

Transponder in use Ranging Activation/Deactivation
File: H_FCP_TTC_TURM.xls
Author: E. Picallo



Procedure Summary

Objectives

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

This procedure uses the logical addressing, thus can be executed under Ground control or not (the commands used can 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 highlighted that the Ranging modulator have to be commanded ON after confirmation of on-board lock.

Spacecraft Configuration

Start of Procedure

CDMU in default configuration;
Downlink active via TX and TWTA marked as "Nominal" and "Not Failed" in the "Unit in Use" table (nominally the branch 1);
XPND 1/2 configuration: CM ON and RNG ON or RNG OFF.

End of Procedure

CDMU in default configuration;
Downlink active via TX and TWTA marked as "Nominal" and "Not Failed" in the "Unit in Use" table (nominally the branch 1);
XPND 1/2 configuration: CM ON and RNG OFF or RNG ON.

Reference File(s)

Input Command Sequences

Output Command Sequences

HFRTURM1
HFRTURM2

Referenced Displays

ANDs GRDs SLDs
ZAZ7I999

Configuration Control Information

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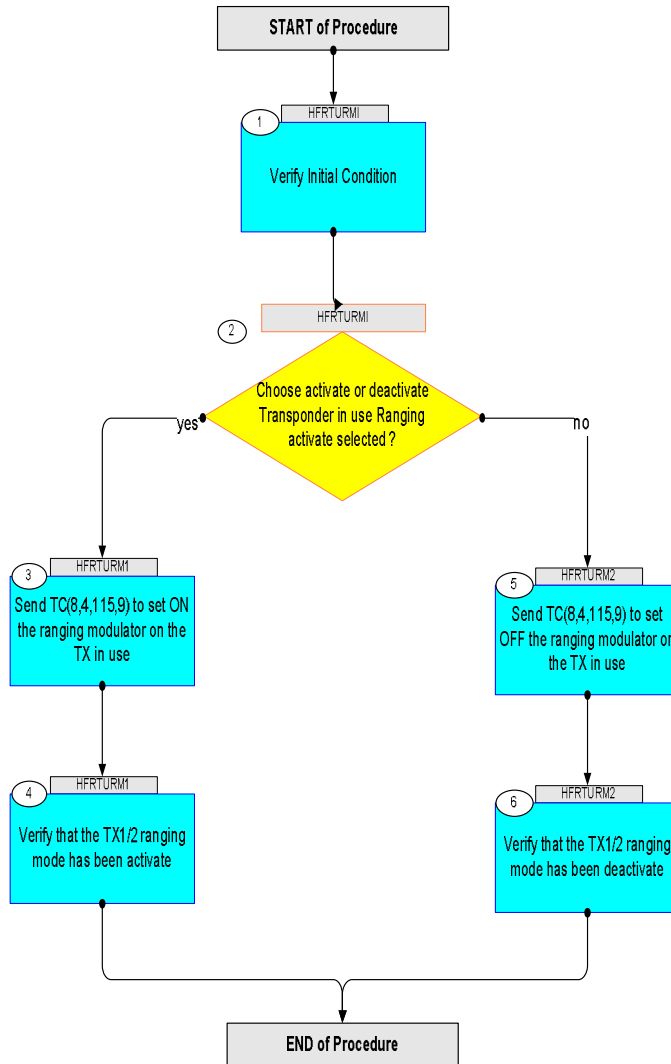


DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
14/07/08	1	1	Created	R. Miniscalco	
28/08/08	2	2	TC DCT18170 Configure Xpnd mask update	E. Picallo	

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
HFRTURM1 TX in use RM ON/OFF <i>Transponder in use Ranging Activation/Deactivation</i> SSID :				
1		Verify Initial Condition		Next Step: 2
1.1		If XPND1 is in use verify		<input type="checkbox"/>
		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 <= -45.0 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
1.2		If XPND2 is in use verify		<input type="checkbox"/>
		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 <= -45.0 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 in use Ranging activate selected ?		Next Step: yes 3 no 5
HFRTURM1 TX in use RM ON SSID :				
3		Send TC(8,4,115,9) to set ON the ranging modulator on the TX in use		Next Step: 4

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand XpndConfigure_Templ Command Parameter(s) : XpndId DH018170 XpndInUseLogic XpndConfMask1Unus DH220170 0 <hex> (Def) 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	
		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) OFF (Def) 0.6 1.2 OFF (Def) 0 <dec> (Def)	
		XpndConfDW2OPLS DH032170 TC Control Flags : GBM IL DSE --Y -- -- SSID : 10	-4	
4		Verify that the TX1/2 ranging mode has been activate		Next Step: END
4.1		If XPND1 is in use verify		<input type="checkbox"/>
		Verify Ranging Modulator status Telemetry X1 Rang MOD-RM RMB27442	= ON	AND=ZAZ7I999
4.2		If XPND2 is in use verify		<input type="checkbox"/>
		Verify Ranging Modulator status Telemetry X2 Rang MD - RM RMB48442	= ON	AND=ZAZ7I999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
HFRTURM2 TX in use RM OFF				
SSID :				
5		Send TC(8,4,115,9) to set OFF the ranging modulator on the TX in use		Next Step: 6
		Execute Telecommand XpndConfigure_Templ	DCT18170	
		Command Parameter(s) :		
		XpndId DH018170 XpndInUseLogic		
		XpndConfMask1Unus DH220170 0 <hex> (Def)		
		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)		
		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 -- ---		
		SSID : 10		
6		Verify that the TX1/2 ranging mode has been deactivate		Next Step: END
6.1		If XPND1 is in use verify		<input type="checkbox"/>
		Verify Ranging Modulator status Telemetry X1 Rang MOD-RM RMB27442	= OFF	AND=ZAZ7I999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
6.2		<i>If XPND2 is in use verify</i>		<input type="checkbox"/>
		Verify Ranging Modulator status Telemetry X2 Rang MD - RM RMB48442	= OFF	AND=ZAZ7I999
End of Procedure				