

MM ID reinitialization  
File: H\_FCP\_DHS\_3018.xls  
Author: S. Manganelli



## Procedure Summary

### Objectives

This procedure describes the steps needed to switch ON the selected Mass Memory board after CDMU start-up has completed.

### Summary of Constraints

MM switch ON is nominally performed as part of the BSW initialization, thus this procedure has to be executed only if the MM has not been switched ON as part of the S/C switch ON (on launch pad).

The status of the MM after switch ON is:

- all four physical memory banks are OFF;
- the mapping is set to default, i.e. logic bank 0 is mapped to physical bank 0;
- no data is stored on the MM.

The MM is initialised through TC(8,4,2,6); this TC will fail when there is an ongoing:

- TC(8,4,2,3) Check Mass Memory
- TC(8,4,2,4) Map Mass Memory
- TC(8,4,2,5) Turn Bank on/off
- TC(8,4,2,6) Initialise Mass Memory

Notice that to acquire the MM banks mapping it is necessary to enable the generation of Diagnostic HK BSW3 (HK ID = 98, SID = 0x530C).

### Spacecraft Configuration

#### Start of Procedure

CDMU in default configuration, that is:

- PM A or B ON (nominally A)
- TM Encoder/OBT A or B active (nominally A)
- RM A and B enabled
- MM A and B ON

#### End of Procedure

CDMU in default configuration, that is:

- PM A or B ON (nominally A)
- TM Encoder/OBT A or B active (nominally A)
- RM A and B enabled
- MM A and B ON

### Reference File(s)

#### Input Command Sequences

#### Output Command Sequences

HFD3018A  
HFD3018B

### Referenced Displays

ANDs      GRDs      SLDs

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ZAZAB999  
 ZAZAC999  
 ZAD22999  
 ZAZAF999

