DAT-P-174/04-00

CNAS L0447

Registration No.910917

TEST REPORT

Report No.: SRMC2009-H024-E0016

Product Name: GSM/GPRS/EDGE Tribands/WCDMA Digital Mobile Phone with Bluetooth

Product Model: H31IA

Applicant: Inventec Appliances (Jiangning) Corporation

Manufacture: Inventec Appliances (Jiangning) Corporation

Specification: 47CFR Part 15 July 10, 2008, Subpart C

FCC ID: UPMW310001

The State Radio Monitoring Center

State Radio Spectrum Monitoring and Testing Center

No.80 Beilishi Road Xicheng District Beijing, China

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

CONTENTS

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
State Radio Spectrum Monitoring and Testing Center
Address: No.80 Beilishi Road, Xicheng District, Beijing China
City: Beijing
Country or Region: P.R. China
Contacted person: Wang Junfeng
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1.3 Applicant's details

Company: Inventec Appliances (Jiangning) Corporation
Address: 113, Jiangjun Road, Jiangning Economic and Technological Development Zone
City: Nanjing, Jiangsu
Country or Region: P.R.China
Grantee Code: UPM
Contacted person: William Zhang
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Email: zhang.william@inventec-inc.com

1.4 Manufacturer's details

Company: Inventec Appliances (Jiangning) Corporation
Address: 113, Jiangjun Road, Jiangning Economic and Technological Development Zone
City: Nanjing, Jiangsu
Country or Region: P.R.China
Grantee Code: UPM
Contacted person: William Zhang
Tel: +86 25 52262313
Fax: +86 25 52218366
Email: zhang.william@inventec-inc.com

1.5 Application details

Date of receipt of test sample: 1st July. 2009
Date of test: 10th Aug. 2009 to 19th Aug.2009

1.6 Reference specification

47CFR Part 15, July 10, 2008, Subpart C

1.7 Information of EUT

1.7.1 General information

Name of EUT	GSM/GPRS/EDGE Tribands /WCDMA Digital Mobile Phone with Bluetooth
FCC ID	UPMW310001
Frequency range	2.4000~2.4835GHz
Number of channel	79
Modulation type	GFSK, π/4DQPSK,8DPSK
Duplex mode	TDD
Channel spacing	1MHz
Data rate	1Mbps,2 Mbps,3 Mbps
Antenna type	Internal/Gain: 0.5dBi
Power Supply	Battery or charger
Rated Power Supply Voltage	3.7V

1.7.2 EUT details

Name	Model	IMEI
GSM/GPRS/EDGE Tribands /WCDMA Digital Mobile Phone with Bluetooth	H31IA	355753030000005

1.7.3 Auxiliary equipment details

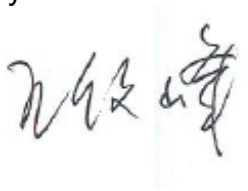
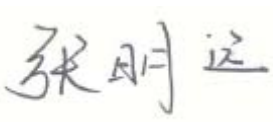
Equipment	Charger
Manufacturer	SHENZHEN ANTHIN POWER SUPPLY CO., LTD.
Model Number	APW305UB-03-06

Equipment	Battery
Manufacturer	Leung's communication & electric products(guangzhou) ltd.
Model Number	PBH31IAZ10
Capacity	820mAh

2. Test information:

2.1 Summary of the test results

No.	Test case	FCC reference	Verdict
1	Occupied Bandwidth	15.247(a) (1)	Pass
2	Peak Power Output	15.247(a) (1)	Pass
3	Spurious RF Conducted Emissions	15.247(d)	Pass
4	Spurious Radiated Emissions	15.247(d), 15.35(b), 15.209	Pass
5	Band Edge Compliance	15.247(d)	Pass
6	Dwell time	15.247(a) (1)(iii)	Pass
7	Channel separation	15.247(a) (1)	Pass
8	Number of Hopping frequencies	15.247(a) (iii)	Pass

This Test Report Is Issued by:	Checked by:
	
Tested by: 	Issued date: **2009.8.27**

2.2 Test result

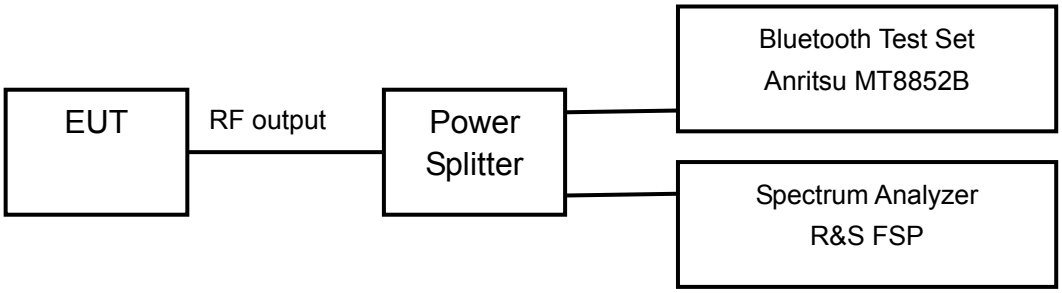
2.2.1 Occupied Bandwidth-§15.247(a) (1)

2.2.1.1 Ambient condition

Temperature	Relative humidity	Pressure
24°C	45%	101.2kPa

2.2.1.2 Test Description

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 Part 15, Subpart C, §15.247 (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.

2.2.1.4 Test result

Modulation type: GFSK

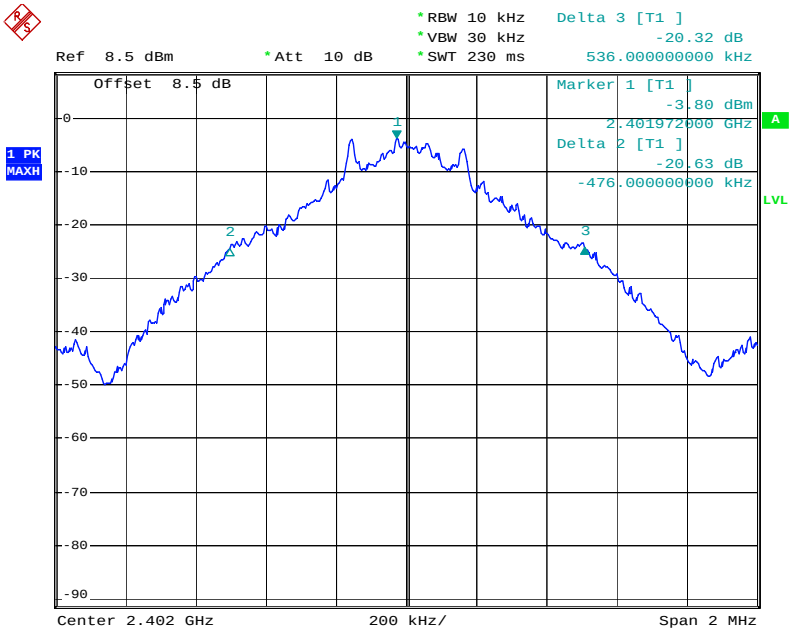
Carrier frequency (MHz)	Channel No.	20 dB bandwidth(KHz)
2402	0	1012.00
2441	39	944.00
2480	79	944.00

Modulation type: π/4DQPSK

Carrier frequency (MHz)	Channel No.	20 dB bandwidth(KHz)
2402	0	1208.00
2441	39	1232.00
2480	79	1200.00

Modulation type: 8DPSK

Carrier frequency (MHz)	Channel No.	20 dB bandwidth(KHz)
2402	0	1172.00
2441	39	1200.00
2480	79	1208.00



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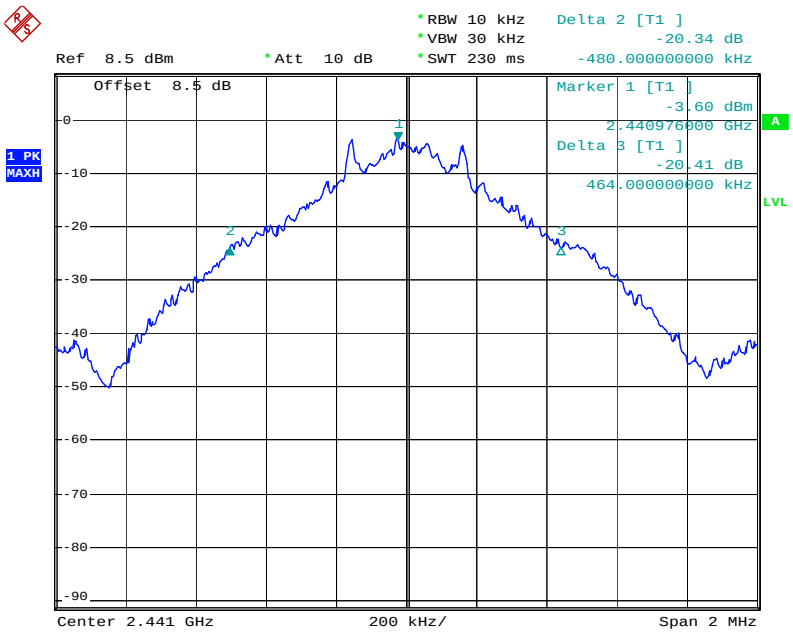
Channel No.:0
Modulation type: GFSK



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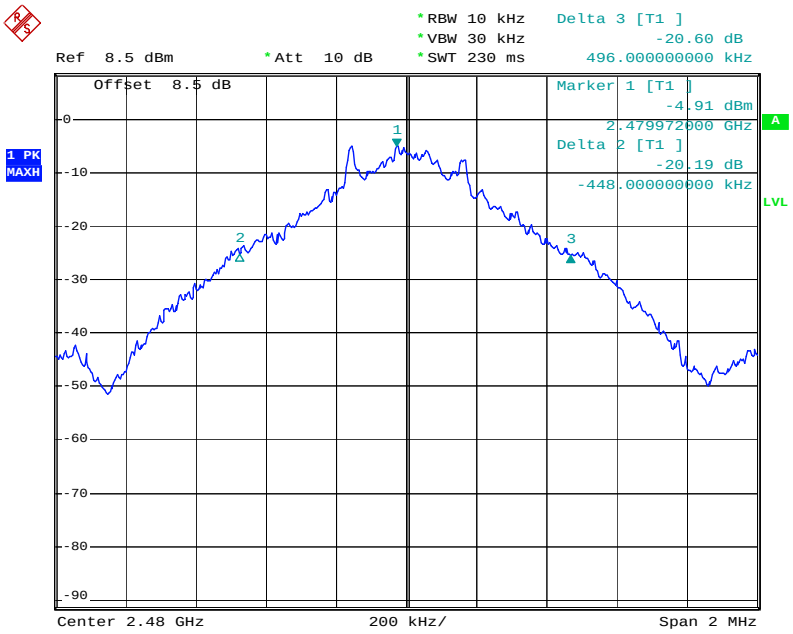
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: GFSK



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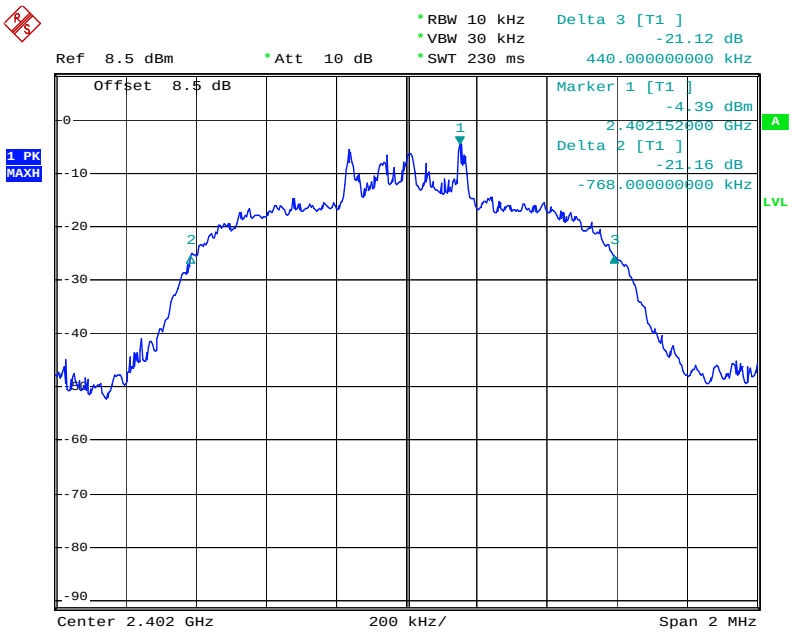
Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: GFSK



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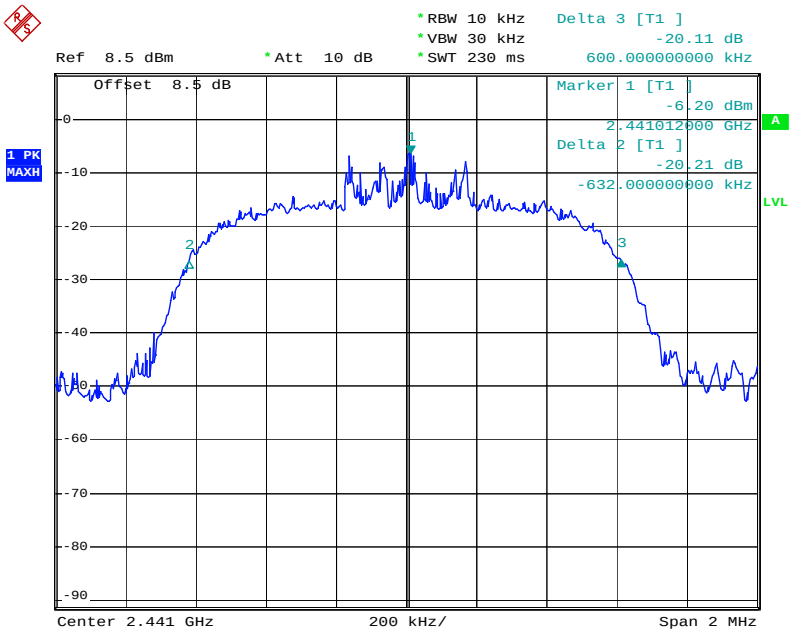
Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: π/4DQPSK



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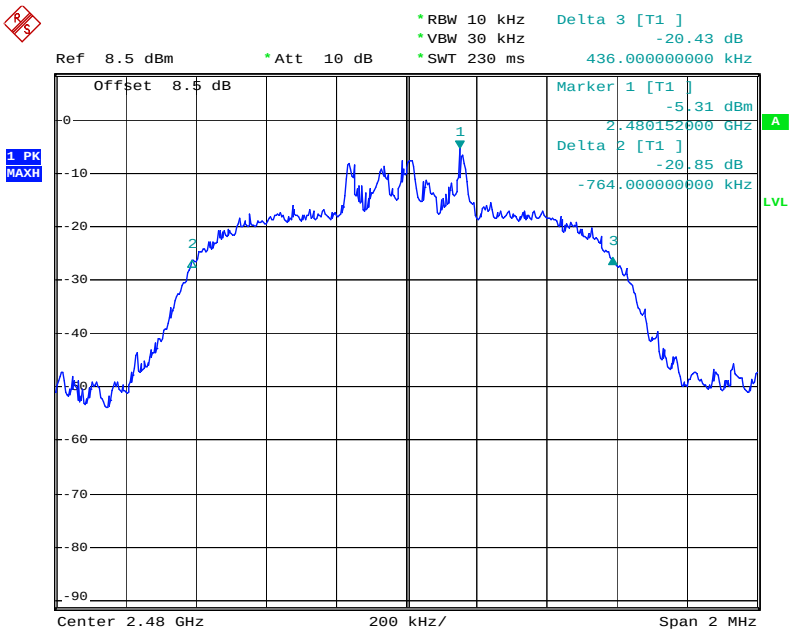
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: π/4DQPSK



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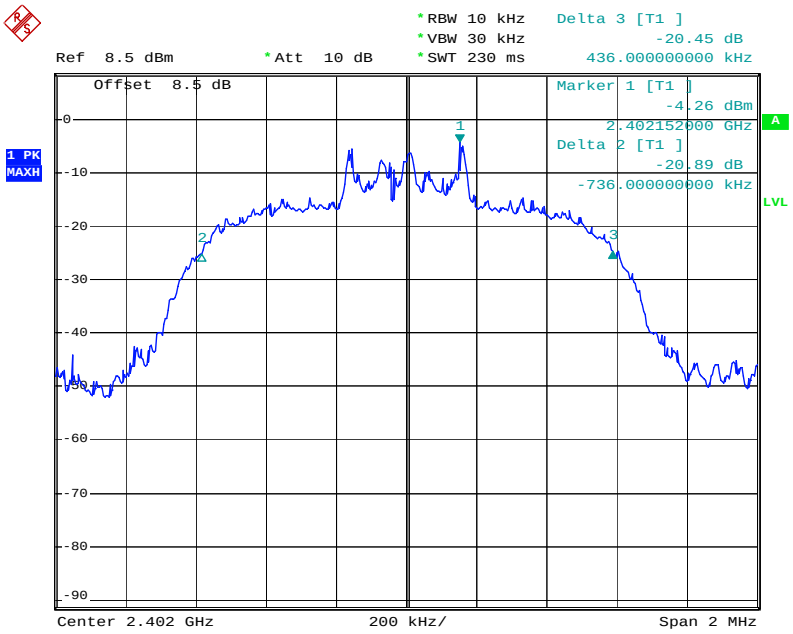
Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: π/4DQPSK



