

RXs Thresholds Check  
File: H\_COP\_TTC\_TTC2.xls  
Author: E. Picallo



## Procedure Summary

### Objectives

This procedure describes the steps needed to perform the Receivers Thresholds Check.  
For each receiver the thresholds to be verified are:  
- Carrier acquisition threshold  
- Receiver demodulation threshold for both TC bit rates.

### Summary of Constraints

The maximum sweep rate is 500 Hz/s in 1 Hz step (or minimised as much as possible since the loop in the receiver is very narrow) and the tracking range is  $\pm 130$  kHz.

RF level at receiver input port must be lower than 0 dBm in order not to damage LNA input stage. The Receiver can stand 0 dBm input power for no longer than 10 minutes.

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".

### Spacecraft Configuration

#### Start of Procedure

CDMU in default configuration;  
Downlink active via TX1 and TWT1;  
TM bit rate equal to 150 kbps;  
XPND configuration: CM OFF and RNG OFF;  
TC bit rate for RX1 Thresholds Check Rx1=4Kbps,Rx2=125bps  
for RX2 Thresholds Check Rx2=4Kbps,Rx1=125bps

#### End of Procedure

CDMU in default configuration;  
Downlink active via TX1 and TWT1;  
TM bit rate equal to 150 kbps;  
XPND configuration: CM OFF and RNG OFF  
TC bit rate for RX1 Thresholds Check Rx1=4Kbps,Rx2=125bps  
for RX2 Thresholds Check Rx2=4Kbps,Rx1=125bps

### Reference File(s)

#### Input Command Sequences

#### Output Command Sequences

HCRTTC21  
HCRTTC22

### Referenced Displays

ANDs      GRDs      SLDs  
ZAZ7I999

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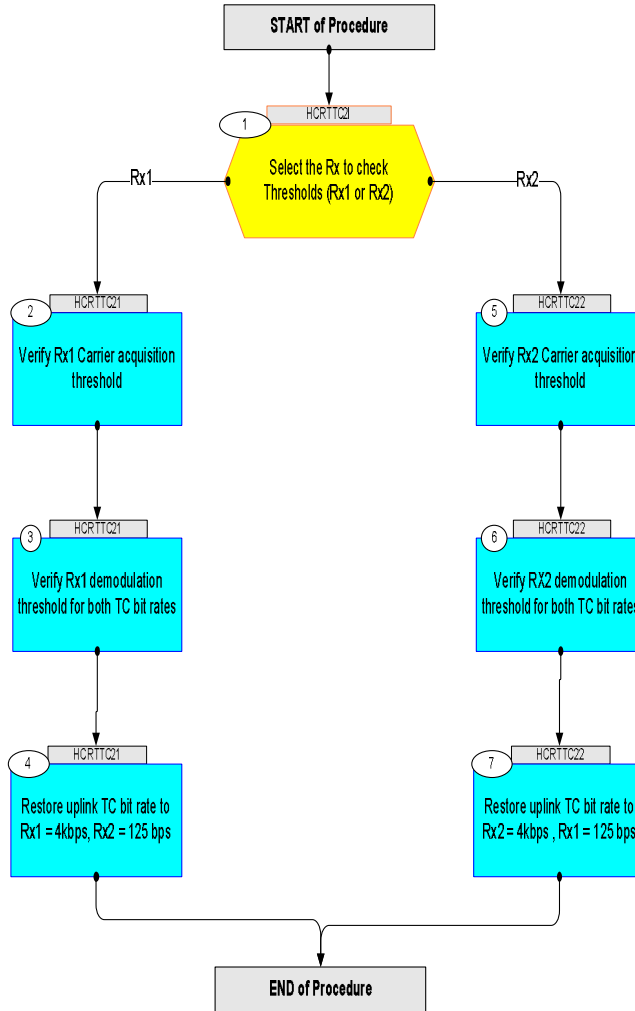
**Configuration Control Information**

