

Chopper Health Check Test #3
 File: H_FCP_HIF_RHC3.xls
 Author: R. Biggins



Procedure Summary

Objectives

The objective of this procedure is to perform part three of HIFI internal chopper health check (closed loop).

Based on procedure:
 HIFI_Chopper_closed_loop_parameter_Redundant (v2)

Summary of Constraints

This should be the very first test performed after transition between OPEN LOOP and CLOSED LOOP contexts

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

Spacecraft Configuration

Start of Procedure

HIFI is in Standby mode

End of Procedure

No change to HIFI mode

Reference File(s)

Input Command Sequences

Output Command Sequences

HFHRHC3

Referenced Displays

ANDs GRDs SLDs
 ZAZ9E999

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
08/11/07		1	Created	R. Biggins	
14/11/07		1.01	Validation : Update due to discussions between D. Teyssier and R. Biggins	R. Biggins	
11/01/08		2	Update due to initial testing against the simulator: - BBID/OBSID TM checks added - TCs updated due to new DB	R. Biggins	
29/02/08		3	Update due to testing against MOC Simulator and comments by D. Teyssier: - Telecommand flags updated - Editorial updates	R. Biggins	
07/03/08		4	Update due to the Prime/Redundant instantiation of the Configure_FCU, Chopper_Rot and Chopper_scan_fast telecommands	R. Biggins	

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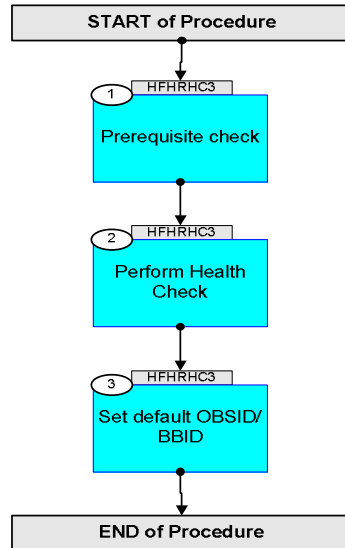


05/06/08	1	5	Updates due to SVT-1 testing: <input type="checkbox"/> - Step 2 [configure HIFI] removed (duplication with previously executed procedure) <input type="checkbox"/> - All HIFI_non_periodic_hk_FCU TCs [HC017289] removed <input type="checkbox"/> - TM parameter HF_APR_CH_ROT replaced with HF_DPR_CH_ROT2 <input type="checkbox"/> - AND updated for all TM parameters <input type="checkbox"/> - Comments added <input type="checkbox"/> - Flags updated	R. Biggins	
25/02/09	2.1	5.01	Validation : Updates due to SVT-2/SOVT-2 testing <input type="checkbox"/> <input type="checkbox"/> - Summary updated <input type="checkbox"/> - TM packet checks updated	R. Biggins	
25/11/09	3	6	Updates due to Prime unit failure resulting in new operation scheme <input type="checkbox"/> - Updated to reflect new mode name	R. Biggins	

