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DELTA Test Report

TEST Reg. no. 19

Test of BTB-2 according to FCC and IC specifications

Performed for GN Hearing A/S

DANAK-19/12482
Project no.: T203281-4
Page 1 of 98
including Annex 1

19 October 2012

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Title	Test of BTB-2 according to FCC and IC specifications
Test object	BTB-2
Report no.	DANAK-19/12482
Project no.	T203281-4
Test period	06 to 16 October 2012
Client	GN Hearing A/S Lautrupbjerg 7 2750 Ballerup Denmark Tel.: +45 45 75 11 11
Contact person	Vinnie Nørager E-mail: vnoerager@gnresound.dk
Manufacturer	GN Hearing A/S
Specifications	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010
Results	The test objects were found to be in compliance with the specifications, as listed in Section 1
Test personnel	Peter Wolf Frandsen Claus Momme Thomsen Henrik Egeberg Nielsen
Test site(s)	DELTA, Venlighedsvej 4, 2970 Hørsholm, Denmark

Date 19 October 2012

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Table of contents

1. Summary of tests

The authorization procedures for the BTB-2 are:

Declaration of Conformity by FCC Part 15 B, Class B (residential use).
Certification by FCC Part 15 C.

Tests	Test methods	Rule Section	Results
Antenna requirement	Visual inspection	47 CFR Part 15.203 RSS-Gen, 7.1.2	Passed
Measurement of radio frequency voltage on mains	ANCI C63.10:2009	47 CFR Part 15.107 47 CFR Part 15.207 RSS-Gen, 4.10	Passed
Measurement of radiated emission	ANCI C63.10:2009	47 CFR Part 15.109 47 CFR Part 15.209 47 CFR Part 15.249(a)(d)(e) RSS-210, 2.5 & A2.9	Passed
Measurement of field strength of fundamental	ANCI C63.10:2009	47 CFR Part 15.249(a)(e) RSS-210, 2.5 & A2.9	Passed
Measurement of 20 dB bandwidth	ANCI C63.10:2009	47 CFR Part 15.215(c)	Passed
Measurement of band edge compliance	ANCI C63.10:2009	47 CFR Part 15.209(a) 47 CFR Part 15.249(d)(e) RSS-210, 2.5 & A2.9	Passed
Measurement of occupied bandwidth	RSS-Gen, Issue 3:2010	RSS-Gen, 4.6.1	Passed
Measurement of radiated emission, receiver	EN 300 328 V1.7.1:2006	RSS-Gen, 6 RSS-210, 2.5	Passed

The given result is based on a shared risk principle with respect to the measurement uncertainty.

Conclusion

The test objects mentioned in this report meet the requirements of the standards stated below.

- 47 CFR Part 15, Subpart B, Class B
- 47 CFR Part 15, Subpart C (Specific rule part §15.249)
- RSS-210, Issue 8:2010
- RSS-Gen, Issue 3:2010

The test results relate only to the objects tested.

2. Test objects and auxiliary equipment

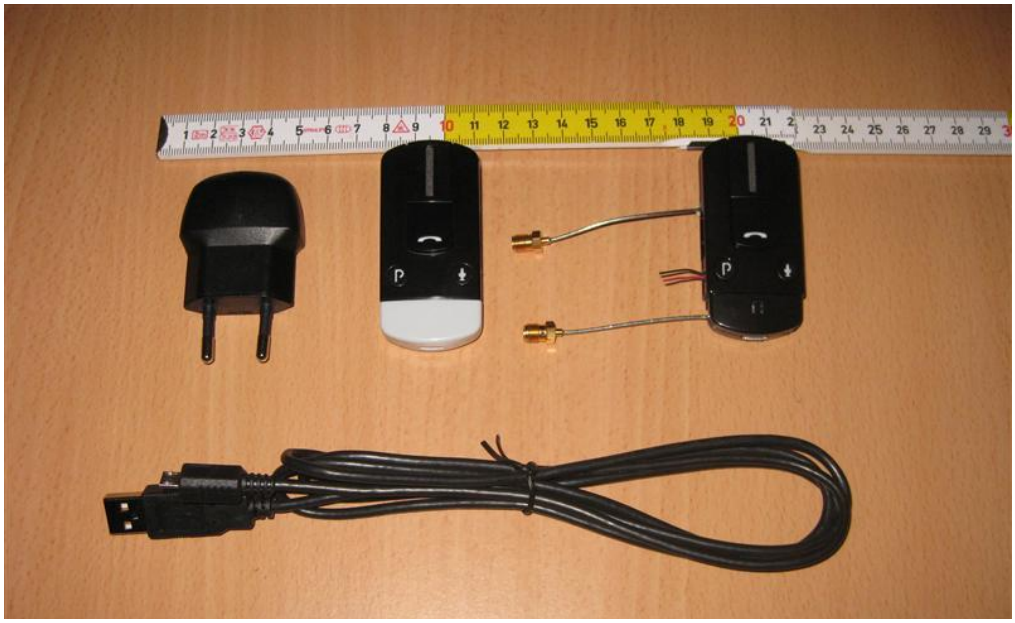

Photo 2.1.1 Test objects.

2.1 Test objects

Test object 2.1.1

Name of test object	BTB-2
Model / type	BTB-2
Part no.	BTB-2
Serial no.	V4 (SVI) 181
FCC ID	X26BTB-2
IC ID	6941C-BTB2
Manufacturer	GN Hearing A/S
Supply voltage	3.7 VDC internal rechargeable battery
Software version	Spurious emission firmware: Tx and Rx Delta Test App 2.6 CSR Bluesuite 2.5 – Bluetest 3
Hardware version	-
Cycle time	< 1.8 ms
Highest frequency generated or used	2.48 GHz
Comment	Supplied by external power supply through USB connector GN radio ON, Bluetooth radio OFF

Test object 2.1.2

Name of test object	BTB-2
Model / type	BTB-2
Part no.	BTB-2
Serial no.	291 V4b
FCC ID	X26BTB-2
IC ID	6941C-BTB2
Manufacturer	GN Hearing A/S
Supply voltage	3.7 VDC internal rechargeable battery
Software version	Spurious emission firmware: Tx and Rx Delta Test App 2.6 CSR Bluesuite 2.5 – Bluetest 3
Hardware version	-
Cycle time	< 1.8 ms
Highest frequency generated or used	2.48 GHz
Comment	Supplied by external power supply through USB connector GN radio OFF, BT radio ON with modulation GFSK

Test object 2.1.3

Name of test object	BTB-2
Model / type	BTB-2
Part no.	BTB-2
Serial no.	V4 (SVI) 151
FCC ID	X26BTB-2
IC ID	6941C-BTB2
Manufacturer	GN Hearing A/S
Supply voltage	3.7 VDC internal rechargeable battery
Software version	Spurious emission firmware: Tx and Rx Delta Test App 2.6 CSR Bluesuite 2.5 – Bluetest 3
Hardware version	-
Cycle time	< 1.8 ms
Highest frequency generated or used	2.48 GHz
Comment	Supplied by external power supply through USB connector GN radio OFF, BT radio ON with modulation π/4-DQPSK

Test object 2.1.4

Name of test object	BTB-2
Model / type	BTB-2
Part no.	BTB-2
Serial no.	V4 (SVI) 168
FCC ID	X26BTB-2
IC ID	6941C-BTB2
Manufacturer	GN Hearing A/S
Supply voltage	3.7 VDC internal rechargeable battery
Software version	Spurious emission firmware: Tx and Rx Delta Test App 2.6 CSR Bluesuite 2.5 – Bluetest 3
Hardware version	-
Cycle time	< 1.8 ms
Highest frequency generated or used	2.48 GHz
Comment	Supplied by external power supply through USB connector GN radio OFF, BT radio ON with modulation 8-DPSK

Test object 2.1.5

Name of test object	BTB-2
Model / type	BTB-2
Part no.	BTB-2
Serial no.	339 V4b
FCC ID	X26BTB-2
IC ID	6941C-BTB2
Manufacturer	GN Hearing A/S
Supply voltage	3.7 VDC internal rechargeable battery
Software version	Spurious emission firmware: Tx and Rx Delta Test App 2.6 CSR Bluesuite 2.5 – Bluetest 3
Hardware version	-
Cycle time	< 1.8 ms
Highest frequency generated or used	2.48 GHz
Comment	Supplied by external power supply or battery External antenna connector GN radio ON, Bluetooth radio OFF

Test object 2.1.6

Name of test object	BTB-2
Model / type	BTB-2
Part no.	BTB-2
Serial no.	V4-184
FCC ID	X26BTB-2
IC ID	6941C-BTB2
Manufacturer	GN Hearing A/S
Supply voltage	3.7 VDC internal rechargeable battery
Software version	Spurious emission firmware: Tx and Rx Delta Test App 2.6 CSR Bluesuite 2.5 – Bluetest 3
Hardware version	-
Cycle time	< 1.8 ms
Highest frequency generated or used	2.48 GHz
Comment	Supplied by external power supply or battery External antenna connector GN radio OFF, BT radio ON with modulation GFSK

Test object 2.1.7

Name of test object	BTB-2
Model / type	BTB-2
Part no.	BTB-2
Serial no.	320 V4b
FCC ID	X26BTB-2
IC ID	6941C-BTB2
Manufacturer	GN Hearing A/S
Supply voltage	3.7 VDC internal rechargeable battery
Software version	Spurious emission firmware: Tx and Rx Delta Test App 2.6 CSR Bluesuite 2.5 – Bluetest 3
Hardware version	-
Cycle time	< 1.8 ms
Highest frequency generated or used	2.48 GHz
Comment	Supplied by external power supply or battery External antenna connector GN radio OFF, BT radio ON with modulation π/4-DQPSK

Test object 2.1.8

Name of test object	BTB-2
Model / type	BTB-2
Part no.	BTB-2
Serial no.	338 V4b
FCC ID	X26BTB-2
IC ID	6941C-BTB2
Manufacturer	GN Hearing A/S
Supply voltage	3.7 VDC internal rechargeable battery
Software version	Spurious emission firmware: Tx and Rx Delta Test App 2.6 CSR Bluesuite 2.5 – Bluetest 3
Hardware version	-
Cycle time	< 1.8 ms
Highest frequency generated or used	2.48 GHz
Comment	Supplied by external power supply or battery External antenna connector GN radio OFF, BT radio ON with modulation 8-DPSK

Test object 2.1.9

Name of test object	BTB-2
Model / type	BTB-2
Part no.	BTB-2
Serial no.	V4-185
FCC ID	-
Manufacturer	GN Hearing A/S
Supply voltage	3.7 VDC internal rechargeable battery
Software version	Normal mode firmware BTB-2
Cycle time	Continually
Highest frequency generated or used	Not relevant
Comment	None

2.2 Auxiliary equipment

Auxiliary equipment 2.2.1

Name of auxiliary equipment	AC/DC Adaptor for BTB-2
Model / type	FW7713
Part no.	-
Serial no.	0912K
FCC ID	-
Manufacturer	I.T.E power supply
Supply voltage	100-240 VAC
Comment	A maximum of 4 AC/DC Adaptors was used, all with the same serial no.

Auxiliary equipment 2.2.2

Name of auxiliary equipment	SY312
Model / type	SY312
Part no.	SY312
Serial no.	AL930-DW
FCC ID	-
Manufacturer	GN Hearing A/S
Supply voltage	1.3 VDC
Comment	None

3. General test conditions

3.1 Test setup during test

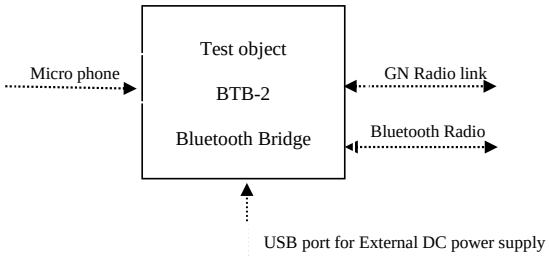

Figure 3.1.1 Block diagram of test object with external cables.

3.1.1 Description and intended use of test object

Bluetooth Bridge (BTB-2) is used to stream audio from an audio source (Mobile phone or other Bluetooth device) to hearing aids.

3.1.2 Test modes during tests

All test objects were running special test software

During test, the test objects were in continuous Tx mode (normal modulation, normal data packets with optimised repetition rate).

Tests were performed at three frequencies for the Bluetooth radio:

- Low frequency: 2402 MHz
- Middle frequency: 2441 MHz
- High frequency: 2480 MHz.

Relevant test are repeated with the additional modulation using the pay load. Related packed types are e.g. GFSK, π/4-DQPSK and 8DPSK.

Tests were performed at three frequencies for the GN radio:

- Low frequency: 2404 MHz
- Middle frequency: 2440 MHz
- High frequency: 2478 MHz.

During relevant tests, the external DC power supply was used.

3.2 Test sequence

The tests described in this test report were performed in the following sequence:

1. Antenna requirement
2. Peak average correction factor (PACF),
3. Measurement of radiated emission
4. Measurement of field strength of fundamental
5. Measurement of 20 dB bandwidth
6. Measurement of band edge compliance
7. Measurement of occupied bandwidth
8. Measurement of radiated emission, receiver.
9. Measurement of radio frequency voltage on mains

3.3 Radio specifications, receiver and transmitter, GN radio

Test object	BTB-2	Sheet	Radio-1
Type	BTB-2	Project no.	T203281-4
Serial no.	All	Date	25 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

The radio of the test object has the following specified RF parameters. The below mentioned information regarding the receiver and the transmitter is declared by the manufacturer.

Type of equipment	:	Low power device (2400-2483.5 MHz)
Operating frequency range	:	2404 to 2478 MHz
Antenna	:	Permanently attached PCB antenna
Maximum gain	:	2.27 dBi
Transmit power, max peak	:	10.57 dBm EIRP
Field Strength, max peak	:	105.8 dBµV/m (195 mV/m) @ 3 meter
Power level	:	No
No of channels	:	20
Bandwidth	:	
Occupied bandwidths (99%)	:	2.2 MHz (Measured)
Channel separation	:	2 MHz
Modulation	:	GFSK / π/4-DQPSK / 8-QPSK
Data rate	:	2 Mbits
Duty cycle	:	10 % during normal mode
Transmit mode	:	Yes
Receive mode	:	Yes
Standby mode	:	Yes
Power supply	:	Li-Ion battery, 3.7 VDC or 5 VDC through USB port
Specified min voltage	:	4.4 VDC
Specified max voltage	:	5.5 VDC
Temperature category	:	-20 to +55 ºC.
Emission Designator	:	2M20F7E
Max. TX spurious emission, average	:	291.7 (µV/m) @ 3 meter (Field Strength)
Max. RX spurious emission, peak	:	184.7 (µV/m) @ 3 meter (Field Strength).

3.4 Radio specifications, receiver and transmitter, Bluetooth radio

Test object	BTB-2	Sheet	Radio-2
Type	BTB-2	Project no.	T203281-4
Serial no.	All	Date	25 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

The radio of the test object has the following specified RF parameters. The below mentioned information regarding the receiver and the transmitter is declared by the manufacturer.

Type of equipment	:	Low power device (2400-2483.5 MHz)
Operating frequency range	:	2402 to 2480 MHz
Antenna	:	Permanently attached Chip antenna
Maximum gain	:	-3.33 dBi
Transmit power, max peak	:	-0.43 dBm EIRP
Field Strength, max peak	:	94.8 dBµV/m (55 mV/m) @ 3 meter
Power level	:	No
No of channels	:	20
Bandwidth	:	
Occupied bandwidths (99%)	:	1.6 MHz (Measured)
Channel separation	:	1 MHz
Modulation	:	GFSK
Data rate	:	2 Mbits
Duty cycle	:	10 % during normal mode
Transmit mode	:	Yes
Receive mode	:	Yes
Standby mode	:	Yes
Power supply	:	Li-Ion battery, 3.7 VDC or 5 VDC through USB port
Specified min voltage	:	4.4 VDC
Specified max voltage	:	5.5 VDC
Temperature category	:	-20 to +55 ºC.
Emission Designator	:	1M60G7E
Max. TX spurious emission, average	:	291.7 (µV/m) @ 3 meter (Field Strength)
Max. RX spurious emission, peak	:	184.7 (µV/m) @ 3 meter (Field Strength).

The test sample is a Bluetooth device. Its pseudorandom hopping scheme, authentication, receiver parameter, synchronisation procedure and other parameters are determined by Bluetooth Core specification.

Relevant tests are repeated with the additional modulation using the pay load. Related packed types are e.g. GFSK, π/4-DQPSK and 8DPSK.

4. Test results

4.1 Antenna requirement

Test object	BTB-2	Sheet	ANT-3
Type	BTB-2	Project no.	T203281-4
Serial no.	V4 (SVI) 181	Date	06 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method **Visual inspection**

Evaluation criteria

Section 15.203 of the FCC rules and 7.1.2 of RSS-Gen state that the subject device must meet at least one of the following criteria:

(a) Antenna must be permanently attached to the unit.

(b) Antenna must use a unique type of connector to attach the unit.

(c) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

Evaluation result

The BTB-2 has two permanently attached antennas:

- The Bluetooth radio has a Chip antenna
- The GN radio has a PCB antenna – Planar Inverted F antenna.
- Both antennas comply with criteria (a)

4.2 Peak average correction factor (PACF), GN radio

Test object	BTB-2	Sheet	ANT-4
Type	BTB-2	Project no.	T203281-4
Serial no.	V4 (SVI) 181	Date	5 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method	ANSI C63.10:2009
Characteristics	Temperature: 22 °C. Test voltage: 3.7 VDC
Test equipm.	49550 49183 49299 Uncertainty: 1•10-7 sec.
SA Settings	RBW: 3 MHz VBW: 10 MHz SPAN: Zero-1ms DET: Peak CF: 2440 MHz Trace: Max Hold

The measured value for the duty cycle (DC):

Max. Tx on time: 221 µs – Delta 2 (T1)

Period: 1763 µs – Delta 3 (T1).

The calculated duty cycle is:

DC: ((Max. Tx) µs / (period) µs) • 100% ≈ 12.5 %.

This corresponds to a Peak to Average Correction Factor of:

PACF: 20 log (DC/100) ≈ -18 dB.

This is according to CFR 47 Part 15, Subpart A, Specific rule part §15.35(c) and RSS-Gen section 4.5. This is valid for one complete pulse train, including blanking intervals and the pulse train do not exceed 0.1 seconds.

This PACF can be subtracted from the peak measurements to obtain the average.

Corrected average: ($P_{Average(resulting)} = P_{peak} + PACF$).

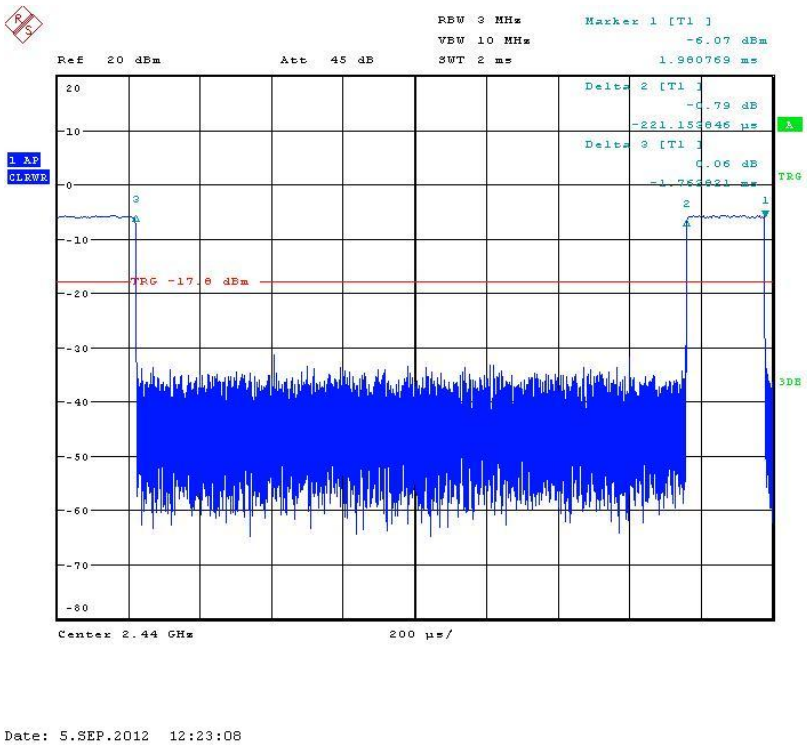

Photo 4.2.1 Peak measurement plot, GN radio.

4.3 Peak average correction factor (PACF), BT GFSK

Test object	BTB-2	Sheet	ANT-5
Type	BTB-2	Project no.	T203281-4
Serial no.	291 V4b	Date	5 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method	ANSI C63.10:2009
Characteristics	Temperature: 22 °C. Test voltage: 3.7 VDC
Test equipm.	49550 49183 Uncertainty: 1•10-7 sec.
SA Settings	RBW: 3 MHz VBW: 10 MHz SPAN: Zero-1ms DET: Peak CF: 2441 MHz Trace: Max Hold

The measured value for the duty cycle (DC):

Max. Tx on time: 224 µs – Delta 2 (T1)

Period: 1500 µs – Delta 3 (T1).

The calculated duty cycle is:

DC: ((Max. Tx) µs / (period) µs) • 100% ≈ 14.9 %.

This corresponds to a Peak to Average Correction Factor of:

PACF: 20 log (DC/100) ≈ -16.5 dB.

This is according to CFR 47 Part 15, Subpart A, Specific rule part §15.35(c) and RSS-Gen section 4.5. This is valid for one complete pulse train, including blanking intervals and the pulse train do not exceed 0.1 seconds.

This PACF can be subtracted from the peak measurements to obtain the average.

Corrected average: ($P_{Average(resulting)}$ = Ppeak + PACF).

