



TEST REPORT

Report No.: SRTC2012-H024-E0035

Product Name: GSM/GPRS/EDGE/UMTS

Digital Mobile Phone with Bluetooth and WiFi

Product Model: ONE TOUCH 902S

Applicant: TCT Mobile Limited

Manufacturer: TCT Mobile Limited

Specification: FCC Part 15, Subpart C (July 10, 2008 edition)

IC RSS-210 (Issue 8, December 2010)

IC RSS-Gen (Issue 3 December 2010)

FCC ID: RAD244

IC: 9238A-0010

The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-68009202 Fax: 86-10-68009205

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1. General information

1.1 Notes of the test report

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The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company: The State Radio_monitoring_center Testing Center (SRTC)
Address: No.80 Beilishi Road, Xicheng District, Beijing China
City: Beijing
Country or Region: China
Contacted person: Wang Junfeng
Tel: +86 10 68009181 +86 10 68009202
Fax: +86 10 68009195 +86 10 68009205
Email: wangjf@srrc.org.cn / wangjunfeng@srtc.org.cn

1.3 Applicant's details

Company: TCT Mobile Limited
Address: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area
City: Shanghai
Country or Region: P.R.China
Grantee Code: RAD
Contacted person: Gong Zhizhou
Tel: +86-21-61460890
Fax: +86-21-61460602
Email: zhizhou.gong@jrdcom.com

1.4 Manufacturer's details

Company: TCT Mobile Limited
Address: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area
City: Shanghai
Country or Region: P.R.China
Contacted person: Gong Zhizhou
Tel: +86-21-61460890
Fax: +86-21-61460602
Email: zhizhou.gong@jrdcom.com

1.5 Application details

Date of reception of test sample: 23rd March 2012

Date of test: 1st April 2012 to 28th April 2012

1.6 Reference specification

FCC Part 15, Subpart C (July 10, 2008 edition)

IC RSS-210 (Issue 8, December 2010)

IC RSS-Gen (Issue 3 December 2010)

1.7 Information of EUT

1.7.1 General information

Name of EUT	GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi
FCC ID	RAD244
IC	9238A-0010
Frequency range	2.4GHz~2.4835GHz
Number of channel	79
Modulation type	GFSK, $\pi/4$ DQPSK, 8DPSK
Duplex mode	TDD
Channel spacing	1MHz
Data rate	1Mbps, 2 Mbps, 3 Mbps
Antenna type	Fixed Internal
Power Supply	Battery or charger
Rated Power Supply Voltage	3.7V
HW Version	PIO01
SW Version	SW134

1.7.2 EUT details

Product Name	Product Model	IMEI
GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi	ONE TOUCH 902S	013023000020641

1.7.3 Auxiliary equipment details

Equipment	Charger
Manufacturer	HUIZHOU BYD ELECTRONIC CO., LTD.
Model Number	CBA3002AG0C1
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

Equipment	Charger
Manufacturer	HUIZHOU BYD ELECTRONIC CO., LTD.
Model Number	CBA3001AG0C1
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

Equipment	Charger
Manufacturer	HUIZHOU BYD ELECTRONIC CO., LTD.
Model Number	CBA3001AG0C2
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

Equipment	Charger
Manufacturer	Ten Pao International Ltd.
Model Number	CBA3000AG0C1
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

Equipment	Battery
Manufacturer	SHENZHEN BAK BATTERY CO., LTD
Model Number	CAB31L0000C2
Capacity	1000mAh
Rated Voltage	3.7V d.c.

Equipment	Data Cable
Manufacturer	Shen Zhen Ju Wei Electronic Co., LTD
Model Number	CDA3122002C1

Equipment	Data Cable
Manufacturer	Huizhou Shenghua Industry Co., Ltd
Model Number	CDA3122002C2

Equipment	Data Cable
Manufacturer	Shen Zhen Ju Wei Electronic Co., LTD
Model Number	CDA3122005C1

Equipment	Data Cable
Manufacturer	Huizhou Shenghua Industry Co., Ltd
Model Number	CDA3122005C2


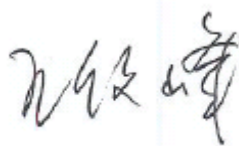

Note: As the information described above, there are four different models of charger manufactured by two different companies, and four different models of data cable manufactured by two different companies.

The relevant tests have been performed in order to verify in which combination case (EUT exercised by only one model of charger and one model of data cable) the EUT would have the worst features. So all the tests shown in this test report are performed when the EUT exercised by the charger CBA3000AG0C1 and the data cable CDA3122005C2.

2. Test information

2.1 Summary of the test results

No.	Test case	FCC and IC reference	Verdict
1	Occupied Bandwidth	FCC Part15.247(a)(1) IC RSS-210 § A8.1(a)	Pass
2	Peak Power Output	FCC Part15.247(a)(1) IC RSS-210 § A8.4(2)	Pass
3	Spurious RF Conducted Emissions	FCC Part15.247(d) IC RSS-210 § A8.5	Pass
4	Spurious Radiated Emissions	FCC Part15.247(d)/15.35(b)/15.209 IC RSS-210 § A8.5	Pass
5	Band Edge Compliance	FCC Part15.247(d) IC RSS-210 § A8.5	Pass
6	Dwell time	FCC Part15.247(a)(1)(iii) IC RSS-210 § A8.1(d)	Pass
7	Channel separation	FCC Part15.247(a)(1) IC RSS-210 § A8.1(b)	Pass
8	Number of Hopping frequencies	FCC Part15.247(a)(1)(iii) IC RSS-210 § A8.1(d)	Pass
9	AC Power line Conducted Emission	FCC Part15.107/15.207 IC RSS-Gen § 7.2.2	Pass

This Test Report Is Issued by: Mr. Song Qizhu Director of the test lab 	Checked by: Mr. Wang Junfeng Deputy director of the test lab 
Tested by: Mr. Li Bin Test engineer 	Issued date: 2012.06.29

2.2 Test result

2.2.1 Occupied Bandwidth

2.2.1.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.1.2 Test Description

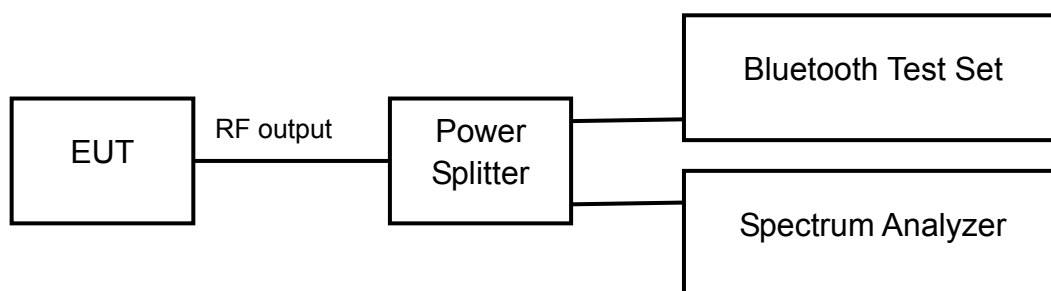
The measurement is made according to Public notice DA 00-705 and ANSI C63.4-2009.

The Equipment Under Test (EUT) was setup in a shielded room to perform the occupied bandwidth measurements.

The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.

The results recorded were measured with the modulation which produces the worst-case (widest) occupied bandwidth. The resolution bandwidth for measuring the reference level and the occupied bandwidth was 10 kHz.

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.



2.2.1.3 Test limit

FCC Part15.247(a)(1):

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

IC RSS-210 § A8.1(a):

The bandwidth of a frequency hopping channel is the -20 dB emission bandwidth, measured with the hopping stopped. The system radio frequency (RF) bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset, while the long-term distribution appears evenly distributed.

2.2.1.4 Test result

Modulation type: GFSK

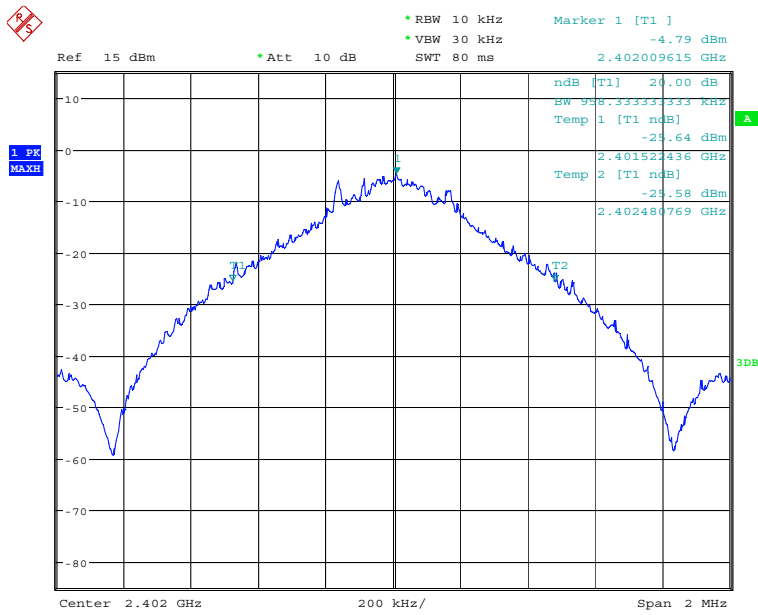
Carrier frequency (MHz)	Channel No.	20 dB bandwidth(kHz)
2402	0	958.33
2441	39	964.74
2480	79	923.08

Modulation type: $\pi/4$ DQPSK

Carrier frequency (MHz)	Channel No.	20 dB bandwidth(kHz)
2402	0	1298.08
2441	39	1298.08
2480	79	1288.46

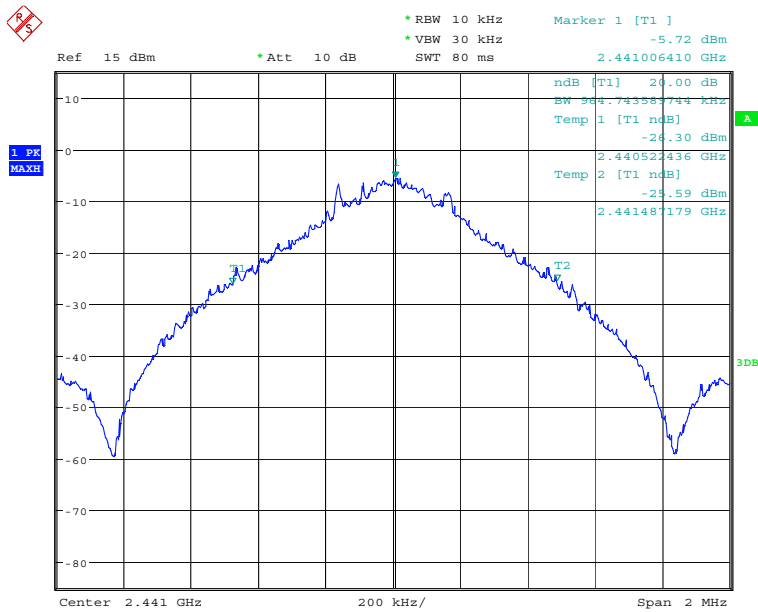
Modulation type: 8DPSK

Carrier frequency (MHz)	Channel No.	20 dB bandwidth(kHz)
2402	0	1294.87
2441	39	1304.49
2480	79	1304.49



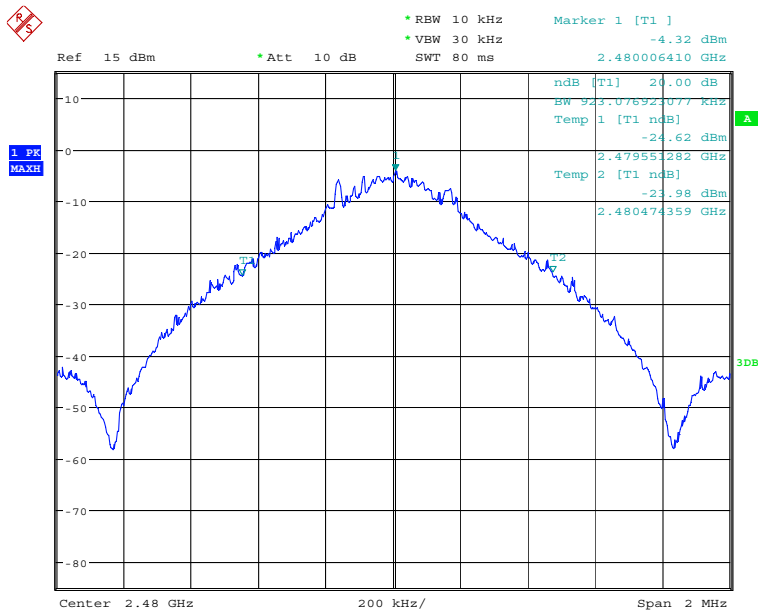
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Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: GFSK



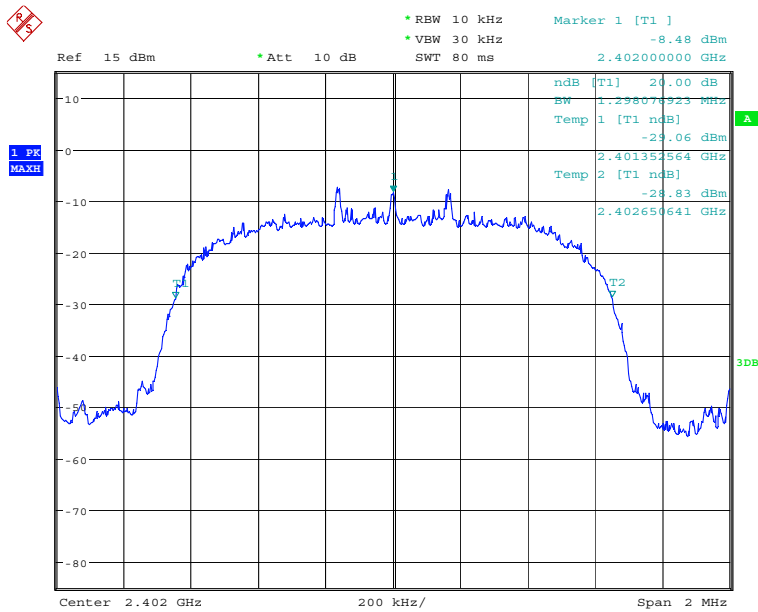
Date: 12.MAR.2012 14:19:22

Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: GFSK



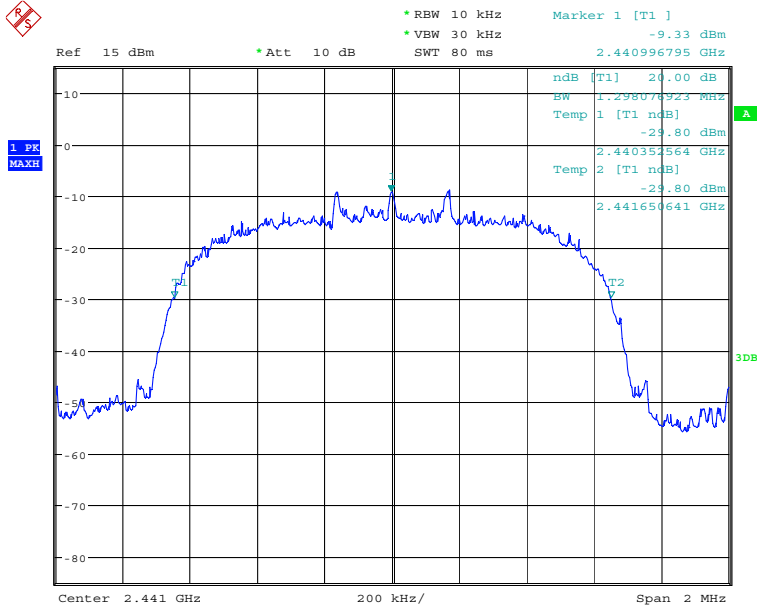
Date: 12.MAR.2012 14:21:12

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type:GFSK



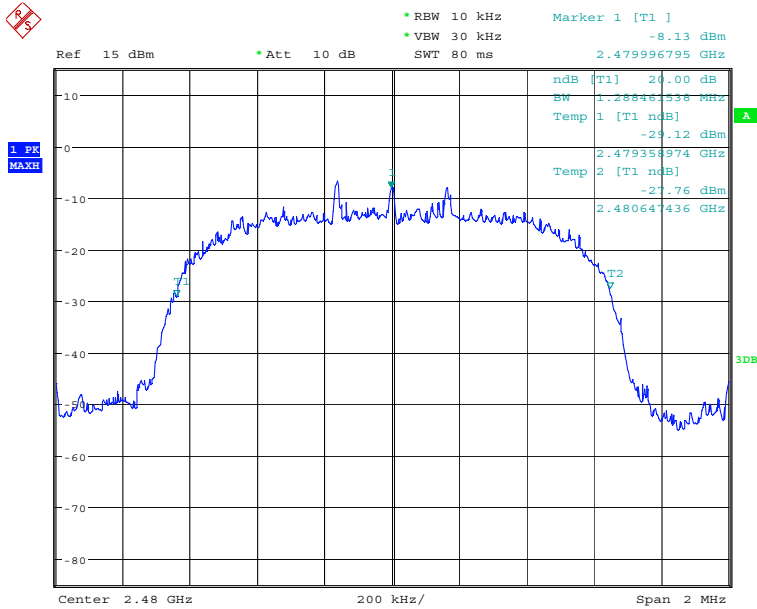
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Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: $\pi/4$ DQPSK



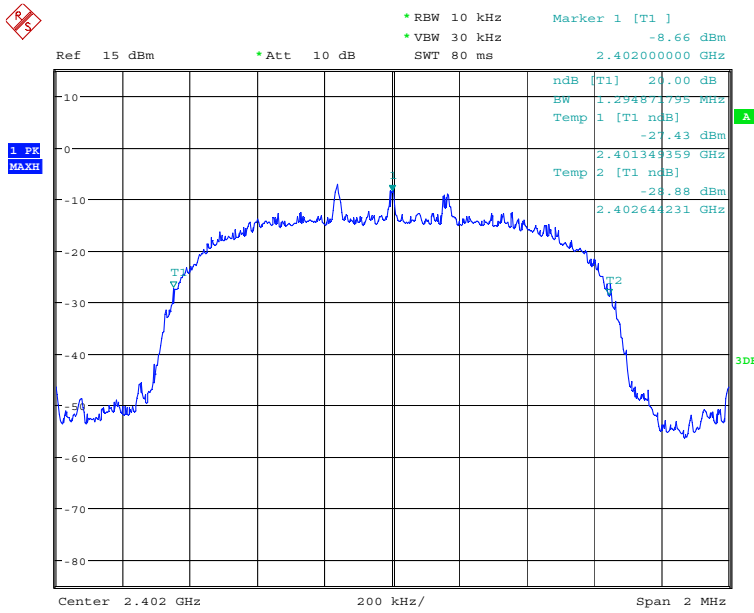
Date: 12.MAR.2012 14:24:41

Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: $\pi/4$ DQPSK



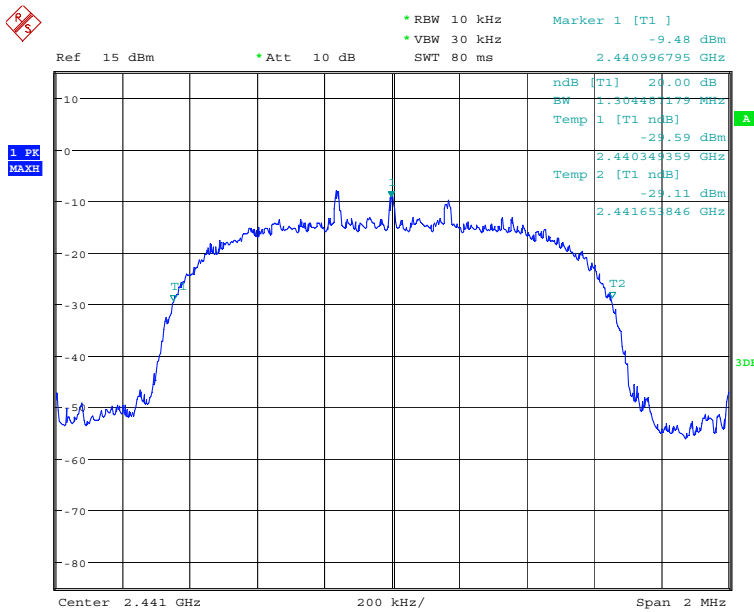
Date: 12.MAR.2012 14:25:45

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: $\pi/4$ DQPSK



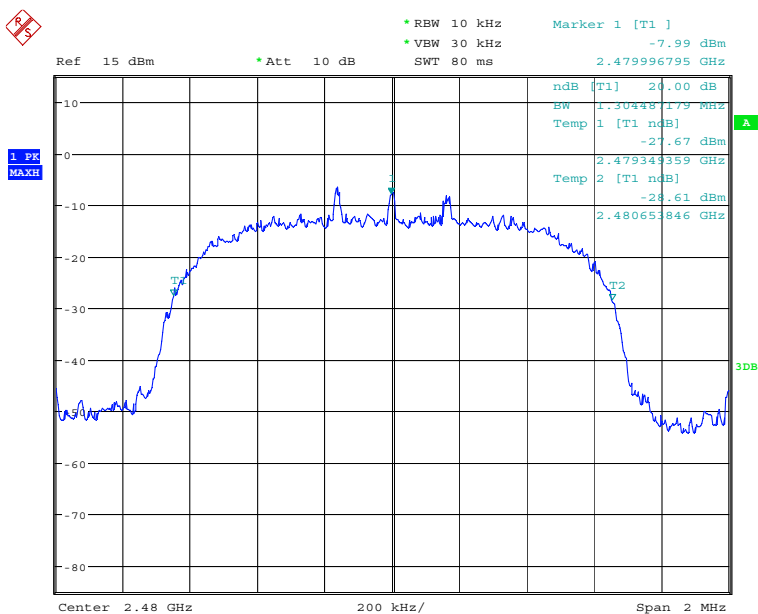
Date: 12.MAR.2012 14:27:05

Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: 8DPSK



Date: 12.MAR.2012 14:29:18

Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: 8DPSK



Date: 12.MAR.2012 14:31:03

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: 8DPSK

2.2.2 Peak Power Output

2.2.2.1 Ambient condition:

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.2.2 Test Description

The measurement is made according to Public notice DA 00-705 and ANSI C63.4-2009

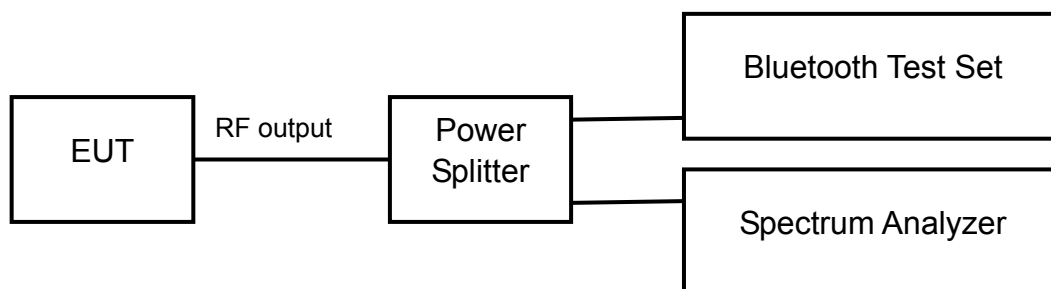
The Equipment Under Test (EUT) was set up in a shielded room to perform the output power measurements.

