SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

588 West Jindu Road,Songjiang District,Shanghai,China

Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5678
ee.shanghai@sgs.com

FCC Part 15C TEST REPORT

Application No. :	SHEM12110012706RF
Applicant:	ANDON HEALTH Co., Ltd.
FCC ID:	ZRYMB3
Equipment Under Test (EUT): **NOTE:** The following sample(s) submitted was/were identified on behalf of the client as	
Product Name:	BodyRhythm
Brand Name:	iMusic
Model:	MB3
Added Model:	N/A
Standards:	FCC PART 15 Subpart C: 2011
Date of Receipt:	November 29, 2012
Date of Test:	December 04, 2012 to December 08, 2012
Date of Issue:	December 11, 2012
Test Result :	**PASS ***

*In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Tony Wu

E&E Section Manager

SGS-CSTC (Shanghai) Co., Ltd.

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01	/	December 11, 2012	/	Original

Authorized for issue by:				
Engineer		Zenger Zhang **Print Name**		Zenger Zhang **Date: Dec. 08, 2012**
Clerk		Amy Wang **Print Name**		Amy Wang **Date: Dec. 11, 2012**
Reviewer		Jim Xu **Print Name**		Jim Xu **Date: Dec. 11, 2012**

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	FCC Part 15, Subpart C Section 15.203/15.247 (c)	---	PASS
AC Power Line Conducted Emission	FCC Part 15, Subpart C Section 15.207	ANSI C63.10 (2009) Section 6.2	PASS
20dB Occupied Bandwidth	FCC Part 15, Subpart C Section 15.247 (a)(1)	ANSI C63.10 (2009) Section 6.9.1	PASS
Conducted Peak Output Power	FCC Part 15, Subpart C Section 15.247 (b)(1)	ANSI C63.10 (2009) Section 6.10.1	PASS
Carrier Frequencies Separation	FCC Part 15, Subpart C Section 15.247 (a)(1)	ANSI C63.10 (2009) Section 7.7.2	PASS
Hopping Channel Number	FCC Part 15, Subpart C Section 15.247 (b)	ANSI C63.10 (2009) Section 7.7.3	PASS
Dwell Time	FCC Part 15, Subpart C Section 15.247 (a)(1)	ANSI C63.10 (2009) Section 7.7.4	PASS
RF Conducted Spurious Emissions	FCC Part 15, Subpart C Section 15.247(d)	ANSI C63.10 (2009) Section 7.7.10	PASS
Band-edge for RF Conducted Emissions	FCC Part 15, Subpart C Section 15.247(d)	ANSI C63.10 (2009) Section 7.7.10	PASS
Radiated Spurious emissions	FCC Part 15, Subpart C Section 15.209 and Section 15.205	ANSI C63.10 (2009) Section 6.12	PASS
Radiated Band-edge	FCC Part 15, Subpart C Section 15.205	ANSI C63.10 (2009) Section 6.5	PASS

Remark: N/A

4 Contents

5 General Information

5.1 Client Information

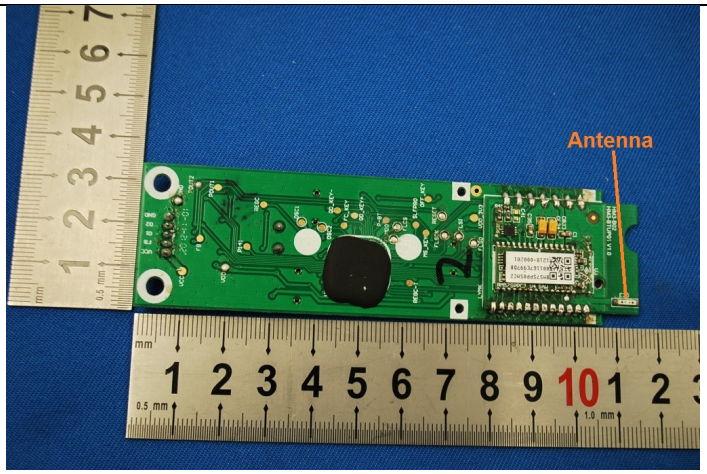
Applicant:	ANDON HEALTH Co., Ltd.
Address of Applicant:	No. 3 Jin Ping Street, Ya An Road, Nankai District, Tianjin 300190, China
Manufacturer:	ANDON HEALTH Co., Ltd.
Address of Manufacturer:	No. 3 Jin Ping Street, Ya An Road, Nankai District, Tianjin 300190, China
Factory:	ANDON HEALTH Co., Ltd.
Address of Factory:	No. 3 Jin Ping Street, Ya An Road, Nankai District, Tianjin 300190, China

5.2 General Description of E.U.T.

Product Name	BodyRhythm
Brand Name:	iMusic
Model No:	MB3
Added Model:	N/A
Rated Input:	120VAC/60Hz
Product Description:	This is a body massage device. It contains a BT modular.

5.3 Technical Specifications:

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	3.0+EDR
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channel:	79
Antenna Type	Internal antenna（Ceramic Chip Antenna）
Antenna Gain	2.45dBi

Antenna Location:	

5.4 Accessories of Product:

AC Cable	Manufacturer:	N/A	
	Model No.:	N/A	
	Rated Input:	AC 100V-240V	
	Cable Type:	AC port:	180cm Length (2 wires)

5.5 Support equipments for Testing

Description	Manufacturer	Model No.	Serial No.	Supplied By
iPhone	Apple	A1387	N/A	Client

Software name	Manufacturer	Supplied By
iMusic	N/A	Client

5.6 Details of Test Mode

Test Mode	Description of Test Mode
Normal operation mode:	Keep the EUT normal working mode.
BT operation mode:	Control the EUT rhythm by BT.
Continue Transmitting mode:	Keep the EUT on continue transmitting at a fixed frequency.
Remark: AC Power Line Conducted Emission at normal operational mode and BT operational mode and found the worst case, the test worst case mode is recorded in the report. Others test case was test at continue transmitting mode.	

5.7 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
No.588 West Jindu Road, Songjiang District, Shanghai, China.201612.

Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

5.8 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L0599)**

  CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2014-07-26.

- **FCC – Registration No.: 402683**

  SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2015-02-22.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

  The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2014-09-20.

- **VCCI (Member No.: 3061)**

  The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868 and C-4336 respectively. Date of Registration: 2012-05-29. Date of Expiry: 2015-05-28.

6 Equipments Used during Test

☒ **Conducted Emission**

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2012-04-13	2013-04-12
2	Line impedance stabilization network (LISN)	SCHWARZBECK	NSLK8127	8127-490	2012-03-15	2013-03-14
3	Line impedance stabilization network (LISN)	ETS	3816/2	00034161	2012-03-15	2013-03-14

☒ **Radiated Spurious Emission**

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2012-06-02	2013-06-01
2	Antenna	SCHWARZBECK	VULB9168	9168-313	2012-03-15	2013-03-14
3	CONTROLLER	INNCO	CO200	474	/	/
4	Antenna	SCHWARZBECK	BBHA9120D	9120D-679	2012-03-15	2013-03-14
5	Antenna	SCHWARZBECK	BBHA9170	9170-373	2012-03-15	2013-03-14
6	Low nosie amplifier	LNA6900	TESEQ	71033	2012-03-15	2013-03-14

☒ **RF Conducted Test**

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2012-06-03	2013-06-01
2	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-679	2012-06-03	2013-06-01
3	Horn Antenna	Rohde & Schwarz	HF906	100284	2012-06-03	2013-06-01
4	ANTENNA	SCHWARZBECK	VULB9168	9168-313	2012-06-03	2013-06-01
5	Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170373	2012-03-15	2013-03-14
6	Ultra broadband antenna	Rohde & Schwarz	HL562	100227	2012-10-09	2013-10-08
7	Atmosphere pressure meter	Shanghai ZhongXuan Electronic Co;Ltd	BY—2009P	--	2012-10-09	2013-10-08
8	CLAMP METER	FLUKE	316	86080010	2012-06-03	2013-06-01
9	Thermo-Hygrometer	ZHICHEN	ZC1-2	01050033	2012-10-09	2013-10-08

11	High-low temperature cabinet	Shanghai YuanZhen	GW2050	--	2012-06-03	2013-06-01
12	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT1800.0/ 2000.0-0.2/40-5SSK	11	2012-06-03	2013-06-01
13	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT800.0/ 880.0-0.2/40-5SSK	9	2012-06-03	2013-06-01
14	High pass Filter	FSCW	HP 12/2800-5AA2	19A45-02	2012-06-03	2013-06-01
15	Low nosie amplifier	TESEQ	LNA6900	70133	2012-06-03	2013-06-01
16	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2012-06-03	2013-06-01
17	Line impedance stabilization network	SCHWARZBECK	NSLK8127	8127-490	2012-06-03	2013-06-01

7 Test Results

7.1 E.U.T. test conditions

Test Power: 120V/60Hz AC

Requirements: 15.31(e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

Operating Environment:

Temperature: 20.0 -25.0 °C

Humidity: 35-75 % RH

Atmospheric Pressure: 992 -1020 mbar

Test frequencies: According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and. if required. reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top. 1 near middle and 1 near bottom

Pursuant to Part 15.31(c) For swept frequency equipment, measurements shall be made with the frequency sweep stopped at those frequencies chosen for the measurements to be reported.

Test frequency is the lowest channel: 0 channel (2402MHz), middle channel: 39 channel (2441MHz) and highest channel: 78 channel (2480MHz) with fixed at channel.

7.2 Antenna Requirement

Standard requirement

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna

The antenna is integrated on the main PCB and no consideration of replacement. The gain of the antenna is less than 2.45 dBi.

7.3 Conducted Emissions on Mains Terminals

Test Requirement: FCC Part 15C, Section 15.207

Test Method: ANSI C63.10:2009 Section 6.2

Test Date: December 04, 2012

Test Result: Pass

Test Voltage: AC 120V 60Hz

Frequency Range: 150 KHz to 30 MHz

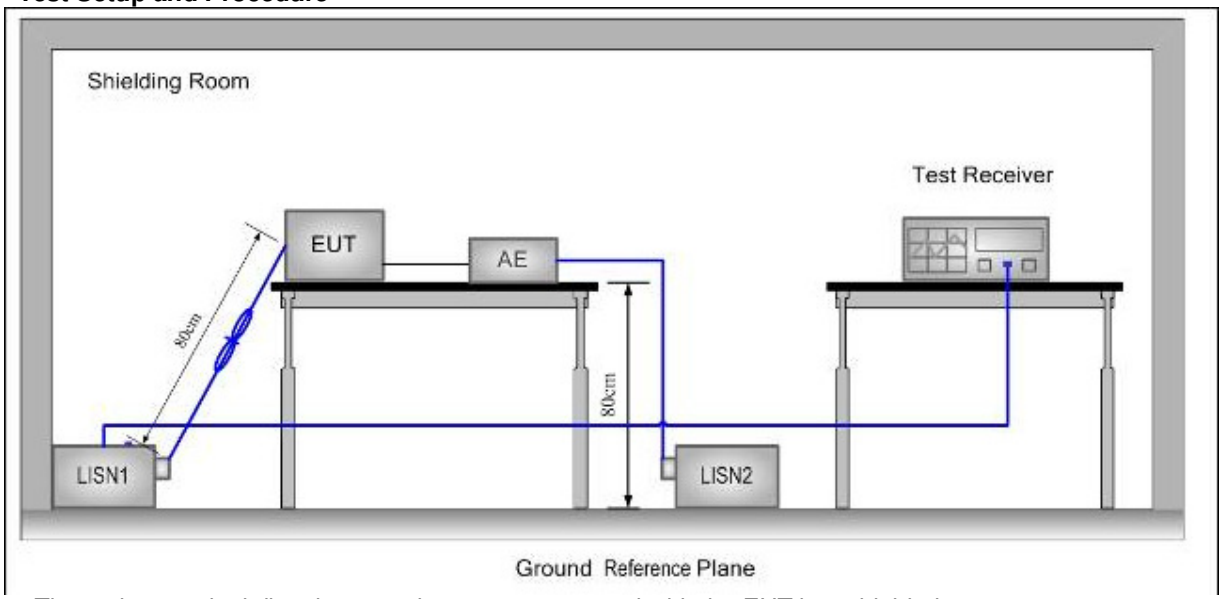
Class/Severity: Class B

Test mode: Normal operational mode and BT operational mode.

Limit:

Frequency range MHz	Class B Limits dB (μV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note1: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz. Note2: The lower limit is applicable at the transition frequency.		

Test Setup and Procedure



1. The mains terminal disturbance voltage was measured with the EUT in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT was connected to a second LISN, which was bonded to the ground reference plane in the same way as the LISN for the unit being measured. A multiple socket outlet strip was used to connect multiple power

cables to a single LISN provided the rating of the LISN was not exceeded

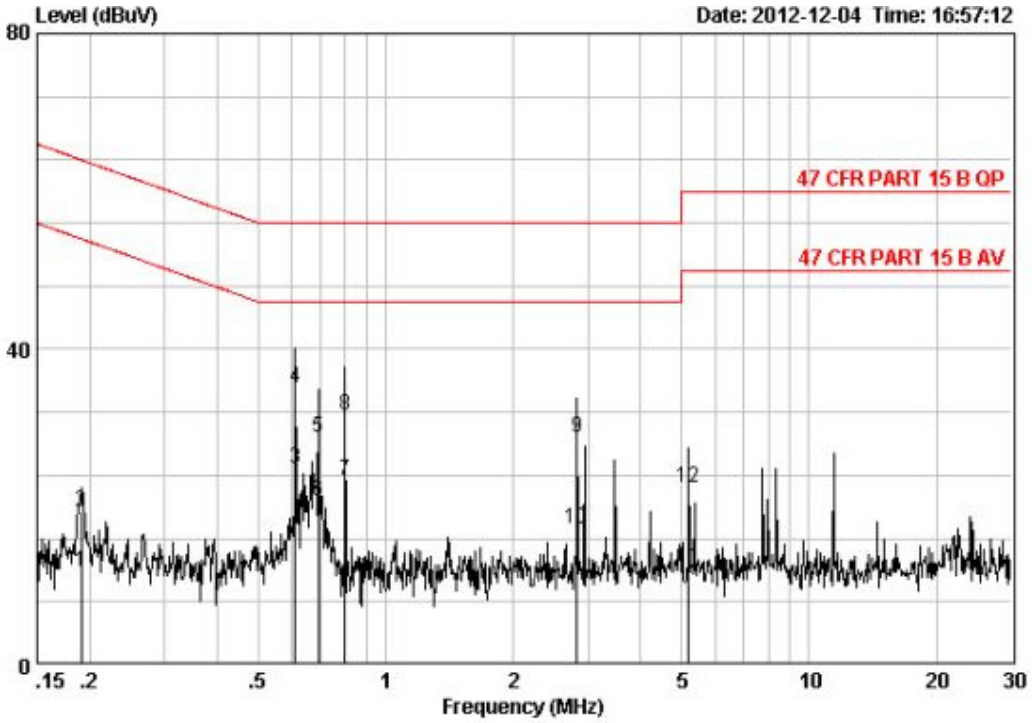
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance was between the closest points of the LISN and the EUT. The mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m. All other units of the EUT and associated equipment was at least 0,8 m from the LISN.

Measurement Data

Pre-scan was performed with peak detected on all ports, Quasi-peak & average measurements were performed at the frequencies at which maximum peak emission level were detected.
Please see the attached Quasi-peak and Average test results.

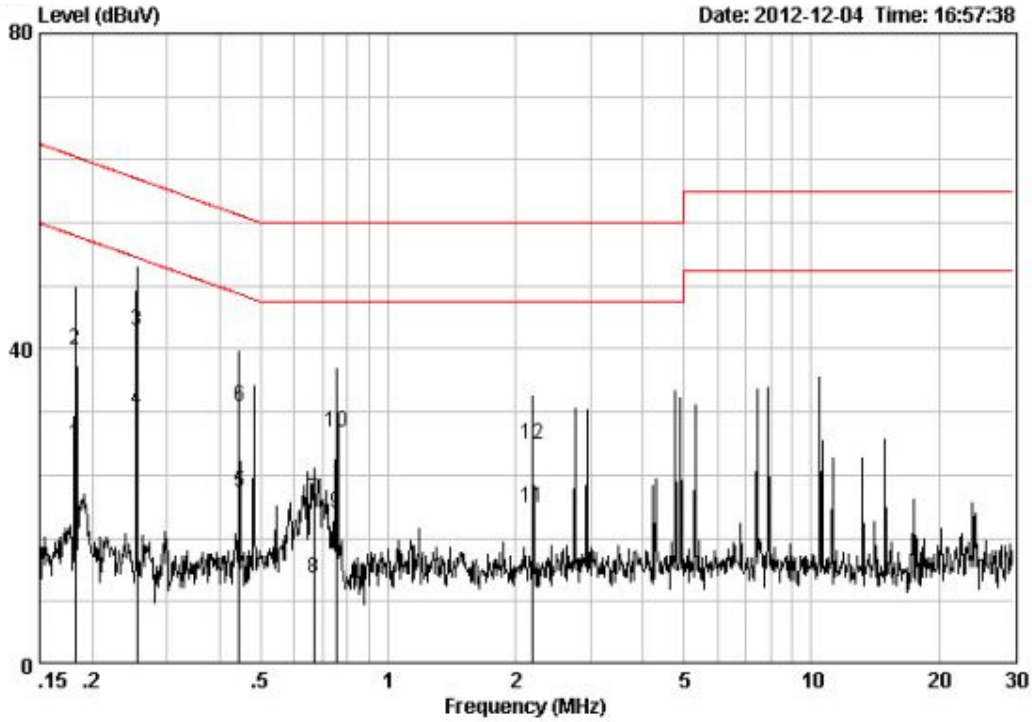
Level = Read Level + LISN/ISN Factor + Cable Loss.

Test Mode: BT operational mode **Test Port:** AC Live Line



Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
MHz	dB	dB	dBuV	dBuV	dBuV	dB	
0.19039	0.02	9.70	2.12	11.84	54.02	-42.18	Average
0.19039	0.02	9.70	9.63	19.35	64.02	-44.67	QP
0.61075	0.02	9.80	15.08	24.90	46.00	-21.10	Average
0.61075	0.02	9.80	25.37	35.19	56.00	-20.81	QP
0.69357	0.02	9.80	19.01	28.83	56.00	-27.17	QP
0.69357	0.02	9.80	10.92	20.74	46.00	-25.26	Average
0.80023	0.02	9.80	13.46	23.28	46.00	-22.72	Average
0.80023	0.02	9.80	21.88	31.70	56.00	-24.30	QP
2.824	0.02	9.84	18.83	28.68	56.00	-27.32	QP
2.824	0.02	9.84	7.45	17.31	46.00	-28.69	Average
5.194	0.01	9.90	2.22	12.13	50.00	-37.87	Average
5.194	0.01	9.90	12.47	22.38	60.00	-37.62	QP

Test Mode: BT operational mode **Test Port:** AC Neutral Line



Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
MHz	dB	dB	dBuV	dBuV	dBuV	dB	
0.18249	0.02	9.70	18.26	27.98	54.37	-26.39	Average
0.18249	0.02	9.70	30.13	39.85	64.37	-24.52	QP
0.25480	0.02	9.70	32.58	42.29	61.60	-19.31	QP
0.25480	0.02	9.70	22.58	32.30	51.60	-19.30	Average
0.44443	0.01	9.80	12.02	21.83	46.98	-25.15	Average
0.44443	0.01	9.80	22.94	32.75	56.98	-24.23	QP
0.66832	0.02	9.80	11.21	21.03	56.00	-34.97	QP
0.66832	0.02	9.80	1.08	10.90	46.00	-35.10	Average
0.75493	0.02	9.80	9.46	19.28	46.00	-26.72	Average
0.75493	0.02	9.80	19.66	29.48	56.00	-26.52	QP
2.201	0.02	9.81	9.97	19.80	46.00	-26.20	Average
2.201	0.02	9.81	18.07	27.90	56.00	-28.10	QP

7.4 20dB Occupied Bandwidth

Test Requirement: FCC Part 15 C Section 15.247 (a)(1)

Test Method: ANSI C63.10:2009 Clause 6.9.1

Test Date: December 08, 2012

Exploratory Test Mode: Non-hopping transmitting with all kind of modulation and all kind of data type

Final Test Mode: Through Pre-scan, find the DH1 of date type is the worse case of GFSK modulation type, 2-DH1 of date type is worse case of π/4DQPSK modulation type, 3-DH1 of date type is worse case of 8DPSK modulation type.

