

Monitor dump of HIFI DPU 1553 DRAM memory area
 File: H_FCP_OBS_3150.xls
 Author: lstefanov-hp



Procedure Summary

Objectives

This Herschel OBSM nominal procedure is used to perform the dump monitoring of one or several HIFI DPU 1553 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
 - HIFI in Intermediate mode (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
 - HIFI in Intermediate mode (ASW running)

End of Procedure

Same as start

Reference File(s)

Input Command Sequences

Output Command Sequences

OFCP3150

Referenced Displays

ANDs GRDs SLDs

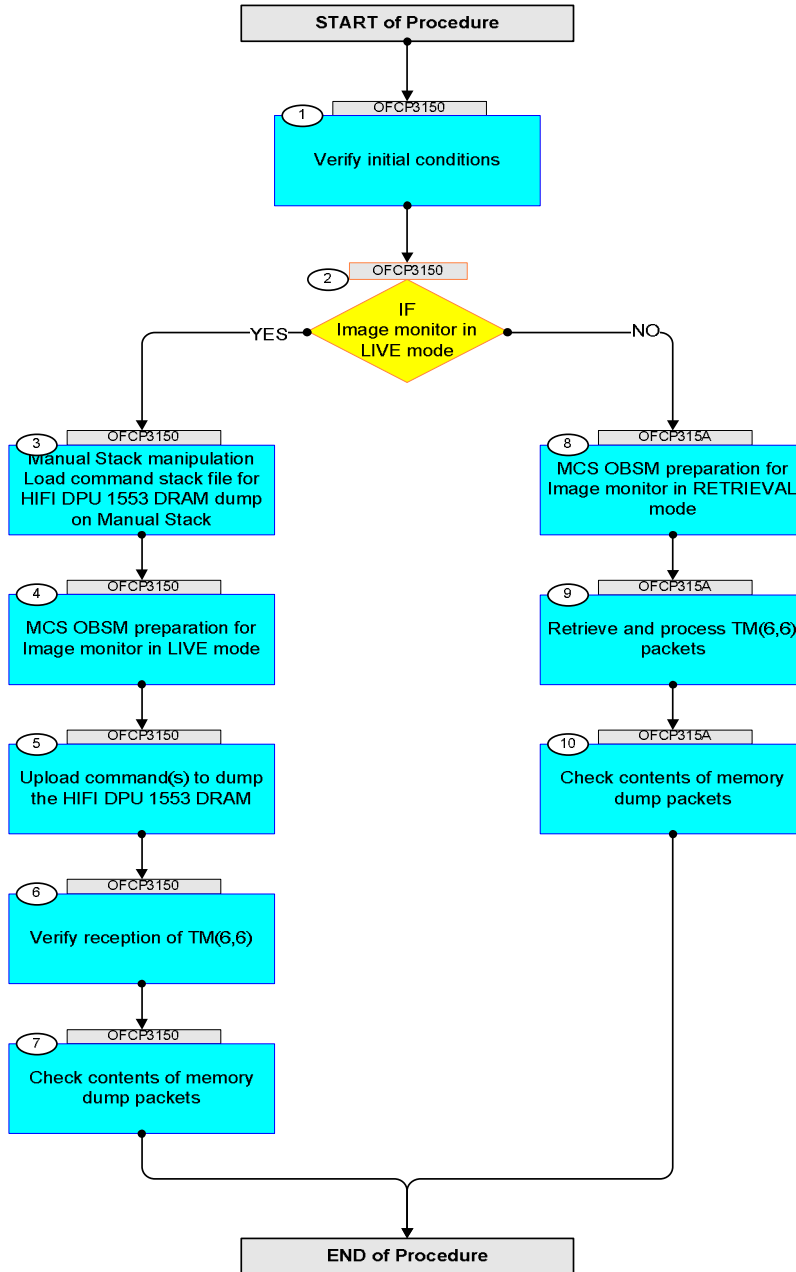
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
27/08/08		1	Created	lstefanov-hp	
27/08/08	2	2	1. steps 3.1 and 3.2 updated: corrected typos in file name examples in 3rd comment - PI replaced by DI 2. step 3.3 updated: changed 2nd comment to reflect the 16 bit length of the Mem ID param. of TC XC005998	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					
OFCP3150 TC Seq. Name :OFCP3150 () HIFI DPU 1553 DRAM dump monitor in Live mode TimeTag Type: B Sub Schedule ID: <input type="checkbox"/>					
1		Verify initial conditions		Next Step: 2	
		Check HIFI instrument in Intermediate mode (ASW running)			
		Instrument SOE to confirm HIFI instrument mode			
2		IF Image monitor in LIVE mode type: [If]		Next Step: YES 3 NO 8	
3		Manual Stack manipulation Load command stack file for HIFI DPU 1553 DRAM dump on 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 HIFI Nominal			
		Select file HIDPRM15_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcsofs/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HIDPRM15 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			