The results recorded were measured with the modulation which produces the worst-case (highest) output power.

The resolution bandwidth for measuring the output power was 2 MHz.

The reference level of the spectrum analyzer was set higher than the output power of the EUT.

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.



2.2.2.3 Test limit

FCC Part15.247(a)(1):

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt.

IC RSS-210 § A8.4(2):

For frequency hopping systems operating in the band 2400-2483.5 MHz and employing at least 75 hopping channels, the maximum peak conducted output power shall not exceed 1 W

Used conversion factor: Limit (dBm) = 10 log (Limit (W)/1mW)

==> Maximum Output Power: 30 dBm

2.2.2.4 Test Condition

Hopping Mode	Modulation type	RBW	VBW	Span	Sweep time
Hopping OFF	GFSK	2MHz	3MHz	8MHz	1ms
Hopping OFF	$\pi/4$ DQPSK	2MHz	3MHz	8MHz	1ms
Hopping OFF	8DPSK	2MHz	3MHz	8MHz	1ms

2.2.2.4 Test result:

Modulation type: GFSK

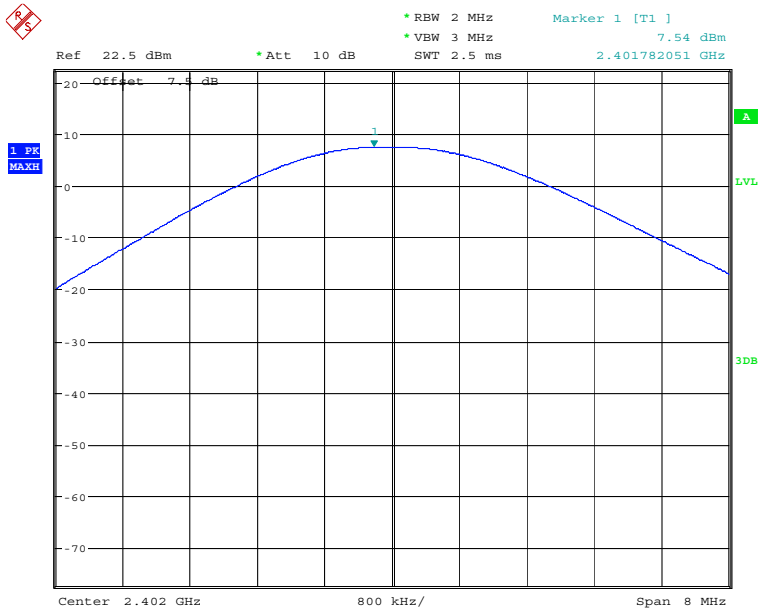
Carrier frequency (MHz)	Channel No.	Peak Conducted Output Power (dBm)
2402	0	7.54
2441	39	6.76
2480	78	8.13

Modulation type: $\pi/4$ DQPSK

Carrier frequency (MHz)	Channel No.	Peak Conducted Output Power (dBm)
2402	0	7.39
2441	39	6.69
2480	78	7.48

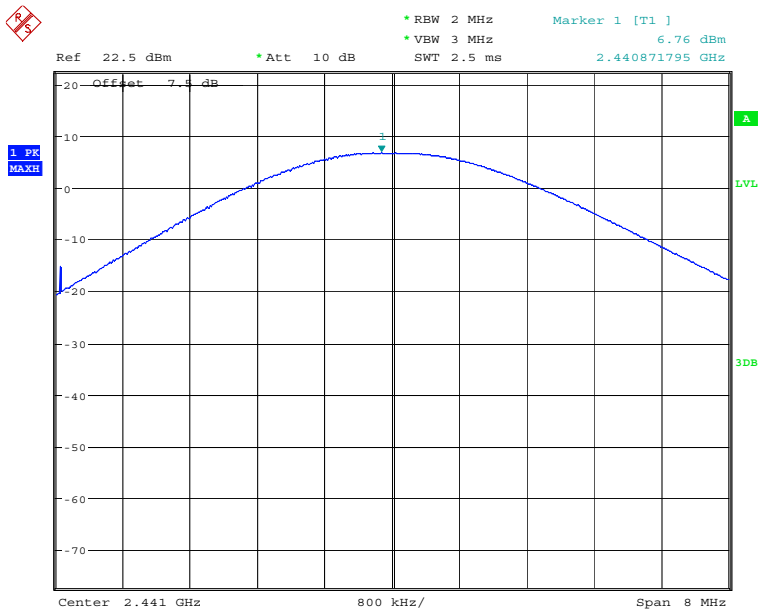
Modulation type: 8DPSK

Carrier frequency (MHz)	Channel No.	Peak Conducted Output Power (dBm)
2402	0	7.33
2441	39	6.66
2480	78	7.93



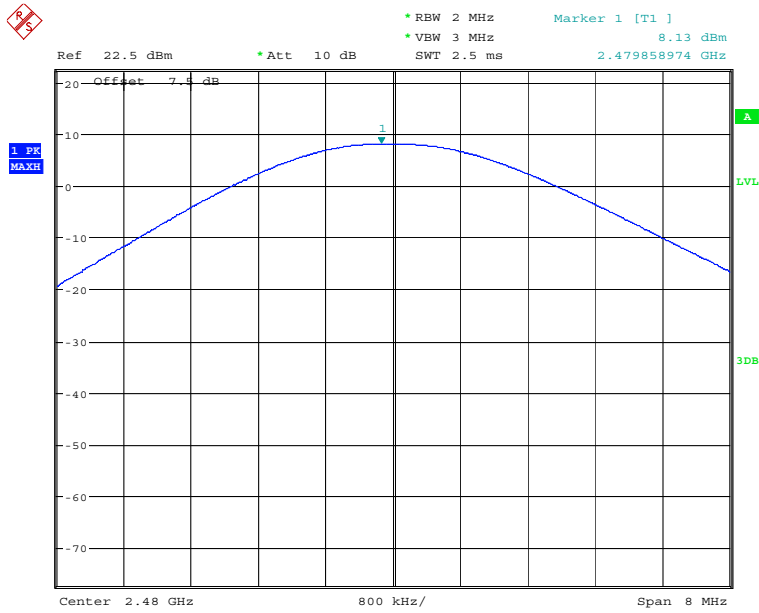
Date: 13.MAR.2012 08:44:21

Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: GFSK



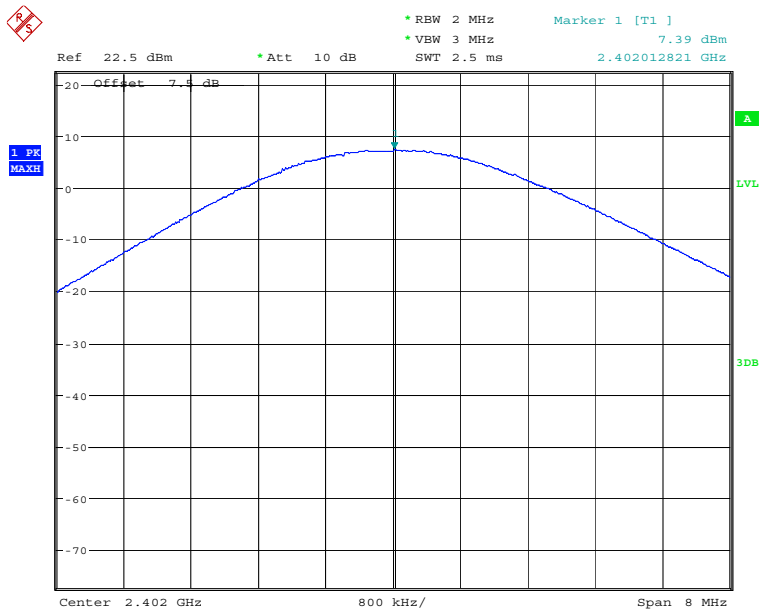
Date: 13.MAR.2012 08:46:40

Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: GFSK



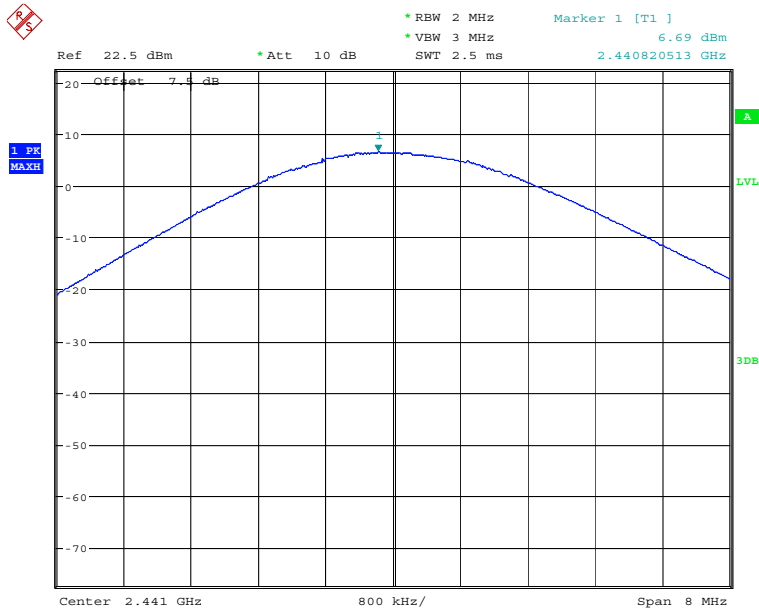
Date: 13.MAR.2012 08:48:34

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: GFSK



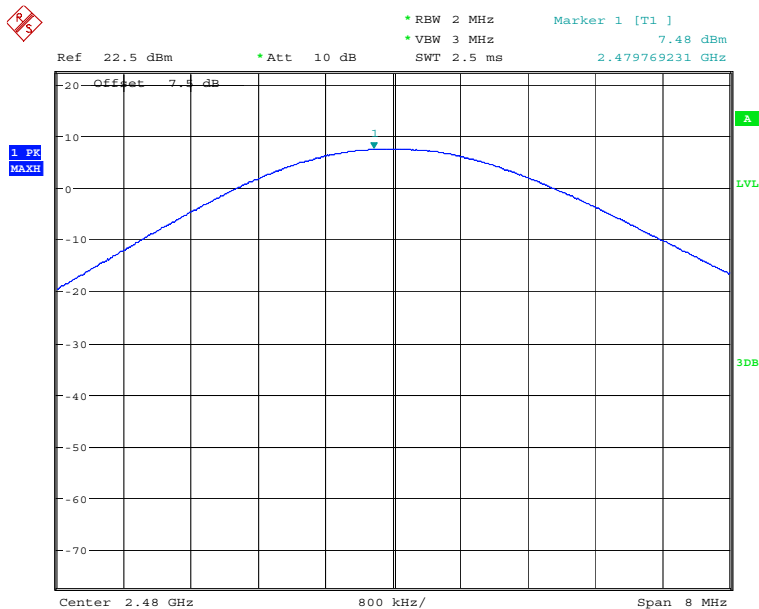
Date: 13.MAR.2012 08:56:12

Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: $\pi/4$ DQPSK



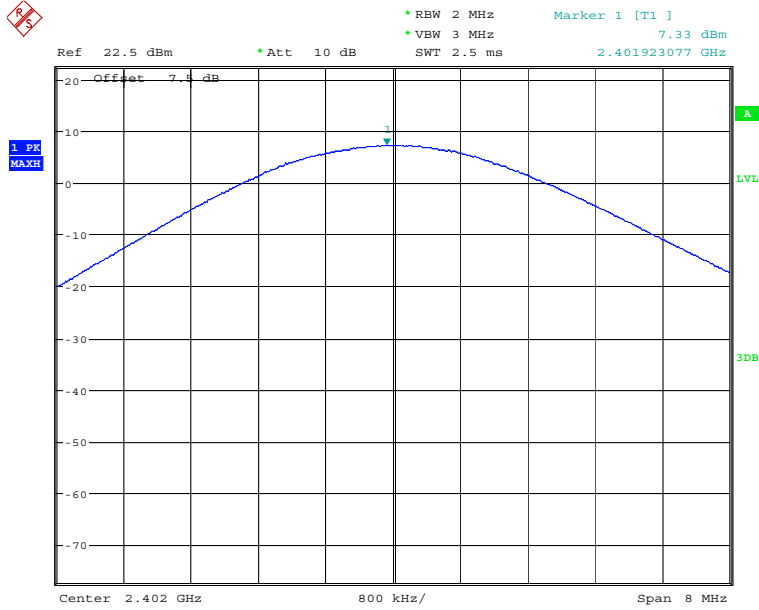
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Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: $\pi/4$ DQPSK



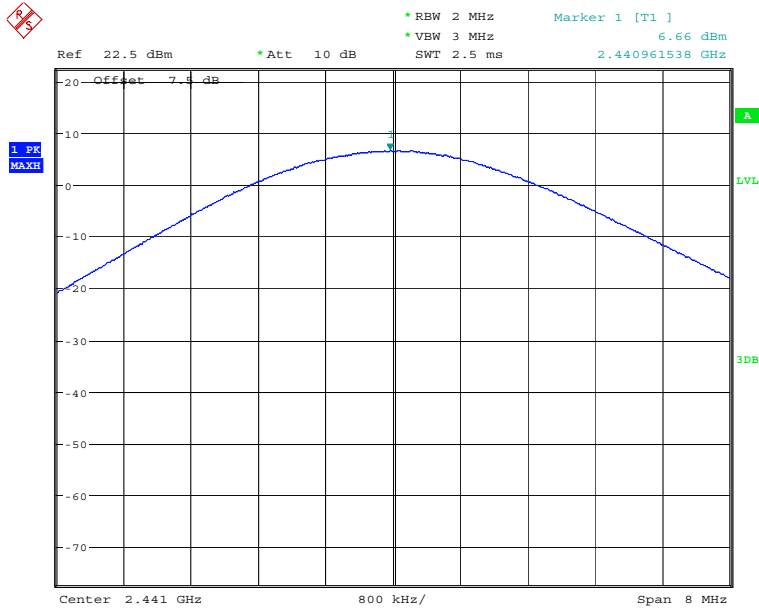
Date: 13.MAR.2012 09:00:48

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: $\pi/4$ DQPSK



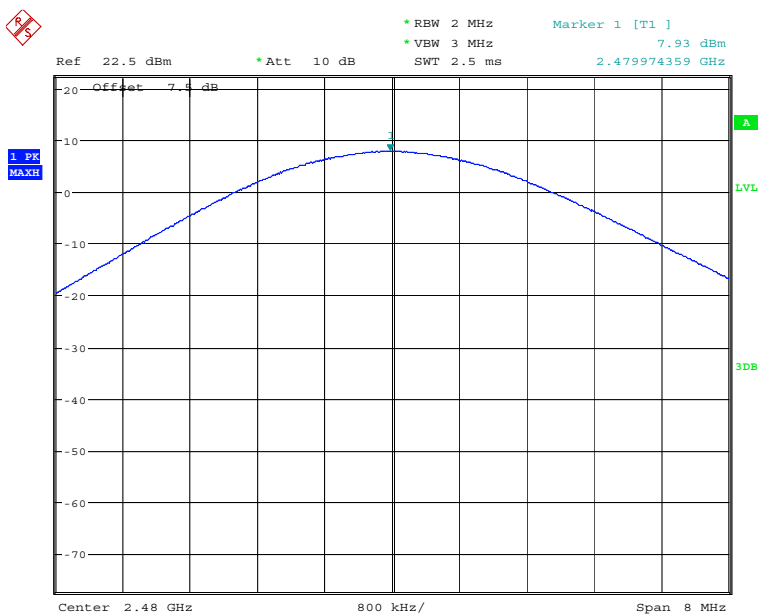
Date: 13.MAR.2012 09:03:49

Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: 8DPSK



Date: 13.MAR.2012 09:05:27

Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: 8DPSK



Date: 13.MAR.2012 09:06:36

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: 8DPSK

2.2.3 Spurious RF Conducted Emissions

2.2.3.1 Ambient condition:

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.3.2 Test Description

The measurement is made according to Public notice DA 00-705 and ANSI C63.4-2009.

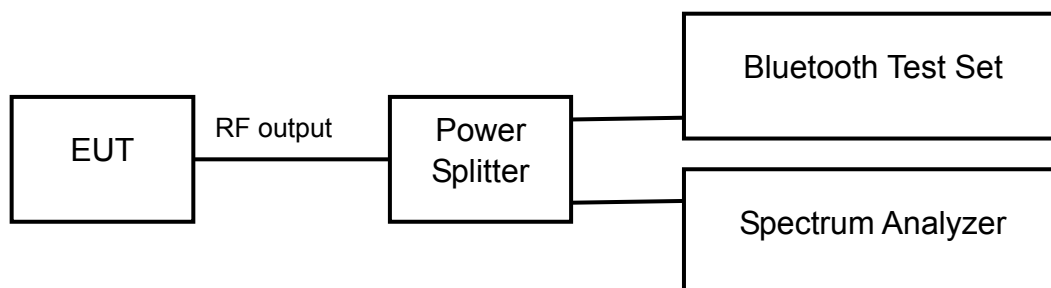
The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements.

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.

Analyzer settings:

- Detector: Peak-Maxhold
- Frequency range: 30 ~25000 MHz
- Resolution Bandwidth (RBW): 100 kHz
- Video Bandwidth (VBW): 300 kHz

The reference value for the measurement of the spurious RF conducted emissions is determined during the test “band edge compliance” (cf. chapter 4.5). This value is used to calculate the 20 dBc limit.



