

Monitor dump of SPIRE DPU DRAM memory area  
File: H\_FCP\_OBS\_5144.xls  
Author Liviu Stefanov



## Procedure Summary

### Objectives

This Herschel OBSM nominal procedure is used to perform the dump monitoring of one or several SPIRE DPU DRAM memory areas. The memory dump is commanded using TC(6,5) and the memory locations content is received on ground in TM(6,6) 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 dumped through TC(6,5); 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  
OFCP5144

### Referenced Displays

ANDs GRDs SLDs

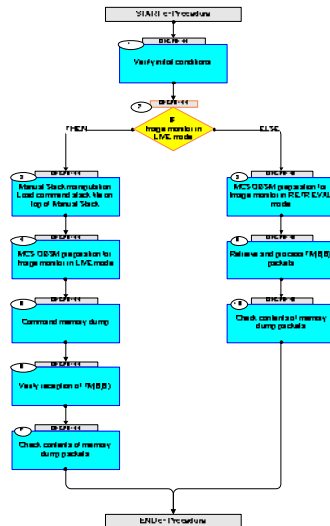
### Configuration Control Information

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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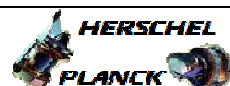
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
<b>Beginning of Procedure</b>					
OFCP5144		TC Seq. Name : OFCP5144 ( ) SPIRE DPU DRAM dump monitoring in Live mode  TimeTag Type: B Sub Schedule ID:  <input type="checkbox"/>			
1		Verify initial conditions		Next Step: 2	
		Check: - SPIRE DPU ON - SPIRE ASW running			
		Instrument SOE to confirm SPIRE instrument mode			
2		IF Image monitor in LIVE mode  type: [If]		Next Step: THEN 3 ELSE 8	
3		Manual Stack manipulation Load command stack file on top of Manual Stack		Next Step: 4	
		<b>NOTE:</b> The current procedure assumes that the memory dump in Live mode is performed using commands with immediate execution.			
		Select the File -> <b>LoadStack</b> option from the main menu of the Manual Stack window			
		Select file  <b>SPDPRMDA_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine</b>  from directory  <a href="#">/home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/SPDPRMDA</a>  as indicated by the OBSM engineer			
		<b>IMPORTANT:</b>  <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			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		File name <b>examples</b>  - No model associated to the memory image:  SPDPMDA_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043  - CT SPDPMDA1, ID 0003, Version 001 associated to the memory image:  SPDPMDA_DI_0002001_C_SPDPMDA1_0003001_2007_337T093320.sun043			
3.1		Check command stack loaded			
		Check that loaded stack contains one or several TCs <b>SCM01500</b>			
		Display the Manual Stack in 'Full mode' and check that the <b>Memory ID</b> parameter in the PC028380 command(s) is set to <b>01 hex</b> :  <b>Memory ID = 01 hex</b>			
		Execute Telecommand  <div style="text-align: right;"><b>DUMP_MEMORY</b></div> <div style="text-align: right;"><b>SCM01500</b></div> Command Parameter(s) : <div style="display: flex; justify-content: space-between;"> <div> <b>MEMORYID_DUMPMEM</b>  <b>STARTADDR_DUMPMEM</b>  <b>NSAU_DUMPMEM</b> </div> <div> <b>SPM6N500</b>  <b>SPM7N500</b>  <b>SPM8N500</b> </div> <div> <b>01 &lt;hex&gt; (Def)</b>  <b>&lt;hex&gt; (Def)</b>  <b>&lt;hex&gt; (Def)</b> </div> </div> TC Control Flags : <div style="text-align: right;"><b>GBM IL DSE</b> <b>--Y -- ---</b></div> Subsch. ID : 370 Det. descr. : DUMP MEMORY USING ABSOLUTE ADDRESSES This Telecommand will not be included in the export		TC	
4		MCS OBSM preparation for Image monitor in LIVE mode		Next Step: 5	
		<b>Note:</b> It is assumed that the OBSM application is already running and the OBSM Desktop is displayed on the MCS client. Starting the OBSM application is not covered by the current procedure.			
4.1		Select 'Image MONITOR' from the menu			
		Select the <b>Image</b> menu of the <b>OBSM Desktop</b> .  From the Image menu, select <b>Monitor</b> .  The 'Image Catalog' window opens.			
