	UB	Total number of telecommands processed from all
TOTTCREJECT	239	0	1	UB	Total number of telecommands processed that were
TOTTCERRORS	240	0	1	UB	Total number of telecommands processed that resulted in errors
TSSFLAGBYTE1	241	0	1	UB	Various SSR Task Flags
TSSRDPTRVLD	241	0	1	BOOL	Indicates whether TSSLSTRDPTR is valid (1 = valid)
TSSWRTPTRVLD	241	1	1	BOOL	Indicates whether TSSLSTWRTPTR is valid (1 =
TSSRTMSCIPRG	241	2	1	BOOL	Real-time IDPU science data playback in progress.
TSSSTDSCIPRG	241	3	1	BOOL	Stored IDPU science data playback in progress.
TSSREDACBYPS	241	4	1	BOOL	Indicates EDAC bypass during playback was
TSSRCRDINPRG	241	5	1	BOOL	Indicates that FSW received record TC; reset on stop record TC
TSSNHRTBEAT	241	6	1	BOOL	Indicates receiving 1Hz SSR Normal Telemetry
TSSPHRTBEAT	241	7	1	BOOL	Indicates receiving 1 Hz SSR Pointer Status
TSSLSTRDPTR	242	0	1	U1234	Last stored science playback position
TSSLSTWRTPTR	246	0	1	U1234	Last stored science record position
TSSCRSPCMDID	250	0	1	UB	SSR command response telemetry command Id.
TSSCRSPRTNCD	251	0	1	UB	SSR command response telemetry return code.
TSSCURWRTPTR	252	0	1	U1234	Row Offset of write pointer from SSR Pointer Status
TSSCURRDPTTR	256	0	1	U1234	Row Offset of read pointer from SSR Pointer Status
TSSRDPTIPRG	260	0	1	BOOL	Indicates that an SSR Data Port Reset Operation is in progress
TSSR1HZPRCEN	260	1	1	BOOL	SSR 1Hz processing is enabled
TSSRCMDRSPEN	260	2	1	BOOL	SSR Command Response telemetry enabled
TSMEEP1FSWR	260	3	1	BOOL	Indicates that the EEPROM1 Filesystem is enabled for writing

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMEEP2FSWR	260	4	1	BOOL	Indicates that the EEPROM2 Filesystem is enabled for writing
TDLTXBYPASS	260	6	1	BOOL	The Tx does not need to be on to downlink stored tlm
TPCTXSWENBL	260	7	1	BOOL	The Transmitter Power Switch is enable to be turned
TSCRTSRECV	261	0	1	U12	Total of all RTS stored telecommands processed
TSCRTSREJECT	263	0	1	U12	Total of all RTS stored telecommands that failed
TSCRTSERRORS	265	0	1	U12	Total of all RTS stored telecommands that failed to
TSCRTSLICDST	267	0	1	UB	Status of the last invalid RTS stored telecommand
TSCRTSLICDRI	268	0	1	UB	ID of the RTS containing the last invalid RTS stored
TSCRTSLICDIX	269	0	1	UB	Index of the last invalid RTS stored telecommand.
TSCRTSLICDTS	270	0	1	U1234	Timestamp of the last invalid RTS stored telecommand.
TSCRTSNRACTV	274	0	1	UB	Number of active-suspended RTSs
TSCRTSNRACTH	275	0	1	UB	High-Water mark for number of active-suspended
TSCATSRECV	276	0	1	U12	Total of all ATS stored telecommands processed
TSCATSREJECT	278	0	1	U12	Total of all ATS stored telecommands that failed
TSCATSERRORS	280	0	1	U12	Total of all ATS stored telecommands that failed to
TSCATSLICDST	282	0	1	UB	Status of the last invalid ATS stored telecommand
TSCATSLICDRI	283	0	1	UB	ID of the ATS containing the last invalid ATS stored
TSCATSLICDTS	284	0	1	TIME40	Timestamp of the last invalid ATS stored telecommand
TSCATSLICDIX	288	0	1	U12	Index of the last invalid ATS stored telecommand
TSCATSPAVSSI	290	0	1	UB	ID of the current or previously active ATS
TSCATSNTCDIX	291	0	1	U12	Index of the next stored telecommand to execute in the
TSCATSVRFYID	293	0	1	UB	ID of the last ATS table verified
TFMUNKNINTR	294	0	1	UB	Counts number of unknown interrupts that occur
TFMSBEDACNUM	295	0	1	UB	Number of RAD6000 CPU EDAC Single Bit Errors
TFMSBEDACADR	296	0	1	U1234	CPU Address of last RAD6000 CPU EDAC Single Bit
TPLSASSEGMENT	300	0	16	UB	IDPU Low Speed Telemetry SAS Segment
TPLSASSEGX1	300	0	1	SB	Payload SAS Segment - X1 count
TPLSASSEGY1	301	0	1	SB	Payload SAS Segment - Y1 count
TPLSASSEGX2	302	0	1	SB	Payload SAS Segment - X2 count
TPLSASSEGY2	303	0	1	SB	Payload SAS Segment - Y2 count
TPLSASSEGX3	304	0	1	SB	Payload SAS Segment - X3 count
TPLSASSEGY3	305	0	1	SB	Payload SAS Segment - Y3 count
TPLSASSEGX4	306	0	1	SB	Payload SAS Segment - X4 count
TPLSASSEGY4	307	0	1	SB	Payload SAS Segment - Y4 count
TPLSASSEGX5	308	0	1	SB	Payload SAS Segment - X5 count
TPLSASSEGY5	309	0	1	SB	Payload SAS Segment - Y5 count
TPLSASSEGX6	310	0	1	SB	Payload SAS Segment - X6 count
TPLSASSEGY6	311	0	1	SB	Payload SAS Segment - Y6 count
TPLSASSEGX7	312	0	1	SB	Payload SAS Segment - X7 count

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TPLSASSEGY7	313	0	1	SB	Payload SAS Segment - Y7 count
TPLSASSEGX8	314	0	1	SB	Payload SAS Segment - X8 count
TPLSASSEGY8	315	0	1	SB	Payload SAS Segment - Y8 count
TPACMDDIGO00	316	0	1	BOOL	Last commanded PACI Digital Output Bit 0
TPACMDDIGOUT	316	0	1	U12	Last commanded PACI Digital Output Word
TPACMDDIGO01	316	1	1	BOOL	Last commanded PACI Digital Output Bit 1
TPACMDDIGO02	316	2	1	BOOL	Last commanded PACI Digital Output Bit 2
TPACMDDIGO03	316	3	1	BOOL	Last commanded PACI Digital Output Bit 3
TPACMDDIGO04	316	4	1	BOOL	Last commanded PACI Digital Output Bit 4
TPACMDDIGO05	316	5	1	BOOL	Last commanded PACI Digital Output Bit 5
TPACMDDIGO06	316	6	1	BOOL	Last commanded PACI Digital Output Bit 6
TPACMDDIGO07	316	7	1	BOOL	Last commanded PACI Digital Output Bit 7
TPACMDDIGO08	316	8	1	BOOL	Last commanded PACI Digital Output Bit 8
TPACMDDIGO09	316	9	1	BOOL	Last commanded PACI Digital Output Bit 9
TPACMDDIGO10	316	10	1	BOOL	Last commanded PACI Digital Output Bit 10
TPACMDDIGO11	316	11	1	BOOL	Last commanded PACI Digital Output Bit 11
TPACMDDIGO12	316	12	1	BOOL	Last commanded PACI Digital Output Bit 12
TPACMDDIGO13	316	13	1	BOOL	Last commanded PACI Digital Output Bit 13
TPACMDDIGO14	316	14	1	BOOL	Last commanded PACI Digital Output Bit 14
TPACMDDIGO15	316	15	1	BOOL	Last commanded PACI Digital Output Bit 15
TCBSYSRSTCNT	318	0	2	BOOL	CIB VME SysReset count (range is 0 to 2)
TCBWDTREG	318	0	1	U12	CIB Watchdog/SysReset Count Register
TCBWDTCOUNT	318	2	6	BOOL	CIB Watchdog Timer Power Cycle Count
TCBWDTENSTAT	318	14	1	BOOL	CIB Watchdog Enable Status
TCBWDTCNTDWN	318	15	1	BOOL	CIB Watchdog 60 second countdown in progress
TPLTLMRCTIME	320	0	1	TIME40	Time when the IDPU telemetry was received
TPLCMDTIME	324	0	1	U4321	IDPU Command - Status Segment - Time
TPLCMDSSR	328	0	1	UB	IDPU Command - Status Segment - SSR
TPLCMDPOWER	329	0	1	UB	IDPU Command - Status Segment - Power
TPLCMDTC	330	0	1	UB	IDPU Command - Status Segment - TC
TPLCMDACS	331	0	1	UB	IDPU Command - Status Segment - ACS
TPLCMDRECVD	332	0	1	UB	IDPU Command - Total number of TCs received
TPLCMDREJECT	333	0	1	UB	DPU Command - Total number of TCs rejected
TPLCMDSENT	334	0	1	UB	IDPU Command - Number of payload TCs last sent
TSMMLDRECVD	340	0	1	UB	# of SMMEMLOAD commands received
TSMMLDREJCT	341	0	1	UB	# of SMMEMLOAD commands rejected
TSMMPYRECVD	342	0	1	UB	# of SMMEMCOPY commands received
TSMMPYREJCT	343	0	1	UB	# of SMMEMCOPY commands rejected
TSMTLDRECVD	344	0	1	UB	# of SMTBLLOAD commands received
TSMTLDREJCT	345	0	1	UB	# of SMTBLLOAD commands rejected

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMTCMTRECVD	346	0	1	UB	# of SMTBLCOMMIT commands received
TSMTCMTREJCT	347	0	1	UB	# of SMTBLCOMMIT commands rejected
TSMOPSTATUS	348	0	1	UB	Table/memory operations status.
TSMTBLID	349	0	1	UB	Table ID currently selected.
TSMRCTYPE	350	0	1	UB	Table/memory operations source type.
TSMDESTTYPE	351	0	1	UB	Table/memory operations destination type.
TSMSTARTLOC	352	0	1	U1234	Starting location of load/copy/dump (address/offset)
TSMCOPYLOC	356	0	1	U1234	Destination address of memory copy
TSMNUMBYTES	360	0	1	U12	Number of bytes to dump.
TSMCOPIES	362	0	1	UB	# of copies of dump to transmit.
TSMCPYREMAIN	363	0	1	UB	# of remaining copies to dump.
TSMATSSTAMPA	364	0	1	U1234	Creation Timestamp of ATS Table A
TSMATSSTMPAI	364	0	1	TIME40	Creation Timestamp of ATS Table A (TIME40)
TSMATSSTMPBI	368	0	1	TIME40	Creation Timestamp of ATS Table B (TIME40)
TSMATSSTAMPB	368	0	1	U1234	Creation Timestamp of ATS Table B
TSMTBLNUM000	372	0	1	BOOL	Indicates whether table 000 has been loaded
TSMTBLLOADED	372	0	13	UB	A boolean indicating the loaded/not loaded state of each
TSMTBLNUM001	372	1	1	BOOL	Indicates whether table 001 has been loaded
TSMTBLNUM002	372	2	1	BOOL	Indicates whether table 002 has been loaded
TSMTBLNUM003	372	3	1	BOOL	Indicates whether table 003 has been loaded
TSMTBLNUM004	372	4	1	BOOL	Indicates whether table 004 has been loaded
TSMTBLNUM005	372	5	1	BOOL	Indicates whether table 005 has been loaded
TSMTBLNUM006	372	6	1	BOOL	Indicates whether table 006 has been loaded
TSMTBLNUM007	372	7	1	BOOL	Indicates whether table 007 has been loaded
TSMTBLNUM008	373	0	1	BOOL	Indicates whether table 008 has been loaded
TSMTBLNUM009	373	1	1	BOOL	Indicates whether table 009 has been loaded
TSMTBLNUM010	373	2	1	BOOL	Indicates whether table 010 has been loaded
TSMTBLNUM011	373	3	1	BOOL	Indicates whether table 011 has been loaded
TSMTBLNUM012	373	4	1	BOOL	Indicates whether table 012 has been loaded
TSMTBLNUM013	373	5	1	BOOL	Indicates whether table 013 has been loaded
TSMTBLNUM014	373	6	1	BOOL	Indicates whether table 014 has been loaded
TSMTBLNUM015	373	7	1	BOOL	Indicates whether table 015 has been loaded
TSMTBLNUM016	374	0	1	BOOL	Indicates whether table 016 has been loaded
TSMTBLNUM017	374	1	1	BOOL	Indicates whether table 017 has been loaded
TSMTBLNUM018	374	2	1	BOOL	Indicates whether table 018 has been loaded
TSMTBLNUM019	374	3	1	BOOL	Indicates whether table 019 has been loaded
TSMTBLNUM020	374	4	1	BOOL	Indicates whether table 020 has been loaded
TSMTBLNUM021	374	5	1	BOOL	Indicates whether table 021 has been loaded
TSMTBLNUM022	374	6	1	BOOL	Indicates whether table 022 has been loaded
TSMTBLNUM023	374	7	1	BOOL	Indicates whether table 023 has been loaded