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
06/01/09	2	1	Created	E. Picallo	
27/02/09	2.1	2	Rxs carrier acq. thresholds test sequence updated according to SRE-PT-055178 (COP #08 HP-SVM) MoM inputs	E. Picallo	
18/03/09	2.2	3	Align to database related to CDMU 3.8.2	E. Picallo	
03/04/09		4	Start/End TC bit rates changed: - for RX1 Thresholds Check Rx1=4Kbps,Rx2=125bps - for RX2 Thresholds Check Rx2=4Kbps,Rx1=125bps	E. Picallo	
07/04/09	2.3	5	The RX bit rate is selected through ASW TC(8,4,115,10)	E. Picallo	

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**Procedure Flowchart Overview**



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<b>Beginning of Procedure</b>				
<p><i>TC Seq. Name : HCR TTC2I (TTC2 RXs Thresholds )</i>  <i>COP TTC2 RXs Thresholds Check Initial</i></p> <p><i>TimeTag Type: N</i>  <i>Sub Schedule ID:</i></p> <p style="text-align: center;"><input type="checkbox"/></p>				
1		Select the Rx to check Thresholds (Rx1 or Rx2)		Next Step: Rx1 2 Rx2 5
<p><i>TC Seq. Name : HCR TTC21 (TTC2 Rx1 Thresholds )</i>  <i>COP_TTC_02a1 Rx1 Thresholds Check</i></p> <p><i>TimeTag Type: N</i>  <i>Sub Schedule ID:</i></p> <p style="text-align: center;"><input type="checkbox"/></p>				
2		Verify Rx1 Carrier acquisition threshold		Next Step: 3
		<p><b>Verify the carrier lock performance at worst case input level with nominal sweep rate and sweep range</b></p> <p><b>General logic:</b></p> <ul style="list-style-type: none"> <li>- G/S gradually reduces the uplink power levels.</li> <li>- The carrier will then be brought down and brought up again with a sweep.</li> <li>- The lock status is checked once on-board lock achieved</li> </ul>		
		<b>Nominal sweep rate (500Hz/s) and sweep range (TBC kHz)</b>		
		<b>The Rx acquisition threshold shall be better than -137 dBm</b>		
2.1		Stop TC data modulation		<input type="checkbox"/>
2.2		Perform carrier frequency sweep with an unmodulated carrier		<input type="checkbox"/>
		<b>Step down TC carrier power to 5dB above expected threshold (-137 dBm)</b>		
		<p><b>Sweep rate = 500 Hz/s</b>  <b>Sweep range = TBC kHz</b>  <b>TC MI = 1.0 rad</b>  <b>U/L power level = - 132 dBm</b>  <b>TC signal = 4 Kbps</b></p>		
2.3		Check the Rx1 lock condition		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry X1 AGC TMUplnk RMB20442	= -132.0 dbmW	AND=ZAZ7I999
		Verify Telemetry X1 Rx Lock - RL RMB24442	= Locked	AND=ZAZ7I999
		Verify Telemetry RX1 125-4K Stat RMB17442	= 4 Kbps	AND=ZAZ7I999
2.4		Check the Rx2 lock condition		<input type="checkbox"/>
		Verify Telemetry X2 AGC TMUplnk RMB41442		AND=ZAZ7I999
		Verify Telemetry RX2 125-4K Stat RMB18442	= 125 bps	AND=ZAZ7I999
2.5		Decrease the uplink level in 1 dB steps until on-board lock is not longer maintained		<input type="checkbox"/>
2.5.1		Between each cycle, verify that Rx1 acquires lock		<input type="checkbox"/>
		Verify Telemetry X1 AGC TMUplnk RMB20442		AND=ZAZ7I999
		Verify Telemetry X1 Rx Lock - RL RMB24442		AND=ZAZ7I999
2.6		Continue decreasing the uplink level until Threshold value - 3dB		<input type="checkbox"/>
2.7		Increase at 1dB steps until lock regained		<input type="checkbox"/>
2.7.1		Between each cycle, verify when Rx1 re-acquires lock		<input type="checkbox"/>
		Verify Telemetry X1 AGC TMUplnk RMB20442		AND=ZAZ7I999
		Verify Telemetry X1 Rx Lock - RL RMB24442		AND=ZAZ7I999
3		Verify Rx1 demodulation threshold for both TC bit rates		Next Step: 4