4.2		Select image to be monitored			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Select the image to be monitored for the memory device <b>SPDPRMDA</b> .  The 'Image MONITOR' window opens.			
4.3		Start dump TM processing			
		Press the <b>LIVE</b> button to start processing of incoming live telemetry.			
5		Command memory dump		Next Step: 6	
		<b>Uplink</b> the <b>SCM01500</b> memory dump command(s) with <b>ARM-GO</b>			
		For each command, one or more TM(6,6) packets must be received on ground.			
6		Verify reception of TM(6,6)		Next Step: 7	
		<b>Note:</b> One or more TM(6,6) packets will be received for each memory dump command uplinked.			
6.1		IF SPIRE Prime			
		Verify Packet Reception  Memory_Dump_Absolute_Addresses Packet Mnemonic : SMEMDUMP0500 APID : 1280 Type : 6 Subtype : 6 PI1 : PI2 :			
6.2		ELSE SPIRE Redundant			
		Verify Packet Reception  R_Memory_Dump_Absolute_Addresses Packet Mnemonic : SMEMDUMP0500 APID : 1281 Type : 6 Subtype : 6 PI1 : PI2 :			
6.3		Check OBSM dump packet processing			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Check that the OBSM is processing the incoming memory dump packets.			
7		Check contents of memory dump packets		Next Step: END	
		Verify that there are <b>NO OBSM reported differences</b> between the memory dump data and the ground image used for monitoring.			
		<b>IF</b> there are <b>differences</b> reported by OBSM between the dump data and the ground image, <b>the merged image shall be saved</b> for offline analysis.			
7.1		Save merged image			
		<b>IF</b> there are <b>mismatches</b> reported by OBSM, save merged image with <b>current ID</b> or with <b>new ID</b> .			
End of Sequence TC Seq. Name : OFCP514B ( ) SPIRE DPU DRAM dump monitoring in Retrieval mode TimeTag Type: Sub Schedule ID: <input type="checkbox"/>					
8		MCS OBSM preparation for Image monitor in RETRIEVAL mode		Next Step: 9	
		<b>Note:</b> It is assumed that the OBSM application is already running and the OBSM Desktop is displayed on the MCS client. Starting the OBSM application is not covered by the current procedure.			
8.1		Select 'Image MONITOR' from the menu			
		Select the <b>Image</b> menu of the <b>OBSM Desktop</b> . From the Image menu, select <b>Monitor</b> . The 'Image Catalog' window opens.			
8.2		Select image to be monitored			
		Select the image to be monitored for the memory device <b>SPDPRMDA</b> . The 'Image MONITOR' window opens.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
8.3		Start dump TM packets processing			
		Set retrieval start time and start retrieval of TM packets using the PLAY buttons.			
9		Retrieve and process TM(6,6) packets		Next Step: 10	
		Use the <b>STEP</b> button to retrieve and process the TM(6,6) packets, packet by packet and starting from the time shown in the packet time field.			
		OR			
		Use the <b>PLAY</b> button to retrieve and process the TM(6,6) packets in automated mode.  Pressing the PLAY button, the display will start to retrieve and process packets, starting from the time shown in the packet time field. This processing will stop automatically when a packet is received which creation time is greater than the one contained in the end time field.			
10		Check contents of memory dump packets		Next Step: END	
		Verify that there are <b>NO OBSM reported differences</b> between the memory dump data and the ground image used for monitoring.			
		<b>IF</b> there are <b>differences</b> reported by OBSM between the dump data and the ground image, <b>the merged image shall be saved</b> for further analysis.			
10.1		Save merged image			
		<b>IF</b> there are <b>mismatches</b> reported by OBSM, save merged image with <b>current ID</b> or with <b>new ID</b> .			
End of Sequence					
End of Procedure					