

MCU_OFF Mode Trans
 File: H_COP_SPI_MMCF.xls
 Author: L.Lucas-hp



Procedure Summary

Objectives

The purpose of this procedure is to switch the MCU OFF.
 Added BB to set NHK to 1Hz sampling for Power Recycling

Based on procedure:SPIRE_MCU_OFF
 Name:MCU_OFF
 Version number:1
 Generated:10/10/2009

Summary of Constraints

n/a

Spacecraft Configuration

Start of Procedure

Mode = REDY

End of Procedure

Sub-Mode =SCU_ON

Reference File(s)

Input Command Sequences

Output Command Sequences

HCSMMCF

Referenced Displays

ANDs	GRDs	SLDs
ZAZ90999		
ZAZ91999		
SA_3_559		
SA_6_559		

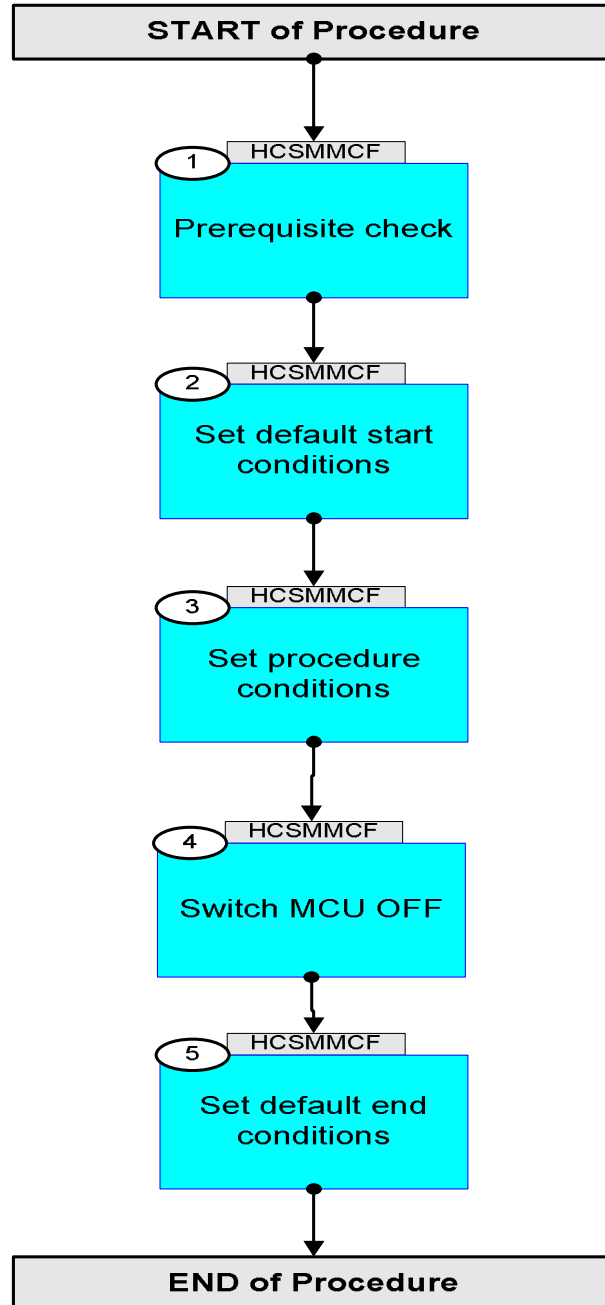
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
19/04/09	2.3	1	Created	L.Lucas-hp	
13/10/09	3	2	Procedure amended NHK rate changed and tables reported for Power Cycling	L.Lucas-hp	

