Monitor dump of SPIRE DPU PRAM memory area
File: H_FCP_OBS_5142.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 PRAM 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

OFCP5142

Referenced Displays

ANDs **GRDs** **SLDs**

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
30/01/08	1	1	Created	lstefanov-hp	

Status : Version 2 - Unchanged
Last Checkin: 05/01/09

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05/01/09	2	2	1. step 3 updated: created sub-steps 3.1 and 3.2 to separate stack load for Prime and Redundant units 2. current step 3.3 updated: TC SCM01500 replaced by ESOC SPIRE mem.dump TC XC007998 3. step 4.2 updated: created sub-steps 4.2.1 and 4.2.2 to separate image selection for Prime and Redundant units 4. step 5 updated: TC SCM01500 replaced by ESOC SPIRE mem.dump TC XC007998 5. step 8.2 updated created sub-steps 8.2.1 and 8.2.2 to separate image selection for Prime and Redundant units 6. changed Command Sequence name from OFCP514A to OFCP514C	lstefanov-hp	

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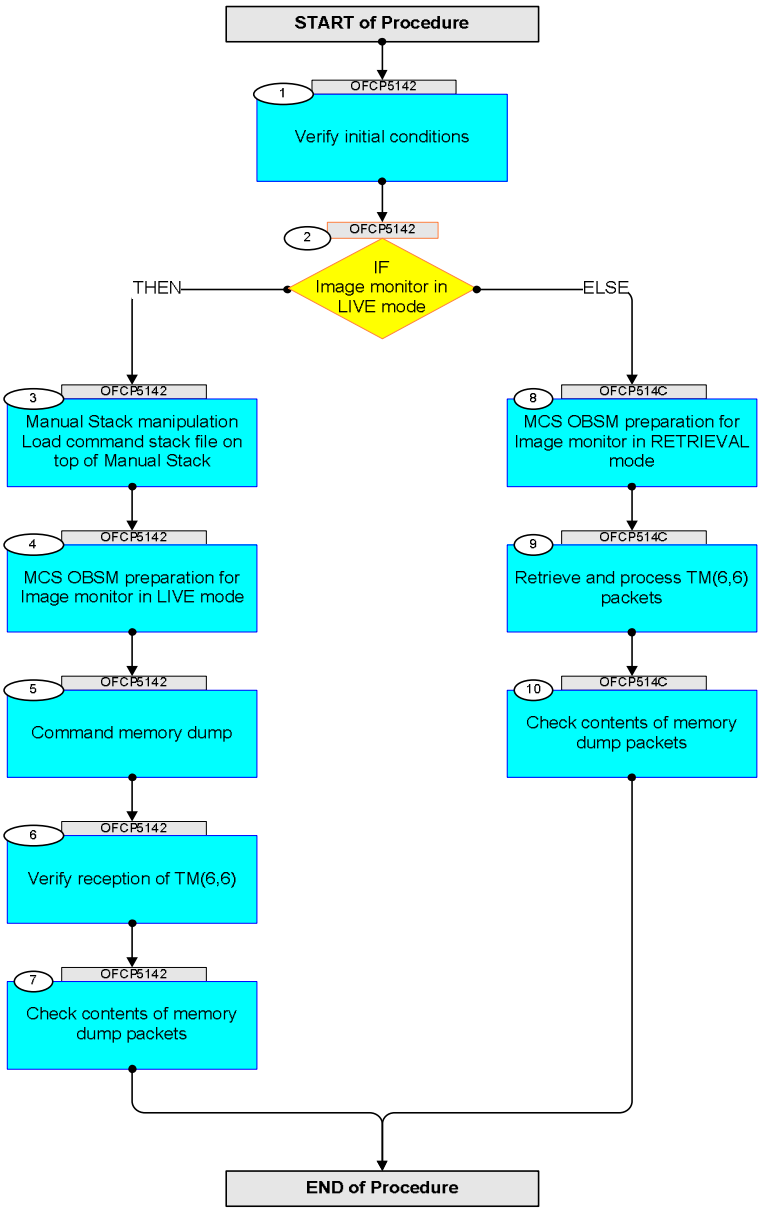
Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
Beginning of Procedure					
	OFCP5142	*TC Seq. Name :* OFCP5142 (SPIRE DPU PRAM dmp) SPIRE DPU PRAM dump monitoring in Live mode *TimeTag Type: B* *Sub Schedule ID:*			
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	
		NOTE: The current procedure assumes that the memory dump in Live mode is performed using commands with immediate execution.			
		Select the File -> **LoadStack** option from the main menu of the Manual Stack window			
3.1		IF SPIRE Prime			
		Select file **SPDPRMPG_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/pmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/SPDPRMPG 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			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		File name **examples** - No model associated to the memory image: SPDPRMPG_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT SPDPRMPG1, ID 0003, Version 001 associated to the memory image: SPDPRMPG_DI_0002001_C_SPDPRMPG1_0003001_2007_337T093320.sun043			
3.2		ELSE SPIRE Redundant			
		Select file **SPDPRMPR_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/pmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/SPDPRMPR 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: SPDPRMPR_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT SPDPRMPR1, ID 0003, Version 001 associated to the memory image: SPDPRMPR_DI_0002001_C_SPDPRMPR1_0003001_2007_337T093320.sun043			
3.3		Check command stack loaded			
		Note: for the whole **SPIRE DPU RAM Prog**: **MemID** = **00** hex **Start Address** = **00.0000** hex **End Address** = **07.FFFF** hex **Length** = **800000** hex			
		Check that loaded stack contains one or several TCs **XC007998**			