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMTBLNUM024	375	0	1	BOOL	Indicates whether table 024 has been loaded
TSMTBLNUM025	375	1	1	BOOL	Indicates whether table 025 has been loaded
TSMTBLNUM026	375	2	1	BOOL	Indicates whether table 026 has been loaded
TSMTBLNUM027	375	3	1	BOOL	Indicates whether table 027 has been loaded
TSMTBLNUM028	375	4	1	BOOL	Indicates whether table 028 has been loaded
TSMTBLNUM029	375	5	1	BOOL	Indicates whether table 029 has been loaded
TSMTBLNUM030	375	6	1	BOOL	Indicates whether table 030 has been loaded
TSMTBLNUM031	375	7	1	BOOL	Indicates whether table 031 has been loaded
TSMTBLNUM032	376	0	1	BOOL	Indicates whether table 032 has been loaded
TSMTBLNUM033	376	1	1	BOOL	Indicates whether table 033 has been loaded
TSMTBLNUM034	376	2	1	BOOL	Indicates whether table 034 has been loaded
TSMTBLNUM035	376	3	1	BOOL	Indicates whether table 035 has been loaded
TSMTBLNUM036	376	4	1	BOOL	Indicates whether table 036 has been loaded
TSMTBLNUM037	376	5	1	BOOL	Indicates whether table 037 has been loaded
TSMTBLNUM038	376	6	1	BOOL	Indicates whether table 038 has been loaded
TSMTBLNUM039	376	7	1	BOOL	Indicates whether table 039 has been loaded
TSMTBLNUM040	377	0	1	BOOL	Indicates whether table 040 has been loaded
TSMTBLNUM041	377	1	1	BOOL	Indicates whether table 041 has been loaded
TSMTBLNUM042	377	2	1	BOOL	Indicates whether table 042 has been loaded
TSMTBLNUM043	377	3	1	BOOL	Indicates whether table 043 has been loaded
TSMTBLNUM044	377	4	1	BOOL	Indicates whether table 044 has been loaded
TSMTBLNUM045	377	5	1	BOOL	Indicates whether table 045 has been loaded
TSMTBLNUM046	377	6	1	BOOL	Indicates whether table 046 has been loaded
TSMTBLNUM047	377	7	1	BOOL	Indicates whether table 047 has been loaded
TSMTBLNUM048	378	0	1	BOOL	Indicates whether table 048 has been loaded
TSMTBLNUM049	378	1	1	BOOL	Indicates whether table 059 has been loaded
TSMTBLNUM050	378	2	1	BOOL	Indicates whether table 050 has been loaded
TSMTBLNUM051	378	3	1	BOOL	Indicates whether table 051 has been loaded
TSMTBLNUM052	378	4	1	BOOL	Indicates whether table 052 has been loaded
TSMTBLNUM053	378	5	1	BOOL	Indicates whether table 053 has been loaded
TSMTBLNUM054	378	6	1	BOOL	Indicates whether table 054 has been loaded
TSMTBLNUM055	378	7	1	BOOL	Indicates whether table 055 has been loaded
TSMTBLNUM056	379	0	1	BOOL	Indicates whether table 056 has been loaded
TSMTBLNUM057	379	1	1	BOOL	Indicates whether table 057 has been loaded
TSMTBLNUM058	379	2	1	BOOL	Indicates whether table 058 has been loaded
TSMTBLNUM059	379	3	1	BOOL	Indicates whether table 069 has been loaded
TSMTBLNUM060	379	4	1	BOOL	Indicates whether table 060 has been loaded
TSMTBLNUM061	379	5	1	BOOL	Indicates whether table 061 has been loaded
TSMTBLNUM062	379	6	1	BOOL	Indicates whether table 062 has been loaded
TSMTBLNUM063	379	7	1	BOOL	Indicates whether table 063 has been loaded

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMTBLNUM064	380	0	1	BOOL	Indicates whether table 064 has been loaded
TSMTBLNUM065	380	1	1	BOOL	Indicates whether table 065 has been loaded
TSMTBLNUM066	380	2	1	BOOL	Indicates whether table 066 has been loaded
TSMTBLNUM067	380	3	1	BOOL	Indicates whether table 067 has been loaded
TSMTBLNUM068	380	4	1	BOOL	Indicates whether table 068 has been loaded
TSMTBLNUM069	380	5	1	BOOL	Indicates whether table 079 has been loaded
TSMTBLNUM070	380	6	1	BOOL	Indicates whether table 070 has been loaded
TSMTBLNUM071	380	7	1	BOOL	Indicates whether table 071 has been loaded
TSMTBLNUM072	381	0	1	BOOL	Indicates whether table 072 has been loaded
TSMTBLNUM073	381	1	1	BOOL	Indicates whether table 073 has been loaded
TSMTBLNUM074	381	2	1	BOOL	Indicates whether table 074 has been loaded
TSMTBLNUM075	381	3	1	BOOL	Indicates whether table 075 has been loaded
TSMTBLNUM076	381	4	1	BOOL	Indicates whether table 076 has been loaded
TSMTBLNUM077	381	5	1	BOOL	Indicates whether table 077 has been loaded
TSMTBLNUM078	381	6	1	BOOL	Indicates whether table 078 has been loaded
TSMTBLNUM079	381	7	1	BOOL	Indicates whether table 079 has been loaded
TSMTBLNUM080	382	0	1	BOOL	Indicates whether table 080 has been loaded
TSMTBLNUM081	382	1	1	BOOL	Indicates whether table 081 has been loaded
TSMTBLNUM082	382	2	1	BOOL	Indicates whether table 082 has been loaded
TSMTBLNUM083	382	3	1	BOOL	Indicates whether table 083 has been loaded
TSMTBLNUM084	382	4	1	BOOL	Indicates whether table 084 has been loaded
TSMTBLNUM085	382	5	1	BOOL	Indicates whether table 085 has been loaded
TSMTBLNUM086	382	6	1	BOOL	Indicates whether table 086 has been loaded
TSMTBLNUM087	382	7	1	BOOL	Indicates whether table 087 has been loaded
TSMTBLNUM088	383	0	1	BOOL	Indicates whether table 088 has been loaded
TSMTBLNUM089	383	1	1	BOOL	Indicates whether table 089 has been loaded
TSMTBLNUM090	383	2	1	BOOL	Indicates whether table 090 has been loaded
TSMTBLNUM091	383	3	1	BOOL	Indicates whether table 091 has been loaded
TSMTBLNUM092	383	4	1	BOOL	Indicates whether table 092 has been loaded
TSMTBLNUM093	383	5	1	BOOL	Indicates whether table 093 has been loaded
TSMTBLNUM094	383	6	1	BOOL	Indicates whether table 094 has been loaded
TSMTBLNUM095	383	7	1	BOOL	Indicates whether table 095 has been loaded
TSMTBLNUM096	384	0	1	BOOL	Indicates whether table 096 has been loaded
TSMTBLNUM097	384	1	1	BOOL	Indicates whether table 097 has been loaded
TSMTBLNUM098	384	2	1	BOOL	Indicates whether table 098 has been loaded
TSMTBLNUM099	384	3	1	BOOL	Indicates whether table 099 has been loaded
TSMTBLNUM100	384	4	1	BOOL	Indicates whether table 100 has been loaded
TSMTBLNUM101	384	5	1	BOOL	Indicates whether table 101 has been loaded
TSMTBLNUM102	384	6	1	BOOL	Indicates whether table 102 has been loaded
TSMTBLNUM103	384	7	1	BOOL	Indicates whether table 103 has been loaded

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMLSTOPSTAT	387	0	1	UB	Last table/memory operations status.
TSMBYTESREMN	388	0	1	U12	Number of bytes remaining to dump
TSMSELTBLSIZ	392	0	1	U1234	Size of the currently selected table
TPCADBSAPDIS	396	0	1	U12	ADB SAPDIS Register
TADBSEPCOUNT	396	0	9	BOOL	The current automated array release count
TADBSTSEP1	396	9	1	BOOL	Raw separation #1 input
TADBSTSEP2	396	10	1	BOOL	Raw separation #2 input
TADBSTSEP3	396	11	1	BOOL	Raw separation #3 input
TADBSTFSEP1	396	12	1	BOOL	Filtered separation #1 input
TADBSTFSEP2	396	13	1	BOOL	Filtered separation #2 input
TADBSTFSEP3	396	14	1	BOOL	Filtered separation #3 input
TADBSTOVERRD	396	15	1	BOOL	Three correct pulses occurred to start array release
TSCRTSVRFYID	398	0	1	UB	ID of the last RTS table verified
TPCBCNTL	399	0	1	U12	PCB Board's PCBCNTL Register
TPCBCNTL_UVEN	399	0	1	BOOL	PCBCNTL UVEN: Under Voltage Enable
TPCBCNTL_LUV1	399	1	1	BOOL	PCBCNTL LUV1: Latched Under Voltage #1 output
TPCBCNTL_LUV2	399	2	1	BOOL	PCBCNTL LUV2: Latched Under Voltage #2 output
TPCBCNTL_LUV3	399	3	1	BOOL	PCBCNTL LUV3: Latched Under Voltage #3 output
TPCBCNTL_UV1	399	4	1	BOOL	PCBCNTL UV1: Raw Under Voltage #1 input
TPCBCNTL_UV2	399	5	1	BOOL	PCBCNTL UV2: Raw Under Voltage #2 input
TPCBCNTL_UV3	399	6	1	BOOL	PCBCNTL UV3: Raw Under Voltage #3 input
TPCBCNTL_OCN1	399	7	1	BOOL	Indicates that NEB1 Over Current event or LUV2
TPCBCNTL_OCIH	399	8	1	BOOL	Indicates that IDPUH Over Current or LUV2 occurred
TPCBCNTL_OCN2	399	9	1	BOOL	Indicates that NEB2 Over Current or LUV2 occurred
TPCBCNTL_OCCR	399	10	1	BOOL	Indicates that CRYO Over Current or LUV2 occurred
TPCBCNTL_OCID	399	11	1	BOOL	Indicates that IDPU Over Current or LUV2 occurred
TPCBCNTL_OCI2	399	12	1	BOOL	Indicates that IDPU28 Over Current or LUV2 occurred
TPCBCNTL_UVS1	399	13	1	BOOL	When set, degrades the UV1 trip level. (clear =
TPCBCNTL_UVS2	399	14	1	BOOL	When set, degrades the UV2 trip level. (clear =
TPCBCNTL_UVS3	399	15	1	BOOL	When set, degrades the UV3 trip level. (clear =
TPCBS1_NEB1	401	0	1	BOOL	PCBSTA1 NEB1_ST: Non-essential Bus #1 Bus Status
PCBSTA1	401	0	1	UB	PCB Board's PCBSTA1 Register (Primary Bus Status
TPCBS1_IDPUH	401	1	1	BOOL	PCBSTA1 IDPUH_ST: IDPU Heater Bus Status
TPCBS1_NEB2	401	2	1	BOOL	PCBSTA1 NEB2_ST: Non-essential Bus #2 Bus Status
TPCBS1_CRYO	401	3	1	BOOL	PCBSTA1 CYRO_ST: Cryocooler Power Status
TPCBS1_IDPU	401	4	1	BOOL	PCBSTA1 IDPU_ST: IDPU Power Bus Status
TPCBS1_IDP28	401	5	1	BOOL	PCBSTA1 IDPU28_ST: IDPU Switched 28V Power Bus Status
TPCBS1_SSR	401	6	1	BOOL	PCBSTA1 SSR_ST: Solid State Recorder Power Bus
PCBSTA2	402	0	1	U12	PCB Board's PCBSTA2 Register (Secondary Bus

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TPCBS2_FSSHT	402	0	1	BOOL	PCBSTA2 FSSHTR_ST: Fine Sun Sensor Heater
TPCBS2_SADHT	402	1	1	BOOL	PCBSTA2 SADHTR_ST: Inertia Adjustment Device Heater Status
TPCBS2_TQHTR	402	2	1	BOOL	PCBSTA2 TQHTR_ST: Torque Rod Heater Status
TPCBS2_XPHTR	402	3	1	BOOL	PCBSTA2 XPHTR_ST: Transponder Heater Status
TPCBS2_SSRHT	402	4	1	BOOL	PCBSTA2 SSRHTR_ST: Solid State Recorder Heater
TPCBS2_SPAR1	402	5	1	BOOL	PCBSTA2 SPARE1: Spare #1 Power Bus Status
TPCBS2_SEMHT	402	6	1	BOOL	PCBSTA2 SEMHTR_ST: Spacecraft Electronics Module Heater Status
TPCBS2_BATH1	402	7	1	BOOL	PCBSTA2 BATHT1: Battery Heater #1 Status
TPCBS2_XTQ	402	8	1	BOOL	PCBSTA2 XTQ_ST: X-axis torque rod power status
TPCBS2_YTQ	402	9	1	BOOL	PCBSTA2 YTQ_ST: Y-axis torque rod power status
TPCBS2_SPAR2	402	10	1	BOOL	PCBSTA2 SPARE2: Spare #2 Power Bus Status
TPCBS2_IAD1	402	11	1	BOOL	PCBSTA2 IAD1_ST: Inerial Adjustment Device 1 (IAD1) Status
TPCBS2_IAD2	402	12	1	BOOL	PCBSTA2 IAD2_ST: Inerial Adjustment Device 2 (IAD2) Status
TPCBS2_BATH2	402	13	1	BOOL	PCBSTA2 BATHTR2: Battery Heater #2 Status
TPCBS2_FSS	402	14	1	BOOL	PCBSTA2 FSS_ST: Fine Sun Sensor Electronics Power Bus Status
TPCBS2_XMIT	402	15	1	BOOL	PCBSTA2 XMIT_ST: Transmitter Power Bus Status
TSCRTSELAP00	404	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP01	408	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP02	412	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP03	416	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP04	420	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP05	424	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP06	428	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP07	432	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP08	436	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP09	440	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP10	444	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP11	448	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP12	452	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTSELAP13	456	0	1	U1234	Elapsed time in seconds since the RTS was started.
TFMHITLOBAT1	460	0	1	BOOL	Low BAT1 State of Charge fault response occurred
TFMFLAGBYTE1	460	0	1	UB	Fault Protection Flag bits, byte 1
TFMHITLOBAT2	460	1	1	BOOL	Low BAT2 State of Charge fault response occurred
TFMHITSUNPT	460	2	1	BOOL	Sun Pointer Error fault response occurred
TFMHITEDAC	460	4	1	BOOL	At least one PACI EDAC memory error occurred.
TFMSPCIBINT	460	5	1	BOOL	Spurious CIB interrupts occurred; CIB interrupts