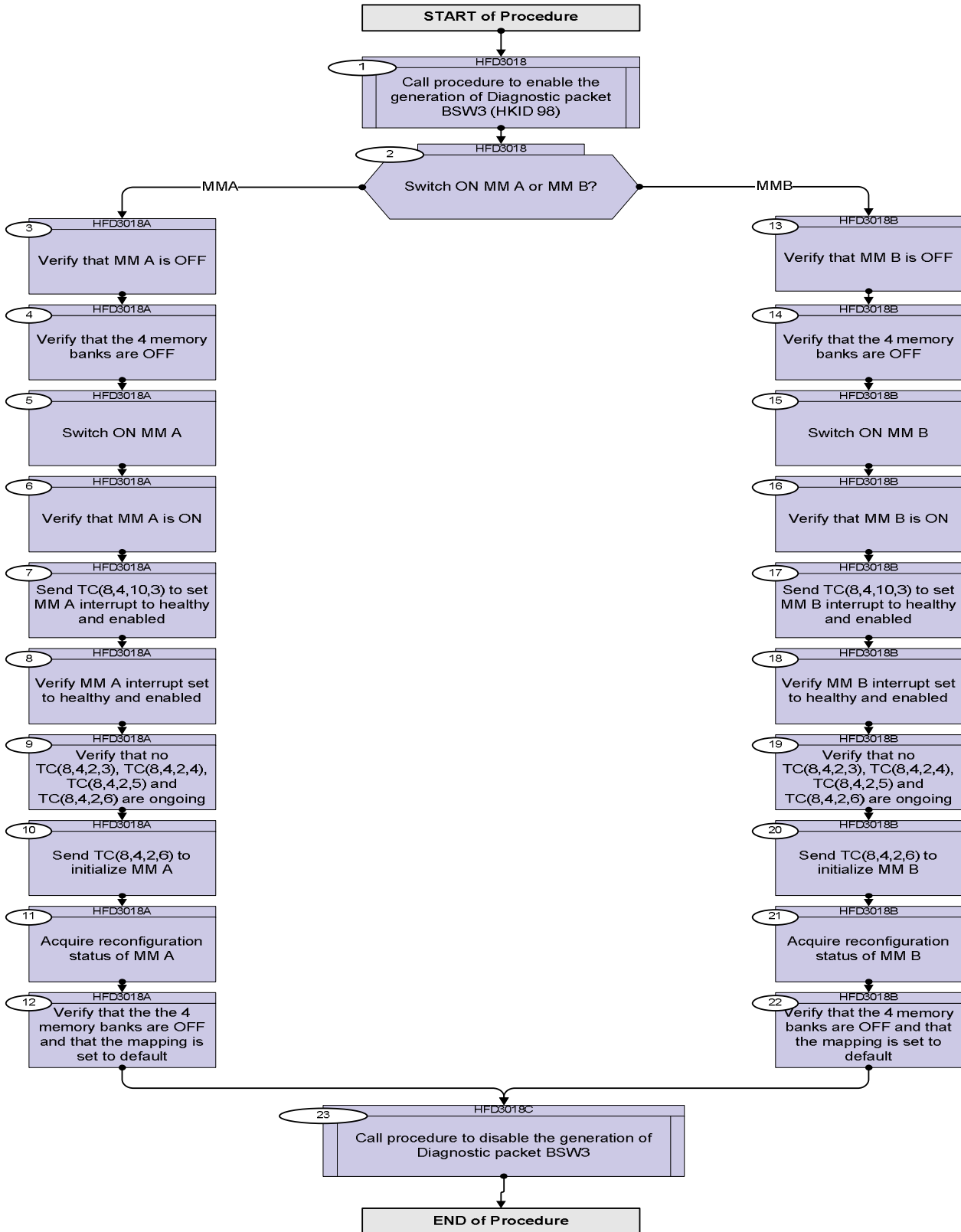
**Configuration Control Information**

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
16/11/07		1	Created	cmevi-hp	
10/12/07		2	Procedure restructured.	cmevi-hp	
16/01/08	1	3	Batch update of TC flags	S. Manganelli	
21/11/08		4	Procedure updated according to latest version received from industry on 29/09/2008	cmevi-hp	
12/01/09	2	5	Updated following OBSW 3_8	S. Manganelli	
22/03/09	2.2	6	TAS-I input 3 march 09	S. Manganelli	

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### Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<b>Beginning of Procedure</b>				
TC Seq. Name :HFD3018 (Enable BSW3 generati)  TimeTag Type: Sub Schedule ID:  <input type="checkbox"/>				
1		Call procedure to enable the generation of Diagnostic packet BSW3 (HKID 98)		Next Step: 2
		<b>Execute procedure H_FCP_DHS_3033.</b>		
2		Switch ON MM A or MM B?		Next Step: MMA 3 MMB 13
TC Seq. Name :HFD3018A (Switch ON MMA)  TimeTag Type: Sub Schedule ID:  <input type="checkbox"/>				
3		Verify that MM A is OFF		Next Step: 4
		Verify Telemetry MMstsA_fromTTRA DEEDG160 = OFF		AND=ZAZAB999
		Verify Telemetry MMstsA_fromTTRB DEEDH160 = OFF		AND=ZAZAB999
4		Verify that the 4 memory banks are OFF		Next Step: 5
		Verify Telemetry PWR_Sts_BankA0 DEECG160 = OFF		AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankA1 DEECH160 = OFF		AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankA2 DEECZ160 = OFF		AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankA3 DEECJ160 = OFF		AND=ZAZAB999
5		Switch ON MM A		Next Step: 6