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry BB_ID_per_hk HM004190	= 1E0F0001 <hex>	AND=ZAZ9E999
		Verify Telemetry OBS_ID_per_hk HM003190	OBS_ID	AND=ZAZ9E999
2.1		Move chopper to 0V		<input type="checkbox"/>
	ET=+ UT=+00.00.01	HIFI_R_Chopper_Rot HIFI_R_Chopper_Rot Command Parameter(s) : HIFI_BB_ID HP001197 HF_R_Chopper_Rot HP455191 SSID : 70	HC185289 1E0F0001 <hex> 0.0 V	
		Verify Telemetry HF_DPR_CH_ROT2 HM196191	= 0.0 V	AND=ZAZ9E999
2.2		Monitor chopper LVDT when moving from 0V to -7.09V		<input type="checkbox"/>
	ET=+ UT=+00.00.01	HIFI_R_Chopper_scan_fast HIFI_R_Chopper_scan_fast Command Parameter(s) : HIF_step_time_ms HP079197 HF_R_Chopper_Rot HP455191 HIF_N_samples_1 HP083197 HIF_N_samples_2 HP084197 SSID : 70	HC187289 3 ms (Def) -7.09 V 50 <dec> (Def) 1000 <dec> (Def)	
		Verify Telemetry HF_DPR_CH_ROT2 HM196191	= -7.09 V	AND=ZAZ9E999
		Verify: 3 of the following HIFI TM packets are generated HIFI_R_chopper_scan_report H_ChoppScan Packet Details: APID: 1027 Type: 3 Subtype: 25 PI1: 271 PI2:		
2.3		Monitor chopper LVDT when stable at -7.09V		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.05	HIFI_R_Chopper_scan_fast <p style="text-align: center;">HIFI_R_Chopper_scan_fast</p> Command Parameter(s) : HIF_step_time_ms HP079197 10 ms HF_R_Chopper_Rot HP455191 -7.09 V HIF_N_samples_1 HP083197 50 <dec> (Def) HIF_N_samples_2 HP084197 1000 <dec> (Def) SSID : 70	HC187289	
		Verify: 3 of the following HIFI TM packets are generated <p style="text-align: center;">HIFI_R_chopper_scan_report H_ChoppScan</p> Packet Details: APID: 1027 Type: 3 Subtype: 25 PI1: 271 PI2:		
2.4		Move chopper back to 0V		☐
	ET=+ UT=+00.00.12	HIFI_R_Chopper_Rot <p style="text-align: center;">HIFI_R_Chopper_Rot</p> Command Parameter(s) : HIFI_BB_ID HP001197 1E0F0001 <hex> HF_R_Chopper_Rot HP455191 0.0 V SSID : 70	HC185289	
		Verify Telemetry <p style="text-align: center;">HF_DPR_CH_ROT2 HM196191 = 0.0 V</p>		AND=ZAZ9E999
2.5		Monitor chopper LVDT when moving from 0V to -0.37V		☐
	ET=+ UT=+00.00.01	HIFI_R_Chopper_scan_fast <p style="text-align: center;">HIFI_R_Chopper_scan_fast</p> Command Parameter(s) : HIF_step_time_ms HP079197 3 ms (Def) HF_R_Chopper_Rot HP455191 -0.37 V HIF_N_samples_1 HP083197 50 <dec> (Def) HIF_N_samples_2 HP084197 1000 <dec> (Def) SSID : 70	HC187289	
		Verify Telemetry <p style="text-align: center;">HF_DPR_CH_ROT2 HM196191 = -0.37 V</p>		AND=ZAZ9E999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify: 3 of the following HIFI TM packets are generated HIFI_R_chopper_scan_report Packet Details: APID: 1027 Type: 3 Subtype: 25 PI1: 271 PI2:	H_ChoppScan	
2.6		Move chopper back to rest position		<input type="checkbox"/>
	ET=+ UT=+00.00.05	HIFI_R_Chopper_Rot HIFI_R_Chopper_Rot Command Parameter(s) : HIFI_BB_ID HP001197 HF_R_Chopper_Rot HP455191 SSID : 70	HC185289 1E0F0001 <hex> -2.33 V	
		Verify Telemetry HF_DPR_CH_ROT2 HM196191	= -2.33 V	AND=ZAZ9E999
		Verify: Success of this integrity check needs off-line analysis		
3		Set default OBSID/BBID		Next Step: END
	ET=+ UT=+00.00.01	HIFI_Set_OBS_ID HIFI_Set_OBS_ID Command Parameter(s) : HIFI_BB_ID HP001197 HIFI_OBS_ID HP000197 SSID : 70	HC014289 0 <hex> (Def) 0 <hex> (Def)	
		Verify Telemetry BB_ID_per_hk HM004190	= 0 <hex>	AND=ZAZ9E999
		Verify Telemetry OBS_ID_per_hk HM003190	= 0 <hex>	AND=ZAZ9E999
End of Procedure				