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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: HIDPRM15_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HIDPRM151, ID 0003, Version 001 associated to the memory image: HIDPRM15_DI_0002001_C_HIDPRM151_0003001_2007_337T093320.sun043			
3.2		ELSE HIFI Redundant			
		Select file HIDPRM1R_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HIDPRM1R 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: HIDPRM1R_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HIDPRM1R1, ID 0003, Version 001 associated to the memory image: HIDPRM1R_DI_0002001_C_HIDPRM1R1_0003001_2007_337T093320.sun043			
3.3		Check memory dump command stack loaded			
		Check that loaded stack contains one or several TCs XC005998			
		Display the Manual Stack in 'Full mode' and check that the Memory ID parameter in the XC005998 command(s) is set to 02 hex : Memory ID = 02 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.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment											
		Execute Telecommand <p style="text-align: center;">HIFI Memory Dump</p> <p>Command Parameter(s) :</p> <table style="margin-left: 40px;"> <tr> <td>Memory ID</td> <td>XH008998</td> <td>02xx <hex></td> </tr> <tr> <td>Start Address</td> <td>XH009998</td> <td><hex> (Def)</td> </tr> <tr> <td>Length</td> <td>XH010998</td> <td><hex> (Def)</td> </tr> </table> <p>TC Control Flags :</p> <table style="margin-left: 40px;"> <tr> <td>GBM IL DSE</td> <td>--Y -- ---</td> </tr> </table> <p>Subsch. ID : 70 Det. descr. : Dump HIFI Memory Using Absolute Addresses This Telecommand will not be included in the export</p>	Memory ID	XH008998	02xx <hex>	Start Address	XH009998	<hex> (Def)	Length	XH010998	<hex> (Def)	GBM IL DSE	--Y -- ---	XC005998	TC	
Memory ID	XH008998	02xx <hex>														
Start Address	XH009998	<hex> (Def)														
Length	XH010998	<hex> (Def)														
GBM IL DSE	--Y -- ---															
4		MCS OBSM preparation for Image monitor in LIVE mode		Next Step: 5												
		<p>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.</p>														
4.1		Select 'Image MONITOR' from the menu														
		Select the Image menu of the <i>OBSM Desktop</i> . From the Image menu, select Monitor . The 'Image Catalog' window opens.														
4.2		Select image to be monitored														
4.2.1		IF HIFI Nominal														
		Select the image to be monitored for the memory device HIDPRM15 . The 'Image MONITOR' window opens.														
4.2.2		ELSE HIFI Redundant														
		Select the image to be monitored for the memory device HIDPRM1R . The 'Image MONITOR' window opens.														

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
4.3		Start dump TM processing			
		In LIVE mode, processing of incoming real-time telemetry starts automatically after the image selection.			
5		Upload command(s) to dump the HIFI DPU 1553 DRAM		Next Step: 6	
		Uplink the XC005998 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 HIFI Prime			
		Verify Packet Reception HIFI_memory_dump Packet Mnemonic : H_mem_dump APID : 1024 Type : 6 Subtype : 6 PI1 : PI2 :			
6.2		ELSE HIFI Redundant			
		Verify Packet Reception HIFI_R_memory_dump Packet Mnemonic : H_mem_dump APID : 1025 Type : 6 Subtype : 6 PI1 : PI2 :			
6.3		Check OBSM dump packet processing			
		Check that the OBSM is processing the incoming memory dump packets.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
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 .			
		Conduct off-line analysis of the reported mismatches.			
End of Sequence					
OFCP315A TC Seq. Name : OFCP315A () HIFI DPU 1553 DRAM dump monitor in Retrieval mode TimeTag Type: Sub Schedule ID: <input type="checkbox"/>					
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			
		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 HIFI Nominal			

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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 HIDPRM15 . The 'Image MONITOR' window opens.			
8.2.2		ELSE HIFI Redundant			
		Select the image to be monitored for the memory device HIDPRM1R . 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	
		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 .			
		Conduct off-line analysis of the reported mismatches.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
End of Sequence					
End of Procedure					