

Access to Write-protected Area of SGM
File: H_CRP_AOC_DSGM.xls
Author: dsalt-hp



Procedure Summary

Objectives

The procedure provides the possibility to modify directly the contents of the write protected areas of the SGM. Since the BSW protected area contains only the boot report and its direct modification will not be necessary under any circumstances, the procedure is restricted to the ASW protected area.

The ASW protected area contains the ACMS configuration data and attitude reference data (CIR and SIR targets and the inertial Sun vector). Dedicated TC's are provided for the modification of any items stored in this area of the SGM. Direct access through memory load commands should therefore not be necessary even in contingencies. The procedure covers the rather exotic case in which the layout of the ASW write protected area needs to be modified in a new release of the ASW. In this very unlikely case, the contents of the ASW area of the SGM would have to be modified through direct access in order to allow the new ASW to initialise correctly in nominal ACMS modes.

The use of the SGM by the OBSW is in general fully autonomous and transparent to the user. The procedure therefore includes a number of steps which override or temporarily disable these autonomous access mechanisms. Some of the operations are carried out at a very low level, in particular direct access to BSW variables is required, which makes the procedure dependent on the ASW release (location of variables in the RAM changes when the software is relinked after a code modification).

USAGE:

Procedure not currently used in either nominal or contingency operations.

Summary of Constraints

- 1. The procedure can only be executed if both SGM's are in use in the current configuration.*
- 2. In order to prevent unexpected ASW access to the SGM, the ACMS must be in Survival Mode.*

Spacecraft Configuration

Start of Procedure

End of Procedure

Reference File(s)

Input Command Sequences

HFADRM1
HFADRM2

Output Command Sequences

Status : Version 2 - Unchanged
Last Checkin: 24/03/09

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NULLSEQ0
 HRADSGM1
 HRADSGM2
 HRADSGM3
 HRADSGM4
 HRADSGM5

Referenced Displays

ANDs **GRDs** **SLDs**
 ZAA01999
 ZAAM0999
 ZAA07999

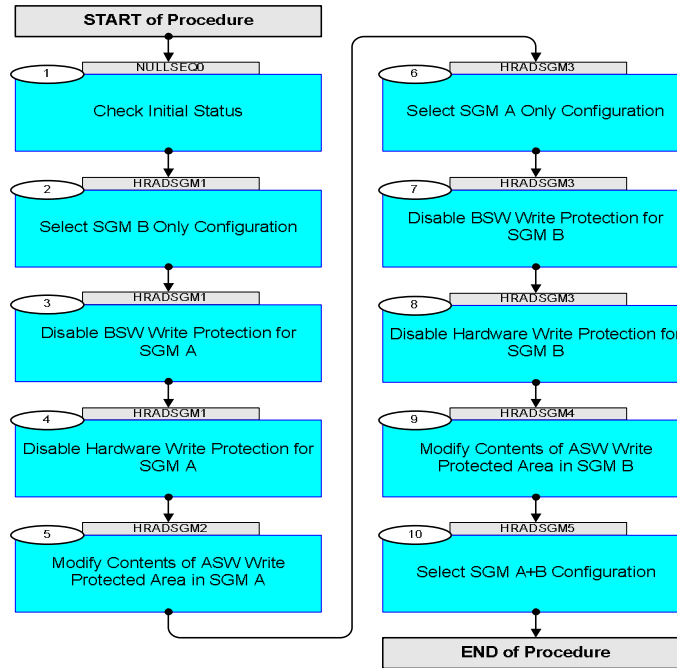
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
24/03/09		1	Created	dsalt-hp	
24/03/09	2.2	2	Sequence name correction	dsalt-hp	