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		<b>Verify the TC demodulated signal for decreasing uplink levels the TC HBR signal is verified, from -100 dBm (TBD) down to -120 dBm (which guarantees in this range the functionality of TC LBR too); the LBR signal is then verified from -121 dBm down to -133.5 dBm</b>		
3.1		<i>Start TC data modulation</i>		<input type="checkbox"/>
3.2		<i>Perform carrier frequency sweep</i>		<input type="checkbox"/>
		<b>Sweep rate = 500 Hz/s            Sweep range = ± 130 kHz            TC MI = 1.0 rad            U/L power level = - 100 dBm            TC signal = 4 Kbps</b>		
3.3		<i>Check the Rx1 lock condition</i>		<input type="checkbox"/>
		Verify Telemetry <b>X1 AGC TMUplnk</b> <b>RMB20442</b>	<b>= -100.0 dbmW</b>	AND=ZAZ7I999
		Verify Telemetry <b>X1 Rx Lock - RL</b> <b>RMB24442</b>	<b>= Locked</b>	AND=ZAZ7I999
		Verify Telemetry <b>X1 SqlchSt - SS</b> <b>RMB23442</b>	<b>= ON</b>	AND=ZAZ7I999
		Verify Telemetry <b>RX1 125-4K Stat</b> <b>RMB17442</b>	<b>= 4 Kbps</b>	AND=ZAZ7I999
3.4		<i>Check the Rx2 lock condition</i>		<input type="checkbox"/>
		Verify Telemetry <b>X2 AGC TMUplnk</b> <b>RMB41442</b>		AND=ZAZ7I999
		Verify Telemetry <b>RX2 125-4K Stat</b> <b>RMB18442</b>	<b>= 125 bps</b>	AND=ZAZ7I999
3.5		<i>For the uplink levels -100 to -120 dBm verify Rx1 performance</i>		<input type="checkbox"/>
		<b>For the uplink levels -100 to -120 dBm perform the following actions and fill a table with the measured values :</b> - set the required uplink level ; - verify Rx1 AGC; - verify Rx1 lock condition; - verify Squelch status		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry X1 AGC TMUplnk RMB20442	<= -100.0 dbmW >= -120.0 dbmW	AND=ZAZ7I999
		Verify Telemetry X1 Rx Lock - RL RMB24442	= Locked	AND=ZAZ7I999
		Verify Telemetry X1 SqlchSt - SS RMB23442	= ON	AND=ZAZ7I999
3.6		Verify that Rx1 TC demodulated signal squelch is "high" down to -120 dBm		<input type="checkbox"/>
		Verify Telemetry X1 SqlchSt - SS RMB23442	= ON	AND=ZAZ7I999
3.7		Send connection test TC		<input type="checkbox"/>
		<b>At uplink carrier level at Rx1 input: - 120 dBm, send a connection test TC</b>		
		Execute Telecommand ConnectionTest TC Control Flags : Subsch. ID : 10 Det. descr. : Perform Connection Test GBM IL DSE --Y -- --	DC810180	
3.8		Verify connexion report packet TM(17,2)		<input type="checkbox"/>
		Verify Packet Reception Link Connection Report Packet Details: APID: 16 Type: 17 Subtype: 2 PI1: PI2:	LnkConnecRep	
3.9		Configure on-board Rx1 for TC 125 bps RF link		<input type="checkbox"/>
		Execute Telecommand Xpnd_A_Rx125bps TC Control Flags : Subsch. ID : 10 Det. descr. : XPND A Select Rx bit rate to 125bps TC(8,4,115,10) GBM IL DSE --Y -- --	DC93E170	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RX1 125-4K Stat RMB17442	= 125 bps	AND=ZAZ7I999
3.10		Configuration RF up-link for TC 125 bps		<input type="checkbox"/>
		<b>The RF up-link shall be PSK/PM modulated (TC MI = 1.0 rad) by the TC signal configured for TC 125 bps RF link</b>		
3.11		Configure on-board Rx2 for TC 4 Kbps RF link		<input type="checkbox"/>
		Execute Telecommand Xpnd_B_Rx4kbps TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : XPND B Select Rx bit rate to 4kbps TC(8,4,115,10)	DC96E170	
		Verify Telemetry RX2 125-4K Stat RMB18442	= 4 Kbps	AND=ZAZ7I999
3.12		For the uplink levels -121 to -133.5 dBm verify Rx1 performance		<input type="checkbox"/>
		<b>For the uplink levels -121 to -133.5 dBm perform the following actions and fill a table with the measured values :</b> - set the required uplink level ; - verify Rx1 AGC; - verify Rx1 lock condition; - verify Squelch status		
		Verify Telemetry X1 AGC TMUplnk RMB20442	<= -121.0 dbmW >= -133.5 dbmW	AND=ZAZ7I999
		Verify Telemetry X1 Rx Lock - RL RMB24442	= Locked	AND=ZAZ7I999
		Verify Telemetry X1 SqlchSt - SS RMB23442	= ON	AND=ZAZ7I999
3.13		Verify that Rx1 TC demodulated signal squelch is "high" down to -133.5 dBm		<input type="checkbox"/>
		Verify Telemetry X1 SqlchSt - SS RMB23442	= ON	AND=ZAZ7I999
3.14		Send connection test TC		<input type="checkbox"/>



