

588 West Jindu Road, Songjiang District, Shanghai, China

 Telephone:
 +86 (0) 21 6191 5666

 Fax:
 +86 (0) 21 6191 5678

 ee.shanghai@sgs.com

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## FCC Part 15C TEST REPORT

Application No. :	SHEM1305000785ME	
Applicant:	Andon Health Co., Ltd.	
FCC ID:	ZRYGMM0001	
IC:	9775A-GMM0001	
Equipment Under Test (E NOTE: The following sam	EUT): ole(s) submitted was/were identified on behalf of the client as	
Product Name:	Blood Glucose Meter	
Brand Name:	IDEAL LIFE	
Model: GMM0001		
Standards:	FCC PART 15 SUBPART C, Section 15.247:2012 RSS-210 Issue 8 (December 2010) RSS-Gen Issue 3 (December 2010)	
Date of Receipt:	May 08, 2013	
Date of Test:         May 31, 2013 to June 04, 2013		
Date of Issue:	June 18, 2013	
Test Result:	PASS *	

\* In the configuration tested, the EUT (Equipment under test) complied with the standards specified above.

June 2013

Tony Wu E&E Section Manager

#### SGS-CSTC (Shanghai) Co., Ltd.

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.



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### 2 Version

	Revision Record					
Version	Version Chapter Date Modifier Remark					
00	/	June 04, 2013	/	Original		

Authorized for issue by:		
Engineer	Zenger Zhang	Zenger Zhang-
	Print Name	
Clerk	Susie Liu	Suise Lin
	Print Name	
Reviewer	Keny Xu	Any Wang
	Print Name	



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### 3 Test Summary

Test Item	FCC Test Requirement	IC Test Requirement	Test method	Result
Antenna Requirement	FCC Part 15, Subpart C Section 15.203/15.247 (c)	RSS-Gen 7.1.2		PASS
AC Power Line Conducted Emission	FCC Part 15, Subpart C Section 15.207	RSS-Gen Section 7.2.4	ANSI C63.10 (2009) Section 6.2	N/A
20dB Occupied Bandwidth	FCC Part 15, Subpart C Section 15.247 (a)(1)	RSS 210 A 8.1(b)	ANSI C63.10 (2009) Section 6.9.1	PASS
Conducted Peak Output Power	FCC Part 15, Subpart C Section 15.247 (b)(1)	RSS 210 A 8.4(2)	ANSI C63.10 (2009) Section 6.10.1	PASS
Carrier FrequenciesFCC Part 15, Subpart CSeparationSection 15.247 (a)(1)		RSS 210 A 8.1(b) ANSI C63.10 (200 Section 7.7.2		PASS
Hopping ChannelFCC Part 15, Subpart CNumberSection 15.247 (b)		RSS 210 A 8.1(d)	ANSI C63.10 (2009) Section 7.7.3	PASS
Dwell Time FCC Part 15, Subpart C Section 15.247 (a)(1)		RSS 210 A 8.1(d)	ANSI C63.10 (2009) Section 7.7.4	PASS
RF Conducted Spurious Emissions	FCC Part 15, Subpart C Section 15.247(d)	RSS 210 A 8.5	ANSI C63.10 (2009) Section 7.7.10	PASS
Radiated Spurious emissions	FCC Part 15, Subpart C Section 15.209 and Section 15.205	RSS-Gen section 4.9	ANSI C63.10 (2009) Section 6.12	PASS
Radiated Band-edge	diated Band-edge FCC Part 15, Subpart C Section 15.205		ANSI C63.10 (2009) Section 6.5	PASS
99% Occupied Bandwidth		RSS-Gen section 4.6.1	RSS-Gen section 4.6.1	Test

Remark: the device is power supplied by battery, so the Conducted Emission is not application.



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### 5 General Information

### 5.1 Client Information

Applicant:	Andon Health Co., Ltd.		
Address of Applicant:	No. 3 JinPing Street, YaAn Road, Nankai District, Tianjin. 300190, China		
Manufacturer:	Andon Health Co., Ltd.		
Address of Manufacturer:	No. 3 JinPing Street, YaAn Road, Nankai District, Tianjin. 300190, China		

### 5.2 General Description of E.U.T.

Product Name	Blood Glucose Meter	
Brand Name:	IDEAL LIFE	
Model No:	GMM0001	

### 5.3 Technical Specifications:

Operation Frequency:	2402MHz~2480MHz
Modulation Technique:	2.0+EDR
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channel:	79
Power Supply:	DC 3V by Battery (AAA*2)
Antenna Type	Integral
Antenna Gain	3.0dBi



### 5.4 Support Software for Testing

The EUT has been tested independently.

### 5.5 Details of Test Mode

Test Mode	Description of Test Mode	
Transmitting mode	Keep the EUT on continue transmitting mode.	

### 5.6 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

### 5.7 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.



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### 6 Equipments Used during Test

Radiated	Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2013-02-23	2014-02-22
2	Antenna	SCHWARZBE CK	VULB916 8	9168-313	2013-03-07	2014-03-06
3	CONTROLLER	INNCO	CO200	474	/	/
4	Antenna	SCHWARZBE CK	BBHA912 0D	9120D-67 9	2013-03-07	2014-03-06
5	Antenna	SCHWARZBE CK	BBHA917 0	9170-373	2013-03-07	2014-03-06
6	Low nosie amplifier	LNA6900	TESEQ	71033	2013-02-23	2014-02-22

$\boxtimes$	RF	Test
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Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date	
1	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2013-06-03	2014-06-01	
2	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-679	2013-06-03	2014-06-01	
3	Horn Antenna	Rohde & Schwarz	HF906	100284	2013-06-03	2014-06-01	
4	ANTENNA	SCHWARZBECK	VULB9168	9168-313	2013-06-03	2014-06-01	
5	Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA91703 73	2013-03-15	2014-03-14	
6	Ultra broadband antenna	Rohde & Schwarz	HL562	100227	2012-10-09	2013-10-08	
7	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT800.0/ 880.0- 0.2/40-5SSK	9	2013-06-03	2014-06-01	



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8	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT1800. 0/ 2000.0- 0.2/40-5SSK	11	2013-06-03	2014-06-01
9	High pass Filter	FSCW	HP 12/2800- 5AA2	19A45-02	2013-06-03	2014-06-01
11	Low nosie amplifier	TESEQ	LNA6900	70133	2013-06-03	2014-06-01
12	High-low temperature cabinet	Shanghai YuanZhen	GW2050		2013-06-03	2014-06-01



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### 7 Test Results

7.1

E.U.T. test conditions					
Test Power:	AC 120V, 60Hz				
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.				
<b>Operating Environment:</b>					
Temperature:	20.0 -25.0 °C				
Humidity:	35-75 % RH				
Atmospheric Pressure:	992 -102.0 kPa				
Test frequencies:	receivers, other than T required. reported for e	(m) Measurements on intentional radiators or V broadcast receivers, shall be performed and. if each band in which the device can be operated with t the number of frequencies in each band specified in			
Frequency range ov		Location in the range			
which device operat	es frequencies	of operation			
1 MHz or less	1	Middle			
1 to 10 MHz	2	1 near top and 1 near bottom			
More than 10 MH	z 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.



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### 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 3.0 dBi.



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### 7.3 20dB Occupied Bandwidth

FCC Part 15 C Section 15.247 (a)(1) RSS 210 A 8.1(b)
ANSI C63.10:2009 Clause 6.9.1
May 31, 2013
Transmitting mode

### Test Procedure:

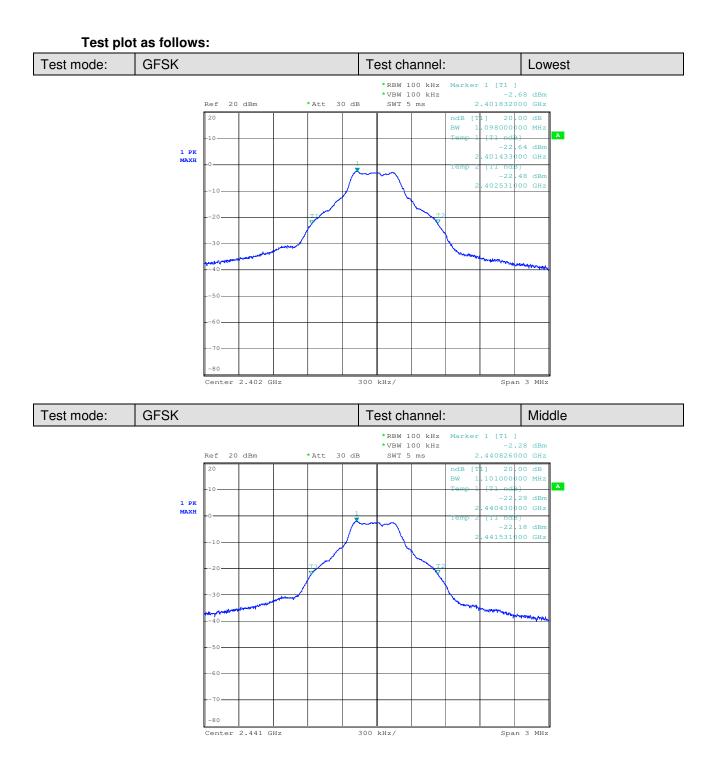
- 1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
- 2. Set the spectrum analyzer: Span = approximately 2 to 3 times the 20dB bandwidth, centered on the hopping channel;
- 3. Set the spectrum analyzer: RBW >= 1% of the 20dB bandwidth (set 100kHz). VBW >= RBW. Sweep = auto; Detector Function = Peak. Trace = Max Hold.
- 4. Mark the peak frequency and -20dB points.

### Test date

Test Channel	Test Channel Manual (MHz)		Bandwidth(MHz)
Low	2402	GFSK	1.098
Middle	2441	GFSK	1.101
High	2480	GFSK	1.098
Low	2402	π/4DQPSK	1.332
Middle	2441	π/4DQPSK	1.332
High	2480	π/4DQPSK	1.335
Low	2402	8DPSK	1.332
Middle	2441	8DPSK	1.335
High	2480	8DPSK	1.335

