

Switch Off Mass Memory Board and Banks  
 File: H\_CRP\_DHS\_1004.xls  
 Author: S. Manganelli



## Procedure Summary

### Objectives

To switch off SSMM A or SSMM B in a controlled way, This procedure will be needed in case it is considered safe to electrically power off one of the SSMM. The necessary ASW and BSW configuration steps ensure that the OBSW shall continue operating normally, using the buffers on the other SSMM. Note that the SSMM left operational is not put in the "nominal" role, since the SSMM switched OFF cannot be used as a hot redundant unit.

### Summary of Constraints

It is advisable to execute this procedure in a window without MTL TC execution

### Spacecraft Configuration

**Start of Procedure**

Both SSMM boards ON, all banks ON

**End of Procedure**

One SSMM board OFF, its four banks OFF.

### Reference File(s)

**Input Command Sequences**

**Output Command Sequences**

HRD1004B  
 HRD1004C

### Referenced Displays

ANDs	GRDs	SLDs
ZAZAM999		
ZAZAN999		
ZAZAB999		
ZAZAC999		

### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
15/02/09		1	Created	S. Manganelli	
16/02/09	2.1	2	Editorial	S. Manganelli	
12/03/09		3	Added disabling of TM storage in packet stores at start of each sequence following TAS-I inputs	S. Manganelli	
24/03/09	2.2	4	Added disabling storage to the default packet store on both sequences.	S. Manganelli	

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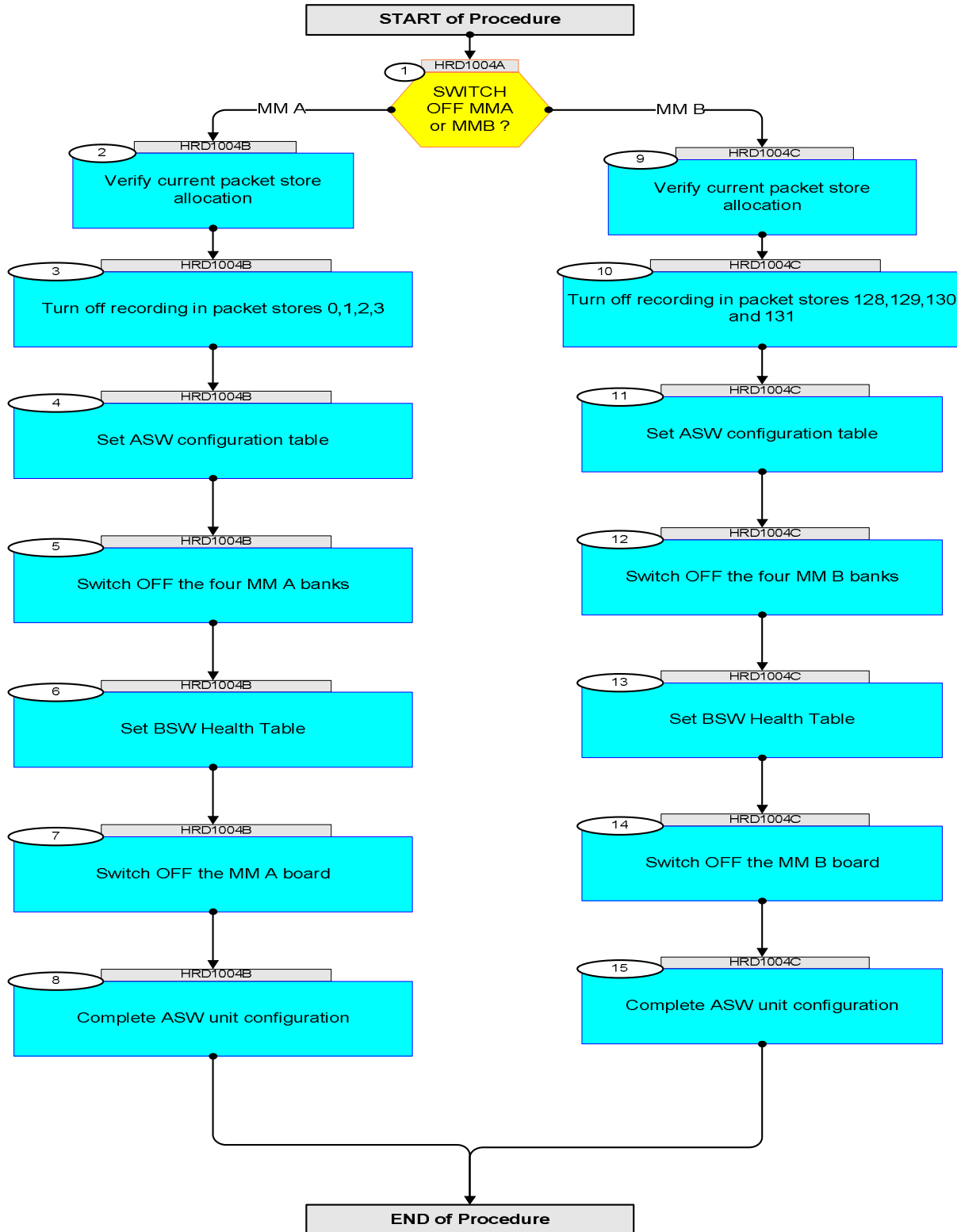