TFMSPPACIINT 460 6 1 BOOL Spurious PACI interrupts occurred; PACI interrupts

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TFMHITTCLOSS	460	7	1	BOOL	Telecommand loss fault response occurred
TFMLSACSINT	461	0	1	UB	Counts PACI Analog Scan interrupt losses
TFMLSCBINT	462	0	1	UB	Counts CIB codeblock interrupt losses
TFMLSDLINT	463	0	1	UB	Counts CIB downlink buffer empty interrupt losses
TFMLSIDPUINT	464	0	1	UB	Counts PACI IDPU data receive interrupt losses
TFMLSSSRINT	465	0	1	UB	Counts PACI SSR data receive interrupt losses
TFMSECLASTTC	468	0	1	U1234	# seconds since the last telecommand was accepted
TFMEVENTSEC	472	0	1	U1234	Event Timestamp Seconds
TFMEVENTTIME	472	0	1	TIME42	SOH Event Message Timestamp
TFMEVENTSUB	476	0	1	U12	Event Timestamp Subseconds
TFMEVENTID	478	0	1	U12	SOH Event Message ID
TFMEVENTDAT1	480	0	1	U1234	Event Message Data Field 1
TFMEVENTDAT2	484	0	1	U1234	Event Message Data Field 2
TFMEDACERRCT	488	0	1	UB	Count of the number of EDAC error interrupts from
TFMBOOTDEV	489	0	1	UB	The current boot device
TFMBOOTTIME	490	0	1	U1234	Time of current image boot
TFMBOOTTIMEI	490	0	1	TIME40	FSW Boot Time in TIME40
TADBSTPCNT	494	0	10	BOOL	The IAD step count
TPCADBSTCNT	494	0	1	U12	ADB STEPCNT Register
TADBPULSECNT	494	10	2	BOOL	The IAD Pulse Count
TPCADBSTCNTL	496	0	1	U12	ADB STEPCNTL Register
TADBUPCNT	496	0	1	BOOL	IAD rotation direction; 0 = counter clockwise, 1 =
TADBIADSEL	496	1	1	BOOL	Which IAD device is selected; 0 = IAD#1, 1 = IAD#2
TADBIADXPHA	496	6	1	BOOL	Current command for the IADX Phase A
TADBIADXPB	496	7	1	BOOL	Current command for the IADX Phase B
TADBIADYPHA	496	8	1	BOOL	Current command for the IADY Phase A
TADBIADYPB	496	9	1	BOOL	Current command for the IADY Phase B
TADBSAPRI	496	10	1	BOOL	Solar array release primary bus command monitor
TADBSASEC	496	11	1	BOOL	Solar array release secondary bus command monitor
TADBSAXUP	496	12	1	BOOL	Solar array release X-axis upper command monitor
TADBSAYUP	496	13	1	BOOL	Solar array release Y-axis upper command monitor
TADBSAXLOW	496	14	1	BOOL	Solar array release X-axis lower command monitor
TADBSAYLOW	496	15	1	BOOL	Solar array release Y-axis lower command monitor
TPCADBSASTAT	498	0	1	U12	ADB SASTAT Register
TADBXUPRI	498	0	1	BOOL	Status of X-axis upper primary array release
TADBXUSEC	498	1	1	BOOL	Status of X-axis upper secondary array release
TADBXLPRI	498	2	1	BOOL	Status of X-axis lower primary array release
TADBXLSEC	498	3	1	BOOL	Status of X-axis lower secondary array release
TADBYUPRI	498	4	1	BOOL	Status of Y-axis upper primary array release
TADBYUSEC	498	5	1	BOOL	Status of Y-axis upper secondary array release

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TADBYLPRI	498	6	1	BOOL	Status of Y-axis lower primary array release
TADBYLSEC	498	7	1	BOOL	Status of Y-axis lower secondary array release
TDLENBLSOH	500	0	1	BOOL	Indicates that Stored SOH is enabled to be downlinked
TDLFLAGBYTE1	500	0	1	UB	Downlink Task Flags
TDLENBLIDIAG	500	1	1	BOOL	Indicates that stored IDPU Diagnostics are enable for downlink
TDLENBLTCLOG	500	2	1	BOOL	Indicates that stored telecommand log is enabled for downlink
TDLENBLEVENT	500	3	1	BOOL	Indicates that stored event messages are enabled for
TDLENBLSSR	500	4	1	BOOL	Indicates that stored SSR telemetry is enabled for
TDLNUMSOH	501	0	1	U12	# of SOH stored tlm frames
TDLTXWTSOH	503	0	1	UB	Transmission weight for SOH
TDLNUMTCLOG	504	0	1	UB	# of Telecommand Log stored tlm frames
TDLTXWTTCLOG	505	0	1	UB	Transmission weight for Telecommand Log
TDLNUMIDIAG	506	0	1	U12	# of IDPU Diagnostic stored tlm frames
TDLTXWTIDIAG	508	0	1	UB	Transmission weight for IDPU Diagnostic
TDLNUMSSR	509	0	1	UB	# of SSR stored tlm frames
TDLTXWTSSR	510	0	1	UB	Transmission weight for SSR
TDLNUMEVENT	511	0	1	UB	# of Message Event stored tlm frames
TDLTXWTEVENT	512	0	1	UB	Transmission weight for Message Event
TDLNUMRT	513	0	1	UB	Number of real-time telemetry frames queued for
TDLNUMRTHIGH	514	0	1	UB	High watermark for queued real-time telemetry frames
TPCBTRQCMDX	515	0	1	U12	Last commanded Torque Rod X count
TPCBTRQCMDY	517	0	1	U12	Last commanded Torque Rod Y count
TPCBTRQCMDZ1	519	0	1	U12	Last commanded primary Torque Rod Z count
TPCBTRQCMDZ2	521	0	1	U12	Last commanded redundant Torque Rod Z count
TSCATSNTCDTS	523	0	1	TIME40	Timestamp of the next stored telecommand to execute in the ATS
TFMCURPNVIDX	527	0	1	UB	Current Fault Management PNV RAM log index
TFMFLAGBYTE3	528	0	1	UB	Fault Protection Flag Byte three
TFMHITNEB1	528	0	1	BOOL	Hit NEB1 overcurrent condition
TFMHITNEB2	528	1	1	BOOL	Hit NEB2 overcurrent condition
TFMHITIDPUH	528	2	1	BOOL	Hit IDPU Heater overcurrent condition
TFMHITIDPU	528	3	1	BOOL	Hit IDPU overcurrent condition
TFMHITCRYO	528	4	1	BOOL	Hit CRYO overcurrent condition
TFMHITIDPUSW	528	5	1	BOOL	Hit IDPU Switched overcurrent condition
TEVTSSRWVRD	528	6	1	BOOL	Event Flag indicates SSR record pointer overtook read pointer
TEVTNORTFRAM	528	7	1	BOOL	Indicates that FSW allocated all real-time telemetry
TFMLS64HZTCK	529	0	1	UB	Number of times the 64 Hz Bus Tick was lost.
TFMLSBUSTCK	530	0	1	UB	Number of times the 1 Hz Bus Tick was lost.

TPACMD6_8HZ 532 0 1 BOOL PACI Command Register 6 - 8 Hz Interrupt Enable

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TPAREGCMD6	532	0	1	U12	PACI Command Register 6
TPACMD6_1HZ	532	1	1	BOOL	PACI Command Register 6 - 1 Hz Interrupt Enable
TPACMD6_IDPU	532	2	1	BOOL	PACI Command Register 6 - IDPU Data Receive Interrupt Enable
TPACMD6_SSR	532	3	1	BOOL	PACI Command Register 6 - SSR Data Receive Interrupt Enable
TPACMD6_EDAC	532	6	1	BOOL	PACI Command Register 6 - EDAC Error Interrupt
TPACMD6_ENBL	532	7	1	BOOL	PACI Command Register 6 - Master Enable
TPACMD7_8HZ	534	0	1	BOOL	PACI Command Register 7 - 8 Hz Interrupt
TPAREGCMD7	534	0	1	U12	PACI Command Register 7
TPACMD7_1HZ	534	1	1	BOOL	PACI Command Register 7 - 1 Hz Interrupt
TPACMD7_IDPU	534	2	1	BOOL	PACI Command Register 6 - IDPU Data Receive
TPACMD7_SSR	534	3	1	BOOL	PACI Command Register 6 - SSR Data Receive
TPACMD7_EDAC	534	6	1	BOOL	PACI Command Register 6 - EDAC Error Interrupt
TPACMD7_CLR	534	7	1	BOOL	PACI Command Register 6 - Master Clear
TPASTA1_SOH	536	0	1	BOOL	PACI Status Register 1 - SOH Scan Completed
TPAREGSTAT1	536	0	1	U12	PACI Status Register 1
TPASTA1_ICLK	536	2	1	BOOL	PACI Status Register 1 - PACI using internal 4 MHz
TPASTA1_PLRX	536	7	1	BOOL	PACI Status Register 1 - Done receiving IDPU
TPASTA1_PLTX	536	11	1	BOOL	PACI Status Register 1 - Done transmitting IDPU command data
TPASTA1_SSRX	536	13	1	BOOL	PACI Status Register 1 - Done receiving SSR telemetry
TPASTA1_SSTX	536	15	1	BOOL	PACI Status Register 1 - Done transmitting SSR telemetry data
TPAREGSTAT2	538	0	1	U12	PACI Status Register 2
TPASTA2_SEU	538	8	1	BOOL	PACI Status Register 2 - SEU upset detected
TPASTA2_PERR	538	10	1	BOOL	PACI Status Register 2 - IDPU Parity Error detected
TCBULCTLSTAT	540	0	1	U12	Uplink Control and Status Register
TCBUPCTLSBER	540	0	1	BOOL	Clear = 1 bit error correction; set = 3 bit detection
TCBUPCTLRACQ	540	1	1	BOOL	Clear = requires acquisition sequence; set = not
TCBUPCTLLCKA	540	2	1	BOOL	UPL A Channel Lock Status
TCBUPCTLLCKB	540	3	1	BOOL	UPL B Channel Lock Status
TCBUPCTLUPSG	540	6	1	BOOL	Clear = UPL A signals for commanding; set = UPL B
TCBUPCTLGSE	540	13	1	BOOL	Clear = GSE uplink disabled; set = GSE uplink enabled
TCBHCDRCVCNT	542	0	1	U12	HCD Data Received Counter
TCBDLCTLRATE	544	0	1	BOOL	Downlink Rate Select: 0 = low rate, 1 = high rate
TCBDLCTLSTAT	544	0	1	U12	Downlink Control and Status Register
TCBDLCTLR SOL	544	1	1	BOOL	Read-Solomon ASIC Reset. Should always be 0.
TCBDLCTLVCID	544	2	3	BOOL	SSR Virtual Channel ID
TCBDLCTLHIRT	544	5	3	BOOL	High Rate Downlink Rate
TCBDLCTLGSE	544	15	1	BOOL	Cleared = GSE outputs disabled; set = GSE output

TCBSRCTLSTAT 546 0 1 U12 SSR Control and Status Register

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TCBSRCTLSTRT	546	0	1	BOOL	SSR Start/Stop Control Bit
TCBSRCTLEOF	546	1	1	BOOL	SSR End of frame status (Hready Status)
TCBSRCTLWDEC	546	2	1	BOOL	Watchdog Enable Control (1 = Enable)
TCBMSCTLSTAT	548	0	1	U12	Miscellaneous Control and Status Register
TCBMSCTLAPE	548	2	1	BOOL	HCD APE: Address Parity Error in accessing the HCD
TCBMSCTLDPE	548	3	1	BOOL	HCD DPE: Data Parity Error in writing to HCD ASIC
TCBMSCTLARE	548	4	1	BOOL	HCD ARE: Address Range Error in accessing HCD
TCBMSCTLCDE	548	5	1	BOOL	HCD CDE: Corrected single bit Data Error in HCD
TCBMSCTLHST	548	6	1	BOOL	HCD ASIC Health Status
TCBMSCTLSP1	548	7	1	BOOL	Spare 1 Differential Channel Monitor
TCBMSCTLBUFA	548	8	1	BOOL	Telemetry Buffer A Flag. 0 = SW controlled, 1 = CIB controlled
TCBMSCTLBUFB	548	9	1	BOOL	Telemetry Buffer B Flag. 0 = SW controlled, 1 = CIB controlled
TCBMSCTLDINT	548	12	1	BOOL	Downlink Telemetry VME Interrupt Enable
TCBMSCTLUINT	548	13	1	BOOL	Uplink HCD Codeblock Received Interrupt Enable
TCBMSCTLDSTA	548	14	1	BOOL	Downlink Telemetry VME Interrupt Status
TCBMSCTLUSTA	548	15	1	BOOL	Uplink HCD Codeblock Received Interrupt Status
TCBHCDSTAT	550	0	1	U12	HCD/CRC ASIC HCDSTAT register
TCBHCDSTAT0	550	0	1	BOOL	LLInDec: 1 = loss of lock while in decode condition
TCBHCDSTAT1	550	1	1	BOOL	OvrRun: Command buffer overrun
TCBHCDSTAT2	550	2	1	BOOL	BFErr: indicates illegal double buffer condition
TCBHCDSTAT3	550	3	1	BOOL	RlyErr: relay holding register overwrite by EFC/Ground
TCBHCDSTAT8	550	8	1	BOOL	Lock: Lock signal from the CDU
TCBHCDSTAT9	550	9	1	BOOL	FlipBit: Polarity from incoming HCD data stream; 0 = inverted
TCBHCDSTAT10	550	10	1	BOOL	EFCRlyBufInUse: 1 = EFC relay holding register is in
TCBHCDSTAT11	550	11	1	BOOL	GNDRlyBufInUse: 1 = CRC relay holding register is in
TCBHCDSTAT12	550	12	1	BOOL	Aside: Set to 1 if this is the ASIDE CDS
TCBHCDSTAT13	550	13	3	BOOL	CCS: Channel Service State:
TCBCMDSTAT	552	0	1	U12	HCD Command Data Status
TCBCMDSTAT00	552	0	1	BOOL	LLInDec: 1 = loss of lock during CB receive
TCBCMDSTAT01	552	1	1	BOOL	OvrRun: 1 = overrun condition during CB receive
TCBCMDSTAT02	552	2	1	BOOL	DecodeCmd: 1 = HW commands can be received
TCBCMDSTAT03	552	3	1	BOOL	RlyErr: 1 = relay error during CB receive
TCBCMDSTAT04	552	4	1	BOOL	CorrError: 1 = correctable error during CB receive
TCBCMDSTAT05	552	5	1	BOOL	UnCorrError: 1 = uncorrectable error during CB
TCBCMDSTAT06	552	6	1	BOOL	HdrwareCmdRcvd: CB was a valid HW command
TCBCMDSTAT07	552	7	1	BOOL	InvldHrdwareCmdRcvd: CB was an invalid HW
TCBHCDINT	554	0	1	U12	HCD/CRC ASIC HCDINT register
TCBHCDINT0	554	0	1	BOOL	LLInDecMsk: Interrupt mask for LLInDec

