

Switch ON TX2 and TWTA2
File: H_CRP_TTC_T201.xls
Author: E. Picallo



Procedure Summary

Objectives

This procedure describes the steps needed to switch ON the transmitter 2 and the travelling wave tube assembly 2 (nominal downlink branch).

This procedure does not use the logical addressing.

Summary of Constraints

TX1&2 and TWTA1&2 are switched OFF a through ASW TCs(8,4,115,1);
TX2 and TWTA2 are switched ON a through ASW TCs(8,4,115,1);
moreover the XPND2 and the TM encoder are configured using
TC(8,4,115,9), TC(8,4,115,17/18) and TC(8,4,115,20); optionally the RFDN
switches are commanded using ASW TCs(8,4,115,5/6/7/8), thus the status of
the ASW function "TTC Management" has to be "running".

Note that:

- the value of the TM modulation index is always 1.2;
- the Coherent mode and Ranging modulator are set OFF because these parameters have to be commanded ON after confirmation of on-board lock;
- the value of the Output power level is always - 4dBm;
- the External reference and Internal bit pattern generator are always OFF.

The XPND needs a maximum warm-up of 20 minutes.

This sequence includes RFDN SW change. TC may loss lock. In this case re-sweep carrier taking into account Rx1-Rx2 delta rest freq is 65Khz

Spacecraft Configuration

Start of Procedure

CDMU in default configuration;

End of Procedure

CDMU in default configuration;
Downlink enabled via TX2 and TWTA2;

Reference File(s)

Input Command Sequences

Output Command Sequences

HRRT2011
HRRT2012
HRRT2013
HRRT2014
HRRT201F

Referenced Displays

ANDs GRDs SLDs

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ZA27I999 (None)
 ZA27J999
 ZA27M999

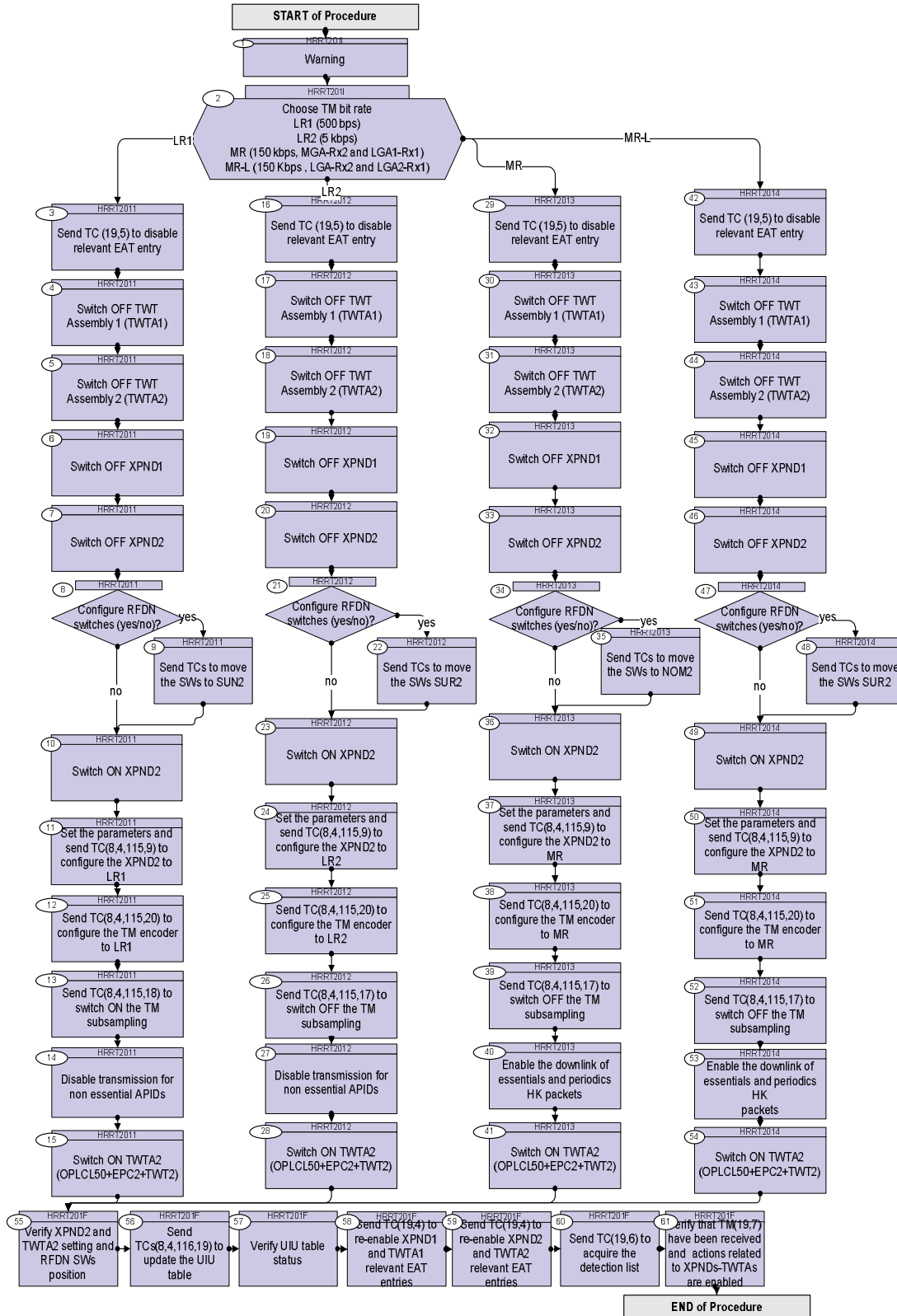
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
29/07/2008	1	1	Created	E. Picallo	
03/12/2008		2	TC DCT18170 Configure Xpnd mask update <input type="checkbox"/> Analog parameters expected values updated	E. Picallo	
05/01/2009		3	Option to configure RFDN switches added	E. Picallo	
08/01/2009	2	4	CDMU ASW V3.8 and BSW V2.4 alignment	E. Picallo	
18/03/2009	2.2	4.01	Validation : Minor AND reference correction	E. Picallo	
25/09/2009	2.5	5	comment on TC XPND1 OFF leaves LCL23 ON <input type="checkbox"/> comment on TC XPND2 OFF leaves LCL16 ON <input type="checkbox"/> EAT entry ID 160 (XPND1 invalid RT) remains DISABLED	E. Picallo	
03/08/2011	3.1	6	New option added: MR-L (150 Kbps , LGA-Rx2 and LGA2-Rx1)	E. Picallo	