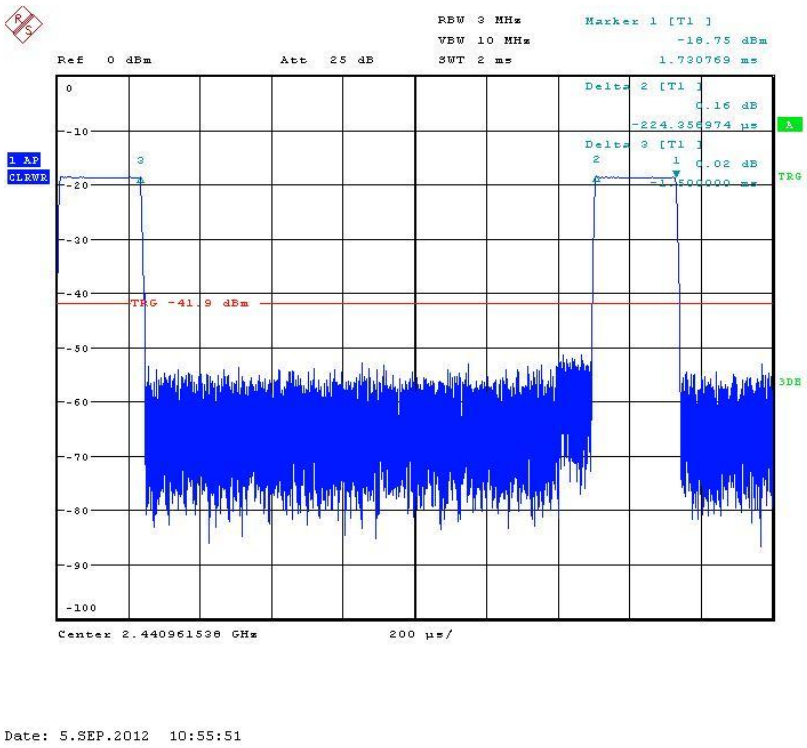

Photo 4.3.1 Peak measurement plot, Bluetooth Radio GFSK modulation.

4.4 Peak average correction factor (PACF), BT π/4-DQPSK

Test object	BTB-2	Sheet	ANT-6
Type	BTB-2	Project no.	T203281-4
Serial no.	V4 (SVI) 151	Date	5 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method	ANSI C63.10:2009
Characteristics	Temperature: 22 °C. Test voltage: 3.7 VDC
Test equipm.	49550 49183 Uncertainty: 1•10-7 sec.
SA Settings	RBW: 3 MHz VBW: 10 MHz SPAN: Zero-1ms DET: Peak CF: 2441 MHz Trace: Max Hold

The measured value for the duty cycle (DC):

Max. Tx on time: 208 µs – Delta 2 (T1)

Period: 1446 µs – Delta 3 (T1).

The calculated duty cycle is:

DC: ((Max. Tx) µs / (period) µs) • 100% ≈ 14.4 %.

This corresponds to a Peak to Average Correction Factor of:

PACF: 20 log (DC/100) ≈ -16.8 dB.

This is according to CFR 47 Part 15, Subpart A, Specific rule part §15.35(c) and RSS-Gen section 4.5. This is valid for one complete pulse train, including blanking intervals and the pulse train do not exceed 0.1 seconds.

This PACF can be subtracted from the peak measurements to obtain the average.

Corrected average: ($P_{Average(resulting)} = P_{peak} + PACF$).

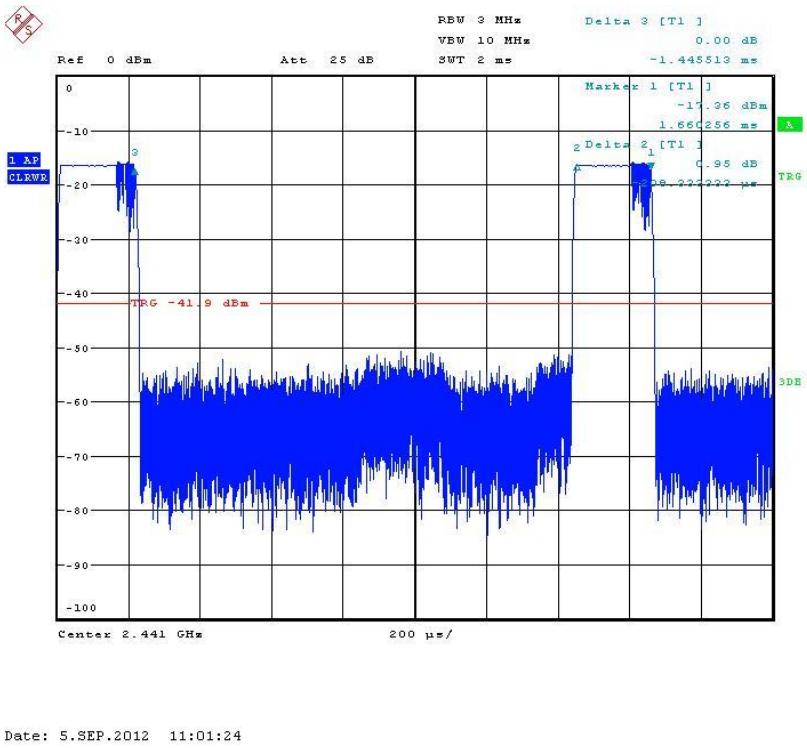

Photo 4.4.1 Peak measurement plot, Bluetooth Radio π/4-DQPSK modulation.

4.5 Peak average correction factor (PACF), BT 8-DPSK

Test object	BTB-2	Sheet	ANT-7
Type	BTB-2	Project no.	T203281-4
Serial no.	V4 (SVI) 168	Date	5 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method	ANSI C63.10:2009
Characteristics	Temperature: 22 °C. Test voltage: 3.7 VDC
Test equipm.	49550 49183 Uncertainty: 1•10-7 sec.
SA Settings	RBW: 3 MHz VBW: 10 MHz SPAN: Zero-1ms DET: Peak CF: 2441 MHz Trace: Max Hold

The measured value for the duty cycle (DC):

Max. Tx on time: 202 µs – Delta 2 (T1)

Period: 1410 µs – Delta 3 (T1).

The calculated duty cycle is:

DC: ((Max. Tx) µs / (period) µs) • 100% ≈ 14.3 %.

This corresponds to a Peak to Average Correction Factor of:

PACF: 20 log (DC/100) ≈ -16.9 dB.

This is according to CFR 47 Part 15, Subpart A, Specific rule part §15.35(c) and RSS-Gen section 4.5. This is valid for one complete pulse train, including blanking intervals and the pulse train do not exceed 0.1 seconds.

This PACF can be subtracted from the peak measurements to obtain the average.

Corrected average: ($P_{Average(resulting)} = P_{peak} + PACF$).

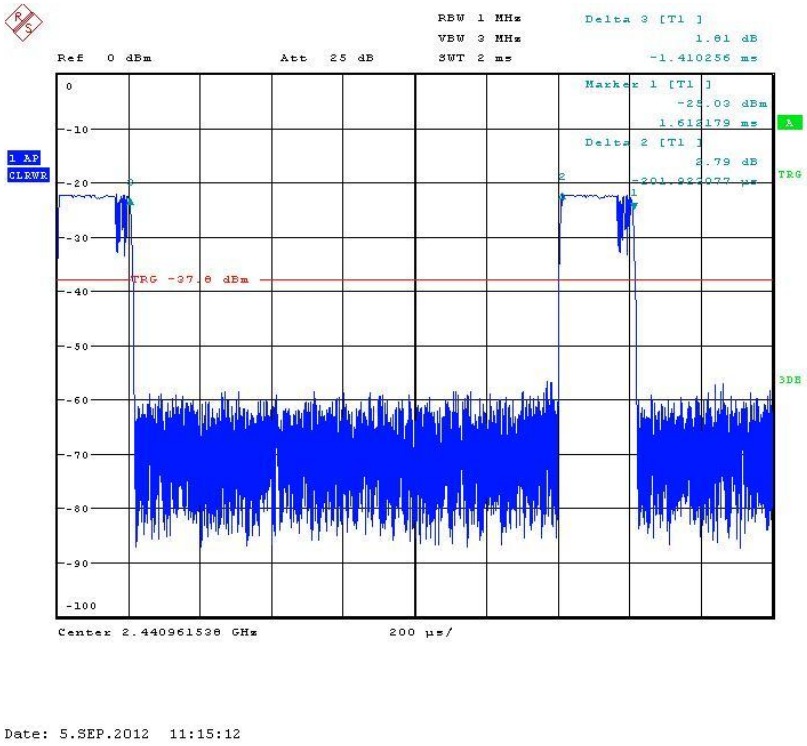

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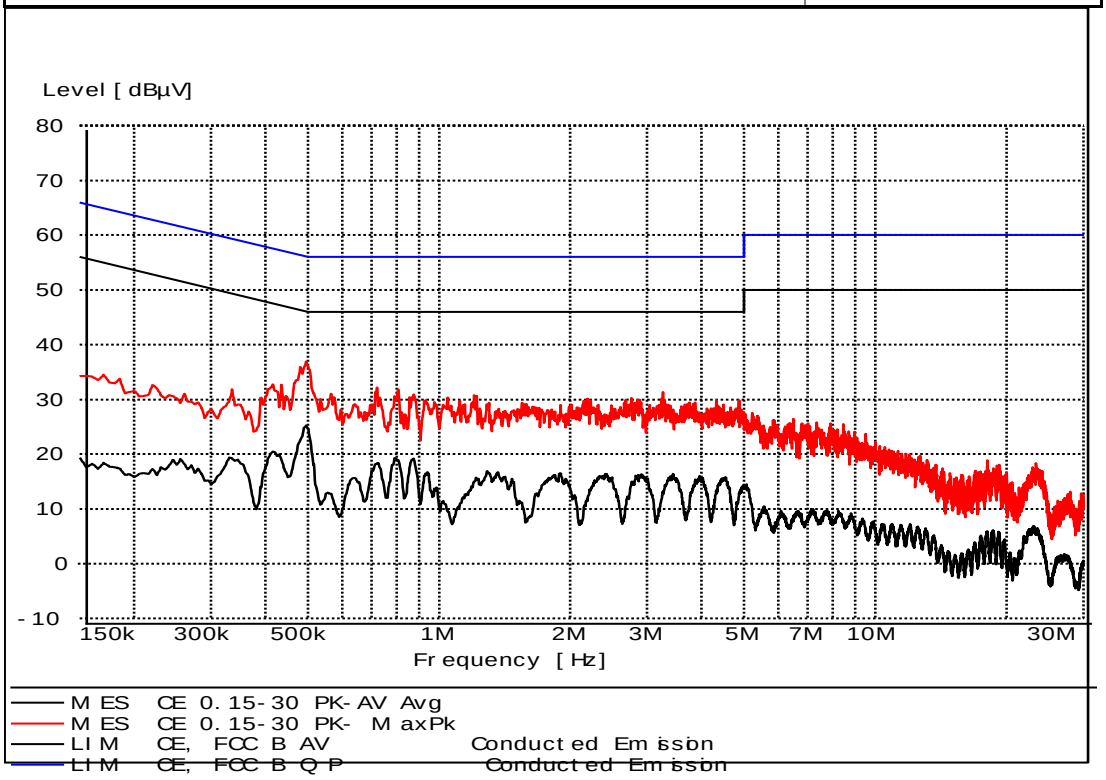
Photo 4.5.1 Peak measurement plot, Bluetooth Radio 8-DPSK modulation.

4.6 Measurement of radio frequency voltage on mains

Test object	BTB-2	Sheet	CE-1
Type	BTB-2	Project no.	T203281-4
Serial no.	V4-185	Date	16 Oct. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	0.15-30 MHz

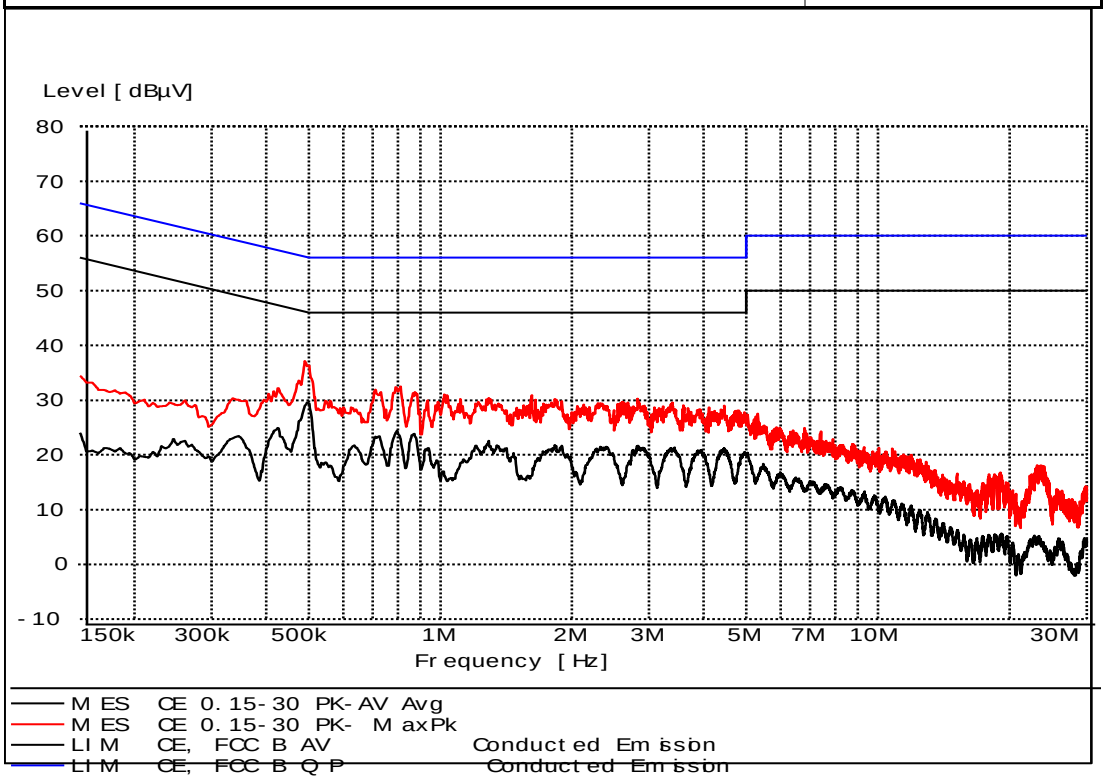
Test method Characteristics	ANSI C63.10:2009 Artificial mains network: 50 Ω, 50 µH	Temperature Humidity	23 °C 48 % RH
Detector	Peak and average	Bandwidth	10 kHz
Test equipm.	EMI room Hørsholm 29301 49421 49600 29861	Uncertainty	2.7 dB



Line under test	Neutral
Test result	The measured voltages were below the limit
Comments	AC/DC Adaptor Mains voltage: 120 VAC.

Test object	BTB-2	Sheet	CE-2
Type	BTB-2	Project no.	T203281-4
Serial no.	V4-185	Date	16 Oct. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	0.15-30 MHz

Test method Characteristics	ANSI C63.10:2009 Artificial mains network: 50 Ω, 50 µH	Temperature Humidity	23 °C 48 % RH
Detector	Peak and average	Bandwidth	10 kHz
Test equipm.	EMI room Hørsholm 29301 49421 49600 29861	Uncertainty	2.7 dB



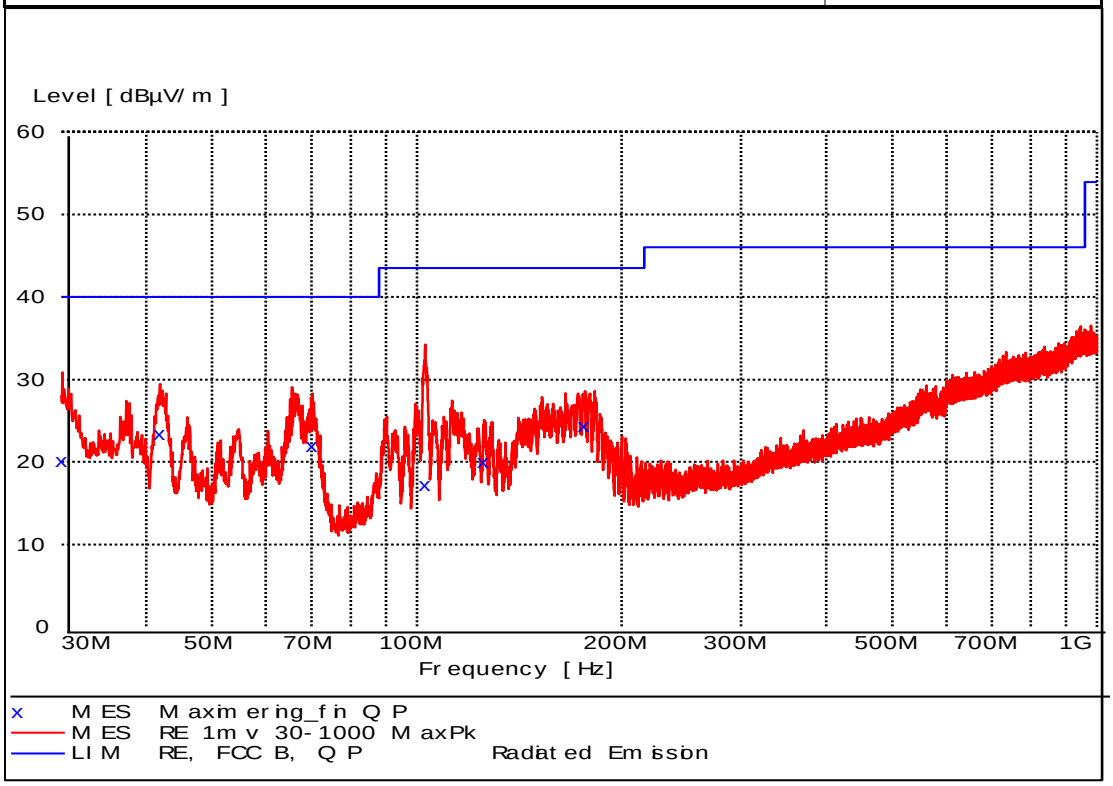
Line under test	Line
Test result	The measured voltages were below the limit
Compliant	Yes
Comments	AC/DC Adaptor mains voltage: 120 VAC. Normal mode firmware BTB-2 paired to a hearing instrument (GN radio) and Mobil phone (Bluetooth radio) streaming music.

Photo 4.6.1 Test setup regarding measurement of radio frequency voltage on mains.

4.7 Measurement of radiated emission below 1 GHz

Test object	Combination of; 2.1.1: BTB-2; 2.1.2: BTB-2; 2.1.3: BTB-2; 2.1.4: BTB-2	Sheet	RE_Spur-1
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	HEN
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	30-1000 MHz

Test method Characteristics	ANSI C63.10:2009 Pre-scan, antenna at 3 m, 1 m height, vert. pol.	Temperature Humidity	23 °C 48 % RH
Detector	Peak and quasi peak	Bandwidth	120 kHz
Test equipm.	EMI room Hørsholm 29301 29861 49600 29797	Uncertainty	4.9 dB

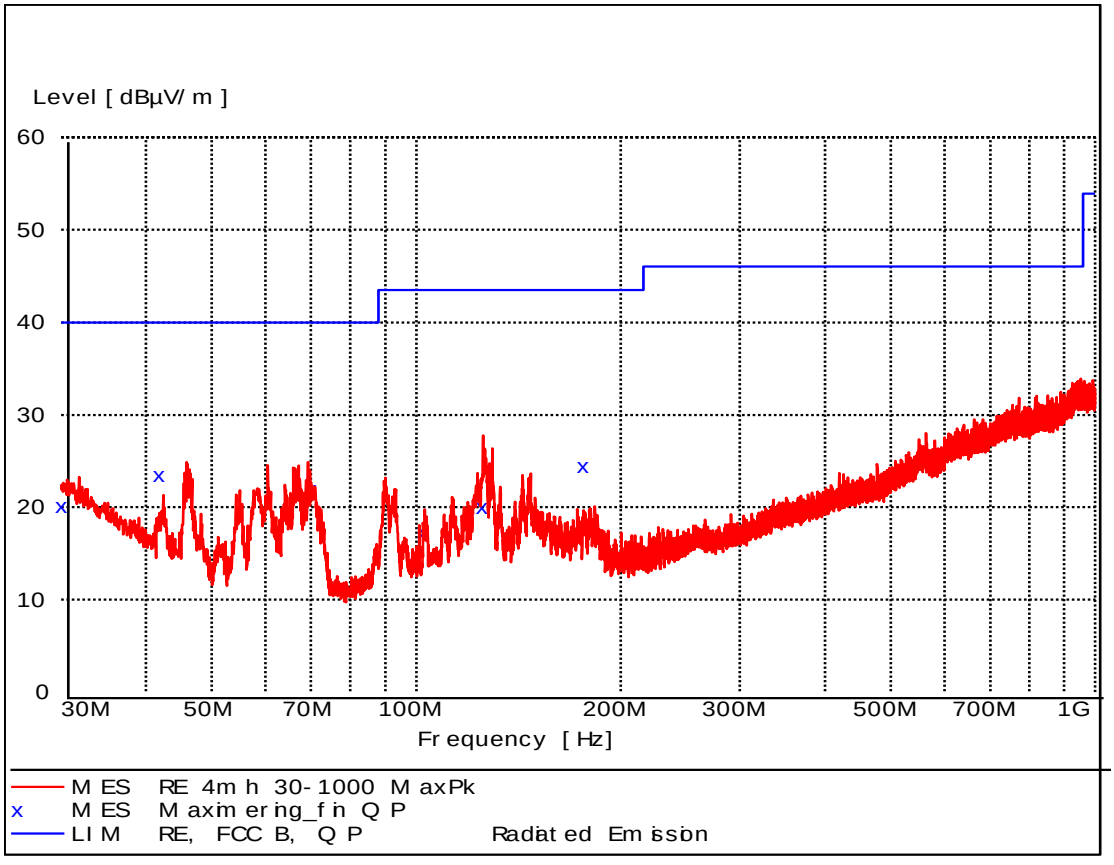


Comments

Continuous Tx - Hopping low-middle-high channel.
Modulation: GN Radio: Normal.
Bluetooth radio: GFSK, π/4 QPSK, and 8 DPSK.

Test object	Combination of; 2.1.1: BTB-2; 2.1.2: BTB-2; 2.1.3: BTB-2; 2.1.4: BTB-2	Sheet	RE_Spur-2
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	HEN
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	30-1000 MHz

Test method Characteristics	ANSI C63.10:2009 Pre-scan, antenna at 3 m, 4 m height, hor. pol.	Temperature Humidity	23 °C 48 % RH
Detector	Peak and quasi peak	Bandwidth	120 kHz
Test equipm.	EMI room Hørsholm 29301 29861 49600 29797	Uncertainty	4.9 dB



Comments

Continuous Tx - Hopping low-middle-high channel.

Modulation: GN Radio: Normal.
Bluetooth radio: GFSK, π/4 QPSK, and 8 DPSK.

