FCC 47 CFR PART 15 SUBPART C &
INDUSTRY CANADA RSS-247

TEST REPORT

For

Tablet Computer

Model: A6002

Trade Name: acer

Issued to

Acer Incorporated
8F, 88, Sec 1, Xintai 5th Rd. Xizhi, New Taipei City 221 Taiwan, R.O.C

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
http://www.ccsrf.com
service@ccsrf.com
Issued Date: April 20, 2016

Testing Laboratory
1309

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		April 20, 2016		Initial Issue	ALL	Doris Chu

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1. TEST RESULT CERTIFICATION

Applicant:	Acer Incorporated 8F, 88, Sec 1, Xintai 5th Rd. Xizhi, New Taipei City 221 Taiwan, R.O.C
Manufacturer:	Acer Incorporated 8F, 88, Sec 1, Xintai 5th Rd. Xizhi, New Taipei City 221 Taiwan, R.O.C
Equipment Under Test:	Tablet Computer
Model Number:	A6002
Trade Name:	acer
Date of Test:	March 31 ~ April 13, 2016

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR Part 15 Subpart C Industry Canada RSS-247 Issue 1	No non-compliance noted

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements set forth in the above standards. The test results of this report relate only to the tested sample EUT identified in this report.

Approved by: *Reviewed by:*

Miller Lee
Manager
Compliance Certification Services Inc.

Angel Cheng
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	Tablet Computer
Model Number	A6002
Trade Name	acer
Received Date	March 29, 2016
Power Supply	1.VDC from Power Adapter 2. Power from Battery 3. Powered from host device via USB
Frequency Range	2402 ~ 2480 MHz
Transmit Power	0.85 dBm
Modulation Technique	GFSK for 1Mbps; π/4-DQPSK for 2Mbps; 8DPSK for 3Mbps
Number of Channels	79 Channels
Antenna Specification	Model: A10H FPC Antenna / Gain: 2dBi

Remark:

1. *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*
2. *This submittal(s) (test report) is intended for FCC: **HLZA6002** & ISED No.： **1754F-A6002** filing to comply with FCC Part 15C, Section 15.207, 15.209 and IC RSS-247 & RSS-GEN.*
3. *Keypast List：*

Components	Vendor	Model Name or Key Spec.	
EMMC(FLASH)	Hynix	H26M52103FMR	16G
	Sandisk	SDIN9DS2	32G
CPU	MTK	MT8163V/A	64-bit Quad Cortex A53
DDR3L	Hynix	H5TC4G83CFR-PBA	2GB (512*8*4)
M/B	Sun & lynn	A10H_V1.1	94V-0
LCD Panel	Kingdisplay	KD101N51-34NP-A1 19	-
Battery	TCL	D279594NR01（1S2P）	3.7V
Front Camera module	microkore	W05P4021 V2	GC2355
Rear Camera module	microkore	W05P4021 V2	OV5670
Speaker left	Haosheng	XHS160911WW30P30-02-RH	4Ω
Speaker right	Haosheng	XHS160911WW30P30-06-RH	4Ω
Adapter	Liteon	PA-1100-25 Rating: Input: 100~240V, 50/60Hz , 0.3A Output: 5.2V, 2A	
	Delta	ADP-10HW A Rating: Input: 100~240V, 50/60Hz , 0.4A Output: 5.35V, 2A	

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209, 15.247, DA00-705 and KDB 558074 D01 DTS Meas Guidance v03r04.

The tests documented in this report were performed in accordance with IC RSS-247, IC RSS-Gen and ANSI C63.10:2013.

This submittal(s) (test report) is intended for IC Certification with Industry Canada RSS-247.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

The tests documented in this report were performed in accordance with IC RSS-247, IC RSS-Gen, IC RSS-102, and ANSI C63.10: 2013.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

According to the requirements in ANSI C63.10: 2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 1.5 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in ANSI C63.10: 2013.

3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) 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	([2])
13.36 - 13.41	322 - 335.4		

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

3.5 DESCRIPTION OF TEST MODES

The EUT (model: A6002) comes with two types of power adapter (model: PA-1100-25 / ADP-10HW A) for sale. After the preliminary test, the power adapter ADP-10HW A was found to emit the worst emissions and therefore had been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting and receiving mode was programmed.

After verification, all tests carried out are with the worst-case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode and receiving radiated spurious emission above 1GHz, which worst case was in CH Mid mode only.

Channel Low (2402MHz), Mid (2441MHz) and High (2480MHz) with 1Mbps data rate was chosen for full testing.

During the preliminary test, GFSK, π/4-QPSK & 8DPSK with DH1 were pre-tested and found that 8DPSK emits the highest output power. Then the tests were carried on with DH1 compare to DH3 & DH5 and found that 8DPSK with DH5 emit the highest output power, and therefore had been tested under operating condition.

Following channels were selected for the radiated emission testing only as listed below:

Tested Channel	Modulation Type	Packet Type	Date Rate
Low, Mid, High	GFSK	DH 5	1
Low, Mid, High	8DPSK	DH 5	3

For Conducted & Conduction

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

For Radiated below 1GHz & Radiated above 1GHz

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (Y axis) and the worst case was recorded.

4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: *Each piece of equipment is scheduled for calibration once a year and Loop Antenna is scheduled for calibration once three years.*

Conducted Emissions Test Site					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
DC Power Supplies	GW Instek	SPS-3610	GPE880163	01/19/2016	01/18/2017
Power Meter	Anritsu	ML2495A	1012009	07/08/2015	07/07/2016
Power Sensor	Anritsu	MA2411B	917072	07/08/2015	07/07/2016
Signal Analyzer	R&S	FSV 40	101073	07/20/2015	07/19/2016
Spectrum Analyzer	Agilent	E4446A	US42510268	02/15/2016	02/14/2017
Thermostatic/Hrgrosatic Chamber	TAICHY	MHG-150LF	930619	10/08/2015	10/07/2016
Vector Signal Generator	R&S	SMU 200A	102239	03/10/2016	03/09/2017
AC Power Source	EXTECH	6205	1140845	N.C.R	N.C.R

Wugu 966 Chamber A					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Bilog Antenna	Sunol Sciences	JB3	A030105	08/06/2015	08/05/2016
EMI Test Receiver	R&S	ESCI	100064	06/04/2015	06/03/2016
Horn Antenna	EMCO	3117	55165	02/24/2016	02/23/2017
Horn Antenna	EMCO	3116	26370	01/15/2016	01/14/2017
K Type Cable	Huber+Suhner	SUCOFLEX 102	29406/2	01/12/2016	01/11/2017
K Type Cable	Huber+Suhner	SUCOFLEX 102	22470/2	01/12/2016	01/11/2017
Pre-Amplifier	MITEQ	AMF-6F-260400-40-8P	985646	01/14/2016	01/13/2017
Pre-Amplifier	EMCI	EMC 012635	980151	06/05/2015	06/04/2016
Pre-Amplifier	EMCI	EM330	N/A	06/05/2015	06/04/2016
Spectrum Analyzer	Agilent	E4446A	US42510252	12/08/2015	12/07/2016
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Software	EZ-EMC (CCS-3A1RE)				

Conducted Emission Room # B					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
EMI Test Receiver	R&S	ESCI	101073	09/09/2015	09/08/2016
LISN	SCHWARZBECK	NSLK 8127	8127-541	11/23/2015	11/22/2016
LISN	R&S	ENV216	101054	05/07/2015	05/06/2016
Capacitive Voltage Probe	FCC	F-CVP-1	100185	03/09/2016	03/08/2017
Test S/W	CCS-3A1-CE				

4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	+/- 1.2575
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9683

***Remark**: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.*

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

☐ No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.
Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)
Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

☐ No.81-1, Lane 210, Bade 2nd Rd., Lujhu Township, Taoyuan County 33841, TAIWAN, R.O.C.
Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10: 2013 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, ridged waveguide, horn and/or Loop. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3M Semi Anechoic Chamber (FCC MRA: TW1039) to perform FCC Part 15 measurements	FCC MRA: TW1039
Taiwan	TAF	LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-247, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12,2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method –47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11	TAF Testing Laboratory 1309
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	Canada IC 2324G-1 IC 2324G-2

** No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.*

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix I for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
	N/A						

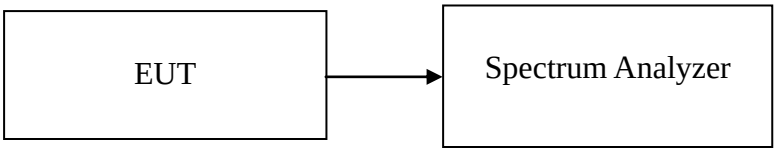
Remark:

1. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

7. FCC PART 15.247 REQUIREMENTS & RSS 247 REQUIREMENTS

7.1 99% BANDWIDTH

Test Configuration



TEST PROCEDURE

The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold.

TEST RESULTS

No non-compliance noted.

Test Data

For GFSK

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	0.8990
Mid	2441	0.8990
High	2480	0.8990

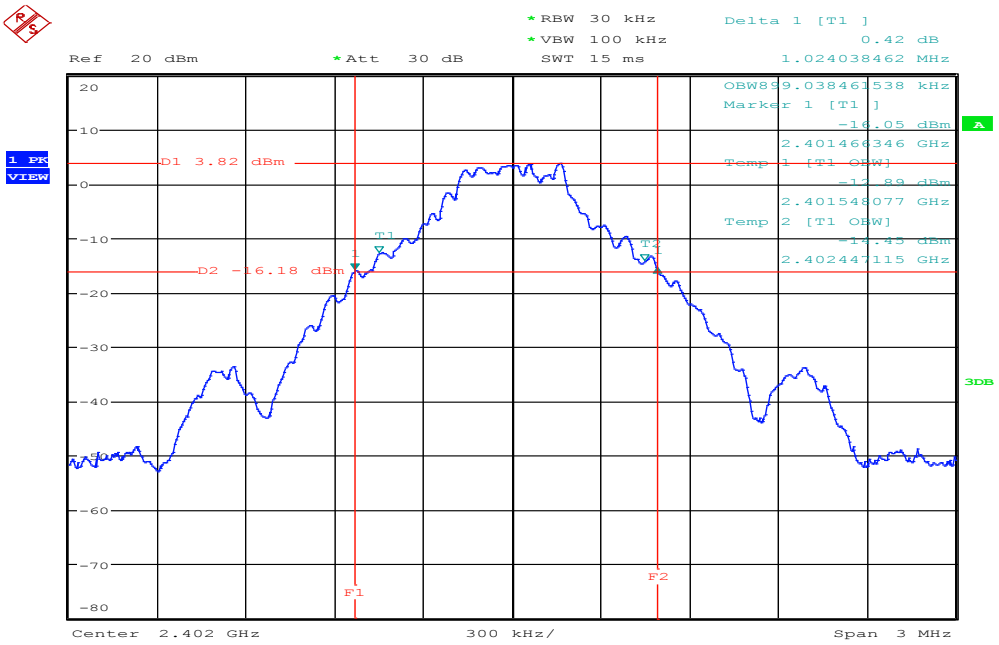
For 8DPSK

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.1778
Mid	2441	1.1778
High	2480	1.1778

Test Plot

For GFSK / DH5

99% Bandwidth (CH Low)



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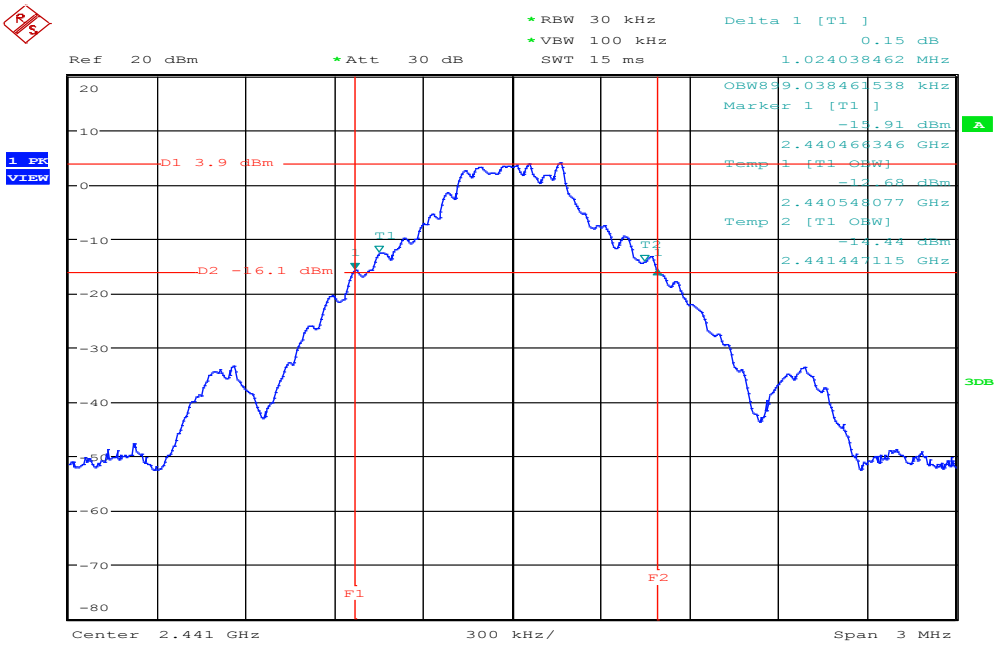
99% Bandwidth (CH Mid)



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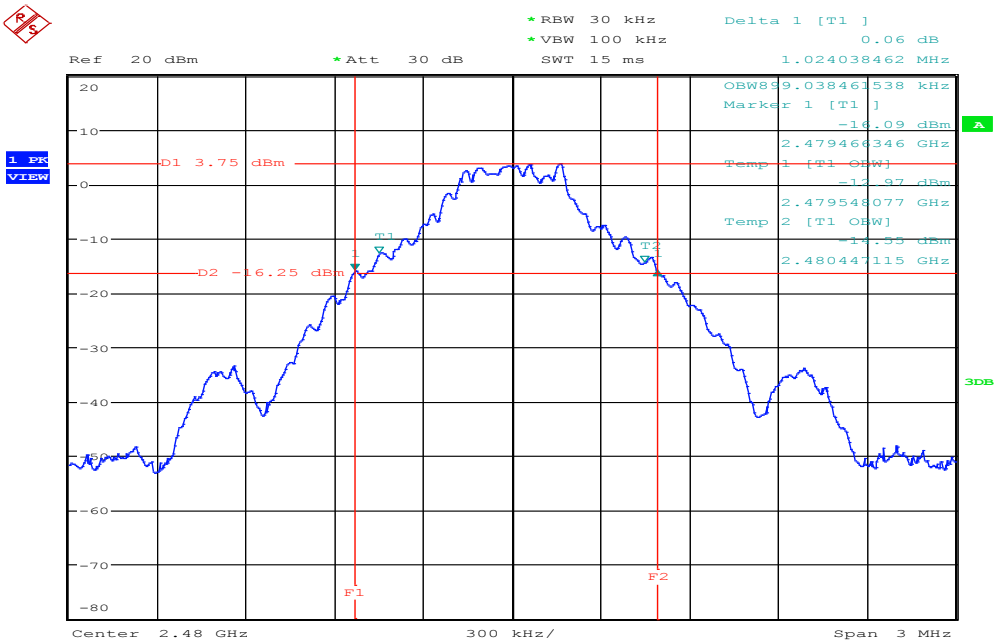

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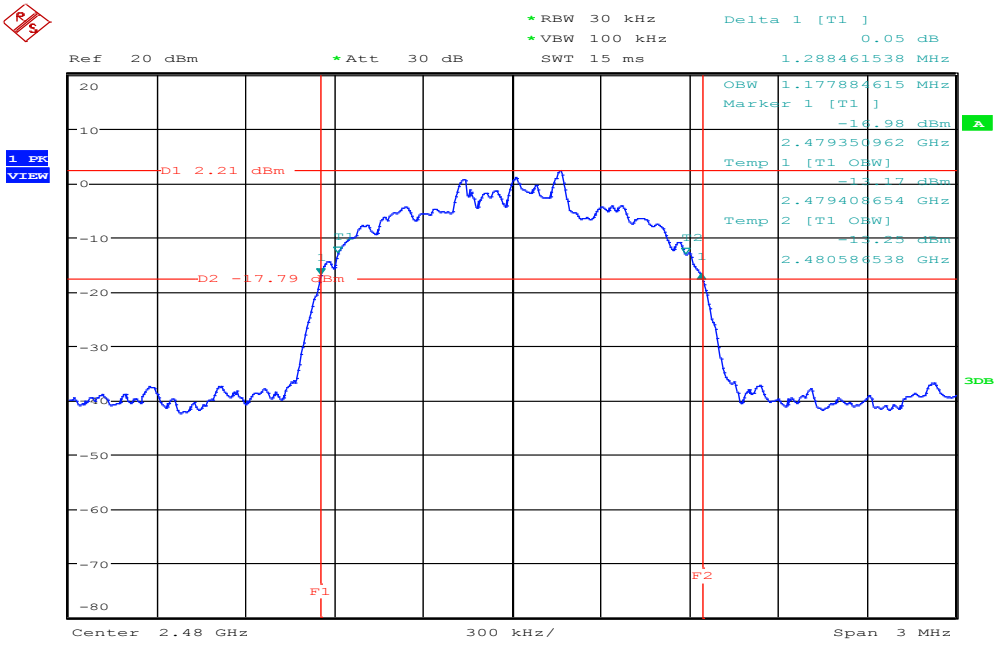
For 8DPSK / DH5

99% Bandwidth (CH Low)



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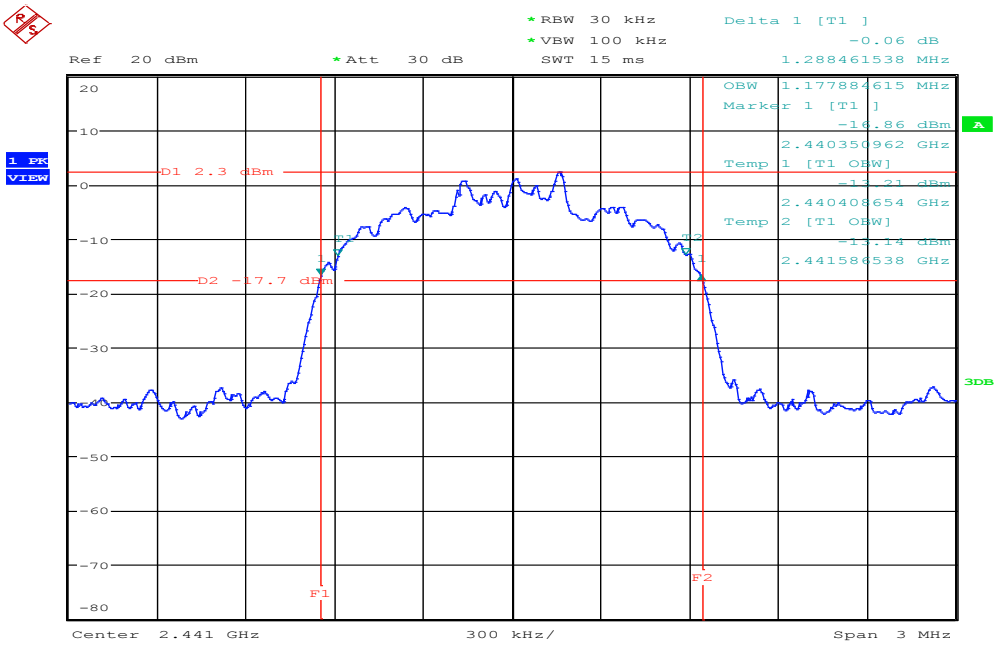
99% Bandwidth (CH Mid)



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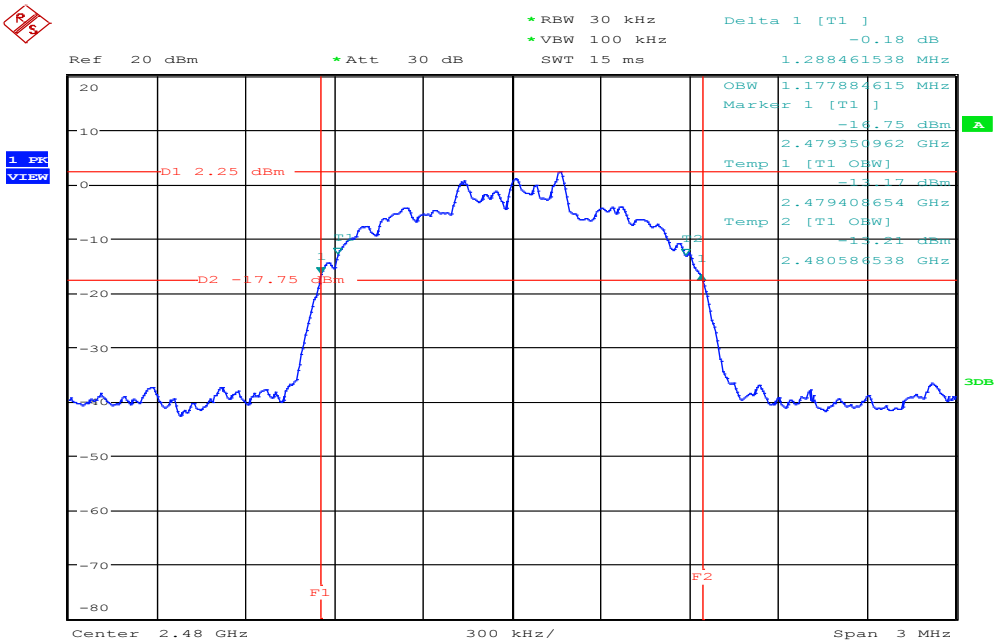
99% Bandwidth (CH High)



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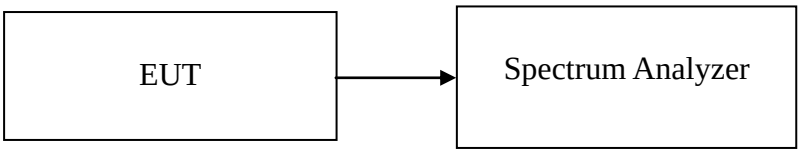
7.2 20 dB Bandwidth

LIMIT

None; for reporting purposes only.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=30 kHz, VBW = 100 kHz, Sweep = 3.2 ms.
4. Mark the peak frequency and 20dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

TEST RESULTS

No non-compliance noted.

