

Check DMC software (Nominal)
 File: H_FCP_PAC_NCMM.xls
 Author: R. Biggins



Procedure Summary

Objectives

The objective of this procedure is to check the on-board software for the nominal DMC

- Switch to PACS bus profile
- Disable SDE FDIR for the PACS RTA
- Enable RT interrogations for the PACS RTA
- Power on and boot nominal DPU
- Switch on and connect DMC
- Check DMC EEPROM contents
- Disable RT interrogations for the PACS RTA
- Switch off DMC and DPU

Based on procedures:

Pacs_Switch_On_DPU_DMCLLSW_Nominal_31_07_2007
 Pacs_Dmc_MemCheck_EEPROM_05_10_2007
 PACS_Switch_Off_Nominal_28_07_2007

Summary of Constraints

PACS has been switched off for at least 4 minutes.

This procedure is valid for the DMC software version 6.028

Spacecraft Configuration

Start of Procedure

- PACS is OFF
- All PACS units powered off
 - UIU table shows PACS off

End of Procedure

- PACS is OFF
- All PACS units powered off
 - UIU table shows PACS off

Reference File(s)

Input Command Sequences

Output Command Sequences

HFPCNMM

Referenced Displays

ANDs GRDs SLDs
 ZAZ99999

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
20/09/07		1	Created	R. Biggins	

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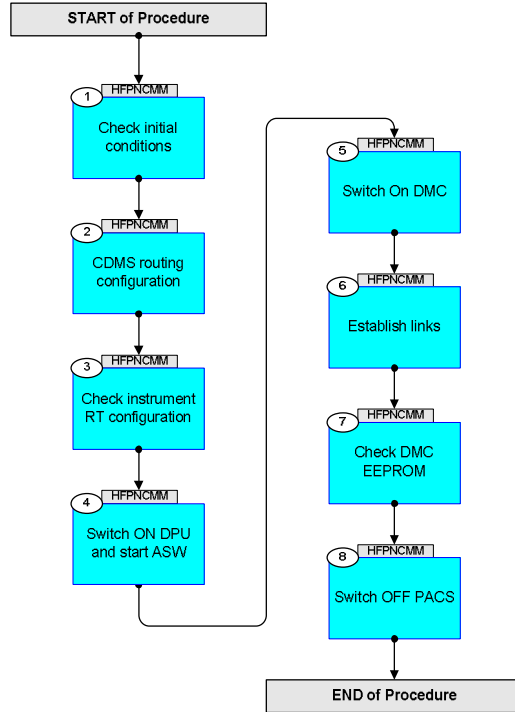


22/11/07		2	- Time tags added to SVM commands - FDIR updated to be disabled throughout procedure - Editorial updates	R. Biggins	
04/12/07		2.01	Validation : Editorial updates	R. Biggins	
21/01/08		3	Update due to initial testing against the simulator: - TCs updated due to new DB - Execution times removed	R. Biggins	
03/03/08		4	Update due to testing against MOC Simulator and comments by S. Pezzuto: - Telecommand flags updated - Editorial updates - Telemetry check added to step 6.2	R. Biggins	
27/05/08	1	5	Updates due to SVT-1 testing: - TC to start RT interrogations updated (step 4.3) - TC to enable FDIR moved from step 8.4 to step 4.5 - TC to disable RT interrogations moved to before LCL switch off - Expected LCL currents updated - Comments added/updated - Flags updated - AND updated for all TM parameters	R. Biggins	
23/10/08	2	6	Updates due to new procedures from industry - Step 4.2 and 4.3 combined - TC DC005161 paramters updated due to database changes	R. Biggins	
23/03/09	2.2	7	Final updates before flight - Summary updated - TC flags updated - Procedure description/title updated - Memory checks updated to reflect current software versions	R. Biggins	
17/04/09	2.3	7.01	Validation : Editorial updates due to comments from project/insudtry	R. Biggins	

