

Change RM Programming Set  
File: H\_CRP\_AOC\_D2PS.xls  
Author: dsalt-hp



## Procedure Summary

### Objectives

The objective of this Herschel ACMS contingency procedure is to change the RM Programming Set.

The procedure involves the following activities:

- selection of RM to be addressed
- check current RM settings
- command change to the required RM Programming Set
  - disable RM
  - set RM Programming Set
  - enable RM

The procedure specifies the actions required to program the pointers which identify the programming set used by the RM. Each programming set consists of two pointers which identify, respectively, the location of the PAP table and the attempt table (the reconfiguration command sequences are stored in a unique CCS table common to all programming sets). For Herschel and Planck, the user has the possibility to select one of four predefined programming sets, for which the PAP and attempt tables are stored in the RM EEPROM's. Each programming set corresponds to one specific configuration of ACC PM's:

- (0) PMA = main, PMB = redundant;
- (1) PMB = main, PMA = redundant;
- (2) PMA = both main and redundant (PMB excluded from use);
- (3) PMB both main and redundant (PMA excluded from use).

TC\_CHANGE\_RM\_PROG\_SET used in the procedure to modify the two RM pointers has an important side effect. As part of the execution of the service call issued in response to the TC, the BSW automatically resets all RM registers that affect the execution of reconfiguration attempts. Thanks to this feature, this TC provides the most convenient way to reset the RM to the original configuration after a trigger, since both attempt counters and the last chance register are zeroed, which guarantees that no reconfiguration attempt will be blocked by the settings of these registers.

Change RM Programming Set  
File: H\_CRP\_AOC\_D2PS.xls  
Author: dsalt-hp



The procedure can be used in two cases:

1. Changing the programming set in order to reflect a new configuration of ACC. This situation should occur if after an ACC contingency the decision is taken to change the configuration of the ACC. For example, if the analysis of a level 3b trigger shows that the problem was due to a permanent failure of PMA, the ACC configuration must be changed so that only PMB is used (as both main and redundant processor) for the remainder of the mission. In this case, the procedure should be executed selecting programming set 3.
2. Repeating the programming with current values in order to reset the attempt counters and the last chance register. This option relies on the side effect of the command discussed in the Objectives section, which provides a convenient way to "clean up" the RM after a trigger. It should be used whenever the ACC is being restored to the original configuration after an RM trigger at any level.

#### Summary of Constraints

N/A

#### Spacecraft Configuration

Start of Procedure

N/A

End of Procedure

N/A

#### Reference File(s)

Input Command Sequences

HFADRM1  
HFADRM2

Output Command Sequences

HRAD2PS1  
HRAD2PS2  
HRAD2PS3  
HRAD2PS4  
HRAD2PS5  
HRAD2PS6  
HRAD2PS7  
HRAD2PS8  
NULLSEQ1  
NULLSEQ3

#### Referenced Displays

ANDs      GRDs      SLDs

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



ZAZ52999  
 ZAAM2999

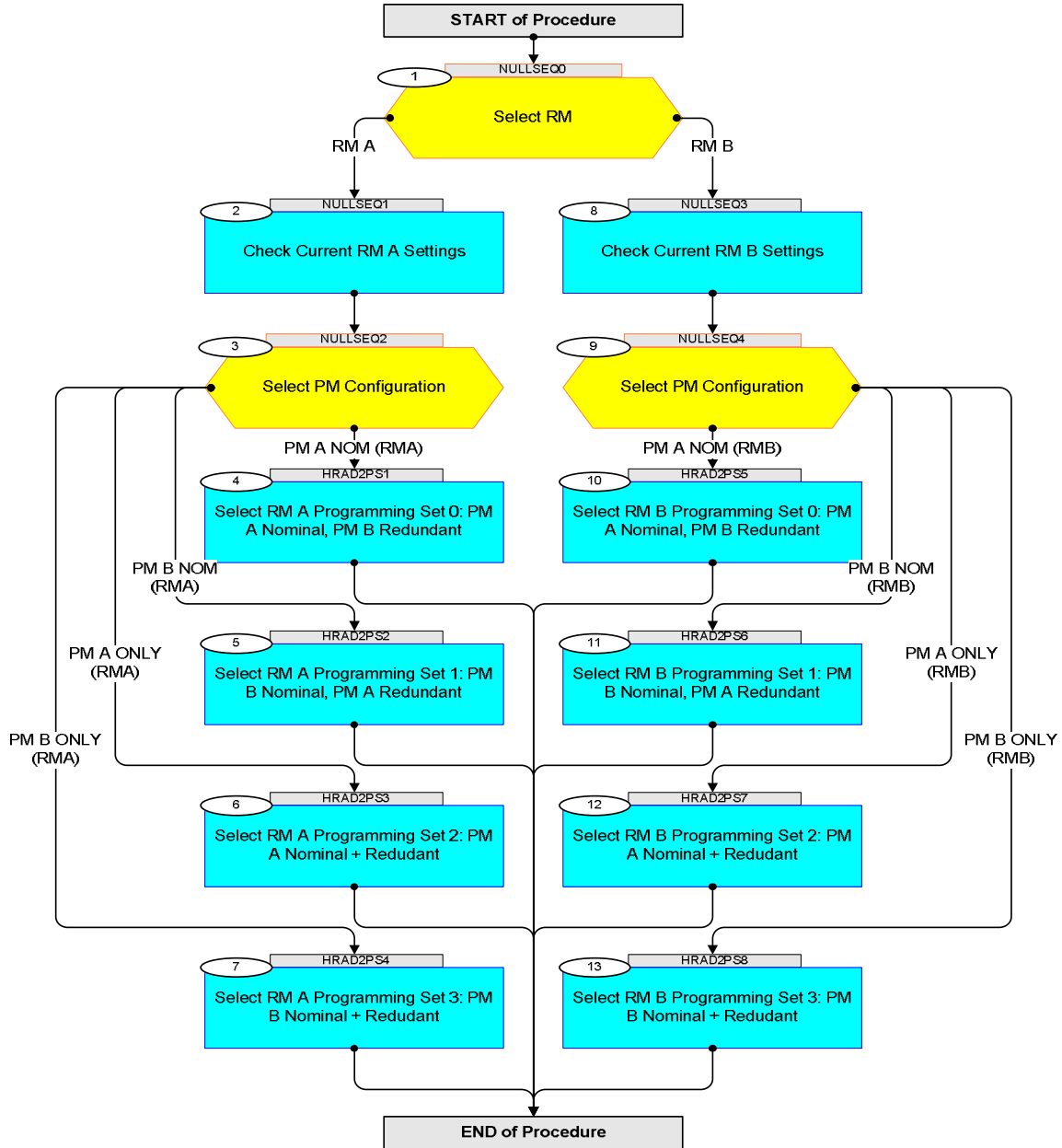
**Configuration Control Information**

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
09/01/09		1	Created	dsalt-hp	
09/01/09		2	Redundant sequence reference removed from end of procedure	dsalt-hp	
13/01/09		3	Addition of TM for each Attempt Counter now included, plus correction of sequence names in step titles.	dsalt-hp	
18/01/09	2	4	Sequence references updated in Step 2 & 8	dsalt-hp	