Test Procedure:

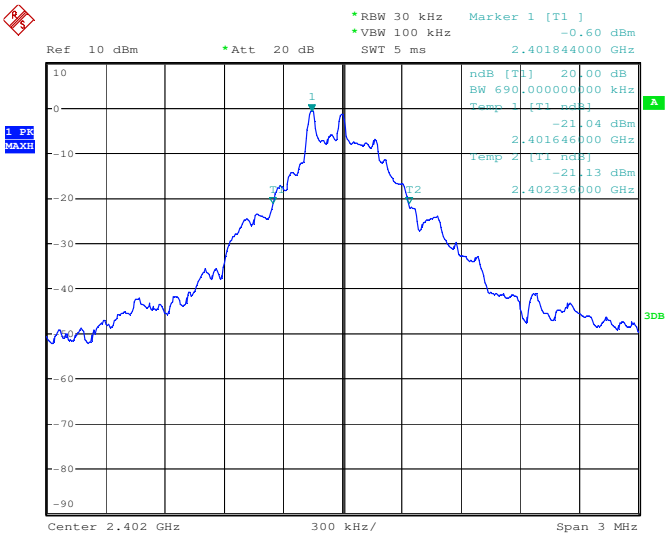
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: Span = approximately 2 to 3 times the 20dB bandwidth, centered on the hopping channel;
3. Set the spectrum analyzer: RBW >= 1% of the 20dB bandwidth (set 30 kHz). VBW >= RBW. Sweep = auto; Detector Function = Peak. Trace = Max Hold.
4. Mark the peak frequency and -20dB points.

Test date

Test Channel	Channel Frequency (MHz)	Modulation	Bandwidth(MHz)
Low	2402	GFSK	0.690
Middle	2441	GFSK	0.684
High	2480	GFSK	0.684
Low	2402	π/4DQPSK	1.248
Middle	2441	π/4DQPSK	1.218
High	2480	π/4DQPSK	1.260
Low	2402	8DPSK	1.236
Middle	2441	8DPSK	1.230
High	2480	8DPSK	1.230

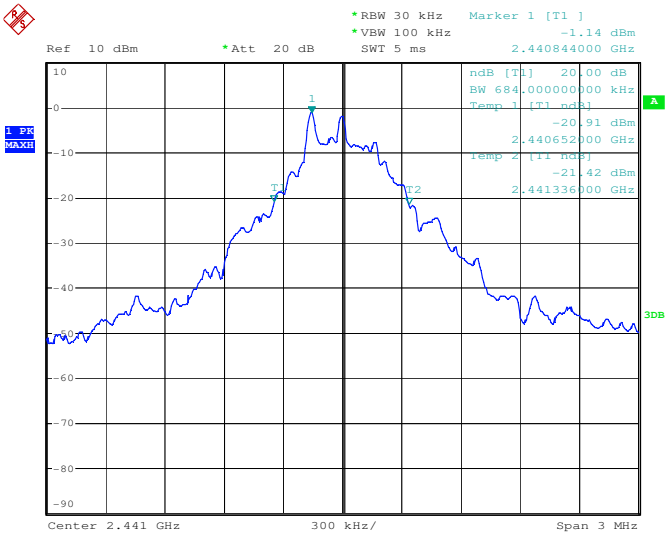
Test plot as follows:

Test mode:	GFSK	Test channel:	Lowest



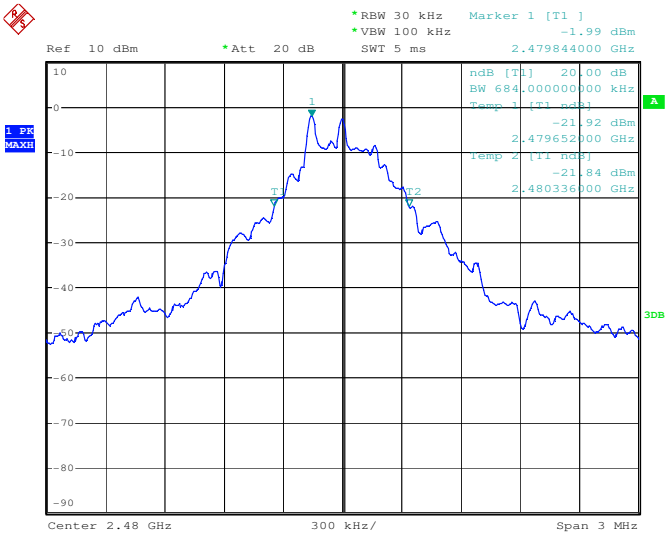
Date: 8.DEC.2012 10:12:01

Test mode:	GFSK	Test channel:	Middle

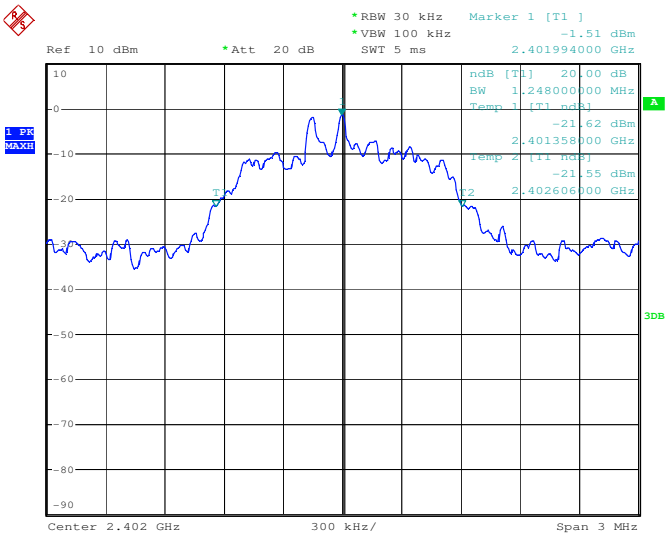


Date: 8.DEC.2012 10:16:09

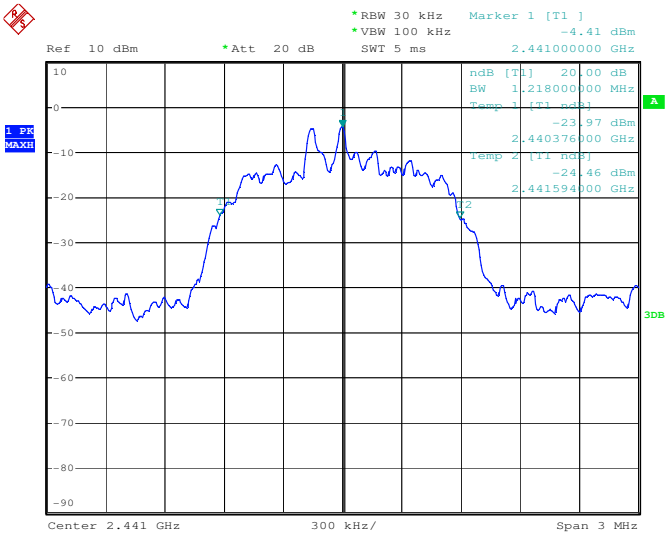
Test mode:	GFSK	Test channel:	Highest



Test mode:	π/4DQPSK	Test channel:	Lowest

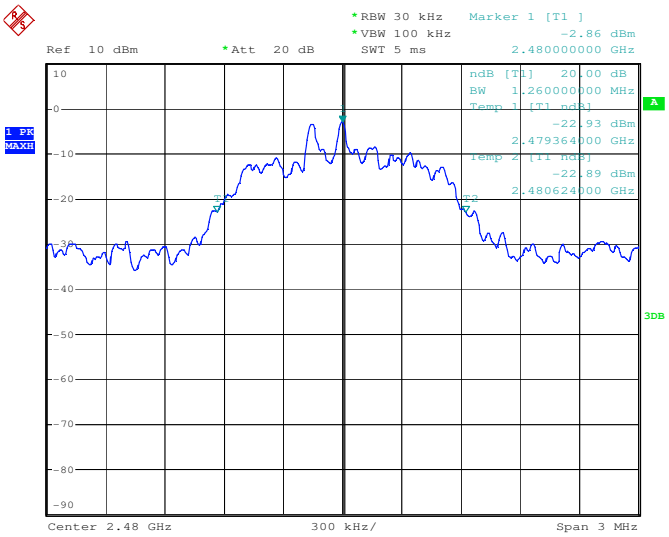


Test mode:	π/4DQPSK	Test channel:	Middle



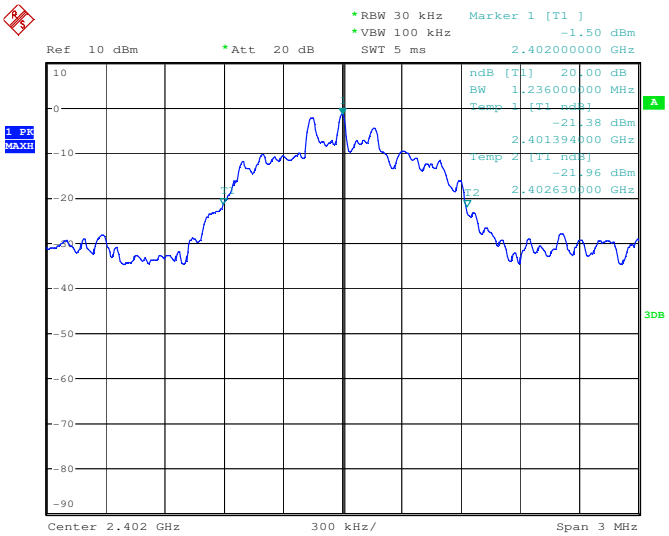
Date: 8.DEC.2012 10:17:39

Test mode:	π/4DQPSK	Test channel:	Highest



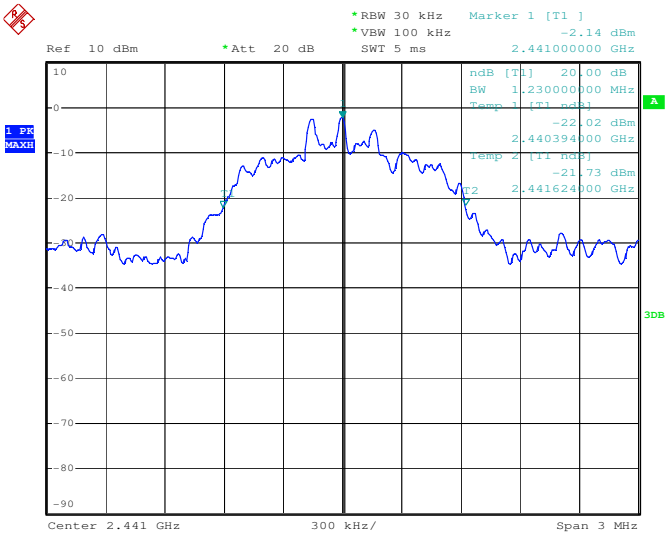
Date: 8.DEC.2012 10:26:23

Test mode:	8DPSK	Test channel:	Lowest



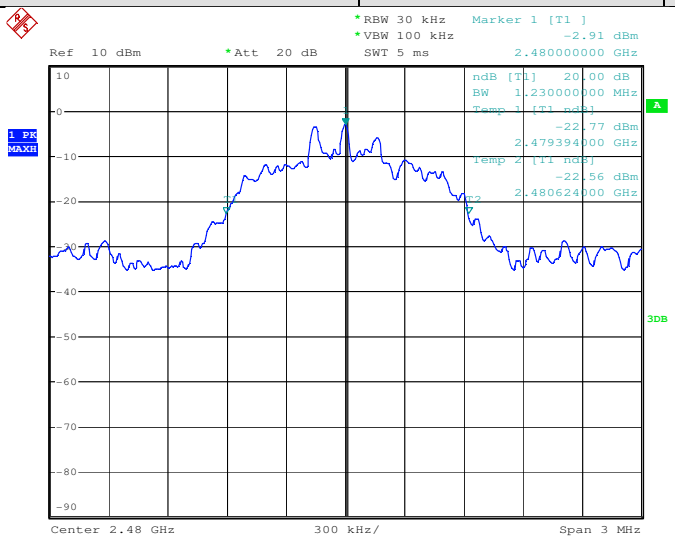
Date: 8.DEC.2012 10:13:44

Test mode:	8DPSK	Test channel:	Middle



Date: 8.DEC.2012 10:19:11

Test mode:	8DPSK	Test channel:	Highest



Date: 8.DEC.2012 10:27:09

7.5 Conducted Peak Output Power

Test Requirement: FCC Part 15.247 Section 15.247(b)(1)

Test Method: ANSI C64.10:2009 Section 6.10.1

Test Date: December 08, 2012

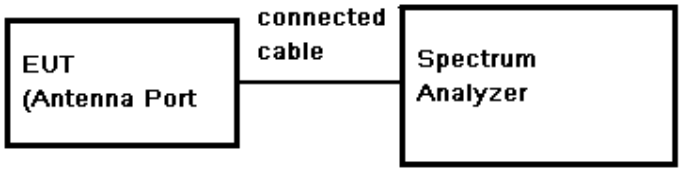
Test Result: Pass

Test Limit: Regulation 15.247 (b)(1)For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
Refer to the result "Hopping channel number" of this document. The 0.125 watt (20.0dBm) limit applies.

Exploratory Test Mode: Non-hopping transmitting with all kind of modulation and all kind of data type

Final Test Mode: Through Pre-scan, find the DH1 of date type is the worse case of GFSK modulation type, 2-DH1 of date type is worse case of π/4DQPSK modulation type, 3-DH1 of date type is worse case of 8DPSK modulation type.

Test Configuration:



Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 3 MHz. VBW = 3 MHz. Sweep = auto; Detector Function = Peak.
3. Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

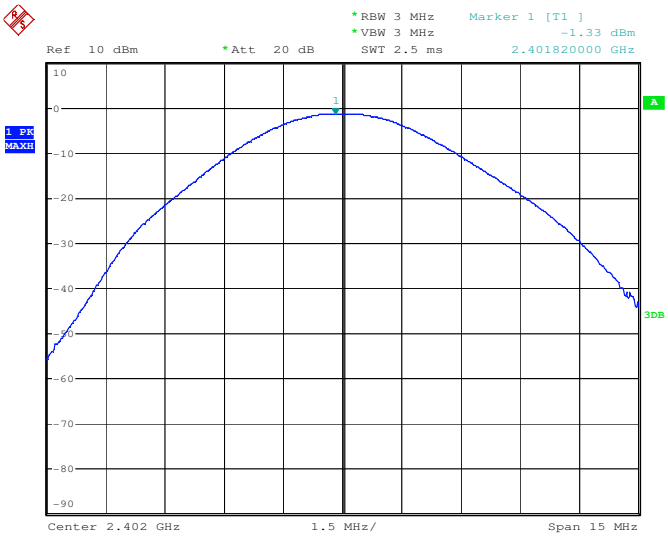
Test Results record:

Test Channel	Modulation	Fundamental Frequency (MHz)	Reading Power (dBm)	Cable Loss (dB)	Output Power		Limit (dBm)	Margin (dB)
					(dBm)	(mW)		
Lowest	GFSK	2402	-1.33	0.6	-0.73	0.845	20	20.73
Middle	GFSK	2441	-1.78	0.6	-1.18	0.762	20	21.18
Highest	GFSK	2480	-2.63	0.6	-2.03	0.627	20	22.03

Lowest	π/4DQPSK	2402	-1.34	0.6	-0.74	0.843	20	20.74
Middle	π/4DQPSK	2441	-1.79	0.6	-1.19	0.760	20	21.19
Highest	π/4DQPSK	2480	-2.65	0.6	-2.05	0.623	20	22.05
Lowest	8DPSK	2402	-1.37	0.6	-0.77	0.838	20	20.77
Middle	8DPSK	2441	-1.84	0.6	-1.24	0.752	20	21.24
Highest	8DPSK	2480	-2.65	0.6	-2.05	0.624	20	22.05

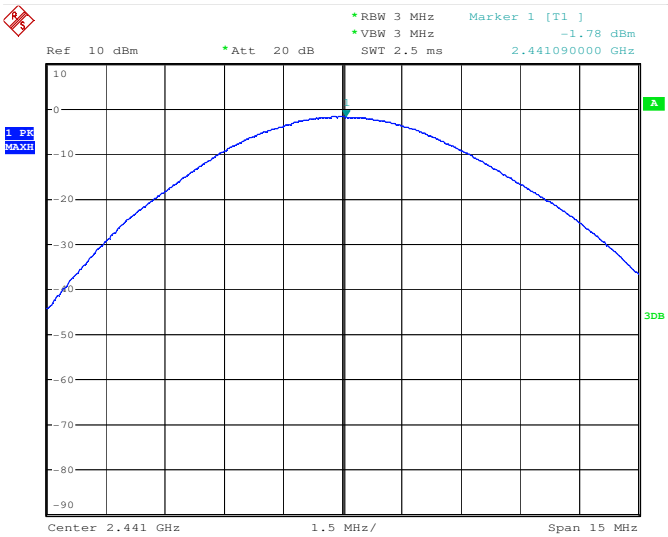
Test result plot as follows:

Test mode:	GFSK	Test channel:	Lowest



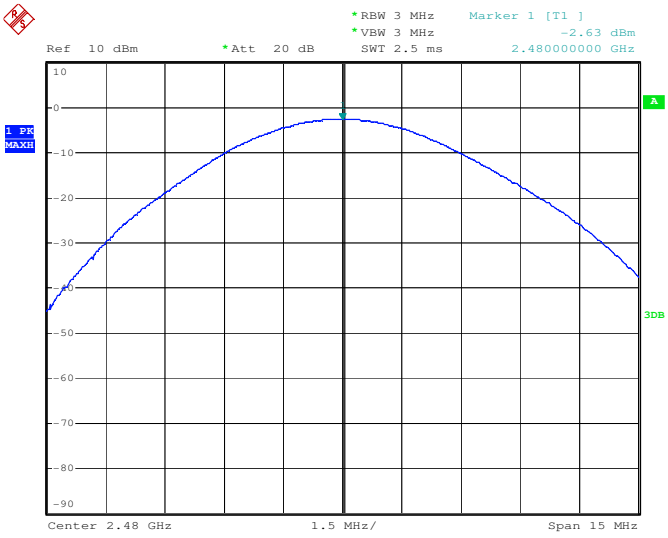
Date: 8.DEC.2012 13:26:31

Test mode:	GFSK	Test channel:	Middle



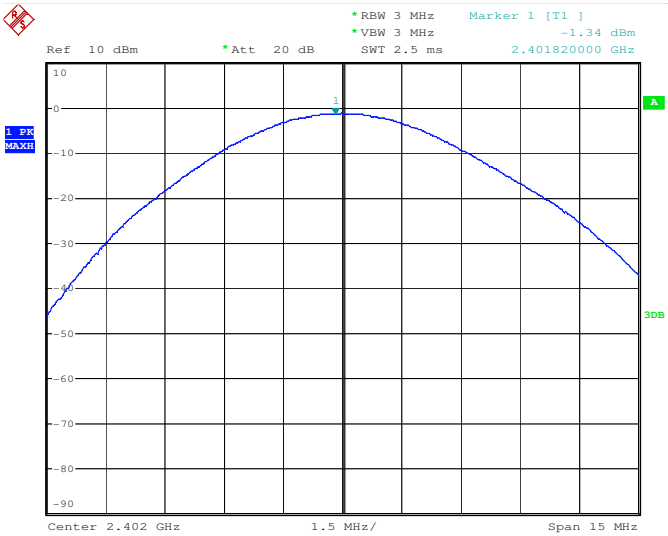
Date: 8.DEC.2012 13:30:46

Test mode:	GFSK	Test channel:	Highest



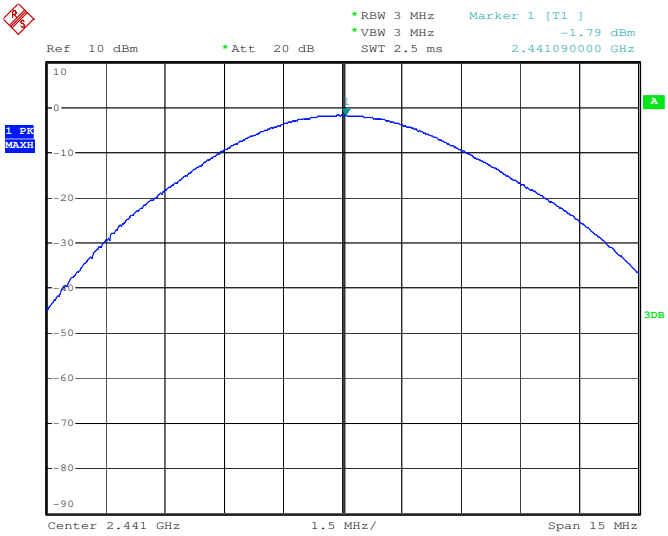
Date: 8.DEC.2012 13:37:00

Test mode:	π/4DQPSK	Test channel:	Lowest



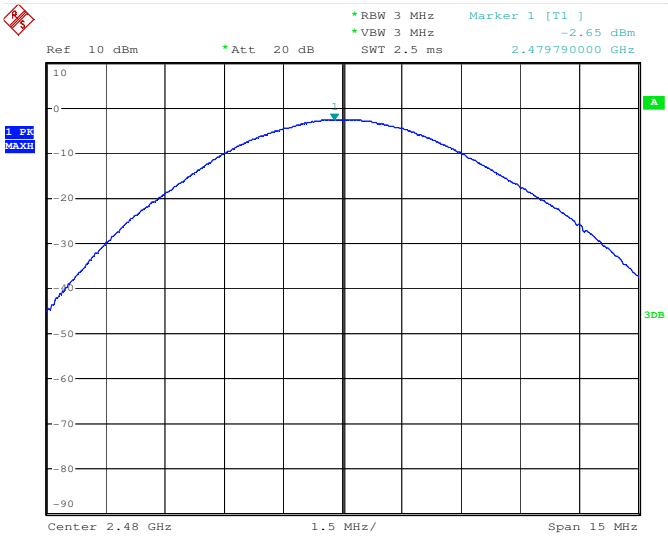
Date: 8.DEC.2012 13:28:41

Test mode:	π/4DQPSK	Test channel:	Middle



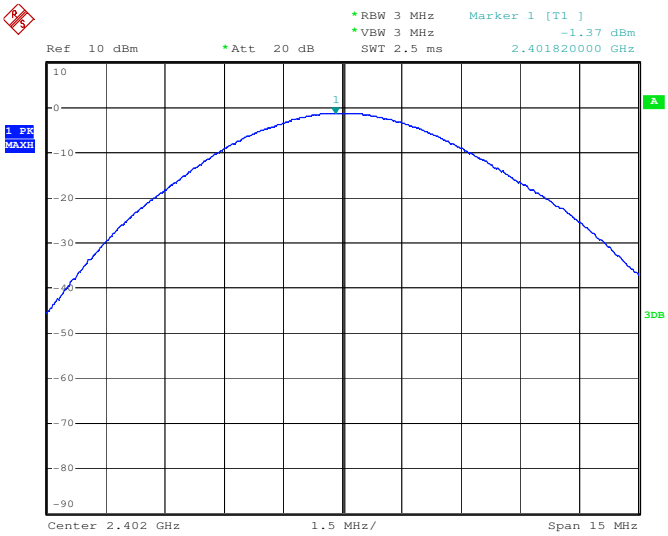
Date: 8.DEC.2012 13:29:41

Test mode:	π/4DQPSK	Test channel:	Highest



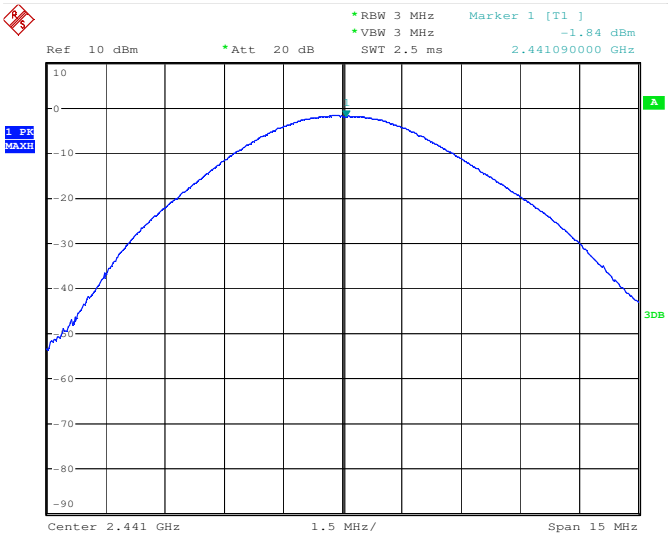
Date: 8.DEC.2012 13:35:55

Test mode:	8DPSK	Test channel:	Lowest



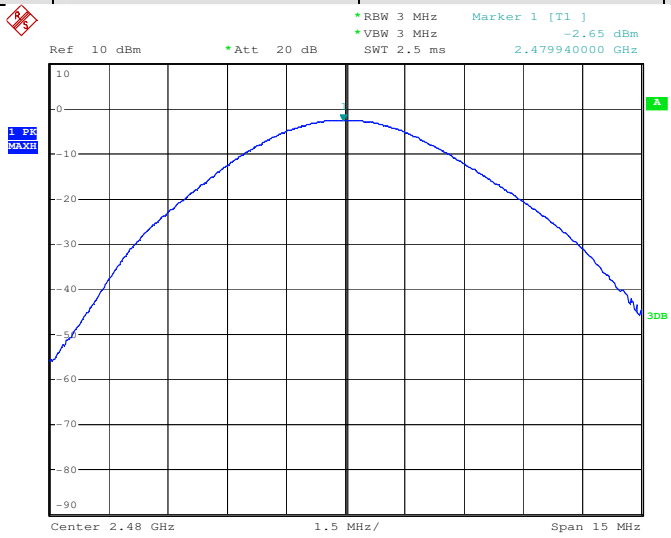
Date: 8.DEC.2012 13:27:48

Test mode:	8DPSK	Test channel:	Middle



Date: 8.DEC.2012 13:32:00

Test mode:	8DPSK	Test channel:	Highest



Date: 8.DEC.2012 13:34:46

7.6 Carrier Frequencies Separated

Test Requirement: FCC Part 15 C Section 15.247 (a)(1)

Test Method: ANSI C63.10:2009 Clause 7.7.2

Test Date: December 08, 2012

Limit: 0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)

Test result: Pass

Exploratory Test Mode: Hopping transmitting with all kind of modulation and all kind of data type

Final Test Mode: Through Pre-scan, find the DH1 of date type is the worse case of GFSK modulation type, 2-DH1 of date type is worse case of π/4DQPSK modulation type, 3-DH1 of date type is worse case of 8DPSK modulation type.

Test Procedure:

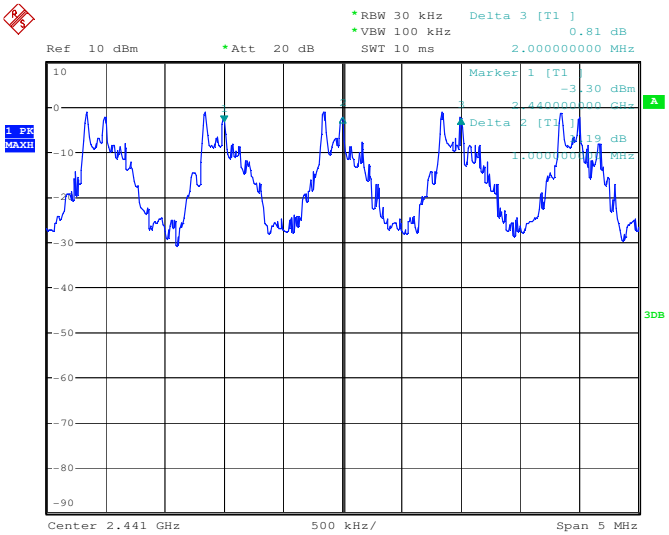
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW >= 1% of the span (set 30 kHz). VBW >= RBW , Span = 3MHz. Sweep = auto; Detector Function = Peak. Trace = Max,hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot.

Test Channel	Modulation	Carrier Frequencies Separated	Limit (25kHz or two-thirds of the 20 dB bandwidth)	Results
Middle Channels (channel 39 and channel 40)	GFSK	1MHz	25kHz/456kHz	PASS
Middle Channels (channel 39 and channel 40)	π/4DQPSK	1MHz	25kHz/840kHz	PASS
Middle Channels (channel 39 and channel 40)	8DPSK	1MHz	25kHz/820kHz	PASS

Note: 20dB bandwidth reference Section 7.5

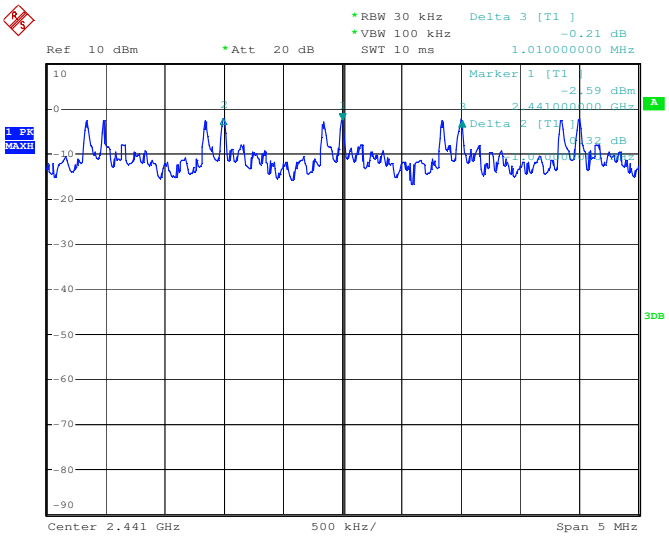
Test plot as follows:

Test mode:	GFSK	Test channel:	Middle



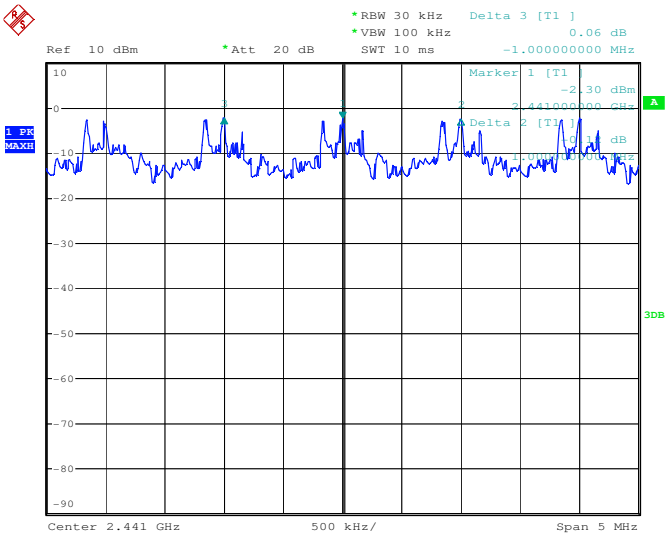
Date: 8.DEC.2012 11:19:39

Test mode:	π/4DQPSK	Test channel:	Middle



Date: 8.DEC.2012 11:31:44

Test mode:	8DPSK	Test channel:	Middle



Date: 8.DEC.2012 11:42:13

7.7 Hopping Channel Number

Test Requirement: FCC Part15 C Section 15.247(b)

Test Method: ANSI C63.10:2009 Clause 7.7.3

Test Date: December. 08, 2012

Limit: At least 15 channels

Test Result: Pass

Test Mode: Hopping transmitting with all kind of modulation

Test Procedure:

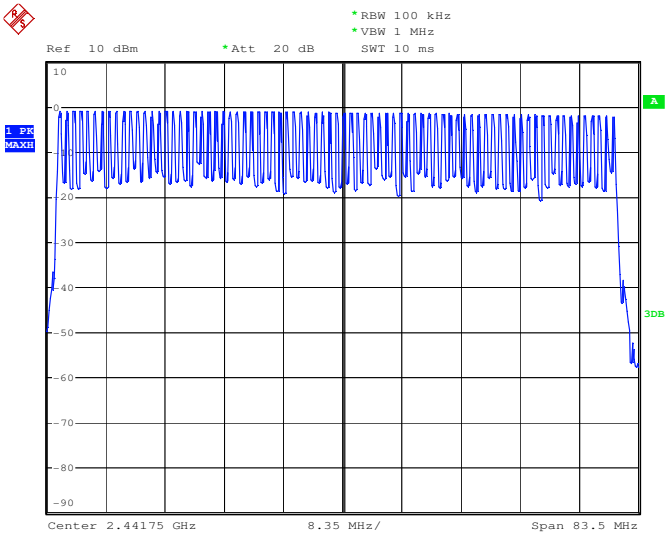
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 100 kHz. VBW = 300 kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. It may prove necessary to break the span up to sections. in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section.
4. Set the spectrum analyzer: start frequency = 2400MHz. stop frequency = 2483.5MHz. Submit the test result graph.

Measurement Data

Mode	Hopping channel numbers	Limit	Results
GFSK	79	≥15	Pass
π/4DQPSK	79	≥15	Pass
8DPSK	79	≥15	Pass

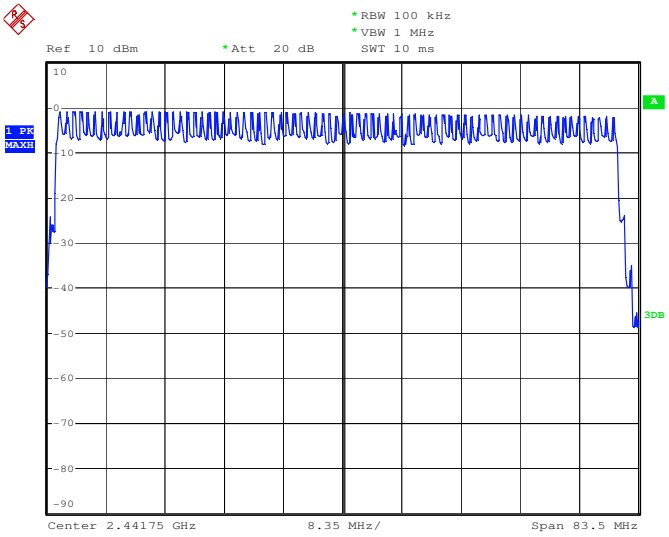
Test plot as follows:

Test mode:	GFSK



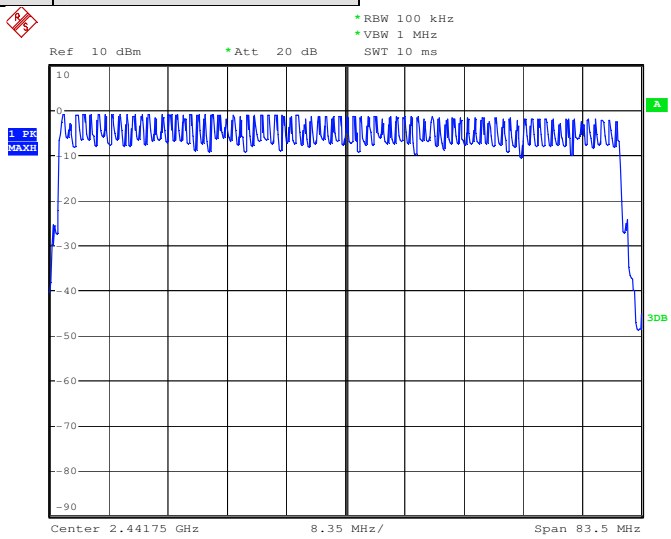
Date: 8.DEC.2012 12:16:04

Test mode:	π/4DQPSK



Date: 8.DEC.2012 12:07:56

Test mode:	8DPSK



Date: 8.DEC.2012 12:10:57

7.8 Dwell Time

Test Requirement: FCC Part 15 C Section 15.247(a)(1)

Test Method: ANSI C63.10:2009 Clause 7.7.4

Test Date: December 08, 2012

Limit: Regulation 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. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Test Status: Hopping transmitting with all kind of modulation.

Test Result: Pass

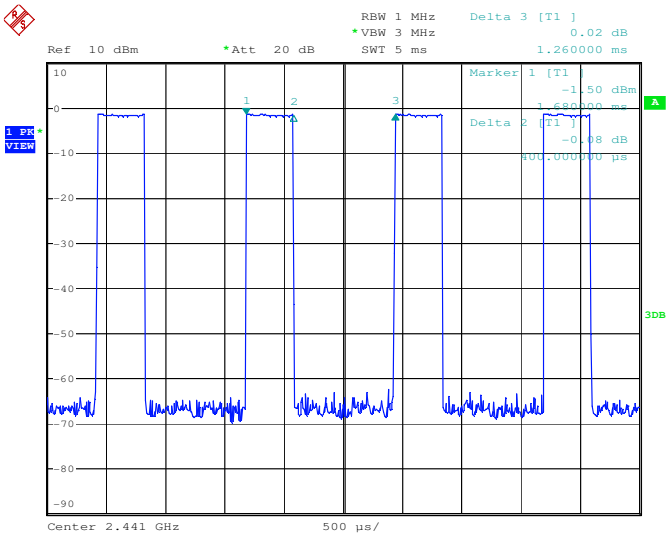
Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set spectrum analyzer span = 0. centered on a hopping channel;
3. Use Emission width / No. of Hopping Channels in 31.6s to determine the dwell time.

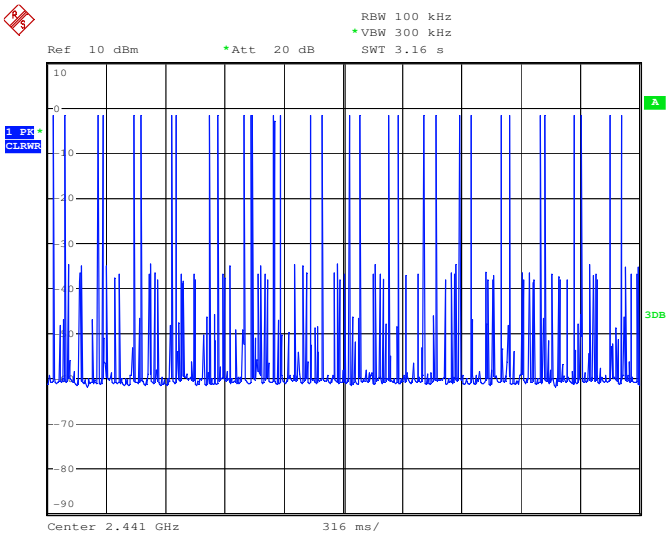
Frequency (MHz)	Modulation	Packet	Emission Width (ms)	Number of Hopping Channel in 31.6s	Average Time of Occupancy(s)	Limit(s)	Result
2441	GFSK	DH1	0.40	320	0.128	0.4	Pass
		DH3	1.66	200	0.332	0.4	Pass
		DH5	2.92	120	0.350	0.4	Pass
2441	π/4DQPSK	2DH1	0.40	300	0.120	0.4	Pass
		2DH3	1.67	180	0.301	0.4	Pass
		2DH5	2.93	130	0.381	0.4	Pass
2441	8DPSK	3DH1	0.41	330	0.135	0.4	Pass
		3DH3	1.65	160	0.264	0.4	Pass
		3DH5	2.93	120	0.352	0.4	Pass

Test plot as follows::

