

HIFI\_Intermediate\_to\_StandbyI\_Redundant  
 File: H\_FCP\_HIF\_RSON.xls  
 Author: R. Biggins



## Procedure Summary

### Objectives

The objective of this procedure is to transition the redundant HIFI units from INTERMEDIATE mode to StandbyI mode, by switching on all the HIFI subsystems

### Summary of Constraints

All unwanted autonomous functions should have been disabled. In particular, H\_FCP\_HIF\_SODI should have been executed

### Spacecraft Configuration

**Start of Procedure**

HIFI in INTERMEDIATE mode

**End of Procedure**

HIFI in StandbyI mode

### Reference File(s)

**Input Command Sequences**

**Output Command Sequences**

HFHRSON

### Referenced Displays

**ANDs**      **GRDs**      **SLDs**  
 ZAZ9C999  
 HA147289  
 HA001000

### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
08/11/07		1	Created	R. Biggins	
08/01/08		2	Update due to initial testing against simulator: - Time tags updated - 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 - 'Notify PDU status for FCU' step moved to H_FCP_HIF_RION	R. Biggins	
05/06/08	1	4	Updates due to SVT-1 testing: - Formal Parameters updated to allow for OPEN or CLOSED loop contexts - TM parameter HF_DPR_CH_ROT changed to HF_DPR_CH_ROT2 (step 7.2) - AND updated for all TM parameters - Comments added - Flags updated	R. Biggins	

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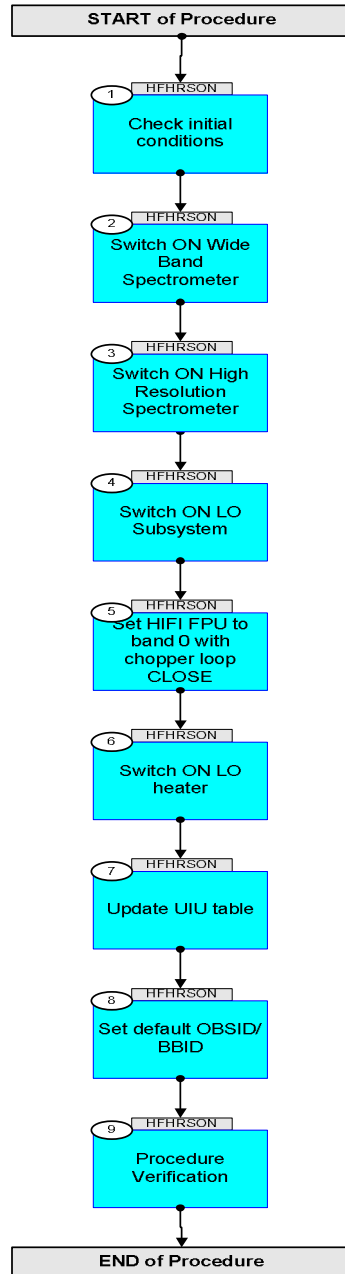


04/11/08		5	Updates due to comments from D. Teyssier - TC parameter HF_CPR_Cal_Heater (HP217191) value updated in step 5 (TC HC182289) - New step added (6) to switch on LO heater	R. Biggins	
05/11/08		6	Updates due to new procedures from industry - New step (7) added to update UIU table	R. Biggins	
24/11/08	2	7	Updates due to updates from D. Teyssier - TM checks moved in step 7 - TC flags updated - TC parameter value updated in step 6 and TM check added - TM value updated in step 9.2 for parameter HF_APR_CS_C	R. Biggins	
07/04/09	2.3	8	Final updates before flight - Summary updated - TC flags updated - Procedure description/title updated - HL_Heater TC updated to FP	R. Biggins	
11/09/09	2.5	9	HK data rate updated to 1 packet per second	R. Biggins	
07/12/09		10	TC added to step 9 to set HK data rate to 1 packet per 4 seconds	R. Biggins	
10/12/09		10.01	Validation : TM checks updated	R. Biggins	
22/12/09		11	TCs updated to ensure that TM is generated one packet per second	R. Biggins	
15/02/10	3	11.01	Validation : Step 1.2: HM124190 updated to be ON not OFF	R. Biggins	

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## Procedure Flowchart Overview

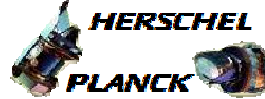


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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<b>Beginning of Procedure</b>				
TC Seq. Name : HFHRSON (Switch ON HIFI (Red))  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>				
1		Check initial conditions		Next Step: 2
		Verify: The following <b>TM(3,25)</b> packets should be produced once every 4 seconds:  <b>HIFI_essential_HK</b> (APID 1025)		
1.1		HSC/ICC input		<input type="checkbox"/>
		Verify that the HSC/ICC has supplied a valid OBSID value  <b>OBS_ID</b> = 0xnnnn nnnn		
		Verify that the ICC has supplied a valid Heater volte  <b>HEATER</b> = 6V (default)		
		Verify with the HIFI ICC that the correct context should be applied:  Open loop context (default): <b>CONTEXT</b> = OPEN <b>CHOPPER</b> = 0.0V  Closed loop context: <b>CONTEXT</b> = CLOSED <b>CHOPPER</b> = -2.33V		
		The following TM indicates the current context <b>HF_DPR_CHLOOP_S</b> <b>HM198191</b>	<b>OPEN or CLOSED</b>	AND=ZAZ9C999
1.2		Verify: HIFI status		<input type="checkbox"/>
		Verify Telemetry <b>HI_au_LCU_mem_S</b> <b>HM123190</b>	<b>= OFF</b>	AND=HA147289
		Verify Telemetry <b>HI_au_LCUmode_S</b> <b>HM124190</b>	<b>= ON</b>	AND=HA147289
2		Switch ON Wide Band Spectrometer		Next Step: 3