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



## Procedure Flowchart Overview



Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<b>Beginning of Procedure</b>				
TC Seq. Name : NULLSEQ0 ( )  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>				
1		Select RM		Next Step: RM A 2 RM B 8
		Select the reconfiguration module that needs change of programming set:  RM A -> GO TO STEP 2  RM B -> GO TO STEP 8		
TC Seq. Name : NULLSEQ1 ( )  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>				
2		Check Current RM A Settings		Next Step: 3
2.1		Check ACC Status based on Current PM Configuration		<input type="checkbox"/>
		To recognise the current PM configuration, go through steps 2.1.1 to 2.1.4 and find the telemetry signature that matches.		
2.1.1		Case 1 : PM A Nominal, PM B Redundant		<input type="checkbox"/>
		Verify Telemetry ActPmBoard_N                  AEDPG050          = A		AND=ZAZ52999
		Verify Telemetry ActPmBoard_R                  AEDPH050          = A		AND=ZAZ52999
		Verify Telemetry ColdSts_A_J011                  AEE45050          = ON		AND=ZAZ52999
		Verify Telemetry ColdSts_A_J121                  AEE46050          = OFF		AND=ZAZ52999
		Verify Telemetry AccColdA_L33_S                  WM62B565          = ON		AND=ZAZ52999

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry AccColdB_L34_S                      WM52B565	= ON	AND=ZAZ52999
2.1.2		Case 2 : PM B Nominal, PM A Redundant		☐
		Verify Telemetry ActPmBoard_N                      AEDPG050	= B	AND=ZAZ52999
		Verify Telemetry ActPmBoard_R                      AEDPH050	= B	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J011                      AEE45050	= OFF	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J121                      AEE46050	= ON	AND=ZAZ52999
		Verify Telemetry AccColdA_L33_S                      WM62B565	= ON	AND=ZAZ52999
		Verify Telemetry AccColdB_L34_S                      WM52B565	= ON	AND=ZAZ52999
2.1.3		Case 3 : PM A Nominal, PM B Defect		☐
		Verify Telemetry ActPmBoard_N                      AEDPG050	= A	AND=ZAZ52999
		Verify Telemetry ActPmBoard_R                      AEDPH050	= A	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J011                      AEE45050	= ON	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J121                      AEE46050	= OFF	AND=ZAZ52999
		Verify Telemetry AccColdA_L33_S                      WM62B565	= ON	AND=ZAZ52999
		Verify Telemetry AccColdB_L34_S                      WM52B565	= OFF	AND=ZAZ52999
2.1.4		Case 4 : PM B Nominal, PM A Defect		☐
		Verify Telemetry ActPmBoard_N                      AEDPG050	= B	AND=ZAZ52999
		Verify Telemetry ActPmBoard_R                      AEDPH050	= B	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J011                      AEE45050	= OFF	AND=ZAZ52999

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry ColdSts_A_J121                    AEE46050	= ON	AND=ZAZ52999
		Verify Telemetry AccColdA_L33_S                    WM62B565	= OFF	AND=ZAZ52999
		Verify Telemetry AccColdB_L34_S                    WM52B565	= ON	AND=ZAZ52999
2.2		Uplink Sequence HFADRM1		<input type="checkbox"/>
		Execute Sequence HFADRM1 GetRmAstatusReport v02 Sequence Grouping = -  SSID : 0		SEQ
2.3		Check RM A Pointer Register Settings		<input type="checkbox"/>
		Verify Telemetry RMH_PAPPTR                    AEW1Z109	<to be read>	AND=ZAAM2999
		Verify Telemetry RMH_ATPTR                    AEW1Y109	<to be read>	AND=ZAAM2999
TC Seq. Name : NULLSEQ2 ( )  TimeTag Type: Sub Schedule ID:  <input type="checkbox"/>				
3		Select PM Configuration		Next Step: PM A NOM (RMA) 4 PM B NOM (RMA) 5 PM A ONLY (RMA) 6 PM B ONLY (RMA) 7

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		<p>Four different RM sets are programmed into the RM board EEPROM, corresponding to four possible PM configurations. Based on the choice of PM configuration, alarms are configured differently. Based on the current PM configuration, select the appropriate step here:</p> <p>PM A nominal, PM B redundant -&gt; GO TO STEP 4</p> <p>PM B nominal, PM A redundant -&gt; GO TO STEP 5</p> <p>PM A only, PM B defect -&gt; GO TO STEP 6</p> <p>PM B only, PM A defect -&gt; GO TO STEP 7</p>		
<p>TC Seq. Name : HRAD2PS1 (SelRmAprogSetPmAnom)</p> <p>TimeTag Type: N</p> <p>Sub Schedule ID:</p> <p style="text-align: center;">□</p>				
4		Select RM A Programming Set 0: PM A Nominal, PM B Redundant		Next Step: END
		<p>This step selects the RM Programming Set corresponding to the PM configuration: PM A nominal, PM B redundant.</p> <p>A programming set is selected by changing the Attempt Pointer Register and the PAP Pointer Register. The PAP and attempt tables corresponding to this PM configuration can be found in P-HPL-NOT-00031-SE, ACC Users Manual, section 11.2, but are also copied here (see end of procedure). Tables to look at are:</p> <p>Table 11-7 Programmable Alarm Pattern Table          Table 11-9 Attempt Table</p>		
4.1		Uplink Sequence HRAD2PS1		□
4.1.1		Disable RM A		□



Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <b>Ext_ACC_RM_A_Disable</b>  TC Control Flags :  Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific  GBM IL DSE --Y -- --	DCM22170	
		Verify Telemetry <b>RMA_fromTTR-RMA</b> <b>AEE91050</b>	= DISABLED	AND=ZAZ52999
		Verify Telemetry <b>RMA_fromTTR-RMB</b> <b>AEE92050</b>	= DISABLED	AND=ZAZ52999
		Verify Telemetry <b>RMB_fromTTR-RMA</b> <b>AEE93050</b>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <b>RMB_fromTTR-RMB</b> <b>AEE94050</b>	= ENABLED	AND=ZAZ52999
4.1.2		Select RM A Programming Set		□
		The addresses of the Attempt Pointer Register and the PAP Pointer Register are taken from P-HPL-NOT-00031-SE, ACC Users Manual, section 11.1, table 11-2 to 11-5.		
		Execute Telecommand <b>Change RMA prog set</b>  Command Parameter(s) : ProgSet DF86Cmd                      AH871001                      Enable 86 ProgSet DD86Cmd                      AH872001                      Enable 86 ProgSet PAP Add                        AHFP5001                      1068 <hex> ProgSet AttpAdd                        AHFP6001                      1048 <hex>  TC Control Flags :  Subsch. ID : 20 Det. descr. : TC(8,1) - Change RMA prog set  GBM IL DSE --Y -- --	ACZGV109	
		Execute Telecommand <b>Fire Change RM ProgSet</b>  Command Parameter(s) : FireFun DF86Cmd                      AH8F1001                      Enable 86 FireFun DD86Cmd                      AH8F2001                      Enable 86  TC Control Flags :  Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - Fire Change RM ProgSet  GBM IL DSE --Y -- --	ACZ9M109	