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		<b>At uplink carrier level at Rx1 input: - 133.5 dBm, send a connection test TC</b>		
		Execute Telecommand ConnectionTest TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 10 Det. descr. : Perform Connection Test	DC810180	
3.15		Verify connexion report packet TM(17,2)		<input type="checkbox"/>
		Verify Packet Reception Link Connection Report Packet Details: APID: 16 Type: 17 Subtype: 2 PI1: PI2:	LnkConnecRep	
4		Restore uplink TC bit rate to Rx1 = 4kbps, Rx2 = 125 bps		Next Step: END
4.1		Perform carrier frequency sweep		<input type="checkbox"/>
		Sweep rate = 500 Hz/s Sweep range = ± 130 kHz TC MI = 1.0 rad U/L power level = - 100 dBm (TBC) TC signal = 125 bps		
4.2		Check the Rx1 lock condition		<input type="checkbox"/>
		Verify Telemetry X1 AGC TMUplnk RMB20442	= -100.0 dbmW	AND=ZAZ7I999
		Verify Telemetry X1 Rx Lock - RL RMB24442	= Locked	AND=ZAZ7I999
		Verify Telemetry RX1 125-4K Stat RMB17442	= 125 bps	AND=ZAZ7I999
4.3		Configure on-board Rx1 for TC 4 kbps RF link		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand  Xpnd_A_Rx4kbps  TC Control Flags :  Subsch. ID : 10 Det. descr. : XPND A Select Rx bit rate to 4kbps TC(8,4,115,10)  GBM IL DSE --Y -- ---	DC94E170	
		Verify Telemetry  RX1 125-4K Stat RMB17442	= 4 Kbps	AND=ZAZ7I999
4.4		Configure RF up-link for TC 4 kbps		<input type="checkbox"/>
		<b>The RF up-link shall be PSK/PM modulated (TC MI = 1.0 rad) by the TC signal configured for TC 4 kbps RF link</b>		
4.5		Send connection test TC		<input type="checkbox"/>
		Execute Telecommand  ConnectionTest  TC Control Flags :  Subsch. ID : 10 Det. descr. : Perform Connection Test  GBM IL DSE --Y -- ---	DC810180	
4.6		Verify connexion report packet TM(17,2)		<input type="checkbox"/>
		Verify Packet Reception  Link Connection Report Packet Details:  APID: 16 Type: 17 Subtype: 2 PI1: PI2:	LnkConnecRep	
4.7		Configure on-board Rx2 for TC 125 bps RF link		<input type="checkbox"/>
		Execute Telecommand  Xpnd_B_Rx125bps  TC Control Flags :  Subsch. ID : 10 Det. descr. : XPND B Select Rx bit rate to 125bps TC(8,4,115,10)  GBM IL DSE --Y -- ---	DC95E170	
		Verify Telemetry  RX2 125-4K Stat RMB18442	= 125 bps	AND=ZAZ7I999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<p>TC Seq. Name : HCR TTC22 (TTC2 Rx2 Thresholds )            COP_TTC_02b1 Rx2 Thresholds Check</p> <p>TimeTag Type: N            Sub Schedule ID:</p> <p><input type="checkbox"/></p>				
5		Verify Rx2 Carrier acquisition threshold		Next Step: 6
		<p><b>Verify the carrier lock performance at worst case input level with nominal sweep rate and sweep range</b></p> <p><b>General logic</b></p> <ul style="list-style-type: none"> <li>- G/S gradually reduces the uplink power levels.</li> <li>- The carrier will then be brought down and brought up again with a sweep.</li> <li>- The lock status is checked once on-board lock achieved</li> </ul> <p><b>Nominal sweep rate (500Hz/s) and sweep range (<math>\pm 130</math> kHz)</b></p> <p><b>The Rx acquisition threshold shall be better than <math>-137</math> dBm</b></p>		
5.1		Stop TC data modulation		<input type="checkbox"/>
5.2		Perform carrier frequency sweep with an unmodulated carrier		<input type="checkbox"/>
		<b>Step down TC carrier power to 5dB above expected threshold (<math>-137</math> dBm)</b>		
		<p><b>Sweep rate = 500 Hz/s</b>  <b>Sweep range = TBC kHz</b>  <b>TC MI = 1.0 rad</b>  <b>U/L power level = - 132 dBm</b>  <b>TC signal = 4 Kbps</b></p>		
5.3		Check the Rx2 lock condition		<input type="checkbox"/>
		Verify Telemetry X2 AGC TMUplnk                   RMB41442                   = -132.0 dbmW		AND=ZAZ7I999
		Verify Telemetry X2 Rx Lock - RL                   RMB45442                   = Locked		AND=ZAZ7I999
		Verify Telemetry RX2 125-4K Stat                   RMB18442                   = 4 Kbps		AND=ZAZ7I999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
5.4		Check the Rx1 lock condition		<input type="checkbox"/>
		Verify Telemetry X1 AGC TMUplnk RMB20442		AND=ZAZ7I999
		Verify Telemetry RX1 125-4K Stat RMB17442	= 125 bps	AND=ZAZ7I999
5.5		Decrease the uplink level in 1 dB steps until on-board lock is not longer maintained		<input type="checkbox"/>
5.5.1		Between each cycle, verify that Rx2 acquires lock		<input type="checkbox"/>
		Verify Telemetry X2 AGC TMUplnk RMB41442		AND=ZAZ7I999
		Verify Telemetry X2 Rx Lock - RL RMB45442		AND=ZAZ7I999
