

FCC 47 CFR PART 15 SUBPART E

TEST REPORT

For

Computer

Model:

TREK-773;TREK-773XXXXXXXXXXXXXXXXXX(where "X" may be any alphanumeric character , "-" or blank)

Trade Name: Advantech

Issued to

Advantech Co.Ltd.

No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 114, 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.)**

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Issued Date: February 4, 2016



Testing Laboratory
1309

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	February 4, 2016	Initial Issue	ALL	Doris Chu
01	November 4, 2016	1. Modify EUT DESCRIPTION. 2. Modify MRA number. 3. Modify Section 7.4 BAND EDGES data.	P.6, P.11, P.51 ~ P.100	Doris Chu

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1. TEST RESULT CERTIFICATION

Applicant: Advantech Co.Ltd.
 No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District,
 Taipei 114, Taiwan, R.O.C.

Equipment Under Test: Computer

Trade Name: Advantech

Model: TREK-773;TREK-773XXXXXXXXXXXXXXXXXXXXX(where "X" may
 be any alphanumeric character , "-" or blank)

Date of Test: January 28 ~ Febryary 1, 2016

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart E	No non-compliance noted

We hereby certify that:

Compliance Certification Services Inc. tested the above equipment. 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 conducted and radiated emission limits of FCC Rules Part 15.407.

The test results of this report relate only to the tested sample identified in this report.

Approved by:

Tested by:




Miller Lee
 Manager
 Compliance Certification Services Inc.

Jason Lu
 Engineer
 Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	Computer				
Trade Name	Advantech				
Model Number	TREK-773;TREK-773XXXXXXXXXXXXXXXXXX(where "X" may be any alphanumeric character , "-" or blank)				
Model Discrepancy	All the above models are identical except for the designation of model numbers. The suffix of (where "X" may be any alphanumeric character , "-" or blank) on model number is just for marketing purpose only.				
Received Date	November 24, 2015				
Power Supply	Supports 12/24 V car power system (9V ~ 32V wide DC input)				
Operating Frequency Range & Number of Channels		Mode	Frequency Range (MHz)	Number of Channels	
	U-NII-1	IEEE 802.11a	5180 – 5240	4 Channels	
		IEEE 802.11n HT 20 MHz	5180 – 5240	4 Channels	
		IEEE 802.11n HT 40 MHz	5190 ~ 5230	2 Channels	
	U-NII-2A	IEEE 802.11a	5260 - 5320	4 Channels	
		IEEE 802.11n HT 20 MHz	5260 - 5320	4 Channels	
		IEEE 802.11n HT 40 MHz	5270 ~ 5310	2 Channels	
	U-NII-2C	IEEE 802.11a	5500 ~ 5700	11 Channels	
		IEEE 802.11n HT 20 MHz	5500 ~ 5700	11 Channels	
		IEEE 802.11n HT 40 MHz	5510 ~ 5670	5 Channels	
Transmit Power		Mode	Frequency Range (MHz)	Output Power (dBm)	Output Power (w)
	U-NII-1	IEEE 802.11a	5180 – 5240	19.37	0.0865
		IEEE 802.11n HT 20 MHz	5180 – 5240	20.09	0.1021
		IEEE 802.11n HT 40 MHz	5190 ~ 5230	20.23	0.1054
	U-NII-2A	IEEE 802.11a	5260 - 5320	19.41	0.0873
		IEEE 802.11n HT 20 MHz	5260 - 5320	20.64	0.1159
		IEEE 802.11n HT 40 MHz	5270 ~ 5310	20.13	0.1030
	U-NII-2C	IEEE 802.11a	5500 ~ 5700	19.13	0.0818
		IEEE 802.11n HT 20 MHz	5500 ~ 5700	19.47	0.0885
IEEE 802.11n HT 40 MHz		5510 ~ 5670	20.11	0.1026	
Modulation Technique	OFDM (QPSK, BPSK, 16-QAM, 64-QAM)				

Transmit Data Rate	IEEE 802.11a mode: OFDM (54, 48, 36, 24, 18, 12, 9, 6 Mbps) IEEE 802.11n HT 20 mode: OFDM (6.5, 7.2, 13, 14.4, 14.44, 19.5, 21.7, 26, 28.9, 39, 43.3, 52, 57.8, 58.5, 65.0, 72.2, 78, 86.67, 104, 115.56, 117, 130, 144.44 Mbps) IEEE 802.11n HT 40 mode: OFDM (13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps)
Antenna Specification	Cortec / AN2450-16HM01BRS Gain: 6.67 dBi
Antenna Designation	Dipole Antenna
Antenna Category	<input checked="" type="checkbox"/> Integral: antenna permanently attached <input type="checkbox"/> External dedicated antennas <input type="checkbox"/> External Unique antenna connector

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 ID: **M82-TREK773LTE** filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.
3. The EUT Antenna requirement was follow Part 15.203 rule.

3. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013 Radiated testing was performed at an antenna to EUT distance 3 meters.

The tests documented in this report were performed in accordance with ANSI C63.10: 2013, FCC CFR 47 Part 15.207, 15.209, 15.407 and KDB 789033 D02 General UNII Test Procedures New Rules v01.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed for RF field strength measurement to meet the Commissions requirement, and is operated in a manner intended to generate the maximum emission in a continuous normal application.

3.2 EUT EXERCISE

The EUT is operated in the engineering mode to fix the Tx frequency for the purposes of measurement.

According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

According to the requirements in of ANSI C63.10: 2013, the conducted emission from the EUT is measured in the frequency range between 0.15 MHz and 30MHz, using the CISPR Quasi-Peak detector mode.

Radiated Emissions

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. 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: TREK-773) had been tested under operating condition.

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

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz, which worst case was in normal link mode only.

U-NII-1:

IEEE 802.11a for 5180 ~ 5240MHz:

Channel Low (5180MHz), Channel Mid (5220MHz) and Channel High (5240MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5180 ~ 5240MHz:

Channel Low (5180MHz), Channel Mid (5220MHz) and Channel High (5240MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz Channel for 5190 ~ 5230MHz:

Channel Low (5190MHz) and Channel High (5230MHz) with 13.5Mbps data rate were chosen for full testing.

U-NII-2A:

IEEE 802.11a for 5260 ~ 5320MHz:

Channel Low (5260MHz), Channel Mid (5280MHz) and Channel High (5320MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5260 ~ 5320MHz:

Channel Low (5260MHz), Channel Mid (5280MHz) and Channel High (5320MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz for 5270 ~ 5310MHz:

Channel Low (5270MHz) and Channel High (5310MHz) with 13.5Mbps data rate were chosen for full testing.

U-NII-2C:

IEEE 802.11a for 5500 ~ 5700MHz:

Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5500 ~ 5700MHz:

Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz for 5510 ~ 5670MHz:

Channel Low (5510MHz), Channel Mid (5590MHz) and Channel High (5670MHz) with 13.5Mbps data rate were chosen for full testing.

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 Due
Spectrum Analyzer	Agilent	E4446A	US42510252	12/07/2016
Thermostatic/Humidity Chamber	TAICHY	MHG-150LF	930619	10/07/2016
AC Power Source	EXTECH	6205	1140845	N.C.R
DC Power Supply	ABM	8301HD	D011531	N.C.R
Power Meter	Anritsu	ML2495A	1012009	07/07/2016
Power Sensor	Anritsu	MA2411A	0917072	07/07/2016
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40	101073	07/19/2016

Wugu 966 Chamber A				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510268	01/24/2017
EMI Test Receiver	R&S	ESCI	100064	06/03/2016
Bilog Antenna	Sunol Sciences	JB3	A030105	08/05/2016
Horn Antenna	EMCO	3117	00055165	01/25/2017
Horn Antenna	EMCO	3116	26370	12/24/2016
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R
Pre-Amplifier	MITEQ	1652-3000	1490939	08/09/2016
Pre-Amplifier	EMC	EMC 012635	980151	06/04/2016
Pre-Amplifier	MITEQ	AMF-6F-260400-40-8P	985646	12/24/2016
Coaxial Cable	Huber+Suhner	102	29212/2	12/24/2016
Coaxial Cable	Huber+Suhner	102	29406/2	12/24/2016
Test S/W	EZ-EMC (CCS-3A1RE)			

4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	N/A
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.139, Wugong Rd., Wugu Dist., New Taipei City 24891, Taiwan (R.O.C.)
Tel: 886-2-2298-4086 / Fax: 886-2-2298-1470
- 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., Luchu Hsiang, Taoyuan Hsien 338, Taiwan
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, and/or ridged waveguide, horn. 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 LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 0824-01 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC 2324G-1 for 3M Semi Anechoic Chamber A, 2324G-2 for 3M Semi Anechoic Chamber B.

5.4 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-210, 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	
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	 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.*

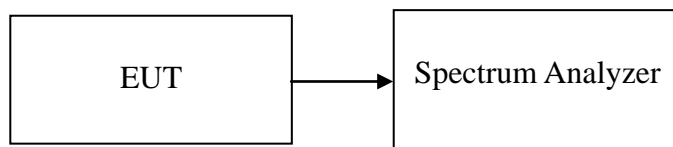
7. FCC PART 15 REQUIREMENTS

7.1 26 dB EMISSION BANDWIDTH

LIMIT

According to §15.303(c), for purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Compliance with the emissions limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolutions bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

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 > 1%EBW, VBW > RBW, Span >26dB bandwidth, and Sweep = auto.
4. Mark the peak frequency and -26dB (upper and lower) frequency.
5. Repeat until all the rest channels were investigated.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	43.1089	22.3557
Mid	5220	43.3493	25.9615
High	5240	45.9134	30.2884

Test mode: IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	40.3044	20.5929
Mid	5220	41.6666	22.9166
High	5240	43.5096	23.3173

Test mode: IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz / Chain 1

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	44.7115	21.4743
Mid	5220	45.9134	22.9967
High	5240	47.5961	27.4038

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	45.9935	37.3397
High	5230	79.1666	40.8653

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	45.5128	37.0192
High	5230	87.9807	45.9935

Test mode: IEEE 802.11a mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	46.3141	31.4102
Mid	5280	44.9519	28.9262
High	5320	42.3076	21.7147

Test mode: IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	49.1185	28.7660
Mid	5280	44.1506	24.2788
High	5320	38.1410	20.0320

Test mode: IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz / Chain 1

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	49.3589	30.6891
Mid	5280	48.2371	26.6826
High	5320	44.3108	21.5544

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	87.9807	48.7179
High	5310	45.1923	36.8589

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	88.3012	46.7948
High	5310	45.5128	37.0192

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	39.7435	20.4326
Mid	5580	45.5128	30.3685
High	5700	43.3493	23.7179

Test mode: IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	34.0544	20.0320
Mid	5580	45.5128	25.1602
High	5700	40.7852	20.4326

Test mode: IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz / Chain 1

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	44.3108	20.6730
Mid	5580	46.8750	26.6025
High	5700	33.8141	19.5512

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	44.8717	36.8589
Mid	5550	88.9423	49.1987
High	5670	45.3525	37.0192

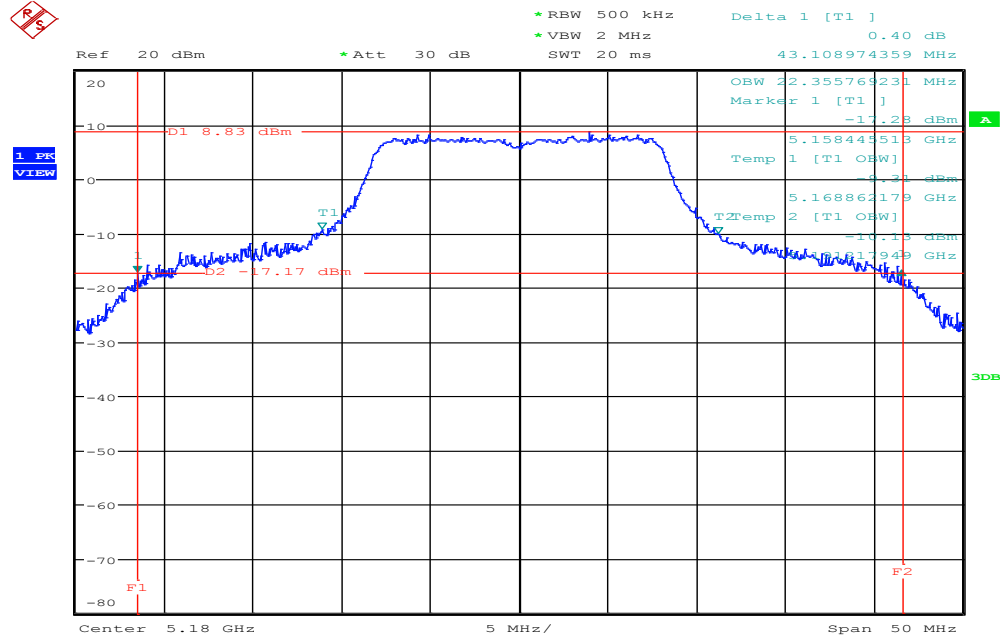
Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	45.8333	36.8589
Mid	5550	90.3846	51.7628
High	5670	45.0320	36.8589

Test Plot

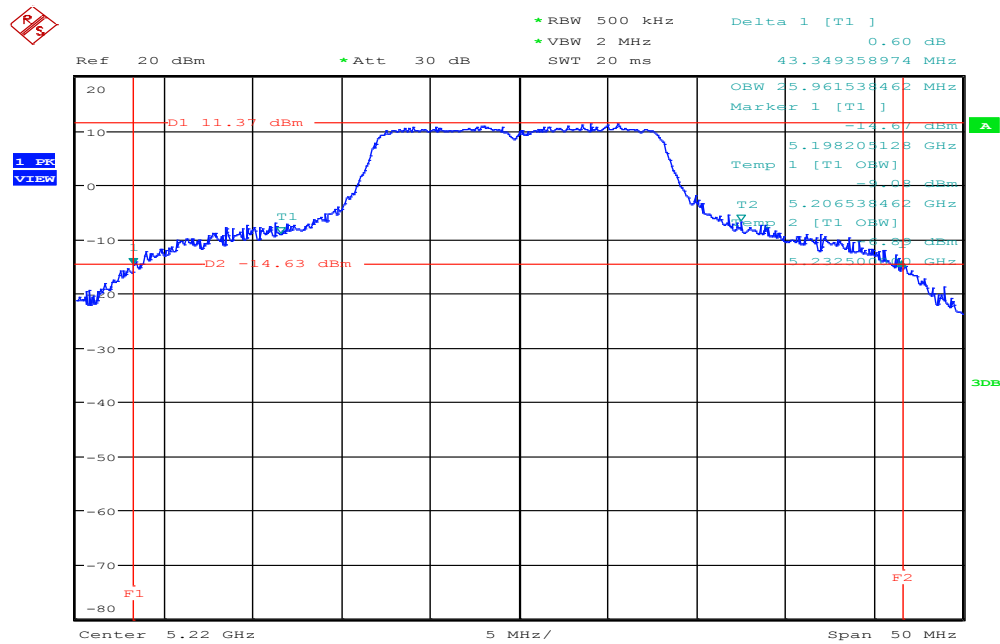
IEEE 802.11a for 5180 ~ 5240MHz

CH Low



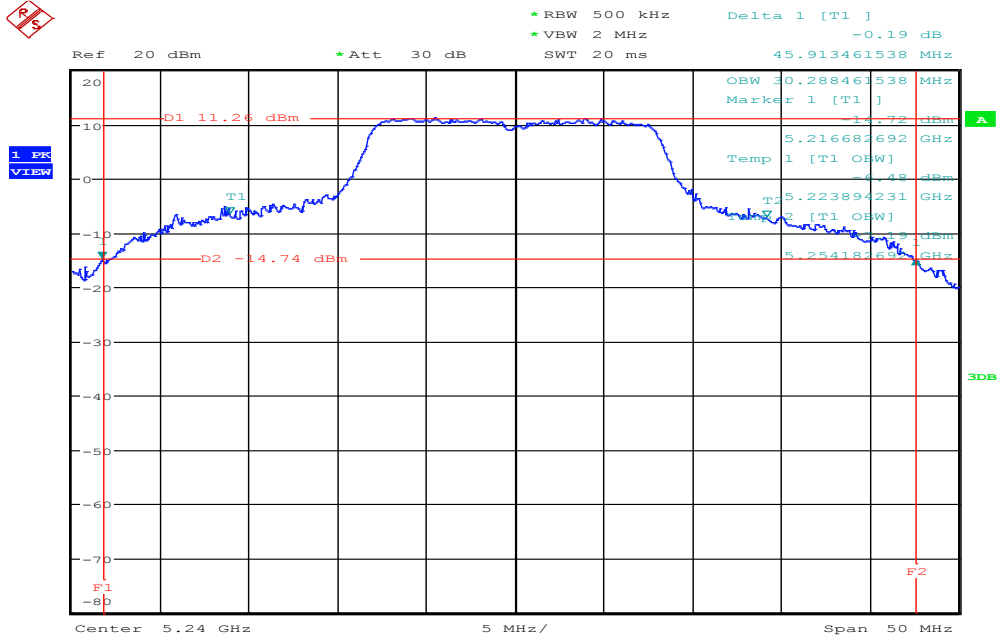
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CH Mid



Date: 1.FEB.2016 11:46:55

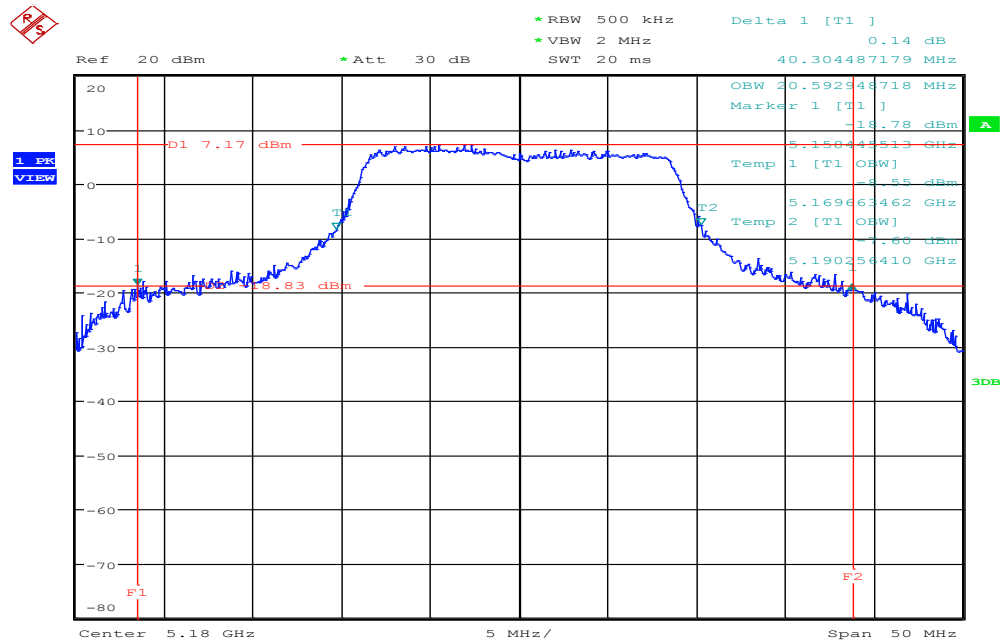
CH High



Date: 1.FEB.2016 11:51:21

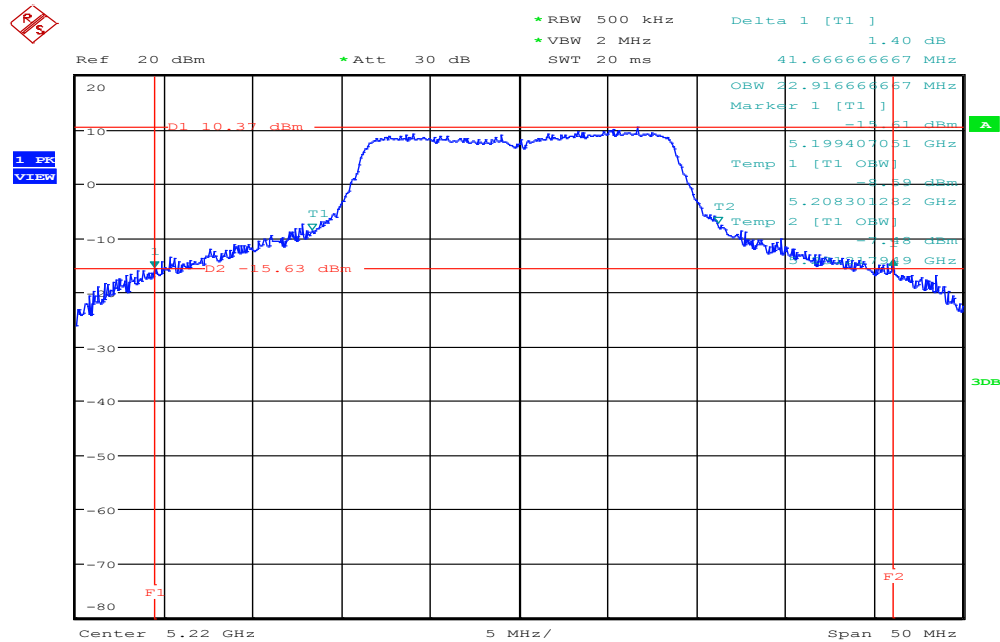
IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz / Chain 0

CH Low



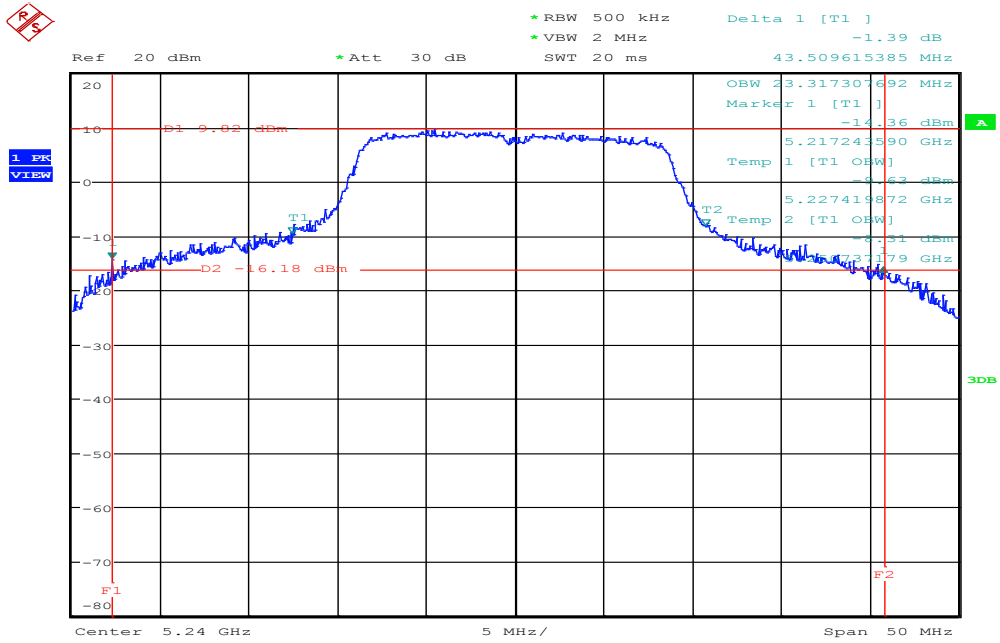
Date: 2.FEB.2016 17:12:22

CH Mid



Date: 1.FEB.2016 19:36:30

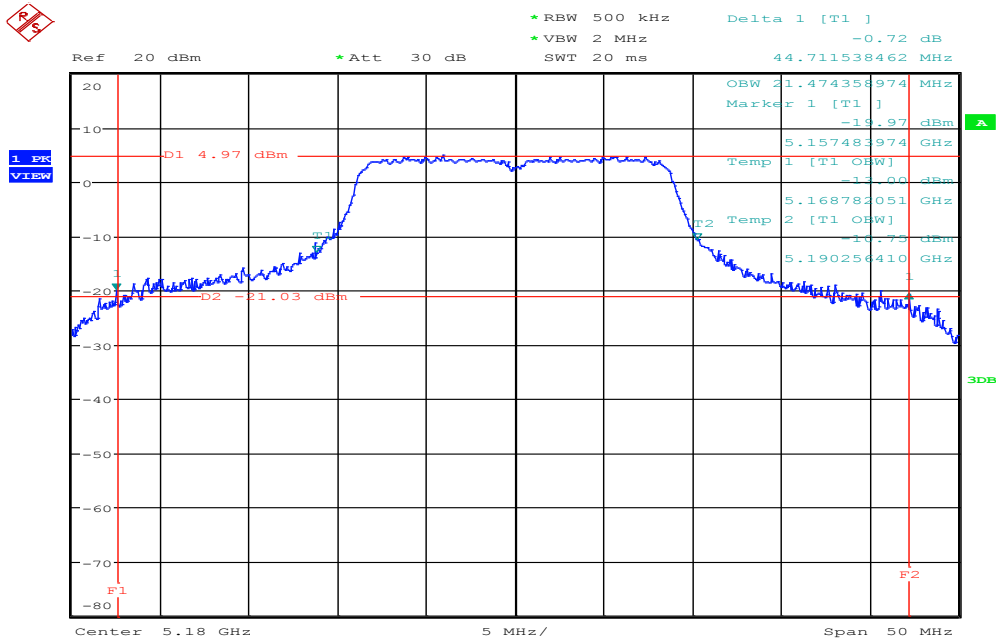
CH High



Date: 1.FEB.2016 19:42:31

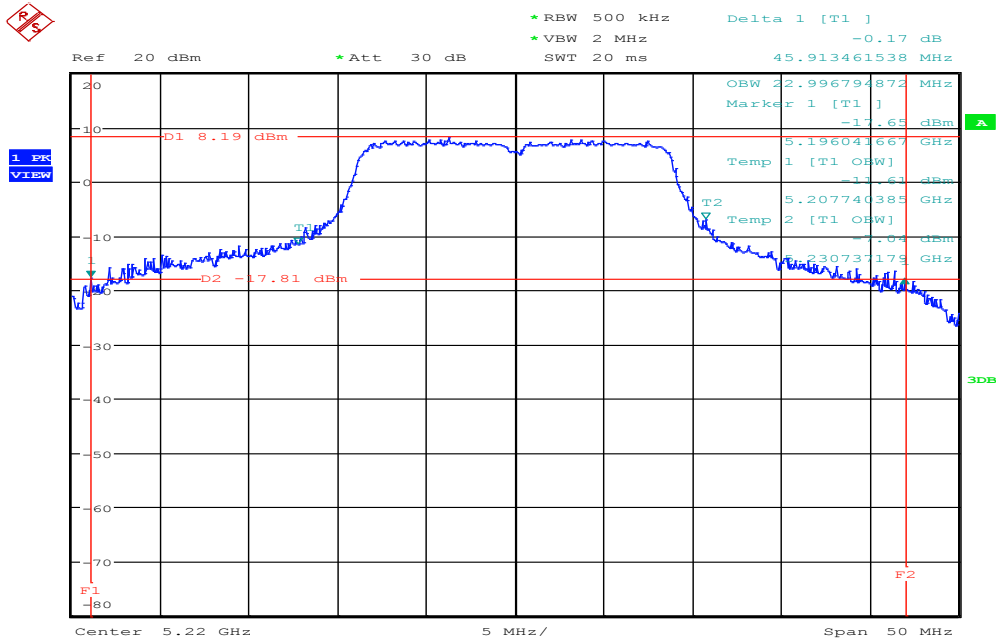
IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz / Chain 1

CH Low



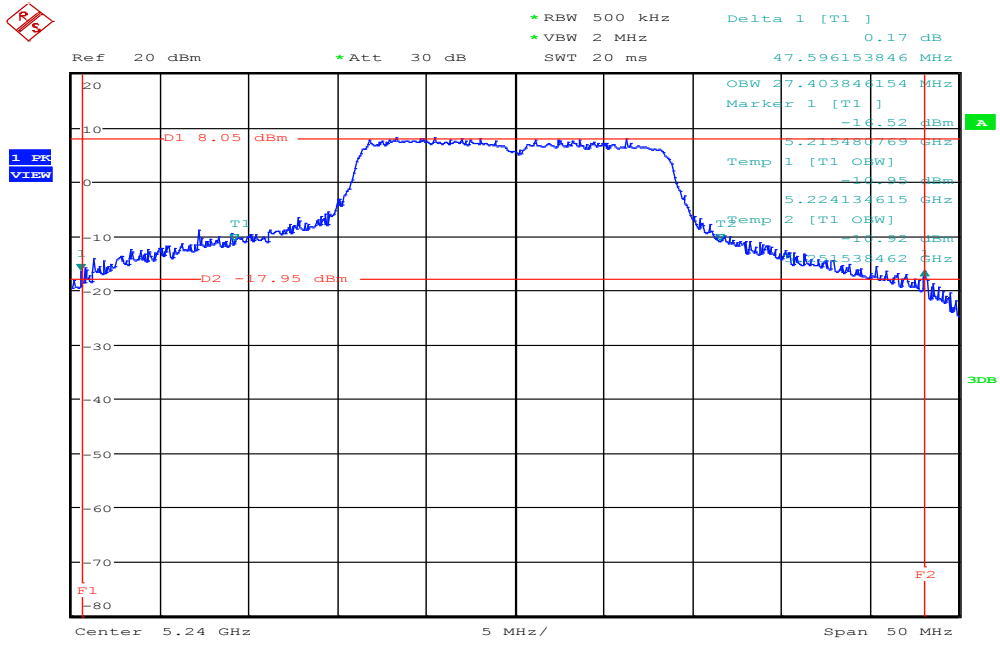
Date: 1.FEB.2016 15:43:06

CH Mid



Date: 1.FEB.2016 19:38:28

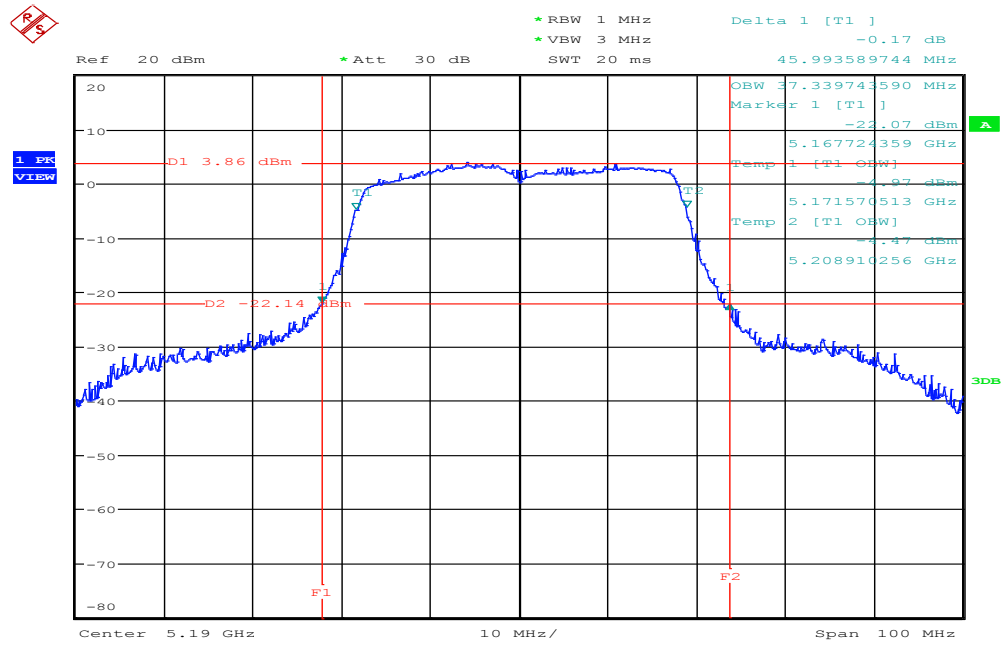
CH High



Date: 1.FEB.2016 19:40:42

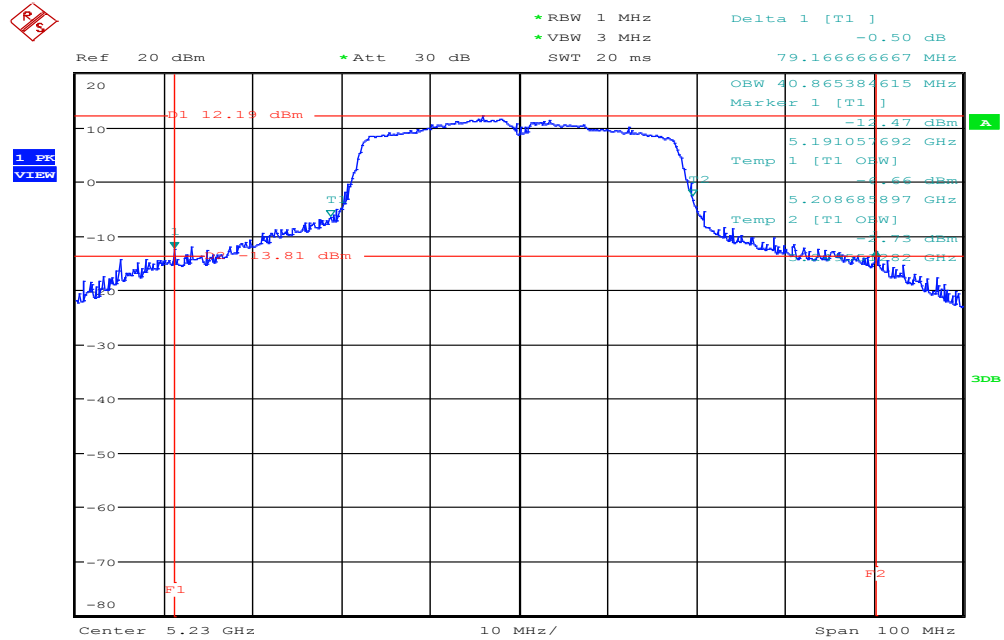
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

CH Low



Date: 1.FEB.2016 21:33:10

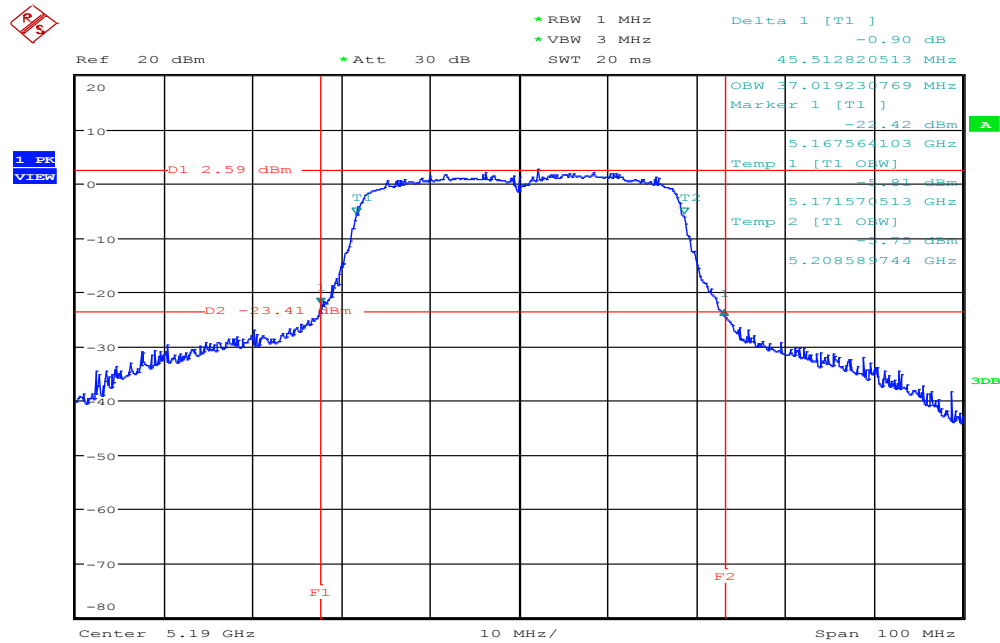
CH High



Date: 1.FEB.2016 21:35:14

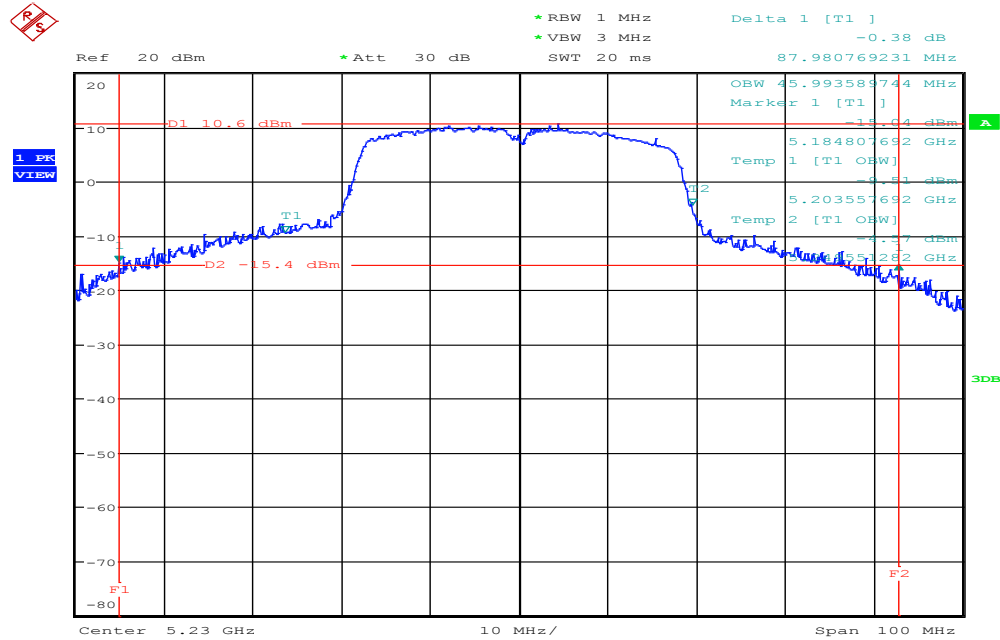
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

CH Low



Date: 1.FEB.2016 21:54:38

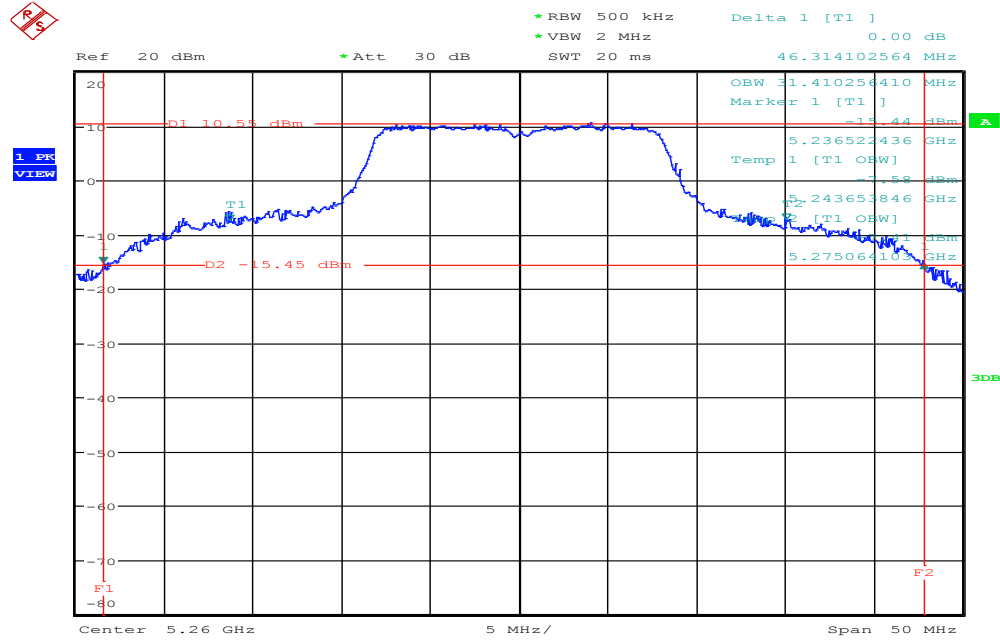
CH High



Date: 1.FEB.2016 21:56:52

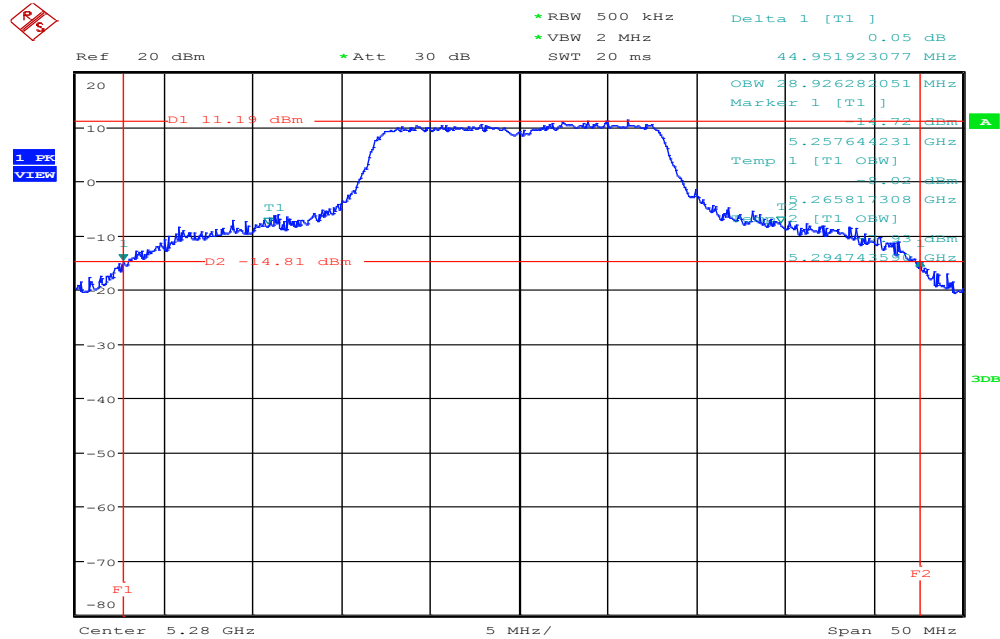
IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low



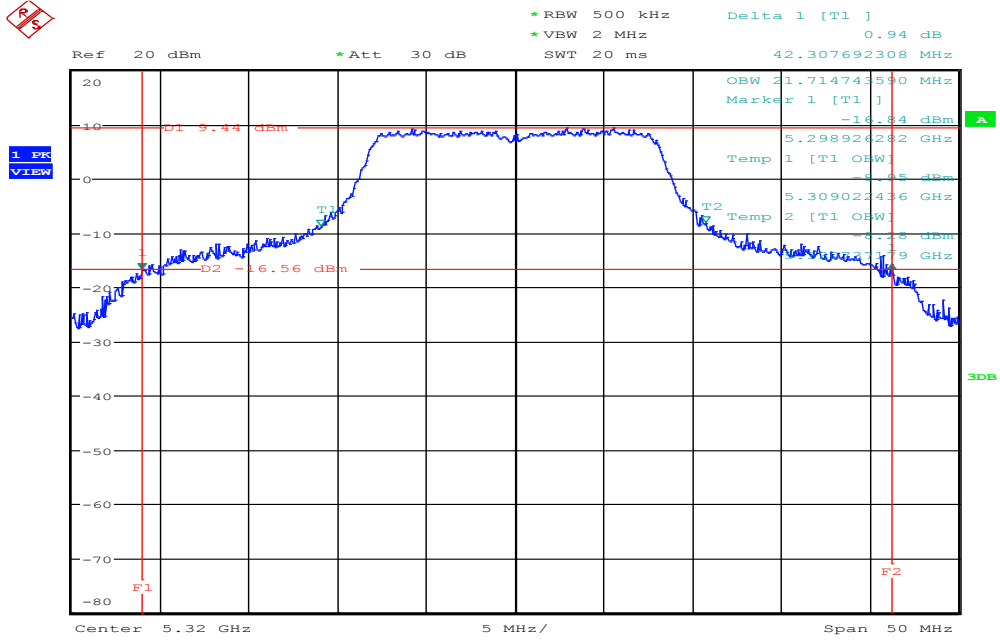
Date: 1.FEB.2016 13:04:57

CH Mid



Date: 1.FEB.2016 13:06:59

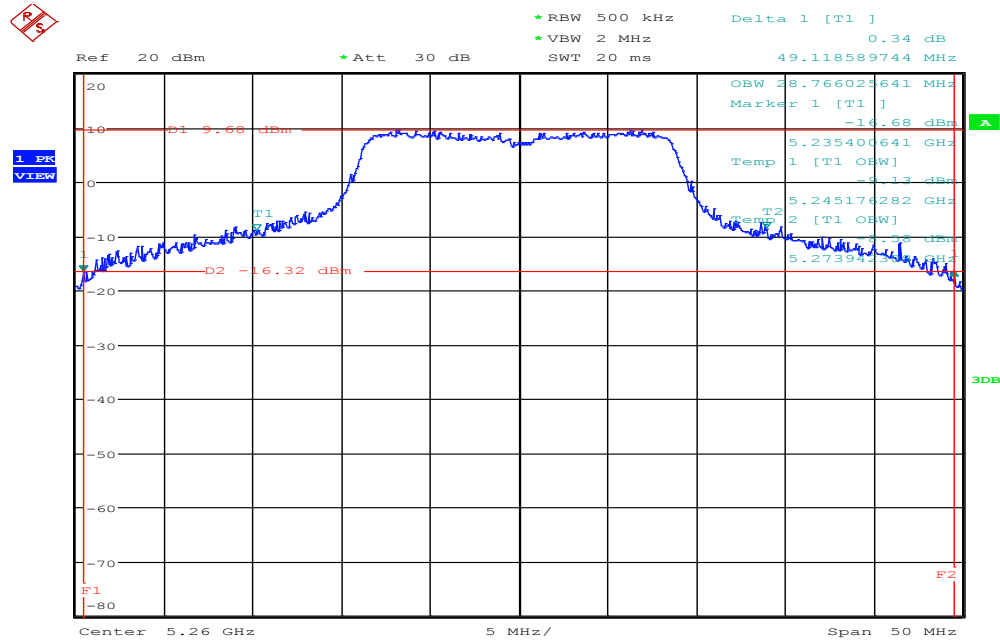
CH High



Date: 1.FEB.2016 13:08:48

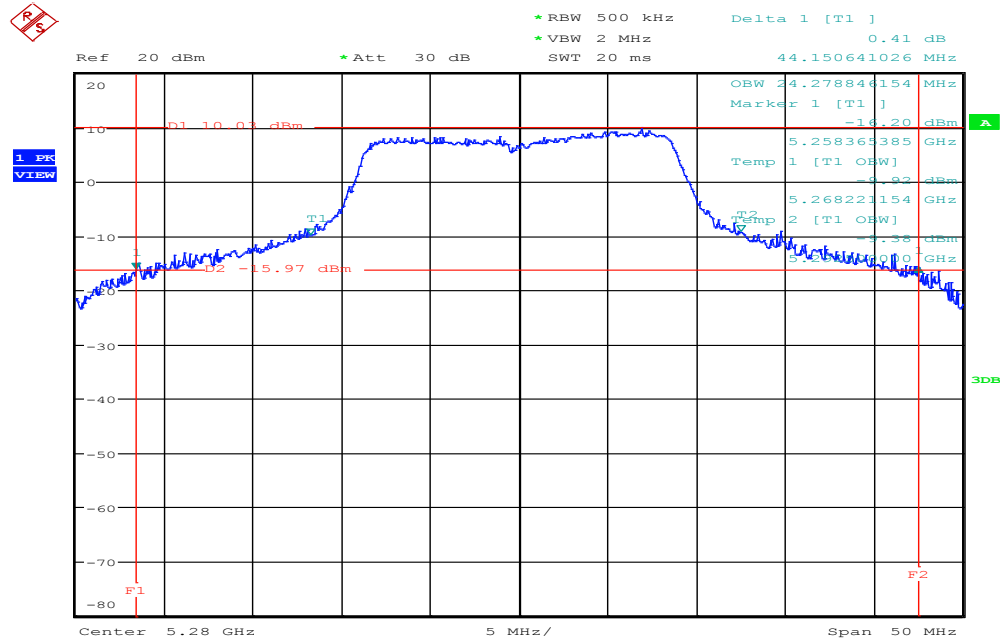
IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz / Chain 0

CH Low



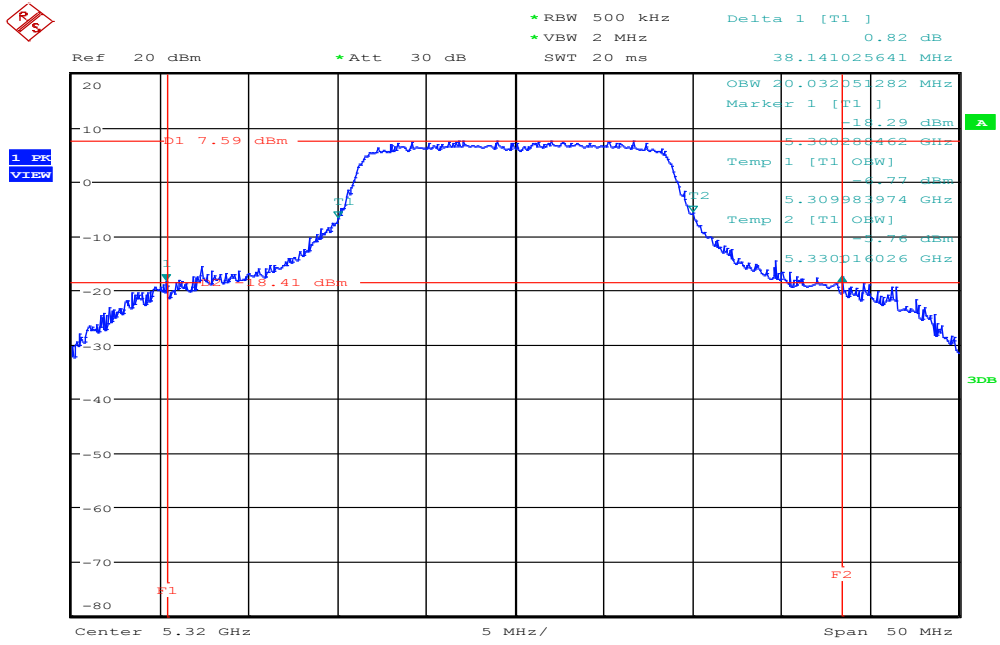
Date: 1.FEB.2016 19:55:55

CH Mid



Date: 1.FEB.2016 20:02:40

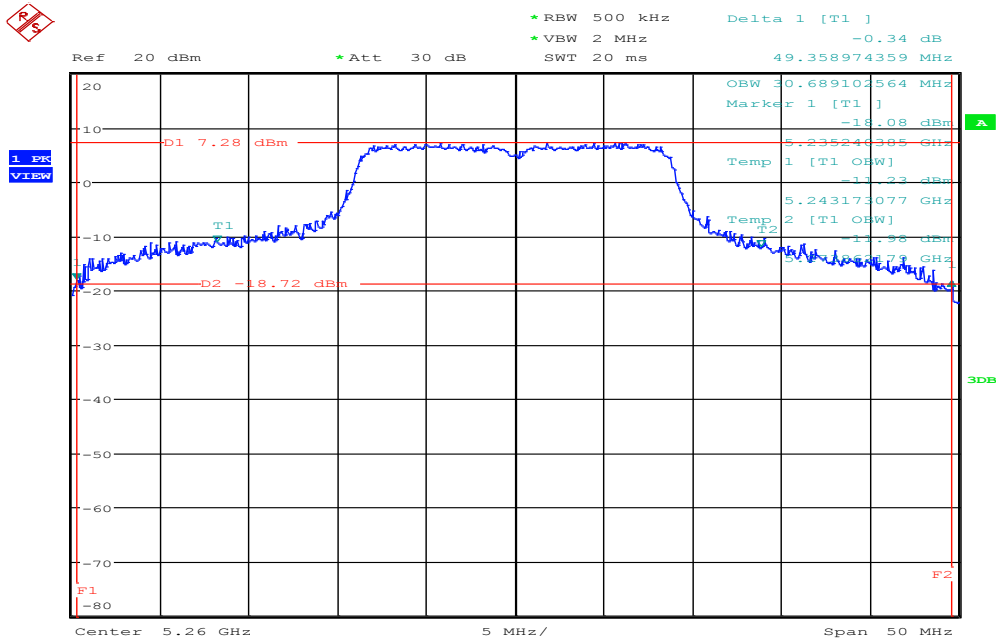
CH High



Date: 2.FEB.2016 17:14:50

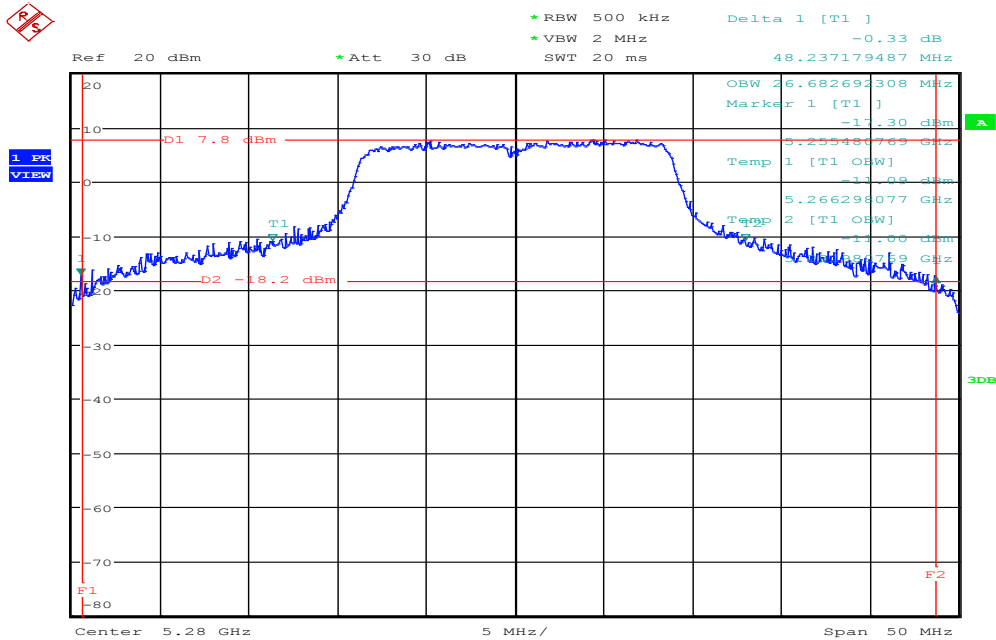
IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz / Chain 1

CH Low



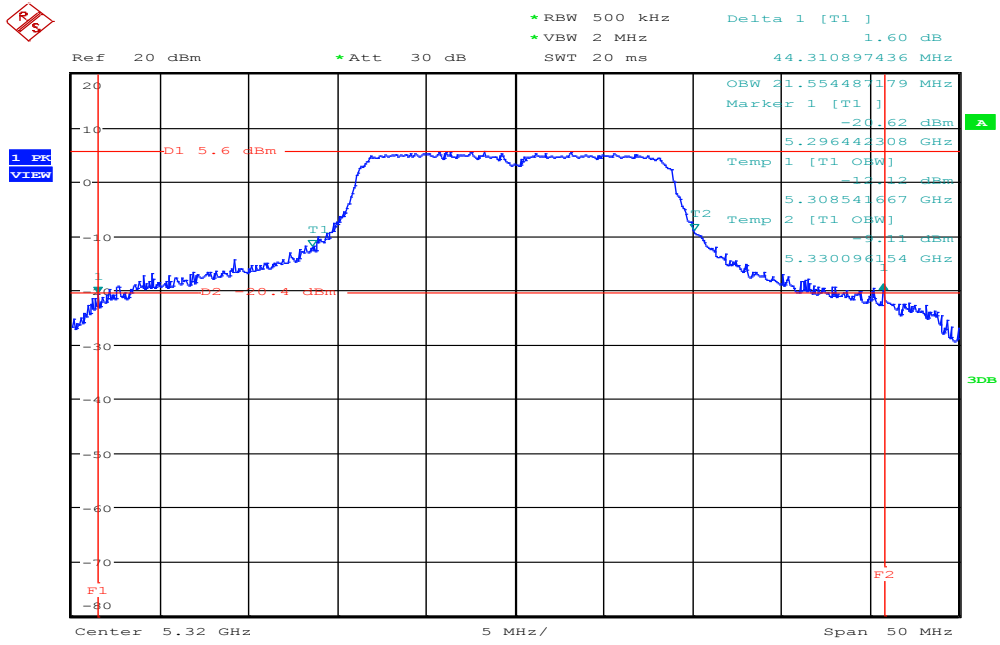
Date: 1.FEB.2016 15:56:56

CH Mid



Date: 1.FEB.2016 20:00:08

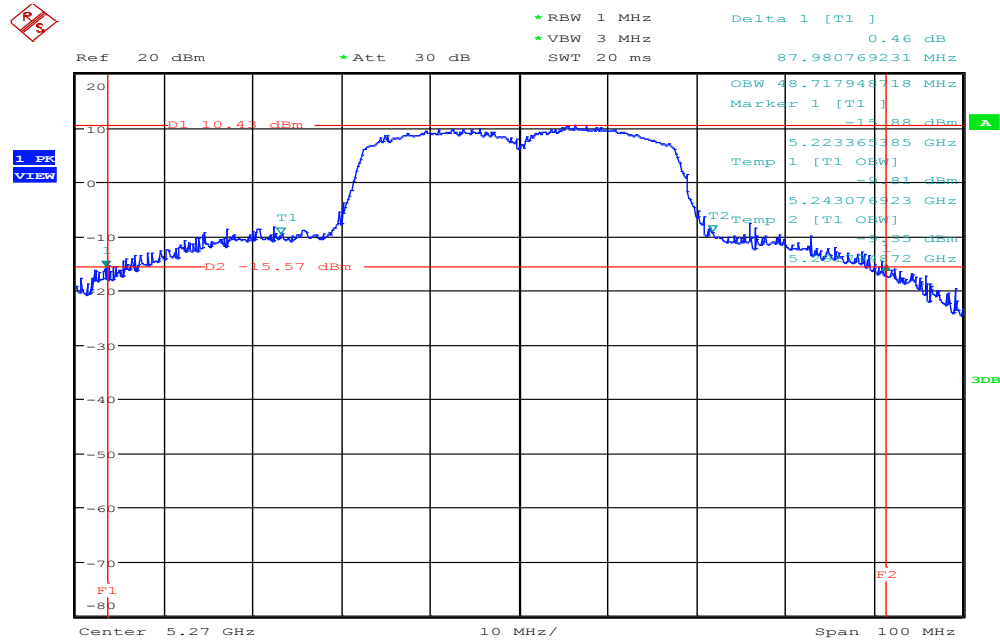
CH High



Date: 1.FEB.2016 16:00:56

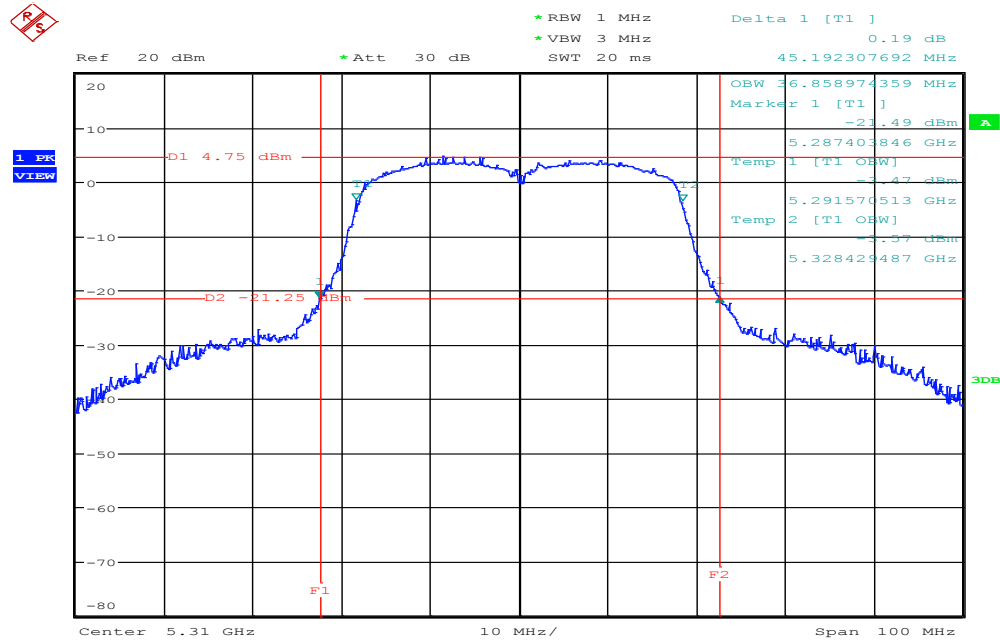
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