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



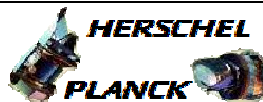
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
4.1.3		Verify Update via RM A Status Report		<input type="checkbox"/>
		Execute Telecommand Get RM-A status Command Parameter(s) : RMStat DF86Cmd           AH841001 RMStat DD86Cmd           AH842001 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status	ACZZ4109  Enable 86 Enable 86	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID:       512 Type:        8 Subtype:   6 PI1:       41600 PI2:       1	A86_RMStatus	
		Verify Telemetry RMH_PAPPTR           AEW1Z109	= PMA=N__PMB=R	AND=ZAAM2999
		Verify Telemetry RMH_ATPTR            AEW1Y109	= PMA=N__PMB=R	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT0           AEW2G109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT1           AEW2H109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT2           AEW2J109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT3           AEW2K109	= 0 <dec>	AND=ZAAM2999
4.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific	DCM21170	
		Verify Telemetry RMA_fromTTR-RMA       AEE91050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMA_fromTTR-RMB       AEE92050	= ENABLED	AND=ZAZ52999

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAZ52999
<p>TC Seq. Name :HRAD2PS2 (SelRmAprogSetPmBnom)</p> <p>TimeTag Type: N            Sub Schedule ID:  <input type="checkbox"/></p>				
5		Select RM A Programming Set 1: PM B Nominal, PM A Redundant		Next Step: END
		<p>This step selects the RM Programming Set corresponding to the PM configuration: PM B nominal, PM A redundant.</p> <p>A programming set is selected by changing the Attempt Pointer Register and the PAP Pointer Register. The PAP and attempt tables corresponding to this PM configuration can be found in P-HPL-NOT-00031-SE, ACC Users Manual, section 11.2, but are also copied here (see end of procedure). Tables to look at are:</p> <p>Table 11-10 Programmable Alarm Pattern Table            Table 11-12 Attempt Table</p>		
5.1		Uplink Sequence HRAD2PS2		<input type="checkbox"/>
5.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Disable DCM22170 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific		
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= DISABLED	AND=ZAZ52999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= DISABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAZ52999

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RMB_fromTTR-RMB      AEE94050	= ENABLED	AND=ZAZ52999
5.1.2		Select RM A Programming Set		<input type="checkbox"/>
		The addresses of the Attempt Pointer Register and the P PAP Pointer Register are taken from P-HPL-NOT-00031- SE, ACC Users Manual, section 11.1, table 11-2 to 11- 5.		
		Execute Telecommand <p style="text-align: center;"><b>Change RMA prog set</b></p> Command Parameter(s) : ProgSet DF86Cmd            AH871001      Enable 86 ProgSet DD86Cmd           AH872001      Enable 86 ProgSet PAP Add            AHFP5001      10B0 <hex> ProgSet AttpAdd            AHFP6001      1090 <hex>  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,1) - Change RMA prog set	ACZGV109	
		Execute Telecommand <p style="text-align: center;"><b>Fire Change RM ProgSet</b></p> Command Parameter(s) : FireFun DF86Cmd           AH8F1001      Enable 86 FireFun DD86Cmd           AH8F2001      Enable 86  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - Fire Change RM ProgSet	ACZ9M109	
5.1.3		Verify Update via RM A Status Report		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: center;"><b>Get RM-A status</b></p> Command Parameter(s) : RMStat DF86Cmd            AH841001      Enable 86 RMStat DD86Cmd            AH842001      Enable 86  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status	ACZZ4109	

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMstatus	
		Verify Telemetry RMH_PAPPTR           AEW1Z109	= PMB=N_PMA=R	AND=ZAAM2999
		Verify Telemetry RMH_ATPTR             AEW1Y109	= PMB=N_PMA=R	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT0           AEW2G109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT1           AEW2H109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT2           AEW2J109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT3           AEW2K109	= 0 <dec>	AND=ZAAM2999
5.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific	DCM21170	
		Verify Telemetry RMA_fromTTR-RMA       AEE91050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMA_fromTTR-RMB       AEE92050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMA       AEE93050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMB       AEE94050	= ENABLED	AND=ZAZ52999
TC Seq. Name : HRAD2PS3 (SelRmAproGSetPmAonly)				
TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
6		Select RM A Programming Set 2: PM A Nominal + Redudant		Next Step: END
		<p>This step selects the RM Programming Set corresponding to the PM configuration: PM A nominal, PM B defect.</p> <p>A programming set is selected by changing the Attempt Pointer Register and the PAP Pointer Register. The PAP and attempt tables corresponding to this PM configuration can be found in P-HPL-NOT-00031-SE, ACC Users Manual, section 11.2, but are also copied here (see end of procedure). Tables to look at are:</p> <p>Table 11-13 Programmable Alarm Pattern Table            Table 11-15 Attempt Table</p>		
6.1		Uplink Sequence HRAD2PS3		<input type="checkbox"/>
6.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: right;"><b>Ext_ACC_RM_A_Disable</b></p> TC Control Flags : <p style="text-align: right;">GBM IL DSE            --Y -- ---</p> Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	
		Verify Telemetry <p style="text-align: right;">RMA_fromTTR-RMA                      AEE91050</p>	= DISABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: right;">RMA_fromTTR-RMB                      AEE92050</p>	= DISABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: right;">RMB_fromTTR-RMA                      AEE93050</p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: right;">RMB_fromTTR-RMB                      AEE94050</p>	= ENABLED	AND=ZAZ52999
6.1.2		Select RM A Programming Set		<input type="checkbox"/>
		<p>The addresses of the Attempt Pointer Register and the PAP Pointer Register are taken from P-HPL-NOT-00031-SE, ACC Users Manual, section 11.1, table 11-2 to 11-5.</p>		

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: center;"><b>Change RMA prog set</b></p> <i>Command Parameter(s) :</i> ProgSet DF86Cmd            AH871001            Enable 86 ProgSet DD86Cmd            AH872001            Enable 86 ProgSet PAP Add            AHFP5001            10D8 <hex> ProgSet AttpAdd            AHFP6001            02A4 <hex>	ACZGV109	
		<i>TC Control Flags :</i> <p style="text-align: right;">GBM IL DSE --Y -- --</p> <i>Subsch. ID : 20</i> Det. descr. : TC(8,1) - Change RMA prog set		
		Execute Telecommand <p style="text-align: center;"><b>Fire Change RM ProgSet</b></p> <i>Command Parameter(s) :</i> FireFun DF86Cmd            AH8F1001            Enable 86 FireFun DD86Cmd            AH8F2001            Enable 86	ACZ9M109	
		<i>TC Control Flags :</i> <p style="text-align: right;">GBM IL DSE --Y -- --</p> <i>Subsch. ID : 20</i> Det. descr. : TC(8,4) Fire Command - Fire Change RM ProgSet		
6.1.3		Verify Update via RM A Status Report		☐
		Execute Telecommand <p style="text-align: center;"><b>Get RM-A status</b></p> <i>Command Parameter(s) :</i> RMStat DF86Cmd            AH841001            Enable 86 RMStat DD86Cmd            AH842001            Enable 86	ACZZ4109	
		<i>TC Control Flags :</i> <p style="text-align: right;">GBM IL DSE --Y -- --</p> <i>Subsch. ID : 20</i> Det. descr. : TC(8,1) - Get RM-A status		
		Verify Packet Reception <p style="text-align: center;"><b>TM 8-6 for RM Status parametrized</b></p> <i>Packet Details:</i> <p style="text-align: right;">APID:            512            Type:            8            Subtype:        6            PI1:            41600            PI2:            1</p>	A86_RMStatus	
		Verify Telemetry <p style="text-align: center;"><b>RMH_PAPPTR            AEW1Z109</b></p>	= PMA_only	AND=ZAAM2999
		Verify Telemetry <p style="text-align: center;"><b>RMH_ATPTR            AEW1Y109</b></p>	= PMA_only	AND=ZAAM2999

