

FPU functional test  
 File: H\_COP\_HIF\_NFF7.xls  
 Author: R. Biggins



## Procedure Summary

### Objectives

The objective of this procedure is to execute a functional test on band 7a of the FPU  
 - Initialise FPU

Based on procedure:  
 HIFI-COP-1.2-FPU\_FT (v6)

### Summary of Constraints

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

### Spacecraft Configuration

**Start of Procedure**

n/a

**End of Procedure**

n/a

### Reference File(s)

**Input Command Sequences**

**Output Command Sequences**

HCHNFF7

### Referenced Displays

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

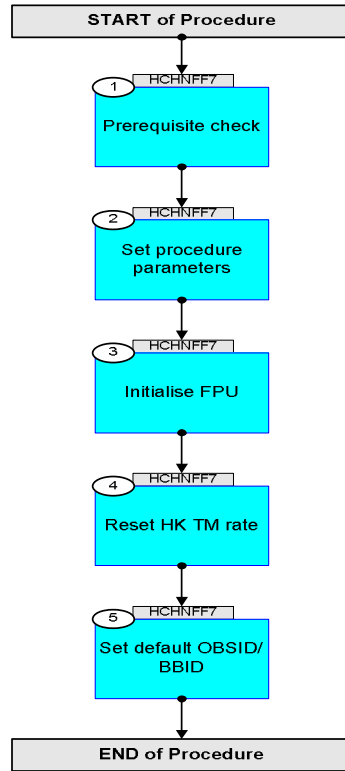
### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
27/10/08	2	1	Created	R. Biggins	
24/02/09	2.1	1.01	Validation : Updates due to SVT-2/SOVT-2 testing <input type="checkbox"/> - Summary updated	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 : HCHNFF7 (FPU functional test)				
TimeTag Type: B Sub Schedule ID:  □				
1		Prerequisite check		Next Step: 2
1.1		HSC/ICC input		□
		Verify that the HSC has supplied a valid OBSID value:  OBS_ID = 0xnnnn nnnn		
2		Set procedure parameters		Next Step: 3
	ET=+00.00.01 UT=+00.00.01	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	HIFI_Set_OBS_ID  HC014289  17700001 <hex> OBS_ID	
		Verify Telemetry  BB_ID_per_hk                  HM004190	= 17700001 <hex>	AND=ZAZ9C999
		Verify Telemetry  OBS_ID_per_hk                  HM003190	OBS_ID	AND=ZAZ9C999
	ET=+00.00.00 UT=+00.00.00	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	HIFI_Housekeeping_on  HC016289  1_pkt_per_s ON (Def) ON (Def) ON (Def) ON (Def) ON (Def) ON (Def)	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify: The following TM(3,25) packets should be produced once every second:  <b>HIFI_essential_HK</b> (APID 1024) <b>HIFI_HK_rev_7</b> (APID 1026)		
3		Initialise FPU		Next Step: 4
	ET+=00.00.01 UT+=00.00.01	HIFI_Configure_FCU_Power  <b>HIFI_Configure_FCU_Power</b>  <i>Command Parameter(s) :</i> <b>HIFI_BB_ID</b> <b>HP001197</b> <b>HF_CPR_Mixer_H_S</b> <b>HP203191</b> <b>HF_CPR_Mixer_V_S</b> <b>HP204191</b> <b>HF_CPR_Chopper_S</b> <b>HP205191</b> <b>HF_CPR_UCH_S</b> <b>HP206191</b> <b>HF_CPR_UCV_S</b> <b>HP207191</b>  <i>Subsch. ID : 70</i> <i>Det. descr. : Switch ON or OFF the five FCU-boards (mixer H/V, chopper, IF HV)</i>	<b>HC027289</b>  1C200001 <hex> ON (Def) ON (Def) ON (Def) ON (Def) ON (Def)	
		Verify Telemetry  <b>BB_ID_per_hk</b> <b>HM004190</b>	<b>= 1C200001 &lt;hex&gt;</b>	<b>AND=ZAZ9C999</b>
	ET+=00.00.00 UT+=00.00.00	HIFI_P_Configure_FCU  <b>HIFI_P_Configure_FCU</b>  <i>Command Parameter(s) :</i> <b>HIFI_BB_ID</b> <b>HP001197</b> <b>HF_CPR_MXBAND</b> <b>HP202191</b> <b>HF_CH1_DPFPF1</b> <b>HP176191</b> <b>HF_CH2_FIF1_Drain_V</b> <b>HP177191</b> <b>HF_CH2_FIF1_Drain_C</b> <b>HP178191</b> <b>HF_CH2_FIF2_Drain_V</b> <b>HP179191</b> <b>HF_CH2_FIF2_Drain_C</b> <b>HP180191</b> <b>HF_CH2_SIF1_Drain_V</b> <b>HP181191</b> <b>HF_CH2_SIF1_Drain_C</b> <b>HP182191</b> <b>HF_CH2_SIF2_Drain_V</b> <b>HP183191</b> <b>HF_CH2_SIF2_Drain_C</b> <b>HP184191</b>  <b>HF_CH2_SIF3_Drain_V</b> <b>HP185191</b> <b>HF_CH2_SIF3_Drain_C</b> <b>HP186191</b> <b>HF_CV1_DPFPF1</b> <b>HP191191</b> <b>HF_CV2_FIF1_Drain_V</b> <b>HP192191</b> <b>HF_CV2_FIF1_Drain_C</b> <b>HP193191</b> <b>HF_CV2_FIF2_Drain_V</b> <b>HP194191</b> <b>HF_CV2_FIF2_Drain_C</b> <b>HP195191</b> <b>HF_CV2_SIF1_Drain_V</b> <b>HP196191</b> <b>HF_CV2_SIF1_Drain_C</b> <b>HP197191</b> <b>HF_CV2_SIF2_Drain_V</b> <b>HP198191</b> <b>HF_CV2_SIF2_Drain_C</b> <b>HP199191</b> <b>HF_CV2_SIF3_Drain_V</b> <b>HP200191</b> <b>HF_CV2_SIF3_Drain_C</b> <b>HP201191</b> <b>HF_CPR_CH_SINE_S</b> <b>HP211191</b> <b>HF_CPR_CH_LOOP_S</b> <b>HP210191</b>	<b>HC182289</b>  1C200001 <hex> 7 <dec> 227 <dec> (Def) 0.75 V 4.0 mA 0.65 V 3.0 mA 0.57 V 3.5 mA 0.8 V 1.85 mA  0.8 V 2.5 mA 227 <dec> (Def) 0.75 V 4.0 mA 0.65 V 3.0 mA 0.57 V 3.5 mA 0.57 V 3.5 mA 0.71 V 2.8 mA ON (Def) CLOSE (Def)	