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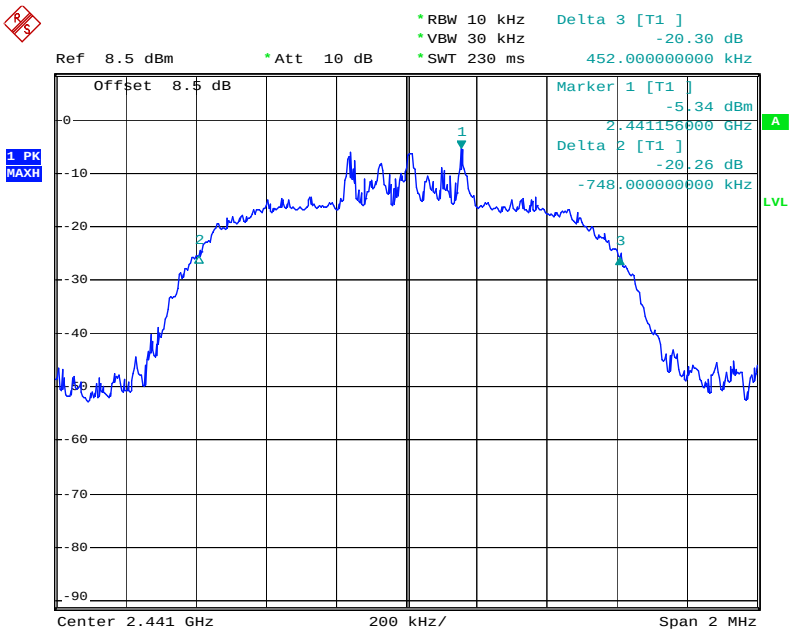
Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: 8DPSK



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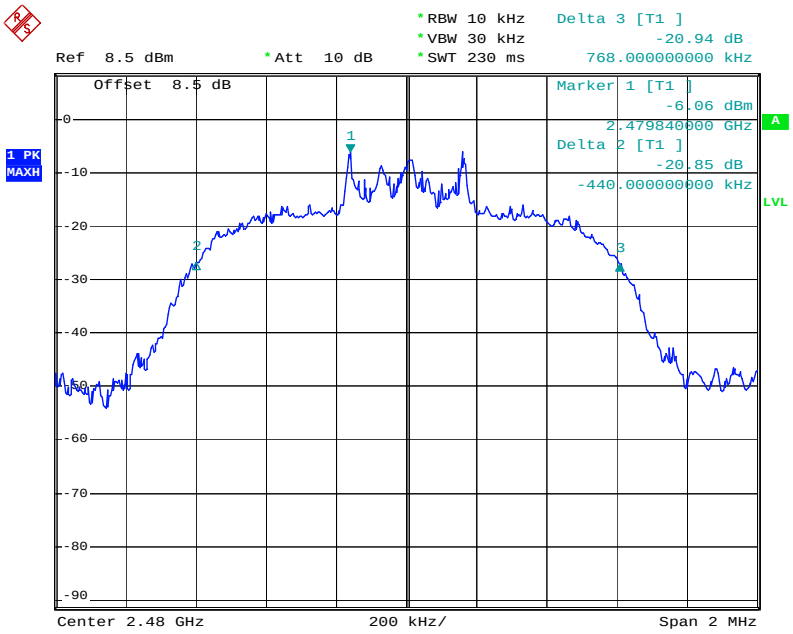
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: 8DPSK



Date: 10.AUG.2009 09:34:57

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

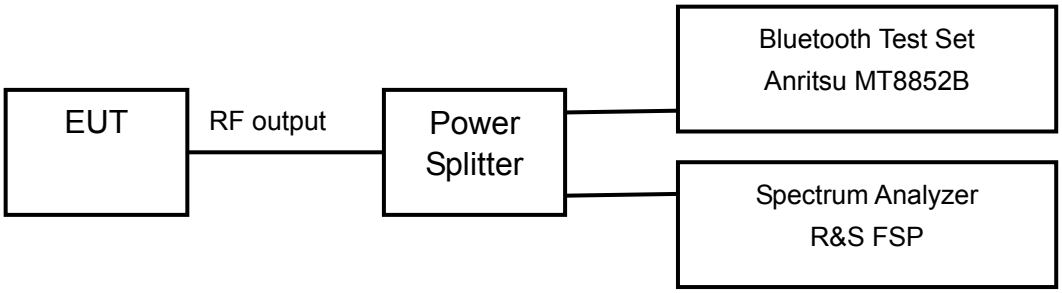
2.2.2 Peak power output-§15.247(a) (1)

2.2.2.1 Ambient condition:

Temperature	Relative humidity	Pressure
24°C	45%	101.2kPa

2.2.2.2 Test Description

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 1 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 Part 15, Subpart C, §15.247 (b) (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.

Used conversion factor: Limit (dBm) = 10 log (Limit (W)/1mW)
==> Maximum Output Power: 30 dBm

2.2.2.4 Test result:

Offset=antenna gain+ the insertion loss of the power splitter+ cable loss
=0.50+6.50+1.50=8.50dB

Modulation type: GFSK

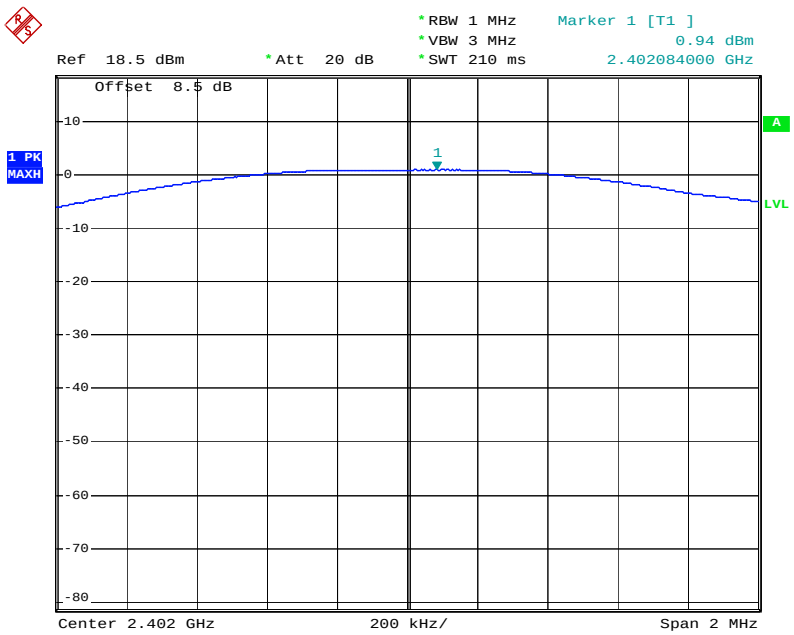
Carrier frequency (MHz)	Channel No.	E.R.I.P. (dBm)
2402	0	0.94
2441	39	1.36
2480	78	0.03

Modulation type: π/4DQPSK

Carrier frequency (MHz)	Channel No.	E.R.I.P. (dBm)
2402	0	0.90
2441	39	1.36
2480	78	0.04

Modulation type: 8DPSK

Carrier frequency (MHz)	Channel No.	E.R.I.P. (dBm)
2402	0	0.91
2441	39	1.32
2480	78	-0.03



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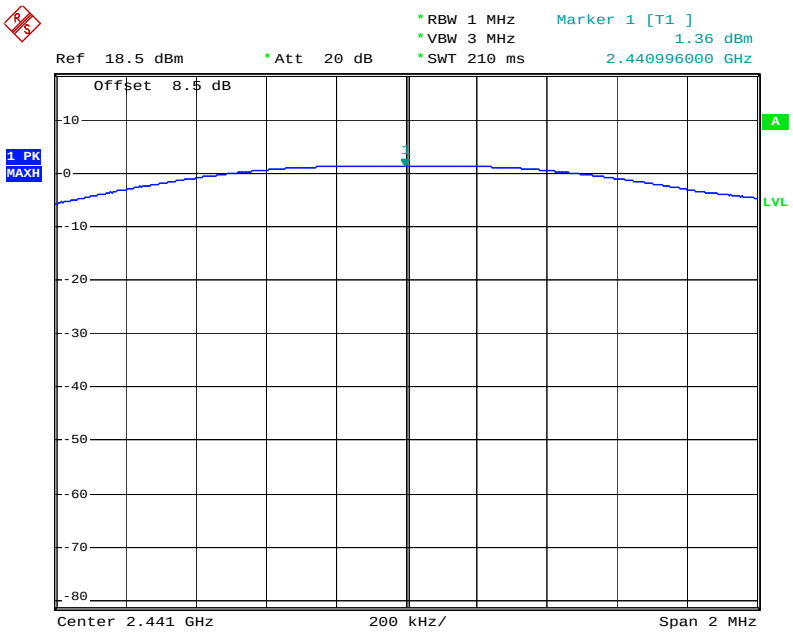
Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: GFSK



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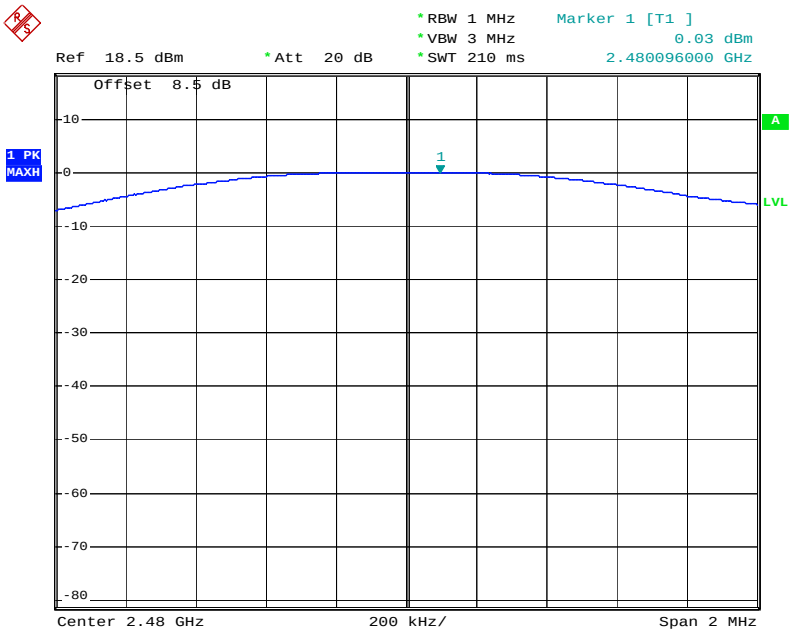
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: GFSK



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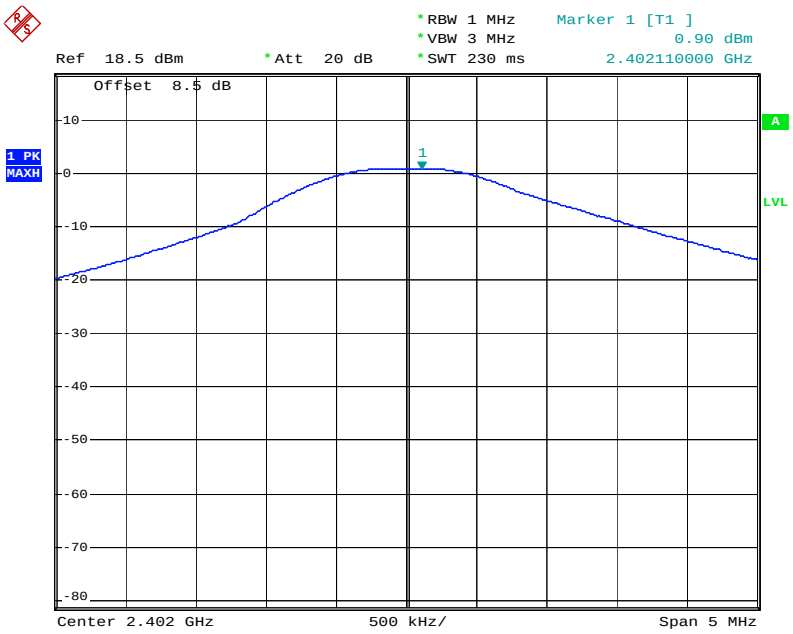
Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: GFSK



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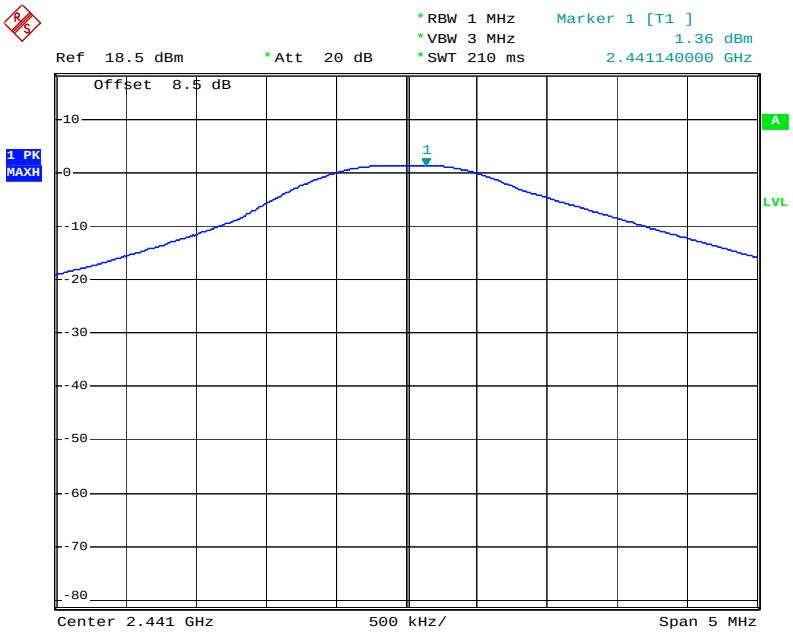
Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: π/4DQPSK



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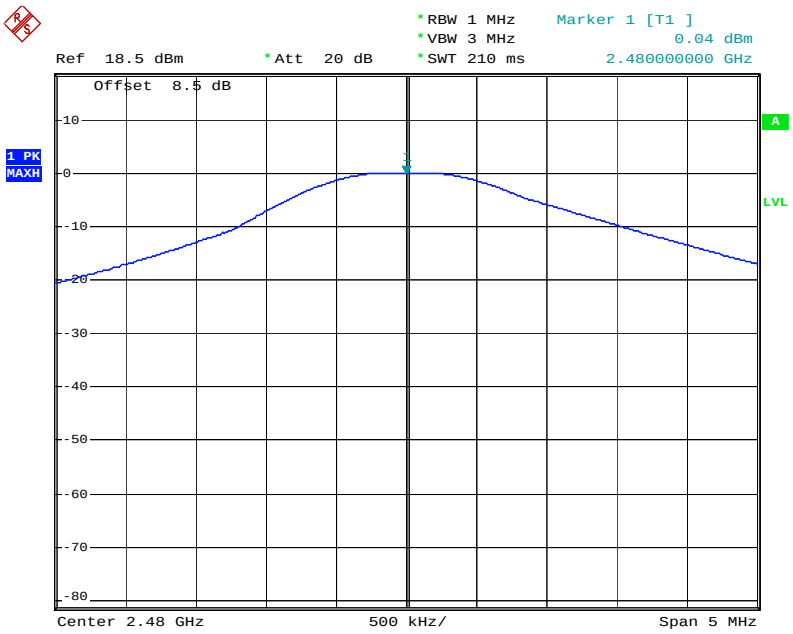
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: π/4DQPSK



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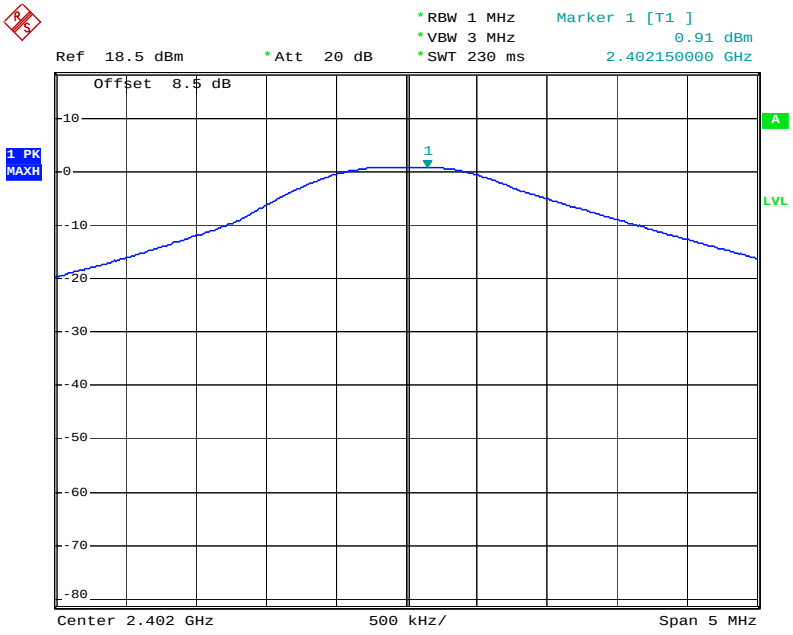
Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: π/4DQPSK