Test object	Combination of; 2.1.1: BTB-2; 2.1.2: BTB-2; 2.1.3: BTB-2; 2.1.4: BTB-2	Sheet	RE_Spur-3
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	HEN
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	30-1000 MHz

Test method Characteristics	ANSI C63.10:2009 Peak search ant. at 3 m, height: 1-4 m, v/h pol.	Temperature Humidity	23 °C 48 % RH
Detector	Quasi peak	Bandwidth	120 kHz
Test equipm.	EMI room Hørsholm 29301 29861 49600 29797	Uncertainty	4.9 dB

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
30.120000	20.10	20.9	40.0	19.9	111.0	44.00	VERTICAL
41.940000	23.50	14.4	40.0	16.5	104.0	82.00	VERTICAL
70.260000	22.00	9.3	40.0	18.0	194.0	89.00	VERTICAL
102.840000	17.30	13.2	43.5	26.2	111.0	14.00	VERTICAL
125.520000	20.00	14.3	43.5	23.5	219.0	164.00	HORIZONTAL
176.760000	24.40	12.8	43.5	19.1	104.0	96.00	VERTICAL

Test result: The measured field strengths were below the limit

Test Port: Enclosure

Test frequency: BT radio: 2402/2441/2480 MHz
GN radio: 2404/2440/2478 MHz

Test mode: Continuous Tx - Hopping low-middle-high channel.
Modulation: GN Radio: Normal.
Bluetooth radio: GFSK, π/4 QPSK, and 8 DPSK.

Condition: Normal

Compliant: Yes

Comments: Final maximal measurements by variation of turntable azimuth, antenna height, and antenna polarisation.

Test voltage: Powered through USB port by AUX AC/DC Adaptor.

Photo 4.7.1 Test setup regarding measurement of radiated emission below 1 GHz.

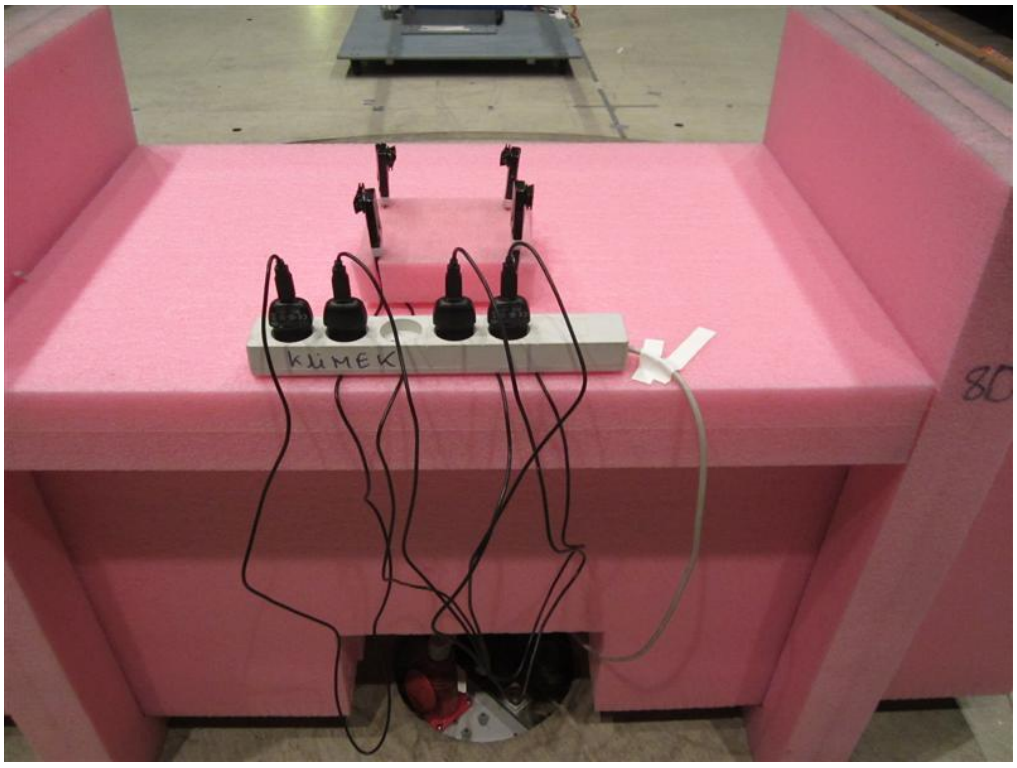
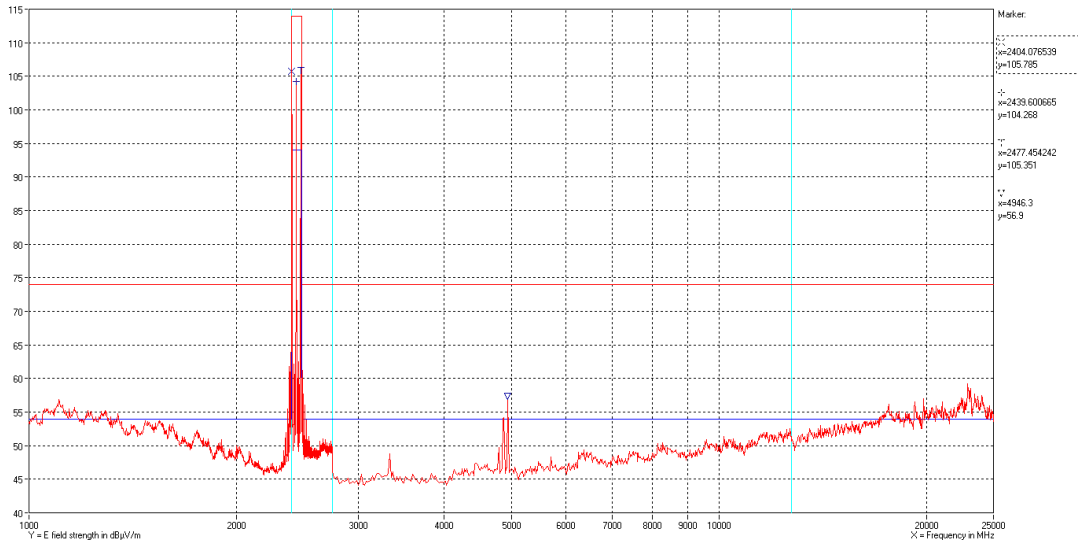


Photo 4.7.2 Test setup regarding measurement of radiated emission below 1 GHz.

4.8 Measurement of radiated emission above 1 GHz GN Radio

Test object	BTB-2	Sheet	RE_Spur-4
Type	BTB-2	Project no.	T203281-4
Serial no.	V4 (SVI) 181	Date	6 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, Antenna distance 3 m	Temperature Humidity	25 °C 51 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB



Polarization: Vertical and horizontal peak measurements

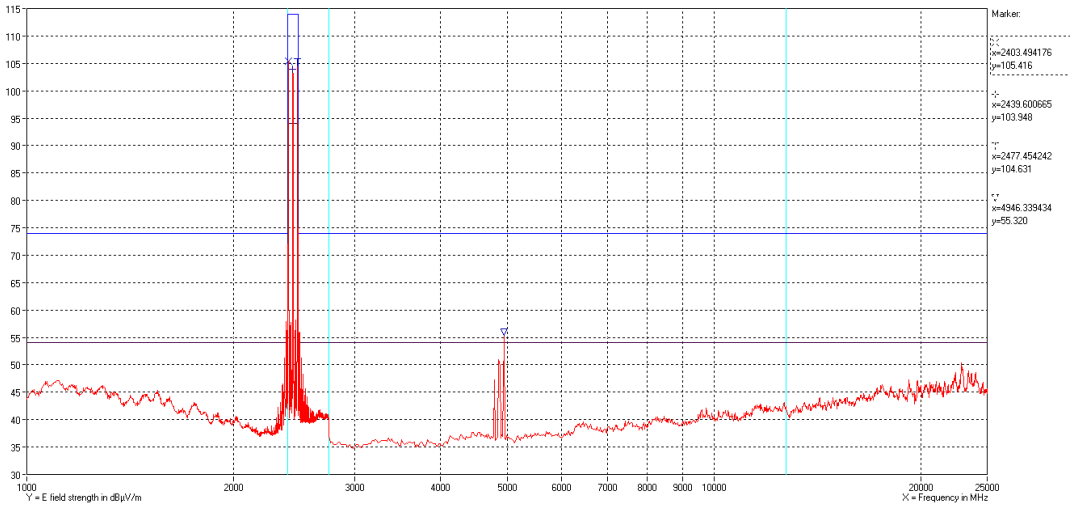
Comments:

Radio: GN proximity radio
Modulation: Normal
Frequency: 2404/2440/2478 MHz

In the frequency range below 2 GHz and above 10 GHz, the peak noise floor is above the 54 dBµV/m average limit and this peak noise floor is generated by the measurement setup.
Measured with 1 MHz video BW.

Test object	BTB-2	Sheet	RE_Spur-5
Type	BTB-2	Project no.	T203281-4
Serial no.	V4 (SVI) 181	Date	6 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	25 °C 51 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
		Video BW	30 kHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB



Polarization: Vertical and horizontal peak measurements

Comments:
Radio: GN proximity radio
Modulation: Normal
Frequency: 2404/2440/2478 MHz

Measured with 30 kHz Video BW to reduce the noise floor and show that no harmonics are present below 2 GHz and above 10 GHz.

Test object	BTB-2	Sheet	RE_Spur-6
Type	BTB-2	Project no.	T203281-4
Serial no.	V4 (SVI) 181	Date	6 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	25 °C 51 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
		Video BW	30 kHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Frequency [MHz]	Peak measurement [dBµV/m]	Peak limit [dBµV/m]	PACF [dB]	Corrected average measurement [dBµV/m]	Average Limit [dBµV/m]	Remarks
4946	56.95	74	18.0	38.95	54	Passed
4880	54.14	74	18.0	36.14	54	Passed

Test result

The measured peak field strengths were below the peak limit.

The measured peak field strengths corrected with the PACF were below the average limit.

Corrected average: ($P_{Average(resulting)}$ = Ppeak + PACF).

Test Port

Enclosure

Test frequency

2404/2440/2478 MHz

Test mode

GN radio: Continuous Tx - normal modulation - hopping on

Condition

Normal

Compliant

Yes

Comments

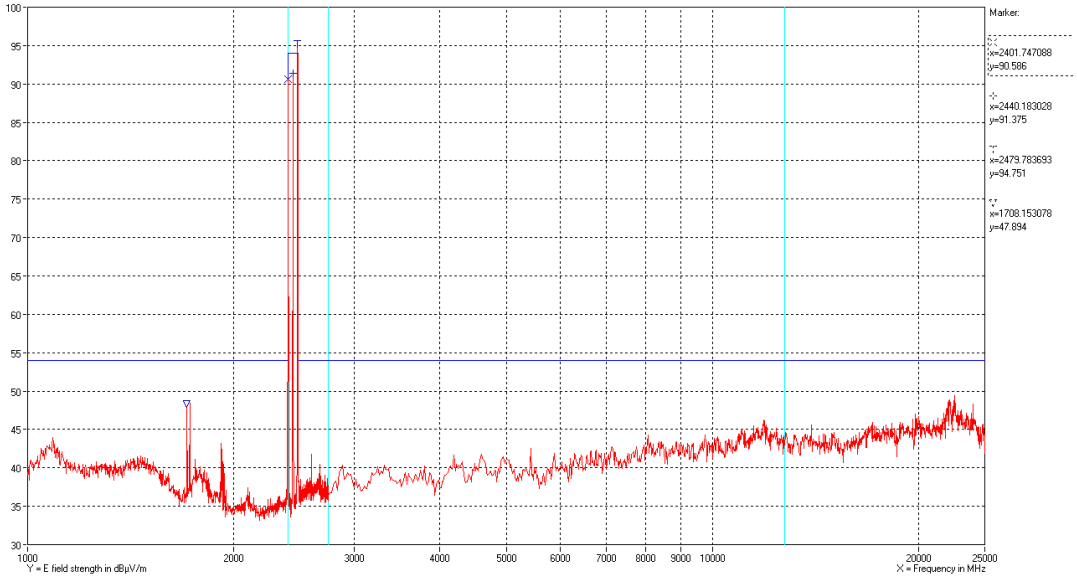
Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarization.

Test voltage: Powered through USB port by AUX AC/DC Adaptor.

4.9 Measurement of radiated emission above 1 GHz BT GFSK

Test object	BTB-2	Sheet	RE_Spur-7
Type	BTB-2	Project no.	T203281-4
Serial no.	291 V4b	Date	12 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	23 °C 43 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB



Polarization: Vertical and horizontal peak measurements

Comments:
Radio: Bluetooth
Modulation: GFSK
Frequency: 2402/2441/2480 MHz

Test object	BTB-2	Sheet	RE_Spur-8
Type	BTB-2	Project no.	T203281-4
Serial no.	291 V4b	Date	12 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

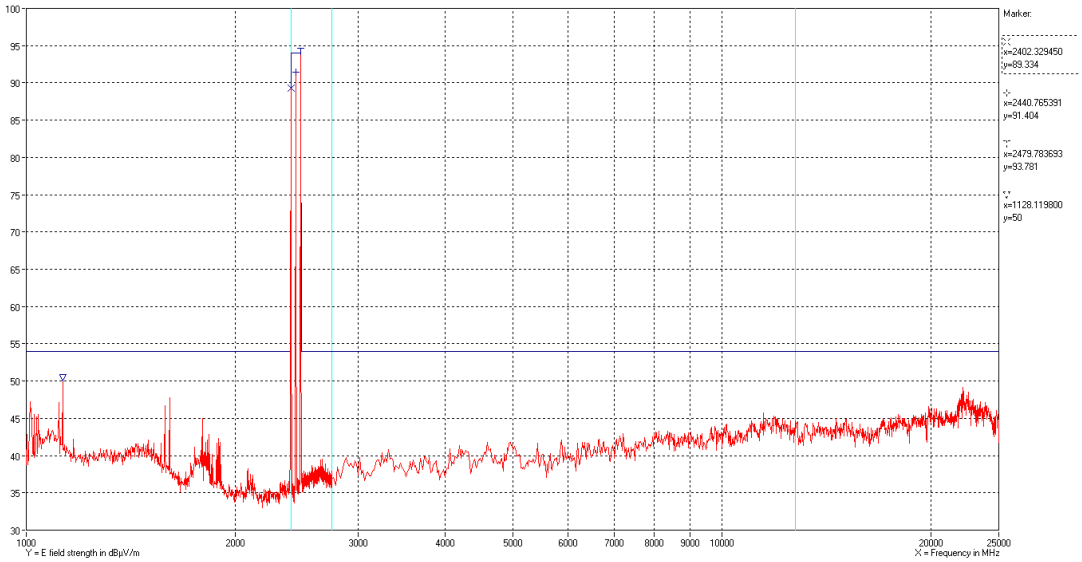
Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	23 °C 43 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Test result	The measured peak field strengths were below the peak and average limits
Test Port	Enclosure
Test frequency	2402/2441/2478 MHz
Test mode	Bluetooth radio: Continuous Tx – GFSK modulation - hopping on
Condition	Normal
Compliant	Yes
Comments	Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarization. Test voltage: Powered through USB port by AUX AC/DC Adaptor.

4.10 Measurement of radiated emission above 1 GHz BT π/4-DQPSK

Test object	BTB-2	Sheet	RE_Spur-9
Type	BTB-2	Project no.	T203281-4
Serial no.	291 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	HEN
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	23 °C 43 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB



Polarization	Vertical and horizontal peak measurements
Comments	Radio: Bluetooth Modulation: π/4-DQPSK Frequency: 2402/2441/2478 MHz

Test object	BTB-2	Sheet	RE_Spur-10
Type	BTB-2	Project no.	T203281-4
Serial no.	291 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	HEN
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

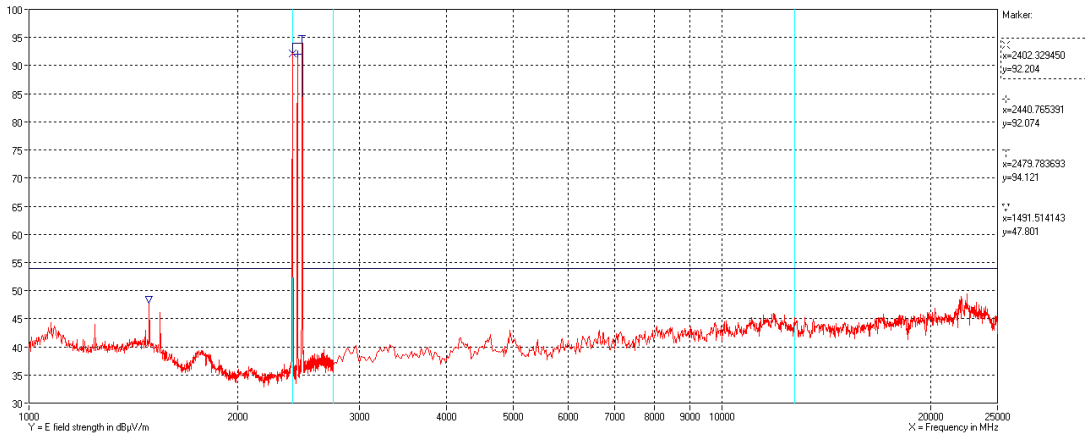
Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	23 °C 43 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Test result	The measured peak field strengths were below the peak and average limits
Test Port	Enclosure
Test frequency	2402/2441/2480 MHz
Test mode	Bluetooth radio: Continuous Tx – π/4-DQPSK modulation - hopping on
Condition	Normal
Compliant	Yes
Comments	Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarization. Test voltage: Powered through USB port by AUX AC/DC Adaptor.

4.11 Measurement of radiated emission above 1 GHz BT 8-DPSK

Test object	BTB-2	Sheet	RE_Spur-11
Type	BTB-2	Project no.	T203281-4
Serial no.	291 V4b	Date	18 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	23 °C 43 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB



Polarization: Vertical and horizontal peak measurements

Comments:
Radio: Bluetooth
Modulation: 8-DPSK
Frequency: 2402/2441/2478 MHz

Test object	BTB-2	Sheet	RE_Spur-12
Type	BTB-2	Project no.	T203281-4
Serial no.	291 V4b	Date	18 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart B, Class B 47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	23 °C 43 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Test result	The measured peak field strengths were below the peak and average limits
Test Port	Enclosure
Test frequency	2402/2441/2480 MHz
Test mode	Bluetooth radio: Continuous Tx – 8-DPSK modulation - hopping on
Condition	Normal
Compliant	Yes
Comments	Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarization. Test voltage: Powered through USB port by AUX AC/DC Adaptor.

Photo 4.11.1 Test setup regarding measurement of radiated emission above 1 GHz.

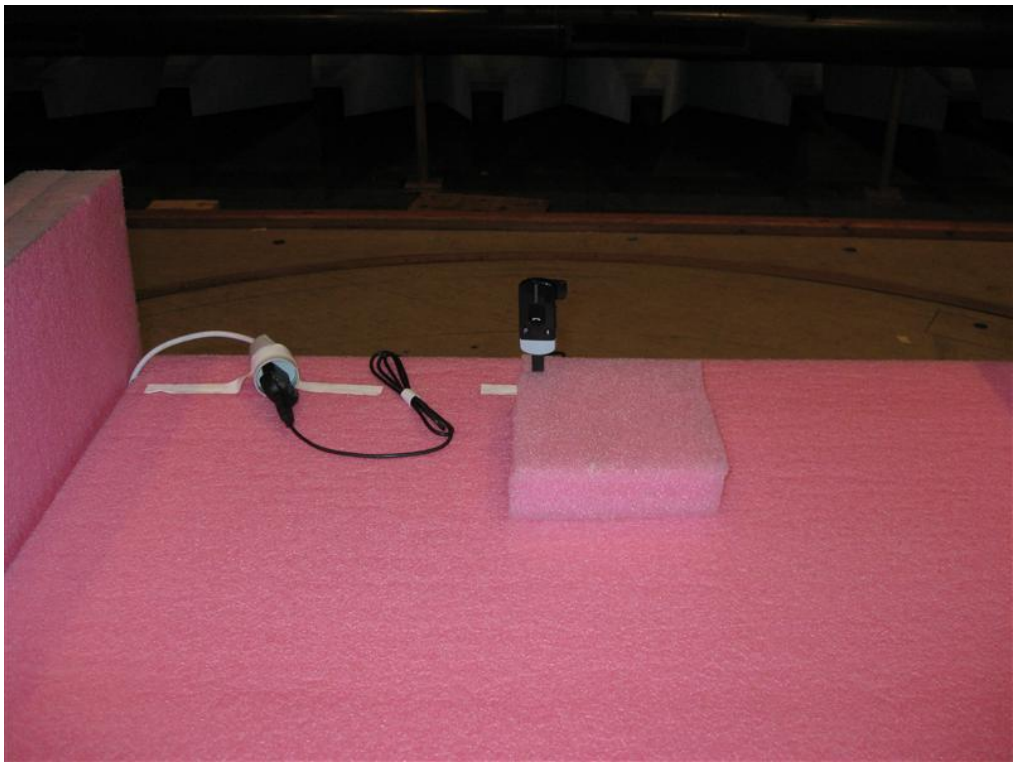


Photo 4.11.2 Test setup regarding measurement of radiated emission above 1.

4.12 Measurement of field strength of fundamental, GN radio

Test object	BTB-2	Sheet	RE_Spur-13
Type	BTB-2	Project no.	T203281-4
Serial no.	V4 (SVI) 181	Date	6 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	25 °C 51 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Operating frequency [MHz]	Peak Measurement [dBµV/m]	Peak limit [dBµV/m]	PACF [dB]	Corrected average [dBµV/m]	Average limit [dBµV/m]	Remarks
2404	105.8	114	18	87.8	94	Passed
2440	104.3	114	18	86.3	94	Passed
2478	105.4	114	18	87.4	94	Passed

Test result: The measured peak field strengths were below the peak limit.

The measured peak field strengths corrected with the PACF are below the average limit.

Corrected average: ($P_{Average(resulting)} = P_{peak} + PACF$).

Test Port: Enclosure

Test frequency: 2404/2440/2478 MHz

Test mode: GN radio: Continuous Tx - normal modulation - hopping on

Condition: Normal

Compliant: Yes

Comments: Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarization.

Test voltage: Powered through USB port by AUX AC/DC Adaptor.

4.13 Measurement of field strength of fundamental, GFSK

Test object	BTB-2	Sheet	RE_Spur-14
Type	BTB-2	Project no.	T203281-4
Serial no.	291 V4b	Date	12 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz
Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	22 °C 43 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Operating frequency [MHz]	Peak Measurement [dBµV/m]	Peak limit [dBµV/m]	PACF [dB]	Corrected average [dBµV/m]	Average limit [dBµV/m]	Remarks
2402	90.6	114	16.5	74.1	94	Passed
2441	91.4	114	16.5	74.9	94	Passed
2480	94.8	114	16.5	78.3	94	Passed

Test result: The measured peak field strengths were below the peak limit.

