

TTC chain 2 health check
File: H_FCP_TTC_T2HC.xls
Author: E. Picallo



Procedure Summary

Objectives

This procedure describes the steps needed to verify that the redundant Tx (XPND2) communicates on the 1553 Bus and that the reported telemetry is as expected. This means that the telemetry parameters associated to the configuration registers are still the programmed ones according to operational Tx setting for MBR while the analog telemetry & Extra TM values are frozen (to the last data acquired)

Summary of Constraints

Expected XPND2 setting is the programmed one according to nominal operational Tx configuration for MBR (related to XPND Configuration Register 1 and 2):

- RNG modulation index = 0.6;
- TM modulation index = 1.2;
- Coherent and Ranging modulator = OFF;
- Output power level = - 4dBm;
- Ext.ref. & Int.bit pattern generator = OFF;

The Analogue TM Register should read values similar to the corresponding Analogue telemetries. However in the current XPND2 state is expected to read fixed values as follows:

- PLL Phase Error = 440.0 Khz
- AGLC TLM/Uplink Level = 32.5 dbmW

The Extra TM Register should read the following values:

- Telemetry counter = increasing;
- Transponder Status = TM mode Active;
- Squelsh Status = OFF (assuming U/L swept in narrow range);
- Rx Lock status = Locked (assuming U/L sweep in narrow range);

However in the current XPND2 state is expected to read fixed values as follows:

- Telemetry counter = 80;
- Squelsh Status = ON;
- Rx Lock status = NO locked;

Spacecraft Configuration

Start of Procedure

CDMU in default configuration.
Downlink active via TX1 and TWTAL.
XPND 2 LCL ON and configured "OFF and " INVALID" on SDB
RX1 TC rate = 4kbps, RX2 TC rate = 125bps.
Chain 1 marked as "nominal" in UIU table.
Chain 2 marked as "redundant" in UIU table.

End of Procedure

CDMU in default configuration.
Downlink active via TX1 and TWTAL.
XPND 2 LCL ON and configured "OFF and " INVALID" on SDB
RX1 TC rate = 4kbps, RX2 TC rate = 125bps.
Chain 1 marked as "nominal" in UIU table.
Chain 2 marked as "redundant" in UIU table.

Reference File(s)

Input Command Sequences

Output Command Sequences

HFRT2HC

TTC chain 2 health check
 File: H_FCP_TTC_T2HC.xls
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Referenced Displays

ANDs	GRDs	SLDs
WALC1584		(None)
ZAZ7I999		
ZAZ39999		
ZAZ7N999		
ZAD1L999		

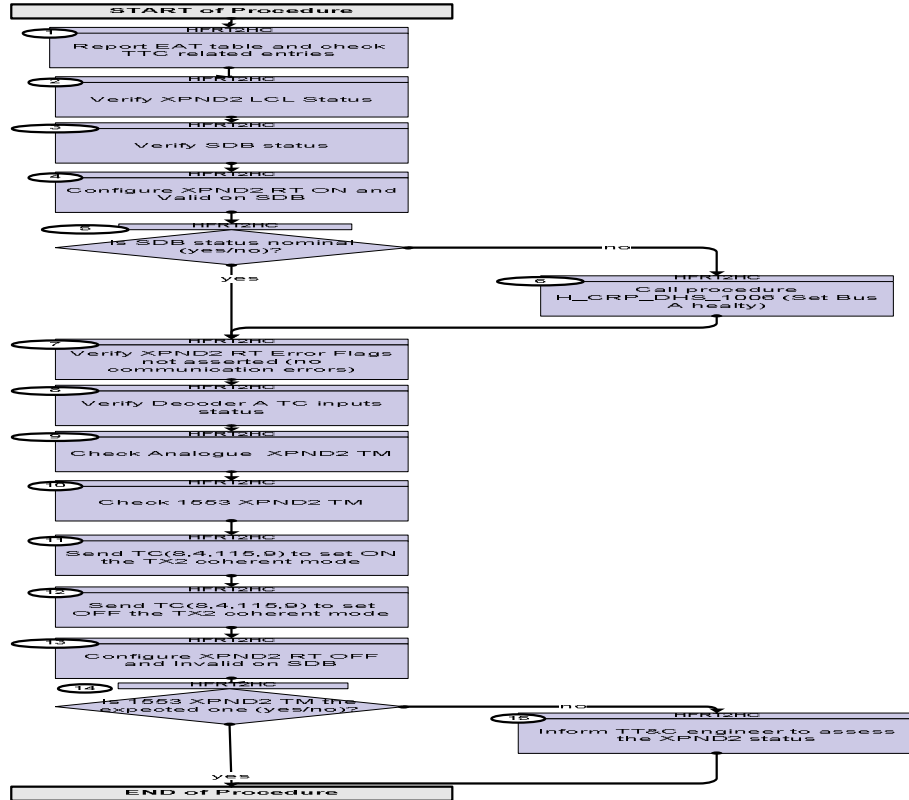
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
04/06/09		1	Created	E. Picallo	
05/06/09		2	XPND2 Analogue telemetries added XPND2 Telemetry counter added SDB telemetries checks added RX2 expected Lock status corrected	E. Picallo	
15/06/09		3	Option to Disable EAT entry relevant to XPND2 RT deleted Expected 1553 XPND2 analog TM & Extra TM frozen values added Coherent Mode Activation/Deactivation added	E. Picallo	
17/06/09	2.5	4	sequence generation	E. Picallo	