2.2.3.3 Test limit

FCC Part15.247(d):

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

IC RSS-210 § A8.5:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section A8.4 (4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

2.2.3.4 Test result

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: GFSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Carrier frequency (MHz): 2441

Channel No.:39

Modulation type: GFSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

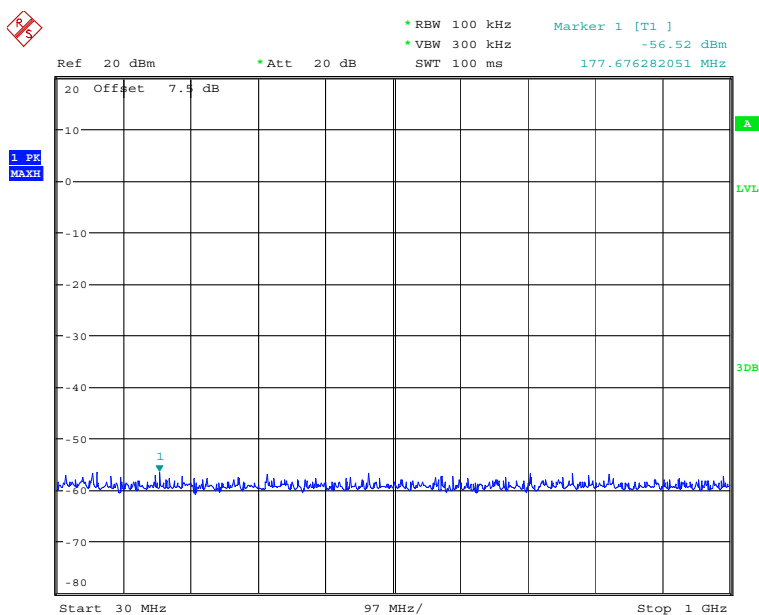
Carrier frequency (MHz): 2480

Channel No.:78

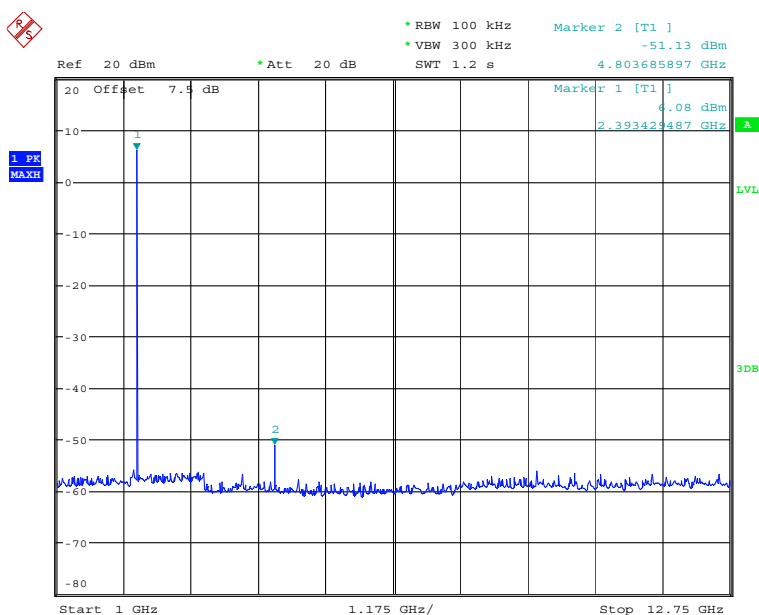
Modulation type: GFSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

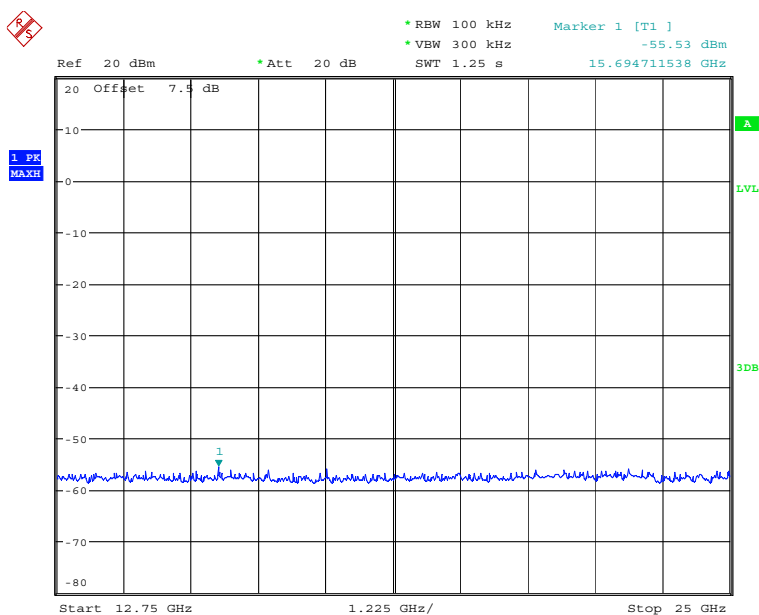
Note: The Reference value see 2.2.5 Band edge compliance



Date: 13.MAR.2012 09:10:30

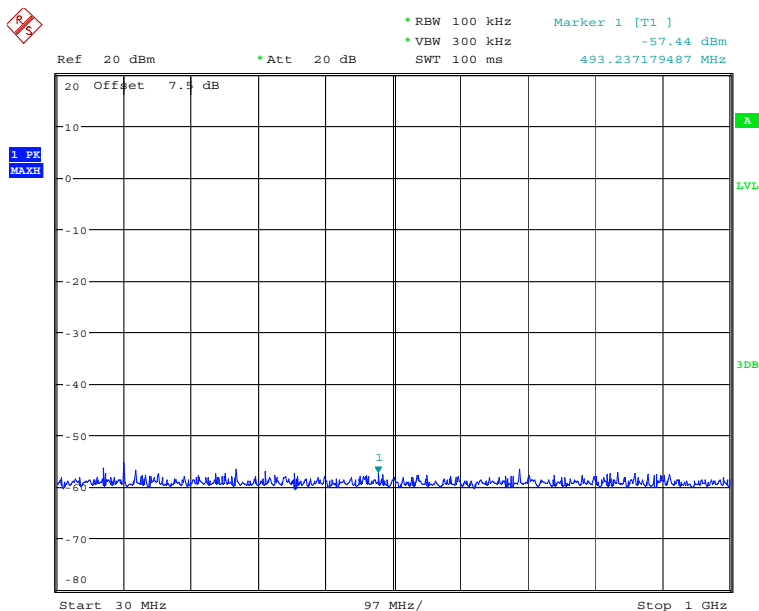


Date: 13.MAR.2012 09:11:06

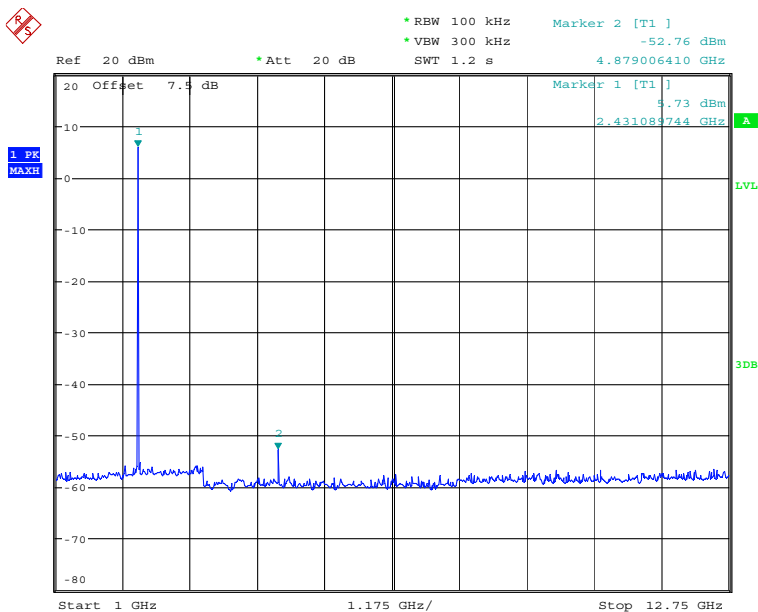


Date: 13.MAR.2012 09:13:34

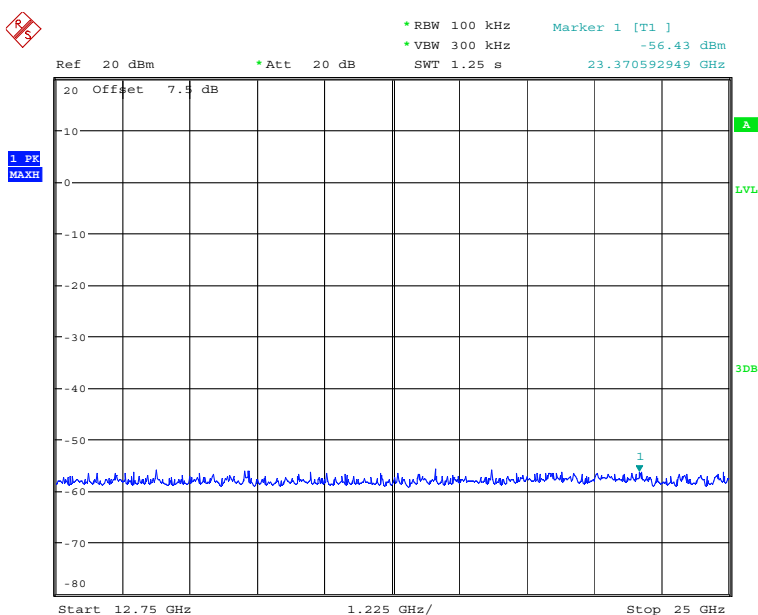
Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: GFSK



Date: 13.MAR.2012 09:34:30

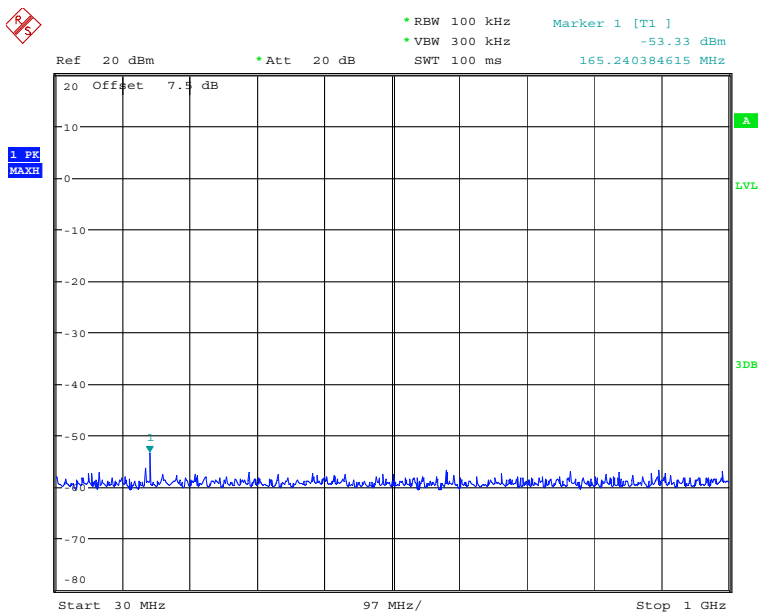


Date: 13.MAR.2012 09:35:24

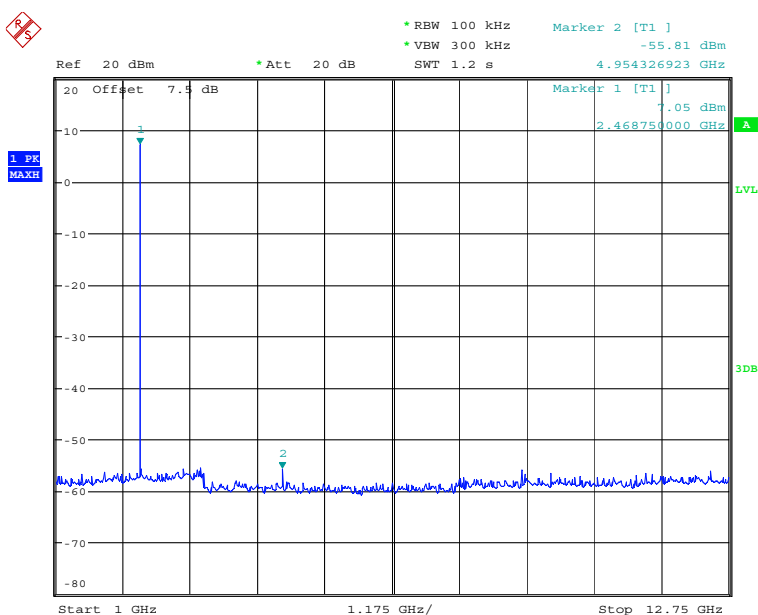


Date: 13.MAR.2012 09:36:15

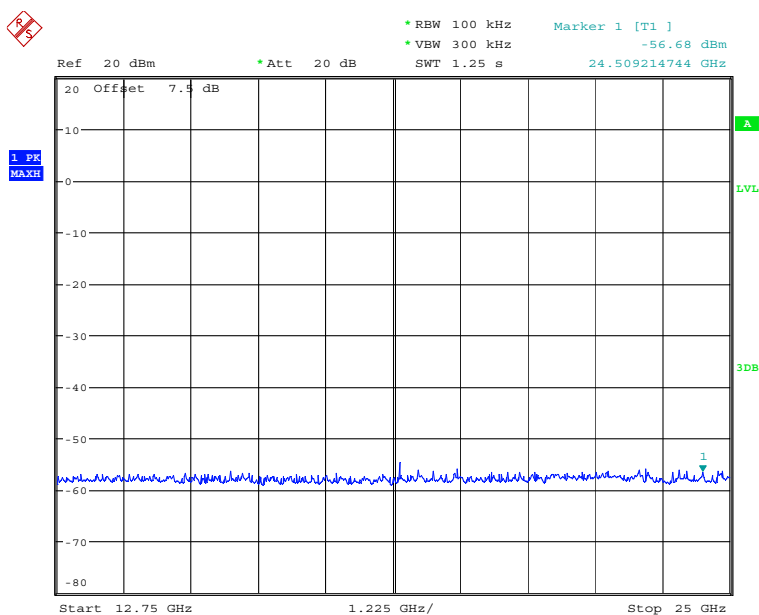
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: GFSK



Date: 13.MAR.2012 09:37:13



Date: 13.MAR.2012 09:38:00



Date: 13.MAR.2012 09:39:06

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: GFSK

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: $\pi/4$ DQPSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Carrier frequency (MHz): 2441

Channel No.:39

Modulation type: $\pi/4$ DQPSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
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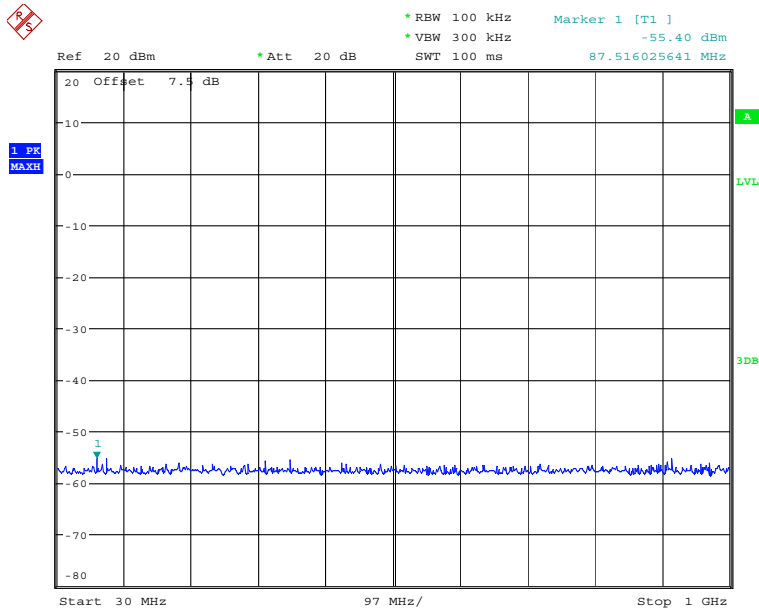
Carrier frequency (MHz): 2480

Channel No.:78

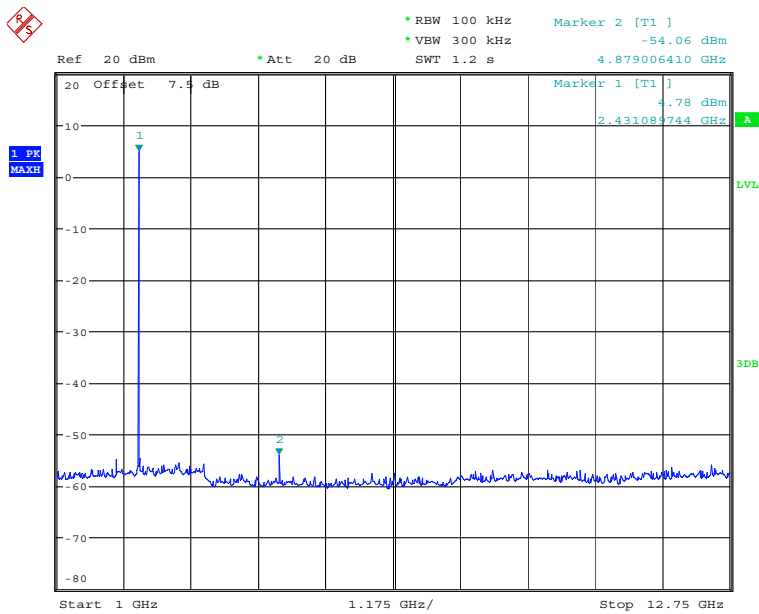
Modulation type: $\pi/4$ DQPSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
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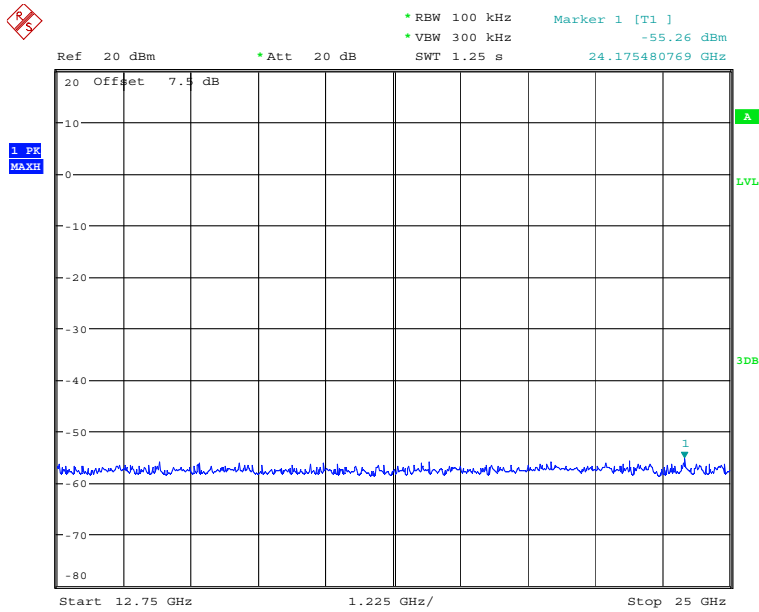
Note: The Reference value see 2.2.5 Band edge compliance



Date: 13.MAR.2012 09:42:53

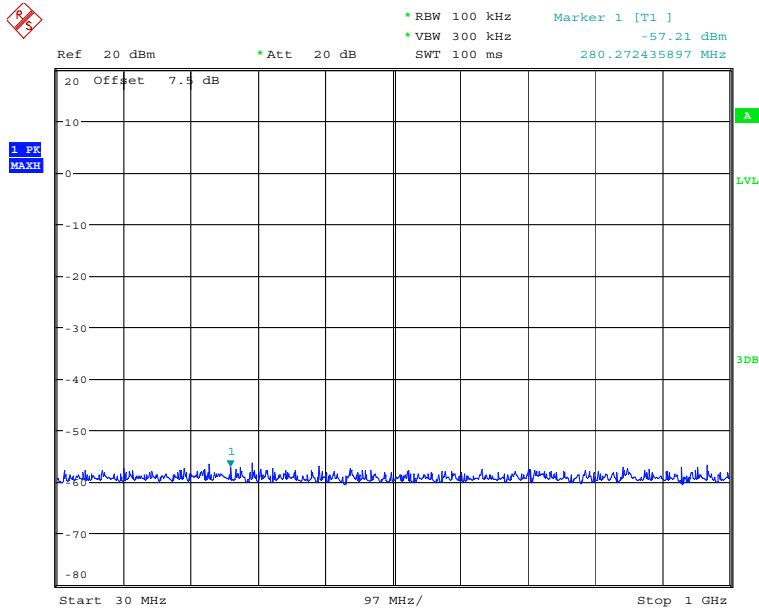


Date: 13.MAR.2012 09:44:05

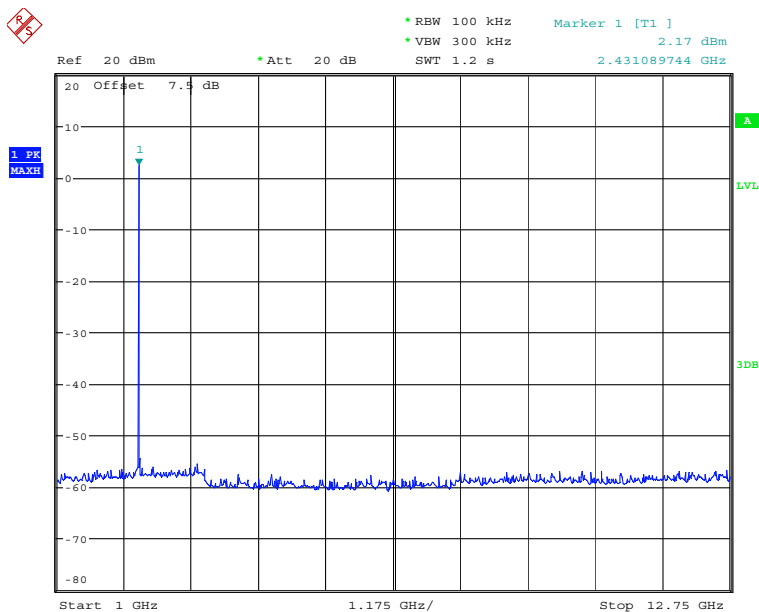


Date: 13.MAR.2012 09:46:35

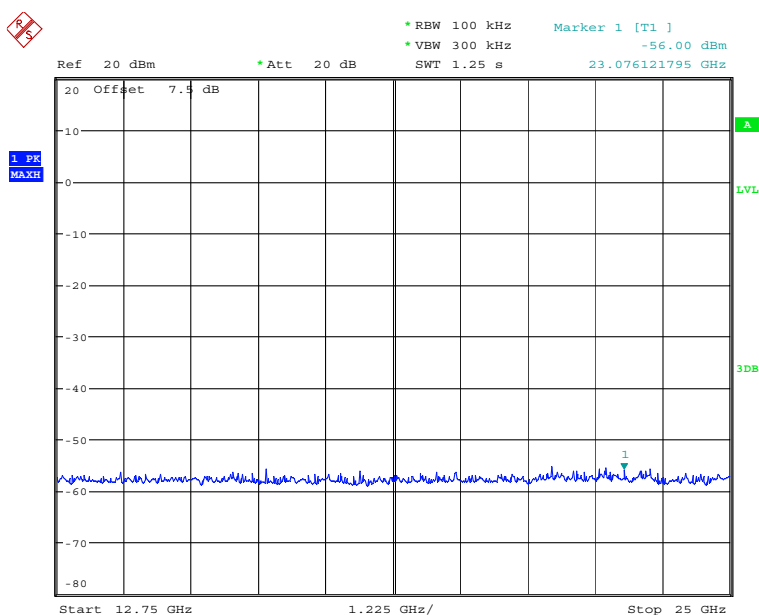
Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: $\pi/4$ DQPSK



