

Transponder 2 Ranging Activation/Deactivation
 File: H_CRP_TTC_T2RM.xls
 Author: E. Picallo



Procedure Summary

Objectives

This procedure describes the steps needed to configure the "Ranging 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 ranging is selected through ASW TC(8,4,115,9); thus the status of the ASW function "TTC Management" has to be "running".

It is highlighted that the Ranging is not possible with high rate (1.5 Mbps).

It is recommended to command ON the ranging 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 ON and RNG ON or RNG OFF.

End of Procedure

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

Reference File(s)

Input Command Sequences

Output Command Sequences

HRRT2RM1
 HRRT2RM2

Referenced Displays

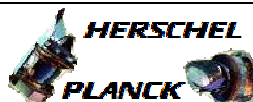
ANDs GRDs SLDs
 ZAZ7I999

Configuration Control Information

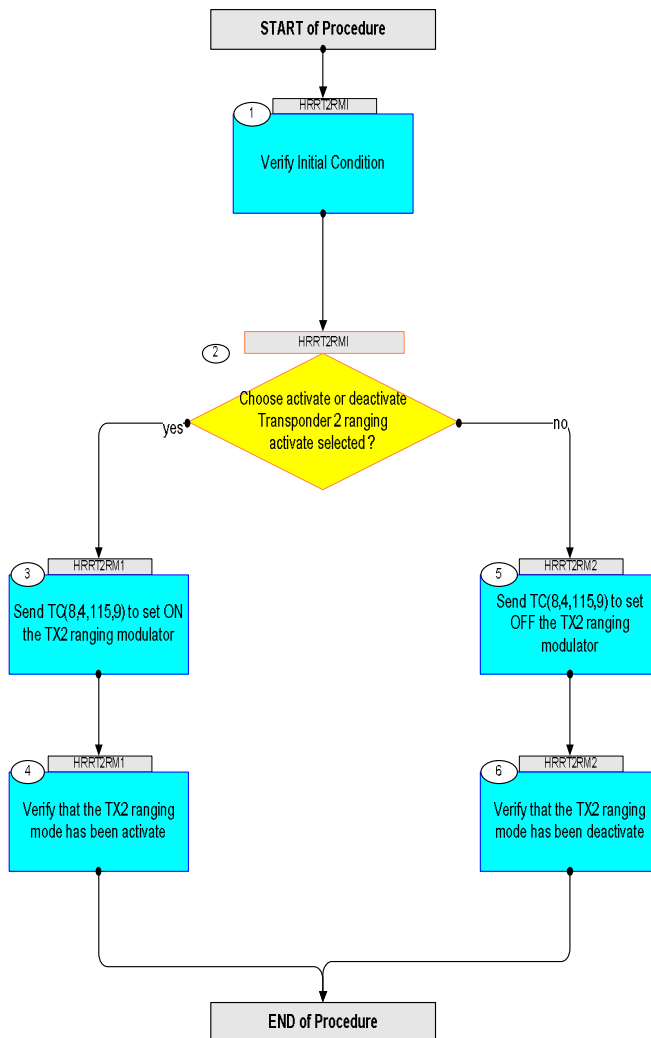
DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
30/07/08	1	1	Created	E. Picallo	
16/12/08	2	2	TC DCT18170 Configure Xpnd mask update	E. Picallo	

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

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch																																												
Beginning of Procedure																																																
TC Seq. Name : HRRT2RMI (TX2 RM ON/OFF) Transponder 2 Ranging 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	>= -141.0 dbmW	AND=ZAZ7I999																																												
		Verify Coherent Modulator status Telemetry X2 Coher MOD-CM RMB47442	= ON	AND=ZAZ7I999																																												
		Verify Ranging Modulator status Telemetry X2 Rang MD - RM RMB48442		AND=ZAZ7I999																																												
2		Choose activate or deactivate Transponder 2 ranging activate selected ?		Next Step: yes 3 no 5																																												
TC Seq. Name : HRRT2RM1 (TX2 RM ON) TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>																																																
3		Send TC(8,4,115,9) to set ON the TX2 ranging modulator		Next Step: 4																																												
		Execute Telecommand <div style="text-align: right; margin-right: 100px;">XpndConfigure_Templ</div> Command Parameter(s) : <table style="margin-left: 20px; border: none;"> <tr><td>XpndId</td><td>DH018170</td><td>XpndB</td><td>11 <bin></td></tr> <tr><td>XpndConfMask1Unus</td><td>DH220170</td><td></td><td>OFF (Def)</td></tr> <tr><td>XpndConfMask1_ER</td><td>DH221170</td><td></td><td>OFF (Def)</td></tr> <tr><td>XpndConfMask1_CM</td><td>DH222170</td><td></td><td>ON</td></tr> <tr><td>XpndConfMask1_RM</td><td>DH223170</td><td></td><td>OFF (Def)</td></tr> <tr><td>XpndConfMask1_HRM</td><td>DH224170</td><td></td><td>OFF (Def)</td></tr> <tr><td>XpndConfMask1_MRM</td><td>DH225170</td><td></td><td>OFF (Def)</td></tr> <tr><td>XpndConfMask1LRM1</td><td>DH226170</td><td></td><td>OFF (Def)</td></tr> <tr><td>XpndConfMask1LRM2</td><td>DH227170</td><td></td><td>Ignore (Def)</td></tr> <tr><td>XpndConfMask1_RMI</td><td>DH228170</td><td></td><td>Ignore (Def)</td></tr> <tr><td>XpndConfMask1_TMI</td><td>DH229170</td><td></td><td></td></tr> </table>	XpndId	DH018170	XpndB	11 <bin>	XpndConfMask1Unus	DH220170		OFF (Def)	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		Ignore (Def)	XpndConfMask1_RMI	DH228170		Ignore (Def)	XpndConfMask1_TMI	DH229170			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	OFF (Def) 0 <dec> (Def) Ignore (Def) 0 <dec> (Def) OFF (Def) OFF (Def) ON OFF (Def) ON 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	
4		Verify that the TX2 ranging mode has been activate		Next Step: END
		Verify Ranging Modulator status Telemetry X2 Rang MD - RM RMB48442	= ON	AND=ZAZ7I999
TC Seq. Name :HRRT2RM2 (TX2 RM OFF) TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
5		Send TC(8,4,115,9) to set OFF the TX2 ranging modulator		Next Step: 6
		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) OFF (Def) ON 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 XpndConfMask2Unus XpndConfMask2OPLS XpndConfDW1Unus XpndConfDW1_ER XpndConfDW1_CM XpndConfDW1_RM XpndConfDW1_HRM XpndConfDW1_MRM XpndConfDW1LRM1 XpndConfDW1LRM2 XpndConfDW1_RMI XpndConfDW1_TMI XpndConfDW2_PG XpndConfDW2Unus	DH230170 DH231170 DH232170 DH020170 DH021170 DH022170 DH023170 DH024170 DH025170 DH026170 DH027170 DH028170 DH029170 DH030170 DH031170	OFF (Def) 0 <dec> (Def) Ignore (Def) 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 TC Control Flags : Subsch. ID : 10 Det. descr. : TEMPLATE Configure Xpnd TC(8,4,115,9)	DH032170	-4 GBM IL DSE --Y -- --	
6		Verify that the TX2 ranging mode has been deactivate		Next Step: END	
		Verify Ranging Modulator status Telemetry X2 Rang MD - RM	RMB48442	= OFF AND=ZAZ7I999	
End of Procedure					