CH Low



Date: 1.FEB.2016 21:37:40

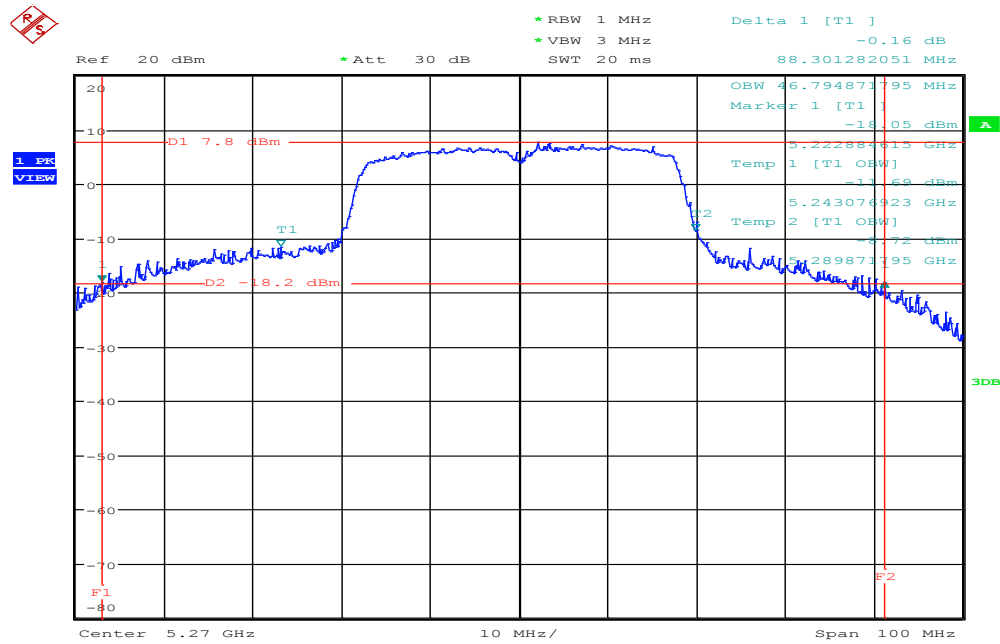
CH High



Date: 1.FEB.2016 21:39:46

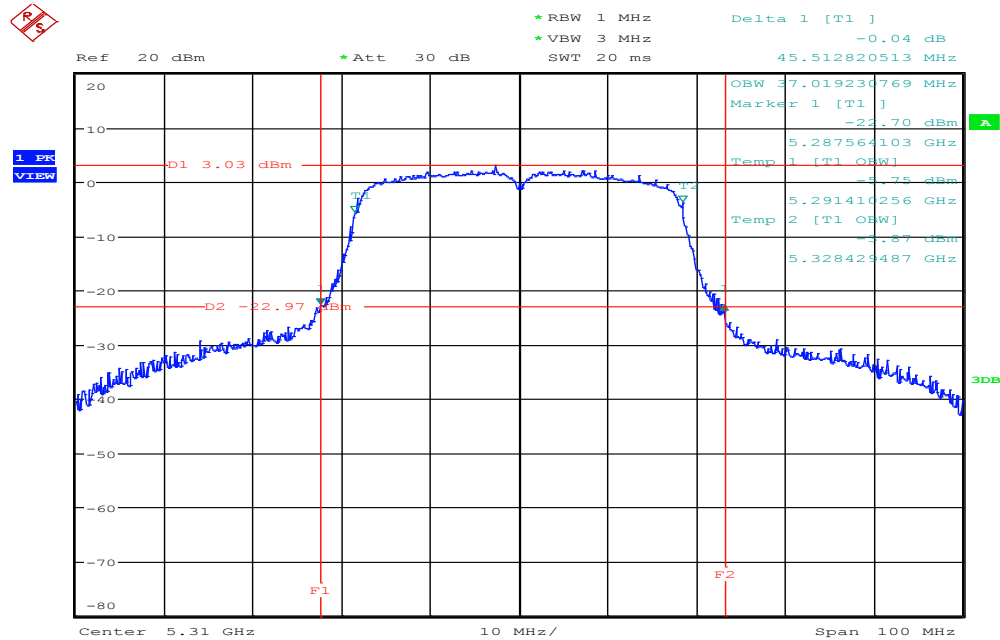
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

CH Low



Date: 1.FEB.2016 21:59:53

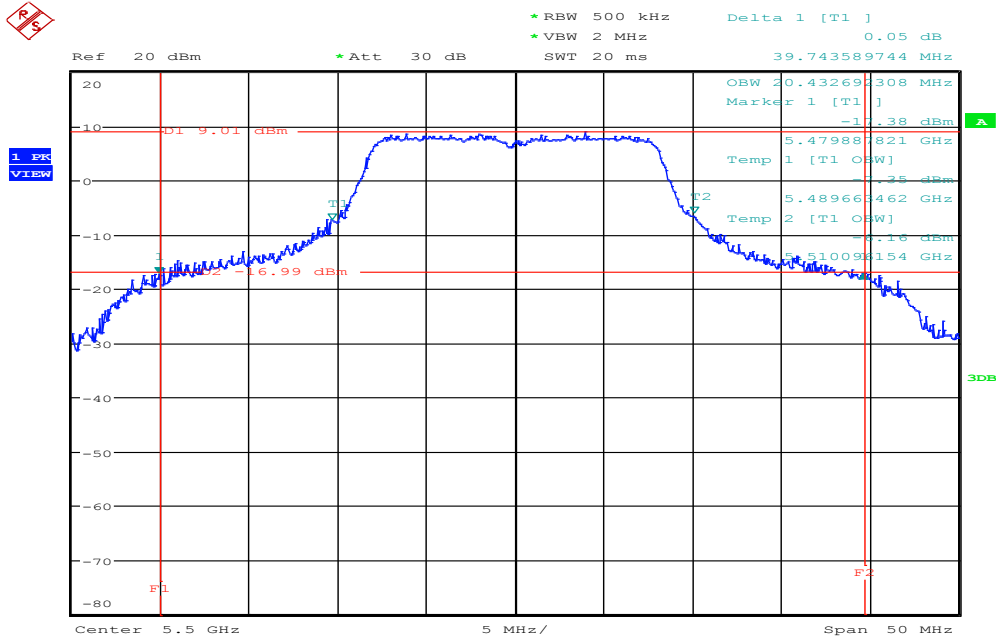
CH High



Date: 1.FEB.2016 22:01:34

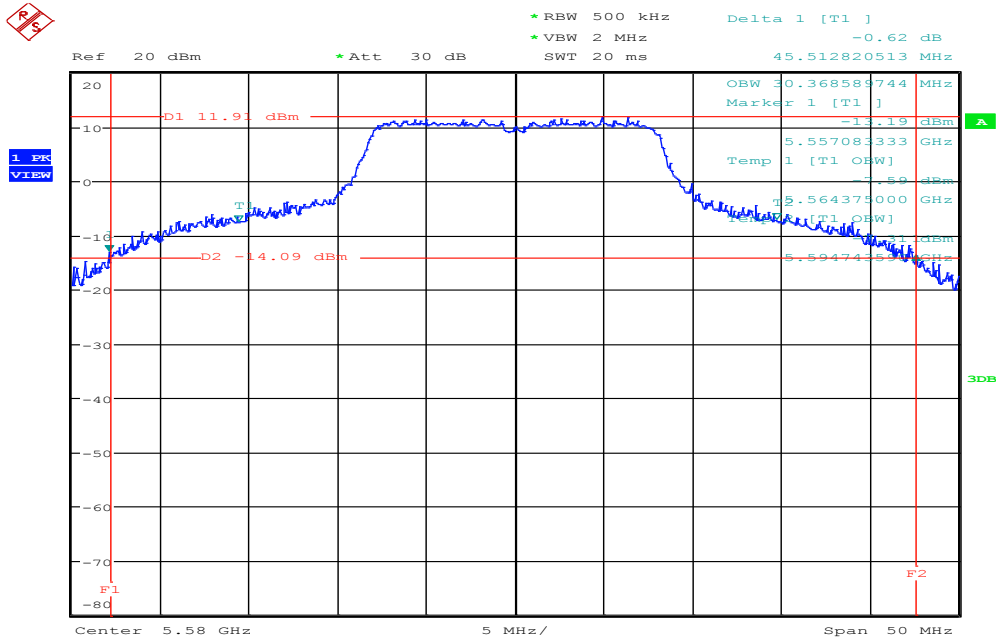
Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low



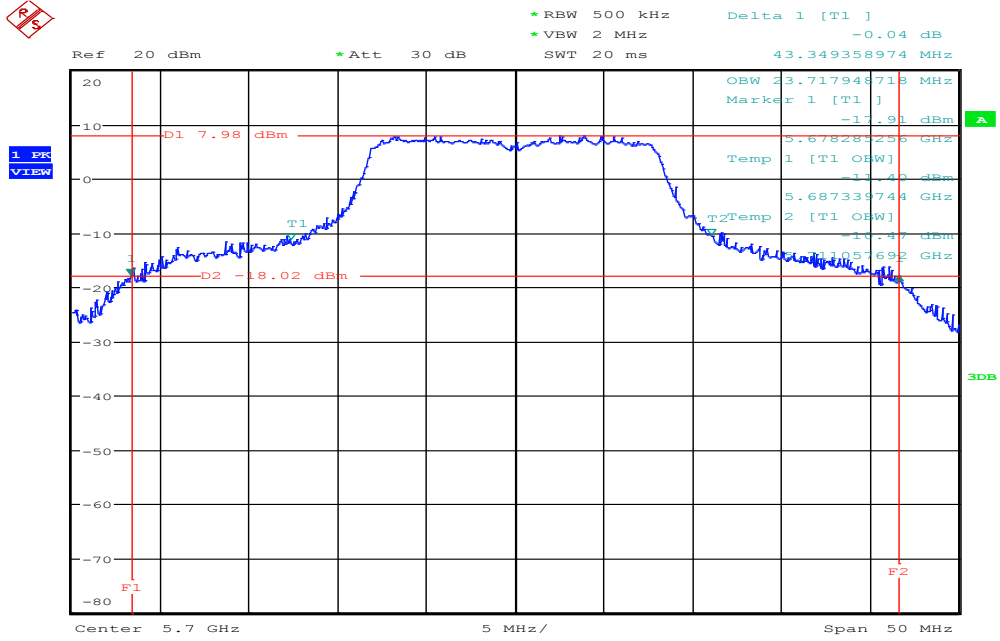
Date: 1.FEB.2016 13:10:39

CH Mid



Date: 1.FEB.2016 13:12:11

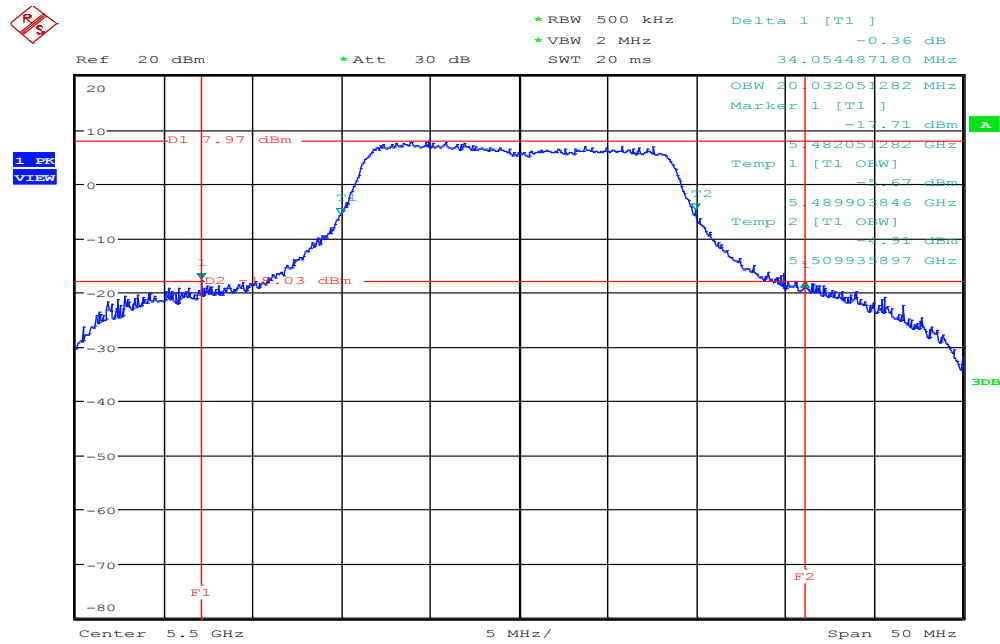
CH High



Date: 1.FEB.2016 13:15:11

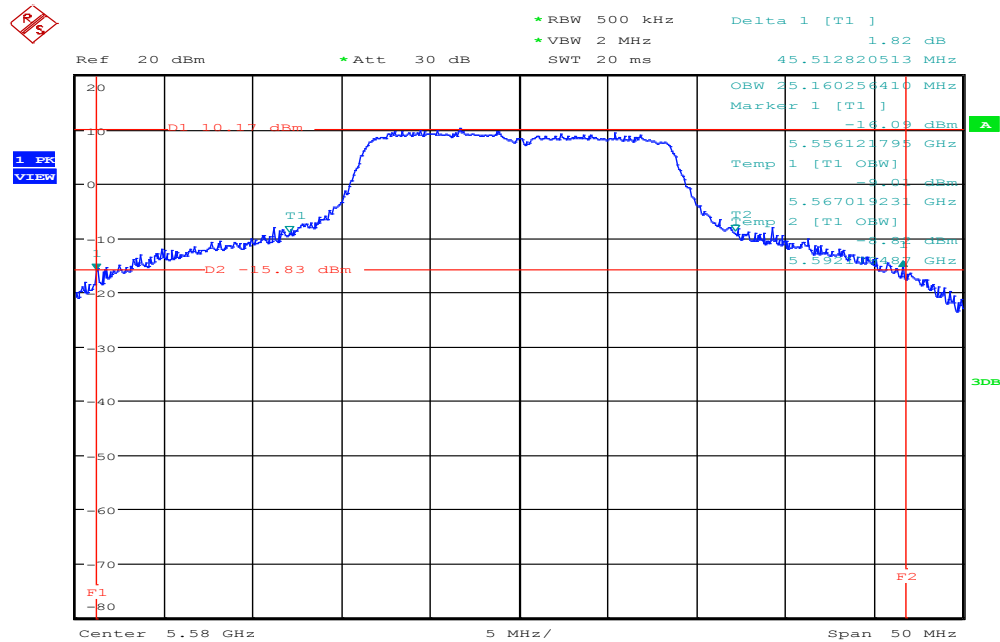
IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz / Chain 0

CH Low



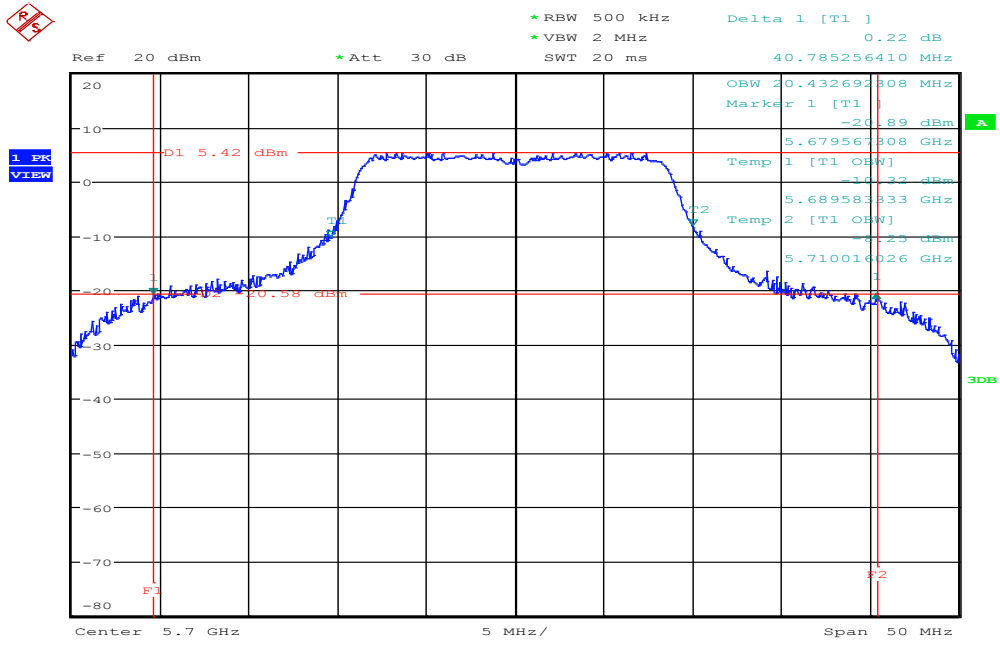
Date: 2.FEB.2016 17:18:52

CH Mid



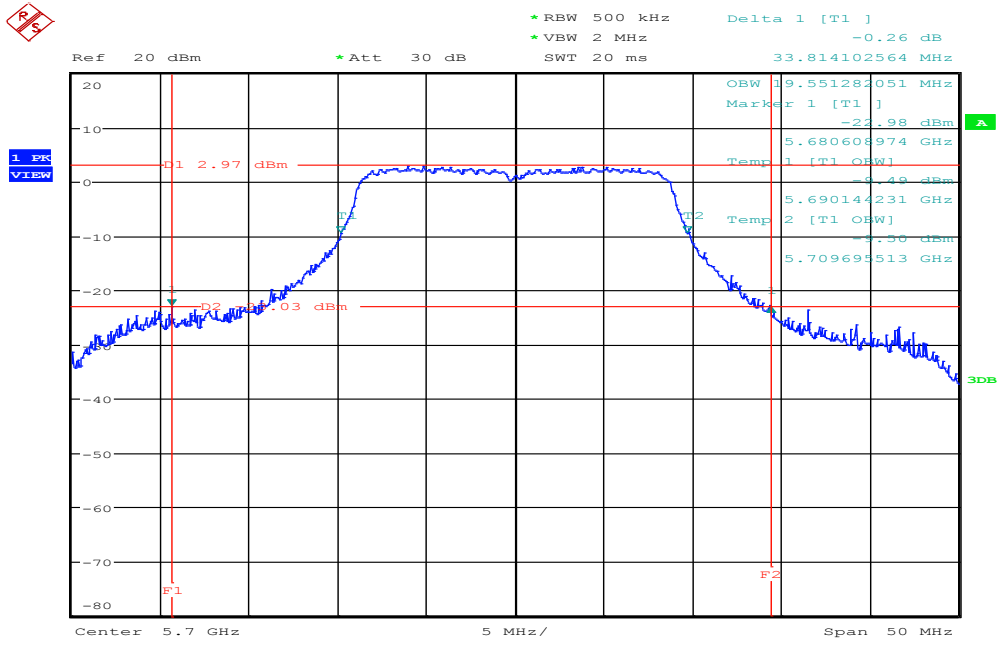
Date: 1.FEB.2016 20:07:51

CH High



Date: 2.FEB.2016 17:20:45

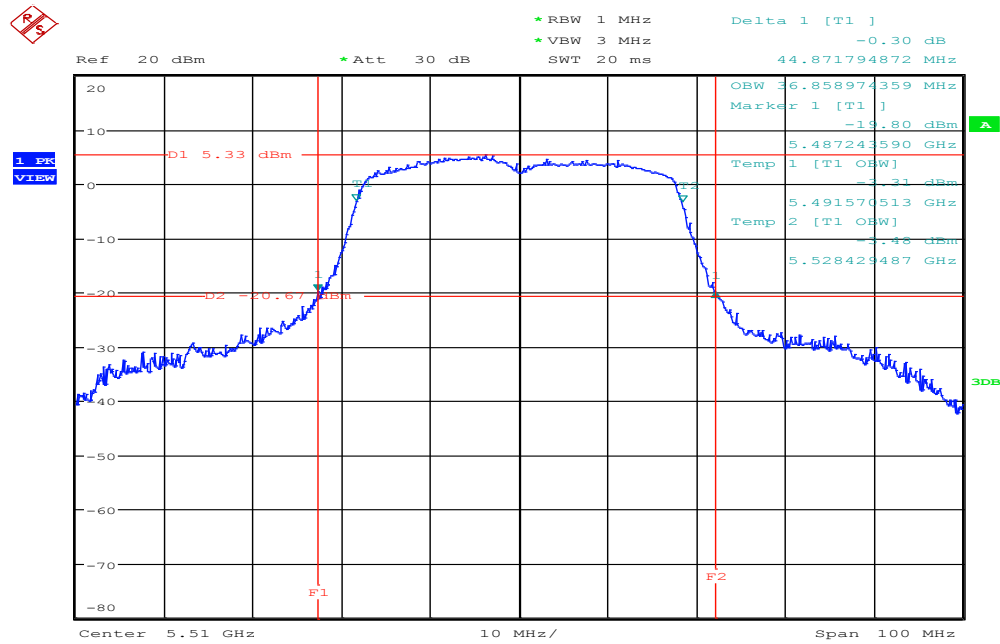
CH High



Date: 1.FEB.2016 16:09:00

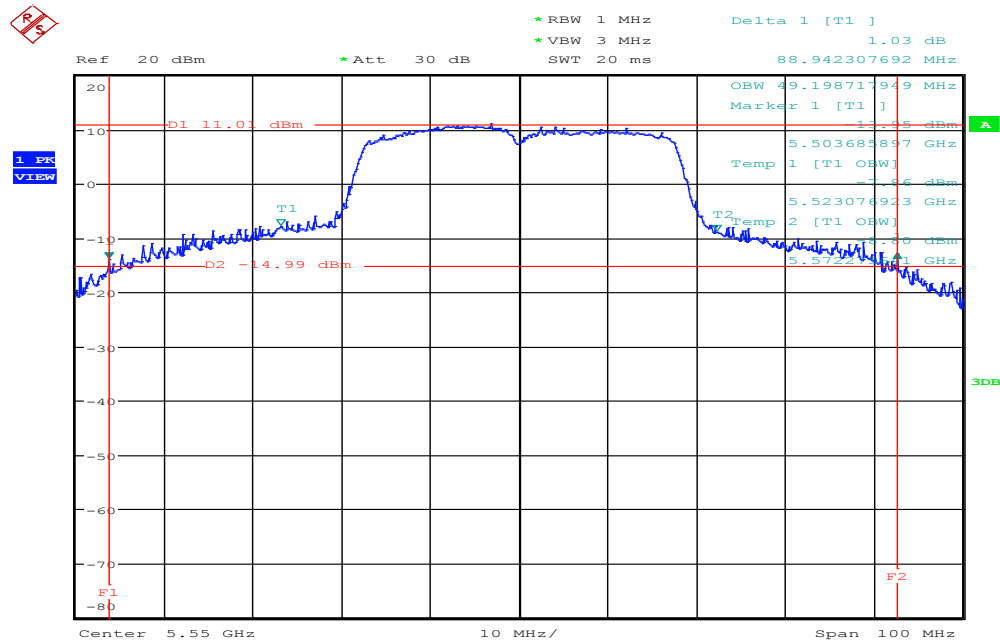
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

CH Low



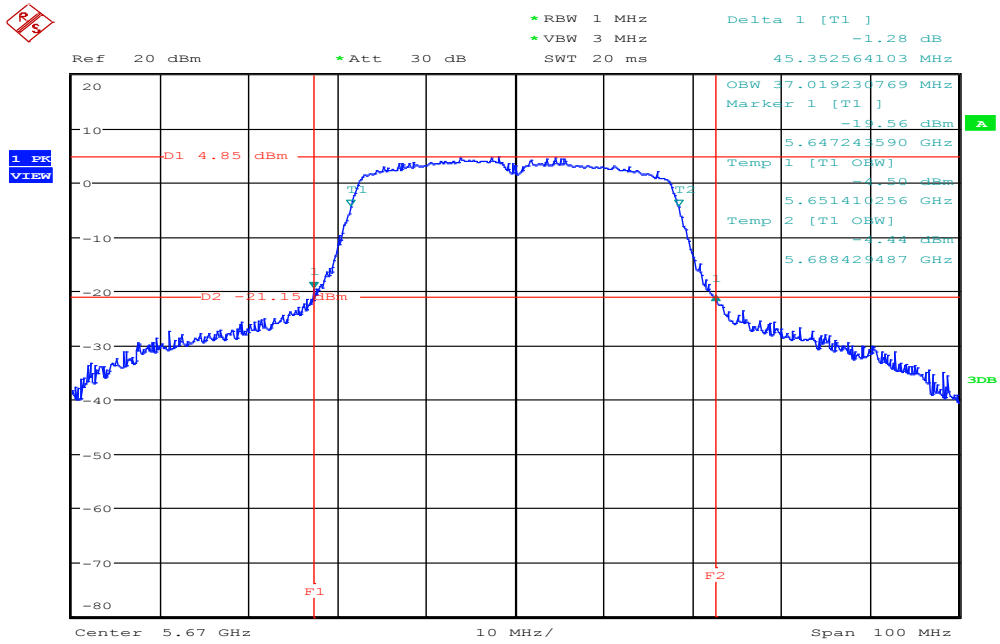
Date: 1.FEB.2016 21:41:44

CH Mid



Date: 1.FEB.2016 21:43:50

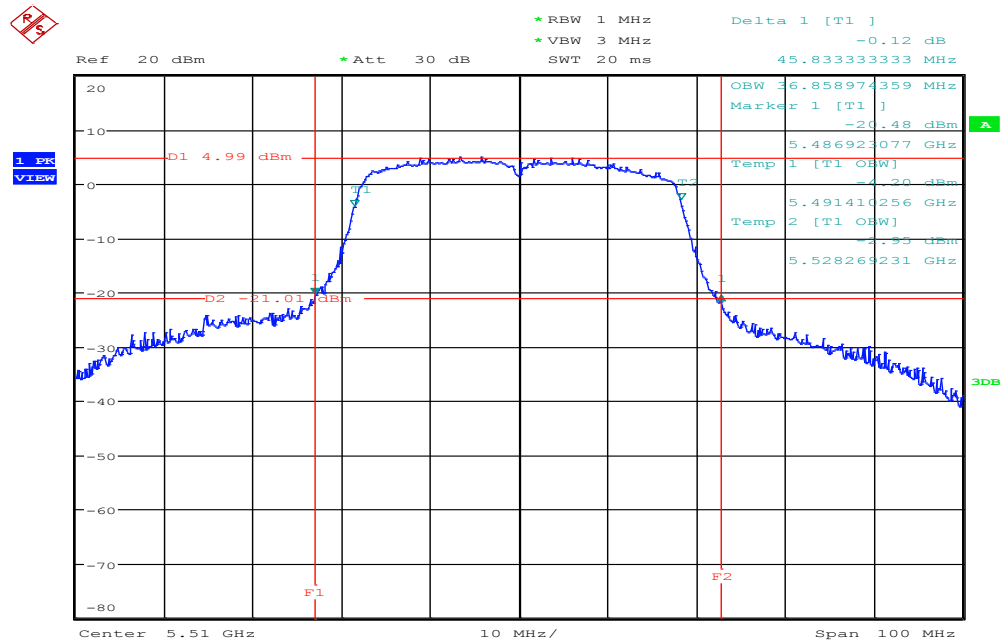
CH High



Date: 1.FEB.2016 21:46:01

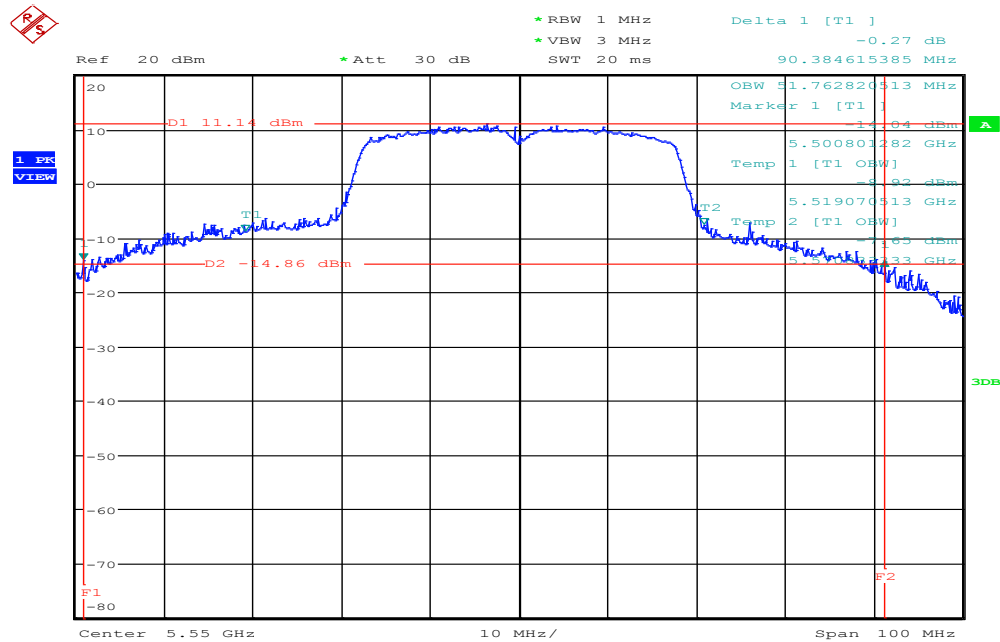
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

CH Low



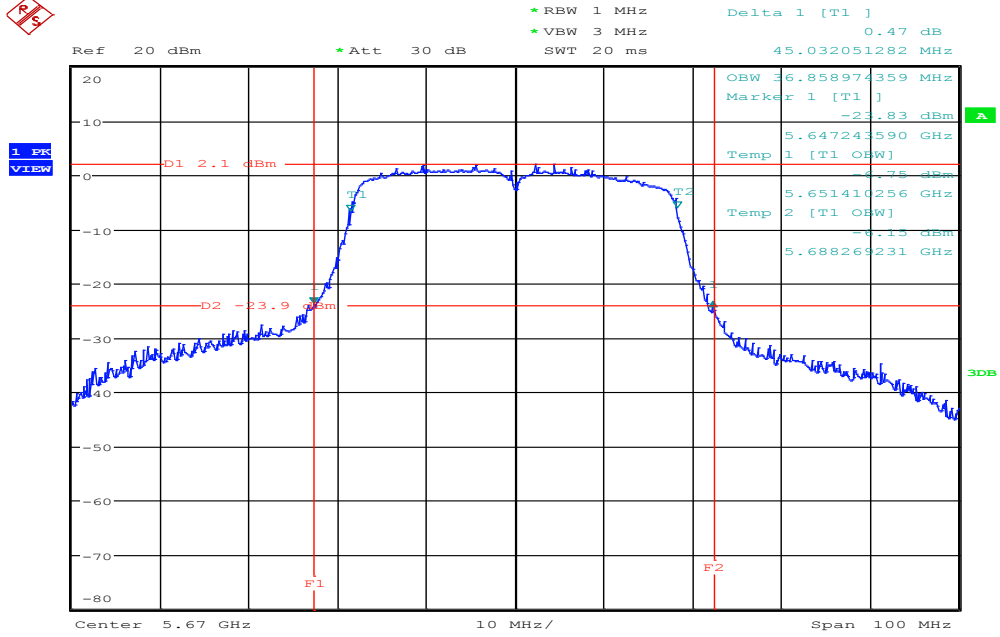
Date: 1.FEB.2016 22:03:22

CH Mid



Date: 1.FEB.2016 22:05:18

CH High



Date: 1.FEB.2016 22:07:11

7.2 MAXIMUM CONDUCTED OUTPUT POWER

LIMIT

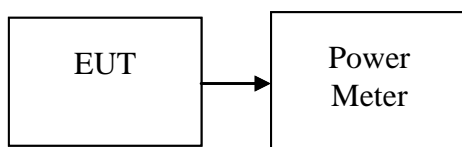
According to §15.407(a),

- (1) For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW, where B is the 26 dB emission bandwidth in MHz.
- (2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW, where B is the 26 dB emission bandwidth in MHz.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Specified Limit of the Maximum Output Power Test Configuration

The EUT was connected to a Power Meter through a 50Ω RF cable.



TEST PROCEDURE

The transmitter output is connected to the Power Meter. The Power Meter is set to the avg power detection. The EUT is configured to transmit continuously.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5180	16.59	24.00
Mid	5220	18.38	24.00
High	5240	*19.37	24.00

Test mode: IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	FCC Limit (dBm)
Low	5180	15.08	14.14	17.65	23.33
Mid	5220	17.14	15.48	19.40	23.33
High	5240	17.71	16.34	*20.09	23.33

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	FCC Limit (dBm)
Low	5190	10.55	8.88	12.81	23.33
High	5230	17.79	16.57	*20.23	23.33

Remark:

1. Total Output Power (w) = Chain 0 (10^{^(Output Power /10)}/1000)+ Chain 1 (10^{^(Output Power /10)}/1000)
2. The maximum antenna gain is 6.67dBi; therefore the reduction due to antenna gain is 0.67dBi, so the limit is 23.33dBm.

Test mode: IEEE 802.11a mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	*19.41	24.00
Mid	5280	19.15	24.00
High	5320	17.39	24.00

Test mode: IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	18.27	16.87	*20.64	23.33
Mid	5280	17.45	16.25	19.90	23.33
High	5320	15.42	14.35	17.93	23.33

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5270	17.82	16.28	*20.13	23.33
High	5310	10.73	9.27	13.07	23.33

Remark:

1. Total Output Power (w) = Chain 0 (10^{^(Output Power /10)/1000})+ Chain 1 (10^{^(Output Power /10)/1000})
2. The maximum antenna gain is 6.67dBi; therefore the reduction due to antenna gain is 0.67dBi, so the limit is 23.33dBm.

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	15.84	24.00
Mid	5580	*19.13	24.00
High	5700	16.09	24.00

Test mode: IEEE 802.11n HT 20 MHz mode/ 5500 ~ 5700MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	14.32	14.72	17.53	23.33
Mid	5580	16.75	16.15	*19.47	23.33
High	5700	13.52	10.95	15.43	23.33

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5510	10.55	10.47	13.52	23.33
Mid	5590	17.15	17.04	20.11	23.33
High	5670	10.98	8.23	12.83	23.33

Remark:

1. Total Output Power (w) = Chain 0 ($10^{(Output\ Power / 10) / 1000}$) + Chain 1 ($10^{(Output\ Power / 10) / 1000}$)
2. The maximum antenna gain is 6.67dBi; therefore the reduction due to antenna gain is 0.67dBi, so the limit is 23.33dBm.

7.3 BAND EDGES MEASUREMENT

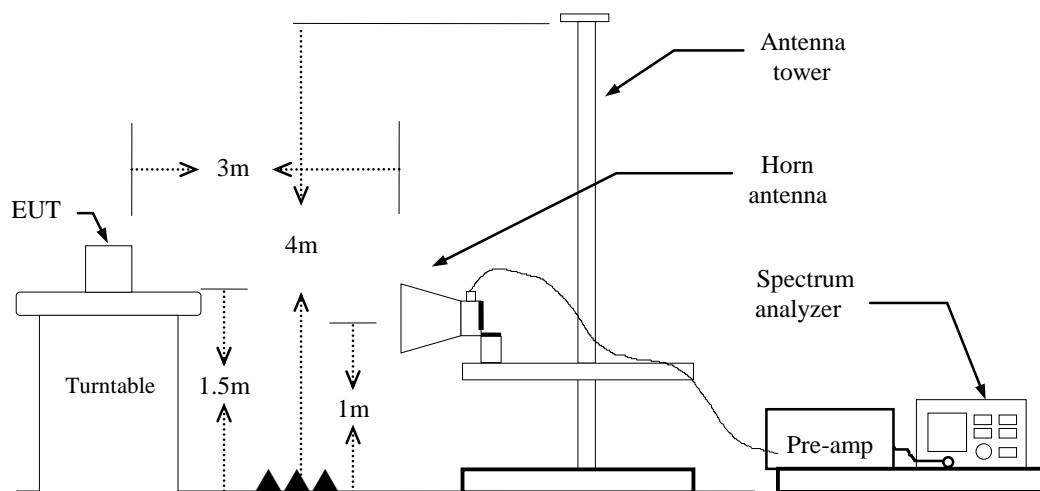
LIMIT

According to §15.407(b)

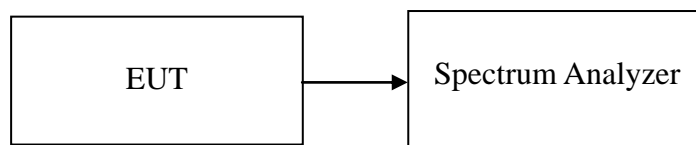
- (1) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
- (2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

Test Configuration

For Radiated Emission above 1GHz



For Conducted



TEST PROCEDURE

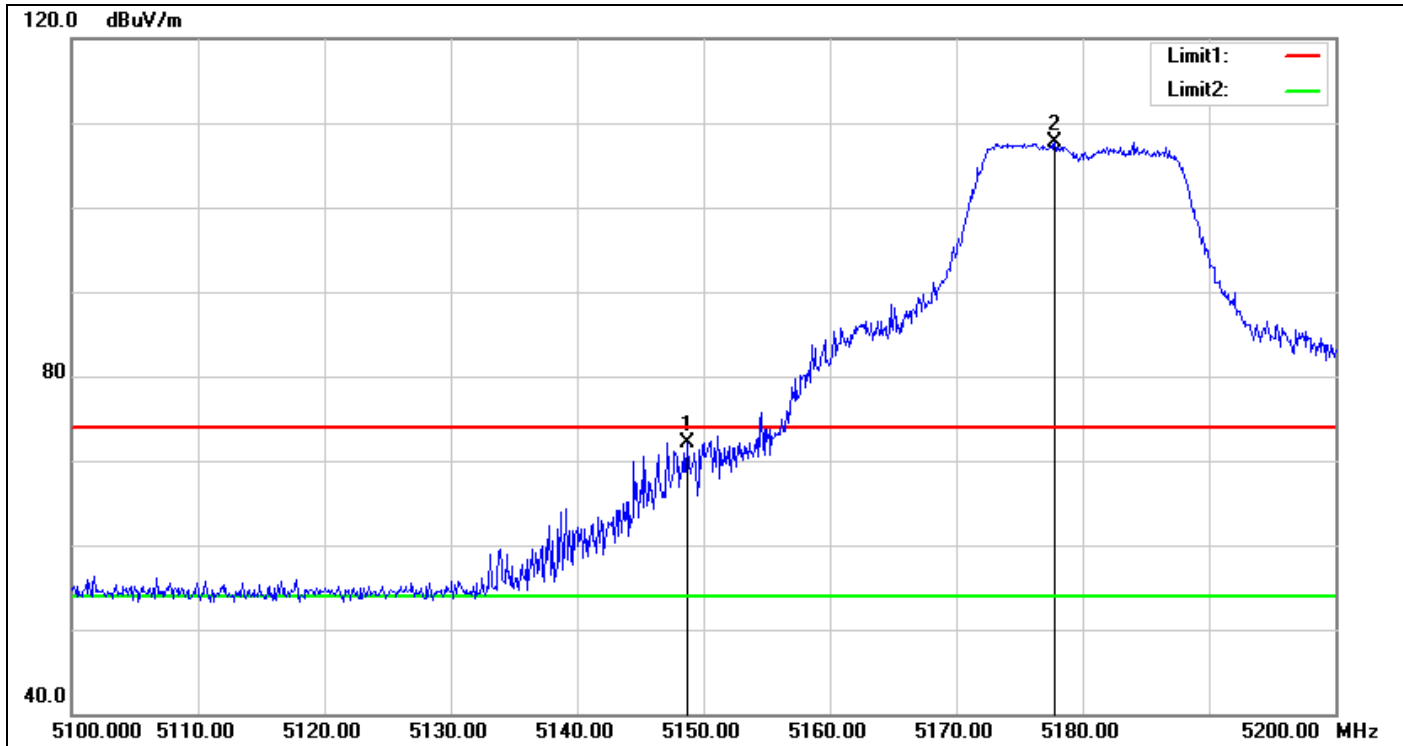
1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the 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 $\geq 98\%$, VBW=10Hz.
if duty cycle $< 98\%$ VBW=1/T.
IEEE 802.11a mode: $\geq 98\%$, VBW=10Hz
IEEE 802.11n HT 20 MHz mode: $\geq 98\%$, VBW=10Hz
IEEE 802.11n HT 40 MHz mode: $\geq 98\%$, VBW=10Hz
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

TEST RESULTS

Refer to attach spectrum analyzer data chart.

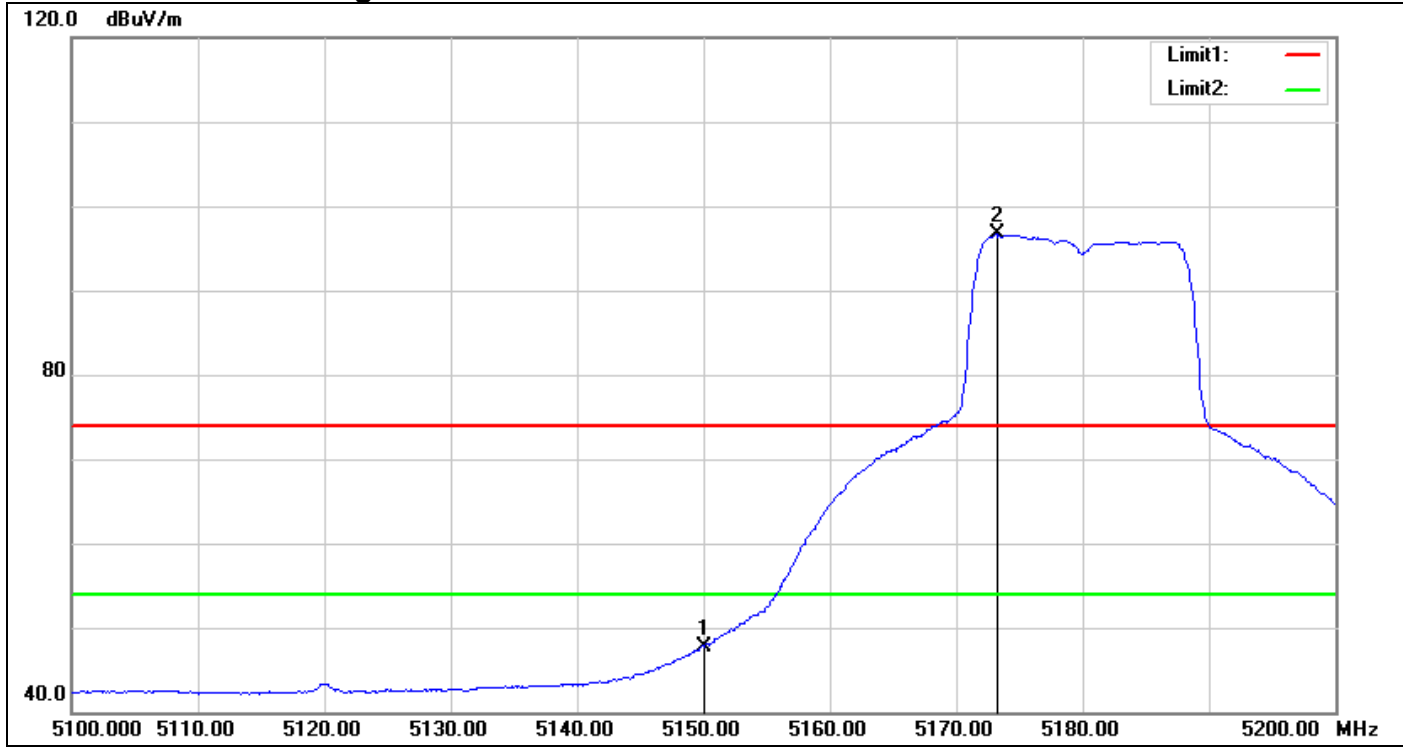
Band Edges (IEEE 802.11a mode / CH 5180 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.700	69.13	3.03	72.16	74.00	-1.84	peak
2	5177.800	103.78	3.85	107.63	-	-	peak

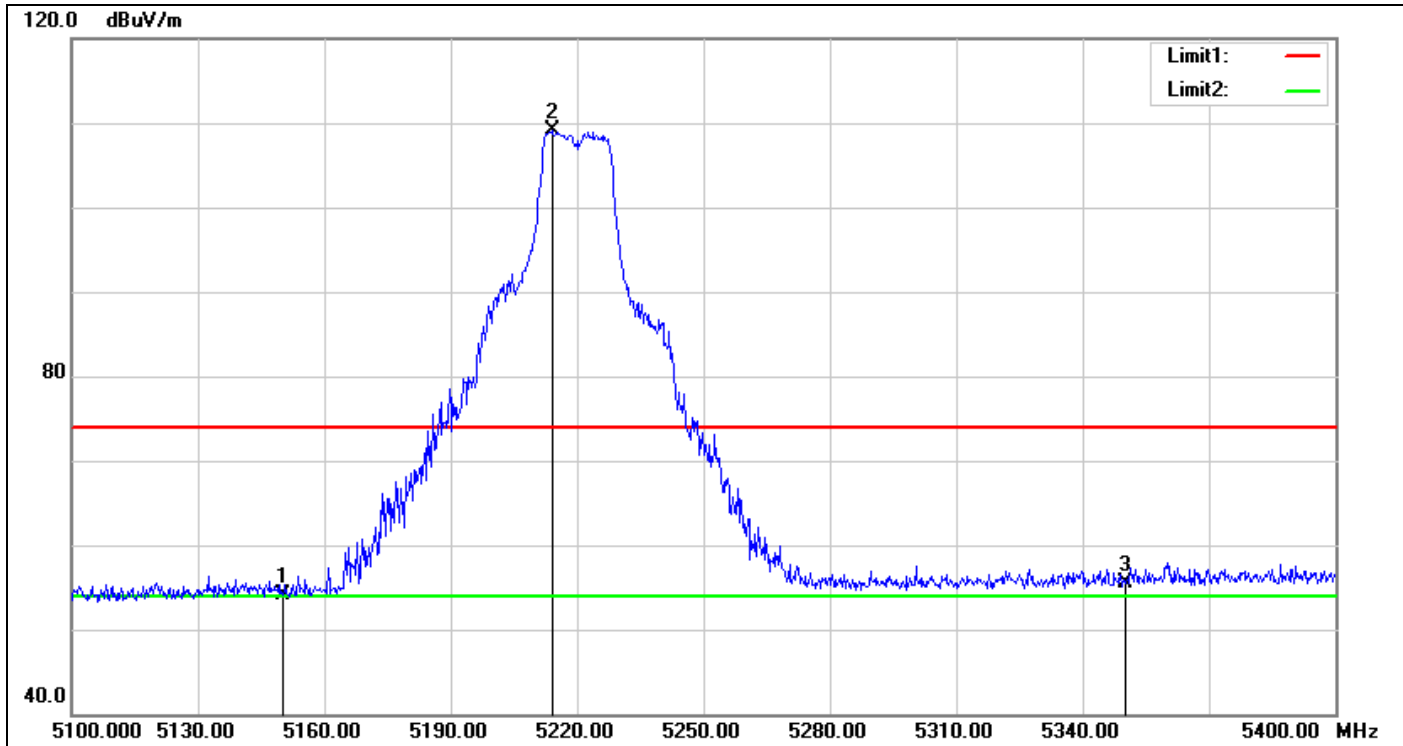
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	44.65	3.04	47.69	54.00	-6.31	AVG
2	5173.200	92.94	3.71	96.65	-	-	AVG

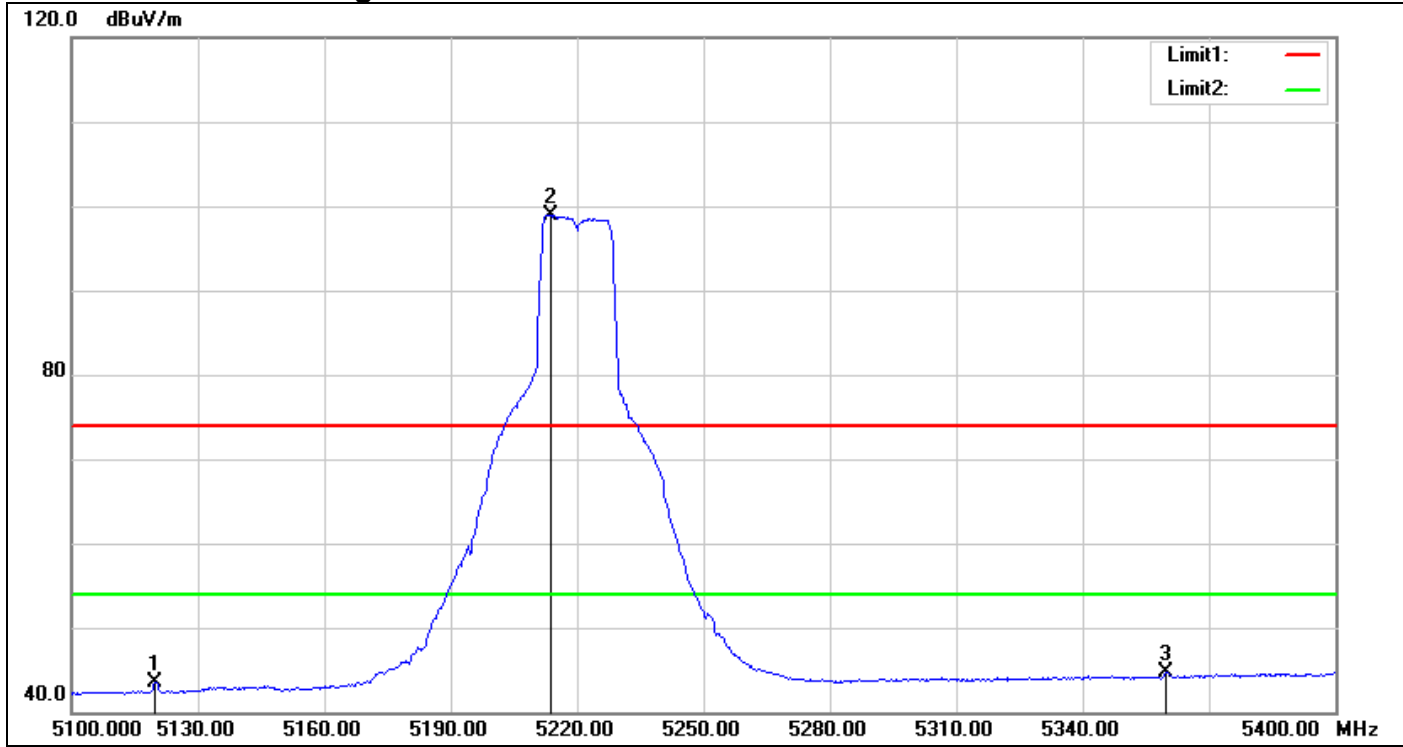
Band Edges (IEEE 802.11a mode / CH 5220 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	51.07	3.04	54.11	74.00	-19.89	peak
2	5214.000	104.49	4.54	109.03	-	-	peak
3	5350.000	50.26	5.31	55.57	74.00	-18.43	peak

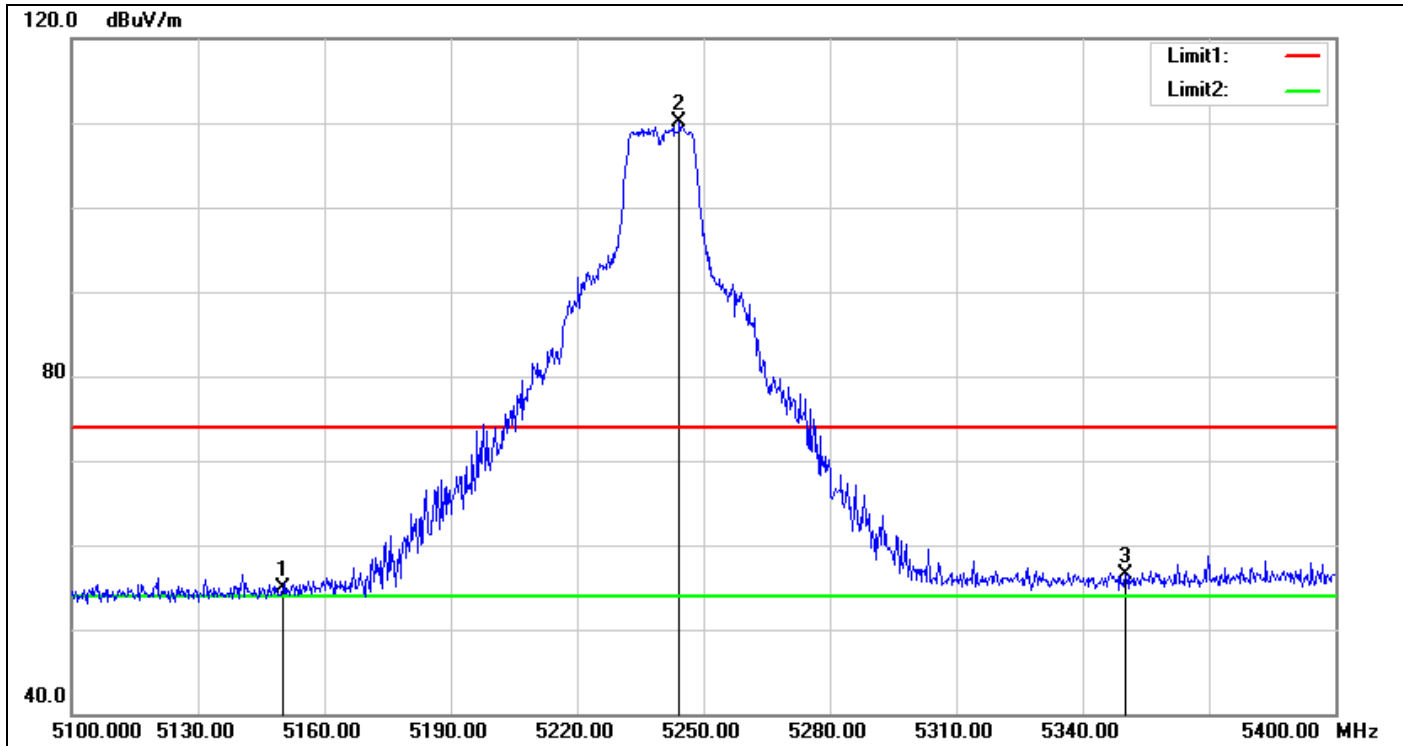
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5119.800	40.75	2.83	43.58	54.00	-10.42	AVG
2	5213.700	94.43	4.54	98.97	-	-	AVG
3	5359.800	39.31	5.39	44.70	54.00	-9.30	AVG

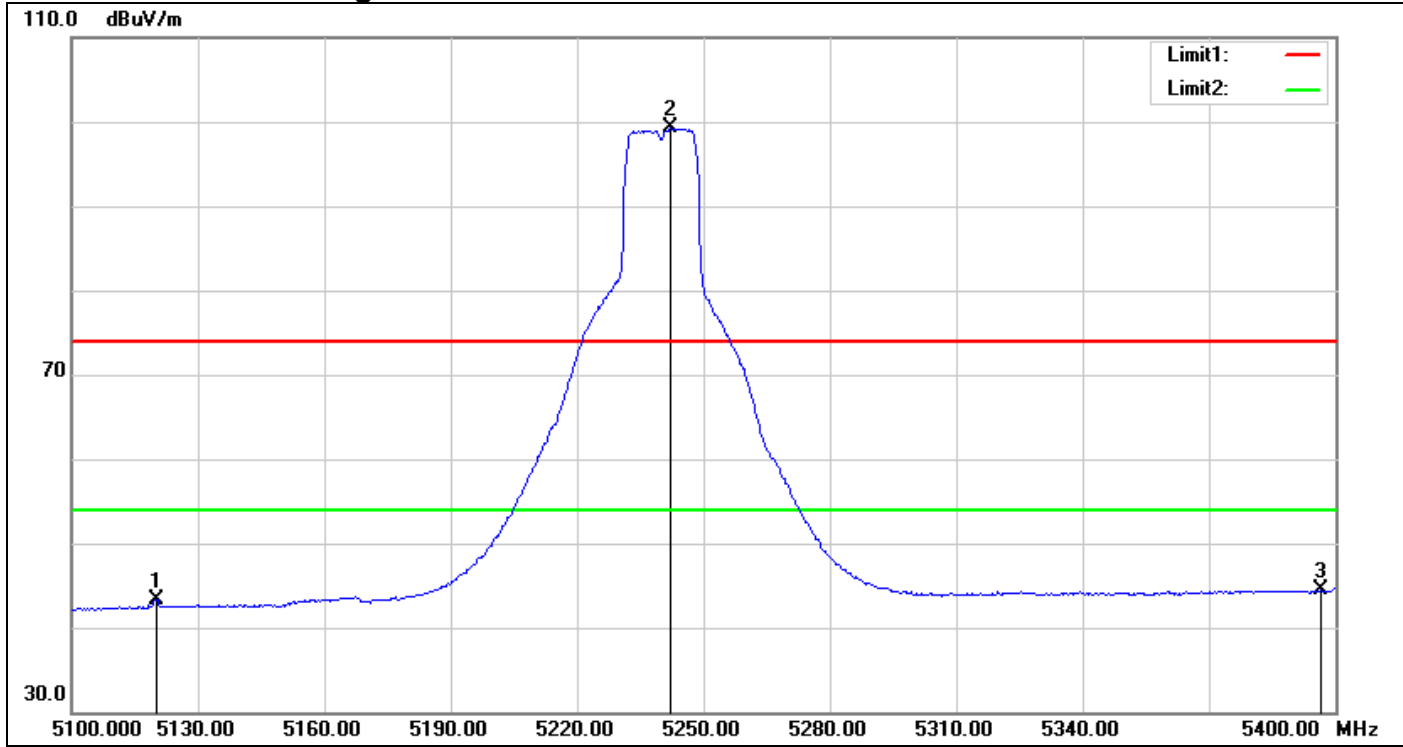
Band Edges (IEEE 802.11a mode / CH 5240 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	51.77	3.04	54.81	74.00	-19.19	peak
2	5244.300	105.38	4.64	110.02	-	-	peak
3	5350.000	51.12	5.31	56.43	74.00	-17.57	peak

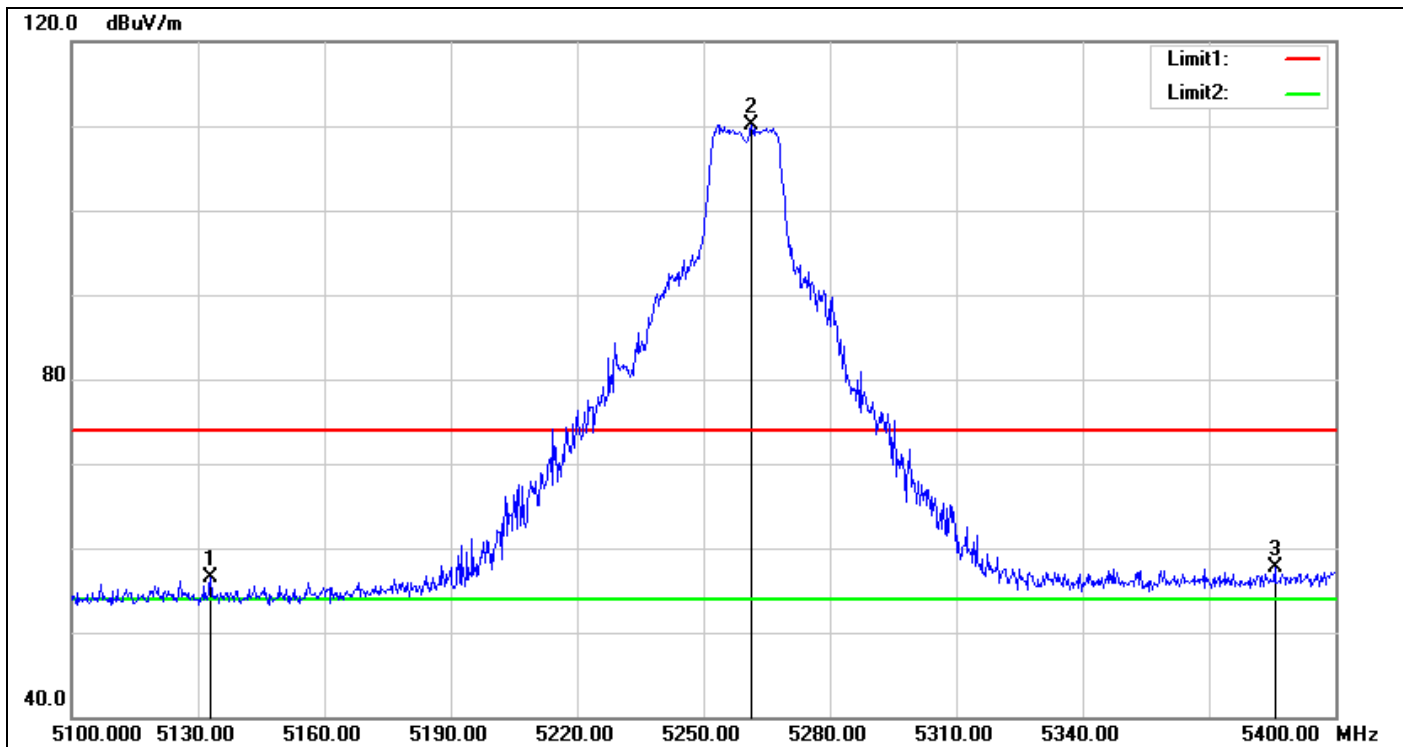
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5120.100	40.50	2.84	43.34	54.00	-10.66	AVG
2	5242.200	94.58	4.63	99.21	-	-	AVG
3	5396.400	38.72	5.69	44.41	54.00	-9.59	AVG

