Tx and TM encoder in use configuration for MR
File: H_MPP_TTC_TUMR.xls
Author: E. Picallo

Procedure Summary

Objectives

This procedure describes the steps needed to change the TM bit
rate to 150 kbps and switch coherent mode and ranging mode ON.

This procedure uses the logical addressing. The commands are
inserted in the MTL to configure the downlink rate to 150Kbps at
the end of DTCP. The assigned Subschedule ID is 31 (DTCP LOS)

If ranging is performed at the end of the pass this procedure
will only re-inforce the TM bit rate to 150 kbps

Summary of Constraints

XPND and the TM encoder are configured using TC(8,4,115,9),
TC(8,4,115,18) and TC(8,4,115,20), thus the status of the ASW
function "TTC Management" has to be "running".

Note that:
- the value of the TM modulation index is always 1.2;
- the value of the RNG modulation index, when CM and RNG are ON,
is always 0.6;
- the value of the Output power level is always - 4dBm;
- the External reference and Internal bit pattern generator are
always OFF.

If the ASW function "On board Scheduling" is stopped the TCs can
not be added into the MTL.
If the function is running, up to four time-tagged TCs are
released per second.

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);
TM bit rate set to any value;
XPND configuration: CM OFF or CM ON and RNG OFF or CM ON and RNG
ON.

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);
TM bit rate equal to 150 kbps;
XPND configuration: CM ON and RNG ON.

Reference File(s)

Input Command Sequences

Output Command Sequences

Status   : Version 2 - Unchanged
Last Checkin: 03/06/09

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Referenced Displays

ANDs   GRDs   SLDs

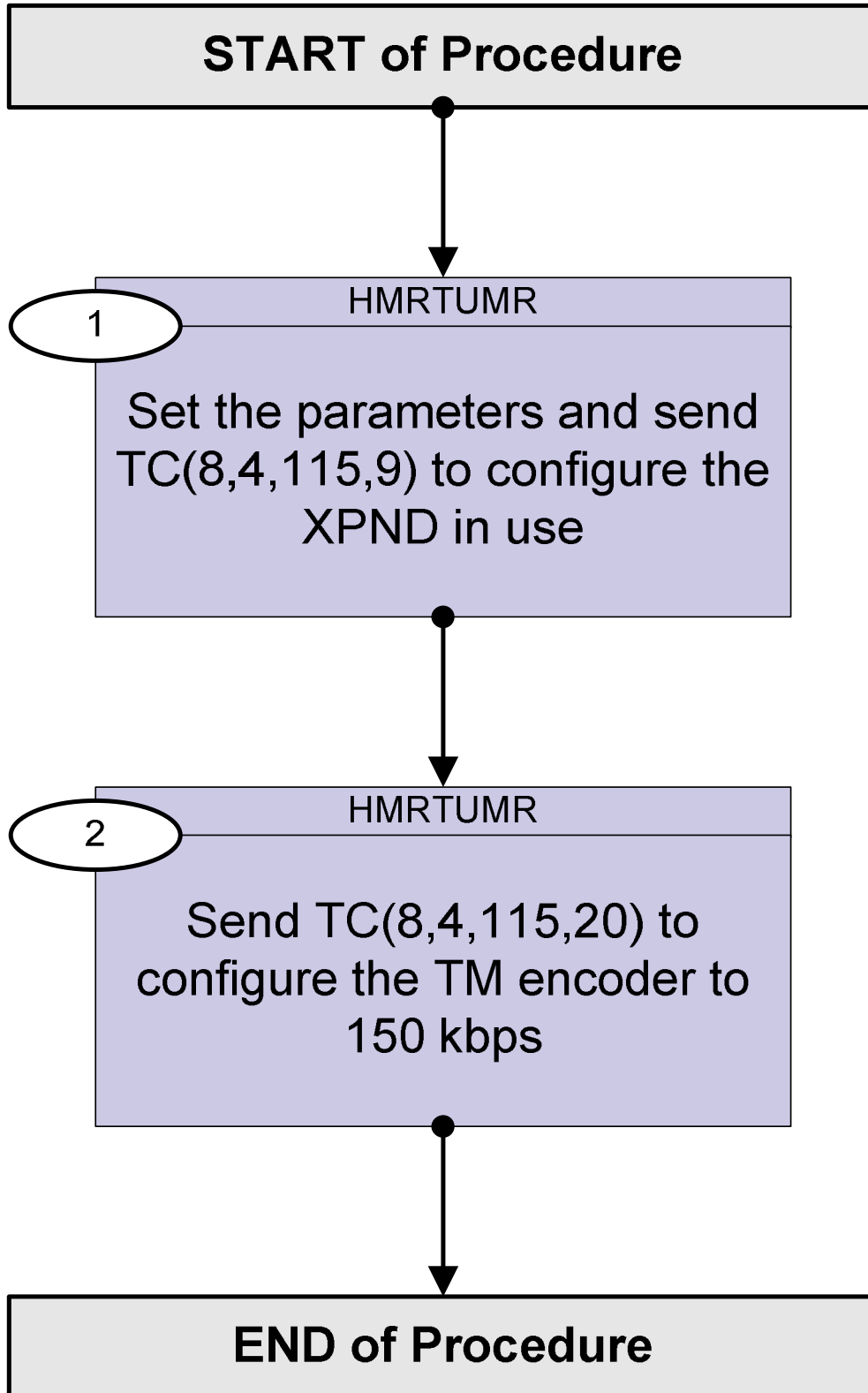## Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
05/09/08	2	1	Created	E. Picallo	
03/06/09	2.5	2	XPND config. updated to set Coherent mode ON and Ranging mode ON	E. Picallo	