Frequency 2441MHz: Modulation: GFSK-DH1

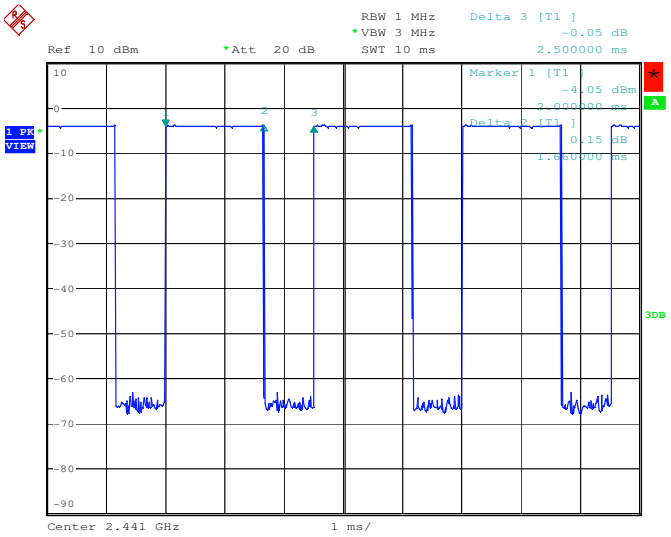


Date: 8.DEC.2012 12:34:48

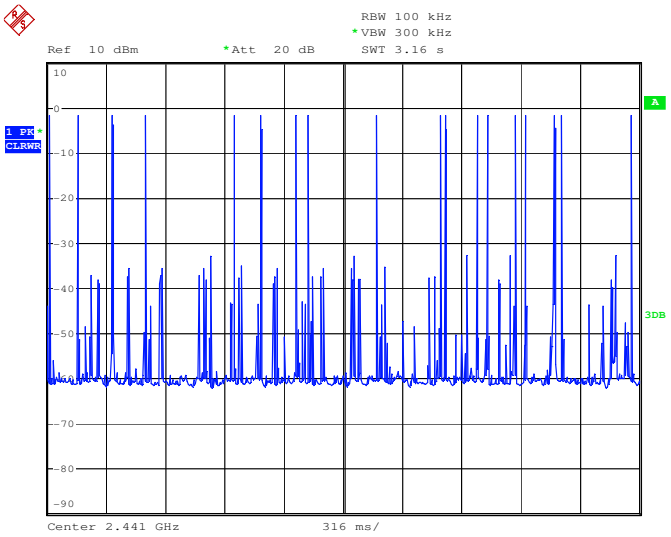


Date: 8.DEC.2012 13:14:06

Frequency 2441MHz: Modulation: GFSK- DH3

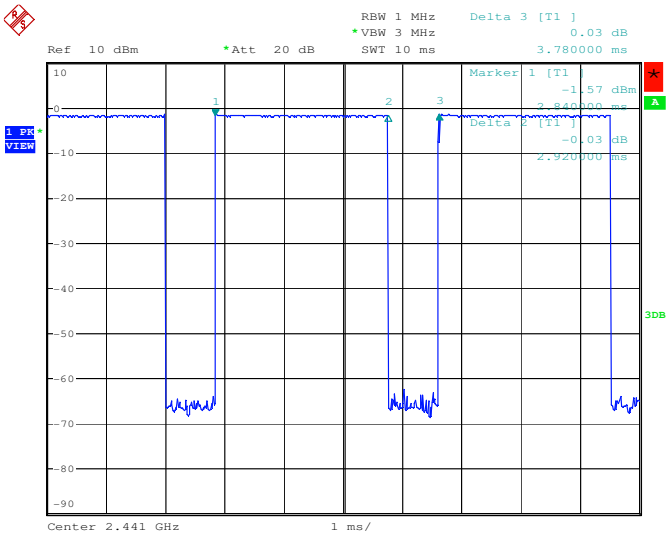


Date: 8.DEC.2012 12:37:18

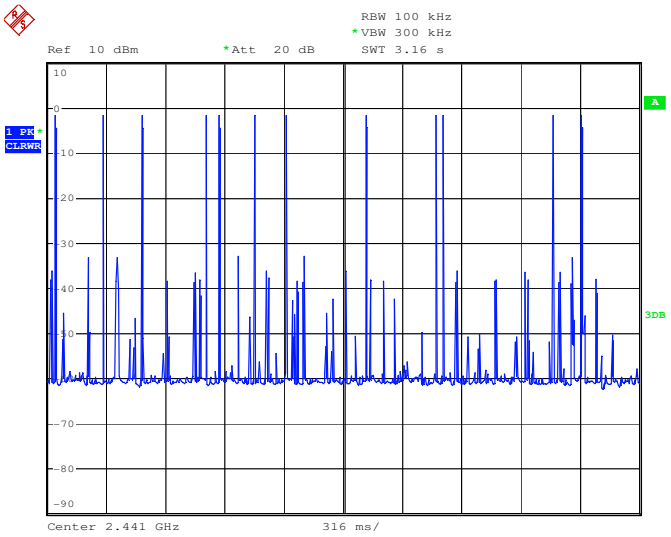


Date: 8.DEC.2012 13:14:49

Frequency 2441MHz: Modulation: GFSK- DH5

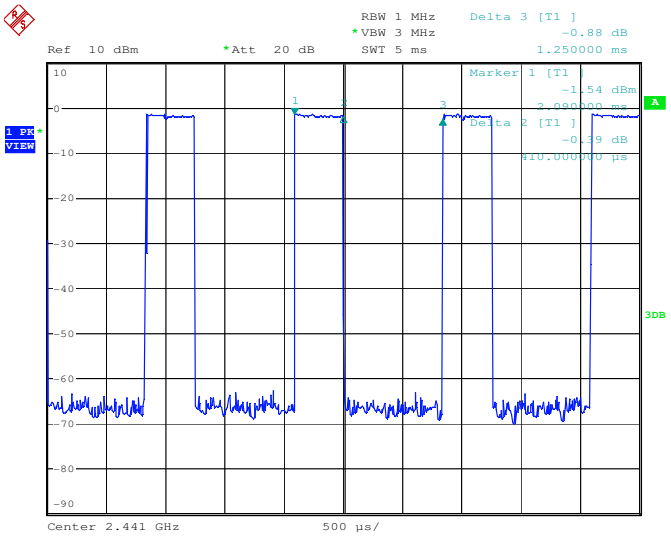


Date: 8.DEC.2012 12:38:20

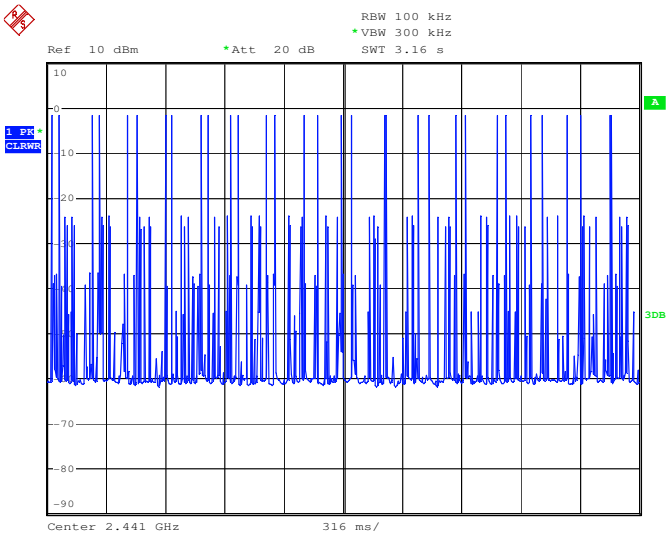


Date: 8.DEC.2012 13:16:13

Frequency 2441MHz: Modulation: π/4DQPSK-2DH1

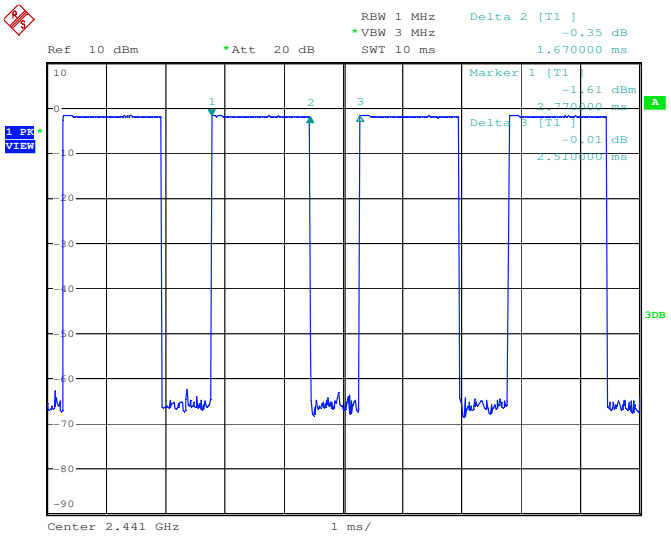


Date: 8.DEC.2012 12:39:22

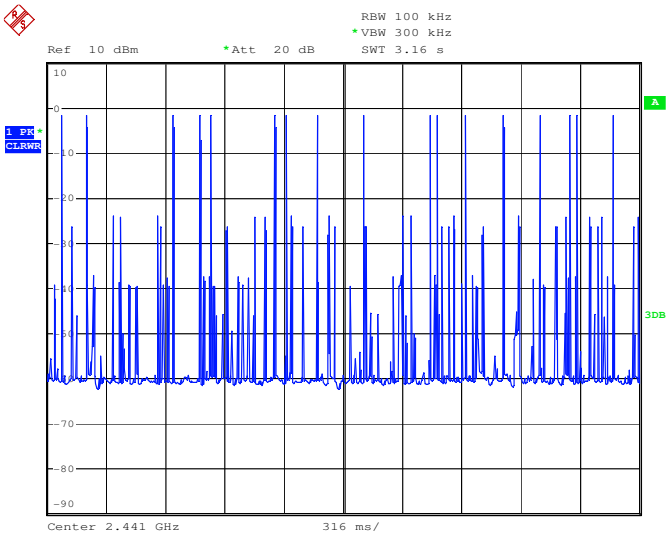


Date: 8.DEC.2012 13:13:17

Frequency 2441MHz: Modulation: π/4DQPSK-2DH3

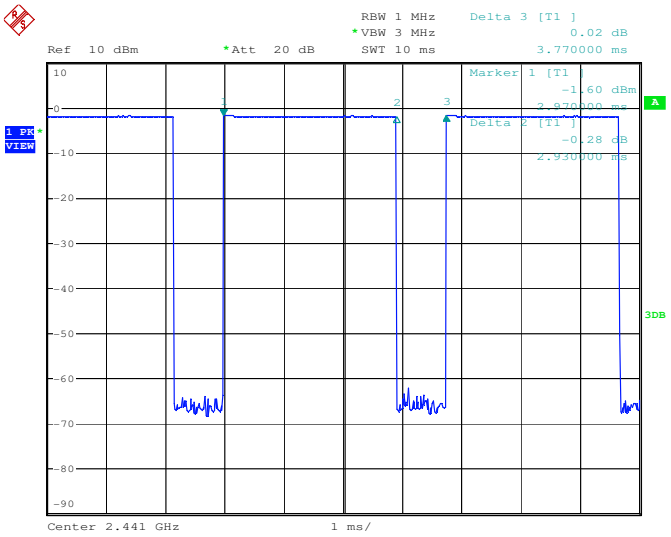


Date: 8.DEC.2012 12:40:30

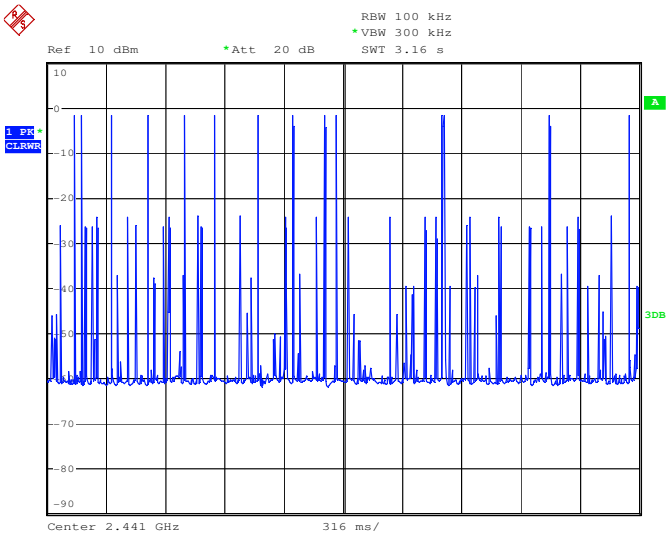


Date: 8.DEC.2012 13:16:51

Frequency 2441MHz: Modulation: π/4DQPSK-2DH5

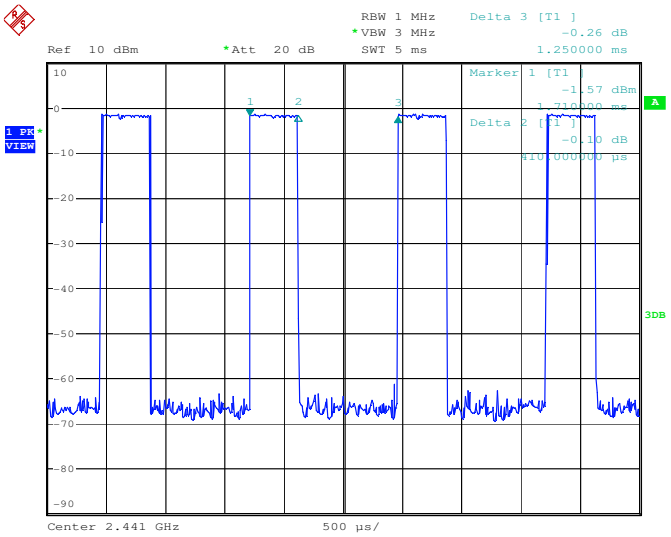


Date: 8.DEC.2012 12:41:21

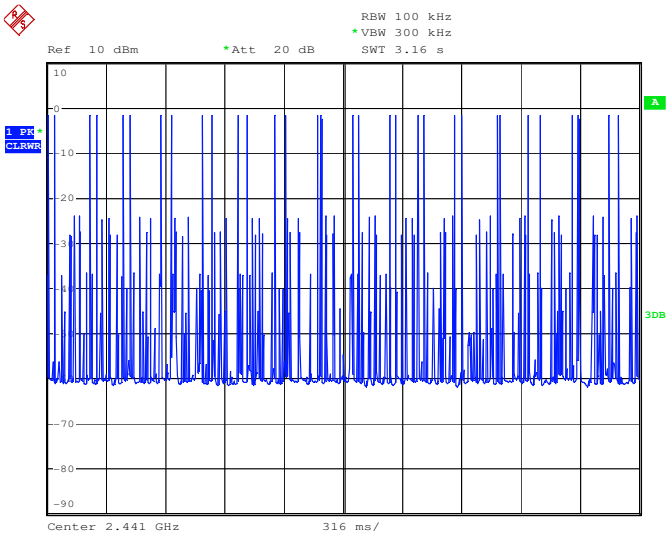


Date: 8.DEC.2012 13:19:43

Frequency 2441MHz: Modulation: 8DPSK-3DH1

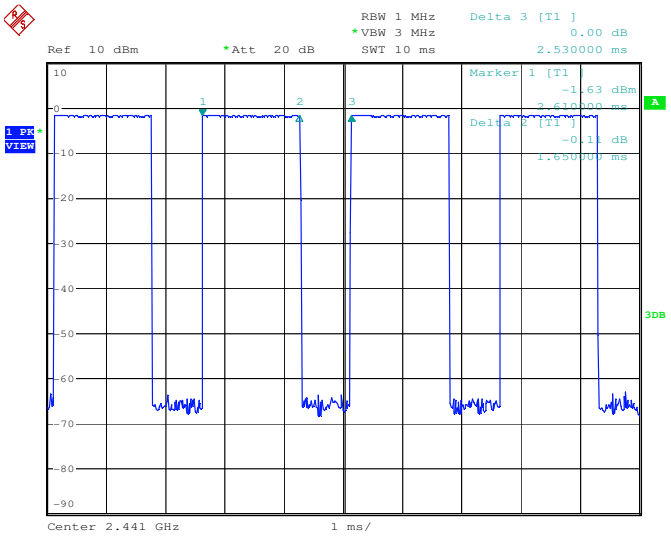


Date: 8.DEC.2012 12:42:14

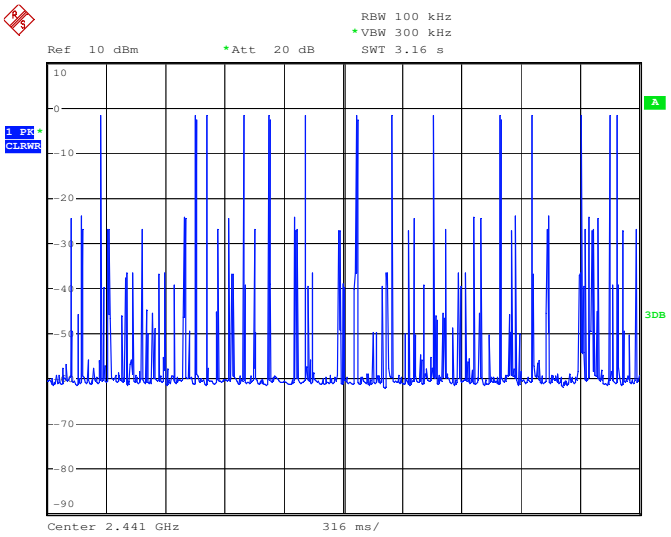


Date: 8.DEC.2012 13:20:36

Frequency 2441MHz: Modulation: 8DPSK-3DH3

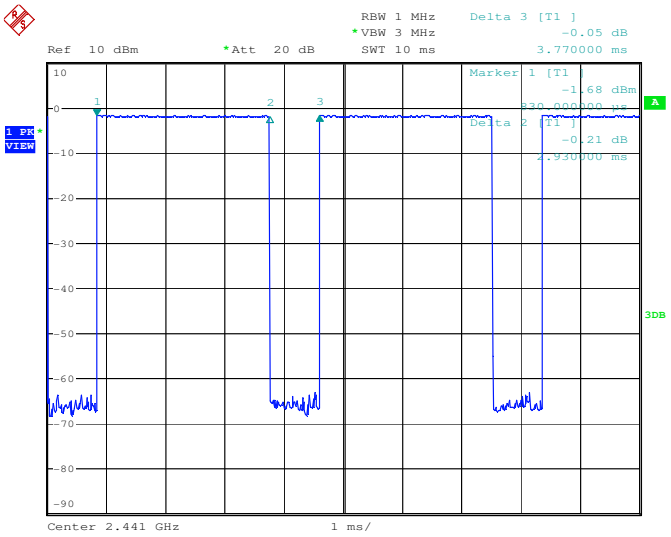


Date: 8.DEC.2012 12:43:11

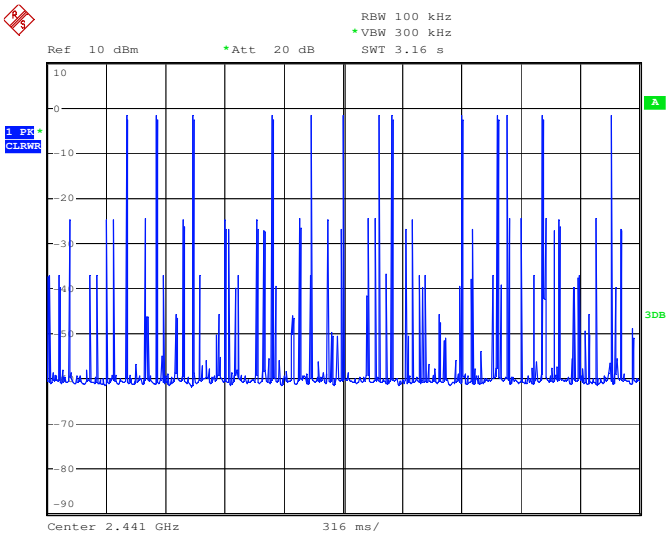


Date: 8.DEC.2012 13:21:18

Frequency 2441MHz: Modulation: 8DPSK-3DH5



Date: 8.DEC.2012 12:44:33



Date: 8.DEC.2012 13:22:14

7.9 Conducted Spurious Emissions

Test Requirement: FCC Part 15 Section 15.247(d)

Test Method: ANSI C63.10:2009 Clause 7.7.10

Test Date: December 08, 2012

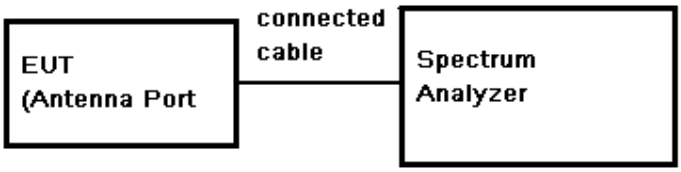
Limit: (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating. the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that 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.

Exploratory Test Mode: Hopping transmitting with all kind of modulation and all kind of data type

Final Test Mode: Through Pre-scan, find the DH1 of date type is the worse case of GFSK modulation type, 2-DH1 of date type is worse case of π/4DQPSK modulation type, 3-DH1 of date type is worse case of 8DPSK modulation type.

Test Result: Pass

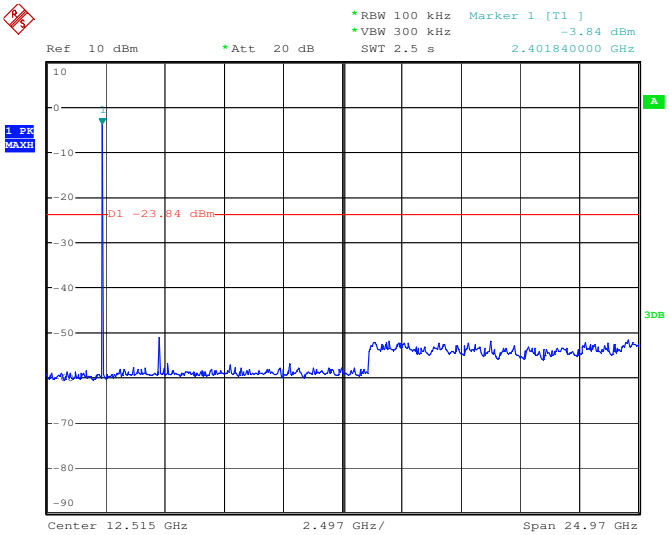
Test Configuration:



Test Procedure: 1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 100KHz. VBW >= RBW. Sweep = auto; Detector Function = Peak (Max. hold).

