

Check SPIRE DPU PRAM memory area (checksum calculation)  
 File: H\_FCP\_OBS\_5162.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 PRAM 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

OFCP5162

### Referenced Displays

ANDs GRDs SLDs  
 SAM4\_500

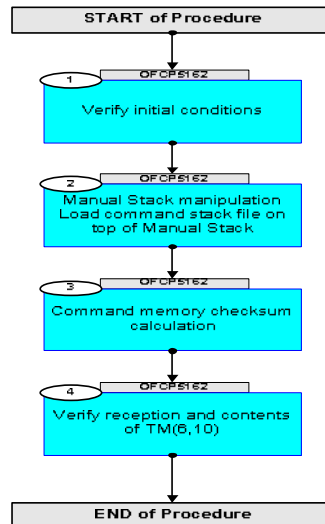
### Configuration Control Information

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
<b>Beginning of Procedure</b>					
OFCP5162		TC Seq. Name : OFCP5162 ( ) SPIRE DPU PRAM 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 -> <b>LoadStack</b> option from the main menu of the Manual Stack window			
		Select file  <b>SPDPRMPG_CI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine</b>  from directory  <a href="#">/home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/SPDPRMPG</a>  as indicated by the OBSM engineer			
		IMPORTANT:  <b>XXXXYYY</b> = Image ID(X) and Version(Y) - depend on image used for stack generation  <b>YYYY_DDD hhmmss</b> - depend on stack generation time  <b>machine</b> - depends on the name of the machine used for stack generation			
		File name <b>examples</b>  - No model associated to the memory image:  SPDPRMPG_CI_0002001_N_NoModel_NoModel_2007_254T123300.sun043  - CT SPDPRMPG1, ID 0003, Version 001 associated to the memory image:  SPDPRMPG_CI_0002001_C_SPDPRMPG1_0003001_2007_337T093320.sun043			
2.1		Check command stack loaded			
		Check that loaded stack contains one or several TCs <b>SCM02500</b>			

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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 <b>Memory ID</b> parameter in the SCM02500 command(s) is set to <b>00 hex</b> :  <b>Memory ID = 00 hex</b>			
		Execute Telecommand  <b>CHECK_MEMORY</b>  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 <b>SCM02500</b> memory check command(s) with <b>ARM-GO</b>			
		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	
		<b>Note:</b> 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	= 00 <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	= 00 <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					