Test Data

For GFSK / DH5

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
Low	2402	1.0240
Mid	2441	1.0240
High	2480	1.0240

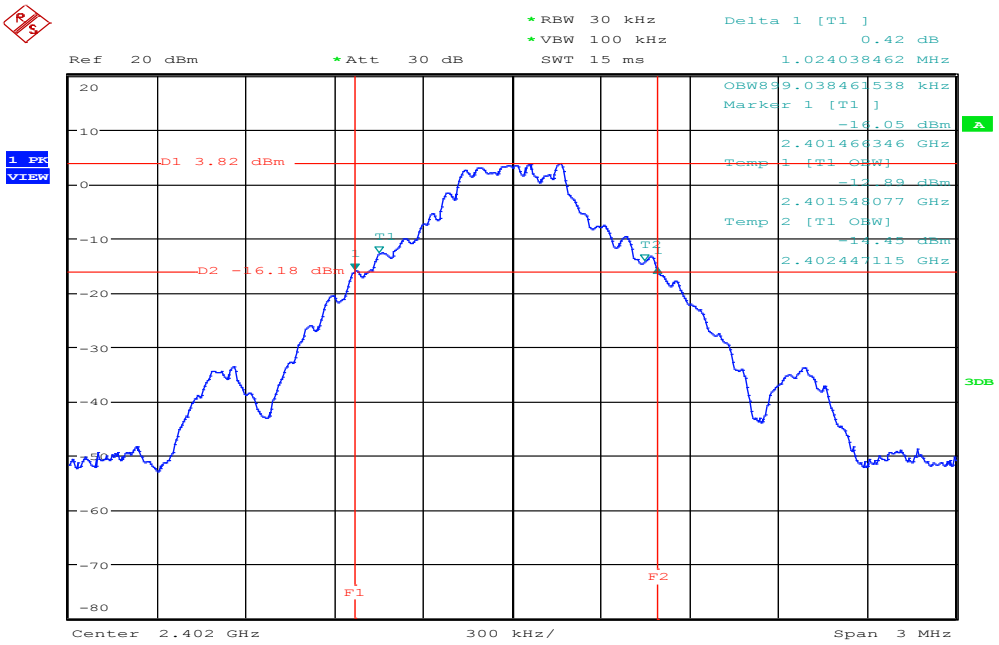
For 8DPSK / DH5

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
Low	2402	1.2884
Mid	2441	1.2884
High	2480	1.2884

Test Plot

For GFSK / DH5

20dB Bandwidth (CH Low)



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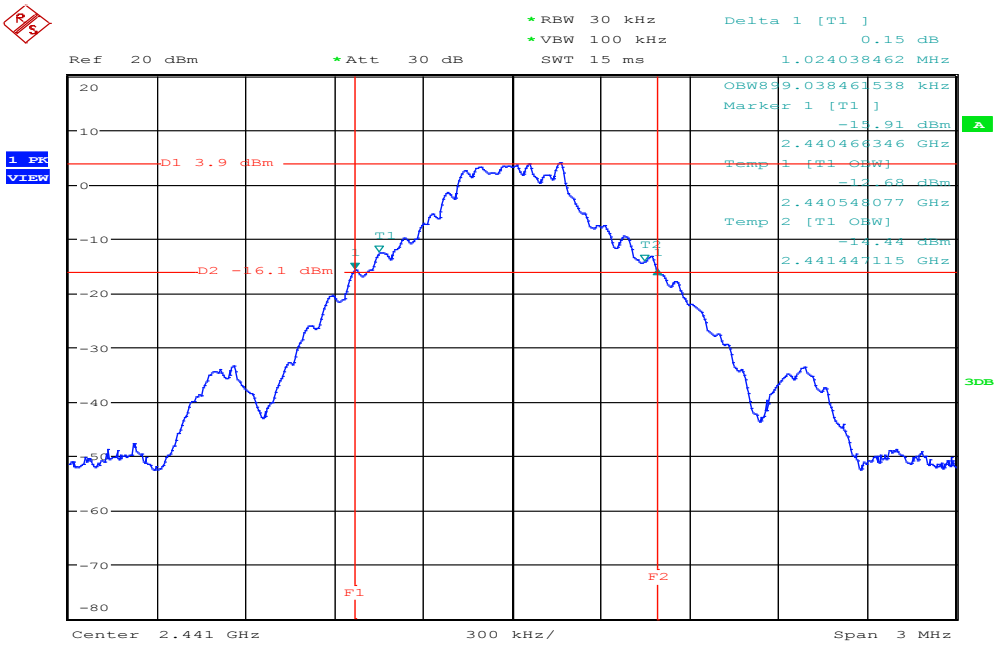
20dB Bandwidth (CH Mid)



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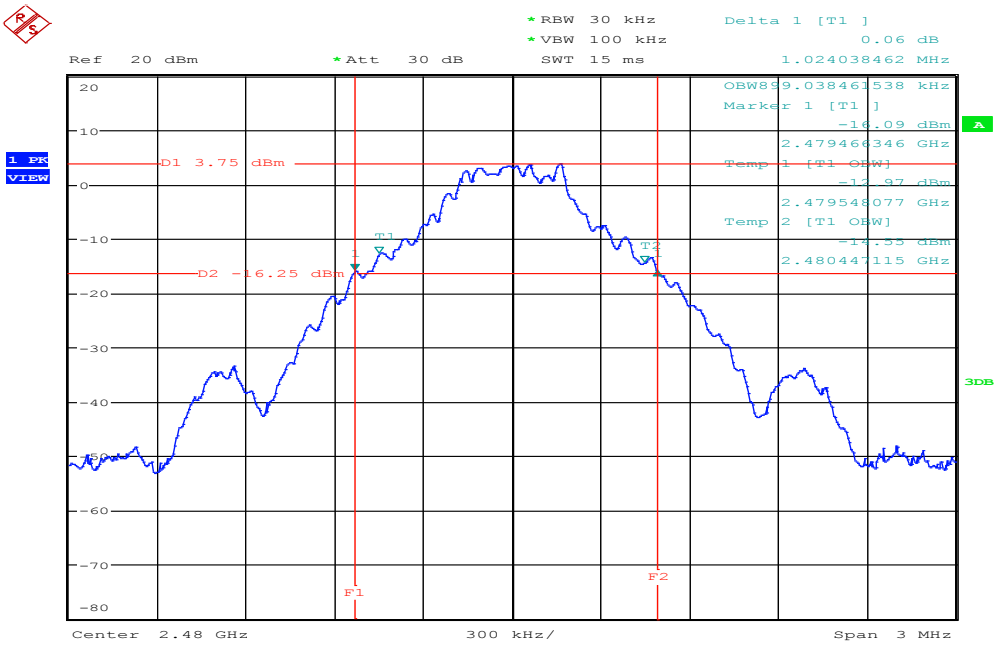
20dB Bandwidth (CH High)



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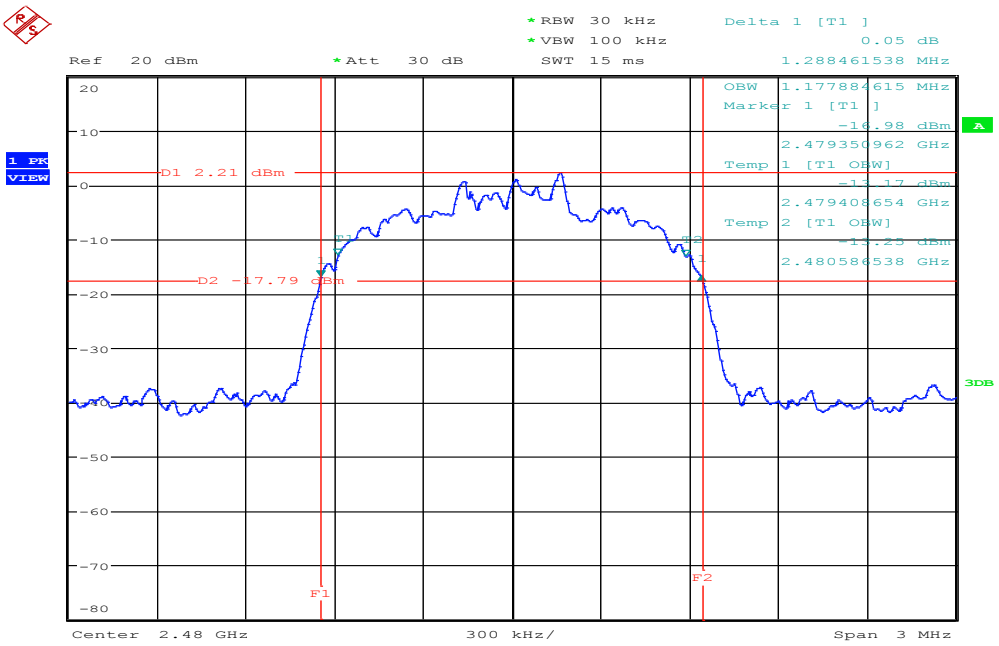
For 8DPSK / DH5

20dB Bandwidth (CH Low)



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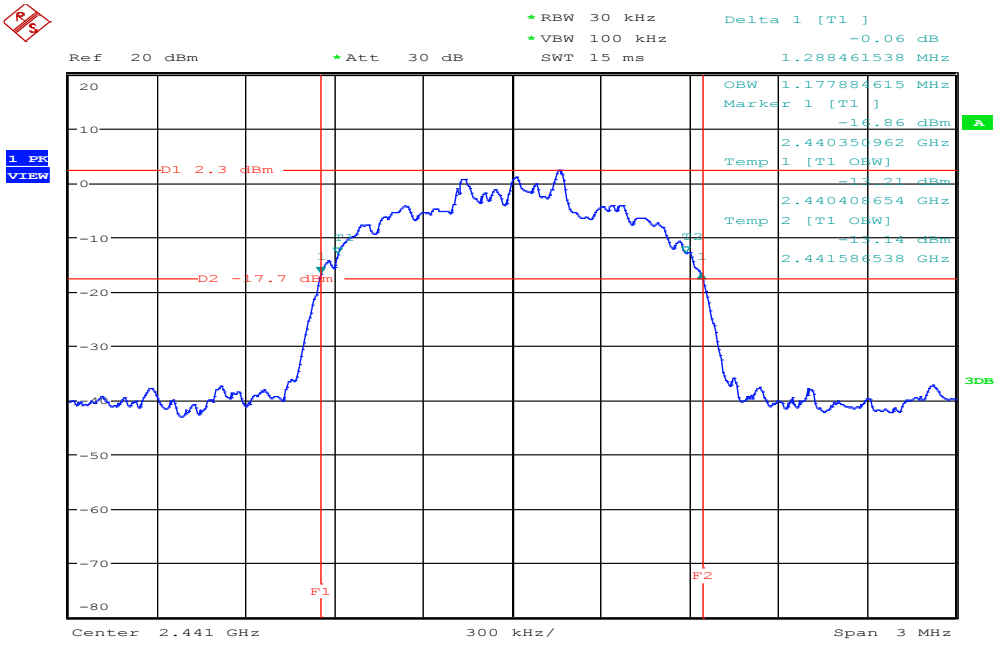
20dB Bandwidth (CH Mid)



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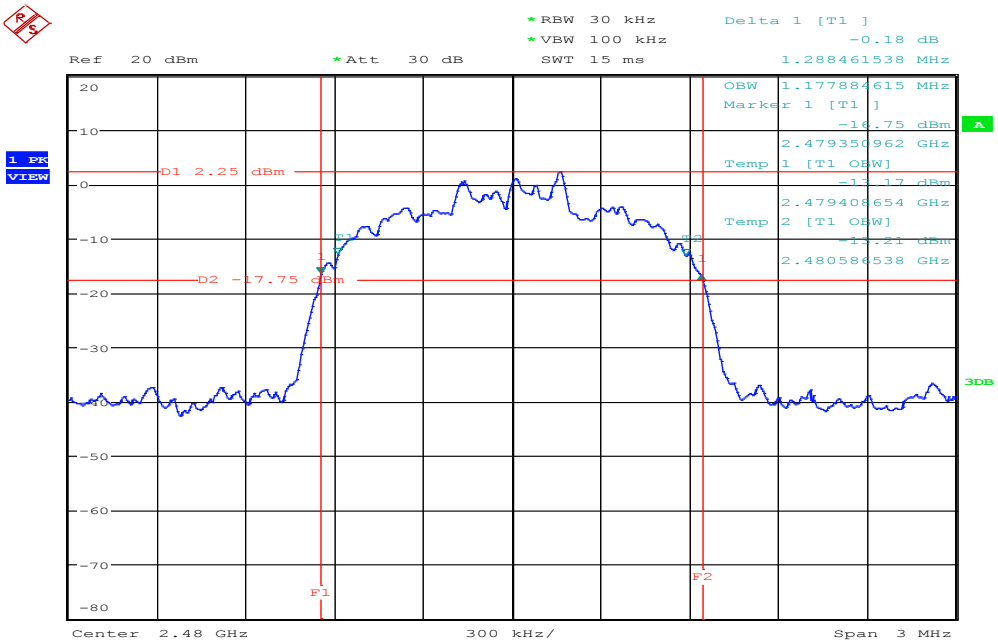
20dB Bandwidth (CH High)



Date: 31.MAR.2016 18:11:05

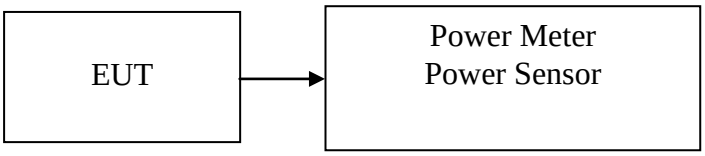
7.3 PEAK POWER

LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(a)(1) & RSS-247, Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
2. According to §15.247(b)(3) & RSS 247, for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the Power Meter. The Power Meter is set to the peak power detection.

TEST RESULTS

No non-compliance noted.

Test Data

For GFSK / DH5

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2402	0.83	0.0012	0.125	PASS
Mid	2441	0.76	0.0012		PASS
High	2480	***0.85**	0.0012		PASS

For 8DPSK / DH5

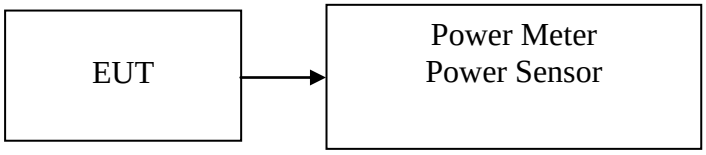
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2402	0.01	0.0010	0.125	PASS
Mid	2441	0.51	0.0011		PASS
High	2480	0.37	0.0011		PASS

7.4 AVERAGE POWER

LIMIT

None; for reporting purposes only.

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the Power Meter. The Power Meter is set to the average power detection.

TEST RESULTS

No non-compliance noted.

Test Data

For GFSK / DH5

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)
Low	2402	0.38	0.0011
Mid	2441	0.61	0.0012
High	2480	0.68	0.0012

For 8DPSK / DH5

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)
Low	2402	-2.20	0.0006
Mid	2441	-2.02	0.0006
High	2480	-1.93	0.0006

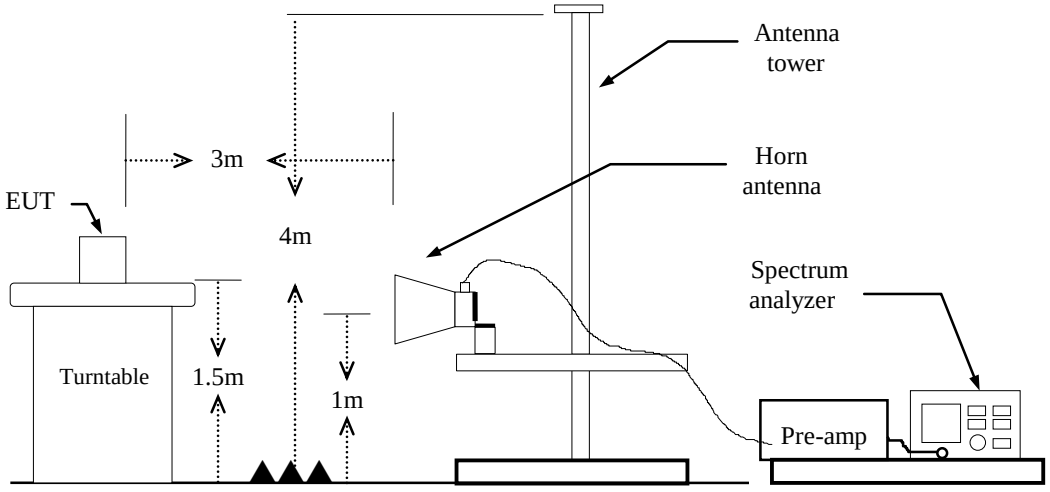
7.5 BAND EDGES MEASUREMENT

LIMIT

According to §15.247(d) & RSS-247, in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in 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. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Test Configuration

For Radiated



TEST PROCEDURE

For Radiated

1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
   (a) PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz,
   if duty cycle≧98%, VBW=10Hz.
   if duty cycle<98% VBW=1/T.
   BT: = 77%, VBW= 360Hz
   EDR = 77%, VBW= 360Hz
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.
6. Result = Spectrum Reading + cable loss(spectrum to Amp) - Amp Gain + Cable loss(Amp to receive Ant)+ Receive Ant

For Un-restricted Band Emissions

The peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

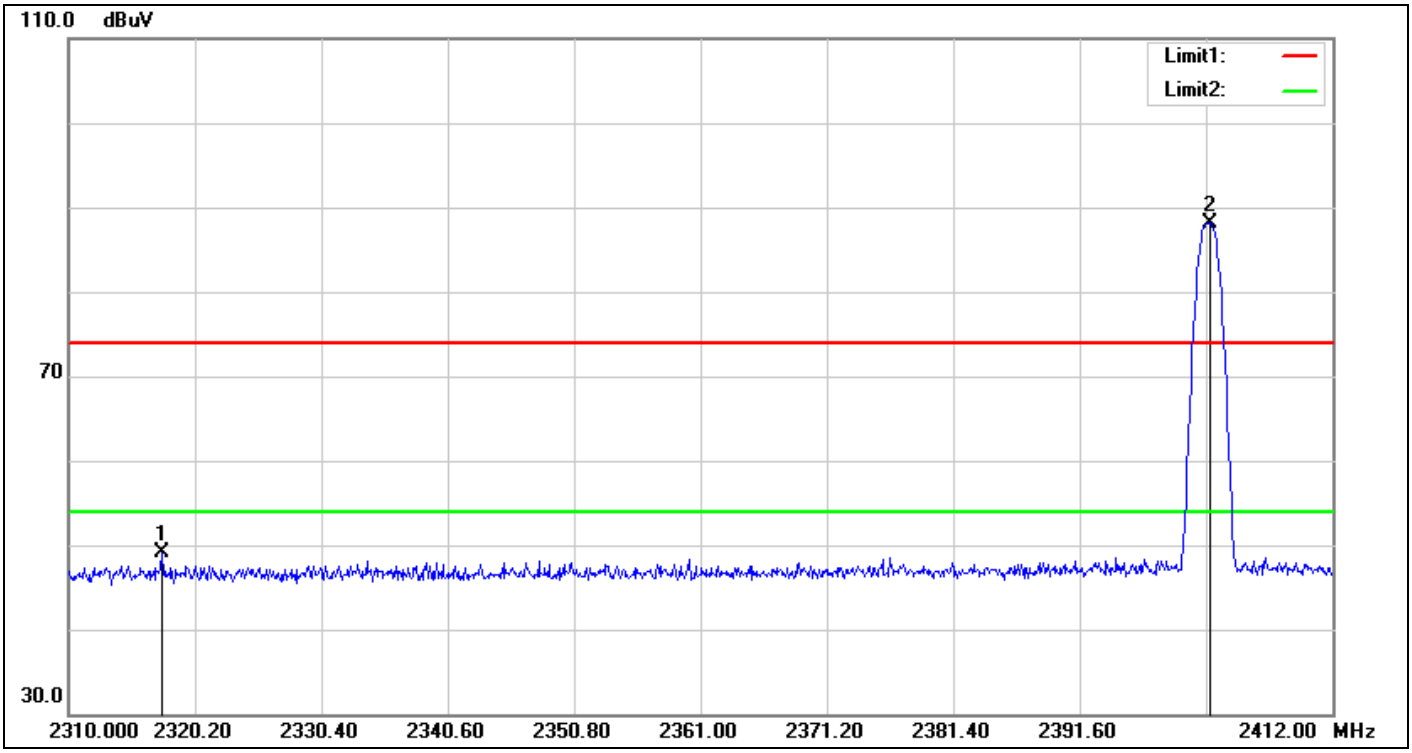
TEST RESULTS

Refer to attach spectrum analyzer data chart.