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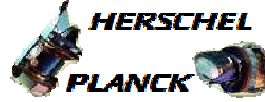
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand  MM_A_on-MM_A_Reset  TC Control Flags :  Subsch. ID : 10 Det. descr. : MM A on / MM A Reset - High Priority Standard	DCA53170	
6		Verify that MM A is ON		Next Step: 7
		Verify Telemetry MMstsA_fromTTRA DEEDG160	= ON	AND=ZAZAB999
		Verify Telemetry MMstsA_fromTTRB DEEDH160	= ON	AND=ZAZAB999
7		Send TC(8,4,10,3) to set MM A interrupt to healthy and enabled		Next Step: 8
		<b>In the TC(8,4,10,3) it is necessary to set the following parameters:</b>  - Number of components for which the health tables shall be updated; in this case must be equal to 1.  - Component for which the Health Table shall be updated; in this case have to be set to 10 (MM interrupt A).  - Component unhealth/health, enable/disable status, health and status update enable/disable; in this case the 3 flag must be equal to 1.  - Masks for the previous 3 flag; in this case have to be set to 1.		
		Execute Telecommand  UpdateHealthTable  Command Parameter(s) : N DH014160 COMP DH100160 M0 DH055160 M1 DH056160 M2 DH057160 F0 DH015160 F1 DH016160 F2 DH017160  TC Control Flags :  Subsch. ID : 10 Det. descr. : Update Health Table	DC822160  1 <dec> (Def) MMIntrpta Update Status Update Status Update Status Healthy ENABLED ENABLED	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
8		Verify MM A interrupt set to healthy and enabled		Next Step: 9
		Verify Telemetry MmIntA_Healthy DEJMJ160	= Healthy	AND=ZAZAC999
		Verify Telemetry MmIntA_Enabled DEJMH160	= ENABLED	AND=ZAZAC999
9		Verify that no TC(8,4,2,3), TC(8,4,2,4), TC(8,4,2,5) and TC(8,4,2,6) are ongoing		Next Step: 10
		Verify Telemetry TC_8-4-2-3_x DEE0J161	= FALSE	AND=ZAD22999
		Verify Telemetry TC_8-4-2-4_x DEE0K161	= FALSE	AND=ZAD22999
		Verify Telemetry TC_8-4-2-5_x DEE0L161	= FALSE	AND=ZAD22999
		Verify Telemetry TC_8-4-2-6_x DEE0M161	= FALSE	AND=ZAD22999
10		Send TC(8,4,2,6) to initialize MM A		Next Step: 11
		Execute Telecommand InitMassMemory Command Parameter(s) : EQU DH025160 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Initialize Mass Memory	DC806160 MM A	
11		Acquire reconfiguration status of MM A		Next Step: 12
		<b>Note that the parameter can have the following values during the reconfiguration:</b> - 1 = Started - 2 = Init COCOS - 3 = Remap banks - 4 = Power switching - 5 = SDRAM init - 6 = Clear NUT area - 7 = Clear banks  <b>When the reconfiguration is completed it should be set to 0, ie No Cfg Ongoing</b>		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry BSW_MM_A_CfgSts	= NoCfgOngoing	AND=ZAZAF999
12		Verify that the the 4 memory banks are OFF and that the mapping is set to default		Next Step: 23
		Verify Telemetry PWR_Sts_BankA0 DEECG160	= OFF	AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankA1 DEECH160	= OFF	AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankA2 DEECZ160	= OFF	AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankA3 DEECJ160	= OFF	AND=ZAZAB999
		Verify Telemetry A0_Phys_Bank DEEE1160	= PhysBank0	AND=ZAZAB999
		Verify Telemetry A1_Phys_Bank DEEF1160	= PhysBank1	AND=ZAZAB999
		Verify Telemetry A2_Phys_Bank DEEG1160	= PhysBank2	AND=ZAZAB999
		Verify Telemetry A3_Phys_Bank DEEH1160	= PhysBank3	AND=ZAZAB999
<p>TC Seq. Name :HFD3018B (Switch ON MMB)</p> <p>TimeTag Type: Sub Schedule ID: <input type="checkbox"/></p>				
13		Verify that MM B is OFF		Next Step: 14
		Verify Telemetry MMstsB_fromTTRA DEEDZ160	= OFF	AND=ZAZAB999
		Verify Telemetry MMstsB_fromTTRB DEEDJ160	= OFF	AND=ZAZAB999
14		Verify that the 4 memory banks are OFF		Next Step: 15
		Verify Telemetry PWR_Sts_BankB0 DEECK160	= OFF	AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankB1 DEECL160	= OFF	AND=ZAZAB999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry PWR_Sts_BankB2 DEECM160	= OFF	AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankB3 DEECN160	= OFF	AND=ZAZAB999
15		Switch ON MM B		Next Step: 16
		Execute Telecommand MM_B_on-MM_B_Reset  TC Control Flags : GBM IL DSE --Y -- --  Subsch. ID : 10 Det. descr. : MM B on / MM B Reset - High Priority Standard	DCA69170	
16		Verify that MM B is ON		Next Step: 17
		Verify Telemetry MMstsB_fromTTRA DEEDZ160	= ON	AND=ZAZAB999
		Verify Telemetry MMstsB_fromTTRB DEEDJ160	= ON	AND=ZAZAB999
17		Send TC(8,4,10,3) to set MM B interrupt to healthy and enabled		Next Step: 18
		<b>In the TC(8,4,10,3) it is necessary to set the following parameters:</b>  - Number of components for which the health tables shall be updated; in this case must be equal to 1.  - Component for which the Health Table shall be updated; in this case have to be set to 11 (MM interrupt B).  - Component unhealth/health, enable/disable status, health and status update enable/disable; in this case the 3 flag must be equal to 1.  - Masks for the previous 3 flag; in this case have to be set to 1.		