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
<p><i>TC Seq. Name :HRRT201I (Tx2+TWTA2 ON initial)</i></p> <p><i>TimeTag Type: B</i> <i>Sub Schedule ID:</i></p> <p style="text-align: center;">□</p>				
1		Warning		Next Step: 2
		<p>In the next steps the downlink is deactivated. Therefore no CLCW will be available to acknowledge the TCs .</p> <p>Switch to BD mode in order to avoid triggering the TC re-transmission or</p> <p>Send the next TCs time-tagged selecting a execution time in the future such that no ore of four time-tagged TCs are released per second .</p>		
2		<p><i>Choose TM bit rate</i> <i>LR1 (500 bps)</i> <i>LR2 (5 kbps)</i> <i>MR (150 kbps, MGA-Rx2 and LGA1-Rx1)</i> <i>MR-L (150 Kbps , LGA-Rx2 and LGA2-Rx1)</i></p>		Next Step: LR1 3 LR2 16 MR 29 MR-L 42
<p><i>TC Seq. Name :HRRT2011 (Tx2+TWTA2 ON in LR1)</i> <i>Tx2 and TM encoder configuration for LR1</i></p> <p><i>TimeTag Type: B</i> <i>Sub Schedule ID:</i></p> <p style="text-align: center;">□</p>				
3		Send TC (19,5) to disable relevant EAT entry		Next Step: 4
		<p>When this request is received, the action-telecommand associated with the corresponding event shall be disabled. In the TC(19,5) it is necessary to set the following parameters:</p> <p>N, number of events to be disabled.</p> <p>APID, identifier of the Application Process generating this event report, in this case always equal to 16 (CDMU).</p> <p>Event ID, identifier of the event to be disabled, in this case equal to:</p> <p>37400 & 37416 (TWTA1 failure), 37401 & 37417 (TWTA2 failure), 37402 (XPND1 RX failure), 37403 (XPND2 RX failure), 160 (XPND1 invalid RT), 161 (XPND2 invalid RT).</p>		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandTwta2Off <i>TC Control Flags :</i> Subsch. ID : 10 Det. descr. : Ttc Command TWTA 2 Off TC(8,4,115,1) GBM IL DSE --Y -- ---	DC07E170	
6		Switch OFF XPND1		Next Step: 7
		Command XPND1 OFF - TC(8,4,115,1) performs : Switch XPND TX1 OFF Configure TX1 "OFF" and "INVALID" on the 1553 S/C bus Note that it leaves LCL23 (XPND1) ON		
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandXpnd1Off <i>TC Control Flags :</i> Subsch. ID : 10 Det. descr. : Ttc Command Xpnd 1 Off TC(8,4,115,1) GBM IL DSE --Y -- ---	DCN80170	
7		Switch OFF XPND2		Next Step: 8
		Command XPND2 OFF - TC(8,4,115,1) performs : Switch XPND TX2 OFF Configure TX2 "OFF" and "INVALID" on the 1553 S/C bus Note that it leaves LCL16 (XPND2) ON		
	ET=+00.00.30 UT=+	Execute Telecommand TtcCommandXpnd2Off <i>TC Control Flags :</i> Subsch. ID : 10 Det. descr. : Ttc Command Xpnd 2 Off TC(8,4,115,1) GBM IL DSE --Y -- ---	DCN81170	
8		Configure RFDN switches (yes/no)?		Next Step: yes 9 no 10
9		Send TCs to move the SWs to SUN2		Next Step: 10

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Sun acquisition otherwise (SUN2) RFDN SWs position ABAB D/L path: TX2 - TWTA2 - LGA1 U/L path: LGA1 - RX2 (MGA - RX1)		
		Notice that at 500 bps another possible RFDN swithes configuration would be Survival (SUR2) to set omnidirectional coverage: RFDN SWs position ABBB D/L path: TX2 - TWTA2 - LGA1 U/L path: LGA1 - RX2 (LGA2 - RX1) In this case the SW3_SW4 shal be commnaded to Pos A: TC DC48E170 (RfdnArmSW3_SW4_log_A) TC DC68E170 (RfdnFireSW3_SW4_log_A)		
		WARNING: if the commands are sent in real time, after the execution of the first pair of commands ("arm" and "fire") Ground station has to re-sweep the uplink to re-acquire the lock and send the second pair of TCs.		
	ET+=00.00.05 UT=+	Execute Telecommand <p style="text-align: right;">RfdnArmSW1_SW2LogB</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : Rfdn Arm SW1/SW2 (logical) Position B TC(8,4,115,6)	DC57E170	
	ET+=00.00.05 UT=+	Execute Telecommand <p style="text-align: right;">RfdnFireSW1_SW2_log_B</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : Rfdn Fire SW1/SW2 (logical) Position B TC(8,4,115,8)	DC77E170	
	ET+=00.00.05 UT=+	Execute Telecommand <p style="text-align: right;">RfdnArmsW3_SW4LogB</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : Rfdn Arm SW3/SW4 (logical) Position B TC(8,4,115,6)	DC58E170	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.05 UT=+	Execute Telecommand RfdnFireSW3_SW4_log_B TC Control Flags : Subsch. ID : 10 Det. descr. : Rfdn Fire SW3/SW4 (logical) Position B TC(8,4,115,8) GBM IL DSE --Y -- ---	DC78E170	
10		Switch ON XPND2		Next Step: 11
		Command XPND2 ON - TC(8,4,115,2) performs : Switch LCL16 (XPND2) ON Configure TX2 "ON" and "VALID" on the 1553 S/C bus Switch XPND TX2 ON		
	ET=+00.00.30 UT=+	Execute Telecommand TtcCommandXpnd2On TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command Xpnd 2 On TC(8,4,115,2) GBM IL DSE --Y -- ---	DCN84170	
11		Set the parameters and send TC(8,4,115,9) to configure the XPND2 to LR1		Next Step: 12
	ET=+00.00.30 UT=+	Execute Telecommand XpndConfigure_Templ Command Parameter(s) : XpndId DH018170 XpndB XpndConfMask1Unus DH220170 11 <bin> XpndConfMask1_ER DH221170 ON XpndConfMask1_CM DH222170 ON XpndConfMask1_RM DH223170 ON XpndConfMask1_HRM DH224170 ON XpndConfMask1_MRM DH225170 ON XpndConfMask1LRM1 DH226170 ON XpndConfMask1LRM2 DH227170 ON XpndConfMask1_RMI DH228170 Update XpndConfMask1_TMI DH229170 Update	DCT18170	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		XpndConfMask2_PG DH230170 XpndConfMask2Unus DH231170 XpndConfMask2OPLS DH232170 XpndConfDW1Unus DH020170 XpndConfDW1_ER DH021170 XpndConfDW1_CM DH022170 XpndConfDW1_RM DH023170 XpndConfDW1_HRM DH024170 XpndConfDW1_MRM DH025170 XpndConfDW1LRM1 DH026170 XpndConfDW1LRM2 DH027170 XpndConfDW1_RMI DH028170 XpndConfDW1_TMI DH029170 XpndConfDW2_PG DH030170 XpndConfDW2Unus DH031170 XpndConfDW2OPLS DH032170 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : TEMPLATE Configure Xpnd TC(8,4,115,9)	ON 1111111111 <bin> Update 0 <dec> (Def) OFF (Def) OFF (Def) OFF (Def) OFF (Def) OFF (Def) OFF (Def) ON OFF (Def) 0.6 1.2 OFF (Def) 0 <dec> (Def)	
12		Send TC(8,4,115,20) to configure the TM encoder to LRI		Next Step: 13
	ET=+00.00.05 UT=+	Execute Telecommand TtcConfigTmEncInUseLow1 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : TTC: Config TM Enc In Use Mode Low 1,500 bps, TC(8,4,115,20)	DC12F170	
13		Send TC(8,4,115,18) to switch ON the TM subsampling		Next Step: 14
	ET=+00.00.05 UT=+	Execute Telecommand TtcSwitchTmSubsamplOn TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : TTC: Switch TM Subsampling On TC(8,4,115,18)	DC04F170	
14		Disable transmission for non essential APIDs		Next Step: 15