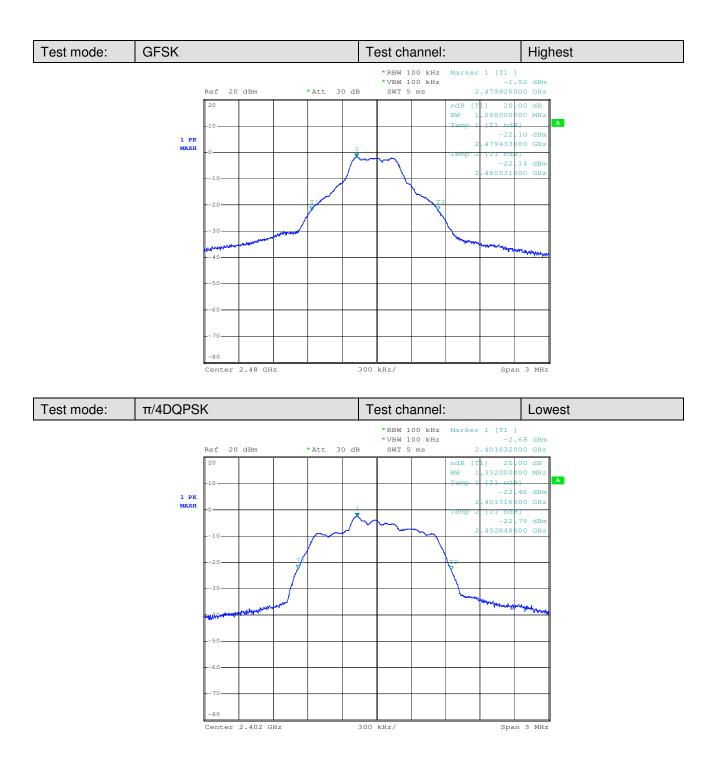


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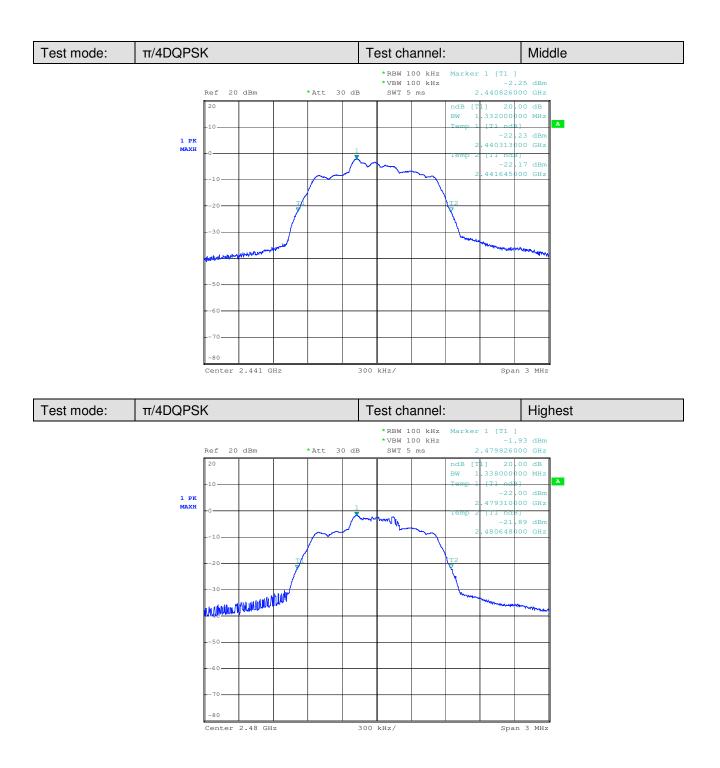


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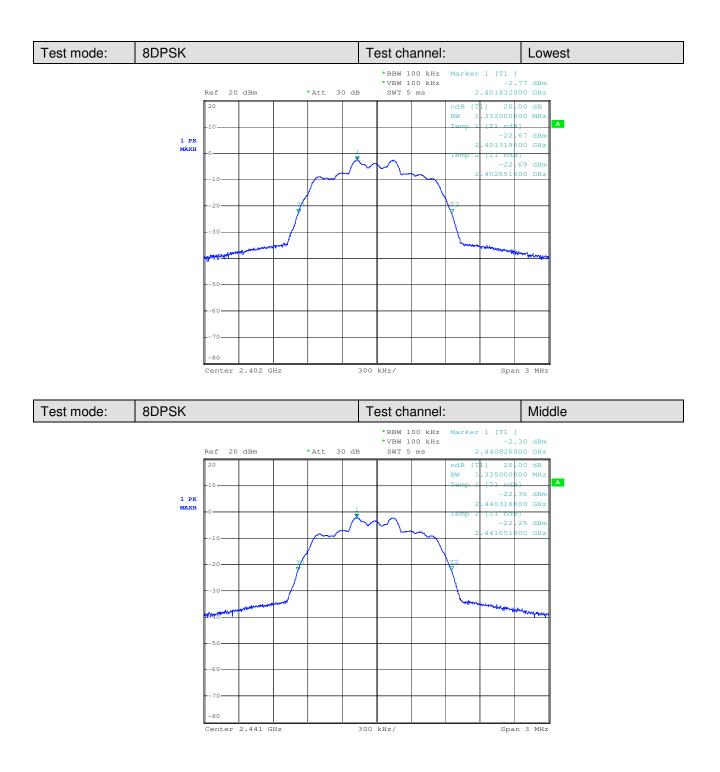


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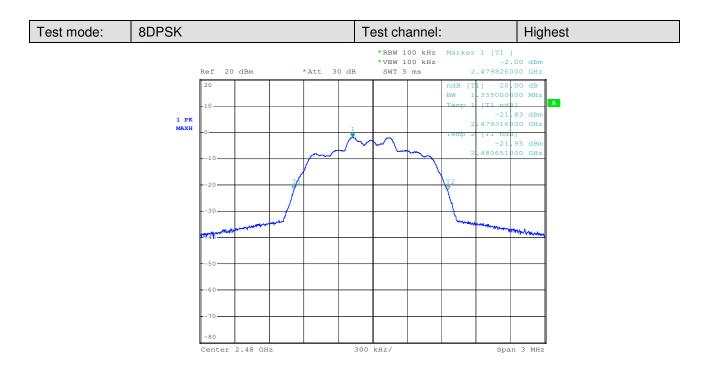


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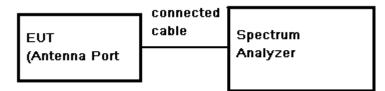


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### 7.4 Conducted Peak Output Power

Test Requirement:	FCC Part 15.247 Section 15.247(b)(1) RSS 210 A 8.4(2)
Test Method:	ANSI C64.10:2009 Section 6.10.1
Test Date:	May 31, 2013
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.
Final Test Mode:	Transmitting mode

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 = 10 MHz, Sweep = auto; Detector Function = Peak.
- 3. Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.



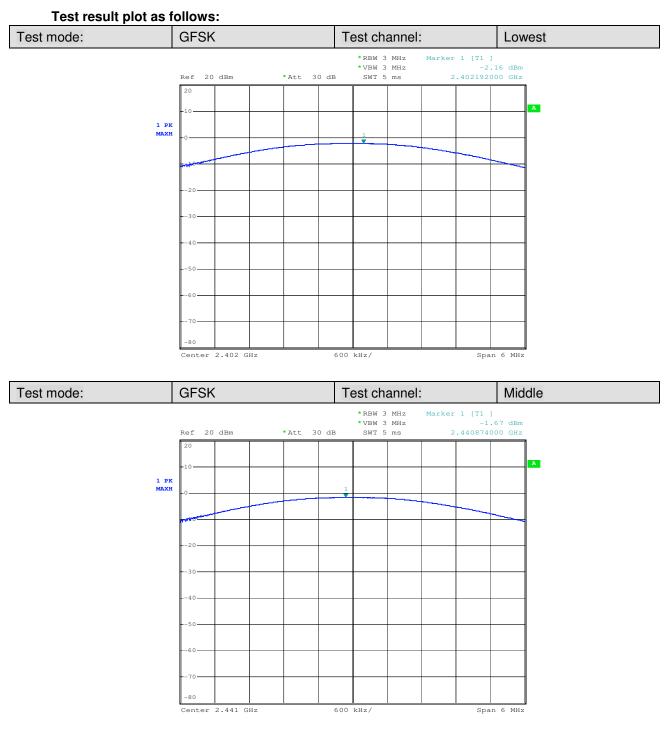
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Test	Results	record:	

Test Channel	Modulation	Fundamental Frequency (MHz)	Reading Power (dBm)	Cable Loss (dB)	Output Peak Power(dBm)	Limit (dBm)	Margin (dB)
Lowest	GFSK	2402	-1.50	1.5	0.00	30	30.00
Middle	GFSK	2441	-1.01	1.5	0.49	30	29.51
Highest	GFSK	2480	-0.76	1.5	0.74	30	29.26
Lowest	π/4DQPSK	2402	-1.18	1.5	0.32	30	29.68
Middle	π/4DQPSK	2441	-0.69	1.5	0.81	30	29.19
Highest	π/4DQPSK	2480	-0.38	1.5	1.12	30	28.88
Lowest	8DPSK	2402	-2.16	1.5	-0.66	30	30.66
Middle	8DPSK	2441	-1.67	1.5	-0.17	30	30.17
Highest	8DPSK	2480	-1.41	1.5	0.09	30	29.91

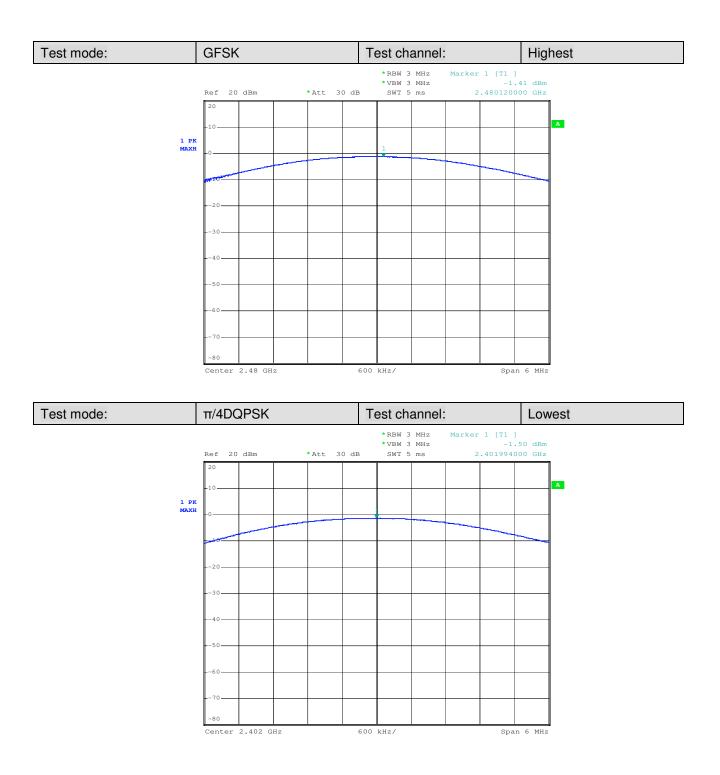


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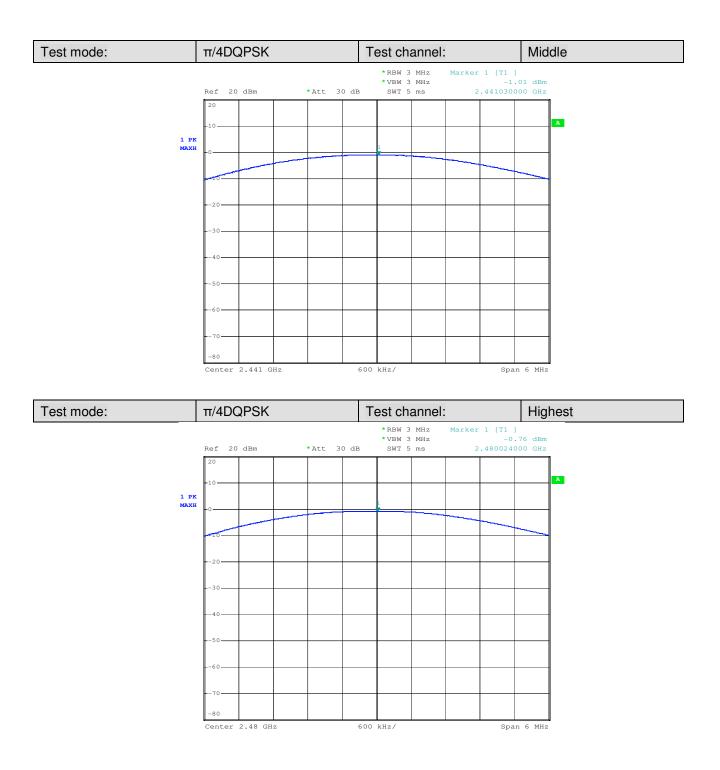


