

OBSW functional test
 File: H_FCP_HIF_COBS.xls
 Author: R. Biggins



Procedure Summary

Objectives

The objective of this procedure is to perform a short functional test on the OBSW.

- Check PM
- Simulate science packet generation

Based on procedure:
 HIFI_OBS_SFT (v3)

Summary of Constraints

Real-time science packets should be enabled for downlink for HIFI analysis

This test is not software dependent, although inputs are required for the running software (inputs for version 6.5.3 included)

Spacecraft Configuration

Start of Procedure

HIFI is in Standby1 mode

End of Procedure

HIFI is in Standby1 mode

Reference File(s)

Input Command Sequences

Output Command Sequences

HFHCOBS

Referenced Displays

ANDs **GRDs** **SLDs**
 ZAZ9C999

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
25/10/2007		1	Created	R. Biggins	
14/11/2007		2	Update due to discussions between D. Teyssier and R. Biggins - Set HK rate command added - Check PM memory parameters updated in line with OBSW version 5.4.0	R. Biggins	
08/01/2008		3	Update due to initial testing against simulator: - BBID/OBSID TM checks added - TCs updated due to new DB	R. Biggins	
08/01/2008		3.01	Validation : Display update	R. Biggins	
29/02/2008		4	Update due to testing against MOC Simulator and comments by D. Teyssier: - Telecommand flags updated - Editorial updates	R. Biggins	

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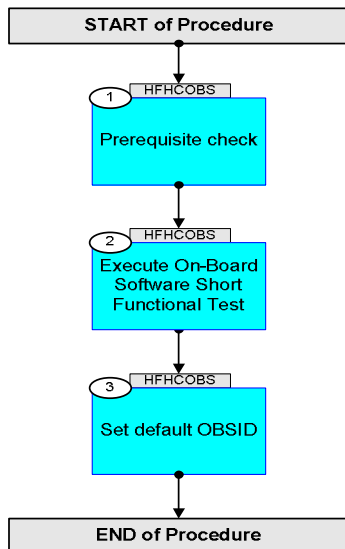


06/06/2008	1	5	Updates due to SVT-1 testing: <input type="checkbox"/> - Check memory TC parameters changed to formal parameters <input type="checkbox"/> - TCs to change HK rate removed <input type="checkbox"/> - OBSW version check added <input type="checkbox"/> - Comments added to become less version-specific <input type="checkbox"/> <input type="checkbox"/> - Flags updated	R. Biggins	
04/03/2009	2.1	5.01	Validation : Updates due to SVT-2/SOVT-2 testing <input type="checkbox"/> - Procedure updated to be compatible with software version 6.1.1 <input type="checkbox"/> - Summary updated	R. Biggins	
19/05/2009	2.5	6	Uupdate to FP 'END' expected value	R. Biggins	
09/02/2011		6.01	Validation : Updated to be correct for ICU software version 6.5.2	R. Biggins	
13/04/2011	3.1	6.02	Validation : Validation: Updated to be correct for ICU software version 6.5.3	R. Biggins	

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Procedure Flowchart Overview

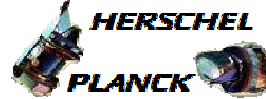


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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
HFHCOBS OBSW functional test				
SSID :				
1		Prerequisite check		Next Step: 2
1.1		HSC/ICC input		<input type="checkbox"/>
		Verify that the HSC has supplied a valid OBSID value OBS_ID = 0xnnnn nnnn		
		Verify that the correct information has been supplied by the ICC: Software Version/Revision/Patch number (step 3)		
		For OBSW v6.5.3 the the following formal parameters should be set accordingly: START = 0x5600 END = 0x18E1E CRC = 0x6260		
2		Execute On-Board Software Short Functional Test		Next Step: 3
2.1		Set OBSID		<input type="checkbox"/>
	ET=+ UT=+00.00.01	<pre>HIFI_Set_OBS_ID HIFI_Set_OBS_ID HC014289 Command Parameter(s) : HIFI_BB_ID HP001197 1EF60001 <hex> HIFI_OBS_ID HP000197 OBS_ID TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID</pre>		
		<pre>Verify Telemetry BB_ID_per_hk HM004190 = 1EF60001 <hex> AND=ZAZ9C999</pre>		
		<pre>Verify Telemetry OBS_ID_per_hk HM003190 OBS_ID AND=ZAZ9C999</pre>		
2.2		Check PM memory		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry HI_SW_Version HM010190	Version	AND=ZAZ9C999
		Verify Telemetry HI_SW_Revision HM011190	Revision	AND=ZAZ9C999
		Verify Telemetry HI_SW_Patch HM012190	Patch	AND=ZAZ9C999
	ET=+ UT=+00.00.00	HIFI_check_PM_memory HIFI_check_PM_memory Command Parameter(s) : HIF_check_start HP231197 HIF_check_end HP232197 HIF_check_crc HP233197 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 70 Det. descr. : Compares checksum of specified PM memory with specified value	HC169289 START END CRC	
		A TM(5,4) packet will be produced only if the check fails, otherwise there is no response expected from HIFI.		
2.3		Run <i>HIFI_enable_time_verify</i>		<input type="checkbox"/>
	ET=+ UT=+00.00.01	HIFI_enable_time_verify HIFI_enable_time_verify SSID : 70	HC172289	
2.4		Simulate <i>spectroscopy measurement</i>		<input type="checkbox"/>
	ET=+ UT=+00.00.01	HIFI_simulate_science HIFI_simulate_science TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 70 Det. descr. : Generate a predefined science datastream	HC155289	
		Confirm that real-time science telemetry packets (21,1) are arriving (either with HIFI or ensure that the NCTRS shows data transmitted on VC1).		
2.5		Abort <i>spectroscopy measurement</i>		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.30	HIFI_abort_spectroscopy <p style="text-align: right;">HIFI_abort_spectroscopy</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- --</p> Subsch. ID : 70 Det. descr. : Aborts any ongoing spectroscopy measurement	HC012289	
		Confirm with HIFI that real-time science telemetry packets (21,1) are not arriving.		
3		Set default OBSID		Next Step: END
	ET=+ UT=+00.00.01	HIFI_Set_OBS_ID <p style="text-align: right;">HIFI_Set_OBS_ID</p> Command Parameter(s) : <p style="text-align: right;">HIFI_BB_ID HP001197 HIFI_OBS_ID HP000197</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- --</p> Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289	
		Verify Telemetry <p style="text-align: right;">BB_ID_per_hk HM004190</p>	= 0 <hex>	AND=ZAZ9C999
		Verify Telemetry <p style="text-align: right;">OBS_ID_per_hk HM003190</p>	= 0 <hex>	AND=ZAZ9C999
End of Procedure				