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Procedure Flowchart Overview



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 File: H_FCP_TTC_T2HC.xls
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
TC Seq. Name : HFRT2HC (TTC 2 health check) TTC chain 2 health check TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
1		Report EAT table and check TTC related entries		Next Step: 2
		Execute Telecommand <div style="text-align: right;">ReptEvtActTable</div> DCT86170 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- --</div> Subsch. ID : 10 Det. descr. : TEMPLATE Report The contents of the event/action table TC(19,6)		
		Check that the following EAT entries are enabled: EventID Event Description 0x00A0 XPND1_NOT_VIT_RT_INV 0x9218 EPC1_HelixCur_OutHi_Lim 0x9219 EPC2_HelixCur_OutHi_Lim 0x9228 EPC1_HelixCur_OutLo_Lim 0x9229 EPC2_HelixCur_OutLo_Lim 0x921A XPND1 RX Failure 0x921B XPND2 RX Failure		
		0x9200 RFDNSW1_Not_In_PosB_Fail 0x9201 RFDNSW1_Not_In_PosA_Fail 0x9202 RFDNSW2_Not_In_PosB_Fail 0x9203 RFDNSW2_Not_In_PosA_Fail 0x9204 RFDNSW3_Not_In_PosB_Fail 0x9205 RFDNSW3_Not_In_PosA_Fail 0x9206 RFDNSW4_Not_In_PosB_Fail 0x9207 RFDNSW4_Not_In_PosA_Fail		
		Check that the following EAT entries is disabled: EventID Event Description 0x00A1 XPND2_NOT_VIT_RT_INV		
2		Verify XPND2 LCL Status		Next Step: 3
		Verify Telemetry <div style="text-align: right;">Xpnd2Tx_L16_S WM92C565</div> = ON		AND=WALC1584
		Verify Telemetry <div style="text-align: right;">Xpnd2Tx_L16_I WM908565</div> >= 0.30 A <= 0.40 A		AND=ZAZ7I999
3		Verify SDB status		Next Step: 4