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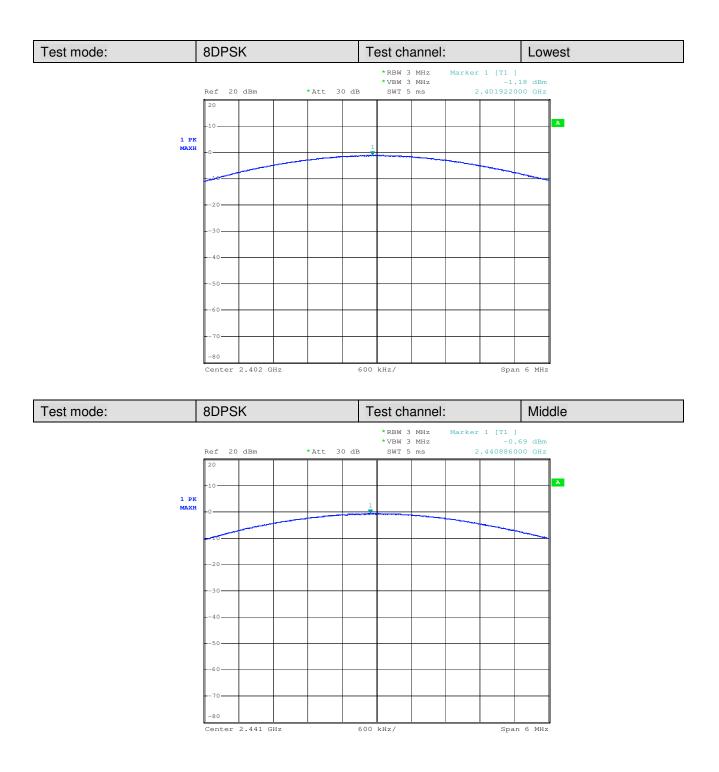


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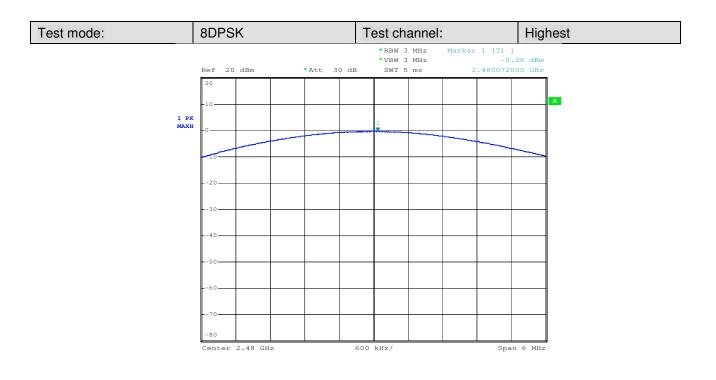


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### 7.5 Carrier Frequencies Separated

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1) RSS 210 A 8.4(2)
Test Method:	ANSI C63.10:2009 Clause 7.7.2
Test Date:	June 04, 2013
Limit:	0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)
Test result:	Pass
Final Test Mode:	Transmitting mode

### **Test Procedure:**

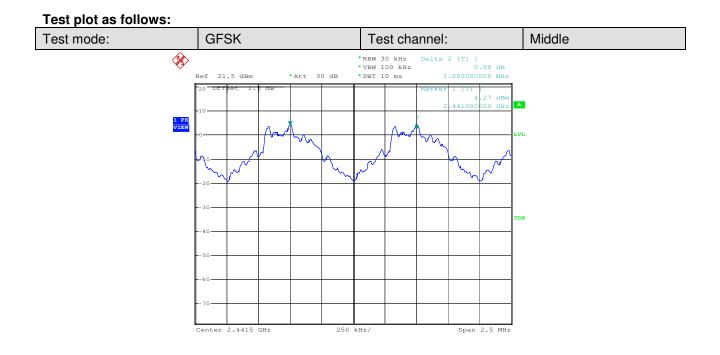
- 1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
- Set the spectrum analyzer: RBW >= 1% of the span (set 100 kHz). VBW >= RBW , Span = 3MHz. Sweep = auto; Detector Function = Peak. Trace = Max,hold.
- 3. Allow the trace to stabilize. Use the 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.

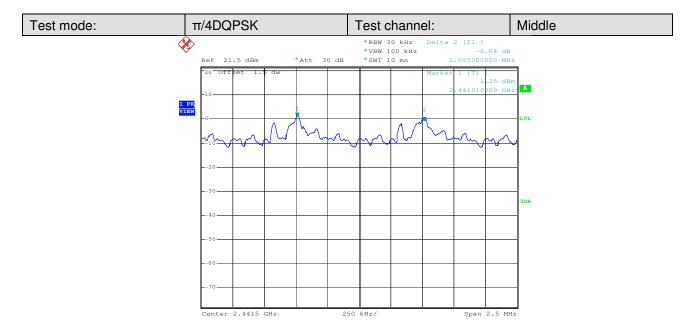
Test Channel	Modulation	Carrier Frequencies Separated	Limit (25kHz or two- thirds of the 20 dB bandwidth)	Results
Middle Channels (channel 39 and channel 40)	8DPSK	1.005	25kHz/890kHz	PASS
Middle Channels (channel 39 and channel 40)	GFSK	1.005	25kHz/890kHz	PASS
Middle Channels (channel 39 and channel 40)	π/4DQPSK	1.005	25kHz/890kHz	PASS

Note: 20dB bandwidth reference Section 7.4



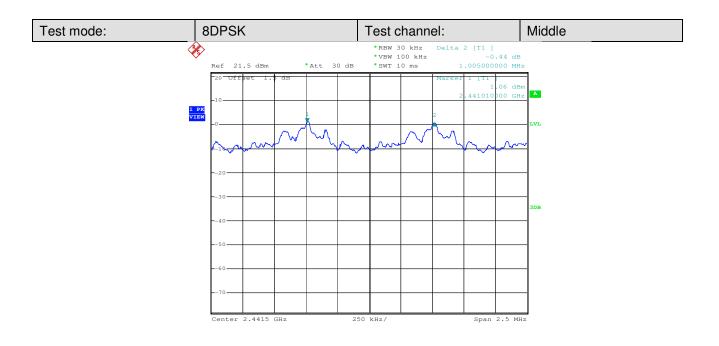
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### 7.6 Hopping Channel Number

Test Requirement:	FCC Part15 C Section 15.247(b)		
	RSS 210 A 8.1(d)		
Test Method:	ANSI C63.10:2009 Clause 7.7.3		
Test Date:	June 04, 2013		
Limit:	At least 15 channels		
Test Result:	Pass		
Test Mode:	Transmitting mode		

### **Test Procedure:**

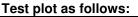
- 1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
- 2. Set the spectrum analyzer: RBW = 100 kHz. VBW = 300 kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.
- 3. Allow the trace to stabilize. It may prove necessary to break the span 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.

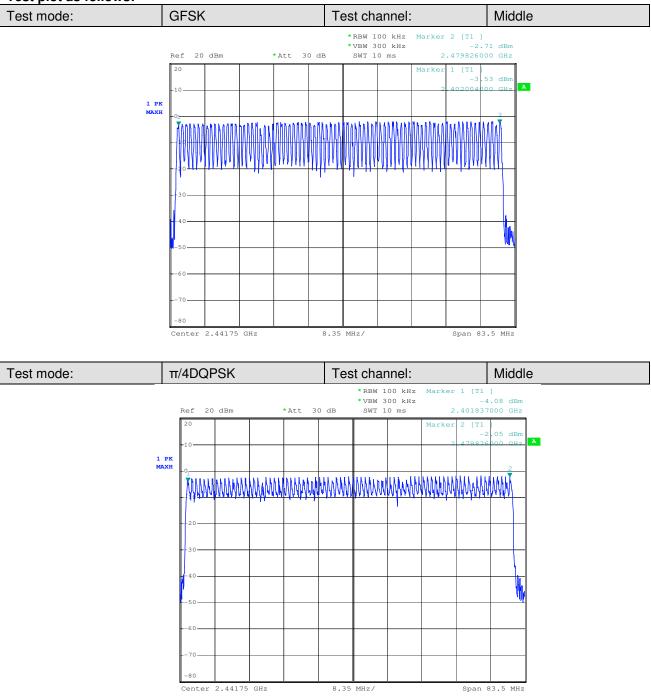
#### **Measurement Data**

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



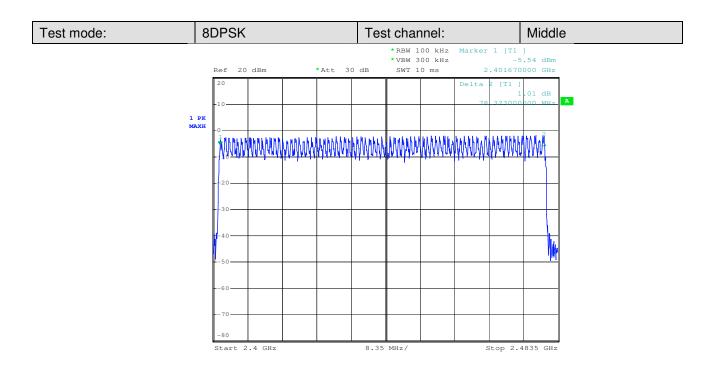
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7.7 Dwell Time

Test Requirement:	FCC Part 15 C Section 15.247(a)(1)				
	RSS 210 A 8.1(d)				
Test Method:	ANSI C63.10:2009 Clause 7.7.4				
Test Date:	June 03, 2013				
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:					

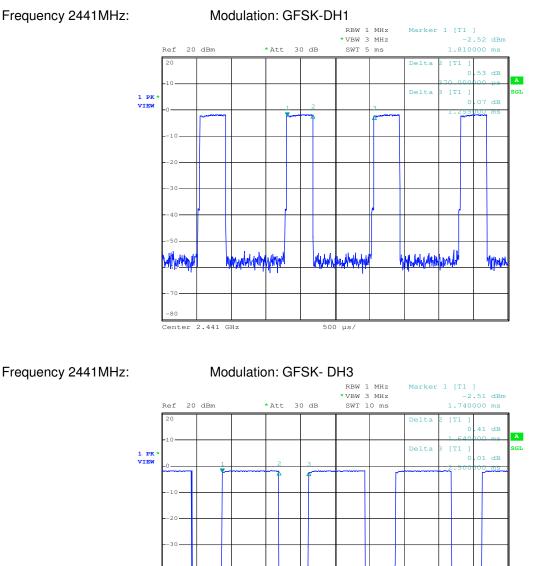
- 1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
- 2. Set spectrum analyzer span = 0. centered on a hopping channel;
- 3. Use Emission width / No. of Hopping Channels in 31.6s to determine the dwell time.

Frequency (MHz)	Modulation	Packet	Emission Width (ms)	Number of Hopping Channel in 31.6s	Average Time of Occupancy(s)	Limit(s)	Result
2441	8DPSK	DH1	0.37	201	0.074	0.4	Pass
		DH3	1.64	125	0.205	0.4	Pass
		DH5	2.87	90	0.258	0.4	Pass
	GFSK	DH1	0.37	211	0.078	0.4	Pass
		DH3	1.63	140	0.228	0.4	Pass
		DH5	2.87	88	0.252	0.4	Pass
	π/4DQPSK	DH1	0.37	164	0.061	0.4	Pass
		DH3	1.62	123	0.199	0.4	Pass
		DH5	2.89	102	0.294	0.4	Pass



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### Test plot as follows::



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1 ms/

Mary .