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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 : NULLSEQ0 ()				
TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
1		Check Initial Status		Next Step: 2
1.1		Verify SGM in-use setting in ASW		<input type="checkbox"/>
		Verify Telemetry SgmInUse AESMS002	= SGM A and B	AND=ZAA01999
1.2		Load sequence HFADRM1 on the Manual Stack and uplink the single command inside the sequence		<input type="checkbox"/>
		Execute Sequence HFADRM1 GetRmAstatusReport v02 Sequence Grouping = - SSID : 0		SEQ
1.3		Verify SGM in-use setting in RM A		<input type="checkbox"/>
		Verify Telemetry MiscCfg SGM use AEW30109	= SGMA+SGMB	AND=ZAAM0999
1.4		Load sequence HFADRM2 on the Manual Stack and uplink the single command inside the sequence		<input type="checkbox"/>
		Execute Sequence HFADRM2 GetRmBstatusReport v02 Sequence Grouping = - SSID : 0		SEQ
1.5		Verify SGM in-use setting in RM B		<input type="checkbox"/>
		Verify Telemetry MiscCfg SGM use AEW30109	= SGMA+SGMB	AND=ZAAM0999

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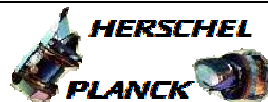


Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRADSGM1 (PrepareSgmAforWrite) TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
2		Select SGM B Only Configuration		Next Step: 3
2.1		Load sequence HRADSGM1 on the Manual Stack		<input type="checkbox"/>
2.2		Uplink 1st block of commands (tagged with release times)		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand Ext_ACC_RM_A_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	
	ET=+ UT=+00.00.05	Execute Telecommand Use SGM-B RM-A Subsch. ID : 20 Det. descr. : TC(8,1) - SELECT ACC - Use SGM-B RM-A	ACYLR109	
	ET=+ UT=+00.00.05	Execute Telecommand Get RM-A status Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status	ACZZ4109	
2.3		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry RMA_fromTTR-RMA AEE91050 = DISABLED		AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050 = DISABLED		AND=ZAA07999
2.4		Verify update in ASW and RM A		<input type="checkbox"/>
		Verify Telemetry SgmInUse AESMS002 = SGM B		AND=ZAA01999
		Verify Telemetry MiscCfg SGM use AEW30109 = SGMB		AND=ZAAM0999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
2.5		Uplink Next Command		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific	DCM21170	
2.6		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAA07999
2.7		Uplink Next Block of Commands (tagged with release times)		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
	ET=+ UT=+00.00.05	Execute Telecommand Use SGM-B RM-B Subsch. ID : 20 Det. descr. : TC(8,1) - SELECT ACC - Use SGM-B RM-B	ACYLW109	
	ET=+ UT=+00.00.05	Execute Telecommand Get RM-B status Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109	
2.8		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= DISABLED	AND=ZAA07999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>Use generic TC(6,5) to dump variable SgmLocked from RAM. Address of SgmLocked depends on the software version, and can be found in image.syms file of the software build (under \ACMS\ASW_3.4_b2\Code\OBSP_3_4\B002\AAE\image.syms). The length should be 8 bytes.</p> <p>The 1st 32bit word in that memory area is the write protection status of SGM A, and the 2nd 32 word is that of SGM B</p>																	
	ET=+ UT=+00.00.05	<p>Execute Telecommand</p> <p style="text-align: center;">Dump Memory</p> <p>Command Parameter(s) :</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 20px;">Memory ID</td> <td>AH6M0109</td> <td>020E <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>7A90 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M3109</td> <td>8 <dec></td> </tr> </table> <p>Subsch. ID : 20 Det. descr. : TC(6,5) Dump Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	020E <hex>	Start Address	AH6M1109	7A90 <hex>	Length SAU	AH6M3109	8 <dec>	AC063109							
Memory ID	AH6M0109	020E <hex>																	
Start Address	AH6M1109	7A90 <hex>																	
Length SAU	AH6M3109	8 <dec>																	
3.2		<p>Verify write protection disable (the first 32 bit word in the dump area should be 0)</p>		<input type="checkbox"/>															
		<p>Verify Packet Reception</p> <p style="text-align: center;">Memory Dump - Absolute Addresses - SAU 8</p> <p>Packet Details:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 20px;">APID:</td> <td>512</td> <td>MemDmpAbsAdd</td> </tr> <tr> <td>Type:</td> <td>6</td> <td></td> </tr> <tr> <td>Subtype:</td> <td>6</td> <td></td> </tr> <tr> <td>PI1:</td> <td></td> <td></td> </tr> <tr> <td>PI2:</td> <td></td> <td></td> </tr> </table>	APID:	512	MemDmpAbsAdd	Type:	6		Subtype:	6		PI1:			PI2:				
APID:	512	MemDmpAbsAdd																	
Type:	6																		
Subtype:	6																		
PI1:																			
PI2:																			
		<p>Verify Packet Telemetry (Pkt = MemDmpAbsAdd)</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 20px;">Memory_ID</td> <td>AE060070</td> <td>= 020E <hex></td> </tr> </table>	Memory_ID	AE060070	= 020E <hex>														
Memory_ID	AE060070	= 020E <hex>																	
		<p>Verify Packet Telemetry (Pkt = MemDmpAbsAdd)</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 20px;">Start_Address</td> <td>AE061070</td> <td>= 7A90 <hex></td> </tr> </table>	Start_Address	AE061070	= 7A90 <hex>														
Start_Address	AE061070	= 7A90 <hex>																	
		<p>Verify Packet Telemetry (Pkt = MemDmpAbsAdd)</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 20px;">Dumped_Byte</td> <td>AE063070</td> <td>= 0000xxxx <hex></td> </tr> </table>	Dumped_Byte	AE063070	= 0000xxxx <hex>														
Dumped_Byte	AE063070	= 0000xxxx <hex>																	
4		<p>Disable Hardware Write Protection for SGM A</p>		Next Step: 5															
4.1		<p>Uplink next block of commands (tagged with release times)</p>		<input type="checkbox"/>															