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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 XC007998 command(s) is set to **00 hex**: **Memory ID = 00 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 **SPIRE Memory Dump** **XC007998** *Command Parameter(s) :* **Memory ID** **XH011998** **00xx <hex>** **Start Address** **XH012998** **<hex>** (Def) **Length** **XH013998** **<hex>** (Def) *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 370* Det. descr. : Dump SPIRE 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	
		Note: 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 **Image** menu of the ***OBSM Desktop***. From the Image menu, select **Monitor**. The 'Image Catalog' window opens.			
4.2		Select image to be monitored			
		Select the image to be monitored for the memory device **SPDPRMPG.** The 'Image MONITOR' window opens.			
4.2.1		IF SPIRE Prime			
		Select the image to be monitored for the memory device **SPDPRMPG.** The 'Image MONITOR' window opens.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
4.2.2		ELSE SPIRE Redundant			
		Select the image to be monitored for the memory device **SPDPRMPR.** The 'Image MONITOR' window opens.			
4.3		Start dump TM processing			
		In **LIVE** mode, processing of incoming real-time telemetry starts automatically after the image selection.			
5		Command memory dump		Next Step: 6	
		Uplink the **XC007998** memory dump command(s) with **ARM-GO**			
		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	
		Note: 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			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		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			
		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 **NO OBSM reported differences** between the memory dump data and the ground image used for monitoring.			
		IF there are **differences** reported by OBSM between the dump data and the ground image, **the merged image shall be saved** for offline analysis.			
7.1		Save merged image			
		IF there are **mismatches** reported by OBSM, save merged image with **new ID**.			
		End of Sequence			
	OFCP514C	*TC Seq. Name :*OFCP514C (SPIRE DPU PRAM dmp C) SPIRE DPU PRAM dump monitoring in Retrieval mode *TimeTag Type:* *Sub Schedule ID:* □			
8		MCS OBSM preparation for Image monitor in RETRIEVAL mode		Next Step: 9	
		Note: 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			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Select the **Image** menu of the ***OBSM Desktop***. From the Image menu, select **Monitor**. The 'Image Catalog' window opens.			
8.2		Select image to be monitored			
8.2.1		IF SPIRE Prime			
		Select the image to be monitored for the memory device **SPDPRMPG.** The 'Image MONITOR' window opens.			
8.2.2		ELSE SPIRE Redundant			
		Select the image to be monitored for the memory device **SPDPRMPR.** The 'Image MONITOR' window opens.			
8.3		Start dump TM packets processing			
		Set **retrieval start** and **stop time** and start retrieval of TM packets using the **PLAY buttons**.			
9		Retrieve and process TM(6,6) packets		Next Step: 10	
		Use the **STEP** 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 **PLAY** 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	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Verify that there are **NO OBSM reported differences** between the memory dump data and the ground image used for monitoring.			
		IF there are **differences** reported by OBSM between the dump data and the ground image, **the merged image shall be saved** for further analysis.			
10.1		Save merged image			
		IF there are **mismatches** reported by OBSM, save merged image with **new ID**.			
		End of Sequence			
		End of Procedure			