

HIFI-COP-2.1-CPR-RespTime_Redundant
 File: H_COP_HIF_RCRT.xls
 Author: R. Biggins



Procedure Summary

Objectives

The objective of this procedure is to analyse the chopper response time to move from one angle to another. The outcome of this test is fed into the uplink LUT in order to indicate the dead-time needed to achieve the rotation between e.g. two positions on the sky.

Based on procedure:
 HIFI-COP-2.1-CPR-RespTime_Redundant (v1)

Summary of Constraints

This test cannot be executed if the chopper health check tests have not proved successful (HFHRHC1, HFHRHC2 and HFHRHC3)

Spacecraft Configuration

Start of Procedure
 n/a

End of Procedure
 n/a

Reference File(s)

Input Command Sequences

Output Command Sequences
 HCHRCRT

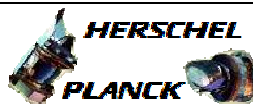
Referenced Displays

ANDs **GRDs** **SLDs**
 ZAZ9E999

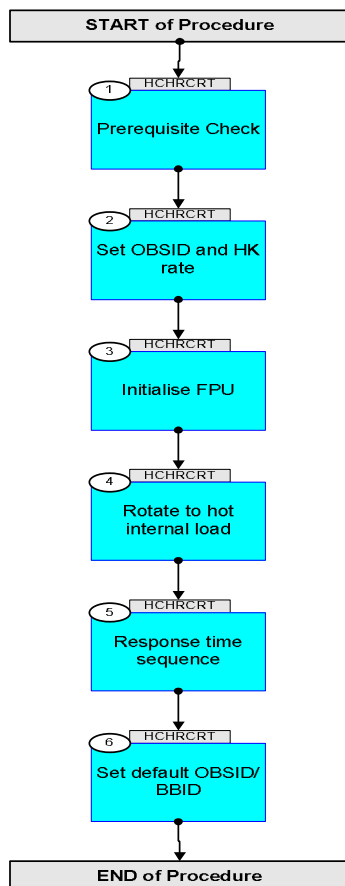
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
03/11/08	2	1	Created	R. Biggins	

HIFI-COP-2.1-CPR-RespTime_Redundant
File: H_COP_HIF_RCRT.xls
Author: R. Biggins



Procedure Flowchart Overview



HIFI-COP-2.1-CPR-RespTime_Redundant
 File: H_COP_HIF_RCRT.xls
 Author: R. Biggins



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
<p><i>TC Seq. Name : HCHRCRT (CPR Response Time)</i></p> <p><i>TimeTag Type: B</i> <i>Sub Schedule ID:</i></p> <p style="text-align: center;">□</p>				
1		<i>Prerequisite Check</i>		Next Step: 2
1.1		<i>HSC/ICC input</i>		□
		Verify that the HSC/ICC has supplied a valid OBSID value OBS_ID = 0xnnnn nnnn		
1.2		<i>Verify: HIFI status</i>		□
		Verify Telemetry <div style="display: flex; justify-content: space-between;"> HI_Prime_red HM009190 = HIFI_redundant </div>		AND=ZAZ9E999
2		<i>Set OBSID and HK rate</i>		Next Step: 3
	ET=+00.00.01 UT=+00.00.01	HIFI_Set_OBS_ID Command Parameter(s) : <div style="display: flex; justify-content: space-between;"> HIFI_BB_ID HP001197 17700001 <hex> </div> <div style="display: flex; justify-content: space-between;"> HIFI_OBS_ID HP000197 OBS_ID </div> Subsch. ID : 70 Det. descr. : Set Observation-ID and Building-Block-ID	HIFI_Set_OBS_ID HC014289	
		Verify Telemetry <div style="display: flex; justify-content: space-between;"> BB_ID_per_hk HM004190 = 17700001 <hex> </div>		AND=ZAZ9E999
		Verify Telemetry <div style="display: flex; justify-content: space-between;"> OBS_ID_per_hk HM003190 OBS_ID </div>		AND=ZAZ9E999

HIFI-COP-2.1-CPR-RespTime_Redundant
 File: H_COP_HIF_RCRT.xls
 Author: R. Biggins



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.00 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 Subsch. ID : 70 Det. descr. : Sets periodic housekeeping packet generation period	HC016289 1_pkt_per_s ON (Def) ON (Def) ON (Def) ON (Def) ON (Def) ON (Def)	
		Verify: The following TM(3,25) packets should be produced once every second: HIFI_R_essential_HK (APID 1025) HIFI_R_HK_rev_7 (APID 1027)		
3		Initialise FPU		Next Step: 4
	ET=+00.00.01 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_S HP205191 HF_CPR_UCH_S HP206191 HF_CPR_UCV_S HP207191 Subsch. ID : 70 Det. descr. : Switch ON or OFF the five FCU-boards (mixer H/V, chopper, IF HV)	HC027289 1C200001 <hex> ON (Def) ON (Def) ON (Def) ON (Def) ON (Def)	
	ET=+00.00.00 UT=+00.00.00	HIFI_R_Configure_FCU HIFI_R_Configure_FCU Command Parameter(s) : HIFI_BB_ID HP001197 HF_CPR_MXBAND 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> 1 <dec> 0 <dec> 0.75 V 4.0 mA 0.65 V 3.0 mA 0.95 V 2.5 mA 0.75 V 1.25 mA	