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		Verify Telemetry Active_Bus_A_B DEFJ1160	= BUS_A	AND=ZAZ39999																																																																																													
		Verify Telemetry BusA_HealthySts DEFJ2160	= Healthy	AND=ZAZ39999																																																																																													
		Verify Telemetry BusB_HealthySts DEFJ3160	= Healthy	AND=ZAZ39999																																																																																													
		Verify Telemetry SDB_FDIR DEFJ4160	= ENABLED	AND=ZAZ39999																																																																																													
4		Configure XPND2 RT ON and Valid on SDB		Next Step: 5																																																																																													
4.1		Set XPND2 RT ON and Valid		<input type="checkbox"/>																																																																																													
		Execute Telecommand ConfigureSDBFDIR Command Parameter(s) :	DC005161																																																																																														
		<table border="0"> <tr><td>RTA</td><td>DH011161</td><td>XPND 2</td></tr> <tr><td>M0</td><td>DH030161</td><td>Update status</td></tr> <tr><td>M1</td><td>DH031161</td><td>Ignore Flag</td></tr> <tr><td>M2</td><td>DH032161</td><td>Ignore Flag</td></tr> <tr><td>M3</td><td>DH033161</td><td>Ignore Flag</td></tr> <tr><td>M4</td><td>DH034161</td><td>Update status</td></tr> <tr><td>M5</td><td>DH035161</td><td>Ignore Flag</td></tr> <tr><td>M6</td><td>DH036161</td><td>Ignore Flag</td></tr> <tr><td>M7</td><td>DH037161</td><td>Ignore Flag</td></tr> <tr><td>F0</td><td>DH018161</td><td>ON</td></tr> <tr><td>F1</td><td>DH019161</td><td>Alive</td></tr> <tr><td colspan="3"> </td></tr> <tr><td>F2</td><td>DH020161</td><td>Well TC</td></tr> <tr><td>F3</td><td>DH021161</td><td>Well TM</td></tr> <tr><td>F4</td><td>DH022161</td><td>Valid</td></tr> <tr><td>F5</td><td>DH023161</td><td>Non-vital</td></tr> <tr><td>F6</td><td>DH024161</td><td>NOMINAL</td></tr> <tr><td>F7</td><td>DH025161</td><td>ON</td></tr> <tr><td>M12</td><td>DH051161</td><td>Ignore Flag</td></tr> <tr><td>M_C</td><td>DH043161</td><td>Ignore CNT</td></tr> <tr><td>M8</td><td>DH038161</td><td>Ignore Flag</td></tr> <tr><td>M9</td><td>DH039161</td><td>Ignore Flag</td></tr> <tr><td>M10</td><td>DH040161</td><td>Ignore Flag</td></tr> <tr><td>M11</td><td>DH041161</td><td>Ignore Flag</td></tr> <tr><td>F12</td><td>DH050161</td><td>ENABLED</td></tr> <tr><td>CNT</td><td>DH042161</td><td>LoopCnt1</td></tr> <tr><td>F8</td><td>DH026161</td><td>Bus A</td></tr> <tr><td colspan="3"> </td></tr> <tr><td>F9</td><td>DH027161</td><td>Healthy</td></tr> <tr><td>F10</td><td>DH028161</td><td>Healthy</td></tr> <tr><td>F11</td><td>DH029161</td><td>ENABLED</td></tr> </table>	RTA	DH011161	XPND 2	M0	DH030161	Update status	M1	DH031161	Ignore Flag	M2	DH032161	Ignore Flag	M3	DH033161	Ignore Flag	M4	DH034161	Update status	M5	DH035161	Ignore Flag	M6	DH036161	Ignore Flag	M7	DH037161	Ignore Flag	F0	DH018161	ON	F1	DH019161	Alive				F2	DH020161	Well TC	F3	DH021161	Well TM	F4	DH022161	Valid	F5	DH023161	Non-vital	F6	DH024161	NOMINAL	F7	DH025161	ON	M12	DH051161	Ignore Flag	M_C	DH043161	Ignore CNT	M8	DH038161	Ignore Flag	M9	DH039161	Ignore Flag	M10	DH040161	Ignore Flag	M11	DH041161	Ignore Flag	F12	DH050161	ENABLED	CNT	DH042161	LoopCnt1	F8	DH026161	Bus A				F9	DH027161	Healthy	F10	DH028161	Healthy	F11	DH029161	ENABLED		
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4.2		Verify XPND2 status on the 1553 S/C bus		<input type="checkbox"/>
		Verify Telemetry XPND2On_Off DEFJ1160	= ON	AND=ZAZ71999
		Verify Telemetry XPND2Val_Inval DEFJ5160	= Valid	AND=ZAZ71999
5		Is SDB status nominal (yes/no)?		Next Step: no 6 yes 7
5.1		SDB nominal status		<input type="checkbox"/>
		Verify Telemetry Active_Bus_A_B DEFJ1160	= BUS_A	AND=ZAZ39999
		Verify Telemetry BusA_HealthySts DEFJ2160	= Healthy	AND=ZAZ39999
		Verify Telemetry BusB_HealthySts DEFJ3160	= Healthy	AND=ZAZ39999
5.2		SDB non nominal status (contignecy case)		<input type="checkbox"/>
		IF XPND2 RT does not response on BUS A but does it on BUS B		
		Verify Telemetry Active_Bus_A_B DEFJ1160	= BUS_B	AND=ZAZ39999
		Verify Telemetry BusA_HealthySts DEFJ2160	= Unhealthy	AND=ZAZ39999
		Verify Telemetry BusB_HealthySts DEFJ3160	= Healthy	AND=ZAZ39999
6		Call procedure H_CRP_DHS_1006 (Set Bus A healty)		Next Step: 7
7		Verify XPND2 RT Error Flags not asserted (no communication errors)		Next Step: 8
7.1		Verify XPND2 Response Status Word		<input type="checkbox"/>