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Procedure: H_CRP_DHS_1001 Disabling transmission for non essential APIDs.		
15		Switch ON TWTA2 (OPLCL50+EPC2+TWT2)		Next Step: 55
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandTwta2On TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command TWTA 2 On TC(8,4,115,2)	DC17E170	
<p>TC Seq. Name : HRRT2012 (Tx2+TWTA2 ON in LR2) Tx2 and TM encoder configuration for LR2</p> <p>TimeTag Type: B Sub Schedule ID: <input type="checkbox"/></p>				
16		Send TC (19,5) to disable relevant EAT entry		Next Step: 17
		<p>When this request is received, the action-telecommand associated with the corresponding event shall be disabled. In the TC(19,5) it is necessary to set the following parameters:</p> <p>N, number of events to be disabled. APID, identifier of the Application Process generating this event report, in this case always equal to 16 (CDMU). Event ID, identifier of the event to be disabled, in this case equal to: 37400 & 37416 (TWTA1 failure), 37401 & 37417 (TWTA2 failure), 37402 (XPND1 RX failure), 37403 (XPND2 RX failure), 160 (XPND1 invalid RT), 161 (XPND2 invalid RT).</p>		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandTwta2Off <i>TC Control Flags :</i> GBM IL DSE --Y -- --- <i>Subsch. ID : 10</i> <i>Det. descr. : Ttc Command TWTA 2 Off TC(8,4,115,1)</i>	DC07E170	
19		Switch OFF XPND1		Next Step: 20
		Command XPND1 OFF - TC(8,4,115,1) performs : Switch XPND TX1 OFF Configure TX1 "OFF" and "INVALID" on the 1553 S/C bus Note that it leaves LCL23 (XPND1) ON		
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandXpnd1Off <i>TC Control Flags :</i> GBM IL DSE --Y -- --- <i>Subsch. ID : 10</i> <i>Det. descr. : Ttc Command Xpnd 1 Off TC(8,4,115,1)</i>	DCN80170	
20		Switch OFF XPND2		Next Step: 21
		Command XPND2 OFF - TC(8,4,115,1) performs : Switch XPND TX2 OFF Configure TX2 "OFF" and "INVALID" on the 1553 S/C bus Note that it leaves LCL16 (XPND2) ON		
	ET=+00.00.30 UT=+	Execute Telecommand TtcCommandXpnd2Off <i>TC Control Flags :</i> GBM IL DSE --Y -- --- <i>Subsch. ID : 10</i> <i>Det. descr. : Ttc Command Xpnd 2 Off TC(8,4,115,1)</i>	DCN81170	
21		Configure RFDN switches (yes/no)?		Next Step: yes 22 no 23
22		Send TCs to move the SWs SUR2		Next Step: 23

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Launch/Sun acquisition after separation/Survival (SUR2) RFDN SWs position ABBB D/L path: TX2 - TWTA2 - LGA1 U/L path: LGA1 - RX2 (LGA2 - RX1)		
		WARNING: if the commands are sent in real time, after the execution of the first pair of commands ("arm" and "fire") Ground station has to re-sweep the uplink to re-acquire the lock and send the second pair of TCs.		
	ET=+00.00.05 UT=+	Execute Telecommand RfdnArmsW1_SW2LogB TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Rfdn Arm SW1/SW2 (logical) Position B TC(8,4,115,6)	DC57E170	
	ET=+00.00.05 UT=+	Execute Telecommand RfdnFireSW1_SW2_log_B TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Rfdn Fire SW1/SW2 (logical) Position B TC(8,4,115,8)	DC77E170	
	ET=+00.00.05 UT=+	Execute Telecommand RfdnArmSW3_SW4_log_A TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Rfdn Arm Command SW3/SW4 (logical) Position A TC(8,4,115,5)	DC48E170	
	ET=+00.00.05 UT=+	Execute Telecommand RfdnFireSW3_SW4_log_A TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Rfdn Fire SW3/SW4 (logical) Position A TC(8,4,115,7)	DC68E170	
23		Switch ON XPND2		Next Step: 24
		Command XPND2 ON - TC(8,4,115,2) performs : Switch LCL16 (XPND2) ON Configure TX2 "ON" and "VALID" on the 1553 S/C bus Switch XPND TX2 ON		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET+=00.00.30 UT=+	Execute Telecommand TtcCommandXpnd2On TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command Xpnd 2 On TC(8,4,115,2) GBM IL DSE --Y -- ---	DCN84170	
24		Set the parameters and send TC(8,4,115,9) to configure the XPND2 to LR2		Next Step: 25
	ET+=00.00.30 UT=+	Execute Telecommand XpndConfigure_Templ Command Parameter(s) : XpndId DH018170 XpndB XpndConfMask1Unus DH220170 11 <bin> XpndConfMask1_ER DH221170 ON XpndConfMask1_CM DH222170 ON XpndConfMask1_RM DH223170 ON XpndConfMask1_HRM DH224170 ON XpndConfMask1_MRM DH225170 ON XpndConfMask1LRM1 DH226170 ON XpndConfMask1LRM2 DH227170 ON XpndConfMask1_RMI DH228170 Update XpndConfMask1_TMI DH229170 Update XpndConfMask2_PG DH230170 ON XpndConfMask2Unus DH231170 11111111111 <bin> XpndConfMask2OPLS DH232170 Update XpndConfDW1Unus DH020170 0 <dec> (Def) XpndConfDW1_ER DH021170 OFF (Def) XpndConfDW1_CM DH022170 OFF (Def) XpndConfDW1_RM DH023170 OFF (Def) XpndConfDW1_HRM DH024170 OFF (Def) XpndConfDW1_MRM DH025170 OFF (Def) XpndConfDW1LRM1 DH026170 OFF (Def) XpndConfDW1LRM2 DH027170 ON XpndConfDW1_RMI DH028170 0.6 XpndConfDW1_TMI DH029170 1.2 XpndConfDW2_PG DH030170 OFF (Def) XpndConfDW2Unus DH031170 0 <dec> (Def) XpndConfDW2OPLS DH032170 -4 TC Control Flags : Subsch. ID : 10 Det. descr. : TEMPLATE Configure Xpnd TC(8,4,115,9) GBM IL DSE --Y -- ---	DCT18170	
25		Send TC(8,4,115,20) to configure the TM encoder to LR2		Next Step: 26

