

FPU functional test  
 File: H\_COP\_HIF\_RFF6.xls  
 Author: R. Biggins



## Procedure Summary

### Objectives

The objective of this procedure is to execute a functional test on band 6a 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**

HCHRRF6

### Referenced Displays

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

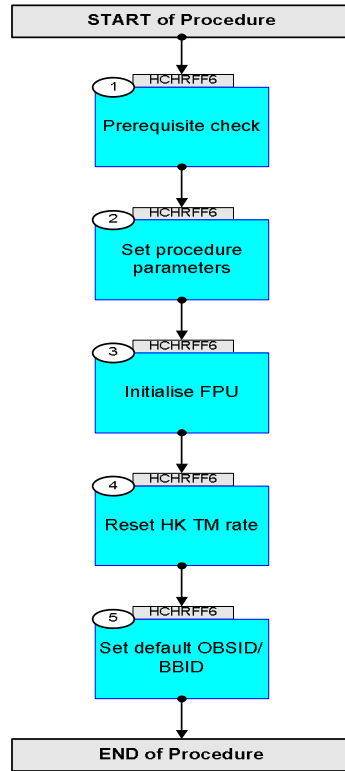
### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
27/08/09	2.5	1	Created	R. Biggins	
26/11/09	3	2	Updates due to Prime unit failure resulting in new operation scheme - Execution times removed - TM APIDs updated	R. Biggins	

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## Procedure Flowchart Overview





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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 1025) <b>HIFI_HK_rev_7</b> (APID 1027)		
3		Initialise FPU		Next Step: 4
	ET=+ 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>  <b>1C200001 &lt;hex&gt;</b> <b>ON (Def)</b> <b>ON (Def)</b> <b>ON (Def)</b> <b>ON (Def)</b> <b>ON (Def)</b>	
		Verify Telemetry  <b>BB_ID_per_hk</b> <b>HM004190</b>	<b>= 1C200001 &lt;hex&gt;</b>	<b>AND=ZAZ9C999</b>
	ET=+ UT=+00.00.00	HIFI_R_Configure_FCU  <b>HIFI_R_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>HC183289</b>  <b>1C200001 &lt;hex&gt;</b> <b>6 &lt;dec&gt;</b> <b>227 &lt;dec&gt; (Def)</b> <b>0.75 V</b> <b>4.0 mA</b> <b>0.65 V</b> <b>3.0 mA</b> <b>0.57 V</b> <b>3.5 mA</b> <b>0.8 V</b> <b>1.85 mA</b>  <b>0.57 V</b> <b>3.5 mA</b> <b>227 &lt;dec&gt; (Def)</b> <b>0.75 V</b> <b>4.0 mA</b> <b>0.65 V</b> <b>3.0 mA</b> <b>0.57 V</b> <b>3.5 mA</b> <b>0.57 V</b> <b>3.5 mA</b> <b>0.57 V</b> <b>3.5 mA</b> <b>0.57 V</b> <b>3.5 mA</b> <b>0.57 V</b> <b>3.5 mA</b> <b>ON (Def)</b> <b>CLOSE (Def)</b>	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		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_DPACT_C HP174191 HF_CV1_DPACT_C HP189191  Subsch. ID : 70  Det. descr. : Configure the FCU-subsystem (redundant)	17 <dec> 201 <dec> (Def) 1010 <dec> 885 <dec> (Def) 149 <dec> (Def) 1.1 mA 6.0 mV 0.0 mA (Def) 6.0 mV 0.0 mA (Def) -2.33 V -1.057 mA 0.033 mA	
	ET=+ UT=+00.00.03	HIFI_CH1_MXBIAS_V  HIFI_CH1_MXBIAS_V  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=+ UT=+00.00.00	HIFI_CV1_MXBIAS_V  HIFI_CV1_MXBIAS_V  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=+ UT=+00.00.01	HIFI_Housekeeping_on  <b>HIFI_Housekeeping_on</b>  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 <b>TM(3,25)</b> packets should be produced once every 4 seconds:  <b>HIFI_essential_HK</b> (APID 1025) <b>HIFI_HK_rev_7</b> (APID 1027)		
5		Set default <b>OBSID/BBID</b>		Next Step: END
	ET=+ UT=+00.00.01	HIFI_Set_OBS_ID  <b>HIFI_Set_OBS_ID</b>  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 <b>BB_ID_per_hk</b> HM004190	= 0 <hex>	AND=ZAZ9C999
		Verify Telemetry <b>OBS_ID_per_hk</b> HM003190	= 0 <hex>	AND=ZAZ9C999
<b>End of Procedure</b>				