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Command below disables the hardware write protection of SGMA applied by the RM. The write protection is controlled by a bit in the PIMWriteDisable register of the CROME ASIC.		
	ET=+ UT=+00.00.00	Execute Telecommand PIMwriteDisClear_RMA TC Control Flags : Subsch. ID : 20 Det. descr. : TC(6,2) Load Mem Using Abs Address - PIM Write Disable Clear RMA GBM IL DSE --Y -- --	ACZ82109	
	ET=+ UT=+00.00.05	Execute Telecommand DumpPIMdisClear_RMA Subsch. ID : 20 Det. descr. : TC(6,5) Dump Mem Using Abs Address - Dump PIM Disable Clear RMA	ACZ78109	
4.2		Verify write protection disable (bit 3 (with LSB as bit 1) in the dumped word (32 bits) must be 0)		<input type="checkbox"/>
		Verify Packet Reception Memory Dump - Absolute Addresses - SAU 8 MemDmpAbsAdd Packet Details: APID: 512 Type: 6 Subtype: 6 PI1: PI2:		
		Verify Packet Telemetry (Pkt = MemDmpAbsAdd) Memory_ID AE060070 = 020E <hex>		
		Verify Packet Telemetry (Pkt = MemDmpAbsAdd) Start_Address AE061070 = 7A90 <hex>		
		Verify Packet Telemetry (Pkt = MemDmpAbsAdd) Dumped_Byte AE063070 = xx0x xxxx xxxx xxxx xxxx xxxx xxxx xxxx <bin>		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<p><i>TC Seq. Name : HRADSGM2 (WriteSgmAprotectArea)</i></p> <p><i>TimeTag Type: N</i> <i>Sub Schedule ID:</i> <i>Formal Parameter List :</i> Memory ID MemId= <dec> Start Address StrtAddr= <dec> Length SAU LenSau= <dec> Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec> Length SAU LenSau2= <dec></p>				
5		Modify Contents of ASW Write Protected Area in SGM A		Next Step: 6
5.1		Load sequence HRADSGM2 on the Manual Stack		<input type="checkbox"/>
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemId = Memory ID; actual value depends on what modification is required - StrtAddr = Start address; actual value depends on what modification is required - LenSau = Lenght in SAU; actual value depends on what modification is required 		
		<ul style="list-style-type: none"> - MemData = Memory data; actual value depends on what modification is required - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget leading zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crccalculation.html?crc=0000b70e&method=hex 		
5.2		Uplink entire block of commands (tagged with release times)		<input type="checkbox"/>