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RMH_ATCNT0 AEW2G109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT1 AEW2H109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT2 AEW2J109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT3 AEW2K109	= 0 <dec>	AND=ZAAM2999
6.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable  TC Control Flags : GBM IL DSE --Y -- --  Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific	DCM21170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAZ52999
TC Seq. Name :HRAD2PS4 (SelRmAprogSetPmBonly)				
TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
7		Select RM A Programming Set 3: PM B Nominal + Redundant		Next Step: END



Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		<p>This step selects the RM Programming Set corresponding to the PM configuration: PM B nominal, PM A defect.</p> <p>A programming set is selected by changing the Attempt Pointer Register and the PAP Pointer Register. The PAP and attempt tables corresponding to this PM configuration can be found in P-HPL-NOT-00031-SE, ACC Users Manual, section 11.2, but are also copied here (see end of procedure). Tables to look at are:</p> <p>Table 11-16 Programmable Alarm Pattern Table            Table 11-18 Attempt Table</p>		
7.1		Uplink Sequence HRAD2PS4		<input type="checkbox"/>
7.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: center;"><b>Ext_ACC_RM_A_Disable</b></p> TC Control Flags : <p style="text-align: center;"><b>GBM IL DSE</b>  <b>--Y -- ---</b></p> Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	
		Verify Telemetry <p style="text-align: center;"><b>RMA_fromTTR-RMA                    AEE91050</b></p> <p style="text-align: center;"><b>= DISABLED</b></p>		AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMA_fromTTR-RMB                    AEE92050</b></p> <p style="text-align: center;"><b>= DISABLED</b></p>		AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMB_fromTTR-RMA                    AEE93050</b></p> <p style="text-align: center;"><b>= ENABLED</b></p>		AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMB_fromTTR-RMB                    AEE94050</b></p> <p style="text-align: center;"><b>= ENABLED</b></p>		AND=ZAZ52999
7.1.2		Select RM A Programming Set		<input type="checkbox"/>
		<p>The addresses of the Attempt Pointer Register and the PAP Pointer Register are taken from P-HPL-NOT-00031-SE, ACC Users Manual, section 11.1, table 11-2 to 11-5.</p>		

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: center;"><b>Change RMA prog set</b></p> Command Parameter(s) : ProgSet DF86Cmd            AH871001            Enable 86 ProgSet DD86Cmd            AH872001            Enable 86 ProgSet PAP Add            AHFP5001            1110 <hex> ProgSet AttpAdd            AHFP6001            10F8 <hex>	ACZGV109	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Change RMA prog set		
		Execute Telecommand <p style="text-align: center;"><b>Fire Change RM ProgSet</b></p> Command Parameter(s) : FireFun DF86Cmd            AH8F1001            Enable 86 FireFun DD86Cmd            AH8F2001            Enable 86	ACZ9M109	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - Fire Change RM ProgSet		
7.1.3		Verify Update via RM A Status Report		☐
		Execute Telecommand <p style="text-align: center;"><b>Get RM-A status</b></p> Command Parameter(s) : RMStat DF86Cmd            AH841001            Enable 86 RMStat DD86Cmd            AH842001            Enable 86	ACZZ4109	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status		
		Verify Packet Reception <p style="text-align: center;"><b>TM 8-6 for RM Status parametrized</b></p> Packet Details: <p style="text-align: right;">APID:            512 Type:            8 Subtype:        6 PI1:            41600 PI2:            1</p>	A86_RMStatus	
		Verify Telemetry <p style="text-align: center;"><b>RMH_PAPPTR            AEW1Z109</b></p>	= PMB_only	AND=ZAAM2999
		Verify Telemetry <p style="text-align: center;"><b>RMH_ATPTR            AEW1Y109</b></p>	= PMB_only	AND=ZAAM2999

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RMH_ATCNT0 AEW2G109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT1 AEW2H109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT2 AEW2J109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT3 AEW2K109	= 0 <dec>	AND=ZAAM2999
7.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable  TC Control Flags : GBM IL DSE --Y -- --  Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific	DCM21170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAZ52999
TC Seq. Name : NULLSEQ3 ( )  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>				
8		Check Current RM B Settings		Next Step: 9
8.1		Check ACC Status based on Current PM Configuration		<input type="checkbox"/>
		To recognise the current PM configuration, go through steps 8.1.1 to 8.1.4 and find the telemetry signature that matches.		

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
8.1.1		Case 1 : PM A Nominal, PM B Redundant		<input type="checkbox"/>
		Verify Telemetry ActPmBoard_N AEDPG050	= A	AND=ZAZ52999
		Verify Telemetry ActPmBoard_R AEDPH050	= A	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J011 AEE45050	= ON	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J121 AEE46050	= OFF	AND=ZAZ52999
		Verify Telemetry AccColdA_L33_S WM62B565	= ON	AND=ZAZ52999
		Verify Telemetry AccColdB_L34_S WM52B565	= ON	AND=ZAZ52999
8.1.2		Case 2 : PM B Nominal, PM A Redundant		<input type="checkbox"/>
		Verify Telemetry ActPmBoard_N AEDPG050	= B	AND=ZAZ52999
		Verify Telemetry ActPmBoard_R AEDPH050	= B	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J011 AEE45050	= OFF	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J121 AEE46050	= ON	AND=ZAZ52999
		Verify Telemetry AccColdA_L33_S WM62B565	= ON	AND=ZAZ52999
		Verify Telemetry AccColdB_L34_S WM52B565	= ON	AND=ZAZ52999
8.1.3		Case 3 : PM A Nominal, PM B Defect		<input type="checkbox"/>
		Verify Telemetry ActPmBoard_N AEDPG050	= A	AND=ZAZ52999
		Verify Telemetry ActPmBoard_R AEDPH050	= A	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J011 AEE45050	= ON	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J121 AEE46050	= OFF	AND=ZAZ52999
		Verify Telemetry AccColdA_L33_S WM62B565	= ON	AND=ZAZ52999

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry AccColdB_L34_S                      WM52B565	= OFF	AND=ZAZ52999
8.1.4		Case 4 : PM B Nominal, PM A Defect		<input type="checkbox"/>
		Verify Telemetry ActPmBoard_N                      AEDPG050	= B	AND=ZAZ52999
		Verify Telemetry ActPmBoard_R                      AEDPH050	= B	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J011                      AEE45050	= OFF	AND=ZAZ52999
		Verify Telemetry ColdSts_A_J121                      AEE46050	= ON	AND=ZAZ52999
		Verify Telemetry AccColdA_L33_S                      WM62B565	= OFF	AND=ZAZ52999
		Verify Telemetry AccColdB_L34_S                      WM52B565	= ON	AND=ZAZ52999
8.2		Uplink Sequence HFADRM2		<input type="checkbox"/>
		Execute Sequence HFADRM2 GetRmBstatusReport v02 Sequence Grouping = -  SSID : 0		SEQ
8.3		Check RM B Pointer Register Settings		<input type="checkbox"/>
		Verify Telemetry RMH_PAPPTR                      AEWLZ109	<to be read>	AND=ZAAM2999
		Verify Telemetry RMH_ATPTR                      AEWLY109	<to be read>	AND=ZAAM2999
<p>TC Seq. Name : NULLSEQ4 ( )</p> <p>TimeTag Type: Sub Schedule ID:  <input type="checkbox"/></p>				