The measured peak field strengths corrected with the PACF are below the average limit.

Corrected average: ($P_{Average(resulting)} = P_{peak} + PACF$).

Test Port: Enclosure

Test frequency: 2402/2441/2480 MHz

Test mode: Bluetooth radio: Continuous Tx – GFSK modulation - hopping on

Condition: Normal

Compliant: Yes

Comments: Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarization.

Test voltage: Powered through USB port by AUX AC/DC Adaptor.

4.14 Measurement of field strength of fundamental, π/4-DQPSK

Test object	BTB-2	Sheet	RE_Spur-15
Type	BTB-2	Project no.	T203281-4
Serial no.	V4 (SVI) 151	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	22 °C 43 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Operating frequency [MHz]	Peak Measurement [dBµV/m]	Peak limit [dBµV/m]	PACF [dB]	Corrected average [dBµV/m]	Average limit [dBµV/m]	Remarks
2402	89.3	114	16.8	72.5	94	Passed
2441	91.4	114	16.8	74.6	94	Passed
2480	93.8	114	16.8	77.0	94	Passed

Test result: The measured peak field strengths were below the peak limit.

The measured peak field strengths corrected with the PACF are below the average limit.

Corrected average: ($P_{Average(resulting)} = P_{peak} + PACF$).

Test Port: Enclosure

Test frequency: 2402/2441/2480 MHz

Test mode: Bluetooth radio: Continuous Tx – π/4-DQPSK modulation - hopping on

Condition: Normal

Compliant: Yes

Comments: Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarization.

Test voltage: Powered through USB port by AUX AC/DC Adaptor.

4.15 Measurement of field strength of fundamental, 8-DPSK

Test object	BTB-2	Sheet	RE_Spur-16
Type	BTB-2	Project no.	T203281-4
Serial no.	V4 (SVI) 168	Date	18 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	22 °C 43 % RH
Detector	Peak for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Operating frequency [MHz]	Peak Measurement [dBµV/m]	Peak limit [dBµV/m]	PACF [dB]	Corrected average [dBµV/m]	Average limit [dBµV/m]	Remarks
2402	92.2	114	16.9	75.3	94	Passed
2441	92.1	114	16.9	75.2	94	Passed
2480	94.1	114	16.9	77.2	94	Passed

Test result: The measured peak field strengths were below the peak limit.

The measured peak field strengths corrected with the PACF are below the average limit.

Corrected average: ($P_{Average(resulting)} = P_{peak} + PACF$).

Test Port: Enclosure

Test frequency: 2402/2441/2480 MHz

Test mode: Bluetooth radio: Continuous Tx – 8-DPSK modulation - hopping on

Condition: Normal

Compliant: Yes

Comments: Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarization.

Test voltage: Powered through USB port by AUX AC/DC Adaptor.

4.16 Measurement of 20 dB bandwidth, GN radio

Test object	BTB-2	Sheet	PROF-1
Type	BTB-2	Project no.	T203281-4
Serial no.	339 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

Test method	ANSI C63.10:2009		
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC		
Test equipm.	Climatic chamber 49184 49550	Uncertainty:	1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 24/40/26 MHz DET: Peak CF: Operating freq. Trace: Max. hold		

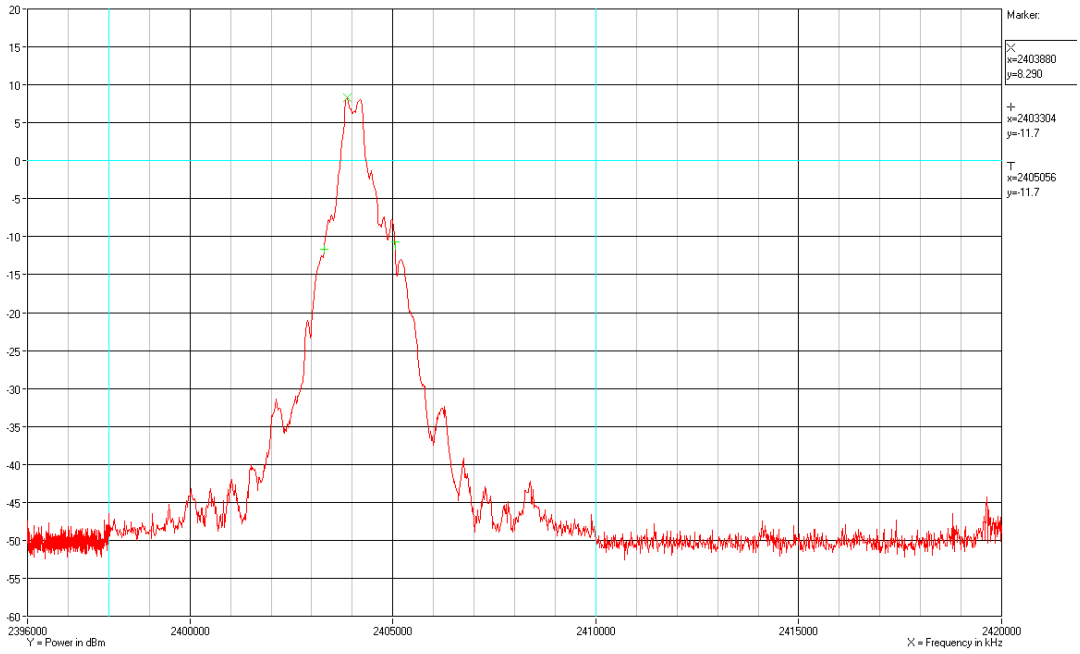
Operating frequency [MHz]	Low frequency [MHz]	High frequency [MHz]	Remarks
2404	2403.3	2405.1	-
2440	2439.3	2441.1	-
2478	2477.2	2479.0	-
	Measured [MHz]	Limit [MHz]	Remarks
Lowest frequency	2403.3	2400.00	Passed
Highest frequency	2479.0	2483.50	Passed

Note 1:

Band edge criteria	20 dB bandwidth
Test result	The measured 20 dB bandwidth was within the limit designated in 15.215(c)
Test port	Antenna connector
Test frequency	2404/2440/2478 MHz
Test mode	GN radio: Continuous Tx - normal modulation - hopping on
Condition	Normal
Compliant	Yes
Comments	None

Test object	BTB-2	Sheet	PROF-2
Type	BTB-2	Project no.	T203281-4
Serial no.	339 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

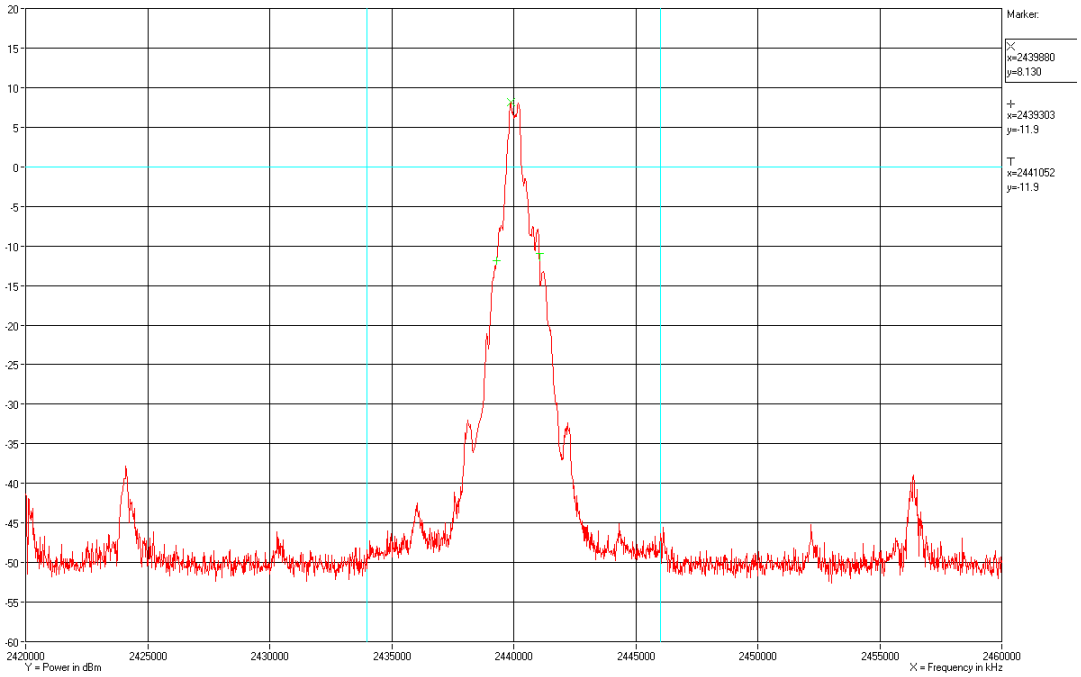
Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 24 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2404 MHz

Test object	BTB-2	Sheet	PROF-3
Type	BTB-2	Project no.	T203281-4
Serial no.	339 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

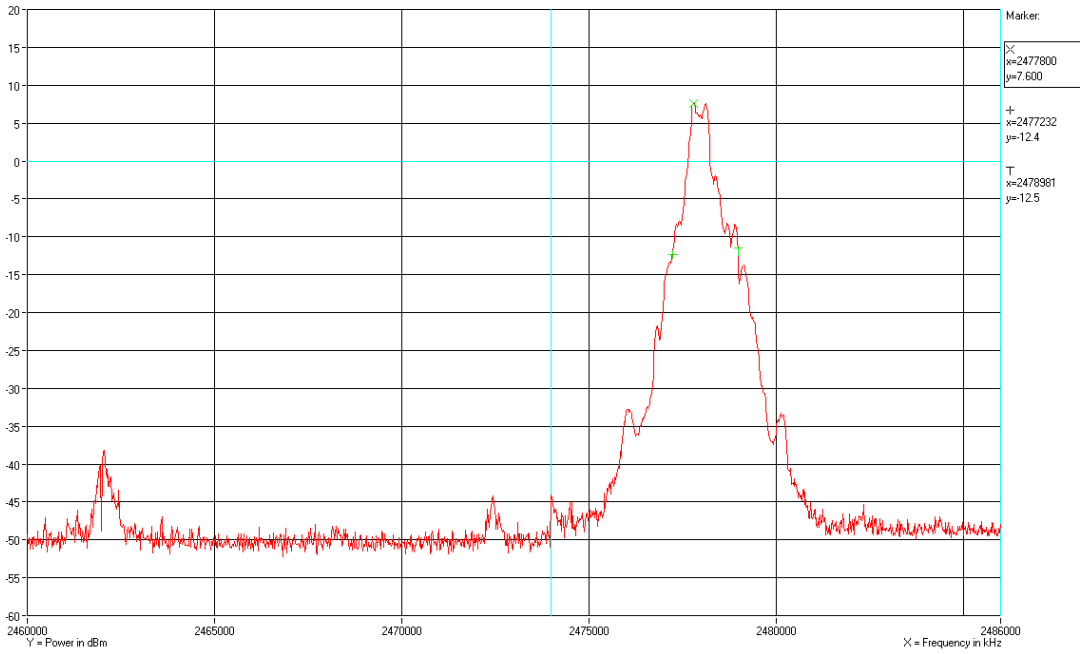
Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 40 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2440 MHz

Test object	BTB-2	Sheet	PROF-4
Type	BTB-2	Project no.	T203281-4
Serial no.	339 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 26 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2478 MHz

4.17 Measurement of 20 dB bandwidth, BT GFSK

Test object	BTB-2	Sheet	PROF-5
Type	BTB-2	Project no.	T203281-4
Serial no.	V4-184	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

Test method	ANSI C63.10:2009		
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC		
Test equipm.	Climatic chamber 49184 49550	Uncertainty:	1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 24/40/26 MHz DET: Peak CF: Operating freq. Trace: Max. hold		

Operating frequency [MHz]	Low frequency [MHz]	High frequency [MHz]	Remarks
2402	2401.6	2402.7	-
2441	2440.7	2441.9	-
2480	2479.7	2480.8	-

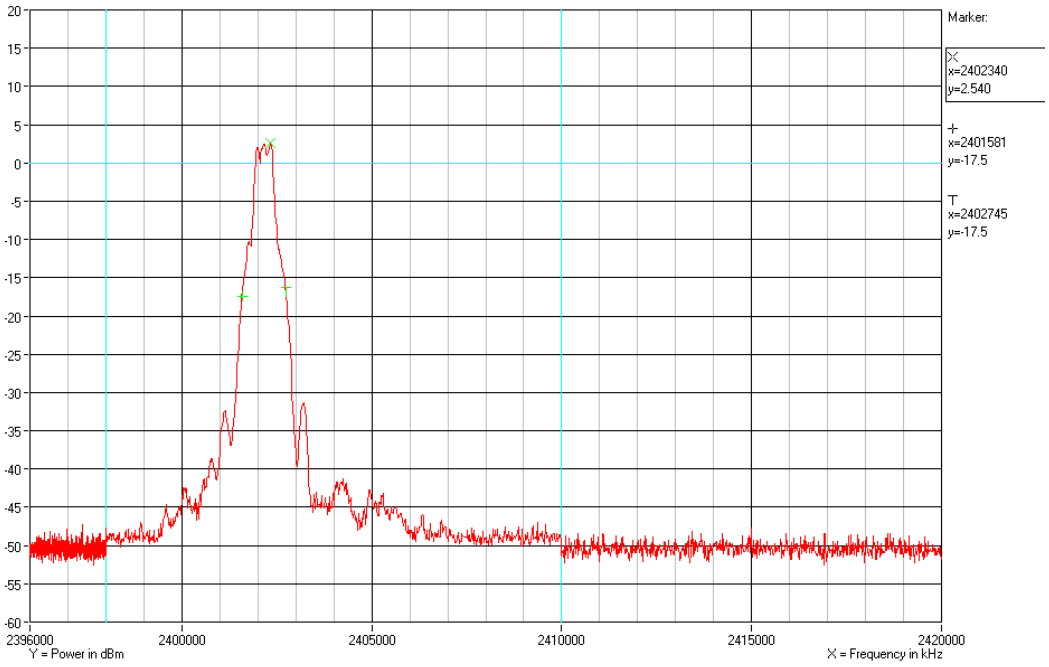
	Measured [MHz]	Limit [MHz]	Remarks
Lowest frequency	2401.6	2400.00	Passed
Highest frequency	2480.8	2483.50	Passed

Note 1:

Band edge criteria	20 dB bandwidth
Test result	The measured 20 dB bandwidth was within limit designated in 15.215(c)
Test port	Antenna connector
Test frequency	2402/2441/2480 MHz
Test mode	Bluetooth radio: Continuous Tx – GFSK modulation - hopping on
Condition	Normal
Compliant	Yes
Comments	None

Test object	BTB-2	Sheet	PROF-6
Type	BTB-2	Project no.	T203281-4
Serial no.	V4-184	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

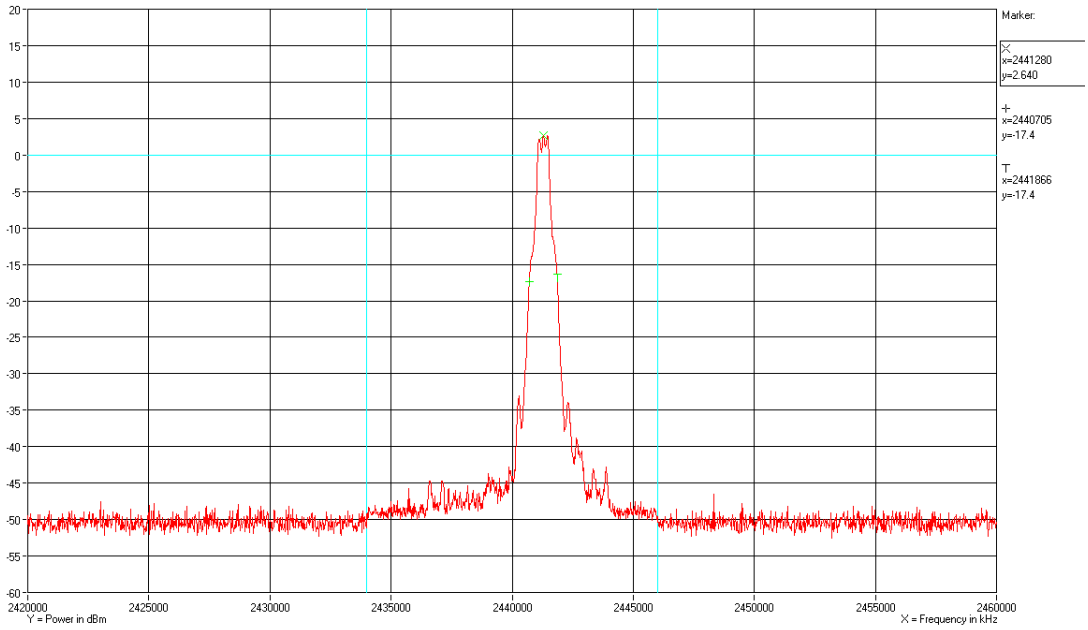
Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 24 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2402 MHz

Test object	BTB-2	Sheet	PROF-7
Type	BTB-2	Project no.	T203281-4
Serial no.	V4-184	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

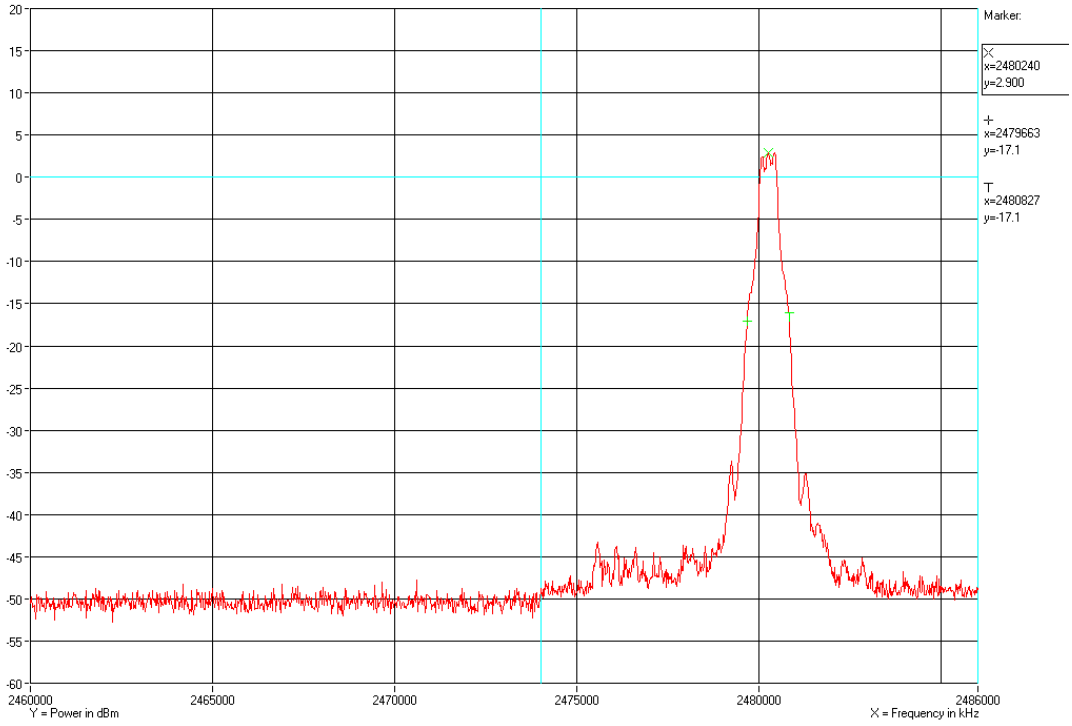
Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 40 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2441 MHz

Test object	BTB-2	Sheet	PROF-8
Type	BTB-2	Project no.	T203281-4
Serial no.	V4-184	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 26 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2480 MHz

4.18 Measurement of 20 dB bandwidth, BT π/4-DQPSK

Test object	BTB-2	Sheet	PROF-9
Type	BTB-2	Project no.	T203281-4
Serial no.	320 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

Test method	ANSI C63.10:2009		
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC		
Test equipm.	Climatic chamber 49184 49550	Uncertainty:	1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 24/40/26 MHz DET: Peak CF: Operating freq. Trace: Max. hold		

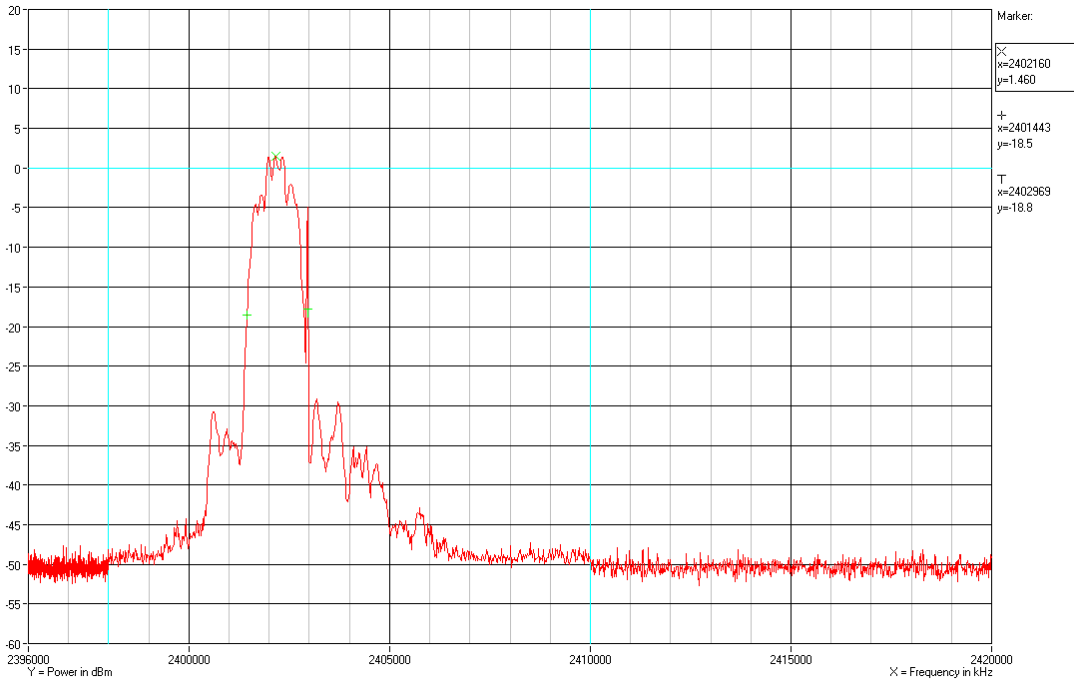
Operating frequency [MHz]	Low frequency [MHz]	High frequency [MHz]	Remarks
2402	2401.4	2403.0	-
2441	2440.6	2442.0	-
2480	2479.5	2480.9	-
	Measured [MHz]	Limit [MHz]	Remarks
Lowest frequency	2401.4	2400.00	Passed
Highest frequency	2480.9	2483.50	Passed