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Procedure Flowchart Overview

```
          ┌──────────────────────────────────────┐
          │        START of Procedure            │
          └──────────────────────────────────────┘
                           │
                           ▼
      ┌────┐  ┌──────────────────────────────────────┐
      │ 1  │  │             HMRTUMR                   │
      └────┘  ├──────────────────────────────────────┤
              │                                        │
              │   Set the parameters and send          │
              │   TC(8,4,115,9) to configure the       │
              │          XPND in use                   │
              │                                        │
              └──────────────────────────────────────┘
                           │
                           ▼
      ┌────┐  ┌──────────────────────────────────────┐
      │ 2  │  │             HMRTUMR                   │
      └────┘  ├──────────────────────────────────────┤
              │                                        │
              │   Send TC(8,4,115,20) to               │
              │   configure the TM encoder to          │
              │           150 kbps                     │
              │                                        │
              └──────────────────────────────────────┘
                           │
                           ▼
          ┌──────────────────────────────────────┐
          │         END of Procedure             │
          └──────────────────────────────────────┘
```

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		TC Seq. Name :HMRTUMR (Tx use config for MR) Tx and TM encoder in use config. for MR (150Kbps) CM ON, RNG ON *TimeTag Type: B* *Sub Schedule ID: 31*		
1		*Set the parameters and send TC(8,4,115,9) to configure the XPND in use*		Next Step: 2
	ET=+00.00.00 UT=+	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 **XpndInUseLogic** 11 <bin> ON ON ON ON ON ON ON 111 <bin> 1111 <bin>	
		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**	ON 11111111111 <bin> 1111 <bin> 0 <dec> (Def) OFF (Def) ON 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 : 31 Det. descr. : TEMPLATE Configure Xpnd TC(8,4,115,9)	**-4**	
2		*Send TC(8,4,115,20) to configure the TM encoder to 150 kbps*		Next Step: END

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.05 UT=	Execute Telecommand **TtcConfTmEncInUseMedium** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 31* Det. descr. : TTC: Config TM Enc In Use Mode Medium 150 kbps, TC(8,4,115,20)	**DC22F170**	

End of Procedure