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
9		Select PM Configuration		Next Step: PM A NOM (RMB) 10 PM B NOM (RMB) 11 PM A ONLY (RMB) 12 PM B ONLY (RMB) 13
		<p>Four different RM sets are programmed into the RM board EEPROM, corresponding to four possible PM configurations. Based on the choice of PM configuration, alarms are configured differently. Based on the current PM configuration, select the appropriate step here:</p> <p>PM A nominal, PM B redundant -&gt; GO TO STEP 10</p> <p>PM B nominal, PM A redundant -&gt; GO TO STEP 11</p> <p>PM A only, PM B defect -&gt; GO TO STEP 12</p> <p>PM B only, PM A defect -&gt; GO TO STEP 13</p>		
<p>TC Seq. Name : HRAD2PS5 (SelRmBprogSetPmAnom)</p> <p>TimeTag Type: N Sub Schedule ID: <input type="checkbox"/></p>				
10		Select RM B Programming Set 0: PM A Nominal, PM B Redundant		Next Step: END
		<p>This step selects the RM Programming Set corresponding to the PM configuration: PM A nominal, PM B redundant.</p> <p>A programming set is selected by changing the Attempt Pointer Register and the PAP Pointer Register. The PAP and attempt tables corresponding to this PM configuration can be found in P-HPL-NOT-00031-SE, ACC Users Manual, section 11.2, but are also copied here (see end of procedure). Tables to look at are:</p> <p>Table 11-7 Programmable Alarm Pattern Table Table 11-9 Attempt Table</p>		
10.1		Uplink Sequence HRAD2PS5		<input type="checkbox"/>

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
10.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand <div style="text-align: right;">Ext_ACC_RM_B_Disable</div> TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry <div style="text-align: center;">RMA_fromTTR-RMA                      AEE91050</div>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <div style="text-align: center;">RMA_fromTTR-RMB                      AEE92050</div>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <div style="text-align: center;">RMB_fromTTR-RMA                      AEE93050</div>	= DISABLED	AND=ZAZ52999
		Verify Telemetry <div style="text-align: center;">RMB_fromTTR-RMB                      AEE94050</div>	= DISABLED	AND=ZAZ52999
10.1.2		Set RM B Programming Set		<input type="checkbox"/>
		<i>The addresses of the Attempt Pointer Register and the PAP Pointer Register are taken from P-HPL-NOT-00031-SE, ACC Users Manual, section 11.1, table 11-2 to 11-5.</i>		
		Execute Telecommand <div style="text-align: right;">Change RMB prog set</div> Command Parameter(s) : <div style="text-align: right;">ProgSet DF86Cmd                      AH871001                      Enable 86            ProgSet DD86Cmd                      AH872001                      Enable 86            ProgSet PAP Add                      AHFP5001                      1068 &lt;hex&gt;            ProgSet AttpAdd                      AHFP6001                      1048 &lt;hex&gt;</div> TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(8,1) - Change RMB prog set	ACZGW109	

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand  <b>Fire Change RM ProgSet</b>  Command Parameter(s) : FireFun DF86Cmd            AH8F1001            Enable 86 FireFun DD86Cmd            AH8F2001            Enable 86  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - Fire Change RM ProgSet	ACZ9M109	
10.1.3		Verify Update via RM B Status Report		<input type="checkbox"/>
		Execute Telecommand  <b>Get RM-B status</b>  Command Parameter(s) : RMStat DF86Cmd            AH841001            Enable 86 RMStat DD86Cmd            AH842001            Enable 86  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109	
		Verify Packet Reception <b>TM 8-6 for RM Status parametrized</b> Packet Details: APID:        512 Type:         8 Subtype:     6 PI1:         41600 PI2:         1	A86_RMStatus	
		Verify Telemetry RMH_PAPPTR            AEW1Z109	= PMA=N__PMB=R	AND=ZAAM2999
		Verify Telemetry RMH_ATPTR             AEW1Y109	= PMA=N__PMB=R	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT0            AEW2G109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT1            AEW2H109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT2            AEW2J109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT3            AEW2K109	= 0 <dec>	AND=ZAAM2999



Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
10.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: right;"><b>Ext_ACC_RM_B_Enable</b></p> TC Control Flags : <p style="text-align: right;">GBM IL DSE            --Y -- ---</p> Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry <p style="text-align: center;"><b>RMA_fromTTR-RMA                    AEE91050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMA_fromTTR-RMB                    AEE92050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMB_fromTTR-RMA                    AEE93050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMB_fromTTR-RMB                    AEE94050</b></p>	= ENABLED	AND=ZAZ52999
TC Seq. Name : HRAD2PS6 (SelRmBprogSetPmBnom)  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>				
11		Select RM B Programming Set 1: PM B Nominal, PM A Redundant		Next Step: END
		This step selects the RM Programming Set corresponding to the PM configuration: PM B nominal, PM A redundant.  A programming set is selected by changing the Attempt Pointer Register and the PAP Pointer Register. The PAP and attempt tables corresponding to this PM configuration can be found in P-HPL-NOT-00031-SE, ACC Users Manual, section 11.2, but are also copied here (see end of procedure). Tables to look at are:  Table 11-10 Programmable Alarm Pattern Table Table 11-12 Attempt Table		
11.1		Uplink Sequence HRAD2PS6		<input type="checkbox"/>

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
11.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMA_fromTTR-RMA                      AEE91050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMA_fromTTR-RMB                      AEE92050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMA                      AEE93050	= DISABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMB                      AEE94050	= DISABLED	AND=ZAZ52999
11.1.2		Set RM B Programming Set		<input type="checkbox"/>
		The addresses of the Attempt Pointer Register and the PAP Pointer Register are taken from P-HPL-NOT-00031-SE, ACC Users Manual, section 11.1, table 11-2 to 11-5.		
		Execute Telecommand Change RMB prog set Command Parameter(s) : ProgSet DF86Cmd                      AH871001                      Enable 86 ProgSet DD86Cmd                      AH872001                      Enable 86 ProgSet PAP Add                      AHFP5001                      10B0 <hex> ProgSet AttpAdd                      AHFP6001                      1090 <hex> TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Change RMB prog set	ACZGW109	

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



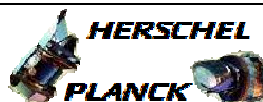
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand  <b>Fire Change RM ProgSet</b>  Command Parameter(s) : FireFun DF86Cmd           AH8F1001 FireFun DD86Cmd           AH8F2001  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - Fire Change RM ProgSet	ACZ9M109  Enable 86 Enable 86	
11.1.3		Verify Update via RM B Status Report		<input type="checkbox"/>
		Execute Telecommand  <b>Get RM-B status</b>  Command Parameter(s) : RMStat DF86Cmd           AH841001 RMStat DD86Cmd           AH842001  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109  Enable 86 Enable 86	
		Verify Packet Reception <b>TM 8-6 for RM Status parametrized</b> Packet Details: APID:       512 Type:        8 Subtype:   6 PI1:       41600 PI2:       1	A86_RMStatus	
		Verify Telemetry RMH_PAPPTR           AEW1Z109	= PMB=N_PMA=R	AND=ZAAM2999
		Verify Telemetry RMH_ATPTR            AEW1Y109	= PMB=N_PMA=R	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT0           AEW2G109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT1           AEW2H109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT2           AEW2J109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT3           AEW2K109	= 0 <dec>	AND=ZAAM2999