Note 1:

Band edge criteria	20 dB bandwidth
Test result	The measured 20 dB bandwidth was within limit designated in 15.215(c)
Test port	Bluetooth radio: Continuous Tx – π/4-DQPSK modulation - hopping on
Test frequency	2402/2441/2480 MHz
Test mode	Continuous Tx - normal modulation - hopping on
Condition	Normal
Compliant	Yes
Comments	None

Test object	BTB-2	Sheet	PROF-10
Type	BTB-2	Project no.	T203281-4
Serial no.	320 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

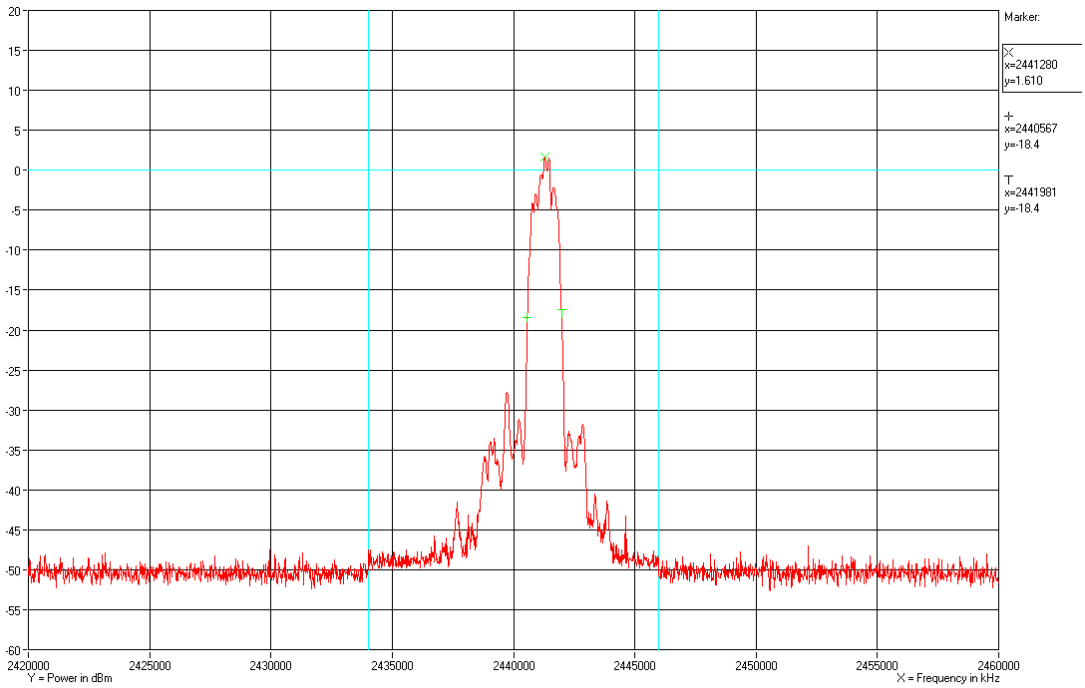
Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 24 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2402 MHz

Test object	BTB-2	Sheet	PROF-11
Type	BTB-2	Project no.	T203281-4
Serial no.	320 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

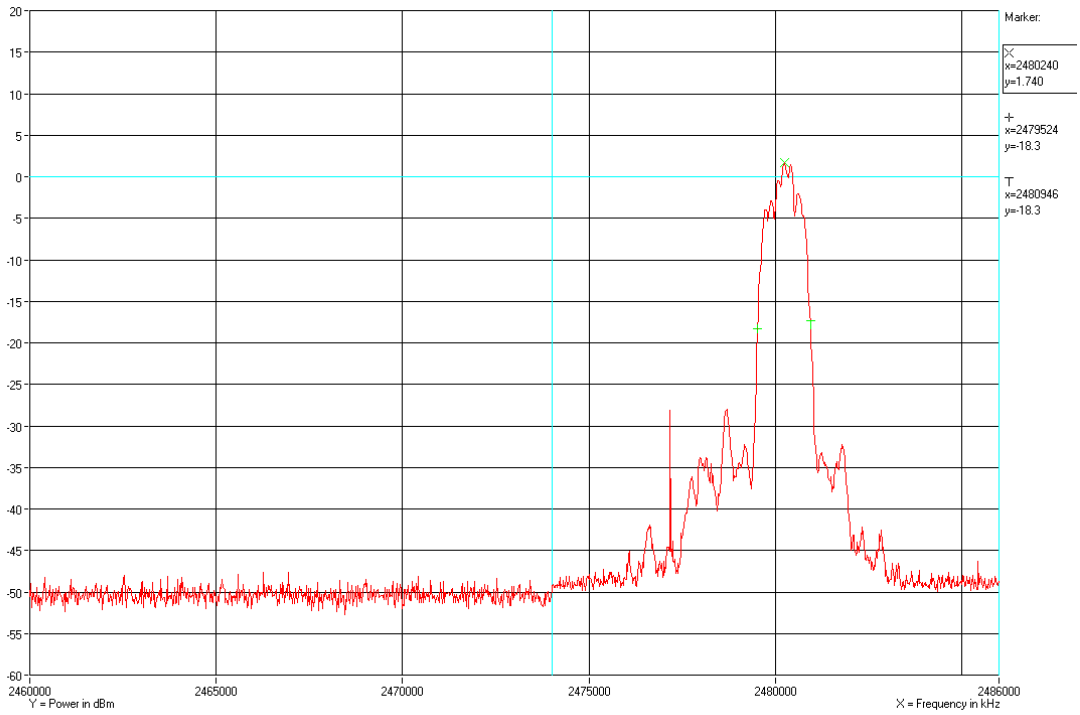
Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 40 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2441 MHz

Test object	BTB-2	Sheet	PROF-12
Type	BTB-2	Project no.	T203281-4
Serial no.	320 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 26 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2480 MHz

4.19 Measurement of 20 dB bandwidth, BT 8-DPSK

Test object	BTB-2	Sheet	PROF-13
Type	BTB-2	Project no.	T203281-4
Serial no.	338 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

Test method	ANSI C63.10:2009		
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC		
Test equipm.	Climatic chamber 49184 49550	Uncertainty:	1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 24/40/26 MHz DET: Peak CF: Operating freq. Trace: Max. hold		

Operating frequency [MHz]	Low frequency [MHz]	High frequency [MHz]	Remarks
2402	2401.5	2402.9	-
2441	2440.6	2442.0	-
2480	2479.5	2480.9	-

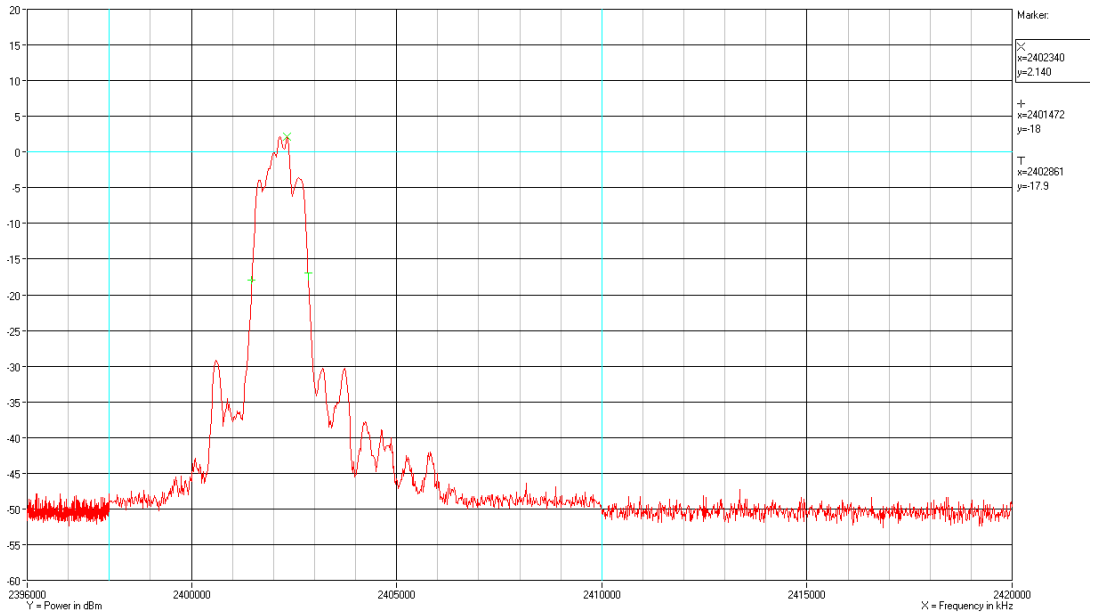
	Measured [MHz]	Limit [MHz]	Remarks
Lowest frequency	2401.5	2400.00	Passed
Highest frequency	2480.9	2483.50	Passed

Note 1:

Band edge criteria	20 dB bandwidth
Test result	The measured 20 dB bandwidth was within limit designated in 15.215(c)
Test port	Antenna connector
Test frequency	2402/2441/2480 MHz
Test mode	Bluetooth radio: Continuous Tx – 8-DPSK modulation - hopping on
Condition	Normal
Compliant	Yes
Comments	None

Test object	BTB-2	Sheet	PROF-14
Type	BTB-2	Project no.	T203281-4
Serial no.	338 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

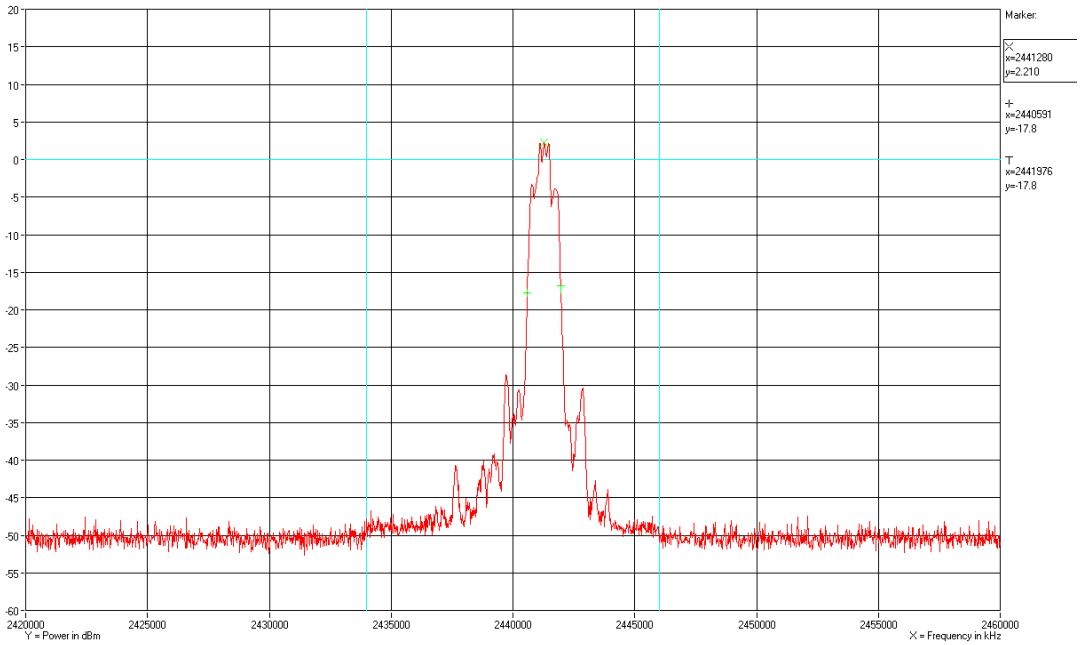
Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 24 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2402 MHz

Test object	BTB-2	Sheet	PROF-15
Type	BTB-2	Project no.	T203281-4
Serial no.	338 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

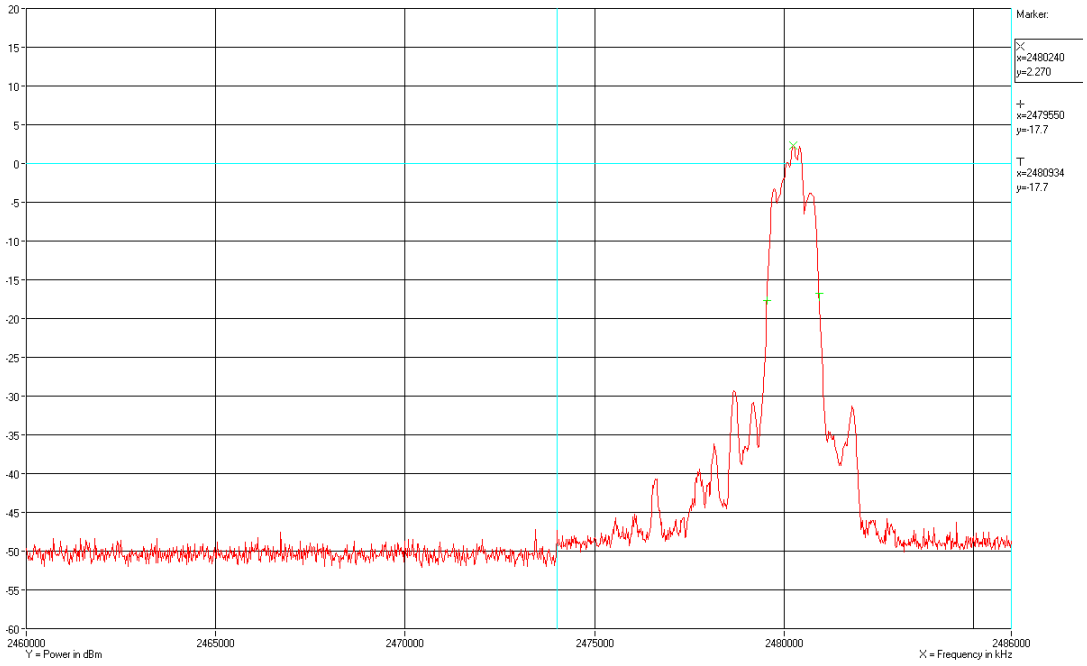
Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 40 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2441 MHz

Test object	BTB-2	Sheet	PROF-16
Type	BTB-2	Project no.	T203281-4
Serial no.	338 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249)		

Test method	ANSI C63.10:2009	
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 26 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2480 MHz

Photo 4.19.1 Test setup regarding measurement of 20 dB bandwidth.

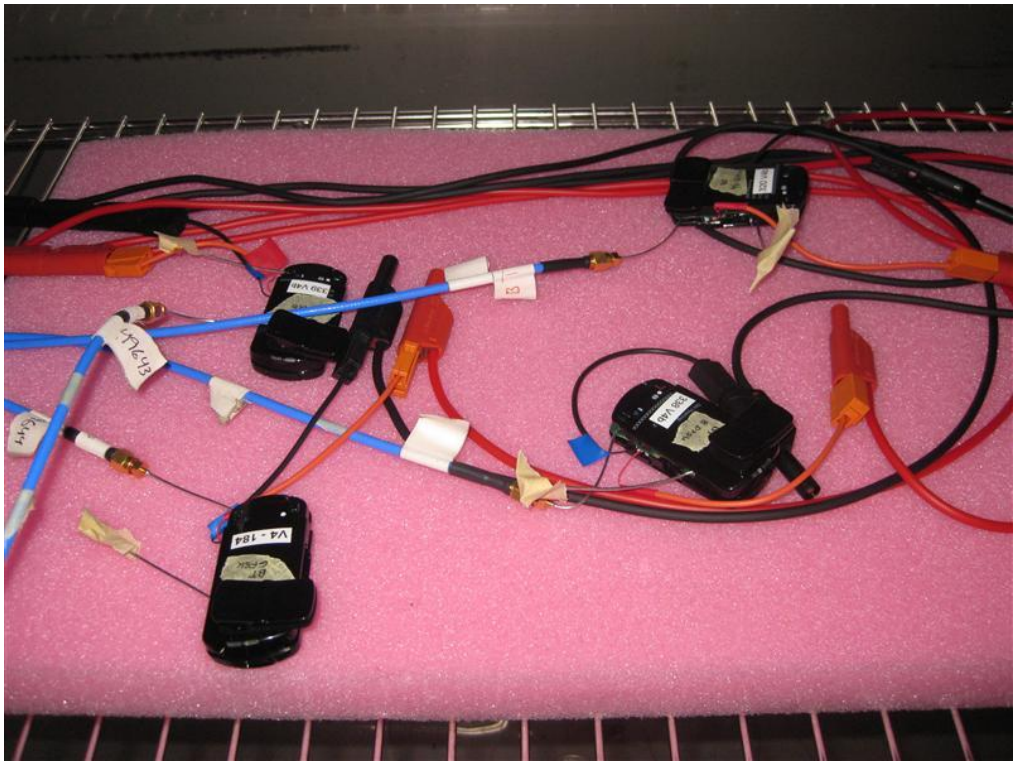


Photo 4.19.2 Test setup regarding measurement of 20 dB bandwidth.

4.20 Measurement of band edge compliance, GN radio

Test object	Combination of 2.1.1: BTB-2 2.1.5: BTB-2	Sheet	PROF-17
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	06 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	25 °C 51 % RH
Detector	Peak and average for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Band Edge frequency [MHz]	Operating frequency [MHz]	Average / Peak	Fundamental field strengths [dBµV/m]	Marker-delta method [dB]	Corrected [dBµV/m]	Limit at Band Edge [dBµV/m]	Remarks
2400	2404	Average	87.8	52.3	35.5	54	-
2400	2404	Peak	105.8	52.3	53.5	74	-
2483.5	2478	Average	87.4	57.1	30.3	54	-
2483.5	2478	Peak	105.4	57.1	48.3	74	-

Note 1:

Test result The measured and corrected peak and average field strengths at the band edge were below the peak and average limits

Test Port Enclosure and antenna connector

Test mode GN radio: Continuous Tx - normal modulation - hopping on

Condition Normal

Compliant Yes

Comments Marker-delta method for band-edge measurements was used to correct the measurements for the peak and average field strengths at band edge according to ANSI C63.10:2009 Section 6.9.3.

Test voltage: External power supply at 3.7 VDC.

4.21 Measurement of band edge compliance, BT GFSK

Test object	Combination of 2.1.2: BTB-2 2.1.6: BTB-2	Sheet	PROF-18
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	12 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	25 °C 51 % RH
Detector	Peak and average for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Band Edge frequency [MHz]	Operating frequency [MHz]	Average / Peak	Fundamental field strengths [dBµV/m]	Marker-delta method [dB]	Corrected [dBµV/m]	Limit at Band Edge [dBµV/m]	Remarks
2400	2402	Average	74.1	46.0	28.1	54	-
2400	2402	Peak	90.6	46.0	44.6	74	-
2483.5	2480	Average	78.3	51.2	27.1	54	-
2483.5	2480	Peak	94.8	51.2	43.6	74	-

Note 1:

Test result The measured and corrected peak and average field strengths at the band edge were below the peak and average limits

Test Port Enclosure and antenna connector

Test mode Bluetooth radio: Continuous Tx – GFSK modulation - hopping on

Condition Normal

Compliant Yes

Comments Marker-delta method for band-edge measurements was used to correct the measurements for the peak and average field strengths at band edge according to ANSI C63.10:2009 Section 6.9.3.

Test voltage: External power supply at 3.7 VDC.

4.22 Measurement of band edge compliance, BT π/4-DQPSK

Test object	Combination of 2.1.3: BTB-2 2.1.7: BTB-2	Sheet	PROF-19
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	12 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, antenna distance 3 m	Temperature Humidity	25 °C 51 % RH
Detector	Peak and average for 1GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Band Edge frequency [MHz]	Operating frequency [MHz]	Average / Peak	Fundamental field strengths [dBµV/m]	Marker-delta method [dB]	Corrected [dBµV/m]	Limit at Band Edge [dBµV/m]	Remarks
2400	2402	Average	72.5	48.9	23.6	54	-
2400	2402	Peak	89.3	48.9	40.4	74	-
2483.5	2480	Average	77.0	51.2	25.8	54	-
2483.5	2480	Peak	93.8	51.2	42.6	74	-

Note 1:

Test result The measured and corrected peak and average field strengths at the band edge were below the peak and average limits

Test Port Enclosure and antenna connector

Test mode Bluetooth radio: Continuous Tx – π/4-DQPSK modulation - hopping on

Condition Normal

Compliant Yes

Comments Marker-delta method for band-edge measurements was used to correct the measurements for the peak and average field strengths at band edge according to ANSI C63.10:2009 Section 6.9.3.

Test voltage: External power supply at 3.7 VDC.

4.23 Measurement of band edge compliance, BT 8-DPSK

Test object	Combination of 2.1.4: BTB-2 2.1.8: BTB-2	Sheet	PROF-20
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	12 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-25 GHz

Test method Characteristics	ANSI C63.10:2009 Complete search, Antenna distance 3 m	Temperature Humidity	25 °C 51 % RH
Detector	Peak and average for 1 GHz to 25 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49086 49600 49624 49625	Uncertainty	4.9 dB

Band Edge frequency [MHz]	Operating frequency [MHz]	Average / Peak	Fundamental field strengths [dBµV/m]	Marker-delta method [dB]	Corrected [dBµV/m]	Limit at Band Edge [dBµV/m]	Remarks
2400	2402	Average	75.3	48.2	27.1	54	-
2400	2402	Peak	92.2	48.2	44.0	74	-
2483.5	2480	Average	77.2	51.6	25.6	54	-
2483.5	2480	Peak	94.1	51.6	42.5	74	-

Note 1:

Test result The measured and corrected peak and average field strengths at the band edge were below the peak and average limits

Test Port Enclosure and antenna connector

Test mode Bluetooth radio: Continuous Tx – 8-DPSK modulation - hopping on

Condition Normal

Compliant Yes

Comments Marker-delta method for band-edge measurements was used to correct the measurements for the peak and average field strengths at band edge according to ANSI C63.10:2009 Section 6.9.3.

Test voltage: External power supply at 3.7 VDC.