13/04/09	2.3	5	Modified following FOP 2_2 TAS comments: added check on current pkst allocation, corrected check on OBCP2 funct status	S. Manganelli	
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### Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
<b>Beginning of Procedure</b>					
HRD1004A <i>TC Seq. Name :HRD1004A ( Dummy )</i>  <i>TimeTag Type:</i> <i>Sub Schedule ID:</i>  <input type="checkbox"/>					
1		SWITCH OFF MMA or MMB ?  type: [Switch]		Next Step: MM A 2 MM B 9	
End of Sequence					
HRD1004B <i>TC Seq. Name :HRD1004B ( SwOffMMA )</i>  <i>TimeTag Type: N</i> <i>Sub Schedule ID:</i>  <input type="checkbox"/>					
2		Verify current packet store allocation		Next Step: 3	
		Execute Telecommand  <b>ReportPktStrAlloc</b>  <i>TC Control Flags :</i>  <i>Subsch. ID : 10</i> <i>Det. descr. : Report Packet Store Allocation</i>  <b>GBM IL DSE</b> <b>--Y -- ---</b>	<b>DC809160</b>	<b>TC</b>	
		Verify Packet Reception  Packet Store Allocation Report Packet Mnemonic : PktStoreAllc APID : 16 Type : 8 Subtype : 6 PI1 : 771 PI2 : 22			
		<b>DE023160</b> <b>N</b>	<input type="checkbox"/>	PKT=PktStoreAllc	
		<b>DE024160</b> <b>PKS_ID</b>	<input type="checkbox"/>	PKT=PktStoreAllc	
		<b>DE019160</b> <b>SAD</b>	<input type="checkbox"/>	PKT=PktStoreAllc	
		<b>DE025160</b> <b>LEN</b>	<input type="checkbox"/>	PKT=PktStoreAllc	
3		Turn off recording in packet stores 0,1,2,3		Next Step: 4	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand <b>DisableStoragePktStore</b> Command Parameter(s) : N                  DH002160    4 <dec> Store_Id          DH003160    3 <dec> Store_Id          DH003160    2 <dec> Store_Id          DH003160    1 <dec> Store_Id          DH003160    0 <dec> TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Disable Storage in Packet Stores	DC152160	TC	
4		Set ASW configuration table		Next Step: 5	
		Execute Telecommand <b>MarkFailUnitA_MtlMmBuf</b> TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Fdir Mark Failed Unit A MTL SSMM Buffer, TC(8,4,116,21)	DC28H170	TC	
		Note that ASW Conf Table and BSW Health Table TM verification is via HK Low Rate, so wait times of more than one minute can be expected.			
		Verify Telemetry <b>Mtl1FailSts</b> DEH88170    = Failed		AND=ZAZAM999	
		Execute Telecommand <b>MarkFailUnitA_ObcpMmBuf</b> TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Fdir Mark Failed Unit A Obcp SSMM Buffer, TC(8,4,116,21)	DCV04170	TC	
		Verify Telemetry <b>Obcp1FailSts</b> DEH64170    = Failed		AND=ZAZAN999	
5		Switch OFF the four MM A banks		Next Step: 6	
		Execute Telecommand <b>TurnBankOff</b> Command Parameter(s) : EQU                  DH025160    MM A BNK                  DH031160    Bank 3 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Turn Bank Off	DC825160	TC	
		Verify Telemetry <b>PWR_Sts_BankA3</b> DEECJ160    = OFF		AND=ZAZAB999	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand <div style="text-align: right;">TurnBankOff</div> Command Parameter(s) : EQU          DH025160 BNK          DH031160 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Turn Bank Off	DC825160	TC	
		Verify Telemetry <div style="text-align: right;">PWR_Sts_BankA2          DEECZ160</div>	= OFF	AND=ZAZAB999	
		Execute Telecommand <div style="text-align: right;">TurnBankOff</div> Command Parameter(s) : EQU          DH025160 BNK          DH031160 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Turn Bank Off	DC825160	TC	