5.6		Continue decreasing the uplink level until Threshold value - 3dB		<input type="checkbox"/>
5.7		Increase at 1dB steps until lock regained		<input type="checkbox"/>
5.7.1		Between each cycle, verify when Rx2 re-acquires lock		<input type="checkbox"/>
		Verify Telemetry X2 AGC TMUplnk RMB41442		AND=ZAZ7I999
		Verify Telemetry X2 Rx Lock - RL RMB45442		AND=ZAZ7I999
6		Verify RX2 demodulation threshold for both TC bit rates		Next Step: 7
		Verify the TC demodulated signal for decreasing uplink levels the TC HBR signal is verified, from -100 dBm (TBD) down to -120 dBm (which guarantees in this range the functionality of TC LBR too); the LBR signal is then verified from -121 dBm down to -133.5 dBm		
6.1		Start TC data modulation		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
6.2		Perform carrier frequency sweep		<input type="checkbox"/>
		<b>Sweep rate = 500 Hz/s</b> <b>Sweep range = ± 130 kHz</b> <b>TC MI = 1.0 rad</b> <b>U/L power level = - 100 dBm</b> <b>TC signal = 4 Kbps</b>		
6.3		Check the Rx2 lock condition		<input type="checkbox"/>
		Verify Telemetry X2 AGC TMUplnk RMB41442	= -100.0 dbmW	AND=ZAZ7I999
		Verify Telemetry X2 Rx Lock - RL RMB45442	= Locked	AND=ZAZ7I999
		Verify Telemetry X2 SqlchSts-SS RMB44442	= ON	AND=ZAZ7I999
		Verify Telemetry RX2 125-4K Stat RMB18442	= 4 Kbps	AND=ZAZ7I999
6.4		Check the Rx1 lock condition		<input type="checkbox"/>
		Verify Telemetry X1 AGC TMUplnk RMB20442		AND=ZAZ7I999
		Verify Telemetry RX1 125-4K Stat RMB17442	= 125 bps	AND=ZAZ7I999
6.5		For the uplink levels -100 to -120 dBm verify Rx2 performance		<input type="checkbox"/>
		<b>For the uplink levels -100 to -120 dBm perform the following actions and fill a table with the measured values :</b> <b>- set the required uplink level ;</b> <b>- verify Rx2 AGC;</b> <b>- verify Rx2 lock condition;</b> <b>- verify Squelch status</b>		
		Verify Telemetry X2 AGC TMUplnk RMB41442	<= -100.0 dbmW >= -120.0 dbmW	AND=ZAZ7I999
		Verify Telemetry X2 Rx Lock - RL RMB45442	= Locked	AND=ZAZ7I999
		Verify Telemetry X2 SqlchSts-SS RMB44442	= ON	AND=ZAZ7I999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
6.6		Verify that Rx2 TC demodulated signal squelch is "high" down to -120 dBm		<input type="checkbox"/>
		Verify Telemetry X2 SqlchSts-SS RMB44442	= ON	AND=ZAZ7I999
6.7		Send connection test TC		<input type="checkbox"/>
		<b>At uplink carrier level at Rx2 input: - 120 dBm, send a connection test TC</b>		
		Execute Telecommand ConnectionTest TC Control Flags : Subsch. ID : 10 Det. descr. : Perform Connection Test GBM IL DSE --Y -- ---	DC810180	
6.8		Verify connexion report packet TM(17,2)		<input type="checkbox"/>
		Verify Packet Reception Link Connection Report Packet Details: APID: 16 Type: 17 Subtype: 2 PI1: PI2:	LnkConneRep	
6.9		Configure on-board Rx2 for TC 125 bps RF link		<input type="checkbox"/>
		Execute Telecommand Xpnd_B_Rx125bps TC Control Flags : Subsch. ID : 10 Det. descr. : XPND B Select Rx bit rate to 125bps TC(8,4,115,10) GBM IL DSE --Y -- ---	DC95E170	
		Verify Telemetry RX2 125-4K Stat RMB18442	= 125 bps	AND=ZAZ7I999
6.10		Configuration RF up-link for TC 125 bps		<input type="checkbox"/>
		<b>The RF up-link shall be PSK/PM modulated (TC MI = 1.0 rad) by the TC signal configured for TC 125 bps RF link</b>		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
6.11		Configure on-board Rx1 for TC 4 Kbps RF link		<input type="checkbox"/>
		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	
		Verify Telemetry RX1 125-4K Stat RMB17442	= 4 Kbps	AND=ZAZ7I999
6.12		For the uplink levels -121 to -133.5 dBm verify Rx2 performance		<input type="checkbox"/>
		<b>For the uplink levels -121 to -133.5 dBm perform the following actions and fill a table with the measured values :</b> - set the required uplink level ; - verify Rx2 AGC; - verify Rx2 lock condition; - verify Squelch status		
		Verify Telemetry X2 AGC TMUplnk RMB41442	<= -121.0 dbmW >= -133.5 dbmW	AND=ZAZ7I999
		Verify Telemetry X2 Rx Lock - RL RMB45442	= Locked	AND=ZAZ7I999
		Verify Telemetry X2 SqlchSts-SS RMB44442	= ON	AND=ZAZ7I999
6.13		Verify that Rx2 TC demodulated signal squelch is "high" down to -133.5 dBm		<input type="checkbox"/>
		Verify Telemetry X2 SqlchSts-SS RMB44442	= ON	AND=ZAZ7I999
6.14		Send connection test TC		<input type="checkbox"/>
		<b>At uplink carrier level at Rx2 input: - 133.5 dBm, send a connection test TC</b>		