For GFSK / DH5

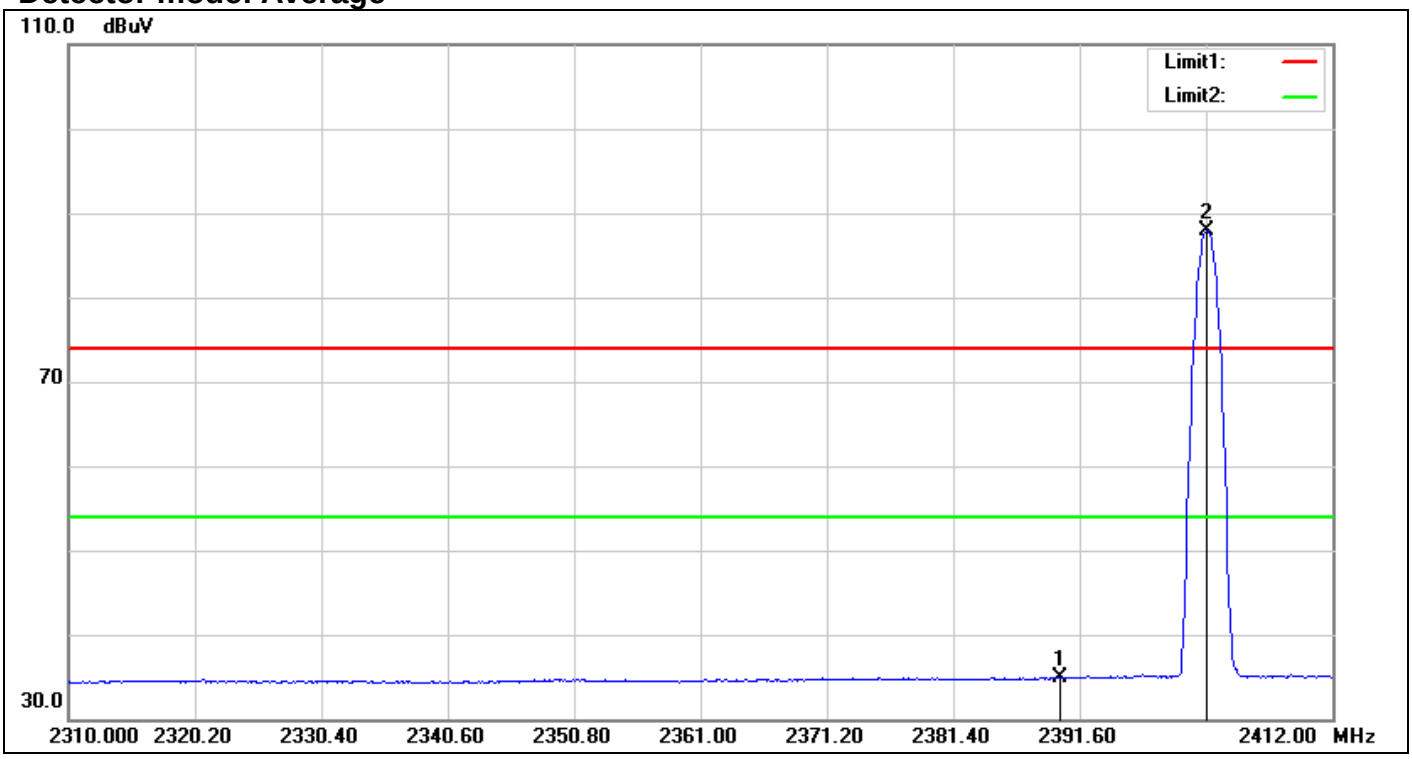
Band Edges (CH Low)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2317.548	52.09	-2.98	49.11	74.00	-24.89	peak
2	2402.106	90.49	-2.41	88.08	74.00	14.08	peak

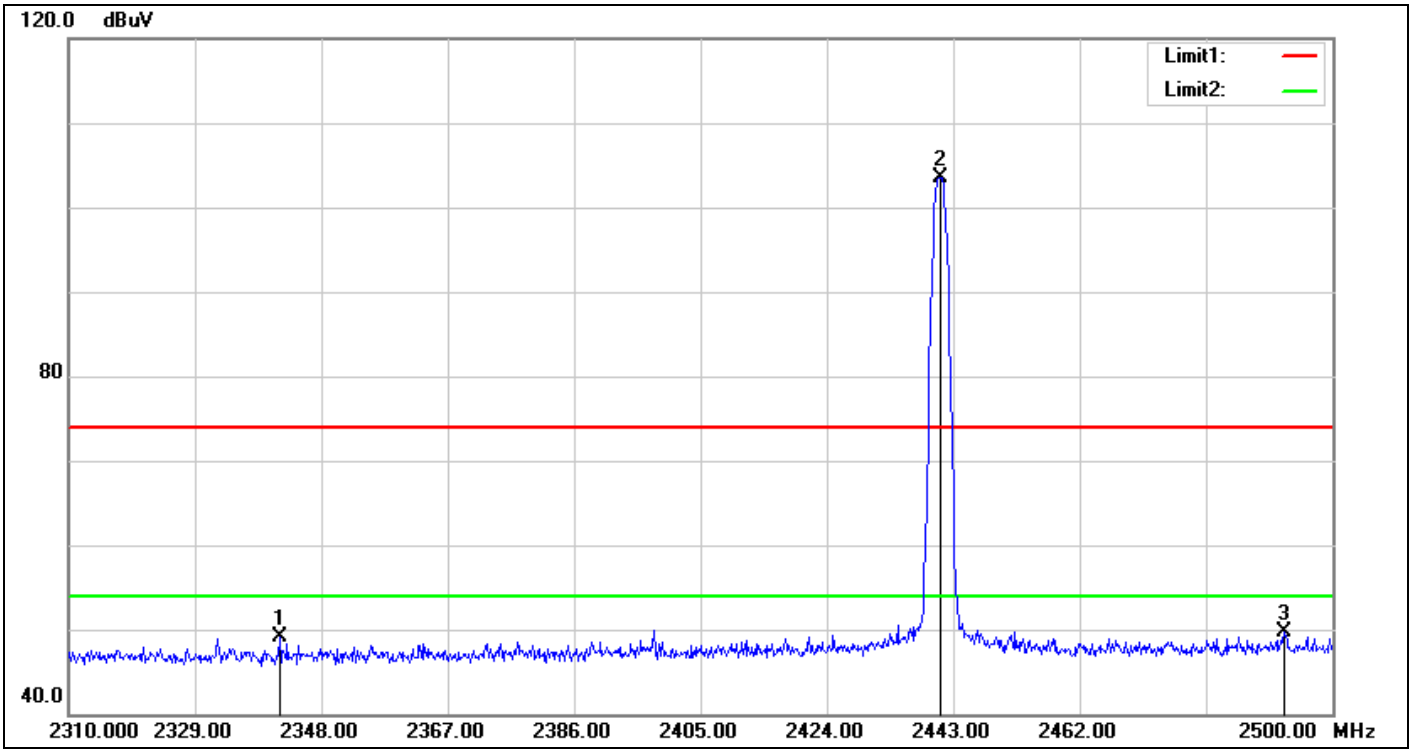
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2390.000	37.46	-2.49	34.97	54.00	-19.03	AVG
2	2401.902	90.34	-2.41	87.93	54.00	33.93	AVG

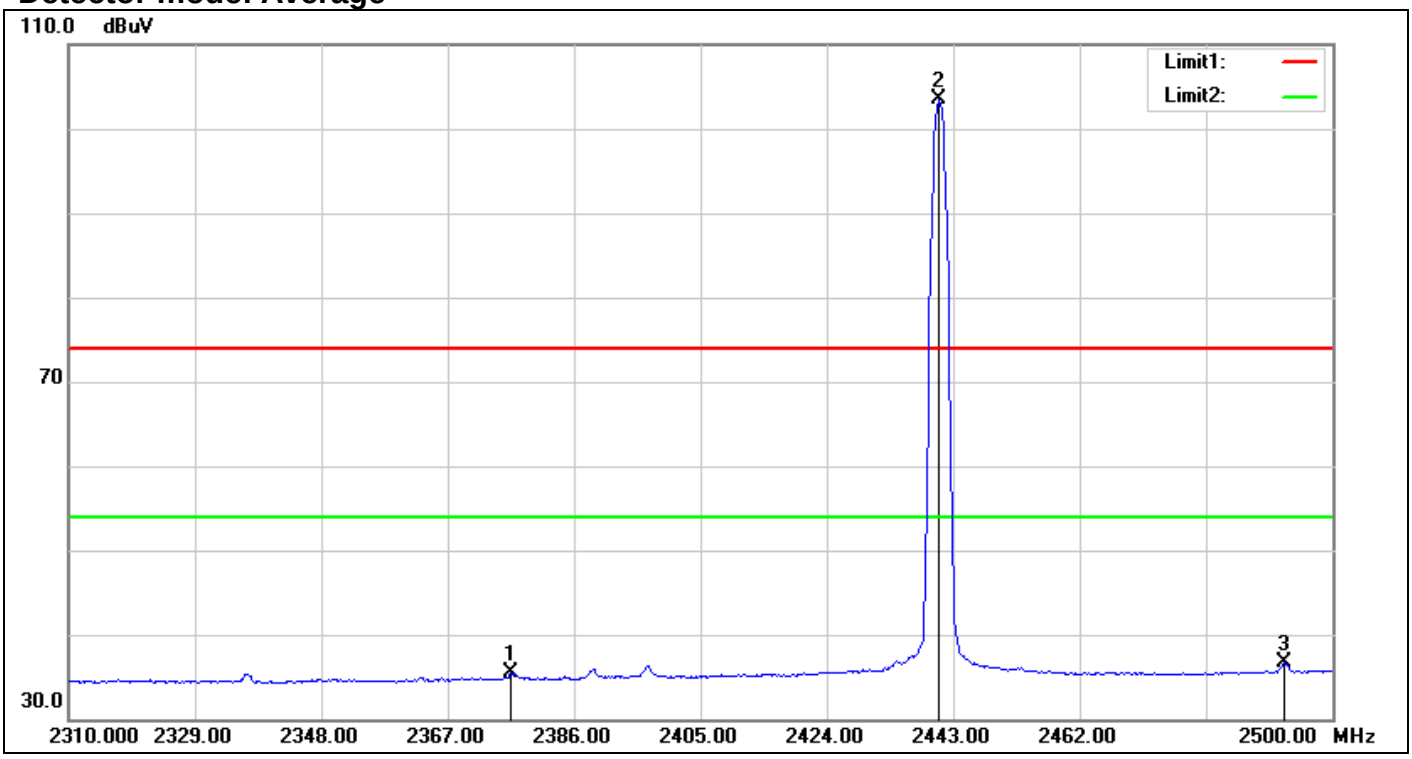
Band Edges (CH Mid)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2341.730	52.05	-2.93	49.12	74.00	-24.88	peak
2	2441.100	105.77	-2.20	103.57	74.00	29.57	peak
3	2492.780	51.54	-1.91	49.63	74.00	-24.37	peak

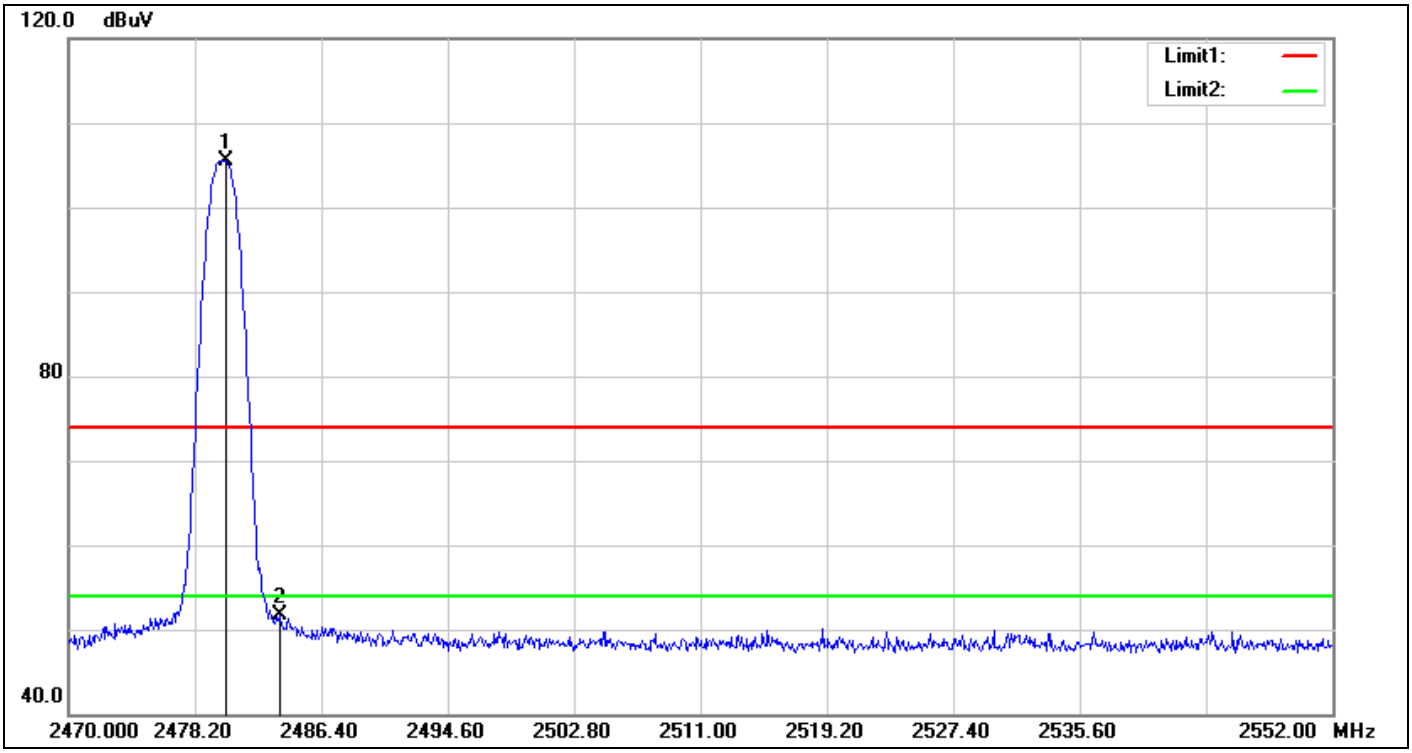
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2376.500	38.04	-2.60	35.44	54.00	-18.56	AVG
2	2440.910	105.62	-2.21	103.41	54.00	49.41	AVG
3	2492.780	38.53	-1.91	36.62	54.00	-17.38	AVG

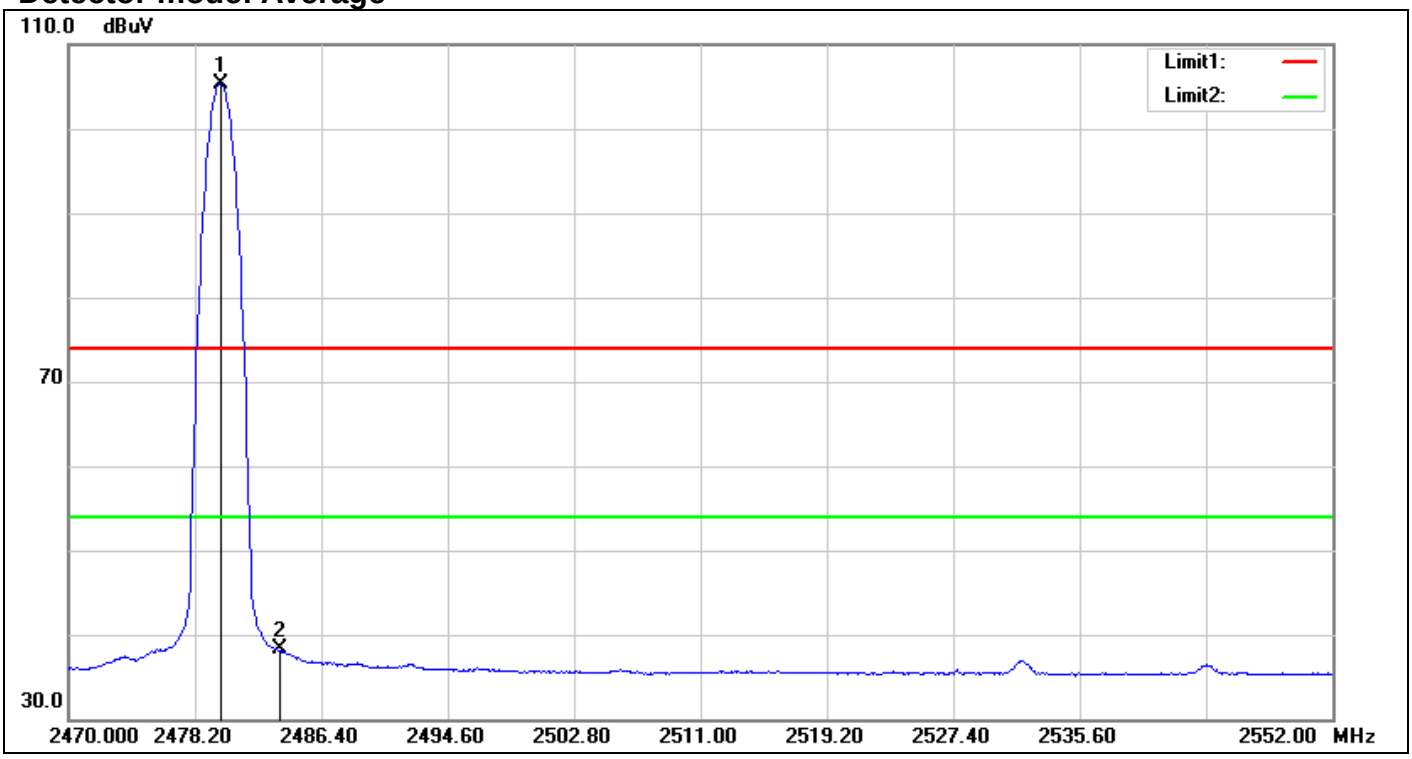
Band Edges (CH High)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2480.168	107.56	-2.03	105.53	74.00	31.53	peak
2	2483.694	53.63	-1.99	51.64	74.00	-22.36	peak

Detector mode: Average

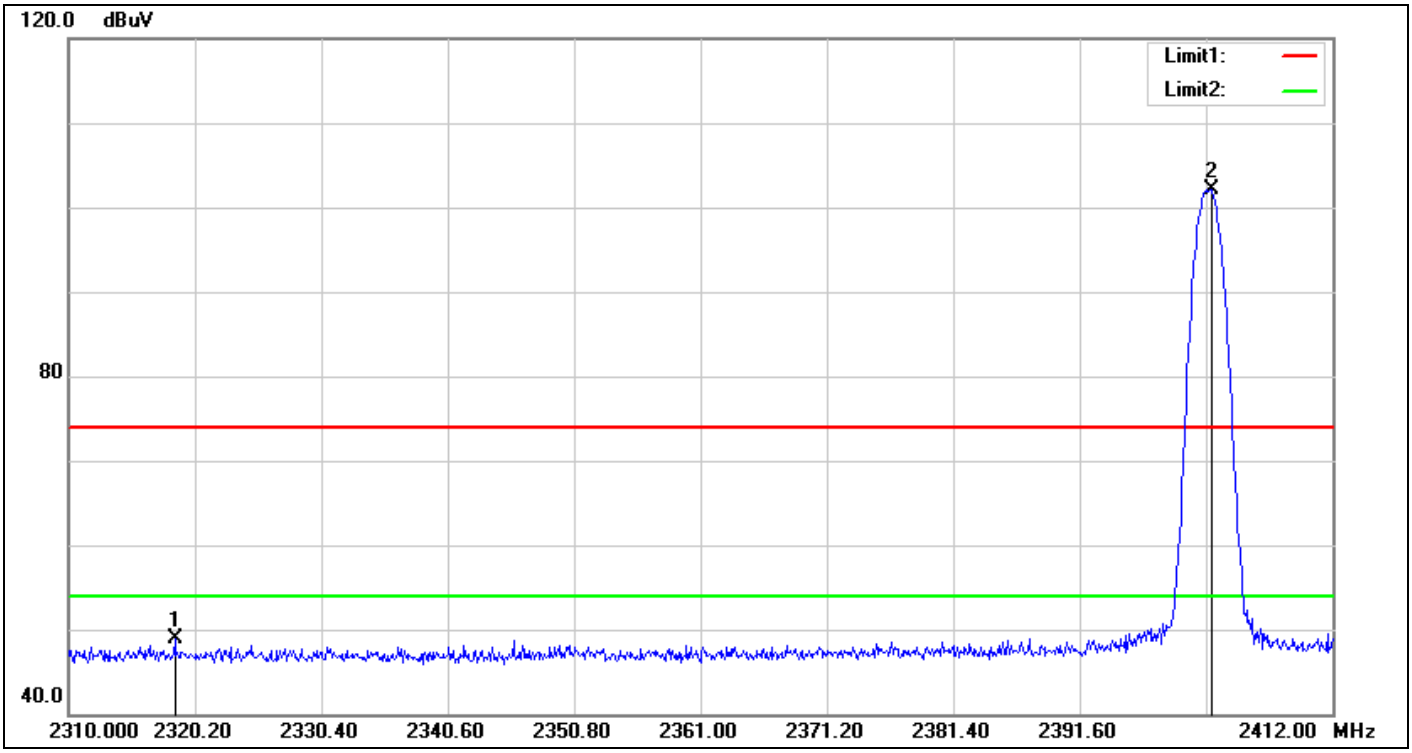


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2479.840	107.32	-2.03	105.29	54.00	51.29	AVG
2	2483.694	40.19	-1.99	38.20	54.00	-15.80	AVG

For 8DPSK

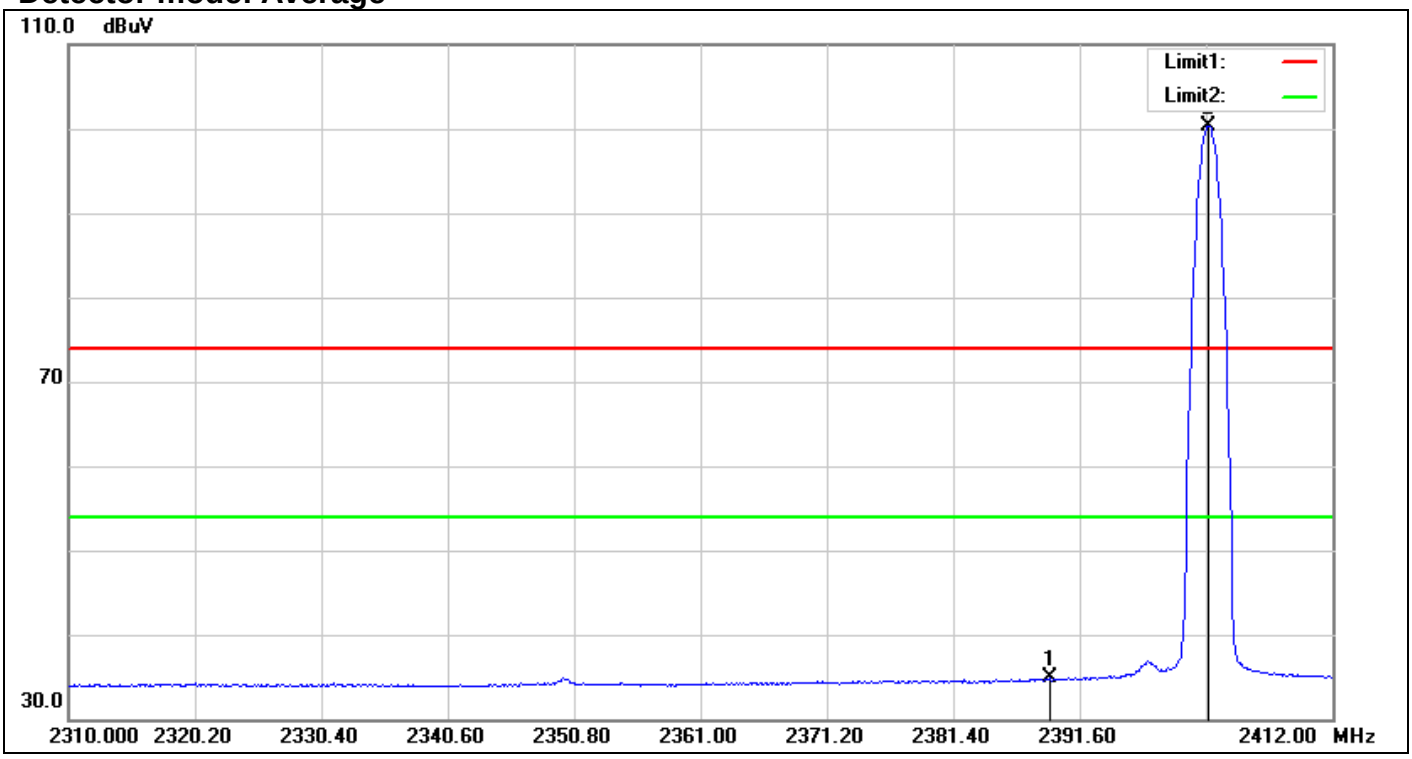
Band Edges (CH Low)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2318.568	51.92	-2.97	48.95	74.00	-25.05	peak
2	2402.208	104.44	-2.41	102.03	74.00	28.03	peak