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TCBHCDINT1	554	1	1	BOOL	OvrRunMsk: Interrupt mask for OvrRun condition
TCBHCDINT2	554	2	1	BOOL	BfErrMsk: Interrupt mask for Double Buffer Error
TCBHCDINT3	554	3	1	BOOL	RlyErrMsk: Interrupt mask for Relay Overrun Error condition
TCBHCDINT4	554	4	1	BOOL	FlagAMsk: Interrupt mask for FLAGA
TCBHCDINT5	554	5	1	BOOL	FlagBMsk: Interrupt mask for FLAGB
TCBHCDINT8	554	8	1	BOOL	LLInDec: Interrupt status for Loss of Lock in Decode
TCBHCDINT9	554	9	1	BOOL	OvrRun: Interrupt status for Overrun Error Condition
TCBHCDINT10	554	10	1	BOOL	BfErr: Interrupt status for Double Buffer Error
TCBHCDINT11	554	11	1	BOOL	FlagA: Interrupt status for FLAGA
TCBHCDINT12	554	12	1	BOOL	FlagB: Interrupt status for FLAGB
TCBHCDINT13	554	13	1	BOOL	HCD HCDINT Bit 13
TCBDLFILLPAT	556	0	1	UB	Downlink Fill Packet Fill Pattern
TCBNUMTLMPKA	557	0	1	UB	Number of telemetry packets written to buffer A
TCBNUMTLMPKB	558	0	1	UB	Number of telemetry packets written to buffer B
TCBCRCBIT0	559	0	1	BOOL	HCD CRC Bit 0
TCBCRC0	559	0	1	UB	HCD/CRC ASIC CRC0 register, bits 7:0
TCBCRCBIT1	559	1	1	BOOL	HCD CRC Bit 1
TCBCRCBIT2	559	2	1	BOOL	HCD CRC Bit 2
TCBCRCBIT3	559	3	1	BOOL	HCD CRC Bit 3
TCBCRCBIT4	559	4	1	BOOL	HCD CRC Bit 4
TCBCRCBIT5	559	5	1	BOOL	HCD CRC Bit 5
TCBCRCBIT6	559	6	1	BOOL	HCD CRC Bit 6
TCBCRCBIT7	559	7	1	BOOL	HCD CRC Bit 7
TCBCRCBIT8	560	0	1	BOOL	HCD CRC Bit 8
TCBCRC1	560	0	1	UB	HCD/CRC ASIC CRC1 register, bits 15:8
TCBCRCBIT9	560	1	1	BOOL	HCD CRC Bit 9
TCBCRCBIT10	560	2	1	BOOL	HCD CRC Bit 10
TCBCRCBIT11	560	3	1	BOOL	HCD CRC Bit 11
TCBCRCBIT12	560	4	1	BOOL	HCD CRC Bit 12
TCBCRCBIT13	560	5	1	BOOL	HCD CRC Bit 13
TCBCRCBIT14	560	6	1	BOOL	HCD CRC Bit 14
TCBCRCBIT15	560	7	1	BOOL	HCD CRC Bit 15
TCBCRC2	561	0	1	UB	HCD/CRC ASIC CRC2 register, bits 23:16
TCBCRCBIT16	561	0	1	BOOL	HCD CRC Bit 16
TCBCRCBIT17	561	1	1	BOOL	HCD CRC Bit 17
TCBCRCBIT18	561	2	1	BOOL	HCD CRC Bit 18
TCBCRCBIT19	561	3	1	BOOL	HCD CRC Bit 19
TCBCRCBIT20	561	4	1	BOOL	HCD CRC Bit 20
TCBCRCBIT21	561	5	1	BOOL	HCD CRC Bit 21

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TCBCRCBIT22	561	6	1	BOOL	HCD CRC Bit 22
TCBCRCBIT23	561	7	1	BOOL	HCD CRC Bit 23
TCBEFCBIT0	562	0	1	BOOL	HCD EFCMSK Bit 0
TCBEFCMSK0	562	0	1	UB	HCD/CRC ASIC EFCMSK0 register, bits 7:0
TCBEFCBIT1	562	1	1	BOOL	HCD EFCMSK Bit 1
TCBEFCBIT2	562	2	1	BOOL	HCD EFCMSK Bit 2
TCBEFCBIT3	562	3	1	BOOL	HCD EFCMSK Bit 3
TCBEFCBIT4	562	4	1	BOOL	HCD EFCMSK Bit 4
TCBEFCBIT5	562	5	1	BOOL	HCD EFCMSK Bit 5
TCBEFCBIT6	562	6	1	BOOL	HCD EFCMSK Bit 6
TCBEFCBIT7	562	7	1	BOOL	HCD EFCMSK Bit 7
TCBEFCBIT8	563	0	1	BOOL	HCD EFCMSK Bit 8
TCBEFCMSK1	563	0	1	UB	HCD/CRC ASIC EFCMSK0 register, bits 15:8
TCBEFCBIT9	563	1	1	BOOL	HCD EFCMSK Bit 9
TCBEFCBIT10	563	2	1	BOOL	HCD EFCMSK Bit 10
TCBEFCBIT11	563	3	1	BOOL	HCD EFCMSK Bit 11
TCBEFCBIT12	563	4	1	BOOL	HCD EFCMSK Bit 12
TCBEFCBIT13	563	5	1	BOOL	HCD EFCMSK Bit 13
TCBEFCBIT14	563	6	1	BOOL	HCD EFCMSK Bit 14
TCBEFCBIT15	563	7	1	BOOL	HCD EFCMSK Bit 15
TCBEFCMSK2	564	0	1	UB	HCD/CRC ASIC EFCMSK0 register, bits 23:16
TCBEFCBIT16	564	0	1	BOOL	HCD EFCMSK Bit 16
TCBEFCBIT17	564	1	1	BOOL	HCD EFCMSK Bit 17
TCBEFCBIT18	564	2	1	BOOL	HCD EFCMSK Bit 18
TCBEFCBIT19	564	3	1	BOOL	HCD EFCMSK Bit 19
TCBEFCBIT20	564	4	1	BOOL	HCD EFCMSK Bit 20
TCBEFCBIT21	564	5	1	BOOL	HCD EFCMSK Bit 21
TCBEFCBIT22	564	6	1	BOOL	HCD EFCMSK Bit 22
TCBEFCBIT23	564	7	1	BOOL	HCD EFCMSK Bit 23
TSCRTSID00	565	0	1	UB	ID of the Active or Suspended RTS 00
TSCRTSID01	566	0	1	UB	ID of the Active or Suspended RTS 01
TSCRTSID02	567	0	1	UB	ID of the Active or Suspended RTS 02
TSCRTSID03	568	0	1	UB	ID of the Active or Suspended RTS 03
TSCRTSID04	569	0	1	UB	ID of the Active or Suspended RTS 04
TSCRTSID05	570	0	1	UB	ID of the Active or Suspended RTS 05
TSCRTSID06	571	0	1	UB	ID of the Active or Suspended RTS 06
TSCRTSID07	572	0	1	UB	ID of the Active or Suspended RTS 07
TSCRTSID08	573	0	1	UB	ID of the Active or Suspended RTS 08
TSCRTSID09	574	0	1	UB	ID of the Active or Suspended RTS 09
TSCRTSID10	575	0	1	UB	ID of the Active or Suspended RTS 10

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSCRTSID11	576	0	1	UB	ID of the Active or Suspended RTS 11
TSCRTSID12	577	0	1	UB	ID of the Active or Suspended RTS 12
TSCRTSID13	578	0	1	UB	ID of the Active or Suspended RTS 13
TSCRTSID14	579	0	1	UB	ID of the Active or Suspended RTS 14
TSCRTSID15	580	0	1	UB	ID of the Active or Suspended RTS 15
TSCRTSSTTS00	581	0	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS01	581	1	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS02	581	2	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS03	581	3	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS04	581	4	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS05	581	5	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS06	581	6	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS07	581	7	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS08	582	0	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS09	582	1	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS10	582	2	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS11	582	3	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS12	582	4	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS13	582	5	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS14	582	6	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSSTTS15	582	7	1	BOOL	State of the RTS. 1=Active, 0=Suspended
TSCRTSNXTI00	583	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI01	584	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI02	585	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI03	586	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI04	587	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI05	588	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI06	589	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI07	590	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI08	591	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI09	592	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI10	593	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI11	594	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI12	595	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI13	596	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI14	597	0	1	UB	Index of the next stored telecommand to execute in the
TSCRTSNXTI15	598	0	1	UB	Index of the next stored telecommand to execute in the
TSCATSAVSTTS	599	0	1	BOOL	Activation state of the ATS. Active=1 or Idle=0
TSCATSSWCHPG	599	1	1	BOOL	ATS Switch is pending state
TSCATSVRFYST	599	2	1	BOOL	State of last ATS table verification (1=pass, 0=failed)

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSCRTSVRFYST	599	3	1	BOOL	State of last ATS table verification (1=pass, 0=failed)
TSSRNRMLTLM	600	0	54	UB	SSR normal telemetry.
TACTQRXCUR	654	0	1	SFP	ACS Commanded current to X torque rod
TACTQRYCUR	658	0	1	SFP	ACS Commanded current to Y torque rod
TACTQRZCUR	662	0	1	SFP	ACS Commanded current to Z torque rod
TACESTSPINRT	666	0	1	SFP	ACS estimated spin rate
TACSMAGX	670	0	1	SFP	ACS Magnetic field along X-axis
TACSMAGY	674	0	1	SFP	ACS Magnetic field along Y-axis
TACSMAGZ	678	0	1	SFP	ACS Magnetic field along Z-axis
TACSCSSX	682	0	1	SFP	ACS CCS Sun vector along X-axis
TACSCSSY	686	0	1	SFP	ACS CCS Sun vector along Y-axis
TACSCSSZ	690	0	1	SFP	ACS CCS Sun vector along Z-axis
TACSFSSX	694	0	1	SFP	ACS FSS Sun vector along X-axis
TACSFSSY	698	0	1	SFP	ACS FSS Sun vector along Y-axis
TACSFSSZ	702	0	1	SFP	ACS FSS Sun vector along Z-axis
TACTRANSVRTX	706	0	1	SFP	ACS Transverse rate along X-axis
TACTRANSVRTY	710	0	1	SFP	ACS Transverse rate along Y-axis
TACSSASX	714	0	1	SFP	ACS SAS Sun vector along X-axis
TACSSASY	718	0	1	SFP	ACS SAS Sun vector along Y-axis
TACSSASZ	722	0	1	SFP	ACS SAS Sun vector along Z-axis
TACSMODE	726	0	1	UB	ACS current mode
TACSFLAGS1	727	0	1	UB	ACS Flag Bits
TACSCSSSPI	727	0	1	BOOL	ACS CSS Sun Presence indicator
TACSSASSPI	727	1	1	BOOL	ACS SAS Sun Presence Indicator
TACINSUNSENS	727	2	1	BOOL	Sun Sensor used by ACS (0 = FSS, 1 = SAS)
TACSCMDMODE	727	3	1	BOOL	0=autonomous mode, 1=commanded mode
TACTOIDLFLG	728	0	1	UB	ACS Flag describing transition to Idle Mode
TSCRTELAP14	729	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTELAP15	733	0	1	U1234	Elapsed time in seconds since the RTS was started.
TSCRTS00ENAB	737	0	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS01ENAB	737	1	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS02ENAB	737	2	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS03ENAB	737	3	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS04ENAB	737	4	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS05ENAB	737	5	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS06ENAB	737	6	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS07ENAB	737	7	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS08ENAB	738	0	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS09ENAB	738	1	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS10ENAB	738	2	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSCRTS11ENAB	738	3	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS12ENAB	738	4	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS13ENAB	738	5	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS14ENAB	738	6	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS15ENAB	738	7	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS16ENAB	739	0	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS17ENAB	739	1	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS18ENAB	739	2	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS19ENAB	739	3	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS20ENAB	739	4	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS21ENAB	739	5	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS22ENAB	739	6	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS23ENAB	739	7	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS24ENAB	740	0	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS25ENAB	740	1	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS26ENAB	740	2	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS27ENAB	740	3	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS28ENAB	740	4	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS29ENAB	740	5	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS30ENAB	740	6	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS31ENAB	740	7	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS32ENAB	741	0	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS33ENAB	741	1	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS34ENAB	741	2	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS35ENAB	741	3	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS36ENAB	741	4	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS37ENAB	741	5	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS38ENAB	741	6	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS39ENAB	741	7	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS40ENAB	742	0	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS41ENAB	742	1	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS42ENAB	742	2	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS43ENAB	742	3	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS44ENAB	742	4	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS45ENAB	742	5	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS46ENAB	742	6	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS47ENAB	742	7	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS48ENAB	743	0	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS49ENAB	743	1	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS50ENAB	743	2	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)