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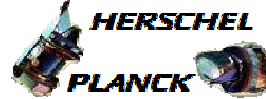
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	Execute Telecommand Load Memory Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109	
	ET=+ UT=+00.00.05	Execute Telecommand Dump Memory Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M3109 Subsch. ID : 20 Det. descr. : TC(6,5) Dump Memory Using Absolute Addresses	AC063109	
TC Seq. Name : HRADSGM3 (PrepareSgmBforWrite) TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
6		Select SGM A Only Configuration		Next Step: 7
6.1		Load sequence HRADSGM3 on the Manual Stack		<input type="checkbox"/>
6.2		Uplink 1st block of commands (tagged with release times)		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand Ext_ACC_RM_A_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.05	Execute Telecommand Use SGM-A RM-A Subsch. ID : 20 Det. descr. : TC(8,1) - SELECT ACC - Use SGM-A RM-A	ACYLP109	
	ET=+ UT=+00.00.05	Execute Telecommand Get RM-A status Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status	ACZZ4109	
6.3		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= DISABLED	AND=ZAA07999
6.4		Verify update in ASW and RM A		<input type="checkbox"/>
		Verify Telemetry SgmInUse AESMS002	= SGM A	AND=ZAA01999
		Verify Telemetry MiscCfg SGM use AEW30109	= SGMA	AND=ZAAM0999
6.5		Uplink Next Command		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific GBM IL DSE --Y --	DCM21170	
6.6		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAA07999
6.7		Uplink Next Block of Commands (tagged with release times)		<input type="checkbox"/>

