

Check HIFI DPU DRAM memory area (checksum calculation)  
 File: H\_FCP\_OBS\_3164.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 DRAM 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  
 - 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**

OFCP3164

### Referenced Displays

ANDs      GRDs      SLDs  
 HA070289

### Configuration Control Information

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

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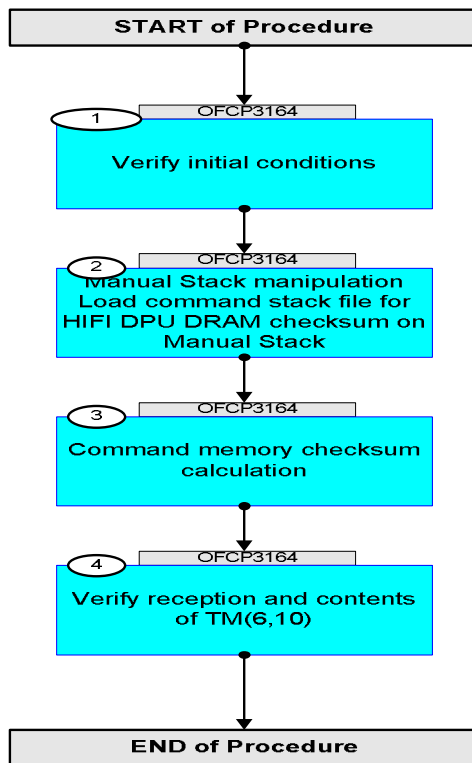


27/08/08		2	1. added current steps 2.1 and 2.2 to separate checksum stack load for HIFI Nom and Red 2. current step 2.3 updated: TC HC005289 replaced by ESOC HIFI mem. checksum TC XC006998	Istefanov-hp	
27/08/08	2	3	1. step 2 updated: removed last 3 comments - they are included now in sub-step 2.1 2. step 2.3 updated: corrected typo in 2nd comment - 'TM parameter' replaced by 'TC parameter'	Istefanov-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>					
OFCP3164 TC Seq. Name :OFCP3164 ( ) HIFI DPU DRAM checksum TimeTag Type: B Sub Schedule ID: □					
1		Verify initial conditions		Next Step: 2	
		Check HIFI instrument in <b>Intermediate mode</b> (ASW running)			
		Instrument SOE to confirm HIFI instrument mode			
2		Manual Stack manipulation Load command stack file for HIFI DPU DRAM checksum on Manual Stack		Next Step: 3	
		Select the File -> <b>LoadStack</b> option from the main menu of the Manual Stack window			
2.1		IF HIFI Nominal			
		Select file <b>HIDPRMDM_CI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine</b> from directory <a href="/home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HIDPRMDM">/home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HIDPRMDM</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: HIDPRMDM_CI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HIDPRMDM1, ID 0003, Version 001 associated to the memory image: HIDPRMDM_CI_0002001_C_HIDPRMDM1_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  <b>HIDPRMDR_CI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine</b>  from directory  <a href="#">/home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HIDPRMDR</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:  <b>HIDPRMDR_CI_0002001_N_NoModel_NoModel_2007_254T123300.sun043</b>  - CT HIDPRMDR1, ID 0003, Version 001 associated to the memory image:  <b>HIDPRMDR_CI_0002001_C_HIDPRMDR1_0003001_2007_337T093320.sun043</b>			
2.3		Check command stack loaded			
		Check that loaded stack contains one or several TCs <b>XC006998</b>			
		Display the Manual Stack in 'Full mode' and check that the <b>Memory ID</b> parameter in the XC006998 commands is set to <b>01 hex</b> :  <b>Memory ID = 01 hex</b>  <b>Note:</b> 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 <b>HIFI Memory Check</b> Command Parameter(s) : Memory ID            XH008998    01xx <hex> Start Address        XH009998    <hex> (Def) Length                XH010998    <hex> (Def) 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	TC	
3		Command memory checksum calculation		Next Step: 4	
		<b>Uplink</b> the XC006998 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 HIFI Prime			
		Verify Packet Reception  HIFI_memory_check Packet Mnemonic :        H_mem_check APID :                    1024 Type :                    6 Subtype :                10 PI1 : PI2 :			
		Verify Telemetry <b>HI_check_mem_id</b> HM072190    = DM		AND=HA070289	
		Verify Telemetry <b>HI_check_start</b> HM073190		AND=HA070289	
		Verify Telemetry <b>HI_check_length</b> HM074190		AND=HA070289	
		Verify Telemetry <b>HI_data_crc</b> 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	= DM	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					
<b>End of Procedure</b>					