AppId 1 HW and FSW SOH Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSCRTS51ENAB	743	3	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS52ENAB	743	4	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS53ENAB	743	5	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS54ENAB	743	6	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS55ENAB	743	7	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS56ENAB	744	0	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS57ENAB	744	1	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS58ENAB	744	2	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS59ENAB	744	3	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS60ENAB	744	4	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS61ENAB	744	5	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS62ENAB	744	6	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TSCRTS63ENAB	744	7	1	BOOL	Enabled-Disabled State of RTS (1=enabled, 0=disabled)
TCBCBRECVD	745	0	1	UB	Total number of codeblocks received from CIB.
TCBCBREJECT	746	0	1	UB	Total number of codeblocks rejected from CIB.
TCBCBERRORS	747	0	1	UB	Total number of codeblocks received with errors.
TPLSOHSEGMNT	748	0	350	UB	IDPU Low Speed Telemetry SOH Segment

AppId 5 File directory of file 0 to 51

Mnemonic	Byte	Bit	Length	Type	ITOS Description
H005APID	0	0	11	BOOL	APID 5 Packet ID Application ID
H005SHDF	0	11	1	BOOL	APID 5 Packet ID Secondary Header Flag
H005PCKT	0	12	1	BOOL	APID 5 Packet ID Type
H005PVNO	0	13	3	BOOL	APID 5 Packet ID Version Number
H005CNT	2	0	14	BOOL	APID 5 Packet Sequence Control Source Sequence
H005SEGF	2	14	2	BOOL	APID 5 Packet Sequence Control Segmentation Flag
H005PLEN	4	0	1	U12	APID 5 Packet Length
H005TIME	6	0	1	TIME42	APID 5 System Time when packet was formed
H005SECONDS	6	0	1	U1234	APID 5 System Time
H005SUBSECS	10	0	1	U12	APID 5 System Time Subseconds
TSMDIRID	12	0	1	UB	Filesystem ID
TSMDIRMODE	13	0	1	UB	Filesystem access mode
TSMDIRCHK000	16	0	1	BOOL	File 0 checksum match flag
TSMDIRCHK001	16	1	1	BOOL	File 1 checksum match flag
TSMDIRCHK002	16	2	1	BOOL	File 2 checksum match flag
TSMDIRCHK003	16	3	1	BOOL	File 3 checksum match flag
TSMDIRCHK004	16	4	1	BOOL	File 4 checksum match flag
TSMDIRCHK005	16	5	1	BOOL	File 5 checksum match flag
TSMDIRCHK006	16	6	1	BOOL	File 6 checksum match flag
TSMDIRCHK007	16	7	1	BOOL	File 7 checksum match flag
TSMDIRCHK008	17	0	1	BOOL	File 8 checksum match flag
TSMDIRCHK009	17	1	1	BOOL	File 9 checksum match flag
TSMDIRCHK010	17	2	1	BOOL	File 10 checksum match flag
TSMDIRCHK011	17	3	1	BOOL	File 11 checksum match flag
TSMDIRCHK012	17	4	1	BOOL	File 12 checksum match flag
TSMDIRCHK013	17	5	1	BOOL	File 13 checksum match flag
TSMDIRCHK014	17	6	1	BOOL	File 14 checksum match flag
TSMDIRCHK015	17	7	1	BOOL	File 15 checksum match flag
TSMDIRCHK016	18	0	1	BOOL	File 16 checksum match flag
TSMDIRCHK017	18	1	1	BOOL	File 17 checksum match flag
TSMDIRCHK018	18	2	1	BOOL	File 18 checksum match flag
TSMDIRCHK019	18	3	1	BOOL	File 19 checksum match flag
TSMDIRCHK020	18	4	1	BOOL	File 20 checksum match flag
TSMDIRCHK021	18	5	1	BOOL	File 21 checksum match flag
TSMDIRCHK022	18	6	1	BOOL	File 22 checksum match flag
TSMDIRCHK023	18	7	1	BOOL	File 23 checksum match flag
TSMDIRCHK024	19	0	1	BOOL	File 24 checksum match flag
TSMDIRCHK025	19	1	1	BOOL	File 25 checksum match flag
TSMDIRCHK026	19	2	1	BOOL	File 26 checksum match flag
TSMDIRCHK027	19	3	1	BOOL	File 27 checksum match flag

AppId 5 File directory of file 0 to 51

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIRCHK028	19	4	1	BOOL	File 28 checksum match flag
TSMDIRCHK029	19	5	1	BOOL	File 29 checksum match flag
TSMDIRCHK030	19	6	1	BOOL	File 30 checksum match flag
TSMDIRCHK031	19	7	1	BOOL	File 31 checksum match flag
TSMDIRCHK032	20	0	1	BOOL	File 32 checksum match flag
TSMDIRCHK033	20	1	1	BOOL	File 33 checksum match flag
TSMDIRCHK034	20	2	1	BOOL	File 34 checksum match flag
TSMDIRCHK035	20	3	1	BOOL	File 35 checksum match flag
TSMDIRCHK036	20	4	1	BOOL	File 36 checksum match flag
TSMDIRCHK037	20	5	1	BOOL	File 37 checksum match flag
TSMDIRCHK038	20	6	1	BOOL	File 38 checksum match flag
TSMDIRCHK039	20	7	1	BOOL	File 39 checksum match flag
TSMDIRCHK040	21	0	1	BOOL	File 40 checksum match flag
TSMDIRCHK041	21	1	1	BOOL	File 41 checksum match flag
TSMDIRCHK042	21	2	1	BOOL	File 42 checksum match flag
TSMDIRCHK043	21	3	1	BOOL	File 43 checksum match flag
TSMDIRCHK044	21	4	1	BOOL	File 44 checksum match flag
TSMDIRCHK045	21	5	1	BOOL	File 45 checksum match flag
TSMDIRCHK046	21	6	1	BOOL	File 46 checksum match flag
TSMDIRCHK047	21	7	1	BOOL	File 47 checksum match flag
TSMDIRCHK048	22	0	1	BOOL	File 48 checksum match flag
TSMDIRCHK049	22	1	1	BOOL	File 49 checksum match flag
TSMDIRCHK050	22	2	1	BOOL	File 50 checksum match flag
TSMDIRCHK051	22	3	1	BOOL	File 51 checksum match flag
TSMDIR000SZ	24	0	1	U1234	File 0 current length
TSMDIR000MSZ	28	0	1	U1234	File 0 maximum length
TSMDIR000TIM	32	0	1	TIME40	File 0 modification time
TSMDIR000SCK	36	0	1	U12	File 0 stored checksum
TSMDIR000CCK	38	0	1	U12	File 0 calculated checksum
TSMDIR001SZ	40	0	1	U1234	File 1 current length
TSMDIR001MSZ	44	0	1	U1234	File 1 maximum length
TSMDIR001TIM	48	0	1	TIME40	File 1 modification time
TSMDIR001SCK	52	0	1	U12	File 1 stored checksum
TSMDIR001CCK	54	0	1	U12	File 1 calculated checksum
TSMDIR002SZ	56	0	1	U1234	File 2 current length
TSMDIR002MSZ	60	0	1	U1234	File 2 maximum length
TSMDIR002TIM	64	0	1	TIME40	File 2 modification time
TSMDIR002SCK	68	0	1	U12	File 2 stored checksum
TSMDIR002CCK	70	0	1	U12	File 2 calculated checksum
TSMDIR003SZ	72	0	1	U1234	File 3 current length

AppId 5 File directory of file 0 to 51

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR003MSZ	76	0	1	U1234	File 3 maximum length
TSMDIR003TIM	80	0	1	TIME40	File 3 modification time
TSMDIR003SCK	84	0	1	U12	File 3 stored checksum
TSMDIR003CCK	86	0	1	U12	File 3 calculated checksum
TSMDIR004SZ	88	0	1	U1234	File 4 current length
TSMDIR004MSZ	92	0	1	U1234	File 4 maximum length
TSMDIR004TIM	96	0	1	TIME40	File 4 modification time
TSMDIR004SCK	100	0	1	U12	File 4 stored checksum
TSMDIR004CCK	102	0	1	U12	File 4 calculated checksum
TSMDIR005SZ	104	0	1	U1234	File 5 current length
TSMDIR005MSZ	108	0	1	U1234	File 5 maximum length
TSMDIR005TIM	112	0	1	TIME40	File 5 modification time
TSMDIR005SCK	116	0	1	U12	File 5 stored checksum
TSMDIR005CCK	118	0	1	U12	File 5 calculated checksum
TSMDIR006SZ	120	0	1	U1234	File 6 current length
TSMDIR006MSZ	124	0	1	U1234	File 6 maximum length
TSMDIR006TIM	128	0	1	TIME40	File 6 modification time
TSMDIR006SCK	132	0	1	U12	File 6 stored checksum
TSMDIR006CCK	134	0	1	U12	File 6 calculated checksum
TSMDIR007SZ	136	0	1	U1234	File 7 current length
TSMDIR007MSZ	140	0	1	U1234	File 7 maximum length
TSMDIR007TIM	144	0	1	TIME40	File 7 modification time
TSMDIR007SCK	148	0	1	U12	File 7 stored checksum
TSMDIR007CCK	150	0	1	U12	File 7 calculated checksum
TSMDIR008SZ	152	0	1	U1234	File 8 current length
TSMDIR008MSZ	156	0	1	U1234	File 8 maximum length
TSMDIR008TIM	160	0	1	TIME40	File 8 modification time
TSMDIR008SCK	164	0	1	U12	File 8 stored checksum
TSMDIR008CCK	166	0	1	U12	File 8 calculated checksum
TSMDIR009SZ	168	0	1	U1234	File 9 current length
TSMDIR009MSZ	172	0	1	U1234	File 9 maximum length
TSMDIR009TIM	176	0	1	TIME40	File 9 modification time
TSMDIR009SCK	180	0	1	U12	File 9 stored checksum
TSMDIR009CCK	182	0	1	U12	File 9 calculated checksum
TSMDIR010SZ	184	0	1	U1234	File 10 current length
TSMDIR010MSZ	188	0	1	U1234	File 10 maximum length
TSMDIR010TIM	192	0	1	TIME40	File 10 modification time
TSMDIR010SCK	196	0	1	U12	File 10 stored checksum
TSMDIR010CCK	198	0	1	U12	File 10 calculated checksum
TSMDIR011SZ	200	0	1	U1234	File 11 current length

AppId 5 File directory of file 0 to 51

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR011MSZ	204	0	1	U1234	File 11 maximum length
TSMDIR011TIM	208	0	1	TIME40	File 11 modification time
TSMDIR011SCK	212	0	1	U12	File 11 stored checksum
TSMDIR011CCK	214	0	1	U12	File 11 calculated checksum
TSMDIR012SZ	216	0	1	U1234	File 12 current length
TSMDIR012MSZ	220	0	1	U1234	File 12 maximum length
TSMDIR012TIM	224	0	1	TIME40	File 12 modification time
TSMDIR012SCK	228	0	1	U12	File 12 stored checksum
TSMDIR012CCK	230	0	1	U12	File 12 calculated checksum
TSMDIR013SZ	232	0	1	U1234	File 13 current length
TSMDIR013MSZ	236	0	1	U1234	File 13 maximum length
TSMDIR013TIM	240	0	1	TIME40	File 13 modification time
TSMDIR013SCK	244	0	1	U12	File 13 stored checksum
TSMDIR013CCK	246	0	1	U12	File 13 calculated checksum
TSMDIR014SZ	248	0	1	U1234	File 14 current length
TSMDIR014MSZ	252	0	1	U1234	File 14 maximum length
TSMDIR014TIM	256	0	1	TIME40	File 14 modification time
TSMDIR014SCK	260	0	1	U12	File 14 stored checksum
TSMDIR014CCK	262	0	1	U12	File 14 calculated checksum
TSMDIR015SZ	264	0	1	U1234	File 15 current length
TSMDIR015MSZ	268	0	1	U1234	File 15 maximum length
TSMDIR015TIM	272	0	1	TIME40	File 15 modification time
TSMDIR015SCK	276	0	1	U12	File 15 stored checksum
TSMDIR015CCK	278	0	1	U12	File 15 calculated checksum
TSMDIR016SZ	280	0	1	U1234	File 16 current length
TSMDIR016MSZ	284	0	1	U1234	File 16 maximum length
TSMDIR016TIM	288	0	1	TIME40	File 16 modification time
TSMDIR016SCK	292	0	1	U12	File 16 stored checksum
TSMDIR016CCK	294	0	1	U12	File 16 calculated checksum
TSMDIR017SZ	296	0	1	U1234	File 17 current length
TSMDIR017MSZ	300	0	1	U1234	File 17 maximum length
TSMDIR017TIM	304	0	1	TIME40	File 17 modification time
TSMDIR017SCK	308	0	1	U12	File 17 stored checksum
TSMDIR017CCK	310	0	1	U12	File 17 calculated checksum
TSMDIR018SZ	312	0	1	U1234	File 18 current length
TSMDIR018MSZ	316	0	1	U1234	File 18 maximum length
TSMDIR018TIM	320	0	1	TIME40	File 18 modification time
TSMDIR018SCK	324	0	1	U12	File 18 stored checksum
TSMDIR018CCK	326	0	1	U12	File 18 calculated checksum
TSMDIR019SZ	328	0	1	U1234	File 19 current length