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	ET+=00.00.05 UT=+	Execute Telecommand TtcConfigTmEncInUseLow2 TC Control Flags : Subsch. ID : 10 Det. descr. : TTC: Config TM Enc In Use Mode Low 2 - 5kbps, TC(8,4,115,20) GBM IL DSE --Y -- ---	DC17F170	
26		Send TC(8,4,115,17) to switch OFF the TM subsampling		Next Step: 27
	ET+=00.00.05 UT=+	Execute Telecommand TtcSwitchTmSubsamplOff TC Control Flags : Subsch. ID : 10 Det. descr. : TTC: Switch TM Subsampling Off TC(8,4,115,17) GBM IL DSE --Y -- ---	DC03F170	
27		Disable transmission for non essential APIDs		Next Step: 28
		Execute Procedure: H_CRP_DHS_1001 Disabling transmission for non essential APIDs.		
28		Switch ON TWTA2 (OPLCL50+EPC2+TWT2)		Next Step: 55
	ET+=00.00.05 UT=+	Execute Telecommand TtcCommandTwta2On TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command TWTA 2 On TC(8,4,115,2) GBM IL DSE --Y -- ---	DC17E170	
TC Seq. Name :HRRT2013 (Tx2+TWTA2 ON in MBR) Tx2 and TM encoder configuration for MR TimeTag Type: B Sub Schedule ID: <input type="checkbox"/>				
29		Send TC (19,5) to disable relevant EAT entry		Next Step: 30

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		<p>When this request is received, the action-telecommand associated with the corresponding event shall be disabled. In the TC(19,5) it is necessary to set the following parameters: N, number of events to be disabled. APID, identifier of the Application Process generating this event report, in this case always equal to 16 (CDMU). Event ID, identifier of the event to be disabled, in this case equal to: 37400 & 37416 (TWTA1 failure), 37401 & 37417 (TWTA2 failure), 37402 (XPND1 RX failure), 37403 (XPND2 RX failure), 160 (XPND1 invalid RT), 161 (XPND2 invalid RT).</p>																																																								
	ET=+00.00.00 UT=+	<p>Execute Telecommand</p> <p style="text-align: center;">DisableActions</p> <p>Command Parameter(s) :</p> <table border="0"> <tr> <td>N_Repetition</td> <td>DH041170</td> <td>8 <dec></td> </tr> <tr> <td>APID_for_EAT_TC</td> <td>DH236170</td> <td>CDMS (Def)</td> </tr> <tr> <td>EventId</td> <td>DH146170</td> <td>37400 <dec></td> </tr> <tr> <td>APID_for_EAT_TC</td> <td>DH236170</td> <td>CDMS (Def)</td> </tr> <tr> <td>EventId</td> <td>DH146170</td> <td>37401 <dec></td> </tr> <tr> <td>APID_for_EAT_TC</td> <td>DH236170</td> <td>CDMS (Def)</td> </tr> <tr> <td>EventId</td> <td>DH146170</td> <td>37402 <dec></td> </tr> <tr> <td>APID_for_EAT_TC</td> <td>DH236170</td> <td>CDMS (Def)</td> </tr> <tr> <td>EventId</td> <td>DH146170</td> <td>37403 <dec></td> </tr> <tr> <td>APID_for_EAT_TC</td> <td>DH236170</td> <td>CDMS (Def)</td> </tr> <tr> <td>EventId</td> <td>DH146170</td> <td>37416 <dec></td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td>APID_for_EAT_TC</td> <td>DH236170</td> <td>CDMS (Def)</td> </tr> <tr> <td>EventId</td> <td>DH146170</td> <td>37417 <dec></td> </tr> <tr> <td>APID_for_EAT_TC</td> <td>DH236170</td> <td>CDMS (Def)</td> </tr> <tr> <td>EventId</td> <td>DH146170</td> <td>160 <dec></td> </tr> <tr> <td>APID_for_EAT_TC</td> <td>DH236170</td> <td>CDMS (Def)</td> </tr> <tr> <td>EventId</td> <td>DH146170</td> <td>161 <dec></td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: center;">GBM IL DSE --Y -- --</p> <p>Subsch. ID : 10 Det. descr. : TEMPLATE Disable Actions TC(19,5)</p>	N_Repetition	DH041170	8 <dec>	APID_for_EAT_TC	DH236170	CDMS (Def)	EventId	DH146170	37400 <dec>	APID_for_EAT_TC	DH236170	CDMS (Def)	EventId	DH146170	37401 <dec>	APID_for_EAT_TC	DH236170	CDMS (Def)	EventId	DH146170	37402 <dec>	APID_for_EAT_TC	DH236170	CDMS (Def)	EventId	DH146170	37403 <dec>	APID_for_EAT_TC	DH236170	CDMS (Def)	EventId	DH146170	37416 <dec>				APID_for_EAT_TC	DH236170	CDMS (Def)	EventId	DH146170	37417 <dec>	APID_for_EAT_TC	DH236170	CDMS (Def)	EventId	DH146170	160 <dec>	APID_for_EAT_TC	DH236170	CDMS (Def)	EventId	DH146170	161 <dec>	DCT85170	
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APID_for_EAT_TC	DH236170	CDMS (Def)																																																								
EventId	DH146170	161 <dec>																																																								
30		Switch OFF TWT Assembly 1 (TWTA1)		Next Step: 31																																																						
		<p>Command TWTA1 OFF - TC(8,4,115,1) performs :</p> <p>Switch TWT Amplifier 1 (TWTA1) OFF Switch EPC1 OFF Switch OP-LCL49 (TWTA1) OFF</p>																																																								