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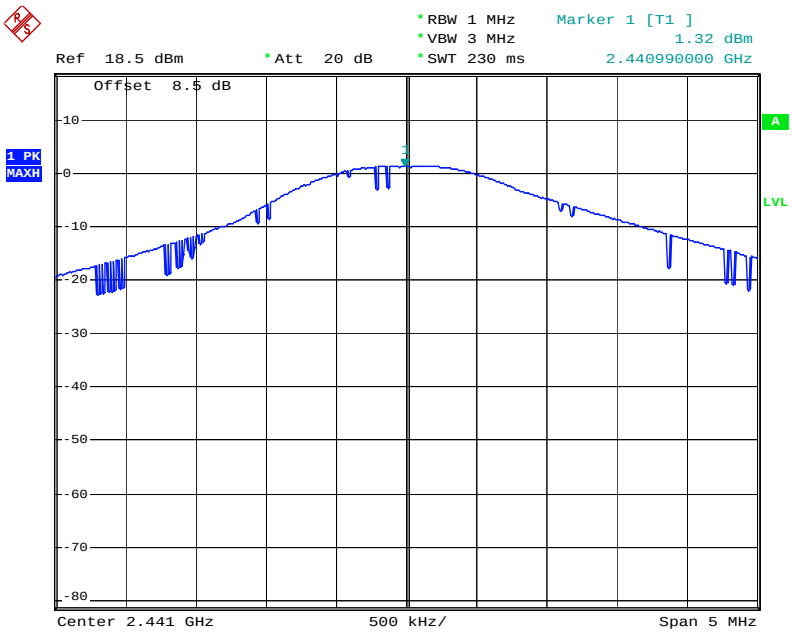
Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: 8DPSK



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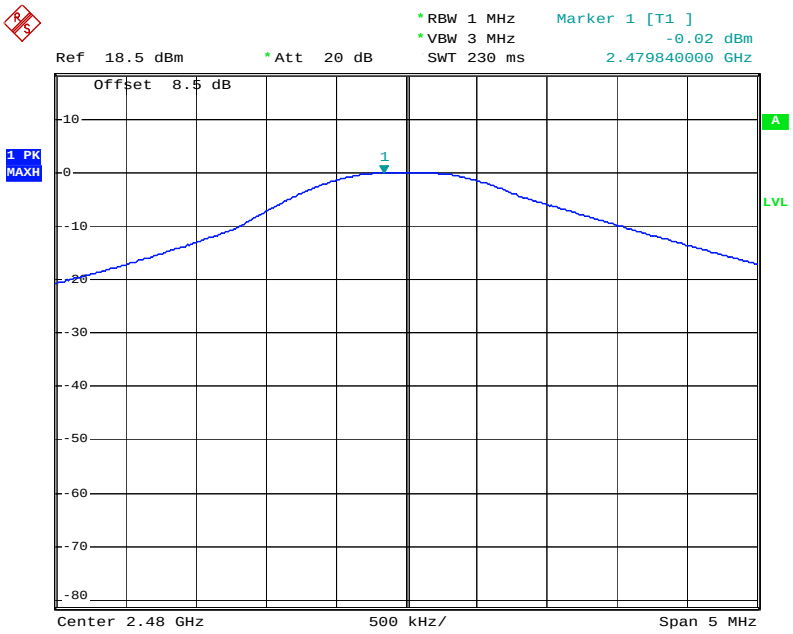
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: 8DPSK



Date: 10.AUG.2009 10:29:03

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

2.2.3 Spurious RF conducted emissions-§15.247(d)

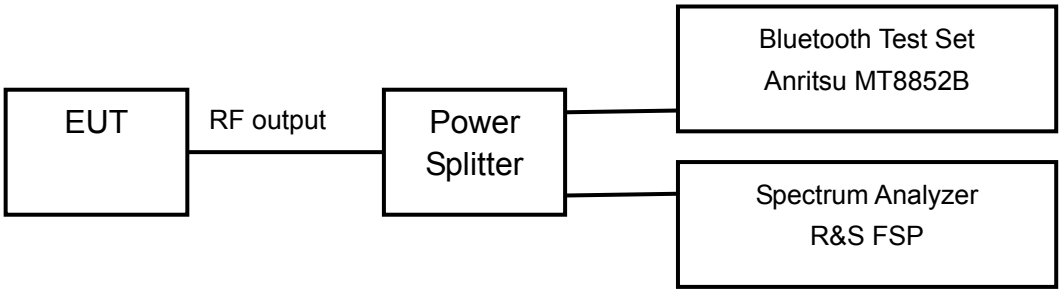
2.2.3.1 Ambient condition:

Temperature	Relative humidity	Pressure
24°C	45%	101.2kPa

2.2.3.2 Test Description

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 Part 15, Subpart C, §15.247 (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.

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 to limit dB
---	---	---	---	---
24265.00	-39.93	0.55	-19.45	20.48

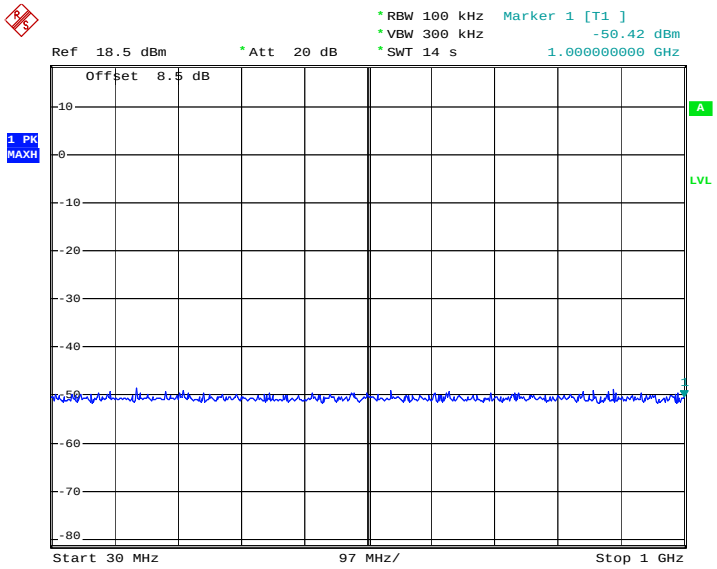
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: GFSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta to limit dB
---	---	---	---	---
24142.50	-41.69	0.97	-19.03	22.66

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

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta to limit dB
---	---	---	---	---
24289.50	-41.30	-0.31	-20.31	20.99

Note: The Reference value see 2.2.5 Band edge compliance



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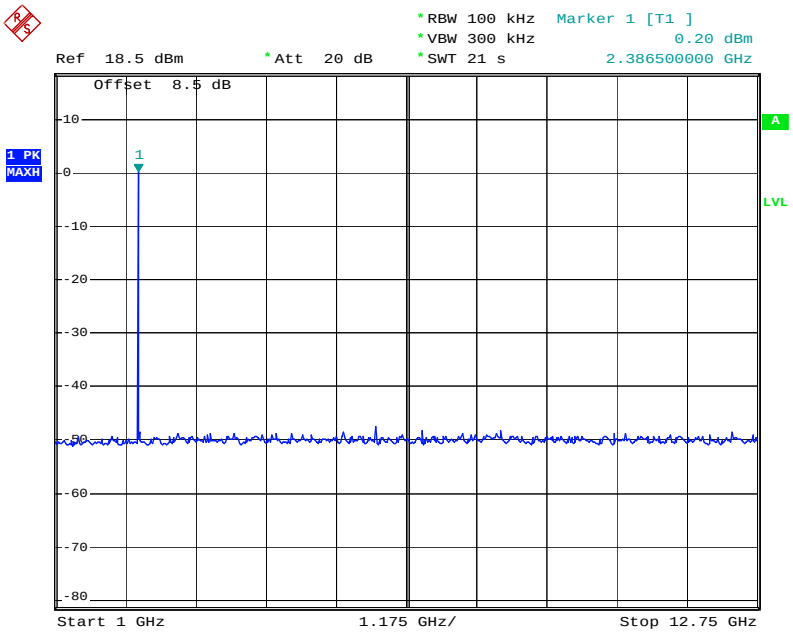

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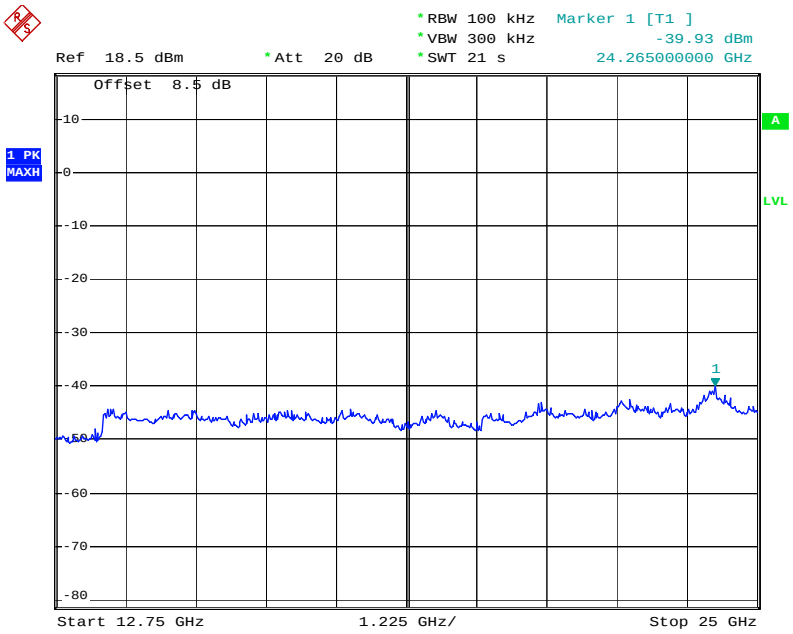

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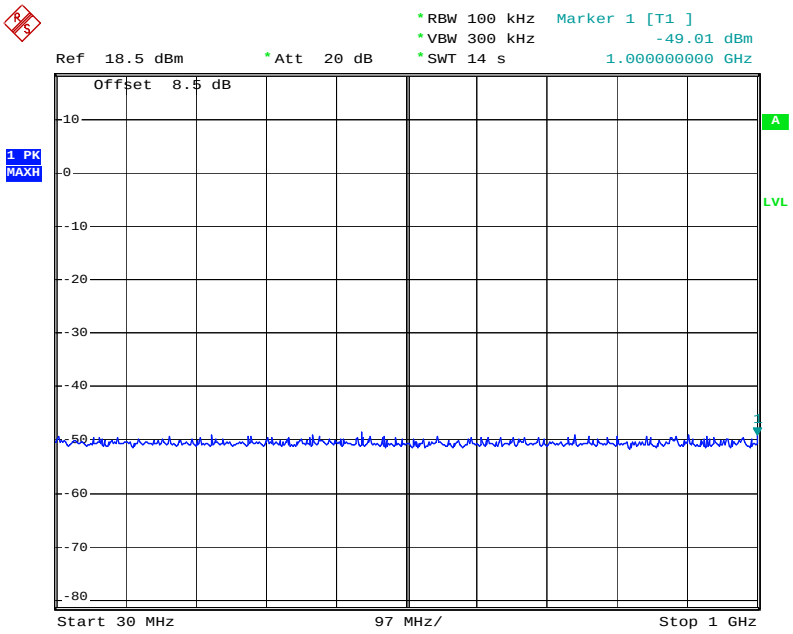
Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: GFSK



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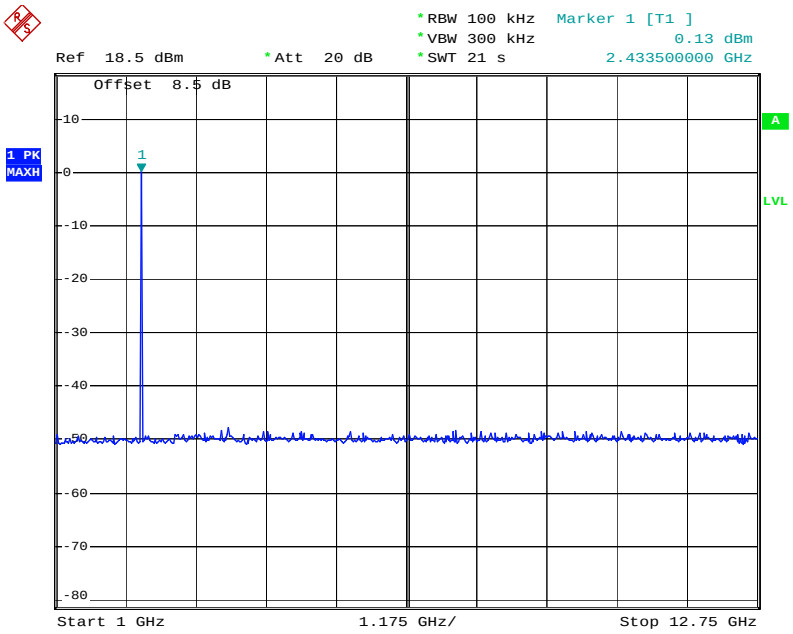

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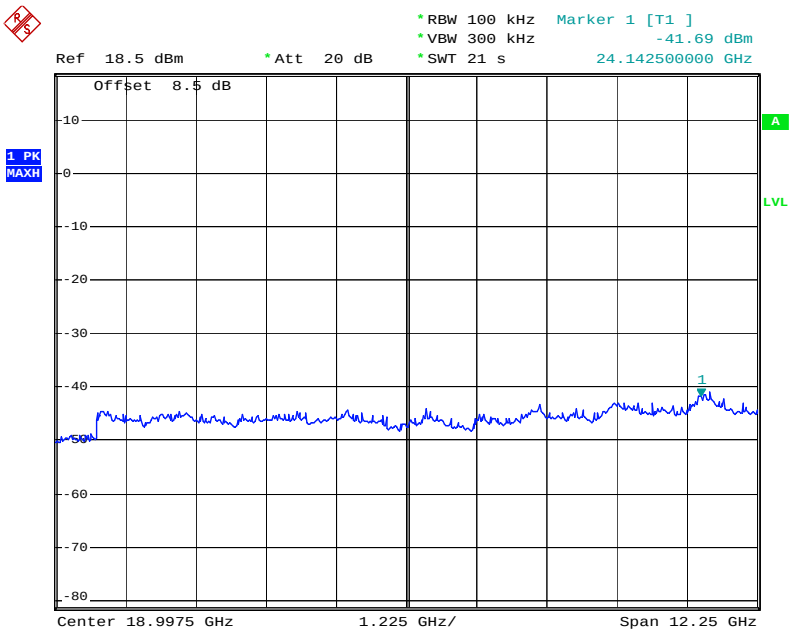

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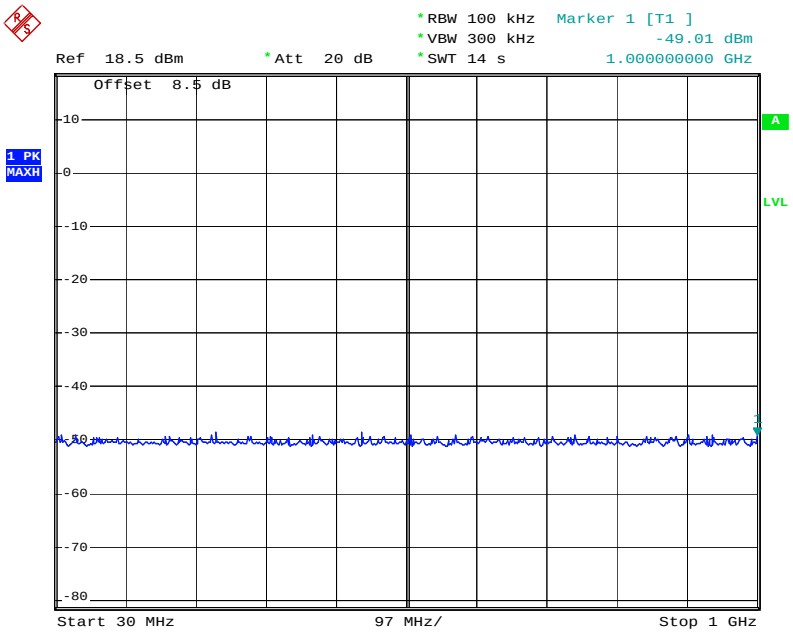
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: GFSK



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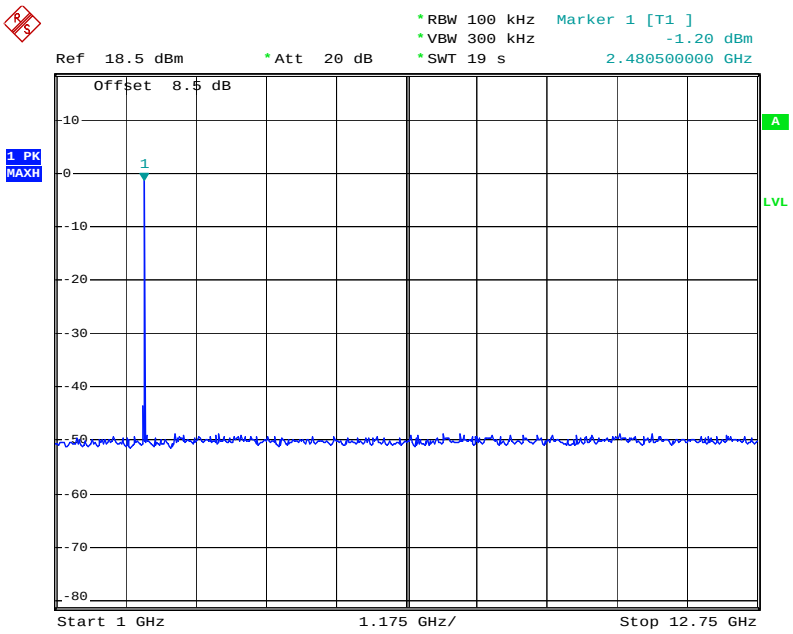