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
2.1		Switch ON WBS-H Subsystem		<input type="checkbox"/>
	ET=+ UT=+00.00.00	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID                  HP001197 HIFI_OBS_ID                  HP000197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DE90001 <hex> OBS_ID	
	ET=+ UT=+00.00.01	Execute Telecommand  SwOn_HiFiWEH_L43  Subsch. ID : 10 Det. descr. : PCDU: TC(8,4,112,5) HIFI WEH - switch LCL_43 on	DC43D170	
		Verify Telemetry  BB_ID_per_hk                  HM004190	= 1DE90001 <hex>	AND=ZAZ9C999
		Verify Telemetry  OBS_ID_per_hk                  HM003190	OBS_ID	AND=ZAZ9C999
		Verify: WBS-H LCL status HiFiWEV_L43_S                  WM82A565	= ON	AND=ZAZ9C999
		Verify: WBS-H LCL current (+/- 10%) HiFiWEH_L43_I                  WM806565	= 0.92 A	AND=ZAZ9C999
	ET=+ UT=+00.00.00	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID                  HP001197 HIFI_OBS_ID                  HP000197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DE70002 <hex> OBS_ID	

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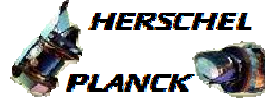
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	HIFI_notify_PDU_status  HIFI_notify_PDU_status  Command Parameter(s) : HIF_FCU_S                  HP006197 HIF_LCU_S                  HP007197 HIF_WBSV_S                HP009197 HIF_WBSH_S                HP008197 HIF_HRSV_S                HP011197 HIF_HRSH_S                HP010197  Subsch. ID : 70 Det. descr. : Notifies the power status of the subssystems to the OBS	HC015289  ON OFF (Def) OFF (Def) ON OFF (Def) OFF (Def)	
		Verify Telemetry BB_ID_per_hk                  HM004190	= 1DE70002 <hex>	AND=ZAZ9C999
		Verify Telemetry OBS_ID_per_hk                  HM003190	OBS_ID	AND=ZAZ9C999
		Verify Telemetry HI_WBSH_S                      HM000193	= ON	AND=ZAZ9C999
2.2		Switch ON WBS-V Subsystem		<input type="checkbox"/>
	ET=+ UT=+00.00.00	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID                  HP001197 HIFI_OBS_ID                HP000197  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DE90002 <hex> OBS_ID	
	ET=+ UT=+00.00.01	Execute Telecommand  SwOn_HiFiWEV_L44  Subsch. ID : 10 Det. descr. : PCDU: TC(8,4,112,5) HIFI WEV - switch LCL_44 on	DC44D170	
		Verify Telemetry BB_ID_per_hk                  HM004190	= 1DE90002 <hex>	AND=ZAZ9C999
		Verify Telemetry OBS_ID_per_hk                  HM003190	OBS_ID	AND=ZAZ9C999
		Verify: WBS-V LCL status HiFiWEV_L44_S                WM32A565	= ON	AND=ZAZ9C999
		Verify: WBS-V LCL current (+/- 10%) HifiWEV_L44_I                WM306565	= 0.92 A	AND=ZAZ9C999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID HP001197 HIFI_OBS_ID HP000197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DE70003 <hex> OBS_ID	
	ET=+ UT=+00.00.01	HIFI_notify_PDU_status  HIFI_notify_PDU_status  Command Parameter(s) : HIF_FCU_S HP006197 HIF_LCU_S HP007197 HIF_WBSV_S HP009197 HIF_WBSH_S HP008197 HIF_HRSV_S HP011197 HIF_HRSR_S HP010197  Subsch. ID : 70 Det. descr. : Notifies the power status of the subssystems to the OBS	HC015289  ON OFF (Def) ON ON OFF (Def) OFF (Def)	
		Verify Telemetry BB_ID_per_hk HM004190	= 1DE70003 <hex>	AND=ZAZ9C999
		Verify Telemetry OBS_ID_per_hk HM003190	OBS_ID	AND=ZAZ9C999
		Verify Telemetry HI_WBSV_S HM001193	= ON	AND=ZAZ9C999
3		Switch ON High Resolution Spectrometer		Next Step: 4
3.1		Switch ON HRS-H Subsystem		<input type="checkbox"/>
	ET=+ UT=+00.00.00	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID HP001197 HIFI_OBS_ID HP000197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DE90003 <hex> OBS_ID	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	Execute Telecommand  SwOn_HiFiHRH_L63  Subsch. ID : 10 Det. descr. : PCDU: TC(8,4,112,5) HIFI HRH - switch LCL_63 on	DC63D170	
		Verify Telemetry BB_ID_per_hk HM004190	= 1DE90003 <hex>	AND=ZAZ9C999
		Verify Telemetry OBS_ID_per_hk HM003190	OBS_ID	AND=ZAZ9C999
		Verify: HRS-H LCL status HiFiHRH_L63_1S WM52C565	= ON	AND=ZAZ9C999
		Verify: HRS-H LCL current (+/- 10%) HiFiHRH_L63_I WM508565	= 2.32 A	AND=ZAZ9C999
3.2		Switch ON HRS-V Subsystem		□
	ET=+ UT=+00.00.00	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID HP001197 HIFI_OBS_ID HP000197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DE90004 <hex> OBS_ID	
	ET=+ UT=+00.00.01	Execute Telecommand  SwOn_HiFiHRV_L67  Subsch. ID : 10 Det. descr. : PCDU: TC(8,4,112,5) HIFI HRV - switch LCL_67 on	DC67D170	
		Verify Telemetry BB_ID_per_hk HM004190	= 1DE90004 <hex>	AND=ZAZ9C999
		Verify Telemetry OBS_ID_per_hk HM003190	OBS_ID	AND=ZAZ9C999
		Verify: HRS-V LCL status HiFiHRV_L67_1S WM62C565	= ON	AND=ZAZ9C999
		Verify: HRS-V LCL current (+/- 10%) HiFiHRV_L67_I WM608565	= 2.32 A	AND=ZAZ9C999
3.3		HRS start-up		□