Center 2.441 GHz

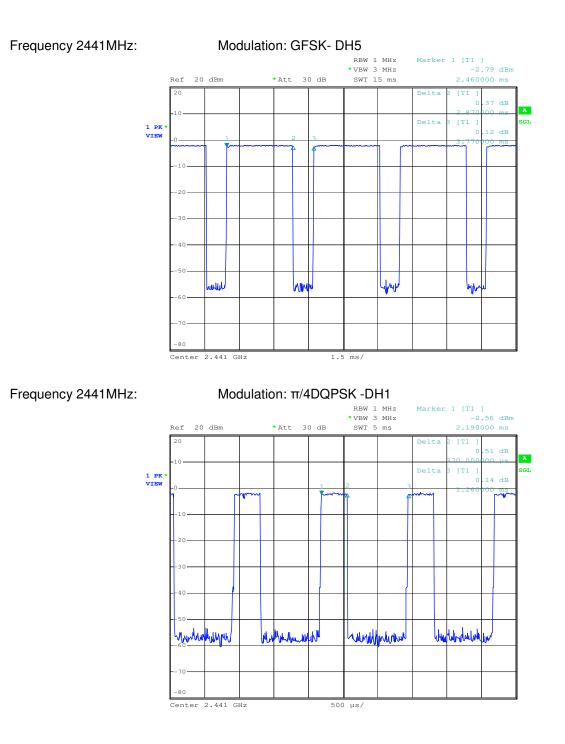
Unit

Mall

hugh

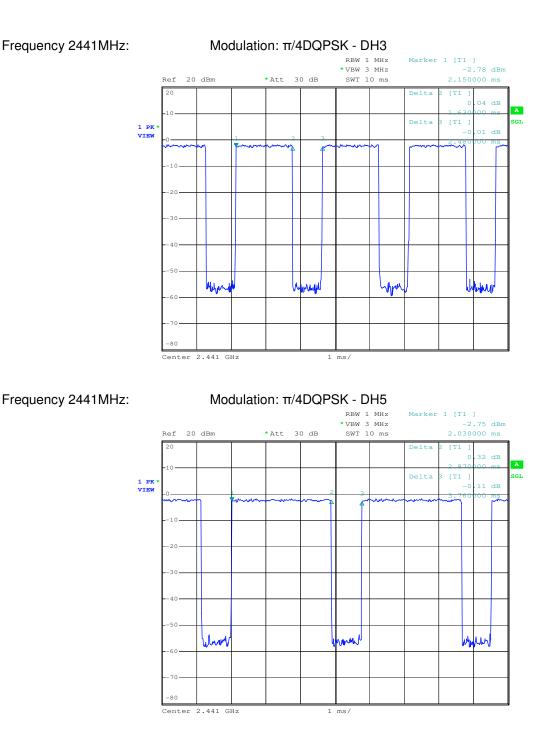


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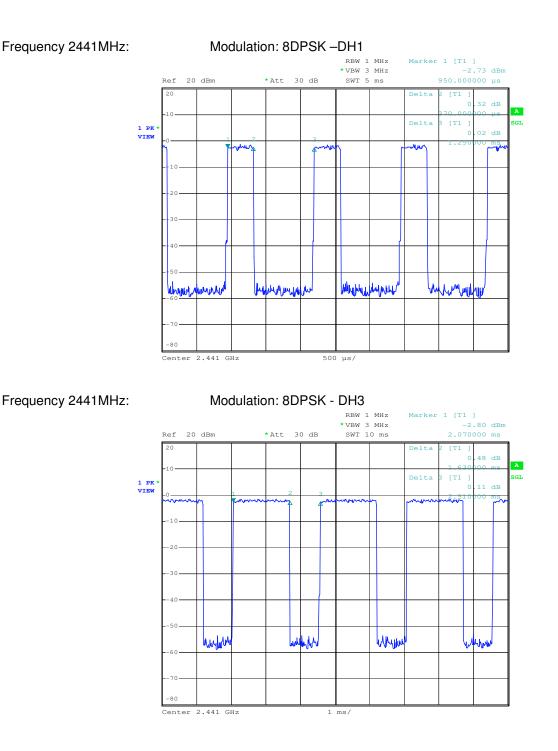


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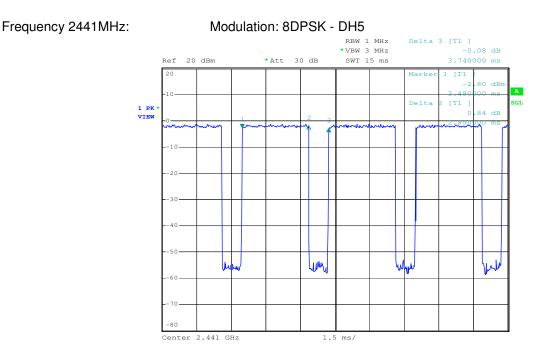


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### 7.8 Conducted Spurious Emissions

Test Requirement:	FCC Part 15 Section 15.247(d)				
	RSS 210 A 8.5				
Test Method:	ANSI C63.10:2009 Clause 7.7.10				
Test Date:	May 31, 2013				
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.				
Final Test Mode:	Transmitting mode				
Test Result:	Pass				
Test Configuration:	connected				
	EUT cable Spectrum (Antenna Port Analyzer				
Test Procedure:	1. Remove the antenna from the EUT and then connect a low RF cable from				

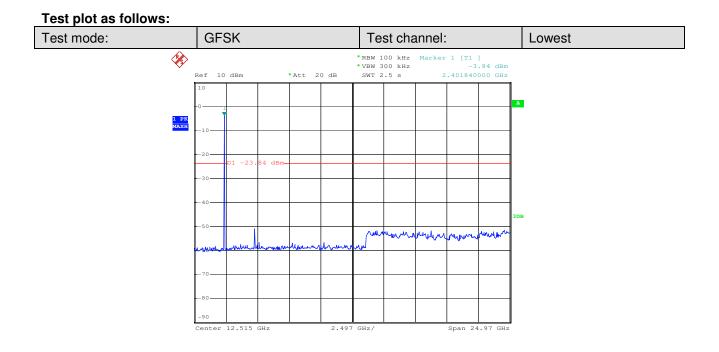
est Procedure:

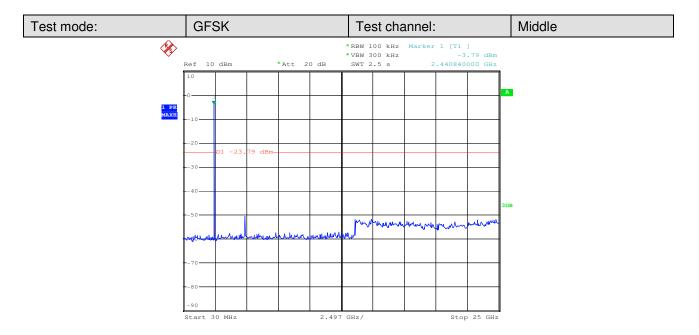
. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 100KHz. VBW >= RBW. Sweep = auto; Detector Function = Peak (Max. hold).



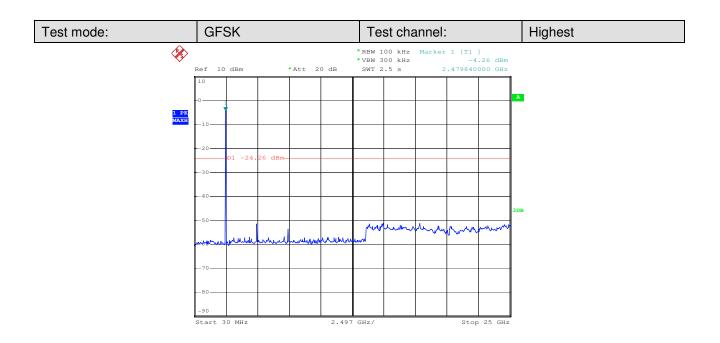
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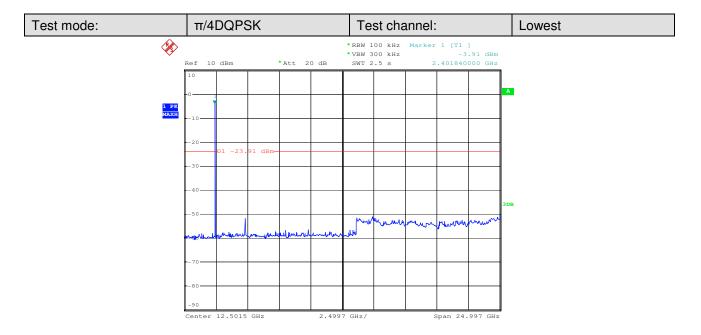






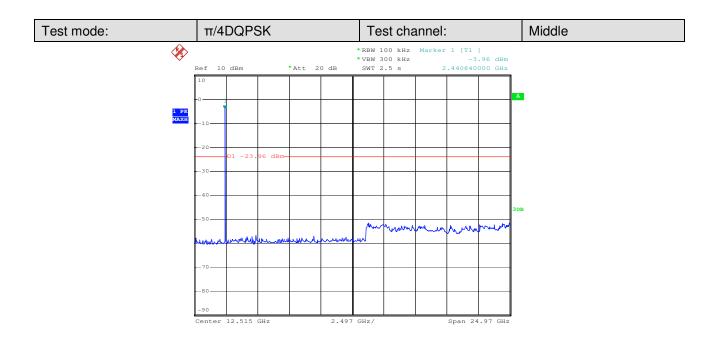
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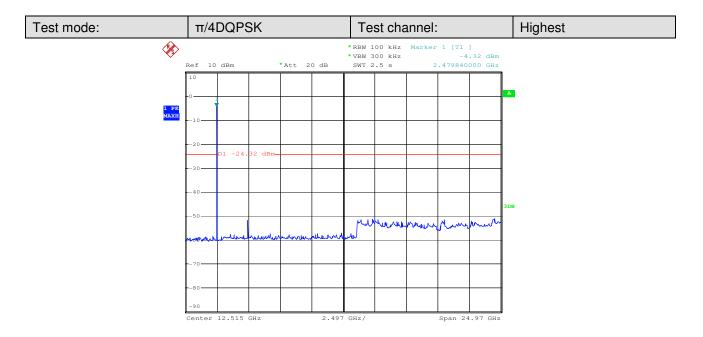






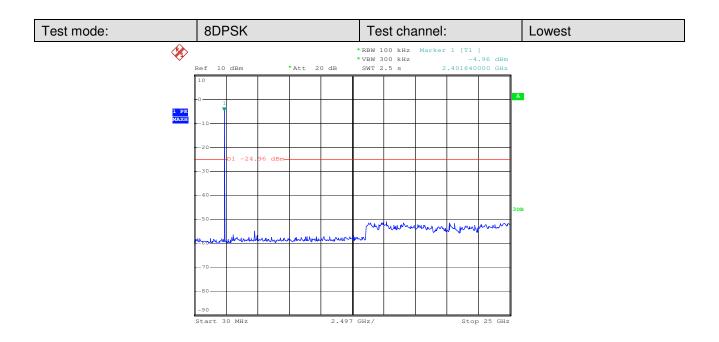
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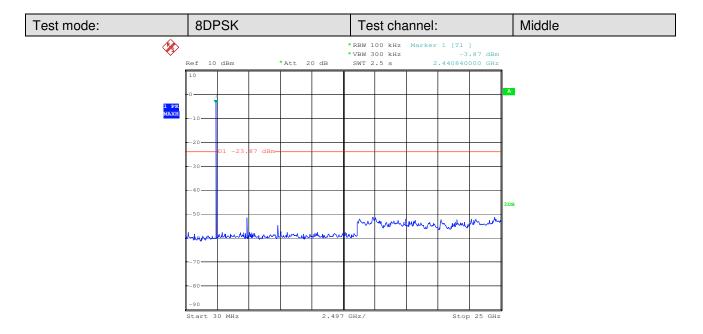






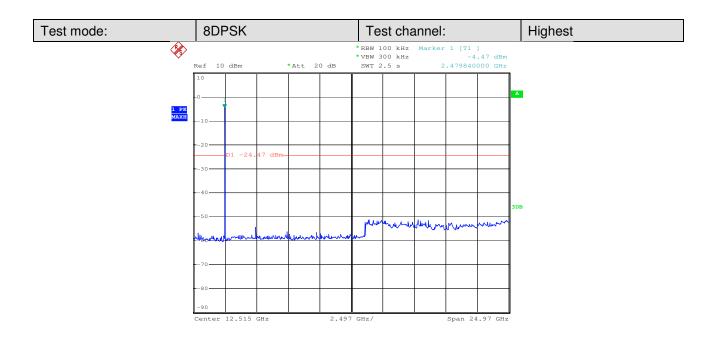
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### 7.9 Conducted Band-edge