4.24 Measurement of occupied bandwidth, IC, GN radio

Test object	BTB-2	Sheet	PROF-21
Type	BTB-2	Project no.	T203281-4
Serial no.	339 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1		
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC		
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty:	1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold		

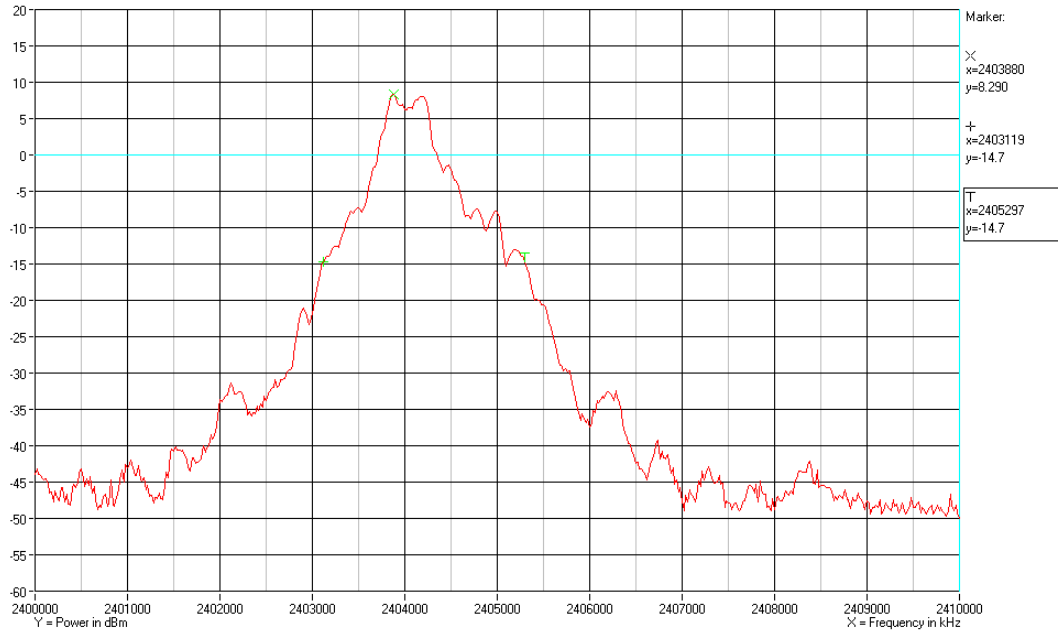
Operating frequency [MHz]	Low frequency [MHz]	High frequency [MHz]	Measured 99% emission bandwidth [MHz]
2404	2403.1	2405.3	2.2
2440	2439.1	2441.3	2.2
2478	2477.0	2479.2	2.2

Note 1:

Band edge criteria	Measured 99 % emission bandwidth (23 dBc)
Test port	Antenna connector
Test frequency	2404/2440/2478 MHz
Test mode	GN radio: Continuous Tx - normal modulation - hopping on
Condition	Normal
Comments	Test voltage: External power supply at 3.7 VDC

Test object	BTB-2	Sheet	PROF-22
Type	BTB-2	Project no.	T203281-4
Serial no.	339 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

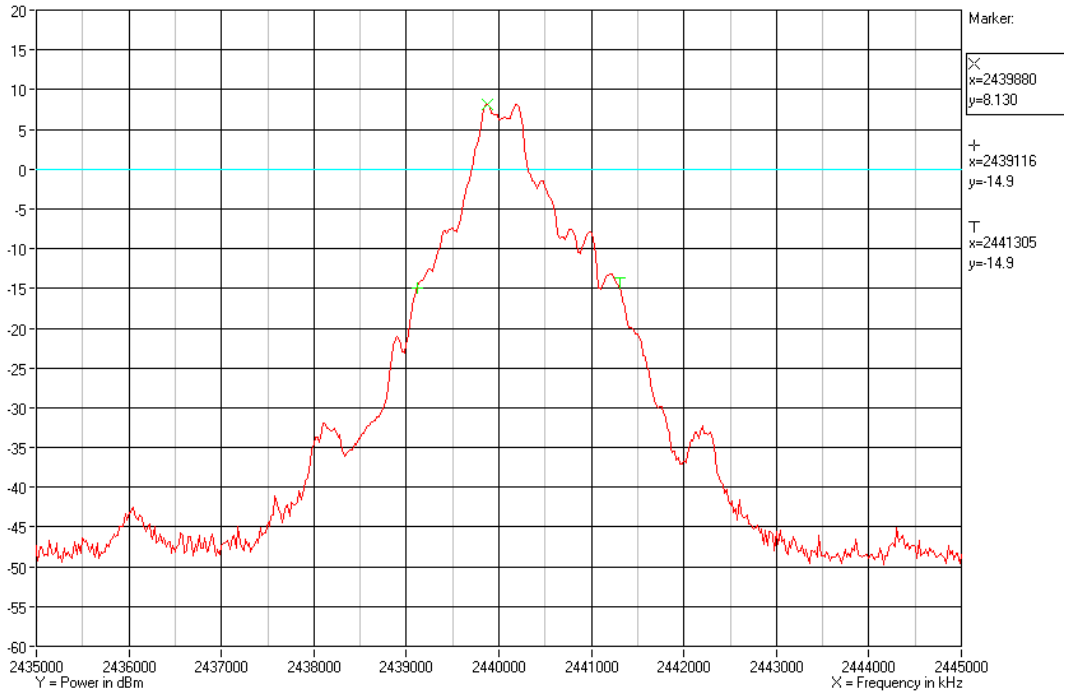
Test method Characteristics	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1 Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2404 MHz

Test object	BTB-2	Sheet	PROF-23
Type	BTB-2	Project no.	T203281-4
Serial no.	339 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

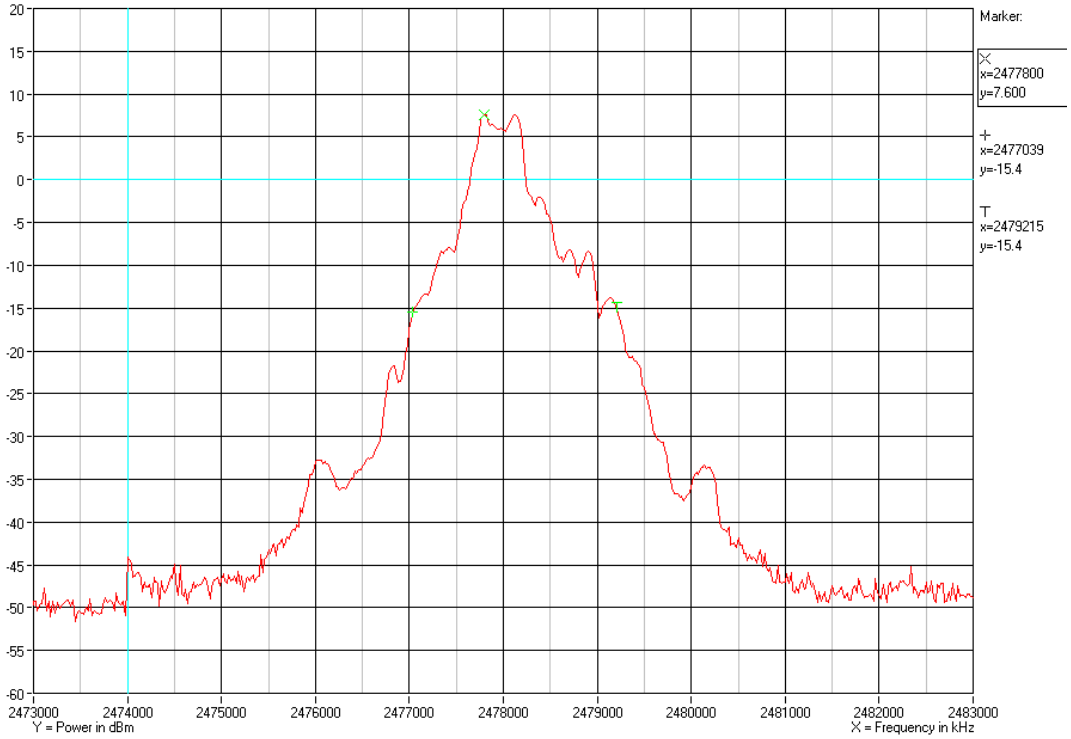
Test method Characteristics	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1 Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2440 MHz

Test object	BTB-2	Sheet	PROF-24
Type	BTB-2	Project no.	T203281-4
Serial no.	339 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method Characteristics	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1 Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2478 MHz

4.25 Measurement of occupied bandwidth, IC, BT GFSK

Test object	BTB-2	Sheet	PROF-25
Type	BTB-2	Project no.	T203281-4
Serial no.	V4-184	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1		
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC		
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty:	1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold		

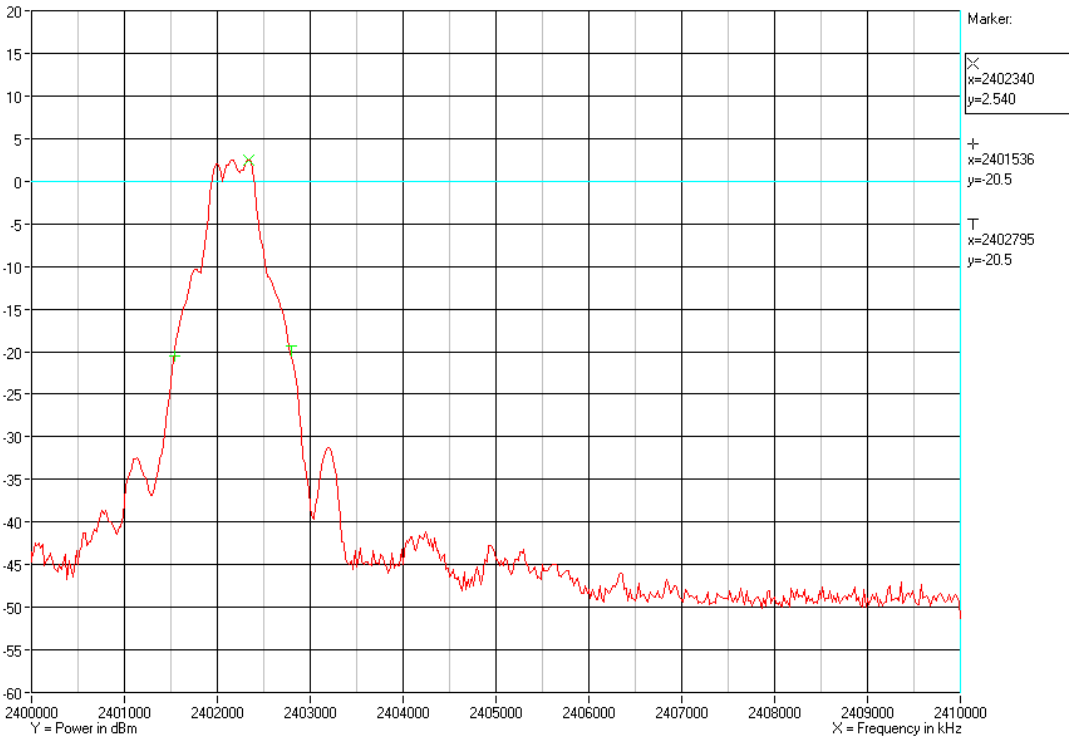
Operating frequency [MHz]	Low frequency [MHz]	High frequency [MHz]	Measured 99% emission bandwidth [MHz]
2402	2401.5	2402.8	1.3
2441	2440.7	2441.9	1.2
2480	2479.6	2480.9	1.3

Note 1:

Band edge criteria	Measured 99 % emission bandwidth (23 dBc)
Test port	Antenna connector
Test frequency	2402/2441/2480 MHz
Test mode	Bluetooth radio: Continuous Tx – GFSK modulation - hopping on
Condition	Normal
Comments	Test voltage: External power supply at 3.7 VDC

Test object	BTB-2	Sheet	PROF-26
Type	BTB-2	Project no.	T203281-4
Serial no.	V4-184	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

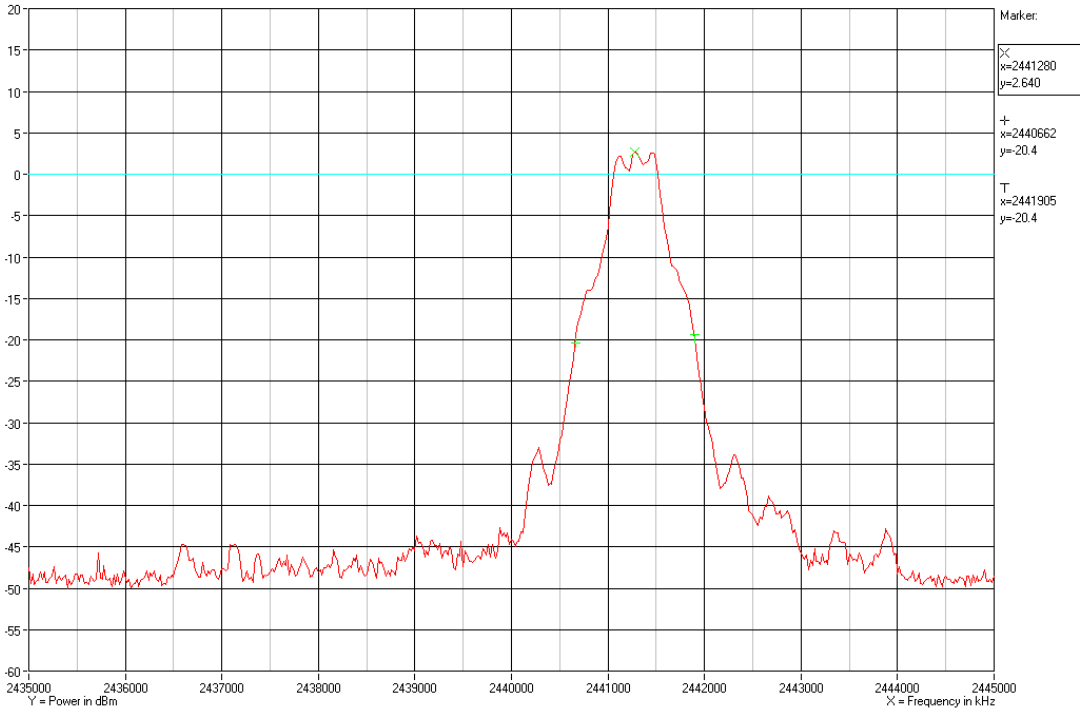
Test method Characteristics	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1 Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2402 MHz

Test object	BTB-2	Sheet	PROF-27
Type	BTB-2	Project no.	T203281-4
Serial no.	V4-184	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

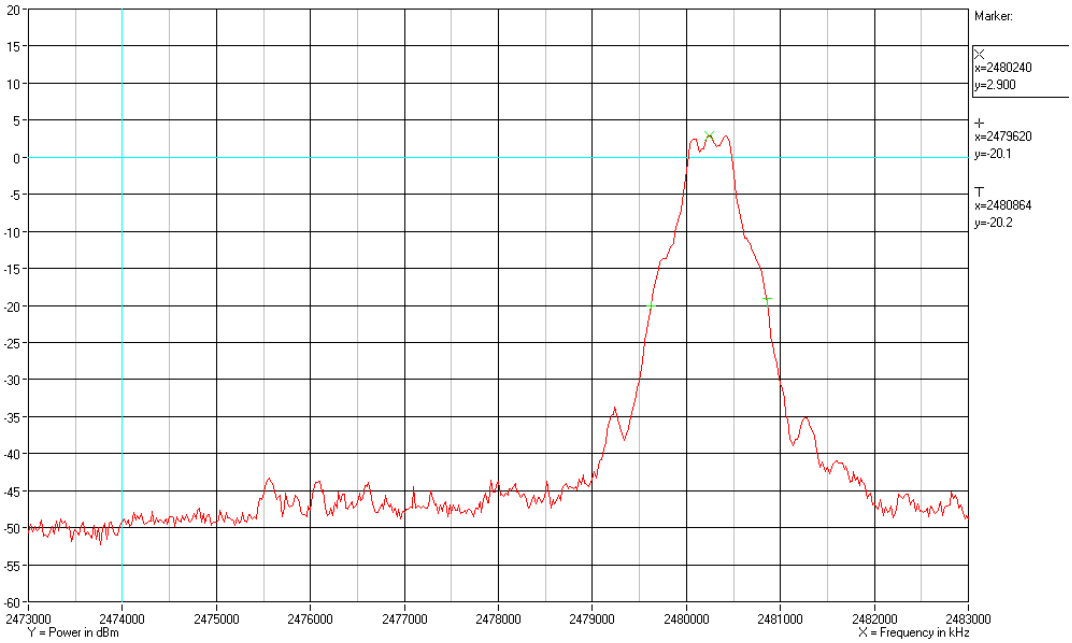
Test method	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1	
Characteristics	Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2441 MHz

Test object	BTB-2	Sheet	PROF-28
Type	BTB-2	Project no.	T203281-4
Serial no.	V4-184	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method Characteristics	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1 Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2480 MHz

4.26 Measurement of occupied bandwidth, IC, BT π/4-DQPSK

Test object	BTB-2	Sheet	PROF-29
Type	BTB-2	Project no.	T203281-4
Serial no.	320 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1		
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC		
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty:	1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold		

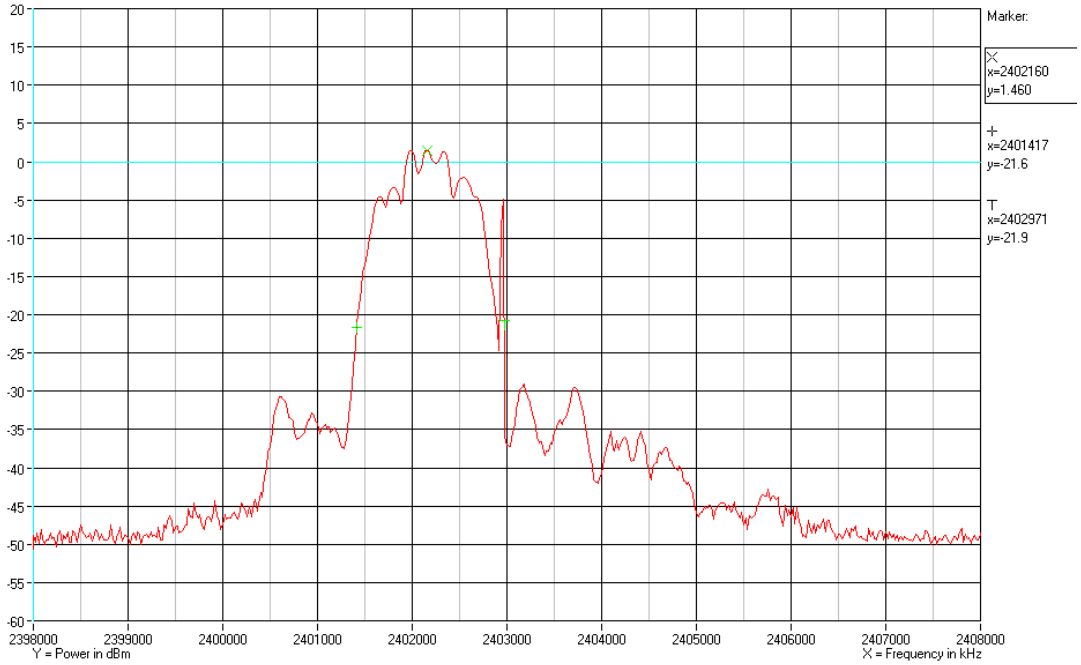
Operating frequency [MHz]	Low frequency [MHz]	High frequency [MHz]	Measured 99% emission bandwidth [MHz]
2402	2401.4	2403.0	1.6
2441	2440.5	2442.0	1.5
2480	2479.5	2481.0	1.5

Note 1:

Band edge criteria	Measured 99 % emission bandwidth (23 dBc)
Test port	Antenna connector
Test frequency	2402/2441/2480 MHz
Test mode	Bluetooth radio: Continuous Tx – π/4-DQPSK modulation - hopping on
Condition	Normal
Comments	Test voltage: External power supply at 3.7 VDC

Test object	BTB-2	Sheet	PROF-30
Type	BTB-2	Project no.	T203281-4
Serial no.	320 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

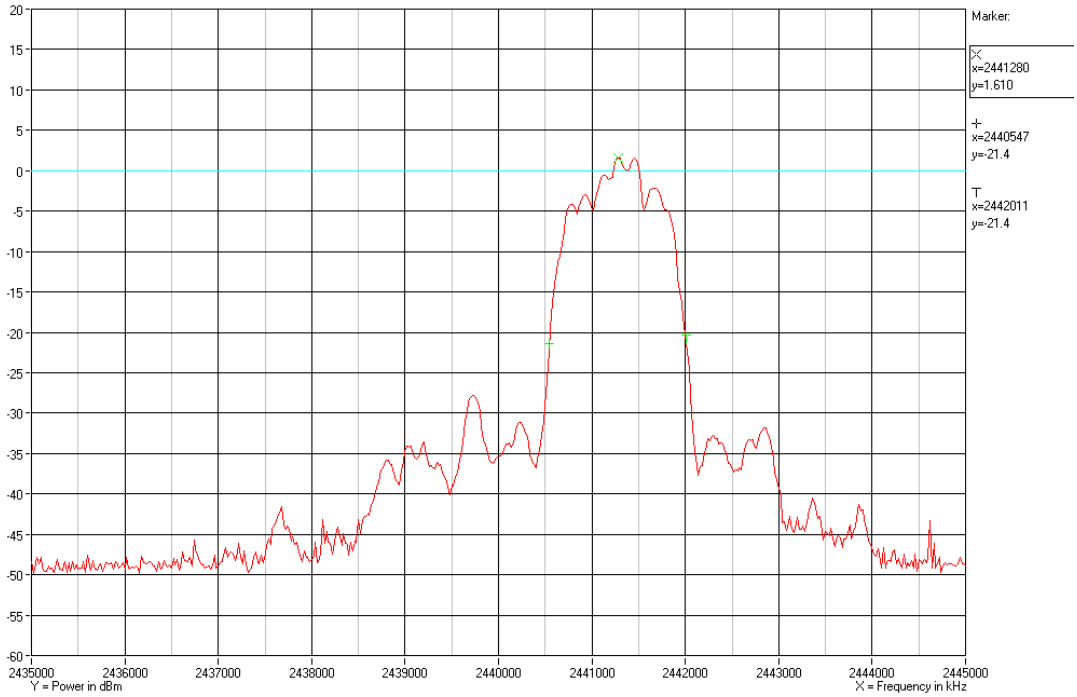
Test method Characteristics	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1 Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2402 MHz

Test object	BTB-2	Sheet	PROF-31
Type	BTB-2	Project no.	T203281-4
Serial no.	320 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