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID                  HP001197 HIFI_OBS_ID                  HP000197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DB50001 <hex> OBS_ID	
		Verify Telemetry  BB_ID_per_hk                  HM004190	= 1DB50001 <hex>	AND=ZAZ9C999
		Verify Telemetry  OBS_ID_per_hk                  HM003190	OBS_ID	AND=ZAZ9C999
	ET=+ UT=+00.00.00	HIFI_Housekeeping_on  HIFI_Housekeeping_on  Command Parameter(s) : HIF_HK_rate                  HP012197 HIF_FCU_S                  HP006197 HIF_LCU_S                  HP007197 HIF_WBSV_S                  HP009197 HIF_WBSH_S                  HP008197 HIF_HRSV_S                  HP011197 HIF_HRSH_S                  HP010197  TC Control Flags :  GBM IL DSE --Y -- ---	HC016289  1_pkt_per_s ON (Def) ON (Def) ON (Def) ON (Def) OFF OFF	
		Subsch. ID : 70 Det. descr. : Sets periodic housekeeping packet generation period		
	ET=+ UT=+00.00.01	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID                  HP001197 HIFI_OBS_ID                  HP000197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DE70004 <hex> OBS_ID	

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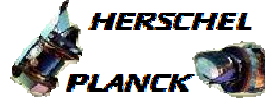
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	HIFI_notify_PDU_status  <b>HIFI_notify_PDU_status</b>  Command Parameter(s) : HIF_FCU_S           HP006197 HIF_LCU_S           HP007197 HIF_WBSV_S          HP009197 HIF_WBSH_S          HP008197 HIF_HRSV_S          HP011197 HIF_HRSH_S          HP010197  Subsch. ID : 70 Det. descr. : Notifies the power status of the subssystems to the OBS	HC015289  ON OFF (Def) ON ON OFF (Def) ON	
		Verify Telemetry  BB_ID_per_hk           HM004190	= 1DE70004 <hex>	AND=ZAZ9C999
		Verify Telemetry  OBS_ID_per_hk          HM003190	OBS_ID	AND=ZAZ9C999
		Verify Telemetry  HI_HRSH_S            HM000192	= ON	AND=ZAZ9C999
	ET=+ UT=+00.00.00	HIFI_Set_OBS_ID  <b>HIFI_Set_OBS_ID</b>  Command Parameter(s) : HIFI_BB_ID            HP001197 HIFI_OBS_ID           HP000197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DE70005 <hex> OBS_ID	
	ET=+ UT=+00.00.01	HIFI_notify_PDU_status  <b>HIFI_notify_PDU_status</b>  Command Parameter(s) : HIF_FCU_S           HP006197 HIF_LCU_S           HP007197 HIF_WBSV_S          HP009197 HIF_WBSH_S          HP008197 HIF_HRSV_S          HP011197 HIF_HRSH_S          HP010197  Subsch. ID : 70 Det. descr. : Notifies the power status of the subssystems to the OBS	HC015289  ON OFF (Def) ON ON ON ON	
		Verify Telemetry  BB_ID_per_hk           HM004190	= 1DE70005 <hex>	AND=ZAZ9C999
		Verify Telemetry  OBS_ID_per_hk          HM003190	OBS_ID	AND=ZAZ9C999
		Verify Telemetry  HI_HRSV_S            HM001192	= ON	AND=ZAZ9C999