Switch ON TX2 and TWTA2
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandTwtalOff TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command TWTA 1 Off TC(8,4,115,1) GBM IL DSE --Y -- --	DC06E170	
31		Switch OFF TWT Assembly 2 (TWTA2)		Next Step: 32
		Command TWTA2 OFF - TC(8,4,115,1) performs : Switch TWT Amplifier 2 (TWT2) OFF Switch EPC2 OFF Switch OP-LCL50 (TWTA2) OFF		
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandTwt2Off TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command TWTA 2 Off TC(8,4,115,1) GBM IL DSE --Y -- --	DC07E170	
32		Switch OFF XPND1		Next Step: 33
		Command XPND1 OFF - TC(8,4,115,1) performs : Switch XPND TX1 OFF Configure TX1 "OFF" and "INVALID" on the 1553 S/C bus Note that it leaves LCL23 (XPND1) ON		
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandXpnd1Off TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command Xpnd 1 Off TC(8,4,115,1) GBM IL DSE --Y -- --	DCN80170	
33		Switch OFF XPND2		Next Step: 34
		Command XPND2 OFF - TC(8,4,115,1) performs : Switch XPND TX2 OFF Configure TX2 "OFF" and "INVALID" on the 1553 S/C bus Note that it leaves LCL16 (XPND2) ON		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.30 UT=+	Execute Telecommand TtcCommandXpnd2Off TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command Xpnd 2 Off TC(8,4,115,1) GBM IL DSE --Y -- ---	DCN81170	
34		Configure RFDN switches (yes/no)?		Next Step: yes 35 no 36
35		Send TCs to move the SWs to NOM2		Next Step: 36
		Nominal/Earth acquisition (NOM2) RFDN SWs position BBAB D/L path: TX2 - TWTA2 - MGA U/L path: MGA - RX2 (LGA1 - RX1)		
		WARNING: if the commands are sent in real time, after the execution of the first pair of commands ("arm" and "fire") Ground station has to re-sweep the uplink to re-acquire the lock and send the second pair of TCs.		
	ET=+00.00.05 UT=+	Execute Telecommand RfdnArmSW1_SW2_log_A TC Control Flags : Subsch. ID : 10 Det. descr. : Rfdn Arm Command SW1/SW2 (logical) Position A TC(8,4,115,5) GBM IL DSE --Y -- ---	DC47E170	
	ET=+00.00.05 UT=+	Execute Telecommand RfdnFireSW1_SW2_log_A TC Control Flags : Subsch. ID : 10 Det. descr. : Rfdn Fire SW1/SW2 (logical) Position A TC(8,4,115,7) GBM IL DSE --Y -- ---	DC67E170	
	ET=+00.00.05 UT=+	Execute Telecommand RfdnArmSW3_SW4LogB TC Control Flags : Subsch. ID : 10 Det. descr. : Rfdn Arm SW3/SW4 (logical) Position B TC(8,4,115,6) GBM IL DSE --Y -- ---	DC58E170	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.05 UT=+	Execute Telecommand RfdnFireSW3_SW4_log_B TC Control Flags : Subsch. ID : 10 Det. descr. : Rfdn Fire SW3/SW4 (logical) Position B TC(8,4,115,8) GBM IL DSE --Y -- --	DC78E170	
36		Switch ON XPND2		Next Step: 37
		Command XPND2 ON - TC(8,4,115,2) performs : Switch LCL16 (XPND2) ON Configure TX2 "ON" and "VALID" on the 1553 S/C bus Switch XPND TX2 ON		
	ET=+00.00.30 UT=+	Execute Telecommand TtcCommandXpnd2On TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command Xpnd 2 On TC(8,4,115,2) GBM IL DSE --Y -- --	DCN84170	
37		Set the parameters and send TC(8,4,115,9) to configure the XPND2 to MR		Next Step: 38
	ET=+00.00.30 UT=+	Execute Telecommand XpndConfigure_Templ Command Parameter(s) : XpndId DH018170 XpndB XpndConfMask1Unus DH220170 11 <bin> XpndConfMask1_ER DH221170 ON XpndConfMask1_CM DH222170 ON XpndConfMask1_RM DH223170 ON XpndConfMask1_HRM DH224170 ON XpndConfMask1_MRM DH225170 ON XpndConfMask1LRM1 DH226170 ON XpndConfMask1LRM2 DH227170 ON XpndConfMask1_RMI DH228170 Update XpndConfMask1_TMI DH229170 Update	DCT18170	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		XpndConfMask2_PG DH230170 XpndConfMask2Unus DH231170 XpndConfMask2OPLS DH232170 XpndConfDW1Unus DH020170 XpndConfDW1_ER DH021170 XpndConfDW1_CM DH022170 XpndConfDW1_RM DH023170 XpndConfDW1_HRM DH024170 XpndConfDW1_MRM DH025170 XpndConfDW1LRM1 DH026170 XpndConfDW1LRM2 DH027170 XpndConfDW1_RMI DH028170 XpndConfDW1_TMI DH029170 XpndConfDW2_PG DH030170 XpndConfDW2Unus DH031170	ON 1111111111 <bin> Update 0 <dec> (Def) OFF (Def) OFF (Def) OFF (Def) OFF (Def) ON OFF (Def) OFF (Def) 0.6 1.2 OFF (Def) 0 <dec> (Def)	
		XpndConfDW2OPLS DH032170 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : TEMPLATE Configure Xpnd TC(8,4,115,9)	-4	
38		Send TC(8,4,115,20) to configure the TM encoder to MR		Next Step: 39
	ET=+00.00.05 UT=+	Execute Telecommand TtcConfTmEncInUseMedium TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : TTC: Config TM Enc In Use Mode Medium 150 kbps, TC(8,4,115,20)	DC22F170	
39		Send TC(8,4,115,17) to switch OFF the TM subsampling		Next Step: 40
	ET=+00.00.05 UT=+	Execute Telecommand TtcSwitchTmSubsamploff TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : TTC: Switch TM Subsampling Off TC(8,4,115,17)	DC03F170	
40		Enable the downlink of essentials and periodics HK packets		Next Step: 41

Switch ON TX2 and TWTA2
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute procedures H_FCP_DHS_1003 (Set the default values for the TRANSMIT/STORAGE flags with TC(14,5)) H_FCP_DHS_1009 (Enable the default HK (essential + periodic) packets with TC(14,1))		
41		Switch ON TWTA2 (OPLCL50+EPC2+TWT2)		Next Step: 55
	ET+=00.00.05 UT=+	Execute Telecommand TtcCommandTwta2On TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command TWTA 2 On TC(8,4,115,2) GBM IL DSE --Y -- --	DC17E170	
TC Seq. Name :HRRT2014 (Tx2+TWTA2 ON MR LGAs) Tx2 and TM encoder configuration for MR with LGAs TimeTag Type: B Sub Schedule ID: <input type="checkbox"/>				
42		Send TC (19,5) to disable relevant EAT entry		Next Step: 43
		When this request is received, the action-telecommand associated with the corresponding event shall be disabled. In the TC(19,5) it is necessary to set the following parameters: N, number of events to be disabled. APID, identifier of the Application Process generating this event report, in this case always equal to 16 (CDMU). Event ID, identifier of the event to be disabled, in this case equal to: 37400 & 37416 (TWTA1 failure), 37401 & 37417 (TWTA2 failure), 37402 (XPND1 RX failure), 37403 (XPND2 RX failure), 160 (XPND1 invalid RT), 161 (XPND2 invalid RT).		