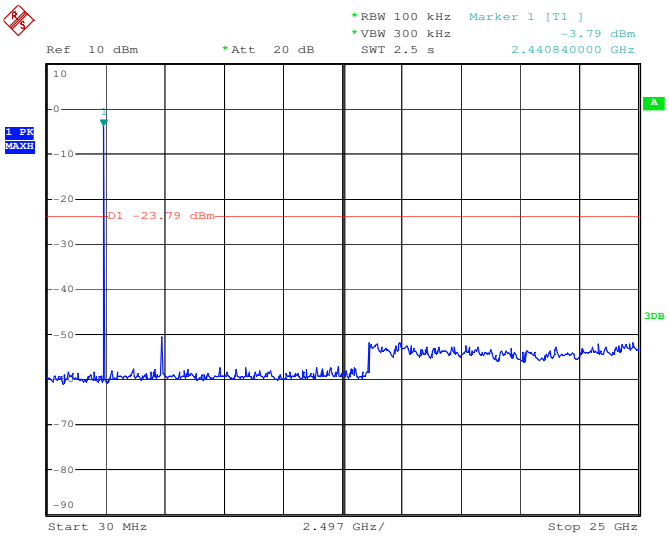
Test plot as follows:

Test mode:	GFSK	Test channel:	Lowest



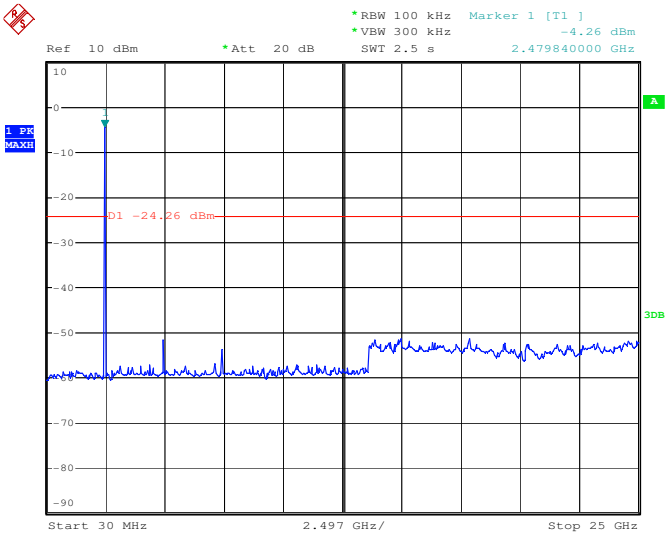
Date: 8.DEC.2012 16:03:50

Test mode:	GFSK	Test channel:	Middle



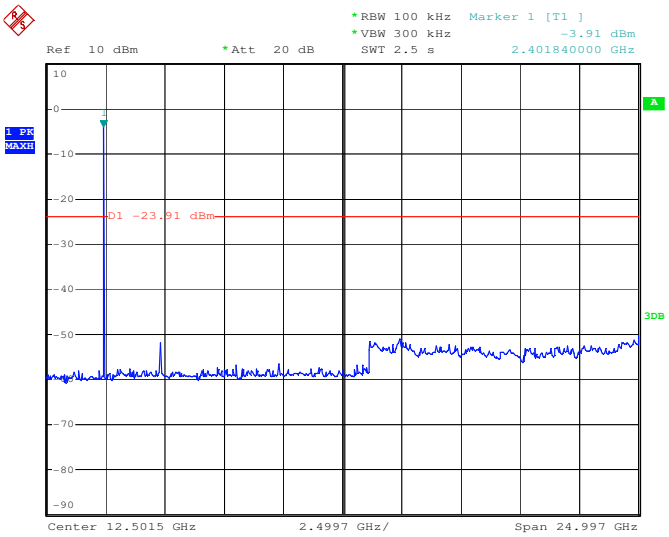
Date: 8.DEC.2012 16:05:10

Test mode:	GFSK	Test channel:	Highest



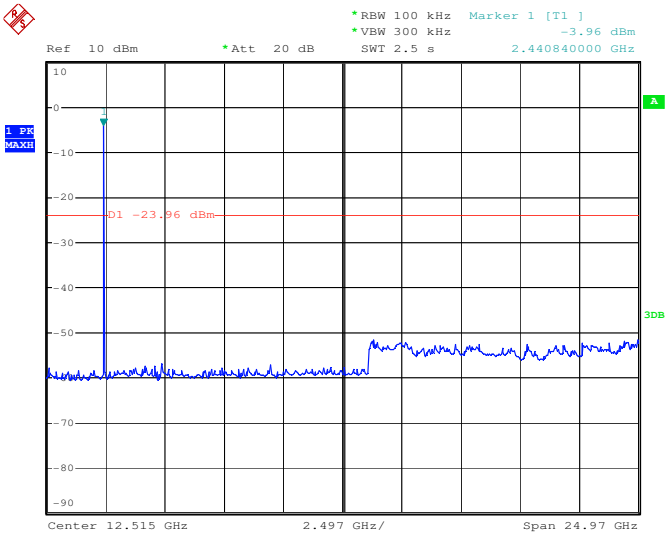
Date: 8.DEC.2012 16:17:01

Test mode:	π/4DQPSK	Test channel:	Lowest



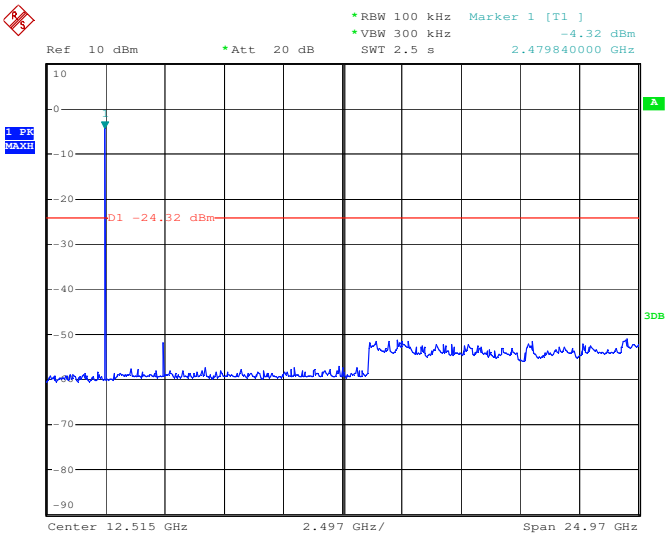
Date: 8.DEC.2012 16:00:29

Test mode:	π/4DQPSK	Test channel:	Middle



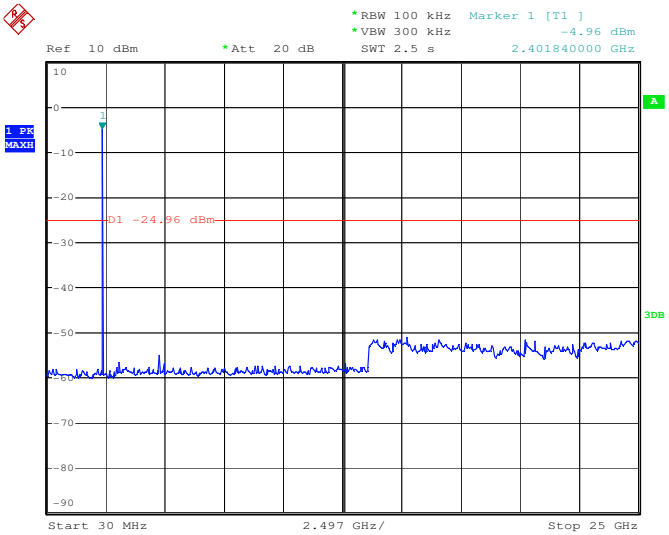
Date: 8.DEC.2012 16:06:31

Test mode:	π/4DQPSK	Test channel:	Highest



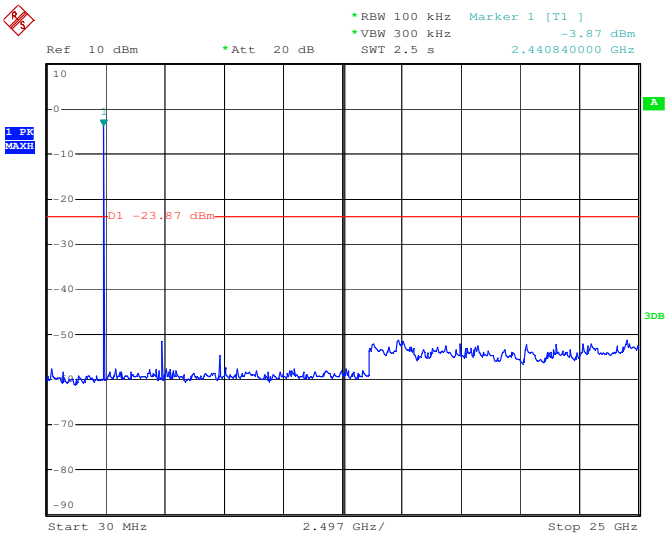
Date: 8.DEC.2012 16:15:16

Test mode:	8DPSK	Test channel:	Lowest



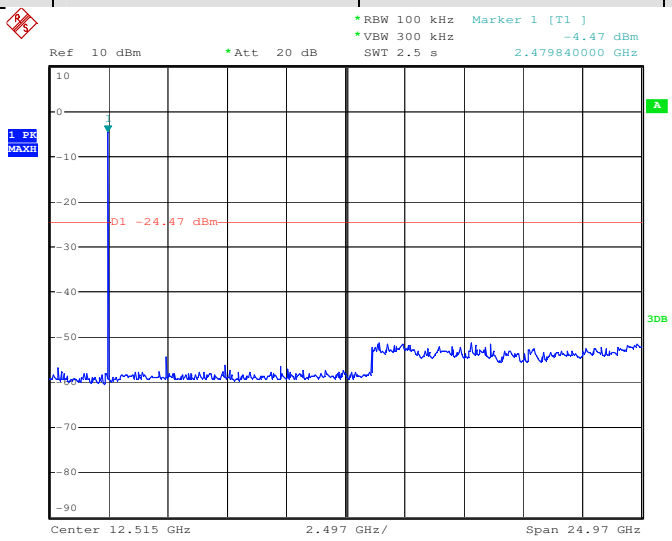
Date: 8.DEC.2012 15:57:58

Test mode:	8DPSK	Test channel:	Middle



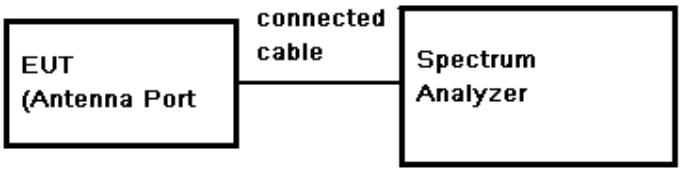
Date: 8.DEC.2012 16:09:05

Test mode:	8DPSK	Test channel:	Highest



Date: 8.DEC.2012 16:11:13

7.10 Conducted Band-edge

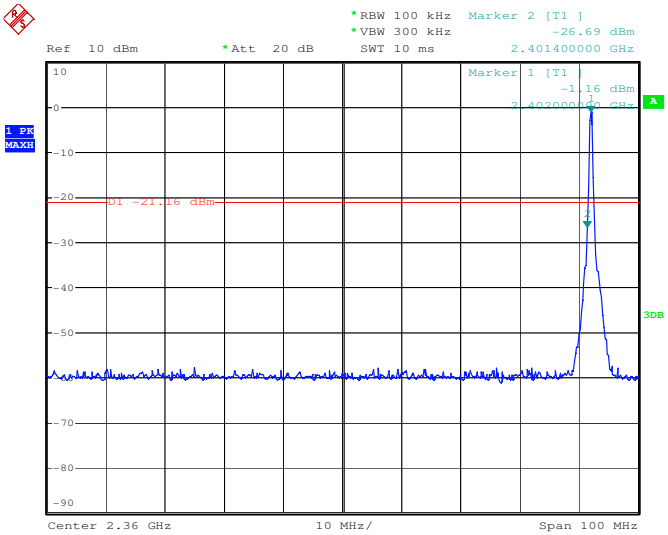
Test Requirement:	FCC Part 15 Section 15.247(d)
Test Method:	ANSI C63.10:2009 Clause 7.7.10
Test Date:	December 08, 2012
Limit:	(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating. the radio frequency power that 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.
Exploratory Test Mode:	Hopping transmitting with all kind of modulation and all kind of data type
Final Test Mode:	Through Pre-scan, find the DH1 of date type is the worse case of GFSK modulation type, 2-DH1 of date type is worse case of π/4DQPSK modulation type, 3-DH1 of date type is worse case of 8DPSK modulation type.
Test Result:	Pass
Test Configuration:	

Test Procedure:

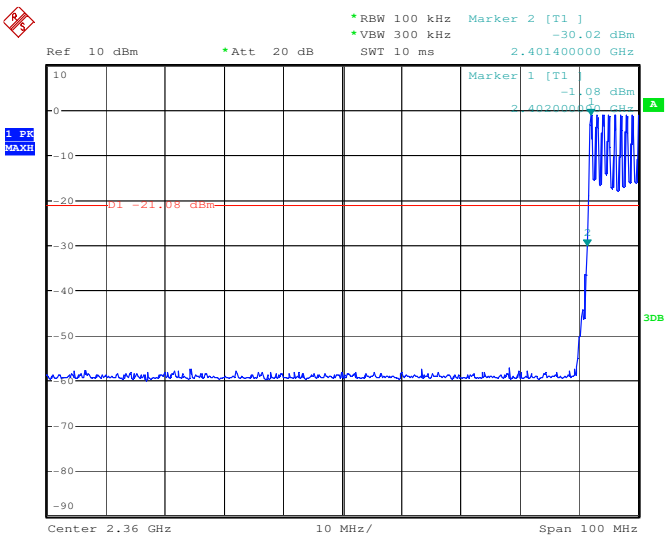
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 100KHz. VBW >= RBW. Sweep = auto; Detector Function = Peak (Max. hold).

Test plot as follows:

Test mode:	GFSK	Test channel:	Lowest

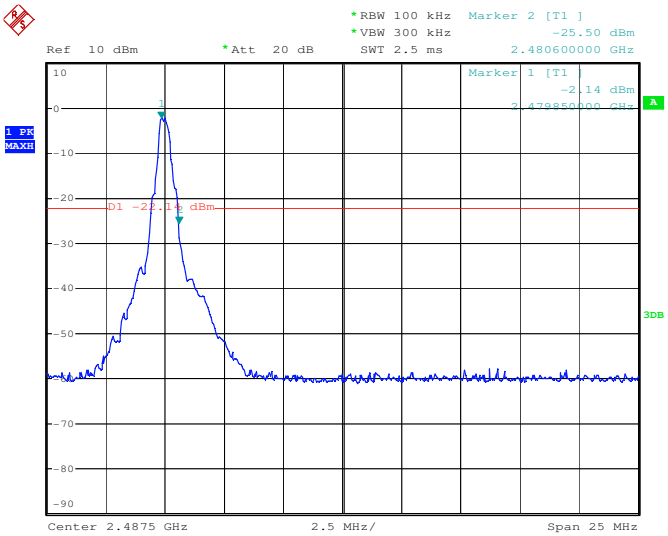


Date: 8.DEC.2012 14:31:59

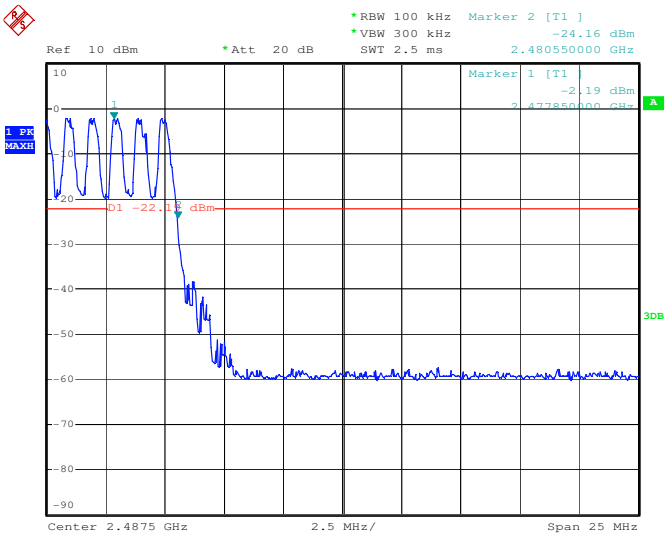


Date: 8.DEC.2012 14:48:33

Test mode:	GFSK	Test channel:	Highest

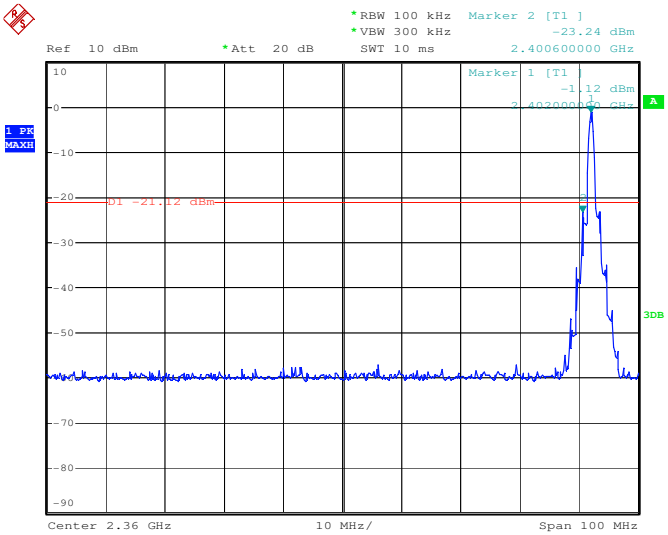


Date: 8.DEC.2012 15:40:07

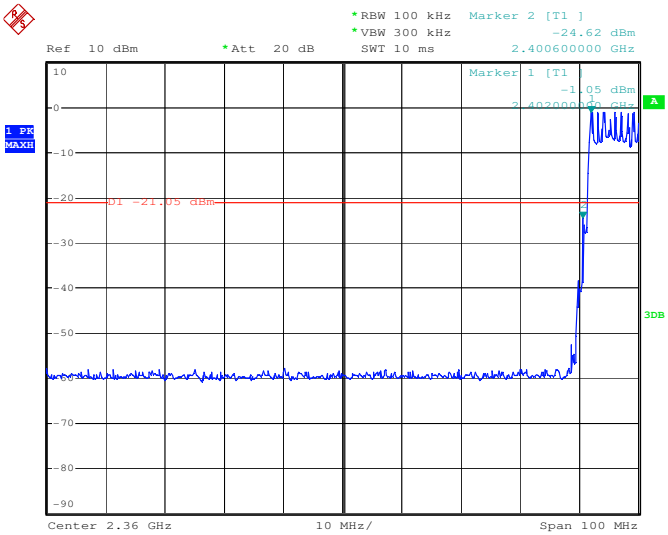


Date: 8.DEC.2012 15:02:24

Test mode:	π/4DQPSK	Test channel:	Lowest

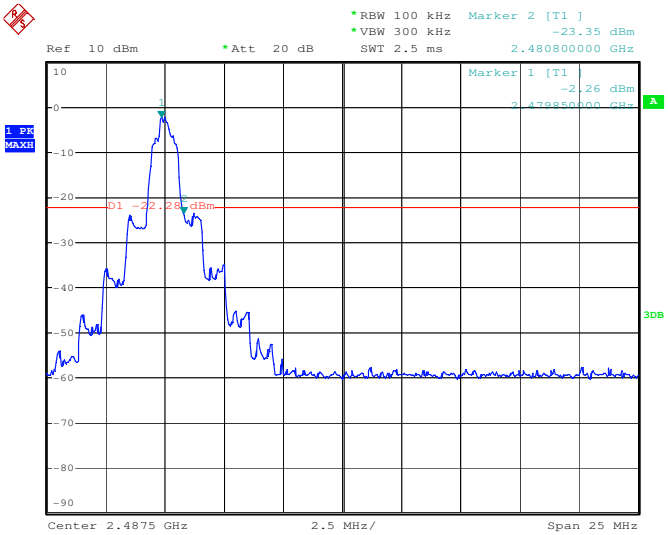


Date: 8.DEC.2012 14:33:47

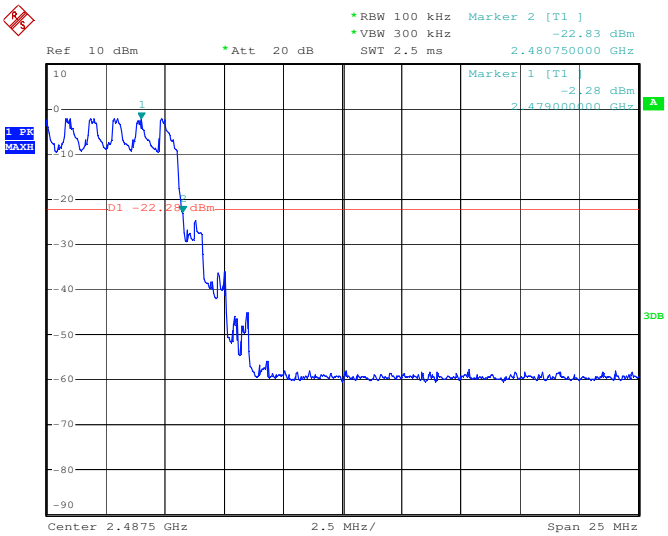


Date: 8.DEC.2012 14:42:34

Test mode:	π/4DQPSK	Test channel:	Highest

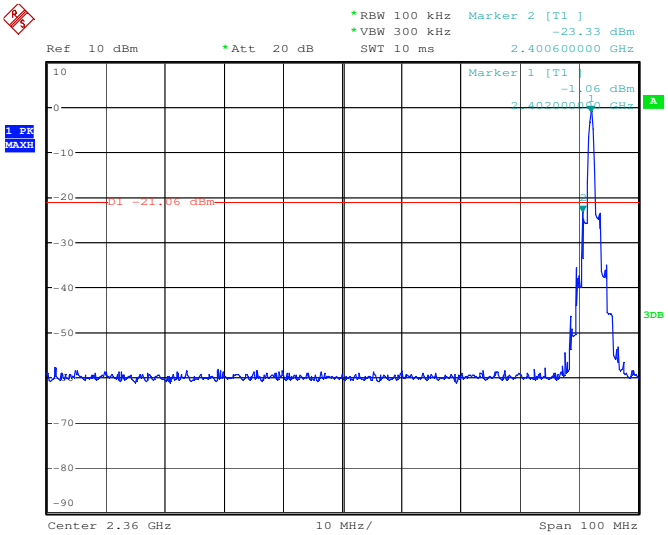


Date: 8.DEC.2012 15:33:45

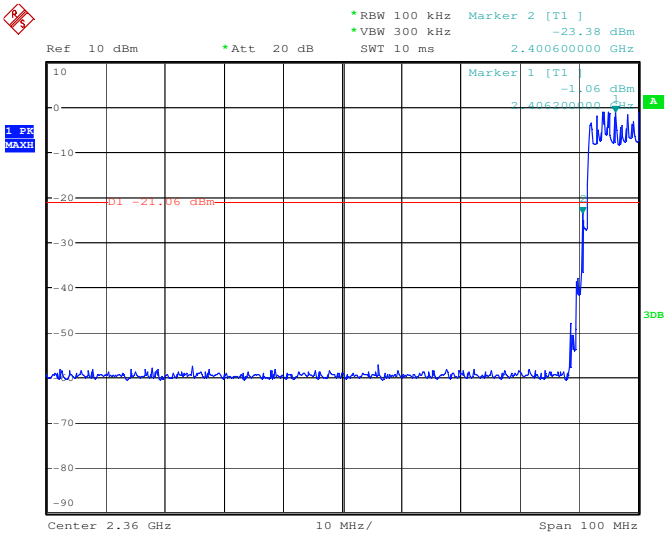


Date: 8.DEC.2012 15:07:46

Test mode:	8DPSK	Test channel:	Lowest

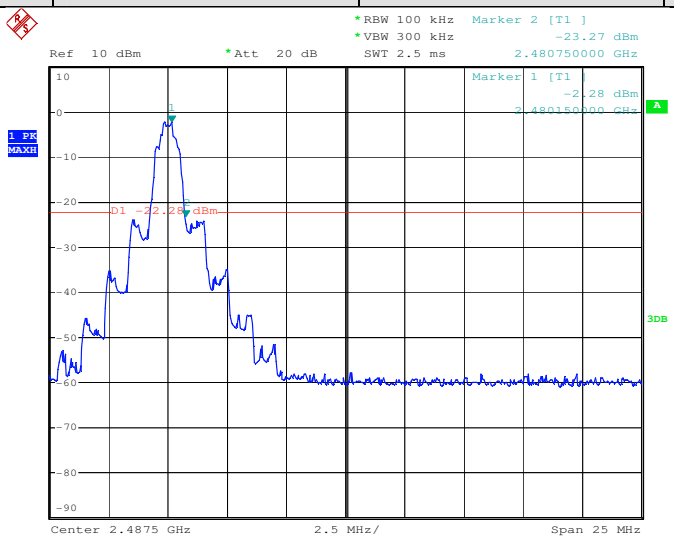


Date: 8.DEC.2012 14:35:56

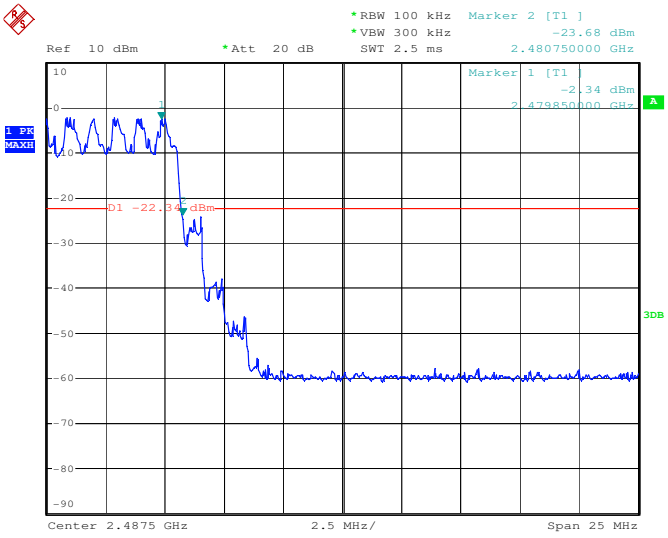


Date: 8.DEC.2012 14:39:41

Test mode:	8DPSK	Test channel:	Highest



Date: 8.DEC.2012 15:36:27



Date: 8.DEC.2012 15:12:19

7.11 Radiated Spurious Emissions

Test Requirement:	FCC Part 15 Section 15.209 and Section 15.205
Test Method:	ANSI C63.10:2009 Clause 6.12
Test Date:	December 04 ,2012
Exploratory Test Mode:	Non-hopping transmitting mode with all kind of modulation and all kind of data type
Final Test Mode:	Through Pre-scan, find the DH1 of date type is the worse case of GFSK modulation type
Test site/setup:	Measurement Distance: 3m (Semi-Anechoic Chamber) Test instrumentation resolution bandwidth 120 kHz and Quasi-Peak detector applies (30 MHz - 1000 MHz). For PK value: RBW = 1 MHz for f ≥ 1 GHz VBW ≥ RBW; Sweep = auto Detector function = peak Trace = max hold For AV value: RBW = 1 MHz for f ≥ 1 GHz VBW =10Hz; Sweep = auto Detector function = peak Trace = max hold Receive antenna scan height 1 m - 4 m. polarization Vertical / Horizontal
15.209 Limit:	40.0 dBμV/m between 30MHz & 88MHz 43.5 dBμV/m between 88MHz & 216MHz 46.0 dBμV/m between 216MHz & 960MHz 54.0 dBμV/m above 960MHz

Test Configuration:

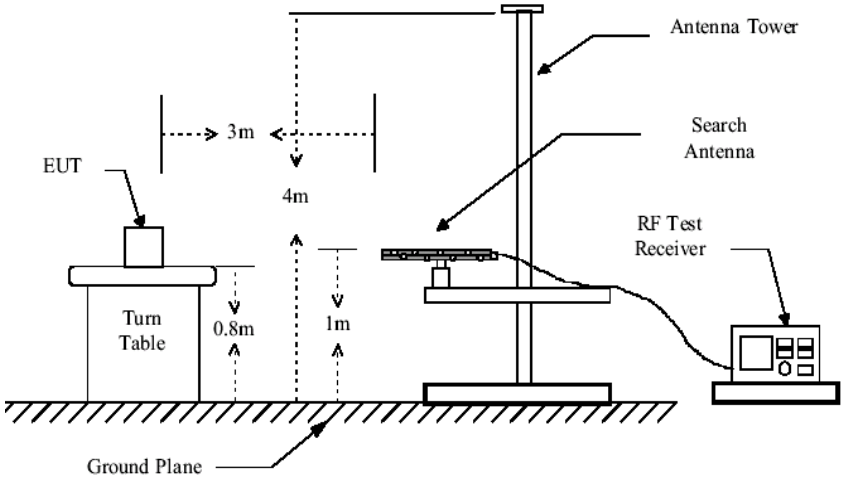


Figure 1. 30MHz to 1GHz radiated emissions test configuration

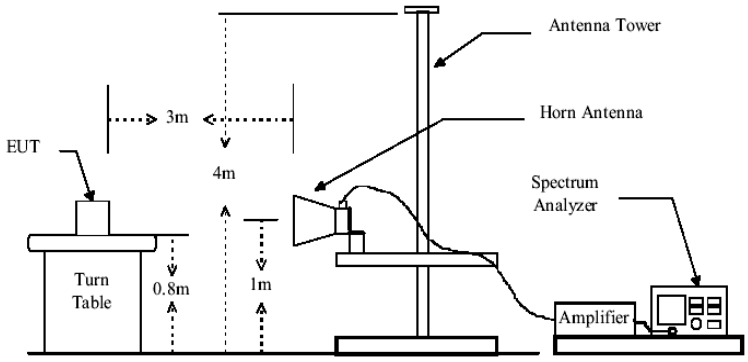


Figure 2. Above 1GHz radiated emissions test configuration

Test Procedure:

The procedure used was ANSI Standard C63.10:2009. The receiver was scanned from 30MHz to 25GHz.When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported.

Low nosie amplifier was used below 1GHz,High pass Filter was used above 3GHz.

Between 1G and 3GHz, we did not use any amplifier or filter.

Pre-test was performed on GFSK and EDR mode with charging mode and only battery power mode, Compliance test was performed on worse case (GFSK mode with charging).

Test were performed for there spatial orthogonal(X, Y, Z), the worst test data (X orthogonal) was sumitted.

1) For this intentional radiator operates below 25 GHz. the spectrum shall be investigated to the tenth harmonic of the highest fundamental frequency. And above the third harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 5rd harmonic.

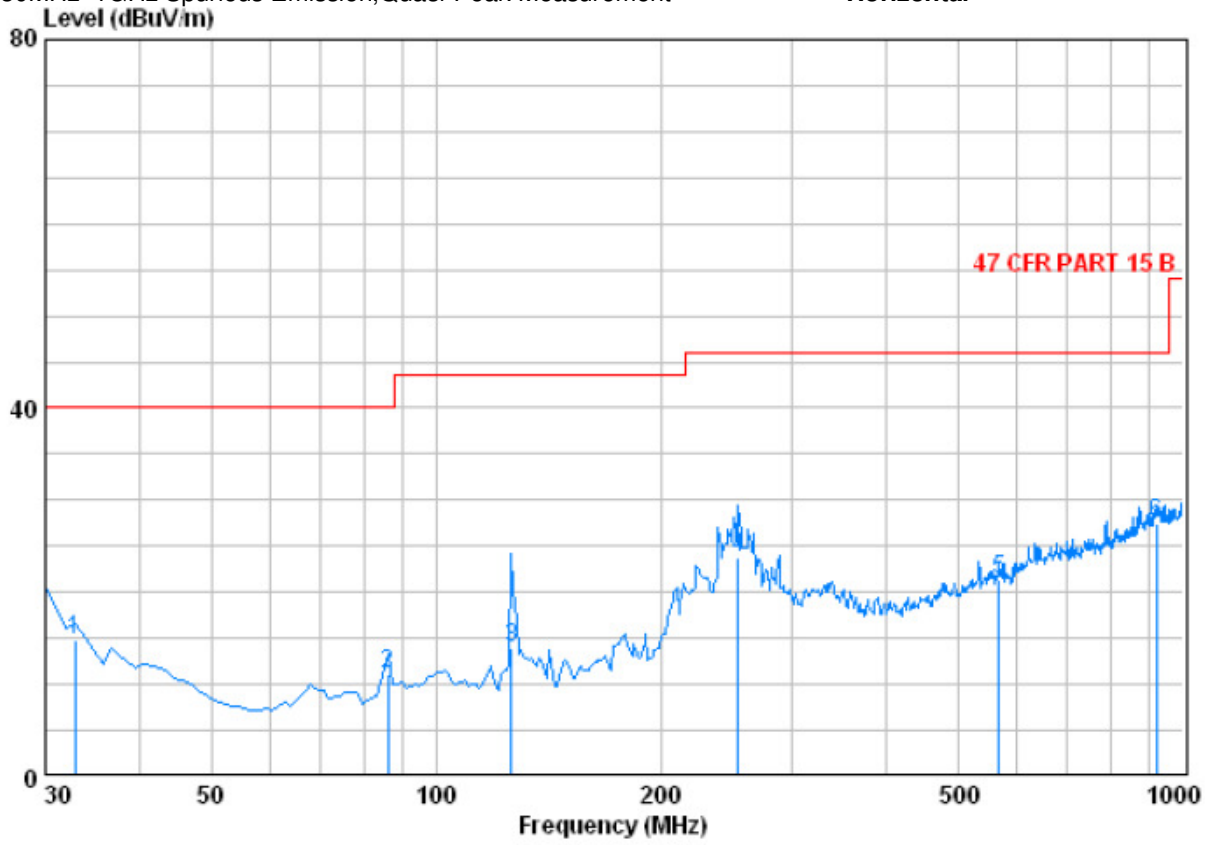
As shown in Section, for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

The test only perform the EUT in transmitting status since the test frequencies were over 1GHz only required transmitting status.

GFSK with charging mode test data as follows:

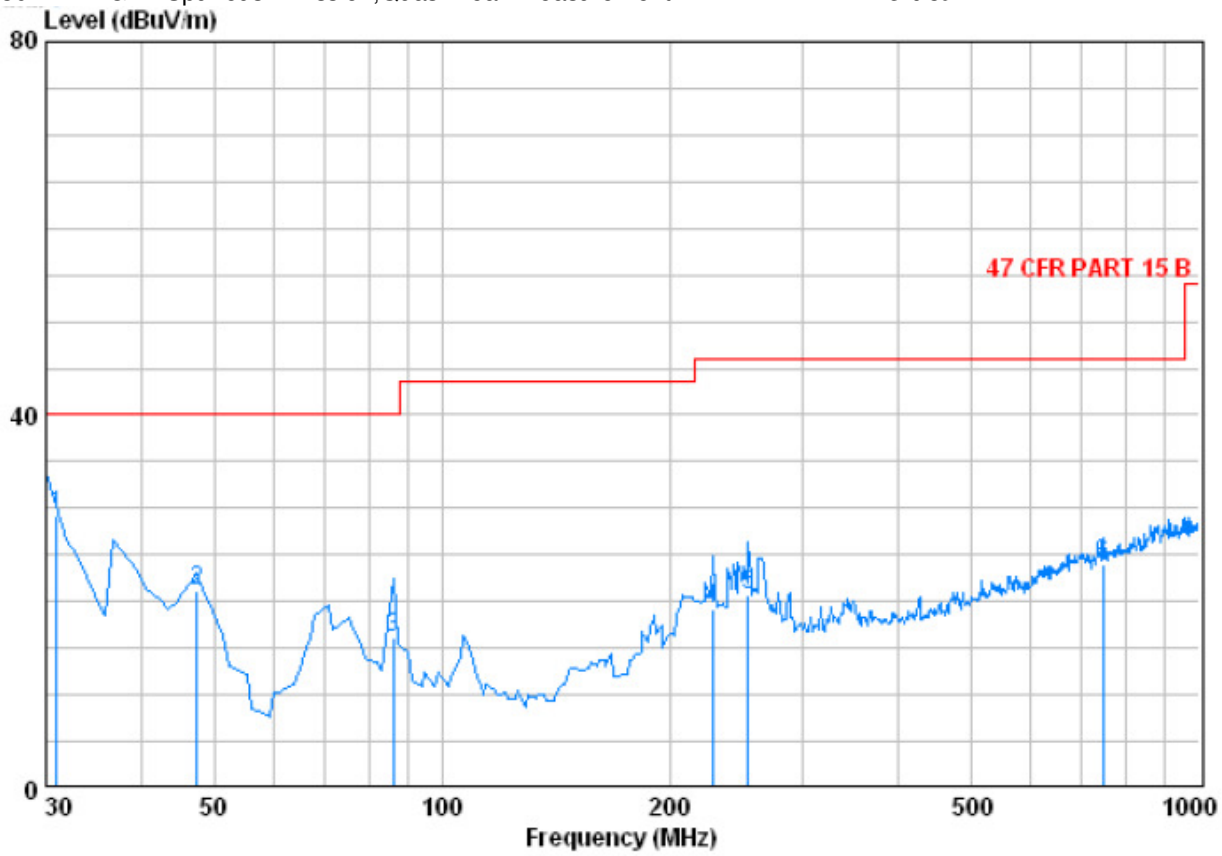
Transmitter:

30MHz~1GHz Spurious Emission,Quasi-Peak Measurement **Horizontal**



Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
32.910	0.60	15.60	27.35	26.06	14.91	40.00	-25.09
86.260	1.10	5.95	27.22	31.19	11.03	40.00	-28.97
126.030	1.27	7.98	27.03	31.83	14.05	43.50	-29.45
254.070	1.69	8.83	26.53	39.66	23.66	46.00	-22.34
567.380	2.67	14.48	27.59	31.71	21.27	46.00	-24.73
921.430	3.62	20.77	26.68	29.72	27.43	46.00	-18.57

30MHz~1GHz Spurious Emission,Quasi-Peak Measurement **Vertical**



Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
30.970	0.60	17.15	27.35	38.80	29.20	40.00	-10.80
47.460	0.76	8.38	27.30	39.32	21.15	40.00	-18.85
86.260	1.10	5.95	27.22	36.32	16.15	40.00	-23.85
227.880	1.56	7.85	26.60	36.33	19.14	46.00	-26.86
254.070	1.69	8.83	26.53	36.77	20.77	46.00	-25.23
745.860	3.04	17.43	27.36	30.79	23.89	46.00	-22.11

1~25 GHz Harmonics & Spurious Emissions, , Peak & Average Measurement

Test in **Channel Low** in transmitting status- **Horizontal** polarization

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
1235.257	2.35	27.63	39.24	49.64	40.38	74	-33.62	Peak
1782.177	2.70	30.20	39.47	48.02	41.45	74	-32.55	Peak
3598.087	3.82	33.32	40.74	48.37	44.77	74	-29.23	Peak
4983.987	4.77	34.43	41.77	49.92	47.35	74	-26.65	Peak
8042.903	6.20	36.01	39.15	48.29	51.35	74	-22.65	Peak
9275.160	6.08	36.93	38.08	46.53	51.46	74	-22.54	Peak

Remark: No other radiation has been found.

Test in **Channel Low** in transmitting status- **Vertical** polarization

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
1510.402	2.52	28.22	39.36	47.19	38.57	74	-35.43	Peak
2179.145	2.90	32.11	39.70	45.69	41.00	74	-33.00	Peak
3516.592	3.75	33.22	40.67	48.09	44.39	74	-29.61	Peak
4582.422	4.55	35.06	41.47	47.20	45.34	74	-28.66	Peak
5971.290	5.12	35.64	40.94	48.42	48.24	74	-25.76	Peak
8377.241	6.19	36.15	38.87	47.32	50.79	74	-23.21	Peak

Remark: No other radiation has been found.

Test in **Channel Middle** in transmitting status- **Horizontal** polarization

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
1031.018	2.21	27.26	39.16	49.43	39.74	74	-34.26	Peak
1235.257	2.35	27.63	39.24	50.16	40.90	74	-33.10	Peak
1593.340	2.58	28.84	39.39	51.45	43.48	74	-30.52	Peak
3786.010	3.98	33.55	40.88	48.57	45.22	74	-28.78	Peak
5297.966	4.88	34.70	41.53	48.72	46.77	74	-27.23	Peak
9441.913	6.03	37.14	37.94	46.71	51.94	74	-22.06	Peak

Remark: No other radiation has been found.

Test in **Channel Middle** in transmitting status- **Vertical** polarization

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
1235.257	2.35	27.63	39.24	51.78	42.52	74	-31.48	Peak
1672.296	2.63	29.46	39.42	51.59	44.26	74	-29.74	Peak
1953.211	2.81	31.43	39.55	50.59	45.28	74	-28.72	Peak
4478.633	4.48	35.15	41.39	48.29	46.53	74	-27.47	Peak
6974.358	5.5	35.83	40.08	48.89	50.14	74	-23.86	Peak
9370.083	6.05	37.03	37.99	46.44	51.53	74	-22.47	Peak

Remark: No other radiation has been found.

Test in **Channel High** in transmitting status- **Vertical** polarization

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
1235.257	2.35	27.63	39.24	51.17	41.91	74	-32.09	Peak
1672.296	2.63	29.46	39.42	52.00	44.67	74	-29.33	Peak
4149.351	4.27	34.22	41.15	47.94	45.28	74	-28.72	Peak
5674.896	5.01	35.18	41.20	49.65	48.64	74	-25.36	Peak
7470.558	6.08	35.99	39.64	48.18	50.61	74	-23.39	Peak
8527.851	6.18	36.23	38.73	47.79	51.47	74	-22.53	Peak

Remark: No other radiation has been found.

Test in **Channel High** in transmitting status- **Horizontal** polarization

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
1235.257	2.35	27.63	39.24	48.60	39.34	74	-34.66	Peak
1953.211	2.81	31.43	39.55	50.19	44.88	74	-29.12	Peak
3709.691	3.91	33.45	40.83	48.25	44.78	74	-29.22	Peak
6109.670	5.15	35.84	40.83	49.48	49.64	74	-24.36	Peak
7470.558	6.08	35.99	39.64	49.63	52.06	74	-21.94	Peak
9346.262	6.06	37.01	38.03	46.60	51.64	74	-22.36	Peak

Remark: No other radiation has been found.

Test Level =Receiver Reading + Antenna Factor + Cable Loss –Preamplifier Factor.

Remark: No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part. Hence there no other emissions have been reported.