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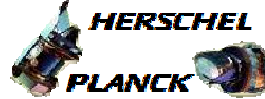
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
3.4		HRS Functional Test #0		□
	ET=+ UT=+00.00.01	HIFI_HRS_functional_test HIFI_HRS_functional_test Command Parameter(s) : HIFI_BB_ID           HP001197 HRS_funcstest_id   HP151192 HRS_selected_unit   HP152192  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Perform specified HRS functional test	HC149289  1DBA0001 <hex> 0 <dec> (Def) BOTH (Def)	
		Verify Telemetry BB_ID_per_hk           HM004190	= 1DBA0001 <hex>	AND=ZAZ9C999
	ET=+ UT=+00.00.05	HIFI_Set_OBS_ID HIFI_Set_OBS_ID Command Parameter(s) : HIFI_BB_ID           HP001197 HIFI_OBS_ID          HP000197  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DB50002 <hex> OBS_ID	
		Verify Telemetry BB_ID_per_hk           HM004190	= 1DB50002 <hex>	AND=ZAZ9C999
		Verify Telemetry OBS_ID_per_hk          HM003190	OBS_ID	AND=ZAZ9C999
	ET=+ UT=+00.00.00	HIFI_Housekeeping_on HIFI_Housekeeping_on Command Parameter(s) : HIF_HK_rate          HP012197 HIF_FCU_S            HP006197 HIF_LCU_S            HP007197 HIF_WBSV_S           HP009197 HIF_WBSH_S           HP008197 HIF_HRSV_S           HP011197 HIF_HRSH_S           HP010197  TC Control Flags : GBM IL DSE --Y -- ---	HC016289  1_pkt_per_s ON (Def) ON (Def) ON (Def) ON (Def) ON (Def) ON (Def)	
		Subsch. ID : 70 Det. descr. : Sets periodic housekeeping packet generation period		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
3.5		Configure HRS		<input type="checkbox"/>
		The following TC will generate a <b>TM(8,6)</b> packet		
	ET=+ UT=+00.00.01	HIFI_Config_HRS_H_att_lo HIFI_Config_HRS_H_att_lo Command Parameter(s) : HIFI_BB_ID HP001197 HRH_switch HP091192 HRH_1U_ATT HP105192 HRH_1L_ATT HP106192 HRH_2U_ATT HP107192 HRH_2L_ATT HP108192 HRH_3U_ATT HP109192 HRH_3L_ATT HP110192 HRH_4U_ATT HP111192 HRH_4L_ATT HP112192 HRH_Up_OL1_M HP093192	HC028289  1DD10001 <hex> H (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 67 <dec>	
		HRH_Up_OL1_A HP092192 HRH_Up_OL2_M HP095192 HRH_Up_OL2_A HP094192 HRH_Up_OL3_M HP097192 HRH_Up_OL3_A HP096192 HRH_Up_OL4_M HP099192 HRH_Up_OL4_A HP098192 HRH_Down_OL5_M HP101192 HRH_Down_OL5_A HP100192 HRH_Down_OL6_M HP103192 HRH_Down_OL6_A HP102192 HRH_Down_OL7_M HP104192  TC Control Flags : GBM IL DSE	5 <dec> 69 <dec> 7 <dec> 71 <dec> 9 <dec> 74 <dec> 1 <dec> 51 <dec> (Def) 5 <dec> (Def) 49 <dec> (Def) 0 <dec> (Def) 7 <dec>	
		Subsch. ID : 70 Det. descr. : Configure the attenuators and local oscillators of HRS-H	--Y -- ---	
		The following TC will generate a <b>TM(8,6)</b> packet		
	ET=+ UT=+00.00.00	HIFI_Config_HRS_V_att_lo HIFI_Config_HRS_V_att_lo Command Parameter(s) : HIFI_BB_ID HP001197 HRV_switch HP121192 HRV_1U_ATT HP135192 HRV_1L_ATT HP136192 HRV_2U_ATT HP137192 HRV_2L_ATT HP138192 HRV_3U_ATT HP139192 HRV_3L_ATT HP140192 HRV_4U_ATT HP141192 HRV_4L_ATT HP142192 HRV_Up_OL1_M HP123192	HC030289  1DD10001 <hex> V 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 15.5 dB (Def) 76 <dec>	