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
<i>TC Seq. Name : HCSMMCF (Mode Trans MCU_OFF)</i> <i>TimeTag Type: Y</i> <i>Sub Schedule ID:</i> <input type="checkbox"/>				
1		<i>Prerequisite check</i>		Next Step: 2
1.1		<i>HSC/ICC input</i>		<input type="checkbox"/>
		Verify that the HSC has supplied a valid OBSID value: OBS_ID = 0xnnnn nnnn		
2		<i>Set default start conditions</i>		Next Step: 3
		Note that a TM(5,1) packet [New_Step_Report] is generated after each of the following SET_OBS_STEP telecommands		
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP <i>Command Parameter(s) :</i> OBSERVATION_STEP SP03N500 <i>Subsch. ID : 370</i> <i>Det. descr. : SET OBSERVATION STEP</i>	SC003500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID SET_BBID <i>Command Parameter(s) :</i> BUILDING_BLOCK_ID SP01N500 <i>Subsch. ID : 370</i> <i>Det. descr. : SET BUILDING BLOCK IDENTIFIER</i>	SC001500 80010001 <hex>	
		Verify Telemetry BBFULLTYPE SM2LN500	= ClearObs	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP <i>Command Parameter(s) :</i> OBSERVATION_STEP SP03N500 <i>Subsch. ID : 370</i> <i>Det. descr. : SET OBSERVATION STEP</i>	SC003500 1 <hex>	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	SET_OBSID Command Parameter(s) : OBSERVATION_ID Subsch. ID : 370 Det. descr. : SET OBSERVATION IDENTIFIER	SET_OBSID SP00N500 00000000 <hex>	
		Verify Telemetry OBSID SM10N500	= 00000000 <hex>	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP SP03N500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID SP01N500 80000000 <hex>	
		Verify Telemetry BBFULLTYPE SM2LN500	= Null	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP SP03N500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID SP01N500 80020001 <hex>	
		Verify Telemetry as commanded BBFULLTYPE SM2LN500		AND=ZAZ90999
3		Set procedure conditions		Next Step: 4

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	RESET_DRCU_COUNTERS RESET_DRCU_COUNTERS Subsch. ID : 370 Det. descr. : RESET DRCU COUNTERS	SCD00505	
		Verify that the TRESET parameter has the same value as the THSK parameter TRESET SM01T500	same as THSK	AND=ZAZ90999
		THSK SM00T500	any	AND=ZAZ90999
		Note that a TM(5,1) packet [New_Step_Report] is generated after each of the following SET_OBS_STEP telecommands		
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 1 <hex>	
	ET=+ UT=+00.00.01	SET_OBSID SET_OBSID Command Parameter(s) : OBSERVATION_ID SP00N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION IDENTIFIER	SC000500 OBS_ID	
		Verify Telemetry OBSID SM10N500	OBS_ID	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500 80000000 <hex>	
		Verify Telemetry BBFULLTYPE SM2LN500	= Null	AND=ZAZ90999
3.1		Change HK Report Rate		☐

