

Parametric Scan at 1897 GHz  
 File: H\_COP\_HIF\_PS10.xls  
 Author: R. Biggins



## Procedure Summary

### Objectives

The objective of this procedure is to execute a parametric scan investigation in band 7b at 1897.0 GHz

Based on procedure:  
 HifiManCmd\_Parameter\_Scan\_MOIS (v1)

### Summary of Constraints

### Spacecraft Configuration

Start of Procedure

End of Procedure

### Reference File(s)

Input Command Sequences

Output Command Sequences

HCHPS10X  
 HCHPS10Y

### Referenced Displays

ANDs      GRDs      SLDs  
 ZAZ9C999

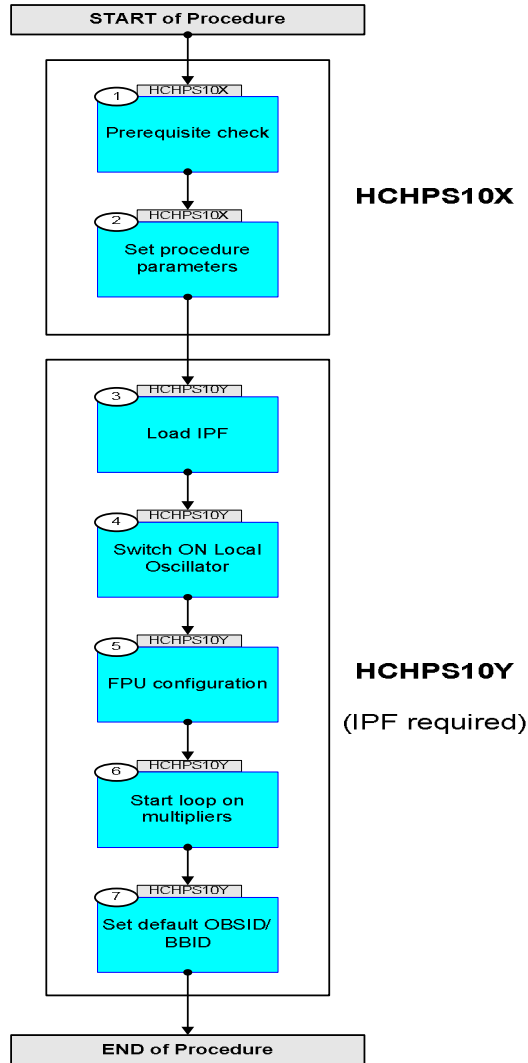
### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
28/05/09		1	Created	R. Biggins	
31/05/09		2	- All ET times removed	R. Biggins	
31/05/09		3	- Descriptor updated for FP 1	R. Biggins	
11/06/09	2.5	4	Update to some FP descriptions (due to MOIS error)	R. Biggins	

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### Procedure Flowchart Overview







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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	HIFI_HL_Normal  HIFI_HL_Normal  Command Parameter(s) : HIFI_BB_ID                  HP001197  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 70 Det. descr. : Send single command to switch LCU to normal mode	HC082289  237633537 <dec>	
	ET=+ UT=+00.00.01	HIFI_Conf_nom_LCU_ch7b  HIFI_Conf_nom_LCU_ch7b  Command Parameter(s) : HIFI_BB_ID                  HP001197 HL_freq_nx                  HP436194 HL_LSU_main                  HP438194 HL_LSU_offset                  HP439194 HL_D2_step                  HP437194 HL_PL_7B_C                  HP389194 HL_M1_7B_V                  HP390194 HL_M2_7B_V                  HP391194 HL_Gate1_7B_V                  HP392194 HL_Gate2_7B_V                  HP393194 HL_Drain1_7B_V                  HP394194  HL_Curlim1                  HP290194 HL_Drain2_7B_V                  HP395194 HL_Curlim2                  HP291194 HL_macro_checksum                  HP440194  Subsch. ID : 70 Det. descr. : Create macro-command to configure LCU band 7b	HC048289  237043713 <dec> 1 <dec> 4062254329 <dec> 4063330019 <dec> 2 <dec> 0.0 A (Def) 1 2 3 4 5  6 7 8 1 <dec>	
	ET=+ UT=+00.00.20	HIFI_LCU_all_tuning_hk  HIFI_LCU_all_tuning_hk  Subsch. ID : 70 Det. descr. : Requests all five LCU intermediate housekeeping-sets	HC193289	
	ET=+ UT=+00.00.02	HIFI_HL_heater  HIFI_HL_heater  Command Parameter(s) : HIFI_BB_ID                  HP001197 HL_heater                  HP397194  Subsch. ID : 70 Det. descr. : Send single command to control the LCU heater	HC086289  236912641 <dec> 2 V	
5		FPU configuration		Next Step: 6