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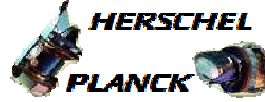
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		HRV_Up_OL1_A HP122192 HRV_Up_OL2_M HP125192 HRV_Up_OL2_A HP124192 HRV_Up_OL3_M HP127192 HRV_Up_OL3_A HP126192 HRV_Up_OL4_M HP129192 HRV_Up_OL4_A HP128192 HRV_Down_OL5_M HP131192 HRV_Down_OL5_A HP130192 HRV_Down_OL6_M HP133192 HRV_Down_OL6_A HP132192 HRV_Down_OL7_M HP134192  Subsch. ID : 70 Det. descr. : Configure the attenuators and local oscillators of HRS-V	3 <dec> 78 <dec> 5 <dec> 80 <dec> 7 <dec> 82 <dec> 9 <dec> 51 <dec> (Def) 5 <dec> (Def) 49 <dec> (Def) 0 <dec> (Def) 7 <dec>	
	ET=+ UT=+00.00.01	HIFI_Config_HRS_H_blocks <b>HIFI_Config_HRS_H_blocks</b>  Command Parameter(s) : HIFI_BB_ID HP001197 HRH_Block_1 HP113192 HRH_Block_2 HP114192 HRH_Block_3 HP115192 HRH_Block_4 HP116192 HRH_Block_5 HP117192 HRH_Block_6 HP118192 HRH_Block_7 HP119192 HRH_Block_8 HP120192  Subsch. ID : 70	HC029289  1DD10001 <hex> corr_wide corr_wide corr_wide corr_wide corr_wide corr_wide corr_wide corr_wide	
		Det. descr. : Configure the autocorrelation blocks of HRS-H		
	ET=+ UT=+00.00.00	HIFI_Config_HRS_V_blocks <b>HIFI_Config_HRS_V_blocks</b>  Command Parameter(s) : HIFI_BB_ID HP001197 HRV_Block_1 HP143192 HRV_Block_2 HP144192 HRV_Block_3 HP145192 HRV_Block_4 HP146192 HRV_Block_5 HP147192 HRV_Block_6 HP148192 HRV_Block_7 HP149192 HRV_Block_8 HP150192  Subsch. ID : 70	HC031289  1DD10001 <hex> corr_wide corr_wide corr_wide corr_wide corr_wide corr_wide corr_wide corr_wide	
		Det. descr. : Configure the autocorrelation blocks of HRS-V		
4		Switch ON LO Subsystem		Next Step: 5

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID HP001197 HIFI_OBS_ID HP000197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DE90005 <hex> OBS_ID	
	ET=+ UT=+00.00.01	Execute Telecommand  SwOn_HiFiLCU_R_L54  Subsch. ID : 10 Det. descr. : PCDU: TC(8,4,112,5) HIFI LCU Red - switch LCL_54 on	DC54D170	
		Verify Telemetry  BB_ID_per_hk HM004190	= 1DE90005 <hex>	AND=ZAZ9C999
		Verify Telemetry  OBS_ID_per_hk HM003190	OBS_ID	AND=ZAZ9C999
		Verify: LCU LCL status HiFiLcuR_L54_1S WM42D565	= ON	AND=ZAZ9C999
		Verify: LCU LCL current (+/- 0.25A) HiFiLCU_R_L54_I WM409565	= 0.9 A	AND=ZAZ9C999
	ET=+ UT=+00.00.00	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID HP001197 HIFI_OBS_ID HP000197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  1DE70006 <hex> OBS_ID	
	ET=+ UT=+00.00.01	HIFI_notify_PDU_status  HIFI_notify_PDU_status  Command Parameter(s) : HIF_FCU_S HP006197 HIF_LCU_S HP007197 HIF_WBSV_S HP009197 HIF_WBSH_S HP008197 HIF_HRSV_S HP011197 HIF_HRSH_S HP010197  Subsch. ID : 70 Det. descr. : Notifies the power status of the subsystems to the OBS	HC015289  ON ON ON ON ON ON	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry BB_ID_per_hk HM004190	= 1DE70006 <hex>	AND=ZAZ9C999
		Verify Telemetry OBS_ID_per_hk HM003190	OBS_ID	AND=ZAZ9C999
		Verify Telemetry HI_LCU_S HM000194	= ON	AND=ZAZ9C999
		Verify Telemetry (RED OOL) HL_MODE_S HM258194	= standby0	AND=ZAZ9C999
5		Set HIFI FPU to band 0 with chopper loop CLOSE		Next Step: 6
	ET=+ UT=+00.00.01	HIFI_Configure_FCU_Power HIFI_Configure_FCU_Power Command Parameter(s) : HIFI_BB_ID HP001197 HF_CPR_Mixer_H_S HP203191 HF_CPR_Mixer_V_S HP204191 HF_CPR_Chopper_V_S HP205191 HF_CPR_UCH_S HP206191 HF_CPR_UCV_S HP207191 TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 70	HC027289  1C200001 <hex> ON (Def) ON (Def) ON (Def) ON (Def) ON (Def)	
		Det. descr. : Switch ON or OFF the five FCU-boards (mixer H/V, chopper, IF HV)		
	ET=+ UT=+00.00.00	HIFI_R_Configure_FCU HIFI_R_Configure_FCU Command Parameter(s) : HIFI_BB_ID HP001197 HF_CPR_MX BAND HP202191 HF_CH1_DPFPF1 HP176191 HF_CH2_FIF1_Drain_V HP177191 HF_CH2_FIF1_Drain_C HP178191 HF_CH2_FIF2_Drain_V HP179191 HF_CH2_FIF2_Drain_C HP180191 HF_CH2_SIF1_Drain_V HP181191 HF_CH2_SIF1_Drain_C HP182191 HF_CH2_SIF2_Drain_V HP183191 HF_CH2_SIF2_Drain_C HP184191	HC183289  1C200001 <hex> 0 <dec> (Def) 0 <dec> 0.075 V (Def) 0.5 mA (Def) 0.075 V (Def) 0.5 mA (Def) 0.075 V (Def) 0.5 mA (Def) 0.075 V (Def) 0.5 mA (Def)	