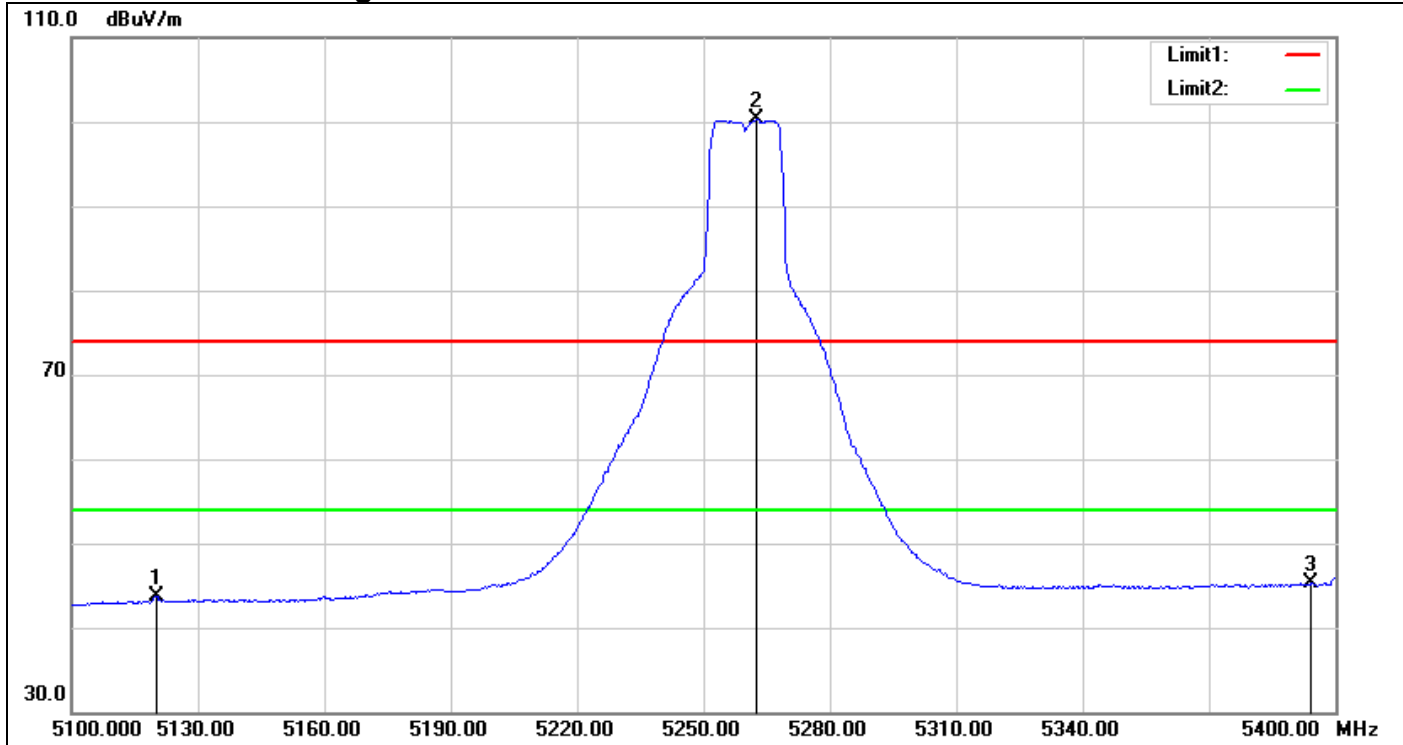
Band Edges (IEEE 802.11a mode / CH 5260 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5133.000	53.66	2.92	56.58	74.00	-17.42	peak
2	5261.400	105.47	4.70	110.17	-	-	peak
3	5385.600	52.10	5.60	57.70	74.00	-16.30	peak

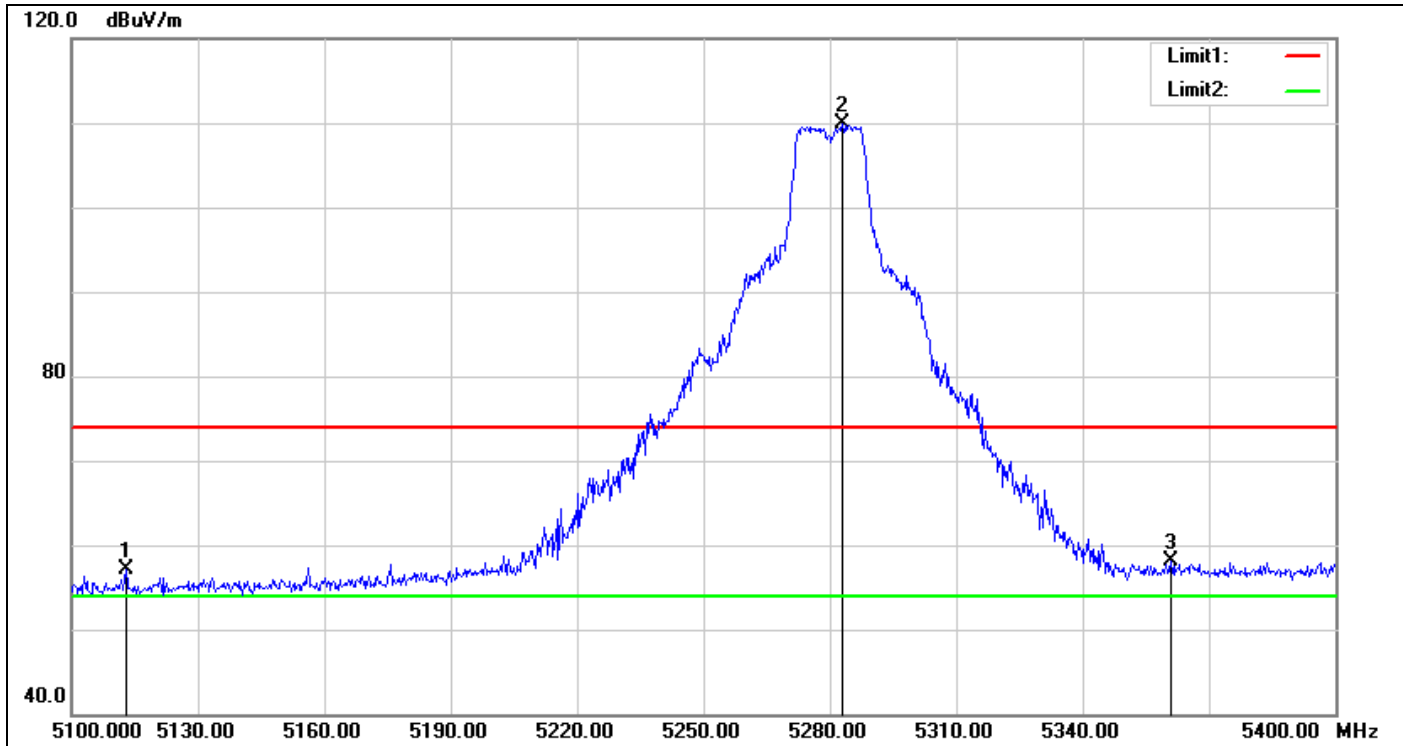
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5120.100	40.85	2.84	43.69	74.00	-30.31	peak
2	5262.600	95.56	4.70	100.26	-	-	peak
3	5394.300	39.61	5.67	45.28	74.00	-28.72	peak

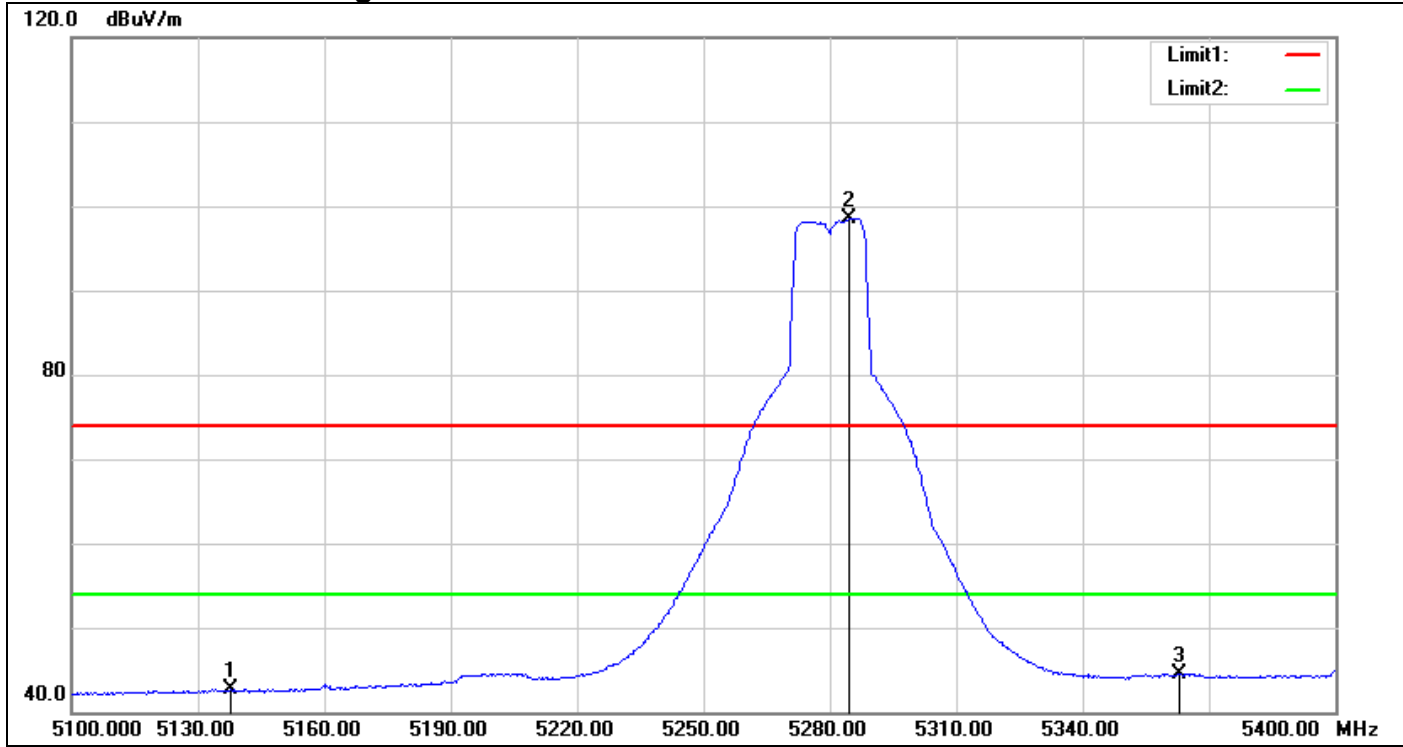
Band Edges (IEEE 802.11a mode / CH 5280 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5112.900	54.40	2.79	57.19	74.00	-16.81	peak
2	5283.000	105.19	4.77	109.96	-	-	peak
3	5361.000	52.71	5.40	58.11	74.00	-15.89	peak

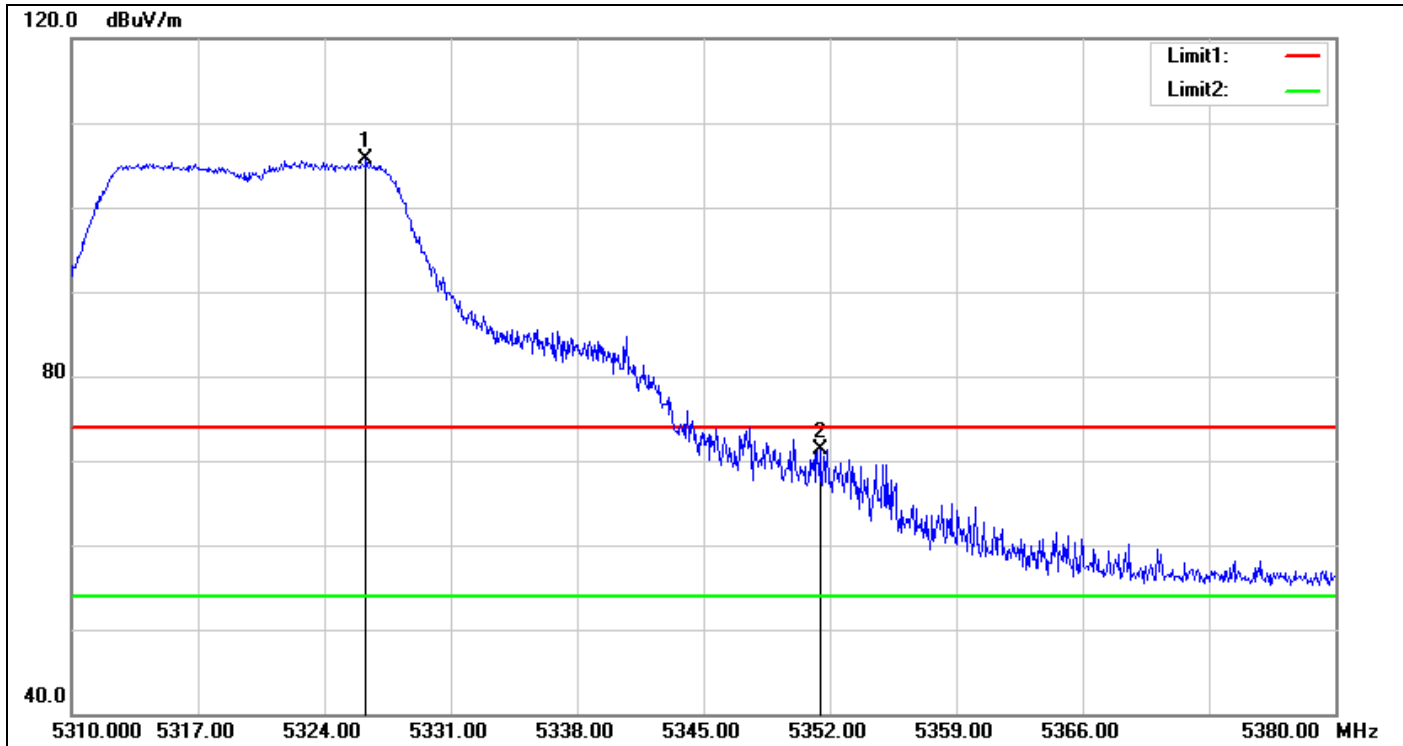
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5137.800	39.73	2.96	42.69	54.00	-11.31	AVG
2	5284.500	93.78	4.78	98.56	-	-	AVG
3	5363.100	39.11	5.42	44.53	54.00	-9.47	AVG

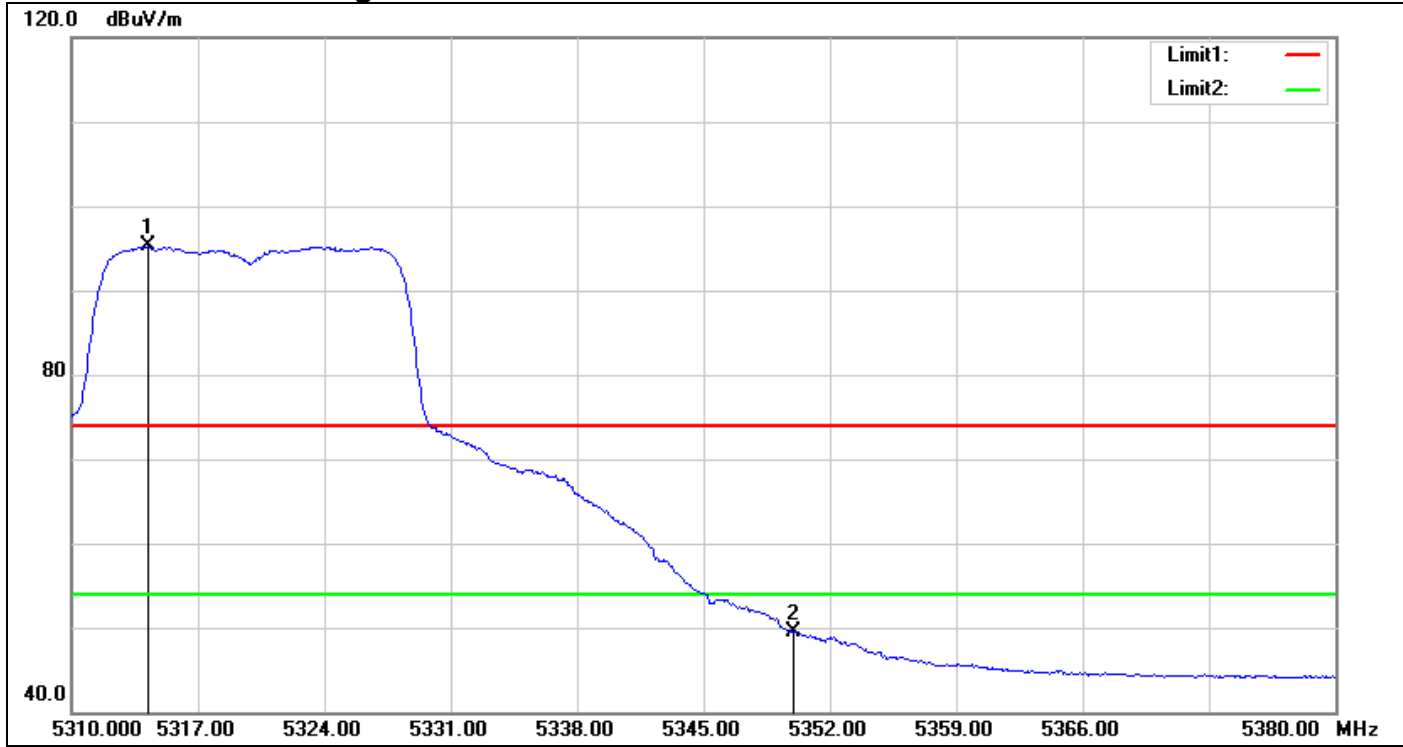
Band Edges (IEEE 802.11a mode / CH 5320 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5326.310	100.59	5.08	105.67	-	-	peak
2	5351.440	66.04	5.32	71.36	74.00	-2.64	peak

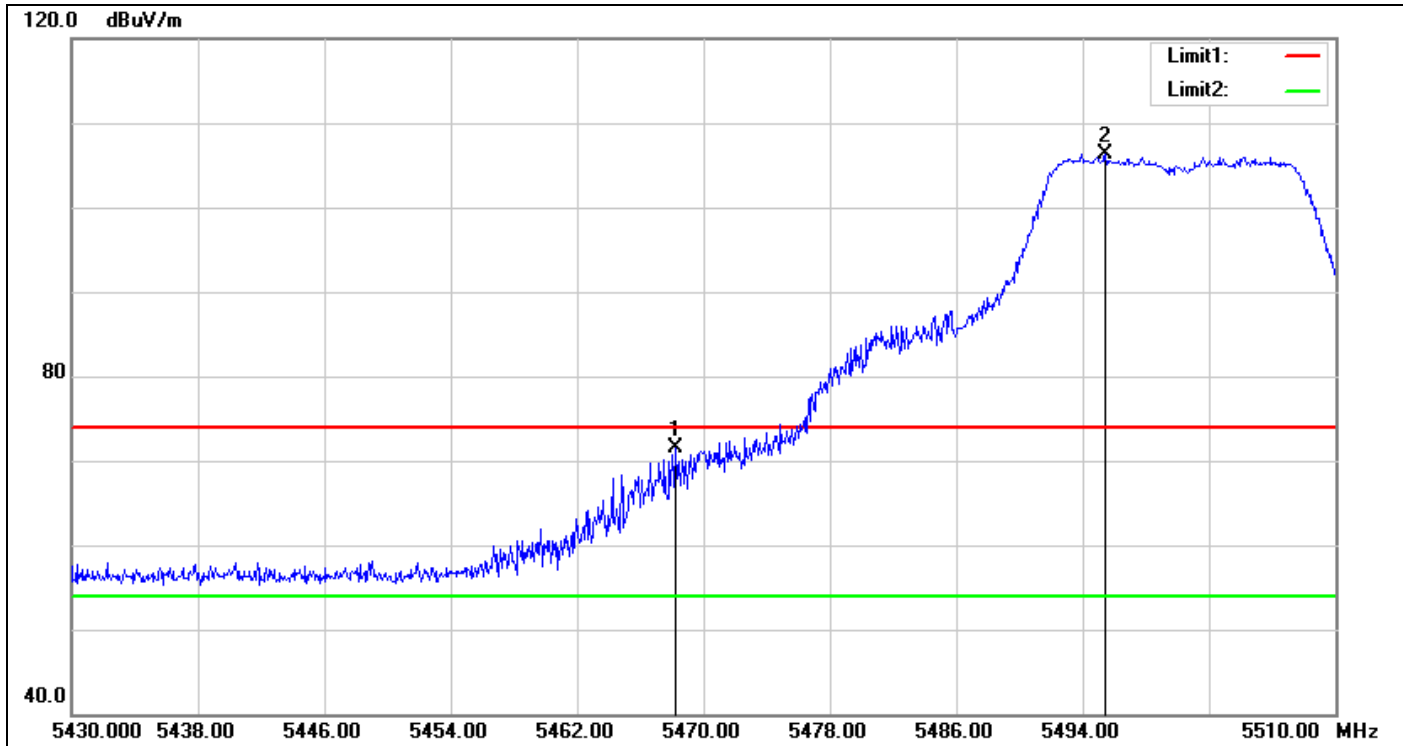
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5314.270	90.26	4.97	95.23	-	-	AVG
2	5350.000	44.23	5.31	49.54	54.00	-4.46	AVG

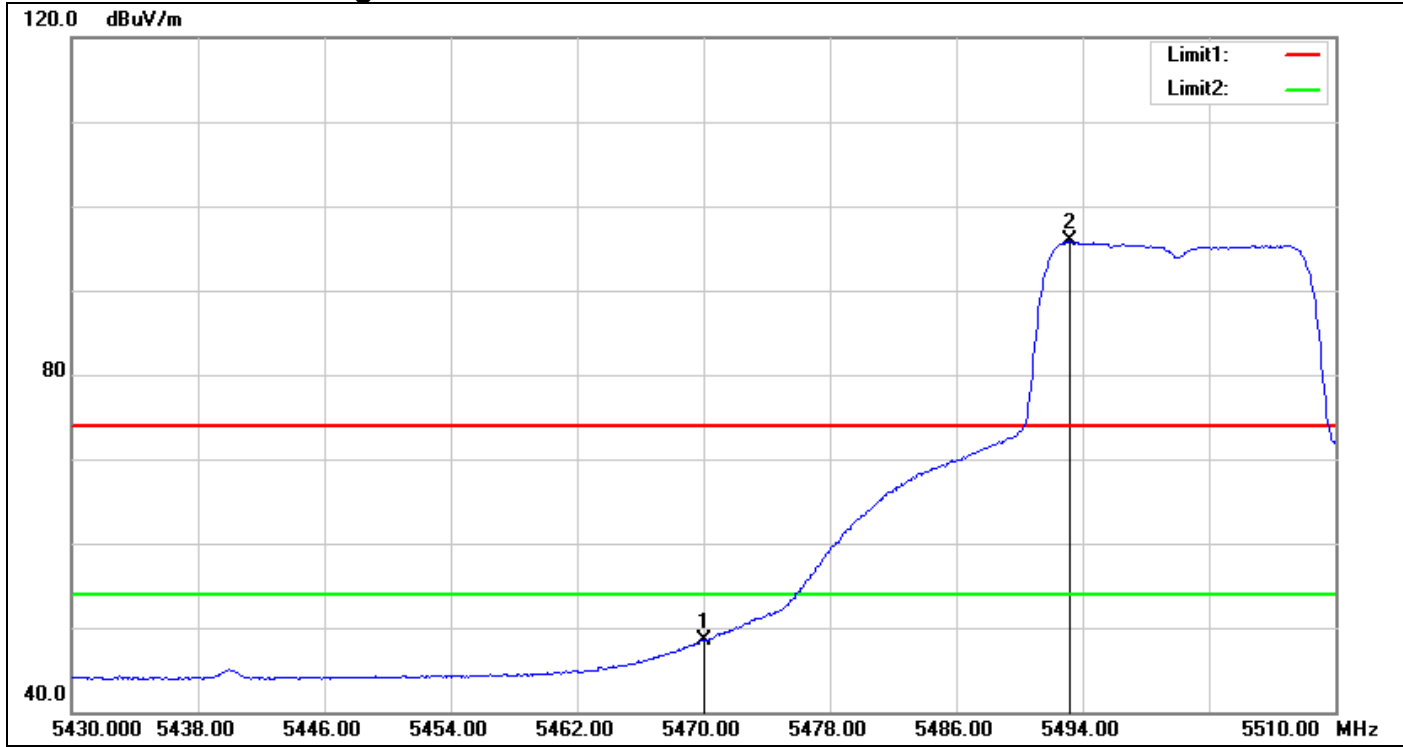
Band Edges (IEEE 802.11a mode / CH 5500 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5468.240	66.07	5.40	71.47	74.00	-2.53	peak
2	5495.440	100.97	5.27	106.24	-	-	peak

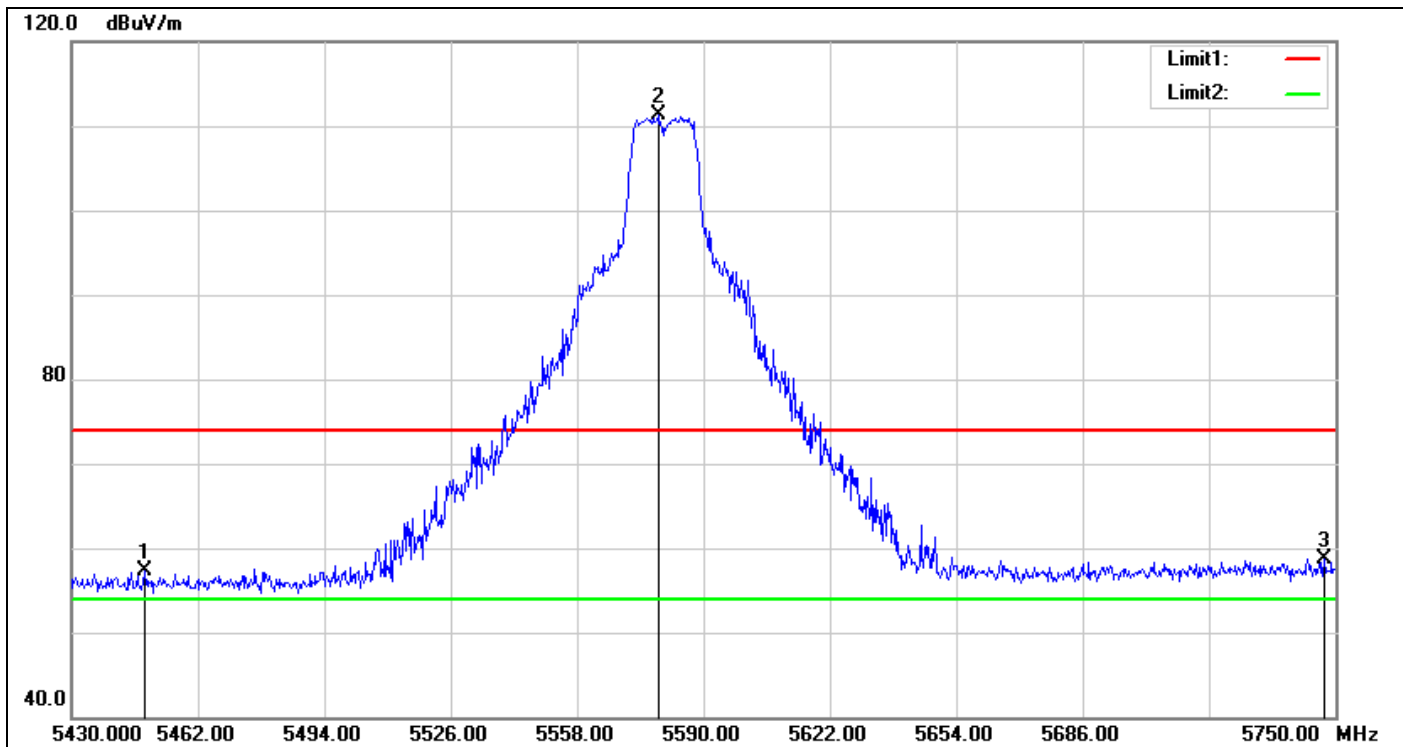
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5470.000	43.08	5.39	48.47	54.00	-5.53	AVG
2	5493.200	90.55	5.28	95.83	-	-	AVG

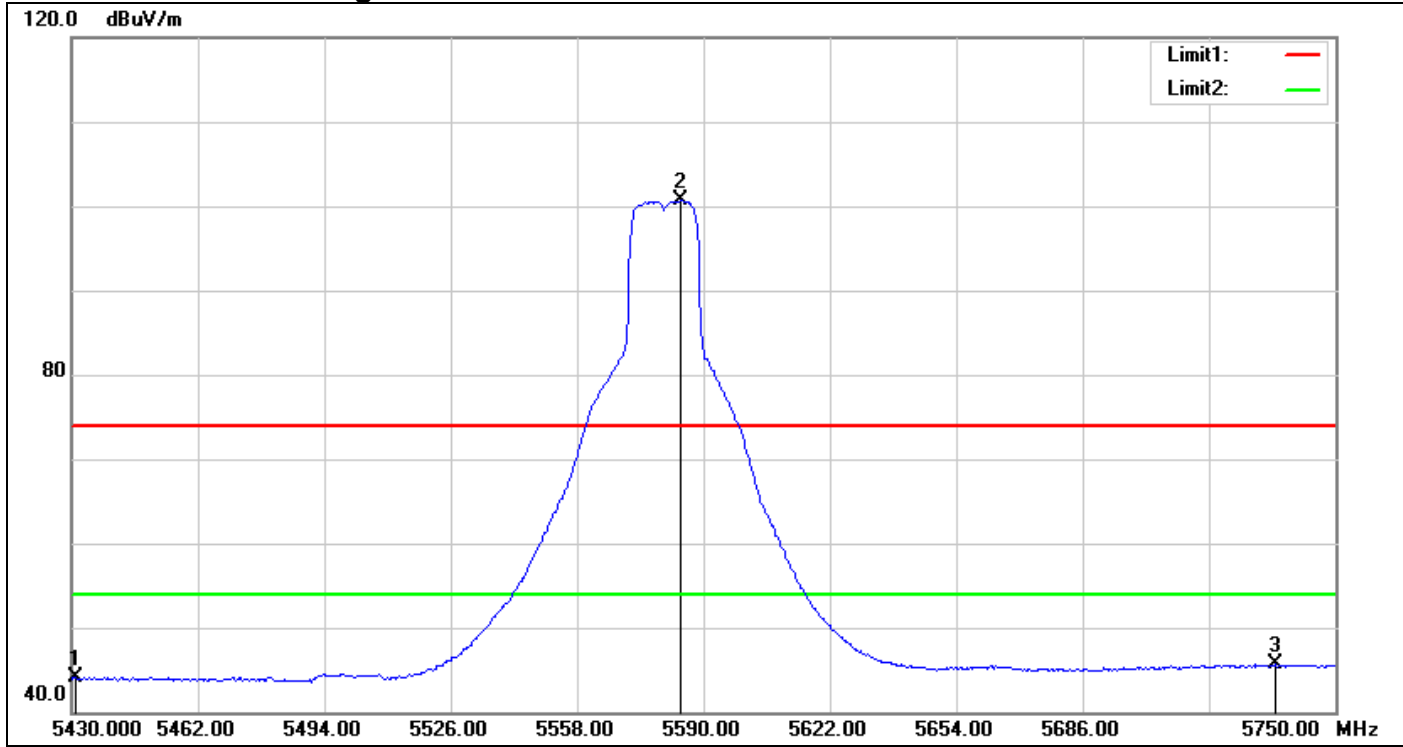
Band Edges (IEEE 802.11a mode / CH 5580 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5448.560	51.72	5.49	57.21	74.00	-16.79	peak
2	5578.480	105.65	5.58	111.23	-	-	peak
3	5747.120	52.49	6.30	58.79	74.00	-15.21	peak

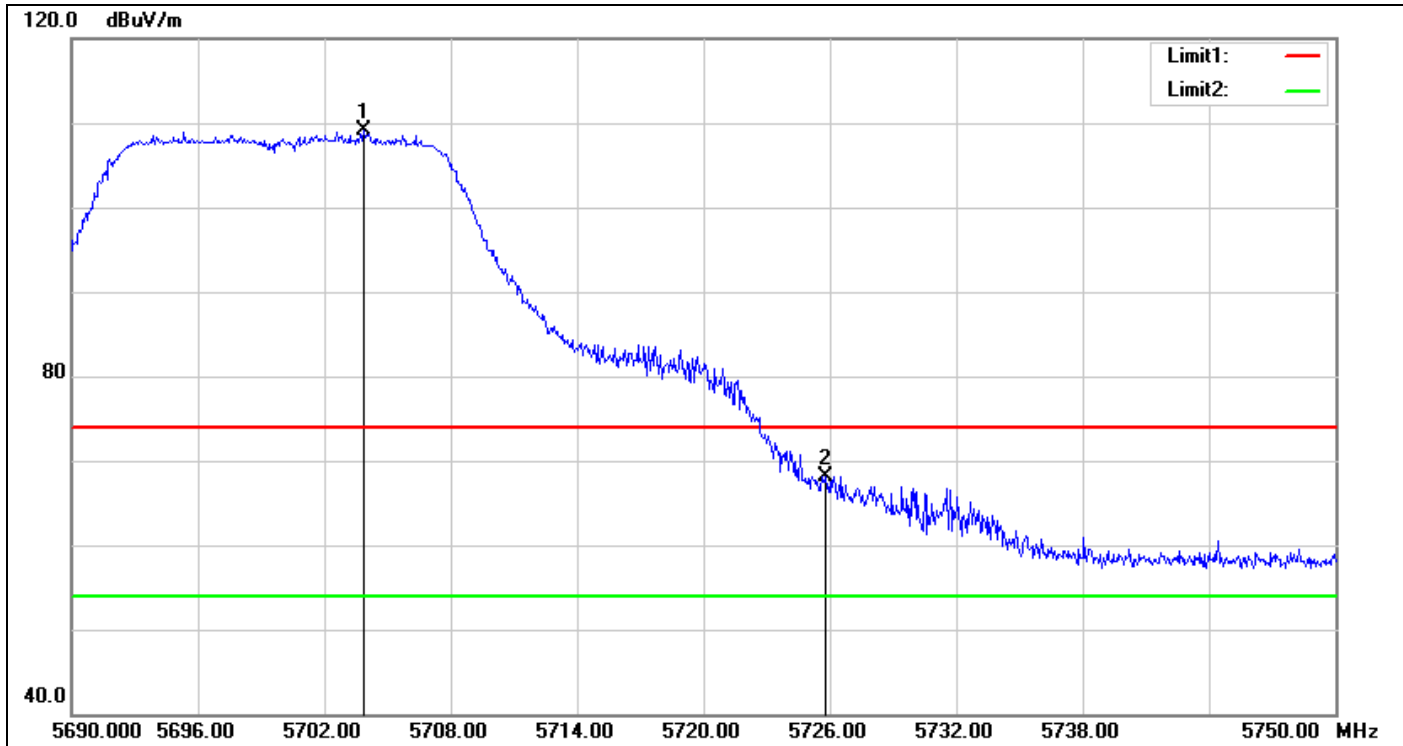
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5430.960	38.52	5.57	44.09	54.00	-9.91	AVG
2	5584.240	95.06	5.61	100.67	-	-	AVG
3	5734.960	39.43	6.25	45.68	54.00	-8.32	AVG

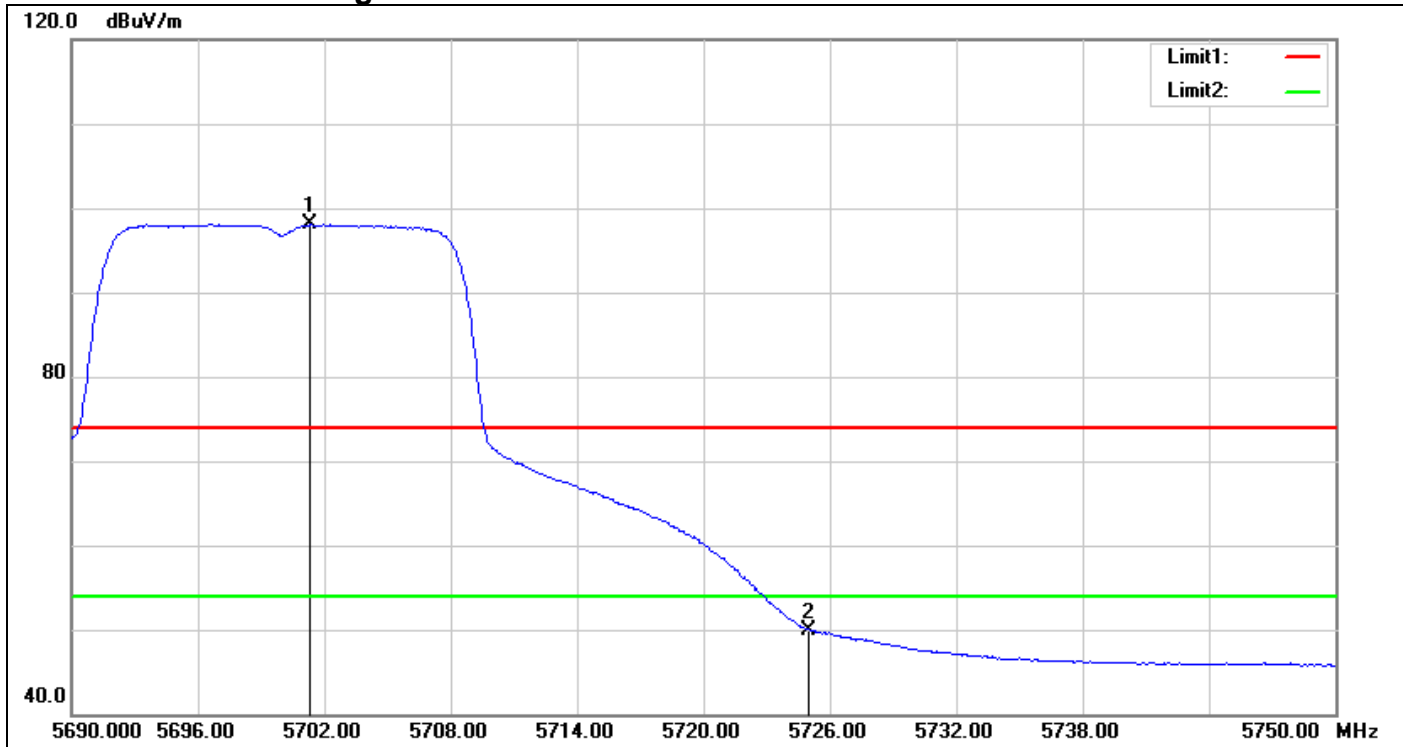
Band Edges (IEEE 802.11a mode / CH 5700 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5703.860	102.94	6.12	109.06	-	-	peak
2	5725.820	61.97	6.21	68.18	74.00	-5.82	peak

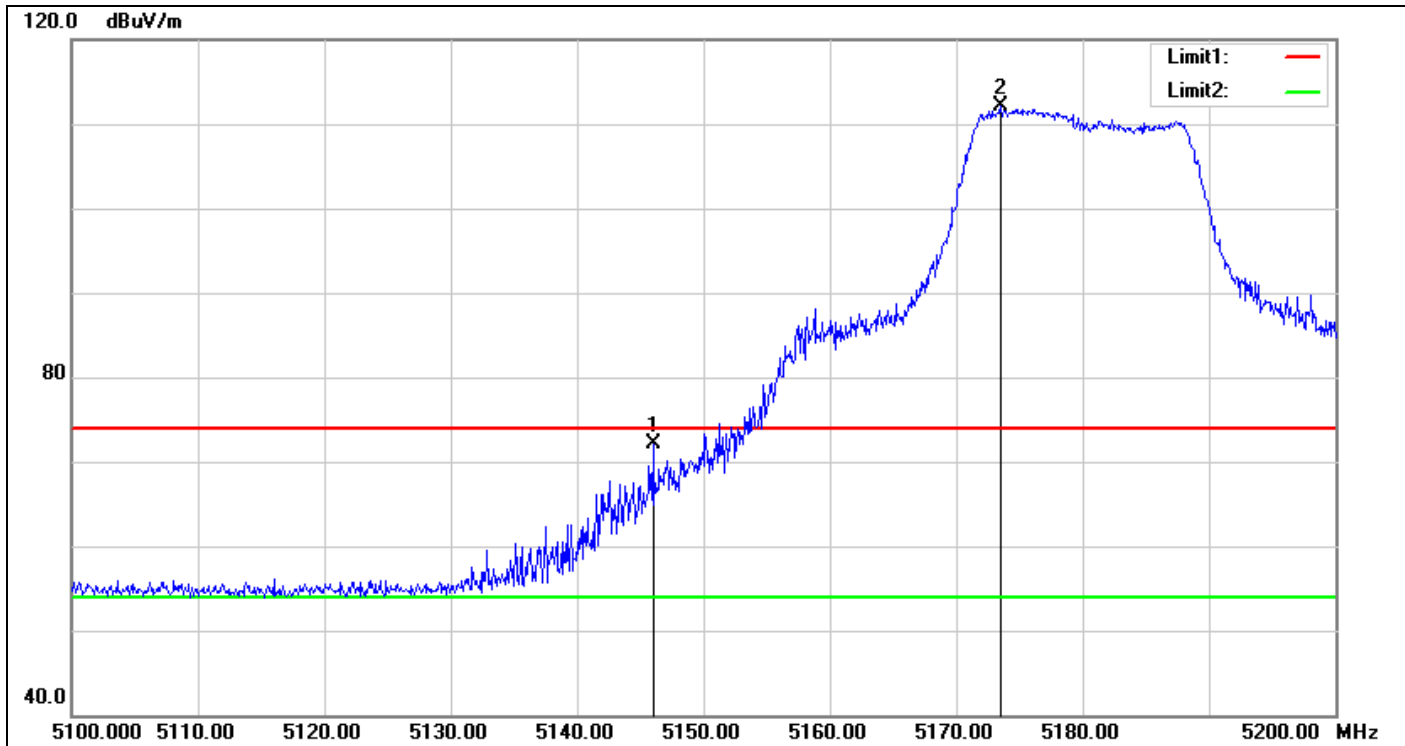
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5701.340	91.97	6.11	98.08	-	-	AVG
2	5725.000	43.74	6.21	49.95	54.00	-4.05	AVG

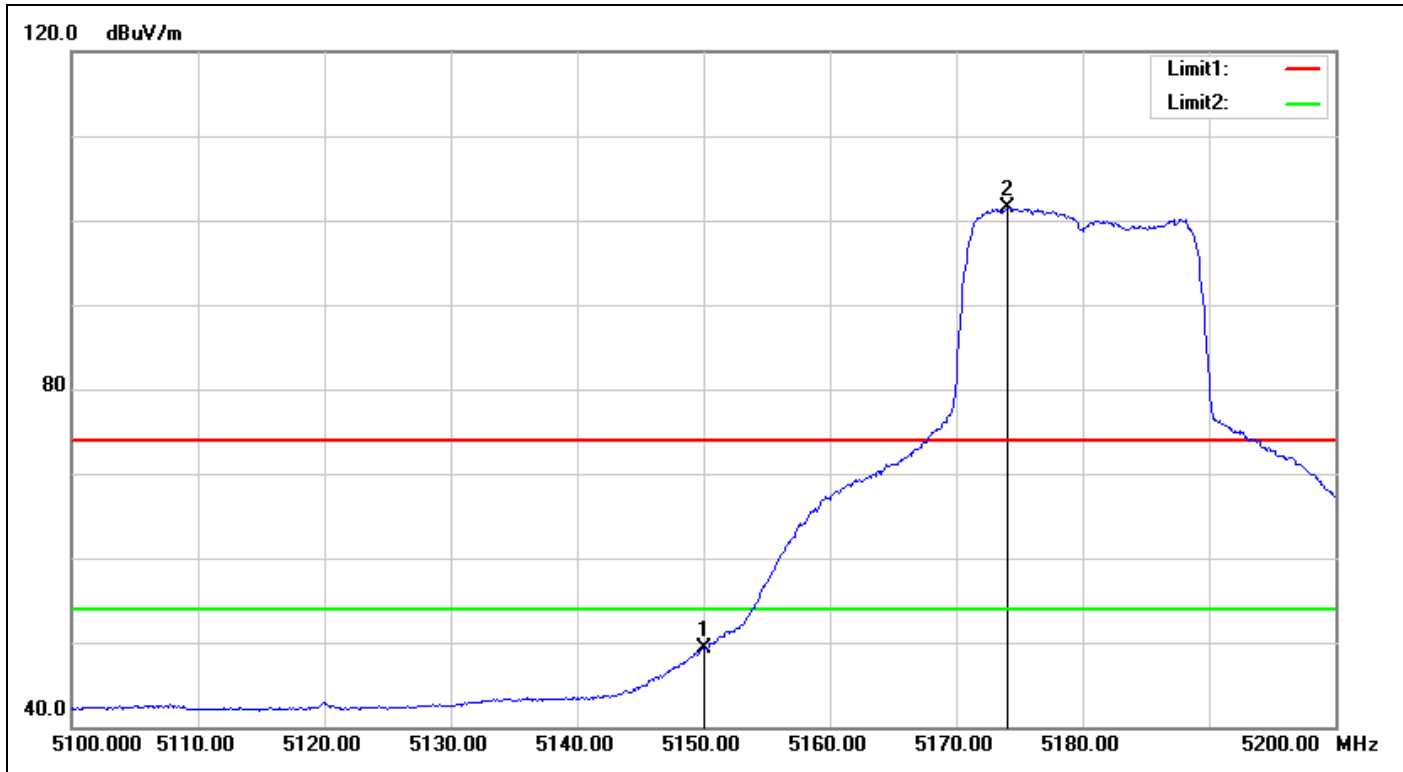
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5180 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5146.000	69.15	3.01	72.16	74.00	-1.84	peak
2	5173.500	108.37	3.72	112.09	-	-	peak

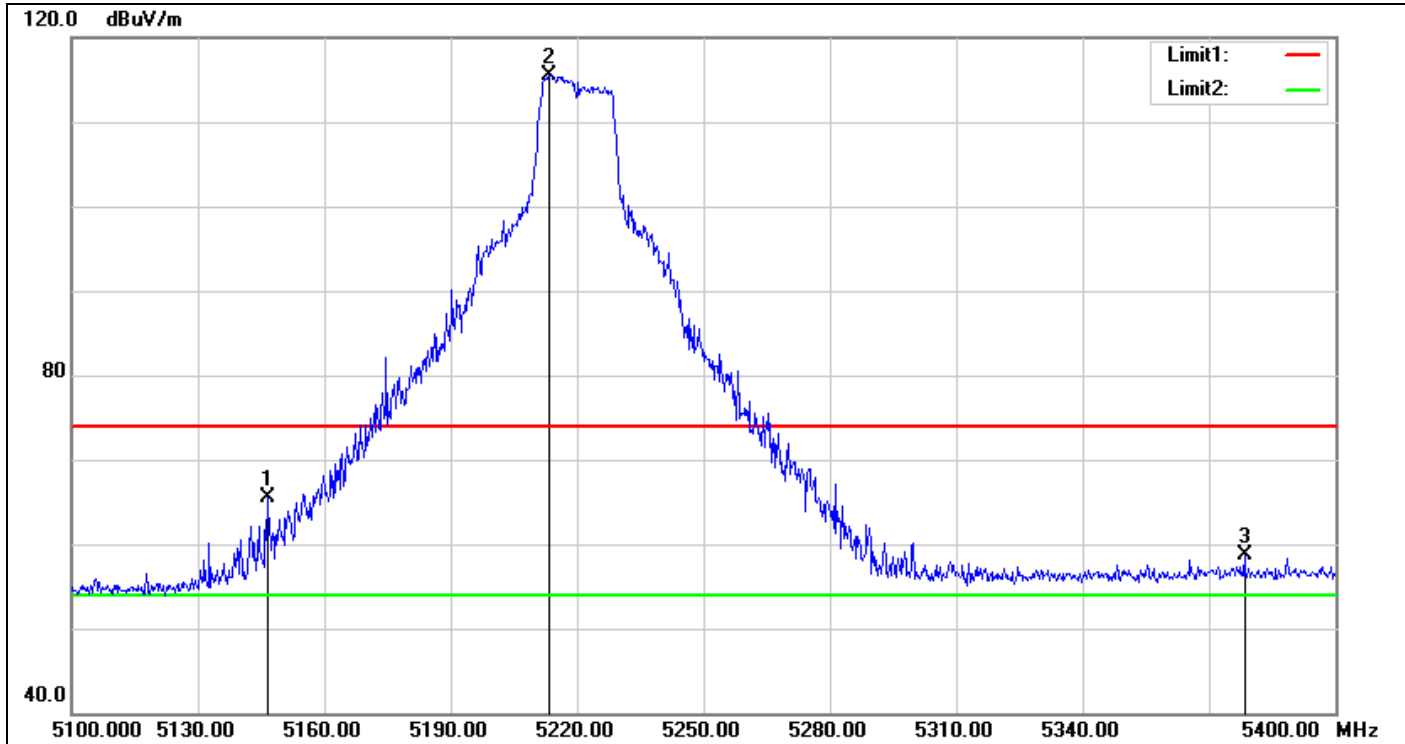
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	46.22	3.04	49.26	54.00	-4.74	AVG
2	5174.000	97.72	3.74	101.46	-	-	AVG

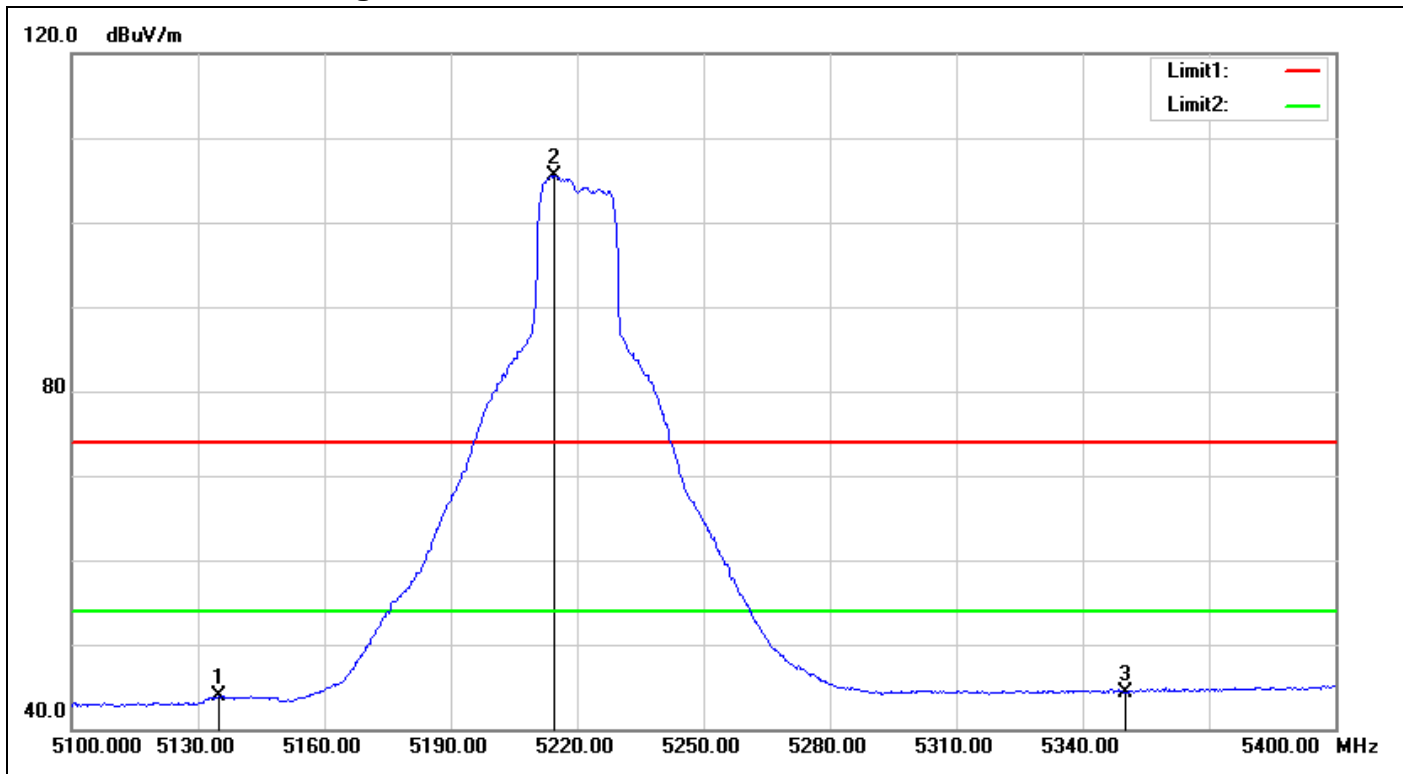
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5220 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5146.500	62.49	3.02	65.51	74.00	-8.49	peak
2	5213.400	111.01	4.54	115.55	-	-	peak
3	5378.400	53.13	5.54	58.67	74.00	-15.33	peak

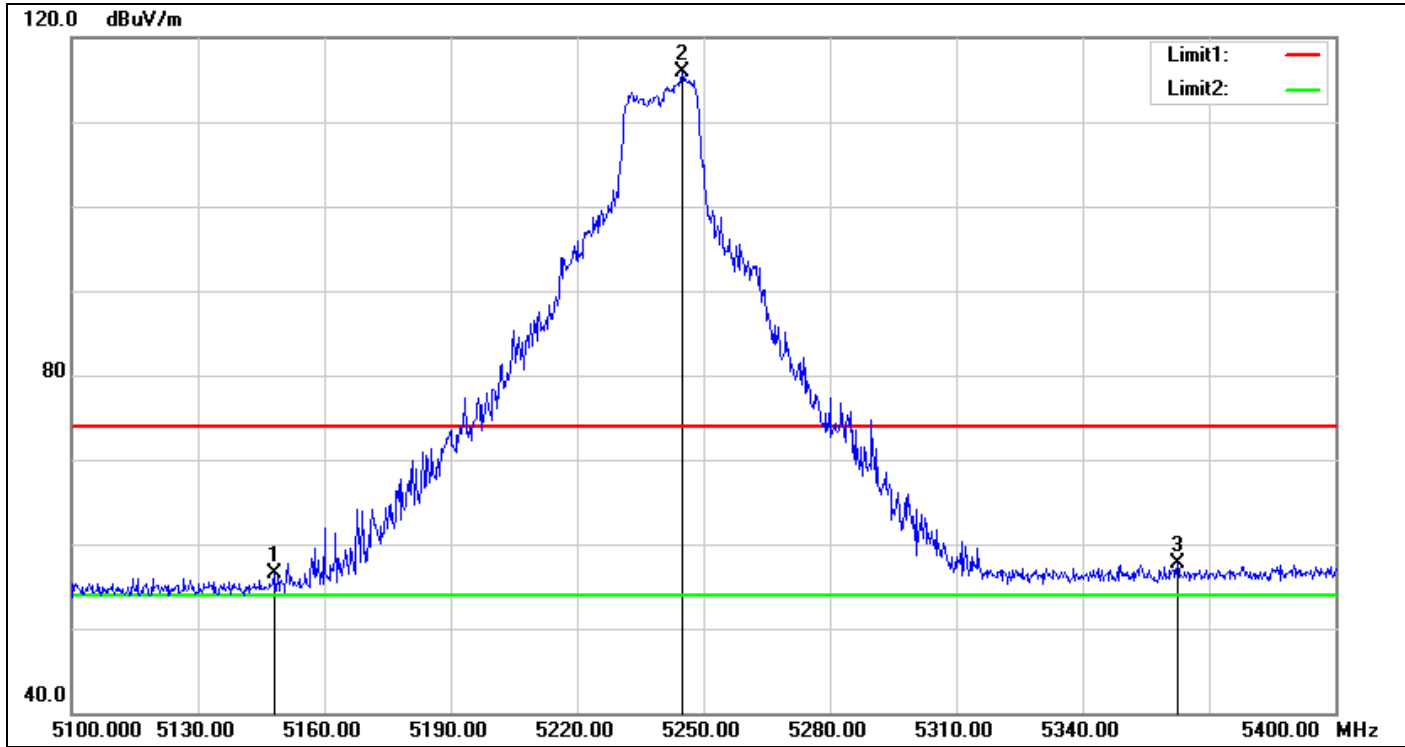
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5134.800	40.97	2.94	43.91	54.00	-10.09	AVG
2	5214.600	100.93	4.54	105.47	-	-	AVG
3	5350.000	39.06	5.31	44.37	54.00	-9.63	AVG

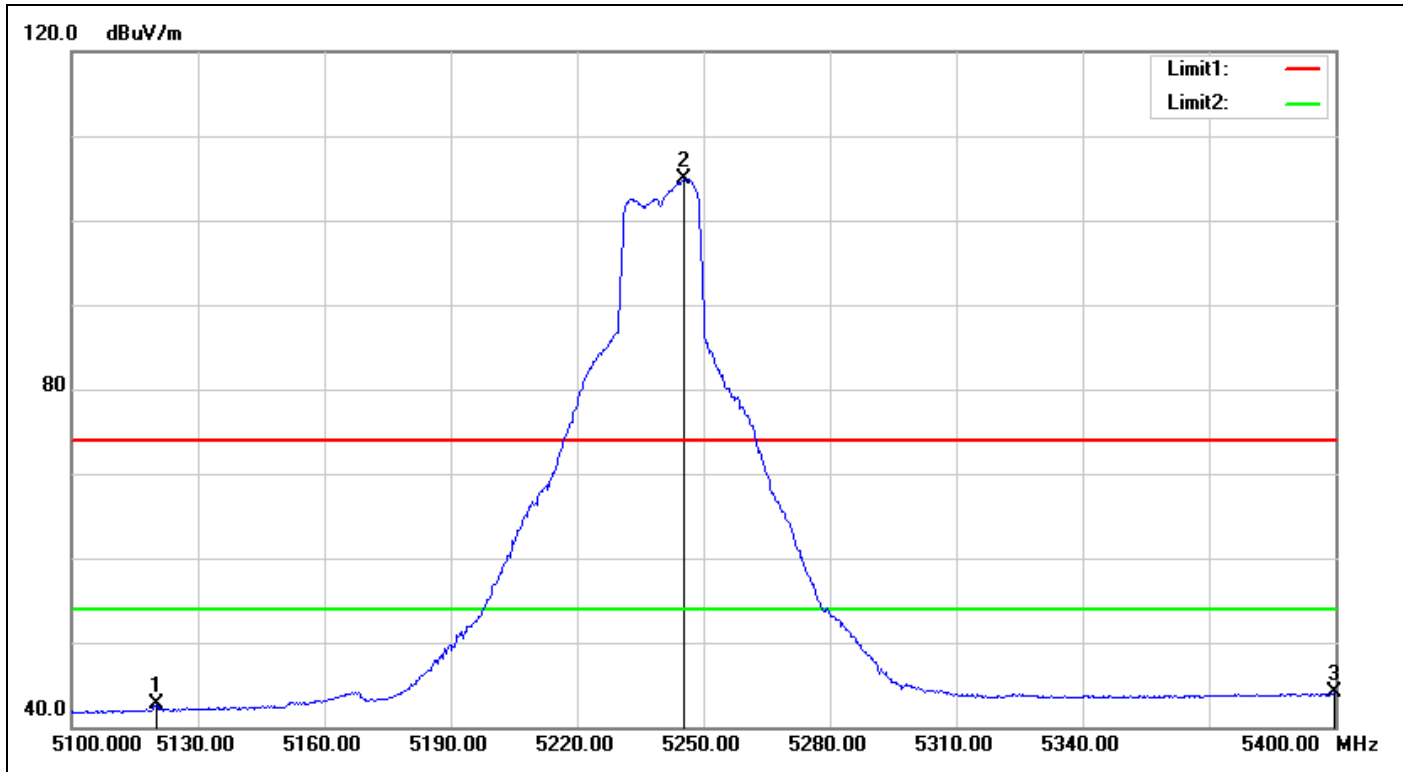
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5240 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.000	53.48	3.03	56.51	74.00	-17.49	peak
2	5244.900	111.18	4.64	115.82	-	-	peak
3	5362.500	52.38	5.41	57.79	74.00	-16.21	peak

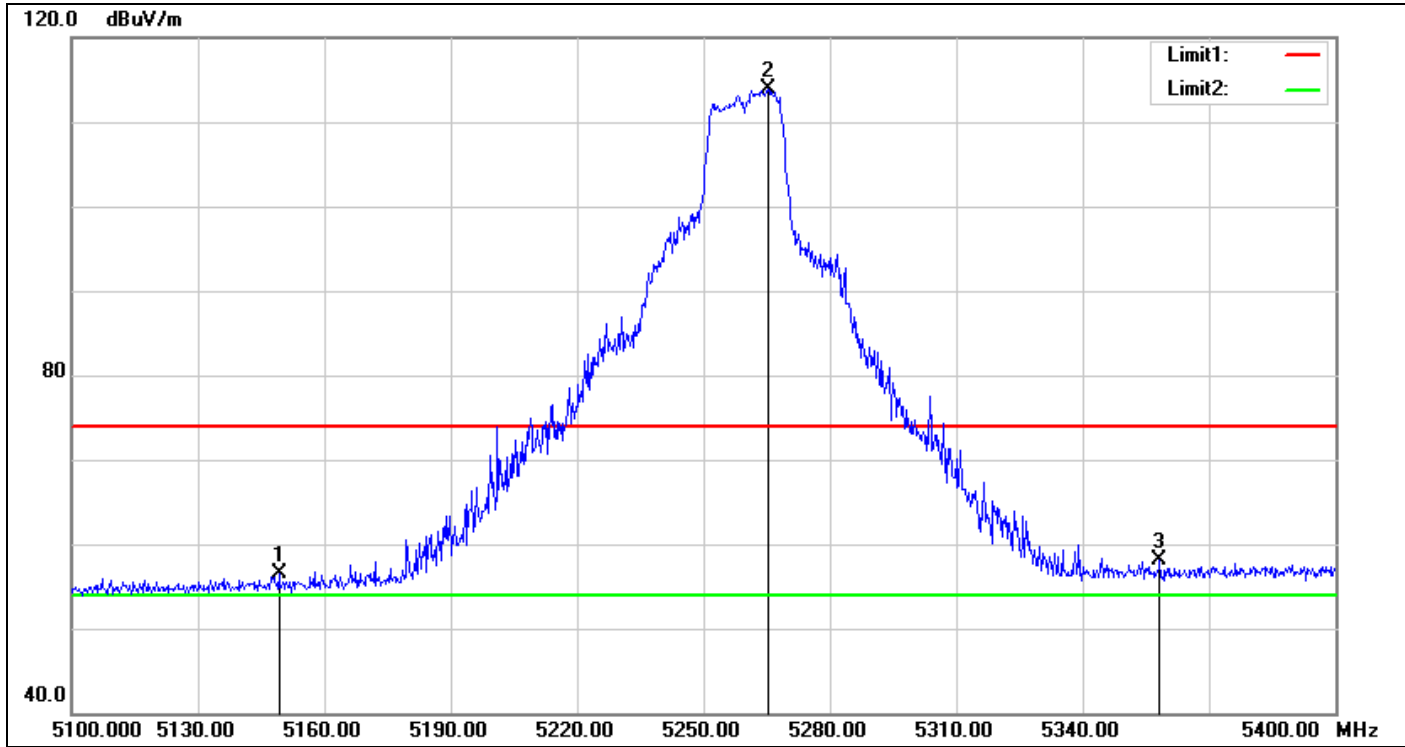
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5120.100	39.81	2.84	42.65	54.00	-11.35	AVG
2	5245.500	100.34	4.64	104.98	-	-	AVG
3	5399.700	38.31	5.72	44.03	54.00	-9.97	AVG