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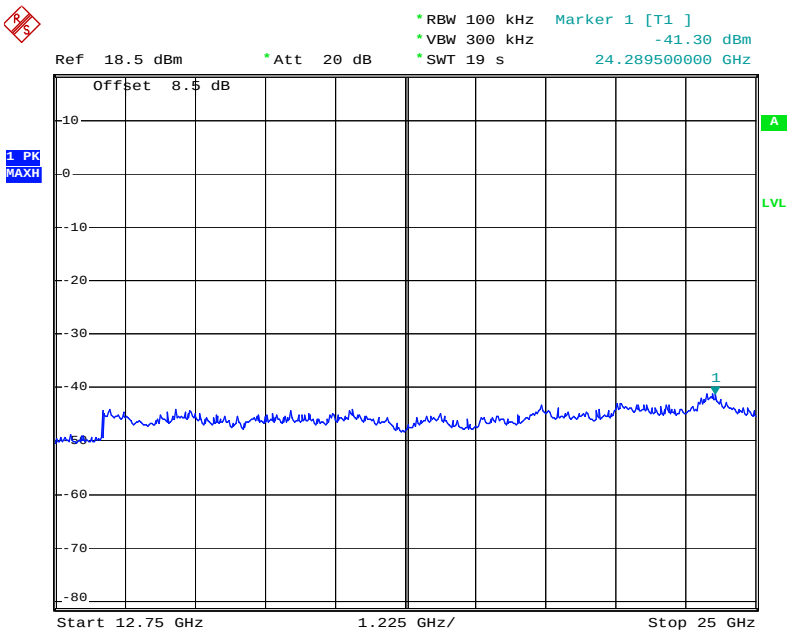


Date: 10.AUG.2009 11:13:13

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

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

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta to limit dB
---	---	---	---	---
24118.00	-41.20	0.61	-19.39	21.81

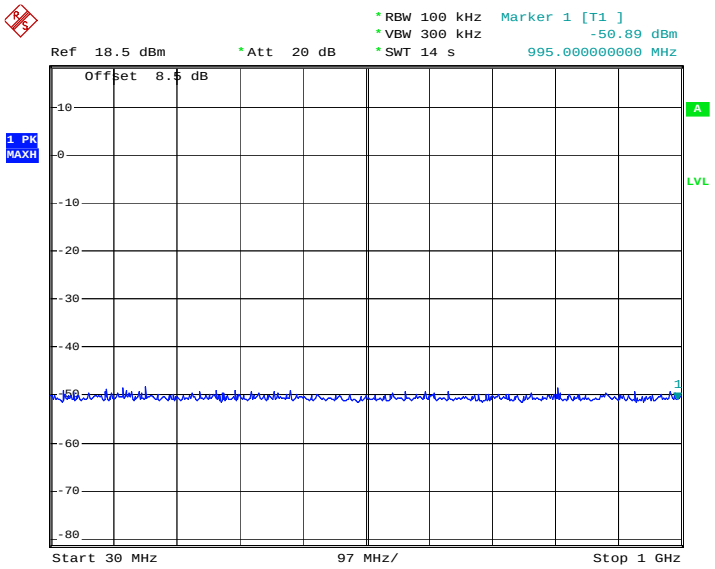
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: π/4DQPSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta to limit dB
---	---	---	---	---
24118.00	-40.43	1.03	-18.97	21.46

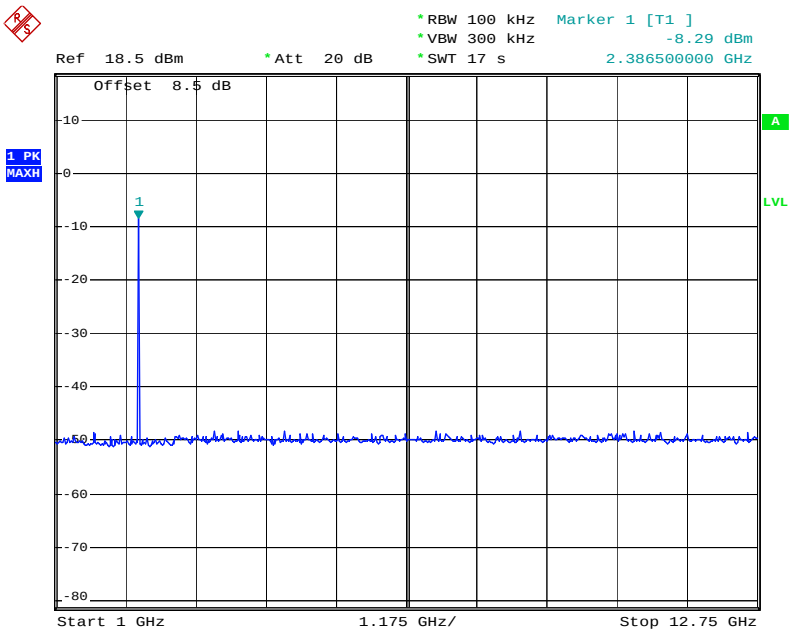
Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: π/4DQPSK

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta to limit dB
---	---	---	---	---
24289.5	-40.77	-0.29	-20.29	20.48

Note: The Reference value see 2.2.5 Band edge compliance



Date: 10.AUG.2009 11:32:13



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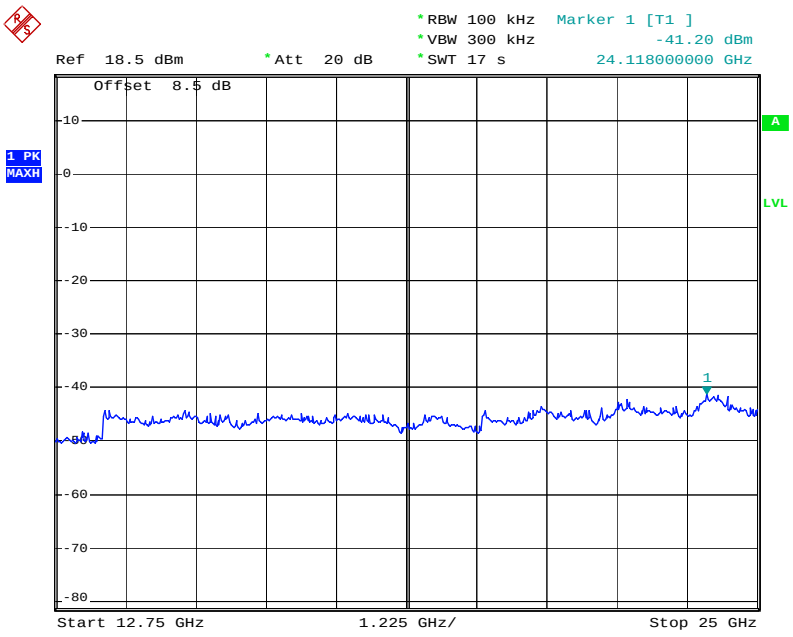
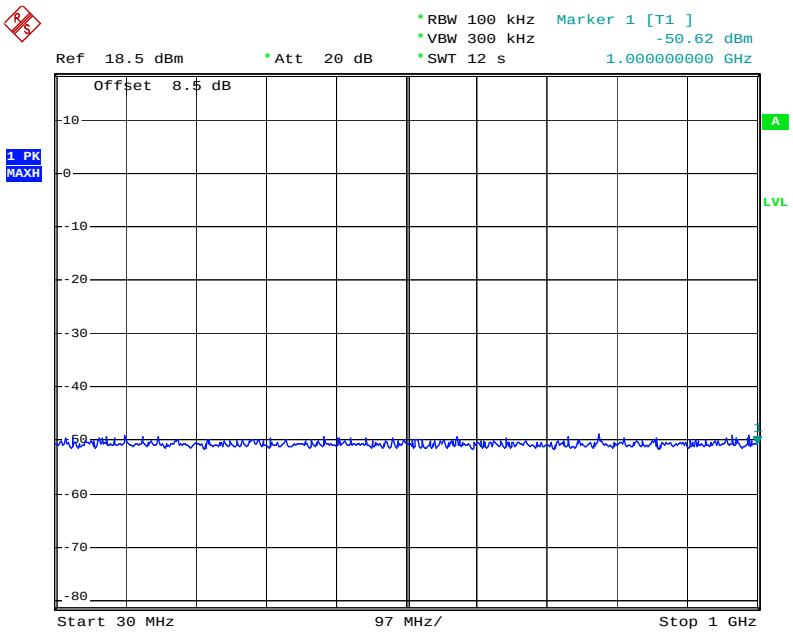


Date: 10.AUG.2009 11:34:47

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



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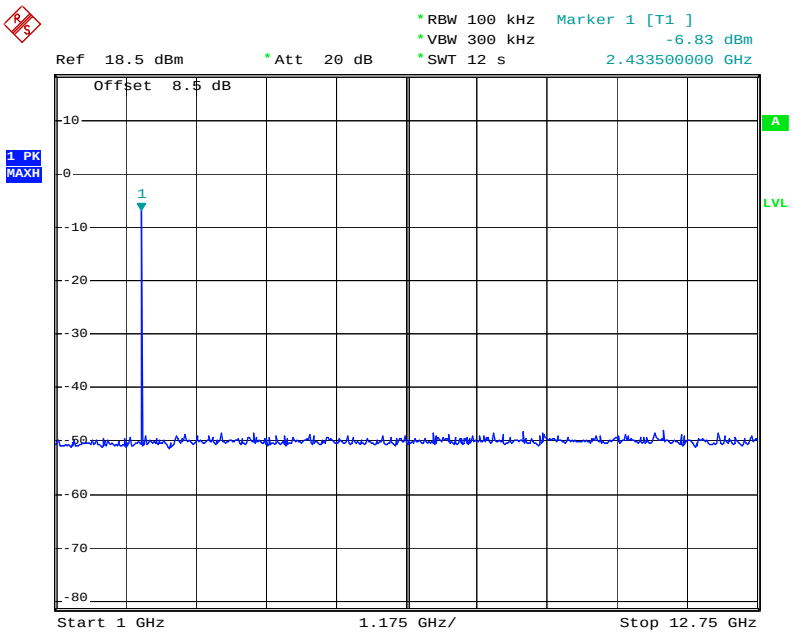

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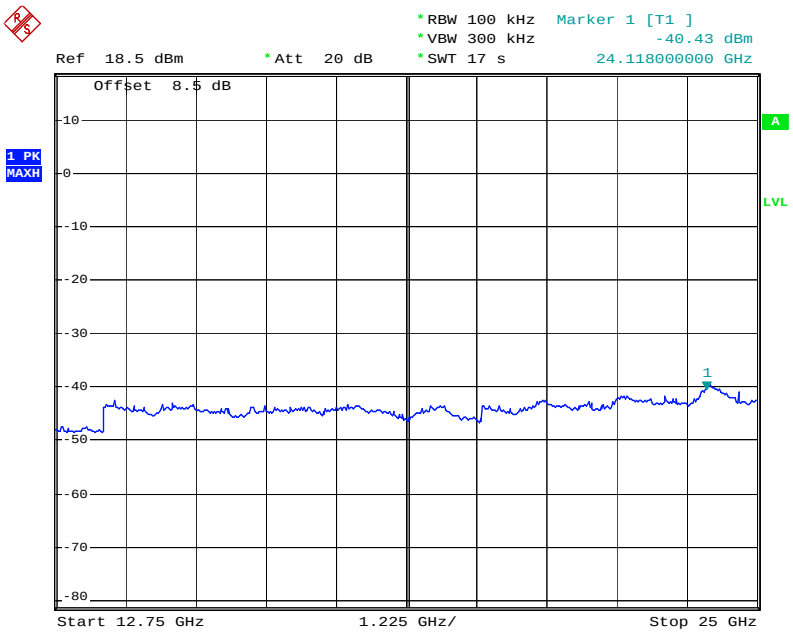
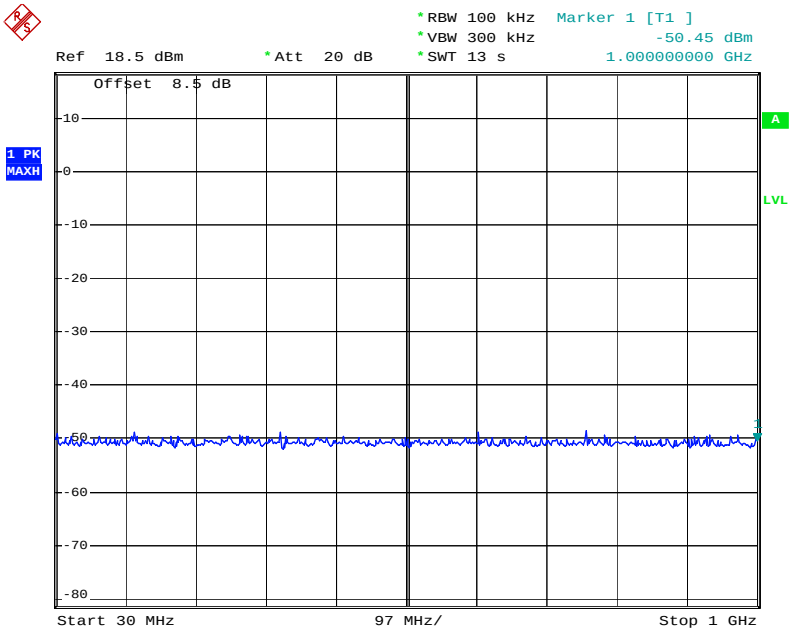
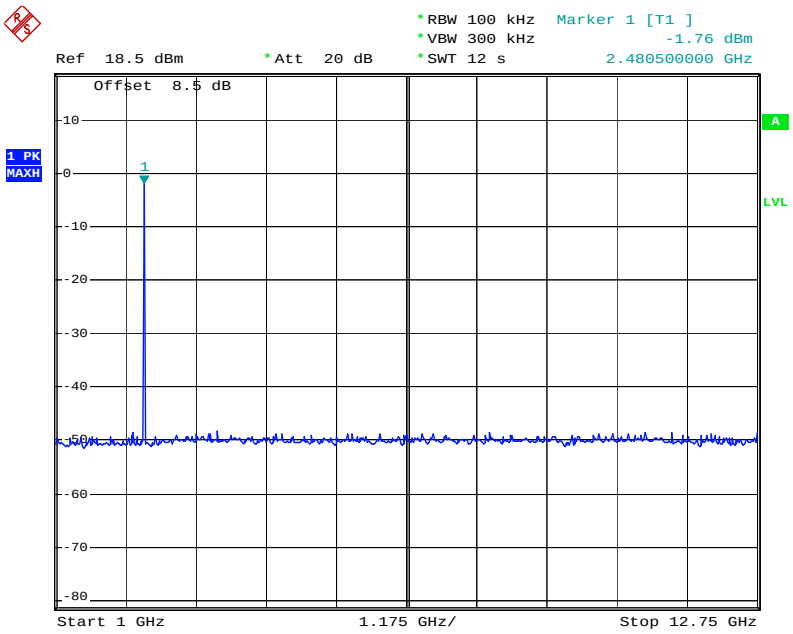


Date: 10.AUG.2009 13:59:45

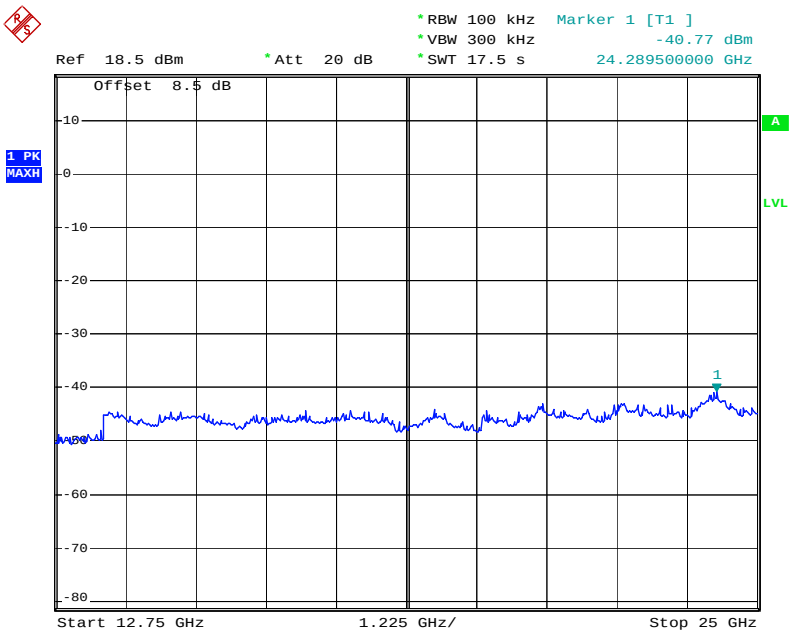
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: π/4DQPSK



Date: 10.AUG.2009 14:05:47



Date: 10.AUG.2009 14:03:43



Date: 10.AUG.2009 14:04:52

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

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

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta to limit dB
---	---	---	---	---
24216.00	-41.64	0.60	-19.40	22.24

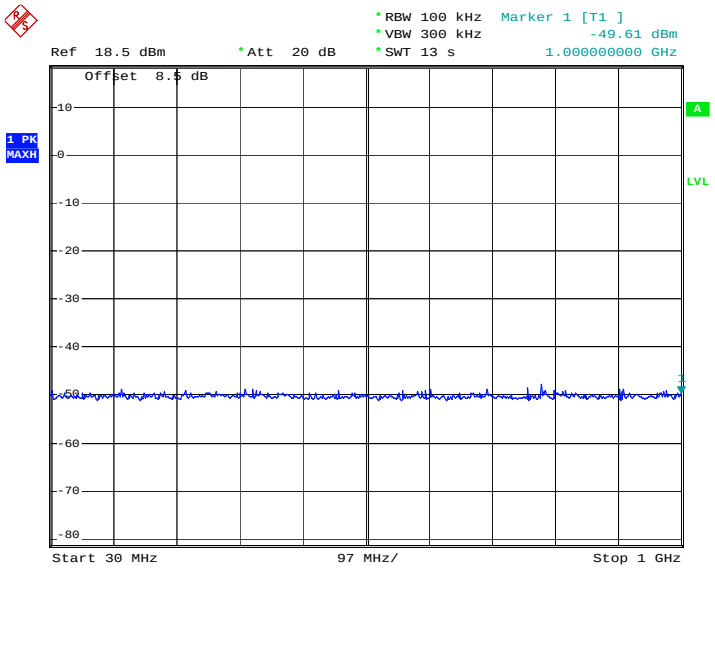
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: 8DPSK