Date: 13.MAR.2012 09:47:03

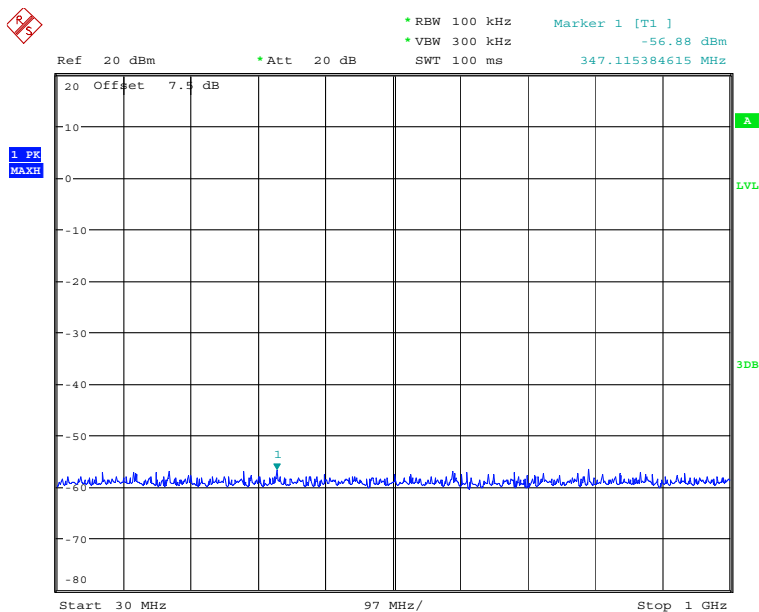


Date: 13.MAR.2012 09:47:42

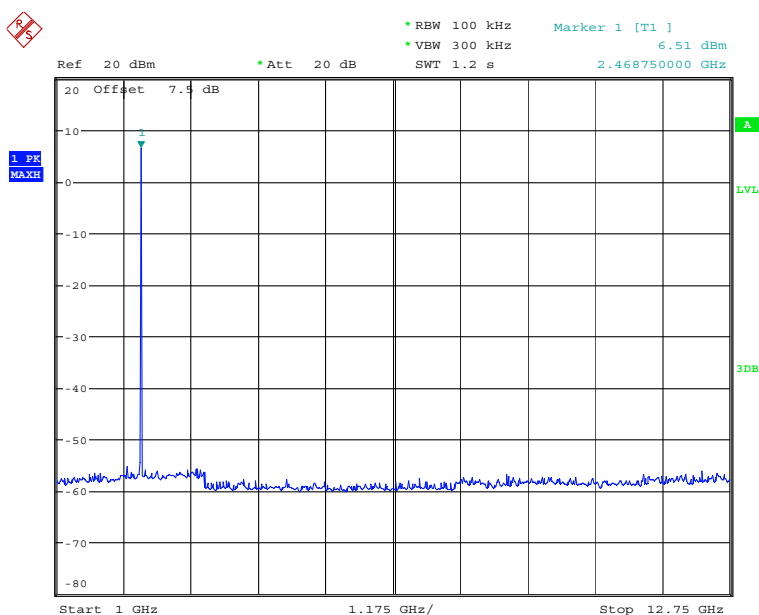


Date: 13.MAR.2012 09:49:02

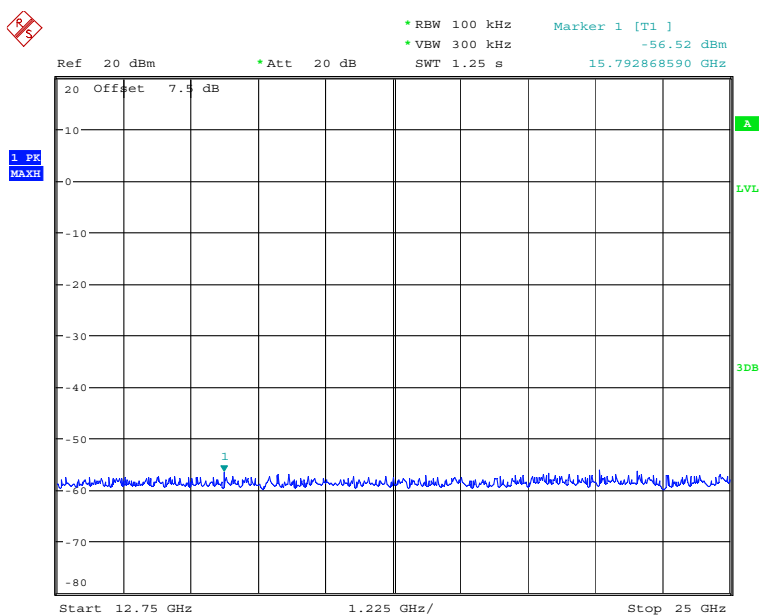
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: $\pi/4$ DQPSK



Date: 13.MAR.2012 09:49:27



Date: 13.MAR.2012 09:50:54



Date: 13.MAR.2012 09:51:15

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: $\pi/4$ DQPSK

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: 8DPSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
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Carrier frequency (MHz): 2441

Channel No.:39

Modulation type: 8DPSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
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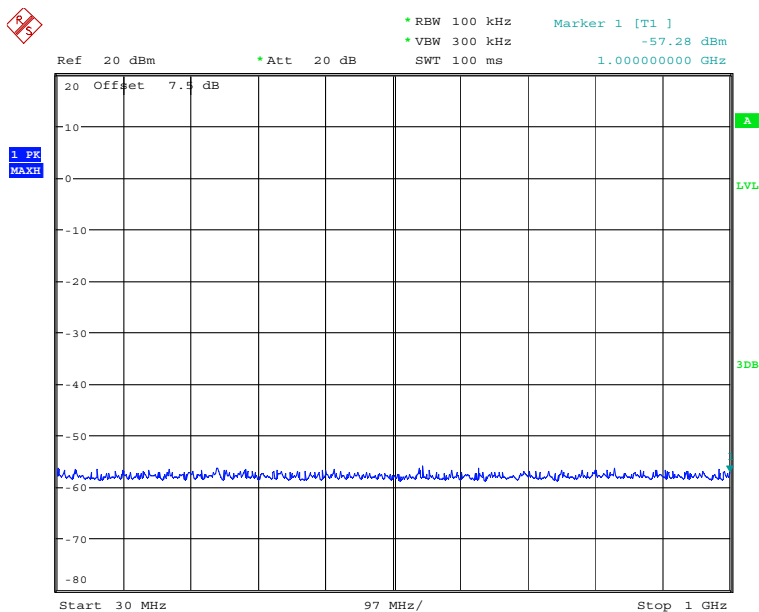
Carrier frequency (MHz): 2480

Channel No.:78

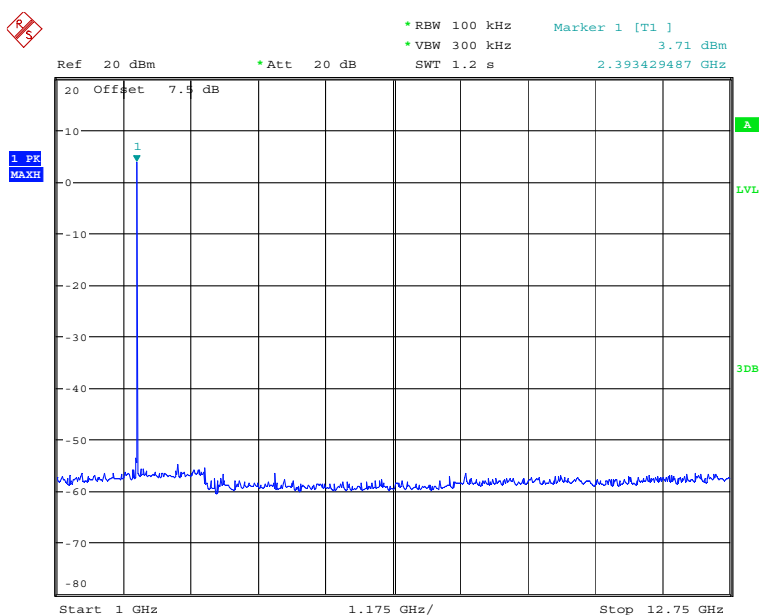
Modulation type: 8DPSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
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---	---	---	---	---

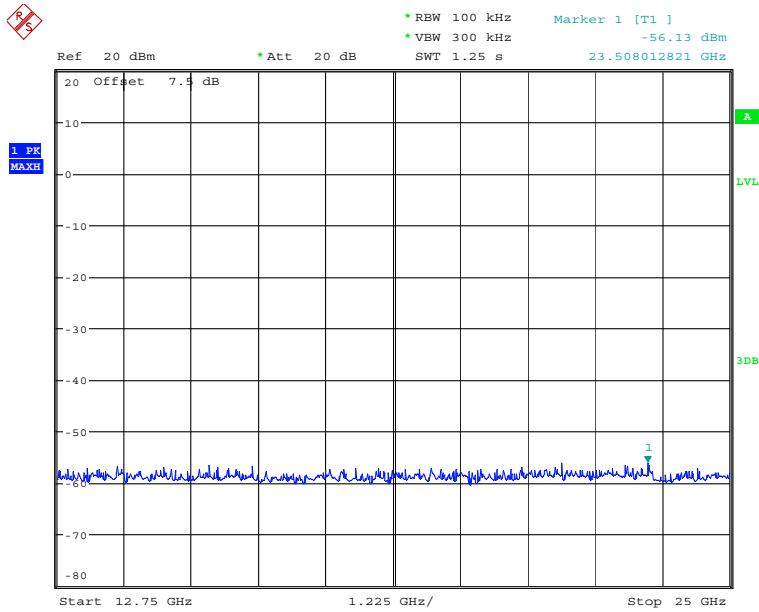
Note: The Reference value see 2.2.5 Band edge compliance



Date: 13.MAR.2012 09:53:05

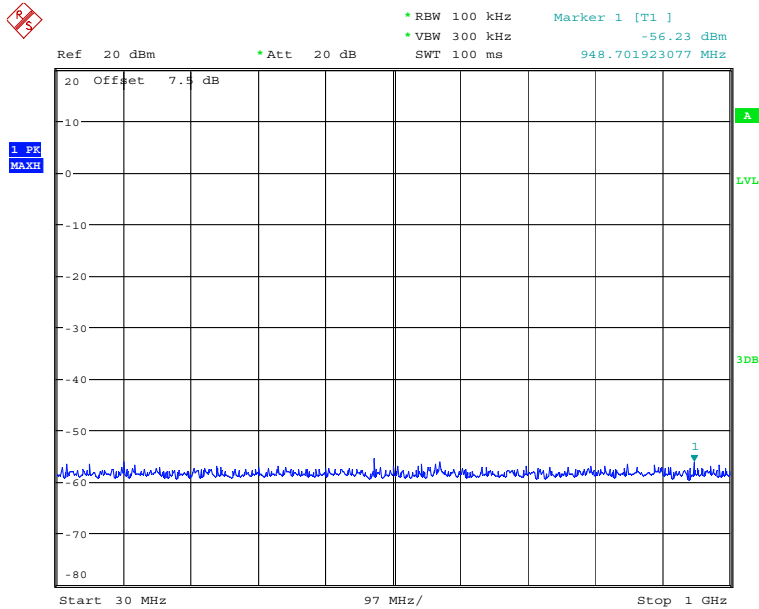


Date: 13.MAR.2012 09:54:47

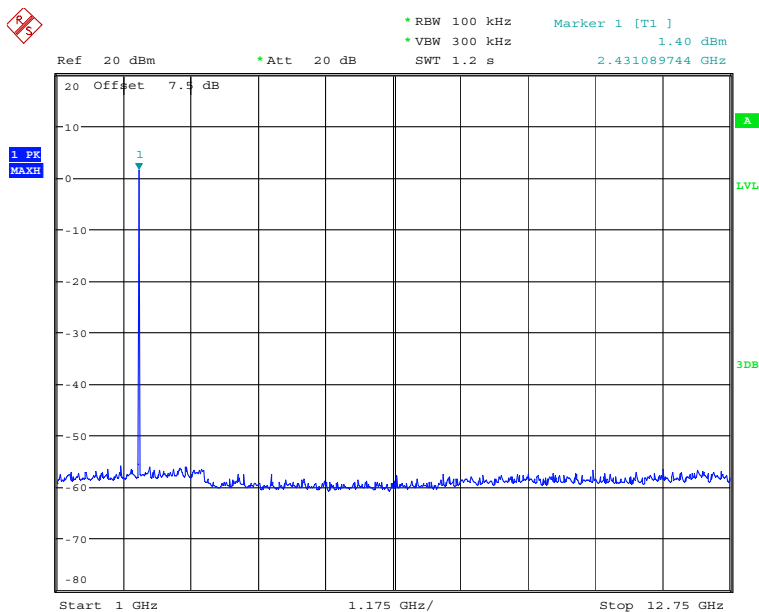


Date: 13.MAR.2012 09:55:05

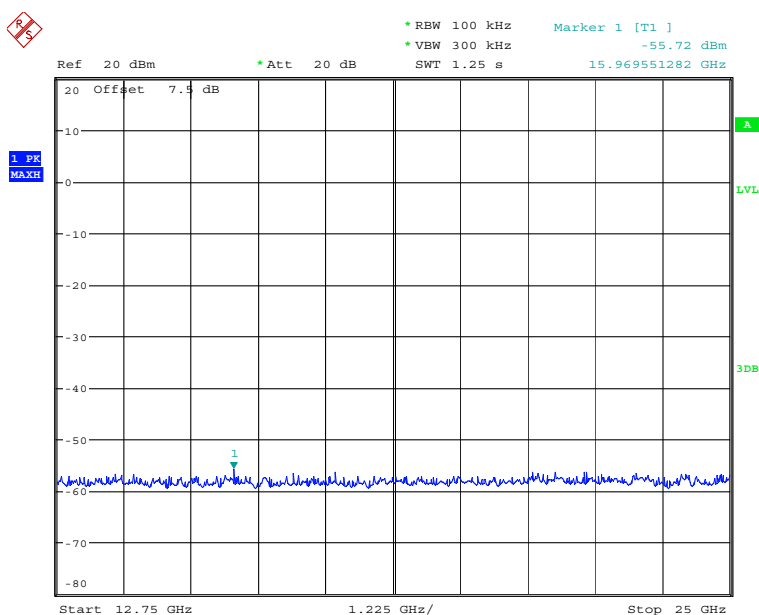
Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: 8DPSK



Date: 13.MAR.2012 09:55:53

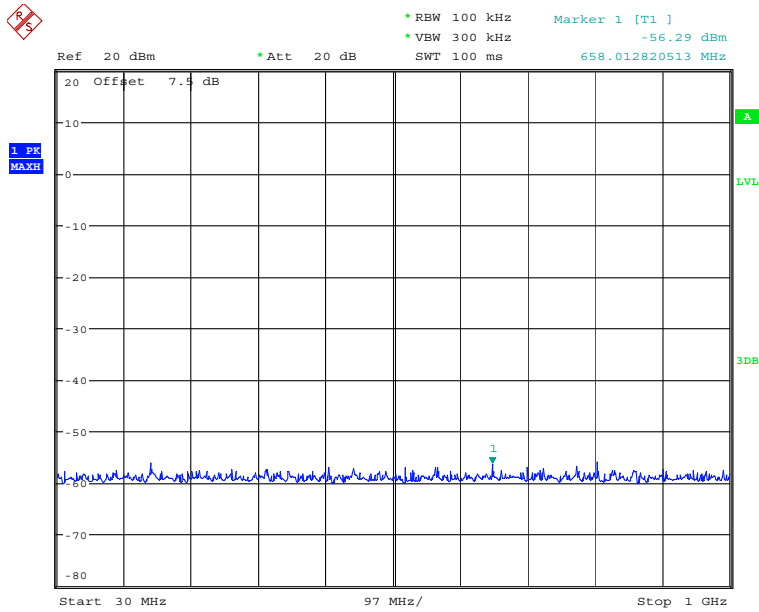


Date: 13.MAR.2012 09:56:36

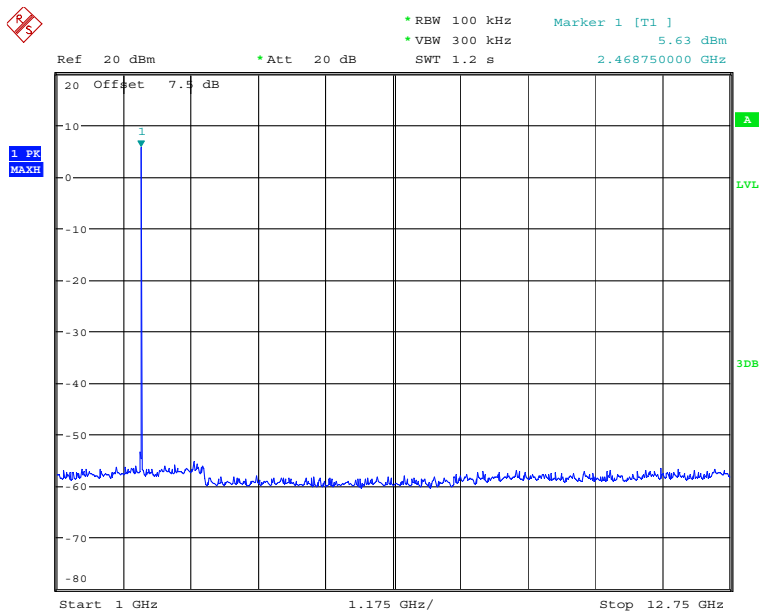


Date: 13.MAR.2012 09:58:50

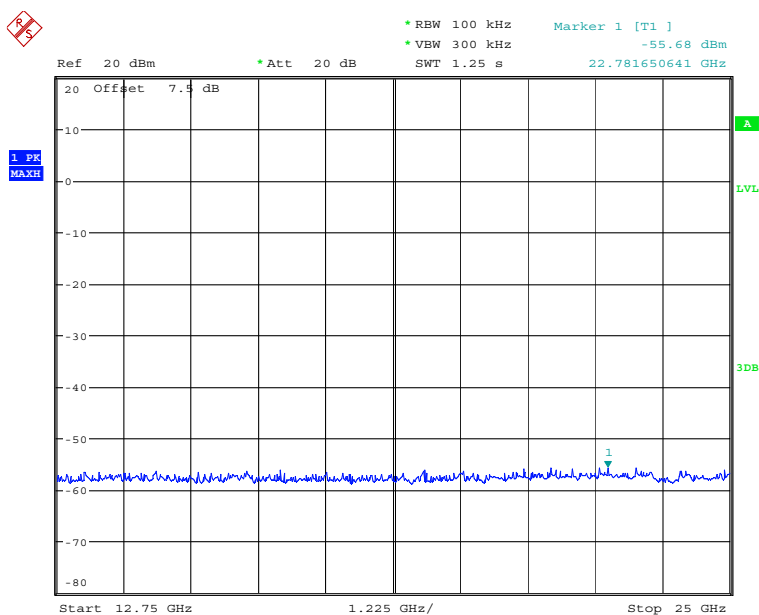
Carrier frequency (MHz): 2441
 Channel No.:39
 Modulation type: 8DPSK



Date: 13.MAR.2012 10:00:27



Date: 13.MAR.2012 10:02:01



Date: 13.MAR.2012 10:03:48

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: 8DPSK

2.2.4 Spurious Radiated Emissions

2.2.4.1 Ambient condition

Temperature	Relative humidity	Pressure
18.3°C	36.2%	100.2kPa

2.2.4.2 Test Description

The measurement is made according to Public notice DA 00-705 and ANSI C63.4-2009.

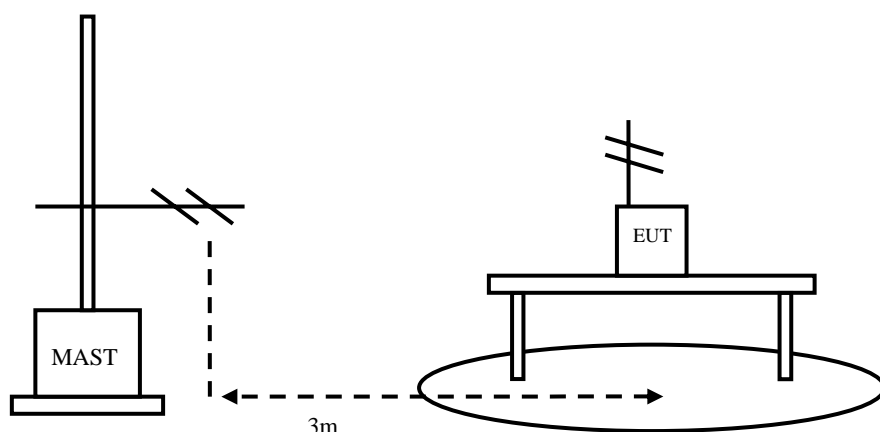
The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna.

The radiated emissions measurements were made in a typical installation configuration.

Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz or above, using receive log period antenna HL562 or Ridge horn antenna HF906.

During the test, the antenna height and EUT azimuth were varied in order to identify the maximum level of emission from the EUT. The height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees. The measurements shall be repeated with orthogonal polarization of the test antenna. The results (reference to 2.2.4.4) shall be showed the worst case of the three orthogonal axes.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.



2.2.4.3 Test limit

FCC Part15.247(d):

... In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

FCC Part15.209:

Radiated Emission Limits

Frequency of Emission(MHz)	Limits	
	Detector	Unit (dB μ V/m)
30~88	Quasi-peak	40.0
88~216	Quasi-peak	43.5
216~960	Quasi-peak	46.0
960~1000	Quasi-peak	54.0
1000~5th harmonic of the highest frequency or 40GHz, whichever is lower	Average	54.0
	Peak	74.0

FCC Part15.35(b):

..., there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit....

Used conversion factor: Limit (dB μ V/m) = 20 log (Limit (μ V/m)/1 μ V/m)

IC RSS-210 § A8.5:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section A8.4 (4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

2.2.4.4 Test result

A “reference path loss” is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{mea}} + A_{Rpl}$$

The worst case attitude: The mobile lay down.