TTC chain 2 health check
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		<p>The XPND RT reports the following error flags in the Response Status Words via 1553 bus:</p> <ul style="list-style-type: none"> - RT message error bit: set by the RT upon detection of an error in the message or an illegal message identification. - RT busy bit: indicates that the RT or subsystem is unable to move data to or from the subsystem in compliance with the BC command. - RT terminal flag bit: indicates a RT fault condition. <p>These RT error bits are not supported by DLL FDIR mechanisms. Thus, if a permanent error is reported on one of these bits, this could indicate a failure in the XPND.</p> <p>Note: The XPND assert the subsystem error flag while TM acquisitions are being performed.</p>		
		<p>The following DIDs are available for XPND2:</p> <p>DID_XPND_2_SA11_RSP_STS_WORD DID_XPND_2_SA30_RSP_STS_WORD</p>		
		<p>The value of the error bits is kept in all the above mentioned DIDs. In case of <u>permanent failures</u> this means that, for example, if DID_XPND_2_SA11_RSP_STS_WORD is indicating a RT message error condition, the same error will be reported in all the other DIDs for response status words.</p> <p>Then, it is enough to check only one of these Status Words. The parameters below correspond to: DID_XPND_2_SA11_RSP_STS_WORD</p>		
		Verify XPND2 RT message error bit status Telemetry MsgErr DEYT2161	= 0 <dec>	AND=ZAZ7N999
		Verify XPND2 RT busy bit status Telemetry Busy DEYT6161	= 0 <dec>	AND=ZAZ7N999
		Verify XPND2 subsystem error flag status Telemetry SubSys DEYT7161	= 1 <dec>	AND=ZAZ7N999
		Verify XPND2 RT terminal flag bit status Telemetry Term DEYT9161	= 0 <dec>	AND=ZAZ7N999
7.2		Verify XPND2 Local message Status Word		□
		Local message Status Word (MSW)		
		Verify Loopback command sync error Telemetry LoopCmdSync DE4YA161	= 0 <dec>	AND=ZAD1L999
		Verify Loopback data sync error Telemetry LoopDatSync DE4YB161	= 0 <dec>	AND=ZAD1L999
		Verify Loopback manchester error Telemetry LoopManch DE4YC161	= 0 <dec>	AND=ZAD1L999