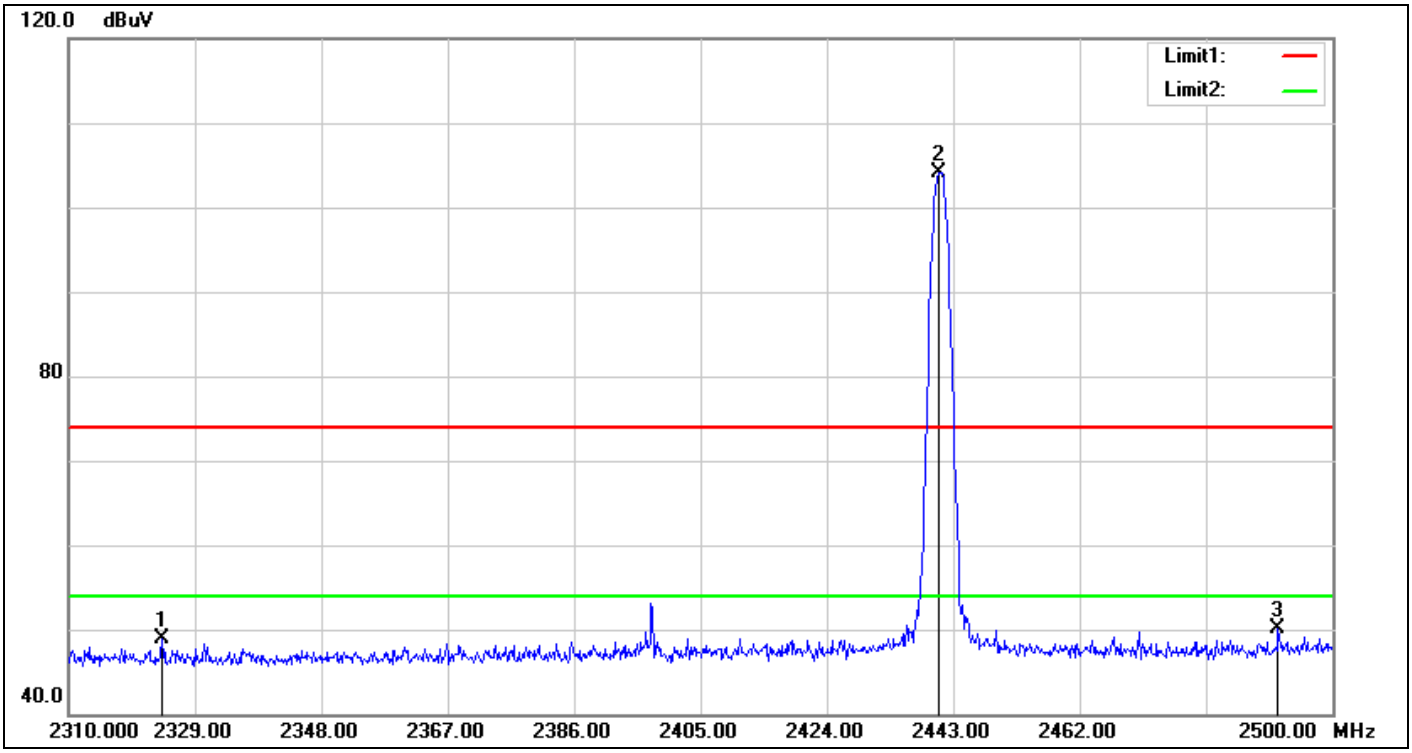
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2389.254	37.39	-2.50	34.89	74.00	-39.11	peak
2	2402.004	102.74	-2.41	100.33	74.00	26.33	peak

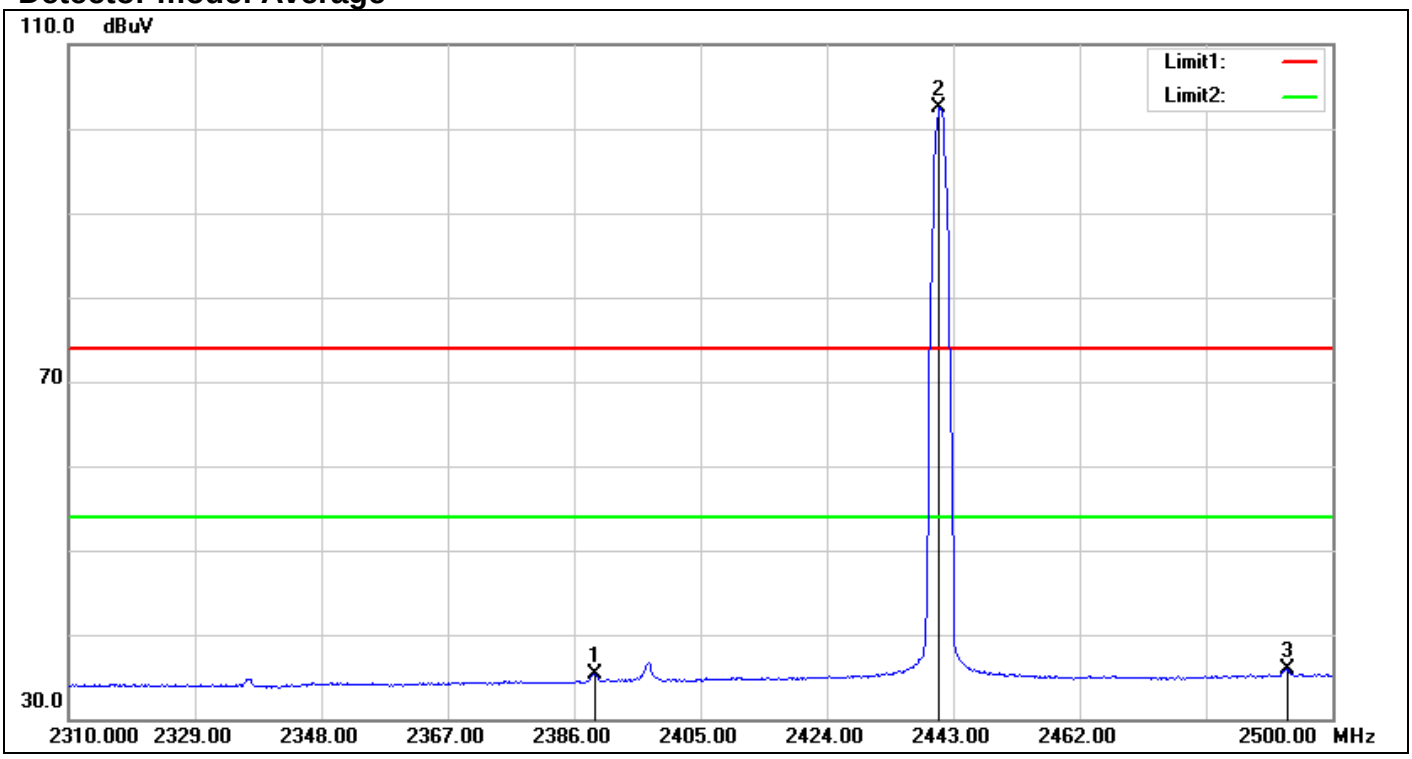
Band Edges (CH Mid)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2324.060	51.78	-2.96	48.82	74.00	-25.18	peak
2	2440.910	106.35	-2.21	104.14	74.00	30.14	peak
3	2491.830	52.11	-1.92	50.19	74.00	-23.81	peak

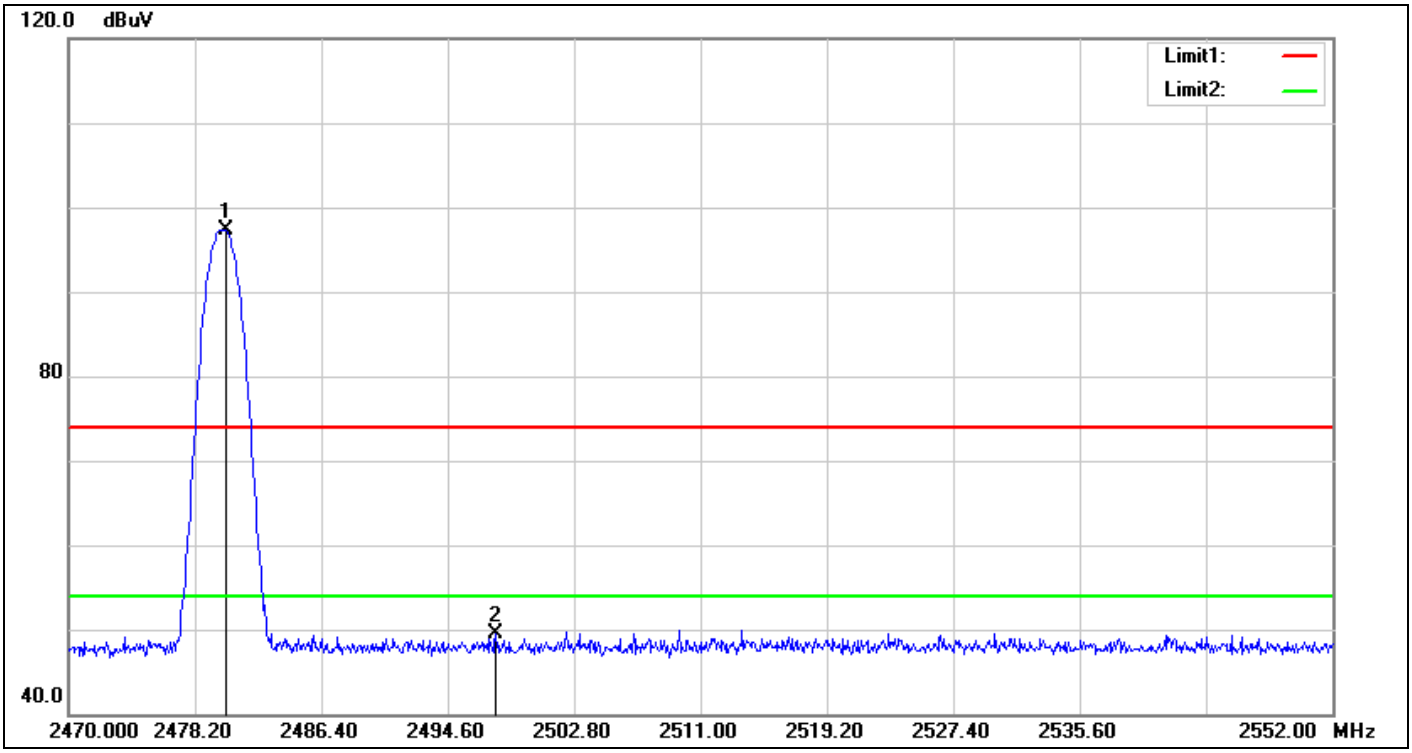
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2389.230	37.81	-2.50	35.31	54.00	-18.69	AVG
2	2440.910	104.80	-2.21	102.59	54.00	48.59	AVG
3	2493.160	37.90	-1.91	35.99	54.00	-18.01	AVG

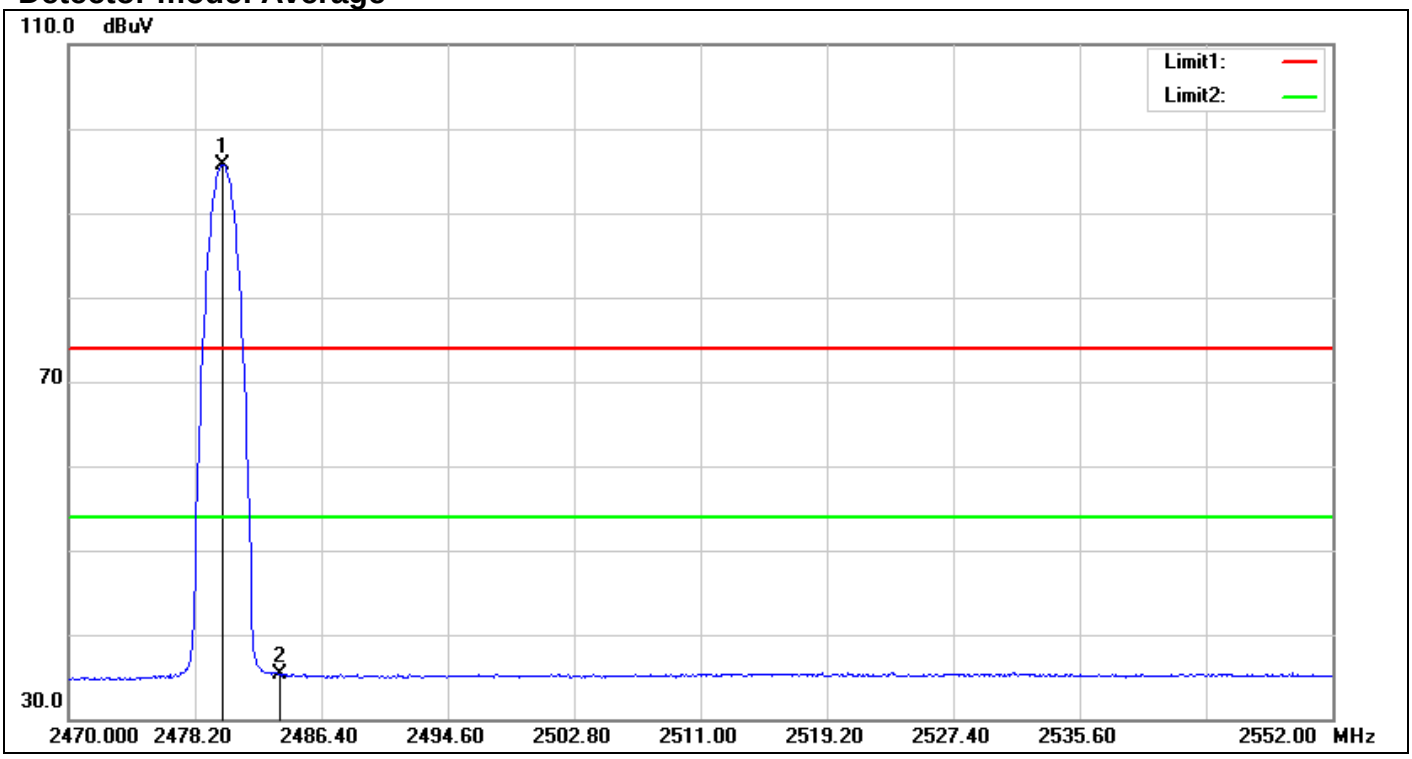
Band Edges (CH High)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2480.168	99.41	-2.03	97.38	74.00	23.38	peak
2	2497.716	51.38	-1.88	49.50	74.00	-24.50	peak

Detector mode: Average

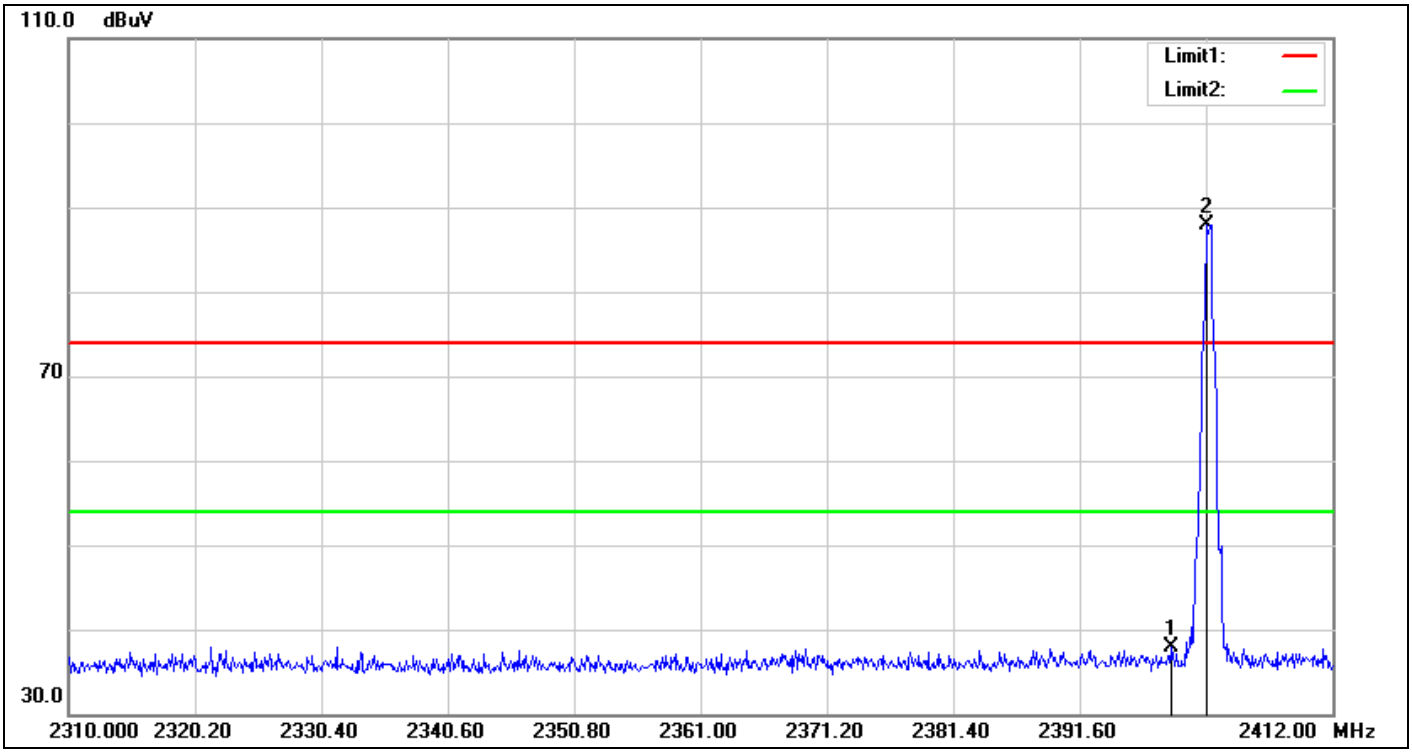


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2480.004	97.80	-2.03	95.77	54.00	41.77	AVG
2	2483.694	37.38	-1.99	35.39	54.00	-18.61	AVG

Test Plot

For GFSK

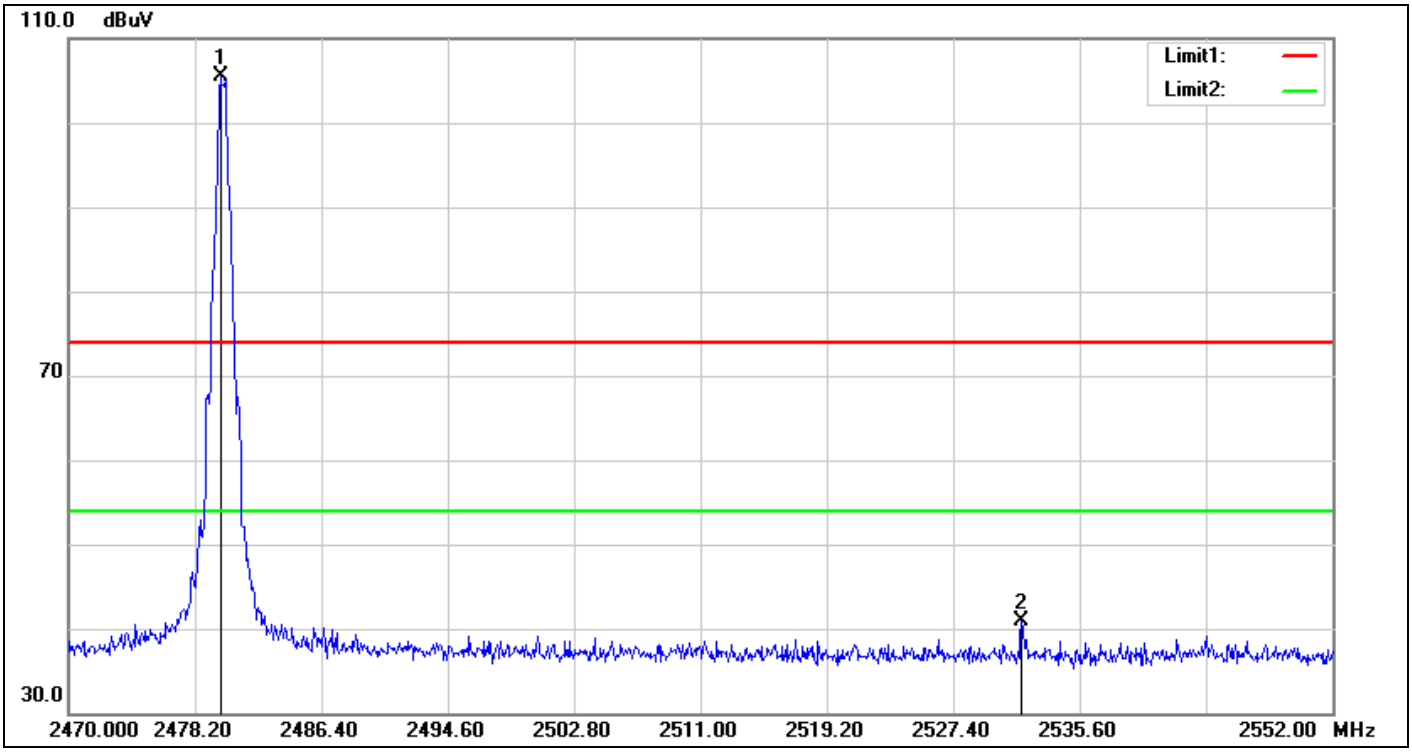
Un-restricted Band Emissions / CH Low



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2398.944	40.28	-2.42	37.86	74.00	-36.14	peak
2	2401.800	90.35	-2.41	87.94	74.00	13.94	peak

Note: Spurious emission levels that exceed the level of 20 dB below the applicable limit.