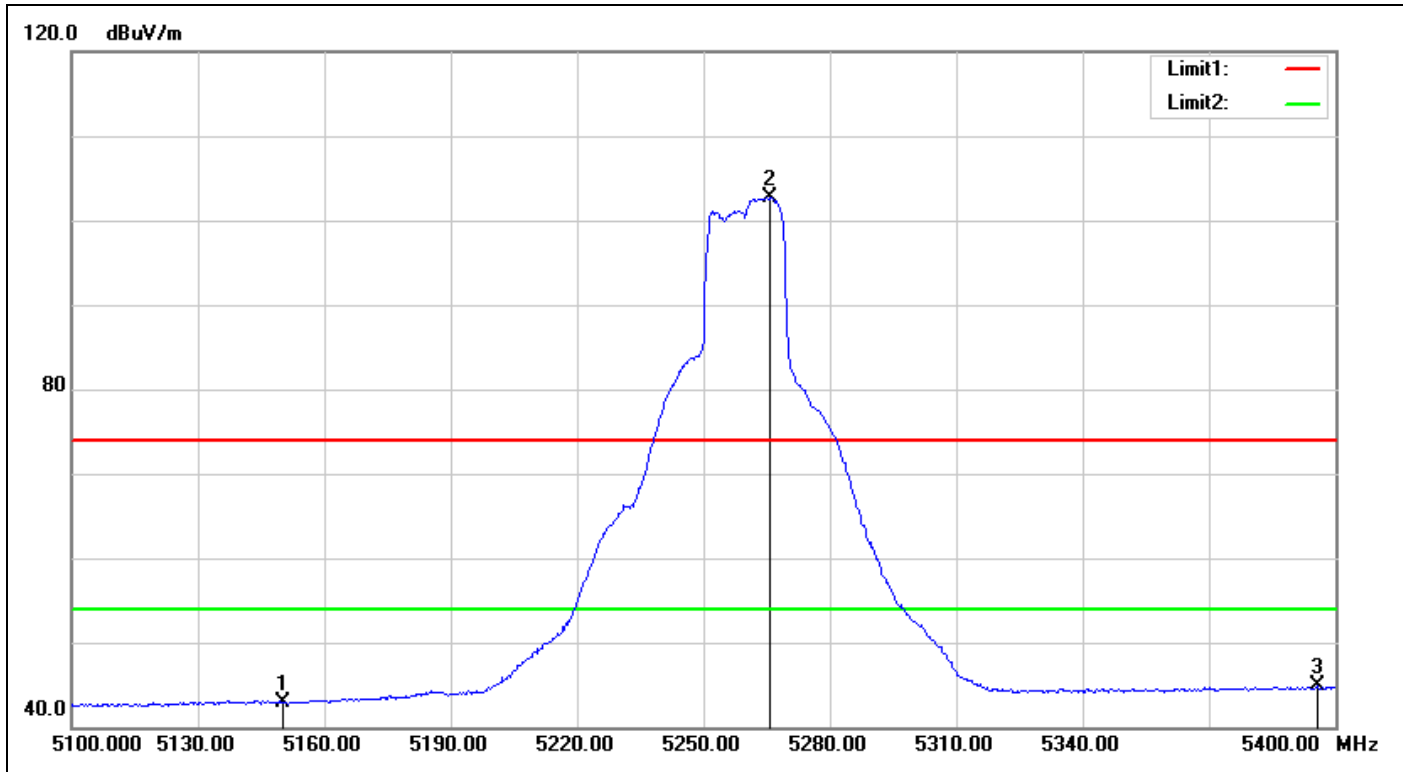
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5260 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.200	53.50	3.03	56.53	74.00	-17.47	peak
2	5265.300	109.24	4.71	113.95	-	-	peak
3	5358.300	52.63	5.38	58.01	74.00	-15.99	peak

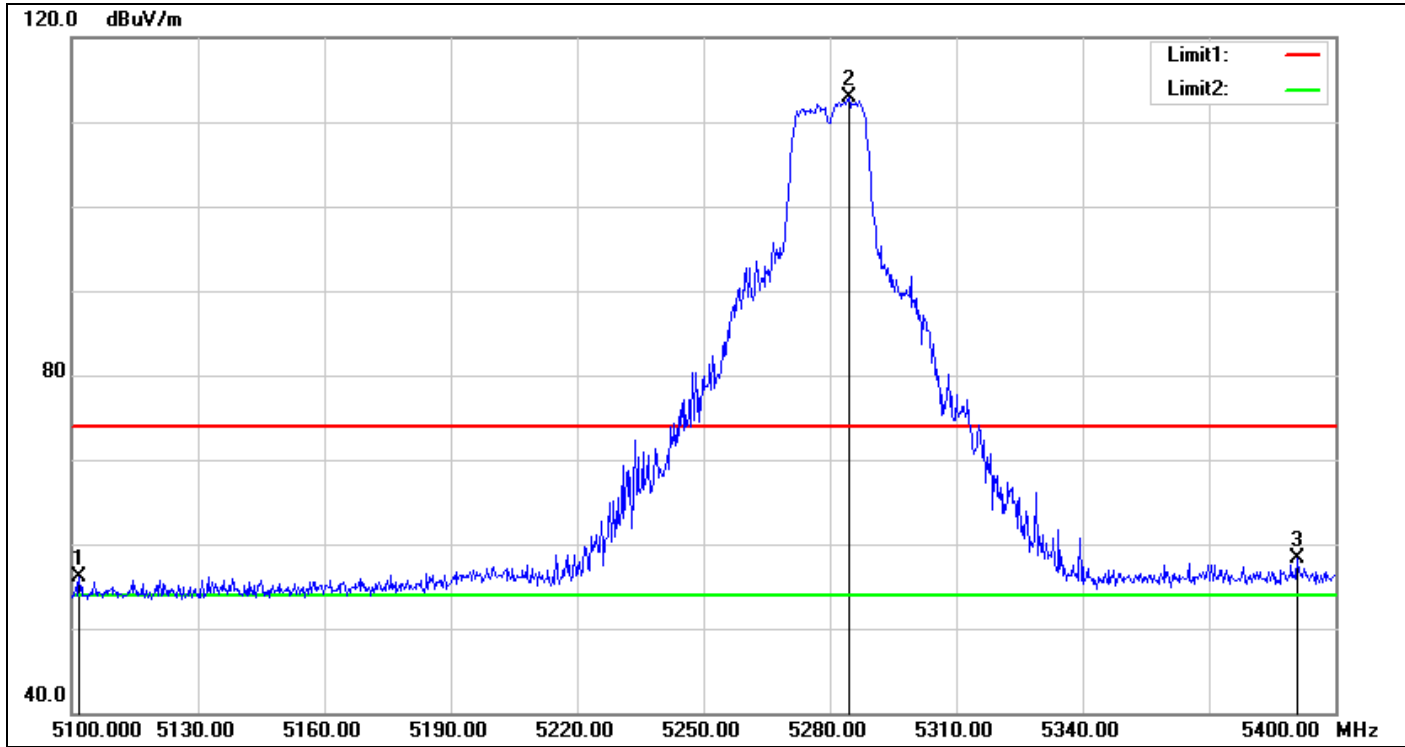
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	39.86	3.04	42.90	54.00	-11.10	AVG
2	5265.600	98.05	4.71	102.76	-	-	AVG
3	5395.800	39.12	5.69	44.81	54.00	-9.19	AVG

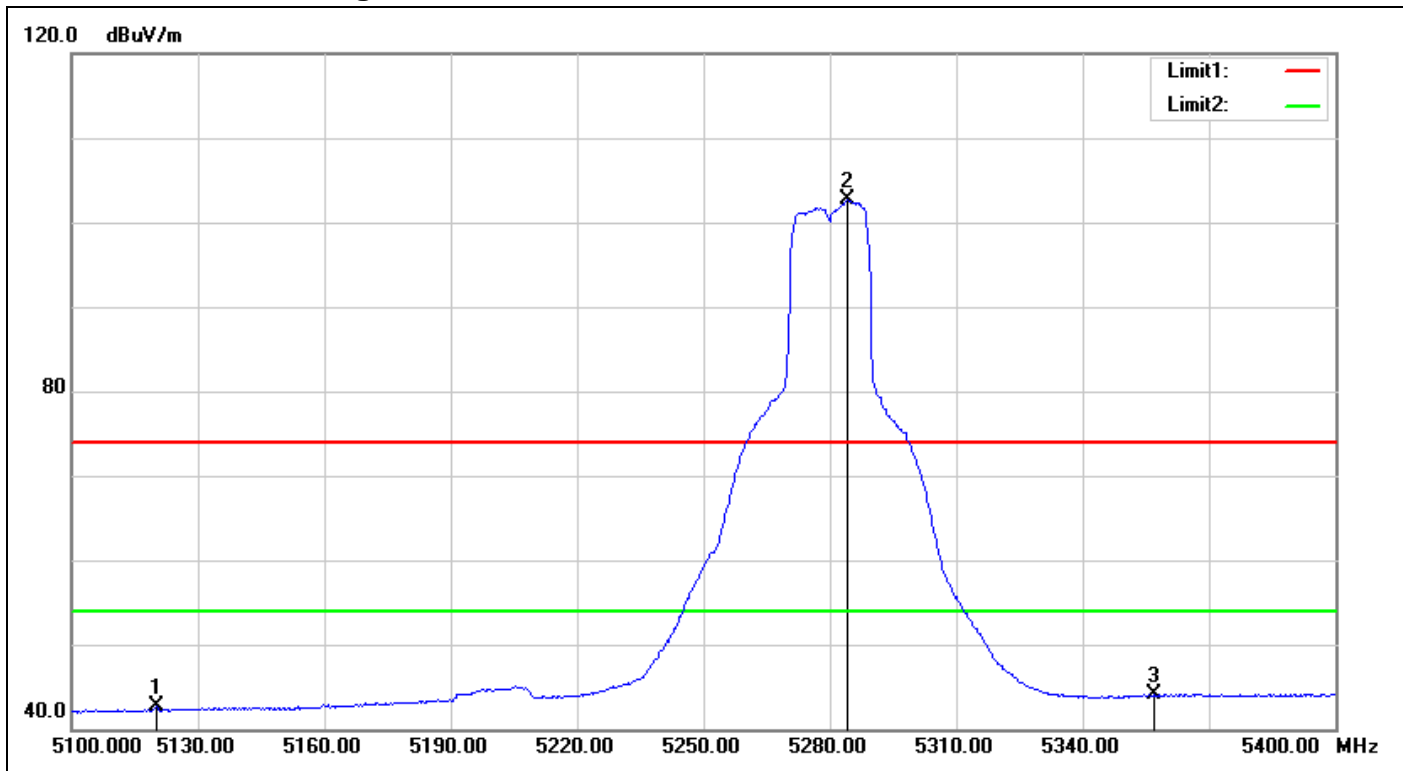
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5280 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5101.800	53.46	2.71	56.17	74.00	-17.83	peak
2	5284.500	108.03	4.78	112.81	-	-	peak
3	5391.000	52.63	5.65	58.28	74.00	-15.72	peak

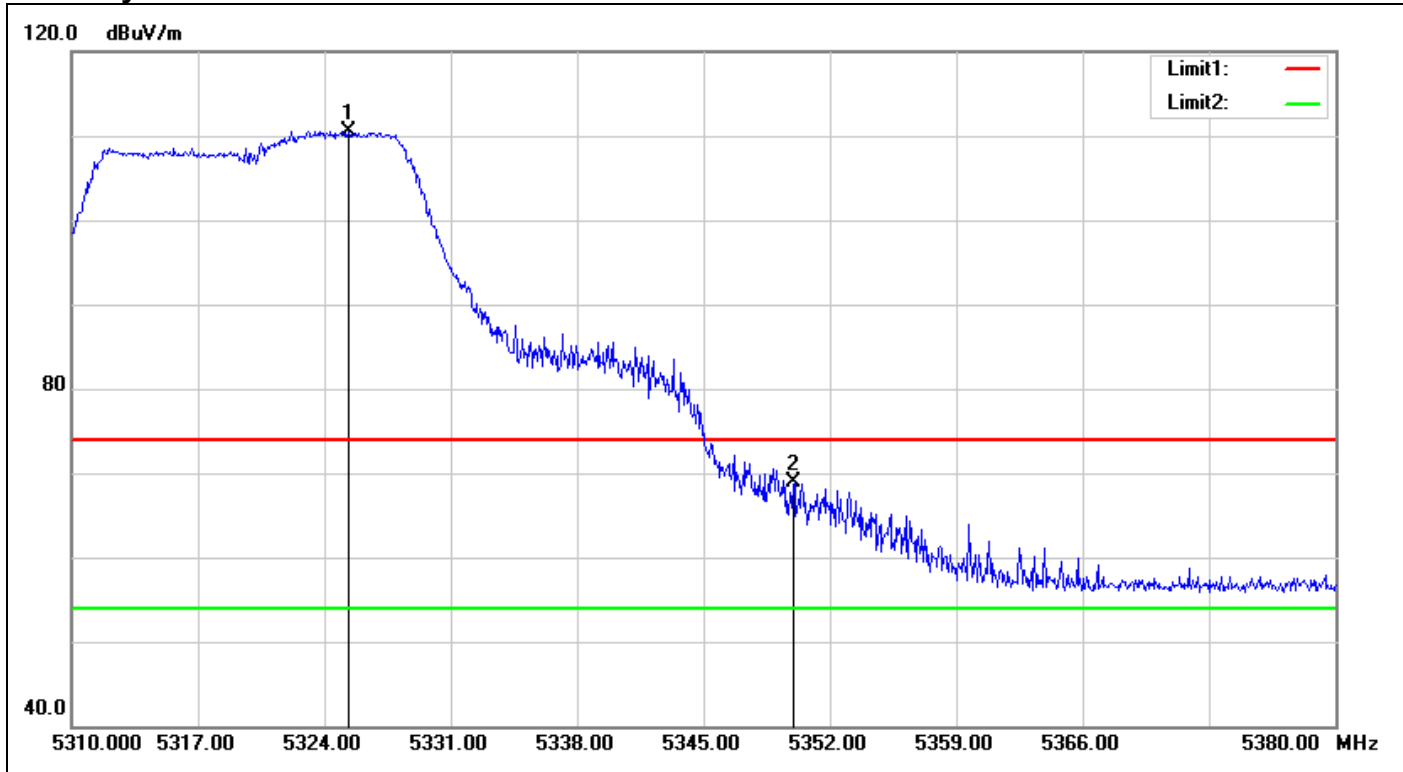
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5120.100	39.77	2.84	42.61	54.00	-11.39	AVG
2	5284.200	98.01	4.78	102.79	-	-	AVG
3	5356.800	38.75	5.37	44.12	54.00	-9.88	AVG

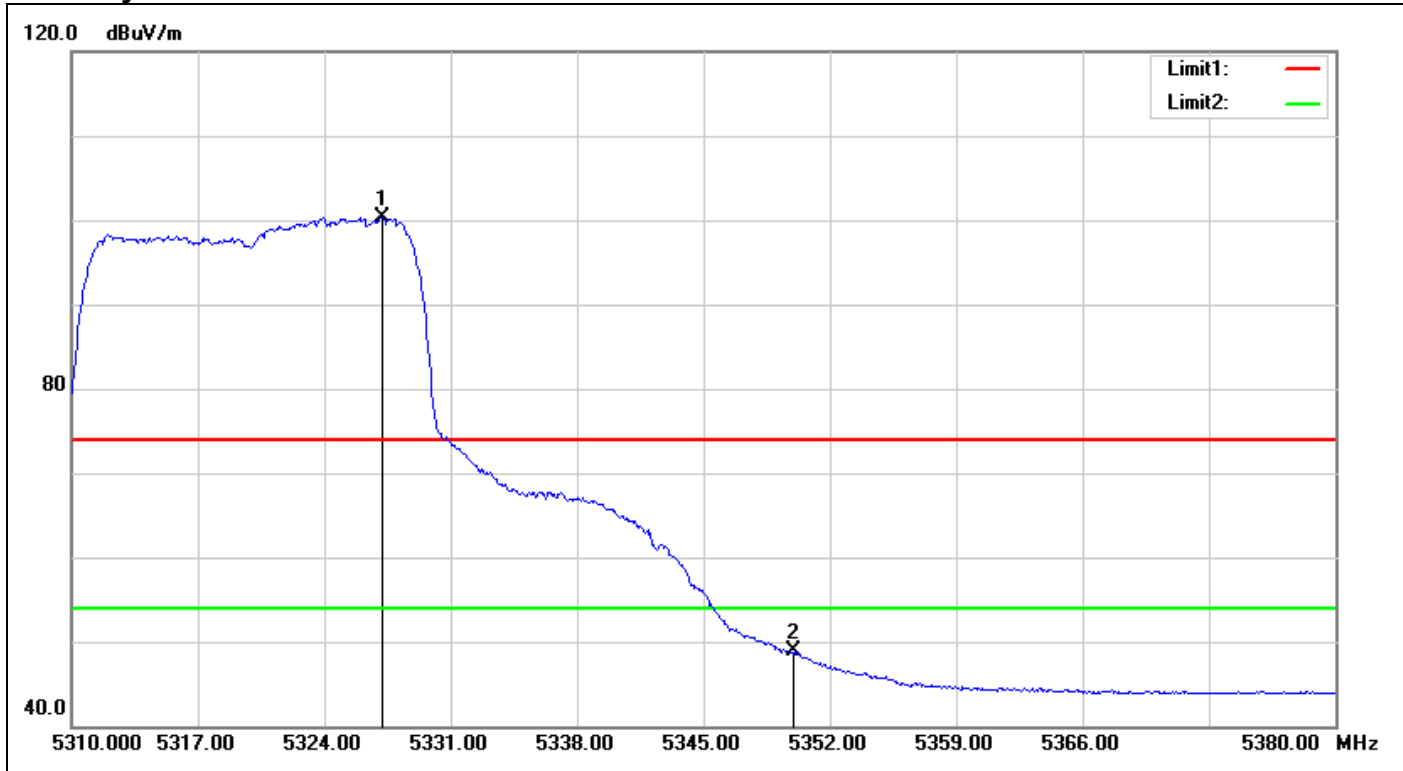
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5320 MHz)

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5325.330	105.51	5.07	110.58	-	-	peak
2	5350.000	63.50	5.31	68.81	74.00	-5.19	peak

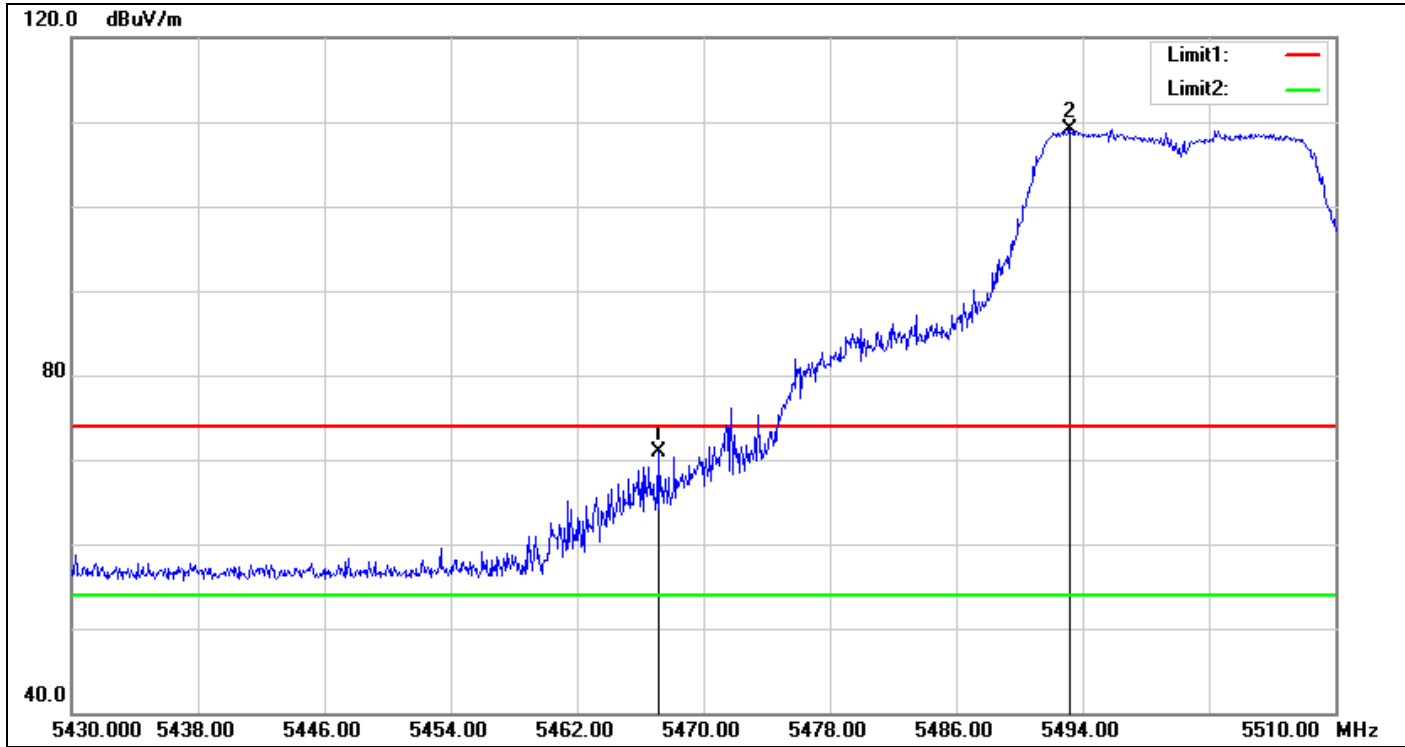
Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5327.220	95.19	5.09	100.28	-	-	AVG
2	5350.000	43.55	5.31	48.86	54.00	-5.14	AVG

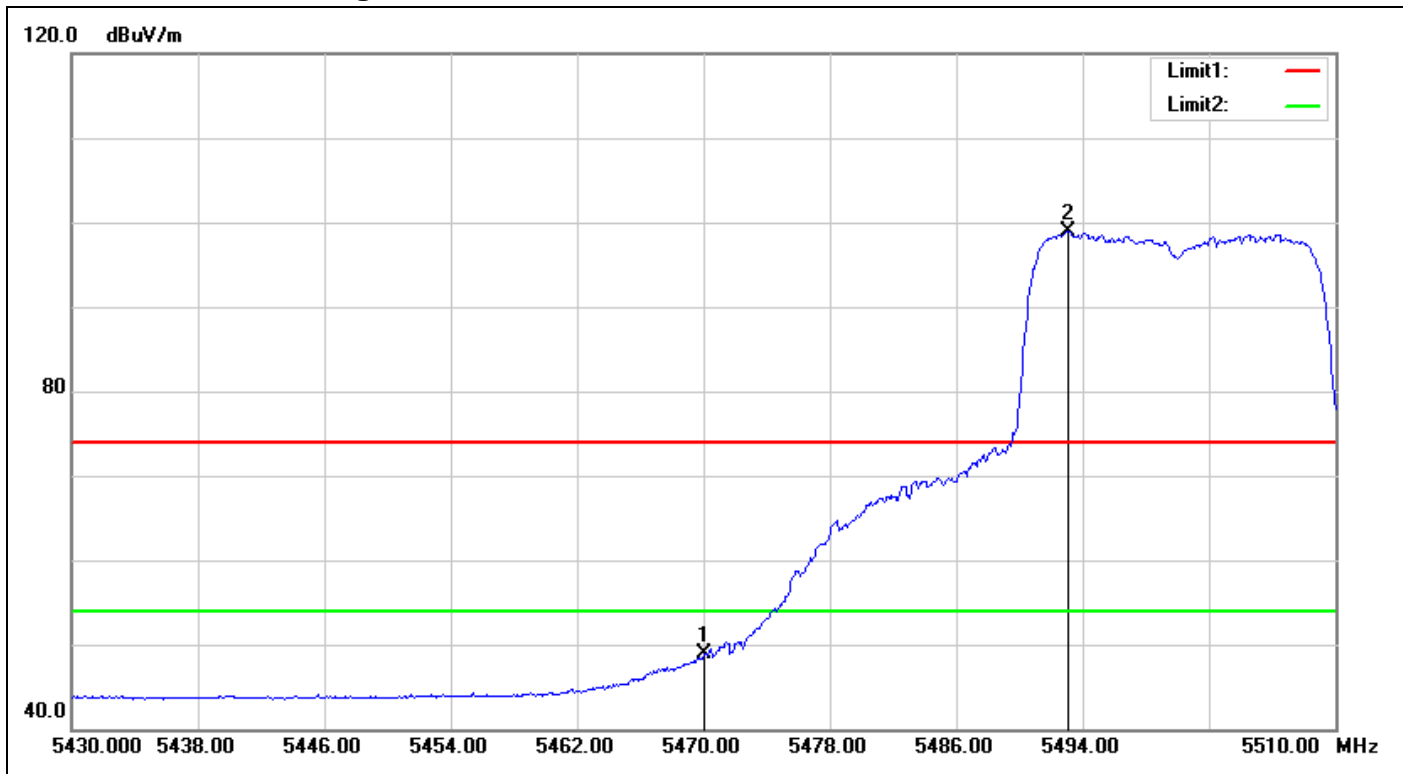
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5500 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5467.120	65.55	5.40	70.95	74.00	-3.05	peak
2	5493.200	103.80	5.28	109.08	-	-	peak

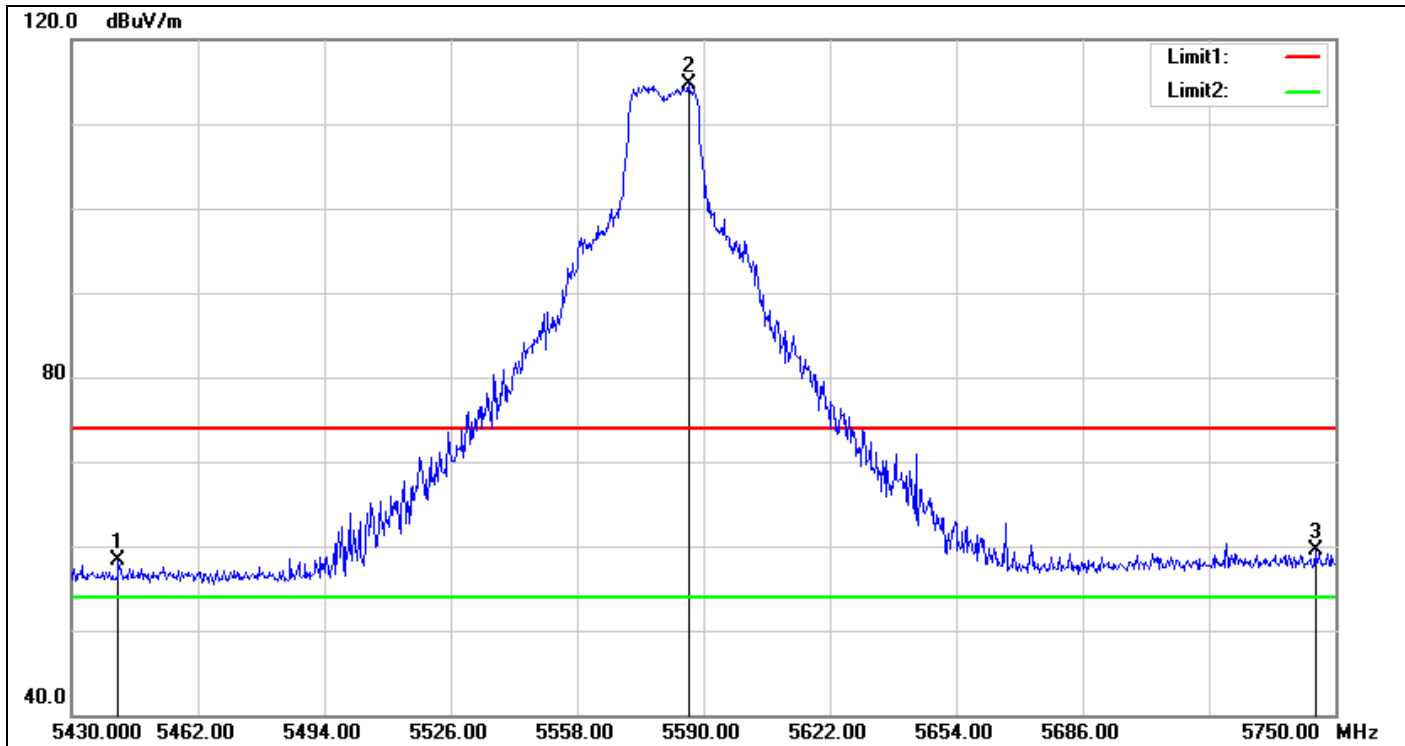
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5470.000	43.47	5.39	48.86	54.00	-5.14	AVG
2	5493.040	93.61	5.28	98.89	-	-	AVG

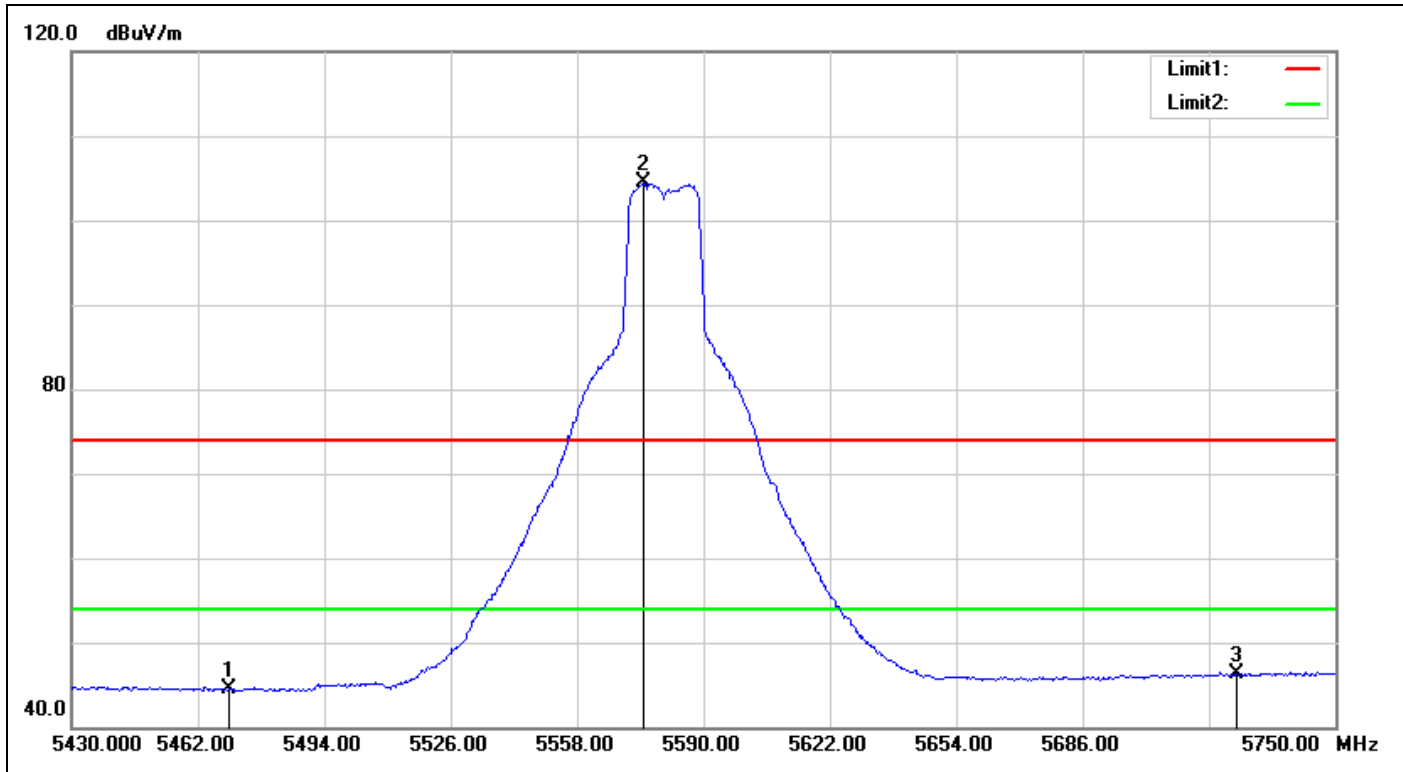
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5580 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5441.840	52.76	5.52	58.28	74.00	-15.72	peak
2	5586.160	109.08	5.62	114.70	-	-	peak
3	5744.880	53.12	6.29	59.41	74.00	-14.59	peak

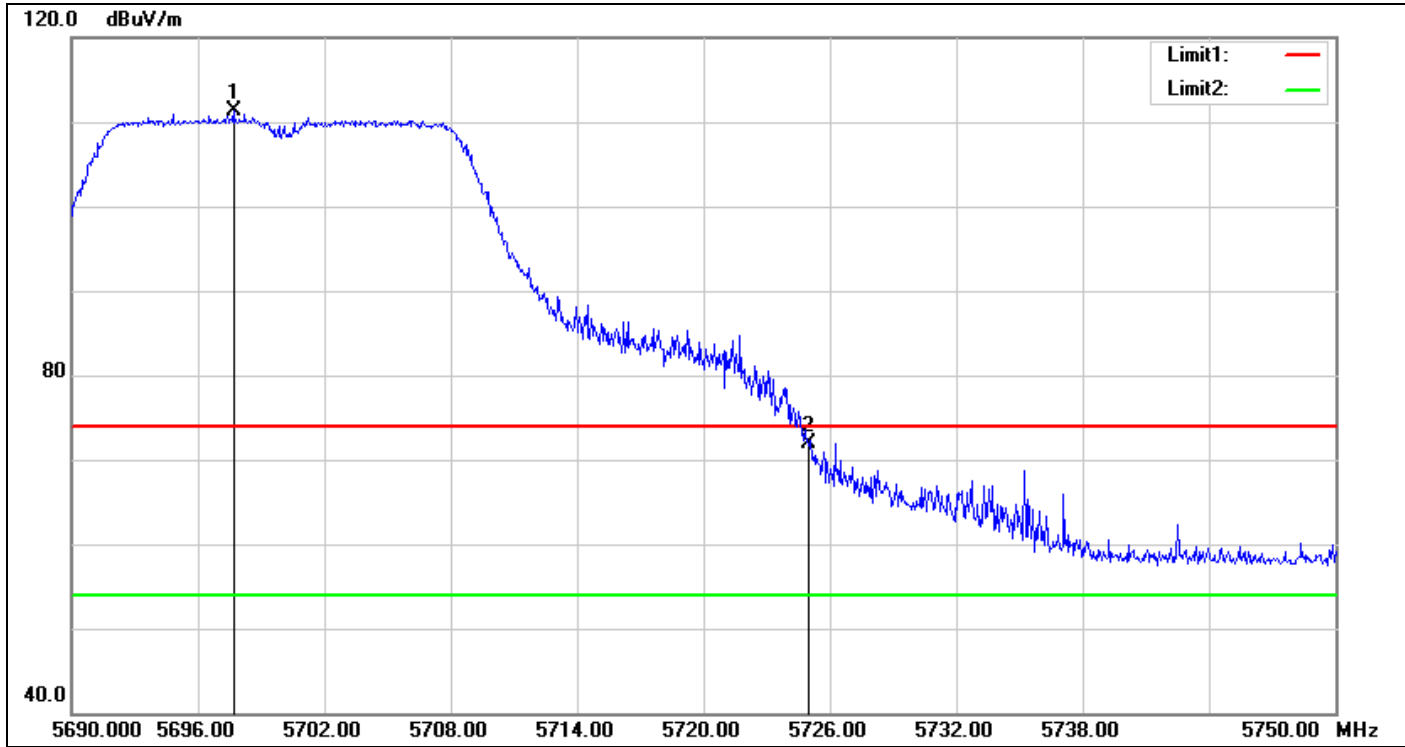
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5470.000	39.11	5.39	44.50	54.00	-9.50	AVG
2	5574.960	98.87	5.57	104.44	-	-	AVG
3	5725.000	40.02	6.21	46.23	54.00	-7.77	AVG

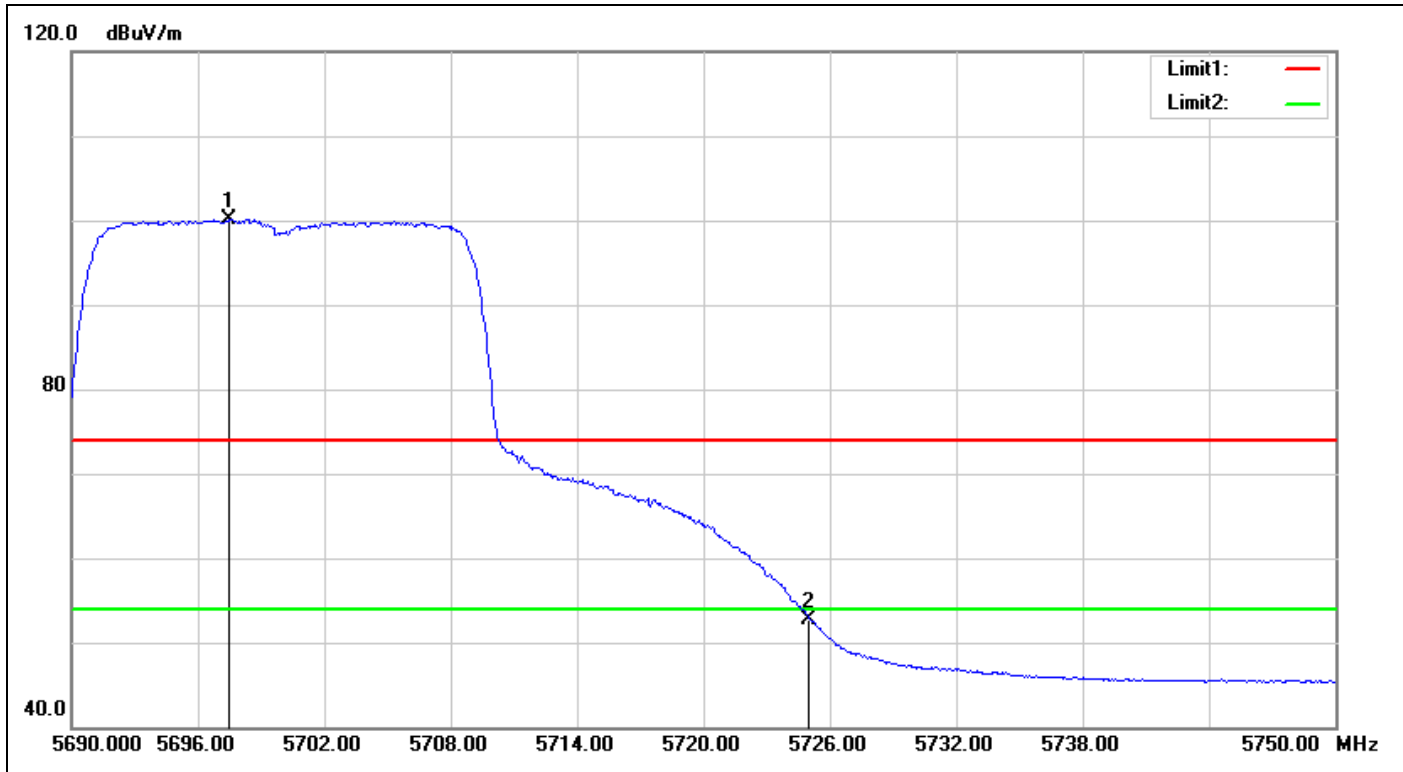
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5700 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5697.680	105.13	6.09	111.22	-	-	peak
2	5725.000	65.75	6.21	71.96	74.00	-2.04	peak

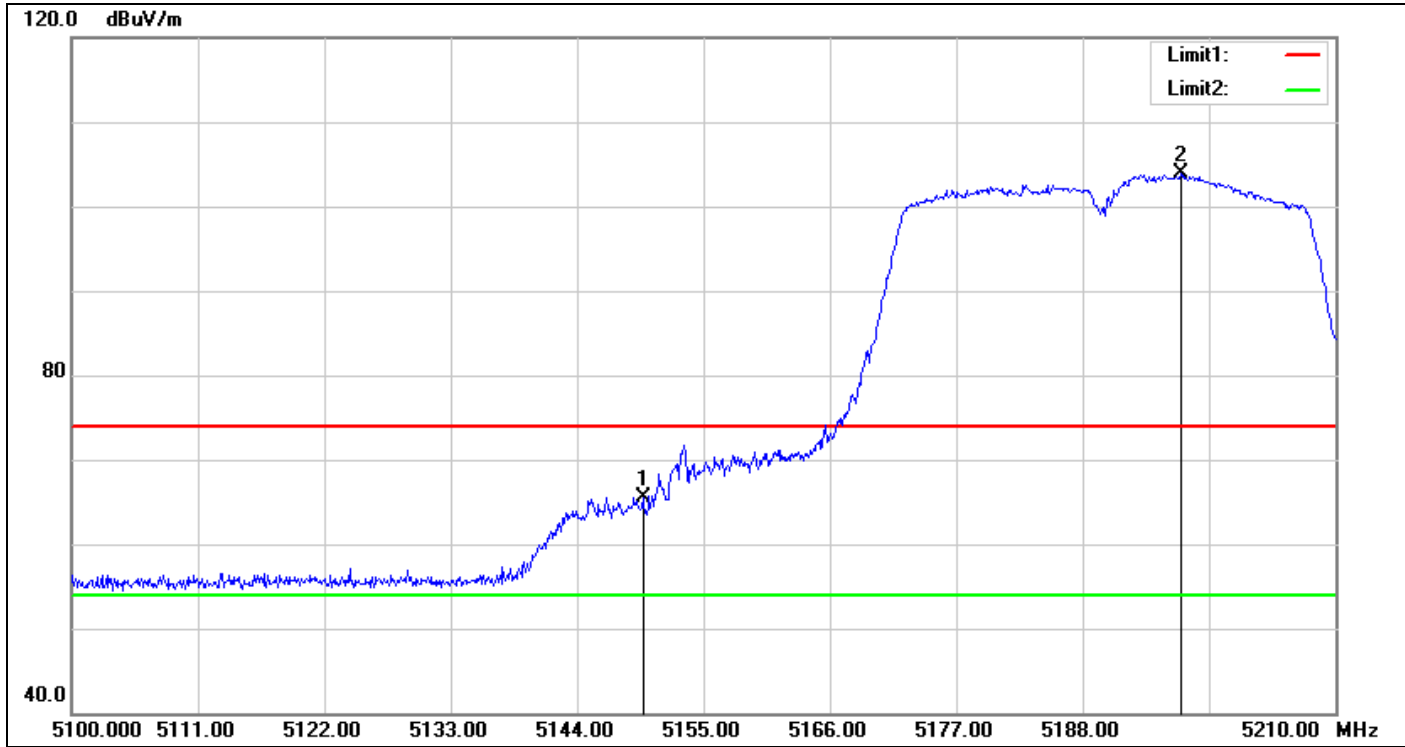
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5697.500	93.99	6.09	100.08	-	-	AVG
2	5725.000	46.56	6.21	52.77	54.00	-1.23	AVG

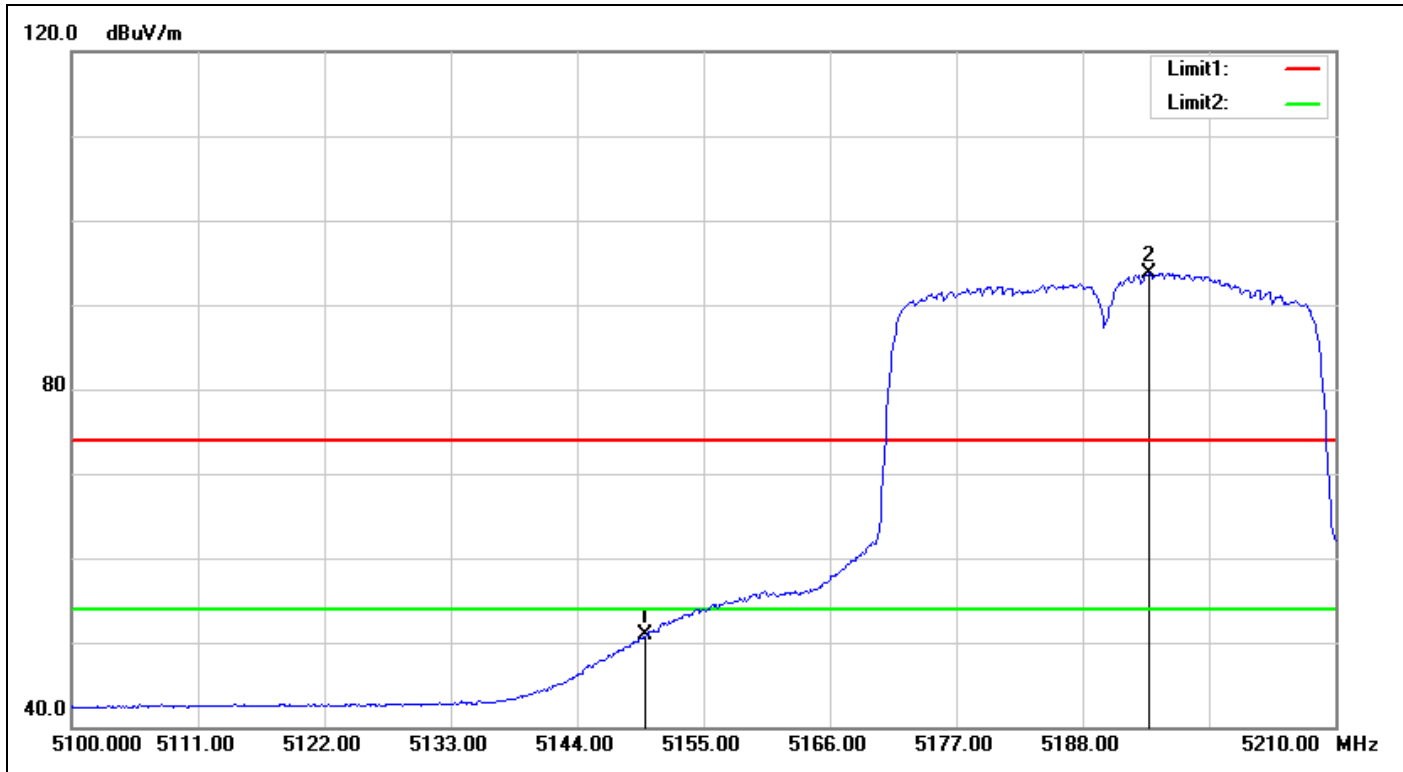
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5190 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.720	62.47	3.04	65.51	74.00	-8.49	peak
2	5196.580	99.49	4.39	103.88	-	-	peak

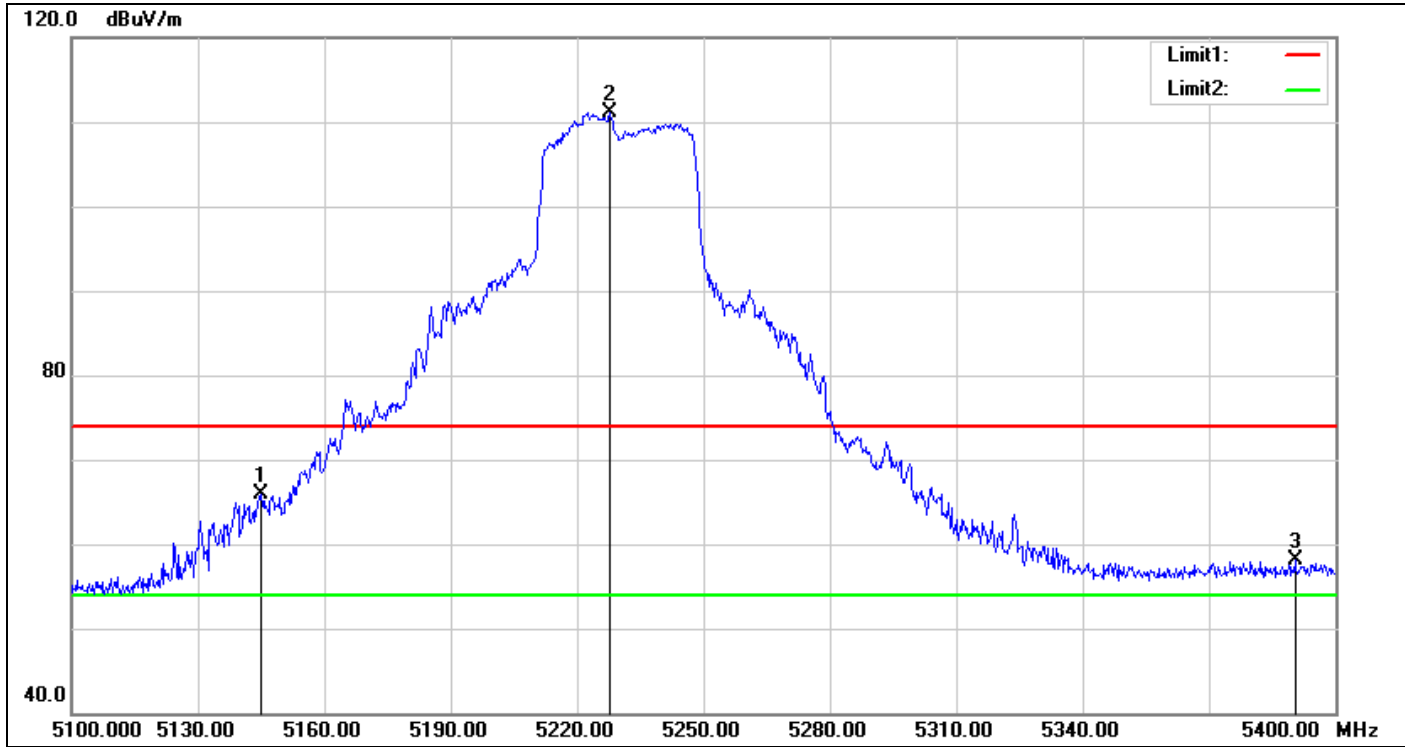
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	47.84	3.04	50.88	54.00	-3.12	AVG
2	5193.720	89.45	4.31	93.76	-	-	AVG

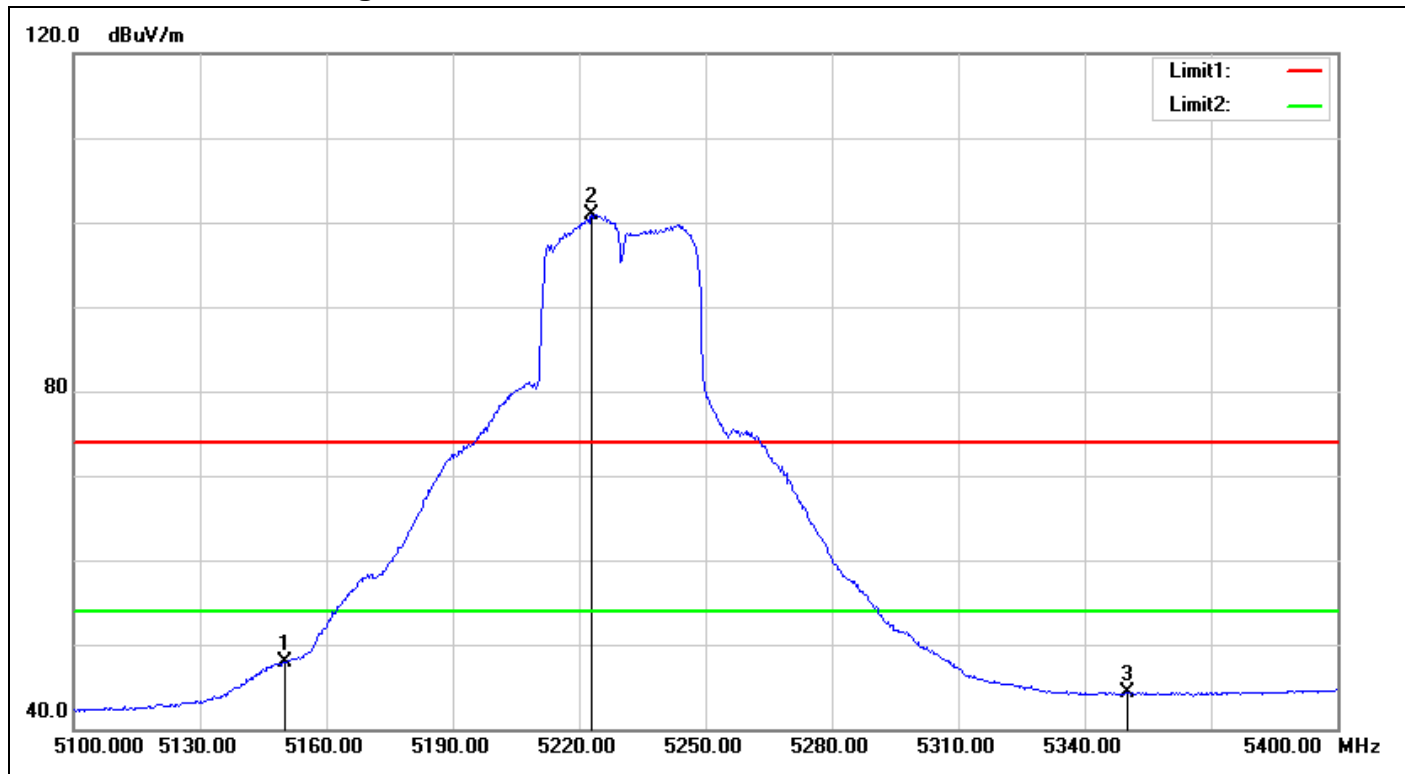
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5230 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5145.000	62.85	3.01	65.86	74.00	-8.14	peak
2	5227.800	106.49	4.58	111.07	-	-	peak
3	5390.400	52.41	5.64	58.05	74.00	-15.95	peak

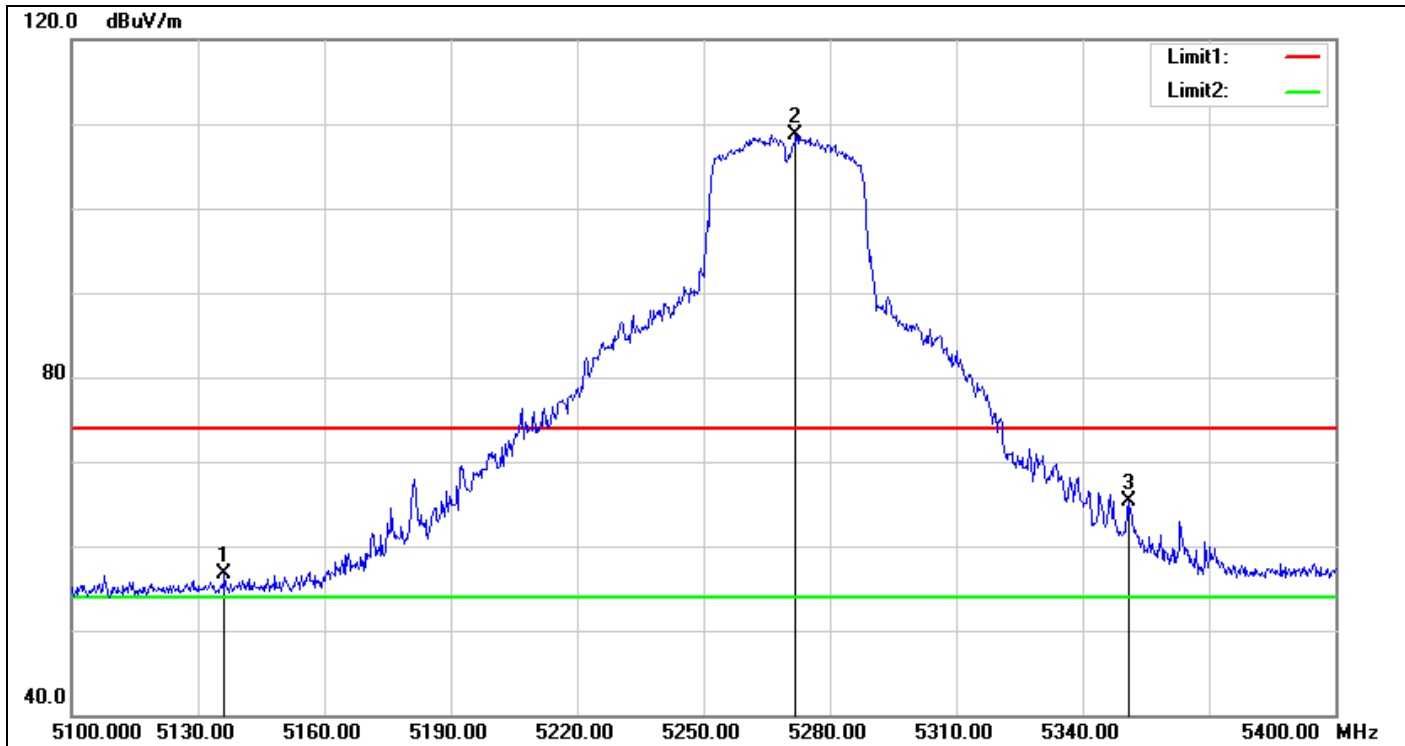
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	44.89	3.04	47.93	54.00	-6.07	AVG
2	5223.000	96.41	4.57	100.98	-	-	AVG
3	5350.000	38.89	5.31	44.20	54.00	-9.80	AVG

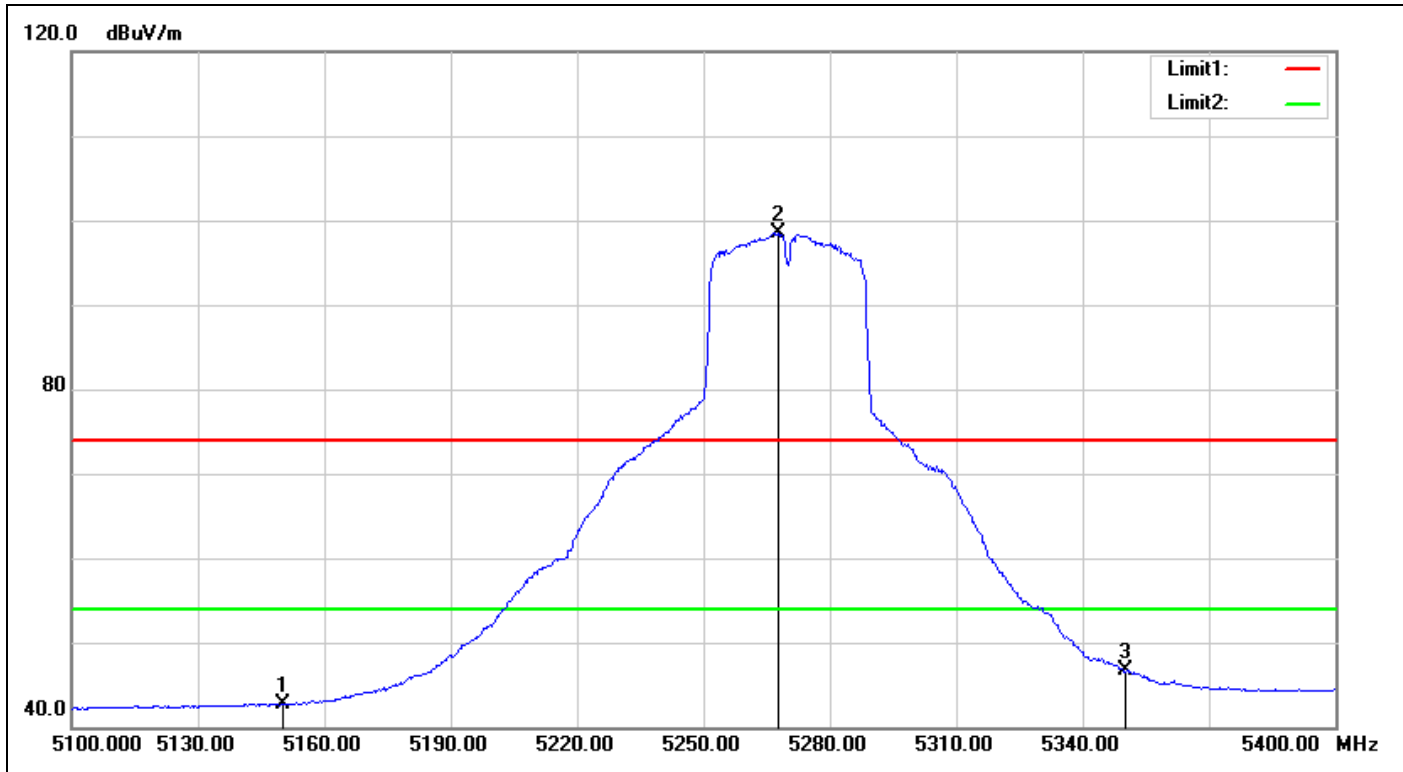
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5270 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5136.300	53.85	2.95	56.80	74.00	-17.20	peak
2	5271.900	103.98	4.73	108.71	-	-	peak
3	5350.800	59.89	5.32	65.21	74.00	-8.79	peak