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	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_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   262078465 <dec> ON (Def) ON (Def) ON (Def) ON (Def) ON (Def) ON (Def)	
	ET=+ UT=+00.00.00	HIFI_P_Configure_FCU  HIFI_P_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  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	HC182289   262078465 <dec> 7 <dec> 227 <dec> (Def) 0.75 V 4 mA 0.65 V 3 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 mA 0.65 V 3 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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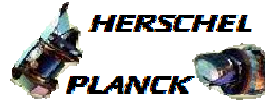


Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		HF_CPR_CHFPG1 HP212191 HF_CPR_CHFPG2 HP213191 HF_CPR_CHFPG1 HP214191 HF_CPR_CHFPG2 HP215191 HF_CPR_CHFPG2 HP216191 HF_CPR_Cal_Heater_C HP217191 HF_CH1_MXBIAS_V HP172191 HF_CH1_MX_MG_C HP173191 HF_CV1_MXBIAS_V HP187191 HF_CV1_MX_MG_C HP188191 HF_P_Chopper_Rot 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 mV 0 mA (Def) 6 mV 0 mA (Def) 7.665 V -0.14207853756069 mA - 0.419600950204696 mA	
	ET=+ UT=+00.00.03	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	HIFI_CH1_MXBIAS_V  HC095289  262078465 <dec> 0.6 mV	
	ET=+ UT=+00.00.00	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	HIFI_CV1_MXBIAS_V  HC098289  262078465 <dec> 0.6 mV	
6		Start loop on multipliers		Next Step: 7
	ET=+ UT=+00.00.01	HIFI_HL_Normal  Command Parameter(s) : HIFI_BB_ID HP001197  Subsch. ID : 70 Det. descr. : Send single command to switch LCU to normal mode	HIFI_HL_Normal  HC082289  243662849 <dec>	





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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		HL_Gate2_7B_V HP393194 HL_Drain1_7B_V HP394194 HL_Curlim1 HP290194 HL_Drain2_7B_V HP395194 HL_Curlim2 HP291194 HL_step_PL_C HP431194 HL_step_M1_7B_V HP429194 HL_step_M2_7B_V HP430194 HL_step_gate1_V HP432194 HL_step_gate2_V HP433194 HL_step_drain1_V HP434194 HL_step_drain2_V HP435194  Subsch. ID : 70 Det. descr. : Specify vector-scan (start and step) for LCU band 7b	20 21 22 23 24 0.0 A (Def) 0.0 V (Def) 0.0 V (Def) 0.0 V (Def) 0.0 V (Def) 0.0 V (Def) 0.0 V (Def) - 3.48959435626102E-02 V	
	ET=+ UT=+00.00.01	HIFI_Tune_LO_Using_MXCH  <b>HIFI_Tune_LO_Using_MXCH</b>  Command Parameter(s) : HIFI_BB_ID                  HP001197 HIF_mxmg_h_target_C          HP064191  Subsch. ID : 70 Det. descr. : Tune LO-level using H-mixer current (bands 1,2,3,4,6,7)	HC138289  243662849 <dec> 0.045 mA	
	ET=+ UT=+00.00.12	HIFI_HL_store_tm  <b>HIFI_HL_store_tm</b>  Command Parameter(s) : HIFI_BB_ID                  HP001197  Subsch. ID : 70 Det. descr. : Send single command to store the current tuning macro	HC089289  243662849 <dec>	
	ET=+ UT=+00.00.01	HIFI_LCU_all_tuning_hk  <b>HIFI_LCU_all_tuning_hk</b>  Subsch. ID : 70 Det. descr. : Requests all five LCU intermediate housekeeping-sets	HC193289	
	ET=+ UT=+00.00.02	HIFI_HL_Normal  <b>HIFI_HL_Normal</b>  Command Parameter(s) : HIFI_BB_ID                  HP001197  Subsch. ID : 70 Det. descr. : Send single command to switch LCU to normal mode	HC082289  243662850 <dec>	