For GFSK

Channel No.:39

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
35.61	22.05	15.5	6.55	Vertical
40.38	28.69	15.5	13.19	Vertical
42.76	28.43	13.8	14.63	Vertical
85.69	28.90	8.0	20.90	Vertical
86.39	28.77	8.1	20.67	Vertical
788.57	27.57	22.2	5.37	Vertical
959.90	29.52	24.3	5.22	Vertical

For $\pi/4$ DQPSK

Channel No.:39

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
35.61	22.05	15.5	6.55	Vertical
40.39	28.68	15.5	13.18	Vertical
42.76	28.43	13.8	14.63	Vertical
85.68	28.93	8.0	20.93	Vertical
86.39	28.76	8.1	20.66	Vertical
788.56	27.55	22.2	5.35	Vertical
959.92	29.56	24.3	5.26	Vertical

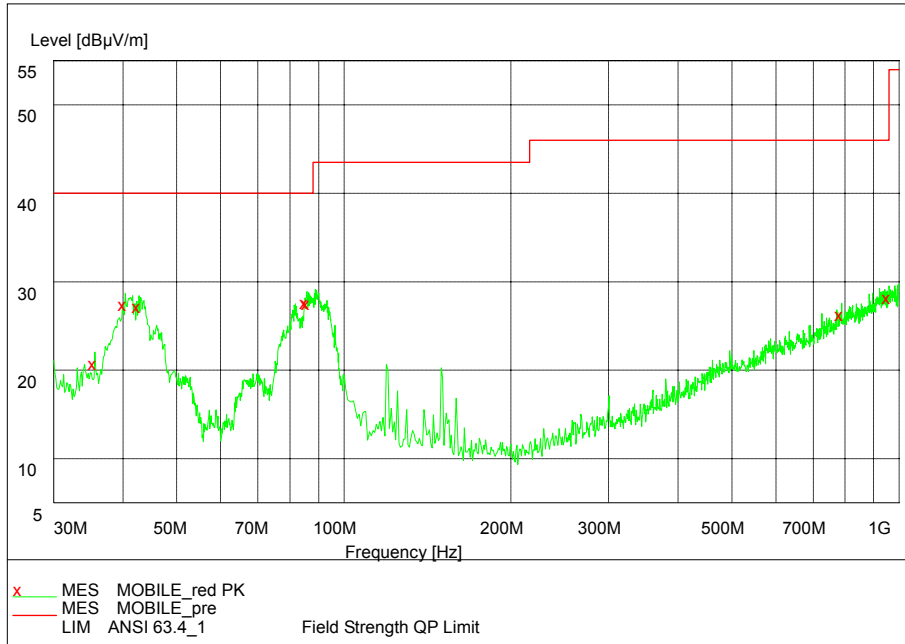
For 8DPSK

Channel No.:39

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
35.61	22.05	15.5	6.55	Vertical
40.38	28.69	15.5	13.19	Vertical
42.76	28.43	13.8	14.63	Vertical
85.69	28.93	8.0	20.93	Vertical
86.39	28.77	8.1	20.67	Vertical
788.57	27.57	22.2	5.37	Vertical
959.91	29.52	24.3	5.22	Vertical

Carrier frequency (MHz): 2441

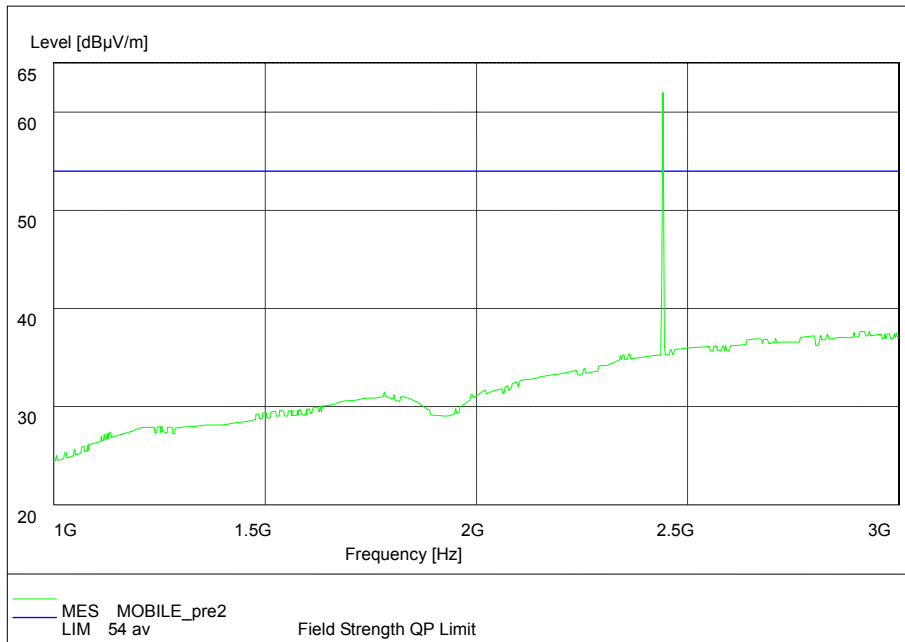
Channel No.:39



Frequency Range: 30MHz-1000MHz

Detector: Av mode and PK mode

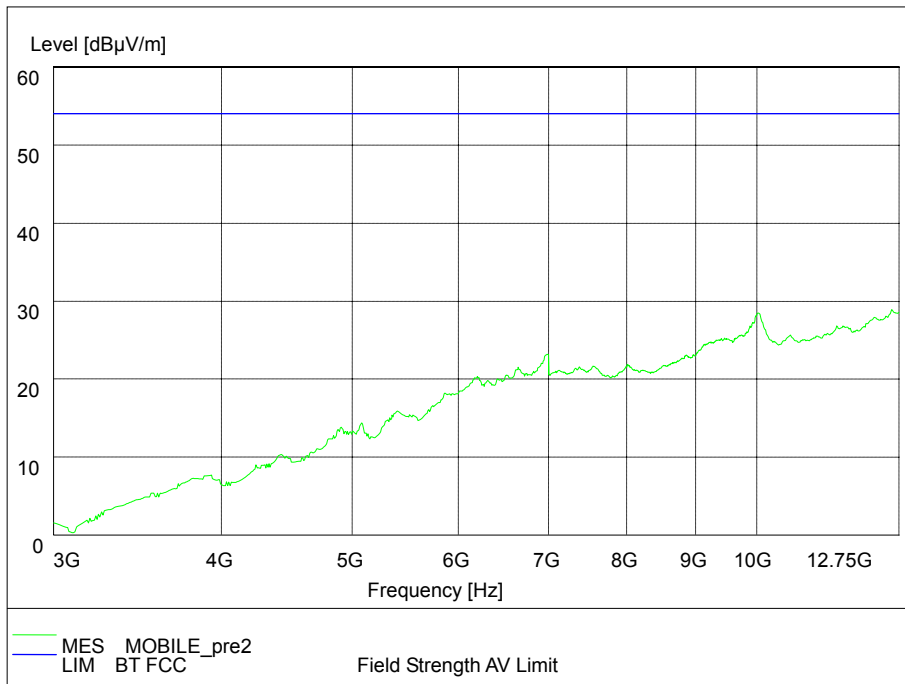
Modulation type: GFSK



Frequency Range: 1GHz-3GHz

Detector: Av mode and PK mode

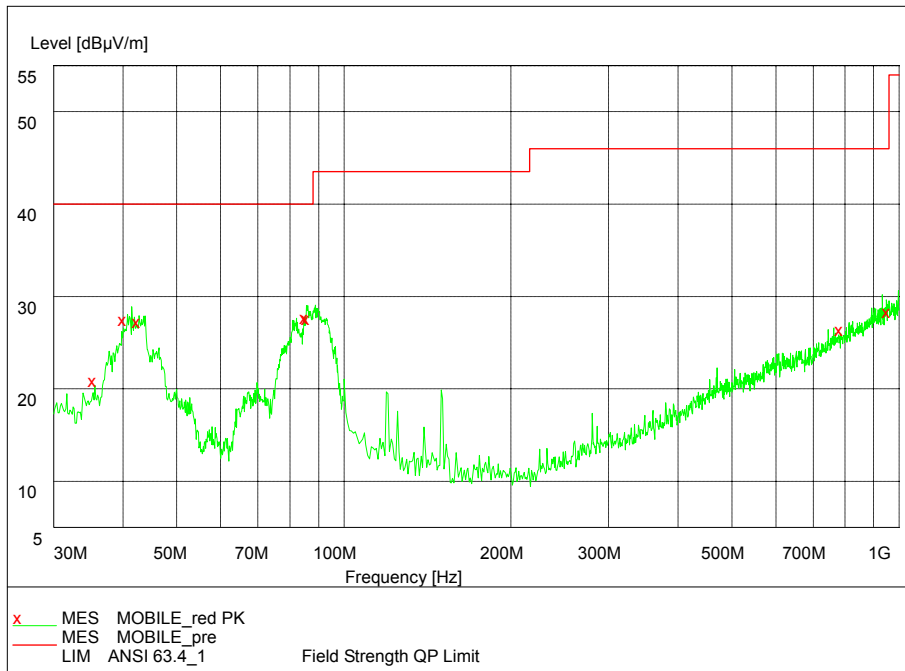
Modulation type: GFSK



Frequency Range: 3GHz-12.75GHz

Detector: Av mode and PK mode

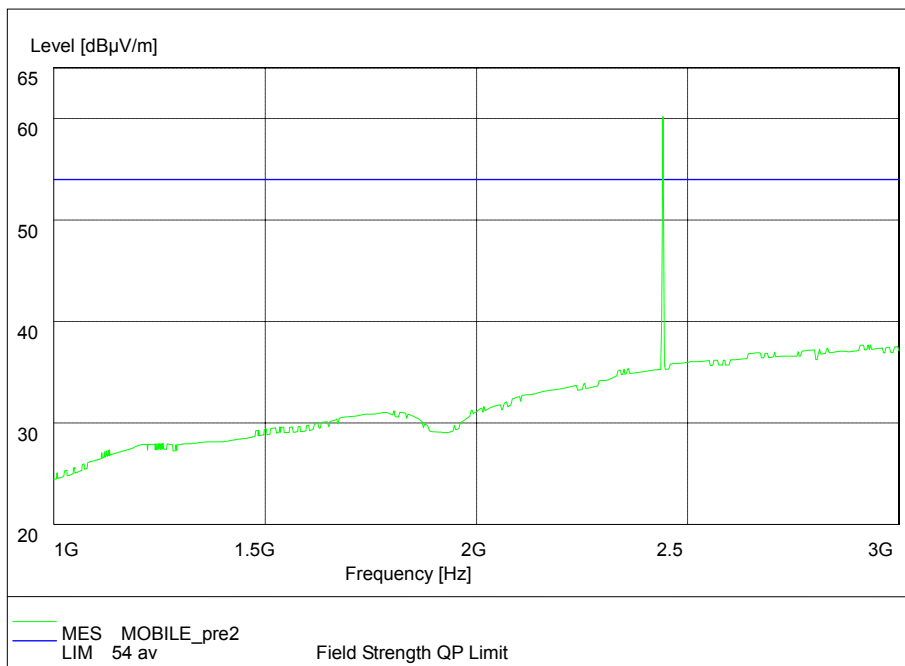
Modulation type: GFSK



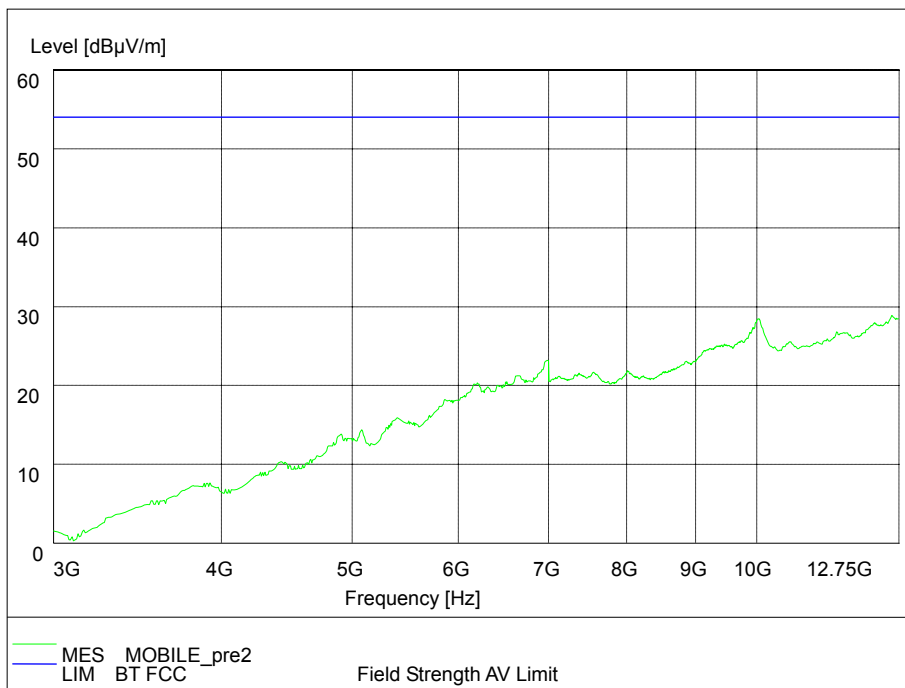
Frequency Range: 30MHz-1000MHz

Detector: Av mode and PK mode

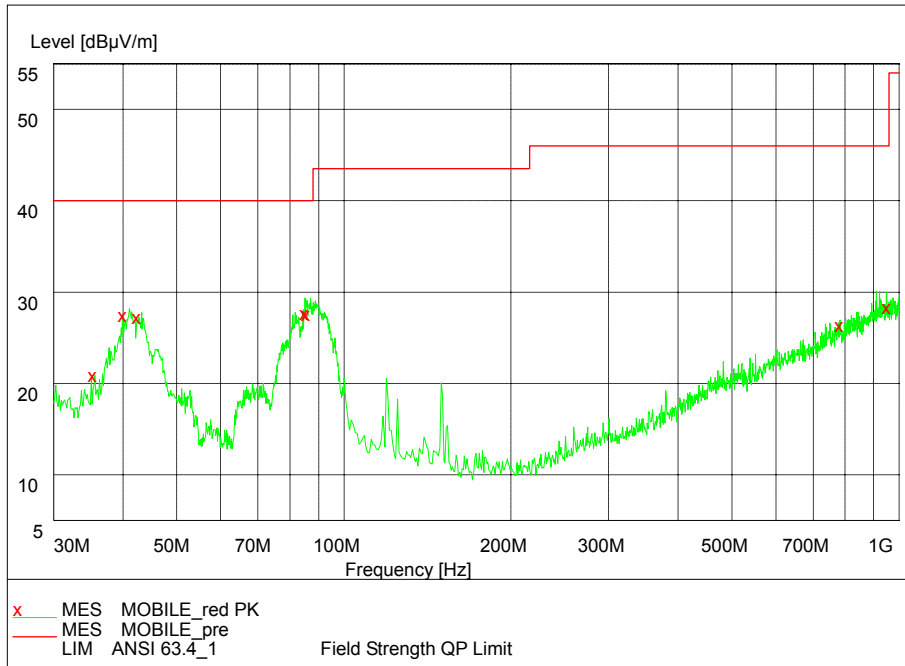
Modulation type: $\pi/4$ DQPSK



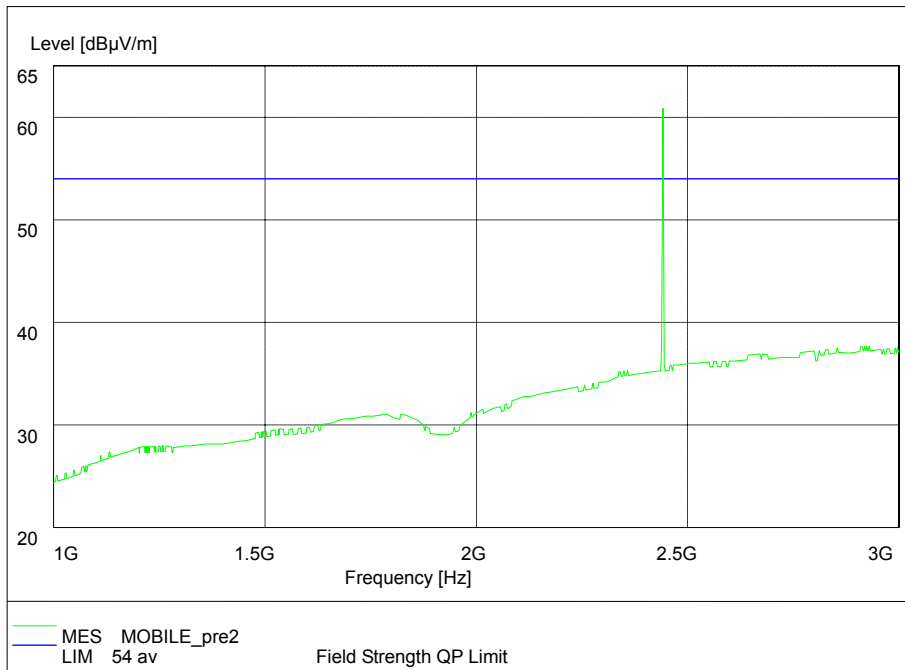
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: $\pi/4$ DQPSK



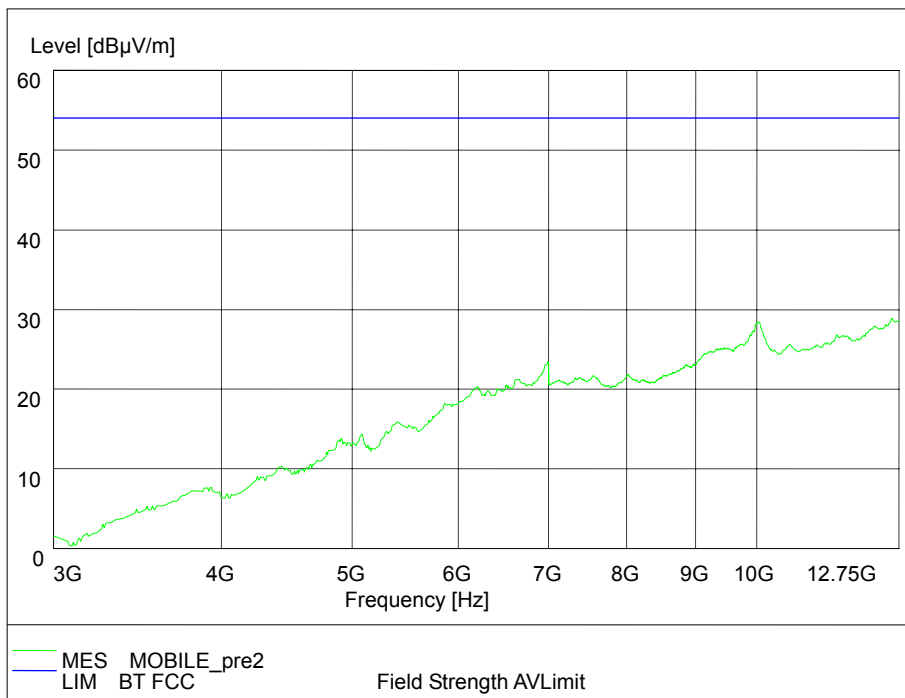
Frequency Range: 3GHz-25GHz
Detector: Av mode and PK mode
Modulation type: $\pi/4$ DQPSK



Frequency Range: 30MHz-1000 MHz
Detector: Av mode and PK mode
Modulation type: 8DPSK



Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK



Frequency Range: 3GHz-25GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

2.2.5 Band Edge Compliance

2.2.5.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.5.2 Test Description

The measurement is made according to Public notice DA 00-705 and ANSI C63.4-2009.

2.2.5.2.1 RF Conducted Measurement:

The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements.

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.

For the first measurement the EUT is set to transmit on the lowest channel (2402 MHz). The lower band edge is 2390 MHz.

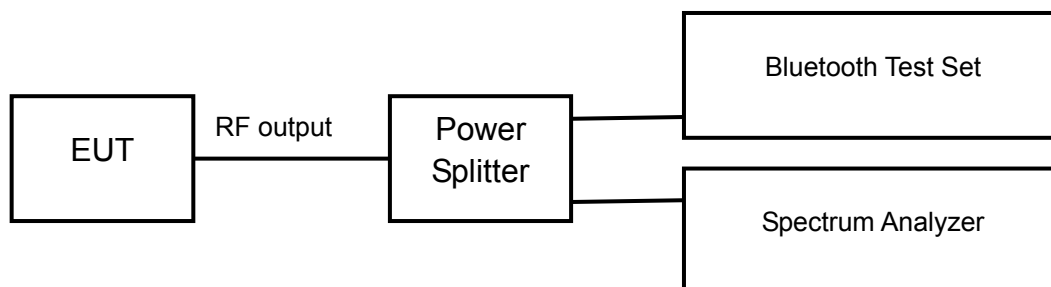
Analyzer settings:

- Detector: Peak
- RBW= 100 kHz
- VBW= 300 kHz

For the second measurement the EUT is set to transmit on the highest channel (2480MHz). The higher band edge is 2483.5 MHz.

Analyzer settings:

- Detector: Peak
- RBW= 100 kHz
- VBW= 300 kHz



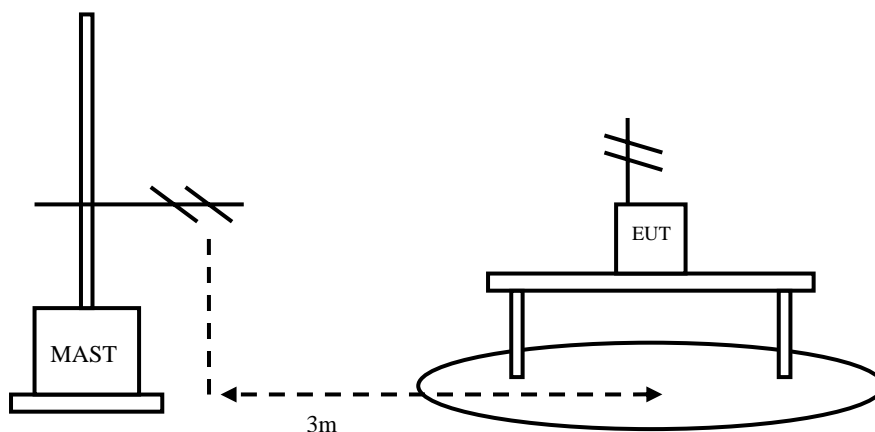
2.2.5.2.2 RF Radiated Measurement

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna.

The radiated emissions measurements were made in a typical installation configuration.

During the test, the antenna height and EUT azimuth were varied in order to identify the maximum level of emission from the EUT. The height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.