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		Execute Telecommand  ConnectionTest  TC Control Flags :  Subsch. ID : 10 Det. descr. : Perform Connection Test  GBM IL DSE --Y -- --	DC810180	
6.15		Verify connexion report packet TM(17,2)		<input type="checkbox"/>
		Verify Packet Reception  Link Connection Report  Packet Details:  APID: 16 Type: 17 Subtype: 2 PI1: PI2:	LnkConnecRep	
7		Restore uplink TC bit rate to Rx2 = 4kbps , Rx1 = 125 bps		Next Step: END
7.1		Perform carrier frequency sweep		<input type="checkbox"/>
		<b>Sweep rate = 500 Hz/s</b> <b>Sweep range = ± 130 kHz</b> <b>TC MI = 1.0 rad</b> <b>U/L power level = - 100 dBm (TBC)</b> <b>TC signal = 125 bps</b>		
7.2		Check the Rx2 lock condition		<input type="checkbox"/>
		Verify Telemetry X2 AGC TMUplnk RMB41442	= -100.0 dbmW	AND=ZAZ7I999
		Verify Telemetry X2 Rx Lock - RL RMB45442	= Locked	AND=ZAZ7I999
		Verify Telemetry RX2 125-4K Stat RMB18442	= 125 bps	AND=ZAZ7I999
7.3		Configure on-board Rx2 for TC 4 kbps RF link		<input type="checkbox"/>