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
TC Seq. Name :HFPNCMM (Check DMC s/w (Nom))				
TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
1		Check initial conditions		Next Step: 2
		Verify: PACS has been switched off for at least 4 minutes		
1.1		PACS input		<input type="checkbox"/>
		Verify that the PACS ICC has indicated whether the DPU is to be booted from the primary or secondary partition (step 4.6) DPU_PRTN = 1 or 2		
1.2		Spacecraft mode		<input type="checkbox"/>
		Verify Telemetry CurrentMode DEL34170 = Nominal		AND=ZAZ99999
		Verify Telemetry ACC_A_MODE AEE8G050 = Nominal		AND=ZAZ99999
1.3		Bus status		<input type="checkbox"/>
		Verify Bus configuration		
		Verify: Active 1553 bus Active_Bus_A_B DEFJ1160 = BUS_A		AND=ZAZ99999
		Verify: 1553 bus FDIR status SDB_FDIR DEFJ4160 = ENABLED		AND=ZAZ99999
		Verify: SDB handling status BSW_SDB_ENAB DEF60160 = ENABLED		AND=ZAZ99999
		Verify bus health status		
		Verify: Bus (side A) health status BusA_HealthySts DEFJ2160 = Healthy		AND=ZAZ99999
		Verify: Bus (side B) health status BusB_HealthySts DEFJ3160 = Healthy		AND=ZAZ99999