Test Requirement:	FCC Part 15 Section 15.247(d)
	RSS-Gen section 4.9
Test Method:	ANSI C63.10:2009 Clause 7.7.10
Test Date:	June 03, 2013
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.
Final Test Mode:	Transmitting mode
Test Result:	Pass
Test Configuration:	EUT cable Spectrum (Antenna Port Analyzer
Test Procedure:	1. Remove the antenna from the EUT and then connect a low RF cable from

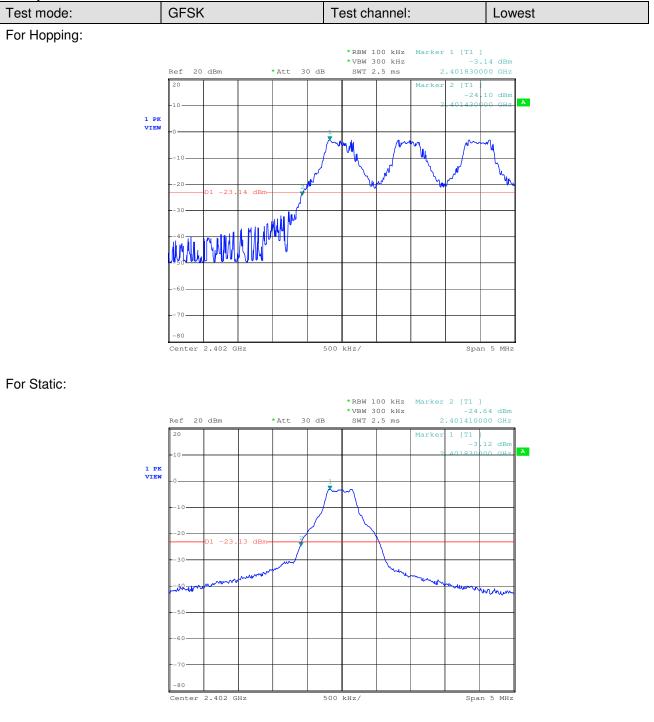
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 100KHz. VBW >= RBW. Sweep = auto; Detector Function = Peak (Max. hold).



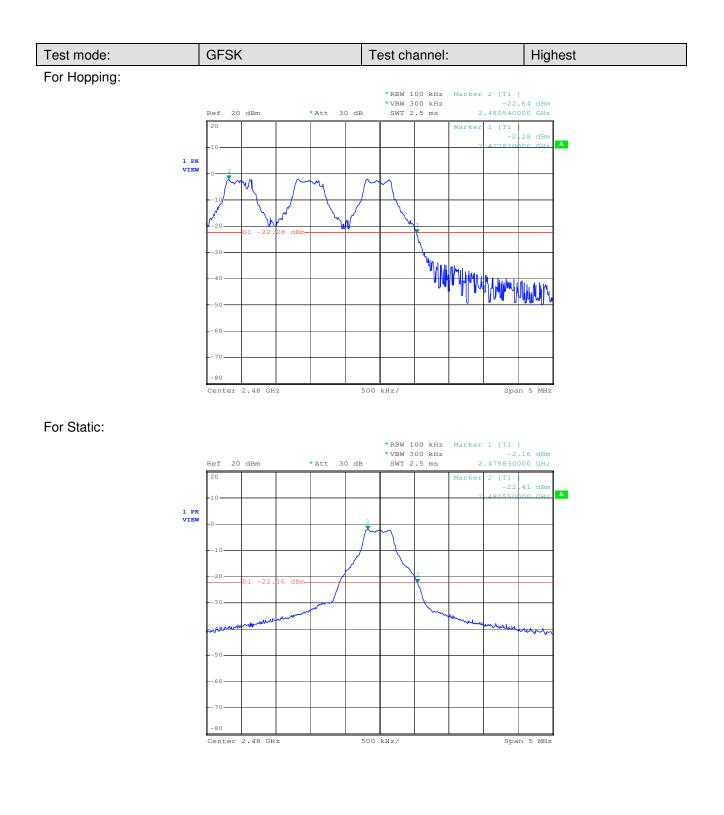
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#### Test plot as follows:



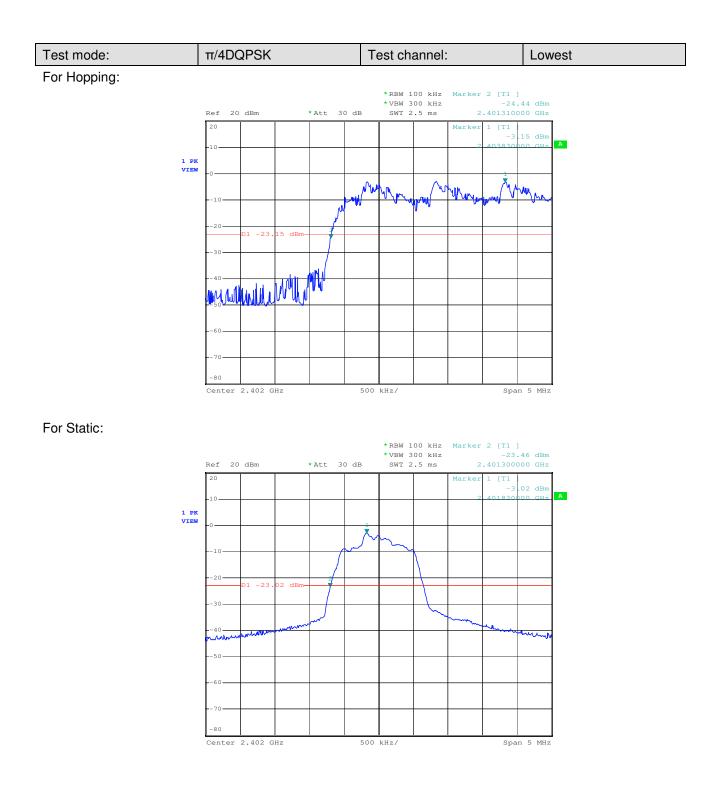


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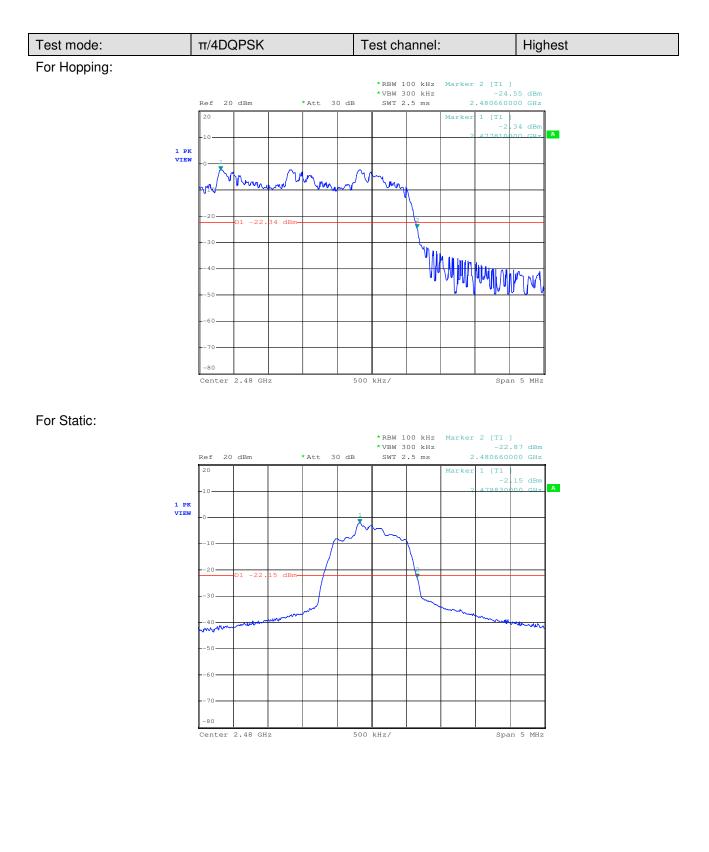


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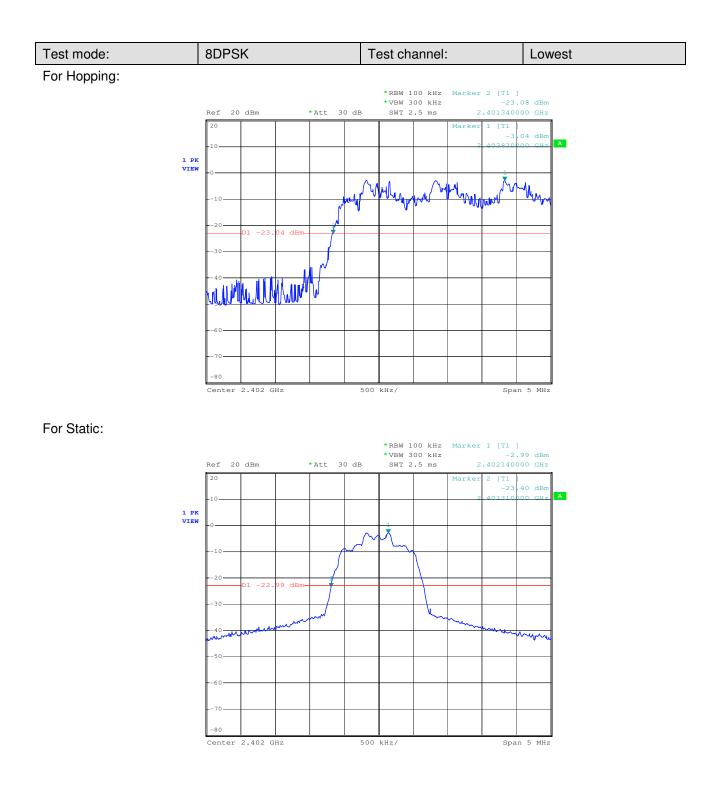


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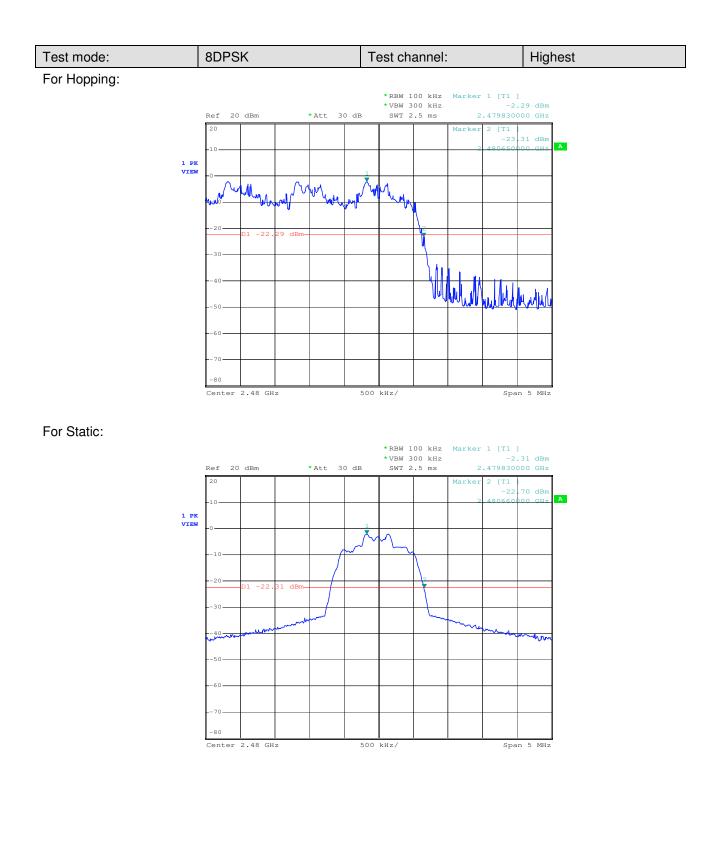


