

Check PACS DPU DRAM memory area (checksum calculation)
 File: H_FCP_OBS_4164.xls
 Author: Liviu Stefanov



Procedure Summary

Objectives

This Herschel OBSM nominal procedure is used to perform a memory check of one or several PACS DPU DRAM memory areas. The memory check 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

OFCP4164

Referenced Displays

ANDs GRDs SLDs
 PA029380

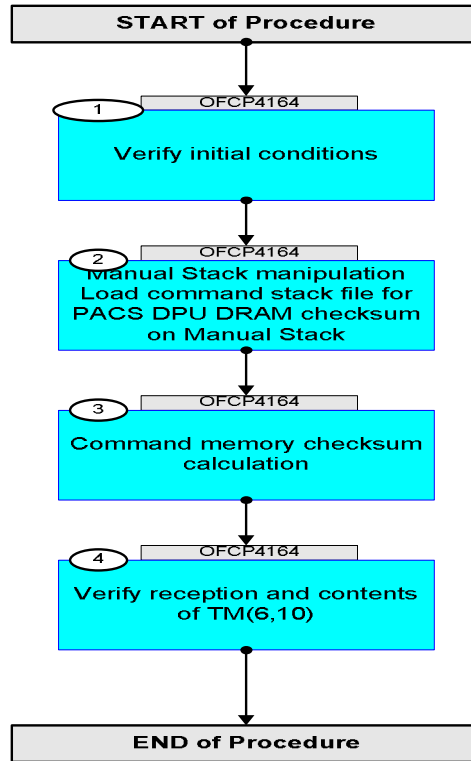
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
30/01/08	1	1	Created	Istefanov-hp	
02/09/08	2	2	1. added current steps 2.1 and 2.2 to separate checksum stack load for PACS Nom and Red	Istefanov-hp	

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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					
OFCP4164		TC Seq. Name : OFCP4164 () PACS DPU DRAM checksum TimeTag Type: B Sub Schedule ID: <input type="checkbox"/>			
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 DRAM 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 PADPRMDA_CI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/PADPRMDA as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = 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: PADPRMDA_CI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT PADPRMDA1, ID 0003, Version 001 associated to the memory image: PADPRMDA_CI_0002001_C_PADPRMDA1_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 PADPRMDR_CI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/PADPRMDR as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = 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: PADPRMDR_CI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT PADPRMDR1, ID 0003, Version 001 associated to the memory image: PADPRMDR_CI_0002001_C_PADPRMDR1_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 11 hex : Memory ID = 11 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 <div style="text-align: right;">DPU_MEMORY_CHECK</div> PC029380 Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 11xx hex DPU_MEMORY_ADDR PP003380 <hex> (Def) DPU_DATA_LENGTH PP008380 <dec> (Def) 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		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 = 11xx <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	= 11xx <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					