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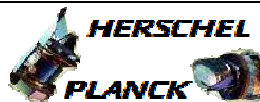
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
1.4		Nominal instrument LCLs		<input type="checkbox"/>
		Verify: DPU LCL status PacsD_N_L41_S WM72B565	= OFF	AND=ZAZ99999
		Verify: SPU LCL status PacsS_N_L35_S WM52A565	= OFF	AND=ZAZ99999
		Verify: BOLC LCL status PacsB_N_L27_1S WM82D565	= OFF	AND=ZAZ99999
		Verify: Dec/Mec1 LCL status PacsMec1_L65_1S WM52E565	= OFF	AND=ZAZ99999
1.5		Redundant instrument LCLs		<input type="checkbox"/>
		Verify: DPU LCL status PacsD_R_L42_S WM42B565	= OFF	AND=ZAZ99999
		Verify: SPU LCL status PacsS_R_L36_S WM62A565	= OFF	AND=ZAZ99999
		Verify: BOLC LCL status PacsB_R_L28_1S WM32D565	= OFF	AND=ZAZ99999
		Verify: Dec/Mec2 LCL status PacsMec2_L69_1S WM62E565	= OFF	AND=ZAZ99999
2		CDMS routing configuration		Next Step: 3
	ET=+ UT=+00.00.00	Execute Telecommand RepDownlinkTMStorage TC Control Flags : Subsch. ID : 10 Det. descr. : Report Telemetry Packets Down-linking/ Storage Status	DC141160 GBM IL DSE --Y -- --	
		It should be verified that telemetry packets for ALL PACS APIDs should be transmitted to ground (Transmit_Flag = ENABLED) EXCEPT for TM(21,x) which should be stored in the SSMM (Storage_Flag = ENABLED, Transmit_Flag = DISABLED). This should be verified on the VPD		
		Verify Packet Reception Telemetry Packets DownLinking-Storage Status Report Packet Details:	(14,7)-1400 APID: 16 Type: 14 Subtype: 7 PI1: PI2:	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
3		Check instrument RT configuration		Next Step: 4
3.1		Remote Terminal configuration		<input type="checkbox"/>
		Verify Telemetry PACS_VitalNonV DED5G161	= NonVital	AND=ZAZ99999
		Verify Telemetry PACS_TmRetry DED5Z161	= ON	AND=ZAZ99999
3.2		Remote Terminal Status		<input type="checkbox"/>
		Nominal units		
		Verify Telemetry PACSA_OnOff DED2G161	= OFF	AND=ZAZ99999
		Verify Telemetry PACSA_DeadAliv DED2H161	= Alive	AND=ZAZ99999
		Verify Telemetry PACSA_WellsiTC DED2Z161	= Well	AND=ZAZ99999
		Verify Telemetry PACSA_WellsiTM DED2J161	= Well	AND=ZAZ99999
		Verify Telemetry PACSA_ValidInv DED2K161	= Invalid	AND=ZAZ99999
		Redundant units		
		Verify Telemetry PACSB_OnOff DED31161	= OFF	AND=ZAZ99999
		Verify Telemetry PACSB_DeadAliv DED32161	= Alive	AND=ZAZ99999
		Verify Telemetry PACSB_WellsiTC DED33161	= Well	AND=ZAZ99999
		Verify Telemetry PACSB_WellsiTM DED34161	= Well	AND=ZAZ99999
		Verify Telemetry PACSB_ValidInv DED35161	= Invalid	AND=ZAZ99999
4		Switch ON DPU and start ASW		Next Step: 5
4.1		Set Bus Profile		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch																																																																																	
	ET=+ UT=+00.00.00	Execute Telecommand <p style="text-align: right;">SelectActiveSCBP</p> Command Parameter(s) : <p style="text-align: right;">SCBP DH049160</p> TC Control Flags : <p style="text-align: right;"> GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : Select Active SCBP from SCBP Table	DC819160 SCBP_04																																																																																		
		Verify: Bus profile <p style="text-align: right;">BSW_SDB_ActProf DEF5F160</p>	= 4 <dec>	AND=ZAZ99999																																																																																	
4.2		Disable SDB FDIR and enable RT interrogations		<input type="checkbox"/>																																																																																	
		NOTE: The following TC acts in the following order: - disables the SDB FDIR for the whole spacecraft - updates the RTA status																																																																																			