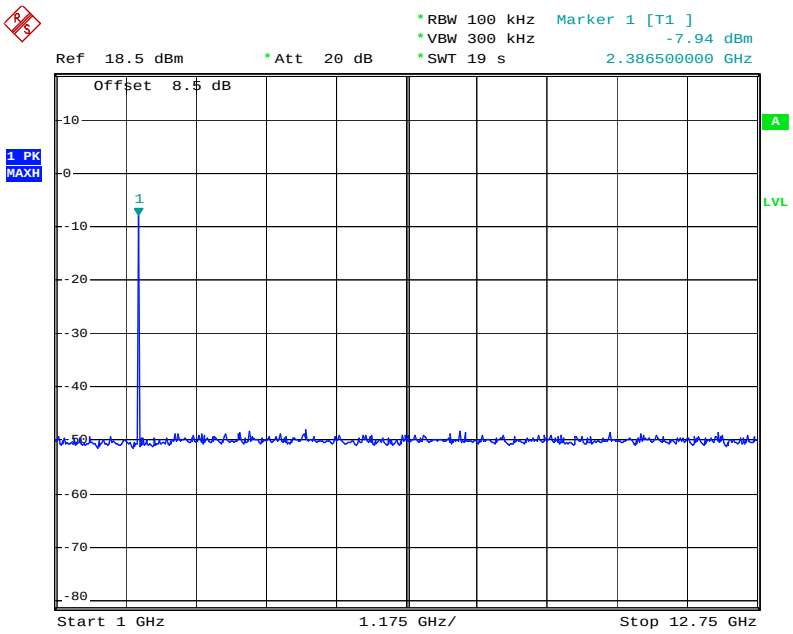
Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta to limit dB
---	---	---	---	---
22672.5	-43.29	-1.02	-21.02	22.27

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

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta to limit dB
---	---	---	---	---
24240.5	-41.29	-0.30	-20.30	20.99

Note: The Reference value see 2.2.5 Band edge compliance





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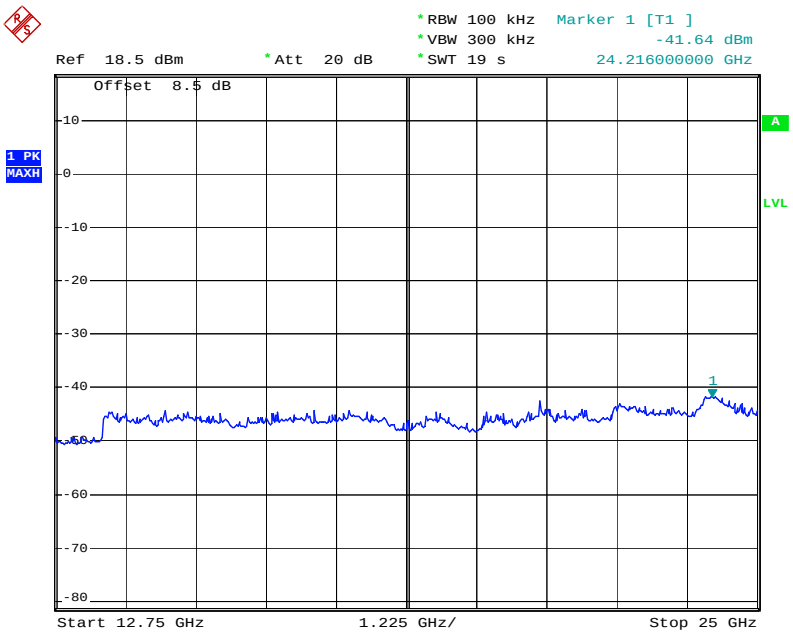
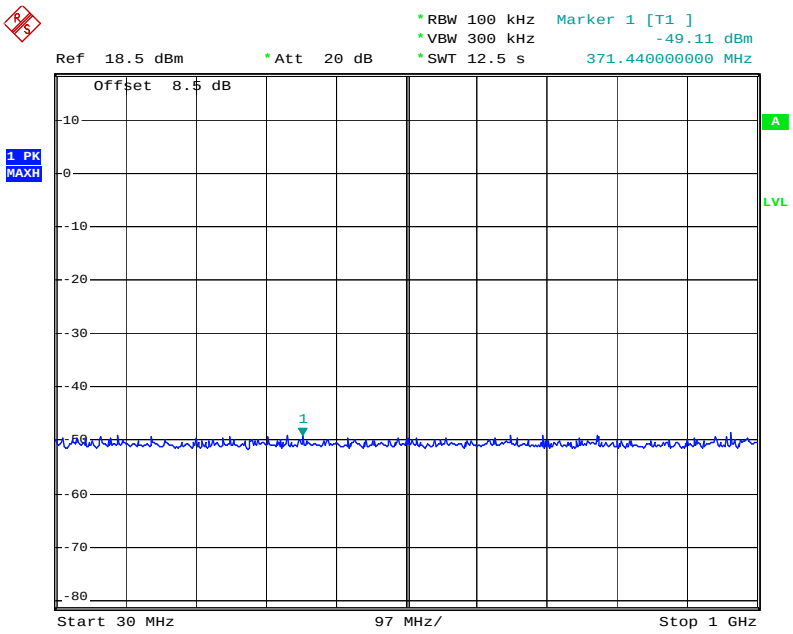
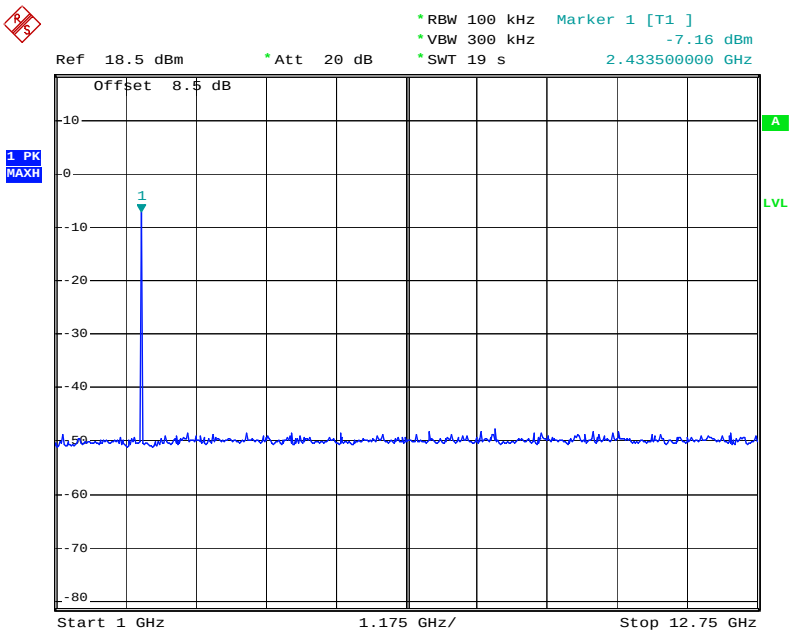


Date: 10.AUG.2009 14:09:17

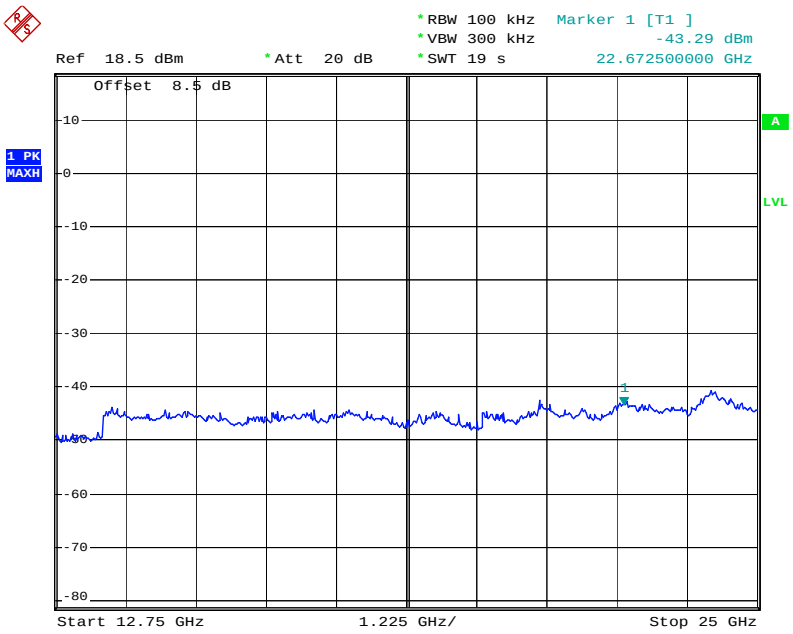
Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: 8DPSK



Date: 10.AUG.2009 14:12:43

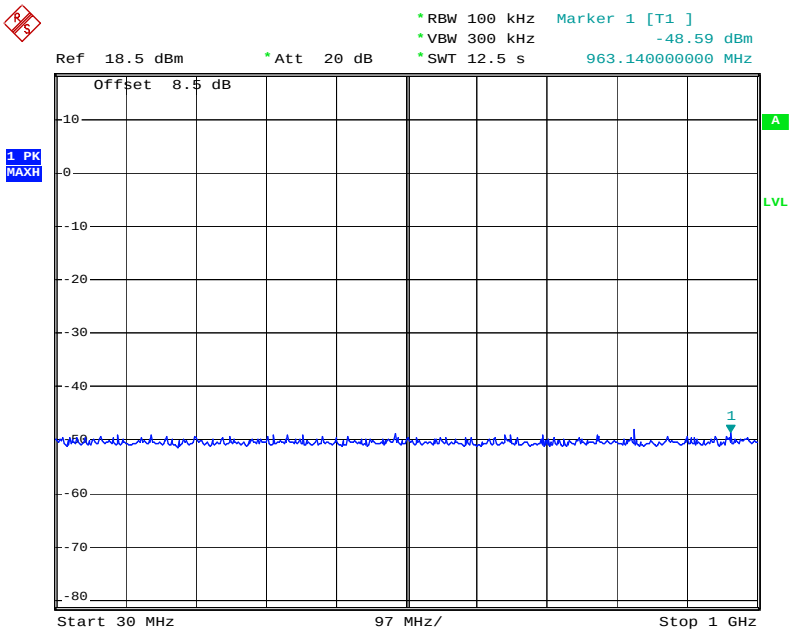


Date: 10.AUG.2009 14:11:54

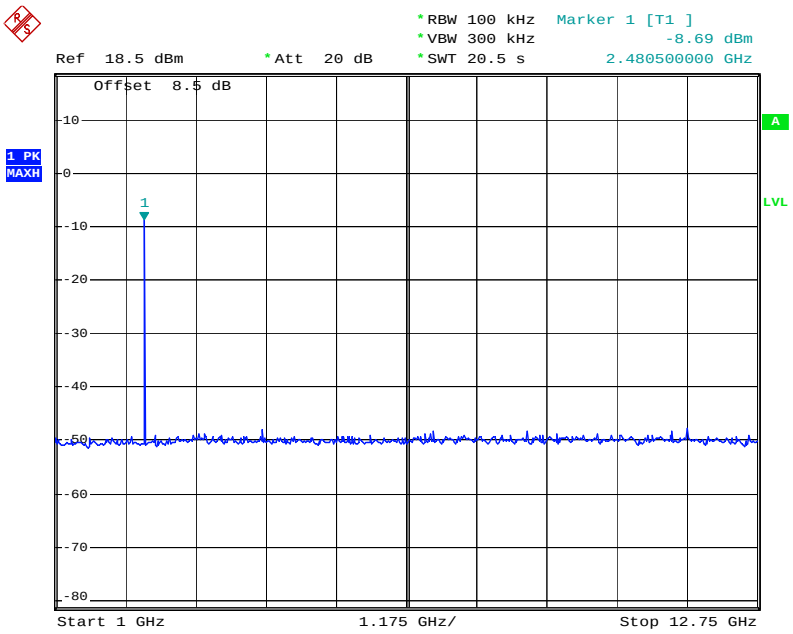


Date: 10.AUG.2009 14:10:32

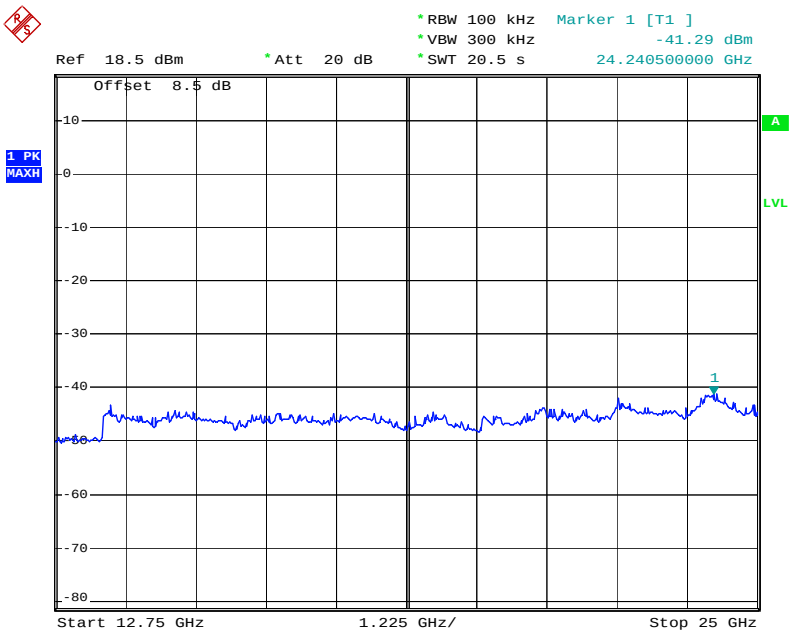
Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: 8DPSK



Date: 10.AUG.2009 14:13:26



Date: 10.AUG.2009 14:14:41



Date: 10.AUG.2009 14:15:39

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

2.2.4 Spurious radiated emissions-§15.247(d),§15.35(b),§15.209

2.2.4.1 Ambient condition

Temperature	Relative humidity	Pressure
27°C	40%	101.4kPa

2.2.4.2 Test Description

The test set-up was made in accordance to the general provisions of ANSI C 63.4-2003.

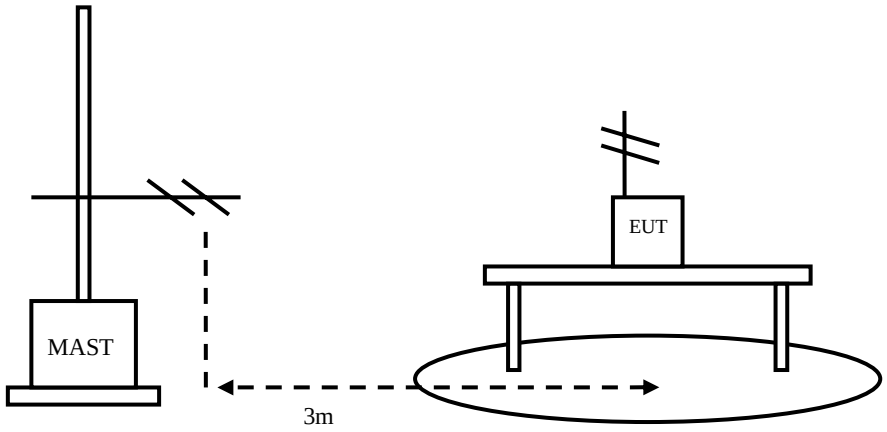
The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna.

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 height of receive antenna shall be moved from 1 to4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna.

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 Part 15, Subpart C, §15.247 (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)).