AppId 5 File directory of file 0 to 51

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR019MSZ	332	0	1	U1234	File 19 maximum length
TSMDIR019TIM	336	0	1	TIME40	File 19 modification time
TSMDIR019SCK	340	0	1	U12	File 19 stored checksum
TSMDIR019CCK	342	0	1	U12	File 19 calculated checksum
TSMDIR020SZ	344	0	1	U1234	File 20 current length
TSMDIR020MSZ	348	0	1	U1234	File 20 maximum length
TSMDIR020TIM	352	0	1	TIME40	File 20 modification time
TSMDIR020SCK	356	0	1	U12	File 20 stored checksum
TSMDIR020CCK	358	0	1	U12	File 20 calculated checksum
TSMDIR021SZ	360	0	1	U1234	File 21 current length
TSMDIR021MSZ	364	0	1	U1234	File 21 maximum length
TSMDIR021TIM	368	0	1	TIME40	File 21 modification time
TSMDIR021SCK	372	0	1	U12	File 21 stored checksum
TSMDIR021CCK	374	0	1	U12	File 21 calculated checksum
TSMDIR022SZ	376	0	1	U1234	File 22 current length
TSMDIR022MSZ	380	0	1	U1234	File 22 maximum length
TSMDIR022TIM	384	0	1	TIME40	File 22 modification time
TSMDIR022SCK	388	0	1	U12	File 22 stored checksum
TSMDIR022CCK	390	0	1	U12	File 22 calculated checksum
TSMDIR023SZ	392	0	1	U1234	File 23 current length
TSMDIR023MSZ	396	0	1	U1234	File 23 maximum length
TSMDIR023TIM	400	0	1	TIME40	File 23 modification time
TSMDIR023SCK	404	0	1	U12	File 23 stored checksum
TSMDIR023CCK	406	0	1	U12	File 23 calculated checksum
TSMDIR024SZ	408	0	1	U1234	File 24 current length
TSMDIR024MSZ	412	0	1	U1234	File 24 maximum length
TSMDIR024TIM	416	0	1	TIME40	File 24 modification time
TSMDIR024SCK	420	0	1	U12	File 24 stored checksum
TSMDIR024CCK	422	0	1	U12	File 24 calculated checksum
TSMDIR025SZ	424	0	1	U1234	File 25 current length
TSMDIR025MSZ	428	0	1	U1234	File 25 maximum length
TSMDIR025TIM	432	0	1	TIME40	File 25 modification time
TSMDIR025SCK	436	0	1	U12	File 25 stored checksum
TSMDIR025CCK	438	0	1	U12	File 25 calculated checksum
TSMDIR026SZ	440	0	1	U1234	File 26 current length
TSMDIR026MSZ	444	0	1	U1234	File 26 maximum length
TSMDIR026TIM	448	0	1	TIME40	File 26 modification time
TSMDIR026SCK	452	0	1	U12	File 26 stored checksum
TSMDIR026CCK	454	0	1	U12	File 26 calculated checksum
TSMDIR027SZ	456	0	1	U1234	File 27 current length

AppId 5 File directory of file 0 to 51

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR027MSZ	460	0	1	U1234	File 27 maximum length
TSMDIR027TIM	464	0	1	TIME40	File 27 modification time
TSMDIR027SCK	468	0	1	U12	File 27 stored checksum
TSMDIR027CCK	470	0	1	U12	File 27 calculated checksum
TSMDIR028SZ	472	0	1	U1234	File 28 current length
TSMDIR028MSZ	476	0	1	U1234	File 28 maximum length
TSMDIR028TIM	480	0	1	TIME40	File 28 modification time
TSMDIR028SCK	484	0	1	U12	File 28 stored checksum
TSMDIR028CCK	486	0	1	U12	File 28 calculated checksum
TSMDIR029SZ	488	0	1	U1234	File 29 current length
TSMDIR029MSZ	492	0	1	U1234	File 29 maximum length
TSMDIR029TIM	496	0	1	TIME40	File 29 modification time
TSMDIR029SCK	500	0	1	U12	File 29 stored checksum
TSMDIR029CCK	502	0	1	U12	File 29 calculated checksum
TSMDIR030SZ	504	0	1	U1234	File 30 current length
TSMDIR030MSZ	508	0	1	U1234	File 30 maximum length
TSMDIR030TIM	512	0	1	TIME40	File 30 modification time
TSMDIR030SCK	516	0	1	U12	File 30 stored checksum
TSMDIR030CCK	518	0	1	U12	File 30 calculated checksum
TSMDIR031SZ	520	0	1	U1234	File 31 current length
TSMDIR031MSZ	524	0	1	U1234	File 31 maximum length
TSMDIR031TIM	528	0	1	TIME40	File 31 modification time
TSMDIR031SCK	532	0	1	U12	File 31 stored checksum
TSMDIR031CCK	534	0	1	U12	File 31 calculated checksum
TSMDIR032SZ	536	0	1	U1234	File 32 current length
TSMDIR032MSZ	540	0	1	U1234	File 32 maximum length
TSMDIR032TIM	544	0	1	TIME40	File 32 modification time
TSMDIR032SCK	548	0	1	U12	File 32 stored checksum
TSMDIR032CCK	550	0	1	U12	File 32 calculated checksum
TSMDIR033SZ	552	0	1	U1234	File 33 current length
TSMDIR033MSZ	556	0	1	U1234	File 33 maximum length
TSMDIR033TIM	560	0	1	TIME40	File 33 modification time
TSMDIR033SCK	564	0	1	U12	File 33 stored checksum
TSMDIR033CCK	566	0	1	U12	File 33 calculated checksum
TSMDIR034SZ	568	0	1	U1234	File 34 current length
TSMDIR034MSZ	572	0	1	U1234	File 34 maximum length
TSMDIR034TIM	576	0	1	TIME40	File 34 modification time
TSMDIR034SCK	580	0	1	U12	File 34 stored checksum
TSMDIR034CCK	582	0	1	U12	File 34 calculated checksum
TSMDIR035SZ	584	0	1	U1234	File 35 current length

AppId 5 File directory of file 0 to 51

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR035MSZ	588	0	1	U1234	File 35 maximum length
TSMDIR035TIM	592	0	1	TIME40	File 35 modification time
TSMDIR035SCK	596	0	1	U12	File 35 stored checksum
TSMDIR035CCK	598	0	1	U12	File 35 calculated checksum
TSMDIR036SZ	600	0	1	U1234	File 36 current length
TSMDIR036MSZ	604	0	1	U1234	File 36 maximum length
TSMDIR036TIM	608	0	1	TIME40	File 36 modification time
TSMDIR036SCK	612	0	1	U12	File 36 stored checksum
TSMDIR036CCK	614	0	1	U12	File 36 calculated checksum
TSMDIR037SZ	616	0	1	U1234	File 37 current length
TSMDIR037MSZ	620	0	1	U1234	File 37 maximum length
TSMDIR037TIM	624	0	1	TIME40	File 37 modification time
TSMDIR037SCK	628	0	1	U12	File 37 stored checksum
TSMDIR037CCK	630	0	1	U12	File 37 calculated checksum
TSMDIR038SZ	632	0	1	U1234	File 38 current length
TSMDIR038MSZ	636	0	1	U1234	File 38 maximum length
TSMDIR038TIM	640	0	1	TIME40	File 38 modification time
TSMDIR038SCK	644	0	1	U12	File 38 stored checksum
TSMDIR038CCK	646	0	1	U12	File 38 calculated checksum
TSMDIR039SZ	648	0	1	U1234	File 39 current length
TSMDIR039MSZ	652	0	1	U1234	File 39 maximum length
TSMDIR039TIM	656	0	1	TIME40	File 39 modification time
TSMDIR039SCK	660	0	1	U12	File 39 stored checksum
TSMDIR039CCK	662	0	1	U12	File 39 calculated checksum
TSMDIR040SZ	664	0	1	U1234	File 40 current length
TSMDIR040MSZ	668	0	1	U1234	File 40 maximum length
TSMDIR040TIM	672	0	1	TIME40	File 40 modification time
TSMDIR040SCK	676	0	1	U12	File 40 stored checksum
TSMDIR040CCK	678	0	1	U12	File 40 calculated checksum
TSMDIR041SZ	680	0	1	U1234	File 41 current length
TSMDIR041MSZ	684	0	1	U1234	File 41 maximum length
TSMDIR041TIM	688	0	1	TIME40	File 41 modification time
TSMDIR041SCK	692	0	1	U12	File 41 stored checksum
TSMDIR041CCK	694	0	1	U12	File 41 calculated checksum
TSMDIR042SZ	696	0	1	U1234	File 42 current length
TSMDIR042MSZ	700	0	1	U1234	File 42 maximum length
TSMDIR042TIM	704	0	1	TIME40	File 42 modification time
TSMDIR042SCK	708	0	1	U12	File 42 stored checksum
TSMDIR042CCK	710	0	1	U12	File 42 calculated checksum
TSMDIR043SZ	712	0	1	U1234	File 43 current length

AppId 5 File directory of file 0 to 51

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR043MSZ	716	0	1	U1234	File 43 maximum length
TSMDIR043TIM	720	0	1	TIME40	File 43 modification time
TSMDIR043SCK	724	0	1	U12	File 43 stored checksum
TSMDIR043CCK	726	0	1	U12	File 43 calculated checksum
TSMDIR044SZ	728	0	1	U1234	File 44 current length
TSMDIR044MSZ	732	0	1	U1234	File 44 maximum length
TSMDIR044TIM	736	0	1	TIME40	File 44 modification time
TSMDIR044SCK	740	0	1	U12	File 44 stored checksum
TSMDIR044CCK	742	0	1	U12	File 44 calculated checksum
TSMDIR045SZ	744	0	1	U1234	File 45 current length
TSMDIR045MSZ	748	0	1	U1234	File 45 maximum length
TSMDIR045TIM	752	0	1	TIME40	File 45 modification time
TSMDIR045SCK	756	0	1	U12	File 45 stored checksum
TSMDIR045CCK	758	0	1	U12	File 45 calculated checksum
TSMDIR046SZ	760	0	1	U1234	File 46 current length
TSMDIR046MSZ	764	0	1	U1234	File 46 maximum length
TSMDIR046TIM	768	0	1	TIME40	File 46 modification time
TSMDIR046SCK	772	0	1	U12	File 46 stored checksum
TSMDIR046CCK	774	0	1	U12	File 46 calculated checksum
TSMDIR047SZ	776	0	1	U1234	File 47 current length
TSMDIR047MSZ	780	0	1	U1234	File 47 maximum length
TSMDIR047TIM	784	0	1	TIME40	File 47 modification time
TSMDIR047SCK	788	0	1	U12	File 47 stored checksum
TSMDIR047CCK	790	0	1	U12	File 47 calculated checksum
TSMDIR048SZ	792	0	1	U1234	File 48 current length
TSMDIR048MSZ	796	0	1	U1234	File 48 maximum length
TSMDIR048TIM	800	0	1	TIME40	File 48 modification time
TSMDIR048SCK	804	0	1	U12	File 48 stored checksum
TSMDIR048CCK	806	0	1	U12	File 48 calculated checksum
TSMDIR049SZ	808	0	1	U1234	File 49 current length
TSMDIR049MSZ	812	0	1	U1234	File 49 maximum length
TSMDIR049TIM	816	0	1	TIME40	File 49 modification time
TSMDIR049SCK	820	0	1	U12	File 49 stored checksum
TSMDIR049CCK	822	0	1	U12	File 49 calculated checksum
TSMDIR050SZ	824	0	1	U1234	File 50 current length
TSMDIR050MSZ	828	0	1	U1234	File 50 maximum length
TSMDIR050TIM	832	0	1	TIME40	File 50 modification time
TSMDIR050SCK	836	0	1	U12	File 50 stored checksum
TSMDIR050CCK	838	0	1	U12	File 50 calculated checksum
TSMDIR051SZ	840	0	1	U1234	File 51 current length

AppId 5 File directory of file 0 to 51

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR051MSZ	844	0	1	U1234	File 51 maximum length
TSMDIR051TIM	848	0	1	TIME40	File 51 modification time
TSMDIR051SCK	852	0	1	U12	File 51 stored checksum
TSMDIR051CCK	854	0	1	U12	File 51 calculated checksum