		Verify Telemetry <div style="text-align: right;">PWR_Sts_BankA1          DEECH160</div>	= OFF	AND=ZAZAB999	
		Execute Telecommand <div style="text-align: right;">TurnBankOff</div> Command Parameter(s) : EQU          DH025160 BNK          DH031160 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Turn Bank Off	DC825160	TC	
		Verify Telemetry <div style="text-align: right;">PWR_Sts_BankA0          DEECG160</div>	= OFF	AND=ZAZAB999	
6		Set BSW Health Table		Next Step: 7	
		Execute Telecommand <div style="text-align: right;">UpdateHealthTable</div> Command Parameter(s) : N              DH014160 COMP          DH100160 M0              DH055160 M1              DH056160 M2              DH057160 F0              DH015160 F1              DH016160 F2              DH017160 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Update Health Table	DC822160	TC	
		Verify Telemetry <div style="text-align: right;">MmBrdA_Healthy          DEJM3160</div>	= Unhealthy	AND=ZAZAC999	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
7		Switch OFF the MM A board		Next Step: 8	
		Execute Telecommand  MM_A_off  TC Control Flags :  Subsch. ID : 10 Det. descr. : MM A off - High Priority Standard	DCA54170	TC	
		Verify Telemetry MMstsA_fromTTRA DEEDG160 = OFF		AND=ZAZAB999	
		Verify Telemetry MMstsA_fromTTRB DEEDH160 = OFF		AND=ZAZAB999	
8		Complete ASW unit configuration		Next Step: END	
		Execute Telecommand  FdirUnitOff_MTL_SSMM_A  TC Control Flags :  Subsch. ID : 10 Det. descr. : FDIR Mark Unit off MTL_SSMM_A, TC(8,4,116,25)	DCV16170	TC	
		Verify Telemetry Mtl1FuncSts DEH89170 = Off		AND=ZAZAM999	
		Execute Telecommand  FdirUnitOff_OBCP_SSMM_A  TC Control Flags :  Subsch. ID : 10 Det. descr. : FDIR Mark Unit off OBCP_SSMM_A, TC(8,4,116,25)	DCV1J170	TC	
		Verify Telemetry ObcplFuncSts DEH65170 = Off		AND=ZAZAN999	
End of Sequence					
HRD1004C TC Seq. Name : HRD1004C ( SwOffMMB )  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>					
9		Verify current packet store allocation		Next Step: 10	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand <b>ReportPktStrAlloc</b>  <i>TC Control Flags :</i> GBM IL DSE --Y -- ---  <i>Subsch. ID : 10</i> <i>Det. descr. : Report Packet Store Allocation</i>	DC809160	TC	
		Verify Packet Reception  Packet Store Allocation Report Packet Mnemonic : PktStoreAllc APID : 16 Type : 8 Subtype : 6 PI1 : 771 PI2 : 22			
		DE023160 N	<input type="checkbox"/>	PKT=PktStoreAllc	
		DE024160 PKS_ID	<input type="checkbox"/>	PKT=PktStoreAllc	
		DE019160 SAD	<input type="checkbox"/>	PKT=PktStoreAllc	
		DE025160 LEN	<input type="checkbox"/>	PKT=PktStoreAllc	
10		Turn off recording in packet stores 128,129,130 and 131		Next Step: 11	
		Execute Telecommand <b>DisableStoragePktStore</b>  <i>Command Parameter(s) :</i> N DH002160 4 <dec> Store_Id DH003160 131 <dec> Store_Id DH003160 130 <dec> Store_Id DH003160 129 <dec> Store_Id DH003160 128 <dec>  <i>TC Control Flags :</i> GBM IL DSE --Y -- ---  <i>Subsch. ID : 10</i> <i>Det. descr. : Disable Storage in Packet Stores</i>	DC152160	TC	
11		Set ASW configuration table		Next Step: 12	
		Execute Telecommand <b>MarkFailUnitB_Mt1MmBuf</b>  <i>TC Control Flags :</i> GBM IL DSE --Y -- ---  <i>Subsch. ID : 10</i> <i>Det. descr. : Fdir Mark Failed Unit B MTL SSMM Buffer, TC(8,4,116,21)</i>	DC54H170	TC	
		Note that ASW Conf Table and BSW Health Table TM verification is via HK Low Rate, so wait times of more than one minute can be expected.			
		Verify Telemetry <b>Mt12FailSts</b> DEH92170	= Failed	AND=ZAZAM999	