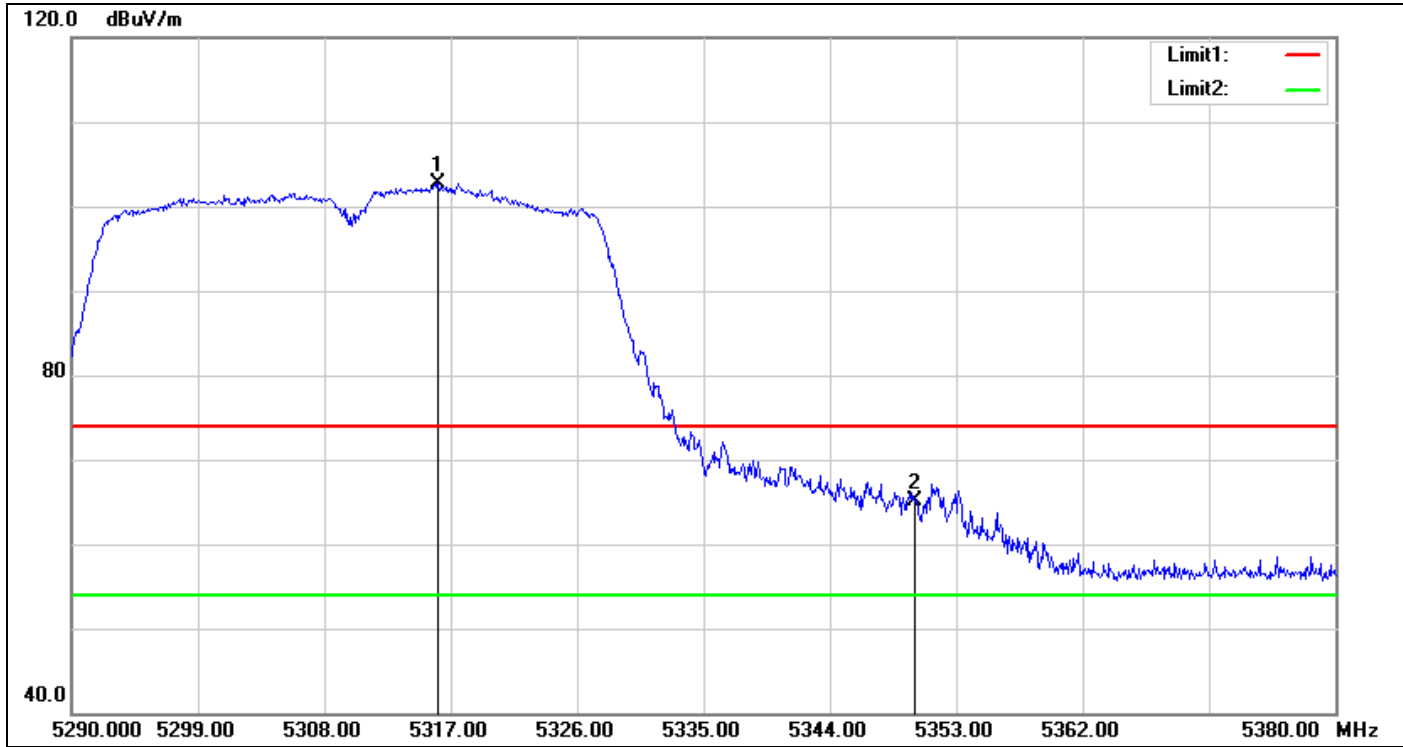
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	39.61	3.04	42.65	54.00	-11.35	AVG
2	5267.700	93.76	4.72	98.48	-	-	AVG
3	5350.000	41.29	5.31	46.60	54.00	-7.40	AVG

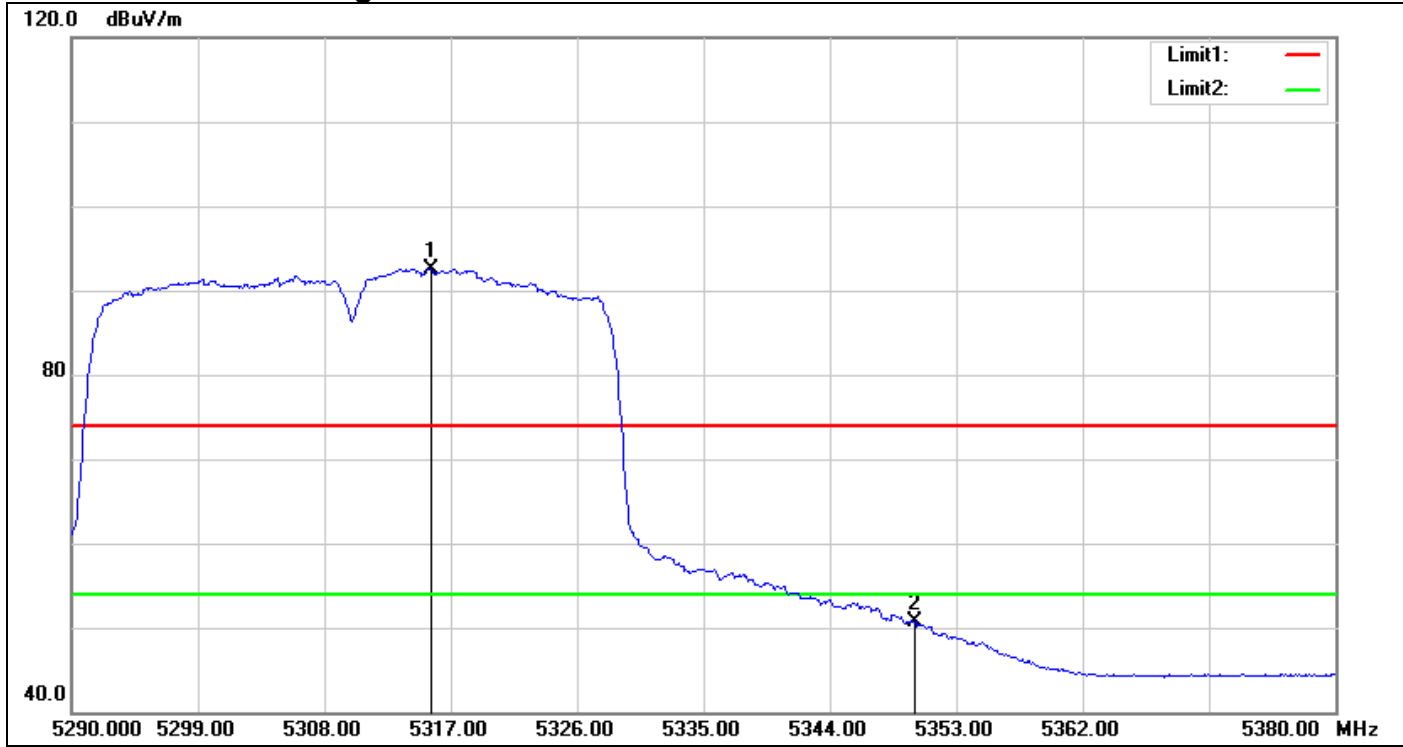
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5310 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5316.100	97.72	4.98	102.70	-	-	peak
2	5350.000	59.88	5.31	65.19	74.00	-8.81	peak

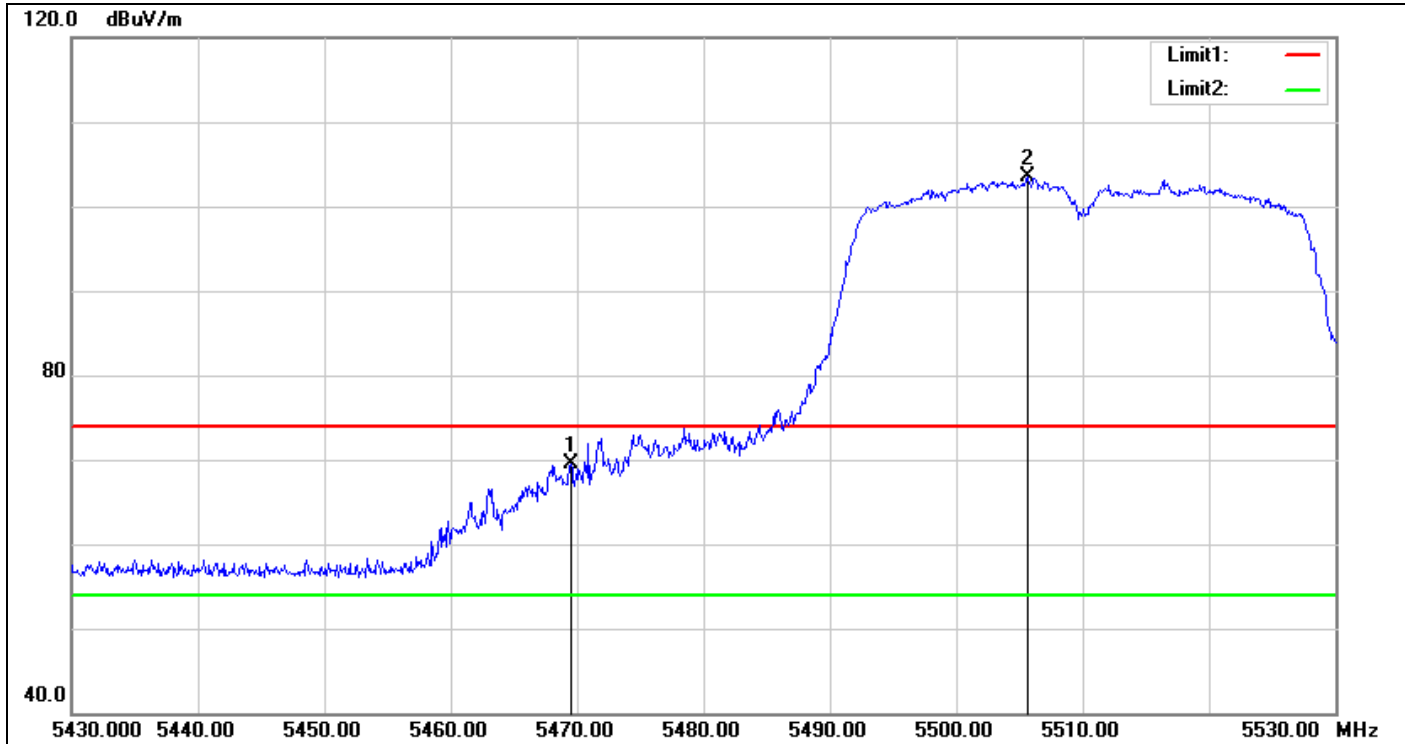
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5315.560	87.60	4.98	92.58	-	-	AVG
2	5350.000	45.39	5.31	50.70	54.00	-3.30	AVG

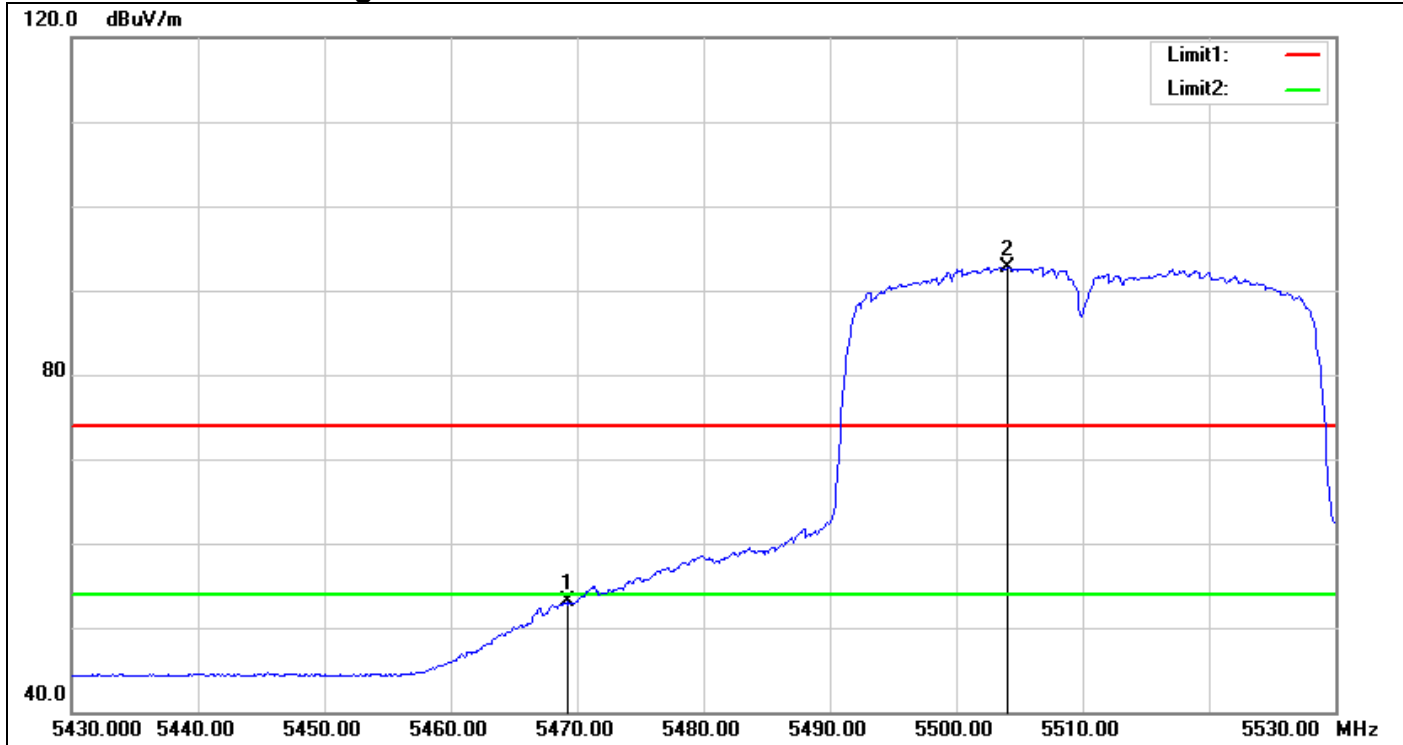
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5510 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5469.500	64.07	5.39	69.46	74.00	-4.54	peak
2	5505.600	98.26	5.27	103.53	-	-	peak

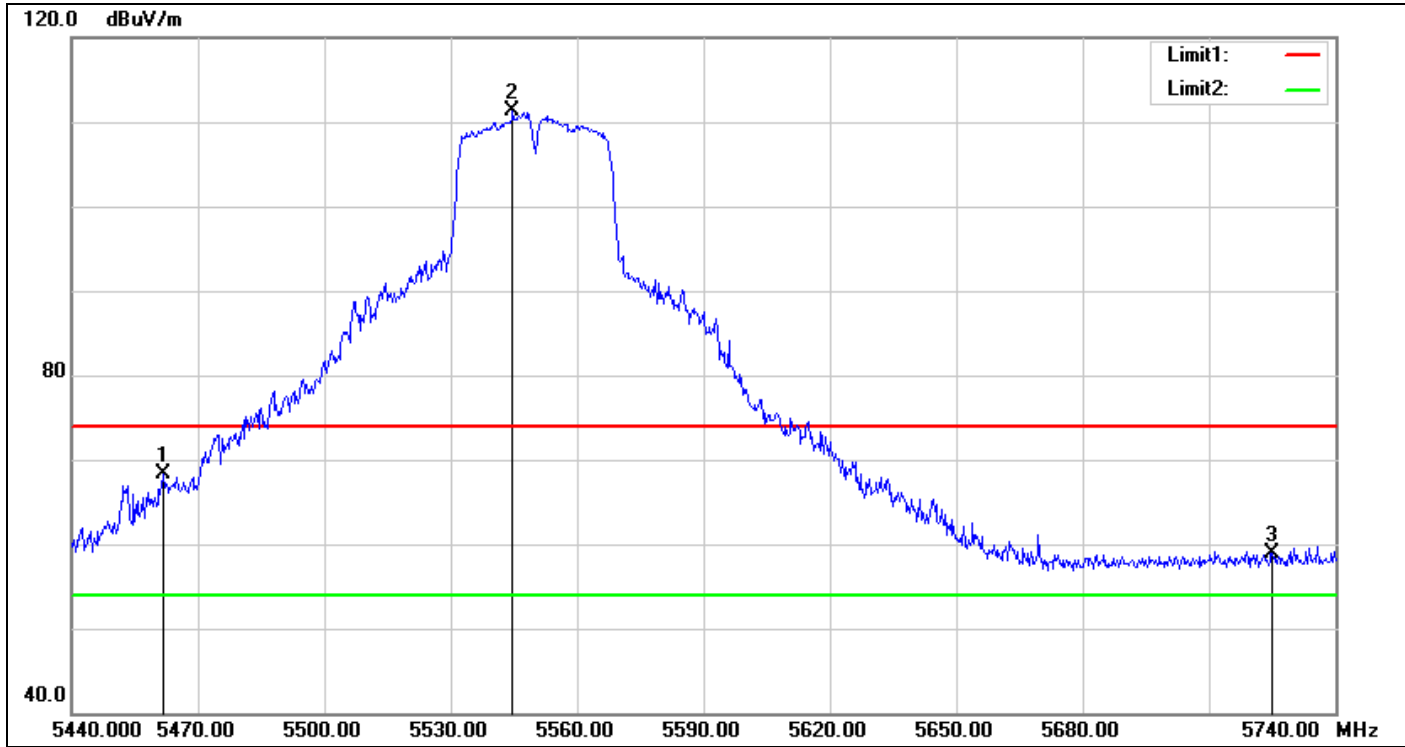
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5469.200	47.67	5.39	53.06	54.00	-0.94	AVG
2	5504.100	87.48	5.27	92.75	-	-	AVG

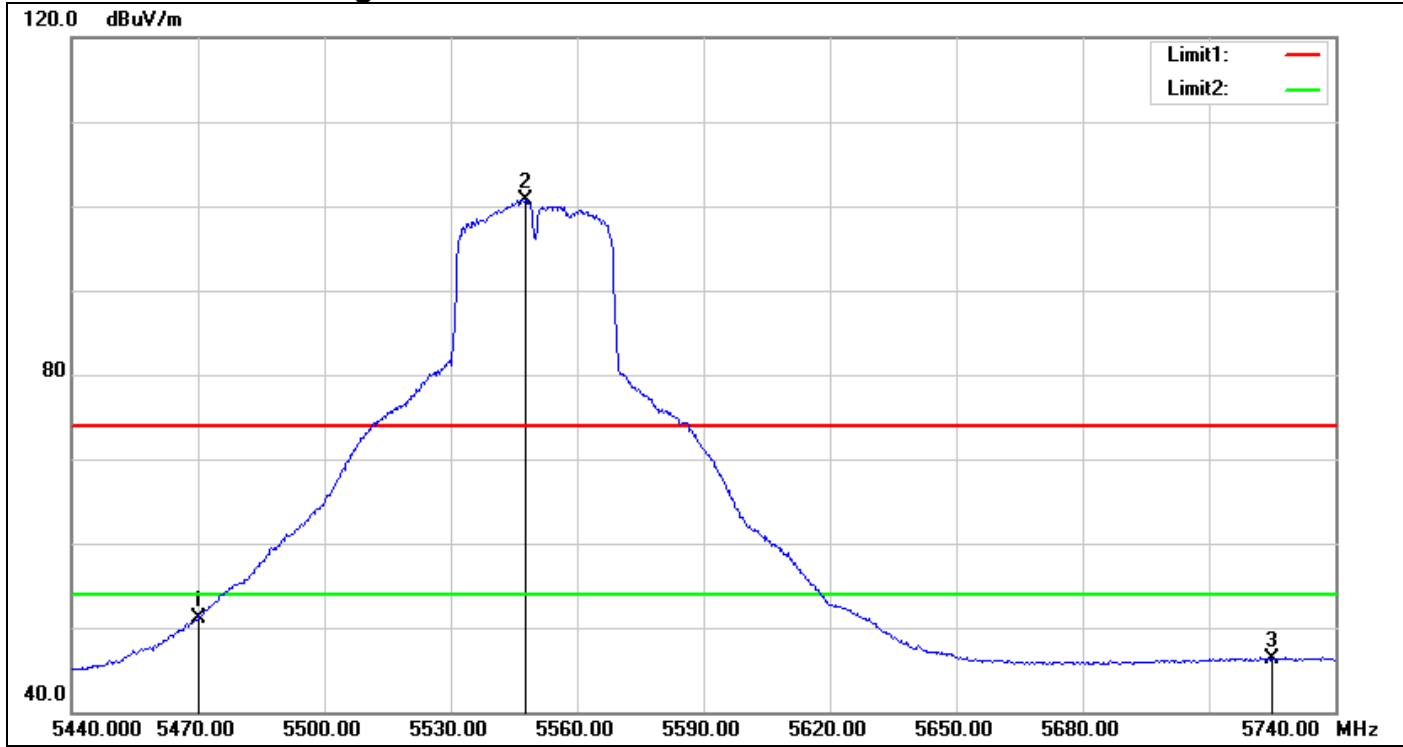
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5550 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5461.900	62.82	5.43	68.25	74.00	-5.75	peak
2	5544.700	105.77	5.44	111.21	-	-	peak
3	5725.000	52.77	6.21	58.98	74.00	-15.02	peak

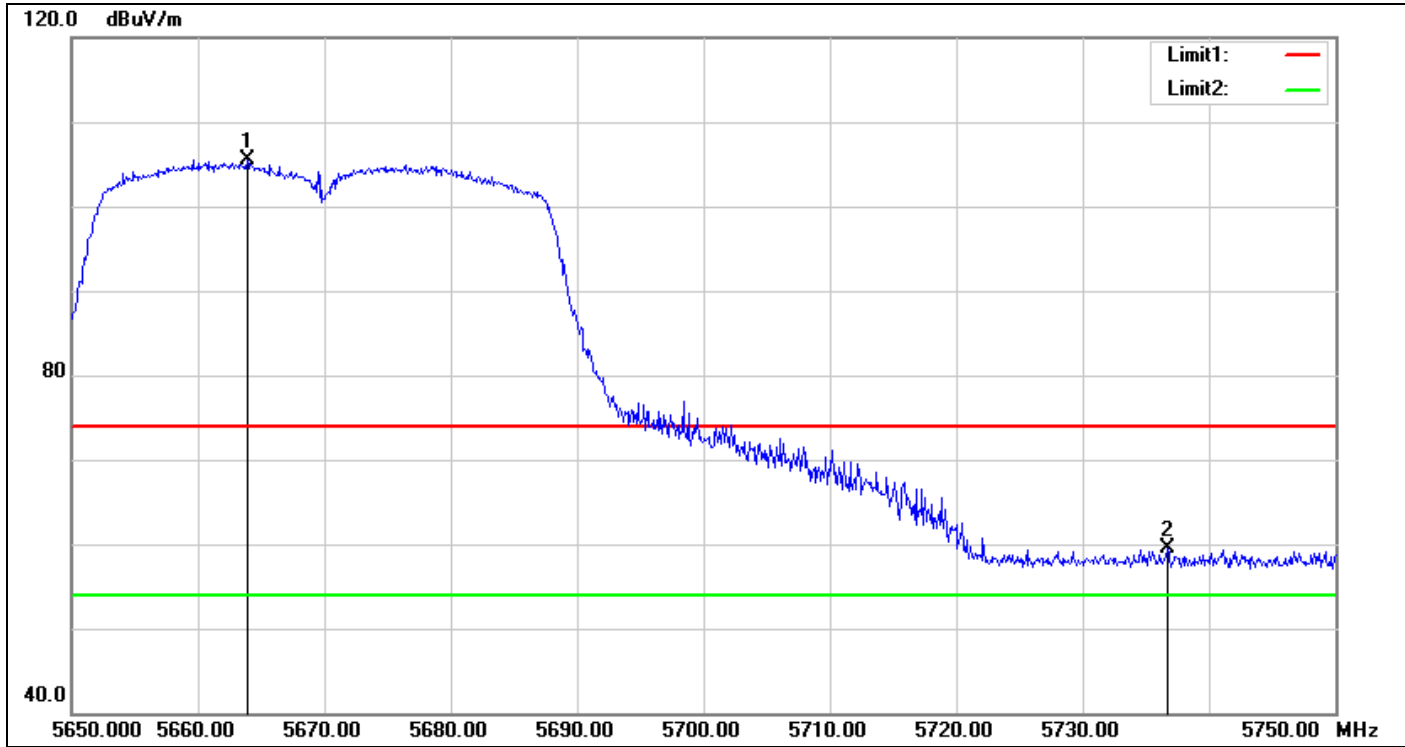
Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5470.000	45.77	5.39	51.16	54.00	-2.84	AVG
2	5547.700	95.33	5.45	100.78	-	-	AVG
3	5725.000	40.11	6.21	46.32	54.00	-7.68	AVG

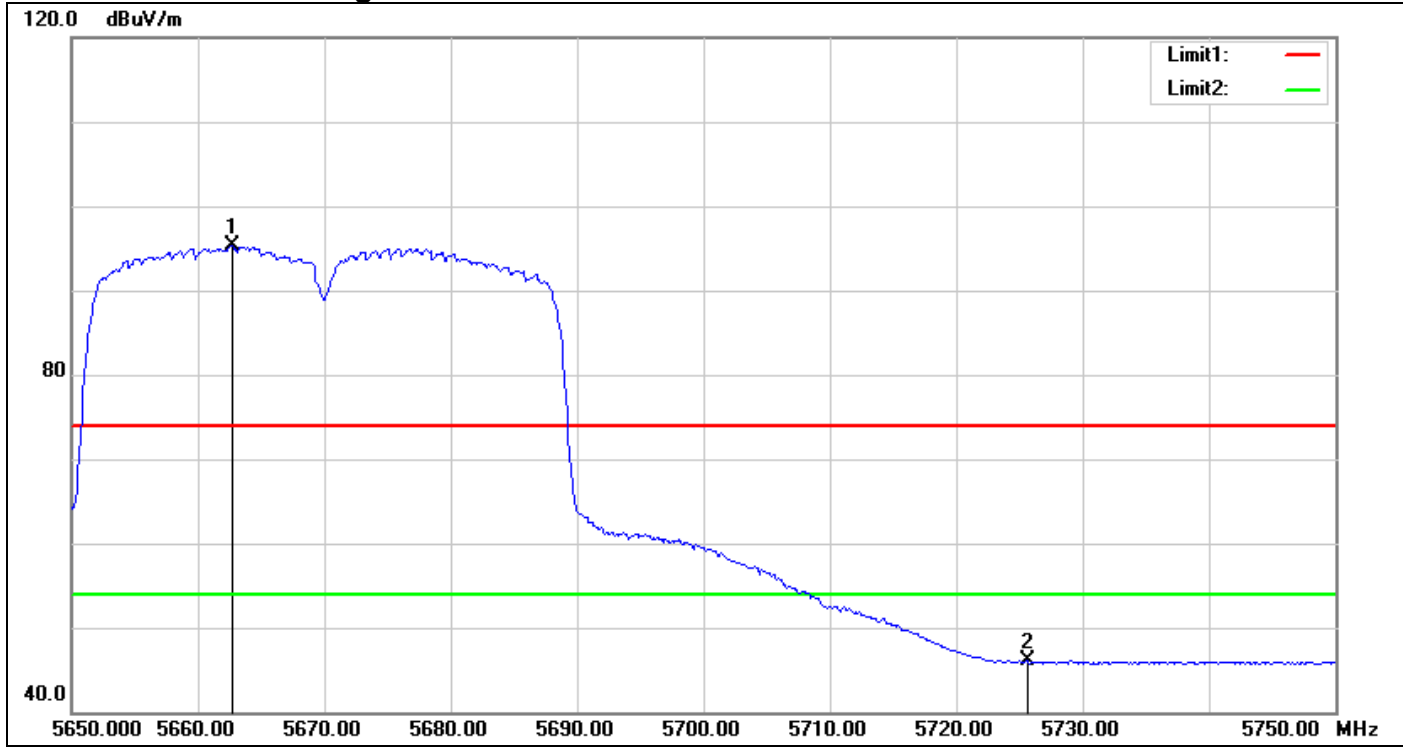
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5670 MHz)

Detector mode: Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5663.900	99.49	5.95	105.44	-	-	peak
2	5736.700	53.33	6.26	59.59	74.00	-14.41	peak

Detector mode: Average



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5662.700	89.36	5.94	95.30	-	-	AVG
2	5725.600	39.91	6.21	46.12	54.00	-7.88	AVG

7.4 PEAK POWER SPECTRAL DENSITY

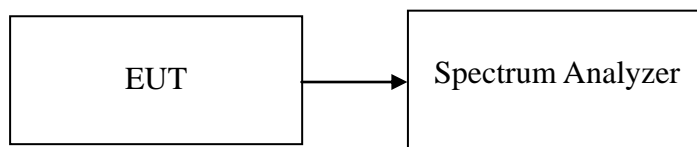
LIMIT

According to §15.407(a)

- (1) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 11dBm in any 1MHz band.
- (2) For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11dBm in any 1MHz band.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 1MHz, VBW = 3MHz, Span = Sweep= AUTO
3. Record the max. reading.
4. Repeat the above procedure until the measurements for all frequencies are completed

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	5180	5.01	11.00	PASS
Mid	5220	7.71	11.00	PASS
High	5240	8.27	11.00	PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5180	3.35	2.04	5.75	10.33	PASS
Mid	5220	3.83	3.40	6.63	10.33	PASS
High	5240	3.09	3.11	6.11	10.33	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Margin	Result
Low	5190	-3.33	-5.32	-1.20	10.33	PASS
High	5230	4.57	3.50	7.08	10.33	PASS

Remark:

1. Total Output Power (w) = Chain 0 (10^{^(Output Power /10)/1000})+ Chain 1 (10^{^(Output Power /10)/1000})
2. The maximum antenna gain is 6.67dBi; therefore the reduction due to antenna gain is 0.67dBi, so the limit is 10.33dBm.

Test mode: IEEE 802.11a mode/ 5260 ~ 5320MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	5260	7.17	11.00	PASS
Mid	5280	8.00	11.00	PASS
High	5320	8.91	11.00	PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5260	4.62	3.55	7.13	10.33	PASS
Mid	5280	4.60	3.87	7.26	10.33	PASS
High	5320	4.07	2.41	6.33	10.33	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5270	2.90	1.75	5.37	10.33	PASS
High	5310	-2.61	-4.59	-0.48	10.33	PASS

Remark:

1. Total Output Power (w) = Chain 0 (10^{^(Output Power /10)}/1000)+ Chain 1 (10^{^(Output Power /10)}/1000)
2. The maximum antenna gain is 6.67dBi; therefore the reduction due to antenna gain is 0.67dBi, so the limit is 10.33dBm.

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	5500	5.66	11.00	PASS
Mid	5580	8.66	11.00	PASS
High	5700	5.24	11.00	PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5500	3.82	3.49	6.67	10.33	PASS
Mid	5580	4.33	4.24	7.30	10.33	PASS
High	5700	1.66	-0.03	3.91	10.33	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz

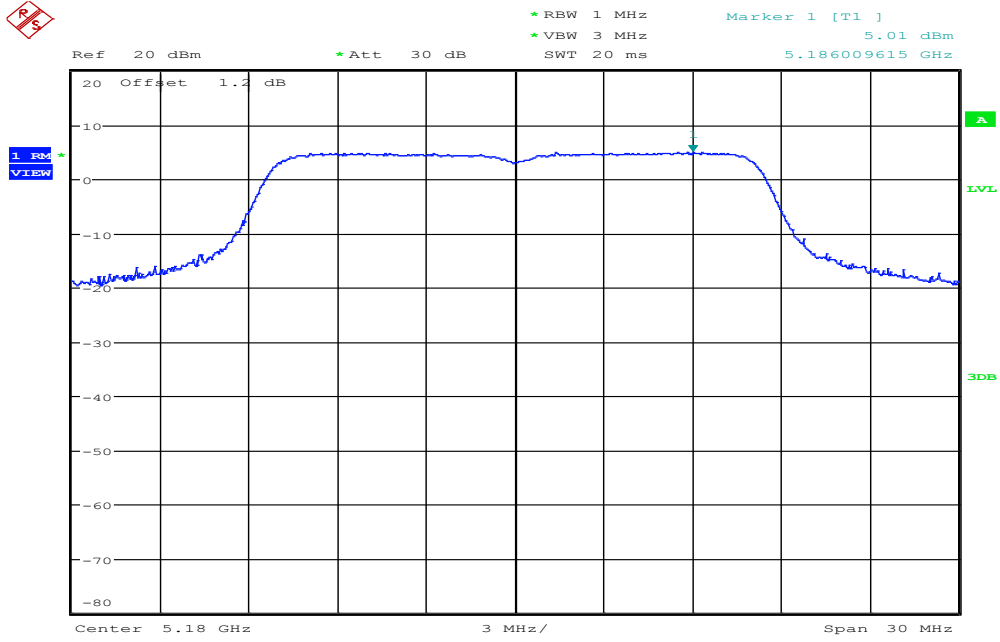
Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5510	-2.07	-2.11	0.92	10.33	PASS
Mid	5550	3.98	3.99	7.00	10.33	PASS
High	5670	-2.37	-5.23	-0.56	10.33	PASS

Remark:

1. Total Output Power (w) = Chain 0 (10^{^(Output Power /10)}/1000)+ Chain 1 (10^{^(Output Power /10)}/1000)
2. The maximum antenna gain is 6.67dBi; therefore the reduction due to antenna gain is 0.67dBi, so the limit is 10.33dBm.

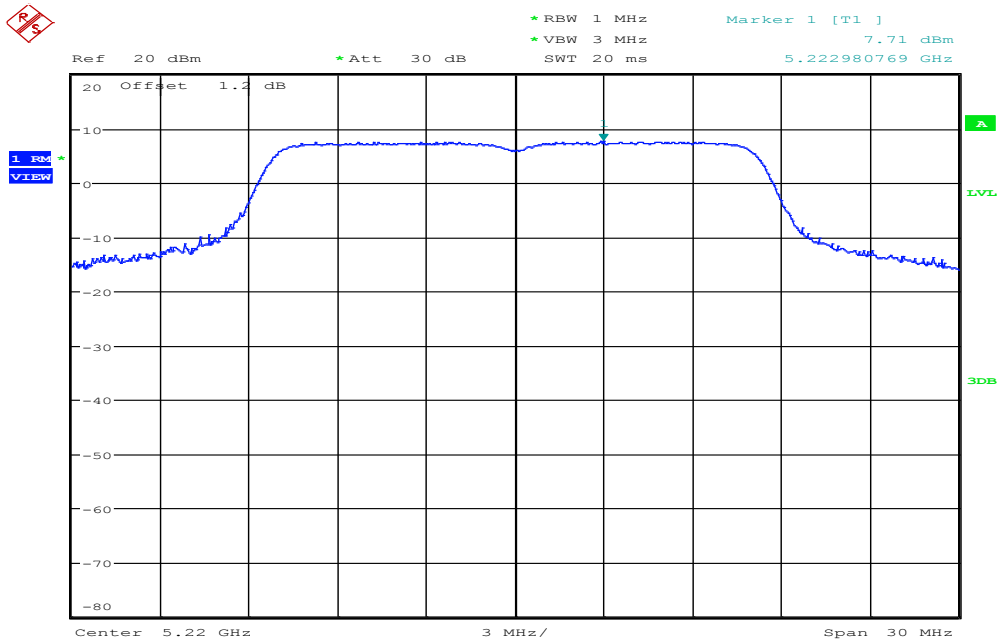
Test Plot IEEE 802.11a mode / 5180 ~ 5240MHz

CH Low



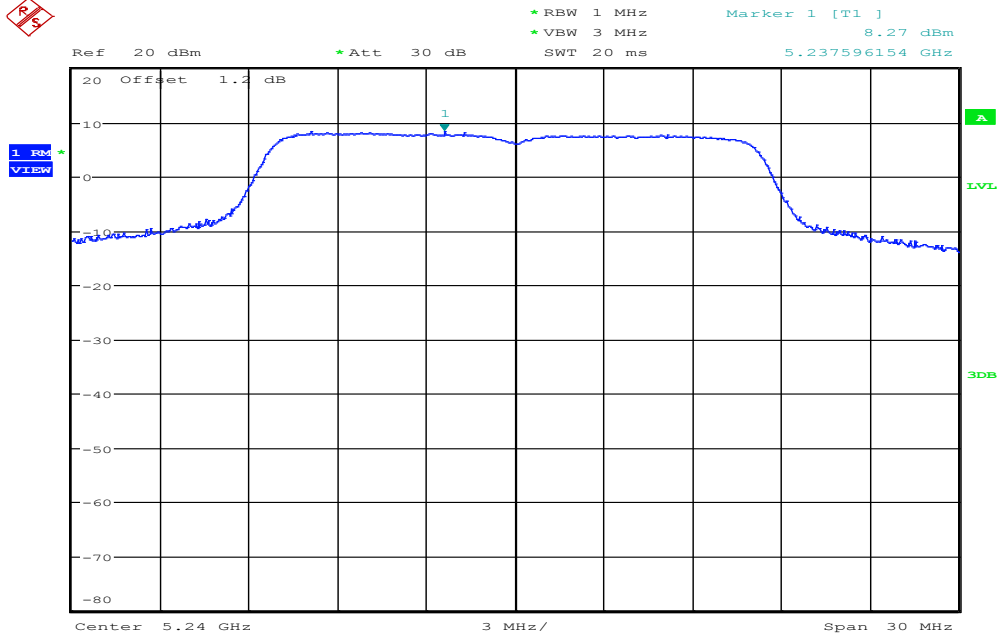
Date: 30.JAN.2016 15:54:44

CH Mid



Date: 30.JAN.2016 16:00:08

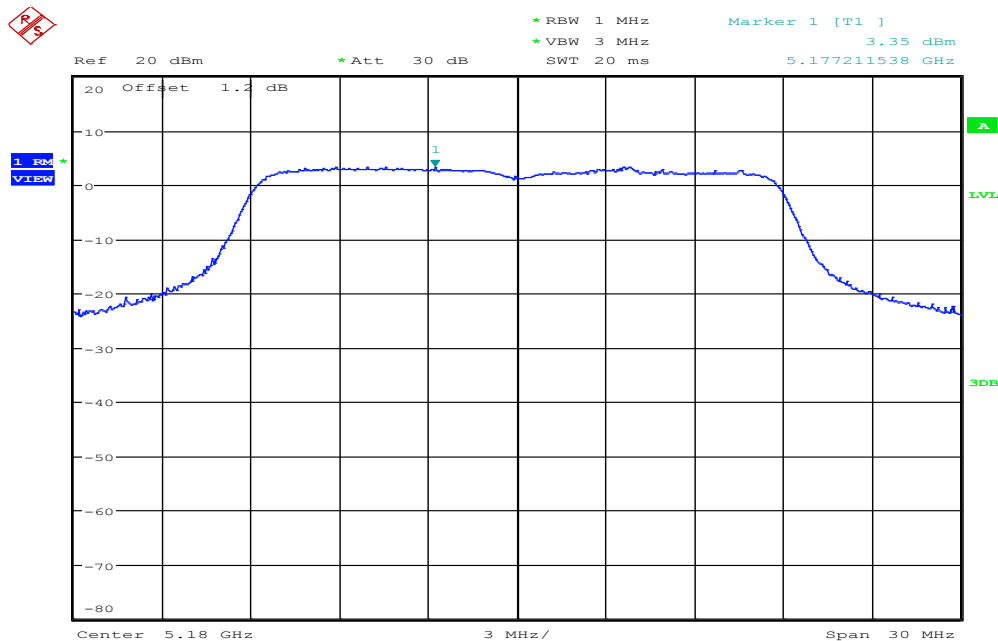
CH High



Date: 30.JAN.2016 16:12:03

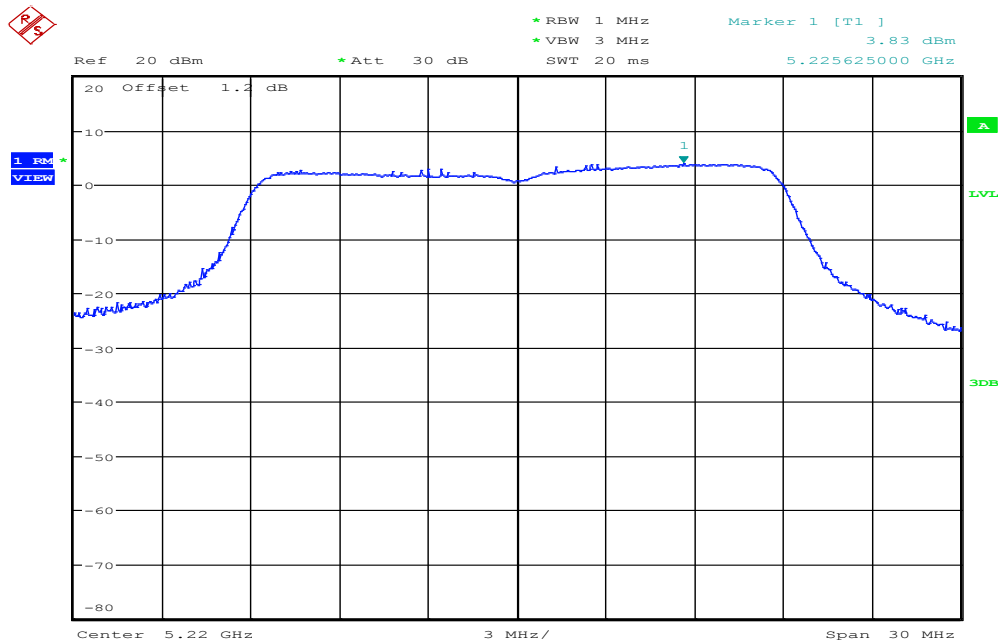
IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz / Chain 0

CH Low



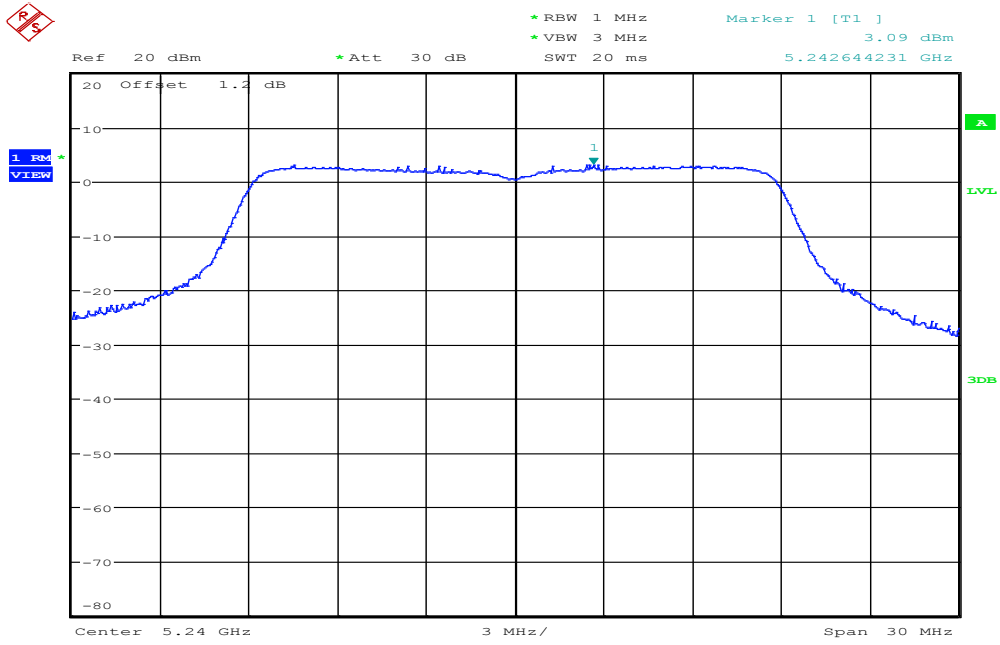
Date: 1.FEB.2016 13:28:20

CH Mid



Date: 4.FEB.2016 19:17:59

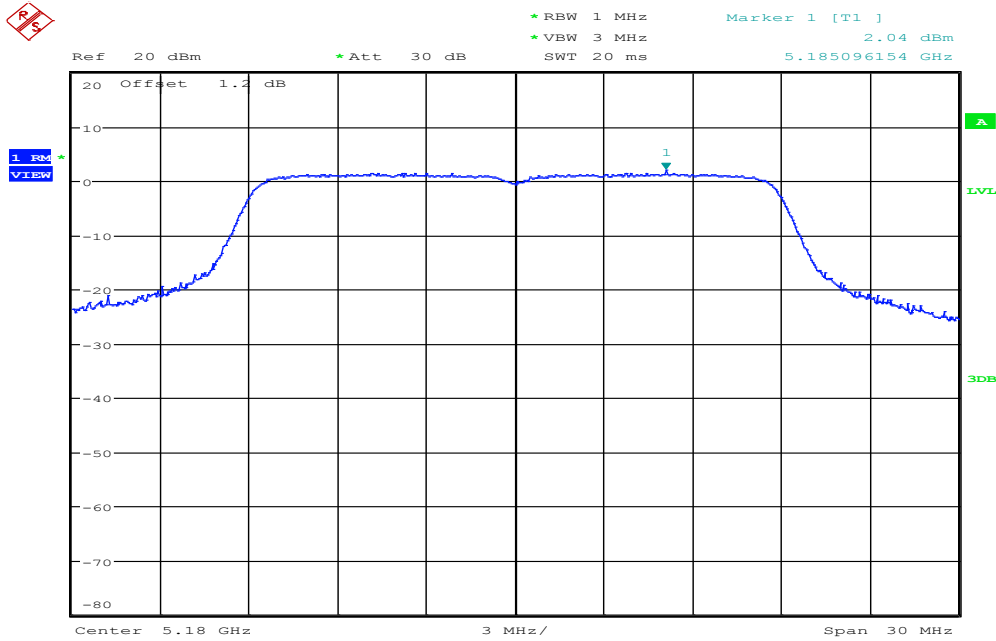
CH High



Date: 4.FEB.2016 19:21:55

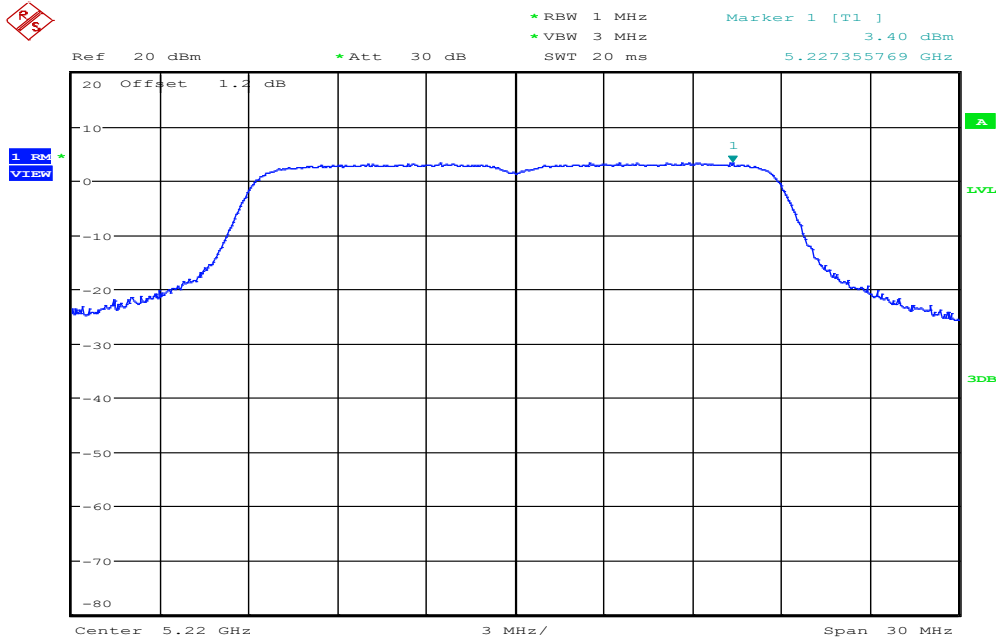
IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz / Chain 1

CH Low



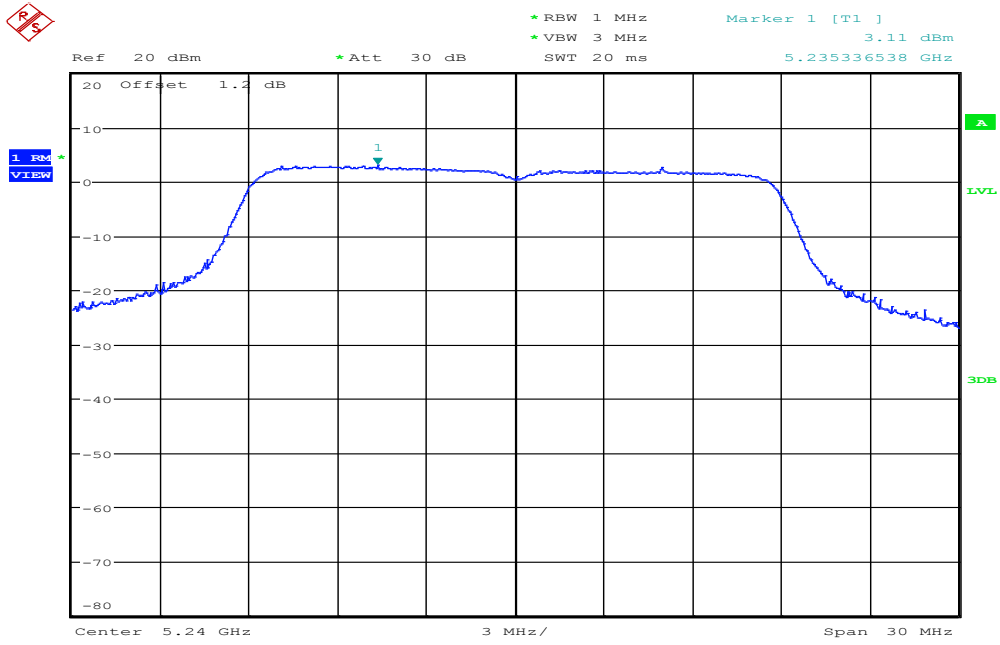
Date: 1.FEB.2016 14:56:26

CH Mid



Date: 4.FEB.2016 19:19:02

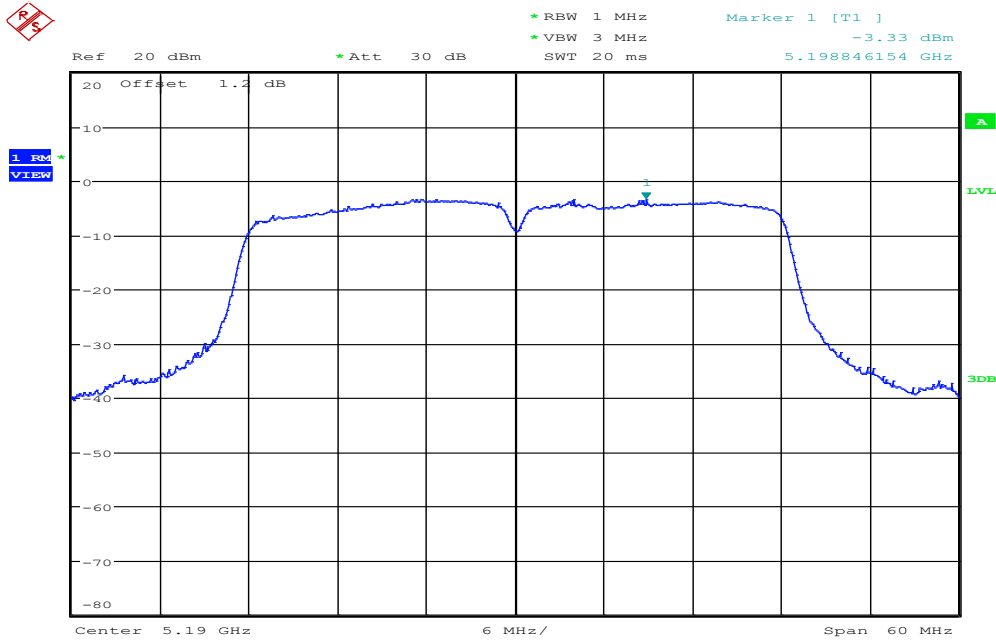
CH High



Date: 4.FEB.2016 19:20:41

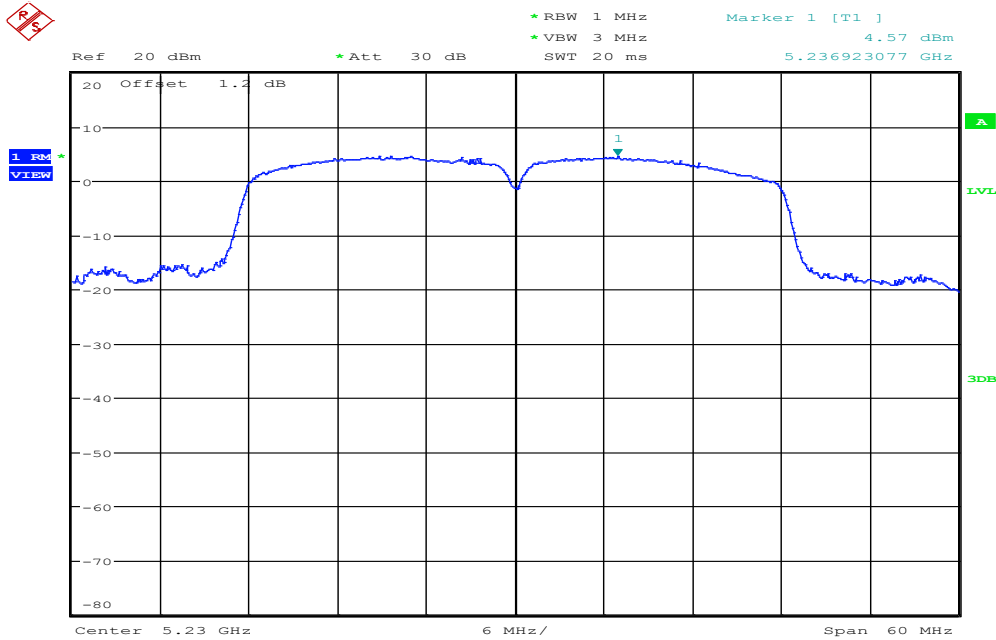
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

CH Low



Date: 1.FEB.2016 20:17:58

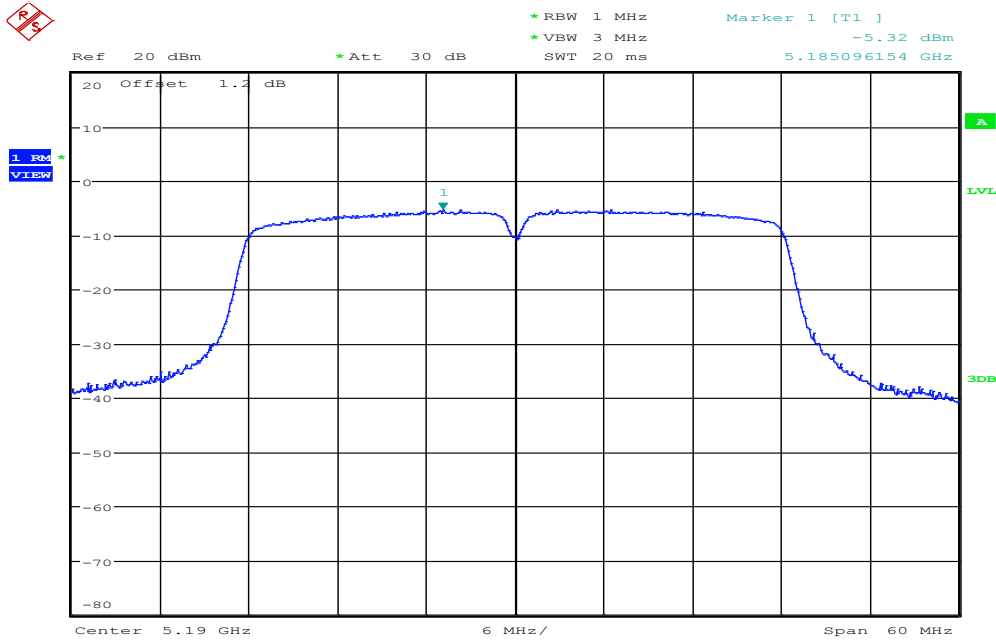
CH High



Date: 1.FEB.2016 20:20:48

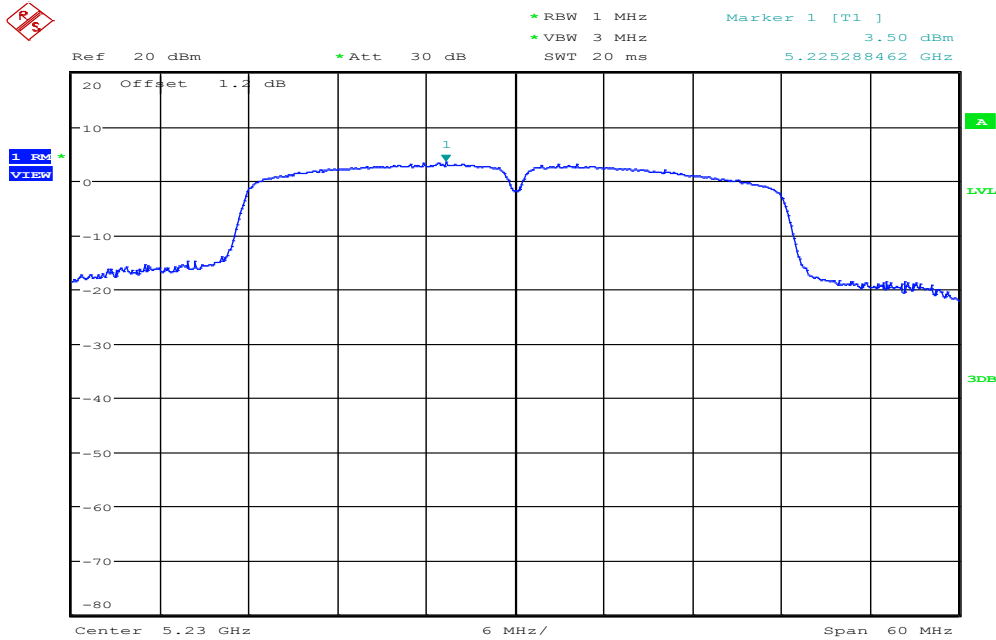
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

CH Low



Date: 1.FEB.2016 20:33:01

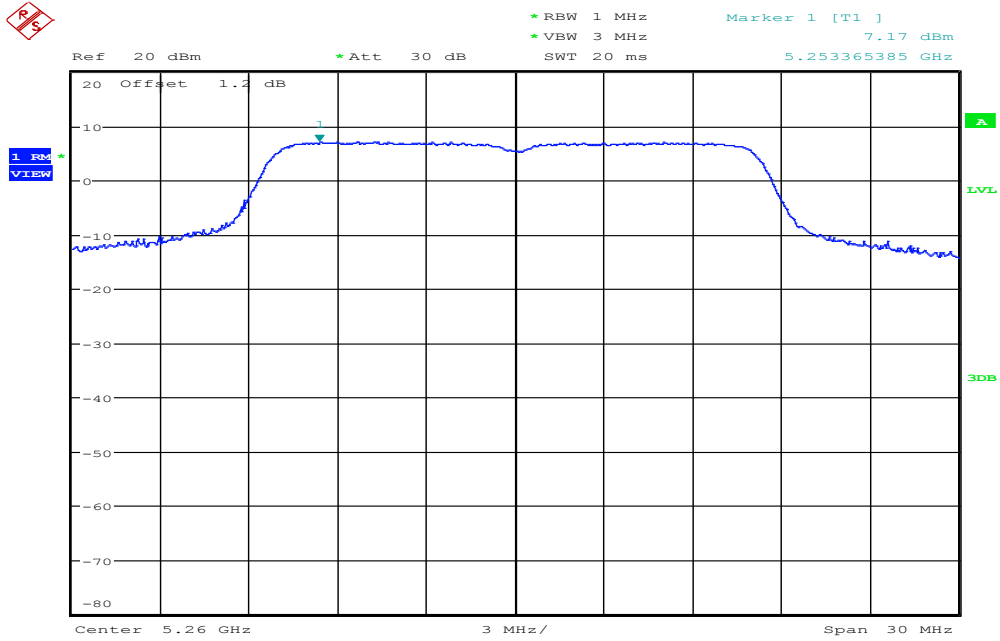
CH High



Date: 1.FEB.2016 20:34:17

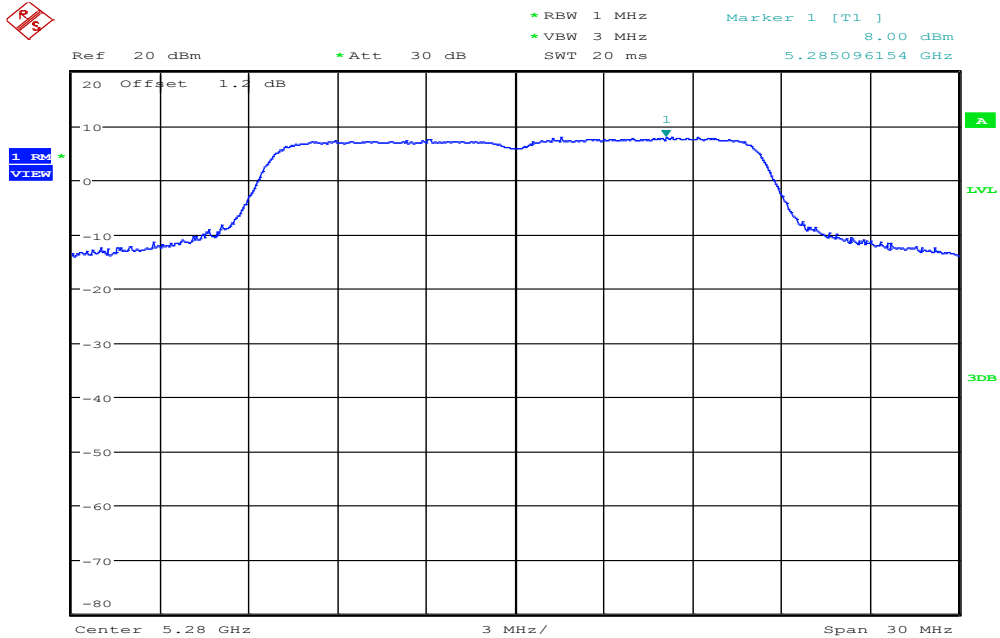
IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low



