

Transponder 2 Coherent Mode Activation/Deactivation  
 File: H\_CRP\_TTC\_T2CM.xls  
 Author: E. Picallo



## Procedure Summary

### Objectives

This procedure describes the steps needed to configure the "Coherent mode" for the transmitter 2 when the downlink and the uplink are already established.

This procedure does not use the logical addressing, thus must be executed under Ground control (the commands used cannot be inserted in the MTL).

### Summary of Constraints

The transponder coherent mode is selected through ASW TC(8,4,115,9); thus the status of the ASW function "TTC Management" has to be "running".

The switching of the coherent mode will lead to a short loss of lock in the downlink TM stream.

It is recommended to command ON the coherent mode parameter by Ground only after confirmation of onboard lock.

### Spacecraft Configuration

#### Start of Procedure

CDMU in default configuration;  
 Downlink active via TX2 and TWTA2;  
 XPND2 configuration: CM OFF or CM ON and RNG OFF.

#### End of Procedure

CDMU in default configuration;  
 Downlink active via TX2 and TWTA2;  
 XPND2 configuration: CM ON or CM OFF and RNG OFF.

### Reference File(s)

#### Input Command Sequences

#### Output Command Sequences

HRRT2CM1  
 HRRT2CM2

### Referenced Displays

ANDs      GRDs      SLDs  
 ZAZ7I999

### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
30/07/08	1	1	Created	E. Picallo	

Status : Version 2 - Unchanged  
 Last Checkin: 16/12/08

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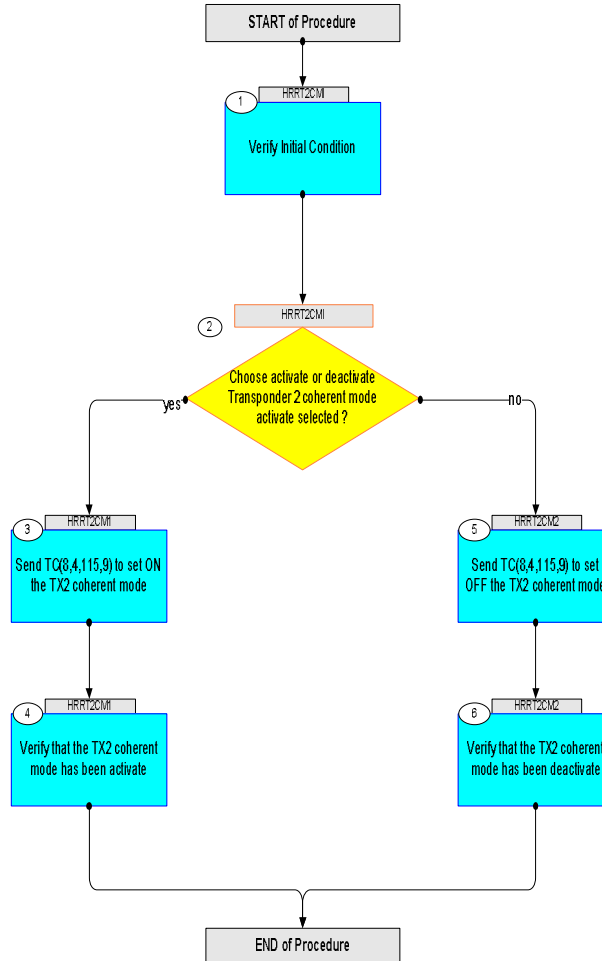


16/12/08	2	2	TC DCT18170 Configure Xpnd mask update	E. Picallo	
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### Procedure Flowchart Overview

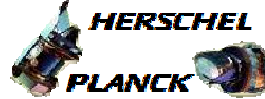


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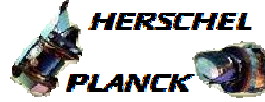
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<b>Beginning of Procedure</b>				
TC Seq. Name : HRRT2CMI (TX2 CM ON/OFF) Transponder 2 Coherent Mode Activation/Deactivation  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>				
1		Verify Initial Condition		Next Step: 2
		Verify RX2 Lock status Telemetry X2 Rx Lock - RL RMB45442	= Locked	AND=ZAZ7I999
		Verify RX2 AGC Level Telemetry X2 AGC TMUplnk RMB41442	>= -141.00 dbmW	AND=ZAZ7I999
		Verify Coherent Mode status Telemetry X2 Coher MOD-CM RMB47442		AND=ZAZ7I999
		Verify Ranging Mode status Telemetry X2 Rang MD - RM RMB48442	= OFF	AND=ZAZ7I999
2		Choose activate or deactivate Transponder 2 coherent mode activate selected ?		Next Step: yes 3 no 5
TC Seq. Name : HRRT2CM1 (TX2 CM ON)  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>				
3		Send TC(8,4,115,9) to set ON the TX2 coherent mode		Next Step: 4
		<b>The switching of the coherent mode will lead to a short loss of lock in the downlink TM stream.</b>		
		Execute Telecommand XpndConfigure_Templ DCT18170  Command Parameter(s) : XpndId DH018170 XpndB XpndConfMask1Unus DH220170 11 <bin> XpndConfMask1_ER DH221170 OFF (Def) XpndConfMask1_CM DH222170 ON XpndConfMask1_RM DH223170 OFF (Def) XpndConfMask1_HRM DH224170 OFF (Def) XpndConfMask1_MRM DH225170 OFF (Def) XpndConfMask1LRM1 DH226170 OFF (Def) XpndConfMask1LRM2 DH227170 OFF (Def) XpndConfMask1_RMI DH228170 Ignore (Def) XpndConfMask1_TMI DH229170 Ignore (Def)		

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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) 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	
4		Verify that the TX2 coherent mode has been activate		Next Step: END
		Verify Coherent Mode status Telemetry X2 Coher MOD-CM RMB47442	= ON	AND-ZAZ7I999
TC Seq. Name : HRRT2CM2 (TX2 CM OFF)  TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
5		Send TC(8,4,115,9) to set OFF the TX2 coherent mode		Next Step: 6
		<b>The switching of the coherent mode will lead to a short loss of lock in the downlink TM stream.</b>		
		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) OFF (Def) Ignore (Def) Ignore (Def)	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		XpndConfMask2_PG DH230170	OFF (Def)	
		XpndConfMask2Unus DH231170	0 <dec> (Def)	
		XpndConfMask2OPLS DH232170	Ignore (Def)	
		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 :  GBM IL DSE --Y -- --  Subsch. ID : 10 Det. descr. : TEMPLATE Configure Xpnd TC(8,4,115,9)		
6		Verify that the TX2 coherent mode has been deactivate		Next Step: END
		Verify Coherent Mode status Telemetry X2 Coher MOD-CM RMB47442	= OFF	AND=ZAZ7I999
<b>End of Procedure</b>				