AppId 6 File directory of file 51 to 103

Mnemonic	Byte	Bit	Length	Type	ITOS Description
H006APID	0	0	11	BOOL	APID 6 Packet ID Application ID
H006SHDF	0	11	1	BOOL	APID 6 Packet ID Secondary Header Flag
H006PCKT	0	12	1	BOOL	APID 6 Packet ID Type
H006PVNO	0	13	3	BOOL	APID 6 Packet ID Version Number
H006CNT	2	0	14	BOOL	APID 6 Packet Sequence Control Source Sequence
H006SEGF	2	14	2	BOOL	APID 6 Packet Sequence Control Segmentation Flag
H006PLEN	4	0	1	U12	APID 6 Packet Length
H006SECONDS	6	0	1	U1234	APID 6 System Time
H006TIME	6	0	1	TIME42	APID 6 System Time when packet was formed
H005SUBSECS	10	0	1	U12	APID 5 System Time Subseconds
TSMDIRID	12	0	1	UB	Filesystem ID
TSMDIRMODE	13	0	1	UB	Filesystem access mode
TSMDIRCHK052	16	0	1	BOOL	File 52 checksum match flag
TSMDIRCHK053	16	1	1	BOOL	File 53 checksum match flag
TSMDIRCHK054	16	2	1	BOOL	File 54 checksum match flag
TSMDIRCHK055	16	3	1	BOOL	File 55 checksum match flag
TSMDIRCHK056	16	4	1	BOOL	File 56 checksum match flag
TSMDIRCHK057	16	5	1	BOOL	File 57 checksum match flag
TSMDIRCHK058	16	6	1	BOOL	File 58 checksum match flag
TSMDIRCHK059	16	7	1	BOOL	File 59 checksum match flag
TSMDIRCHK060	17	0	1	BOOL	File 60 checksum match flag
TSMDIRCHK061	17	1	1	BOOL	File 61 checksum match flag
TSMDIRCHK062	17	2	1	BOOL	File 62 checksum match flag
TSMDIRCHK063	17	3	1	BOOL	File 63 checksum match flag
TSMDIRCHK064	17	4	1	BOOL	File 64 checksum match flag
TSMDIRCHK065	17	5	1	BOOL	File 65 checksum match flag
TSMDIRCHK066	17	6	1	BOOL	File 66 checksum match flag
TSMDIRCHK067	17	7	1	BOOL	File 67 checksum match flag
TSMDIRCHK068	18	0	1	BOOL	File 68 checksum match flag
TSMDIRCHK069	18	1	1	BOOL	File 69 checksum match flag
TSMDIRCHK070	18	2	1	BOOL	File 70 checksum match flag
TSMDIRCHK071	18	3	1	BOOL	File 71 checksum match flag
TSMDIRCHK072	18	4	1	BOOL	File 72 checksum match flag
TSMDIRCHK073	18	5	1	BOOL	File 73 checksum match flag
TSMDIRCHK074	18	6	1	BOOL	File 74 checksum match flag
TSMDIRCHK075	18	7	1	BOOL	File 75 checksum match flag
TSMDIRCHK076	19	0	1	BOOL	File 76 checksum match flag
TSMDIRCHK077	19	1	1	BOOL	File 77 checksum match flag
TSMDIRCHK078	19	2	1	BOOL	File 78 checksum match flag
TSMDIRCHK079	19	3	1	BOOL	File 79 checksum match flag

AppId 6 File directory of file 51 to 103

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIRCHK080	19	4	1	BOOL	File 80 checksum match flag
TSMDIRCHK081	19	5	1	BOOL	File 81 checksum match flag
TSMDIRCHK082	19	6	1	BOOL	File 82 checksum match flag
TSMDIRCHK083	19	7	1	BOOL	File 83 checksum match flag
TSMDIRCHK084	20	0	1	BOOL	File 84 checksum match flag
TSMDIRCHK085	20	1	1	BOOL	File 85 checksum match flag
TSMDIRCHK086	20	2	1	BOOL	File 86 checksum match flag
TSMDIRCHK087	20	3	1	BOOL	File 87 checksum match flag
TSMDIRCHK088	20	4	1	BOOL	File 88 checksum match flag
TSMDIRCHK089	20	5	1	BOOL	File 89 checksum match flag
TSMDIRCHK090	20	6	1	BOOL	File 90 checksum match flag
TSMDIRCHK091	20	7	1	BOOL	File 91 checksum match flag
TSMDIRCHK092	21	0	1	BOOL	File 92 checksum match flag
TSMDIRCHK093	21	1	1	BOOL	File 93 checksum match flag
TSMDIRCHK094	21	2	1	BOOL	File 94 checksum match flag
TSMDIRCHK095	21	3	1	BOOL	File 95 checksum match flag
TSMDIRCHK096	21	4	1	BOOL	File 96 checksum match flag
TSMDIRCHK097	21	5	1	BOOL	File 97 checksum match flag
TSMDIRCHK098	21	6	1	BOOL	File 98 checksum match flag
TSMDIRCHK099	21	7	1	BOOL	File 99 checksum match flag
TSMDIRCHK100	22	0	1	BOOL	File 100 checksum match flag
TSMDIRCHK101	22	1	1	BOOL	File 101 checksum match flag
TSMDIRCHK102	22	2	1	BOOL	File 102 checksum match flag
TSMDIRCHK103	22	3	1	BOOL	File 103 checksum match flag
TSMDIR052SZ	24	0	1	U1234	File 52 current length
TSMDIR052MSZ	28	0	1	U1234	File 52 maximum length
TSMDIR052TIM	32	0	1	TIME40	File 52 modification time
TSMDIR052SCK	36	0	1	U12	File 52 stored checksum
TSMDIR052CCK	38	0	1	U12	File 52 calculated checksum
TSMDIR053SZ	40	0	1	U1234	File 53 current length
TSMDIR053MSZ	44	0	1	U1234	File 53 maximum length
TSMDIR053TIM	48	0	1	TIME40	File 53 modification time
TSMDIR053SCK	52	0	1	U12	File 53 stored checksum
TSMDIR053CCK	54	0	1	U12	File 53 calculated checksum
TSMDIR054SZ	56	0	1	U1234	File 54 current length
TSMDIR054MSZ	60	0	1	U1234	File 54 maximum length
TSMDIR054TIM	64	0	1	TIME40	File 54 modification time
TSMDIR054SCK	68	0	1	U12	File 54 stored checksum
TSMDIR054CCK	70	0	1	U12	File 54 calculated checksum
TSMDIR055SZ	72	0	1	U1234	File 55 current length

AppId 6 File directory of file 51 to 103

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR055MSZ	76	0	1	U1234	File 55 maximum length
TSMDIR055TIM	80	0	1	TIME40	File 55 modification time
TSMDIR055SCK	84	0	1	U12	File 55 stored checksum
TSMDIR055CCK	86	0	1	U12	File 55 calculated checksum
TSMDIR056SZ	88	0	1	U1234	File 56 current length
TSMDIR056MSZ	92	0	1	U1234	File 56 maximum length
TSMDIR056TIM	96	0	1	TIME40	File 56 modification time
TSMDIR056SCK	100	0	1	U12	File 56 stored checksum
TSMDIR056CCK	102	0	1	U12	File 56 calculated checksum
TSMDIR057SZ	104	0	1	U1234	File 57 current length
TSMDIR057MSZ	108	0	1	U1234	File 57 maximum length
TSMDIR057TIM	112	0	1	TIME40	File 57 modification time
TSMDIR057SCK	116	0	1	U12	File 57 stored checksum
TSMDIR057CCK	118	0	1	U12	File 57 calculated checksum
TSMDIR058SZ	120	0	1	U1234	File 58 current length
TSMDIR058MSZ	124	0	1	U1234	File 58 maximum length
TSMDIR058TIM	128	0	1	TIME40	File 58 modification time
TSMDIR058SCK	132	0	1	U12	File 58 stored checksum
TSMDIR058CCK	134	0	1	U12	File 58 calculated checksum
TSMDIR059SZ	136	0	1	U1234	File 59 current length
TSMDIR059MSZ	140	0	1	U1234	File 59 maximum length
TSMDIR059TIM	144	0	1	TIME40	File 59 modification time
TSMDIR059SCK	148	0	1	U12	File 59 stored checksum
TSMDIR059CCK	150	0	1	U12	File 59 calculated checksum
TSMDIR060SZ	152	0	1	U1234	File 60 current length
TSMDIR060MSZ	156	0	1	U1234	File 60 maximum length
TSMDIR060TIM	160	0	1	TIME40	File 60 modification time
TSMDIR060SCK	164	0	1	U12	File 60 stored checksum
TSMDIR060CCK	166	0	1	U12	File 60 calculated checksum
TSMDIR061SZ	168	0	1	U1234	File 61 current length
TSMDIR061MSZ	172	0	1	U1234	File 61 maximum length
TSMDIR061TIM	176	0	1	TIME40	File 61 modification time
TSMDIR061SCK	180	0	1	U12	File 61 stored checksum
TSMDIR061CCK	182	0	1	U12	File 61 calculated checksum
TSMDIR062SZ	184	0	1	U1234	File 62 current length
TSMDIR062MSZ	188	0	1	U1234	File 62 maximum length
TSMDIR062TIM	192	0	1	TIME40	File 62 modification time
TSMDIR062SCK	196	0	1	U12	File 62 stored checksum
TSMDIR062CCK	198	0	1	U12	File 62 calculated checksum
TSMDIR063SZ	200	0	1	U1234	File 63 current length

AppId 6 File directory of file 51 to 103

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR063MSZ	204	0	1	U1234	File 63 maximum length
TSMDIR063TIM	208	0	1	TIME40	File 63 modification time
TSMDIR063SCK	212	0	1	U12	File 63 stored checksum
TSMDIR063CCK	214	0	1	U12	File 63 calculated checksum
TSMDIR064SZ	216	0	1	U1234	File 64 current length
TSMDIR064MSZ	220	0	1	U1234	File 64 maximum length
TSMDIR064TIM	224	0	1	TIME40	File 64 modification time
TSMDIR064SCK	228	0	1	U12	File 64 stored checksum
TSMDIR064CCK	230	0	1	U12	File 64 calculated checksum
TSMDIR065SZ	232	0	1	U1234	File 65 current length
TSMDIR065MSZ	236	0	1	U1234	File 65 maximum length
TSMDIR065TIM	240	0	1	TIME40	File 65 modification time
TSMDIR065SCK	244	0	1	U12	File 65 stored checksum
TSMDIR065CCK	246	0	1	U12	File 65 calculated checksum
TSMDIR066SZ	248	0	1	U1234	File 66 current length
TSMDIR066MSZ	252	0	1	U1234	File 66 maximum length
TSMDIR066TIM	256	0	1	TIME40	File 66 modification time
TSMDIR066SCK	260	0	1	U12	File 66 stored checksum
TSMDIR066CCK	262	0	1	U12	File 66 calculated checksum
TSMDIR067SZ	264	0	1	U1234	File 67 current length
TSMDIR067MSZ	268	0	1	U1234	File 67 maximum length
TSMDIR067TIM	272	0	1	TIME40	File 67 modification time
TSMDIR067SCK	276	0	1	U12	File 67 stored checksum
TSMDIR067CCK	278	0	1	U12	File 67 calculated checksum
TSMDIR068SZ	280	0	1	U1234	File 68 current length
TSMDIR068MSZ	284	0	1	U1234	File 68 maximum length
TSMDIR068TIM	288	0	1	TIME40	File 68 modification time
TSMDIR068SCK	292	0	1	U12	File 68 stored checksum
TSMDIR068CCK	294	0	1	U12	File 68 calculated checksum
TSMDIR069SZ	296	0	1	U1234	File 69 current length
TSMDIR069MSZ	300	0	1	U1234	File 69 maximum length
TSMDIR069TIM	304	0	1	TIME40	File 69 modification time
TSMDIR069SCK	308	0	1	U12	File 69 stored checksum
TSMDIR069CCK	310	0	1	U12	File 69 calculated checksum
TSMDIR070SZ	312	0	1	U1234	File 70 current length
TSMDIR070MSZ	316	0	1	U1234	File 70 maximum length
TSMDIR070TIM	320	0	1	TIME40	File 70 modification time
TSMDIR070SCK	324	0	1	U12	File 70 stored checksum
TSMDIR070CCK	326	0	1	U12	File 70 calculated checksum
TSMDIR071SZ	328	0	1	U1234	File 71 current length

AppId 6 File directory of file 51 to 103

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR071MSZ	332	0	1	U1234	File 71 maximum length
TSMDIR071TIM	336	0	1	TIME40	File 71 modification time
TSMDIR071SCK	340	0	1	U12	File 71 stored checksum
TSMDIR071CCK	342	0	1	U12	File 71 calculated checksum
TSMDIR072SZ	344	0	1	U1234	File 72 current length
TSMDIR072MSZ	348	0	1	U1234	File 72 maximum length
TSMDIR072TIM	352	0	1	TIME40	File 72 modification time
TSMDIR072SCK	356	0	1	U12	File 72 stored checksum
TSMDIR072CCK	358	0	1	U12	File 72 calculated checksum
TSMDIR073SZ	360	0	1	U1234	File 73 current length
TSMDIR073MSZ	364	0	1	U1234	File 73 maximum length
TSMDIR073TIM	368	0	1	TIME40	File 73 modification time
TSMDIR073SCK	372	0	1	U12	File 73 stored checksum
TSMDIR073CCK	374	0	1	U12	File 73 calculated checksum
TSMDIR074SZ	376	0	1	U1234	File 74 current length
TSMDIR074MSZ	380	0	1	U1234	File 74 maximum length
TSMDIR074TIM	384	0	1	TIME40	File 74 modification time
TSMDIR074SCK	388	0	1	U12	File 74 stored checksum
TSMDIR074CCK	390	0	1	U12	File 74 calculated checksum
TSMDIR075SZ	392	0	1	U1234	File 75 current length
TSMDIR075MSZ	396	0	1	U1234	File 75 maximum length
TSMDIR075TIM	400	0	1	TIME40	File 75 modification time
TSMDIR075SCK	404	0	1	U12	File 75 stored checksum
TSMDIR075CCK	406	0	1	U12	File 75 calculated checksum
TSMDIR076SZ	408	0	1	U1234	File 76 current length
TSMDIR076MSZ	412	0	1	U1234	File 76 maximum length
TSMDIR076TIM	416	0	1	TIME40	File 76 modification time
TSMDIR076SCK	420	0	1	U12	File 76 stored checksum
TSMDIR076CCK	422	0	1	U12	File 76 calculated checksum
TSMDIR077SZ	424	0	1	U1234	File 77 current length
TSMDIR077MSZ	428	0	1	U1234	File 77 maximum length
TSMDIR077TIM	432	0	1	TIME40	File 77 modification time
TSMDIR077SCK	436	0	1	U12	File 77 stored checksum
TSMDIR077CCK	438	0	1	U12	File 77 calculated checksum
TSMDIR078SZ	440	0	1	U1234	File 78 current length
TSMDIR078MSZ	444	0	1	U1234	File 78 maximum length
TSMDIR078TIM	448	0	1	TIME40	File 78 modification time
TSMDIR078SCK	452	0	1	U12	File 78 stored checksum
TSMDIR078CCK	454	0	1	U12	File 78 calculated checksum
TSMDIR079SZ	456	0	1	U1234	File 79 current length