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand  Xpnd_B_Rx4kbps  TC Control Flags :  Subsch. ID : 10 Det. descr. : XPND B Select Rx bit rate to 4kbps TC(8,4,115,10)  GBM IL DSE --Y -- ---	DC96E170	
		Verify Telemetry  RX2 125-4K Stat RMB18442	= 4 Kbps	AND=ZAZ7I999
7.4		Configure RF up-link for TC 4 kbps		<input type="checkbox"/>
		<b>The RF up-link shall be PSK/PM modulated (TC MI = 1.0 rad) by the TC signal configured for TC 4 kbps RF link</b>		
7.5		Send connection test TC		<input type="checkbox"/>
		Execute Telecommand  ConnectionTest  TC Control Flags :  Subsch. ID : 10 Det. descr. : Perform Connection Test  GBM IL DSE --Y -- ---	DC810180	
7.6		Verify connexion report packet TM(17,2)		<input type="checkbox"/>
		Verify Packet Reception  Link Connection Report Packet Details:  APID: 16 Type: 17 Subtype: 2 PI1: PI2:	LnkConnecRep	
7.7		Configure on-board Rx1 for TC 125 bps RF link		<input type="checkbox"/>
		Execute Telecommand  Xpnd_A_Rx125bps  TC Control Flags :  Subsch. ID : 10 Det. descr. : XPND A Select Rx bit rate to 125bps TC(8,4,115,10)  GBM IL DSE --Y -- ---	DC93E170	
		Verify Telemetry  RX1 125-4K Stat RMB17442	= 125 bps	AND=ZAZ7I999

RXs Thresholds Check  
File: H\_COP\_TTC\_TTC2.xls  
Author: E. Picallo



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<b>End of Procedure</b>				