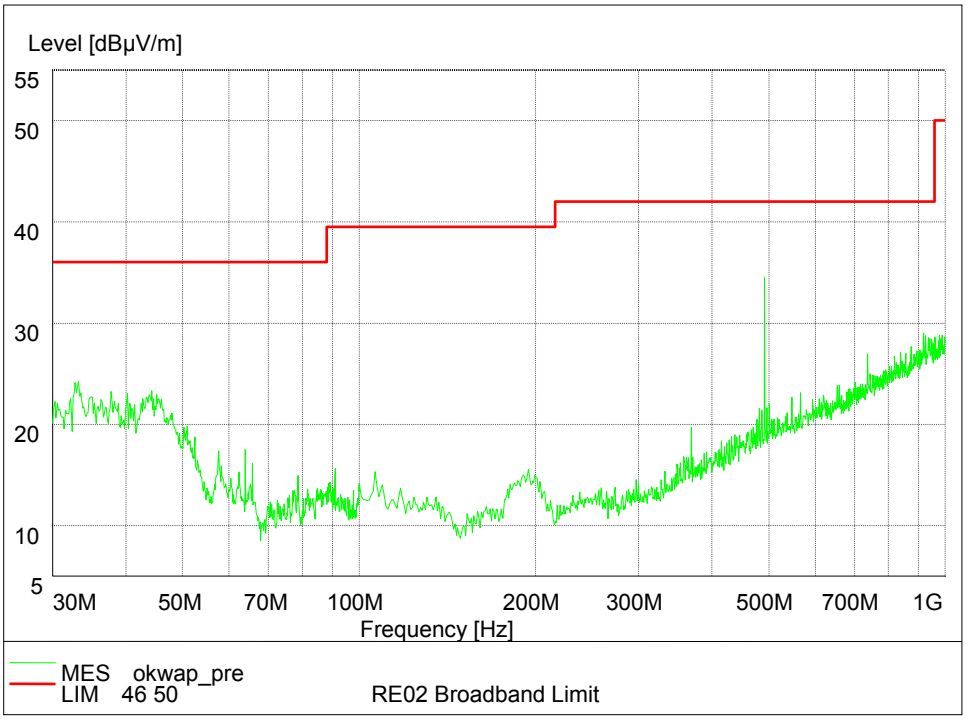
FCC Part 15, Subpart C, §15.209, Radiated Emission Limits

Frequency Range (MHz)	Class B Limit (dBμV/m)
30 – 88	40.0
88 – 216	43.5
216 – 960	46.0
above 960	54.0

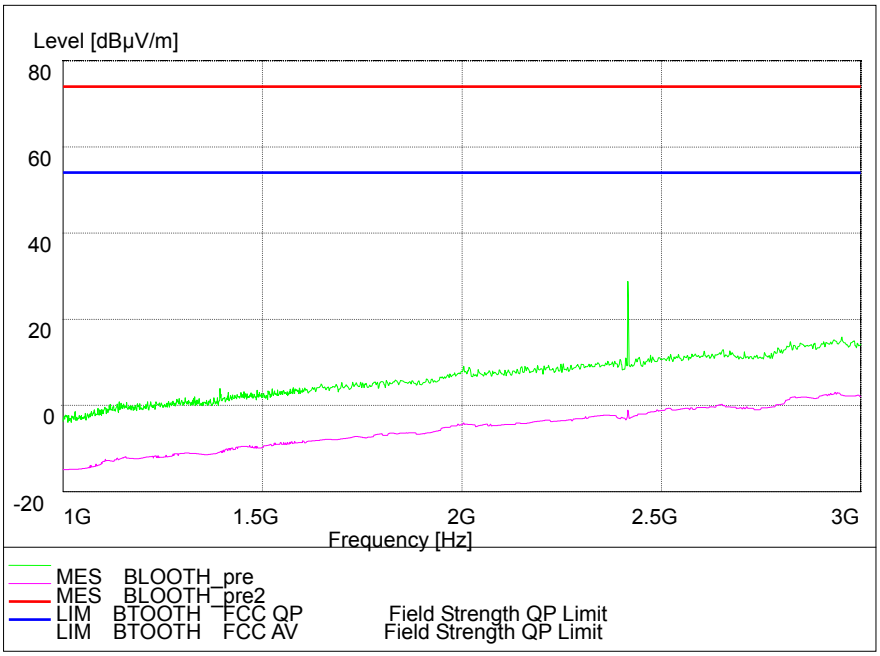
§15.35(b)
..., there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit....
Used conversion factor: Limit (dBμV/m) = 20 log (Limit (μV/m)/1μV/m)

2.2.4.4 Test result

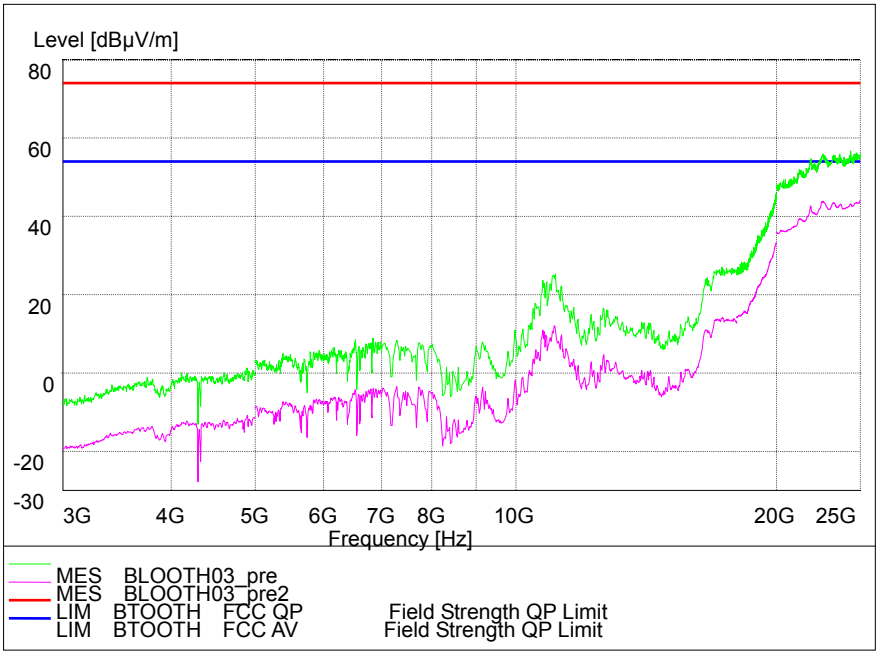
Carrier frequency (MHz): 2441
Channel No.:39



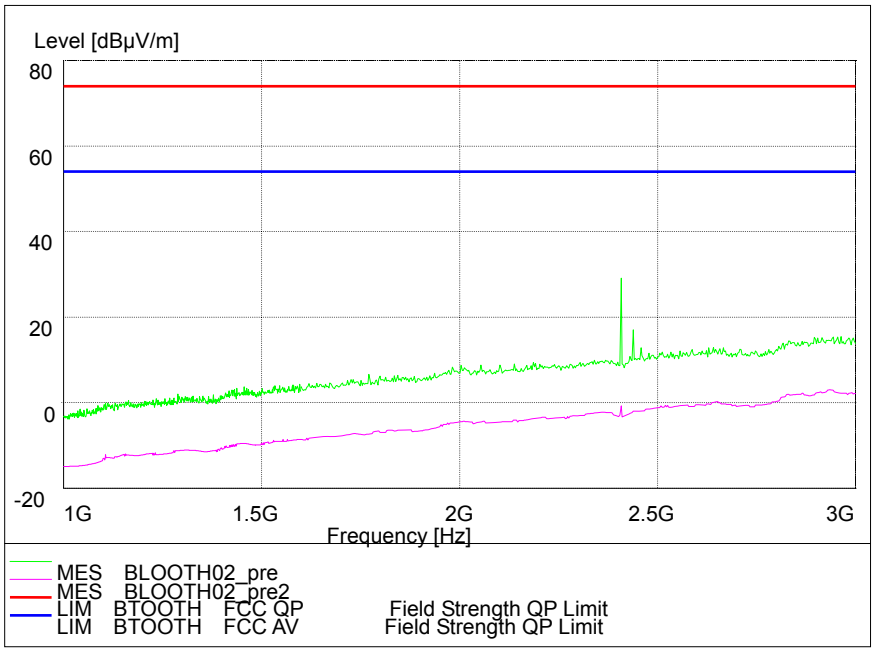
Frequency Range :30MHz -1000 MHz



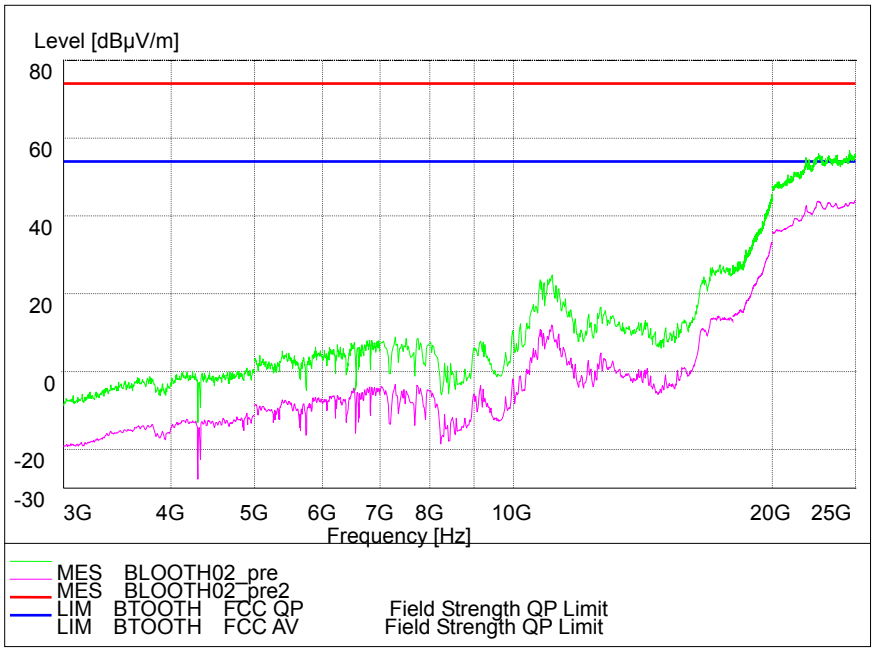
Frequency Range : 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: GFSK



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



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



Frequency Range : 20GHz-25GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

2.2.5 Band edge compliance-§15.247(d)

2.2.5.1 Ambient condition

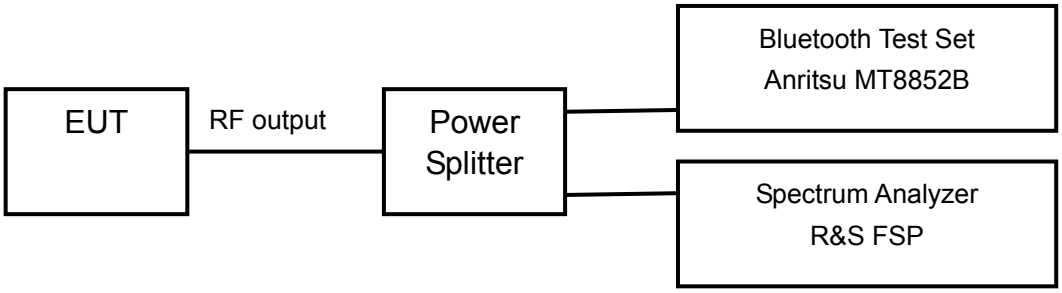
Temperature	Relative humidity	Pressure
24°C	45%	101.2kPa

2.2.5.2 Test Description

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 2400 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



2.2.5.3 Test limit

FCC Part 15.247 (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.
...

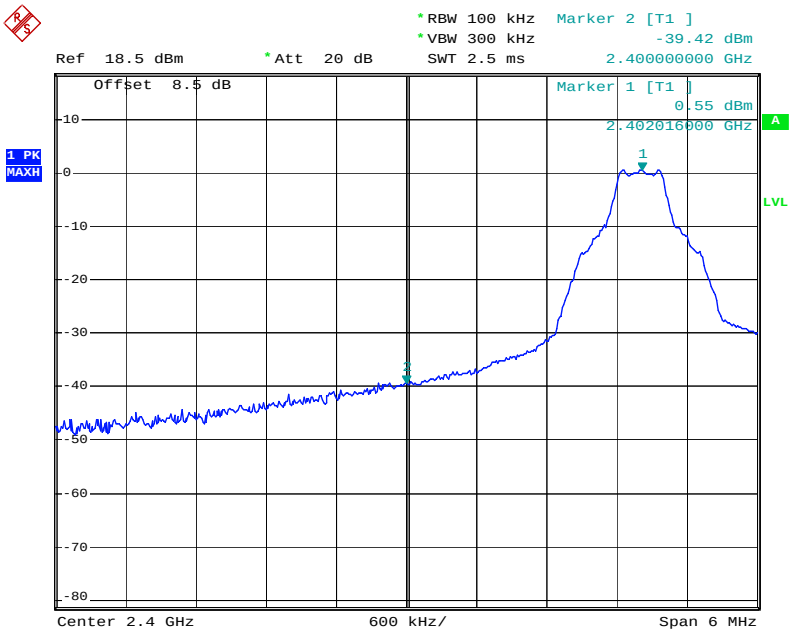
2.2.5.4 Test result

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

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm	Delta to limit dB
2400	-39.42	0.55	-19.45	19.97

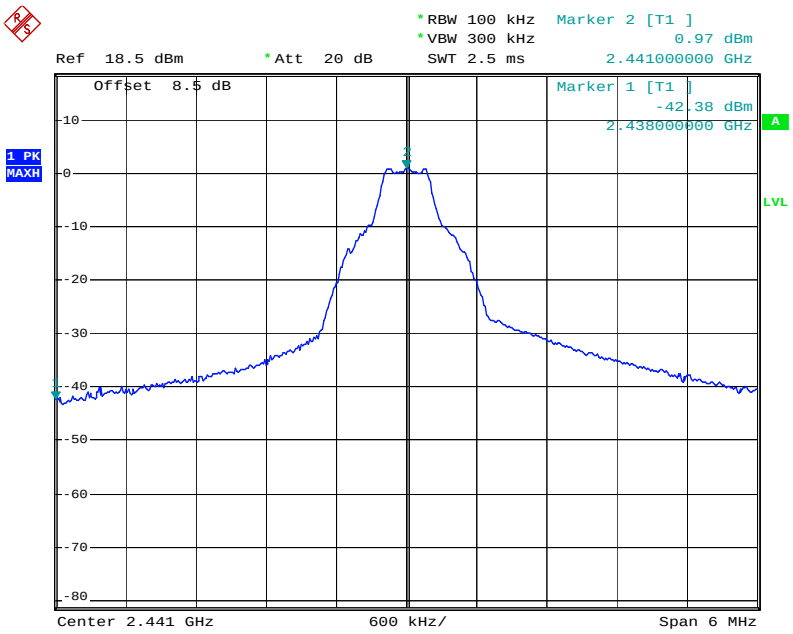
Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: GFSK

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm	Delta to limit dB
2483.5	-43.48	-0.31	-20.31	23.17



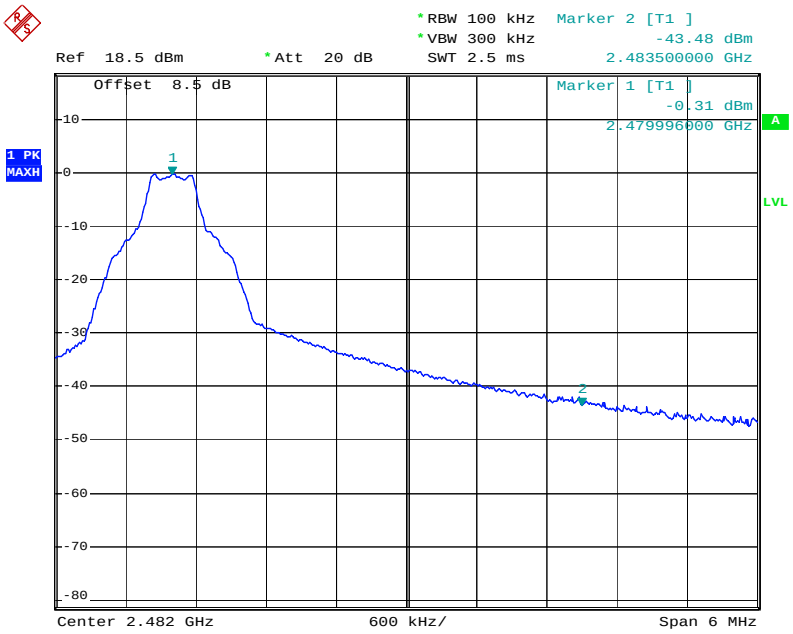
Date: 10.AUG.2009 14:43:34

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



Date: 10.AUG.2009 14:44:41

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



Date: 10.AUG.2009 14:49:11

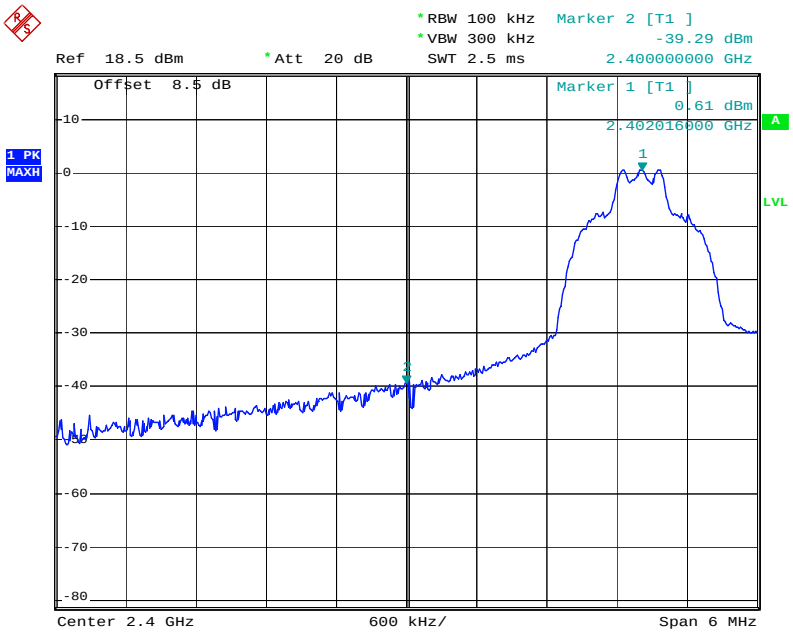
Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: GFSK

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

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm	Delta to limit dB
2400	-39.29	0.61	-19.39	19.90