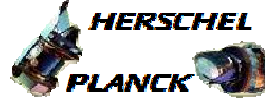
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		HF_CH2_SIF3_Drain_V HP185191 HF_CH2_SIF3_Drain_C HP186191 HF_CV1_DPFPF1 HP191191 HF_CV2_FIF1_Drain_V HP192191 HF_CV2_FIF1_Drain_C HP193191 HF_CV2_FIF2_Drain_V HP194191 HF_CV2_FIF2_Drain_C HP195191 HF_CV2_SIF1_Drain_V HP196191 HF_CV2_SIF1_Drain_C HP197191 HF_CV2_SIF2_Drain_V HP198191 HF_CV2_SIF2_Drain_C HP199191 HF_CV2_SIF3_Drain_V HP200191 HF_CV2_SIF3_Drain_C HP201191 HF_CPR_CH_SINE_S HP211191 HF_CPR_CH_LOOP_S HP210191	0.075 V (Def) 0.5 mA (Def) 0 <dec> 0.075 V (Def) 0.5 mA (Def) 0.075 V (Def) 0.5 mA (Def) 0.075 V (Def) 0.5 mA (Def) 0.075 V (Def) 0.5 mA (Def) 0.075 V (Def) 0.5 mA (Def) 0.075 V (Def) 0.5 mA (Def) 0.075 V (Def) 0.5 mA (Def) ON (Def) CONTEXT	
		HF_CPR_CHFPG1 HP212191 HF_CPR_CHFPG2 HP213191 HF_CPR_CHFPZ1 HP214191 HF_CPR_CHFPZ2 HP215191 HF_CPR_CHFPP2 HP216191 HF_CPR_Cal_Heater_C HP217191 HF_CH1_MXBIAS_V HP172191 HF_CH1_MX_MG_C HP173191 HF_CV1_MXBIAS_V HP187191 HF_CV1_MX_MG_C HP188191 HF_R_Chopper_Rot HP455191 HF_CH1_DFACT_C HP174191 HF_CV1_DFACT_C HP189191  Subsch. ID : 70	17 <dec> 201 <dec> (Def) 1010 <dec> 885 <dec> (Def) 149 <dec> (Def) 1.1 mA 0.5 mV 15.0 mA 0.5 mV 15.0 mA CHOPPER 0.0 mA 0.0 mA	
		Det. descr. : Configure the FCU-subsystem (redundant)		
	ET=+ UT=+00.00.03	HIFI_CH1_MX_MG_C  Command Parameter(s) : HIFI_BB_ID HP001197 HF_CH1_MX_MG_C HP173191  Subsch. ID : 70 Det. descr. : Send single command to set H mixer magnet current	HIFI_CH1_MX_MG_C  HC096289  1C200001 <hex> 0.5 mA	
	ET=+ UT=+00.00.00	HIFI_CV1_MX_MG_C  Command Parameter(s) : HIFI_BB_ID HP001197 HF_CV1_MX_MG_C HP188191  Subsch. ID : 70 Det. descr. : Send single command to set V mixer magnet current	HIFI_CV1_MX_MG_C  HC099289  1C200001 <hex> 0.5 mA	
	ET=+ UT=+00.00.01	HIFI_non_periodic_hk_FCU  Subsch. ID : 70 Det. descr. : Requests non-periodic housekeeping packet from FCU	HIFI_non_periodic_hk_FCU  HC017289	