7.12 Band edge (Radiated Emission)

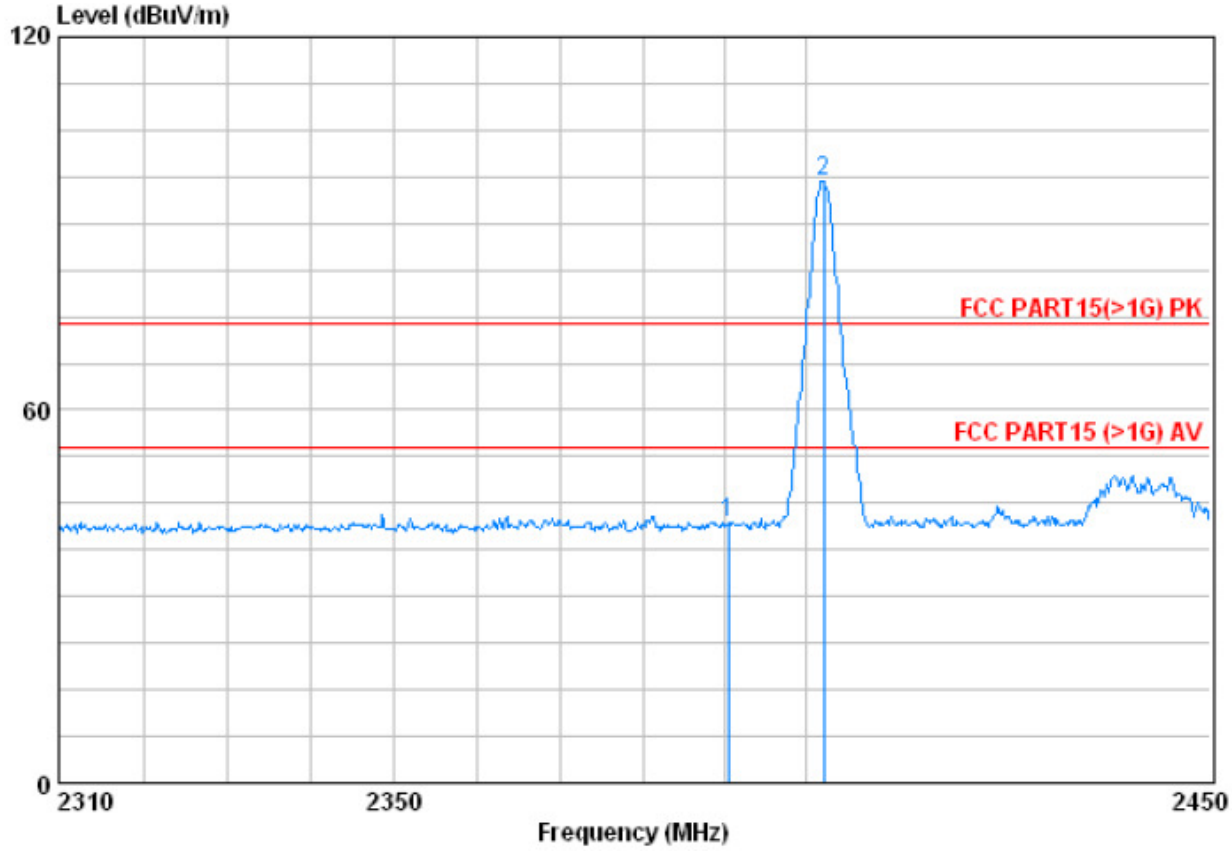
Test Requirement:	Section 15.247(d) In addition, radiated emissions which fall in the restricted bands. as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c).
Test Method:	ANSI 63.10:2009 Clause 6.12
Test Date:	December 10, 2012
Measurement Distance:	3m (Semi-Anechoic Chamber)
Limit:	40.0 dBμV/m between 30MHz & 88MHz; 43.5 dBμV/m between 88MHz & 216MHz; 46.0 dBμV/m between 216MHz & 960MHz; 54.0 dBμV/m above 960MHz.
Detector:	For PK value: RBW = 1 MHz for f ≥ 1 GHz VBW ≥ RBW; Sweep = auto Detector function = peak Trace = max hold For AV value: RBW = 1 MHz for f ≥ 1 GHz VBW =10Hz; Sweep = auto Detector function = peak Trace = max hold

According to section,15.35(b) for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

Pre-test were performed for there spatial orthogonal(X, Y, Z), the worst test data (X orthogonal) was sumitted.

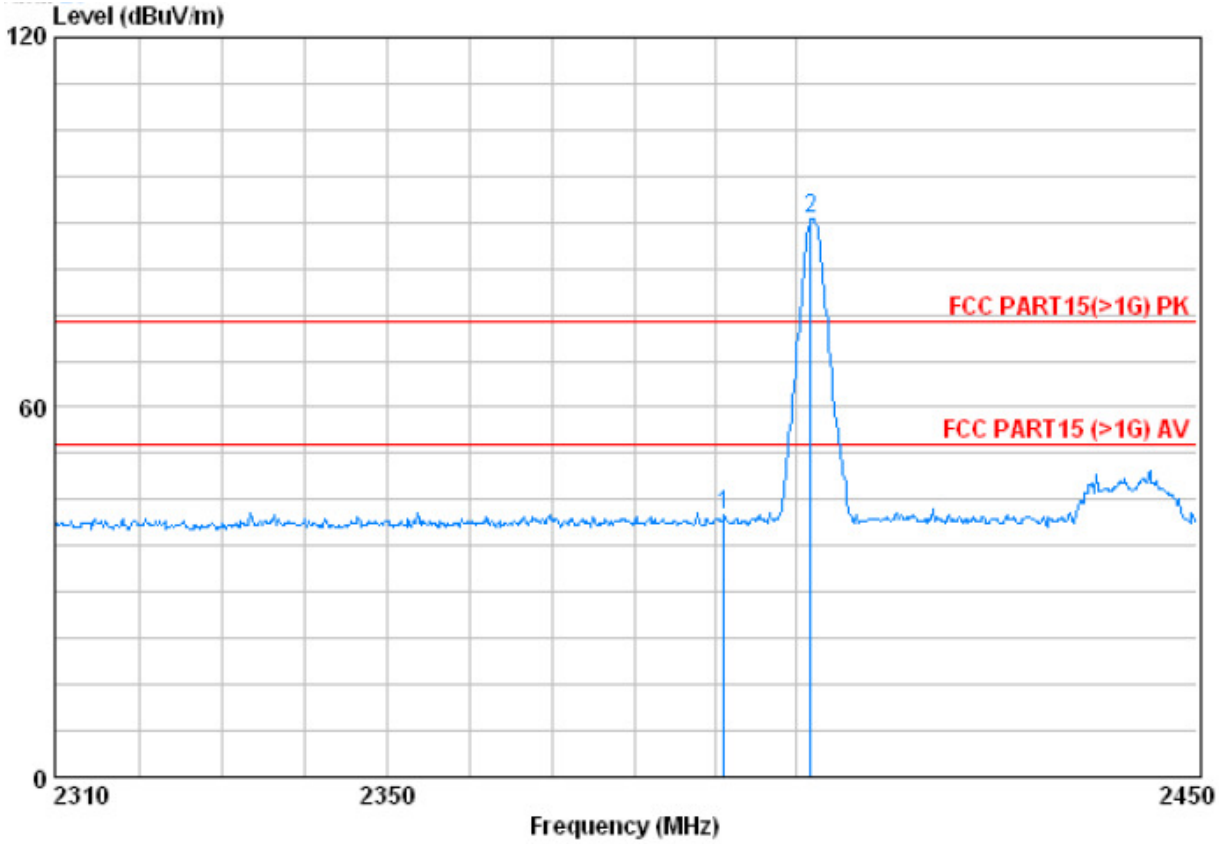
Test Result: The EUT does meet the FCC requirements.

Measurement Result:
CH Low 2412MHz Radiated Bandedge **Modulation: GFSK**
Horizontal, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2390.36	2.98	32.51	39.85	46.19	41.83	74	-32.17	Peak
2402.12	2.98	32.51	39.86	101.04	96.67	74	22.67	Peak

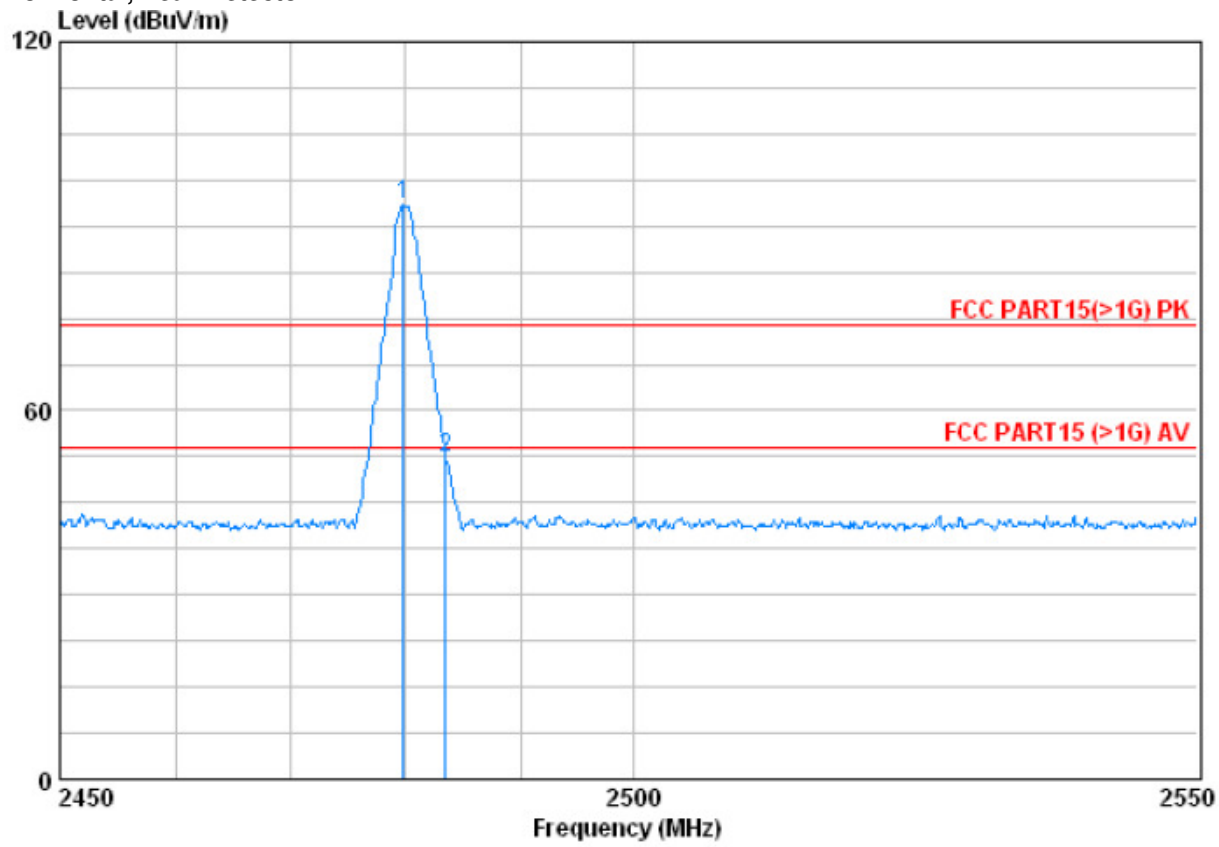
Vertical, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2391.06	2.98	32.51	39.85	47.01	42.65	74	-31.35	Peak
2401.70	2.98	32.51	39.86	95.09	90.72	74	16.72	Peak

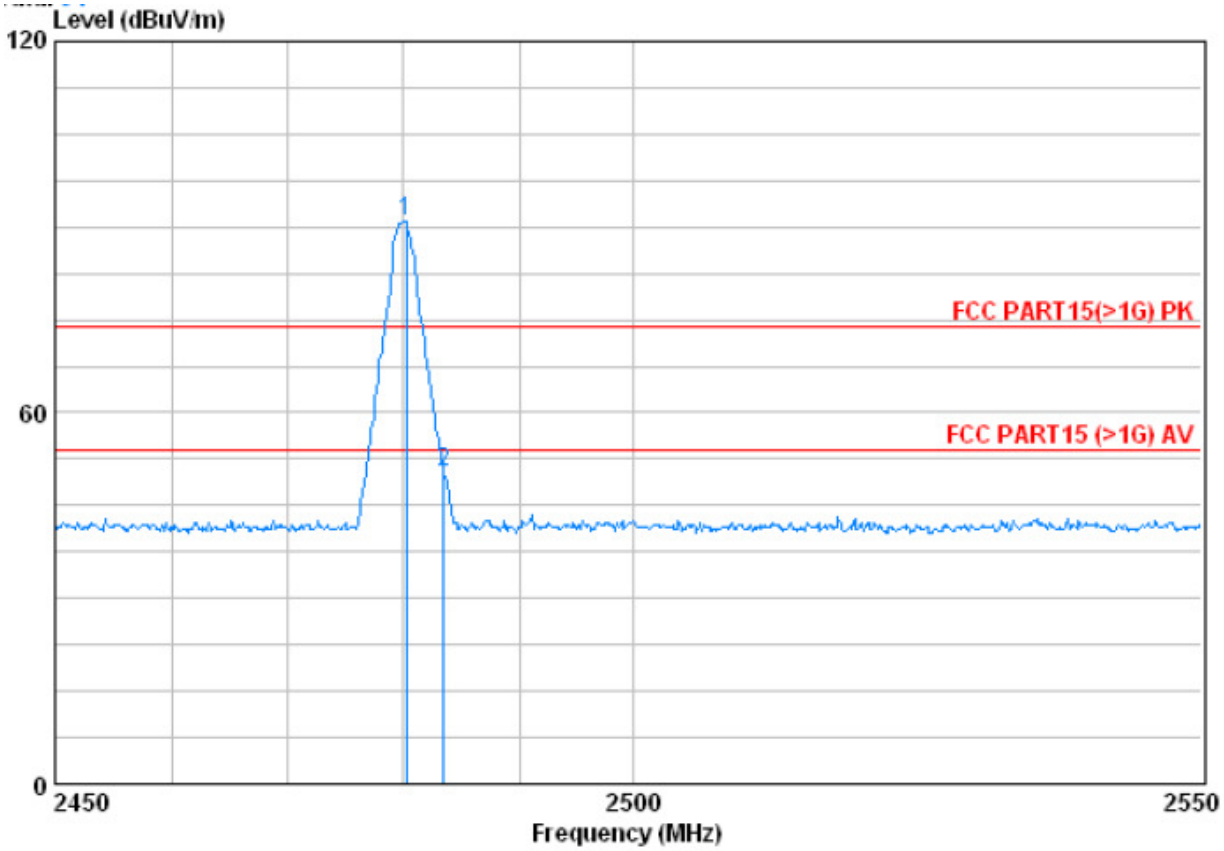
CH High 2480MHz Radiated Bandedge **Modulation: GFSK**

Horizontal, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2479.8	3.03	32.67	39.92	97.64	93.42	74	19.42	Peak
2483.5	3.03	32.67	39.92	56.45	52.23	74	-21.77	Peak

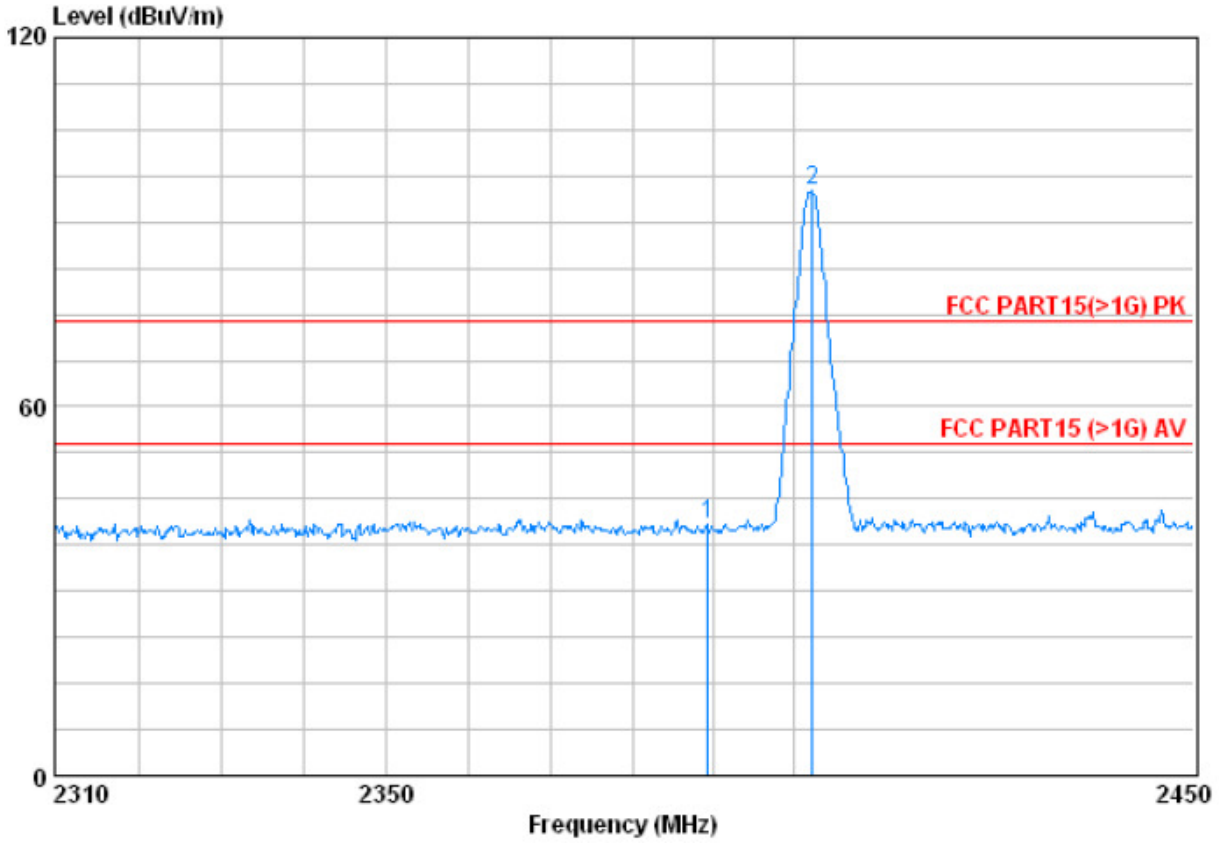
Vertical, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2480.2	3.03	32.67	39.92	95.00	90.78	74	16.78	Peak
2483.5	3.03	32.67	39.92	54.59	50.37	74	-23.63	Peak

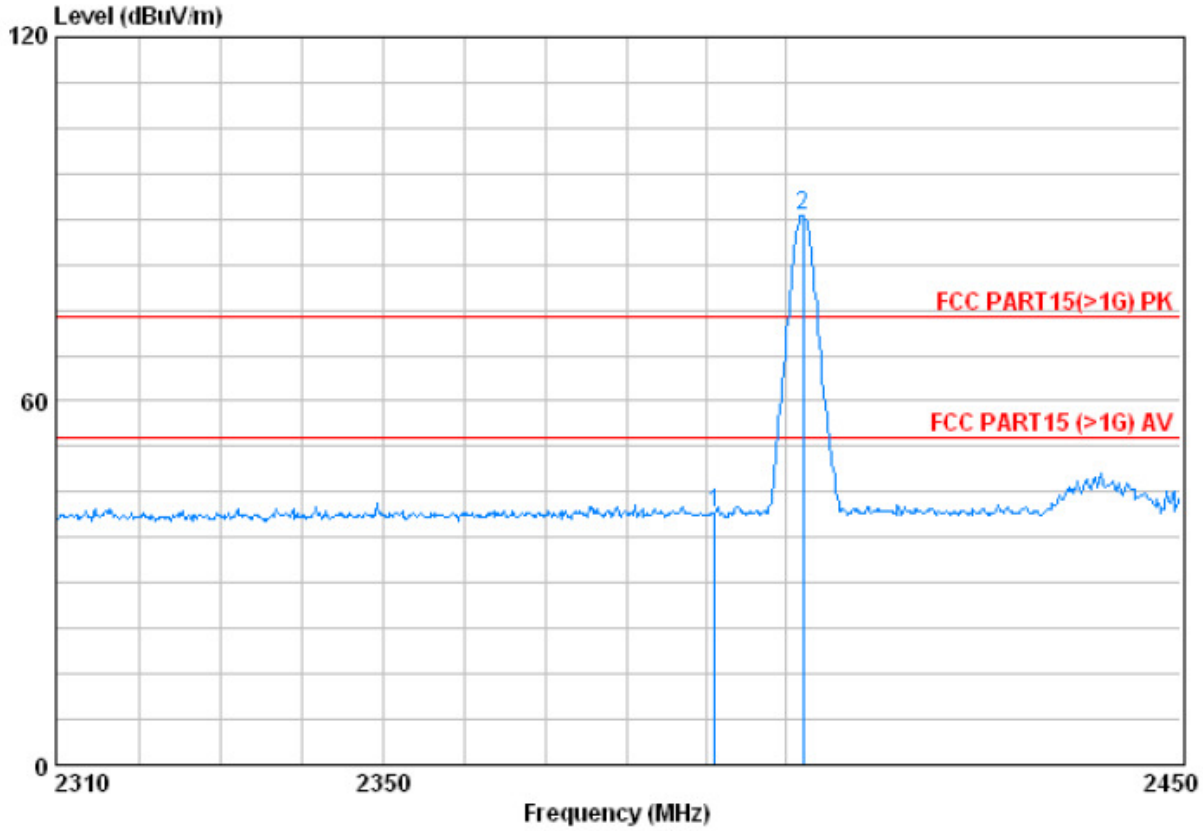
CH Low 2412MHz Radiated Bandedge **Modulation: π/4DQPSK**

Horizontal, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2389.24	2.98	32.51	39.85	45.23	40.87	74	-33.13	Peak
2402.26	2.98	32.51	39.86	99.40	95.03	74	21.03	Peak