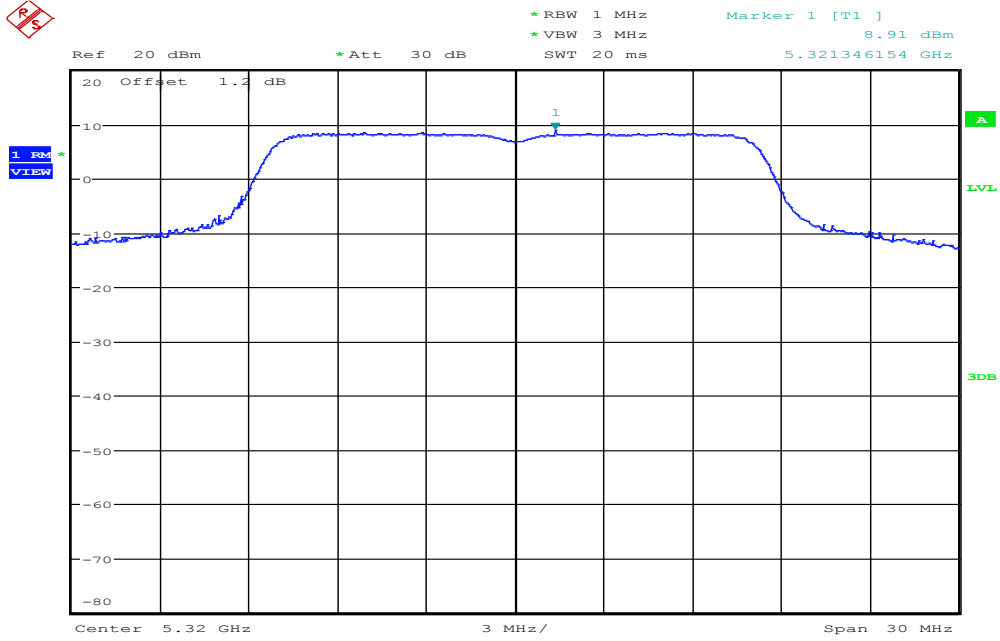
Date: 30.JAN.2016 16:28:43

CH Mid



Date: 30.JAN.2016 19:18:03

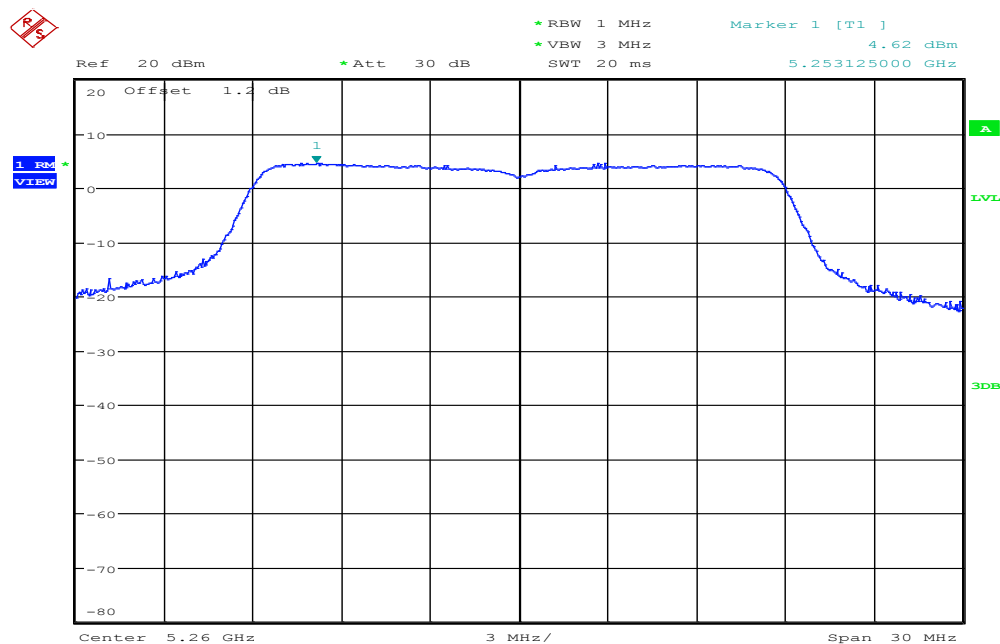
CH High



Date: 30.JAN.2016 19:19:03

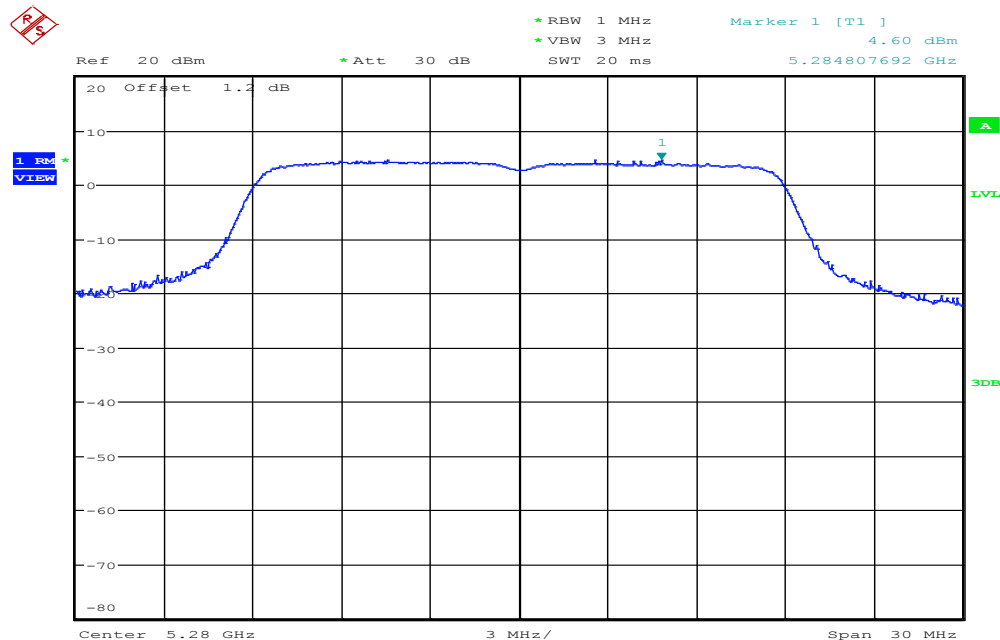
IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz / Chain 0

CH Low



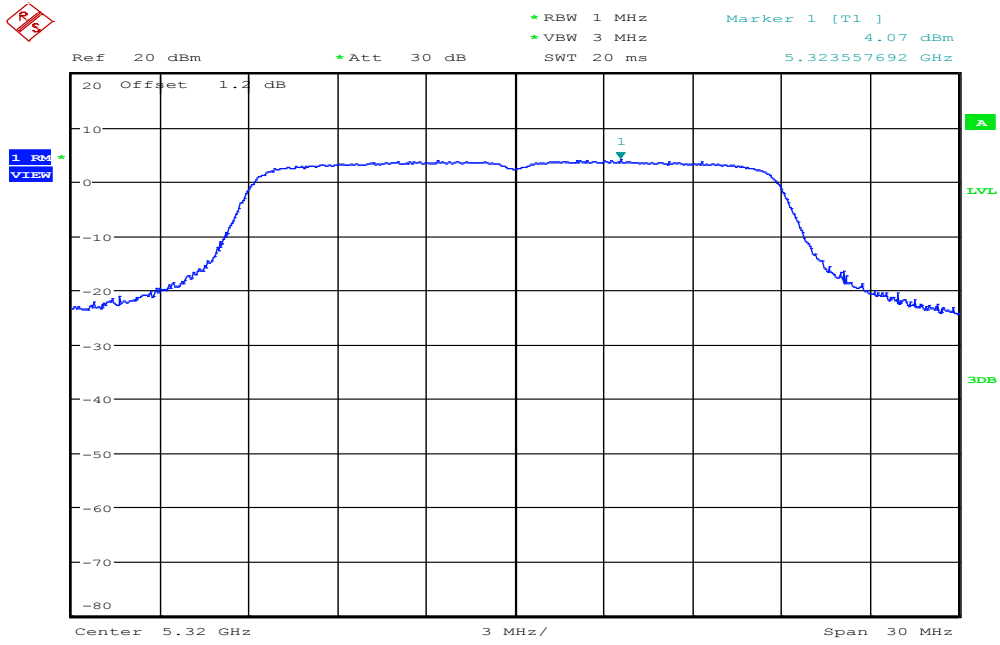
Date: 4.FEB.2016 19:28:26

CH Mid



Date: 4.FEB.2016 19:29:44

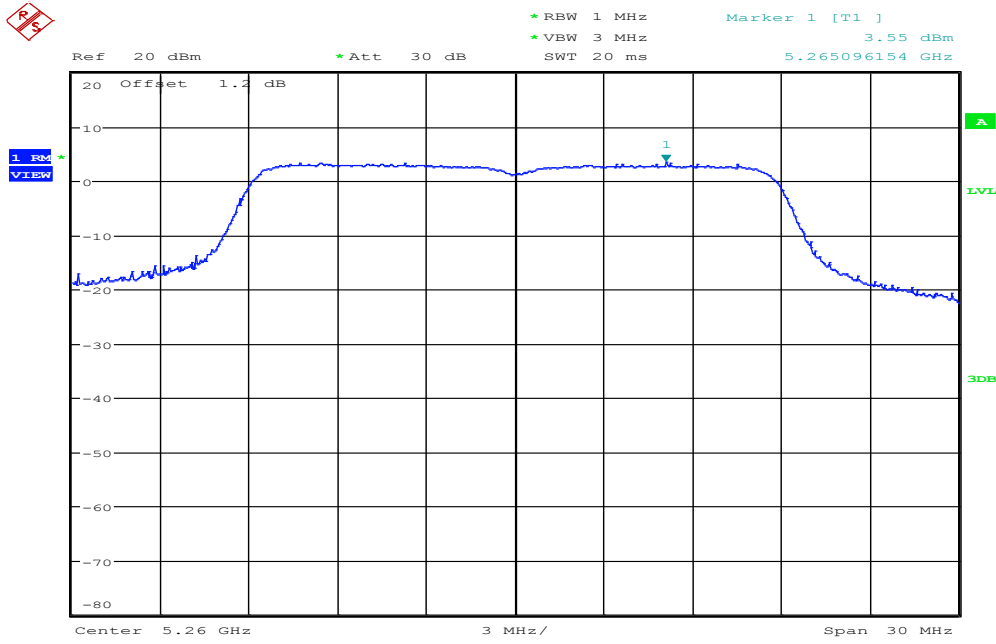
CH High



Date: 1.FEB.2016 14:49:18

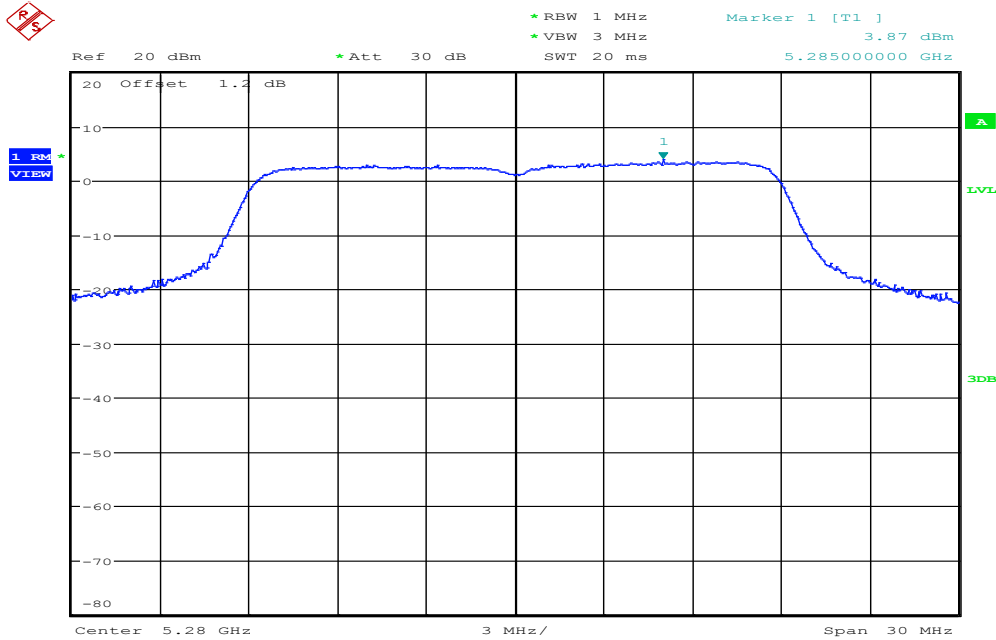
IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz / Chain 1

CH Low



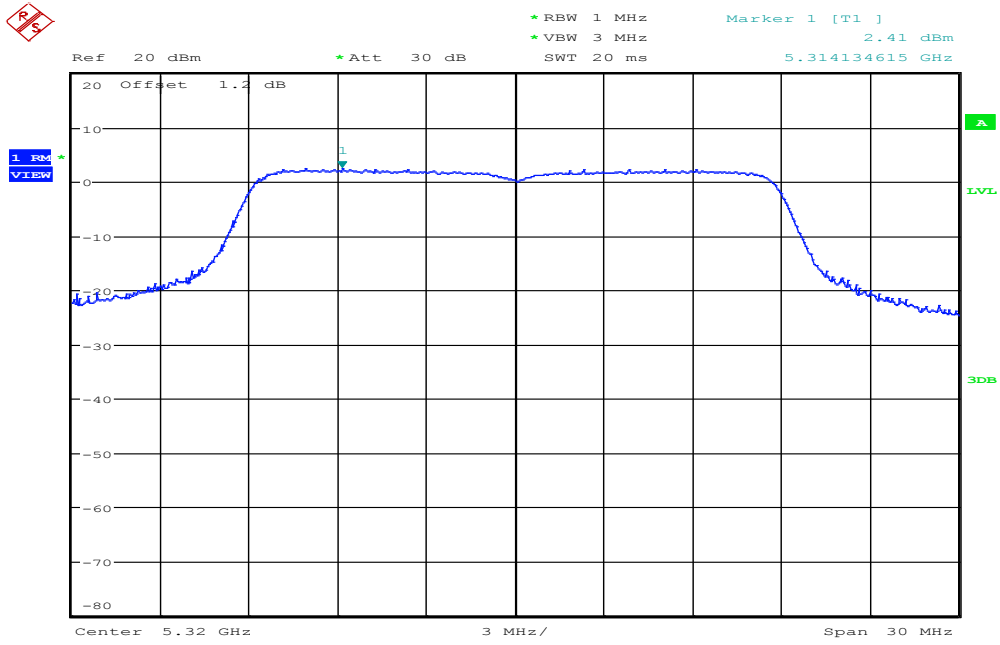
Date: 4.FEB.2016 19:26:45

CH Mid



Date: 4.FEB.2016 19:30:59

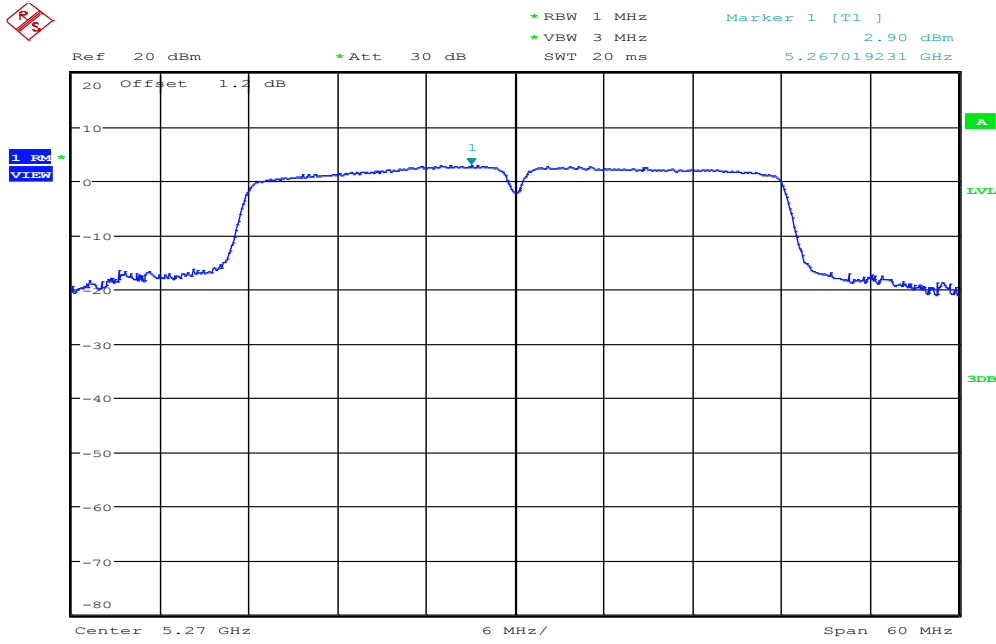
CH High



Date: 1.FEB.2016 15:00:55

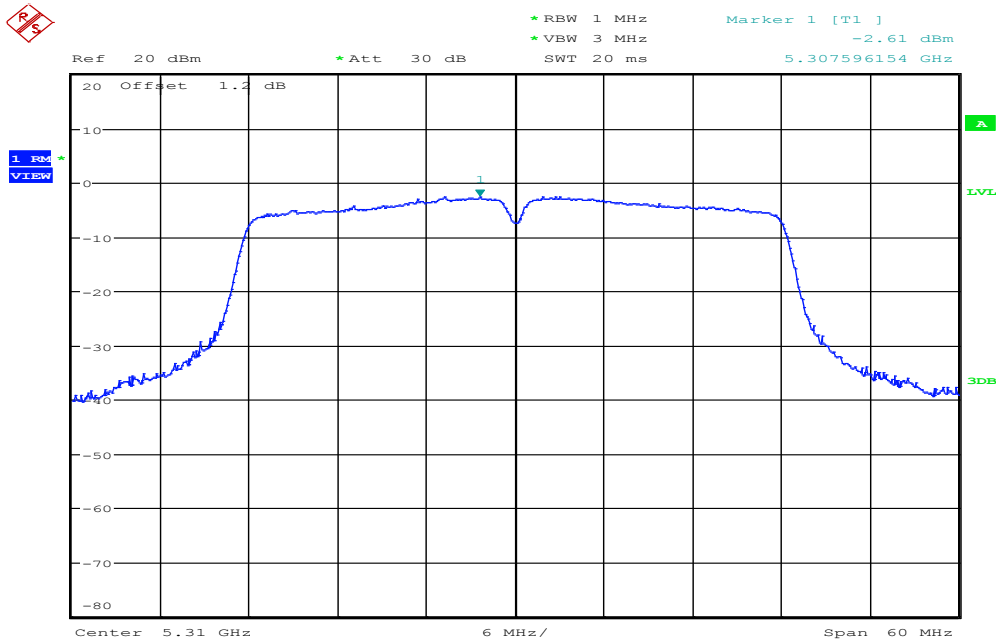
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

CH Low



Date: 1.FEB.2016 20:21:55

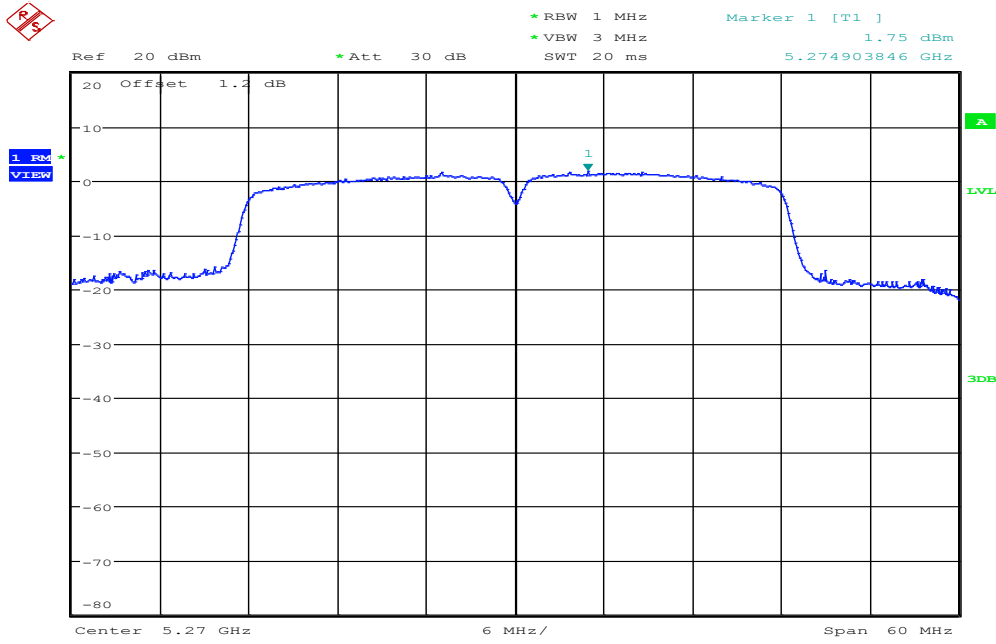
CH High



Date: 1.FEB.2016 20:22:59

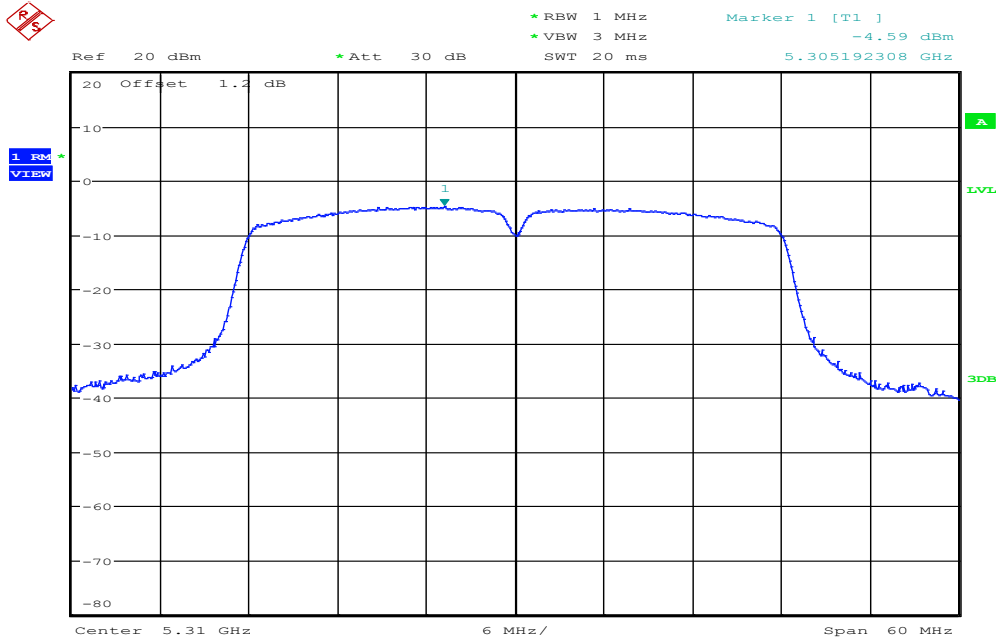
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

CH Low



Date: 1.FEB.2016 20:35:08

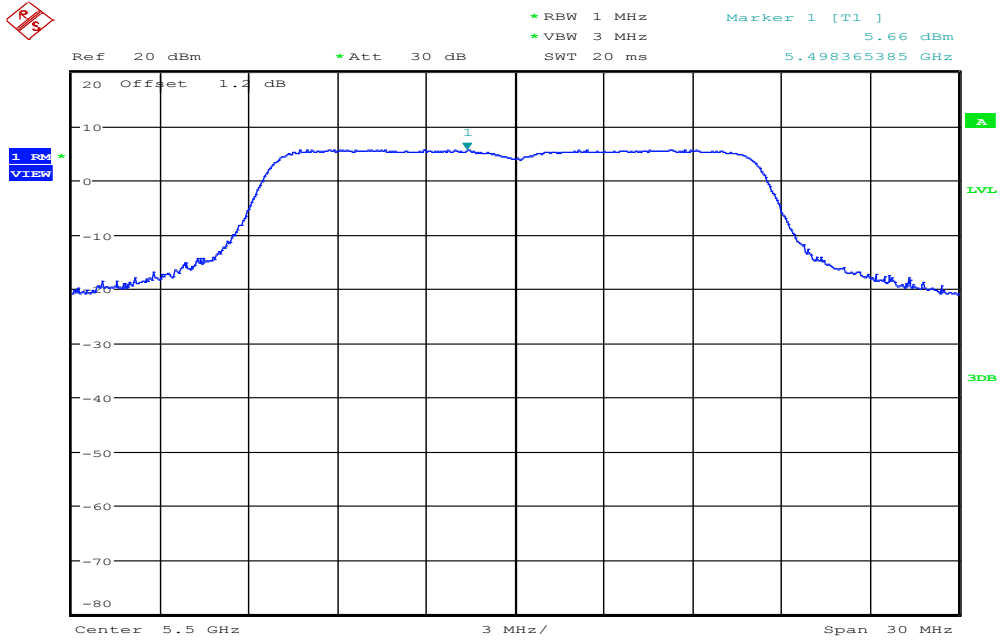
CH High



Date: 1.FEB.2016 20:36:04

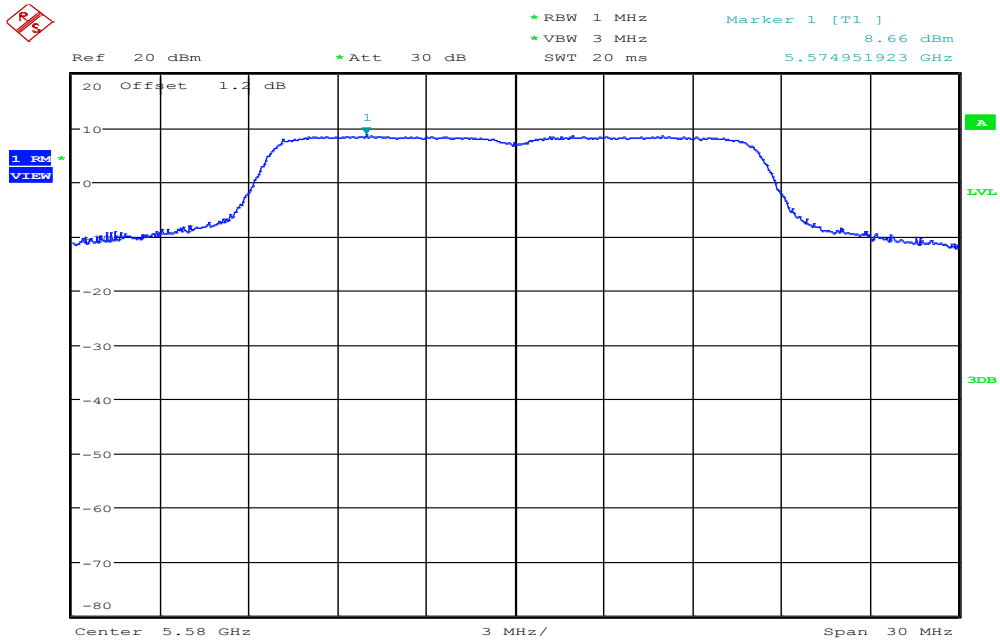
Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low



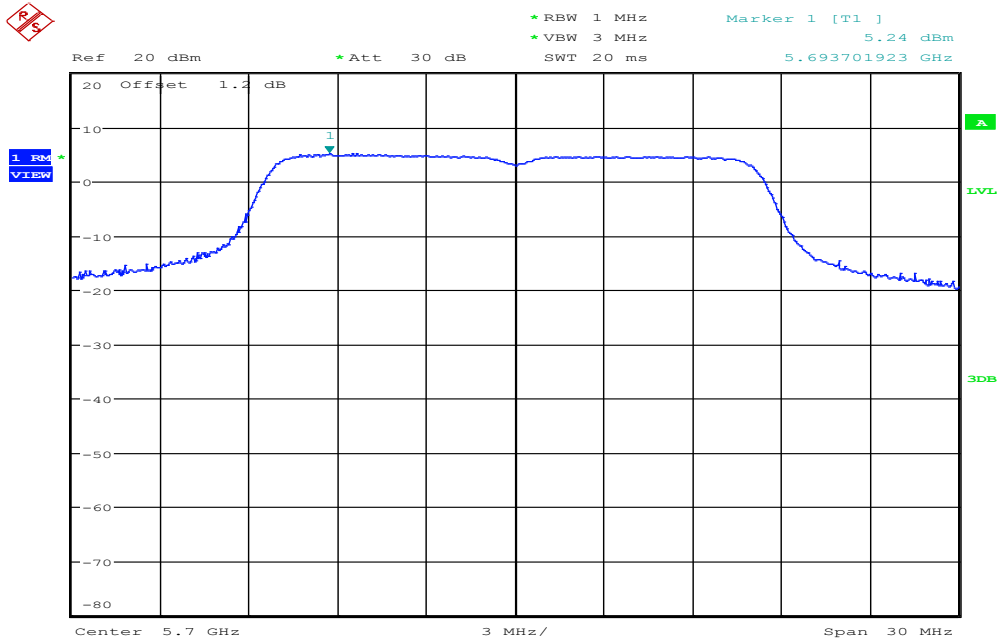
Date: 30.JAN.2016 19:20:09

CH Mid



Date: 30.JAN.2016 19:24:22

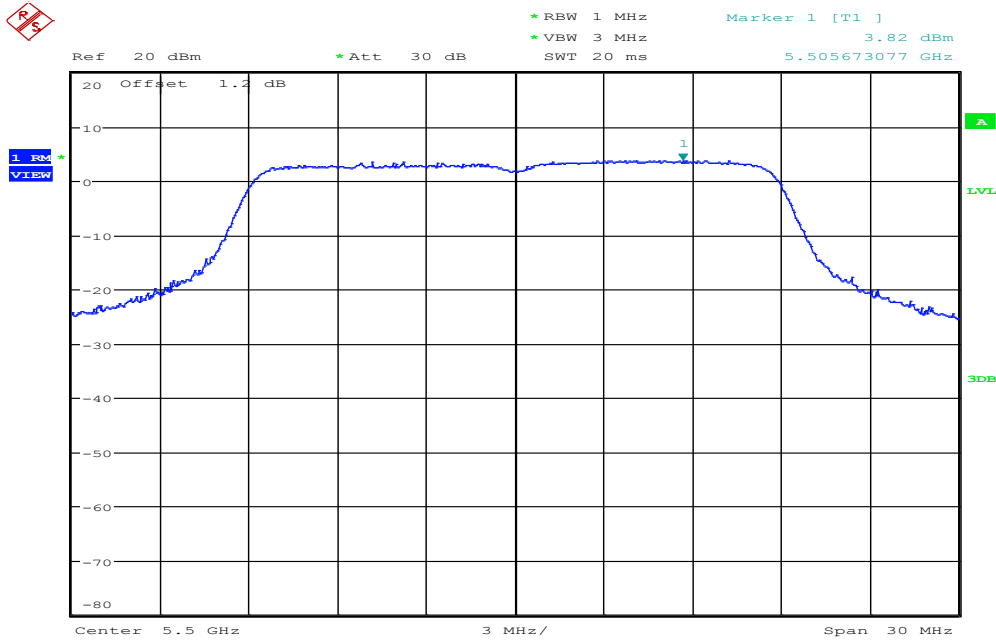
CH High



Date: 30.JAN.2016 19:27:03

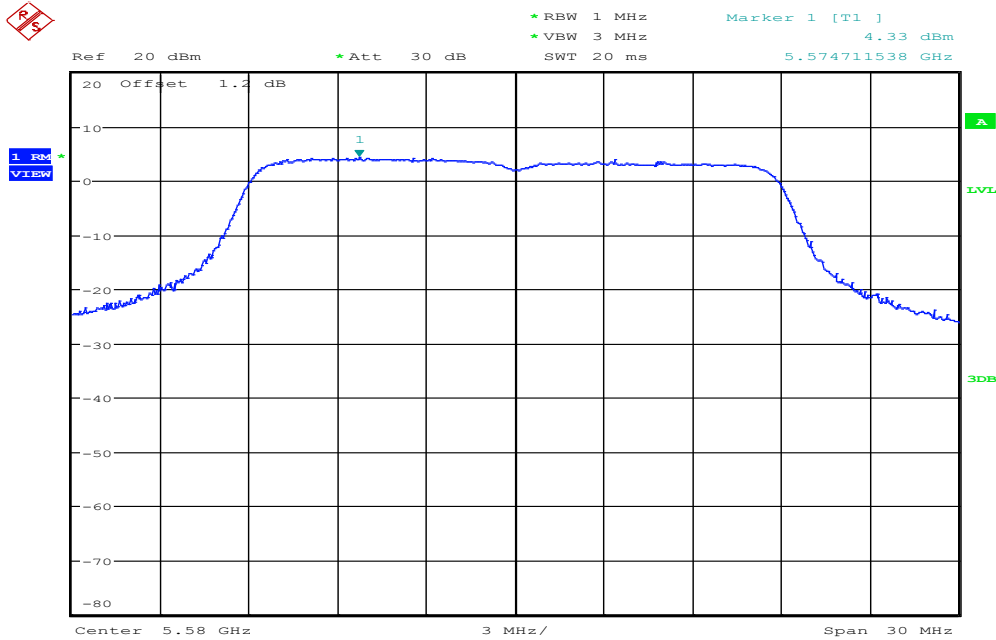
IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz / Chain 0

CH Low



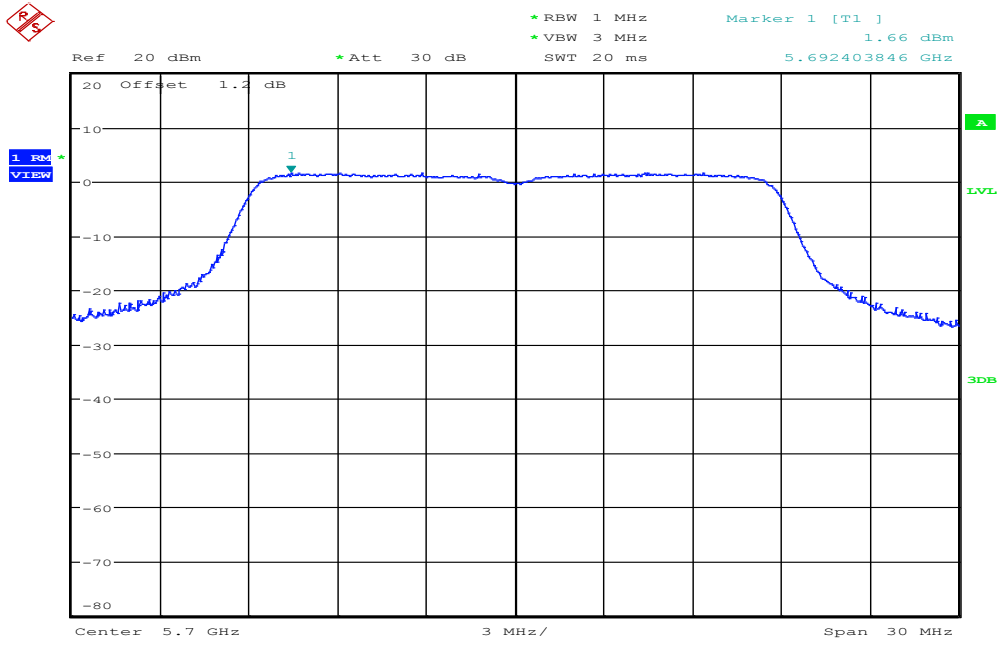
Date: 1.FEB.2016 14:50:23

CH Mid



Date: 4.FEB.2016 19:36:18

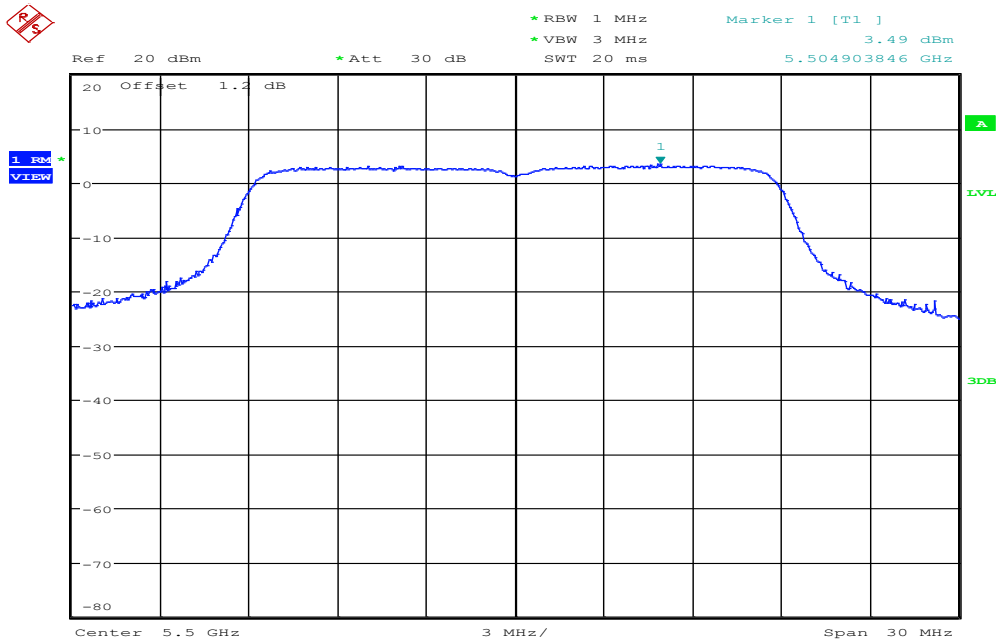
CH High



Date: 1.FEB.2016 14:52:32

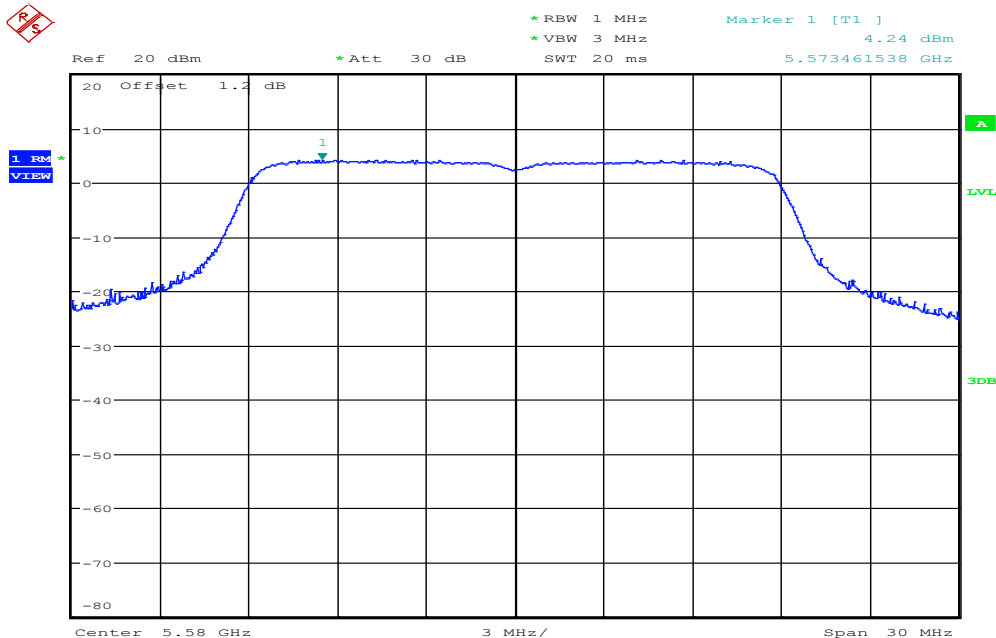
IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz / Chain 1

CH Low



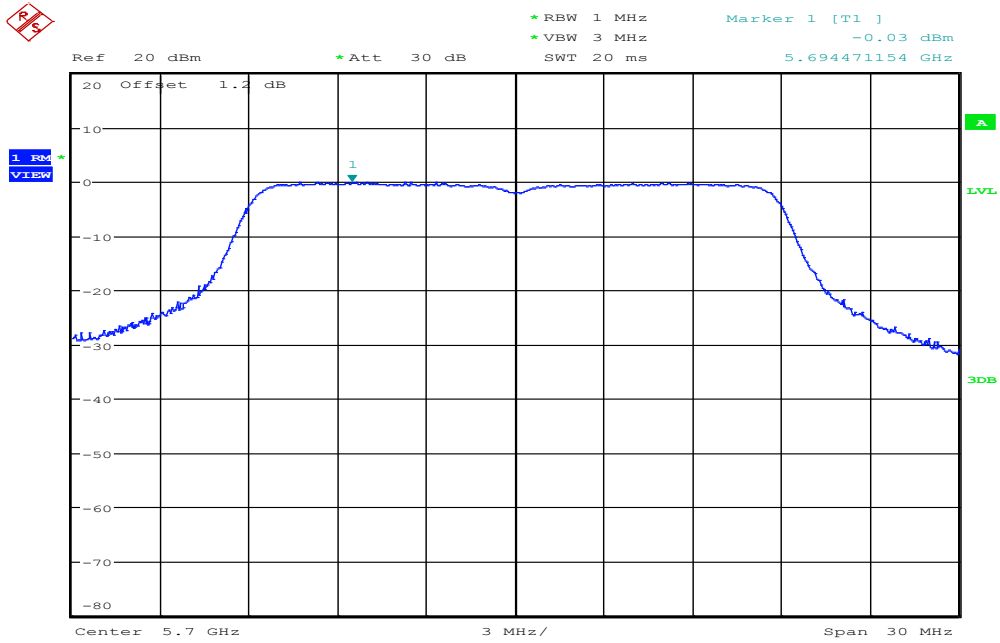
Date: 1.FEB.2016 15:01:55

CH Mid



Date: 4.FEB.2016 19:37:39

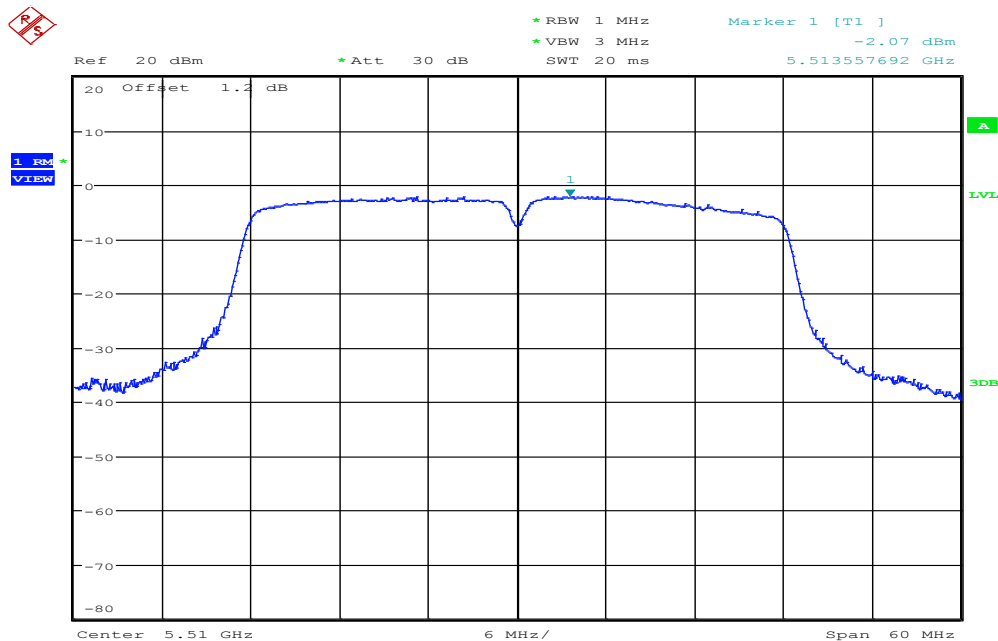
CH High



Date: 1.FEB.2016 15:04:00

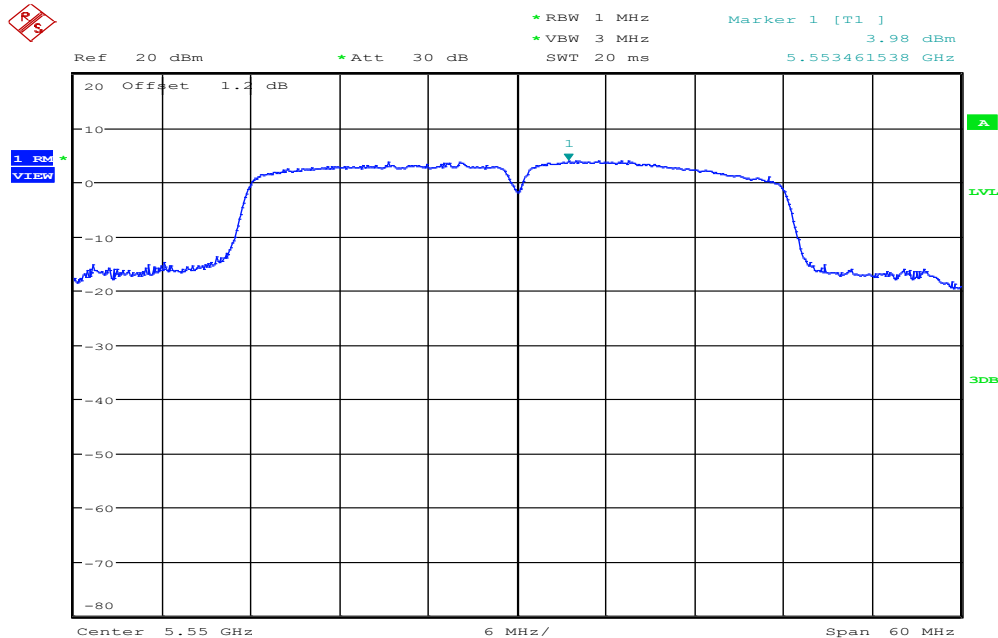
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5690MHz / Chain 0

CH Low



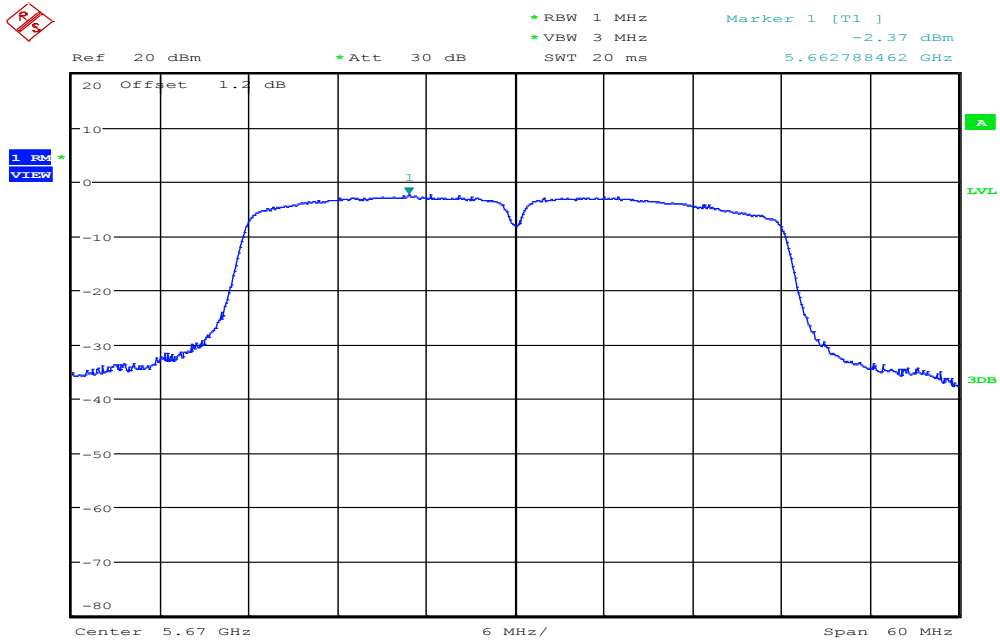
Date: 1.FEB.2016 20:24:03

CH Mid



Date: 1.FEB.2016 20:25:10

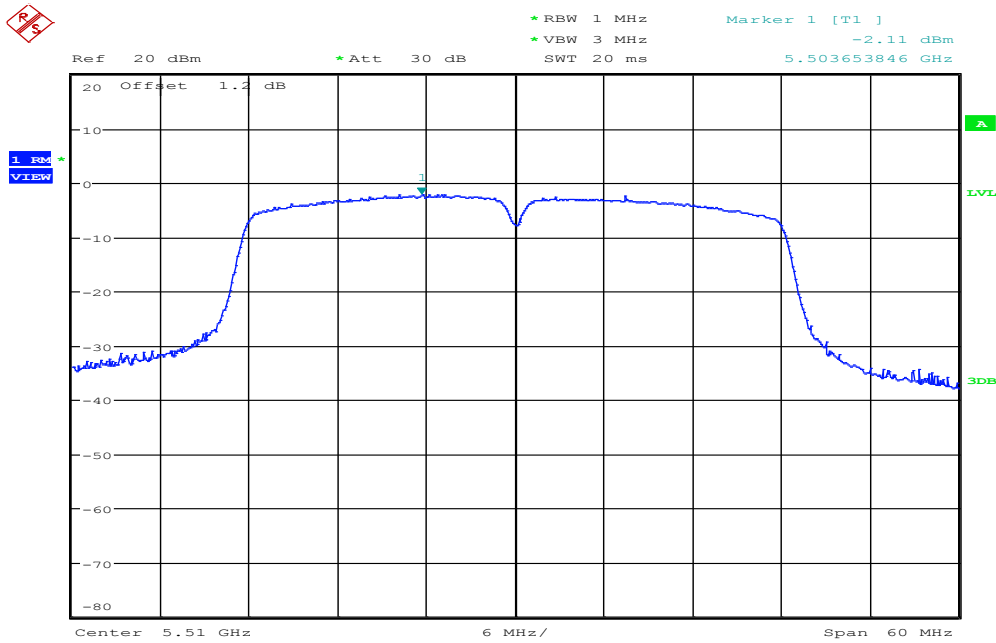
CH High



Date: 1.FEB.2016 20:26:19

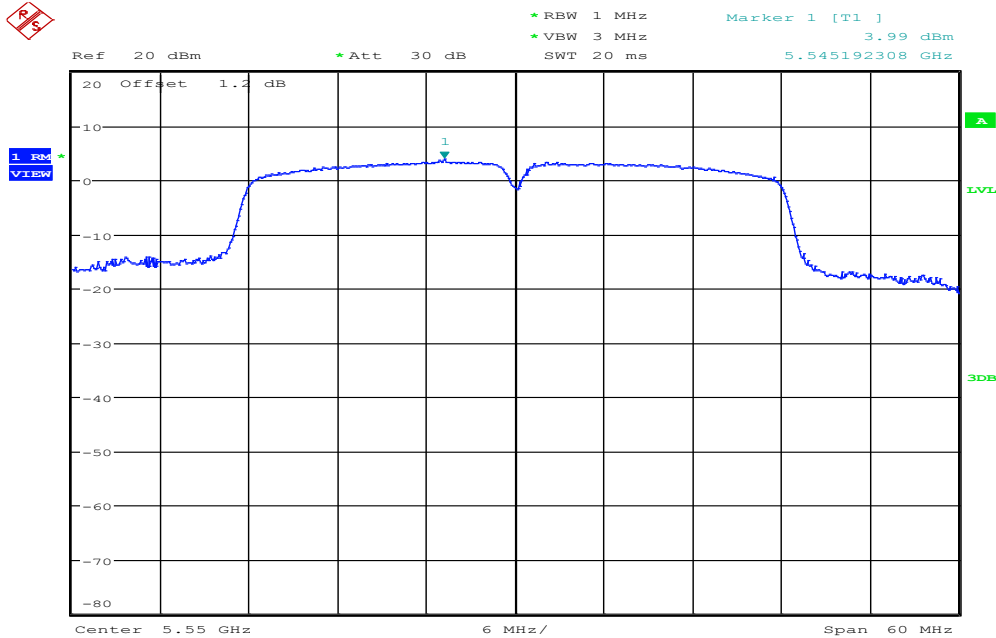
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5690MHz / Chain 1

CH Low



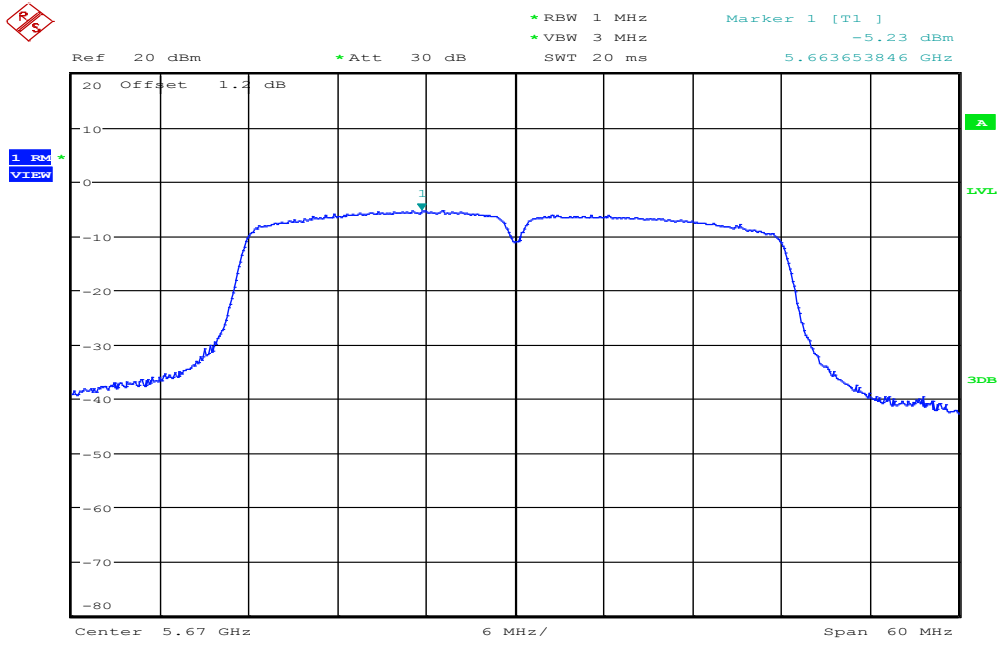
Date: 1.FEB.2016 20:37:35

CH Mid



Date: 1.FEB.2016 20:38:40

CH High



Date: 1.FEB.2016 20:39:46

7.5 RADIATED UNDESIRABLE EMISSION

1. According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (µV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

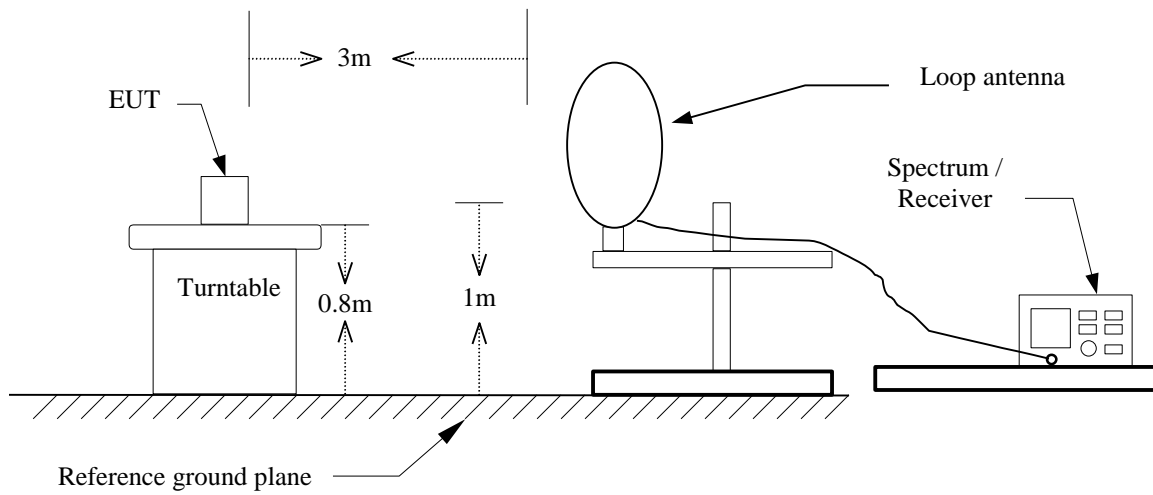
Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

2. In the emission table above, the tighter limit applies at the band edges.

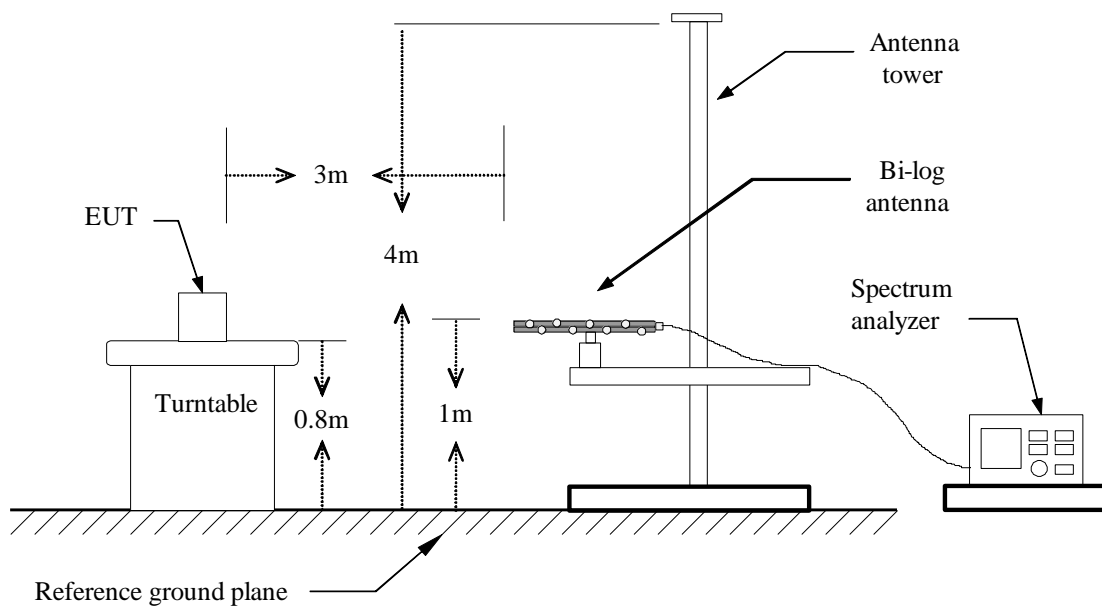
Frequency (MHz)	Field Strength (µV/m at 3-meter)	Field Strength (dBµV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

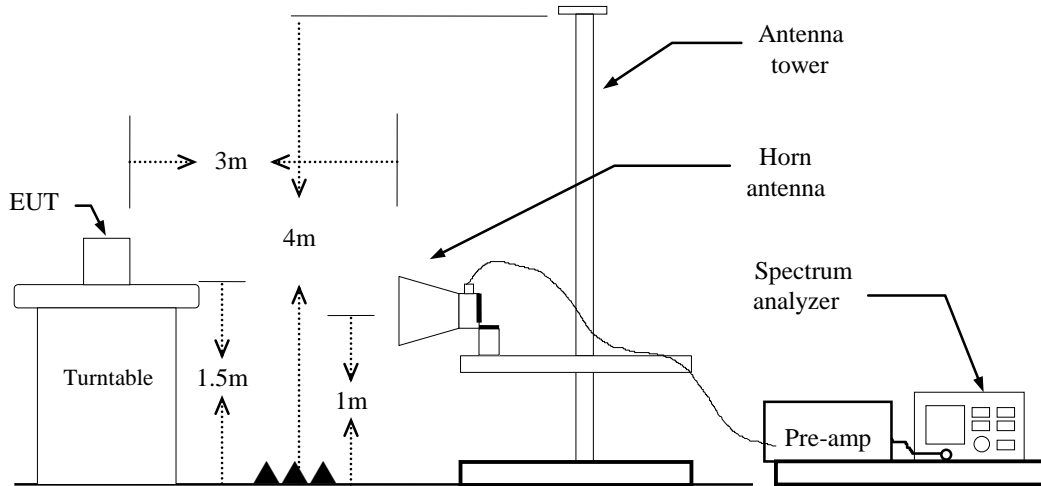
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1 GHz



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 $\geq 98\%$, VBW=10Hz.

if duty cycle $< 98\%$ VBW=1/T.