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
11.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: center;"><b>Ext_ACC_RM_B_Enable</b></p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry <p style="text-align: center;"><b>RMA_fromTTR-RMA                      AEE91050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMA_fromTTR-RMB                      AEE92050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMB_fromTTR-RMA                      AEE93050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMB_fromTTR-RMB                      AEE94050</b></p>	= ENABLED	AND=ZAZ52999
TC Seq. Name : HRAD2PS7 (SelRmBprogSetPmAonly)  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>				
12		Select RM B Programming Set 2: PM A Nominal + Redudant		Next Step: END
		This step selects the RM Programming Set corresponding to the PM configuration: PM A nominal, PM B defect.  A programming set is selected by changing the Attempt Pointer Register and the PAP Pointer Register. The PAP and attempt tables corresponding to this PM configuration can be found in P-HPL-NOT-00031-SE, ACC Users Manual, section 11.2, but are also copied here (see end of procedure). Tables to look at are:  Table 11-13 Programmable Alarm Pattern Table Table 11-15 Attempt Table		
12.1		Uplink Sequence HRAD2PS7		<input type="checkbox"/>

Change RM Programming Set  
File: H\_CRP\_AOC\_D2PS.xls  
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
12.1.1		Disable RM B		☐
		Execute Telecommand Ext_ACC_RM_B_Disable  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMA_fromTTR-RMA          AEE91050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMA_fromTTR-RMB          AEE92050	= ENABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMA          AEE93050	= DISABLED	AND=ZAZ52999
		Verify Telemetry RMB_fromTTR-RMB          AEE94050	= DISABLED	AND=ZAZ52999
12.1.2		Set RM B Programming Set		☐
		The addresses of the Attempt Pointer Register and the PAP Pointer Register are taken from P-HPL-NOT-00031- SE, ACC Users Manual, section 11.1, table 11-2 to 11- 5.		
		Execute Telecommand Change RMB prog set  Command Parameter(s) : ProgSet DF86Cmd          AH871001 ProgSet DD86Cmd          AH872001 ProgSet PAP Add          AHFP5001 ProgSet AttpAdd          AHFP6001  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,1) - Change RMB prog set	ACZGW109  Enable 86 Enable 86 10D8 <hex> 02A4 <hex>	

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand  <b>Fire Change RM ProgSet</b>  Command Parameter(s) : FireFun DF86Cmd            AH8F1001            Enable 86 FireFun DD86Cmd            AH8F2001            Enable 86  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - Fire Change RM ProgSet	ACZ9M109	
12.1.3		Verify Update via RM B Status Report		<input type="checkbox"/>
		Execute Telecommand  <b>Get RM-B status</b>  Command Parameter(s) : RMStat DF86Cmd            AH841001            Enable 86 RMStat DD86Cmd            AH842001            Enable 86  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109	
		Verify Packet Reception <b>TM 8-6 for RM Status parametrized</b> Packet Details: APID:        512 Type:         8 Subtype:     6 PI1:        41600 PI2:         1	A86_RMstatus	
		Verify Telemetry RMH_PAPPTR            AEW1Z109	= PMA_only	AND=ZAAM2999
		Verify Telemetry RMH_ATPTR             AEW1Y109	= PMA_only	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT0            AEW2G109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT1            AEW2H109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT2            AEW2J109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT3            AEW2K109	= 0 <dec>	AND=ZAAM2999

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
12.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: center;"><b>Ext_ACC_RM_B_Enable</b></p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry <p style="text-align: center;"><b>RMA_fromTTR-RMA                    AEE91050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMA_fromTTR-RMB                    AEE92050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMB_fromTTR-RMA                    AEE93050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;"><b>RMB_fromTTR-RMB                    AEE94050</b></p>	= ENABLED	AND=ZAZ52999
TC Seq. Name : HRAD2PS8 (SelRmBprogSetPmBonly)  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>				
13		Select RM B Programming Set 3: PM B Nominal + Redudant		Next Step: END
		This step selects the RM Programming Set corresponding to the PM configuration: PM B nominal, PM A defect.  A programming set is selected by changing the Attempt Pointer Register and the PAP Pointer Register. The PAP and attempt tables corresponding to this PM configuration can be found in P-HPL-NOT-00031-SE, ACC Users Manual, section 11.2, but are also copied here (see end of procedure). Tables to look at are:  Table 11-16 Programmable Alarm Pattern Table Table 11-18 Attempt Table		
13.1		Uplink Sequence HRAD2PS8		<input type="checkbox"/>

Change RM Programming Set  
File: H\_CRP\_AOC\_D2PS.xls  
Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
13.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: right;"><b>Ext_ACC_RM_B_Disable</b></p> TC Control Flags : <p style="text-align: right;">GBM IL DSE  --Y -- ---</p> Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry <p style="text-align: right;"><b>RMA_fromTTR-RMA                    AEE91050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: right;"><b>RMA_fromTTR-RMB                    AEE92050</b></p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: right;"><b>RMB_fromTTR-RMA                    AEE93050</b></p>	= DISABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: right;"><b>RMB_fromTTR-RMB                    AEE94050</b></p>	= DISABLED	AND=ZAZ52999
13.1.2		Set RM B Programming Set		<input type="checkbox"/>
		The addresses of the Attempt Pointer Register and the PAP Pointer Register are taken from P-HPL-NOT-00031-SE, ACC Users Manual, section 11.1, table 11-2 to 11-5.		
		Execute Telecommand <p style="text-align: right;"><b>Change RMB prog set</b></p> Command Parameter(s) : <p style="text-align: right;"><b>ProgSet DF86Cmd                    AH871001                    Enable 86</b>  <b>ProgSet DD86Cmd                    AH872001                    Enable 86</b>  <b>ProgSet PAP Add                     AHFP5001                    1110 &lt;hex&gt;</b>  <b>ProgSet AttpAdd                     AHFP6001                    10F8 &lt;hex&gt;</b></p> TC Control Flags : <p style="text-align: right;">GBM IL DSE  --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Change RMB prog set	ACZGW109	



Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand  <b>Fire Change RM ProgSet</b>  Command Parameter(s) : FireFun DF86Cmd            AH8F1001 FireFun DD86Cmd            AH8F2001  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - Fire Change RM ProgSet	ACZ9M109  Enable 86 Enable 86	
13.1.3		Verify Update via RM B Status Report		<input type="checkbox"/>
		Execute Telecommand  <b>Get RM-B status</b>  Command Parameter(s) : RMStat DF86Cmd            AH841001 RMStat DD86Cmd            AH842001  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109  Enable 86 Enable 86	
		Verify Packet Reception <b>TM 8-6 for RM Status parametrized</b> Packet Details: APID:       512 Type:        8 Subtype:   6 PI1:       41600 PI2:       1	A86_RMstatus	
		Verify Telemetry RMH_PAPPTR            AEW1Z109	= PMB_only	AND=ZAAM2999
		Verify Telemetry RMH_ATPTR             AEW1Y109	= PMB_only	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT0            AEW2G109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT1            AEW2H109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT2            AEW2J109	= 0 <dec>	AND=ZAAM2999
		Verify Telemetry RMH_ATCNT3            AEW2K109	= 0 <dec>	AND=ZAAM2999