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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand <p style="text-align: right;"><b>TurnBankOff</b></p> Command Parameter(s) : EQU          DH025160    MM B BNK          DH031160    Bank 0  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 10 Det. descr. : Turn Bank Off	DC825160	TC	
		Verify Telemetry PWR_Sts_BankB0          DEECK160	= OFF	AND=ZAZAB999	
13		Set BSW Health Table		Next Step: 14	
		Execute Telecommand <p style="text-align: right;"><b>UpdateHealthTable</b></p> Command Parameter(s) : N              DH014160    1 <dec> (Def) COMP          DH100160    MMBoardB M0              DH055160    Update Status M1              DH056160    Update Status M2              DH057160    Update Status F0              DH015160    Unhealthy F1              DH016160    ENABLED F2              DH017160    ENABLED  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 10 Det. descr. : Update Health Table	DC822160	TC	
		Verify Telemetry MmBrdB_Healthy          DEJM6160	= Unhealthy	AND=ZAZAC999	
14		Switch OFF the MM B board		Next Step: 15	
		Execute Telecommand <p style="text-align: right;"><b>MM_B_off</b></p> TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 10 Det. descr. : MM B off - High Priority Standard	DCA70170	TC	
		Verify Telemetry MMstsB_fromTTRA          DEEDZ160	= OFF	AND=ZAZAB999	
		Verify Telemetry MMstsB_fromTTRB          DEEDJ160	= OFF	AND=ZAZAB999	
15		Complete ASW unit configuration		Next Step: END	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand <p style="text-align: center;"><b>FdirUnitOff_MTL_SSMM_B</b></p> <i>TC Control Flags :</i> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <i>Subsch. ID : 10</i> Det. descr. : FDIR Mark Unit off MTL_SSMM_B, TC(8,4,116,25)	DCV5X170	TC	
		Verify Telemetry <p style="text-align: center;"><b>Mtl2FuncSts</b>                      DEH93170</p>	= Off	AND=ZAZAM999	
		Execute Telecommand <p style="text-align: center;"><b>FdirUnitOff_OBCP_SSMM_B</b></p> <i>TC Control Flags :</i> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <i>Subsch. ID : 10</i> Det. descr. : FDIR Mark Unit off OBCP_SSMM_B, TC(8,4,116,25)	DCV69170	TC	
		Verify Telemetry <p style="text-align: center;"><b>Obcp2FuncSts</b>                      DEH69170</p>	= Off	AND=ZAZAN999	
End of Sequence					
<b>End of Procedure</b>					