	ET=+ UT=+00.00.00	Execute Telecommand <p style="text-align: right;">ConfiguresDBFDIR</p> Command Parameter(s) : <table border="0" style="width: 100%;"><tr><td style="text-align: right;">RTA</td><td>DH011161</td><td>PACS A</td></tr><tr><td style="text-align: right;">M0</td><td>DH030161</td><td>Update status</td></tr><tr><td style="text-align: right;">M1</td><td>DH031161</td><td>Ignore Flag</td></tr><tr><td style="text-align: right;">M2</td><td>DH032161</td><td>Ignore Flag</td></tr><tr><td style="text-align: right;">M3</td><td>DH033161</td><td>Ignore Flag</td></tr><tr><td style="text-align: right;">M4</td><td>DH034161</td><td>Update status</td></tr><tr><td style="text-align: right;">M5</td><td>DH035161</td><td>Ignore Flag</td></tr><tr><td style="text-align: right;">M6</td><td>DH036161</td><td>Update status</td></tr><tr><td style="text-align: right;">M7</td><td>DH037161</td><td>Ignore Flag</td></tr><tr><td style="text-align: right;">F0</td><td>DH018161</td><td>ON</td></tr><tr><td style="text-align: right;">F1</td><td>DH019161</td><td>Alive</td></tr><tr><td colspan="3"> </td></tr><tr><td style="text-align: right;">F2</td><td>DH020161</td><td>Well TC</td></tr><tr><td style="text-align: right;">F3</td><td>DH021161</td><td>Well TM</td></tr><tr><td style="text-align: right;">F4</td><td>DH022161</td><td>Valid</td></tr><tr><td style="text-align: right;">F5</td><td>DH023161</td><td>Non-vital</td></tr><tr><td style="text-align: right;">F6</td><td>DH024161</td><td>NOMINAL</td></tr><tr><td style="text-align: right;">F7</td><td>DH025161</td><td>ON</td></tr><tr><td style="text-align: right;">M12</td><td>DH051161</td><td>Ignore Flag</td></tr><tr><td style="text-align: right;">M_C</td><td>DH043161</td><td>Ignore CNT</td></tr><tr><td style="text-align: right;">M8</td><td>DH038161</td><td>Ignore Flag</td></tr><tr><td style="text-align: right;">M9</td><td>DH039161</td><td>Ignore Flag</td></tr><tr><td style="text-align: right;">M10</td><td>DH040161</td><td>Ignore Flag</td></tr><tr><td style="text-align: right;">M11</td><td>DH041161</td><td>Update status</td></tr><tr><td style="text-align: right;">F12</td><td>DH050161</td><td>ENABLED</td></tr><tr><td style="text-align: right;">CNT</td><td>DH042161</td><td>LoopCnt1</td></tr><tr><td style="text-align: right;">F8</td><td>DH026161</td><td>Bus A</td></tr></table>	RTA	DH011161	PACS A	M0	DH030161	Update status	M1	DH031161	Ignore Flag	M2	DH032161	Ignore Flag	M3	DH033161	Ignore Flag	M4	DH034161	Update status	M5	DH035161	Ignore Flag	M6	DH036161	Update status	M7	DH037161	Ignore Flag	F0	DH018161	ON	F1	DH019161	Alive				F2	DH020161	Well TC	F3	DH021161	Well TM	F4	DH022161	Valid	F5	DH023161	Non-vital	F6	DH024161	NOMINAL	F7	DH025161	ON	M12	DH051161	Ignore Flag	M_C	DH043161	Ignore CNT	M8	DH038161	Ignore Flag	M9	DH039161	Ignore Flag	M10	DH040161	Ignore Flag	M11	DH041161	Update status	F12	DH050161	ENABLED	CNT	DH042161	LoopCnt1	F8	DH026161	Bus A	DC005161	
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M_C	DH043161	Ignore CNT																																																																																			
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M10	DH040161	Ignore Flag																																																																																			
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		F9 DH027161 F10 DH028161 F11 DH029161 TC Control Flags : Subsch. ID : 10 Det. descr. : Configure SDB FDIR	Healthy Healthy DISABLED	
		Wait up to 1 minute for the generation of the D_Hk_P64 packet from the CDMU (APID = 18)		
		Verify: 1553 bus FDIR status SDB_FDIR DEFJ4160	= DISABLED	AND=ZAZ99999
		Verify Telemetry PACS_NomRed DED5H161	= NOMINAL	AND=ZAZ99999
		Verify Telemetry PACSA_OnOff DED2G161	= ON	AND=ZAZ99999
		Verify Telemetry PACSA_ValidInv DED2K161	= Valid	AND=ZAZ99999
4.3		Switch ON DPU LCL		<input type="checkbox"/>
		Switching ON the DPU LCL will initialise BSW. This will initially execute memory checks (failures will generate TM(5,4) packets) and then generate TM(5,1) [EVENT_REPORT_3_32776] packets every 10 seconds.		