Change RM Programming Set  
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
13.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: right;">Ext_ACC_RM_B_Enable</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry <p style="text-align: center;">RMA_fromTTR-RMA                      AEE91050</p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;">RMA_fromTTR-RMB                      AEE92050</p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;">RMB_fromTTR-RMA                      AEE93050</p>	= ENABLED	AND=ZAZ52999
		Verify Telemetry <p style="text-align: center;">RMB_fromTTR-RMB                      AEE94050</p>	= ENABLED	AND=ZAZ52999
<b>End of Procedure</b>				

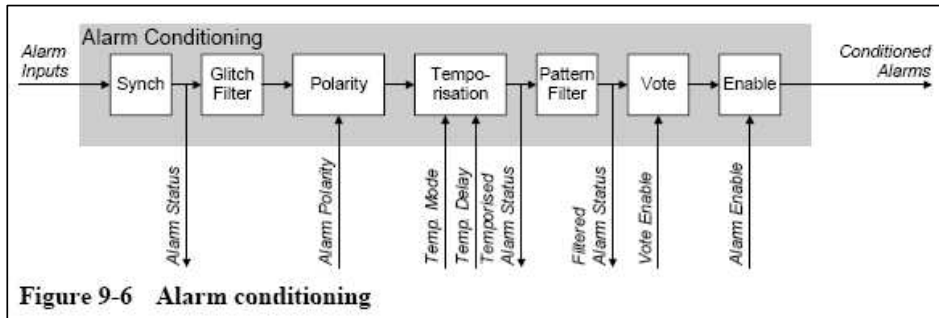
Change RM Programming Set  
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**Tables & Figures**

Alarm no	Function	Source	Polarity	Temporization	Vote	Enable
0	Watchdog toggle	RM board (PIO 15)	Toggle	WD, 1 s	OFF	ON
1	CRS 1	External	L	ACT, 250 ms	OFF	ON
2	CRS 2	External	L	ACT, 250 ms	OFF	OFF
3	CRS 3	External	L	ACT, 250 ms	OFF	OFF
4	AAD 1	External	L	ACT, 250 ms	OFF	ON
5	AAD 2	External	L	ACT, 250 ms	OFF	ON
6	Separation Strap 1	External	H	ACT, 25 s	OFF	ON
7	Separation Strap 2	External	H	ACT, 150 s	OFF	ON
8	External 8	External	H	ACT, 0.1 ms	OFF	OFF
9	PM A CPU*	PM A	L	NA	OFF	ON
10	PM A COCOS	PM A	H	NA	OFF	ON
11	PM A Undervoltage alarm*	PM A	L	NA	OFF	ON
12	PM A Software alarm	PM A	H	NA	OFF	ON
13	PM B CPU*	PM B	L	NA	OFF	ON
14	PM B COCOS	PM B	H	NA	OFF	ON
15	PM B Undervoltage alarm*	PM B	L	NA	OFF	ON
16	PM B Software alarm	PM B	H	NA	OFF	ON
17	Select PM (High = PM B)	RM board B	H	NA	OFF	ON
18	Not used	-	H	NA	OFF	OFF
19	Not used	-	H	NA	OFF	OFF
20	Not used	-	H	NA	OFF	OFF
21	Watchdog enable	RM board A/B	H	NA	OFF	ON

**Table 11-6 ACC alarm input**



**Figure 9-6 Alarm conditioning**

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



### Tables & Figures

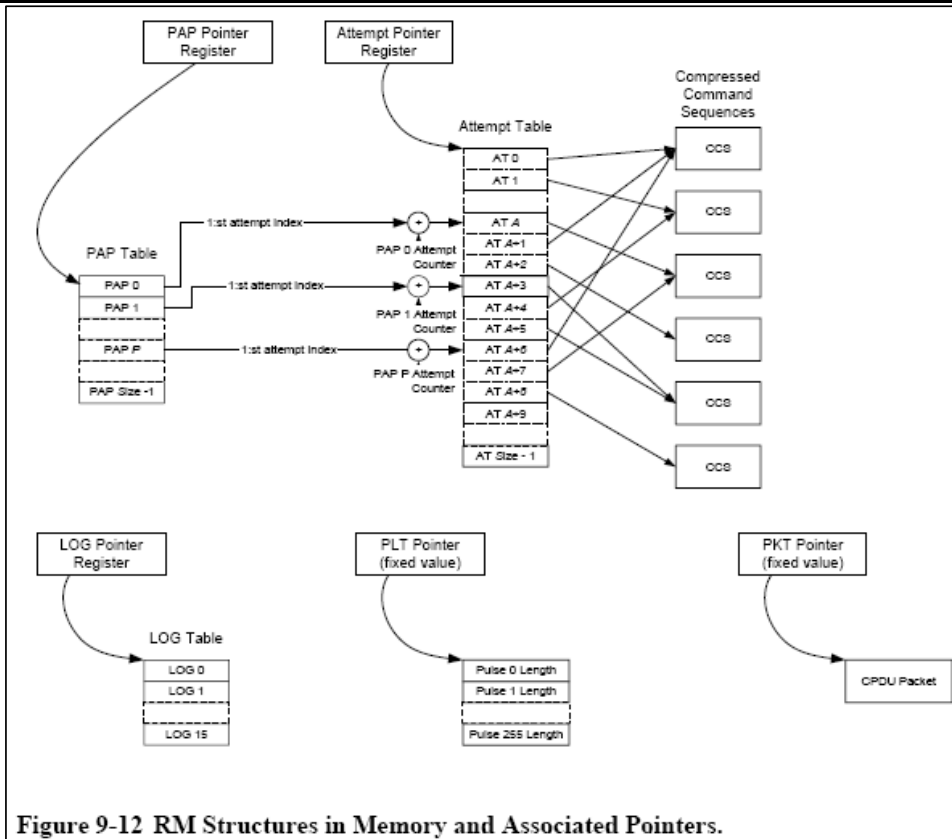
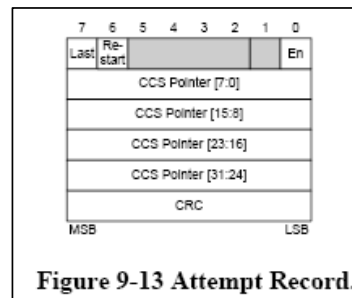
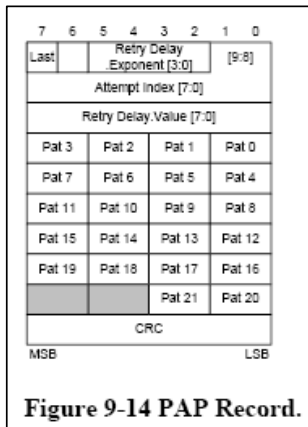


Figure 9-12 RM Structures in Memory and Associated Pointers.



Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



**Tables & Figures**

**11.3 RM Programming Set 1: PM A as Nominal**

PAP Name	Internal Alarm (PMA)	Rate Anomaly (PMA)	Attitude Anomaly (PMA)	Internal Alarm (PMB)
<b>PAP#</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
Watchdog toggle	OR	X	X	OR
CRS 1	X	OR	X	X
CRS 2	X	OR	X	X
CRS 3	X	OR	X	X
AAD 1	X	X	OR	X
AAD 2	X	X	OR	X
Separation Strap 1	X	1	1	X
Separation Strap 2	X	X	1	X
External 7	X	X	X	X
PM A CPU*	OR	X	X	X
PM A COCOS	OR	X	X	X
PM A Undervoltage alarm*	OR	X	X	X
PM A Software alarm	OR	X	X	X
PM B CPU*	X	X	X	OR
PM B COCOS	X	X	X	OR
PM B Undervoltage alarm*	X	X	X	OR
PM B Software alarm	X	X	X	OR
Select PM (High = PM B)	0	0	0	1
Not used	X	X	X	X
Not used	X	X	X	X
Not used	X	X	X	X
Watchdog enable	X	X	X	X
<b>1st Attempt</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>2nd Attempt</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Further Attempt</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Table 11-7

PAP#	Retry Delay
0	0.5 sec
1	2.5 sec
2	2.5 sec
3	2.5 sec

Table 11-8

PAP#	PAP Name	First Attempt	Second Attempt
0	Internal alarm (PMA)	Reset PMA (CCS 0)	Switch to PMB (CCS 1)
1	Rate anomaly (PMA)	Full reconfiguration from PMA to PMB (CCS 2)	
2	Attitude anomaly (PMA)	Full reconfiguration from PMA to PMB (CCS 2)	
3	Internal alarm (PMB)	Reset PMB after switch-over (CCS 3)	

Table 11-9

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
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## Tables & Figures

### 11.4 RM Programming Set 2: PM B as Nominal

PAP Name	Internal Alarm (PMB)	Rate Anomaly (PMB)	Attitude Anomaly (PMB)	Internal Alarm (PMA)
PAP#	0	1	2	3
Watchdog toggle	OR	X	X	OR
CRS 1	X	OR	X	X
CRS 2	X	OR	X	X
CRS 3	X	OR	X	X
AAD 1	X	X	OR	X
AAD 2	X	X	OR	X
Separation Strap 1	X	1	1	X
Separation Strap 2	X	X	1	X
External 7	X	X	X	X
PM A CPU*	X	X	X	OR
PM A COCOS	X	X	X	OR
PM A Undervoltage alarm*	X	X	X	OR
PM A Software alarm	X	X	X	OR
PM B CPU*	OR	X	X	X
PM B COCOS	OR	X	X	X
PM B Undervoltage alarm*	OR	X	X	X
PM B Software alarm	OR	X	X	X
Select PM (High = PM B)	1	1	1	0
Not used	X	X	X	X
Not used	X	X	X	X
Not used	X	X	X	X
Watchdog enable	X	X	X	X
1st Attempt	Yes	Yes	Yes	Yes
2nd Attempt	Yes	No	No	No
Further Attempt	No	No	No	No

Table 11-10

PAP#	Retry Delay
0	0.5 sec
1	2.5 sec
2	2.5 sec
3	2.5 sec

Table 11-11

PAP#	PAP Name	First Attempt	Second Attempt
0	Internal alarm (PMB)	Reset PMB (CCS 4)	Switch to PMA (CCS 5)
1	Rate anomaly (PMB)	Full reconfiguration from PMB to PMA (CCS 6)	
2	Attitude anomaly (PMB)	Full reconfiguration from PMB to PMA (CCS 6)	
3	Internal alarm (PMA)	Reset PMA after switch-over (CCS 7)	

Table 11-12

### 11.5 RM Programming Set 3: PMA only

Status : Version 4 - Unchanged  
 Last Checkin: 18/01/09

Change RM Programming Set  
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**Tables & Figures**

PAP Name	Internal Alarm	Rate Anomaly	Attitude Anomaly
PAP#	0	1	2
Watchdog toggle	OR	X	X
CRS 1	X	OR	X
CRS 2	X	OR	X
CRS 3	X	OR	X
AAD 1	X	X	OR
AAD 2	X	X	OR
Separation Strap 1	X	1	1
Separation Strap 2	X	X	1
External 7	X	X	X
PM A CPU*	OR	X	X
PM A COCOS	OR	X	X
PM A Undervoltage alarm*	OR	X	X
PM A Software alarm	OR	X	X
PM B CPU*	X	X	X
PM B COCOS	X	X	X
PM B Undervoltage alarm*	X	X	X
PM B Software alarm	X	X	X
Select PM (High = PM B)	X	X	X
Not used	X	X	X
Not used	X	X	X
Not used	X	X	X
Watchdog enable	X	X	X
1st Attempt	Yes	Yes	Yes
2nd Attempt	No	No	No
Further Attempt	No	No	No

Table 11-13

PAP#	Retry Delay
0	0.5 sec
1	0.5 sec
2	0.5 sec

Table 11-14

PAP#	PAP Name	First Attempt	Second Attempt
0	Internal alarm	Switch to PMA (CCS 5)	Rest PMA after switchover (CCS 7)
1	Rate anomaly	Full reconfiguration from PMB to PMA (CCS 6)	-
2	Attitude anomaly	Full reconfiguration from PMB to PMA (CCS 6)	-

Table 11-15

**11.6 RM Programming Set 4: PMB only**

PAP Name	Internal Alarm	Rate Anomaly	Attitude Anomaly
Status : Version 4 - Unchanged			
Last Checkin: 18/01/09			

Change RM Programming Set  
 File: H\_CRP\_AOC\_D2PS.xls  
 Author: dsalt-hp



**Tables & Figures**

PAP Name	Internal Alarm	Rate Anomaly	Attitude Anomaly
PAP#	0	1	2
Watchdog toggle	OR	X	X
CRS 1	X	OR	X
CRS 2	X	OR	X
CRS 3	X	OR	X
AAD 1	X	X	OR
AAD 2	X	X	OR
Separation Strap 1	X	1	1
Separation Strap 2	X	X	1
External 7	X	X	X
PM A CPU*	X	X	X
PM A COCOS	X	X	X
PM A Undervoltage alarm*	X	X	X
PM A Software alarm	X	X	X
PM B CPU*	OR	X	X
PM B COCOS	OR	X	X
PM B Undervoltage alarm*	OR	X	X
PM B Software alarm	OR	X	X
Select PM (High = PM B)	X	X	X
Not used	X	X	X
Not used	X	X	X
Not used	X	X	X
Watchdog enable	X	X	X
1st Attempt	Yes	Yes	Yes
2nd Attempt	No	No	No
Further Attempt	No	No	No

Table 11-16

PAP#	Retry Delay
0	0.5 sec
1	0.5 sec
2	0.5 sec

Table 11-17

PAP#	PAP Name	First Attempt	Second Attempt
0	Internal alarm	Switch to PMB (CCS 1)	Rest PMB after switchover (CCS 3)
1	Rate anomaly	Full reconfiguration from PMA to PMB (CCS 2)	-
2	Attitude anomaly	Full reconfiguration from PMA to PMB (CCS 2)	-

Table 11-18