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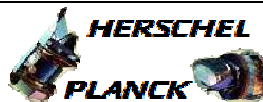
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific GBM IL DSE --Y -- ---	DCM25170	
	ET=+ UT=+00.00.05	Execute Telecommand Use SGM-A RM-B Subsch. ID : 20 Det. descr. : TC(8,1) - SELECT ACC - Use SGM-A RM-B	ACYLV109	
	ET=+ UT=+00.00.05	Execute Telecommand Get RM-B status Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109	
6.8		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= DISABLED	AND=ZAA07999
6.9		Verify update in RM B		<input type="checkbox"/>
		Verify Telemetry MiscCfg SGM use AEW30109	= SGMA	AND=ZAAM0999
6.10		Uplink Next Command		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Enable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific GBM IL DSE --Y -- ---	DCM24170	
6.11		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAA07999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAA07999
7		Disable BSW Write Protection for SGM B		Next Step: 8
7.1		Uplink next block of commands (commands valid for ASW V4B002 only)		□
		Command below sets the write protection words for both SGM's to 0 (disabled). Only the second word will retain its value, since the status of SGMA, which remains in use by the ASW, is autonomously modified during the updating of the Sun vector. Note that the instantiated command is currently valid only for ASW V4B002		
	ET=+ UT=+00.00.00	Execute Telecommand WritesGM_Locked TC Control Flags : Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses - Write SGM Locked	ACZ80109	
		Use generic TC(6,5) to dump variable SgmLocked from RAM. Address of SgmLocked depends on the software version, and can be found in image.syms file of the software build (under \ACMS\ASW_3.4_b2\Code\OBSP_3_4\B002\AAE\image.syms). The length should be 8 bytes. The 1st 32bit word in that memory area is the write protection status of SGM A, and the 2nd 32 word is that of SGM B		
	ET=+ UT=+00.00.05	Execute Telecommand Dump Memory Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M3109 Subsch. ID : 30 Det. descr. : TC(6,5) Dump Memory Using Absolute Addresses	AC063109	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
7.2		Verify write protection disable (the second 32 bit word in the dump area should be 0)		<input type="checkbox"/>
		Verify Packet Reception Memory Dump - Absolute Addresses - SAU 8 Packet Details: <div style="text-align: right; margin-left: 200px;"> MemDmpAbsAdd APID: 512 Type: 6 Subtype: 6 PI1: PI2: </div>		
		Verify Packet Telemetry (Pkt = MemDmpAbsAdd) <div style="text-align: right; margin-left: 150px;"> Memory_ID AE060070 = 020E <hex> </div>		
		Verify Packet Telemetry (Pkt = MemDmpAbsAdd) <div style="text-align: right; margin-left: 150px;"> Start_Address AE061070 = 7A90 <hex> </div>		
		Verify Packet Telemetry (Pkt = MemDmpAbsAdd) <div style="text-align: right; margin-left: 150px;"> Dumped_Byte AE063070 = xxxx0000 <hex> </div>		
8		Disable Hardware Write Protection for SGM B		Next Step: 9
8.1		Uplink next block of commands (tagged with release times)		<input type="checkbox"/>
		Command below disables the hardware write protection of SGMB applied by the RM. The write protection is controlled by a bit in the PIMWriteDisable register of the CROME ASIC.		
	ET=+ UT=+00.00.00	Execute Telecommand <div style="text-align: right; margin-left: 150px;"> PIMwriteDisClear_RMB </div> TC Control Flags : <div style="text-align: right; margin-left: 150px;"> GBM IL DSE --Y -- -- </div> Subsch. ID : 20 Det. descr. : TC(6,2) Load Mem Using Abs Address - PIM Write Disable Clear RMB	ACZ83109	
	ET=+ UT=+00.00.05	Execute Telecommand <div style="text-align: right; margin-left: 150px;"> DumpPIMdisClear_RMB </div> Subsch. ID : 20 Det. descr. : TC(6,5) Dump Mem Using Abs Address - Dump PIM Disable Clear RMB	ACZ79109	
8.2		Verify write protection disable (bit 3 (with LSB as bit 1) in the dumped word (32 bits) must be 0)		<input type="checkbox"/>