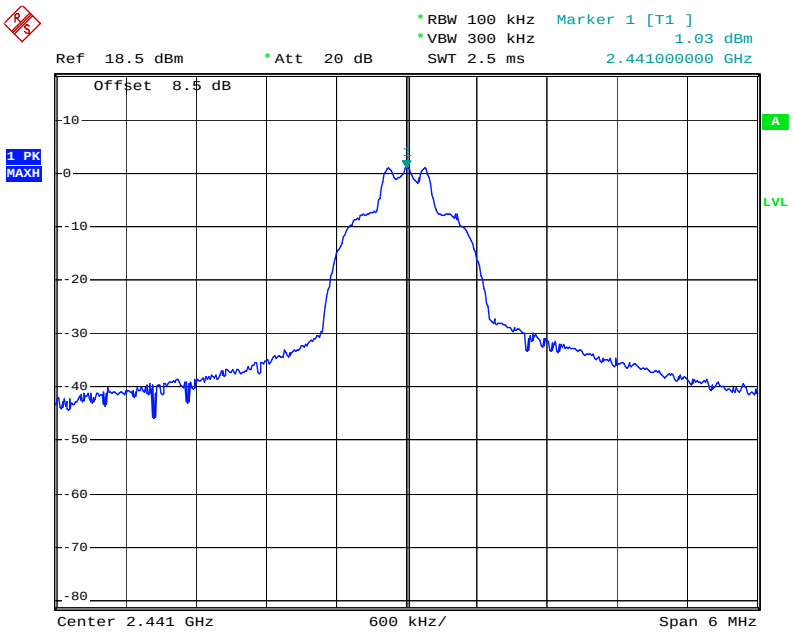
Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: π/4DQPSK

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm	Delta to limit dB
2483.5	-43.79	-0.29	-20.29	23.50



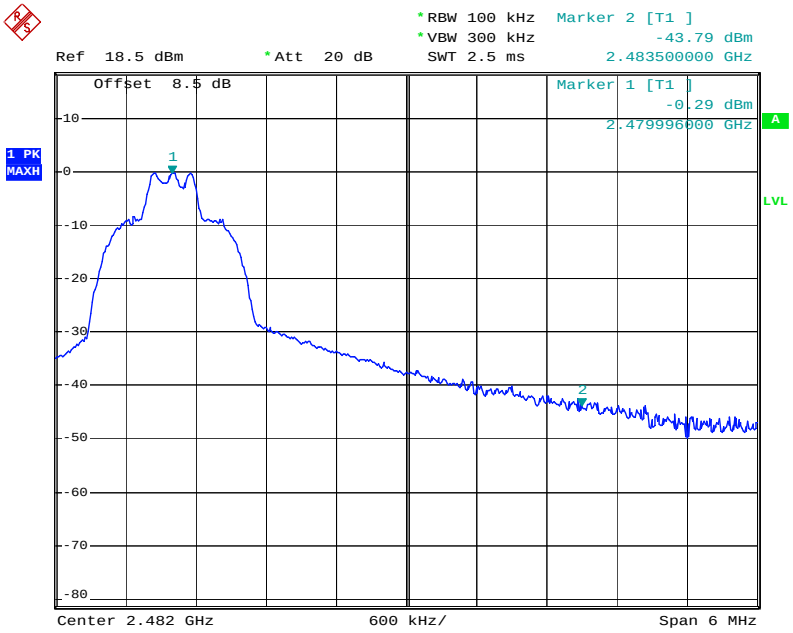
Date: 10.AUG.2009 14:34:47

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



Date: 10.AUG.2009 14:37:02

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



Date: 10.AUG.2009 14:39:20

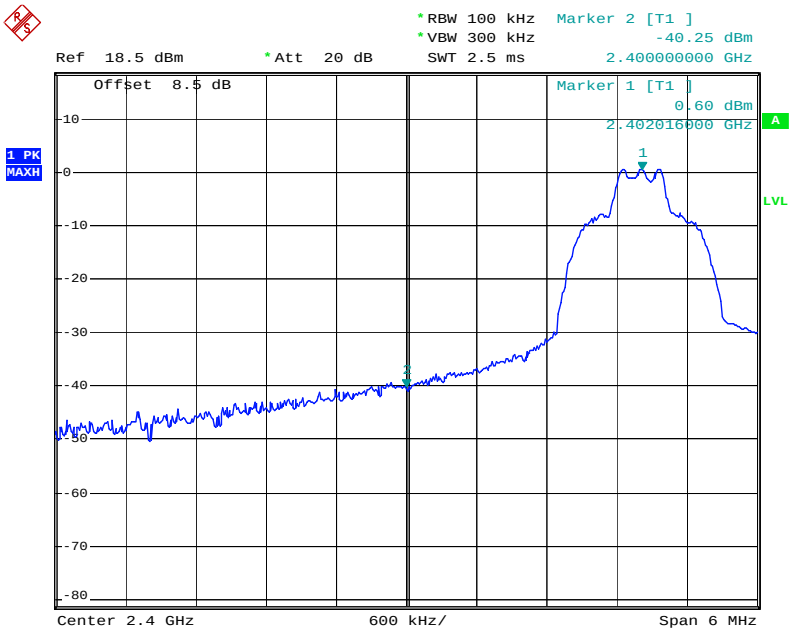
Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: π/4DQPSK

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

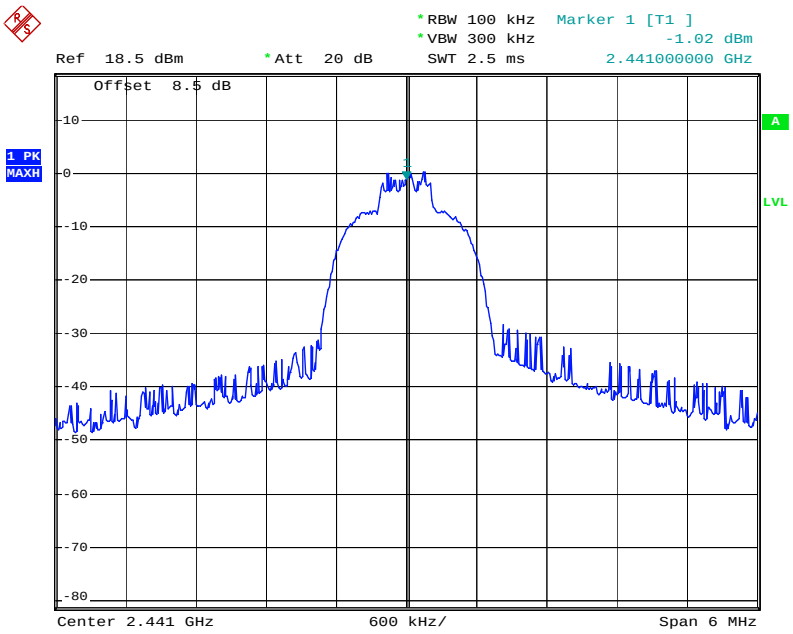
Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm	Delta to limit dB
2400	-40.25	0.60	-19.40	20.85

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

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm	Delta to limit dB
2483.5	-44.26	-0.30	-20.30	23.96

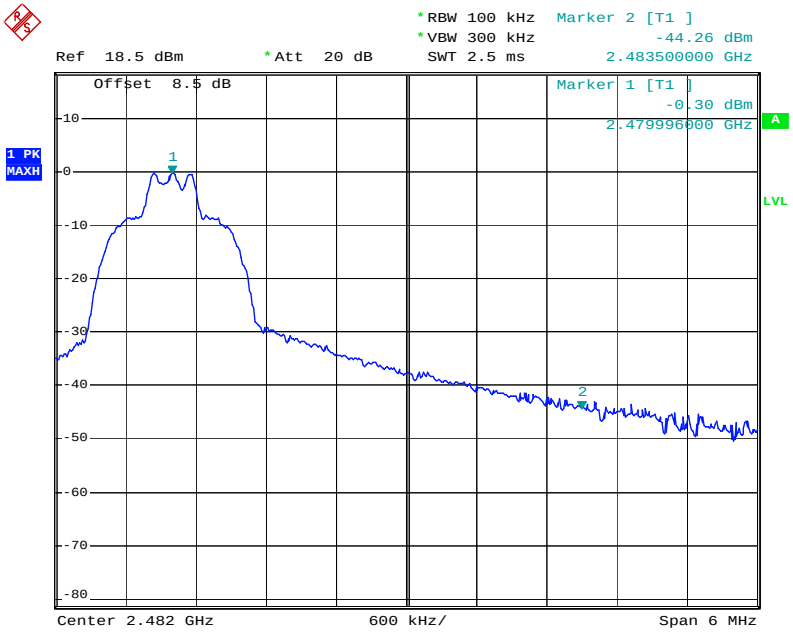


Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: 8DPSK



Date: 10.AUG.2009 14:29:06

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



Date: 10.AUG.2009 14:26:29

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

2.2.6 Dwell time-§15.247(a) (1)(iii)

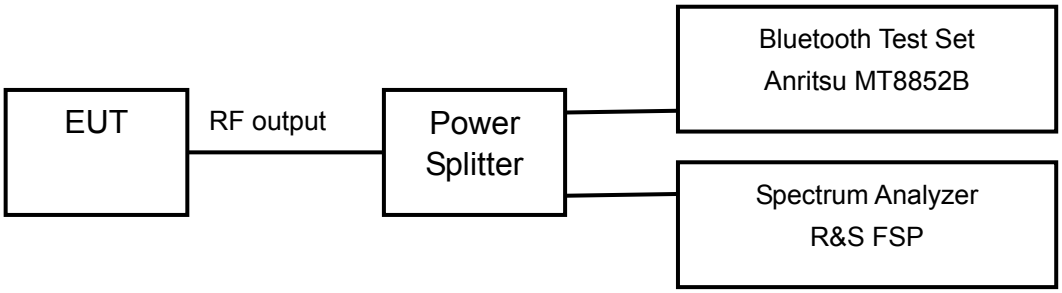
2.2.6.1 Ambient condition

Temperature	Relative humidity	Pressure
24°C	45%	101.2kPa

2.2.6.2 Test Description

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 * 1/s for DH1 packets =1600
- hop rate=1600/3 * 1/s for DH3 packets =533.33
- hop rate=1600/5 * 1/s for DH5 packets =320
- 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 Part 15, Subpart C, §15.247 (a) (1) (iii)

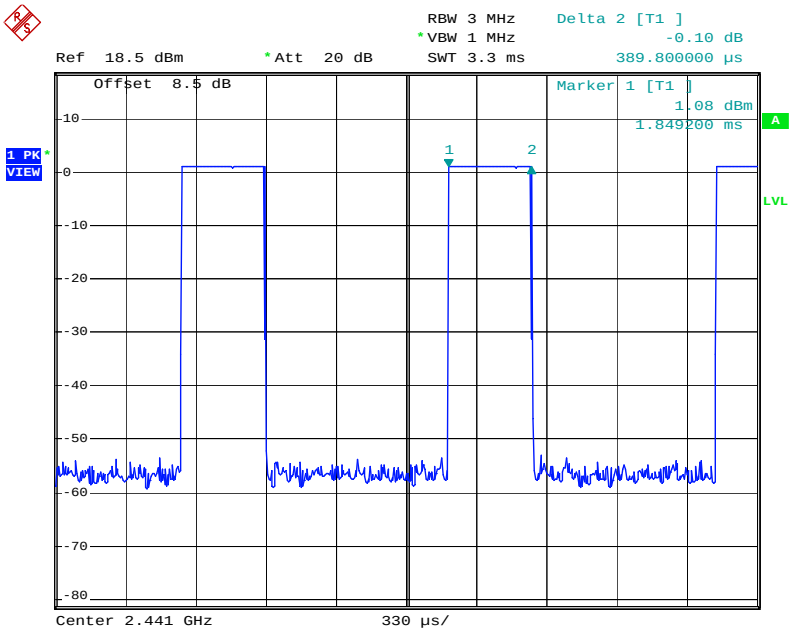
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

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

2.2.6.4 Test result

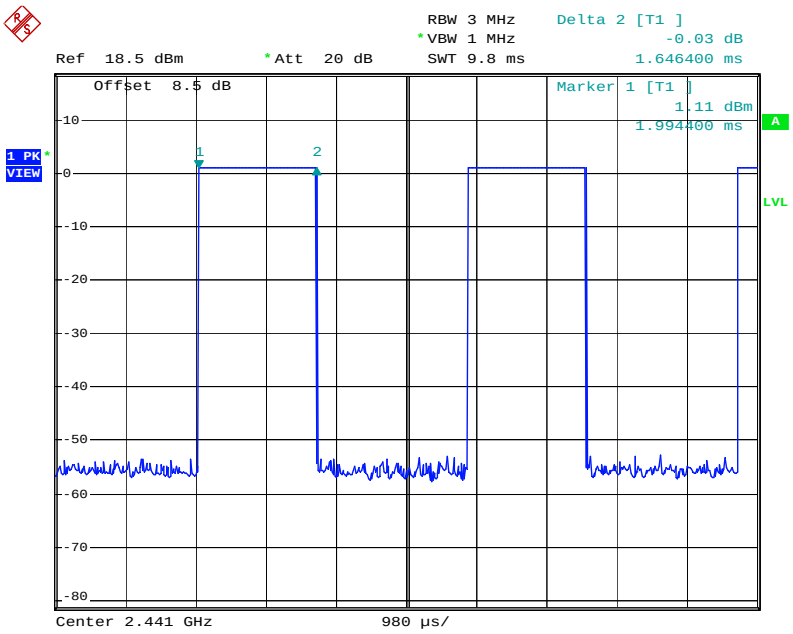
Modulation type: GFSK

Packet type	Time slot length ms	Dwell time	Dwell time ms
DH1	0.3898	time slot length * 1600* 31.6 /79	249.47
DH3	1.6464	time slot length * 31.6 *1600/3 /79	351.23
DH5	2.8738	time slot length * 31.6 *1600/5 /79	367.85



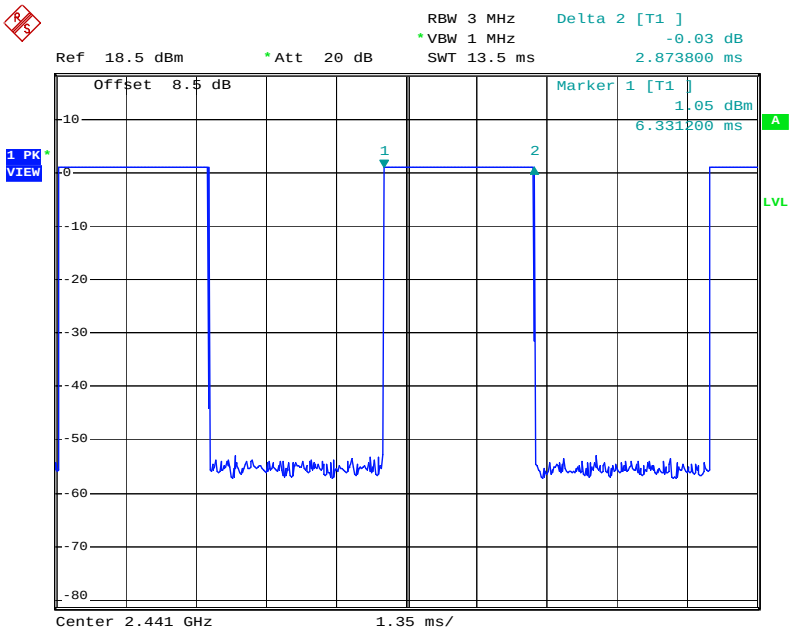
Date: 10.AUG.2009 15:01:52

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



Date: 10.AUG.2009 15:00:24

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

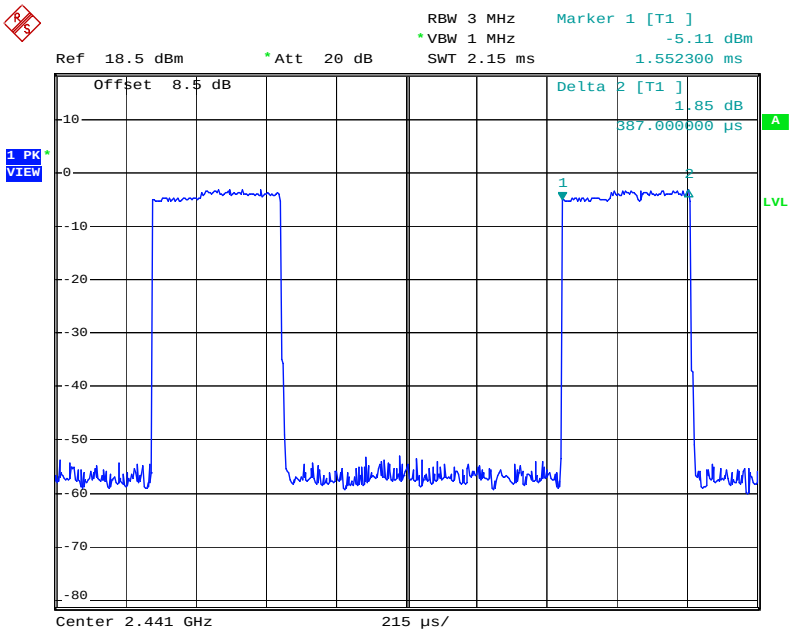


Date: 10.AUG.2009 15:03:18

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

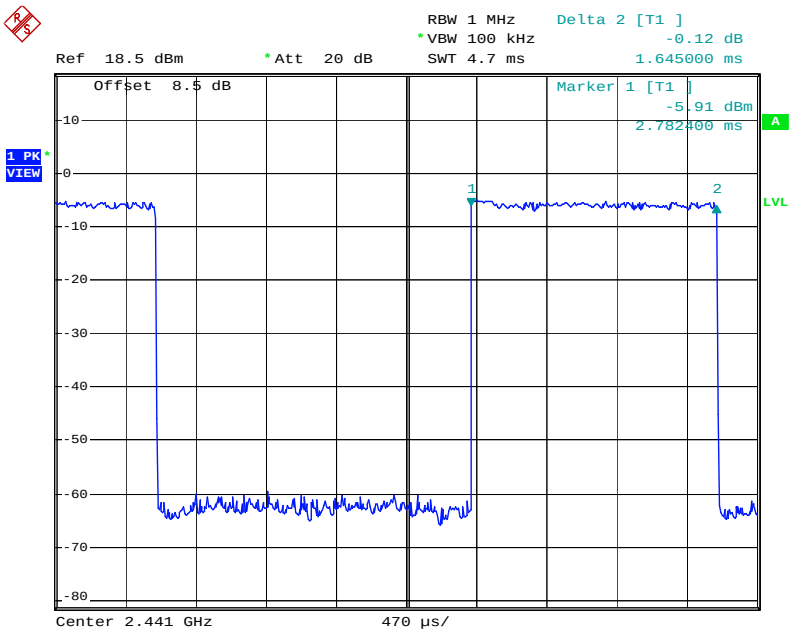
Modulation type: π/4DQPSK

Packet type	Time slot length ms	Dwell time	Dwell time ms
DH1	0.387	time slot length * 1600* 31.6 /79	247.68
DH3	1.645	time slot length * 31.6 *1600/3 /79	350.93
DH5	2.882	time slot length * 31.6 *1600/5 /79	368.90