	ET=+ UT=+00.00.00	Execute Telecommand SwOn_PacsD_N_L41 TC Control Flags : Subsch. ID : 10 Det. descr. : PCDU: TC(8,4,112,5) PACS DPU Nom - switch LCL_41 on	DC41D170	
		Verify: DPU LCL status PacsD_N_L41_S WM72B565	= ON	AND=ZAZ99999
		Verify: DPU LCL current (+/- 0.1A) PacsD_N_L41_I WM707565	= 0.49 A	AND=ZAZ99999
4.4		DPU Force Boot		<input type="checkbox"/>
		Sending the FORCE_BOOT TC will generate a TM(5,1) [EVENT_REPORT_3_33041] packet from the BSW.		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.22	DPU_LLSW_FORCE_BOOT DPU_LLSW_FORCE_BOOT Command Parameter(s) : DPU_STRUCTURE_ID PP002380 DPU_PARTITION PP267380 Subsch. ID : 90 Det. descr. : FORCE THE BOOT OF THE DPU LLSW FROM EEPROM	PC032380 1 <dec> (Def) DPU_PRTN	
		Verify: The following TM(3,25) packets should be generated: PACS_essential_HK (APID 1152) PACS_NO_PRIME_HK (APID 1154)		
4.5		Re-enable SDB FDIR		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand ConfigureSDBFDIR Command Parameter(s) : RTA DH011161 M0 DH030161 M1 DH031161 M2 DH032161 M3 DH033161 M4 DH034161 M5 DH035161 M6 DH036161 M7 DH037161 F0 DH018161 F1 DH019161	DC005161 PACS A Ignore Flag Ignore Flag Ignore Flag Ignore Flag Ignore Flag Ignore Flag Ignore Flag Ignore Flag ON Alive	
		F2 DH020161 F3 DH021161 F4 DH022161 F5 DH023161 F6 DH024161 F7 DH025161 M12 DH051161 M_C DH043161 M8 DH038161 M9 DH039161 M10 DH040161 M11 DH041161 F12 DH050161 CNT DH042161 F8 DH026161	Well TC Well TM Valid Non-vital NOMINAL ON Ignore Flag Ignore CNT Ignore Flag Ignore Flag Ignore Flag Update status ENABLED LoopCnt1 Bus A	
		F9 DH027161 F10 DH028161 F11 DH029161 TC Control Flags : Subsch. ID : 10 Det. descr. : Configure SDB FDIR	Healthy Healthy ENABLED GBM IL DSE --Y -- ---	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Wait up to 1 minute for the generation of the D_Hk_P64 packet from the CDMU (APID = 18)		
		Verify: 1553 bus FDIR status SDB_FDIR DEFJ4160	= ENABLED	AND=ZAZ99999
5		Switch On DMC		Next Step: 6
	ET=+ UT=+00.00.00	Execute Telecommand SwOn_PacsDecMec1_L65 TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 10 Det. descr. : PCDU: TC(8,4,112,5) PACS DEC/MEC1 - switch LCL_65 on	DC65D170	
		Verify: DMC LCL status PacsMec1_L65_1S WM52E565	= ON	AND=ZAZ99999
		Verify: DMC LCL current (+/- 0.1A) PacsMec1_L65_I WM510565	= 0.6 A	AND=ZAZ99999
6		Establish links		Next Step: 7
6.1		DPU reset of 1355		<input type="checkbox"/>
	ET=+ UT=+00.00.28	DPU_RESET_1355 DPU_RESET_1355 Subsch. ID : 90 Det. descr. : DPU RESET THE 1355 CHIP	PC025380	
6.2		Establish DPU -> DMC link (via OBCP)		<input type="checkbox"/>
		Sending the following TC will establish the link between the DPU and the DMC. This will then generate a TM(5,1) [EVENT_REPORT_0_20 - DEC DEAD] packet as no data has been received in the previous 10 seconds.		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.03	DPU_START_OBCP_RAW DPU_START_OBCP Command Parameter(s) : PROCEDURE_ID PP012380 NUMBER_OF_TIMES PP010380 PAR_ID PP011380 PAR_VALUE PP017380 PAR_ID PP011380 PAR_VALUE PP017380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : START AN OBCP WITH THE COMMANDED PARAMETERS	PC012380 START_1355_LINK 2 <dec> (Def) 1 <dec> 0 <dec> 2 <dec> 1 <dec>	
		Verify Telemetry DP_DMC_LINK PM022380	= ON	AND=ZAZ99999
6.3		Execute Memory self test check		<input type="checkbox"/>
	ET=+ UT=+00.00.04	DPU_MEMORY_DUMP DPU_MEMORY_DUMP Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : DUMP OF A DPU MEMORY AREA	PC028380 3100 <hex> 0 <hex> 17 <dec>	
		Verify: The following TM(6,6) packet should be generated: PACS_MEMORY_DUMP (APID 1152)		
		For PACS DMC OBSW v6.028 : 0x 0000 0001 0x 0007 FFFF 0x 0000 55D0 0x 0000 55D0 Although the rest of the dump should be 0x0000 0000, it is not unexpected if it is not. This should be analysed by PACS offline.		
7		Check DMC EEPROM		Next Step: 8