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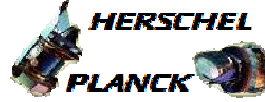
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
6		Switch ON LO heater		Next Step: 7
	ET=+ UT=+00.00.00	Execute Telecommand  <b>HIFI_HL_heater</b>  Command Parameter(s) : <b>HIFI_BB_ID</b> <b>HP001197</b> <b>HL_heater</b> <b>HP397194</b>  TC Control Flags :  <b>GBM IL DSE</b> <b>--Y -- ---</b>  Subsch. ID : 70 Det. descr. : Send single command to control the LCU heater	<b>HC086289</b>  <b>1C200001 &lt;hex&gt;</b> <b>HEATER</b>	
		Verify Telemetry  <b>HL_Eheater</b> <b>HM791194</b>	<b>HEATER</b>	<b>AND=HA021289</b>
	ET=+ UT=+00.00.00	HIFI_Housekeeping_on  <b>HIFI_Housekeeping_on</b>  Command Parameter(s) : <b>HIF_HK_rate</b> <b>HP012197</b> <b>HIF_FCU_S</b> <b>HP006197</b> <b>HIF_LCU_S</b> <b>HP007197</b> <b>HIF_WBSV_S</b> <b>HP009197</b> <b>HIF_WBSH_S</b> <b>HP008197</b> <b>HIF_HRSV_S</b> <b>HP011197</b> <b>HIF_HRSH_S</b> <b>HP010197</b>  TC Control Flags :  <b>GBM IL DSE</b> <b>--Y -- ---</b>  Subsch. ID : 70 Det. descr. : Sets periodic housekeeping packet generation period	<b>HC016289</b>  <b>1_pkt_per_s</b> <b>ON (Def)</b> <b>ON (Def)</b> <b>ON (Def)</b> <b>ON (Def)</b> <b>ON (Def)</b> <b>ON (Def)</b> <b>ON (Def)</b>	
7		Update UIU table		Next Step: 8
	ET=+ UT=+00.00.00	Execute Telecommand  <b>H_FdirMarkUnitOn_Templ</b>  Command Parameter(s) : <b>H_ConfStsUnitId</b> <b>DHZ00170</b>  TC Control Flags :  <b>GBM IL DSE</b> <b>--Y -- ---</b>  Subsch. ID : 10 Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	<b>DC93H159</b>  <b>HifiLcu</b>	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	Execute Telecommand <b>H_FdirMarkUnitOn_Templ</b>  Command Parameter(s) : <b>H_ConfStsUnitId</b> <b>DHZ00170</b>  Subsch. ID : 10 Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	DC93H159  <b>HifiHrh</b>	
	ET=+ UT=+00.00.01	Execute Telecommand <b>H_FdirMarkUnitOn_Templ</b>  Command Parameter(s) : <b>H_ConfStsUnitId</b> <b>DHZ00170</b>  Subsch. ID : 10 Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	DC93H159  <b>HifiHrv</b>	
	ET=+ UT=+00.00.01	Execute Telecommand <b>H_FdirMarkUnitOn_Templ</b>  Command Parameter(s) : <b>H_ConfStsUnitId</b> <b>DHZ00170</b>  Subsch. ID : 10 Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	DC93H159  <b>HifiIfv</b>	
	ET=+ UT=+00.00.01	Execute Telecommand <b>H_FdirMarkUnitOn_Templ</b>  Command Parameter(s) : <b>H_ConfStsUnitId</b> <b>DHZ00170</b>  Subsch. ID : 10 Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	DC93H159  <b>HifiLsu</b>	
	ET=+ UT=+00.00.01	Execute Telecommand <b>H_FdirMarkUnitOn_Templ</b>  Command Parameter(s) : <b>H_ConfStsUnitId</b> <b>DHZ00170</b>  Subsch. ID : 10 Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	DC93H159  <b>HifiWeh</b>	
	ET=+ UT=+00.00.01	Execute Telecommand <b>H_FdirMarkUnitOn_Templ</b>  Command Parameter(s) : <b>H_ConfStsUnitId</b> <b>DHZ00170</b>  Subsch. ID : 10 Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	DC93H159  <b>HifiWev</b>	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	Execute Telecommand <b>H_FdirMarkUnitOn_Templ</b>  Command Parameter(s) : <b>H_ConfStsUnitId</b> <b>DHZ00170</b>  Subsch. ID : 10 Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	<b>DC93H159</b>  <b>HifiWoh</b>	
	ET=+ UT=+00.00.01	Execute Telecommand <b>H_FdirMarkUnitOn_Templ</b>  Command Parameter(s) : <b>H_ConfStsUnitId</b> <b>DHZ00170</b>  Subsch. ID : 10 Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	<b>DC93H159</b>  <b>HifiWov</b>	
		Verify Telemetry <b>HifiLcuFuncSts</b> <b>DEL55171</b>	<b>= On</b>	AND=ZAZA0999
		Verify Telemetry <b>HifiHrhFuncSts</b> <b>DEL46171</b>	<b>= On</b>	AND=ZAZA0999
		Verify Telemetry <b>HifiHrvFuncSts</b> <b>DEL41171</b>	<b>= On</b>	AND=ZAZA0999
		Verify Telemetry <b>HifiIfvFuncSts</b> <b>DEL39171</b>	<b>= On</b>	AND=ZAZA0999
		Verify Telemetry <b>HifiLsuFuncSts</b> <b>DEL42171</b>	<b>= On</b>	AND=ZAZA0999
		Verify Telemetry <b>HifiWehFuncSts</b> <b>DEL48171</b>	<b>= On</b>	AND=ZAZA0999
		Verify Telemetry <b>HifiWohFuncSts</b> <b>DEL40171</b>	<b>= On</b>	AND=ZAZA0999
		Verify Telemetry <b>HifiWevFuncSts</b> <b>DEL53171</b>	<b>= On</b>	AND=ZAZA0999
		Verify Telemetry <b>HifiWovFuncSts</b> <b>DEL49171</b>	<b>= On</b>	AND=ZAZA0999
8		Set default OBSID/BBID		Next Step: 9