AppId 6 File directory of file 51 to 103

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR079MSZ	460	0	1	U1234	File 79 maximum length
TSMDIR079TIM	464	0	1	TIME40	File 79 modification time
TSMDIR079SCK	468	0	1	U12	File 79 stored checksum
TSMDIR079CCK	470	0	1	U12	File 79 calculated checksum
TSMDIR080SZ	472	0	1	U1234	File 80 current length
TSMDIR080MSZ	476	0	1	U1234	File 80 maximum length
TSMDIR080TIM	480	0	1	TIME40	File 80 modification time
TSMDIR080SCK	484	0	1	U12	File 80 stored checksum
TSMDIR080CCK	486	0	1	U12	File 80 calculated checksum
TSMDIR081SZ	488	0	1	U1234	File 81 current length
TSMDIR081MSZ	492	0	1	U1234	File 81 maximum length
TSMDIR081TIM	496	0	1	TIME40	File 81 modification time
TSMDIR081SCK	500	0	1	U12	File 81 stored checksum
TSMDIR081CCK	502	0	1	U12	File 81 calculated checksum
TSMDIR082SZ	504	0	1	U1234	File 82 current length
TSMDIR082MSZ	508	0	1	U1234	File 82 maximum length
TSMDIR082TIM	512	0	1	TIME40	File 82 modification time
TSMDIR082SCK	516	0	1	U12	File 82 stored checksum
TSMDIR082CCK	518	0	1	U12	File 82 calculated checksum
TSMDIR083SZ	520	0	1	U1234	File 83 current length
TSMDIR083MSZ	524	0	1	U1234	File 83 maximum length
TSMDIR083TIM	528	0	1	TIME40	File 83 modification time
TSMDIR083SCK	532	0	1	U12	File 83 stored checksum
TSMDIR083CCK	534	0	1	U12	File 83 calculated checksum
TSMDIR084SZ	536	0	1	U1234	File 84 current length
TSMDIR084MSZ	540	0	1	U1234	File 84 maximum length
TSMDIR084TIM	544	0	1	TIME40	File 84 modification time
TSMDIR084SCK	548	0	1	U12	File 84 stored checksum
TSMDIR084CCK	550	0	1	U12	File 84 calculated checksum
TSMDIR085SZ	552	0	1	U1234	File 85 current length
TSMDIR085MSZ	556	0	1	U1234	File 85 maximum length
TSMDIR085TIM	560	0	1	TIME40	File 85 modification time
TSMDIR085SCK	564	0	1	U12	File 85 stored checksum
TSMDIR085CCK	566	0	1	U12	File 85 calculated checksum
TSMDIR086SZ	568	0	1	U1234	File 86 current length
TSMDIR086MSZ	572	0	1	U1234	File 86 maximum length
TSMDIR086TIM	576	0	1	TIME40	File 86 modification time
TSMDIR086SCK	580	0	1	U12	File 86 stored checksum
TSMDIR086CCK	582	0	1	U12	File 86 calculated checksum
TSMDIR087SZ	584	0	1	U1234	File 87 current length

AppId 6 File directory of file 51 to 103

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR087MSZ	588	0	1	U1234	File 87 maximum length
TSMDIR087TIM	592	0	1	TIME40	File 87 modification time
TSMDIR087SCK	596	0	1	U12	File 87 stored checksum
TSMDIR087CCK	598	0	1	U12	File 87 calculated checksum
TSMDIR088SZ	600	0	1	U1234	File 88 current length
TSMDIR088MSZ	604	0	1	U1234	File 88 maximum length
TSMDIR088TIM	608	0	1	TIME40	File 88 modification time
TSMDIR088SCK	612	0	1	U12	File 88 stored checksum
TSMDIR088CCK	614	0	1	U12	File 88 calculated checksum
TSMDIR089SZ	616	0	1	U1234	File 89 current length
TSMDIR089MSZ	620	0	1	U1234	File 89 maximum length
TSMDIR089TIM	624	0	1	TIME40	File 89 modification time
TSMDIR089SCK	628	0	1	U12	File 89 stored checksum
TSMDIR089CCK	630	0	1	U12	File 89 calculated checksum
TSMDIR090SZ	632	0	1	U1234	File 90 current length
TSMDIR090MSZ	636	0	1	U1234	File 90 maximum length
TSMDIR090TIM	640	0	1	TIME40	File 90 modification time
TSMDIR090SCK	644	0	1	U12	File 90 stored checksum
TSMDIR090CCK	646	0	1	U12	File 90 calculated checksum
TSMDIR091SZ	648	0	1	U1234	File 91 current length
TSMDIR091MSZ	652	0	1	U1234	File 91 maximum length
TSMDIR091TIM	656	0	1	TIME40	File 91 modification time
TSMDIR091SCK	660	0	1	U12	File 91 stored checksum
TSMDIR091CCK	662	0	1	U12	File 91 calculated checksum
TSMDIR092SZ	664	0	1	U1234	File 92 current length
TSMDIR092MSZ	668	0	1	U1234	File 92 maximum length
TSMDIR092TIM	672	0	1	TIME40	File 92 modification time
TSMDIR092SCK	676	0	1	U12	File 92 stored checksum
TSMDIR092CCK	678	0	1	U12	File 92 calculated checksum
TSMDIR093SZ	680	0	1	U1234	File 93 current length
TSMDIR093MSZ	684	0	1	U1234	File 93 maximum length
TSMDIR093TIM	688	0	1	TIME40	File 93 modification time
TSMDIR093SCK	692	0	1	U12	File 93 stored checksum
TSMDIR093CCK	694	0	1	U12	File 93 calculated checksum
TSMDIR094SZ	696	0	1	U1234	File 94 current length
TSMDIR094MSZ	700	0	1	U1234	File 94 maximum length
TSMDIR094TIM	704	0	1	TIME40	File 94 modification time
TSMDIR094SCK	708	0	1	U12	File 94 stored checksum
TSMDIR094CCK	710	0	1	U12	File 94 calculated checksum
TSMDIR095SZ	712	0	1	U1234	File 95 current length

AppId 6 File directory of file 51 to 103

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR095MSZ	716	0	1	U1234	File 95 maximum length
TSMDIR095TIM	720	0	1	TIME40	File 95 modification time
TSMDIR095SCK	724	0	1	U12	File 95 stored checksum
TSMDIR095CCK	726	0	1	U12	File 95 calculated checksum
TSMDIR096SZ	728	0	1	U1234	File 96 current length
TSMDIR096MSZ	732	0	1	U1234	File 96 maximum length
TSMDIR096TIM	736	0	1	TIME40	File 96 modification time
TSMDIR096SCK	740	0	1	U12	File 96 stored checksum
TSMDIR096CCK	742	0	1	U12	File 96 calculated checksum
TSMDIR097SZ	744	0	1	U1234	File 97 current length
TSMDIR097MSZ	748	0	1	U1234	File 97 maximum length
TSMDIR097TIM	752	0	1	TIME40	File 97 modification time
TSMDIR097SCK	756	0	1	U12	File 97 stored checksum
TSMDIR097CCK	758	0	1	U12	File 97 calculated checksum
TSMDIR098SZ	760	0	1	U1234	File 98 current length
TSMDIR098MSZ	764	0	1	U1234	File 98 maximum length
TSMDIR098TIM	768	0	1	TIME40	File 98 modification time
TSMDIR098SCK	772	0	1	U12	File 98 stored checksum
TSMDIR098CCK	774	0	1	U12	File 98 calculated checksum
TSMDIR099SZ	776	0	1	U1234	File 99 current length
TSMDIR099MSZ	780	0	1	U1234	File 99 maximum length
TSMDIR099TIM	784	0	1	TIME40	File 99 modification time
TSMDIR099SCK	788	0	1	U12	File 99 stored checksum
TSMDIR099CCK	790	0	1	U12	File 99 calculated checksum
TSMDIR100SZ	792	0	1	U1234	File 100 current length
TSMDIR100MSZ	796	0	1	U1234	File 100 maximum length
TSMDIR100TIM	800	0	1	TIME40	File 100 modification time
TSMDIR100SCK	804	0	1	U12	File 100 stored checksum
TSMDIR100CCK	806	0	1	U12	File 100 calculated checksum
TSMDIR101SZ	808	0	1	U1234	File 101 current length
TSMDIR101MSZ	812	0	1	U1234	File 101 maximum length
TSMDIR101TIM	816	0	1	TIME40	File 101 modification time
TSMDIR101SCK	820	0	1	U12	File 101 stored checksum
TSMDIR101CCK	822	0	1	U12	File 101 calculated checksum
TSMDIR102SZ	824	0	1	U1234	File 102 current length
TSMDIR102MSZ	828	0	1	U1234	File 102 maximum length
TSMDIR102TIM	832	0	1	TIME40	File 102 modification time
TSMDIR102SCK	836	0	1	U12	File 102 stored checksum
TSMDIR102CCK	838	0	1	U12	File 102 calculated checksum
TSMDIR103SZ	840	0	1	U1234	File 103 current length

AppId 6 File directory of file 51 to 103

Mnemonic	Byte	Bit	Length	Type	ITOS Description
TSMDIR103MSZ	844	0	1	U1234	File 103 maximum length
TSMDIR103TIM	848	0	1	TIME40	File 103 modification time
TSMDIR103SCK	852	0	1	U12	File 103 stored checksum
TSMDIR103CCK	854	0	1	U12	File 103 calculated checksum

AppId 7 SM Table Dump Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
H007APID	0	0	11	BOOL	APID 7 Packet ID Application ID
H007SHDF	0	11	1	BOOL	APID 7 Packet ID Secondary Header Flag
H007PCKT	0	12	1	BOOL	APID 7 Packet ID Type
H007PVNO	0	13	3	BOOL	APID 7 Packet ID Version Number
H007CNT	2	0	14	BOOL	APID 7 Packet Sequence Control Source Sequence
H007SEGF	2	14	2	BOOL	APID 7 Packet Sequence Control Segmentation Flag
H007PLEN	4	0	1	U12	APID 7 Packet Length
H007SECONDS	6	0	1	U1234	APID 7 System Time
H007TIME	6	0	1	TIME42	APID 7 System Time when packet was formed
H007SUBSECS	10	0	1	U12	APID 7 System Time Subseconds
CTDUMPSTADD	12	0	1	U1234	SM Table Dump Start Address
CTDUMPENDADD	16	0	1	U1234	SM Table Dump End Address
CTDUMPPKTADD	20	0	1	U1234	SM Table Dump Packet Address
CTDUMPPKTSIZ	24	0	1	U12	SM Table Dump Packet Size
CTDUMPCNUM	26	0	1	UB	SM Table Dump Copy Number
CTDUMPCTOT	27	0	1	UB	SM Table Dump Copy Total
CTABLEID	28	0	1	UB	SM Table Dump Table ID
CTMEMSOURCE	29	0	1	UB	SM Table Dump Source Memory Type
CTDPDATA	30	0	1	UB	SM Table Dump Data (up to 255 bytes)

AppId 8 SM Memory Dump Packet

Mnemonic	Byte	Bit	Length	Type	ITOS Description
H008APID	0	0	11	BOOL	APID 8 Packet ID Application ID
H008SHDF	0	11	1	BOOL	APID 8 Packet ID Secondary Header Flag
H008PCKT	0	12	1	BOOL	APID 8 Packet ID Type
H008PVNO	0	13	3	BOOL	APID 8 Packet ID Version Number
H008CNT	2	0	14	BOOL	APID 8 Packet Sequence Control Source Sequence
H008SEGF	2	14	2	BOOL	APID 8 Packet Sequence Control Segmentation Flag
H008PLEN	4	0	1	U12	APID 8 Packet Length
H008SECONDS	6	0	1	U1234	APID 8 System Time
H008TIME	6	0	1	TIME42	APID 8 System Time when packet was formed
H008SUBSECS	10	0	1	U12	APID 8 System Time Subseconds
CMDUMPSTADD	12	0	1	U1234	SM Memory Dump Start Address
CMDUMPENDADD	16	0	1	U1234	SM Memory Dump End Address
CMDUMPPKTADD	20	0	1	U1234	SM Memory Dump Packet Address
CMDUMPPKTSIZ	24	0	1	U12	SM Memory Dump Packet Size
CMDUMPCNUM	26	0	1	UB	SM Memory Dump Copy Number
CMDUMPCTOT	27	0	1	UB	SM Memory Dump Copy Total
CMSPARE1	28	0	1	UB	SM Memory Dump Spare 1
CMSPARE2	28	0	1	UB	SM Memory Dump Spare 2
CMDPDATA	30	0	1	UB	SM Memory Dump Data (up to 255 bytes)

AppId 40 Event Message

Mnemonic	Byte	Bit	Length	Type	ITOS Description
H040APID	0	0	11	BOOL	APID 40 Packet ID Application ID
H040SHDF	0	11	1	BOOL	APID 40 Packet ID Secondary Header Flag
H040PCKT	0	12	1	BOOL	APID 40 Packet ID Type
H040PVNO	0	13	3	BOOL	APID 40 Packet ID Version Number
H040CNT	2	0	14	BOOL	APID 40 Packet Sequence Control Source Sequence
H040SEGF	2	14	2	BOOL	APID 40 Packet Sequence Control Segmentation Flag
H040PLEN	4	0	1	U12	APID 40 Packet Length
H040TIME	6	0	1	TIME42	APID 40 System Time when packet was formed
H040SECONDS	6	0	1	U1234	APID 40 System Time
H040SUBSECS	10	0	1	U12	APID 40 System Time Subseconds