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#### 7.10 Radiated Spurious Emissions

Test Requirement:	FCC Part 15 Section 15.209 and Section 15.205 RSS-Gen section 4.9					
Test Method:	ANSI C63.10:2009 Clause 6.12					
Test Date:	May 30, 2013					
Final Test Mode:	Transmitting mode					
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 $f \ge 1$ GHz VBW $\ge$ RBW; Sweep = auto Detector function = peak Trace = max hold For AV value: RBW = 1 MHz for $f \ge 1$ 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 dB $\mu$ V/m between 88MHz & 216MHz					
	46.0 dB $\mu$ V/m between 216MHz & 960MHz					
	54.0 dBµV/m above 960MHz					



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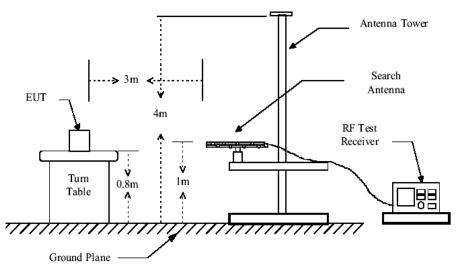


Figure 1. 30MHz to 1GHz radiated emissions test configuration

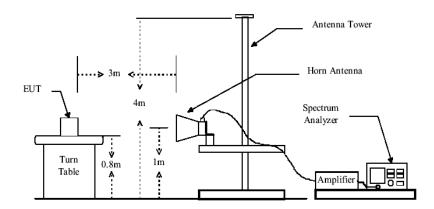


Figure 2. Above 1GHz radiated emissions test configuration

#### **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 ( $\pi$ /4DQPSK mode with charging).

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



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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.

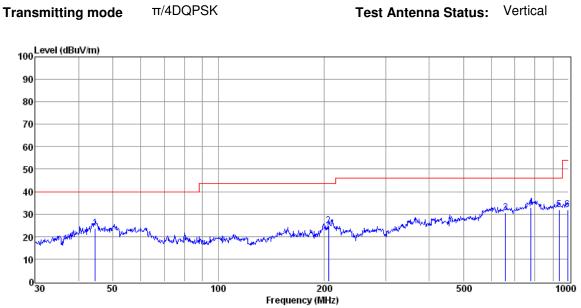
The test only perform the EUT in transmitting status since the test frequencies were over 1GHz only required transmitting status.



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#### Below show the worst Test results:

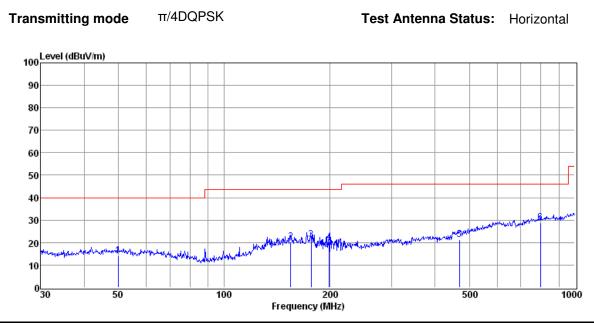
#### 30MHz to 1GHz



Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)		
44.53	34.79	13.12	24.70	0.60	23.81	40.00	-16.19	QP	Vertical
206.32	38.46	9.24	24.60	1.54	24.64	43.50	-18.86	QP	Vertical
660.06	31.81	19.98	24.13	3.04	30.70	46.00	-15.30	QP	Vertical
779.36	31.48	22.09	24.00	3.40	32.97	46.00	-13.03	QP	Vertical
939.52	28.23	23.69	23.80	3.77	31.89	46.00	-14.11	QP	Vertical
993.01	27.56	24.24	23.70	3.88	31.98	54.00	-22.02	QP	Vertical



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Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)		
49.88	25.41	12.81	24.70	0.65	14.17	40.00	-25.83	QP	Horizontal
154.68	31.05	12.65	24.70	1.29	20.29	43.50	-23.21	QP	Horizontal
177.18	33.21	11.44	24.60	1.40	21.45	43.50	-22.05	QP	Horizontal
199.44	34.16	9.32	24.60	1.51	20.39	43.50	-23.11	QP	Horizontal
468.88	27.07	16.28	24.40	2.51	21.46	46.00	-24.54	QP	Horizontal
797.43	27.13	22.18	24.00	3.44	28.75	46.00	-17.25	QP	Horizontal



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#### 1GHz-12GHz:

Transmittir	ng mode $\pi/4$	4DQPSK	Test Chann	el: Low	Те	st Antenna:	Iorizontal
Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5547.25	33.87	11.52	45.39	54	8.61	peak
2	7638.75	34.40	17.92	52.32	54	1.68	peak
3	8191.00	33.30	18.31	51.61	54	2.39	peak
4	9565.75	31.98	22.63	52.61	54	1.39	peak
5	11093.25	32.25	20.65	52.90	54	1.10	peak
6	11892.25	32.67	19.89	52.56	54	1.44	peak

Transmittir	Transmitting mode π/4DQPSK		Test Channel:		Test Antenna: Horizontal		
Mark	Frequency	Reading	Factor	Emission	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	5617.75	33.71	11.64	45.35	54	8.65	peak
2	7873.75	33.80	17.96	51.76	54	2.24	peak
3	8320.25	32.61	18.55	51.16	54	2.84	peak
4	9577.50	29.48	22.57	52.05	54	1.95	peak
5	11069.75	31.21	20.70	51.91	54	2.09	peak
6	12562.00	33.80	17.94	51.74	54	2.26	peak



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Transmittin	ng mode π/4	DQPSK	Test Chann	el: Middle	Т	est Antenna:	Horizontal
Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3561.50	34.59	6.87	41.46	54	12.54	peak
2	5382.75	35.47	11.20	46.67	54	7.33	peak
3	7662.25	33.66	17.94	51.60	54	2.40	peak
4	8214.50	33.75	18.36	52.11	54	1.89	peak
5	9589.25	30.00	22.52	52.52	54	1.48	peak
6	11175.50	33.04	20.55	53.59	54	0.41	peak
7	12021.50	32.71	19.77	52.48	54	1.52	peak

Transmittir	itting mode π/4DQPSK		Test Channel: Middle		Test Antenna: Horizontal		
Mark	Frequenc	y Reading	Factor	Emission	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	5641.25	34.28	11.69	45.97	54	8.03	peak
2	7004.25	33.51	15.14	48.65	54	5.35	peak
3	7838.50	33.83	17.94	51.77	54	2.23	peak
4	9342.50	30.70	21.93	52.63	54	1.37	peak
5	10059.25	5 33.02	20.63	53.65	54	0.35	peak
6	11034.50	32.72	20.76	53.48	54	0.52	peak



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Transmittir	ng mode	π/4DQPSK	Test Chann	el: High	Те	est Antenna:	lorizontal
Mark	Frequence (MHz)	cy Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5664.75	, í	11.73	45.90	54	8.10	peak
2	7462.50	) 33.92	17.71	51.63	54	2.37	peak
3	8120.50	33.70	18.18	51.88	54	2.12	peak
4	9448.25	5 30.25	22.60	52.85	54	1.15	peak
5	11222.5	0 33.15	20.48	53.63	54	0.37	peak
6	11539.7	5 33.52	20.06	53.58	54	0.42	peak

Transmittir	ansmitting mode π/4DQPSK		Test Channel: High		Test Antenna: Horizontal				
Mark	Frequen (MHz)		Reading (dBuV)	Factor (dB)	Emis (dBu)		Limit (dBuV/m)	Margin (dB)	Detector
1	5782.2	5	33.24	11.94	45.	18	54	8.82	peak
2	6581.2	5	32.48	14.65	47.	13	54	6.87	peak
3	7615.2	5	33.66	17.93	51.	59	54	2.41	peak
4	9577.5	0	29.99	22.57	52.	56	54	1.44	peak
5	11469.2	25	33.43	20.13	53.	56	54	0.44	peak
6	12092.0	00	33.09	19.49	52.	58	54	1.42	peak

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.



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### 7.11 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:	June 04, 2013
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 $f \ge 1$ GHz VBW $\ge$ RBW; Sweep = auto Detector function = peak Trace = max hold For AV value: RBW = 1 MHz for $f \ge 1$ 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:

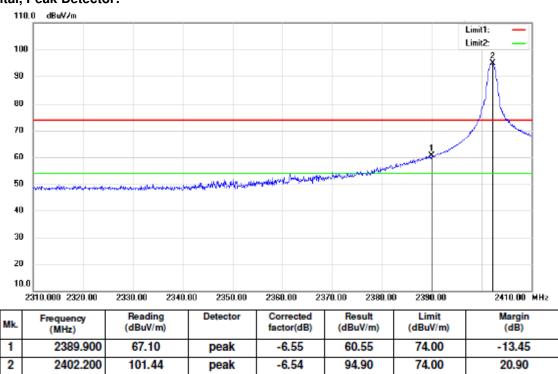
The EUT does meet the FCC requirements.



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#### Measurement Result: CH Low 2402MHz Radiated Bandedge Horizontal, Peak Detector:

Modulation: GFSK

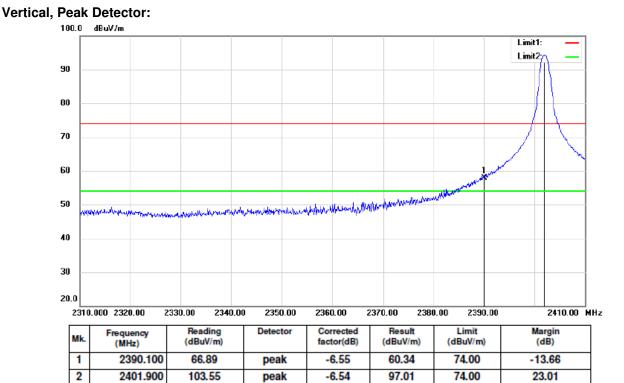


#### Horizontal, Average Detector:

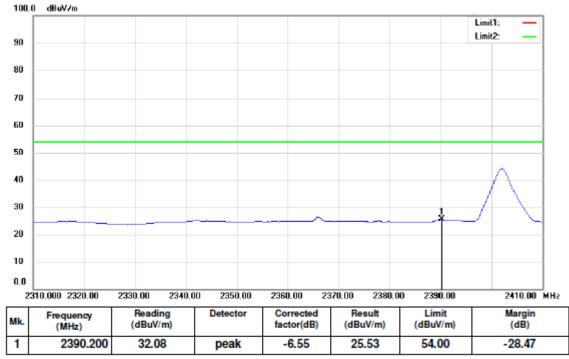




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#### Vertical, Average Detector:





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#### Measurement Result: CH Low 2402MHz Radiated Bandedge Horizontal, Peak Detector:

110.0 dBuV/m Limit1: Limit2 100 90 80 70 60 whether the property of the start of the sta 50 40 30 20 10.0 2410.00 MHz 2310.000 2320.00 2330.00 2340.00 2350.00 2360.00 2370.00 2380.00 2390.00 Reading Frequency Detector Corrected Result Limit Margin Mk (dBuV/m) (dBuV/m) factor(dB) (dBuV/m) (dB) (MHz) 1 2390.200 65.53 peak -6.55 58.98 74.00 -15.02