TTC chain 2 health check
 File: H_FCP_TTC_T2HC.xls
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		Verify Loopback parity error Telemetry LoopPar DE4YD161	= 0 <dec>	AND=ZAD1L999
		Verify Loopback word count error Telemetry LoopWdCnt DE4YE161	= 0 <dec>	AND=ZAD1L999
		Verify response 1 expected Telemetry Rsp1Expd DE4YF161	= 1 <dec>	AND=ZAD1L999
		Local message Status Word (LSW)		
		Verify Response 1 status sync error Telemetry Rsp1StsSync DE4YG161	= 0 <dec>	AND=ZAD1L999
		Verify Response 1 data sync error Telemetry Rsp1DatSync DE4YH161	= 0 <dec>	AND=ZAD1L999
		Verify Response 1 Manchester error Telemetry Rsp1Manch DE4YJ161	= 0 <dec>	AND=ZAD1L999
		Verify Response 1 parity error Telemetry Rsp1Par DE4YK161	= 0 <dec>	AND=ZAD1L999
		Verify Response 1 word count error Telemetry Rsp1WdCnt DE4YL161	= 0 <dec>	AND=ZAD1L999
		Verify Response 1 store Data word Telemetry Rsp1Words DE4YM161	= 4 <dec>	AND=ZAD1L999
		Verify Response 2 expected Telemetry Rsp2Expd DE4YN161	= 0 <dec>	AND=ZAD1L999
		Verify Response 2 status sync error Telemetry Rsp2StsSync DE4YP161	= 0 <dec>	AND=ZAD1L999
		Verify Response 2 Manchester error Telemetry Rsp2Manch DE4YR161	= 0 <dec>	AND=ZAD1L999
		Verify Response 2 parity error Telemetry Rsp2Par DE4YS161	= 0 <dec>	AND=ZAD1L999
		Verify Response 2 word count error Telemetry Rsp2WdCnt DE4YT161	= 0 <dec>	AND=ZAD1L999
		The layout of the Local message Status Word (LSW) is attached at the end of the procedure		
8		Verify Decoder A TC inputs status		Next Step: 9
		Verify TC0 Status Decoder A Telemetry TC0_Status_A DEEP7160	= Active	(None)
		Verify TC1 Status Decoder A Telemetry TC1_Status_A DEEP6160	= Inactive	(None)

TTC chain 2 health check
 File: H_FCP_TTC_T2HC.xls
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		<p>The TC Active status TM provides the information that the following conditions are meet:</p> <ul style="list-style-type: none"> - Rx Demodulator locked on uplink carrier and - Rx Demodulator locked on uplink subcarrier <p>i.e. it is the logic AND of Carrier Lock Status and Squelch Status Telemetry</p> <p>Assuming U/L swept in narrow range (only Rx1 is locked): TC0_Status_A is Active (XPND1 Rx valid signal to Decoder A)</p> <p>TC1_Status_A is inactive (XPND2 Rx no valid signal to Decoder A)</p>		
9		Check Analogue XPND2 TM		Next Step: 10
		Verify RX AGC Level Telemetry XPD2_RX2_AGC_LV RMB10442	>= -140.0 dbmW	AND=ZAZ7I999
		Verify PLL Phase Error Telemetry XPD2_RX2_PLL_SP RMB12442	< 130.0 kHz > -130.0 kHz	AND=ZAZ7I999
		Verify RF Output Power Telemetry XPD2_RF2_OUT_PW RMB14442	< -13.0 dbmW	AND=ZAZ7I999
		Verify RX TC rate Status Telemetry RX2 125-4K Stat RMB18442	= 125 bps	AND=ZAZ7I999
		Verify Transmitter temperature Telemetry TX2_TEMP RMB03442	> 20.0 degC	AND=ZAZ7I999
10		Check 1553 XPND2 TM		Next Step: 11
		Verify XPND2 status Telemetry X2 Status - XS RMB43442	= NoTmModeActive	AND=ZAZ7I999
		Verify Telemetry counter Telemetry X2 TLM counter RMB42442	= 80 <dec>	AND=ZAZ7I999
		Verify Low Rate-1 status Telemetry X2 LowRate-1 MD RMB51442	= OFF	AND=ZAZ7I999
		Verify Low Rate-2 status Telemetry X2 LowRate-2 MD RMB52442	= OFF	AND=ZAZ7I999
		Verify Medium Rate Modulator status Telemetry X2 MedRate-MRM RMB50442	= ON	AND=ZAZ7I999
		Verify High Rate status Telemetry X2 HIRateMD-HRM RMB49442	= OFF	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