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		Uplink the memory check commands one by one and verify the received checksums (PM132380) against the corresponding expected values in Attachment 1.		
	ET=+ UT=+00.00.00	DPU_MEMORY_CHECK_RAW <p style="text-align: right;">DPU_MEMORY_CHECK</p> Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> 0 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW <p style="text-align: right;">DPU_MEMORY_CHECK</p> Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> 800 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW <p style="text-align: right;">DPU_MEMORY_CHECK</p> Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> 1000 <hex> 69B <hex>	

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	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> 8000 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> 8800 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> 9000 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> 9800 <hex> 800 <hex>	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> A000 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> A800 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> B000 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> B800 <hex> 800 <hex>	

Check DMC software (Nominal)
 File: H_FCP_PAC_NCMX.xls
 Author: R. Biggins



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> C000 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> C800 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> D000 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> D800 <hex> 800 <hex>	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> E000 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> E800 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> F000 <hex> 800 <hex>	
	ET=+ UT=+00.00.01	DPU_MEMORY_CHECK_RAW DPU_MEMORY_CHECK Command Parameter(s) : DPU_MEMORY_BLOCK_ID PP009380 DPU_MEMORY_ADDR PP003380 DPU_DATA_LENGTH PP008380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : REQUEST FOR A CHECKSUM OF A SPECIFIED MEMORY AREA	PC029380 2300 <hex> F800 <hex> 637 <hex>	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
8		Switch OFF PACS		Next Step: END
8.1		Go to SAFE MODE		<input type="checkbox"/>
		Sending the following TC will generate a TM(5,1) [EVENT_REPORT_6_3 - NACK] packet.		
	ET=+ UT=+00.00.00	DPU_START_OBCP_RAW Command Parameter(s) : PROCEDURE_ID PP012380 NUMBER_OF_TIMES PP010380 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 90 Det. descr. : START AN OBCP WITH THE COMMANDED PARAMETERS	DPU_START_OBCP PC012380 24 <dec> 0 <dec>	
		Verify Telemetry DP_TM_RATE PM049380	= SAFE	AND=ZAZ99999
8.2		Stop the instrument RT interrogation		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand Command Parameter(s) : RTA DH011161 M0 DH030161 M1 DH031161 M2 DH032161 M3 DH033161 M4 DH034161 M5 DH035161 M6 DH036161 M7 DH037161 F0 DH018161 F1 DH019161 F2 DH020161 F3 DH021161 F4 DH022161 F5 DH023161 F6 DH024161 F7 DH025161 M12 DH051161 M_C DH043161 M8 DH038161 M9 DH039161 M10 DH040161 M11 DH041161 F12 DH050161 CNT DH042161 F8 DH026161	ConfiguresSDBFDIR DC005161 PACS A Update status Ignore Flag Ignore Flag Ignore Flag Update status Ignore Flag Ignore Flag Ignore Flag OFF Alive Well TC Well TM Invalid Non-vital NOMINAL OFF Ignore Flag Ignore CNT Ignore Flag Ignore Flag Ignore Flag ENABLED LoopCnt1 Bus A	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		F9 DH027161 F10 DH028161 F11 DH029161 TC Control Flags : Subsch. ID : 10 Det. descr. : Configure SDB FDIR GBM IL DSE --Y -- ---	Healthy Healthy ENABLED	
		Wait up to 1 minute for the generation of the D_H_Hk_P64 packet from the CDMU (APID = 18)		
		Verify Telemetry PACSA_OnOff DED2G161	= OFF	AND=ZAZ99999
		Verify Telemetry PACSA_ValidInv DED2K161	= Invalid	AND=ZAZ99999
8.3		Switch OFF LCLs		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand SwOff_PacsDecMec1_L65 TC Control Flags : Subsch. ID : 10 Det. descr. : PCDU: TC(8,4,112,3) PACS DEC/MEC1 - switch LCL_65 off	DC65B170	
	ET=+ UT=+00.00.01	Execute Telecommand SwOff_PacsD_N_L41 Subsch. ID : 10 Det. descr. : PCDU: TC(8,4,112,3) PACS DPU Nom - switch LCL_41 off	DC41B170	
		Verify Telemetry PacsMec1_L65_1S WM52E565	= OFF	AND=ZAZ99999
		Verify Telemetry PacsS_N_L35_S WM52A565	= OFF	AND=ZAZ99999
End of Procedure				

ATTACHMENT 1

DMC EEPROM contents

H_FCP_PAC_NCMM

Checksums for step 7
 Block ID: 2300

DMC OBSW version 6.028

DPU_MEMORY_ADDR	DPU_DATA_LENGTH	Checksum (HEX)
0000	800	9A89
0800	800	436D
1000	800	8CDE
8000	800	568E
8800	800	B550
9000	800	F92A
9800	800	12E9
A000	800	319E
A800	800	4EEF
B000	800	BC50
B800	800	92DA
C000	800	3E37
C800	800	6213
D000	800	07E3
D800	800	DDC6
E000	800	2621
E800	800	FEF7
F000	800	E48F
F800	637	8C8C

Doc No. : PT-HMOC-OPS-FOP-6001-OPS-OAH
Fop Issue : 3.0
Issue Date: 13/04/10

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Status : Version 7 - Unchanged
Last Checkin: 23/03/09