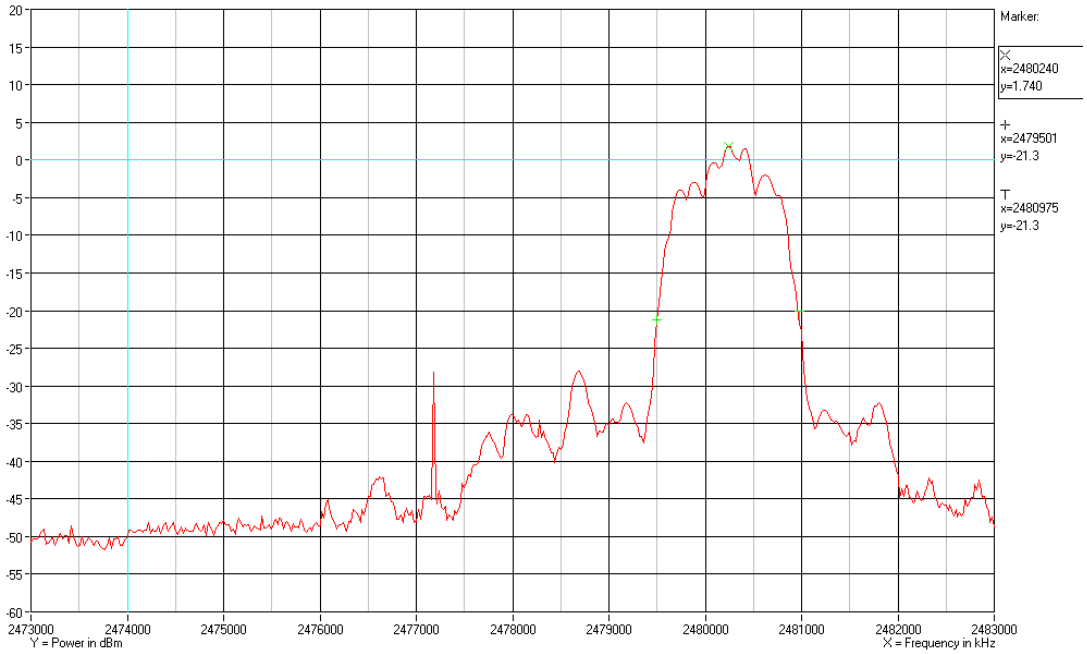
Test method Characteristics	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1 Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2441 MHz

Test object	BTB-2	Sheet	PROF-32
Type	BTB-2	Project no.	T203281-4
Serial no.	320 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method Characteristics	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1 Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2480 MHz

4.27 Measurement of occupied bandwidth, IC, BT 8-DPSK

Test object	BTB-2	Sheet	PROF-33
Type	BTB-2	Project no.	T203281-4
Serial no.	338 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1		
Characteristics	Temperature: 22 °C. Test voltage: External power supply at 3.7 VDC		
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty:	1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold		

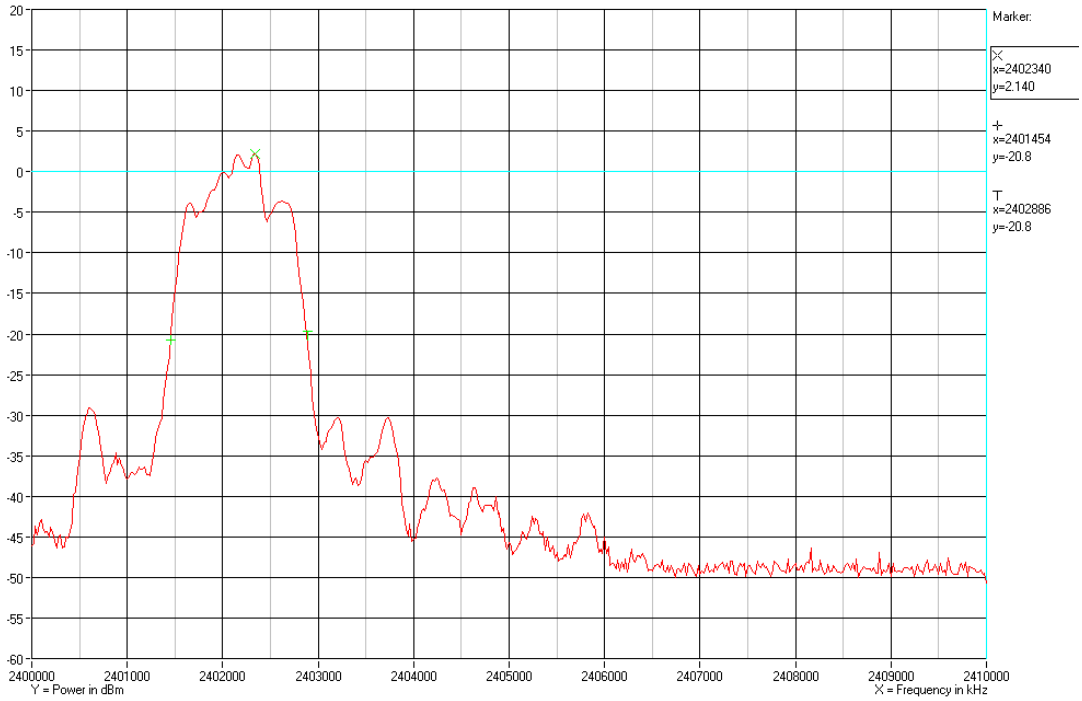
Operating frequency [MHz]	Low frequency [MHz]	High frequency [MHz]	Measured 99% emission bandwidth [MHz]
2402	2401.5	2402.9	1.4
2441	2440.6	2442.0	1.4
2480	2479.5	2481.0	1.5

Note 1:

Band edge criteria	Measured 99 % emission bandwidth (23 dBc)
Test port	Antenna connector
Test frequency	2402/2441/2480 MHz
Test mode	Bluetooth radio: Continuous Tx – 8-DPSK modulation - hopping on
Condition	Normal
Comments	Test voltage: External power supply at 3.7 VDC

Test object	BTB-2	Sheet	PROF-34
Type	BTB-2	Project no.	T203281-4
Serial no.	338 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

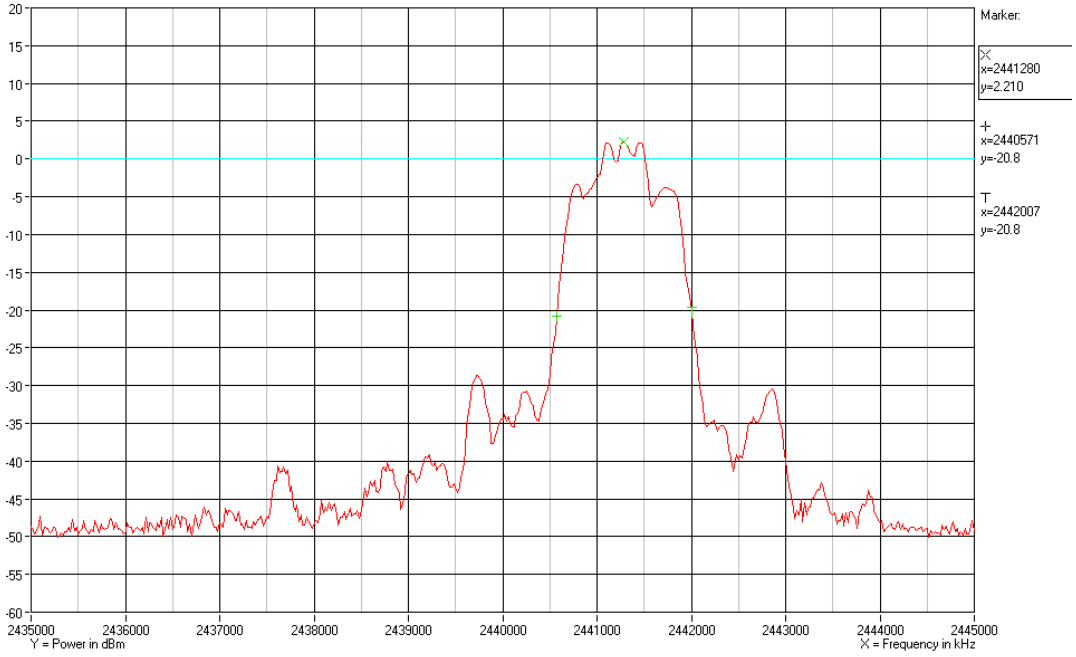
Test method Characteristics	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1 Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2402 MHz

Test object	BTB-2	Sheet	PROF-35
Type	BTB-2	Project no.	T203281-4
Serial no.	338 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

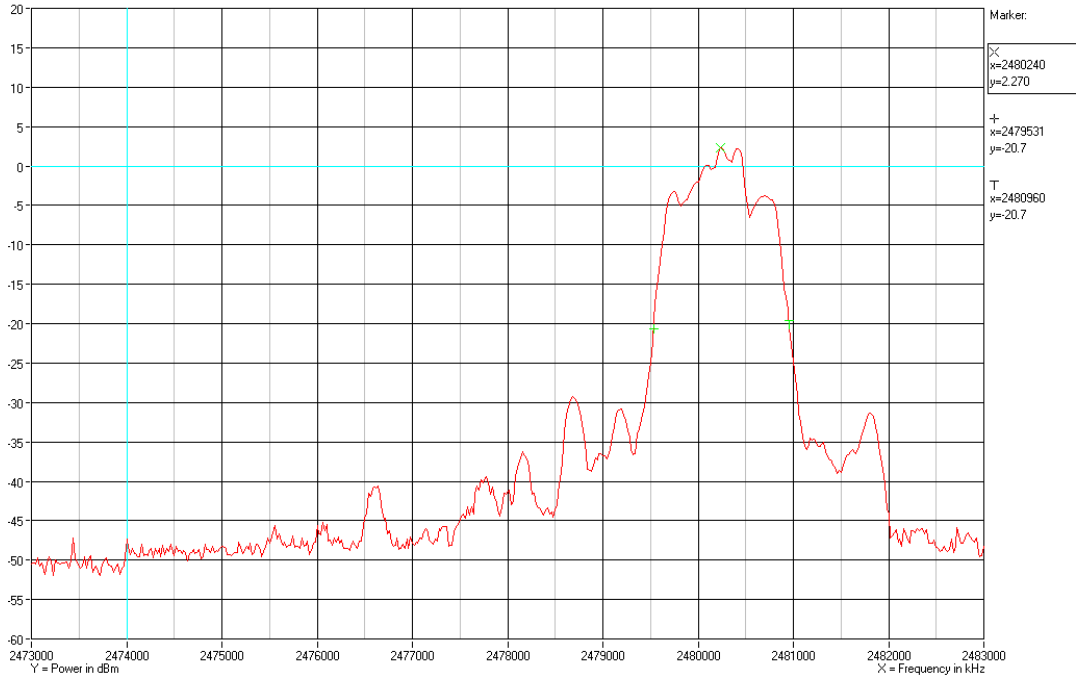
Test method Characteristics	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1 Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2441 MHz

Test object	BTB-2	Sheet	PROF-36
Type	BTB-2	Project no.	T203281-4
Serial no.	338 V4b	Date	14 Sep. 2012
Client	GN Hearing A/S	Initials	CMT
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010		

Test method	IC Standard RSS-Gen, Issue 3:2010 - Section 4.6.1	
Characteristics	Temperature: 22 ºC. Test voltage: External power supply at 3.7 VDC	
Test equipm.	Climatic chamber EVFGT-47 49184 49550	Uncertainty: 1.1 dB
SA Settings	RBW: 100 kHz VBW: 300 kHz SPAN: 10 MHz DET: Peak CF: Operating freq. Trace: Max. hold	



Comments Operating frequency: 2480 MHz

Photo 4.27.1 Test setup regarding measurement of occupied bandwidth, IC.

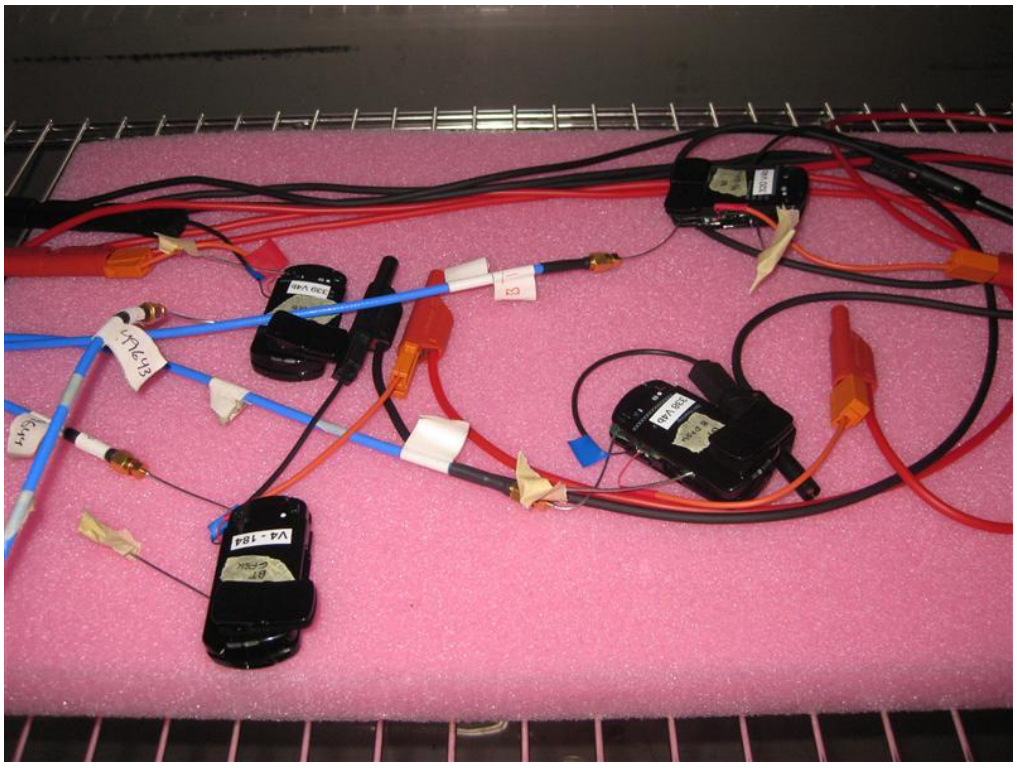
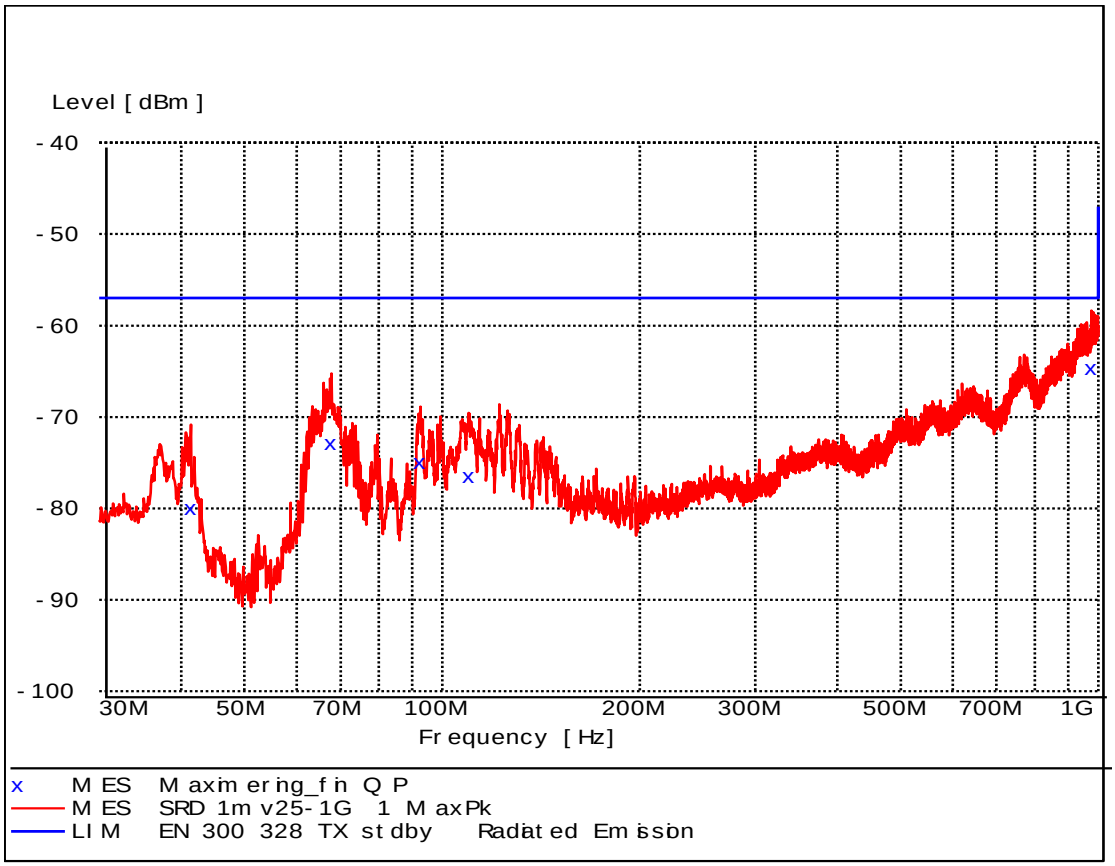


Photo 4.27.2 Test setup regarding measurement of occupied bandwidth, IC.

4.28 Measurement of radiated emission, Rx, IC below 1 GHz

Test object	Combination of; 2.1.1: BTB-2; 2.1.2: BTB-2; 2.1.3: BTB-2; 2.1.4: BTB-2	Sheet	RE_Spur-17
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	25 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	25 MHz–1 GHz

Test method Characteristics	EN 300 328 V1.7.1:2006 Pre-scan, Antenna at 10 m, 1 m height, vert. pol.	Temperature Humidity	23 °C 50 % RH
Detector	Peak and quasi peak	Bandwidth	120 kHz
Test equipm.	EMI room Hørsholm 49600 29861 29797 29499	Uncertainty	4.9 dB

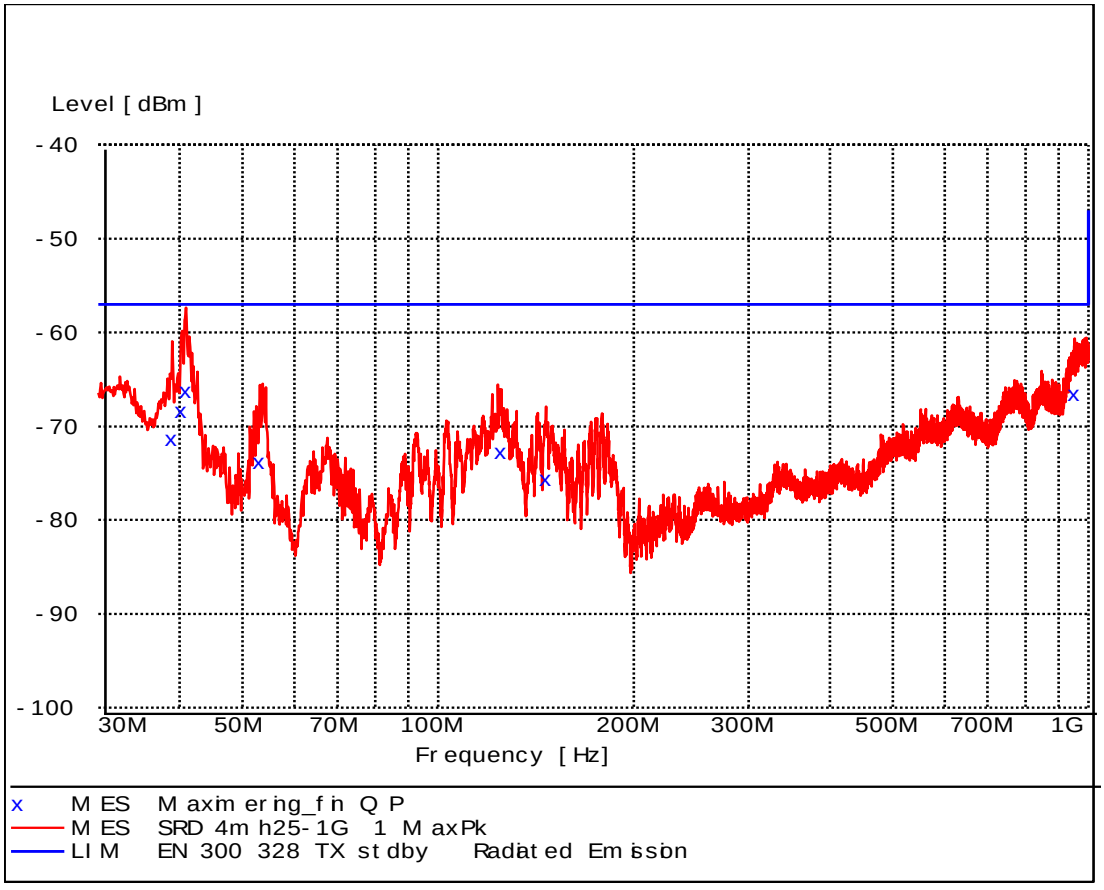


Comments

Continuous Rx - Hopping low-high channel.
GN Radio: Normal modulation.
Bluetooth radio: GFSK, π/4 QPSK, and 8 DPSK modulation.

Test object	Combination of; 2.1.1: BTB-2; 2.1.2: BTB-2; 2.1.3: BTB-2; 2.1.4: BTB-2	Sheet	RE_Spur-18
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	25 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	25 MHz–1 GHz

Test method Characteristics	EN 300 328 V1.7.1:2006 Pre-scan, Antenna at 10 m, 4 m height, hor. pol.	Temperature Humidity	23 °C 50 % RH
Detector	Peak and quasi peak	Bandwidth	120 kHz
Test equipm.	EMI room Hørsholm 49600 29861 29797 29499	Uncertainty	4.9 dB



Comments

Continuous Rx - Hopping low-high channel.
GN Radio: Normal modulation.
Bluetooth radio: GFSK, π/4 QPSK, and 8 DPSK modulation.