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Change the Nominal HK generation rate from 0.25Hz to 1Hz		
	ET=+ UT=+00.00.02	DEFINE_NEW_HK_REPORT DEFINE_NEW_HK_REPORT Command Parameter(s) : HKPCKTID_DEFINENEWHK SPR0N500 HKSID_DEFINENEWHK SPR1N500 HKINTERVAL_DEFINENEWHK SPR2N500 HKREPEAT_DEFINENEWHK SPR3N500 TABLEID_DEFINENEWHK SPR4N500 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 370 Det. descr. : DEFINE NEW HOUSEKEEPING PARAMETER REPORT	SCR00500	
		A new HK report rate has been established; continue with setting procedure conditions.		
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500	
	ET=+ UT=+00.00.01	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500	
		Verify Telemetry BBFULLTYPE SM2LN500		AND=ZAZ90999
	ET=+ UT=+00.00.01	SET_OBS_MODE SET_OBS_MODE Command Parameter(s) : OBSERVING_MODE SP02N500 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 370 Det. descr. : SET OBSERVING MODE	SC002500	
		Verify Telemetry MODE SM00M500	= MCU_OFF	AND=ZAZ91999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
3.2		Report, Update and Check Tables		<input type="checkbox"/>
		Report and Update Tables		
	ET=+ UT=+00.00.00	REPORT_TABLE REPORT_TABLE Command Parameter(s) : TABLEID_REPTAB SPB2N500 INDEX_REPTAB SPB3N500 COUNT_REPTAB SPB4N500 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 370 Det. descr. : REQUEST TM PACKETS REPORTING CONTENTS OF A TABLE	SCB01500 6 <hex> 0 <hex> 0 <hex>	
		WAIT for confirmation from SPIRE before continuing.		
	ET=+ UT=+00.00.02	UPDATE_TABLE UPDATE_TABLE Command Parameter(s) : TABLEID_UPDTAB SPB5N500 INDEX_UPDTAB SPB6N500 N_UPDTAB SPB7N500 DATA_UPDTAB SPB8N500 DATA_UPDTAB SPB8N500 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 370 Det. descr. : UPDATE CONTENTS OF A TABLE	SCB02500 6 <hex> 10 <hex> 2 <hex> FFFFFFFF <hex> FFFFFFFF <hex>	
		WAIT for confirmation from SPIRE before continuing.		
	ET=+ UT=+00.00.02	REPORT_TABLE REPORT_TABLE Command Parameter(s) : TABLEID_REPTAB SPB2N500 INDEX_REPTAB SPB3N500 COUNT_REPTAB SPB4N500 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 370 Det. descr. : REQUEST TM PACKETS REPORTING CONTENTS OF A TABLE	SCB01500 6 <hex> 0 <hex> 0 <hex>	
		WAIT for confirmation from SPIRE before continuing.		
4		Switch MCU OFF		Next Step: 5

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Note that after the following TC is sent, a TM(5,1) packet [No_MCU_Response_Error] and a TM(5,4) packet [ALARM_LSMCU_DEAD] are generated		
	ET=+ UT=+00.00.00	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505 A0870000 <hex> 0 <hex> (Def)	
		Note that a TM(5,1) packet [No_MCU_Response_Error] and a TM(5,4) packet [ALARM_LSMCU_DEAD] should have been generated		
	ET=+ UT=+00.00.02	SET_OBS_MODE SET_OBS_MODE Command Parameter(s) : OBSERVING_MODE SP02N500 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 370 Det. descr. : SET OBSERVING MODE	SC002500 101 <hex>	
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500 80000000 <hex>	
		Verify Telemetry is approx 20V (0xFFFF RAW) MCUP5V SM_4V515	= 20.0 V	AND=SA_3_559

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry should be ~75V (0xFFFF RAW) MCUP15V SM_0V515	= 75.0 V	AND=SA_3_559
		Verify Telemetry should be ~75V (0xFFFF RAW) MCUP14V SM_2V515	= 75.0 V	AND=SA_3_559
		Verify Telemetry should be ~75V (0xFFFF RAW) MCUM14V SM_3V515	= 75.0 V	AND=SA_3_559
		Verify Telemetry should be ~75V (0xFFFF RAW) MCUM15V SM_1V515	= 75.0 V	AND=SA_3_559
		Verify Telemetry MODE SM00M500	= SCU_ON	AND=SA_6_559
5		Set default end conditions		Next Step: END
		Note that a TM(5,1) packet [New_Step_Report] is generated after each of the following SET_OBS_STEP telecommands		
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500 80000000 <hex>	
		Verify Telemetry BBFULLTYPE SM2LN500	= Null	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500 80030001 <hex>	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry BBFULLTYPE SM2LN500	= EndObs	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 1 <hex>	
	ET=+ UT=+00.00.01	SET_OBSID SET_OBSID Command Parameter(s) : OBSERVATION_ID SP00N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION IDENTIFIER	SC000500 00000000 <hex>	
		Verify Telemetry OBSID SM10N500	= 00000000 <hex>	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500 80000000 <hex>	
		Verify Telemetry BBFULLTYPE SM2LN500	= Null	AND=ZAZ90999
End of Procedure				