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		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_P_Chopper_Rot HP454191 HF_CH1_DPACT_C HP174191 HF_CV1_DPACT_C HP189191  Subsch. ID : 70  Det. descr. : Configure the FCU-subsystem (prime)	17 <dec> 201 <dec> 1010 <dec> 885 <dec> 149 <dec> 1.1 mA 6.0 mV 0.0 mA (Def) 6.0 mV 0.0 mA (Def) -1.07 V -0.152 mA 0.446 mA	
	ET=+00.00.03 UT=+00.00.03	HIFI_CH1_MXBIAS_V  <b>HIFI_CH1_MXBIAS_V</b>  Command Parameter(s) : HIFI_BB_ID HP001197 HF_CH1_MXBIAS_V HP172191  Subsch. ID : 70 Det. descr. : Send single command to set H mixer bias voltage	HC095289  1C200001 <hex> 0.6 mV	
	ET=+00.00.00 UT=+00.00.00	HIFI_CV1_MXBIAS_V  <b>HIFI_CV1_MXBIAS_V</b>  Command Parameter(s) : HIFI_BB_ID HP001197 HF_CV1_MXBIAS_V HP187191  Subsch. ID : 70 Det. descr. : Send single command to set V mixer bias voltage	HC098289  1C200001 <hex> 0.6 mV	
		Verify: Verify the content of the following ANDs with the HIFI representative:		
		HA038289 FCU_H_device HA039289 FCU_V_device HA042289 FCU_PR_power HA044289 FCU_common		
4		Reset HK TM rate		Next Step: 5

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.01 UT=+00.00.01	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_essential_HK (APID 1024) HIFI_HK_rev_7 (APID 1026)		
5		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=ZAZ9C999
		Verify Telemetry OBS_ID_per_hk         HM003190	= 0 <hex>	AND=ZAZ9C999
<b>End of Procedure</b>				