-6.54

peak

93.51

74.00

19.51

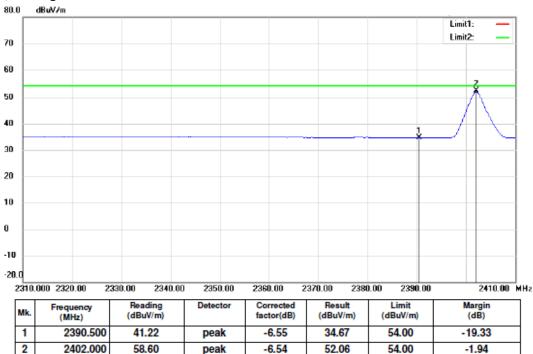
**Modulation:** π/4DQPSK

#### Horizontal, Average Detector:

2401,900

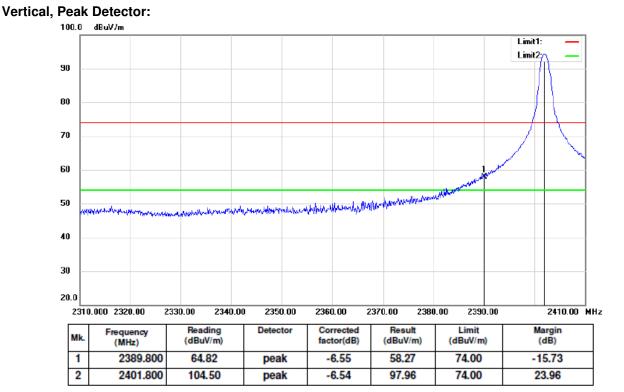
100.05

2

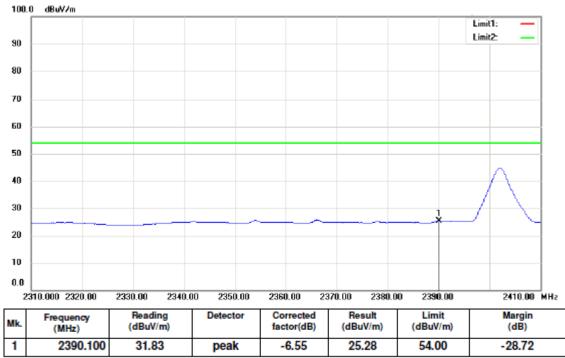




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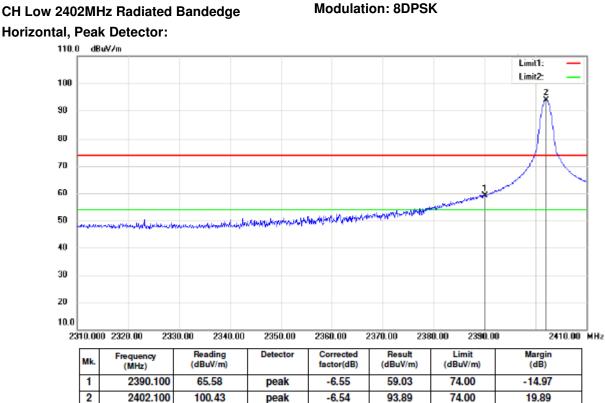


#### Vertical, Average Detector:

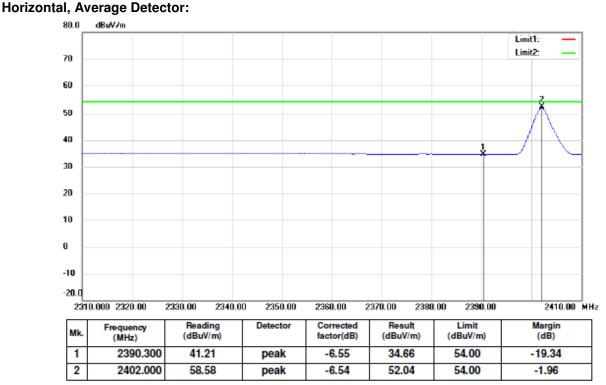




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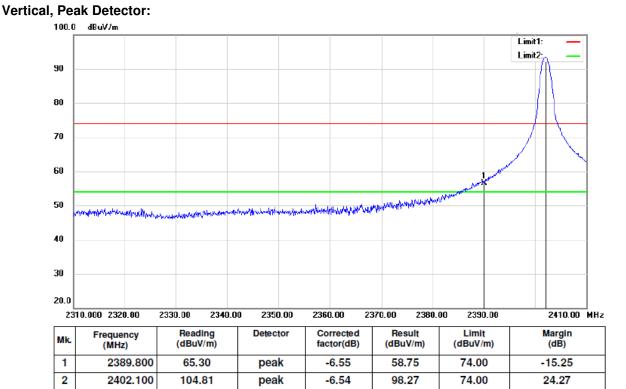


### CH Low 2402MHz Radiated Bandedge

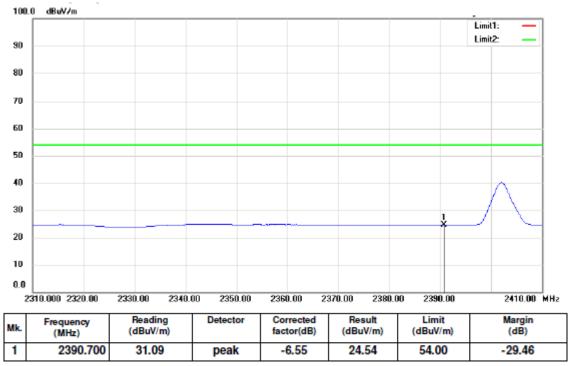




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#### Vertical, Average Detector:

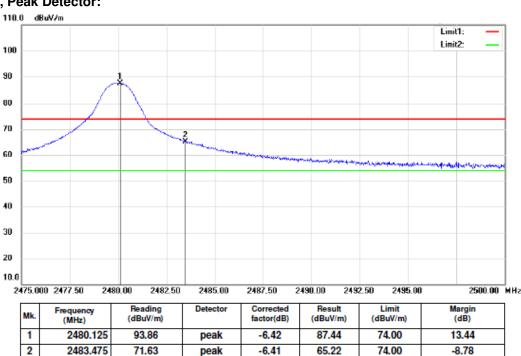




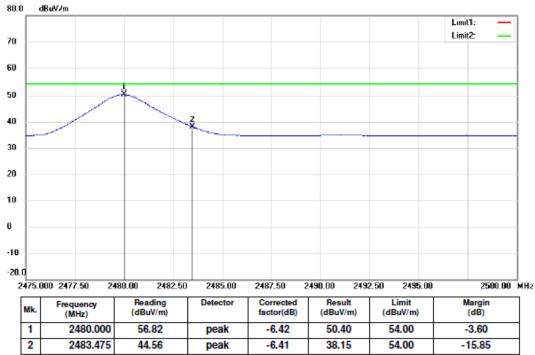
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#### Measurement Result: CH Low 2480MHz Radiated Bandedge Horizontal, Peak Detector:

Modulation: GFSK

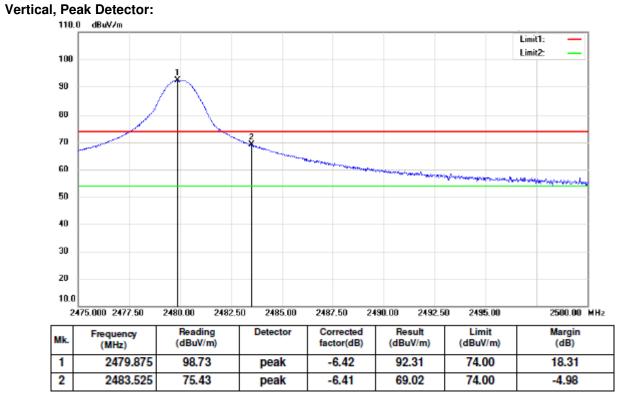




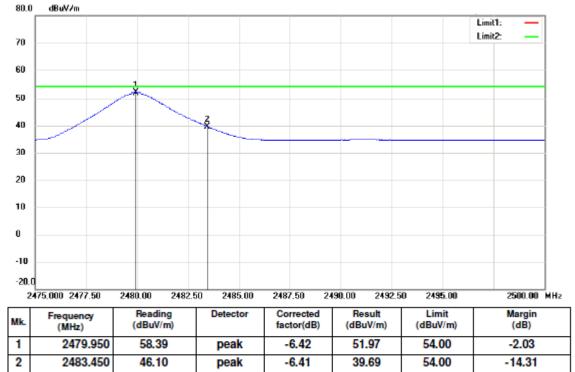




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Vertical, Average Detector:

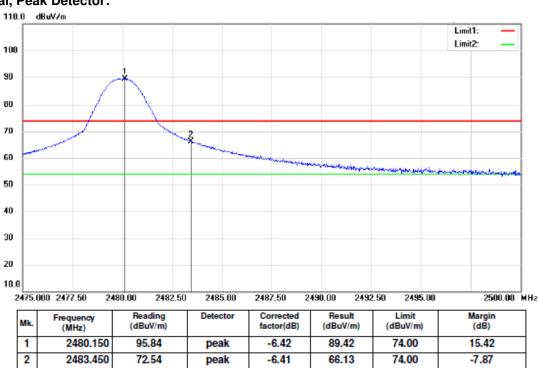




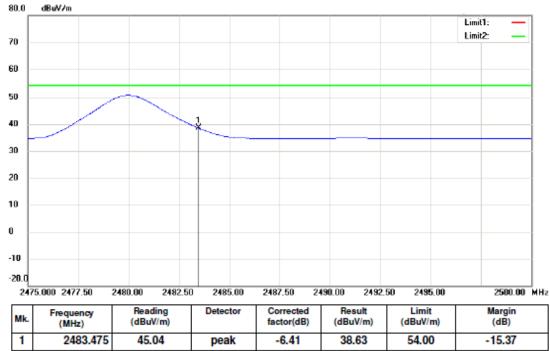
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#### Measurement Result: CH Low 2480MHz Radiated Bandedge Horizontal, Peak Detector:

Modulation:  $\pi/4DQPSK$ 

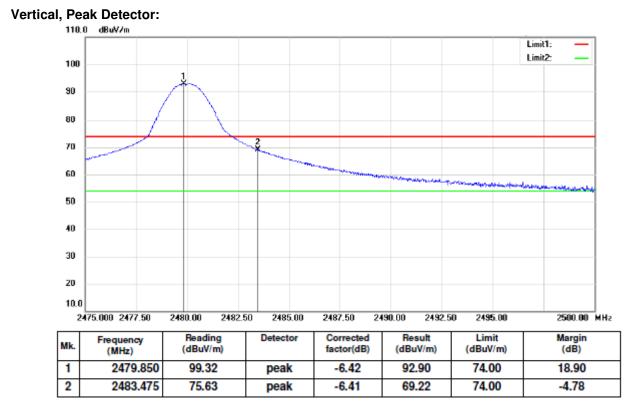


#### Horizontal, Average Detector:

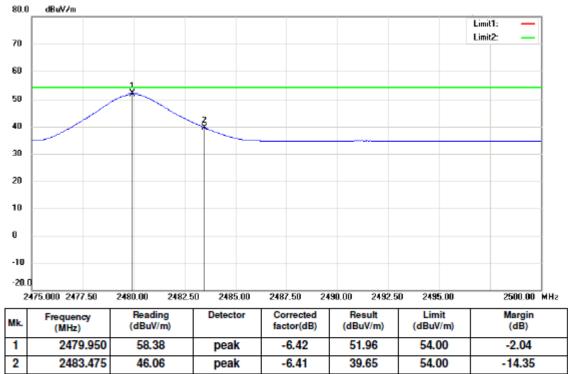




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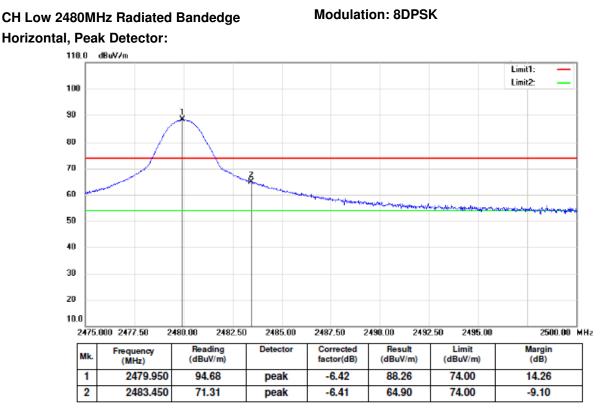