TTC chain 2 health check
 File: H_FCP_TTC_T2HC.xls
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		Verify RNG Modulation Index Telemetry X2 RNGMD ID-RMI RMB53442	= 0.6 rad	AND=ZAZ7I999
		Verify TM Modulation Index Telemetry X2 TM MD ID-TMI RMB54442	= 1.2 rad	AND=ZAZ7I999
		Verify Output Power Level Setting Telemetry X2 OutPowLevSet RMB56442	= -4 dbmW	AND=ZAZ7I999
		Verify Internal Bit Pattern Generator Telemetry X2 IntBitPatGen RMB55442	= OFF	AND=ZAZ7I999
		Verify External Reference Telemetry X2 Ext Ref - ER RMB46442	= OFF	AND=ZAZ7I999
		Verify Receiver lock status Telemetry X2 Rx Lock - RL RMB45442	= No locked	AND=ZAZ7I999
		Verify RX AGC Level Telemetry X2 AGC TMUplnk RMB41442	= 32.5 dbmW	AND=ZAZ7I999
		Verify PLL Phase Error Telemetry X2 RX PLL PhErr RMB40442	= 440.0 kHz	AND=ZAZ7I999
		Verify Squelch Status Telemetry X2 SqlchSts-SS RMB44442	= ON	AND=ZAZ7I999
		Verify Telemetry X2 TcBitRateTCB RMB62442	= Low	AND=ZAZ7I999
		It is expected that the following XPND2 telemeries provided through 1553 bus are not reliable (value remain frozen): PLL Phase Error, RX AGC Level, TLM counter, XPND status, Squelsh status Rx lock status		
11		Send TC(8,4,115,9) to set ON the TX2 coherent mode		Next Step: 12
		Execute Telecommand XpndConfigure_Templ Command Parameter(s) : XpndId DH018170 XpndConfMask1Unus DH220170 XpndConfMask1_ER DH221170 XpndConfMask1_CM DH222170 XpndConfMask1_RM DH223170 XpndConfMask1_HRM DH224170 XpndConfMask1_MRM DH225170 XpndConfMask1LRM1 DH226170 XpndConfMask1LRM2 DH227170 XpndConfMask1_RMI DH228170 XpndConfMask1_TMI DH229170	DCT18170 XpndB 11 <bin> OFF (Def) ON OFF (Def) OFF (Def) OFF (Def) OFF (Def) OFF (Def) OFF (Def) Ignore (Def) Ignore (Def)	

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		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)	OFF (Def) 0 <dec> (Def) Ignore (Def) 0 <dec> (Def) OFF (Def) ON OFF (Def) OFF (Def) ON OFF (Def) OFF (Def) ON OFF (Def) OFF (Def) 0.6 1.2 OFF (Def) 0 <dec> (Def) -4	
11.1		Verify that the TX2 coherent mode has been activate		<input type="checkbox"/>
		Verify Coherent Mode status Telemetry X2 Coher MOD-CM RMB47442	= ON	AND-ZAZ7I999
12		Send TC(8,4,115,9) to set OFF the TX2 coherent mode Execute Telecommand XpndConfigure_Templ Command Parameter(s) : XpndId DH018170 XpndConfMask1Unus DH220170 XpndConfMask1_ER DH221170 XpndConfMask1_CM DH222170 XpndConfMask1_RM DH223170 XpndConfMask1_HRM DH224170 XpndConfMask1_MRM DH225170 XpndConfMask1LRM1 DH226170 XpndConfMask1LRM2 DH227170 XpndConfMask1_RMI DH228170 XpndConfMask1_TMI DH229170	DCT18170 XpndB 11 <bin> OFF (Def) ON OFF (Def) OFF (Def) OFF (Def) OFF (Def) OFF (Def) OFF (Def) Ignore (Def) Ignore (Def)	Next Step: 13

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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)	OFF (Def) 0 <dec> (Def) Ignore (Def) 0 <dec> (Def) OFF (Def) OFF (Def) OFF (Def) OFF (Def) OFF (Def) ON OFF (Def) OFF (Def) 0.6 1.2 OFF (Def) 0 <dec> (Def) -4	
12.1		Verify that the TX2 coherent mode has been deactivate		<input type="checkbox"/>
		Verify Coherent Mode status Telemetry X2 Coher MOD-CM RMB47442	= OFF	AND=ZAZ7I999
13		Configure XPND2 RT OFF and Invalid on SDB		Next Step: 14
13.1		Set XPND2 RT OFF and Invalid		<input type="checkbox"/>
		Execute Telecommand ConfiguresDBFDIR Command Parameter(s) : RTA DH011161 M0 DH030161 M1 DH031161 M2 DH032161 M3 DH033161 M4 DH034161 M5 DH035161 M6 DH036161 M7 DH037161 F0 DH018161 F1 DH019161	DC005161 XPND 2 Update status Ignore Flag Ignore Flag Ignore Flag Ignore Flag Update status Ignore Flag Ignore Flag Ignore Flag OFF Alive	