Un-restricted Band Emissions / CH High

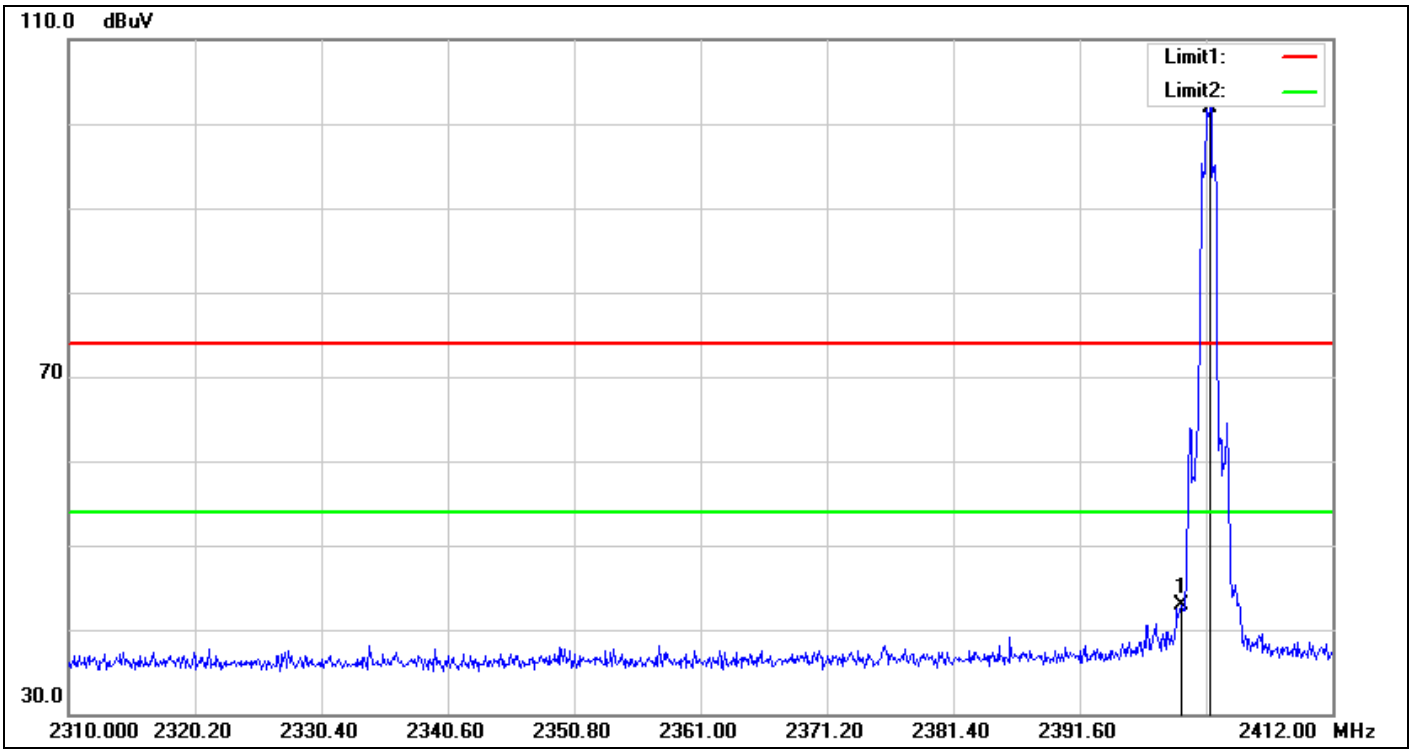


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2479.840	107.45	-2.03	105.42	74.00	31.42	peak
2	2531.828	42.75	-1.78	40.97	74.00	-33.03	peak

Note: Spurious emission levels that exceed the level of 20 dB below the applicable limit.

For 8DPSK

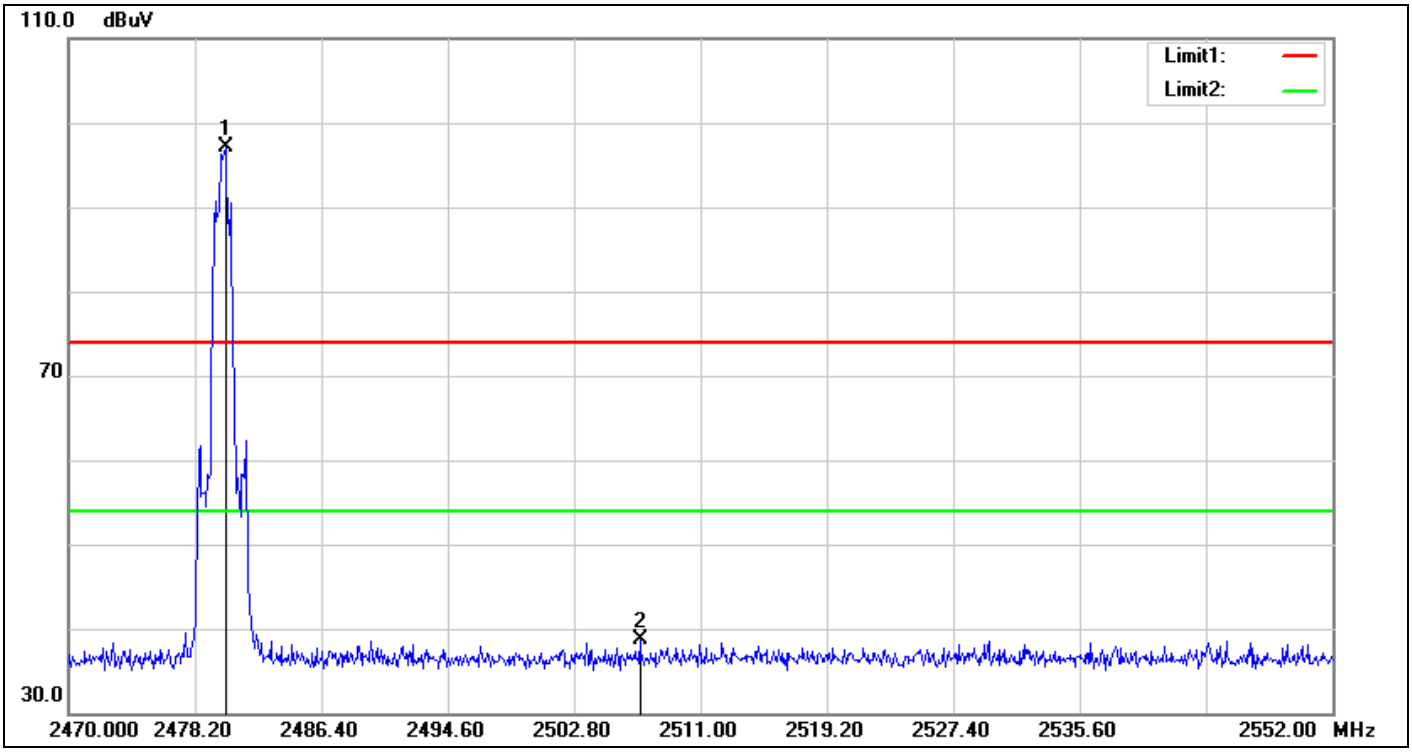
Un-restricted Band Emissions / CH Low



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2399.760	45.36	-2.41	42.95	74.00	-31.05	peak
2	2402.106	104.22	-2.41	101.81	74.00	27.81	peak

Note: Spurious emission levels that exceed the level of 20 dB below the applicable limit.

Un-restricted Band Emissions / CH High



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2480.168	99.21	-2.03	97.18	74.00	23.18	peak
2	2507.064	40.54	-1.84	38.70	74.00	-35.30	peak

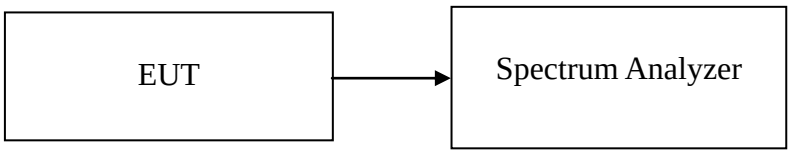
Note: Spurious emission levels that exceed the level of 20 dB below the applicable limit.

7.6 FREQUENCY SEPARATION

LIMIT

According to §15.247(a)(1) & RSS-247, Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = middle of hopping channel.
4. Set the spectrum analyzer as RBW = 30kHz, VBW = 100kHz, Sweep = 3.2 ms.
5. Max hold, mark 3 peaks of hopping channel and record the 3 peaks frequency.

TEST RESULTS

No non-compliance noted

Test Data

For GFSK

Channel	Channel Separation (MHz)	two-thirds of the 20 dB bandwidth (MHz)	Channel Separation Limit	Result
Low	1.0048	0.6826	> two-thirds of the 20 dB bandwidth	Pass
Mid	1.0038	0.6826	> two-thirds of the 20 dB bandwidth	Pass
High	1.0096	0.6826	> two-thirds of the 20 dB bandwidth	Pass

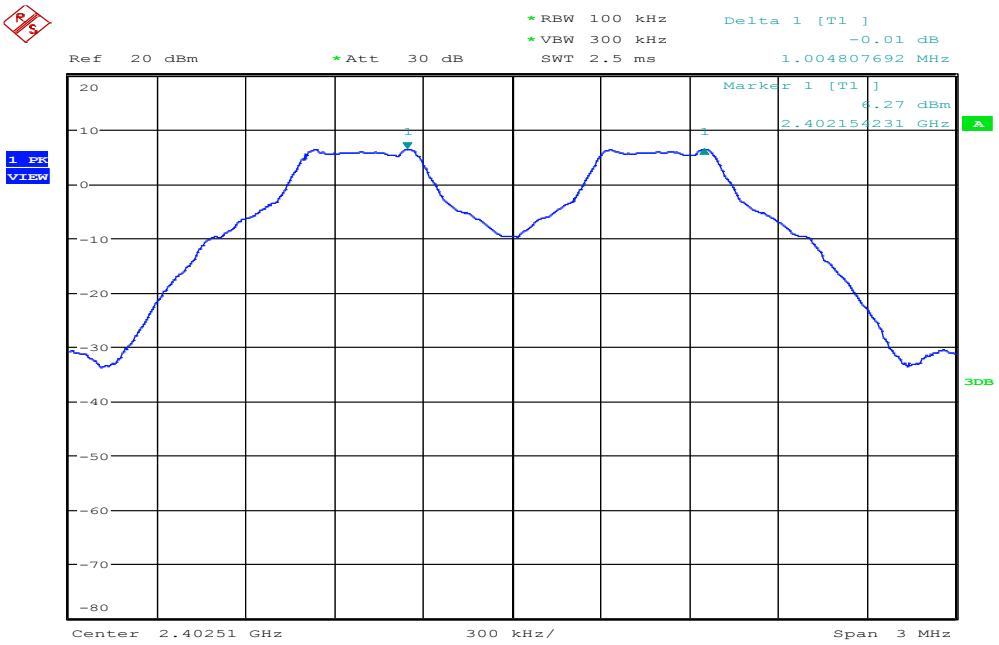
For 8DPSK

Channel	Channel Separation (MHz)	two-thirds of the 20 dB bandwidth (MHz)	Channel Separation Limit	Result
Low	1.0048	0.8589	> two-thirds of the 20 dB bandwidth	Pass
Mid	1.0048	0.8589	> two-thirds of the 20 dB bandwidth	Pass
High	1.0048	0.8589	> two-thirds of the 20 dB bandwidth	Pass

Test Plot

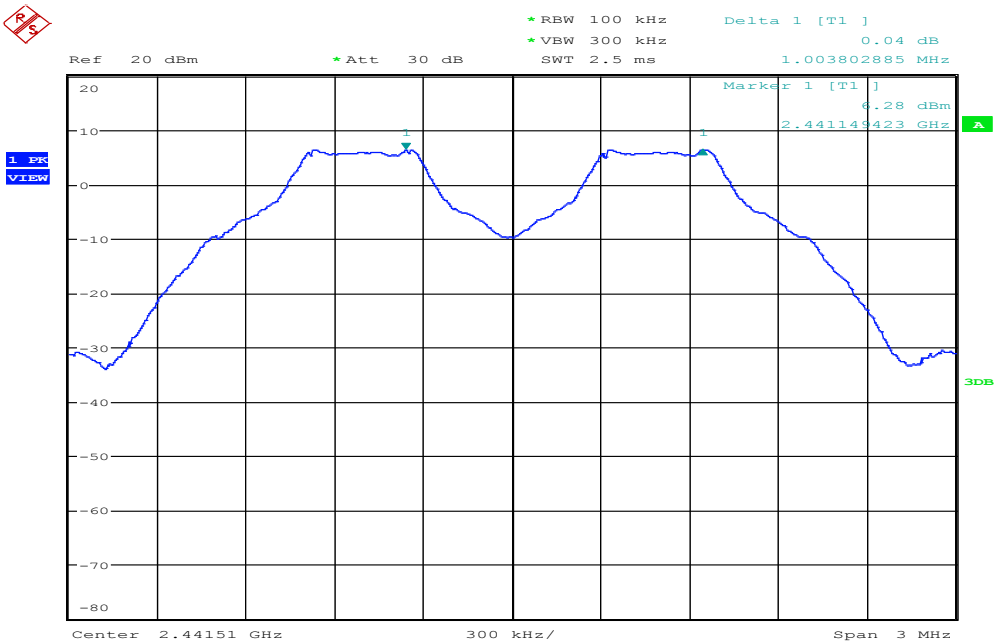
For GFSK / DH5

Measurement of Channel Separation / (CH Low)



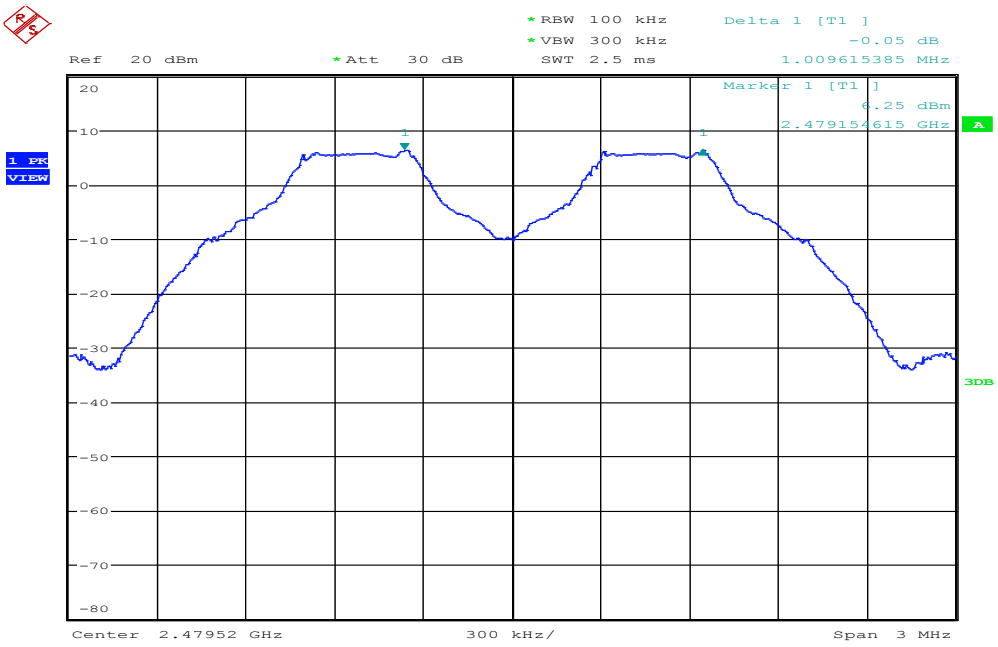
Date: 31.MAR.2016 17:10:23

Measurement of Channel Separation / (CH Mid)



Date: 31.MAR.2016 17:06:09

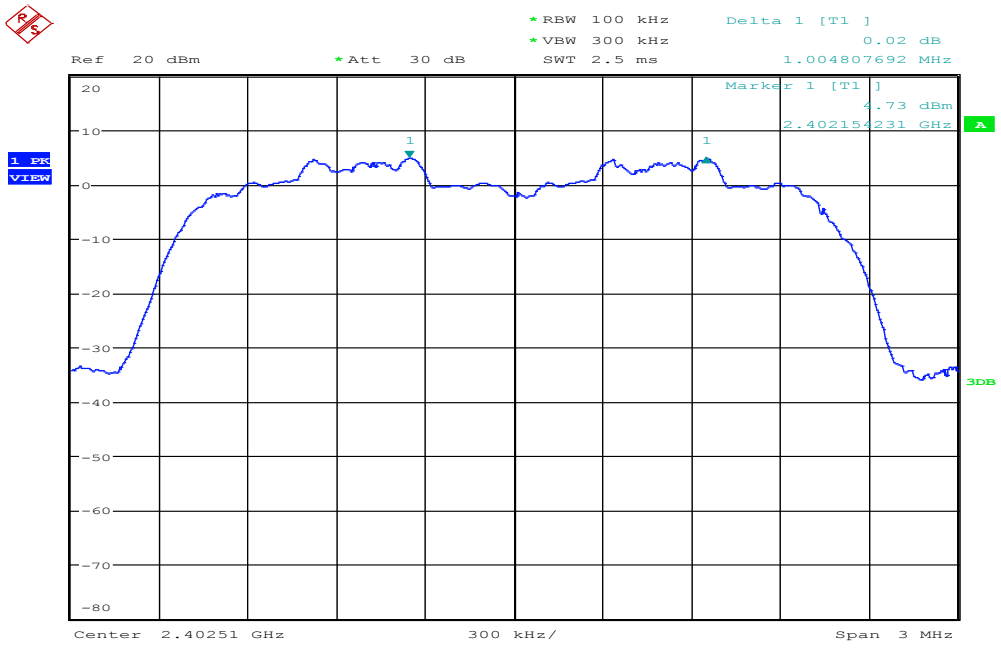
Measurement of Channel Separation / (CH High)



Date: 31.MAR.2016 17:12:17

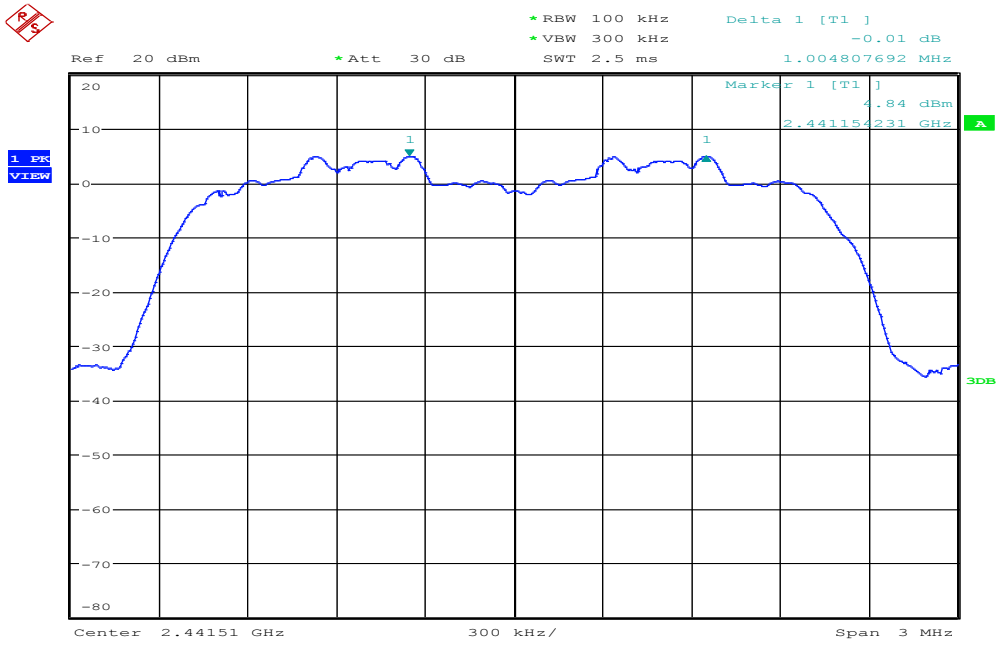
For 8DPSK / DH5

Measurement of Channel Separation / (CH Low)



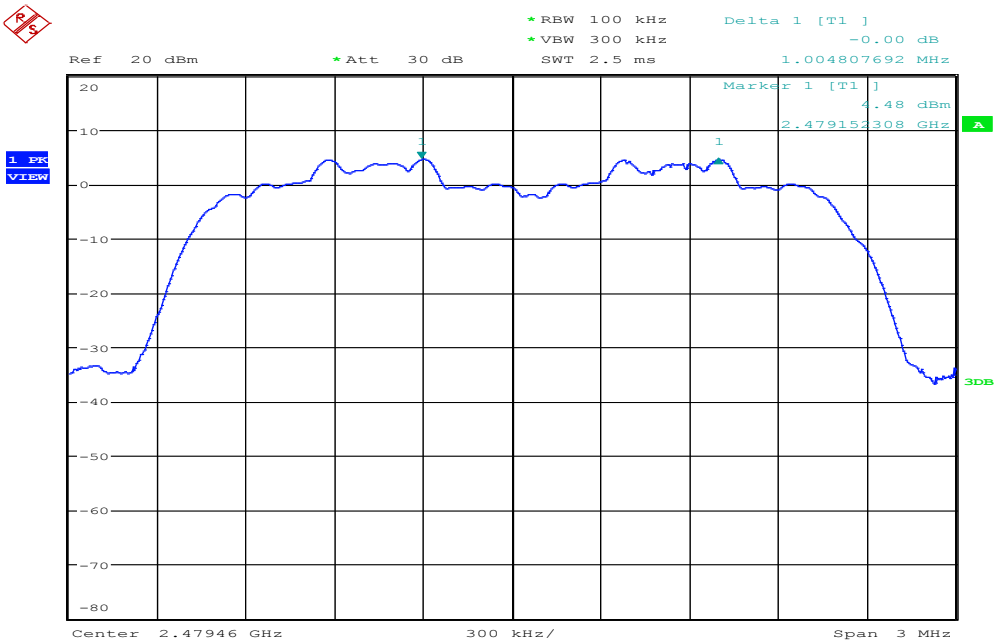
Date: 31.MAR.2016 18:34:04

Measurement of Channel Separation / (CH Mid)



Date: 31.MAR.2016 18:36:32

Measurement of Channel Separation / (CH High)



Date: 31.MAR.2016 19:10:22

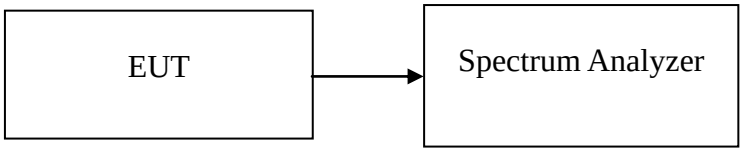
7.7 NUMBER OF HOPPING FREQUENCY

LIMIT

According to §15.247(a)(1)(ii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 75 hopping frequencies.