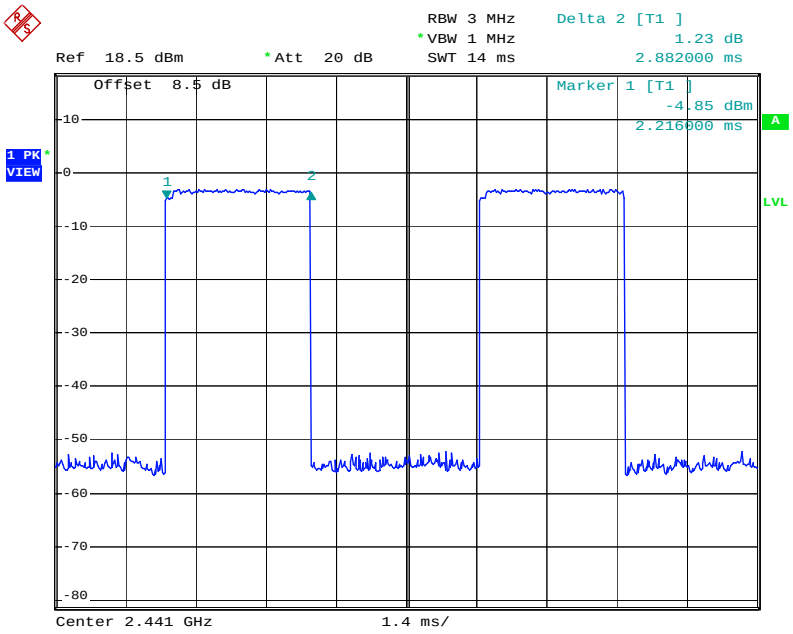
Date: 10.AUG.2009 15:08:18

Carrier frequency (MHz): 2441
Packet type: DH1
Modulation type: π/4DQPSK



Date: 10.AUG.2009 15:46:42

Carrier frequency (MHz): 2441
Packet type: DH3
Modulation type: π/4DQPSK

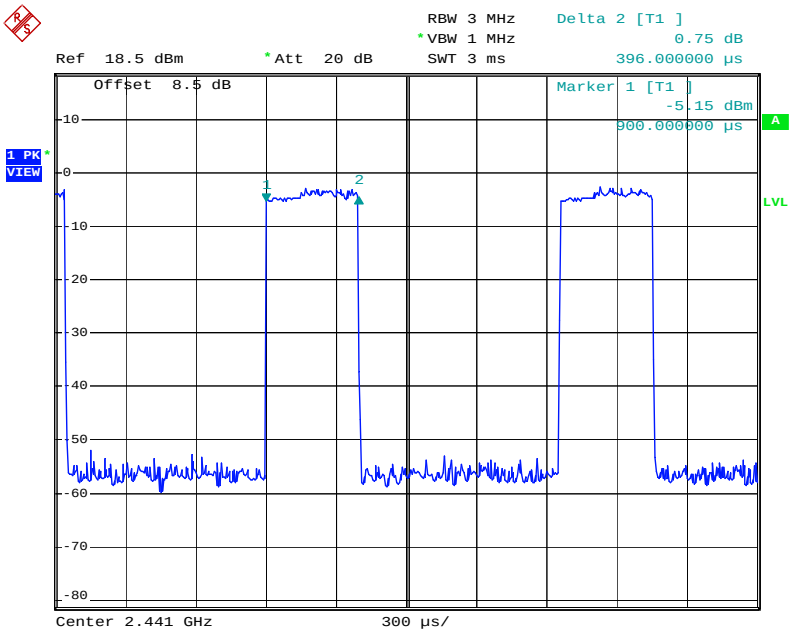


Date: 10.AUG.2009 15:11:11

Carrier frequency (MHz): 2441
Packet type: DH5
Modulation type: π/4DQPSK

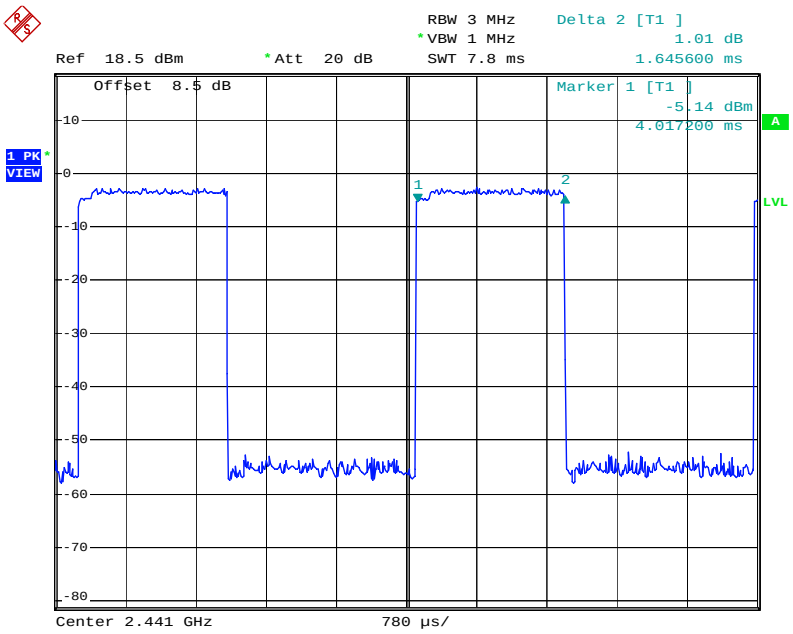
Modulation type: 8DPSK

Packet type	Time slot length ms	Dwell time	Dwell time ms
DH1	0.396	time slot length * 1600* 31.6 /79	253.44
DH3	1.6456	time slot length * 31.6 *1600/3 /79	351.06
DH5	2.882	time slot length * 31.6 *1600/5 /79	368.90



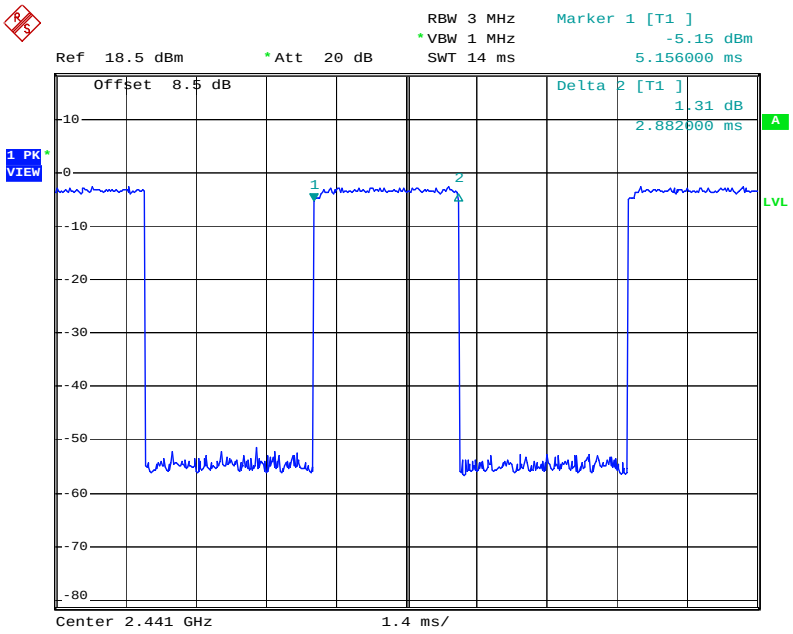
Date: 10.AUG.2009 15:15:27

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



Date: 10.AUG.2009 15:14:19

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



Date: 10.AUG.2009 15:12:54

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

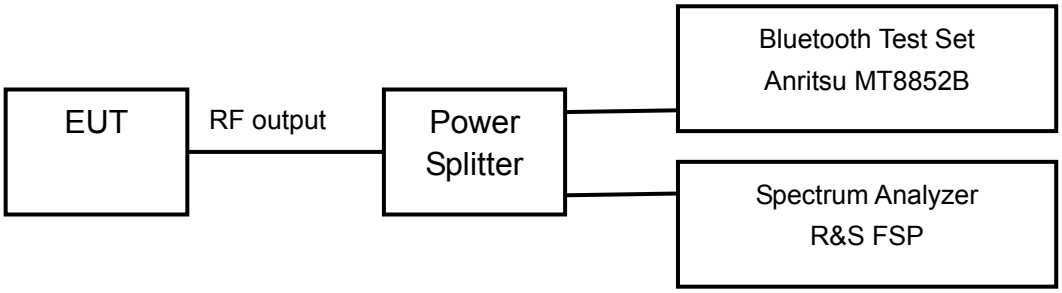
2.2.7 Channel separation-§15.247(a) (1)

2.2.7.1 Ambient condition

Temperature	Relative humidity	Pressure
24°C	45%	101.2kPa

2.2.7.2 Test Description

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



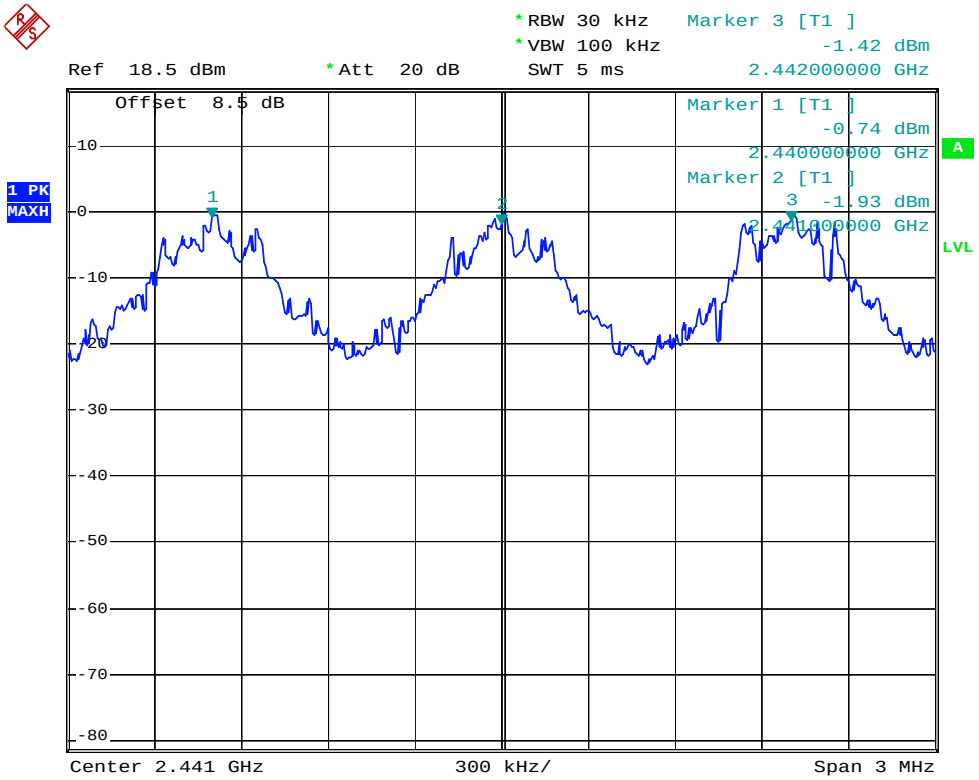
2.2.7.3 Test limit

FCC Part 15, Subpart C, §15.247 (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.

2.2.7.4 Test result

Carrier frequency MHz	Channel No.	Op-mode	Channel separation MHz
2441	39	Hopping mode	1



Date: 10.AUG.2009 15:19:51

Carrier frequency (MHz): 2441
Op-mode: Hopping mode

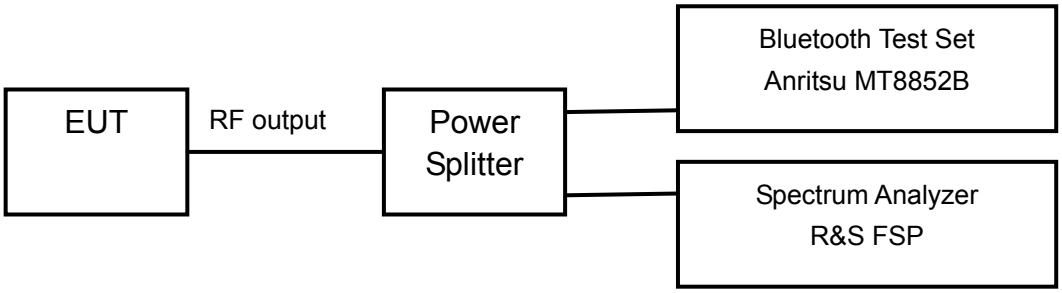
2.2.8 Number of hopping frequencies-§15.247(a) (iii)

2.2.8.1 Ambient condition

Temperature	Relative humidity	Pressure
24°C	45%	101.2kPa

2.2.8.2 Test Description

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

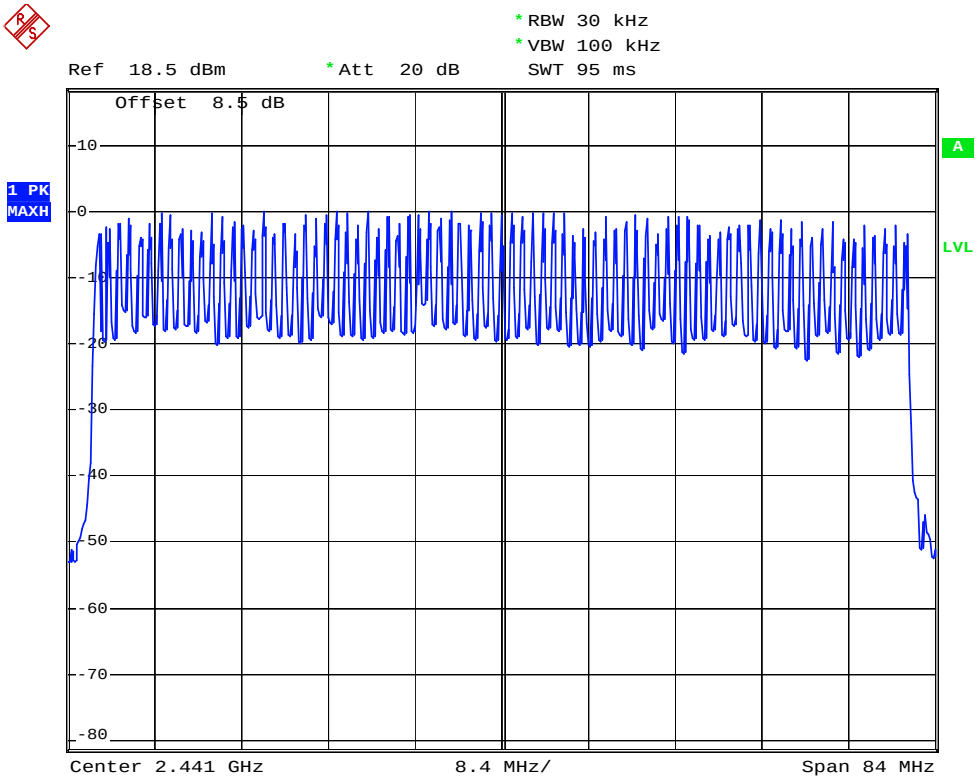


2.2.8.3 Test limit

FCC Part 15, Subpart C, §15.247 (a) (iii)
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

2.2.8.4 Test result

Carrier frequency MHz	Channel No.	Op-mode	Result
2441	39	Hopping mode	Pass



Date: 10.AUG.2009 15:38:20

Carrier frequency (MHz): 2441
Op-mode: Hopping mode

2.3. List of test equipment

No.	Name/Model	Manufacturer	S/N	Calibration Due Date
1	Bluetooth Test Set Anritsu MT8852B	Anritsu	6K 00005827	19th Aug. 2009
2	R&S FSP Spectrum Analyzer	R&S	100118	19th Aug. 2009
3	1506A Power Splitter	Weinschel	MN154	19th Aug. 2009
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	19th Aug. 2009
5	ESI 40 EMI test receiver	R&S	100015	19th Aug. 2009
6	SMR 20 Signal generator	R&S	100086	19th Aug. 2009
7	CMU 200 Radio tester	R&S	100313	19th Aug. 2009
8	12.65m*8.03m*7.50m Fully-Anechoic Chamber	FRANKONIA	-----	19th Aug. 2009
9	HL562 Ultra log test antenna	R&S	100016	19th Aug. 2009
10	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	19th Aug. 2009
11	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	19th Aug. 2009
12	PS2000 Turn Table	FRANKONIA	-----	19th Aug. 2009
13	MA260 Antenna Master	FRANKONIA	-----	19th Aug. 2009
14	ES-K1EMI test software	R&S	-----	-----
15	HL562 Receive antenna	R&S	100167	19th Aug. 2009