

Check SPIRE DPU DRAM memory area (checksum calculation)
 File: H_FCP_OBS_5164.xls
 Author Liviu Stefanov



Procedure Summary

Objectives

This Herschel OBSM nominal procedure is used to perform a memory check of one or several SPIRE 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

- SPIRE DPU is ON
- SPIRE 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

- SPIRE DPU is ON
- SPIRE ASW running

End of Procedure

Same as start

Reference File(s)

Input Command Sequences

Output Command Sequences

OFCP5164

Referenced Displays

ANDs GRDs SLDs
 SAM4_500

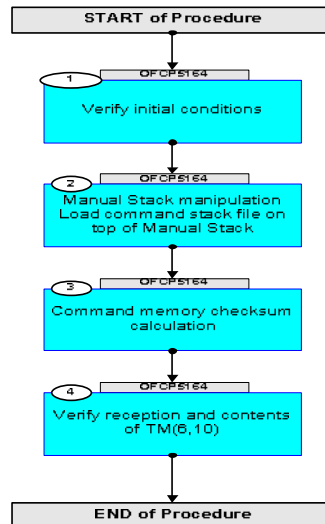
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
30/01/2008	1	1	Created	lstefanov-hp	

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Procedure Flowchart Overview



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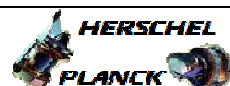
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
Beginning of Procedure					
OFCP5164		TC Seq. Name : OFCP5164 () SPIRE DPU DRAM checksum TimeTag Type: B Sub Schedule ID: <input type="checkbox"/>			
1		Verify initial conditions		Next Step: 2	
		Check: - SPIRE DPU ON - SPIRE ASW running			
		Instrument SOE to confirm SPIRE instrument mode			
2		Manual Stack manipulation Load command stack file on top of Manual Stack		Next Step: 3	
		Select the File -> LoadStack option from the main menu of the Manual Stack window			
		Select file SPDPRMDA_CI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/SPDPRMDA 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: SPDPRMDA_CI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT SPDPRMDA1, ID 0003, Version 001 associated to the memory image: SPDPRMDA_CI_0002001_C_SPDPRMDA1_0003001_2007_337T093320.sun043			
2.1		Check command stack loaded			
		Check that loaded stack contains one or several TCs SCM02500			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Display the Manual Stack in 'Full mode' and check that the Memory ID parameter in the SCM02500 command(s) is set to 01 hex : Memory ID = 01 hex			
		Execute Telecommand CHECK_MEMORY Command Parameter(s) : MEMORYID_CHECKMEM SPM9N500 STARTADDR_CHECKMEM SPMAN500 NSAU_CHECKMEM SPMBN500 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 370 Det. descr. : CHECK MEMORY USING ABSOLUTE ADDRESSES This Telecommand will not be included in the export	SCM02500	TC	
3		Command memory checksum calculation		Next Step: 4	
		Uplink the SCM02500 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 SPIRE Prime			
		Verify Packet Reception Memory_Check_Absolute_Addresses Packet Mnemonic : SMECHK00500 APID : 1280 Type : 6 Subtype : 10 PI1 : PI2 :			
		Verify Telemetry MEMORYID_MCHK SMM8N500	= 01 <hex>	AND=SAM4_500	
		Verify Telemetry STARTADDR_MCHK SMM9N500		AND=SAM4_500	
		Verify Telemetry NSAU_MCHK SMMAN500		AND=SAM4_500	
		Verify Telemetry CHK_MCHK SMMBN500		AND=SAM4_500	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
4.2		ELSE SPIRE Redundant			
		Verify Packet Reception R_Memory_Check_Absolute_Addresses Packet Mnemonic : SMMCHK00500 APID : 1281 Type : 6 Subtype : 10 PI1 : PI2 :			
		Verify Telemetry MEMORYID_MCHK SMM8N500	= 01 <hex>	AND=SAM4_500	
		Verify Telemetry STARTADDR_MCHK SMM9N500		AND=SAM4_500	
		Verify Telemetry NSAU_MCHK SMMAN500		AND=SAM4_500	
		Verify Telemetry CHK_MCHK SMMBN500		AND=SAM4_500	
4.3		Verify checksum value			
		Check the received checksum against the expected value			
		Verify Telemetry CHK_MCHK SMMBN500	= expected value	AND=SAM4_500	
End of Sequence					
End of Procedure					