According to §15.247(a)(1)(iii) & RSS-247, Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 15 hopping frequencies.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set spectrum analyzer Start=2400MHz, Stop = 2430.5MHz, Sweep = auto

   Start=2430.5MHz, Stop = 2460.5MHz, Sweep = auto and Start=2460.5MHz, Stop = 2485.5MHz, Sweep = auto.
4. Set the spectrum analyzer as RBW, VBW=510kHz.
5. Max hold, view and count how many channel in the band.

TEST RESULTS

No non-compliance noted

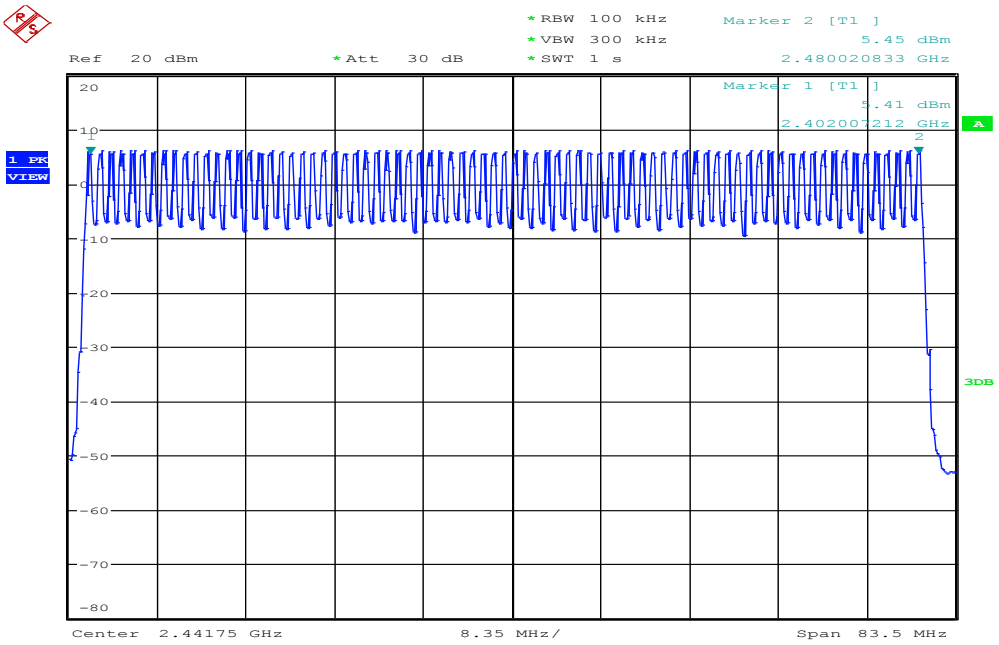
Test Data

Result (No. of CH)	Limit (No. of CH)	Result
79	>15	PASS

Test Plot

For GFSK

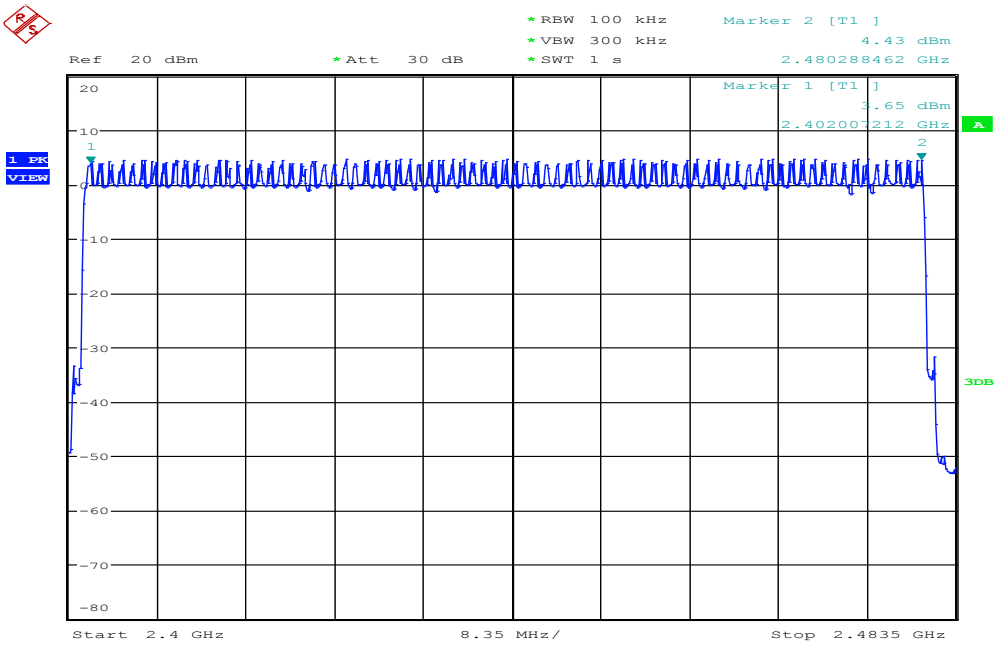
Channel Number



Date: 31.MAR.2016 19:37:00

For 8DPSK

Channel Number



Date: 31.MAR.2016 19:22:54

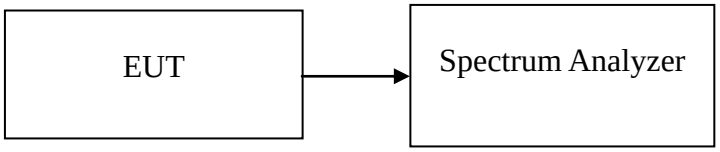
7.8 TIME OF OCCUPANCY (DWELL TIME)

LIMIT

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands. The average time of occupancy on any channels shall not greater than 0.4 s within a period 0.4 s multiplied by the number of hopping channels employed.

According to RSS-247, the average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Transmissions on particular hopping frequencies may be avoided or suppressed provided that a minimum of 15 hopping channels are used.

Test Configuration



TEST PROCEDURE

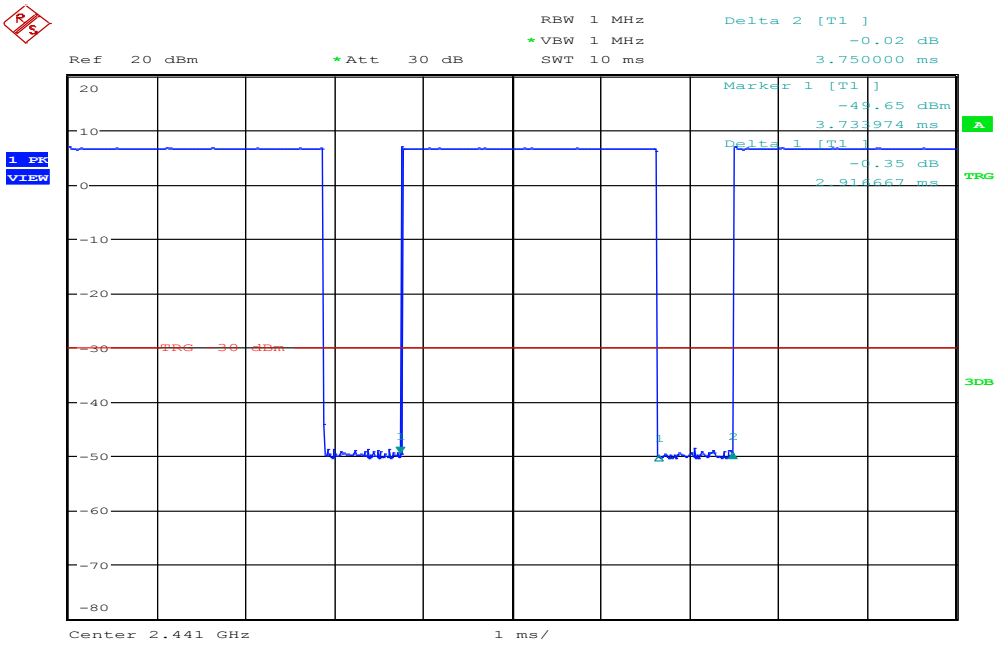
1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = operating frequency.
4. Set the spectrum analyzer as RBW, VBW=1MHz, Sweep = 1 ms.
5. Repeat above procedures until all frequency measured were complete.

TEST RESULTS

No non-compliance noted

Test Data

Time of Occupancy (Dwell Time)						
Mode	Frequency (MHz)	Pulse Time Per Hopping (ms)	Number of pulse in (0.4 * N sec)	Dwell Time IN (0.4 * N sec)	Dwell Time Limits (s)	Result
BR-1Mbps	2402	2.9167	79	106.67	0.3111	Pass
EDR-3Mbps	2402	2.9167	79	106.67	0.3111	
AFH: DH5	2402	2.9167	20	53.33	0.1556	
Non-AFH: DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 3.37 * 0.4 *79 = 106.6						
AFH: DH5 Packet permit maximum 800/ 20 / 6 = 6.666 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 6.666*0.4*20 = 53.33						



7.9 RADIATED EMISSIONS

LIMIT

All spurious emissions shall comply with the limits of §15.209(a) and RSS-Gen Table 2 & Table 5.

RSS-Gen Table 2 & Table 5: General Field Strength Limits for Transmitters and Receivers at Frequencies Above 30 MHz (Note)

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

Note: *Measurements for compliance with limits in the above table may be performed at distances other than 3 metres, in accordance with Section 7.2.7.
Transmitting devices are not permitted in Table 1 bands or, unless stated otherwise, in TV bands (54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-806 MHz).

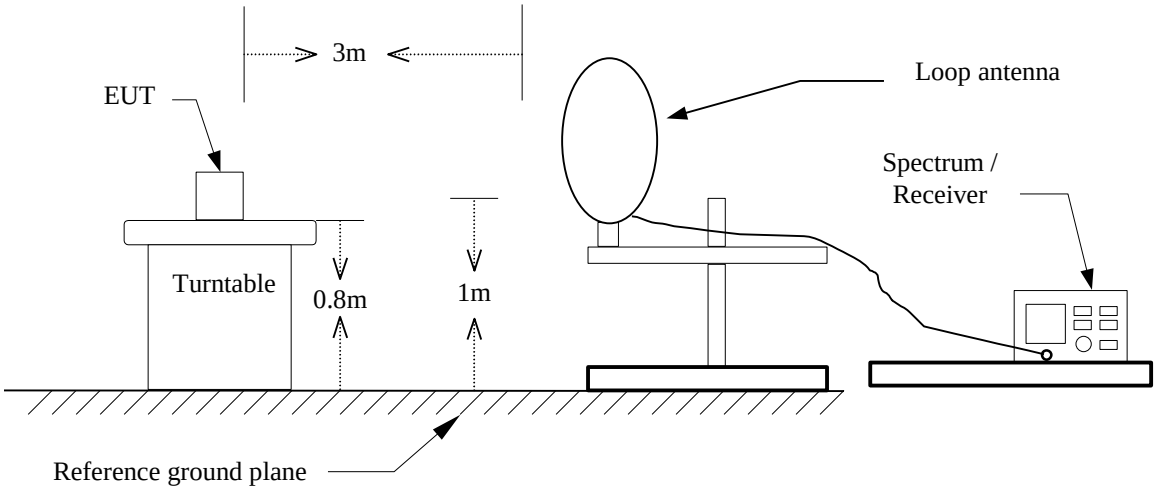
RSS-Gen Table 6: General Field Strength Limits for Transmitters at Frequencies Below 30 MHz (Transmit)

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/377F (F in kHz)	3000
490-1,705 kHz	24,000/F (F in kHz)	24,000/377F (F in kHz)	30
1.705-30 MHz	30	N/A	30

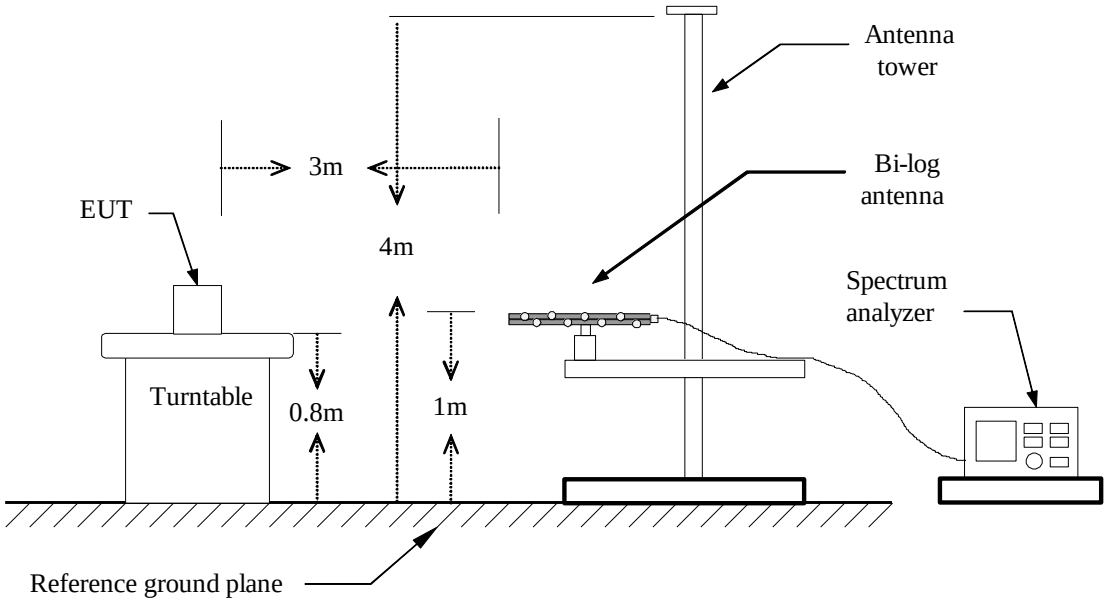
Note: The emission limits for the bands 9-90 kHz and 110-490 kHz are based on measurements
employing an average detector.

Test Configuration

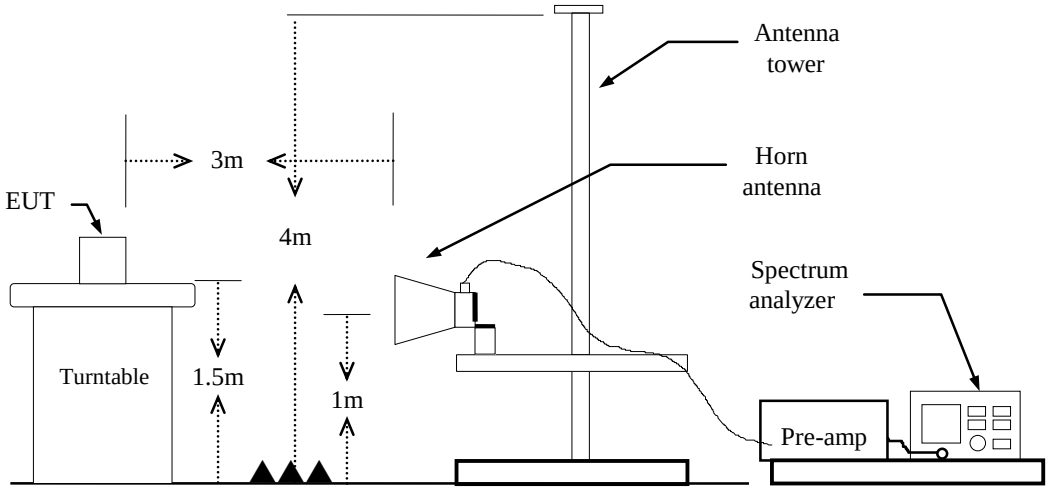
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1 GHz


Antenna
tower
3m
Horn
antenna
EUT
4m
Spectrum
analyzer
Turntable
1.5m
1m
Pre-amp

TEST PROCEDURE

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m high and below 1 GHz is 0.8m high above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

   Below 1GHz:

   RBW=100kHz / VBW=300kHz / Sweep=AUTO

   Above 1GHz:

   (a) PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz,
   if duty cycle≧98%, VBW=10Hz.
   if duty cycle<98% VBW=1/T.
   BT: = 77%, VBW= 360Hz
   EDR = 77%, VBW= 360Hz

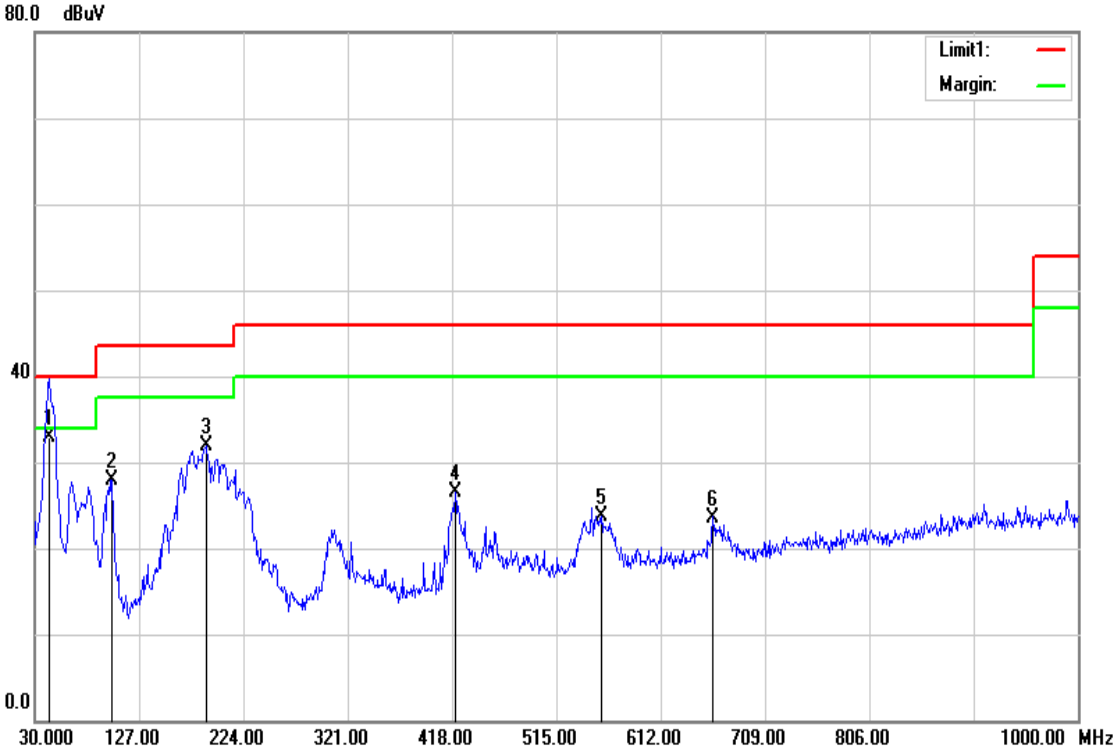
7. Repeat above procedures until the measurements for all frequencies are complete.
8. Result = Spectrum Reading + cable loss(spectrum to Amp) - Amp Gain + Cable loss(Amp to receive Ant)+ Receive Ant

Note: We checked every harmonics frequencies from Fundamental frequencies with reduced VBW, and we mark a point to prove pass or not if we find any emission. For this case, there are no emissions hidden in the noise floor.

TEST RESULTS

Below 1GHz

Operation Mode:	Normal Link	**Test Date:**	April 8, 2016
Temperature:	27°C	**Tested by:**	Jason Lu
Humidity:	53% RH	**Polarity:**	Ver.

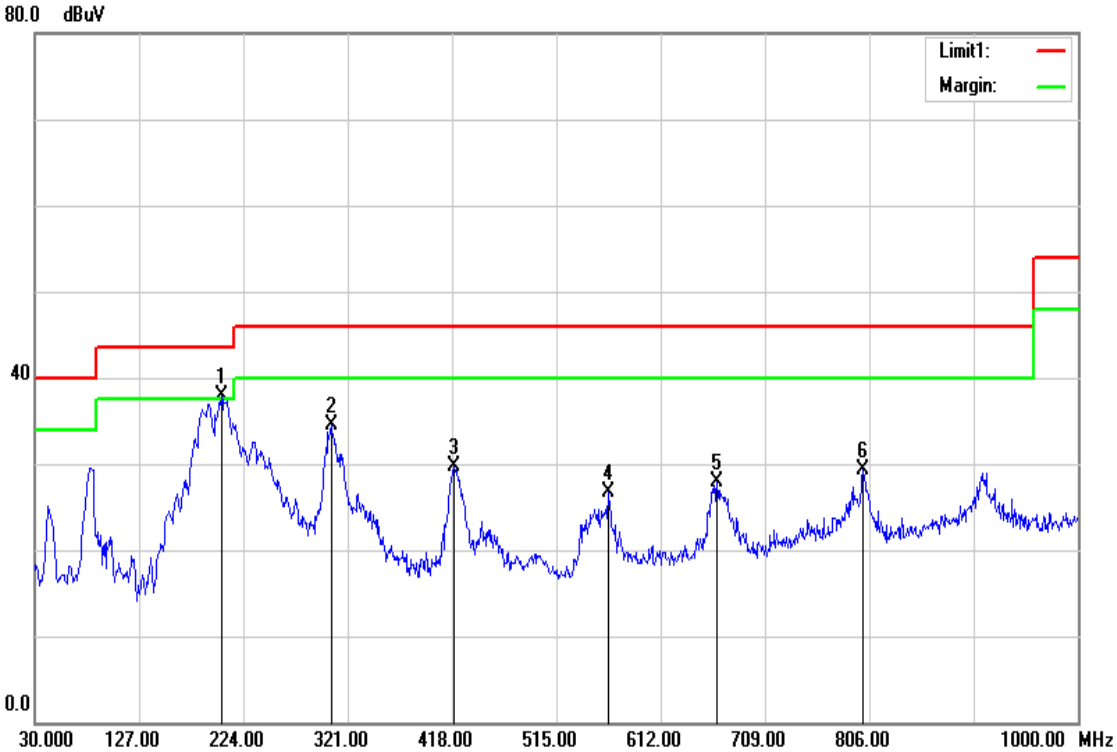


Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
43.5800	50.21	-17.39	32.82	40.00	-7.18	peak	V
101.7800	46.61	-18.72	27.89	43.50	-15.61	peak	V
189.0800	48.48	-16.53	31.95	43.50	-11.55	peak	V
420.9100	37.48	-11.07	26.41	46.00	-19.59	peak	V
556.7100	32.05	-8.39	23.66	46.00	-22.34	peak	V
660.5000	30.06	-6.46	23.60	46.00	-22.40	peak	V

Remark:

1. *No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz)*
2. *Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*
3. *Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).*

Operation Mode:	Normal Link	**Test Date:**	April 8, 2016
Temperature:	27°C	**Tested by:**	Jason Lu
Humidity:	53% RH	**Polarity:**	Hor.



Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
203.6300	53.73	-15.81	37.92	43.50	-5.58	peak	H
305.4800	48.61	-14.09	34.52	46.00	-11.48	peak	H
419.9400	40.86	-11.10	29.76	46.00	-16.24	peak	H
563.5000	34.90	-8.29	26.61	46.00	-19.39	peak	H
664.3800	34.26	-6.43	27.83	46.00	-18.17	peak	H
800.1800	33.75	-4.50	29.25	46.00	-16.75	peak	H

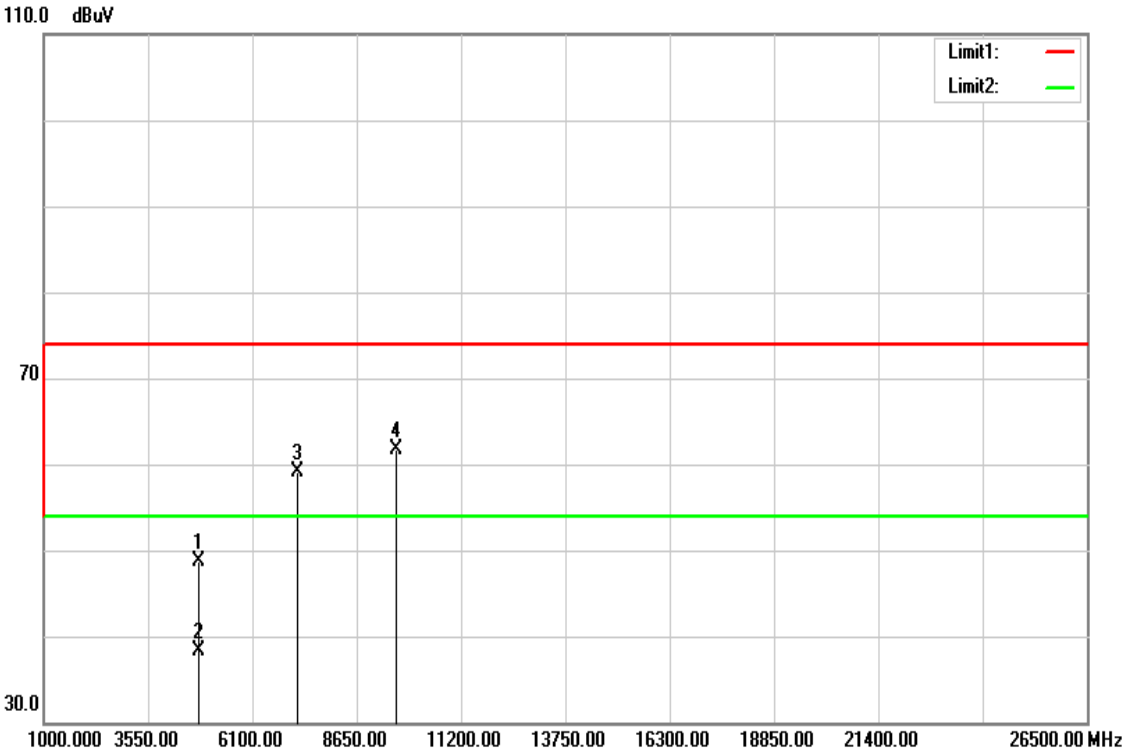
Remark:

1. *No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz)*
2. *Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*
3. *Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).*

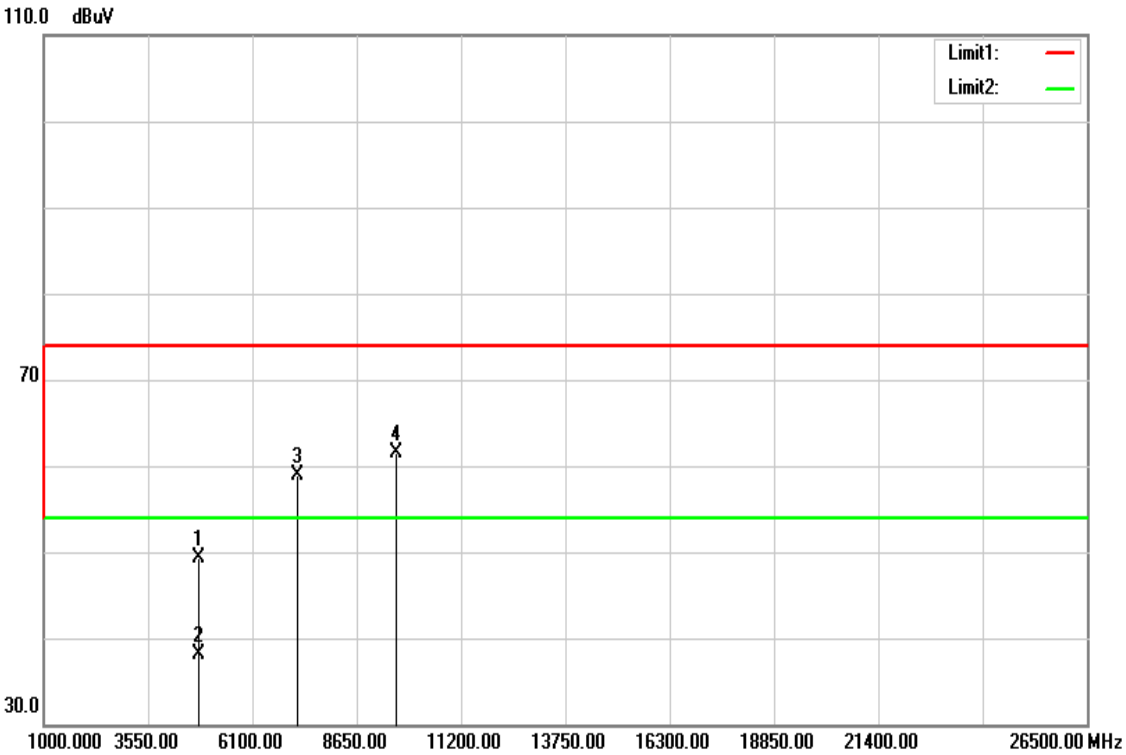
Above 1 GHz

TX / GFSK / DH5 / CH Low

Polarity: Vertical



Polarity: Horizontal



Above 1 GHz

Operation Mode:	TX / GFSK / DH5 / CH Low	**Test Date:**	April 3, 2016
Temperature:	27°C	**Tested by:**	Jason Lu
Humidity:	53 % RH	**Polarity:**	Ver. / Hor.

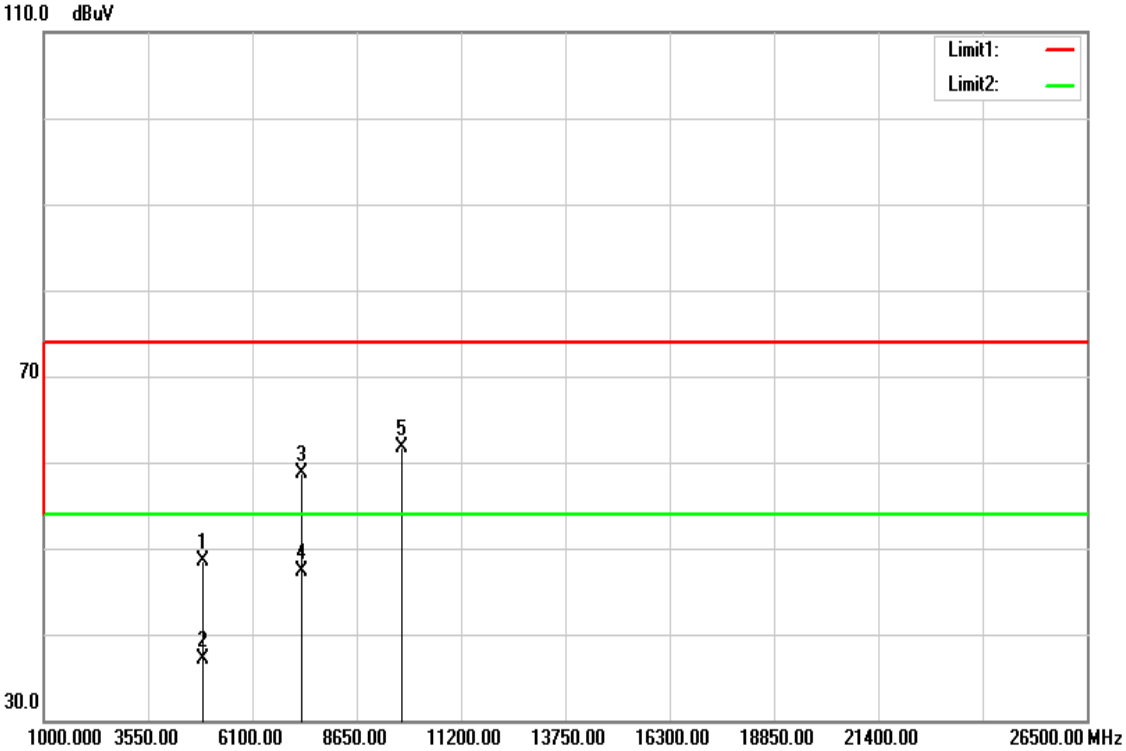
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
4804.000	43.57	5.04	48.61	74.00	-25.39	peak	V
4804.000	33.20	5.04	38.24	54.00	-15.76	AVG	V
7206.000	46.55	12.62	59.17	74.00	-14.83	peak	V
9608.000	44.01	17.60	61.61	74.00	-12.39	peak	V
N/A							
4804.000	44.30	5.04	49.34	74.00	-24.66	peak	H
4804.000	33.13	5.04	38.17	54.00	-15.83	AVG	H
7206.000	46.22	12.62	58.84	74.00	-15.16	peak	H
9608.000	44.00	17.60	61.60	74.00	-12.40	peak	H
N/A							

Remark:

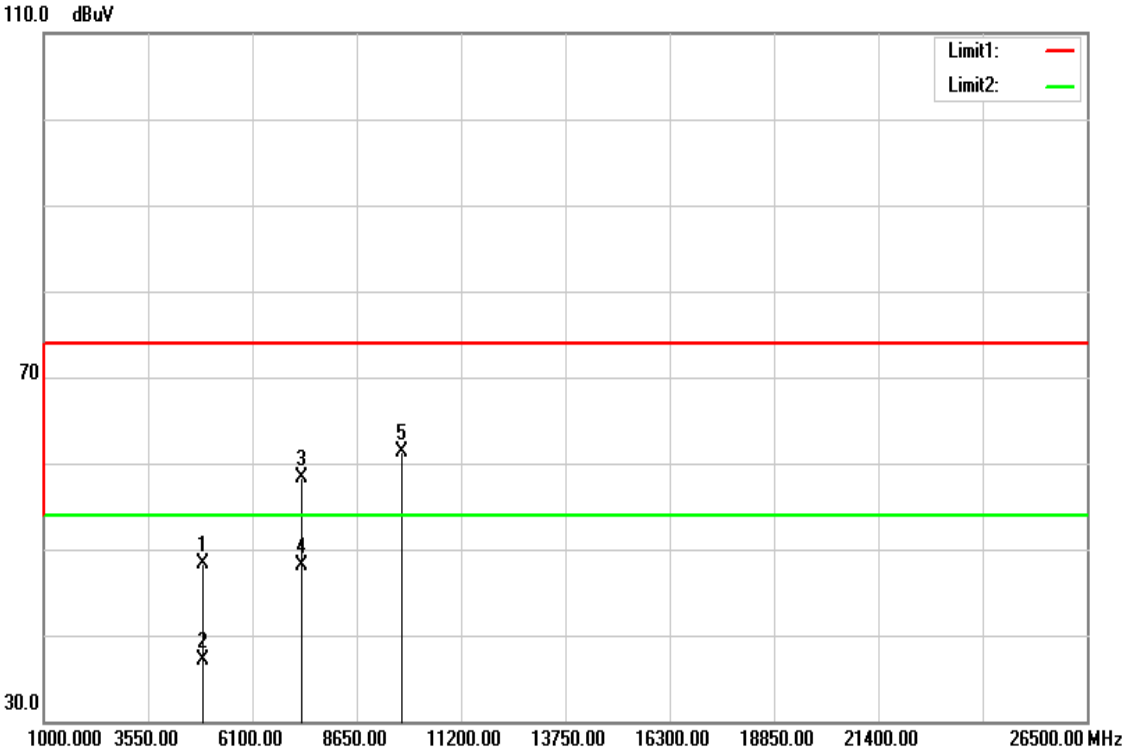
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit .*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

TX / GFSK / DH5 / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	TX / GFSK / DH5 / CH Mid	**Test Date:**	April 3, 2016
Temperature:	26°C	**Tested by:**	Jason Lu
Humidity:	50 % RH	**Polarity:**	Ver. / Hor.

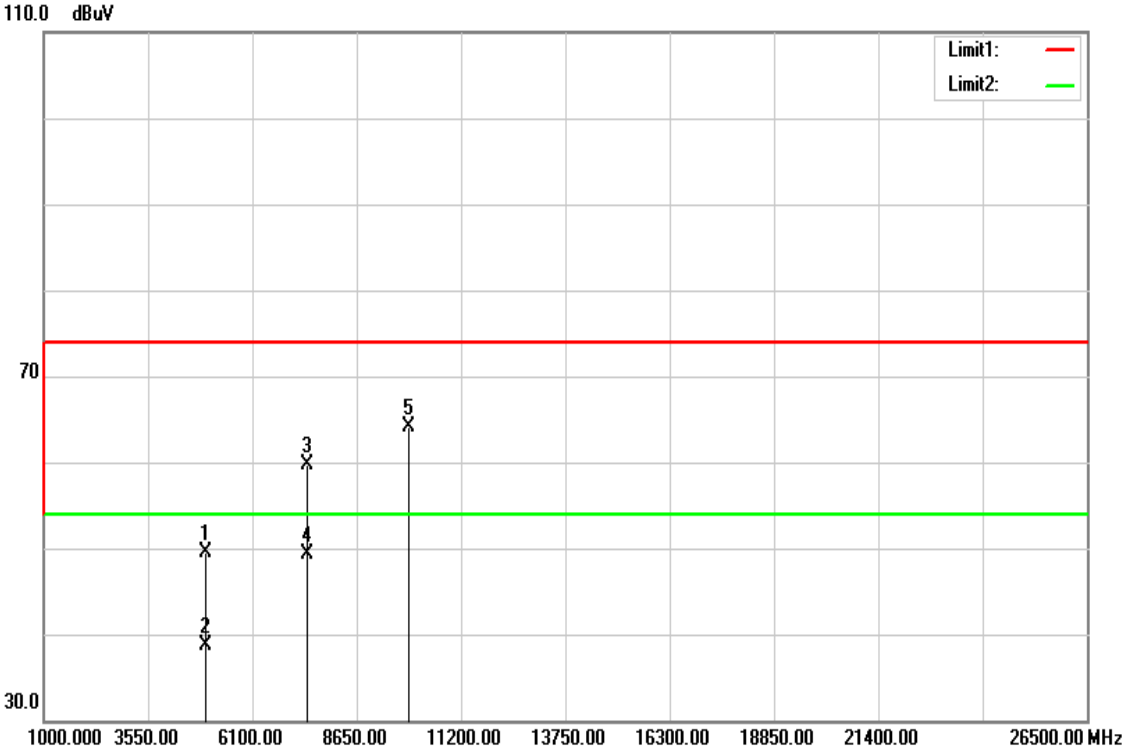
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
4882.000	43.31	5.25	48.56	74.00	-25.44	peak	V
4882.000	31.81	5.25	37.06	54.00	-16.94	AVG	V
7323.000	45.68	12.98	58.66	74.00	-15.34	peak	V
7323.000	34.29	12.98	47.27	54.00	-6.73	AVG	V
9760.000	44.07	17.60	61.67	74.00	-12.33	peak	V
N/A							
4882.000	43.05	5.25	48.30	74.00	-25.70	peak	H
4882.000	31.91	5.25	37.16	54.00	-16.84	AVG	H
7323.000	45.34	12.98	58.32	74.00	-15.68	peak	H
7323.000	35.10	12.98	48.08	54.00	-5.92	AVG	H
9760.000	43.77	17.60	61.37	74.00	-12.63	peak	H
N/A							

Remark:

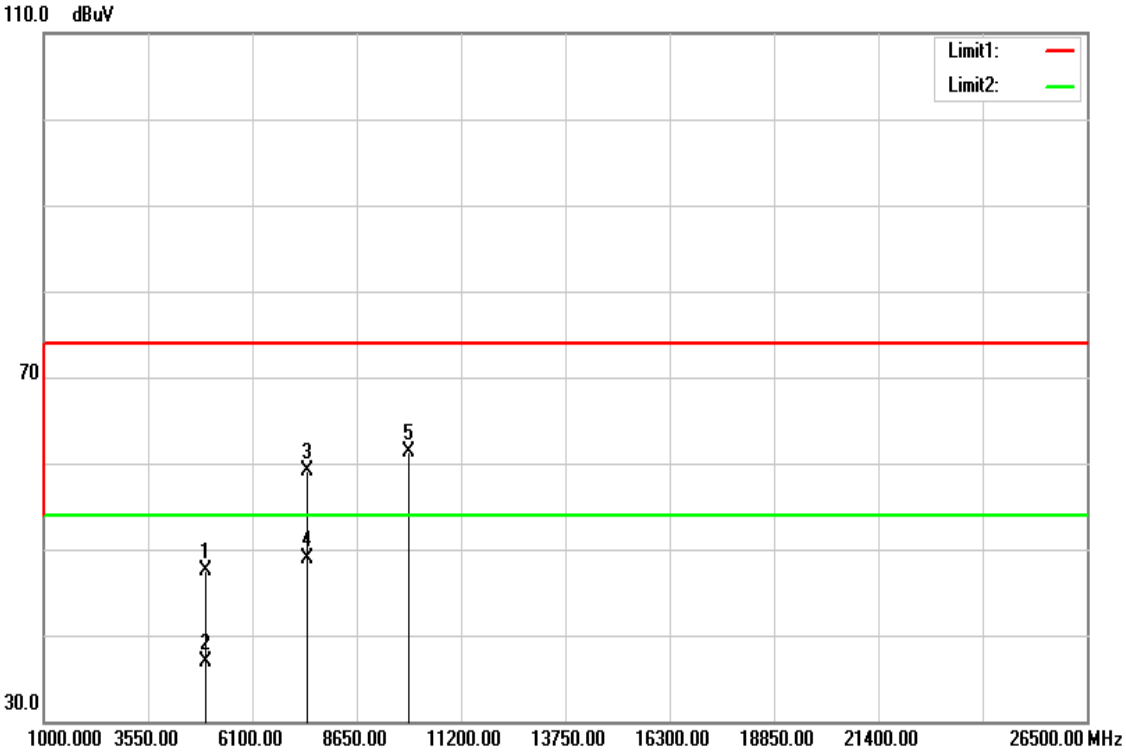
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

TX / GFSK / DH5 / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	TX / GFSK / DH5 / CH High	**Test Date:**	April 3, 2016
Temperature:	26°C	**Tested by:**	Jason Lu
Humidity:	50 % RH	**Polarity:**	Ver. / Hor.