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	HIFI_Set_OBS_ID  HIFI_Set_OBS_ID  Command Parameter(s) : HIFI_BB_ID HP001197 HIFI_OBS_ID HP000197  TC Control Flags :  GBM IL DSE --Y -- --  Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HC014289  0 <hex> (Def) 0 <hex> (Def)	
		Verify Telemetry BB_ID_per_hk HM004190	= 0 <hex>	AND=ZAZ9C999
		Verify Telemetry OBS_ID_per_hk HM003190	= 0 <hex>	AND=ZAZ9C999
9		Procedure Verification		Next Step: END
9.1		HIFI mode status		<input type="checkbox"/>
		Verify Telemetry HF_DPR_CHLOOP_S HM198191	CONTEXT	AND=ZAZ9C999
		Verify Telemetry (RED OOL) HL_MODE_S HM258194	= standby0	AND=ZAZ9C999
		Verify Telemetry HI_Prime_red HM009190	= HIFI_redundant	AND=ZAZ9C999
9.2		HIFI system status		<input type="checkbox"/>
		Verify Telemetry HF_DPR_CH_ROT2 HM196191	CHOPPER	AND=ZAZ9C999
		Verify Telemetry HF_APR_CS_C HM241191	= 1.1 mA	AND=ZAZ9C999
		Verify Telemetry HF_DH1_MXBAND HM005191	= 0 <dec>	AND=ZAZ9C999
		Verify Telemetry HF_DV1_MXBAND HM096191	= 0 <dec>	AND=ZAZ9C999
		Verify Telemetry HL_Channel_S HM003194	= OFF	AND=ZAZ9C999
		Refer to Checkform ZAZ9D999 at the back of this document		ANDCK

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

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## ZAZ9D999 / HIFI: Status parameters

ID	DESCRIPTION	VALUE	UNIT	ID	DESCRIPTION	VALUE	UNIT
HM056193	HWV_Laser1_S	OFF		HM017193	HWH_Laser1_S	OFF	
HM055193	HWV_Laser2_S	OFF		HM016193	HWH_Laser2_S	OFF	
HM057193	HWV_LUP_level_S	Low		HM018193	HWH_LUP_level_S	Low	
HM059193	HWV_Comb_S	OFF		HM020193	HWH_Comb_S	OFF	
HM060193	HWV_Zero_S	ON		HM021193	HWH_Zero_S	ON	
HM134192	HRV_Lock_LO1_S	Locked		HM009192	HRH_Lock_LO1_S	Locked	
HM135192	HRV_Lock_LO2_S	Locked		HM010192	HRH_Lock_LO2_S	Locked	
HM136192	HRV_Lock_LO3_S	Locked		HM011192	HRH_Lock_LO3_S	Locked	
HM137192	HRV_Lock_LO4_S	Locked		HM012192	HRH_Lock_LO4_S	Locked	
HM138192	HRV_Lock_LO5_S	Locked		HM013192	HRH_Lock_LO5_S	Locked	
HM139192	HRV_Lock_LO6_S	Locked		HM014192	HRH_Lock_LO6_S	Locked	
HM140192	HRV_Lock_LO7_S	Locked		HM015192	HRH_Lock_LO7_S	Locked	
HM142192	HRV_1U_ATT	15.5	dB	HM017192	HRH_1U_ATT	15.5	dB
HM143192	HRV_1L_ATT	15.5	dB	HM018192	HRH_1L_ATT	15.5	dB
HM144192	HRV_2U_ATT	15.5	dB	HM019192	HRH_2U_ATT	15.5	dB
HM145192	HRV_2L_ATT	15.5	dB	HM020192	HRH_2L_ATT	15.5	dB
HM147192	HRV_3U_ATT	15.5	dB	HM022192	HRH_3U_ATT	15.5	dB
HM148192	HRV_3L_ATT	15.5	dB	HM023192	HRH_3L_ATT	15.5	dB
HM149192	HRV_4U_ATT	15.5	dB	HM024192	HRH_4U_ATT	15.5	dB
HM150192	HRV_4L_ATT	15.5	dB	HM025192	HRH_4L_ATT	15.5	dB
HM151192	HRV_LO1_F	15460	MHz	HM026192	HRH_LO1_F	13700	MHz
HM154192	HRV_LO2_F	15900	MHz	HM029192	HRH_LO2_F	14140	MHz
HM157192	HRV_LO3_F	16340	MHz	HM032192	HRH_LO3_F	14580	MHz
HM160192	HRV_LO4_F	16780	MHz	HM035192	HRH_LO4_F	15020	MHz
HM163192	HRV_LO5_F	10500	MHz	HM038192	HRH_LO5_F	10500	MHz
HM166192	HRV_LO6_F	1250	MHz	HM041192	HRH_LO6_F	1250	MHz
HM169192	HRV_LO7_F	490	MHz	HM044192	HRH_LO7_F	490	MHz
HM047193	HWV_IN_ATT	15	dB	HM008193	HWH_IN_ATT	15	dB
HM048193	HWV_Band_1_ATT	7	dB	HM009193	HWH_Band_1_ATT	7	dB
HM049193	HWV_Band_2_ATT	7	dB	HM010193	HWH_Band_2_ATT	7	dB
HM050193	HWV_Band_3_ATT	7	dB	HM011193	HWH_Band_3_ATT	7	dB
HM051193	HWV_Band_4_ATT	7	dB	HM012193	HWH_Band_4_ATT	7	dB