2.2.6.3 Test limit

2.2.6.3.1 RF Conducted Measurement:

FCC Part15.247(d):

“In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

2.2.6.3.2 RF Radiated Measurement

IC RSS-210 § A8.5:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

2.2.5.4 Test result

RF Conducted Measurement

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: GFSK

Frequency MHz	Hopping Mode	Measured value dBm	Reference value dBm	Limit dBm	Delta dB
2390	Hopping OFF	-54.48	5.63	-14.37	60.11
2390	Hopping ON	-55.17	4.91	-15.09	60.08

Carrier frequency (MHz): 2480

Channel No.:78

Modulation type: GFSK

Frequency MHz	Hopping Mode	Measured value dBm	Reference value dBm	Limit dBm	Delta dB
2483.5	Hopping OFF	-54.38	6.48	-13.52	60.86
2483.5	Hopping ON	-55.18	5.69	-14.31	60.87

RF Radiated Measurement

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: GFSK

Frequency MHz	Hopping Mode	Correction Factor dB/m	Reading Level dBuV	Emission Level dBuV/m	Detector
2402	Hopping OFF	2.7	72.82	75.52	Peak
2402	Hopping ON	2.7	72.36	75.06	Peak

Carrier frequency (MHz): 2480

Channel No.:78

Modulation type: GFSK

Frequency MHz	Hopping Mode	Correction Factor dB/m	Reading Level dBuV	Emission Level dBuV/m	Detector
2480	Hopping OFF	2.5	73.13	75.63	Peak
2480	Hopping ON	2.5	71.65	74.15	Peak

Band Edge Test Data

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: GFSK

Frequency MHz	Hopping Mode	Fundamental (dBuV/m)	Delta dB	Band Edge Field Strength (dBuV/m)	Detector
2390	Hopping OFF	75.52	60.11	15.41	Peak
2390	Hopping ON	75.06	60.08	14.98	Peak

Carrier frequency (MHz): 2480

Channel No.:78

Modulation type: GFSK

Frequency MHz	Hopping Mode	Fundamental (dBuV/m)	Delta dB	Band Edge Field Strength (dBuV/m)	Detector
2483.5	Hopping OFF	75.63	60.86	14.77	Peak
2483.5	Hopping ON	74.15	60.87	13.28	Peak

Note:

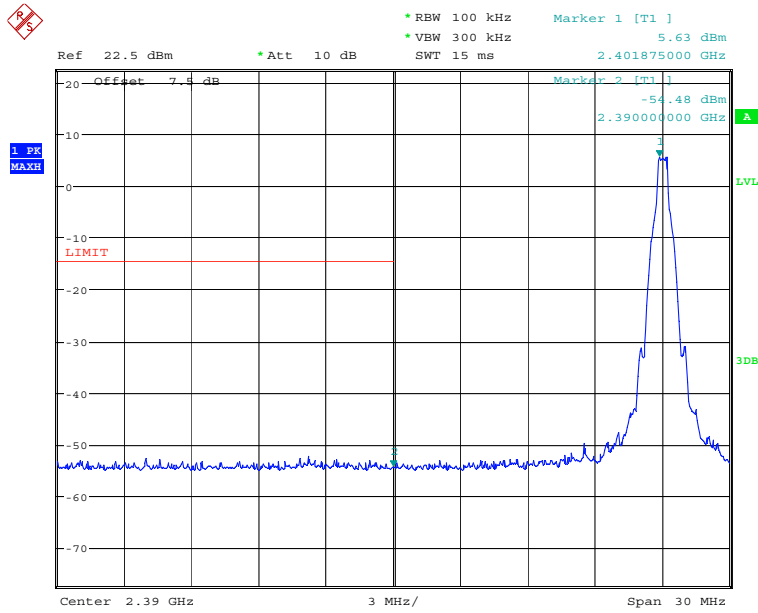
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge

measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Delta

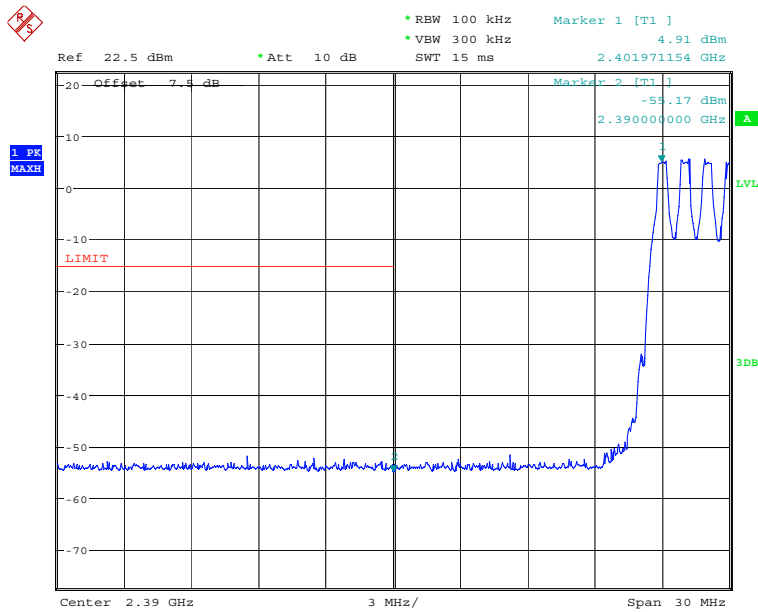
F = Fundamental field Strength (Peak or Average)

Delta= Conducted Band Edge Delta (Peak or Average)



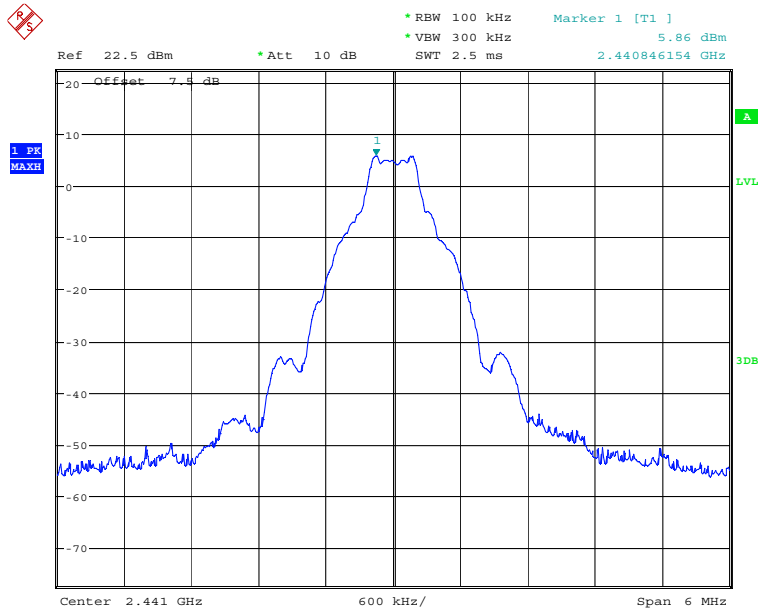
Date: 1.APR.2012 14:56:29

Carrier frequency (MHz): 2402
Channel No.:0, Hopping OFF
Modulation type: GFSK



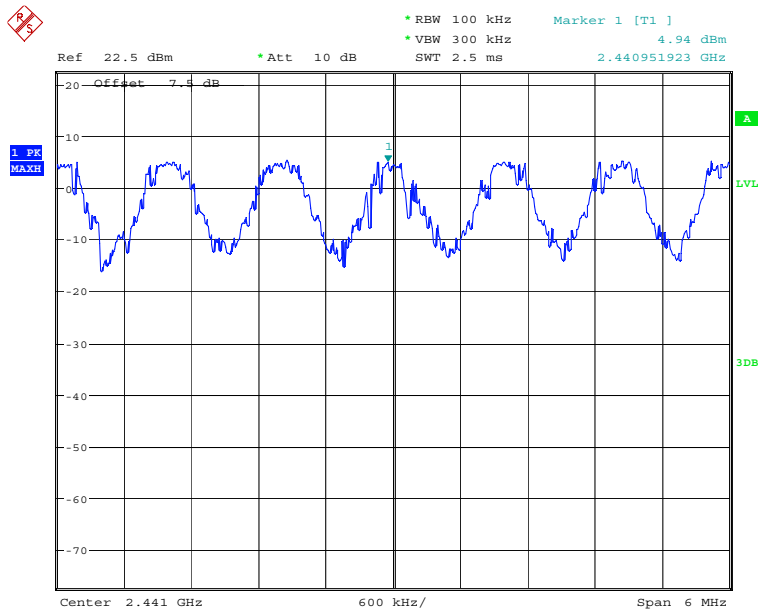
Date: 1.APR.2012 15:19:06

Carrier frequency (MHz): 2402
Channel No.:0, Hopping ON
Modulation type: GFSK



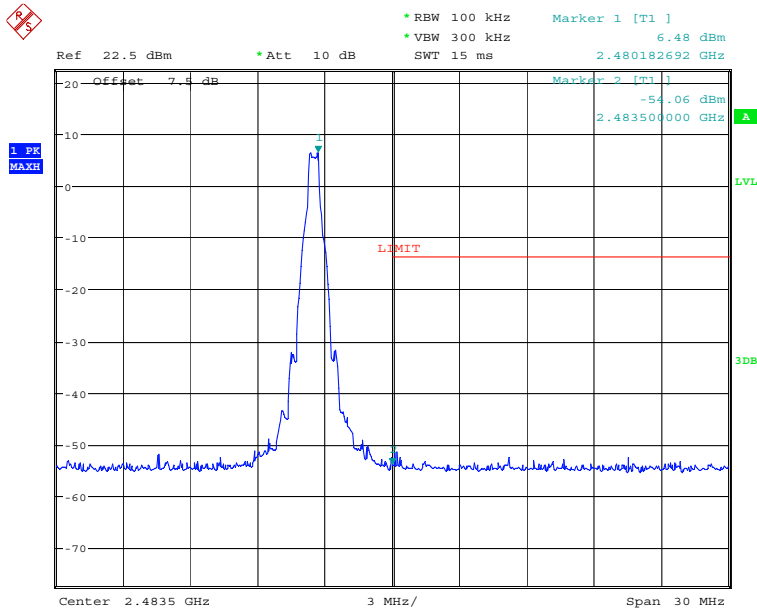
Date: 1.APR.2012 16:13:22

Carrier frequency (MHz): 2441
Channel No.:39, Hopping OFF
Modulation type: GFSK



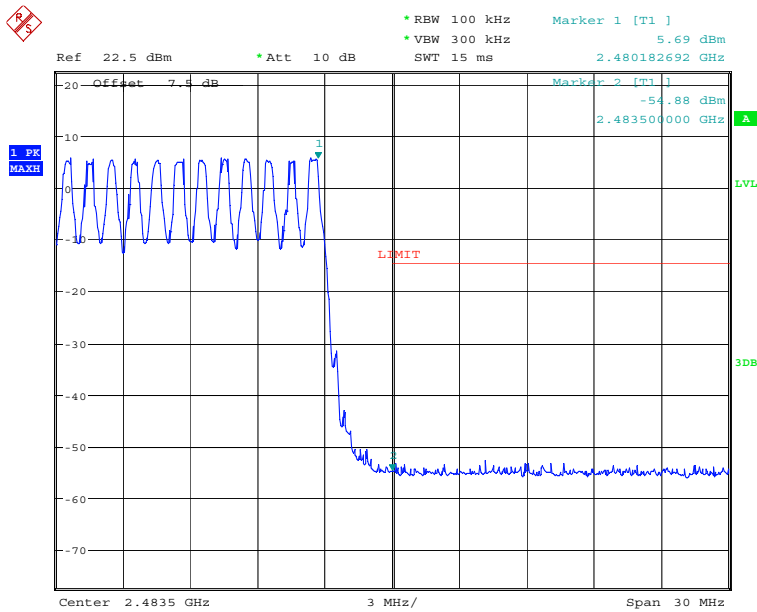
Date: 1.APR.2012 16:14:37

Carrier frequency (MHz): 2441
Channel No.:39, Hopping ON
Modulation type: GFSK



Date: 1.APR.2012 16:32:36

Carrier frequency (MHz): 2480
Channel No.:78, Hopping OFF
Modulation type: GFSK



Date: 1.APR.2012 16:33:53

Carrier frequency (MHz): 2480
Channel No.:78, Hopping ON
Modulation type: GFSK

RF Conducted Measurement

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: $\pi/4$ DQPSK

Frequency MHz	Hopping Mode	Measured value dBm	Reference value dBm	Limit dBm	Delta dB
2390	Hopping OFF	-54.32	5.47	-14.53	59.79
2390	Hopping ON	-54.88	4.30	-15.70	59.18

Carrier frequency (MHz): 2480

Channel No.:78

Modulation type: $\pi/4$ DQPSK

Frequency MHz	Hopping Mode	Measured value dBm	Reference value dBm	Limit dBm	Delta dB
2483.5	Hopping OFF	-52.45	5.31	-14.69	57.76
2483.5	Hopping ON	-54.35	4.48	-15.52	58.83

RF Radiated Measurement

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: $\pi/4$ DQPSK

Frequency MHz	Hopping Mode	Correction Factor dB/m	Reading Level dBuV	Emission Level dBuV/m	Detector
2402	Hopping OFF	2.7	73.77	76.47	Peak
2402	Hopping ON	2.7	72.28	74.98	Peak

Carrier frequency (MHz): 2480

Channel No.:78

Modulation type: $\pi/4$ DQPSK

Frequency MHz	Hopping Mode	Correction Factor dB/m	Reading Level dBuV	Emission Level dBuV/m	Detector
2480	Hopping OFF	2.5	73.11	75.61	Peak
2480	Hopping ON	2.5	72.33	74.83	Peak

Band Edge Test Data

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: $\pi/4$ DQPSK

Frequency MHz	Hopping Mode	Fundamental (dBuV/m)	Delta dB	Band Edge Field Strength (dBuV/m)	Detector
2390	Hopping OFF	76.47	59.79	16.68	Peak
2390	Hopping ON	74.98	59.18	15.80	Peak

Carrier frequency (MHz): 2480

Channel No.:78

Modulation type: $\pi/4$ DQPSK

Frequency MHz	Hopping Mode	Fundamental (dBuV/m)	Delta dB	Band Edge Field Strength (dBuV/m)	Detector
2483.5	Hopping OFF	75.61	57.76	17.85	Peak
2483.5	Hopping ON	74.83	58.83	16.00	Peak

Note:

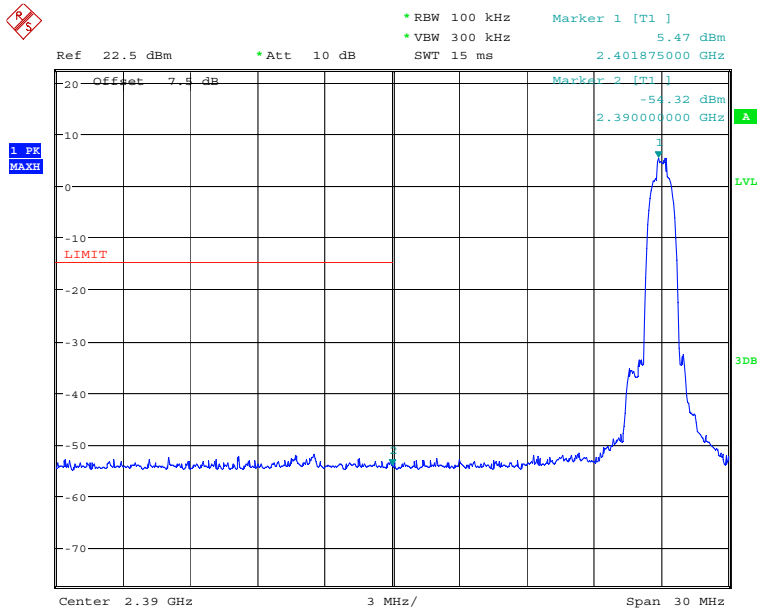
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge

measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Delta

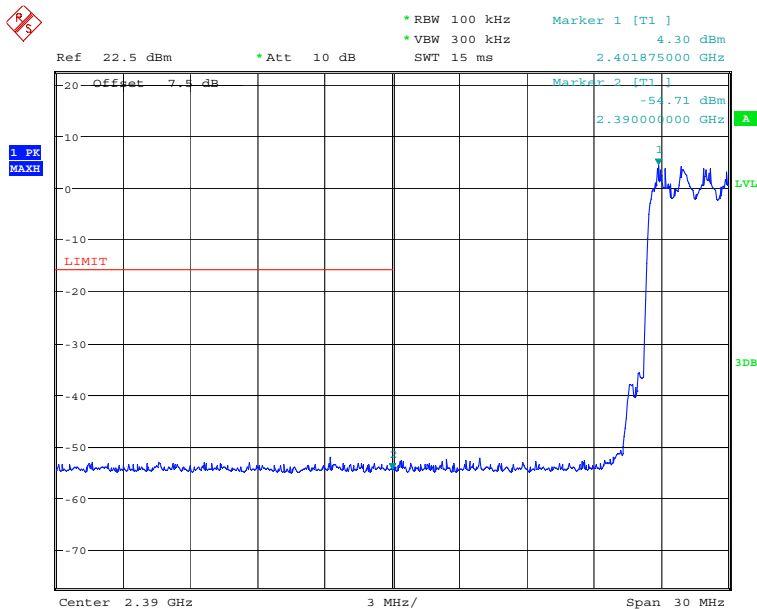
F = Fundamental field Strength (Peak or Average)

Delta= Conducted Band Edge Delta (Peak or Average)



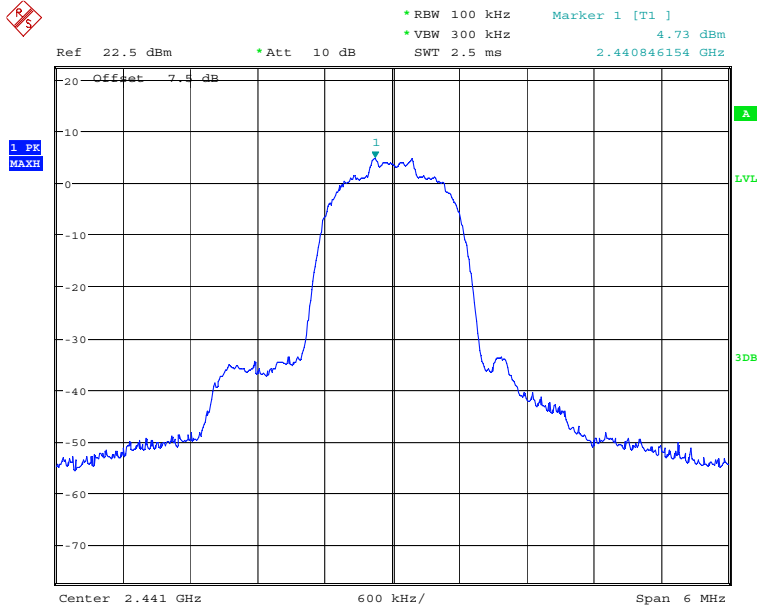
Date: 1.APR.2012 15:31:51

Carrier frequency (MHz): 2402
Channel No.:0, Hopping OFF
Modulation type: $\pi/4$ DQPSK



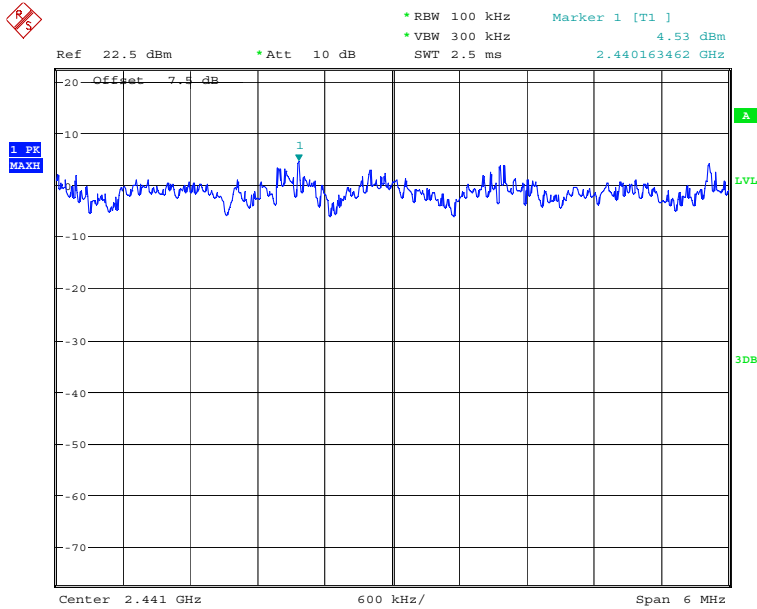
Date: 1.APR.2012 15:44:20

Carrier frequency (MHz): 2402
Channel No.:0, Hopping ON
Modulation type: $\pi/4$ DQPSK



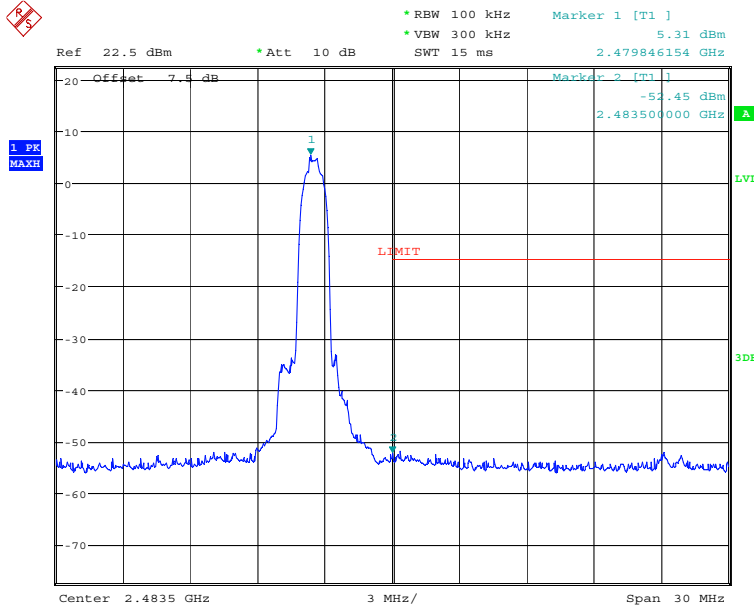
Date: 1.APR.2012 16:16:23

Carrier frequency (MHz): 2441
Channel No.:39, Hopping OFF
Modulation type: $\pi/4$ DQPSK