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand  UpdateHealthTable  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  1 <dec> (Def) MMIntrptB Update Status Update Status Update Status Healthy ENABLED ENABLED	
18		Verify MM B interrupt set to healthy and enabled		Next Step: 19
		Verify Telemetry MmIntB_Healthy          DEJML160	= Healthy	AND=ZAZAC999
		Verify Telemetry MmIntB_Enabled          DEJMK160	= ENABLED	AND=ZAZAC999
19		Verify that no TC(8,4,2,3), TC(8,4,2,4), TC(8,4,2,5) and TC(8,4,2,6) are ongoing		Next Step: 20
		Verify Telemetry TC_8-4-2-3_x          DEE0J161	= FALSE	AND=ZAD22999
		Verify Telemetry TC_8-4-2-4_x          DEE0K161	= FALSE	AND=ZAD22999
		Verify Telemetry TC_8-4-2-5_x          DEE0L161	= FALSE	AND=ZAD22999
		Verify Telemetry TC_8-4-2-6_x          DEE0M161	= FALSE	AND=ZAD22999
20		Send TC(8,4,2,6) to initialize MM B		Next Step: 21
		Execute Telecommand  InitMassMemory  Command Parameter(s) : EQU          DH025160  TC Control Flags :  GBM IL DSE  --Y -- ---  Subsch. ID : 10 Det. descr. : Initialize Mass Memory	DC806160  MM B	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
21		Acquire reconfiguration status of MM B		Next Step: 22
		<p><b>Note that the parameter can have the following values during the reconfiguration:</b></p> <ul style="list-style-type: none"> <li>- 1 = Started</li> <li>- 2 = Init COCOS</li> <li>- 3 = Remap banks</li> <li>- 4 = Power switching</li> <li>- 5 = SDRAM init</li> <li>- 6 = Clear NUT area</li> <li>- 7 = Clear banks</li> </ul> <p><b>When the reconfiguration is completed it should be set to 0, ie No Cfg Ongoing</b></p>		
		Verify Telemetry BSW_MM_B_CfgSts DEL30160	= NoCfgOngoing	AND=ZAZAF999
22		Verify that the 4 memory banks are OFF and that the mapping is set to default		Next Step: 23
		Verify Telemetry PWR_Sts_BankB0 DEECK160	= OFF	AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankB1 DEECL160	= OFF	AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankB2 DEECM160	= OFF	AND=ZAZAB999
		Verify Telemetry PWR_Sts_BankB3 DEECN160	= OFF	AND=ZAZAB999
		Verify Telemetry B0_Phys_Bank DEEEG160	= PhysBank0	AND=ZAZAB999
		Verify Telemetry B1_Phys_Bank DEEFG160	= PhysBank1	AND=ZAZAB999
		Verify Telemetry B2_Phys_Bank DEEGG160	= PhysBank2	AND=ZAZAB999
		Verify Telemetry B3_Phys_Bank DEEHG160	= PhysBank3	AND=ZAZAB999
<p>TC Seq. Name :HFD3018C (Disable BSW3 generat)</p> <p>TimeTag Type: Sub Schedule ID: <input type="checkbox"/></p>				
23		Call procedure to disable the generation of Diagnostic packet BSW3		Next Step: END

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute procedure H_FCP_DHS_3033.		
<b>End of Procedure</b>				