

Transponder 1 Ranging Activation/Deactivation
 File: H_CRP_TTC_T1RM.xls
 Author: E. Picallo



Procedure Summary

Objectives

This procedure describes the steps needed to configure the "Ranging mode" for the transmitter 1 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 TX1 and TWTAL;
 XPND1 configuration: CM ON and RNG ON or RNG OFF.

End of Procedure

CDMU in default configuration;
 Downlink active via TX1 and TWTAL;
 XPND1 configuration: CM ON and RNG OFF or RNG ON.

Reference File(s)

Input Command Sequences

Output Command Sequences

HRRT1RM1
 HRRT1RM2

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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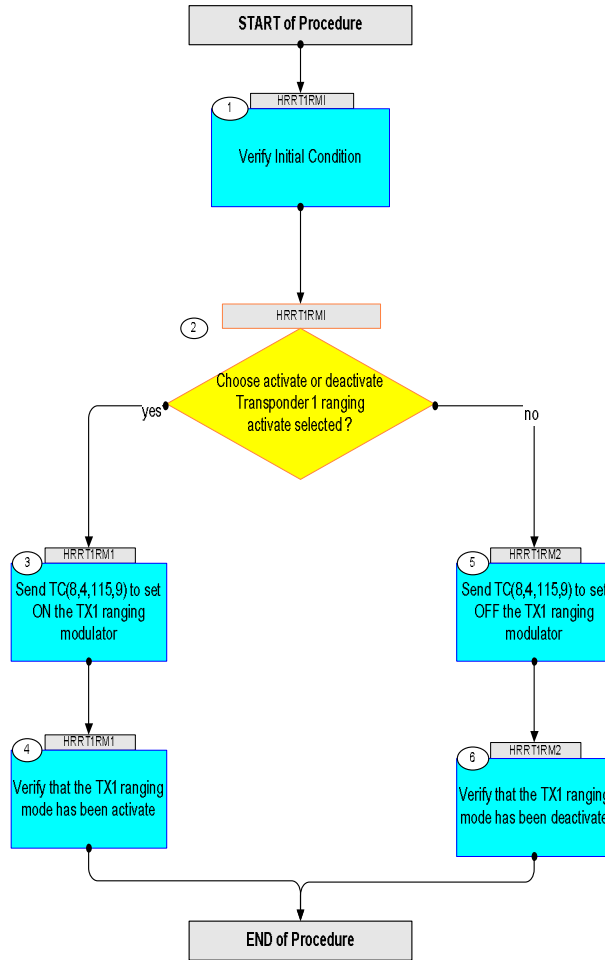


16/12/08		2	TC DCT18170 Configure Xpnd mask update	E. Picallo	
16/12/08	2	2.01	Validation : Ranging only after onboard lock recommended	E. Picallo	

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Procedure Flowchart Overview

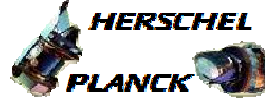


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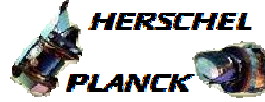
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
TC Seq. Name : HRRT1RM1 (TX1 RM ON/OFF) Transponder 1 Ranging Activation/Deactivation TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
1		Verify Initial Condition		Next Step: 2
		Verify RX1 Lock status Telemetry X1 Rx Lock - RL RMB24442	= Locked	AND=ZAZ7I999
		Verify RX1 AGC Level Telemetry X1 AGC TMUplnk RMB20442	>= -141.0 dbmW	AND=ZAZ7I999
		Verify Coherent Modulator status Telemetry X1 Coher MOD-CM RMB26442	= ON	AND=ZAZ7I999
		Verify Ranging Modulator status Telemetry X1 Rang MOD-RM RMB27442		AND=ZAZ7I999
2		Choose activate or deactivate Transponder 1 ranging activate selected ?		Next Step: yes 3 no 5
TC Seq. Name : HRRT1RM1 (TX1 RM ON) TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
3		Send TC(8,4,115,9) to set ON the TX1 ranging modulator		Next Step: 4
		Execute Telecommand <div style="text-align: right; margin-right: 20px;">XpndConfigure_Templ</div> Command Parameter(s) : XpndId DH018170 XpndA (Def) XpndConfMask1Unus DH220170 11 <bin> XpndConfMask1_ER DH221170 OFF (Def) XpndConfMask1_CM DH222170 OFF (Def) XpndConfMask1_RM DH223170 ON 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)	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) 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 TX1 ranging mode has been activate		Next Step: END
		Verify Ranging Modulator status Telemetry X1 Rang MOD-RM RMB27442	= ON	AND=ZAZ7I999
TC Seq. Name :HRRT1RM2 (TX1 RM OFF) TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
5		Send TC(8,4,115,9) to set OFF the TX1 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 XpndA (Def) 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 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 TX1 ranging mode has been deactivate		Next Step: END
		Verify Ranging Modulator status Telemetry X1 Rang MOD-RM RMB27442	= OFF	AND=ZAZ7I999
End of Procedure				