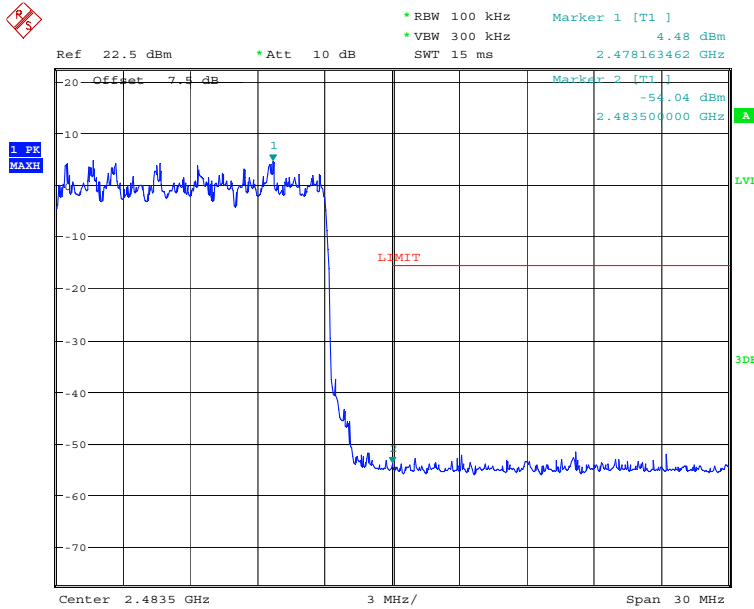
Date: 1.APR.2012 16:18:08

Carrier frequency (MHz): 2441
Channel No.:39, Hopping ON
Modulation type: $\pi/4$ DQPSK



Date: 1.APR.2012 16:35:37

Carrier frequency (MHz): 2480
Channel No.:78, Hopping OFF
Modulation type: $\pi/4$ DQPSK



Date: 1.APR.2012 16:37:24

Carrier frequency (MHz): 2480
Channel No.:78, Hopping ON
Modulation type: $\pi/4$ DQPSK

RF Conducted Measurement

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: 8DPSK

Frequency MHz	Hopping Mode	Measured value dBm	Reference value dBm	Limit dBm	Delta dB
2390	Hopping OFF	-55.31	4.17	-15.83	59.48
2390	Hopping ON	-54.06	4.28	-15.72	58.34

Carrier frequency (MHz): 2480

Channel No.:78

Modulation type: 8DPSK

Frequency MHz	Hopping Mode	Measured value dBm	Reference value dBm	Limit dBm	Delta dB
2483.5	Hopping OFF	-55.17	4.91	-15.09	60.08
2483.5	Hopping ON	-54.45	4.02	-15.98	58.47

RF Radiated Measurement

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: 8DPSK

Frequency MHz	Hopping Mode	Correction Factor dB/m	Reading Level dBuV	Emission Level dBuV/m	Detector
2402	Hopping OFF	2.7	73.23	75.93	Peak
2402	Hopping ON	2.7	71.28	73.98	Peak

Carrier frequency (MHz): 2480

Channel No.:78

Modulation type: 8DPSK

Frequency MHz	Hopping Mode	Correction Factor dB/m	Reading Level dBuV	Emission Level dBuV/m	Detector
2480	Hopping OFF	2.5	73.41	75.91	Peak
2480	Hopping ON	2.5	72.44	74.94	Peak

Band Edge Test Data

Carrier frequency (MHz): 2402

Channel No.:0

Modulation type: 8DPSK

Frequency MHz	Hopping Mode	Fundamental (dBuV/m)	Delta dB	Band Edge Field Strength (dBuV/m)	Detector
2390	Hopping OFF	75.93	59.48	16.45	Peak
2390	Hopping ON	73.98	58.34	15.64	Peak

Carrier frequency (MHz): 2480

Channel No.:78

Modulation type: 8DPSK

Frequency MHz	Hopping Mode	Fundamental (dBuV/m)	Delta dB	Band Edge Field Strength (dBuV/m)	Detector
2483.5	Hopping OFF	75.91	60.08	15.83	Peak
2483.5	Hopping ON	74.94	58.47	16.47	Peak

Note:

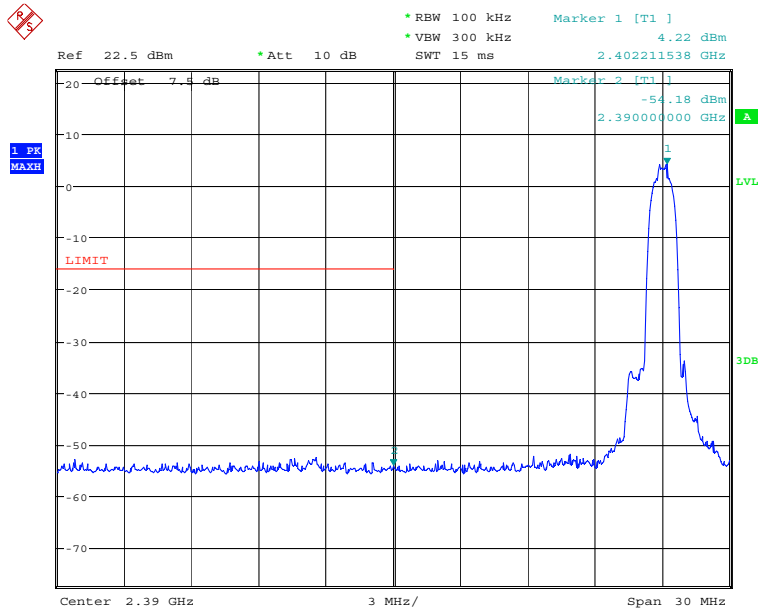
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge

measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Delta

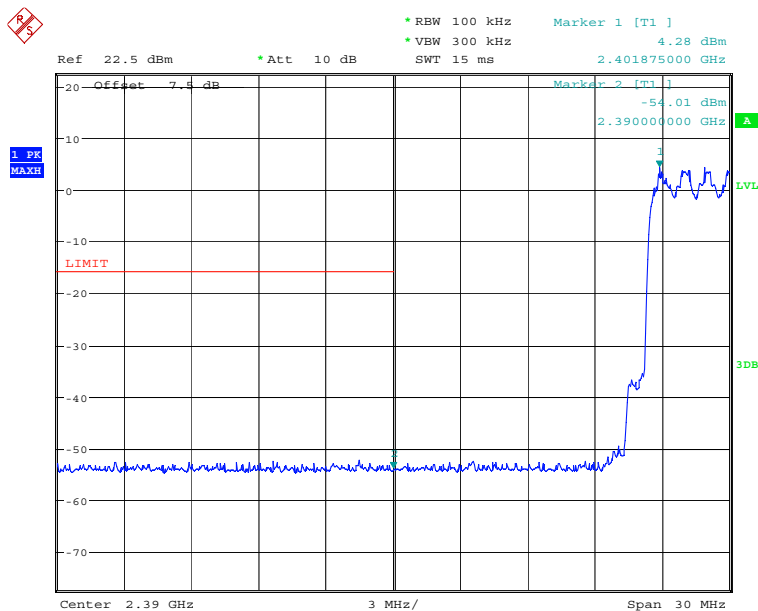
F = Fundamental field Strength (Peak or Average)

Delta= Conducted Band Edge Delta (Peak or Average)



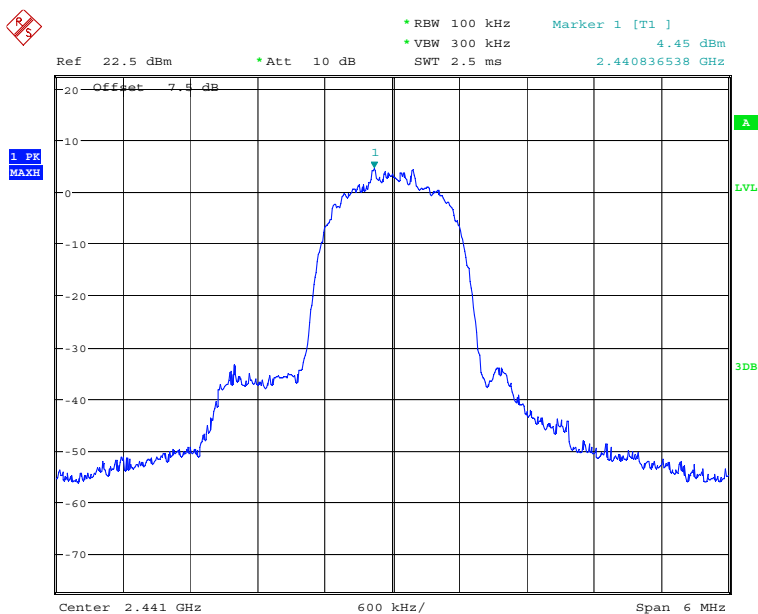
Date: 1.APR.2012 15:47:33

Carrier frequency (MHz): 2402
Channel No.:0, Hopping OFF
Modulation type: 8DPSK



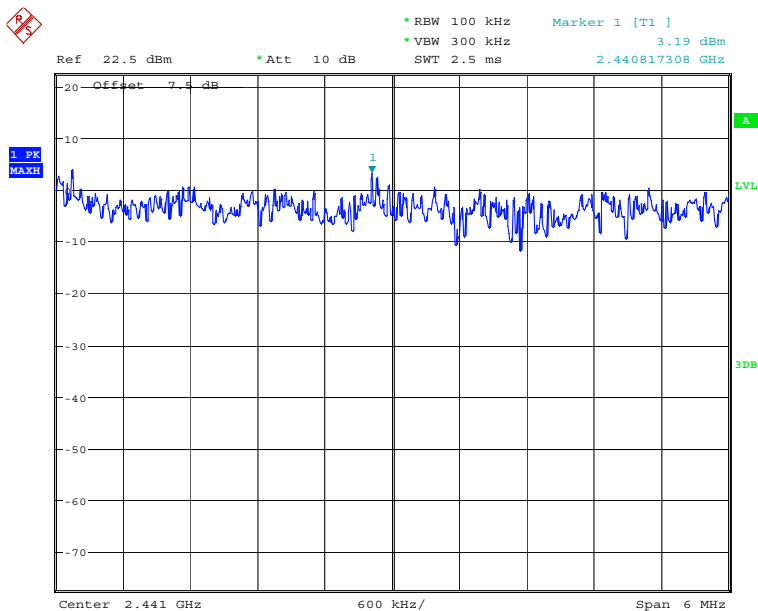
Date: 1.APR.2012 16:08:55

Carrier frequency (MHz): 2402
Channel No.:0, Hopping ON
Modulation type: 8DPSK



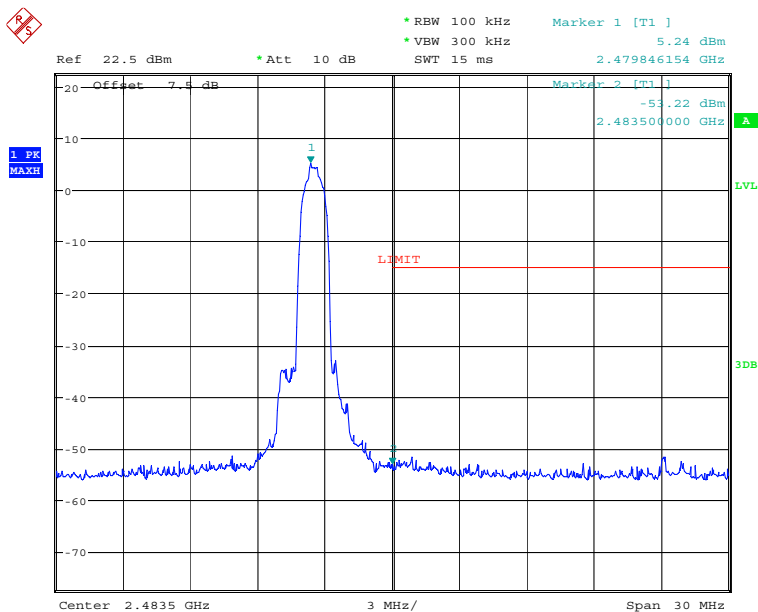
Date: 1.APR.2012 16:18:35

Carrier frequency (MHz): 2441
Channel No.:39, Hopping OFF
Modulation type: 8DPSK



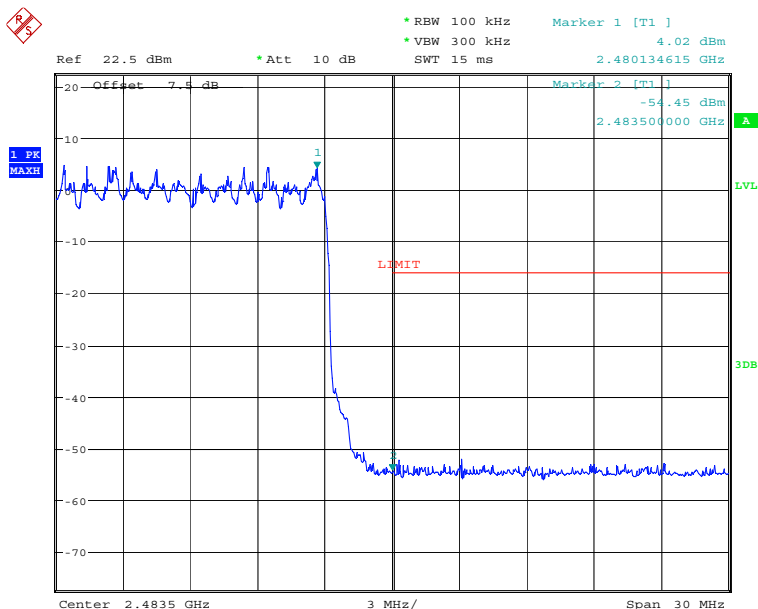
Date: 1.APR.2012 16:19:04

Carrier frequency (MHz): 2441
Channel No.:39, Hopping ON
Modulation type: 8DPSK



Date: 1.APR.2012 16:38:29

Carrier frequency (MHz): 2480
Channel No.:78, Hopping OFF
Modulation type: 8DPSK



Date: 1.APR.2012 16:41:27

Carrier frequency (MHz): 2480
Channel No.:78, Hopping ON
Modulation type: 8DPSK

2.2.6 Dwell time

2.2.6.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.6.2 Test Description

The measurement is made according to Public notice DA 00-705 and ANSI C63.4-2009.

The Equipment Under Test (EUT) was set up in a shielded room to perform the dwell time measurements.

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.

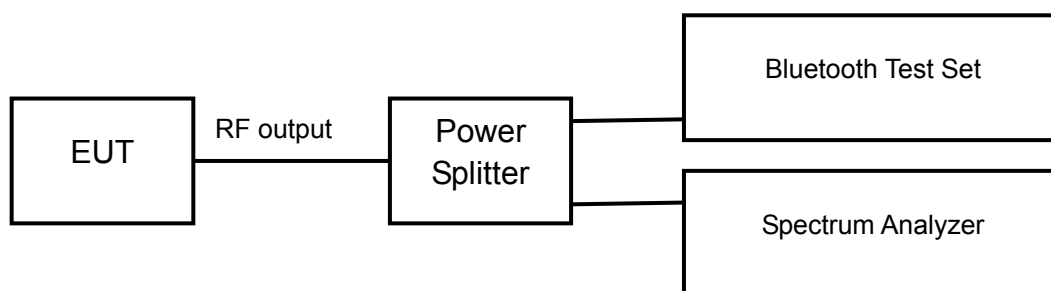
The time slot length is measured of three different packet types which are available in the Bluetooth technology. Those are DH1, DH3 and DH5 packets.

The dwell time is calculated by:

Dwell time = time slot length * hop rate * 31.6/ number of hopping channels

with:

- hop rate=1600/2 * 1/s for DH1 packets =800
- hop rate=1600/4 * 1/s for DH3 packets =400
- hop rate=1600/6 * 1/s for DH5 packets =266.67
- number of hopping channels=79
- 31.6 s=0.4 seconds multiplied by the number of hopping channels=0.4s * 79



2.2.6.3 Test limit

FCC Part15.247(a)(1)(iii)

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

Since the Bluetooth technology uses 79 channels this period is calculated to be 31.6 seconds.

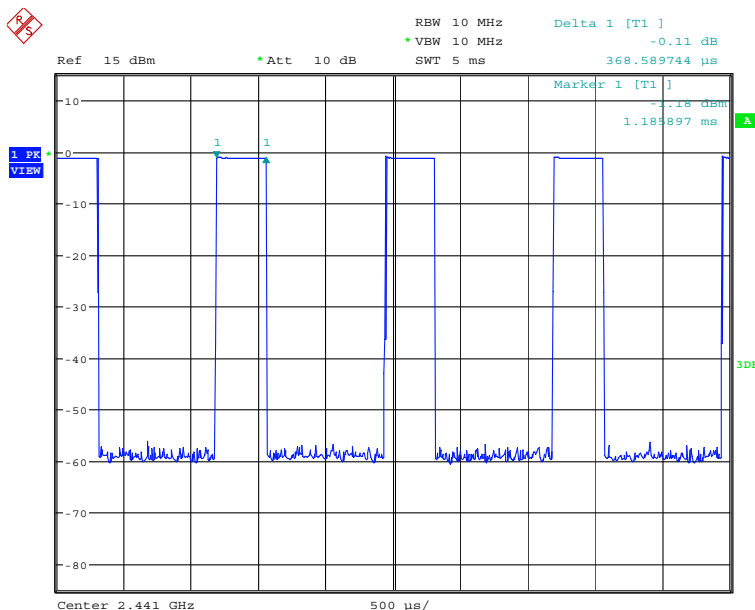
IC RSS-210 § A8.1(d)

Frequency hopping systems operating in the band 2400-2483.5 MHz shall use at least 15 hopping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds, multiplied by the number of hopping channels employed. Transmissions on particular hopping frequencies may be avoided or suppressed provided that a minimum of 15 hopping channels are used.

2.2.6.4 Test result

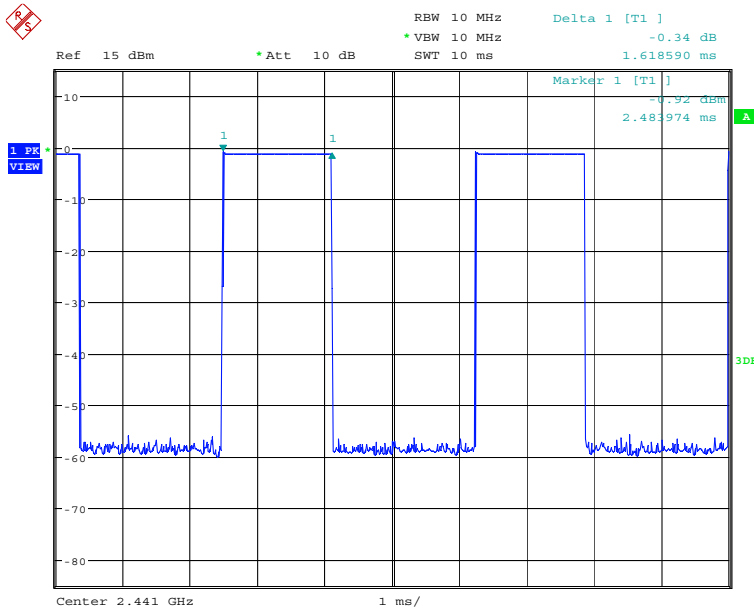
Modulation type: GFSK

Packet type	Time slot length ms	Dwell time	Dwell time ms
DH1	0.3686	time slot length *31.6 *1600/2 /79	117.95
DH3	1.6186	time slot length * 31.6 *1600/4 /79	258.98
DH5	2.8686	time slot length * 31.6 *1600/6 /79	305.98



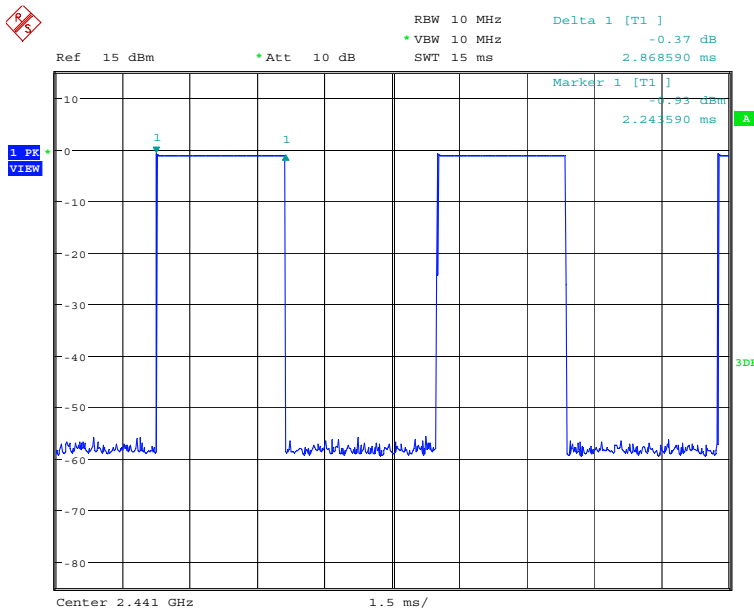
Date: 13.MAR.2012 14:53:33

Carrier frequency (MHz): 2441
 Packet type: DH1
 Modulation type: GFSK



Date: 13.MAR.2012 14:54:21

Carrier frequency (MHz): 2441
Packet type: DH3
Modulation type: GFSK

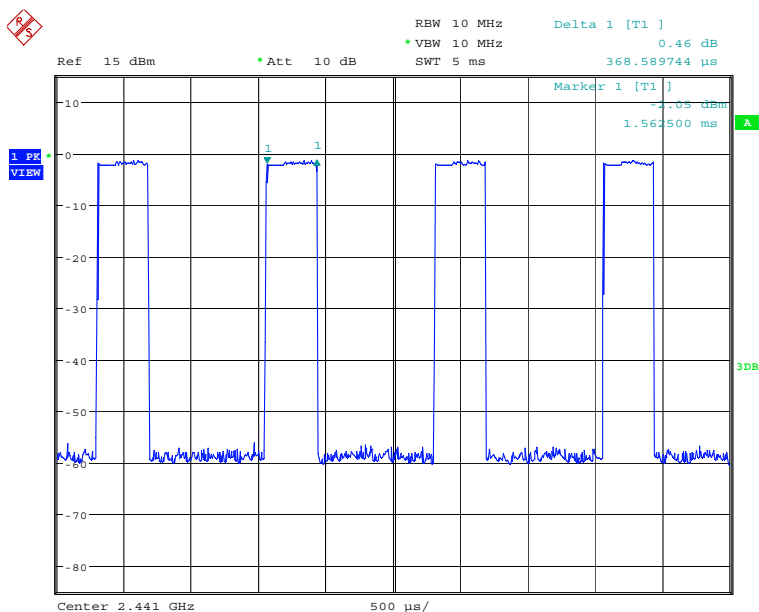


Date: 13.MAR.2012 14:55:10

Carrier frequency (MHz): 2441
Packet type: DH5
Modulation type: GFSK

Modulation type: $\pi/4$ DQPSK

Packet type	Time slot length ms	Dwell time	Dwell time ms
DH1	0.3686	time slot length *31.6 *1600/2 /79	117.95
DH3	1.6186	time slot length * 31.6 *1600/4 /79	258.98
DH5	2.8686	time slot length * 31.6 *1600/6 /79	305.98