Switch ON TX2 and TWTA2
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.00 UT=+	Execute Telecommand DisableActions Command Parameter(s) : N_Repetition DH041170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : TEMPLATE Disable Actions TC(19,5)	DCT85170 8 <dec> CDMS (Def) 37400 <dec> CDMS (Def) 37401 <dec> CDMS (Def) 37402 <dec> CDMS (Def) 37403 <dec> CDMS (Def) 37416 <dec> CDMS (Def) 37417 <dec> CDMS (Def) 160 <dec> CDMS (Def) 161 <dec>	
43		Switch OFF TWT Assembly 1 (TWTA1)		Next Step: 44
		Command TWTA1 OFF - TC(8,4,115,1) performs : Switch TWT Amplifier 1 (TWT1) OFF Switch EPC1 OFF Switch OP-LCL49 (TWTA1) OFF		
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandTwtalOff TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Ttc Command TWTA 1 Off TC(8,4,115,1)	DC06E170	
44		Switch OFF TWT Assembly 2 (TWTA2)		Next Step: 45
		Command TWTA2 OFF - TC(8,4,115,1) performs : Switch TWT Amplifier 2 (TWT2) OFF Switch EPC2 OFF Switch OP-LCL50 (TWTA2) OFF		

Switch ON TX2 and TWTA2
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandTwta2Off <i>TC Control Flags :</i> GBM IL DSE --Y -- --- <i>Subsch. ID : 10</i> <i>Det. descr. : Ttc Command TWTA 2 Off TC(8,4,115,1)</i>	DC07E170	
45		Switch OFF XPND1		Next Step: 46
		Command XPND1 OFF - TC(8,4,115,1) performs : Switch XPND TX1 OFF Configure TX1 "OFF" and "INVALID" on the 1553 S/C bus Note that it leaves LCL23 (XPND1) ON		
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandXpnd1Off <i>TC Control Flags :</i> GBM IL DSE --Y -- --- <i>Subsch. ID : 10</i> <i>Det. descr. : Ttc Command Xpnd 1 Off TC(8,4,115,1)</i>	DCN80170	
46		Switch OFF XPND2		Next Step: 47
		Command XPND2 OFF - TC(8,4,115,1) performs : Switch XPND TX2 OFF Configure TX2 "OFF" and "INVALID" on the 1553 S/C bus Note that it leaves LCL16 (XPND2) ON		
	ET=+00.00.30 UT=+	Execute Telecommand TtcCommandXpnd2Off <i>TC Control Flags :</i> GBM IL DSE --Y -- --- <i>Subsch. ID : 10</i> <i>Det. descr. : Ttc Command Xpnd 2 Off TC(8,4,115,1)</i>	DCN81170	
47		Configure RFDN switches (yes/no)?		Next Step: yes 48 no 49
48		Send TCs to move the SWs SUR2		Next Step: 49

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Launch/Sun acquisition after separation/Survival (SUR2) RFDN SWs position ABBB D/L path: TX2 - TWTA2 - LGA1 U/L path: LGA1 - RX2 (LGA2 - RX1)		
		WARNING: if the commands are sent in real time, after the execution of the first pair of commands ("arm" and "fire") Ground station has to re-sweep the uplink to re-acquire the lock and send the second pair of TCs.		
	ET=+00.00.05 UT=+	Execute Telecommand RfdnArmsW1_SW2LogB <i>TC Control Flags :</i> GBM IL DSE --Y -- --- <i>Subsch. ID : 10</i> Det. descr. : Rfdn Arm SW1/SW2 (logical) Position B TC(8,4,115,6)	DC57E170	
	ET=+00.00.05 UT=+	Execute Telecommand RfdnFireSW1_SW2_log_B <i>TC Control Flags :</i> GBM IL DSE --Y -- --- <i>Subsch. ID : 10</i> Det. descr. : Rfdn Fire SW1/SW2 (logical) Position B TC(8,4,115,8)	DC77E170	
	ET=+00.00.05 UT=+	Execute Telecommand RfdnArmSW3_SW4_log_A <i>TC Control Flags :</i> GBM IL DSE --Y -- --- <i>Subsch. ID : 10</i> Det. descr. : Rfdn Arm Command SW3/SW4 (logical) Position A TC(8,4,115,5)	DC48E170	
	ET=+00.00.05 UT=+	Execute Telecommand RfdnFireSW3_SW4_log_A <i>TC Control Flags :</i> GBM IL DSE --Y -- --- <i>Subsch. ID : 10</i> Det. descr. : Rfdn Fire SW3/SW4 (logical) Position A TC(8,4,115,7)	DC68E170	
49		Switch ON XPND2		Next Step: 50
		Command XPND2 ON - TC(8,4,115,2) performs : Switch LCL16 (XPND2) ON Configure TX2 "ON" and "VALID" on the 1553 S/C bus Switch XPND TX2 ON		

Switch ON TX2 and TWTA2
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET+=00.00.30 UT=+	Execute Telecommand TtcCommandXpnd2On TC Control Flags : Subsch. ID : 10 Det. descr. : Ttc Command Xpnd 2 On TC(8,4,115,2) GBM IL DSE --Y -- --	DCN84170	
50		Set the parameters and send TC(8,4,115,9) to configure the XPND2 to MR		Next Step: 51
	ET+=00.00.30 UT=+	Execute Telecommand XpndConfigure_Templ Command Parameter(s) : XpndId DH018170 XpndB XpndConfMask1Unus DH220170 11 <bin> XpndConfMask1_ER DH221170 ON XpndConfMask1_CM DH222170 ON XpndConfMask1_RM DH223170 ON XpndConfMask1_HRM DH224170 ON XpndConfMask1_MRM DH225170 ON XpndConfMask1LRM1 DH226170 ON XpndConfMask1LRM2 DH227170 ON XpndConfMask1_RMI DH228170 Update XpndConfMask1_TMI DH229170 Update XpndConfMask2_PG DH230170 ON XpndConfMask2Unus DH231170 111111111111 <bin> XpndConfMask2OPLS DH232170 Update XpndConfDW1Unus DH020170 0 <dec> (Def) XpndConfDW1_ER DH021170 OFF (Def) XpndConfDW1_CM DH022170 OFF (Def) XpndConfDW1_RM DH023170 OFF (Def) XpndConfDW1_HRM DH024170 OFF (Def) XpndConfDW1_MRM DH025170 ON XpndConfDW1LRM1 DH026170 OFF (Def) XpndConfDW1LRM2 DH027170 OFF (Def) XpndConfDW1_RMI DH028170 0.6 XpndConfDW1_TMI DH029170 1.2 XpndConfDW2_PG DH030170 OFF (Def) XpndConfDW2Unus DH031170 0 <dec> (Def) XpndConfDW2OPLS DH032170 -4 TC Control Flags : Subsch. ID : 10 Det. descr. : TEMPLATE Configure Xpnd TC(8,4,115,9) GBM IL DSE --Y -- --	DCT18170	
51		Send TC(8,4,115,20) to configure the TM encoder to MR		Next Step: 52

