Check HIFI DPU PRAM memory area (checksum calculation)
File: H_FCP_OBS_3162.xls
Author: Liviu Stefanov

Procedure Summary

Objectives

This Herschel OBSM nominal procedure is used to perform a memory check of one or several HIFI DPU PRAM memory areas. The memory ckeck 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
- HIFI in Intermediate mode (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
- HIFI in Intermediate mode (ASW running)

End of Procedure

Same as start

Reference File(s)

Input Command Sequences

Output Command Sequences

OFCP3162

Referenced Displays

ANDs **GRDs** **SLDs**

HA070289

Configuration Control Information

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

Status : Version 3 - Unchanged
Last Checkin: 27/08/08

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27/08/08		2	1. added current steps 2.1 and 2.2 to separate checksum stack load for HIFI Nom and Red 2. current step 2.3 updated: TC HC005289 replaced by ESOC HIFI mem. checksum TC XC006998	lstefanov-hp	
27/08/08	2	3	1. step 2.3 updated: corrected typo in 2nd comment - 'TM parameter' replaced by 'TC parameter'	lstefanov-hp	

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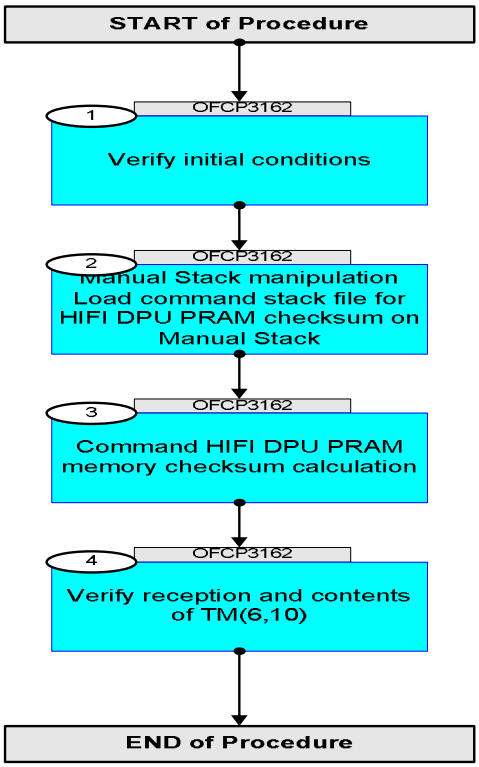
Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Beginning of Procedure			
	OFCP3162	*TC Seq. Name :* OFCP3162 ( ) HIFI DPU PRAM checksum *TimeTag Type: B* *Sub Schedule ID:*			
1		Verify initial conditions		Next Step: 2	
		Check HIFI instrument in **Intermediate mode** (ASW running)			
		Instrument SOE to confirm HIFI instrument mode			
2		Manual Stack manipulation Load command stack file for HIFI DPU PRAM checksum on Manual Stack		Next Step: 3	
		Select the File -> **LoadStack** option from the main menu of the Manual Stack window			
2.1		IF HIFI Nominal			
		Select file **HIDPRMPG_CI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/pmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HIDPRMPG 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: HIDPRMPG_CI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HIDPRMPG1, ID 0003, Version 001 associated to the memory image: HIDPRMPG_CI_0002001_C_HIDPRMPG1_0003001_2007_337T093320.sun043			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
2.2		ELSE HIFI Redundant			
		Select file **HIDPRMPR_CI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/pmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HIDPRMPR 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: HIDPRMPR_CI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HIDPRMPR1, ID 0003, Version 001 associated to the memory image: HIDPRMPR_CI_0002001_C_HIDPRMPR1_0003001_2007_337T093320.sun043			
2.3		Check command stack loaded			
		Check that loaded stack contains one or several TCs **XC006998**			
		Display the Manual Stack in 'Full mode' and check that the **Memory ID** parameter in the XC006998 commands 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.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand **HIFI Memory Check** *Command Parameter(s) :* **Memory ID** **XH008998** **Start Address** **XH009998** **Length** **XH010998** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 70* Det. descr. : Check HIFI Memory Using Absolute Addresses This Telecommand will not be included in the export	**XC006998** **00xx <hex>** **<hex>** (Def) **<hex>** (Def)	**TC**	
3		Command HIFI DPU PRAM memory checksum calculation		Next Step: 4	
		Uplink the **XC006998** 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 HIFI Prime			
		Verify Packet Reception HIFI_memory_check Packet Mnemonic : H_mem_check APID : 1024 Type : 6 Subtype : 10 PI1 : PI2 :			
		Verify Telemetry **HI_check_mem_id** **HM072190**	**= PM**	AND=HA070289	
		Verify Telemetry **HI_check_start** **HM073190**		AND=HA070289	
		Verify Telemetry **HI_check_length** **HM074190**		AND=HA070289	
		Verify Telemetry **HI_data_crc** **HM075190**		AND=HA070289	
4.2		ELSE HIFI Redundant			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Verify Packet Reception HIFI_R_memory_check Packet Mnemonic : H_mem_check APID : 1025 Type : 6 Subtype : 10 PI1 : PI2 :			
		Verify Telemetry **HI_check_mem_id HM072190**	**= PM**	AND=HA070289	
		Verify Telemetry **HI_check_start HM073190**		AND=HA070289	
		Verify Telemetry **HI_check_length HM074190**		AND=HA070289	
		Verify Telemetry **HI_data_crc HM075190**		AND=HA070289	
4.3		Verify checksum value(s)			
		Check the received checksum(s) against the expected value(s)			
		Verify Telemetry **HI_data_crc HM075190**	**= expected value**	AND=HA070289	
		End of Sequence			
		End of Procedure			