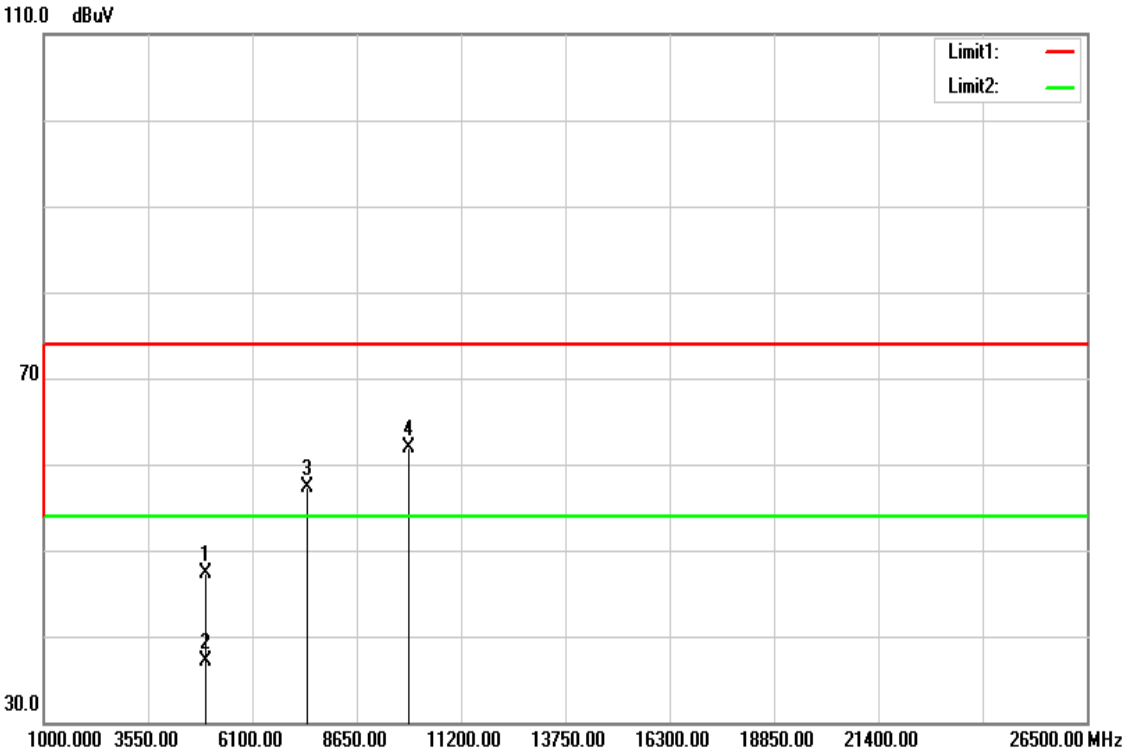
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
4960.000	44.02	5.46	49.48	74.00	-24.52	peak	V
4960.000	33.30	5.46	38.76	54.00	-15.24	AVG	V
7440.000	46.47	13.33	59.80	74.00	-14.20	peak	V
7440.000	35.91	13.33	49.24	54.00	-4.76	AVG	V
9920.000	46.43	17.60	64.03	74.00	-9.97	peak	V
N/A							
4960.000	42.07	5.46	47.53	74.00	-26.47	peak	H
4960.000	31.38	5.46	36.84	54.00	-17.16	AVG	H
7440.000	45.69	13.33	59.02	74.00	-14.98	peak	H
7440.000	35.54	13.33	48.87	54.00	-5.13	AVG	H
9920.000	43.65	17.60	61.25	74.00	-12.75	peak	H
N/A							

Remark:

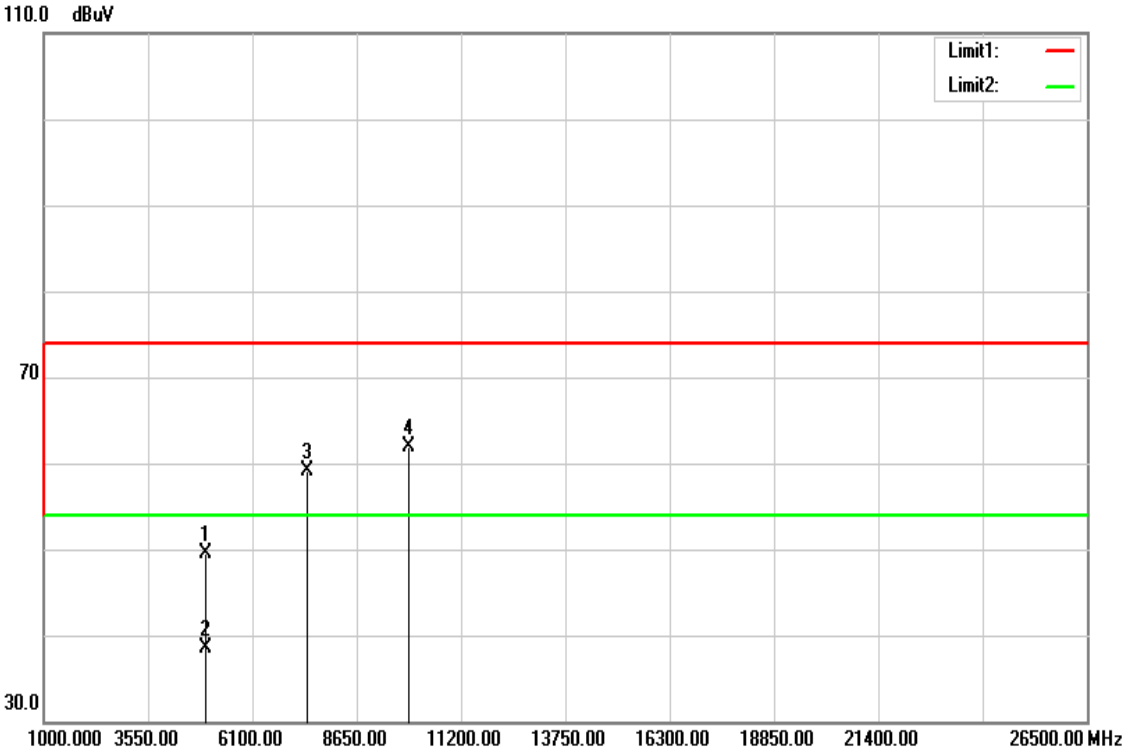
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

TX / 8DPSK / DH5 / CH Low

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	TX / 8DPSK / DH5 / CH Low	**Test Date:**	April 3, 2016
Temperature:	26°C	**Tested by:**	Jason Lu
Humidity:	50 % RH	**Polarity:**	Ver. / Hor.

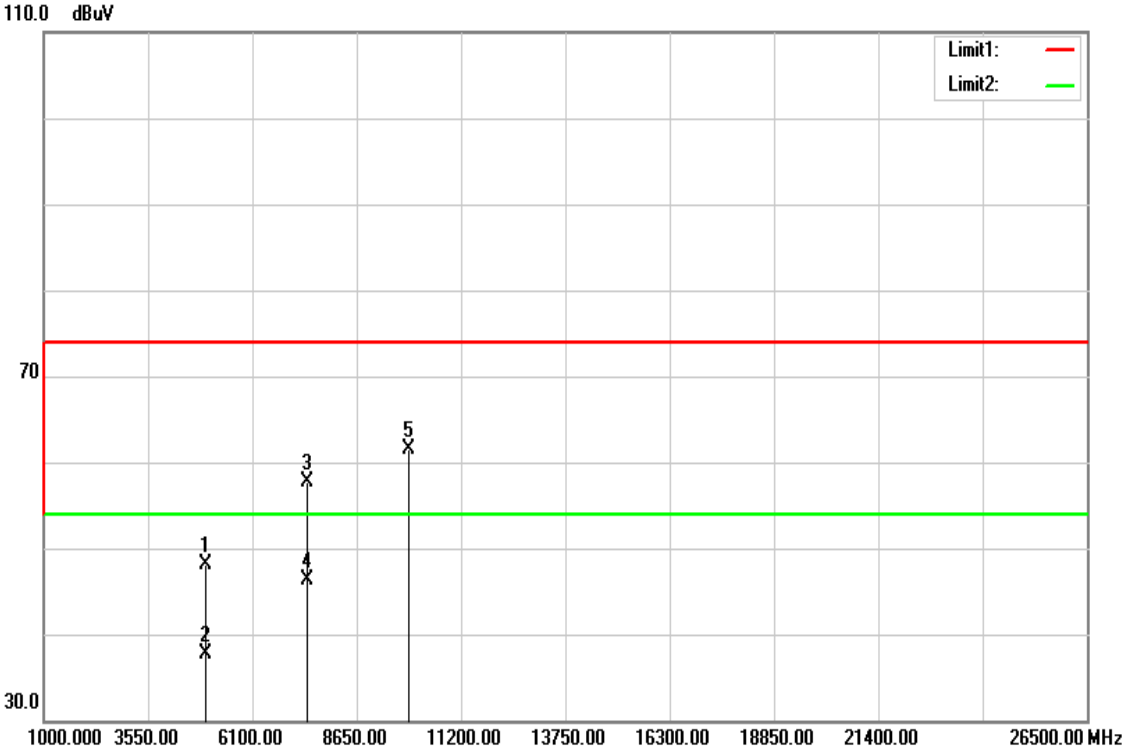
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
4960.000	41.90	5.46	47.36	74.00	-26.64	peak	V
4960.000	31.58	5.46	37.04	54.00	-16.96	AVG	V
7440.000	43.96	13.33	57.29	74.00	-16.71	peak	V
9920.000	44.40	17.60	62.00	74.00	-12.00	peak	V
N/A							
4960.000	44.13	5.46	49.59	74.00	-24.41	peak	H
4960.000	33.00	5.46	38.46	54.00	-15.54	AVG	H
7440.000	45.78	13.33	59.11	74.00	-14.89	peak	H
9920.000	44.36	17.60	61.96	74.00	-12.04	peak	H
N/A							

Remark:

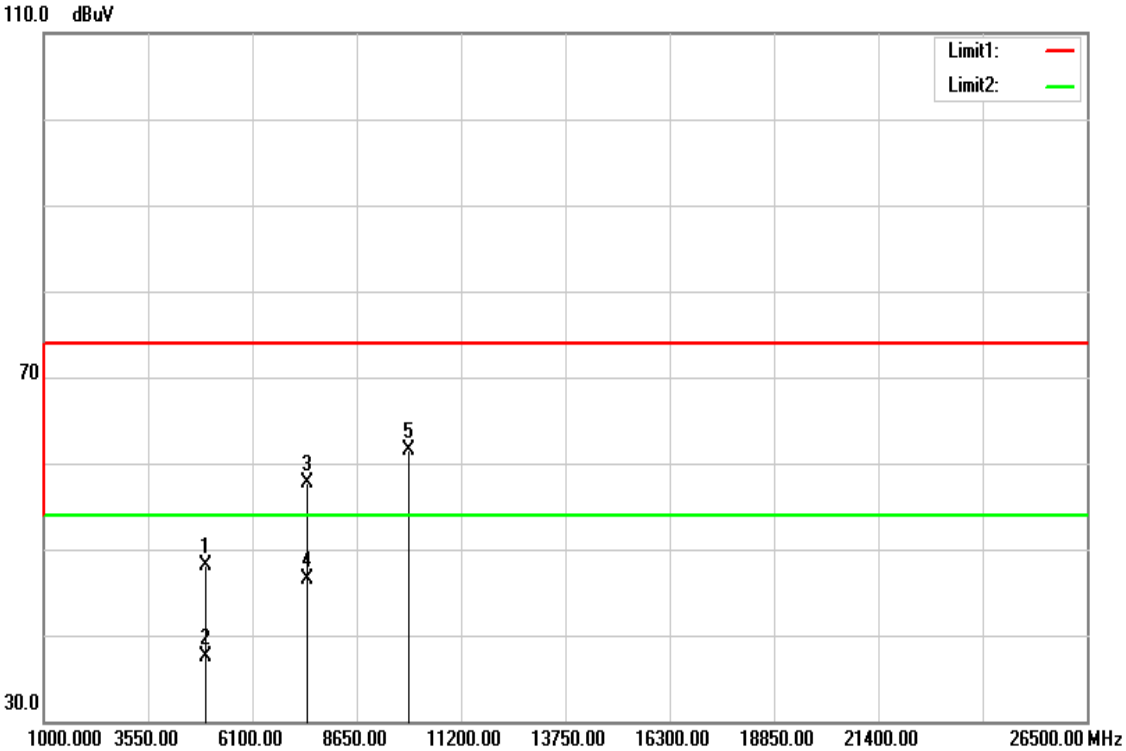
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

TX / 8DPSK / DH5 / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	TX / 8DPSK / DH5 / CH Mid	**Test Date:**	April 3, 2016
Temperature:	26°C	**Tested by:**	Jason Lu
Humidity:	50 % RH	**Polarity:**	Ver. / Hor.

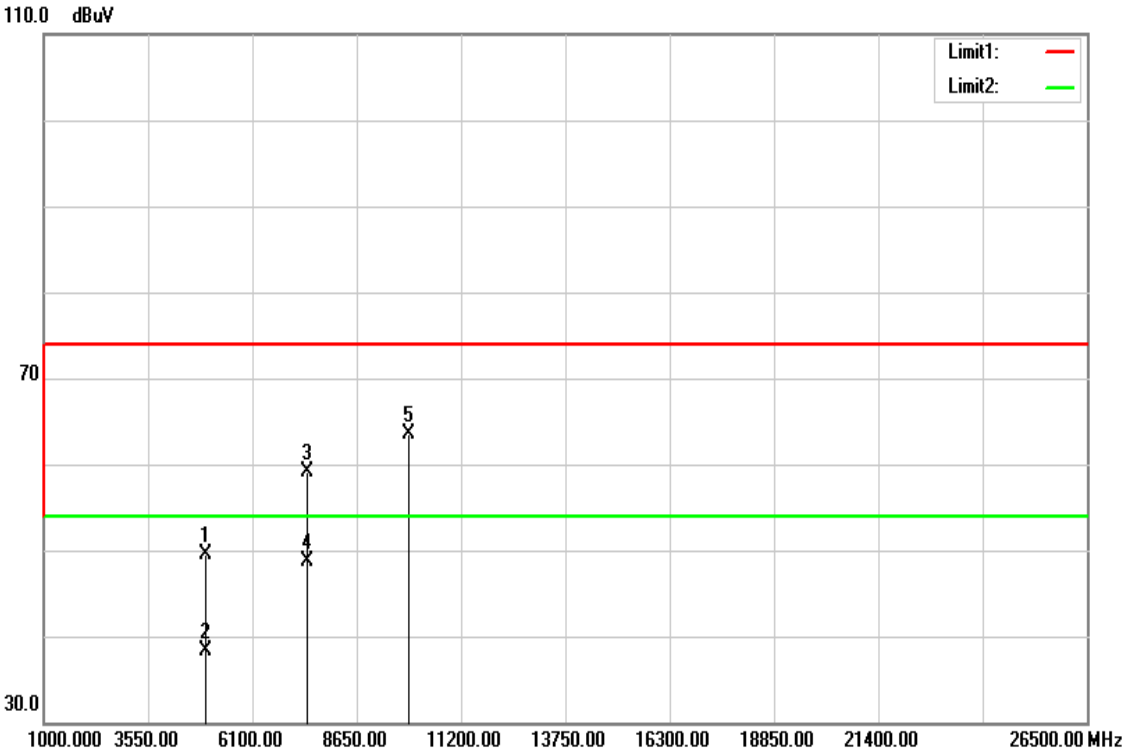
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
4960.000	42.67	5.46	48.13	74.00	-25.87	peak	V
4960.000	32.29	5.46	37.75	54.00	-16.25	AVG	V
7440.000	44.35	13.33	57.68	74.00	-16.32	peak	V
7440.000	32.94	13.33	46.27	54.00	-7.73	AVG	V
9920.000	43.99	17.60	61.59	74.00	-12.41	peak	V
N/A							
4960.000	42.67	5.46	48.13	74.00	-25.87	peak	H
4960.000	32.00	5.46	37.46	54.00	-16.54	AVG	H
7440.000	44.35	13.33	57.68	74.00	-16.32	peak	H
7440.000	33.24	13.33	46.57	54.00	-7.43	AVG	H
9920.000	43.99	17.60	61.59	74.00	-12.41	peak	H
N/A							

Remark:

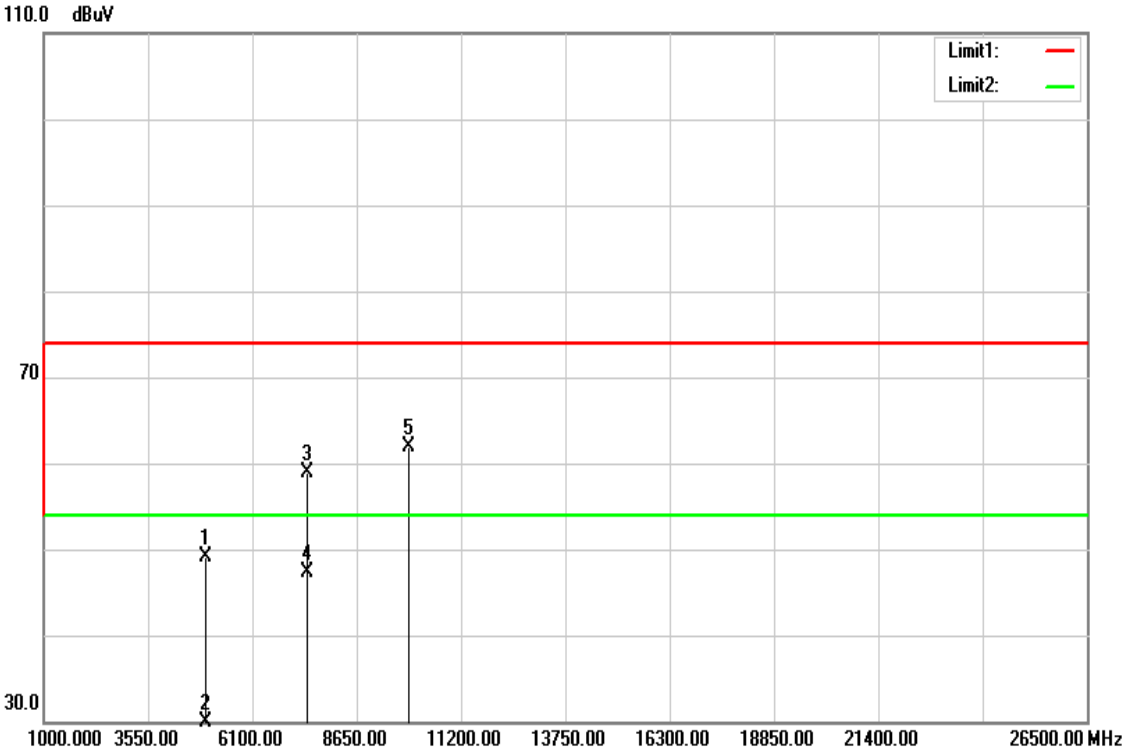
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

TX / 8DPSK / DH5 / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	TX / 8DPSK / DH5 / CH High	**Test Date:**	April 3, 2016
Temperature:	26°C	**Tested by:**	Jason Lu
Humidity:	50 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
4960.000	43.95	5.46	49.41	74.00	-24.59	peak	V
4960.000	32.75	5.46	38.21	54.00	-15.79	AVG	V
7440.000	45.76	13.33	59.09	74.00	-14.91	peak	V
7440.000	35.41	13.33	48.74	54.00	-5.26	AVG	V
9920.000	45.81	17.60	63.41	74.00	-10.59	peak	V
N/A							
4960.000	43.71	5.46	49.17	74.00	-24.83	peak	H
4960.000	17.80	5.46	23.26	54.00	-30.74	AVG	H
7440.000	45.56	13.33	58.89	74.00	-15.11	peak	H
7440.000	34.03	13.33	47.36	54.00	-6.64	AVG	H
9920.000	44.35	17.60	61.95	74.00	-12.05	peak	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

7.10 POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a) & RSS-Gen §7.2.4, except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dBµV)	
	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

***** *Decreases with the logarithm of the frequency.*

Test Configuration

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Test Data

Operation Mode:	Normal Link	**Test Date:**	April 12, 2016
Temperature:	24°C	**Tested by:**	Jason Lu
Humidity:	56% RH		

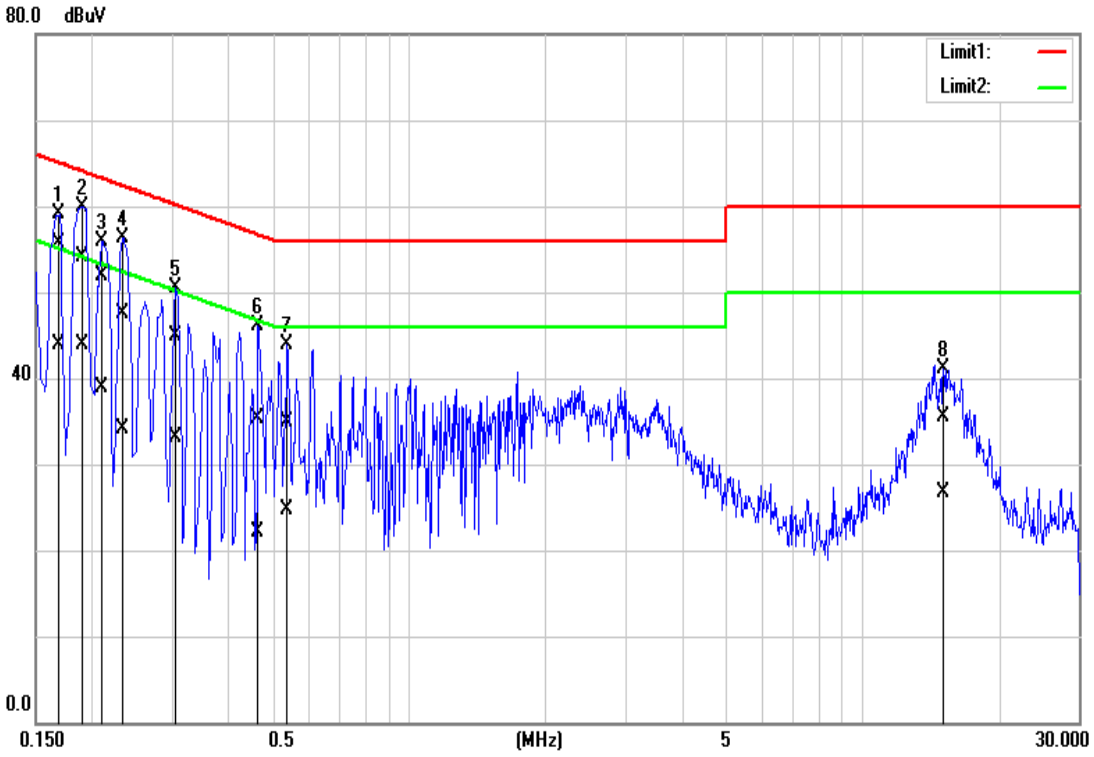
Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. factor (dB/m)	QP Result (dBuV/m)	AV Result (dBuV/m)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
0.1700	45.91	34.09	9.77	55.68	43.86	64.96	54.96	-9.28	-11.10	L1
0.1900	44.31	34.05	9.76	54.07	43.81	64.04	54.04	-9.97	-10.23	L1
0.2100	42.15	29.13	9.76	51.91	38.89	63.21	53.21	-11.30	-14.32	L1
0.2340	37.82	24.41	9.76	47.58	34.17	62.31	52.31	-14.73	-18.14	L1
0.3060	35.12	23.43	9.77	44.89	33.20	60.08	50.08	-15.19	-16.88	L1
0.4660	25.44	12.31	9.86	35.30	22.17	56.58	46.58	-21.28	-24.41	L1
0.5380	24.96	14.84	9.96	34.92	24.80	56.00	46.00	-21.08	-21.20	L1
15.1420	25.38	16.63	10.11	35.49	26.74	60.00	50.00	-24.51	-23.26	L1
0.1620	47.18	35.26	9.84	57.02	45.10	65.36	55.36	-8.34	-10.26	L2
0.1700	46.90	36.31	9.84	56.74	46.15	64.96	54.96	-8.22	-8.81	L2
0.1940	46.41	35.04	9.83	56.24	44.87	63.86	53.86	-7.62	-8.99	L2
0.2100	45.16	31.37	9.83	54.99	41.20	63.20	53.21	-8.21	-12.01	L2
0.2380	39.55	25.50	9.83	49.38	35.33	62.16	52.17	-12.78	-16.84	L2
0.2660	39.25	26.22	9.83	49.08	36.05	61.24	51.24	-12.16	-15.19	L2
0.2779	37.23	25.34	9.83	47.06	35.17	60.88	50.88	-13.82	-15.71	L2
0.3060	37.79	24.17	9.83	47.62	34.00	60.08	50.08	-12.46	-16.08	L2
0.4740	29.11	19.43	9.93	39.04	29.36	56.44	46.44	-17.40	-17.08	L2
0.5220	30.41	19.28	10.00	40.41	29.28	56.00	46.00	-15.59	-16.72	L2
0.6100	27.67	15.15	10.12	37.79	25.27	56.00	46.00	-18.21	-20.73	L2

Remark:

1. *Measuring frequencies from 0.15 MHz to 30MHz.*
2. *The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.*
3. *The IF bandwidth of SPA between 0.15MHz to 30MHz was 10kHz; the IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9kHz;*
4. *L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)*

Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)