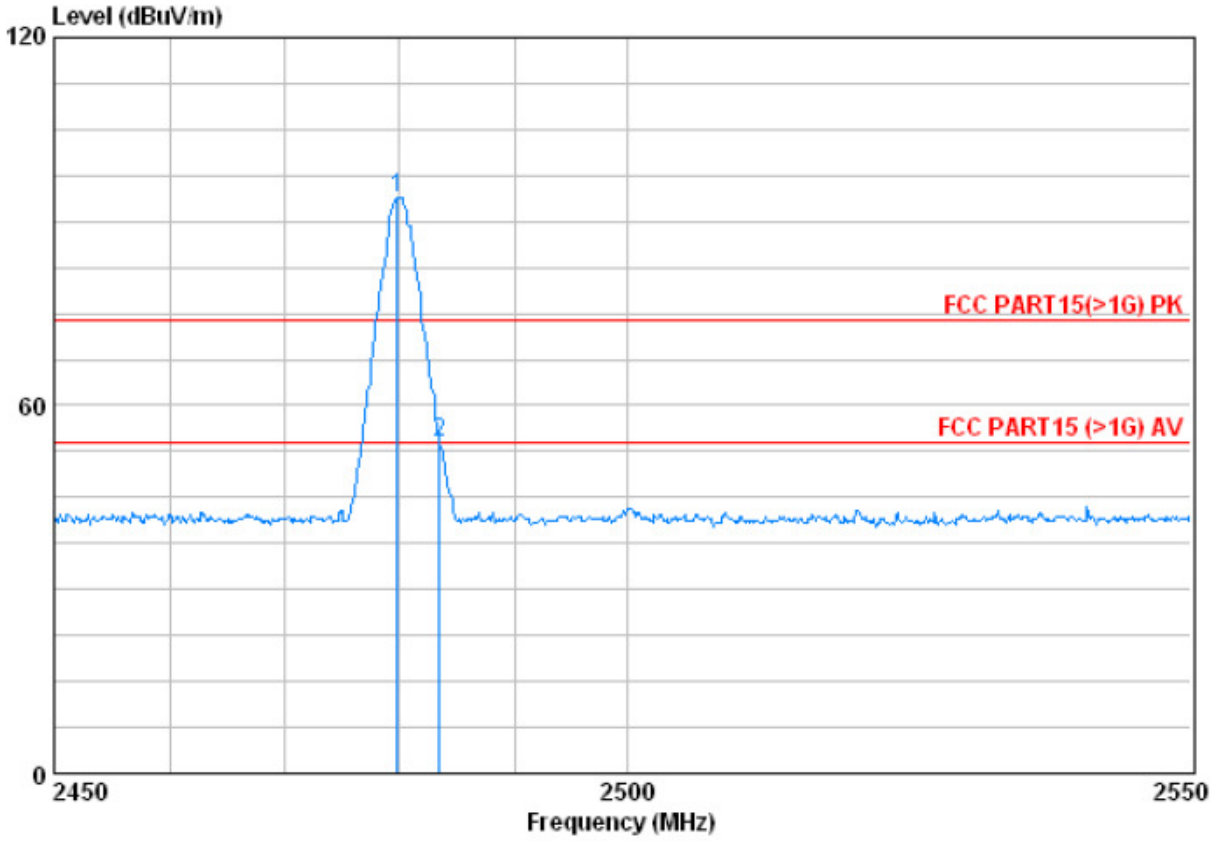
Vertical, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2391.06	2.98	32.51	39.85	45.94	41.58	74	-32.42	Peak
2402.12	2.98	32.51	39.86	94.94	90.57	74	16.57	Peak

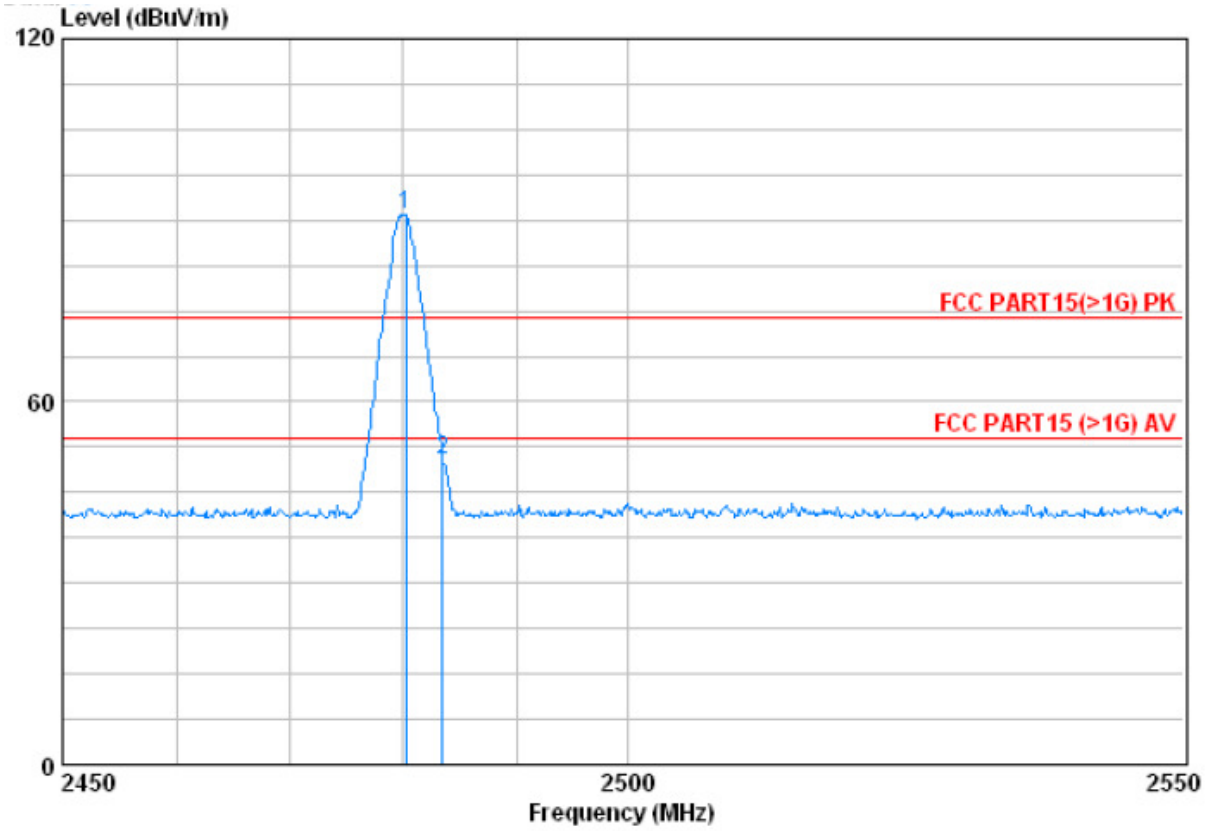
CH High 2480MHz Radiated Bandedge **Modulation: π/4DQPSK**

Horizontal, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2479.8	3.03	32.67	39.92	98.05	93.83	74	19.83	Peak
2483.5	3.03	32.67	39.92	58.21	53.99	74	-20.01	Peak

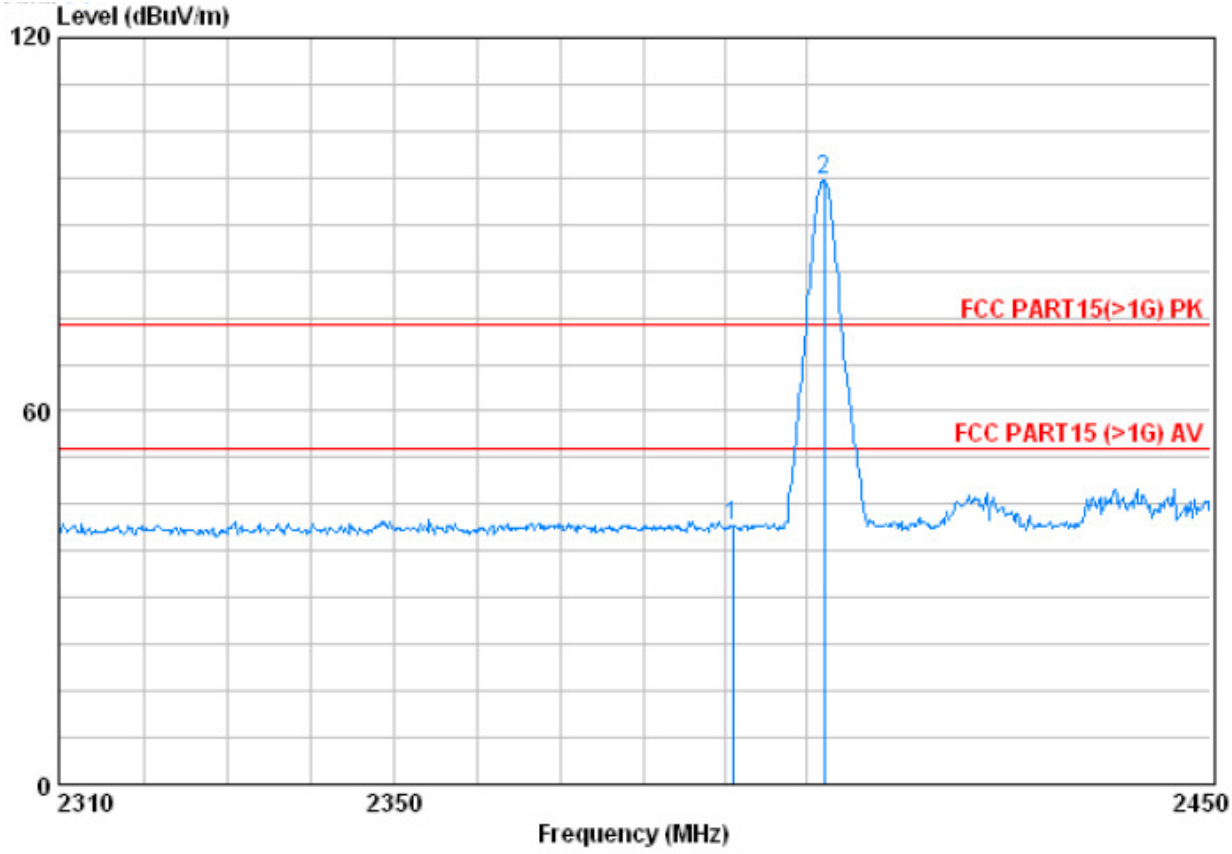
Vertical, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2480.2	3.03	32.67	39.92	95.21	90.99	74	16.99	Peak
2483.5	3.03	32.67	39.92	54.56	50.34	74	-23.66	Peak

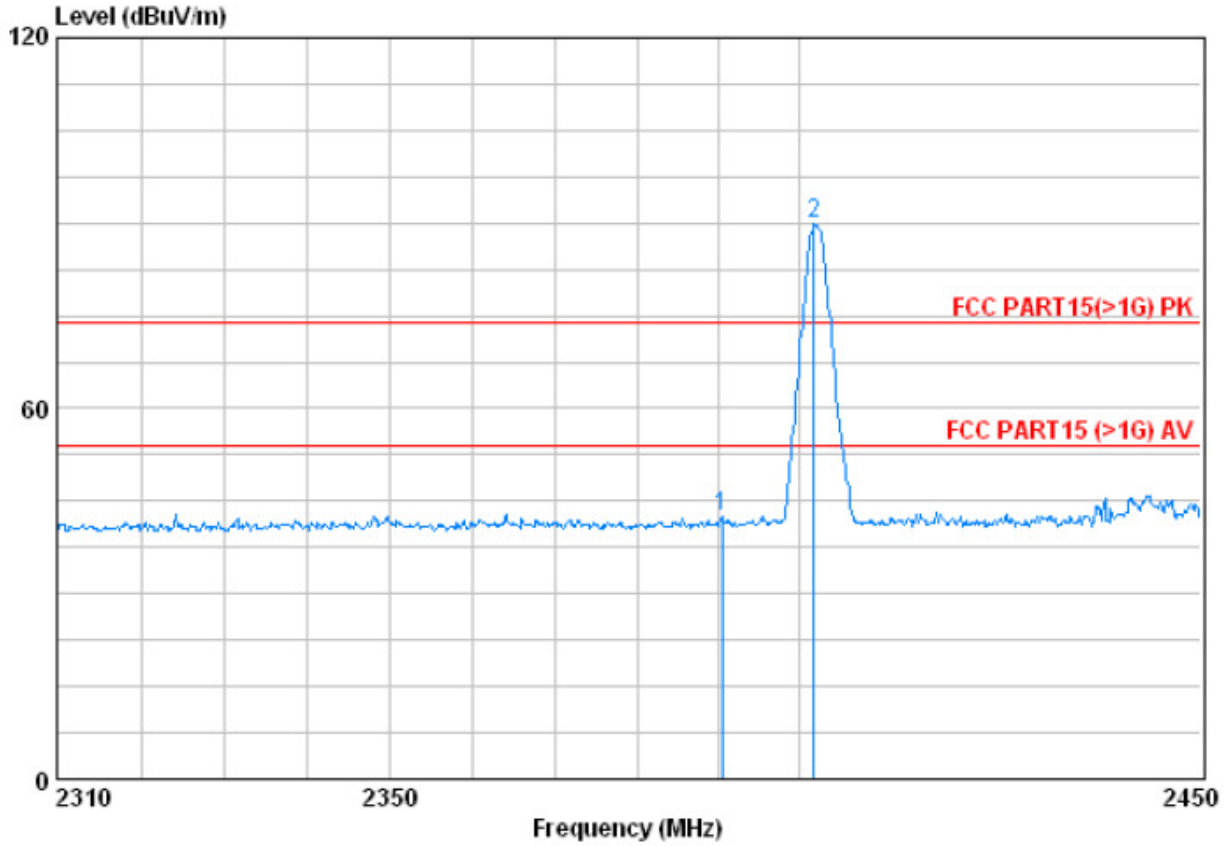
CH Low 2412MHz Radiated Bandedge **Modulation: 8DPSK**

Horizontal, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2390.92	2.98	32.51	39.85	45.98	41.62	74	-32.38	Peak
2402.12	2.98	32.51	39.86	101.38	97.01	74	23.01	Peak

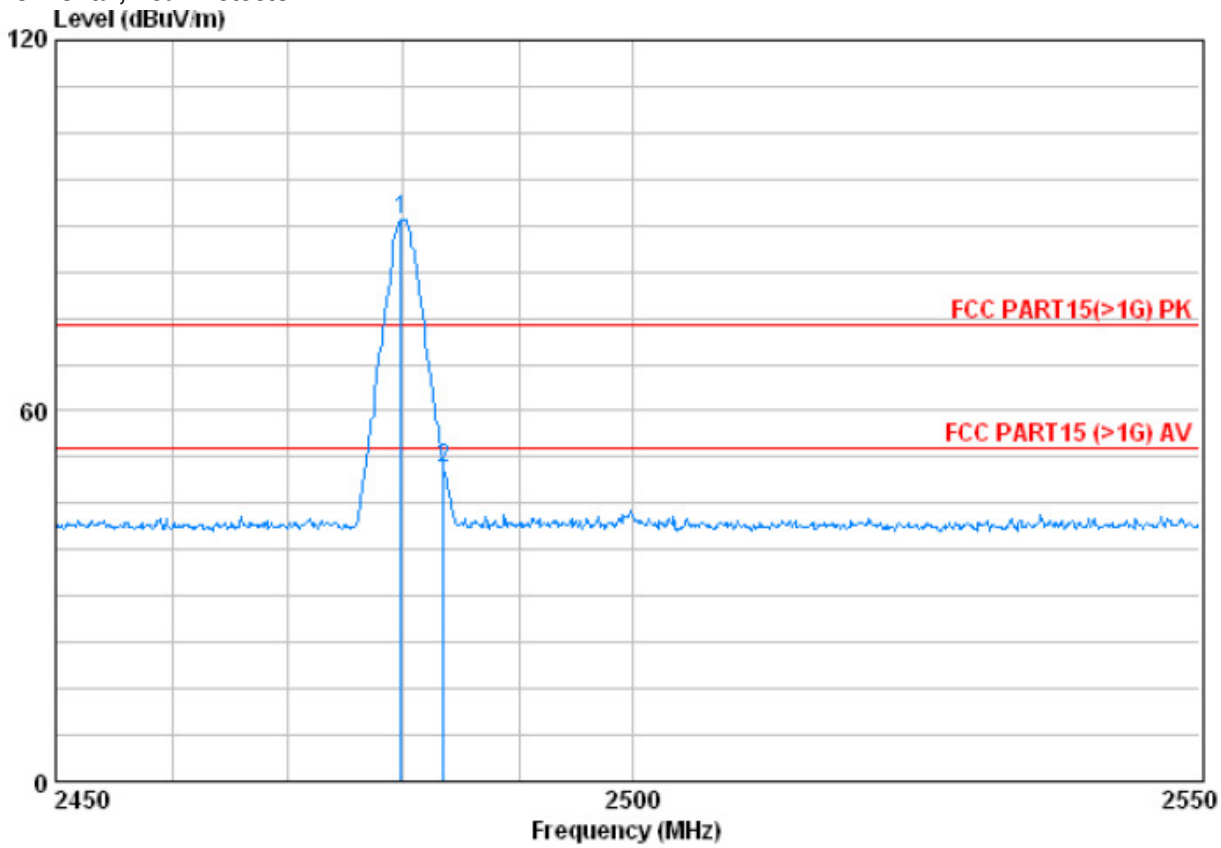
Vertical, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2390.36	2.98	32.51	39.85	46.79	42.43	74	-31.57	Peak
2401.70	2.98	32.51	39.86	94.16	89.79	74	15.79	Peak

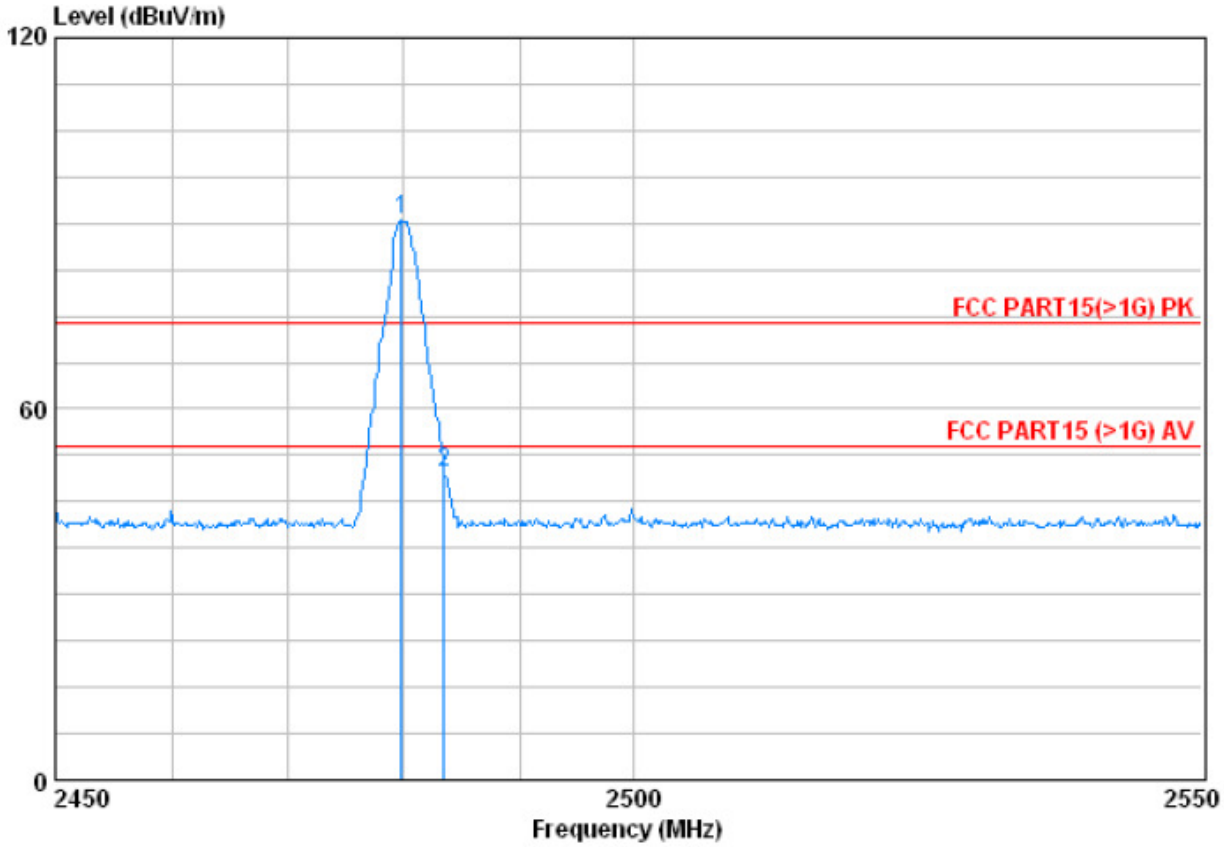
CH High 2480MHz Radiated Bandedge **Modulation: 8DPSK**

Horizontal, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2479.8	3.03	32.67	39.92	95.17	90.95	74	16.95	Peak
2483.5	3.03	32.67	39.92	54.88	50.66	74	-23.34	Peak

Vertical, Peak Detector:



Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2479.8	3.03	32.67	39.92	94.84	90.62	74	16.62	Peak
2483.5	3.03	32.67	39.92	53.86	49.64	74	-24.36	Peak

Remark: No any other emission which fall in restricted bands can be detected and be reported.

Test Level = Receiver Reading + Antenna Factor + Cable Loss- Preamplifier Factor

All frequencies within the “Restricted bands” have been evaluated to compliance. Section 15.205 Restricted bands of operation.

Except as shown in paragraph of this section. only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	
13.36 - 13.41	322 - 335.4		

8 Test Setup Photographs

Refer to the <Appendix A MB3_Test Setup photos>.

9 EUT Constructional Details

Refer to the <Appendix B MB3_External Photos> & <Appendix C MB3_Internal Photos>.

End of Report