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.05 UT=+	Execute Telecommand TtcConfTmEncInUseMedium <i>TC Control Flags :</i> Subsch. ID : 10 Det. descr. : TTC: Config TM Enc In Use Mode Medium 150 kbps, TC(8,4,115,20) GBM IL DSE --Y -- ---	DC22F170	
52		Send TC(8,4,115,17) to switch OFF the TM subsampling		Next Step: 53
	ET=+00.00.05 UT=+	Execute Telecommand TtcSwitchTmSubsamplOff <i>TC Control Flags :</i> Subsch. ID : 10 Det. descr. : TTC: Switch TM Subsampling Off TC(8,4,115,17) GBM IL DSE --Y -- ---	DC03F170	
53		Enable the downlink of essentials and periodics HK packets		Next Step: 54
		Execute Procedure: H_FCP_DHS_1003 Nominal TRANSMIT/STORAGE settings		
		Execute Procedure: H_FCP_DHS_1009 Enable default HK packets		
54		Switch ON TWTA2 (OPLCL50+EPC2+TWT2)		Next Step: 55
	ET=+00.00.05 UT=+	Execute Telecommand TtcCommandTwta2On <i>TC Control Flags :</i> Subsch. ID : 10 Det. descr. : Ttc Command TWTA 2 On TC(8,4,115,2) GBM IL DSE --Y -- ---	DC17E170	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name :HRRT201F (Tx2+TWTA2 ON final)				
TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
55		Verify XPND2 and TWTA2 setting and RFDN SWS position		Next Step: 56
55.1		Rx2 power line status verification		<input type="checkbox"/>
		Verify FCL4 (XPND2 Rx) voltage Telemetry Xpnd2_Rx_FCL4_V WM403565	>= 27.96 V <= 28.71 V	(None)
		Verify FCL4 (XPND2 Rx) current Telemetry Xpnd2_Rx_FCL4_I WM402565	>= 0.20 A <= 0.35 A	AND=ZAZ7I999
55.2		Rx2 analogue telemetry verification		<input type="checkbox"/>
		Verify RX2 AGC Level Telemetry XPD2_RX2_AGC_LV RMB10442		AND=ZAZ7I999
		Verify RX2 PLL SPE Telemetry XPD2_RX2_PLL_SP RMB12442		AND=ZAZ7I999
		Verify Rx2 TC bit rate Telemetry RX2_125-4K_Stat RMB18442		AND=ZAZ7I999
		Verify Rx2 Supply Voltage Telemetry XPND2_RX2_SUP_V RMB08442	>= 4.8 V <= 5.5 V	AND=ZAZ7I999
		Verify Rx2 temperature Telemetry RX2_TEMP RMB04442		AND=ZAZ7I999
55.3		Tx2 power line status verification		<input type="checkbox"/>
		Verify LCL16 (XPND2 Tx) status Telemetry Xpnd2Tx_L16_S WM92C565	= ON	AND=ZAZ7I999
		Verify LCL16 (XPND2 Tx) Telemetry Xpnd2Tx_L16_I WM908565	>= 0.41 A <= 0.55 A	AND=ZAZ7I999
55.4		Tx2 analogue telemetry verification		<input type="checkbox"/>
		Verify Tx2 Status Telemetry TX2_ON-OFF_Stat RMB16442	= ON	AND=ZAZ7I999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Tx2 RF Output Power Telemetry XPD2_RF2_OUT_PW RMB14442	<= -4.0 dbmW >= -4.8 dbmW	AND=ZAZ7I999
		Verify Tx2 Supply Voltage Telemetry XPND2_TX2_SUP_V RMB06442	>= 6.0 V <= 6.9 V	AND=ZAZ7I999
		Verify Tx2 Temperature Telemetry TX2_TEMP RMB03442		AND=ZAZ7I999
55.5		Verify XPND2 status on the 1553 S/C bus		□
		Verify Telemetry XPND2On_Off DEFD1160	= ON	AND=ZAZ7I999
		Verify Telemetry XPND2Val_Inval DEFD5160	= Valid	AND=ZAZ7I999
55.6		XPND2 1553 S/C bus TM verification		□
		Verify XPND2 status Telemetry X2 Status - XS RMB43442	= TM mode active	AND=ZAZ7I999
		Verify Low Rate-1 status Telemetry X2 LowRate-1 MD RMB51442		AND=ZAZ7I999
		Verify Low Rate-2 status Telemetry X2 LowRate-2 MD RMB52442		AND=ZAZ7I999
		Verify Medium Rate Modulator status Telemetry X2 MedRate-MRM RMB50442		AND=ZAZ7I999
		Verify High Rate status Telemetry X2 HIRateMD-HRM RMB49442		AND=ZAZ7I999
		Verify Ranging Modulator status Telemetry X2 Rang MD - RM RMB48442	= OFF	AND=ZAZ7I999
		Verify Coherent Mode status Telemetry X2 Coher MOD-CM RMB47442	= OFF	AND=ZAZ7I999
		Verify Telemetry X2 RNGMD ID-RMI RMB53442	= 0.6 rad	AND=ZAZ7I999
		Verify Telemetry X2 TM MD ID-TMI RMB54442	= 1.2 rad	AND=ZAZ7I999
		Verify Telemetry X2 OutPowLevSet RMB56442	= -4 dbmW	AND=ZAZ7I999
		Verify Telemetry X2 IntBitPatGen RMB55442	= OFF	AND=ZAZ7I999
		Verify Telemetry X2 Ext Ref - ER RMB46442	= OFF	AND=ZAZ7I999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Receiver lock status Telemetry X2 Rx Lock - RL RMB45442		AND=ZAZ7I999
		Verify RX AGC Level Telemetry X2 AGC TMUpInk RMB41442		AND=ZAZ7I999
		Verify PLL Phase Error Telemetry X2 RX PLL PhErr RMB40442		AND=ZAZ7I999
		Verify Squelch Status Telemetry X2 SqlchSts-SS RMB44442		AND=ZAZ7I999
		Verify Telemetry X2 TcBitRateTCB RMB62442		(None)
55.7		<i>TM Encoder (in use) verification</i>		☐
		Verify Telemetry TME_BITRATE DEMRF160		AND=ZAZ7J999
		Verify Telemetry BSW_TM_MODE DEMF0160		AND=ZAZ7J999
55.8		<i>TWTA2 setting verification</i>		☐
		Verify OPLCL50 (TWTA 2) Status Telemetry Twta_2_L50_1S WM92E565	= ON	AND=ZAZ7J999
		Verify TWTA2 current Telemetry Twta_2_L50_I WM910565	>= 2.2 A <= 2.8 A	AND=ZAZ7J999
		Verify EPC2 Status Telemetry EPC2_ONOFF_STS RMB07439	= ON	AND=ZAZ7J999
		Verify EPC2 Anode Voltage Telemetry EPC2_ANODE_VOLT RMB03439	<= 1058.0 V >= 998.0 V	AND=ZAZ7J999
		Verify EPC2 Helix current Telemetry EPC2_HELIX_CURR RMB04439	<= 0.46 mA >= 1.59 mA	AND=ZAZ7J999
		Verify EPC2 Automatic Restart Status Telemetry EPC2_AUT_RSTART RMB08439	= NOTACTIVE	AND=ZAZ7J999
		Verify EPC2 Temperature Telemetry EPC2_TEMP RMB12439		AND=ZAZ7J999
		Verify TWT2 Status Telemetry TWT2_ONOFF_STS RMB10439	= ON	AND=ZAZ7J999
55.9		<i>RFDN SWS position verification</i>		☐