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		HL_Gate2_7B_V HP393194 HL_Drain1_7B_V HP394194 HL_Curlim1 HP290194 HL_Drain2_7B_V HP395194 HL_Curlim2 HP291194 HL_step_PL_C HP431194 HL_step_M1_7B_V HP429194 HL_step_M2_7B_V HP430194 HL_step_gate1_V HP432194 HL_step_gate2_V HP433194 HL_step_drain1_V HP434194 HL_step_drain2_V HP435194  Subsch. ID : 70 Det. descr. : Specify vector-scan (start and step) for LCU band 7b	36 V 37 V 38 39 V 40 0 A (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) - 3.48959435626102E-02 V	
	ET=+ UT=+00.00.01	HIFI_Tune_LO_Using_MXCH  <b>HIFI_Tune_LO_Using_MXCH</b>  Command Parameter(s) : HIFI_BB_ID HP001197 HIF_mxmg_h_target_C HP064191  Subsch. ID : 70 Det. descr. : Tune LO-level using H-mixer current (bands 1,2,3,4,6,7)	HC138289  243662850 <dec> 0.045 mA	
	ET=+ UT=+00.00.12	HIFI_HL_store_tm  <b>HIFI_HL_store_tm</b>  Command Parameter(s) : HIFI_BB_ID HP001197  Subsch. ID : 70 Det. descr. : Send single command to store the current tuning macro	HC089289  243662850 <dec>	
	ET=+ UT=+00.00.01	HIFI_LCU_all_tuning_hk  <b>HIFI_LCU_all_tuning_hk</b>  Subsch. ID : 70 Det. descr. : Requests all five LCU intermediate housekeeping-sets	HC193289	
	ET=+ UT=+00.00.02	HIFI_HL_Normal  <b>HIFI_HL_Normal</b>  Command Parameter(s) : HIFI_BB_ID HP001197  Subsch. ID : 70 Det. descr. : Send single command to switch LCU to normal mode	HC082289  243662851 <dec>	



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		HL_Gate2_7B_V HP393194 HL_Drain1_7B_V HP394194 HL_Curlim1 HP290194 HL_Drain2_7B_V HP395194 HL_Curlim2 HP291194 HL_step_PL_C HP431194 HL_step_M1_7B_V HP429194 HL_step_M2_7B_V HP430194 HL_step_gate1_V HP432194 HL_step_gate2_V HP433194 HL_step_drain1_V HP434194 HL_step_drain2_V HP435194  Subsch. ID : 70 Det. descr. : Specify vector-scan (start and step) for LCU band 7b	52 V 53 V 54 55 V 56 0 A (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) - 3.48959435626102E-02 V	
	ET=+ UT=+00.00.01	HIFI_Tune_LO_Using_MXCH  <b>HIFI_Tune_LO_Using_MXCH</b>  Command Parameter(s) : HIFI_BB_ID HP001197 HIF_mxmg_h_target_C HP064191  Subsch. ID : 70 Det. descr. : Tune LO-level using H-mixer current (bands 1,2,3,4,6,7)	HC138289  243662851 <dec> 0.045 mA	
	ET=+ UT=+00.00.12	HIFI_HL_store_tm  <b>HIFI_HL_store_tm</b>  Command Parameter(s) : HIFI_BB_ID HP001197  Subsch. ID : 70 Det. descr. : Send single command to store the current tuning macro	HC089289  243662851 <dec>	
	ET=+ UT=+00.00.01	HIFI_LCU_all_tuning_hk  <b>HIFI_LCU_all_tuning_hk</b>  Subsch. ID : 70 Det. descr. : Requests all five LCU intermediate housekeeping-sets	HC193289	
	ET=+ UT=+00.00.02	HIFI_HL_Normal  <b>HIFI_HL_Normal</b>  Command Parameter(s) : HIFI_BB_ID HP001197  Subsch. ID : 70 Det. descr. : Send single command to switch LCU to normal mode	HC082289  243662852 <dec>	



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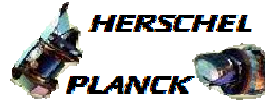


Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		HL_Gate2_7B_V HP393194 HL_Drain1_7B_V HP394194 HL_Curlim1 HP290194 HL_Drain2_7B_V HP395194 HL_Curlim2 HP291194 HL_step_PL_C HP431194 HL_step_M1_7B_V HP429194 HL_step_M2_7B_V HP430194 HL_step_gate1_V HP432194 HL_step_gate2_V HP433194 HL_step_drain1_V HP434194 HL_step_drain2_V HP435194  Subsch. ID : 70 Det. descr. : Specify vector-scan (start and step) for LCU band 7b	68 V 69 V 70 71 V 72 0 A (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) - 3.48959435626102E-02 V	
	ET=+ UT=+00.00.01	HIFI_Tune_LO_Using_MXCH  <b>HIFI_Tune_LO_Using_MXCH</b>  Command Parameter(s) : HIFI_BB_ID HP001197 HIF_mxmg_h_target_C HP064191  Subsch. ID : 70 Det. descr. : Tune LO-level using H-mixer current (bands 1,2,3,4,6,7)	HC138289  243662852 <dec> 0.045 mA	
	ET=+ UT=+00.00.12	HIFI_HL_store_tm  <b>HIFI_HL_store_tm</b>  Command Parameter(s) : HIFI_BB_ID HP001197  Subsch. ID : 70 Det. descr. : Send single command to store the current tuning macro	HC089289  243662852 <dec>	
	ET=+ UT=+00.00.01	HIFI_LCU_all_tuning_hk  <b>HIFI_LCU_all_tuning_hk</b>  Subsch. ID : 70 Det. descr. : Requests all five LCU intermediate housekeeping-sets	HC193289	
	ET=+ UT=+00.00.02	HIFI_HL_Normal  <b>HIFI_HL_Normal</b>  Command Parameter(s) : HIFI_BB_ID HP001197  Subsch. ID : 70 Det. descr. : Send single command to switch LCU to normal mode	HC082289  243662853 <dec>	





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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		HL_Gate2_7B_V HP393194 HL_Drain1_7B_V HP394194 HL_Curlim1 HP290194 HL_Drain2_7B_V HP395194 HL_Curlim2 HP291194 HL_step_PL_C HP431194 HL_step_M1_7B_V HP429194 HL_step_M2_7B_V HP430194 HL_step_gate1_V HP432194 HL_step_gate2_V HP433194 HL_step_drain1_V HP434194 HL_step_drain2_V HP435194  Subsch. ID : 70 Det. descr. : Specify vector-scan (start and step) for LCU band 7b	84 V 85 V 86 87 V 88 0 A (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) 0 V (Def) - 3.48959435626102E-02 V	
	ET=+ UT=+00.00.01	HIFI_Tune_LO_Using_MXCH  <b>HIFI_Tune_LO_Using_MXCH</b>  Command Parameter(s) : HIFI_BB_ID HP001197 HIF_mxmg_h_target_C HP064191  Subsch. ID : 70 Det. descr. : Tune LO-level using H-mixer current (bands 1,2,3,4,6,7)	HC138289  243662853 <dec> 0.045 mA	
	ET=+ UT=+00.00.12	HIFI_HL_store_tm  <b>HIFI_HL_store_tm</b>  Command Parameter(s) : HIFI_BB_ID HP001197  Subsch. ID : 70 Det. descr. : Send single command to store the current tuning macro	HC089289  243662853 <dec>	
	ET=+ UT=+00.00.01	HIFI_LCU_all_tuning_hk  <b>HIFI_LCU_all_tuning_hk</b>  Subsch. ID : 70 Det. descr. : Requests all five LCU intermediate housekeeping-sets	HC193289	
	ET=+ UT=+00.00.02	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_HRSB_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)	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	
	ET=+ UT=+00.00.01	HIFI_noop  Subsch. ID : 70 Det. descr. : Invokes no operation	HIFI_noop  HC179289		
	ET=+ 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  1_pkt_per_10_s ON (Def) ON (Def) ON (Def) ON (Def) ON (Def) ON (Def)	HC016289	
7		Set default OBSID/BBID		Next Step: END	
	ET=+ UT=+00.00.01	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	HIFI_Set_OBS_ID  0 <hex> (Def) 0 <hex> (Def)	HC014289	
		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>					