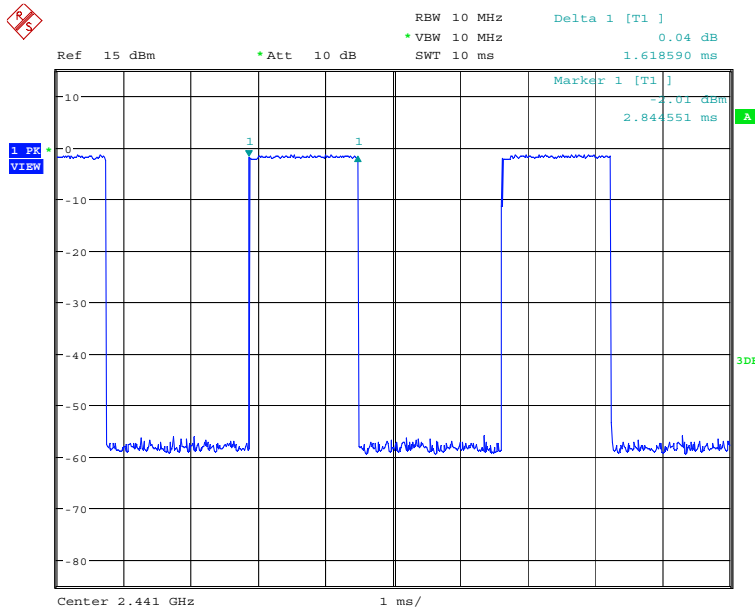


Date: 13.MAR.2012 14:56:06

Carrier frequency (MHz): 2441

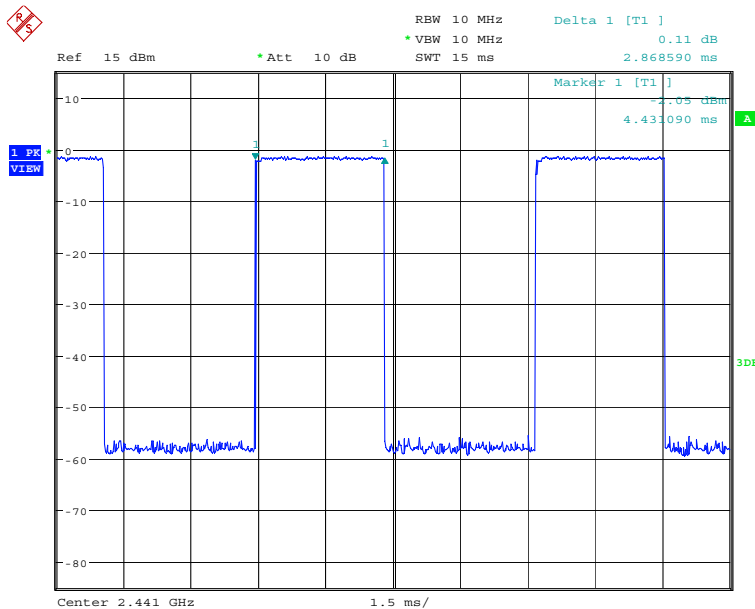
Packet type: DH1

Modulation type: $\pi/4$ DQPSK



Date: 13.MAR.2012 14:56:54

Carrier frequency (MHz): 2441
Packet type: DH3
Modulation type: $\pi/4$ DQPSK

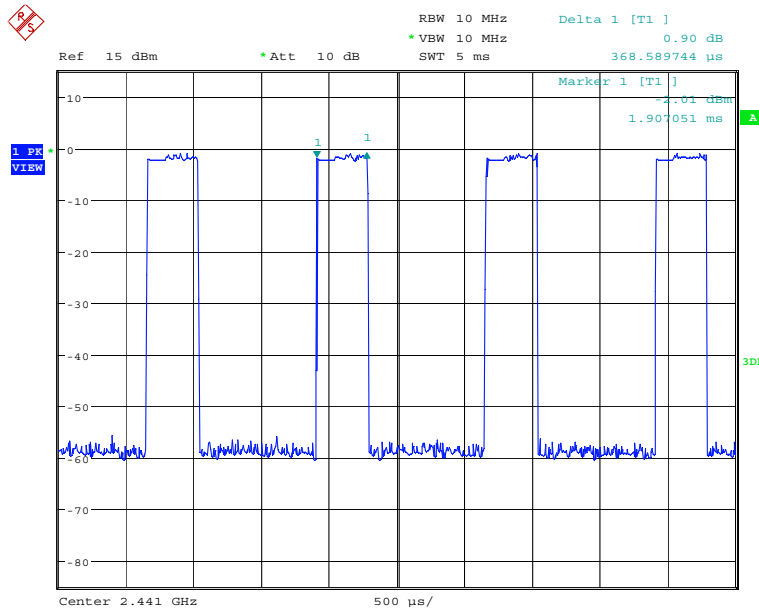


Date: 13.MAR.2012 14:57:29

Carrier frequency (MHz): 2441
Packet type: DH5
Modulation type: $\pi/4$ DQPSK

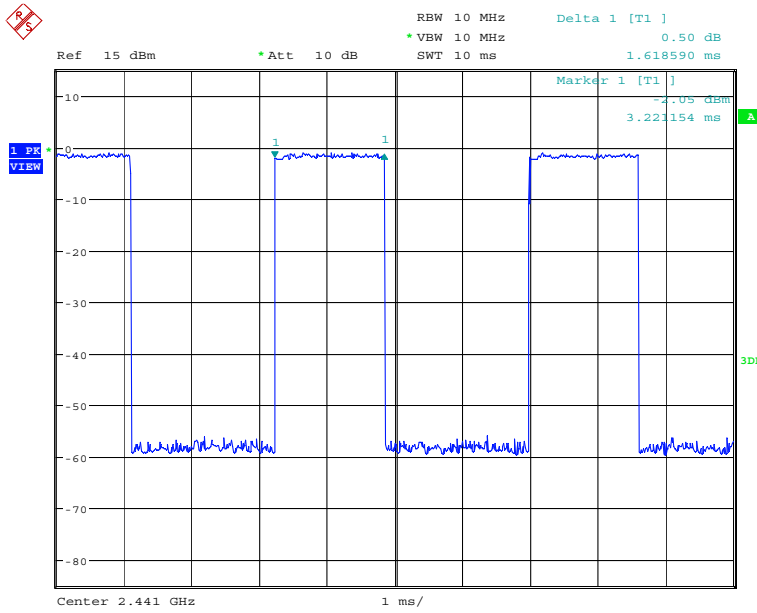
Modulation type: 8DPSK

Packet type	Time slot length ms	Dwell time	Dwell time ms
DH1	0.3686	time slot length *31.6 *1600/2 /79	117.95
DH3	1.6186	time slot length * 31.6 *1600/4 /79	258.98
DH5	2.8686	time slot length * 31.6 *1600/6 /79	305.98



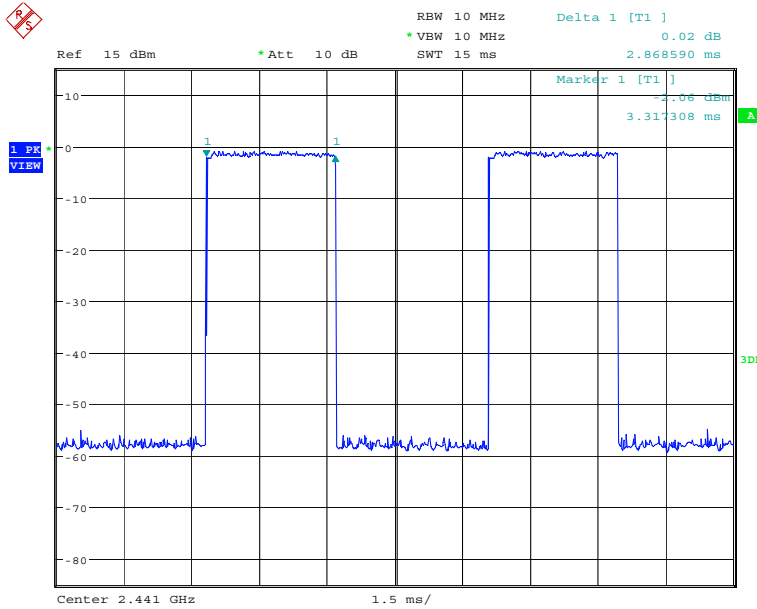
Date: 13.MAR.2012 14:59:48

Carrier frequency (MHz): 2441
Packet type:DH1
Modulation type: 8DPSK



Date: 13.MAR.2012 15:00:31

Carrier frequency (MHz): 2441
Packet type:DH3
Modulation type: 8DPSK



Date: 13.MAR.2012 15:01:22

Carrier frequency (MHz): 2441
Packet type:DH5
Modulation type: 8DPSK

2.2.7 Channel separation

2.2.7.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.7.2 Test Description

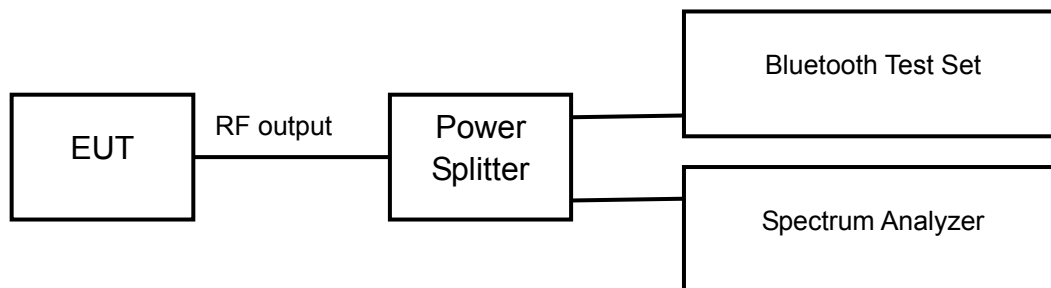
The measurement is made according to Public notice DA 00-705 and ANSI C63.4-2009.

The Equipment Under Test (EUT) was set up in a shielded room to perform the channel separation measurements.

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.

Analyzer settings:

- Detector: Peak-Maxhold
- Span: 3 MHz
- Centre Frequency: 2441 MHz
- Resolution Bandwidth (RBW): 30 kHz
- Video Bandwidth (VBW): 100 kHz
- Sweep Time: Coupled



2.2.7.3 Test limit

FCC Part15.247(a)(1)

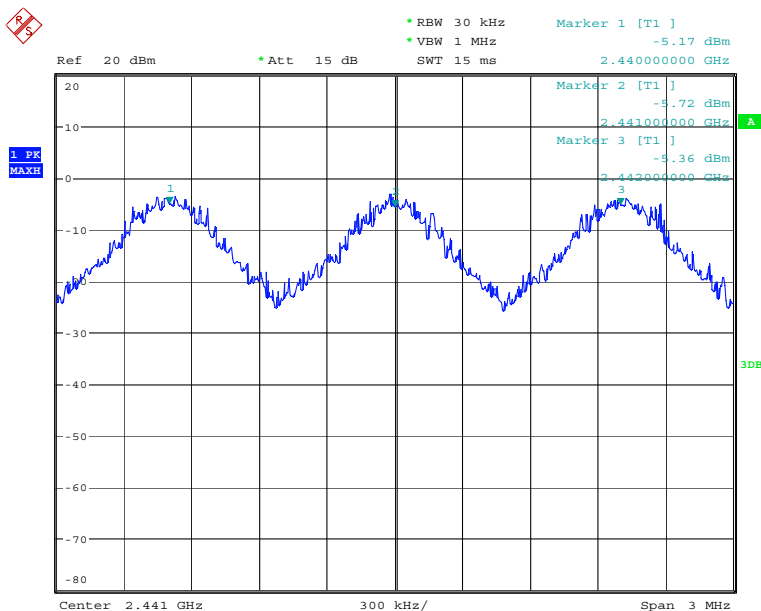
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

IC RSS-210 § A8.1(b)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the -20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the band 2400-2483.5 MHz may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the -20 dB bandwidth of the hopping channel, whichever is greater, provided that the systems operate with an output power no greater than 0.125 W. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

2.2.7.4 Test result

Op-mode	Channel separation MHz
Hopping mode	1



Date: 13.MAR.2012 15:04:22

Op-mode: Hopping mode

2.2.8 Number of hopping frequencies

2.2.8.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.8.2 Test Description

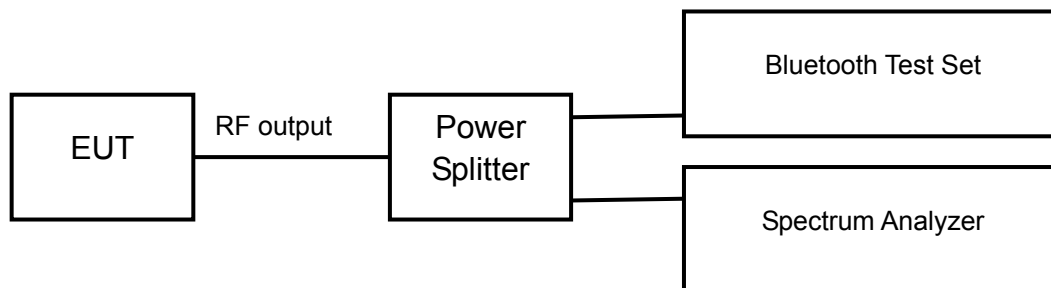
The measurement is made according to Public notice DA 00-705 and ANSI C63.4-2009.

The Equipment Under Test (EUT) was set up in a shielded room to perform the number of hopping frequencies measurement.

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.

Analyzer settings:

- Detector: Peak-Maxhold
- Start frequency: 2400 MHz
- Stop frequency: 2483.5 MHz
- Resolution Bandwidth (RBW): 100 kHz
- Video Bandwidth (VBW): 300 kHz
- Sweep Time: Coupled



2.2.8.3 Test limit

FCC Part15.247(a)(1)(iii)

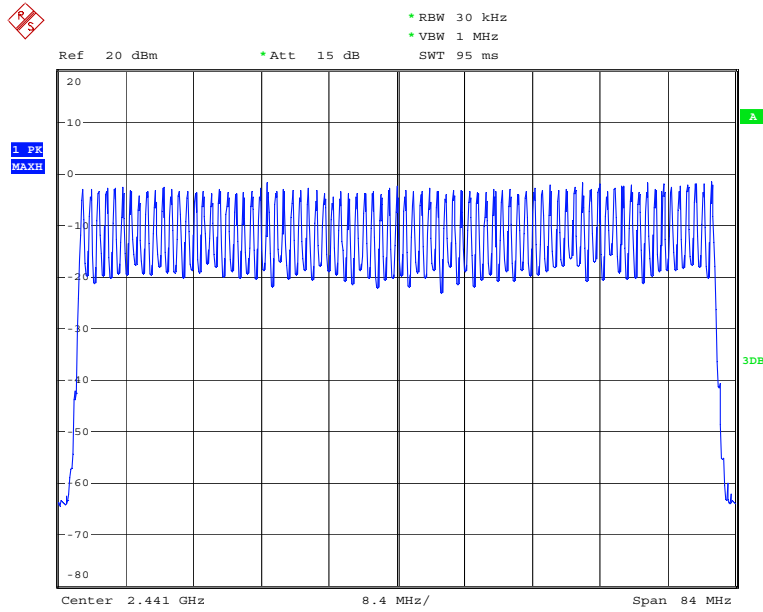
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

IC RSS-210 § A8.1(d)

Frequency hopping systems operating in the band 2400-2483.5 MHz shall use at least 15 hopping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds, multiplied by the number of hopping channels employed. Transmissions on particular hopping frequencies may be avoided or suppressed provided that a minimum of 15 hopping channels are used.

2.2.8.4 Test result

Op-mode	Result
Hopping mode	79



Date: 13.MAR.2012 15:10:39

Op-mode: Hopping mode

2.2.9 AC Power line Conducted Emission

2.2.9.1 Ambient condition

Temperature	Relative humidity	Pressure
23°C	37%	99.6kPa

2.2.9.2 Test limit

FCC Part15.107 and Part15.207

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

IC RSS-Gen § 7.2.2

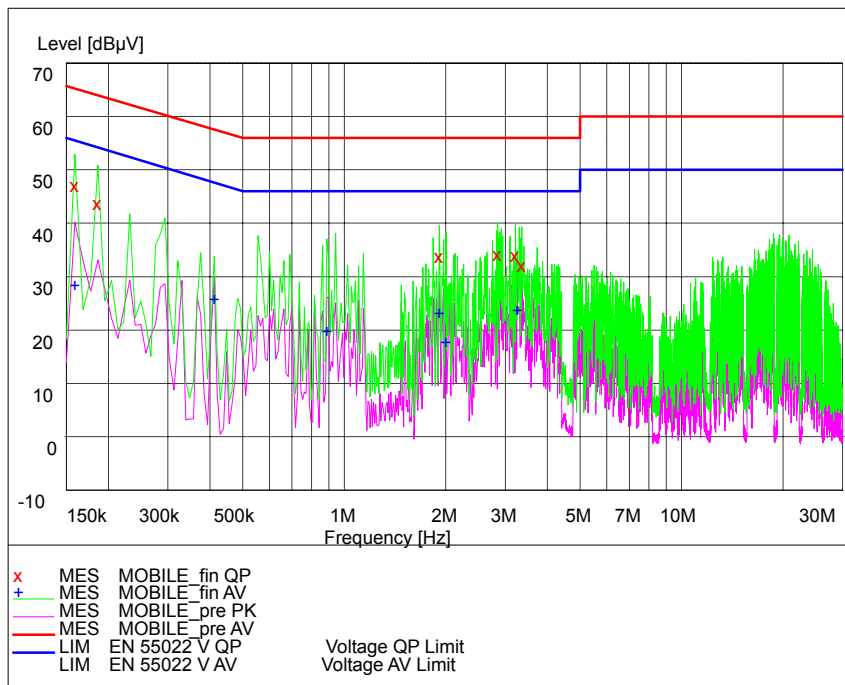
Restricted bands, identified in Table 3, are designated primarily for safety-of-life services (distress calling and certain aeronautical bands), certain satellite downlinks, radio astronomy and some government uses. Except where otherwise indicated, the following restrictions apply:

- (a) fundamental components of modulation of licence-exempt radio apparatus shall not fall within the restricted bands of Table 3;
- (b) unwanted emissions falling into restricted bands of Table 3 shall comply with the limits specified in RSS-Gen;
- (c) unwanted emissions not falling within restricted frequency bands shall either comply with the limits specified in the applicable RSS, or with those specified in RSS-Gen.

The measurement is made according to Public notice DA 00-705 and ANSI C63.4-2009

2.2.9.3 Test result

Noise Level of the Measuring Instrument



L and N Line

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.159000	49.20	20.1	65	16.1	N	GND
0.186000	45.90	20.2	64	18.1	L	GND
1.914000	36.00	20.2	56	20.0	L	GND
2.850000	36.40	20.3	56	19.6	L	GND
3.219000	36.20	20.3	56	19.8	L	GND
3.363000	34.40	20.3	56	21.6	L	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.159000	30.50	20.1	56	25.0	N	GND
0.411000	27.90	20.3	48	19.8	L	GND
0.888000	21.90	20.3	46	24.1	L	GND
1.914000	25.30	20.2	46	20.7	L	GND
2.004000	19.90	20.3	46	26.1	L	GND
3.255000	25.80	20.3	46	20.2	L	GND

2.3. Measurement Uncertainty

Items	Uncertainty	
Occupied Bandwidth	3kHz	
Peak power output	0.67dB	
Band edge compliance	1.20dB	
Spurious emissions	30MHz~1GHz	2.83dB
	1GHz~12.75GHz	2.50dB
	12.75GHz~25GHz	2.75dB

2.4. List of test equipment

No.	Name/ Model	Manufacturer	S/N	Cal Due date
1.	Spectrum Analyzer FSQ 40	R&S	200065	2013.3
2.	Signal Generator E8257D	Agilent	MY46520645	2012.8
3.	Oscilloscope 54622A	Agilent	MY40010227	2012.8
4.	Bluetooth Test Set MT8852B	Auritsu	001007002	2012.8
5.	Cable N-N	Spectrum	6-046	2012.8
6.	Cable N-N	Spectrum	6-050	2012.8
7.	Power Splitter 11850C	Agilent	026057	2012.8
8.	12.65m×8.03m×7.50m Fully-Anechoic Chamber	FRANKONIA	-----	-----
9.	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	---	-----
10.	Turn table Diameter:1m	HD	-----	-----
11.	Turn table Diameter:5m	HD	-----	-----
12.	Antenna master FAC(MA4.0)	MATURO	-----	-----
13.	Antenna master SAC(MA4.0)	MATURO	-----	-----
14.	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	-----
15.	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	2012.8
16.	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	2012.8
17.	HL562 Ultra log antenna	R&S	100016	2012.8
18.	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2012.8
19.	ESI 40 EMI test receiver	R&S	100015	2012.8
20.	Radio tester	CMU 200	114667	2012.8
21.	ESCS30 EMI test receiver	R&S	100029	2012.8
22.	HL562 Receive antenna	R&S	100167	2012.8
23.	ESH3-Z5 LISN	R&S	100020	2012.8