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		Verify Packet Reception Memory Dump - Absolute Addresses - SAU 8 Packet Details: APID: 512 Type: 6 Subtype: 6 PI1: PI2:	MemDmpAbsAdd	
		Verify Packet Telemetry (Pkt = MemDmpAbsAdd) Memory_ID AE060070 = 020E <hex>		
		Verify Packet Telemetry (Pkt = MemDmpAbsAdd) Start_Address AE061070 = 7A90 <hex>		
		Verify Packet Telemetry (Pkt = MemDmpAbsAdd) Dumped_Byte AE063070 = xx0x xxxx xxxx xxxx xxxx xxxx xxxx xxxx <bin>		
<p><i>TC Seq. Name :HRADSGM4 (WriteSgmBprotectArea)</i></p> <p><i>TimeTag Type: N</i> <i>Sub Schedule ID:</i> <i>Formal Parameter List :</i> Memory ID MemId= <dec> Start Address StrtAddr= <dec> Length SAU LenSau= <dec> Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec> Length SAU LenSau2= <dec></p>				
9		Modify Contents of ASW Write Protected Area in SGM B		Next Step: 10
9.1		Load sequence HRADSGM4 on the Manual Stack		<input type="checkbox"/>
		<p><i>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</i></p> <ul style="list-style-type: none"> - MemId = Memory ID; actual value depends on what modification is required - StrtAddr = Start address; actual value depends on what modification is required - LenSau = Lenght in SAU; actual value depends on what modification is required 		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>- MemData = Memory data; actual value depends on what modification is required</p> <p>- MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget leading zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crccalculation.html?crc=0000b70e&method=hex</p>																	
9.2		Uplink entire block of commands (tagged with release times)		<input type="checkbox"/>															
	ET=+ UT=+00.00.00	<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table border="0"> <tr> <td style="padding-right: 20px;">Memory ID</td> <td>AH6M0109</td> <td>MemId</td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>StrtAddr</td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>LenSau</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	MemId	Start Address	AH6M1109	StrtAddr	Length SAU	AH6M2109	LenSau	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	MemId																	
Start Address	AH6M1109	StrtAddr																	
Length SAU	AH6M2109	LenSau																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
	ET=+ UT=+00.00.05	<p>Execute Telecommand</p> <p style="text-align: right;">Dump Memory</p> <p>Command Parameter(s) :</p> <table border="0"> <tr> <td style="padding-right: 20px;">Memory ID</td> <td>AH6M0109</td> <td>MemId</td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>StrtAddr</td> </tr> <tr> <td>Length SAU</td> <td>AH6M3109</td> <td>LenSau2</td> </tr> </table> <p>Subsch. ID : 20 Det. descr. : TC(6,5) Dump Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	MemId	Start Address	AH6M1109	StrtAddr	Length SAU	AH6M3109	LenSau2	AC063109							
Memory ID	AH6M0109	MemId																	
Start Address	AH6M1109	StrtAddr																	
Length SAU	AH6M3109	LenSau2																	
<p>TC Seq. Name : HRADSGM5 (RestoreSgmConfig)</p> <p>TimeTag Type: N Sub Schedule ID: <input type="checkbox"/></p>																			
10		Select SGM A+B Configuration		Next Step: END															
10.1		Load sequence HRADSGM5 on the Manual Stack		<input type="checkbox"/>															

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
10.2		Uplink 1st block of commands (tagged with release times)		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand Ext_ACC_RM_A_Disable TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	
	ET=+ UT=+00.00.05	Execute Telecommand Use both SGM RM-A Subsch. ID : 20 Det. descr. : TC(8,1) - SELECT ACC - Use both SGM RM-A	ACYLS109	
	ET=+ UT=+00.00.05	Execute Telecommand Get RM-A status Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status	ACZZ4109	
10.3		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry RMA_fromTTR-RMA AEE91050 = DISABLED		AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050 = DISABLED		AND=ZAA07999
10.4		Verify update in ASW and RM A		<input type="checkbox"/>
		Verify Telemetry SgmInUse AESMS002 = SGM A and B		AND=ZAA01999
		Verify Telemetry MiscCfg SGM use AEW30109 = SGMA+SGMB		AND=ZAAM0999
10.5		Uplink Next Command		<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	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
10.6		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAA07999
10.7		Uplink Next Block of Commands (tagged with release times)		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific GBM IL DSE --Y -- --	DCM25170	
	ET=+ UT=+00.00.05	Execute Telecommand Use both SGM RM-B Subsch. ID : 20 Det. descr. : TC(8,1) - SELECT ACC - Use both SGM RM-B	ACYLX109	
	ET=+ UT=+00.00.05	Execute Telecommand Get RM-B status Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109	
10.8		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= DISABLED	AND=ZAA07999
10.9		Verify update in RM B		<input type="checkbox"/>
		Verify Telemetry MiscCfg SGM use AEW30109	= SGMA+SGMB	AND=ZAAM0999
10.10		Uplink Next Command		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: right;">Ext_ACC_RM_B_Enable</p> <i>TC Control Flags :</i> <p style="text-align: right;">GBM IL DSE --Y -- --</p> <i>Subsch. ID : 10</i> Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
10.11		Verify RM Status		<input type="checkbox"/>
		Verify Telemetry <p style="text-align: right;">RMB_fromTTR-RMA AEE93050</p>	= ENABLED	AND=ZAA07999
		Verify Telemetry <p style="text-align: right;">RMB_fromTTR-RMB AEE94050</p>	= ENABLED	AND=ZAA07999
End of Procedure				