Test object	Combination of; 2.1.1: BTB-2; 2.1.2: BTB-2; 2.1.3: BTB-2; 2.1.4: BTB-2	Sheet	RE_Spur-19
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	25 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	25 MHz–1 GHz

Test method Characteristics	EN 300 328 V1.7.1:2006 Peak search ant. at 10 m, height: 1-4 m, v/h pol.	Temperature Humidity	23 °C 50 % RH
Detector	Quasi peak	Bandwidth	120 kHz
Test equipm.	EMI room Hørsholm 49600 29861 29797 29499	Uncertainty	4.9 dB

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
41.400000	-80.00	-98.5	-57.0	23.0	382.0	4.00	VERTICAL
67.800000	-72.80	-104.5	-57.0	15.8	212.0	230.00	VERTICAL
92.600000	-74.90	-98.7	-57.0	17.9	101.0	358.00	VERTICAL
110.000000	-76.40	-95.6	-57.0	19.4	118.0	23.00	VERTICAL
976.800000	-64.70	-77.1	-57.0	7.7	200.0	357.00	VERTICAL
39.000000	-71.40	-83.2	-57.0	14.4	369.0	4.00	HORIZONTAL
40.300000	-68.30	-85.3	-57.0	11.3	354.0	0.00	HORIZONTAL
40.900000	-66.20	-86.1	-57.0	9.2	132.0	358.00	HORIZONTAL
53.200000	-73.80	-99.8	-57.0	16.8	400.0	1.00	HORIZONTAL
125.000000	-72.70	-95.0	-57.0	15.7	105.0	281.00	HORIZONTAL
146.500000	-75.60	-95.7	-57.0	18.6	313.0	195.00	HORIZONTAL
953.000000	-66.60	-78.7	-57.0	9.6	400.0	1.00	HORIZONTAL

Test result — The measured field strengths were below the limit

Polarization — Horizontal and vertical

Test Port — Enclosure

Test frequency — BT radio: 2402/2441/2480 MHz

GN radio: 2404/2440/2478 MHz

Test mode — Continuous Rx - Hopping low-high channel.
GN Radio: Normal modulation.
Bluetooth radio: GFSK, π/4 QPSK, and 8 DPSK modulation.

Condition — Normal

Compliant — Yes

Comments	Final maximal measurements by variation of turntable azimuth, antenna height, and antenna polarisation. The radiated substitution test method of EN 300 440 was used to demonstrate compliance with the limits for RSS-Gen, Section 6. EN 300 328 limit is -57 dBm at 10 meter (38.23 dBµV/m at 3 meter). RSS-Gen most stringent limit is 40 dBµV/m at 3 meter. The EN 300 328 limit is lower than the most stringent limit in RSS-Gen, Section 6.

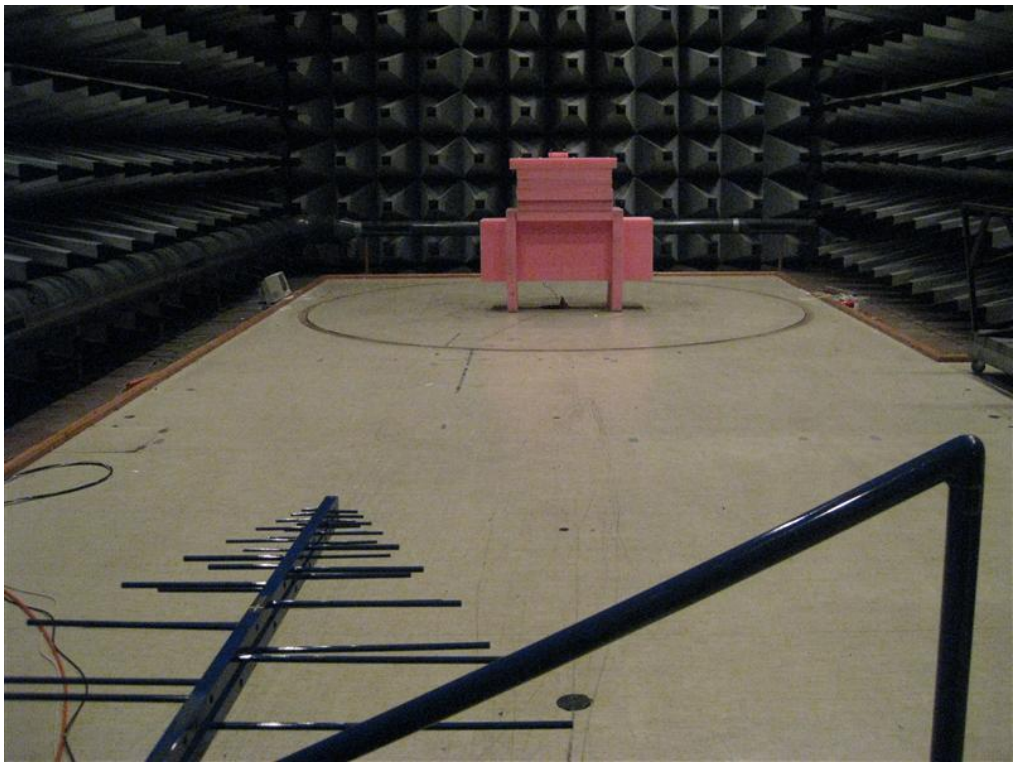


Photo 4.28.1 Test setup regarding measurement of radiated emission, Rx, IC below 1 GHz.

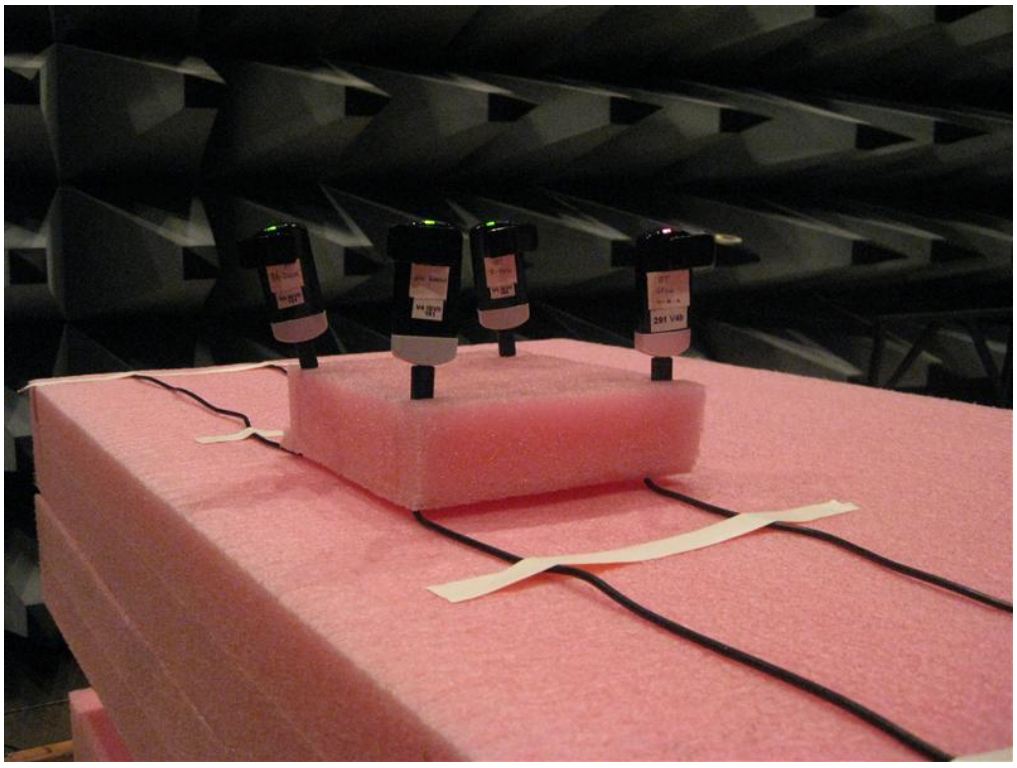
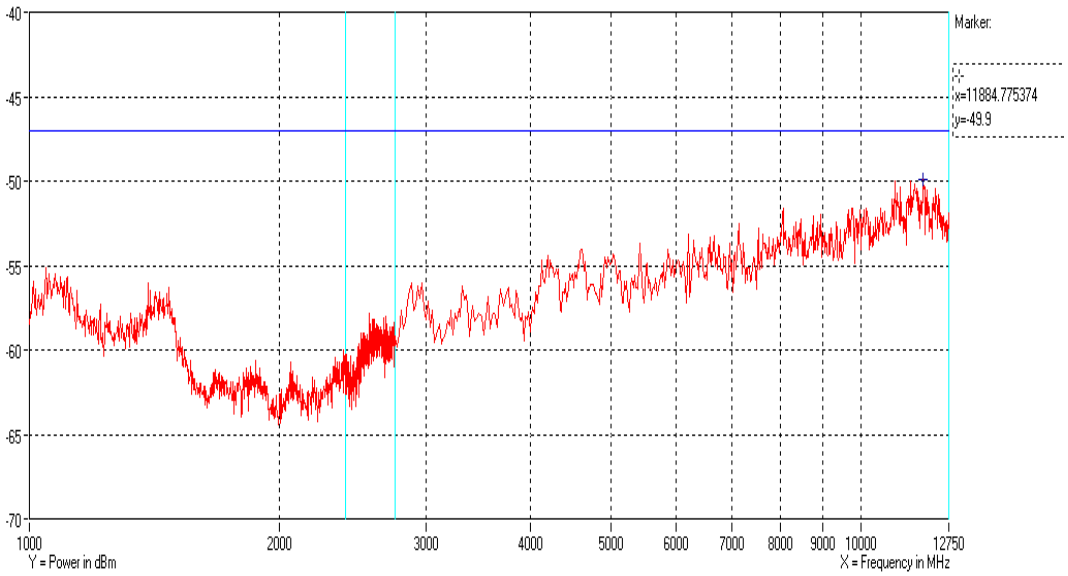


Photo 4.28.2 Test setup regarding measurement of radiated emission, Rx, IC below 1 GHz.

4.29 Measurement of radiated emission, Rx, IC above 1 GHz

Test object	Combination of; 2.1.1: BTB-2; 2.1.2: BTB-2; 2.1.3: BTB-2; 2.1.4: BTB-2	Sheet	RE_Spur-20
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	25 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-12.75 GHz

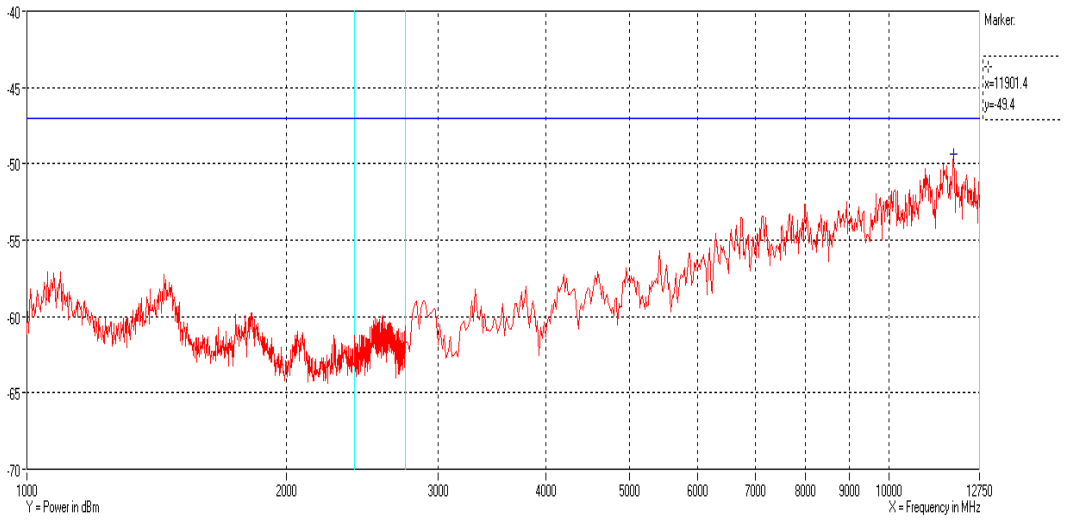
Test method Characteristics	EN 300 328 V1.7.1:2006 Complete search, antenna distance 3	Temperature Humidity	23 °C 50 % RH
Detector	Peak for 1GHz to 12.75 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49600 49624 49625	Uncertainty	4.9 dB



Polarization	Vertical peak measurements
Comments	Continuous Rx - Hopping low-high channel. GN Radio: Normal modulation. Bluetooth radio: GFSK, π/4 QPSK, and 8 DPSK modulation.

Test object	Combination of; 2.1.1: BTB-2; 2.1.2: BTB-2; 2.1.3: BTB-2; 2.1.4: BTB-2	Sheet	RE_Spur-21
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	25 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-12.75 GHz

Test method Characteristics	EN 300 328 V1.7.1:2006 Complete search, antenna distance 3 m	Temperature Humidity	23 °C 50 % RH
Detector	Peak for 1 GHz to 12.75 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49600 49624 49625	Uncertainty	4.9 dB



Polarization Horizontal peak measurements

Comments Continuous Rx - Hopping low-high channel.
GN Radio: Normal modulation.
Bluetooth radio: GFSK, π/4 QPSK, and 8 DPSK modulation.

Test object	Combination of; 2.1.1: BTB-2; 2.1.2: BTB-2; 2.1.3: BTB-2; 2.1.4: BTB-2	Sheet	RE_Spur-22
Type	See section 2	Project no.	T203281-4
Serial no.	See section 2	Date	25 Sep. 2012
Client	GN Hearing A/S	Initials	PWF
Specification	RSS-210, Issue 8:2010 RSS-Gen, Issue 3:2010	Frequency	1-12.75 GHz

Test method Characteristics	EN 300 328 V1.7.1:2006 Complete search, Antenna distance 3 m	Temperature Humidity	23 °C 50 % RH
Detector	Peak for 1 GHz to 12.75 GHz	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49600 49624 49625	Uncertainty	4.9 dB

Test result	The measured field strengths are below the limit
Test Port	Enclosure
Test frequency	BT radio: 2402/2441/2480 MHz GN radio: 2404/2440/2478 MHz
Test mode	Continuous Rx - Hopping low-high channel GN Radio: Normal modulation Bluetooth radio: GFSK, π/4 QPSK, and 8 DPSK modulation
Condition	Normal
Compliant	Yes
Comments	Final maximal measurements by variation of turntable azimuth, antenna height and antenna polarization. The radiated substitution test method of EN 300 440 was used to demonstrate compliance with the limits for RSS-Gen, Section 6. EN 300 328 limit is -47 dBm peak (48.23 dBµV/m peak at 3 meter). RSS-Gen limit is 54 dBµV/m average at 3 meter. The EN 300 328 peak limit is more than 5 dB lower than the average limit in RSS-Gen, Section 6.

Photo 4.29.1 Test setup regarding measurement of radiated emission above 1 GHz.

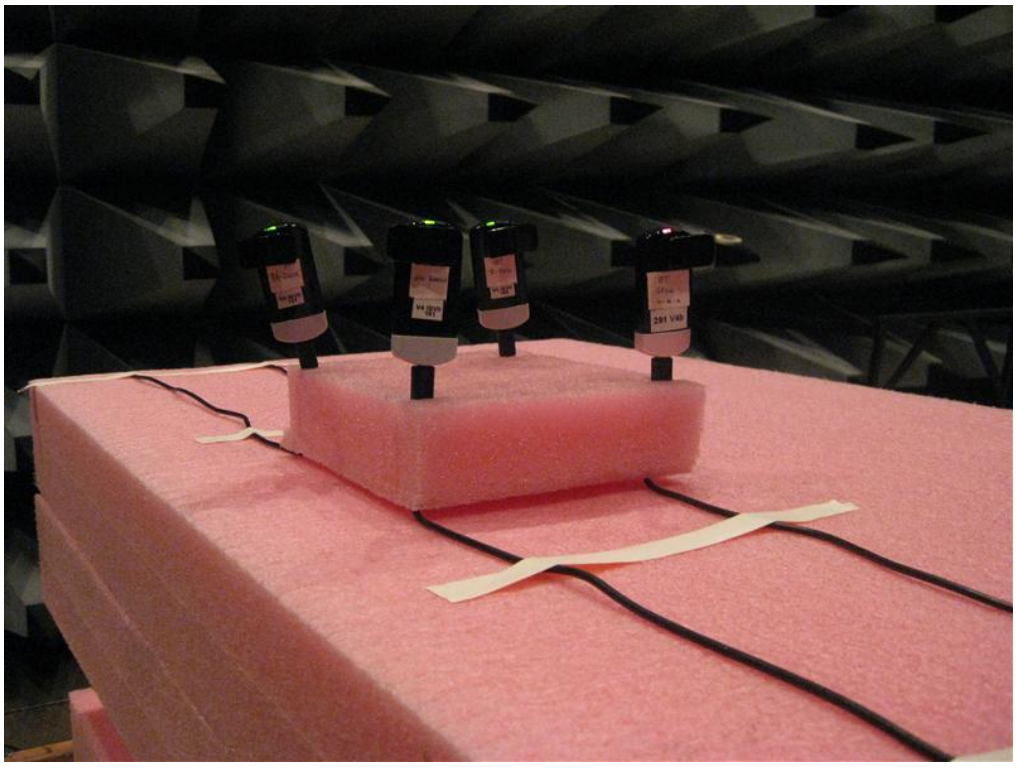


Photo 4.29.2 Test setup regarding measurement of radiated emission above 1 GHz.

5. National registrations and accreditations

5.1 DANAK Accreditation

Organization: Danish Accreditation and Metrology Fund - DANAK, see www.danak.dk and www.ilac.org

Registration Number: 19

Area Number: C

DANAK is part of ILAC (International Laboratory Accreditation Cooperation) including its MRA (Mutual Recognition Arrangement). The MRA includes the Australian NATA and Canadian SCC.

CISPR 22 is equivalent to AS/NZS CISPR 22, and therefore this report can be used for applying the **Australian C-Tick mark** for IT equipment, when this test has been passed.

CISPR 22:2002 is equivalent to ICES-003:2004, and therefore this report can be used for approval in Canada for IT equipment, when this test has been passed.

5.2 FCC Registrations

Organization: Federal Communications Commission, USA

Registration Number: 90529

Facilities: EMC room 2 Hørsholm (EMC-2)
EMC room 3 Hørsholm (EMC-3)
EMC room 4 Hørsholm (EMC-4)
EMI room Hørsholm (EMC-5)

5.3 VCCI Registrations

Organization: Voluntary Control Council for Interference by Information Technology, Japan

Member Number: 910

Facilities:

EMC room 2 Hørsholm (EMC-2):	C-707, T-246 and T-1547
EMC room 3 Hørsholm (EMC-3):	C-2532, T-247 and T-1548
EMC room 4 Hørsholm (EMC-4):	C-2533, T-248 and T1549
EMI room Hørsholm (EMC-5):	R-1180, C-706, and T-1550, G-470

5.4 IC Registrations

Organization: Industry Canada, Certification and Engineering Bureau

Registration Number: IC4187A-5

Facilities: EMI room Hørsholm (EMC-5)

6. List of instruments

No.	Description	Manufacturer	Type No.	Cal. date	Cal. exp.
29301	ARTIFICIAL MAINS NETWORK	ROHDE & SCHWARZ	ESH2-Z5	21-12-2011	21-12-2012
29499	BROADBAND RF PREAMPLIFIER	EC/MTS TELEMETER	TVV 711	07-12-2011	07-12-2012
29797	BILOG ANTENNA, 30-2000 MHz	CHASE ELECTRICS LTD	CBL 6111A	26-10-2010	26-10-2012
29861	EMI-SOFTWARE VER. 1.60	ROHDE & SCHWARZ	ES-K1, PART: 1026.6790.02		
49086	REMI EMISSION SOFTWARE PACKAGE V. 2.133, ROOM 5	NeWeTec	REMI		
49183	POWER SUPPLY	TTI	PL 320		
49184	POWER SUPPLY	TTI	CPX200		
49421	IMPULSE VOLTAGE LIMITER (BNC)	ROHDE & SCHWARZ	ESH3/Z2	21-06-2012	21-06-2013
49550	SIGNAL ANLYZER	ROHDE & SCHWARZ	FSQ8	28-02-2012	28-02-2013
49600	SPECTRUM ANALYZER / MEASUREMENT RECEIVER	ROHDE & SCHWARZ	ESU40	16-12-2011	16-12-2012
49624	DUAL RIDGE HORN ANTENNA – 1 GHz - 26 GHz (2 GHz – 32 GHz)	SATIMO	SH2000	19-09-2011	19-09-2014
49625	SRD COAX SWITCH MATRIX USED IN 1 GHz TO 26 GHz SRD ANTENNASYSTEM	DELTA	COAX SWITCH MATRIX	11-05-2012	11-05-2013

Annex 1

Out of band emission table

Transmitter out-of-band Emission Table, GN radio

Project No.	T203281-4
Client	GN Hearing
Product	BTB-2

Specification:	FCC CFR 47 Part 15, Subpart C, §15.249 RSS-210, Issue 8:2010, A8.5
Requirement:	All out-of-band emission shall be below the general limit (54 dBuV/m)

The table below lists all out-of-band emissions exceeding the general emission limit of 500 uV/m (54 dBuV/m) as wells as the measured in-band emissions for reference.
The data is an extract of the measurement results reported in chapter 4 of the main report.

Meas. Ref. No.	Frequency [MHz]	Reading [dBuV, Av] (BW: 1 MHz)	Transducer Factor [dB] (Cables and Amplifiers)	Antenna Correction Factor [dB]	Result [dBuV/m, AV] (Reading - TF + AF)	Limit [dBuV/m, AV] (Max. in-band emission - 30 dB)	Margin [dB] (Limit - Result)	Pass/Fail	Note
56	2404	84.6	29.3	32.5	87.8	In-band	-	-	Tx @ 2404 MHz, Fundamental, Pk
56	4807.8	63.0	68.2	37.0	31.8	54.0	22.2	PASS	Tx @ 2404 MHz, 2nd harmonic
56	7212	*	*	*	*	*	*	PASS	Tx @ 2404 MHz, 3rd harmonic
56	9616	*	*	*	*	*	*	PASS	Tx @ 2404 MHz, 4th harmonic
54	2440	82.3	29.1	33.1	86.3	In-band	-	-	Tx @ 2440 MHz, Fundamental, Pk
54	4880	67.3	68.2	37.0	36.1	54.0	17.9	PASS	Tx @ 2440 MHz, 2nd harmonic
54	7320	*	*	*	*	*	*	PASS	Tx @ 2440 MHz, 3rd harmonic
54	9760	*	*	*	*	*	*	PASS	Tx @ 2440 MHz, 4th harmonic
52	2478	82.1	29.1	34.4	87.4	In-band	-	-	Tx @ 2478 MHz, Fundamental, Pk
52	4956	70.2	68.2	37.0	39.0	54.0	15.1	PASS	Tx @ 2478 MHz, 2nd harmonic
52	7434	*	*	*	*	*	*	PASS	Tx @ 2478 MHz, 3rd harmonic
52	9912	*	*	*	*	*	*	PASS	Tx @ 2478 MHz, 4th harmonic

** : The result is below the general limit (54 dBuV/m)*

Max. in-band emission:	87.8 dBuV/m, AV @ 3 m

Test result:	All out-of-band emission is below the general limit (54 dBuV/m)
Compliant:	Yes.