Check PACS DPU EEPROM memory area (checksum calculation)
File: H_FCP_OBS_4160.xls
Author: lstefanov-hp

Procedure Summary

Objectives

This Herschel OBSM nominal procedure is used to perform a memory check of one or several PACS DPU EEPROM memory areas. The memory ckeck is commanded using TC(6,9) and the checksum calculated on-board is received on ground in TM(6,10) packets.

The procedure assumes that the command stack has already been generated using the OBSM system and is ready for loading on the Manual Stack. The command stack generation activity is not covered by this procedure.

Summary of Constraints

CDMU in Operational Mode
- PACS DPU ASW running

Memory areas are Checked through TC(6,9); this TC will be delayed when there is an ongoing:
- TC(6,2) Load Memory Using Absolute Addresses
- TC(6,5) Dump Memory Using Absolute Addresses
- TC(6,9) Check Memory Using Absolute Addresses
- TC(8,4,1,1) Copy Memory

Spacecraft Configuration

Start of Procedure

CDMU in Operational Mode
- PACS DPU ASW running

End of Procedure

Same as start

Reference File(s)

Input Command Sequences

Output Command Sequences

OFCP4160

Referenced Displays

ANDs **GRDs** **SLDs**

PA029380

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
02/09/08	2	1	Created	lstefanov-hp	

Status : Version 1 - Unchanged
Last Checkin: 02/09/08

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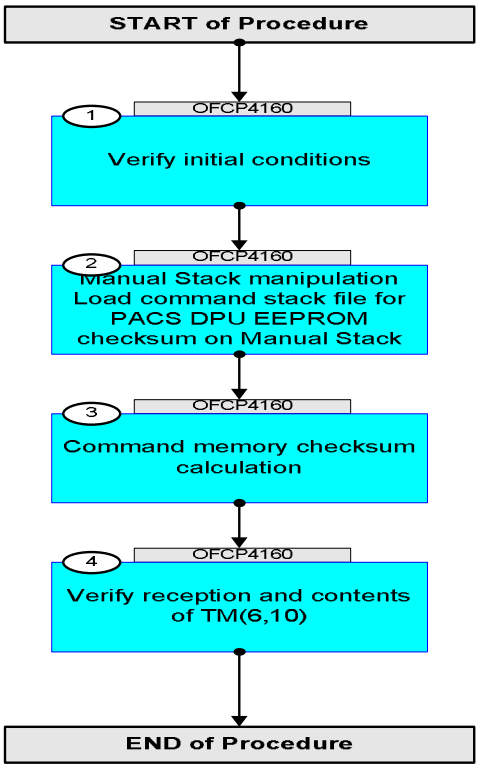
Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Beginning of Procedure			
	OFCP4160	*TC Seq. Name :* OFCP4160 ( ) PACS DPU EEPROM checksum *TimeTag Type: B* *Sub Schedule ID:*			
1		Verify initial conditions		Next Step: 2	
		Check PACS **DPU ASW running**			
		Instrument SOE to confirm PACS instrument mode			
2		Manual Stack manipulation Load command stack file for PACS DPU EEPROM checksum on Manual Stack		Next Step: 3	
		Select the File -> **LoadStack** option from the main menu of the Manual Stack window			
2.1		IF PACS Nominal			
		Select file **PADPEEPR_CI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/pmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/PADPEEPR as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYYY = Image ID(X) and Version(Y) - depend on image used for stack generation YYYY_DDD hhmmss - depend on stack generation time machine - depends on the name of the machine used for stack generation			
		File name **examples** - No model associated to the memory image: PADPEEPR_CI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT PADPEEPR1, ID 0003, Version 001 associated to the memory image: PADPEEPR_CI_0002001_C_PADPEEPR1_0003001_2007_337T093320.sun043			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
2.2		ELSE PACS Redundant			
		Select file **PADPEPRR_CI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/pmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/PADPEPRR as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYYY = Image ID(X) and Version(Y) - depend on image used for stack generation YYYY_DDD hhmmss - depend on stack generation time machine - depends on the name of the machine used for stack generation			
		File name **examples** - No model associated to the memory image: PADPEPRR_CI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT PADPEPRR1, ID 0003, Version 001 associated to the memory image: PADPEPRR_CI_0002001_C_PADPEPRR1_0003001_2007_337T093320.sun043			
2.3		Check command stack loaded			
		Check that loaded stack contains one or several TCs **PC029380**			
		Display the Manual Stack in 'Full mode' and check that the **Memory ID** parameter in the PC029380 command(s) is set to **13 hex**: **Memory ID = 13 hex** **Note**: The Memory ID of the target memory device is stored in the MSB of the 16-bit long Mem ID TC parameter. The LSB of the same parameter carries the most significant 8 bits of the Start Address.			
		Execute Telecommand **DPU_MEMORY_CHECK** *Command Parameter(s) :* **DPU_MEMORY_BLOCK_ID PP009380** **DPU_MEMORY_ADDR PP003380** **DPU_DATA_LENGTH PP008380** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 90* Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA This Telecommand will not be included in the export	**PC029380** **13xx hex** **<hex>** (Def) **<dec>** (Def)	**TC**	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
3		Command memory checksum calculation		Next Step: 4	
		Uplink the **PC029380** memory check command(s) with **ARM-GO**			
		For each command, a TM(6,10) packet must be received on ground.			
4		Verify reception and contents of TM(6,10)		Next Step: END	
		Note: A TM(6,10) packet will be received for each memory check command uplinked.			
4.1		IF PACS Prime			
		Verify Packet Reception MEMORY_CRC Packet Mnemonic : MEMORY_CRC APID : 1152 Type : 6 Subtype : 10 PI1 : PI2 :			
		Note: The Memory ID of the target memory device is stored in the MSB of the 16-bit long Mem ID TM parameter. The LSB of the same parameter carries the most significant 8 bits of the Start Address.			
		Verify Telemetry **MEMORY_ID PM129380**	**= 13xx <hex>**	AND=PA029380	
		Verify Telemetry **START_ADDRESS PM130380**		AND=PA029380	
		Verify Telemetry **LENGTH PM131380**		AND=PA029380	
		Verify Telemetry **CHECKSUM PM132380**		AND=PA029380	
4.2		ELSE PACS Redundant			
		Verify Packet Reception MEMORY_CRC Packet Mnemonic : MEMORY_CRC APID : 1153 Type : 6 Subtype : 10 PI1 : PI2 :			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Note: The Memory ID of the target memory device is stored in the MSB of the 16-bit long Mem ID TM parameter. The LSB of the same parameter carries the most significant 8 bits of the Start Address.			
		Verify Telemetry **MEMORY_ID PM129380**	**= 13xx <hex>**	AND=PA029380	
		Verify Telemetry **START_ADDRESS PM130380**		AND=PA029380	
		Verify Telemetry **LENGTH PM131380**		AND=PA029380	
		Verify Telemetry **CHECKSUM PM132380**		AND=PA029380	
4.3		Verify checksum value(s)			
		Check the received checksum(s) against the expected value(s)			
		Verify Telemetry **CHECKSUM PM132380**	**= expected value**	AND=PA029380	
		End of Sequence			
		End of Procedure			