Select RX1 TC bit rate
File: H_FCP_TTC_R1BR.xls
Author: E. Picallo

Procedure Summary

Objectives

This procedure describes the steps needed to select the TC uplink bit rate (high or low) on the receiver 1 (nominal RX).

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 RX bit rate is selected through ASW TC(8,4,115,10); thus the status of the ASW function "TTC Management" has to be "running".

Note that:
- TC rate = 125 bps is foreseen when the S/C is in "Sun Acquisition otherwise" and in "Survival" mode;
- TC rate = 4 kbps is foreseen when the S/C is in "Launch", "Sun Acquisition after separation", "Nominal" and "Earth Acquisition" mode.

The TC bit rate from ground shall be in line with the on-board Rx TC bit rate, to permit to the S/C receivers to acquire the TC signal.

RXs TC threshold is - 120 dBm at 4Kbps TC rate
RXs TC threshold is - 133.5 dBm at 125 bps TC rate
RXs carrier acquisition thershold is - 137 dBm

Spacecraft Configuration

Start of Procedure

CDMU in default configuration;
RX1 set to any bit rate.

End of Procedure

CDMU in default configuration;
RX1 bit rate updated.

Reference File(s)

Input Command Sequences

Output Command Sequences

HFRR1BR1
HFRR1BR2

Referenced Displays

ANDs **GRDs** **SLDs**
ZAZ7I999

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Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
11/07/08	1	1	Created	R. Miniscalco	
02/12/08	2	2	Added TC bit rate via 1553 TM	E. Picallo	
21/03/09	2.2	2.01	Validation : RXs TC thresholds constrain added	E. Picallo	

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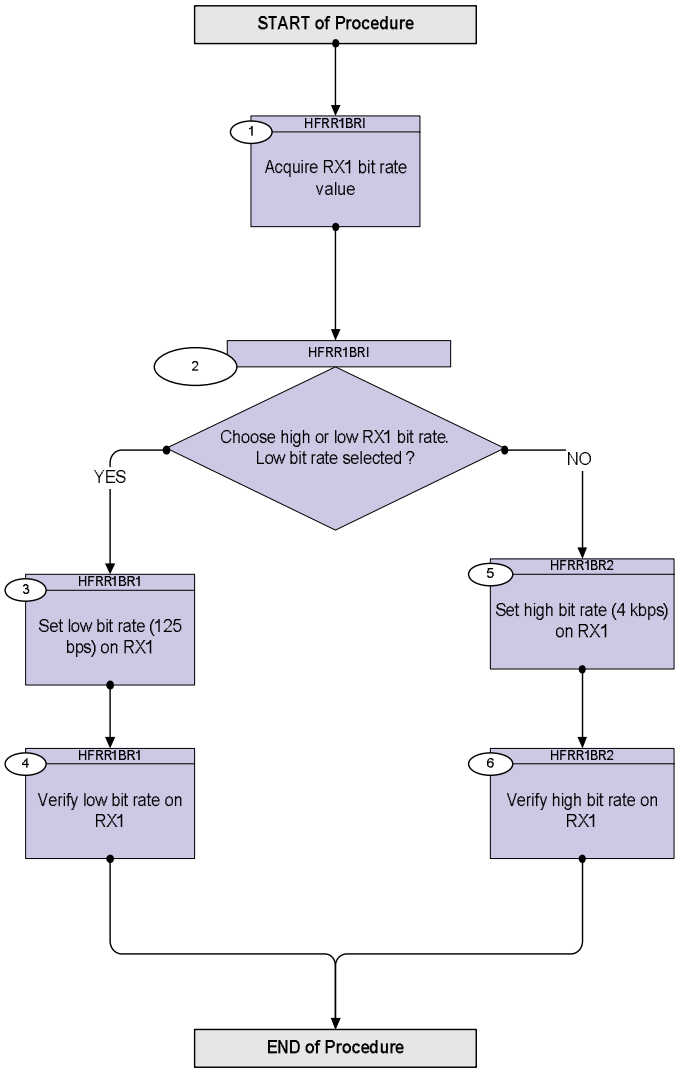
Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		TC Seq. Name :HFRR1BRI (Select RX1 TC rate) Select RX1 TC bit rate *TimeTag Type: N* *Sub Schedule ID:*		
1		*Acquire RX1 bit rate value*		Next Step: 2
		Verify Rx1 TC Bit Rate Telemetry **RX1 125-4K Stat** **RMB17442**		AND=ZAZ7I999
		Verify Rx1 TC Bit Rate Telemetry **X1 TcBitRateTCB** **RMB61442**		AND=ZAZ7I999
2		*Choose high or low RX1 bit rate.* *Low bit rate selected ?*		Next Step: YES 3 NO 5
		TC Seq. Name :HFRR1BR1 (RX1 for Low rate) *TimeTag Type: N* *Sub Schedule ID:*		
3		*Set low bit rate (125 bps) on RX1*		Next Step: 4
		Execute Telecommand **Xpnd_A_Rx125bps**	**DC93E170**	
		TC Control Flags : **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : XPND A Select Rx bit rate to 125bps TC(8,4,115,10)		
4		*Verify low bit rate on RX1*		Next Step: END
		Verify Rx1 TC Bit Rate Telemetry **RX1 125-4K Stat** **RMB17442**	**= 125 bps**	AND=ZAZ7I999
		Verify Rx1 TC Bit Rate Telemetry **X1 TcBitRateTCB** **RMB61442**	**= Low**	AND=ZAZ7I999
		The TC bit rate from ground shall be in line with the on-board Rx1 TC bit rate (125 bps), to permit to Rx1 acquire the TC signal.		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		TC Seq. Name :HFRR1BR2 (RX1 for High Rate) *TimeTag Type: N* *Sub Schedule ID:*		
5		*Set high bit rate (4 kbps) on RX1*		Next Step: 6
		Execute Telecommand **Xpnd_A_Rx4kbps** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : XPND A Select Rx bit rate to 4kbps TC(8,4,115,10)	**DC94E170**	
6		*Verify high bit rate on RX1*		Next Step: END
		Verify Rx1 TC Bit Rate Telemetry **RX1 125-4K Stat** **RMB17442**	**= 4 Kbps**	AND=ZAZ7I999
		Verify Rx1 TC Bit Rate Telemetry **X1 TcBitRateTCB** **RMB61442**	**= High**	AND=ZAZ7I999
		The TC bit rate from ground shall be in line with the on-board Rx1 TC bit rate (4 kbps), to permit to Rx1 acquire the TC signal.		
		End of Procedure		