#### Vertical, Average Detector:

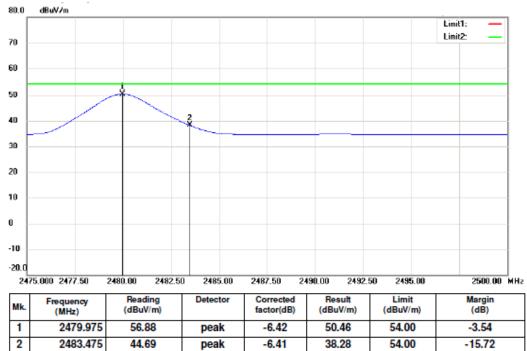




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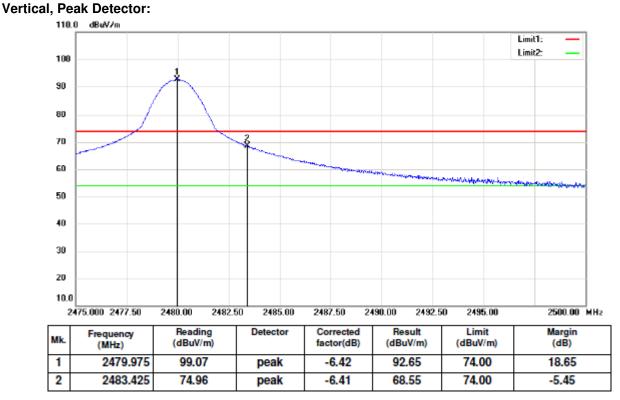


#### Horizontal, Average Detector:





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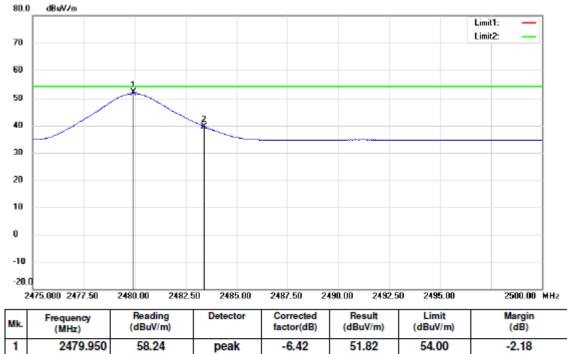


Vertical, Average Detector:

2483.425

2

46.08



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-6.41

peak

39.67

54.00

-14.33



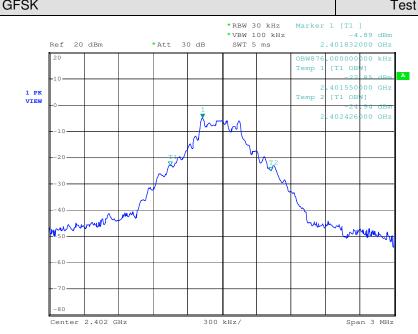
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### 7.12 Occupied Bandwidth Test

Test Requirement:	RSS-Gen Issue 3 Clause 4.6.1
Standard Applicable	According to the section RSS-Gen Issue 3 Clause 4.6.1
EUT Setup	The occupied bandwidth per RSS-Gen Issue 3 Clause 4.6.1 was measured using the Spectrum Analyzer with the resolutions set at 100kHz, the video bandwidth set at 300kHz.

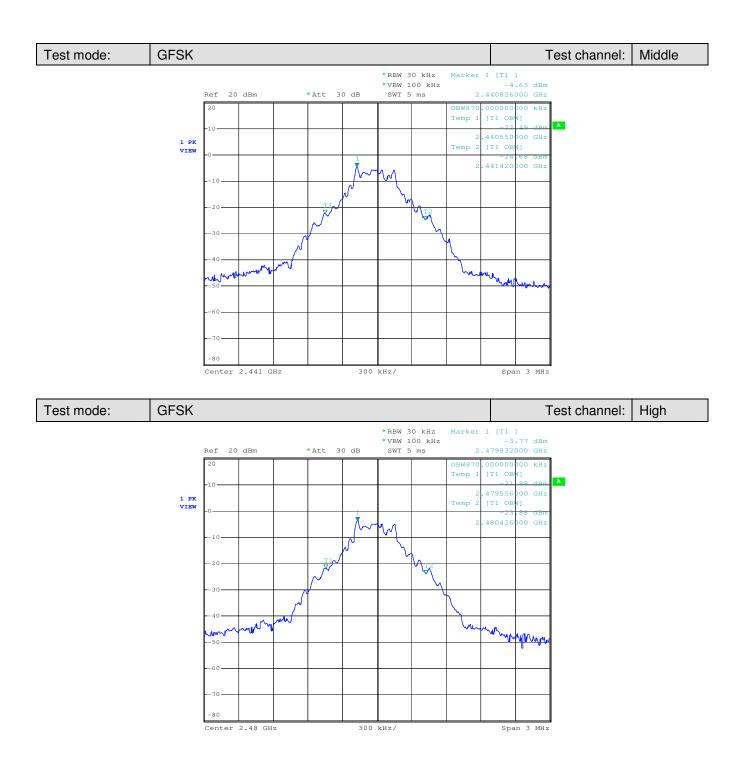
#### Measurement Result:

	Test M	ode	Channel	Frequency (MHz)	Bandwidth (MHz)
	GFSK		LOW	2402	0.876
			MID	2441	0.870
			HIGH	2480	0.870
	π/4DQPSK 8DPSK		LOW	2402	1.164
			MID	2441	1.158
			HIGH	2480	1.164
			LOW	2402	1.170
			MID	2441	1.170
			HIGH	2480	1.170
Test mode: GFSK				Test channel: Low	



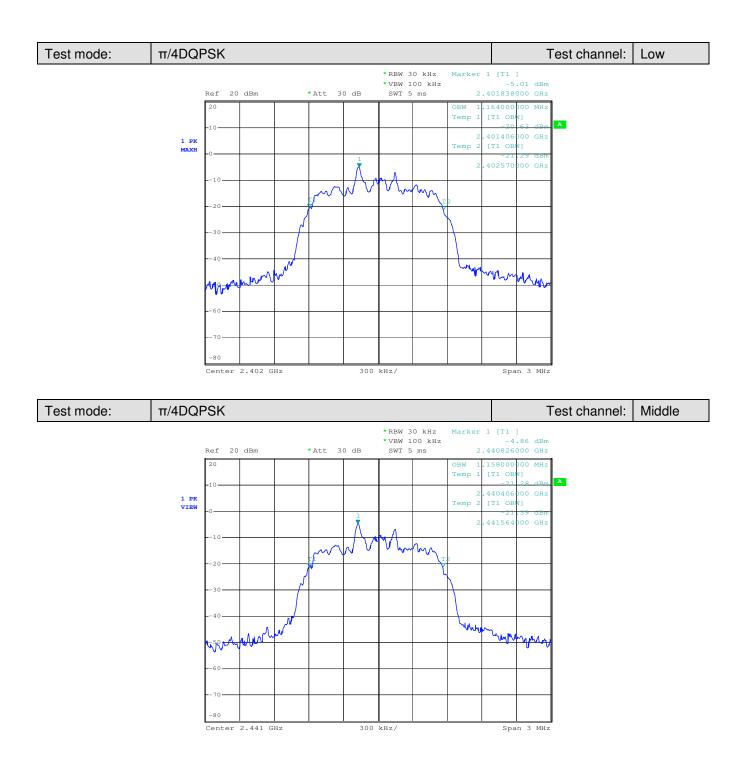


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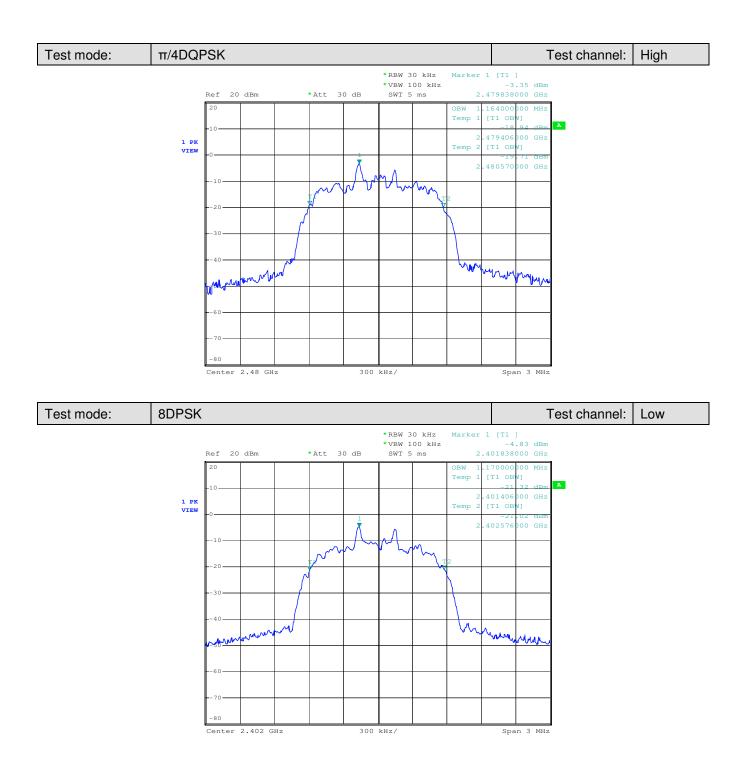


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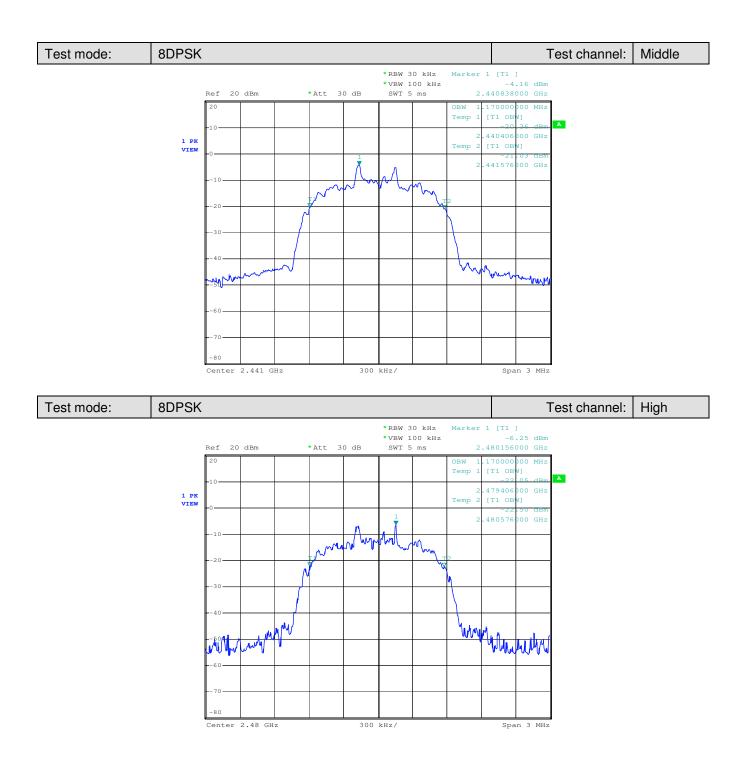


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### 8 Test Setup Photographs

Refer to the < GMM0001\_Test Setup photos>.

### 9 EUT Constructional Details

Refer to the < GMM0001\_External Photos > & < GMM0001\_Internal Photos >.

### End of Report