TTC chain 2 health check
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		F2 DH020161 F3 DH021161 F4 DH022161 F5 DH023161 F6 DH024161 F7 DH025161 M12 DH051161 M_C DH043161 M8 DH038161 M9 DH039161 M10 DH040161 M11 DH041161 F12 DH050161 CNT DH042161 F8 DH026161	Well TC Well TM Invalid Non-vital NOMINAL ON Ignore Flag Ignore CNT Ignore Flag Ignore Flag Ignore Flag Ignore Flag ENABLED LoopCnt1 Bus A	
		F9 DH027161 F10 DH028161 F11 DH029161	Healthy Healthy ENABLED	
		TC Control Flags : Subsch. ID : 10 Det. descr. : Configure SDB FDIR	GBM IL DSE --Y -- ---	
13.2		Verify XPND2 status on the 1553 S/C bus		<input type="checkbox"/>
		Verify Telemetry XPND2On_Off DEFD1160	= OFF	AND=ZAZ7I999
		Verify Telemetry XPND2Val_Inval DEFD5160	= Invalid	AND=ZAZ7I999
14		Is 1553 XPND2 TM the expected one (yes/no)?		Next Step: yes END no 15
15		Inform TT&C engineer to assess the XPND2 status		Next Step: END
End of Procedure				

TTC chain 2 health check
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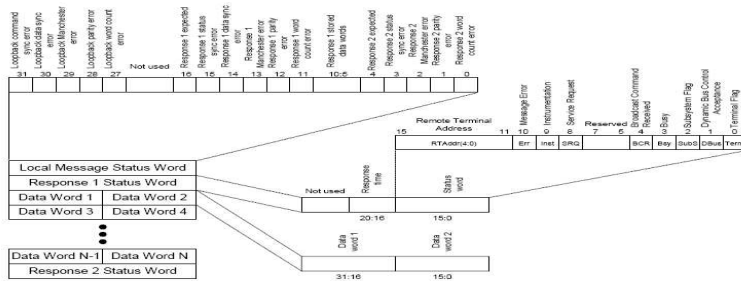


Figure 6-15 Bus Controller response block

DW Name	Telemetry Name	DW	Significant BITS																Telemetry Value		
			MSB	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	LSB	
Analogue TM Register	PLL Phase Error	00	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	binary value (*)
	AGLC TLM/Uplink Level	00	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	binary value (*)
Extra TM Register	Telemetry counter	01	S	S	S	S	S	S	S	X	X	X	X	X	X	X	X	X	X	S	binary value (*)
	Transponder Status	01								X	X	X	X	X	X	X	X	X	X	S	0 = OFF, 1 = ON (**)
	Squelch Status	01								X	X	X	X	X	X	X	X	X	X	S	0 = OFF, 1 = ON
	Rx Lock	01								X	X	X	X	X	X	X	X	X	X	S	0 = No locked, 1 = Locked
Configuration Register 1	TC Bit Rate	02	X	S																	0 = Low, 1 = High
	External Reference	02	X	S																	0 = OFF, 1 = ON
	Coherent Mode	02	X		S																0 = OFF, 1 = ON
	Ranging MOD	02	X			S															0 = OFF, 1 = ON
	High Rate MOD (GMSK)	02	X				S														0 = OFF, 1 = ON
	Medium Rate MOD (PCM (SP-L)/PM)	02	X					S													0 = OFF, 1 = ON
	Low Rate-1 MOD (PCM (NRZ-L)/PSK/PM MOD)	02	X						S												0 = OFF, 1 = ON
	Low Rate-2 MOD (PCM (NRZ-L)/PSK/PM MOD)	02	X							S											0 = OFF, 1 = ON
RNG MOD Index	02	X								S	S									binary value (*)	
TM MOD Index	02	X										S	S	S	S					binary value (*)	
Configuration Register 2	Internal Bit Pattern Generator	03	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S	0 = OFF, 1 = ON
	Output Power Level Set	03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S	binary value (*)