HIFI-COP-2.1-CPR-RespTime_Redundant
 File: H_COP_HIF_RCRT.xls
 Author: R. Biggins



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		HF_CH2_SIF3_Drain_V HP185191 HF_CH2_SIF3_Drain_C HP186191 HF_CV1_DPFPP1 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 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 Det. descr. : Configure the FCU-subsystem (redundant)	0.7 V 2.5 mA 0 <dec> 0.75 V 4.0 mA 0.65 V 3.0 mA 0.8 V 2.5 mA 0.8 V 1.2 mA 0.66 V 3.0 mA ON (Def) CLOSE (Def) 17 <dec> 201 <dec> 1010 <dec> 885 <dec> 149 <dec> 1.1 mA 1.937 mV 15.0 mA 1.937 mV 15.0 mA -2.33 V 0.0 mA 0.0 mA	
	ET+=00.00.03 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> 7.5 mA	
	ET+=00.00.00 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> 8.0 mA	
4		Rotate to hot internal load		Next Step: 5

HIFI-COP-2.1-CPR-RespTime_Redundant
 File: H_COP_HIF_RCRT.xls
 Author: R. Biggins



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.01 UT=+00.00.01	HIFI_R_Chopper_Rot HIFI_R_Chopper_Rot Command Parameter(s) : HIFI_BB_ID HP001197 HF_R_Chopper_Rot HP455191 Subsch. ID : 70 Det. descr. : Single command chopper to position in redundant command-range	HC185289 0EA20001 <hex> 6.762 V	
	ET=+00.00.00 UT=+00.00.00	HIFI_non_periodic_hk_FCU HIFI_non_periodic_hk_FCU Subsch. ID : 70 Det. descr. : Requests non-periodic housekeeping packet from FCU	HC017289	
5		Response time sequence		Next Step: 6
	ET=+00.00.01 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 Subsch. ID : 70 Det. descr. : Perform an engineering scan for the chopper (redundant)	HC187289 3 ms (Def) 4.515 V 30 <dec> 1000 <dec> (Def)	
	ET=+00.00.05 UT=+00.00.05	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 Subsch. ID : 70 Det. descr. : Perform an engineering scan for the chopper (redundant)	HC187289 3 ms (Def) -5.560 V 30 <dec> 1000 <dec> (Def)	
	ET=+00.00.05 UT=+00.00.05	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 Subsch. ID : 70 Det. descr. : Perform an engineering scan for the chopper (redundant)	HC187289 3 ms (Def) 4.515 V 30 <dec> 1000 <dec> (Def)	

HIFI-COP-2.1-CPR-RespTime_Redundant
 File: H_COP_HIF_RCRT.xls
 Author: R. Biggins



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.05 UT=+00.00.05	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 Subsch. ID : 70 Det. descr. : Perform an engineering scan for the chopper (redundant)	HC187289 3 ms (Def) 6.762 V 30 <dec> 1000 <dec> (Def)	
	ET=+00.00.05 UT=+00.00.05	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 Subsch. ID : 70 Det. descr. : Perform an engineering scan for the chopper (redundant)	HC187289 3 ms (Def) -7.485 V 30 <dec> 1000 <dec> (Def)	
	ET=+00.00.05 UT=+00.00.05	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 Subsch. ID : 70 Det. descr. : Perform an engineering scan for the chopper (redundant)	HC187289 3 ms (Def) -2.342 V 30 <dec> 1000 <dec> (Def)	
	ET=+00.00.05 UT=+00.00.05	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 Subsch. ID : 70 Det. descr. : Perform an engineering scan for the chopper (redundant)	HC187289 3 ms (Def) -7.485 V 30 <dec> 1000 <dec> (Def)	

HIFI-COP-2.1-CPR-RespTime_Redundant
 File: H_COP_HIF_RCRT.xls
 Author: R. Biggins



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.05 UT=+00.00.05	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 Subsch. ID : 70 Det. descr. : Sets periodic housekeeping packet generation period	HC016289 1_pkt_per_4_s ON (Def) ON (Def) ON (Def) ON (Def) ON (Def) ON (Def)	
		Verify: The following TM(3,25) packets should be produced once every 4 seconds: HIFI_R_essential_HK (APID 1025) HIFI_R_HK_rev_7 (APID 1027)		
6		Set default OBSID/BBID		Next Step: END
	ET=+00.00.01 UT=+00.00.01	HIFI_Set_OBS_ID HIFI_Set_OBS_ID Command Parameter(s) : HIFI_BB_ID HP001197 HIFI_OBS_ID HP000197 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=ZAZ9E999
		Verify Telemetry OBS_ID_per_hk HM003190	= 0 <hex>	AND=ZAZ9E999
End of Procedure				