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RFDN SW1 Pos A RMB05436		AND=ZAZ7J999
		Verify Telemetry RFDN SW1 Pos B RMB09436		AND=ZAZ7J999
		Verify Telemetry RFDN SW2 Pos A RMB06436		AND=ZAZ7J999
		Verify Telemetry RFDN SW2 Pos B RMB10436		AND=ZAZ7J999
		Verify Telemetry RFDN SW3 Pos A RMB07436		AND=ZAZ7J999
		Verify Telemetry RFDN SW3 Pos B RMB11436		AND=ZAZ7J999
		Verify Telemetry RFDN SW4 Pos A RMB08436		AND=ZAZ7J999
		Verify Telemetry RFDN SW4 Pos B RMB12436		AND=ZAZ7J999
		Verify RFDN Diplexer 1 Temp Telemetry RFDN_DIPL1_TEMP RMB03436		AND=ZAZ7J999
		Verify RFDN Diplexer 2 Temp Telemetry RFDN_DIPL2_TEMP RMB04436		AND=ZAZ7J999
		Verify RFDN Isolator 1 Temp Telemetry RFDN_ISOL1_TEMP RMB01436		AND=ZAZ7J999
		Verify RFDN Isolator 2 Temp Telemetry RFDN_ISOL2_TEMP RMB02436		AND=ZAZ7J999
55.10		UIU table verification		☐
		Verify Telemetry XpndTx2FuncSts DEL31170	= On	AND=ZAZ7M999
		Verify Telemetry TwtA2FuncSts DEL23170	= On	AND=ZAZ7M999
		Verify Telemetry Epc2FuncSts DEG29170	= On	AND=ZAZ7M999
		Verify Telemetry TwtAmp2FuncSts DEH17170	= On	AND=ZAZ7M999
		Verify Telemetry Rfdn1FuncSts DEH49170		AND=ZAZ7M999
		Verify Telemetry Rfdn2FuncSts DEH53170		AND=ZAZ7M999
		Verify Telemetry Rfdn3FuncSts DEH57170		AND=ZAZ7M999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry Rfdn4FuncSts DEH61170		AND=ZAZ7M999
56		Send TCs(8,4,116,19) to update the UIU table		Next Step: 57
		After the execution of this TC the XPND2 (RX+TX) and the TWTA2 (EPC+TWT) are considered the nominal units.		
		Execute Telecommand SelNomUnitB_XpndRx TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Fdir Select Nominal Unit B XPND RX, TC(8,4,116,19)	DC71G170	
57		Verify UIU table status		Next Step: 58
		Verify Telemetry XpndRx2LogSts DEL61170	= Nominal	AND=ZAZ7M999
		Verify Telemetry XpndTx2LogSts DEL32170	= Nominal	AND=ZAZ7M999
		Verify Telemetry TwtA2LogSts DEL24170	= Nominal	AND=ZAZ7M999
		Verify Telemetry TwtAmp2LogSts DEH18170	= Nominal	AND=ZAZ7M999
		Verify Telemetry Epc2LogSts DEG30170	= Nominal	AND=ZAZ7M999
58		Send TC(19,4) to re-enable XPND1 and TWTA1 relevant EAT entries		Next Step: 59
		When this request is received, the action-telecommand associated with the corresponding event shall be enabled. In the TC(19,4) it is necessary to set the following parameters: N, number of events to be enabled. APID, identifier of the Application Process generating this event report, in this case always equal to 16 (CDMU). Event ID, identifier of the event to be enabled, in this case equal to: 37400 & 37416 (TWTA1 failure), 37402 (XPND1 RX failure) Note that the Event ID 160 (XPND1 invalid RT) remains disabled.		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: right;">EnableActions</p> Command Parameter(s) : N_Repetition DH041170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : TEMPLATE Enable Actions TC(19,4)	DCT84170	
59		Send TC(19,4) to re-enable XPND2 and TWTA2 relevant EAT entries		Next Step: 60
		<p>When this request is received, the action-telecommand associated with the corresponding event shall be enabled. In the TC(19,4) it is necessary to set the following parameters:</p> <p>N, number of events to be enabled. APID, identifier of the Application Process generating this event report, in this case always equal to 16 (CDMU). Event ID, identifier of the event to be enabled, in this case equal to: 37401 & 37417 (TWTA2 failure), 37403 (XPND2 RX failure), 161 (XPND2 invalid RT).</p>		
		Execute Telecommand <p style="text-align: right;">EnableActions</p> Command Parameter(s) : N_Repetition DH041170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 APID_for_EAT_TC DH236170 EventId DH146170 TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : TEMPLATE Enable Actions TC(19,4)	DCT84170	
60		Send TC(19,6) to acquire the detection list		Next Step: 61

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: right;">ReptEvtActTable</p> <i>TC Control Flags :</i> <p style="text-align: right;">GBM IL DSE --Y -- --</p> <i>Subsch. ID : 10</i> Det. descr. : TEMPLATE Report The contents of the event/action table TC(19,6)	DCT86170	
61		Verify that TM(19,7) have been received and actions related to XPNDs-TWTAs are enabled		Next Step: END
		Verify Packet Reception TM 19-7 Event-Action Table Content Report <i>Packet Details:</i> <p style="text-align: right;">APID: 16 Type: 19 Subtype: 7 PI1: PI2:</p>	EvtActTblRpt	
		Verify that the following Event ID are enabled: 37400 & 37416 (TWTA1 failure), 37402 (XPND1 RX failure), 37401 & 37417 (TWTA2 failure), 37403 (XPND2 RX failure), 161 (XPND2 invalid RT). Verify that the Event ID 160 (XPND1 invalid RT) is disabled.		
End of Procedure				