IEEE 802.11a mode: $\geq 98\%$, VBW=10Hz

IEEE 802.11n HT 20 MHz mode: $\geq 98\%$, VBW=10Hz

IEEE 802.11n HT 40 MHz mode: $\geq 98\%$, VBW=10Hz

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

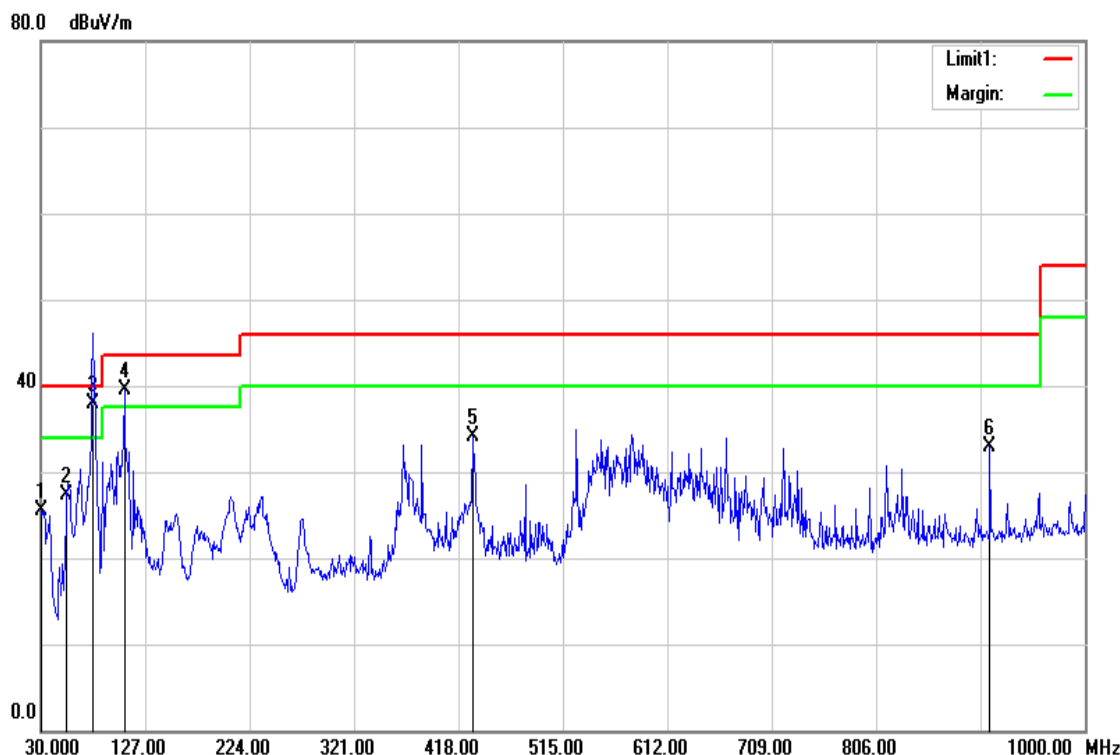
Test Date: January 28, 2016

Temperature: 27°C

Tested by: Jason Lu

Humidity: 53% RH

Polarity: Ver.



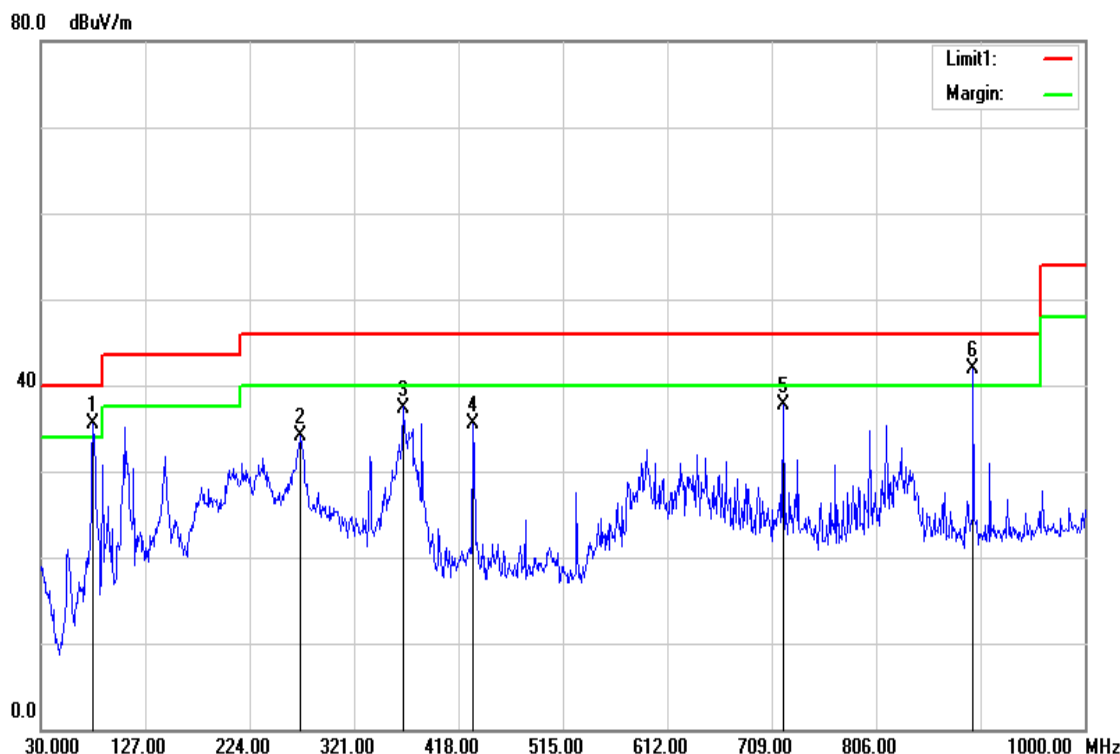
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant. Pol. (H/V)
30.9700	34.20	-8.63	25.57	40.00	-14.43	peak	V
54.2500	48.87	-21.51	27.36	40.00	-12.64	peak	V
78.5000	59.12	-21.17	37.95	40.00	-2.05	QP	V
107.6000	57.23	-17.69	39.54	43.50	-3.96	peak	V
431.5800	44.90	-10.75	34.15	46.00	-11.85	peak	V
911.7300	35.96	-3.00	32.96	46.00	-13.04	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) = Result (dBuV/m) – Limit (dBuV/m).

Operation Mode: Normal Link
Temperature: 27°C
Humidity: 53% RH

Test Date: January 28, 2016
Tested by: Jason Lu
Polarity: Hor.



Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant. Pol. (H/V)
78.5000	56.61	-21.17	35.44	40.00	-4.56	peak	H
271.5300	48.92	-14.77	34.15	46.00	-11.85	peak	H
366.5900	49.90	-12.50	37.40	46.00	-8.60	peak	H
431.5800	46.24	-10.75	35.49	46.00	-10.51	peak	H
719.6700	43.27	-5.62	37.65	46.00	-8.35	peak	H
896.2100	45.23	-3.23	42.00	46.00	-4.00	peak	H

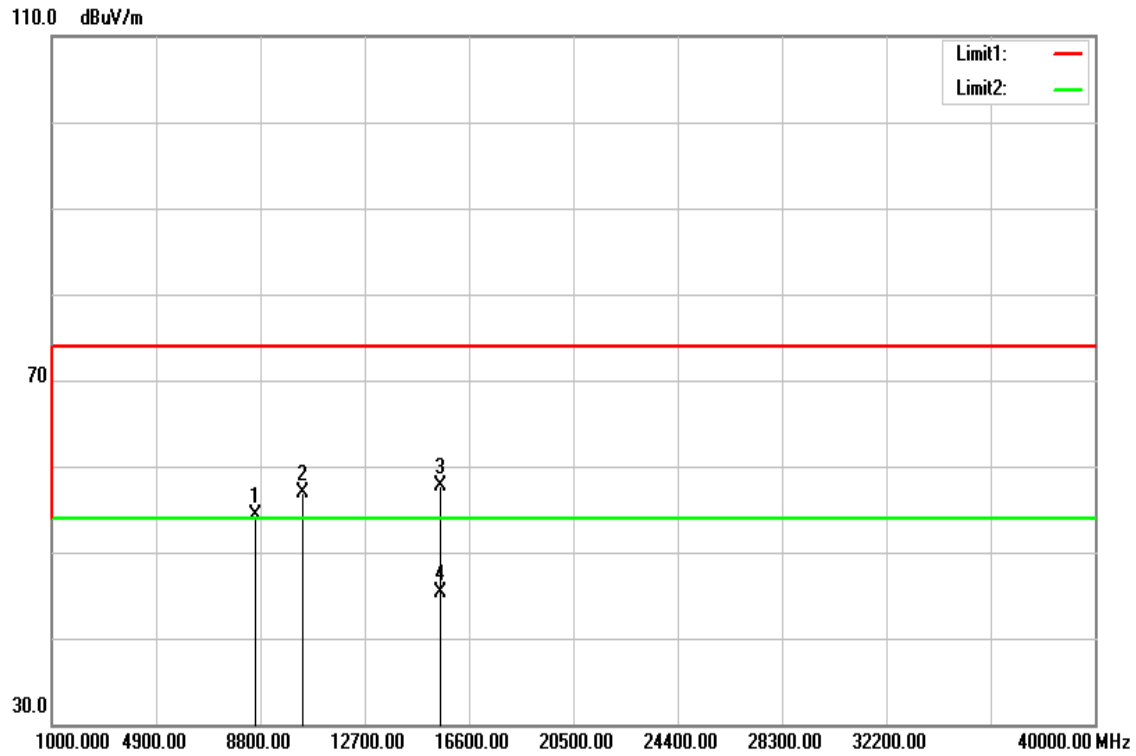
Remark:

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) = Result (dBuV/m) – Limit (dBuV/m).

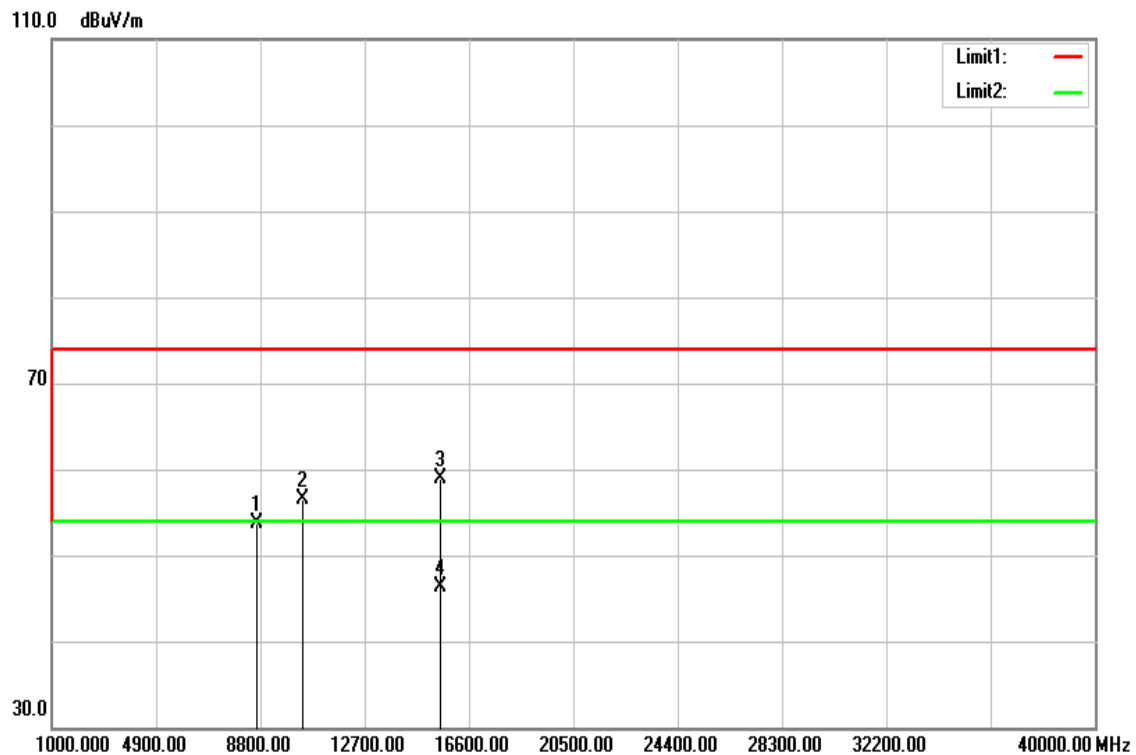
Above 1 GHz

Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Low

Polarity: Vertical



Polarity: Horizontal



Above 1 GHz

Operation Mode: Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Low
Temperature: 27°C
Humidity: 53% RH

Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

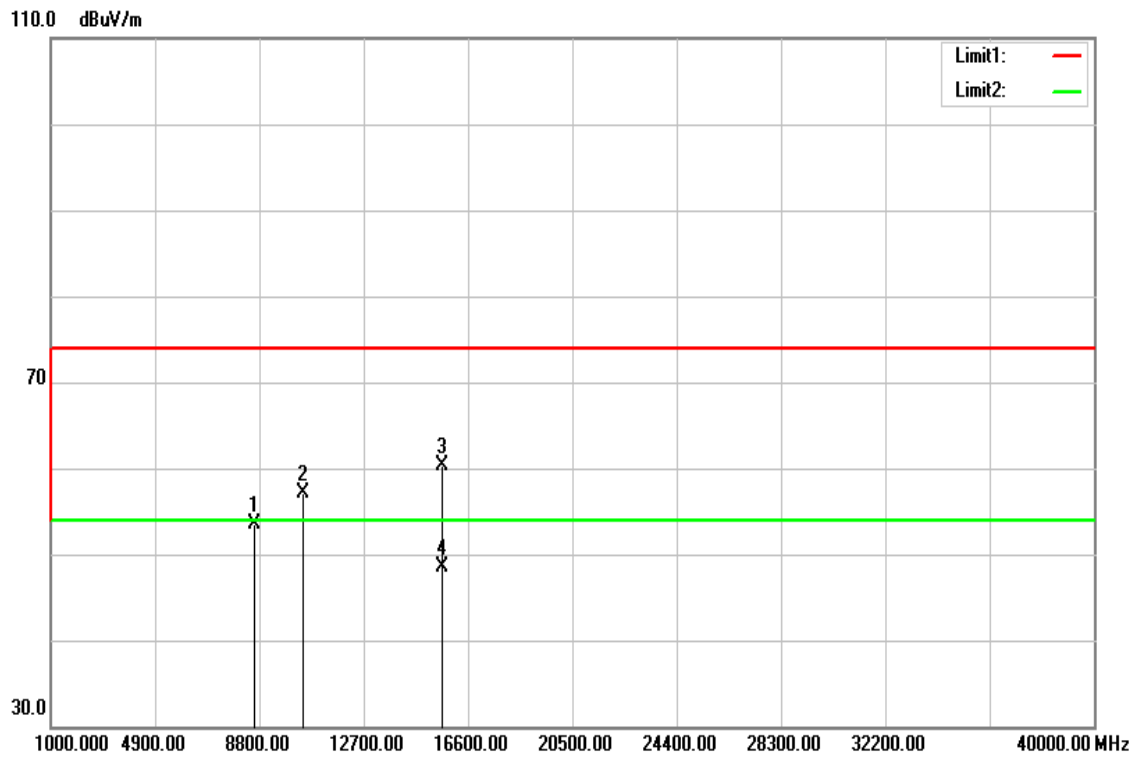
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8632.000	39.02	15.33	54.35	74.00	-19.65	peak	V
10360.000	39.33	17.58	56.91	74.00	-17.09	peak	V
15540.000	37.06	20.61	57.67	74.00	-16.33	peak	V
15540.000	24.75	20.61	45.36	54.00	-8.64	AVG	V
N/A							
8652.000	38.29	15.37	53.66	74.00	-20.34	peak	H
10360.000	38.93	17.58	56.51	74.00	-17.49	peak	H
15540.000	38.31	20.61	58.92	74.00	-15.08	peak	H
15540.000	25.72	20.61	46.33	54.00	-7.67	AVG	H
N/A							

Remark:

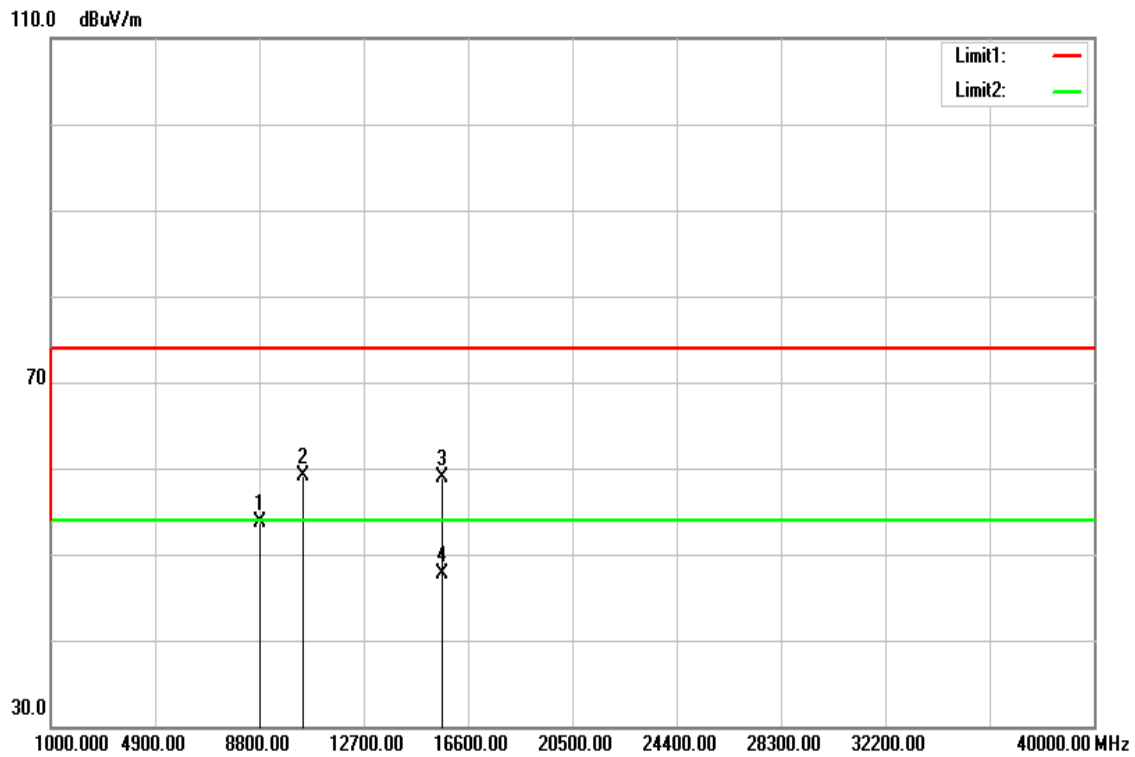
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
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 / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Mid
Temperature: 27°C
Humidity: 53% RH

Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

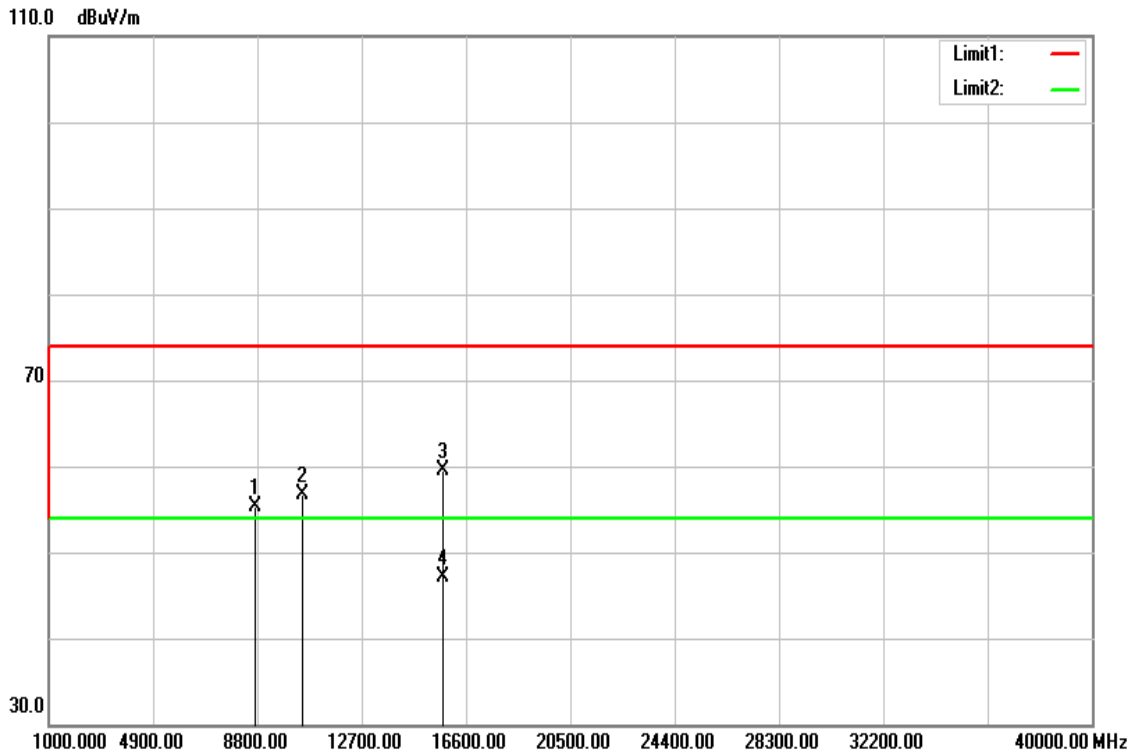
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8632.000	38.20	15.33	53.53	74.00	-20.47	peak	V
10440.000	39.46	17.57	57.03	74.00	-16.97	peak	V
15660.000	39.28	21.02	60.30	74.00	-13.70	peak	V
15660.000	27.53	21.02	48.55	54.00	-5.45	AVG	V
N/A							
8835.000	38.06	15.71	53.77	74.00	-20.23	peak	H
10440.000	41.52	17.57	59.09	74.00	-14.91	peak	H
15660.000	37.97	21.02	58.99	74.00	-15.01	peak	H
15660.000	26.69	21.02	47.71	54.00	-6.29	AVG	H
N/A							

Remark:

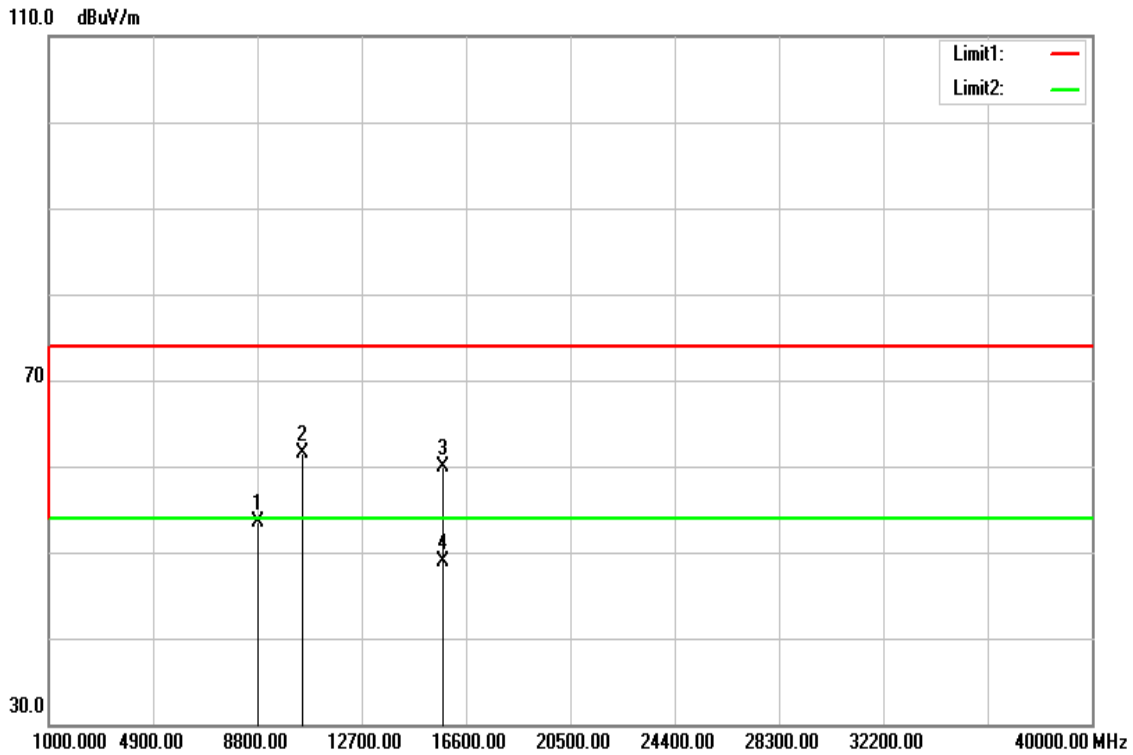
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
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 / IEEE 802.11a mode / 5180 ~ 5240MHz / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH High
Temperature: 27°C
Humidity: 53% RH
Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

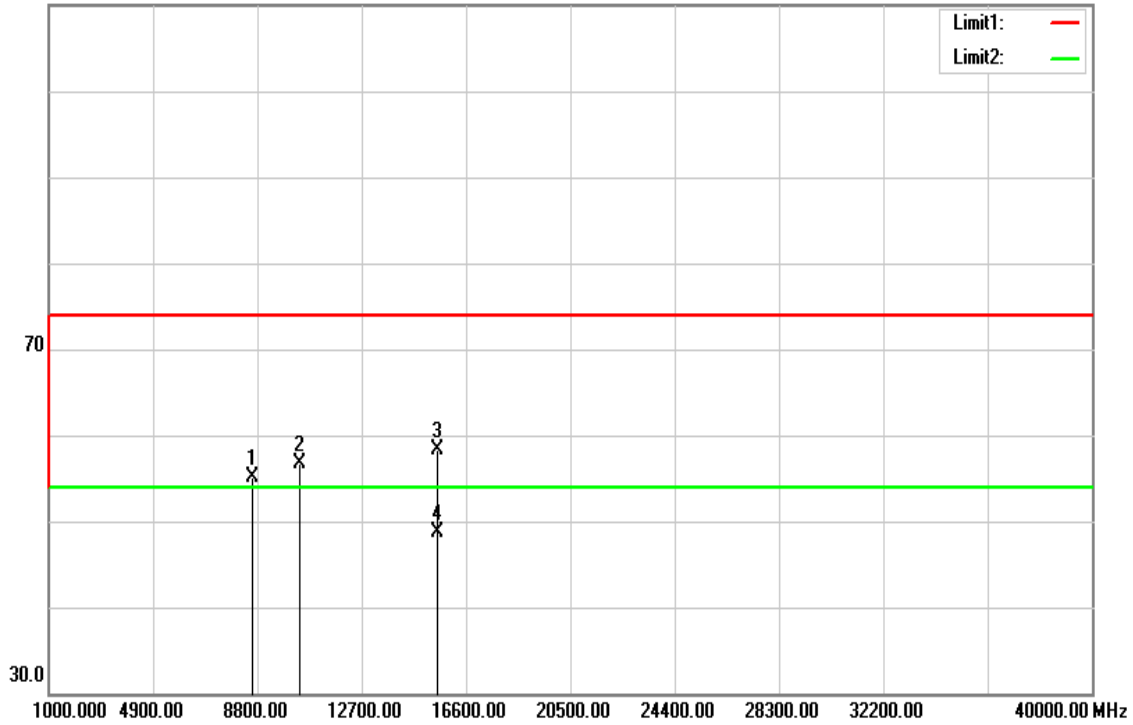
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8722.000	39.77	15.50	55.27	74.00	-18.73	peak	V
10480.000	39.05	17.57	56.62	74.00	-17.38	peak	V
15720.000	38.33	21.22	59.55	74.00	-14.45	peak	V
15720.000	25.89	21.22	47.11	54.00	-6.89	AVG	V
N/A							
8815.000	37.88	15.67	53.55	74.00	-20.45	peak	H
10480.000	43.91	17.57	61.48	74.00	-12.52	peak	H
15720.000	38.66	21.22	59.88	74.00	-14.12	peak	H
15720.000	27.72	21.22	48.94	54.00	-5.06	AVG	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).

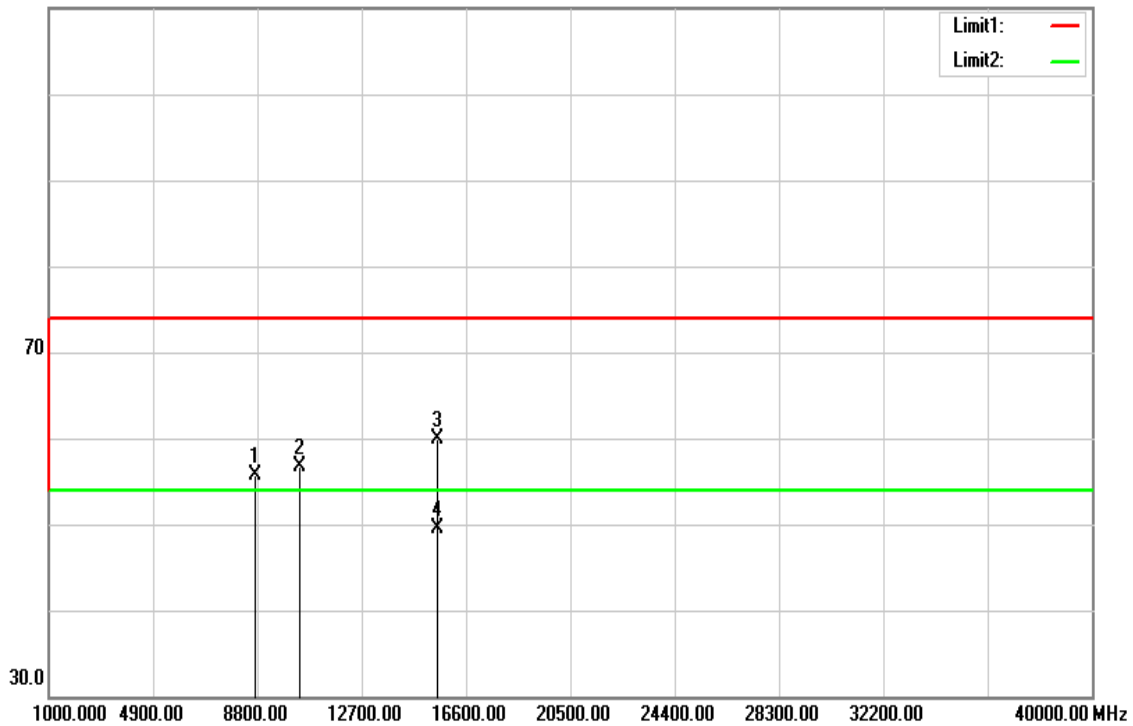
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH Low
Polarity: Vertical

110.0 dBuV/m



Polarity: Horizontal

110.0 dBuV/m



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH Low
Temperature: 27°C
Humidity: 53% RH
Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

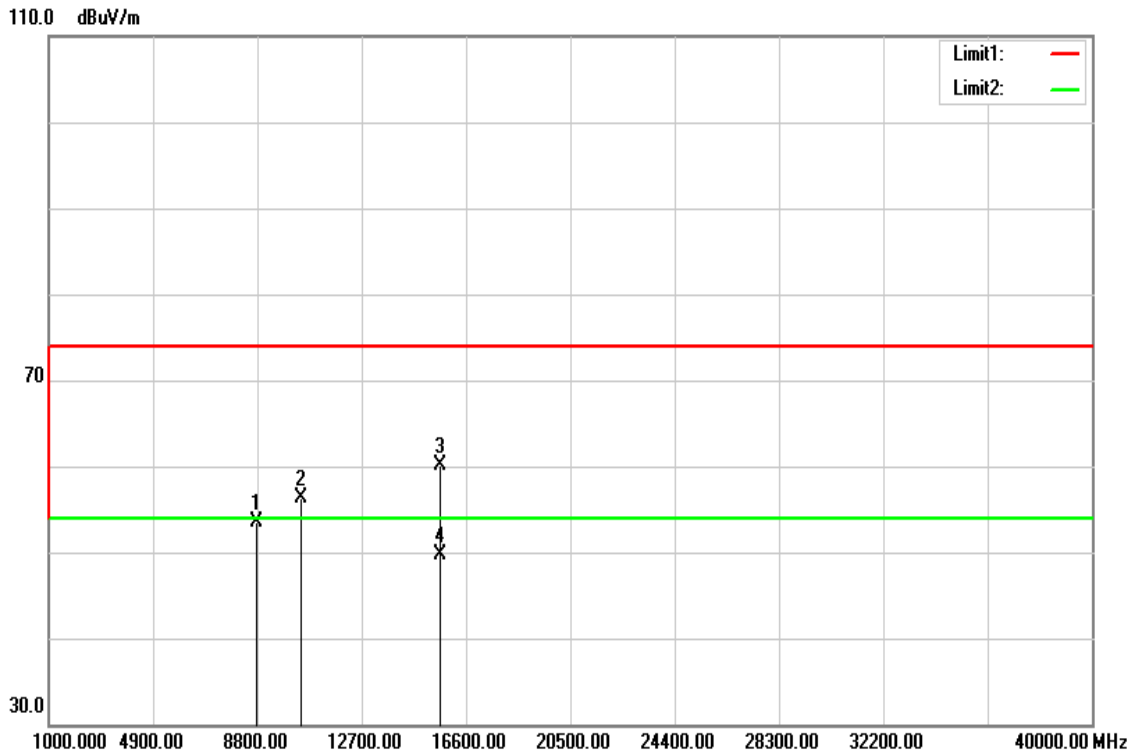
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8625.000	39.81	15.31	55.12	74.00	-18.88	peak	V
10360.000	39.18	17.58	56.76	74.00	-17.24	peak	V
15540.000	37.74	20.61	58.35	74.00	-15.65	peak	V
15540.000	28.01	20.61	48.62	54.00	-5.38	AVG	V
N/A							
8724.000	40.30	15.50	55.80	74.00	-18.20	peak	H
10360.000	39.19	17.58	56.77	74.00	-17.23	peak	H
15540.000	39.37	20.61	59.98	74.00	-14.02	peak	H
15540.000	28.90	20.61	49.51	54.00	-4.49	AVG	H
N/A							

Remark:

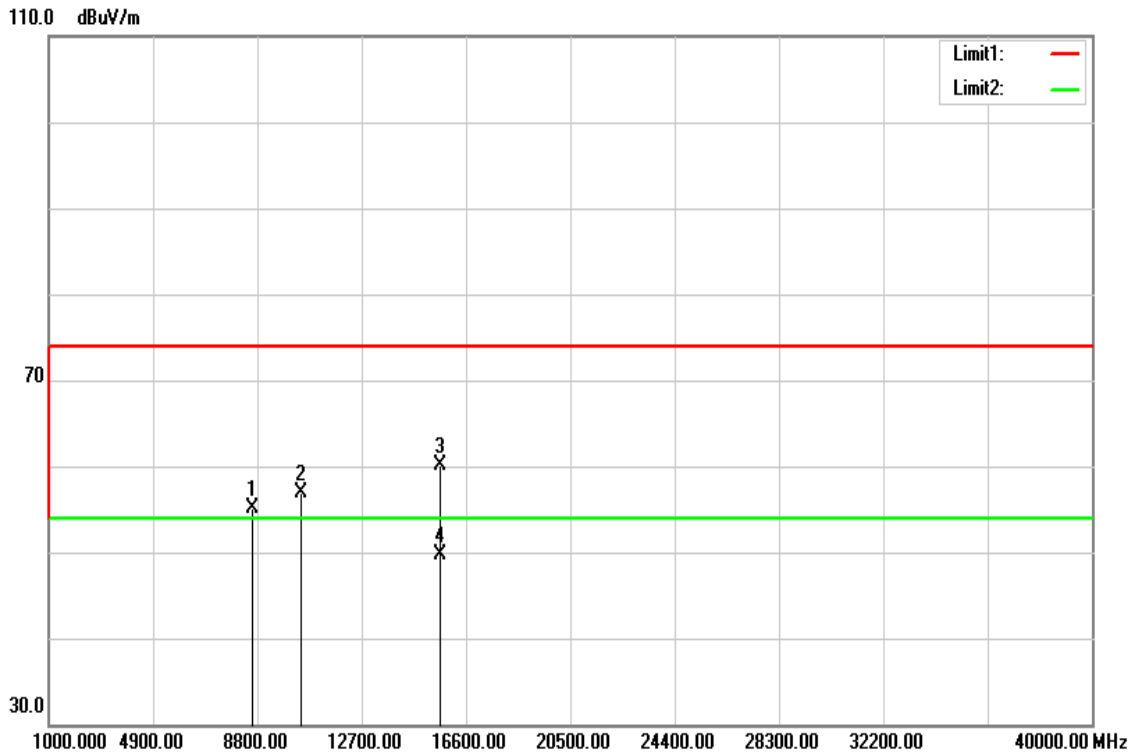
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
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 / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH Mid

Polarity: Vertical



Polarity: Horizontal



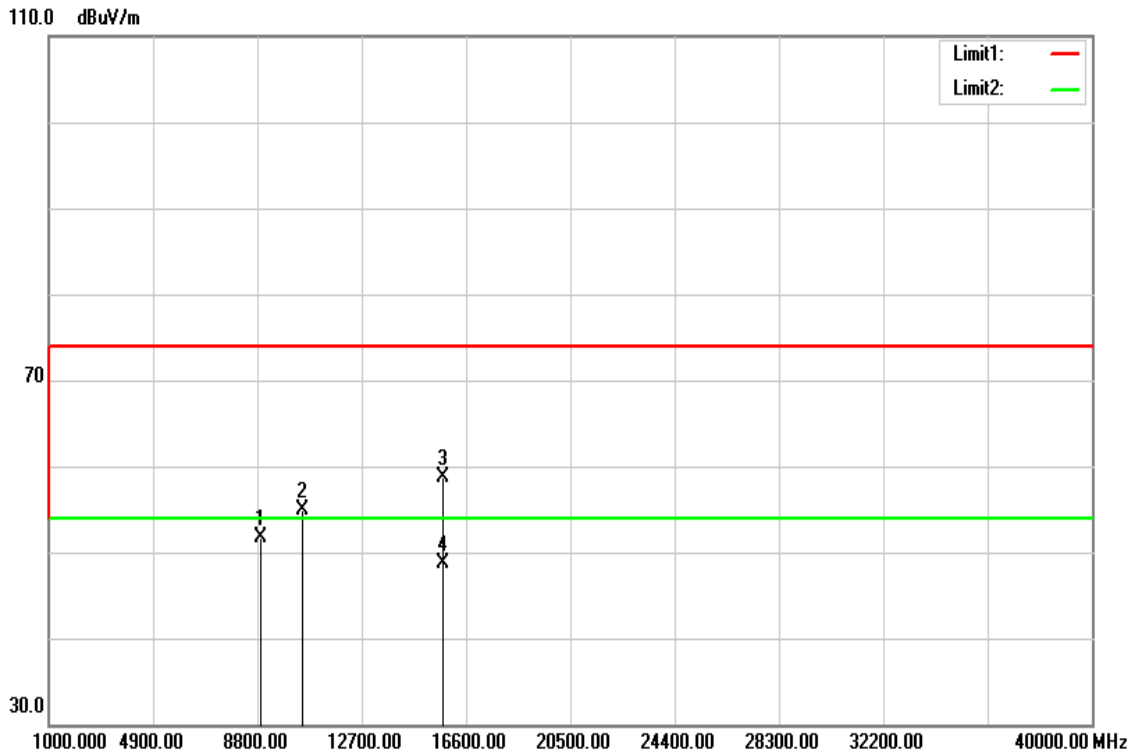
Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH Mid **Test Date:** January 30, 2016
Temperature: 27°C **Tested by:** Jason Lu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8765.000	37.93	15.58	53.51	74.00	-20.49	peak	V
10440.000	38.76	17.57	56.33	74.00	-17.67	peak	V
15660.000	39.10	21.02	60.12	74.00	-13.88	peak	V
15660.000	28.76	21.02	49.78	54.00	-4.22	AVG	V
N/A							
8632.000	39.72	15.33	55.05	74.00	-18.95	peak	H
10440.000	39.42	17.57	56.99	74.00	-17.01	peak	H
15660.000	39.15	21.02	60.17	74.00	-13.83	peak	H
15660.000	28.63	21.02	49.65	54.00	-4.35	AVG	H
N/A							

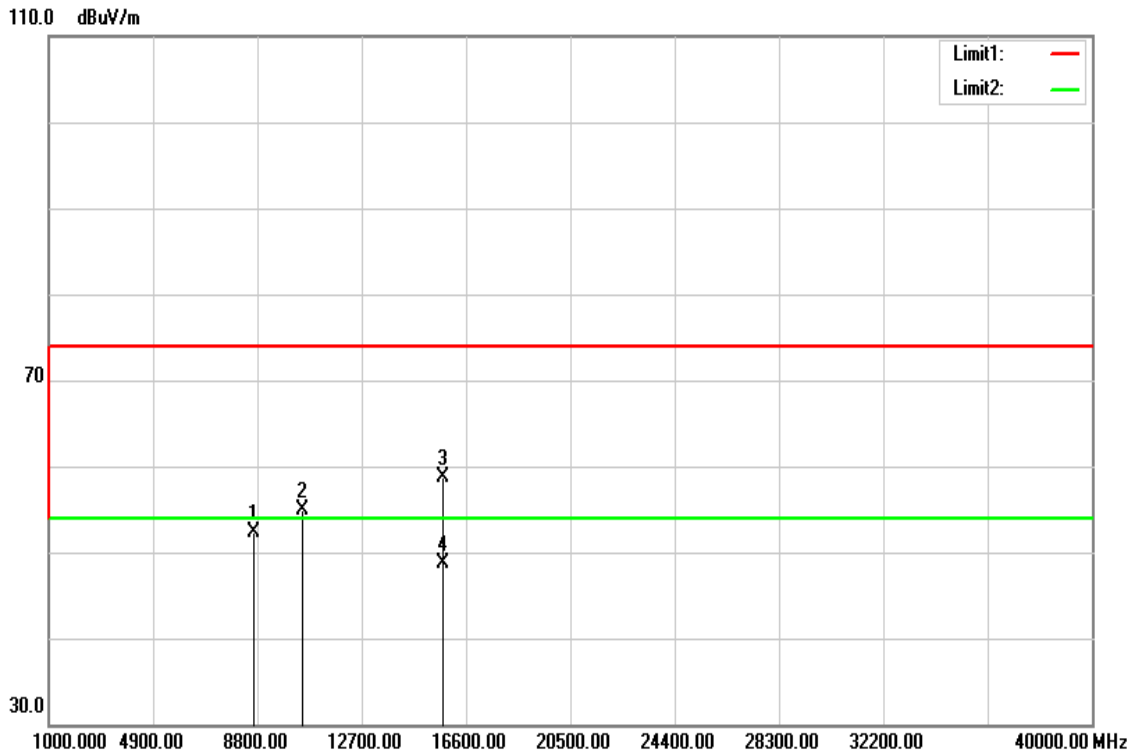
Remark:

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 / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH High
Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH High
Temperature: 27°C
Humidity: 53% RH
Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8923.000	35.78	15.88	51.66	74.00	-22.34	peak	V
10480.000	37.24	17.57	54.81	74.00	-19.19	peak	V
15720.000	37.45	21.22	58.67	74.00	-15.33	peak	V
15720.000	27.44	21.22	48.66	54.00	-5.34	AVG	V
N/A							
8645.000	37.00	15.35	52.35	74.00	-21.65	peak	H
10480.000	37.24	17.57	54.81	74.00	-19.19	peak	H
15720.000	37.45	21.22	58.67	74.00	-15.33	peak	H
15720.000	27.44	21.22	48.66	54.00	-5.34	AVG	H
N/A							

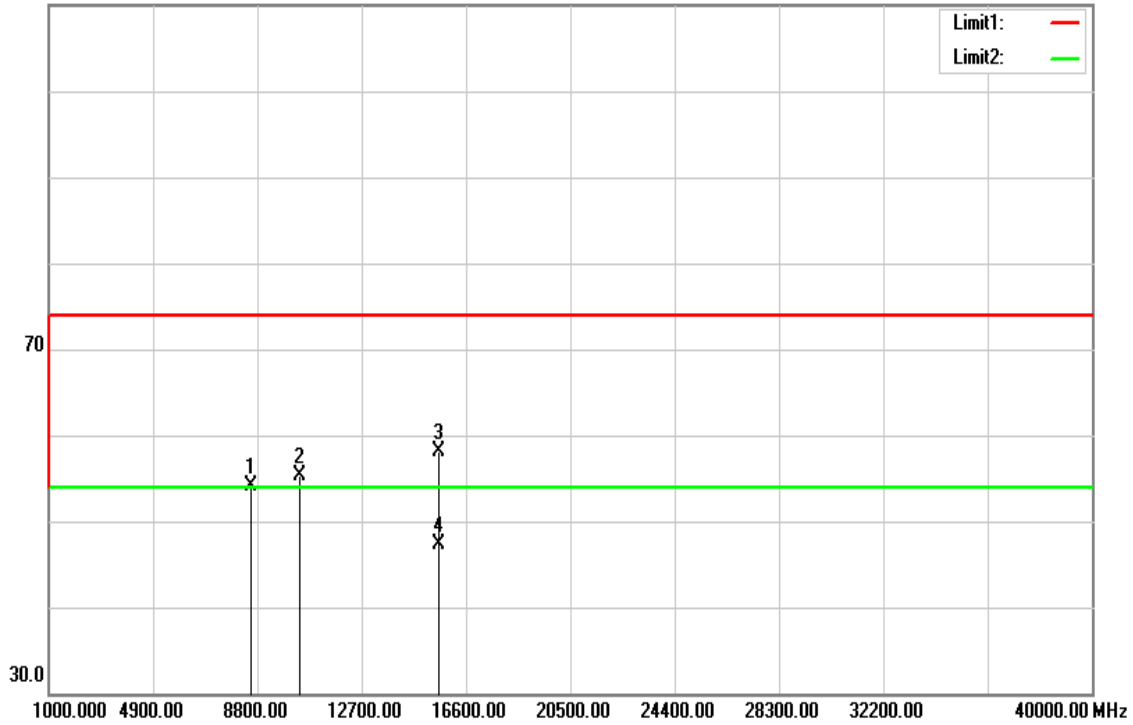
Remark:

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 / IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH Low

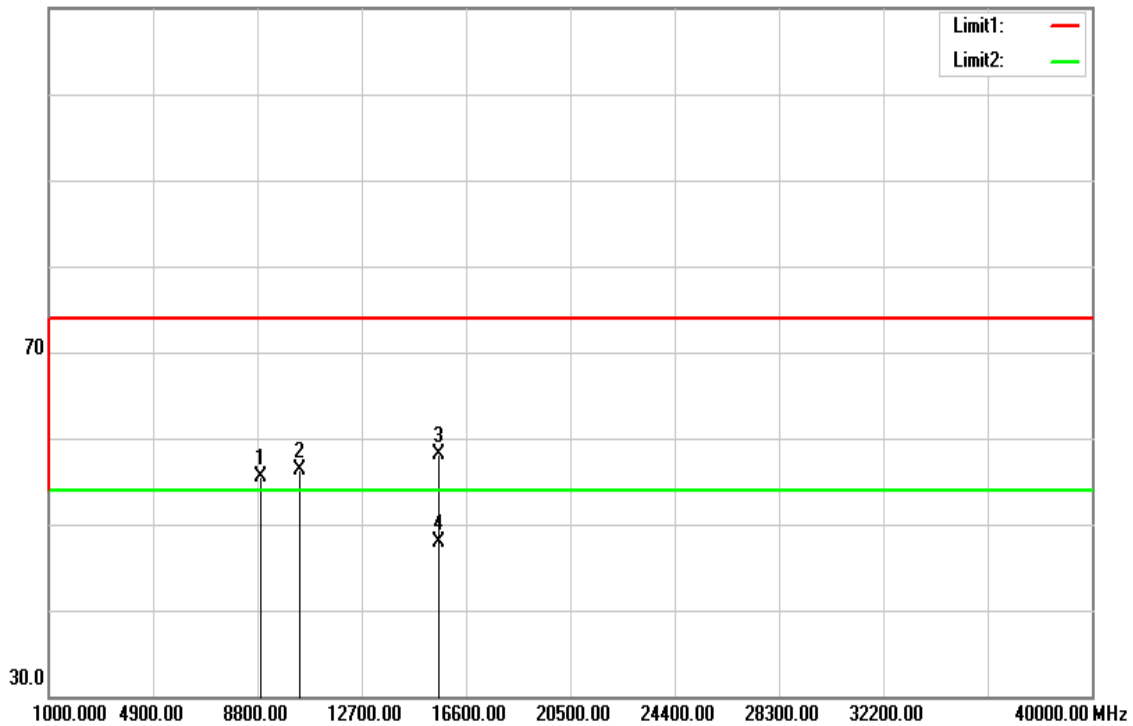
Polarity: Vertical

110.0 dBuV/m



Polarity: Horizontal

110.0 dBuV/m



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH Low
Temperature: 27°C
Humidity: 53% RH

Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

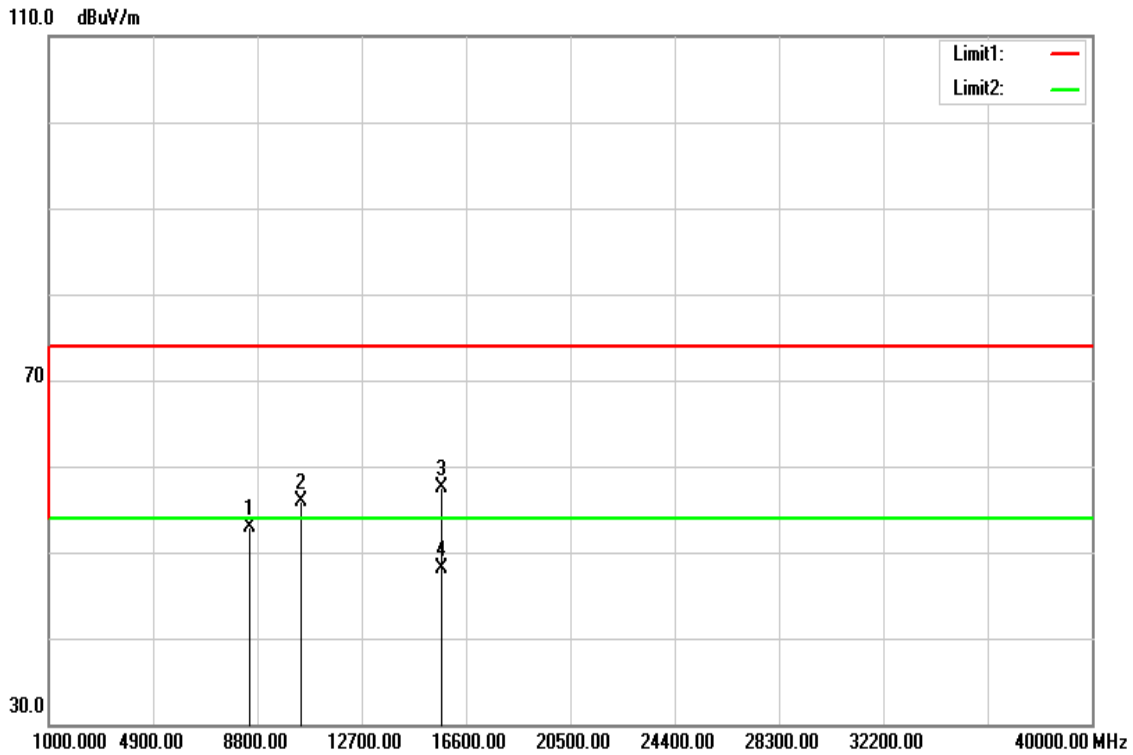
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8570.000	38.89	15.21	54.10	74.00	-19.90	peak	V
10380.000	37.77	17.58	55.35	74.00	-18.65	peak	V
15570.000	37.41	20.71	58.12	74.00	-15.88	peak	V
15570.000	26.62	20.71	47.33	54.00	-6.67	AVG	V
N/A							
8910.000	39.71	15.85	55.56	74.00	-18.44	peak	H
10380.000	38.64	17.58	56.22	74.00	-17.78	peak	H
15570.000	37.39	20.71	58.10	74.00	-15.90	peak	H
15570.000	27.23	20.71	47.94	54.00	-6.06	AVG	H
N/A							

Remark:

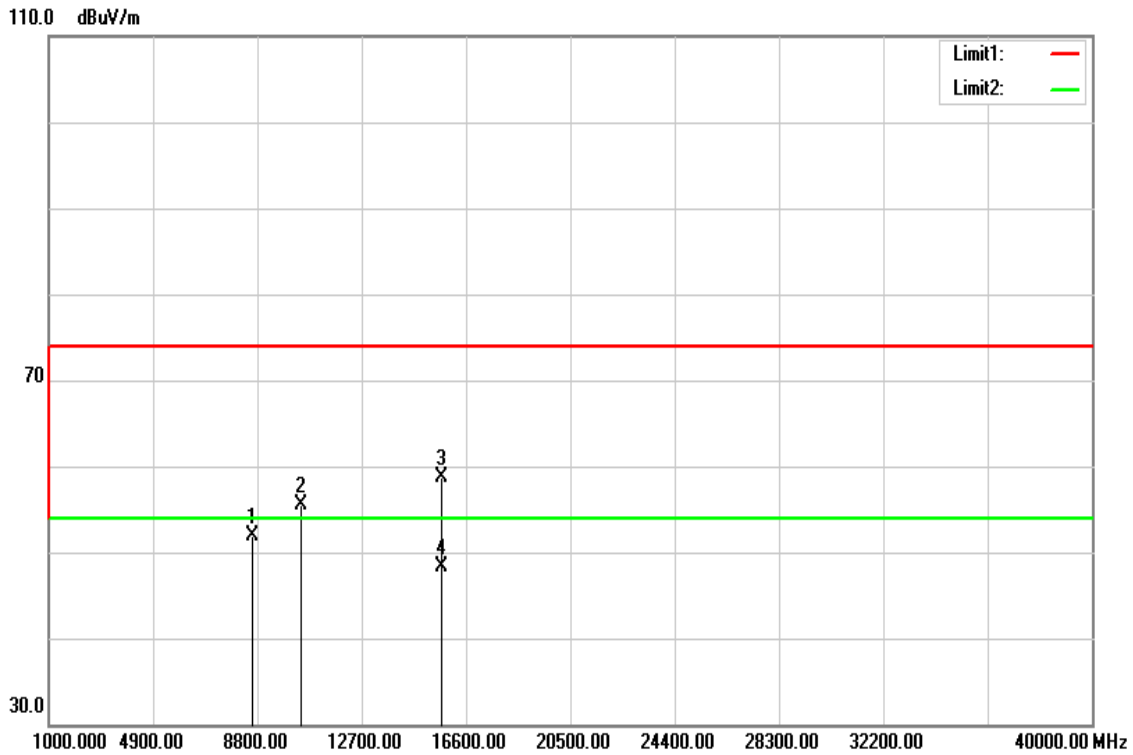
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
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 / IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH High
Temperature: 27°C
Humidity: 53% RH
Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8522.000	37.84	15.12	52.96	74.00	-21.04	peak	V
10460.000	38.26	17.57	55.83	74.00	-18.17	peak	V
15690.000	36.47	21.12	57.59	74.00	-16.41	peak	V
15690.000	26.99	21.12	48.11	54.00	-5.89	AVG	V
N/A							
8623.000	36.66	15.31	51.97	74.00	-22.03	peak	H
10460.000	38.01	17.57	55.58	74.00	-18.42	peak	H
15690.000	37.58	21.12	58.70	74.00	-15.30	peak	H
15690.000	27.24	21.12	48.36	54.00	-5.64	AVG	H
N/A							

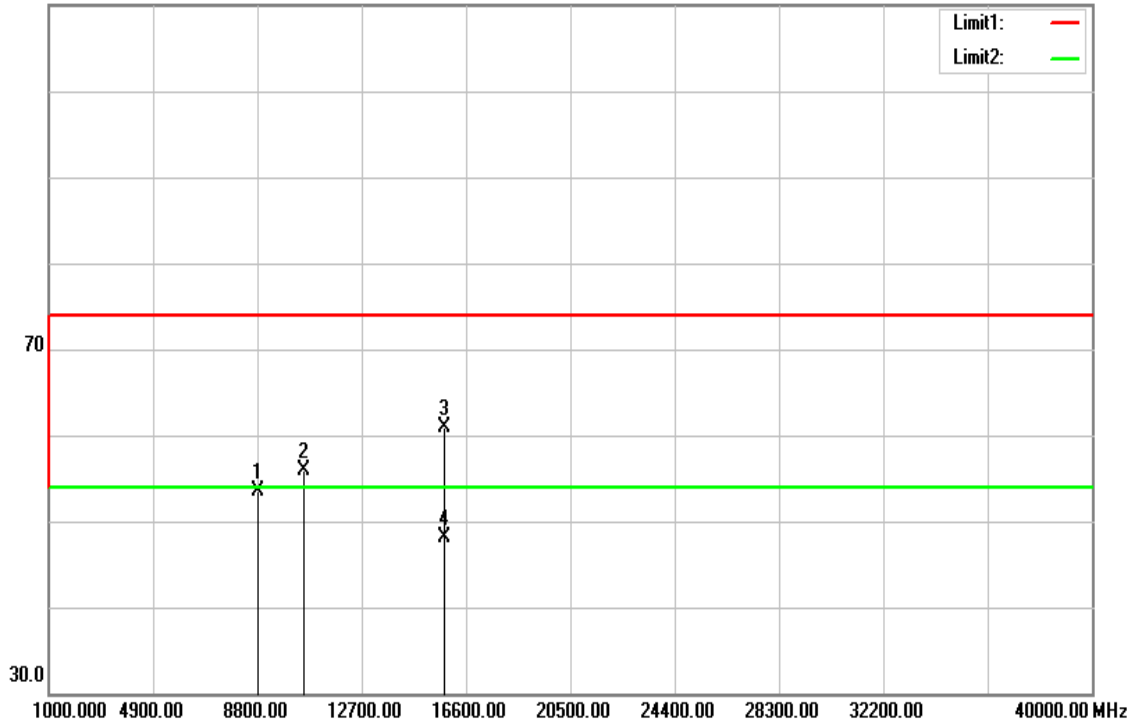
Remark:

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 / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Low

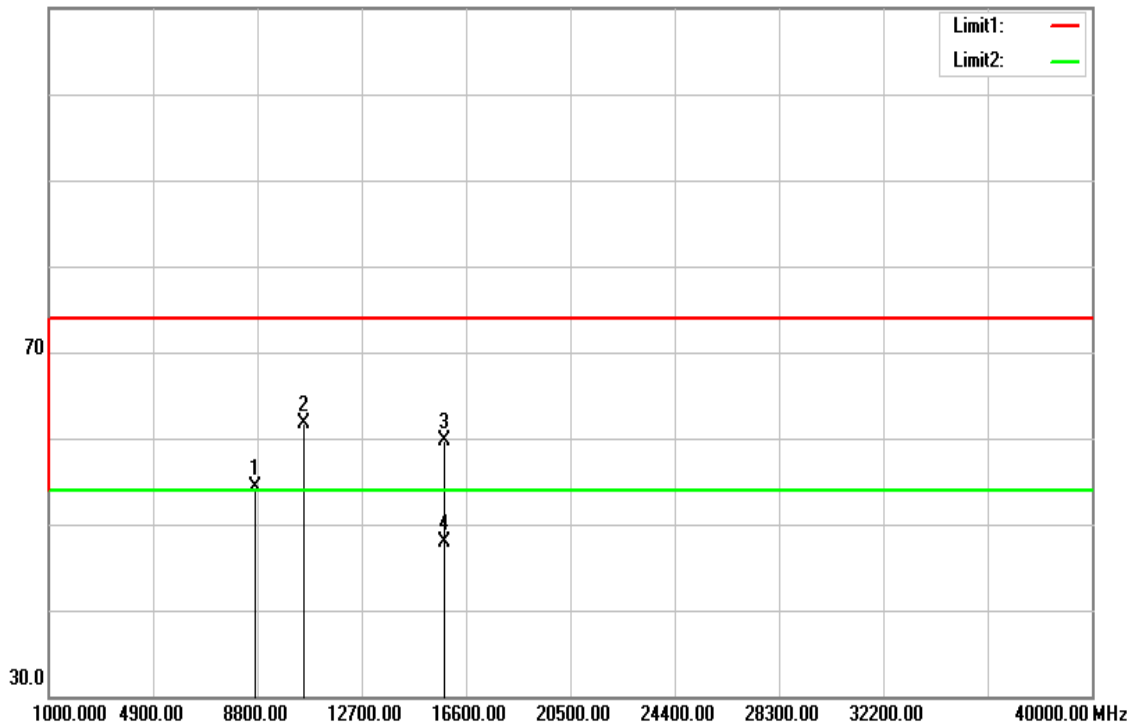
Polarity: Vertical

110.0 dBuV/m



Polarity: Horizontal

110.0 dBuV/m



Operation Mode: Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Low
Temperature: 27°C
Humidity: 53% RH

Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8836.000	37.80	15.71	53.51	74.00	-20.49	peak	V
10520.000	38.32	17.59	55.91	74.00	-18.09	peak	V
15780.000	39.45	21.43	60.88	74.00	-13.12	peak	V
15780.000	26.72	21.43	48.15	54.00	-5.85	AVG	V
N/A							
8725.000	38.72	15.50	54.22	74.00	-19.78	peak	H
10520.000	44.09	17.59	61.68	74.00	-12.32	peak	H
15780.000	38.35	21.43	59.78	74.00	-14.22	peak	H
15780.000	26.46	21.43	47.89	54.00	-6.11	AVG	H
N/A							

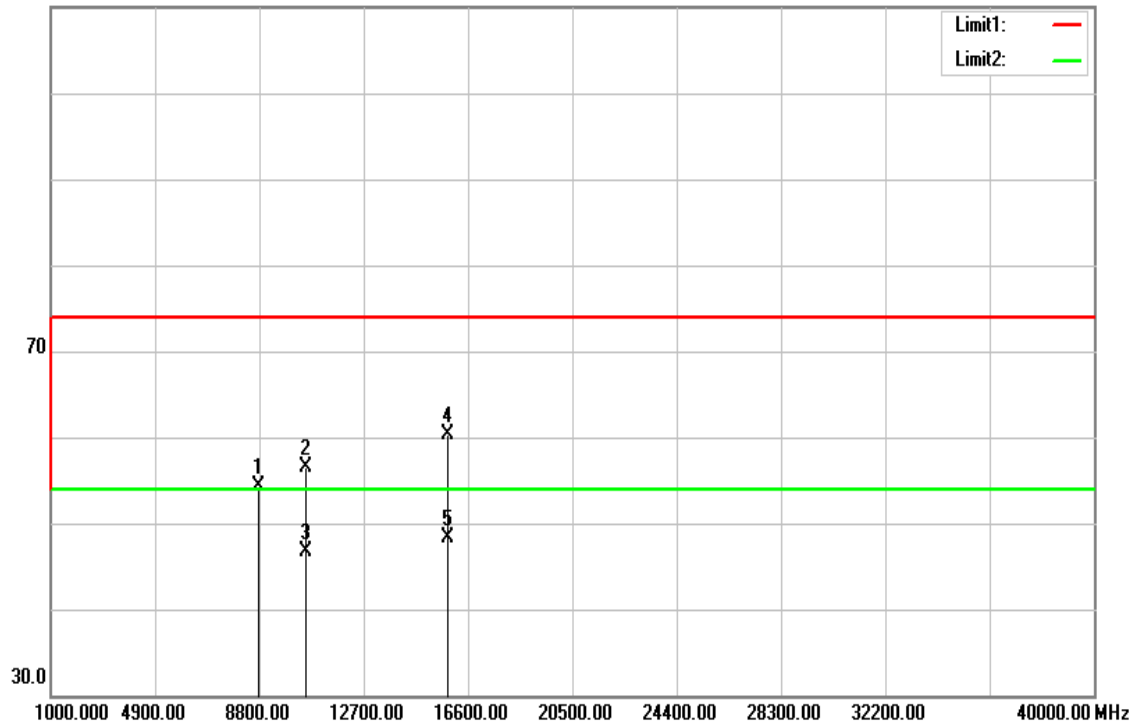
Remark:

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 / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Mid

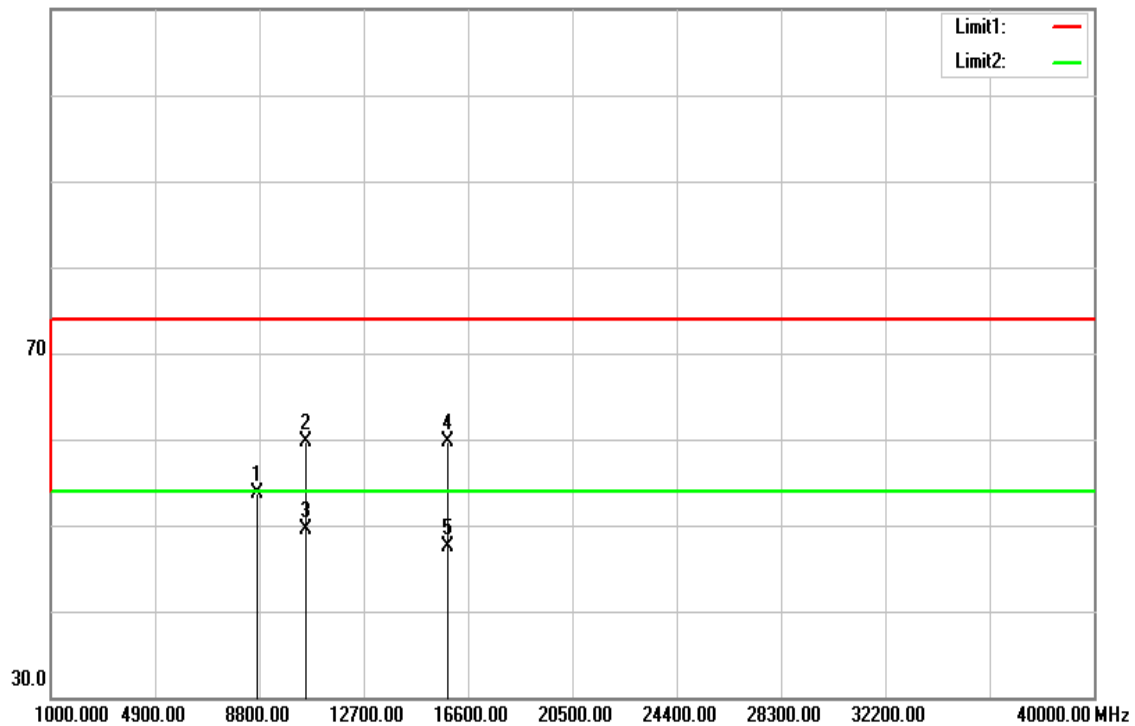
Polarity: Vertical

110.0 dBuV/m



Polarity: Horizontal

110.0 dBuV/m



Operation Mode: Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Mid
Temperature: 27°C
Humidity: 53% RH

Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8765.000	38.77	15.58	54.35	74.00	-19.65	peak	V
10560.000	38.87	17.63	56.50	74.00	-17.50	peak	V
10560.000	29.02	17.63	46.65	54.00	-7.35	AVG	V
15840.000	38.63	21.63	60.26	74.00	-13.74	peak	V
15840.000	26.73	21.63	48.36	54.00	-5.64	AVG	V
N/A							
8745.000	38.09	15.54	53.63	74.00	-20.37	peak	H
10560.000	42.02	17.63	59.65	74.00	-14.35	peak	H
10560.000	31.87	17.63	49.50	54.00	-4.50	AVG	H
15840.000	38.10	21.63	59.73	74.00	-14.27	peak	H
15840.000	25.88	21.63	47.51	54.00	-6.49	AVG	H
N/A							

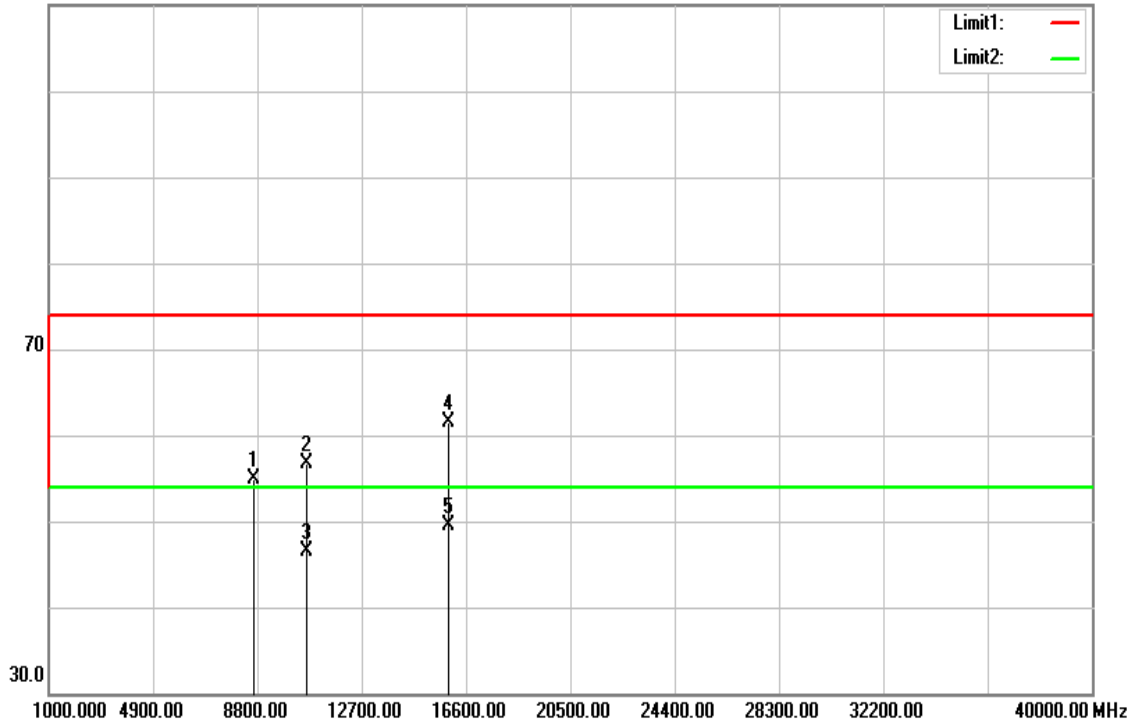
Remark:

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 / IEEE 802.11a mode / 5260 ~ 5320MHz / CH High

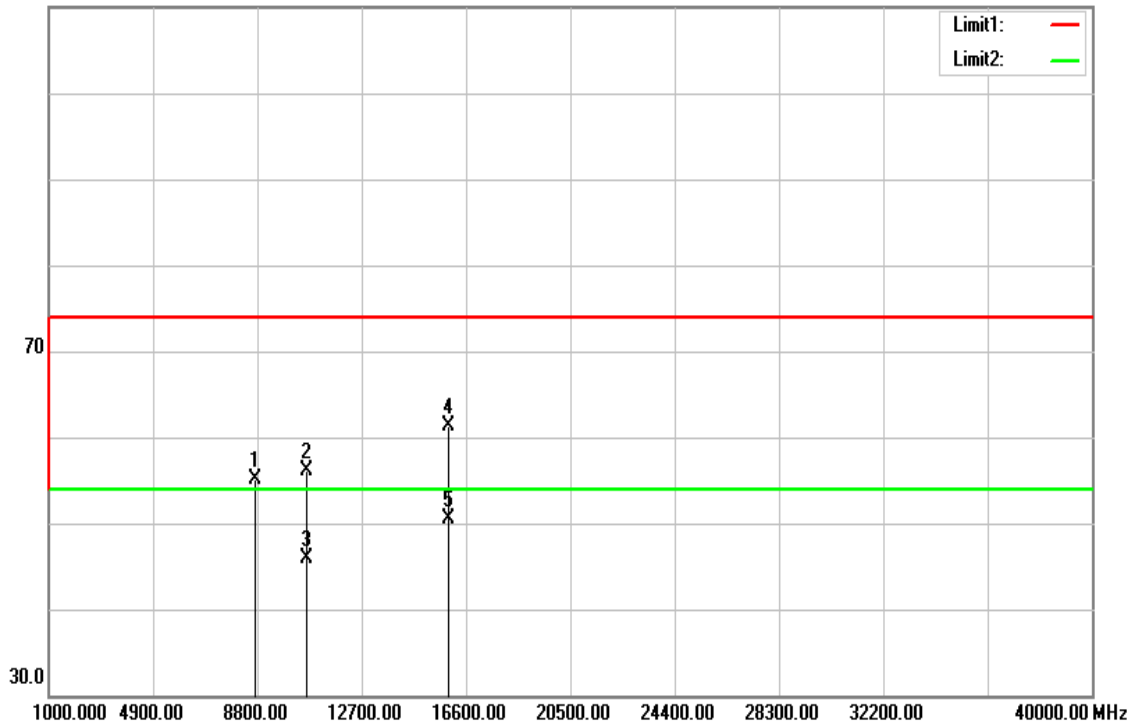
Polarity: Vertical

110.0 dBuV/m



Polarity: Horizontal

110.0 dBuV/m



Operation Mode: Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH High
Temperature: 27°C
Humidity: 53% RH
Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

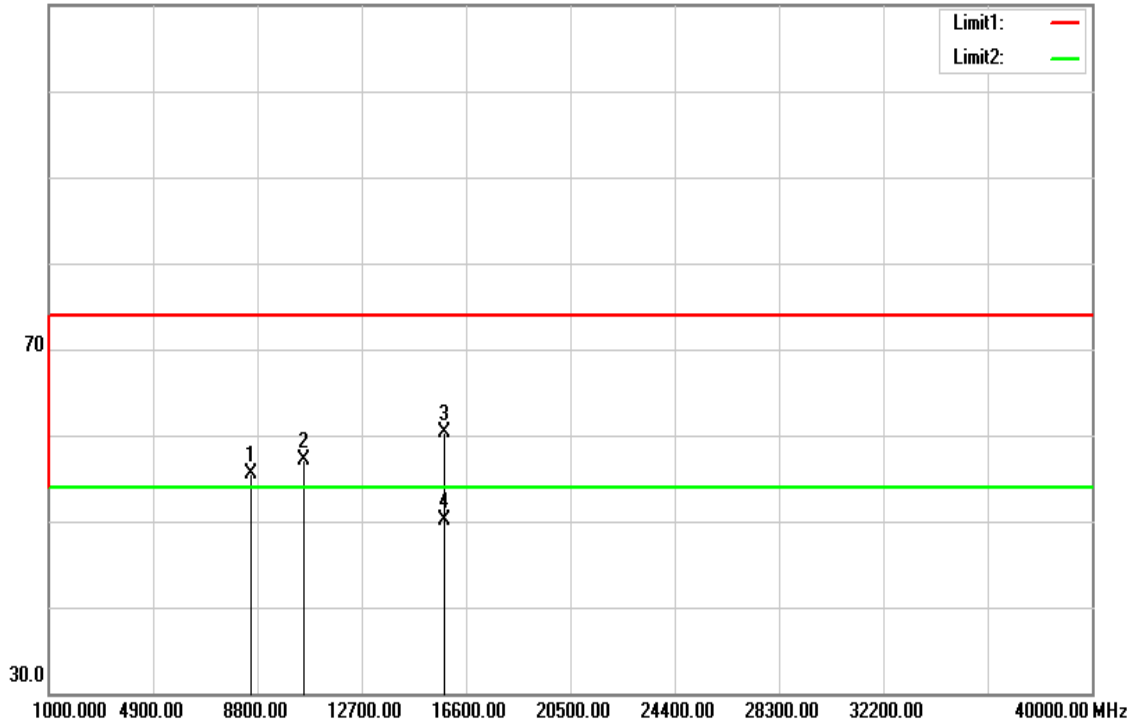
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8666.000	39.45	15.39	54.84	74.00	-19.16	peak	V
10640.000	38.91	17.72	56.63	74.00	-17.37	peak	V
10640.000	28.88	17.72	46.60	54.00	-7.40	AVG	V
15960.000	39.43	22.04	61.47	74.00	-12.53	peak	V
15960.000	27.51	22.04	49.55	54.00	-4.45	AVG	V
N/A							
8725.000	39.67	15.50	55.17	74.00	-18.83	peak	H
10640.000	38.35	17.72	56.07	74.00	-17.93	peak	H
10640.000	28.26	17.72	45.98	54.00	-8.02	AVG	H
15960.000	39.23	22.04	61.27	74.00	-12.73	peak	H
15960.000	28.37	22.04	50.41	54.00	-3.59	AVG	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).

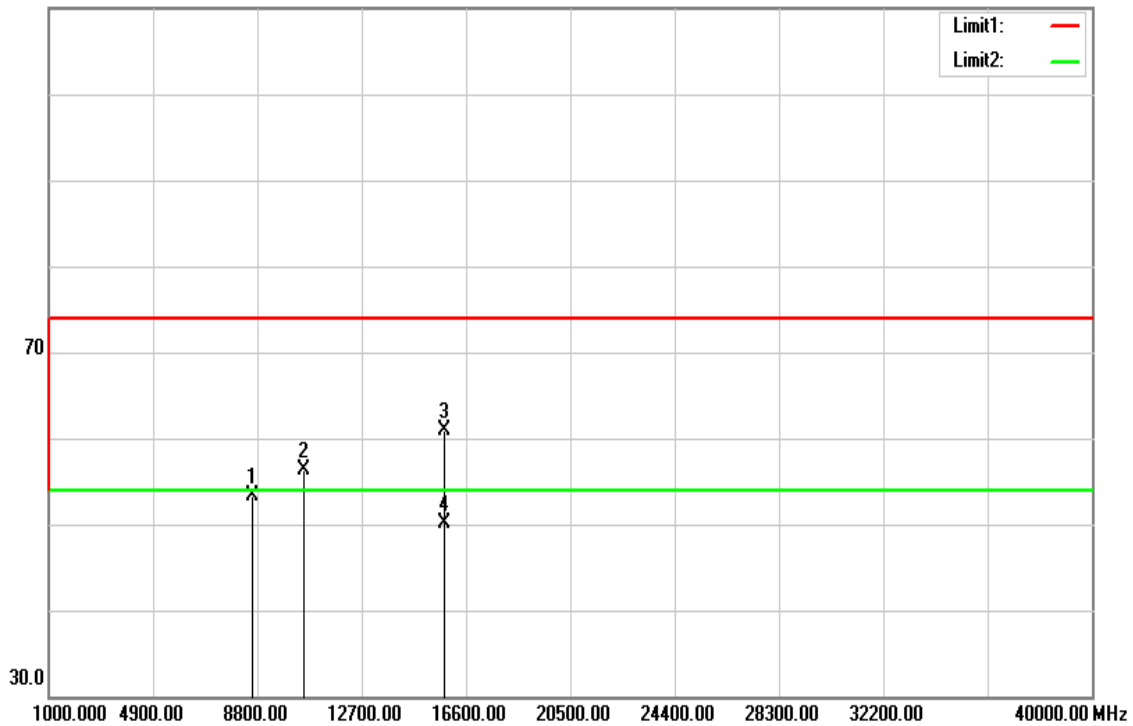
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH Low
Polarity: Vertical

110.0 dBuV/m



Polarity: Horizontal

110.0 dBuV/m



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH Low
Temperature: 27°C
Humidity: 53% RH
Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

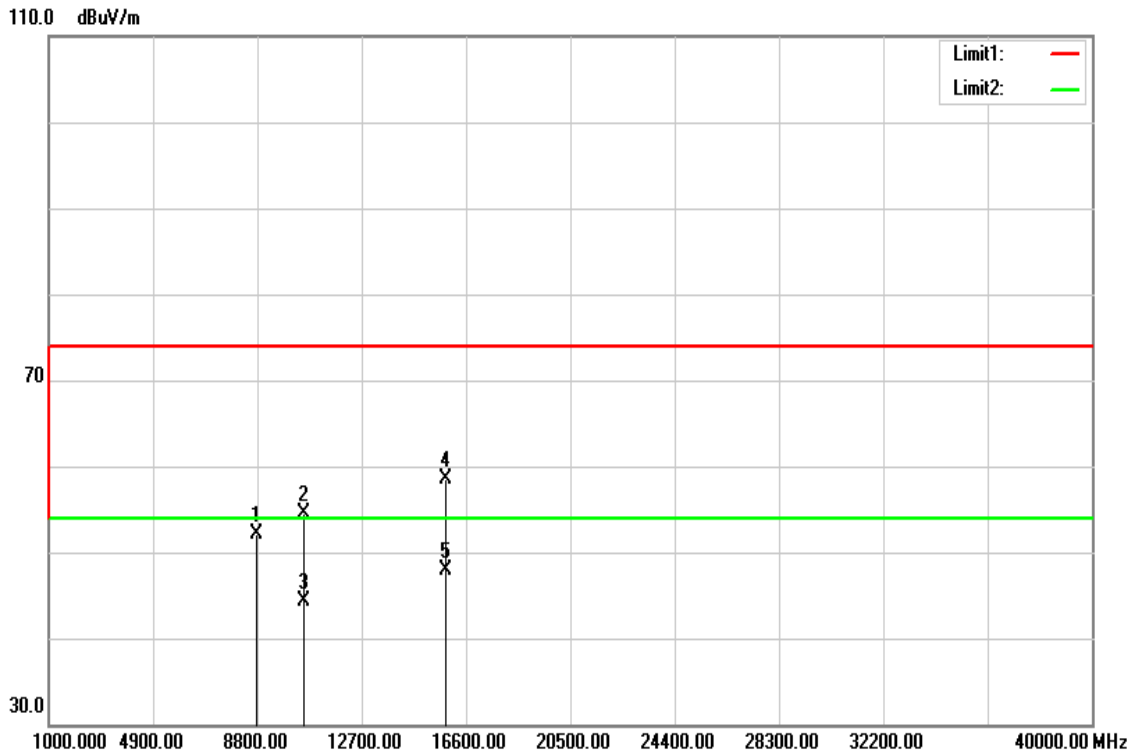
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8541.000	40.39	15.16	55.55	74.00	-18.45	peak	V
10520.000	39.57	17.59	57.16	74.00	-16.84	peak	V
15780.000	38.93	21.43	60.36	74.00	-13.64	peak	V
15780.000	28.68	21.43	50.11	54.00	-3.89	AVG	V
N/A							
8599.000	38.11	15.27	53.38	74.00	-20.62	peak	H
10520.000	38.68	17.59	56.27	74.00	-17.73	peak	H
15780.000	39.49	21.43	60.92	74.00	-13.08	peak	H
15780.000	28.71	21.43	50.14	54.00	-3.86	AVG	H
N/A							

Remark:

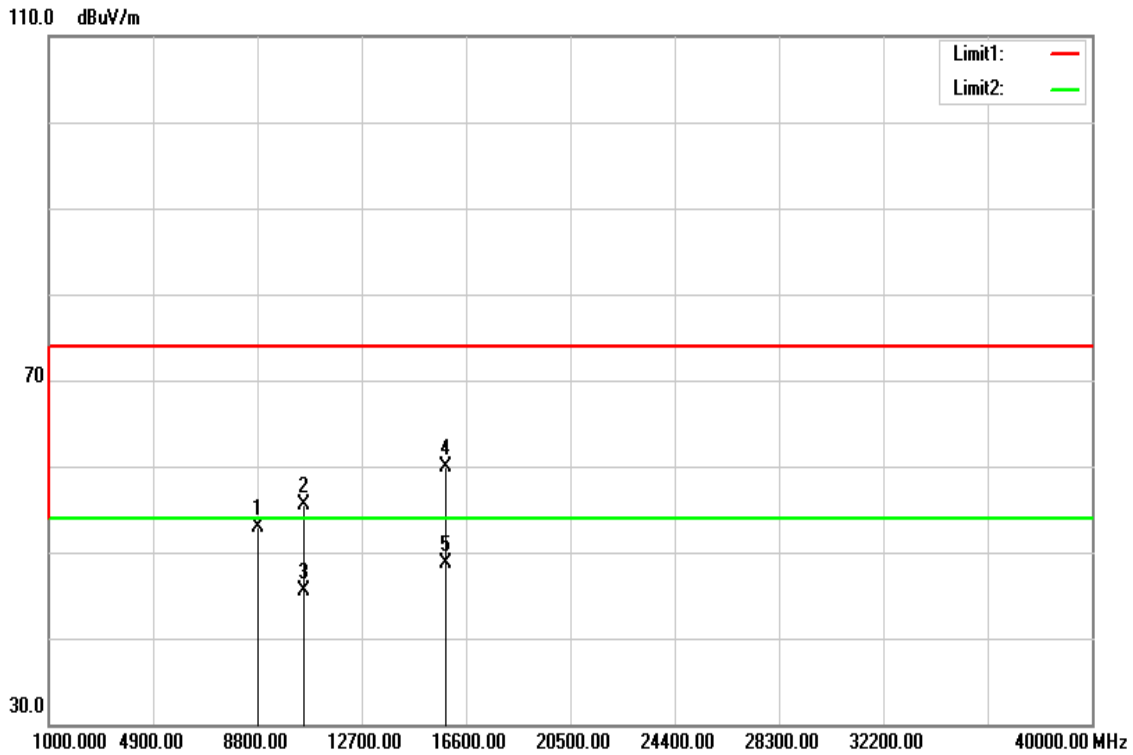
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
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 / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH Mid

Polarity: Vertical



Polarity: Horizontal



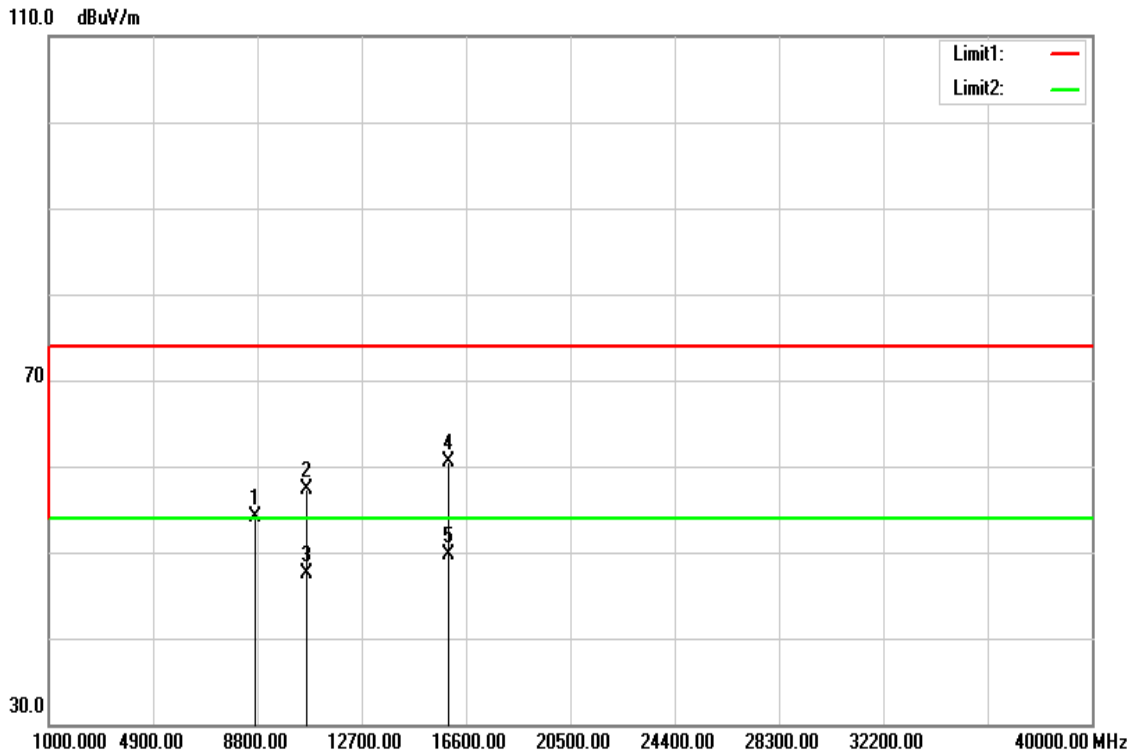
Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH Mid **Test Date:** January 30, 2016
Temperature: 27°C **Tested by:** Jason Lu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8753.000	36.51	15.56	52.07	74.00	-21.93	peak	V
10560.000	36.81	17.63	54.44	74.00	-19.56	peak	V
10560.000	26.62	17.63	44.25	54.00	-9.75	AVG	V
15840.000	36.91	21.63	58.54	74.00	-15.46	peak	V
15840.000	26.33	21.63	47.96	54.00	-6.04	AVG	V
N/A							
8814.000	37.17	15.67	52.84	74.00	-21.16	peak	H
10560.000	37.92	17.63	55.55	74.00	-18.45	peak	H
10560.000	27.89	17.63	45.52	54.00	-8.48	AVG	H
15840.000	38.28	21.63	59.91	74.00	-14.09	peak	H
15840.000	27.06	21.63	48.69	54.00	-5.31	AVG	H
N/A							

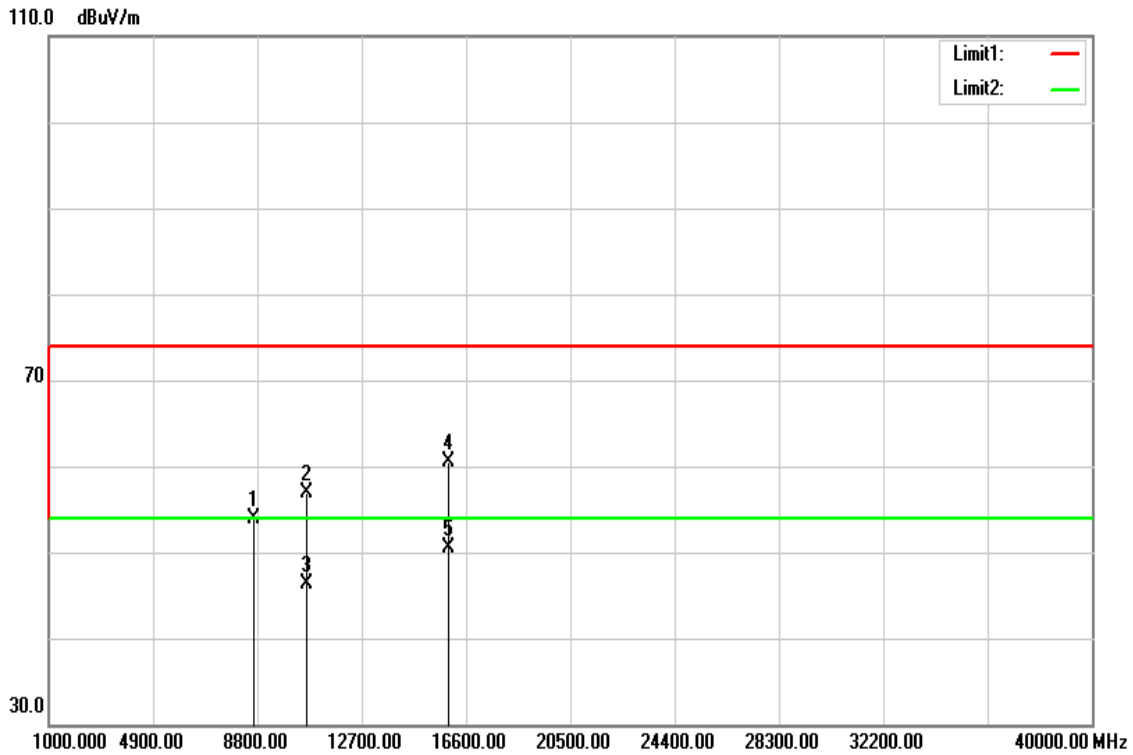
Remark:

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 / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH High
Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH High
Temperature: 27°C
Humidity: 53% RH
Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8732.000	38.65	15.52	54.17	74.00	-19.83	peak	V
10640.000	39.53	17.72	57.25	74.00	-16.75	peak	V
10640.000	29.77	17.72	47.49	54.00	-6.51	AVG	V
15960.000	38.38	22.04	60.42	74.00	-13.58	peak	V
15960.000	27.60	22.04	49.64	54.00	-4.36	AVG	V
N/A							
8652.000	38.60	15.37	53.97	74.00	-20.03	peak	H
10640.000	39.13	17.72	56.85	74.00	-17.15	peak	H
10640.000	28.53	17.72	46.25	54.00	-7.75	AVG	H
15960.000	38.42	22.04	60.46	74.00	-13.54	peak	H
15960.000	28.37	22.04	50.41	54.00	-3.59	AVG	H
N/A							

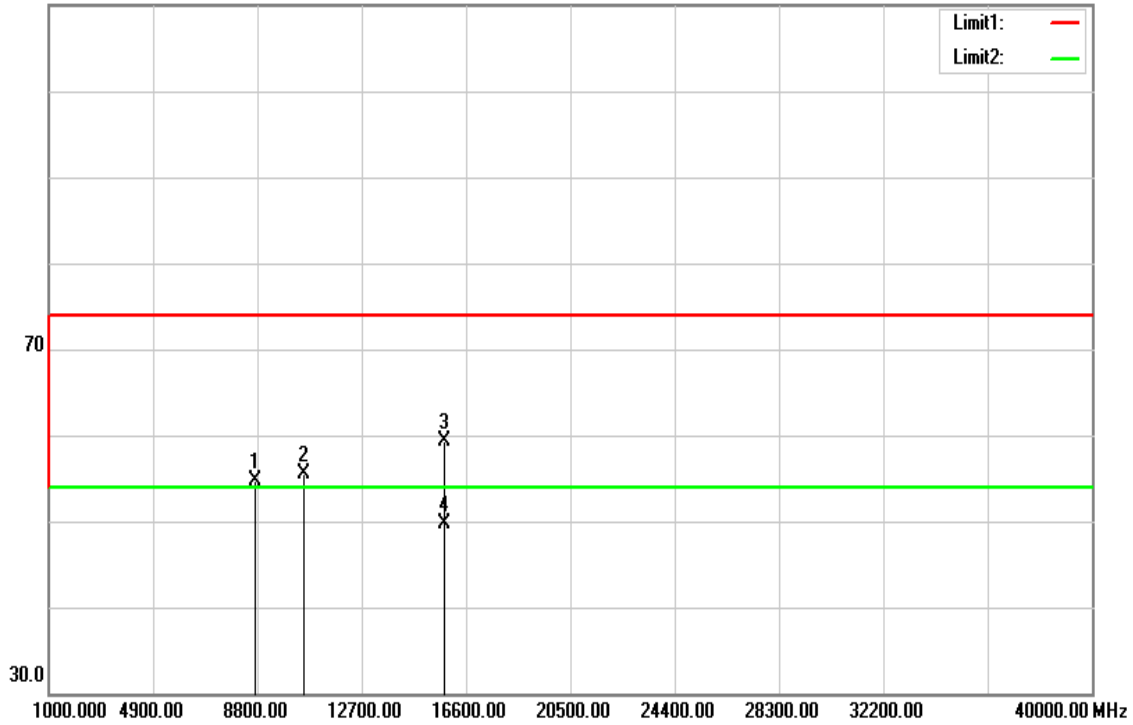
Remark:

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 / IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH Low

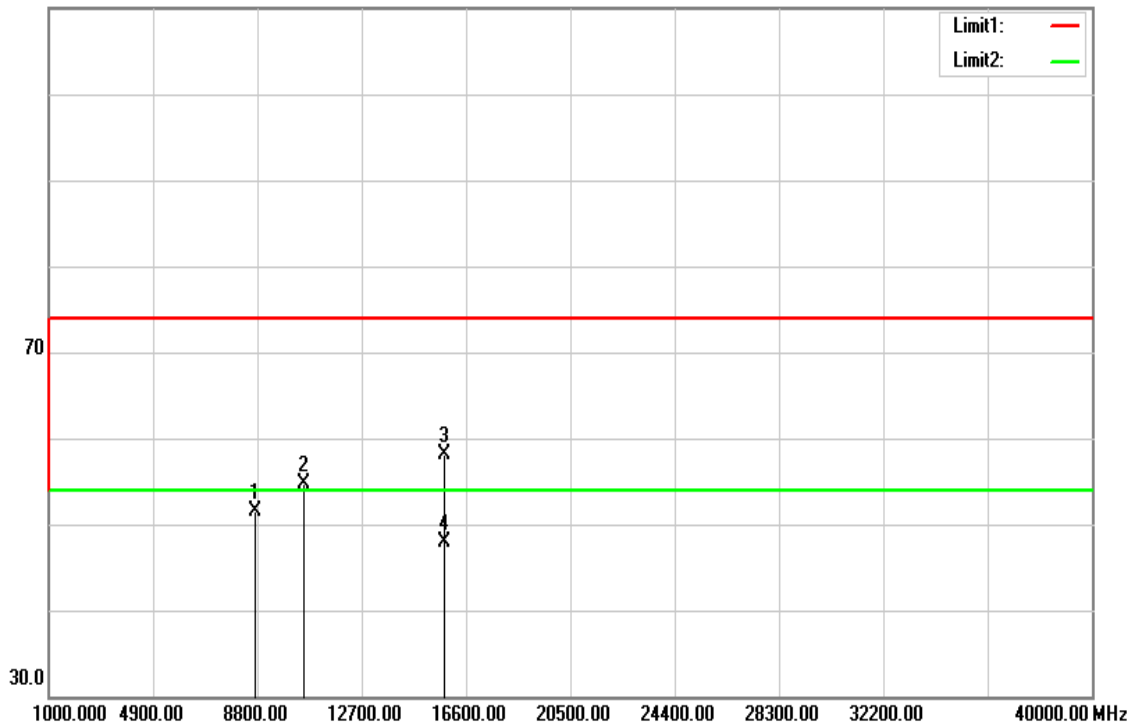
Polarity: Vertical

110.0 dBuV/m



Polarity: Horizontal

110.0 dBuV/m



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH Low
Temperature: 27°C
Humidity: 53% RH

Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

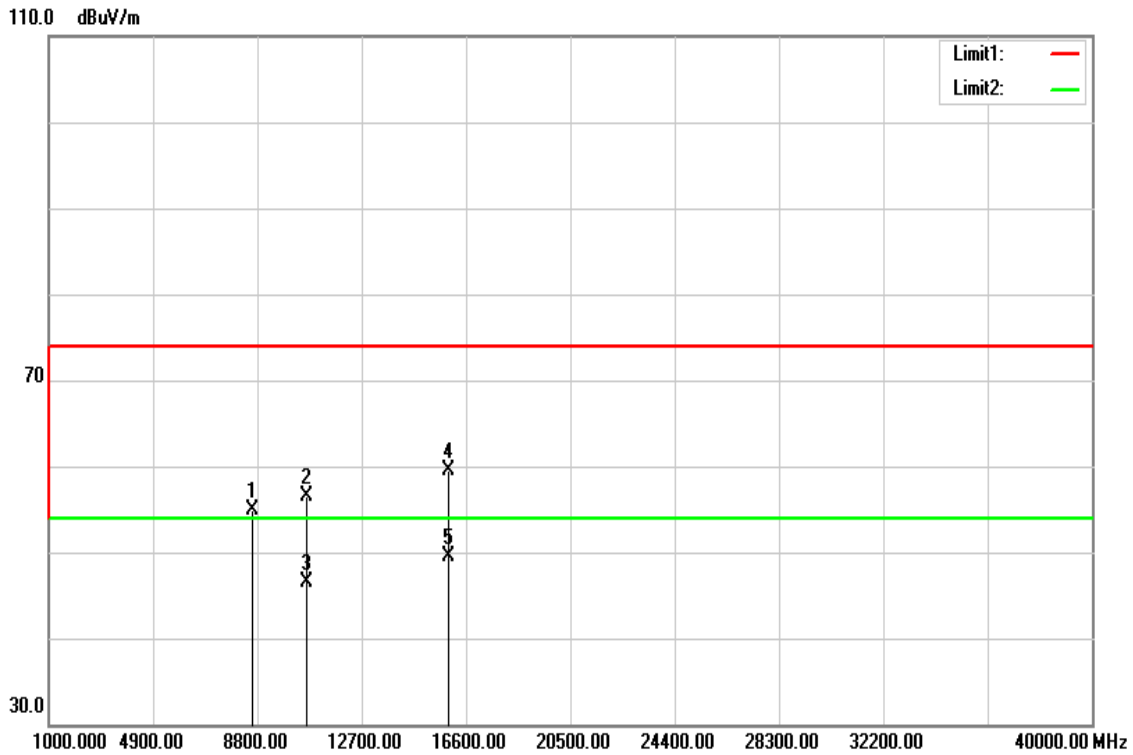
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8745.000	39.23	15.54	54.77	74.00	-19.23	peak	V
10540.000	37.96	17.61	55.57	74.00	-18.43	peak	V
15810.000	37.74	21.53	59.27	74.00	-14.73	peak	V
15810.000	28.24	21.53	49.77	54.00	-4.23	AVG	V
N/A							
8720.000	35.98	15.49	51.47	74.00	-22.53	peak	H
10540.000	37.15	17.61	54.76	74.00	-19.24	peak	H
15810.000	36.50	21.53	58.03	74.00	-15.97	peak	H
15810.000	26.41	21.53	47.94	54.00	-6.06	AVG	H
N/A							

Remark:

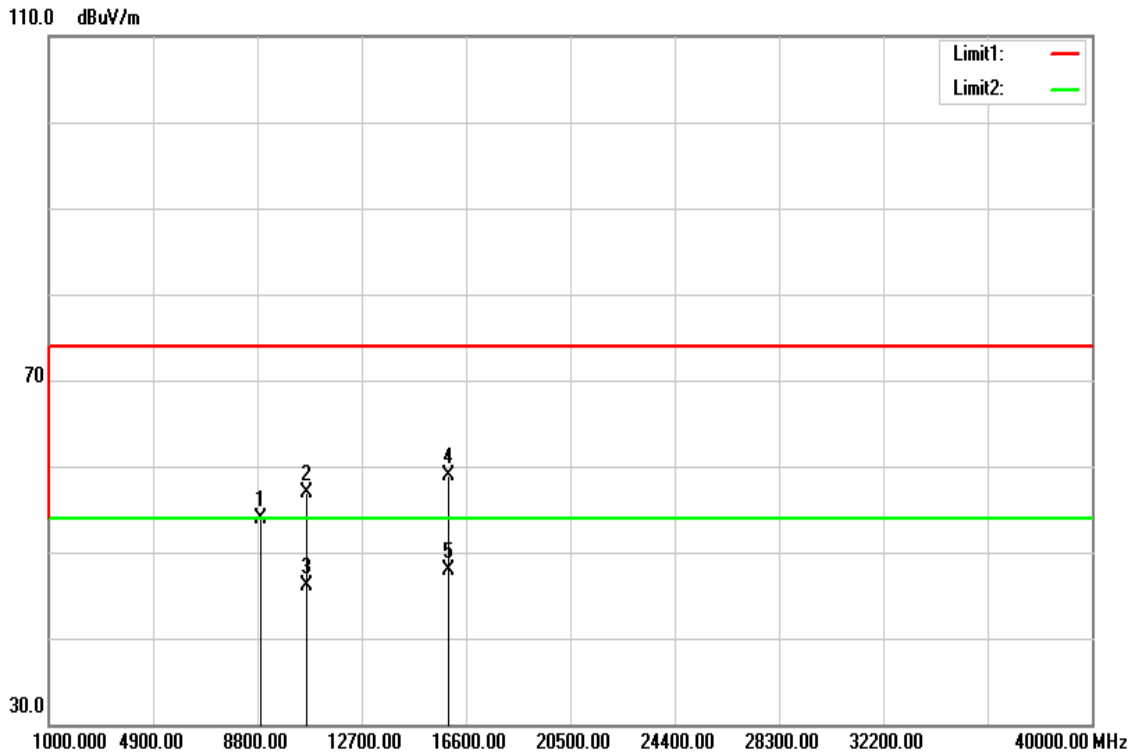
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
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 / IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH High
Temperature: 27°C
Humidity: 53% RH
Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8631.000	39.49	15.33	54.82	74.00	-19.18	peak	V
10620.000	38.90	17.70	56.60	74.00	-17.40	peak	V
10620.000	28.85	17.70	46.55	54.00	-7.45	AVG	V
15930.000	37.65	21.94	59.59	74.00	-14.41	peak	V
15930.000	27.57	21.94	49.51	54.00	-4.49	AVG	V
N/A							
8914.000	38.01	15.86	53.87	74.00	-20.13	peak	H
10620.000	39.17	17.70	56.87	74.00	-17.13	peak	H
10620.000	28.41	17.70	46.11	54.00	-7.89	AVG	H
15930.000	36.89	21.94	58.83	74.00	-15.17	peak	H
15930.000	26.00	21.94	47.94	54.00	-6.06	AVG	H
N/A							

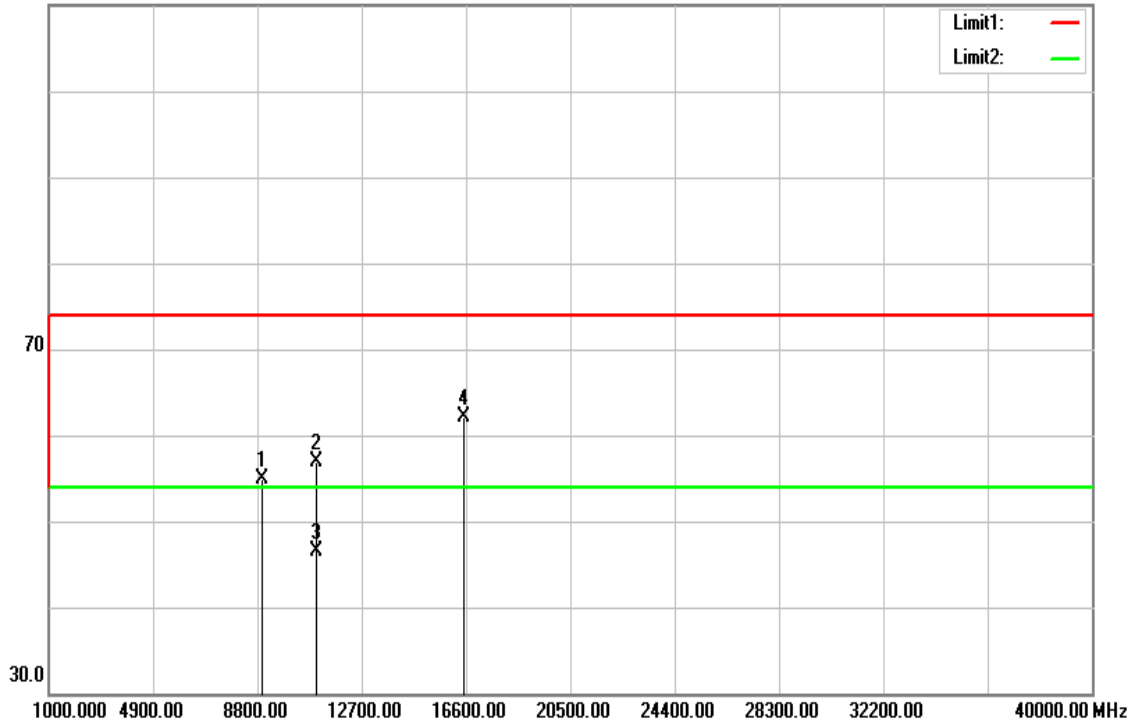
Remark:

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 / IEEE 802.11a mode / 5500 ~ 5700MHz / CH Low

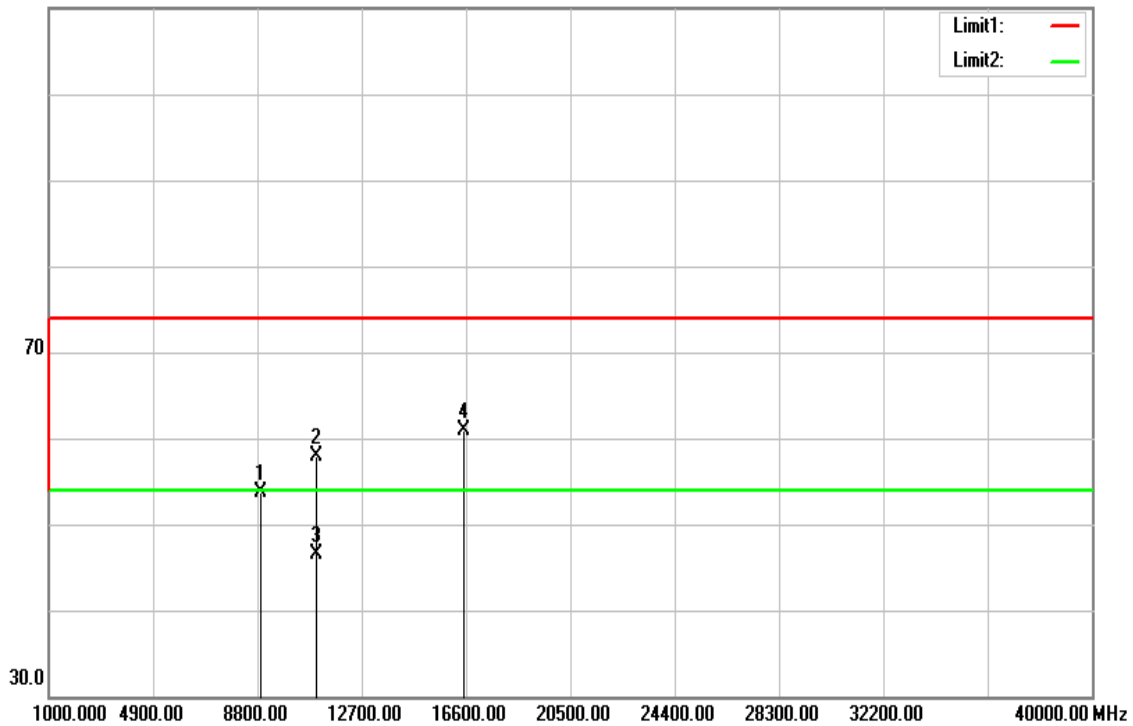
Polarity: Vertical

110.0 dBuV/m



Polarity: Horizontal

110.0 dBuV/m



Operation Mode: Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH Low **Test Date:** January 30, 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)
8975.000	38.91	15.97	54.88	74.00	-19.12	peak	V
11000.000	38.85	18.10	56.95	74.00	-17.05	peak	V
11000.000	28.44	18.10	46.54	54.00	-7.46	AVG	V
16500.000	38.53	23.57	62.10	74.00	-11.90	peak	V
N/A							
8922.000	37.93	15.87	53.80	74.00	-20.20	peak	H
11000.000	39.80	18.10	57.90	74.00	-16.10	peak	H
11000.000	28.42	18.10	46.52	54.00	-7.48	AVG	H
16500.000	37.38	23.57	60.95	74.00	-13.05	peak	H
N/A							

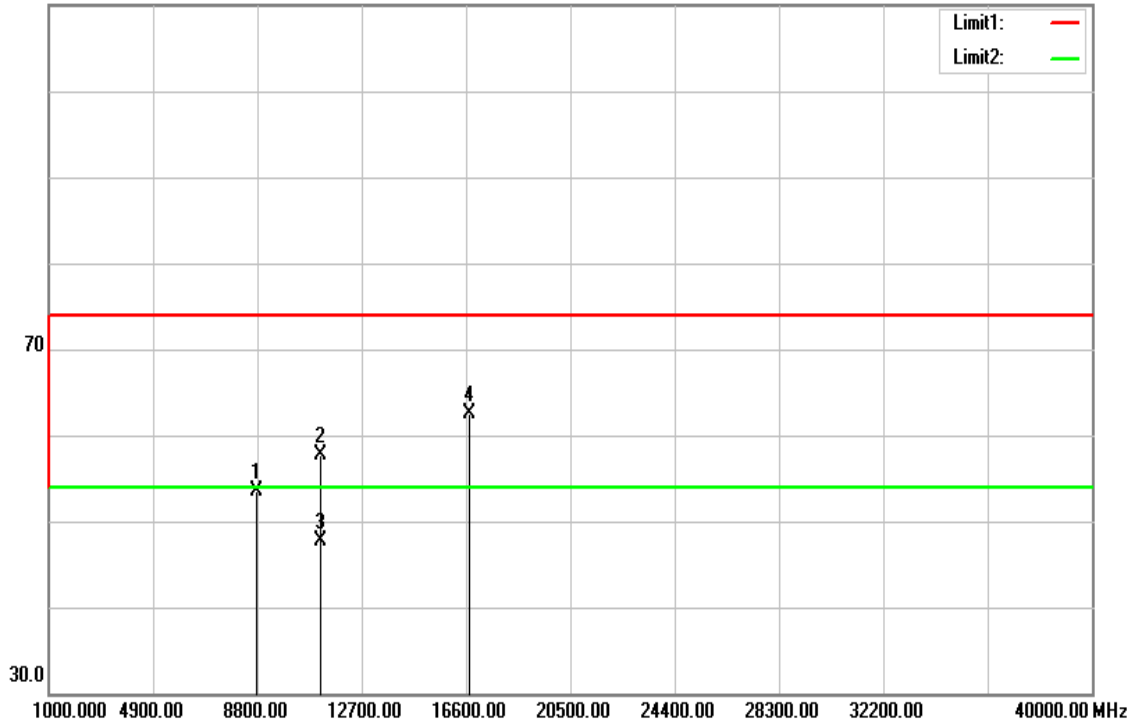
Remark:

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 or as required by the applicant.
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 / IEEE 802.11a mode / 5500 ~ 5700MHz /CH Mid

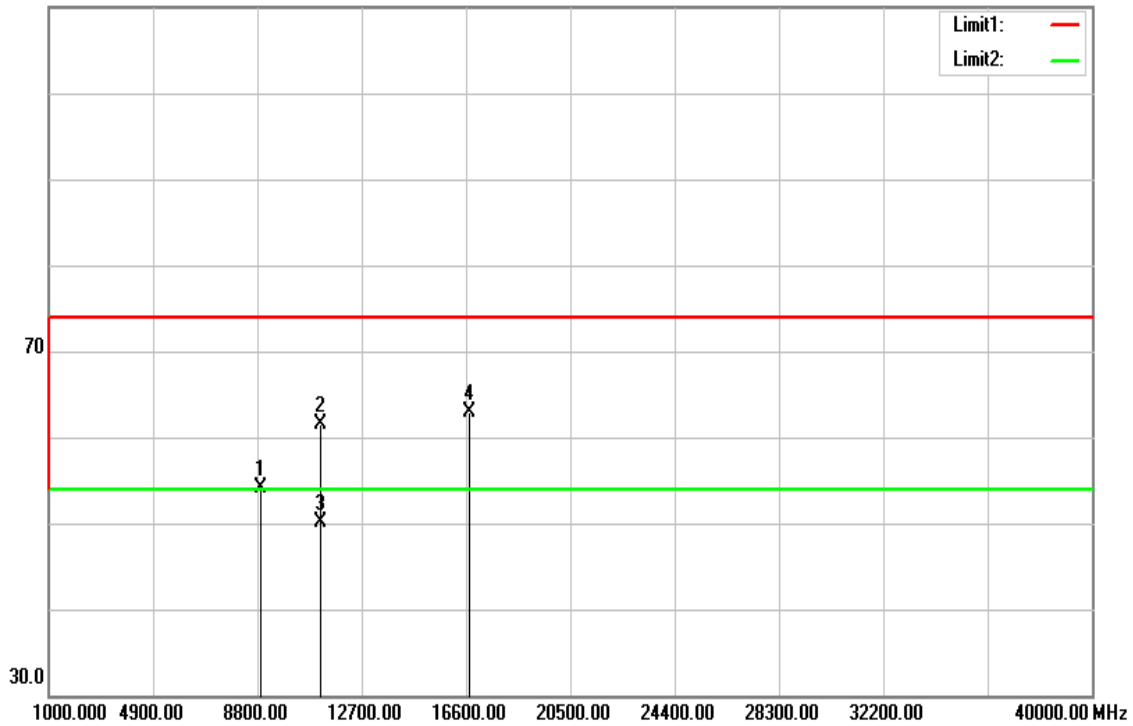
Polarity: Vertical

110.0 dBuV/m



Polarity: Horizontal

110.0 dBuV/m



Operation Mode: Tx / IEEE 802.11a mode / 5500 ~ 5700MHz /CH Mid
Temperature: 27°C
Humidity: 53% RH

Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

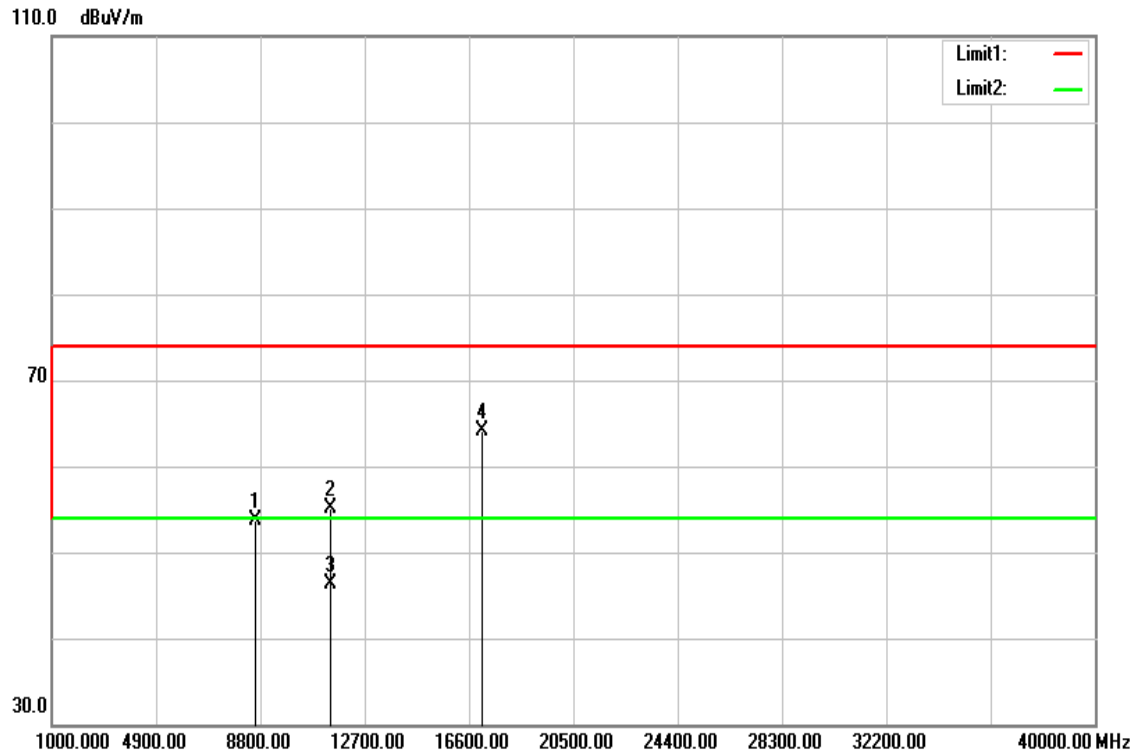
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8752.000	37.92	15.55	53.47	74.00	-20.53	peak	V
11160.000	39.57	18.12	57.69	74.00	-16.31	peak	V
11160.000	29.52	18.12	47.64	54.00	-6.36	AVG	V
16740.000	38.00	24.45	62.45	74.00	-11.55	peak	V
N/A							
8923.000	38.25	15.88	54.13	74.00	-19.87	peak	H
11160.000	43.32	18.12	61.44	74.00	-12.56	peak	H
11160.000	31.99	18.12	50.11	54.00	-3.89	AVG	H
16740.000	38.47	24.45	62.92	74.00	-11.08	peak	H
N/A							

Remark:

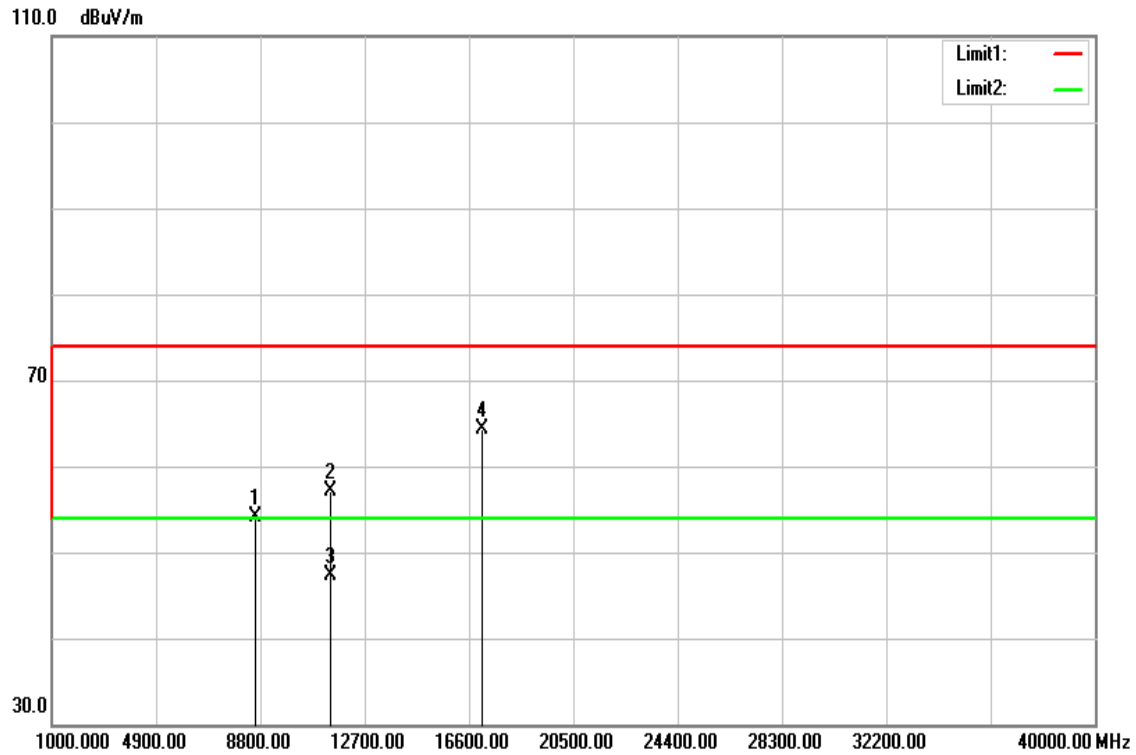
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
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 / IEEE 802.11a mode / 5500 ~ 5700MHz / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH High
Temperature: 27°C
Humidity: 53% RH

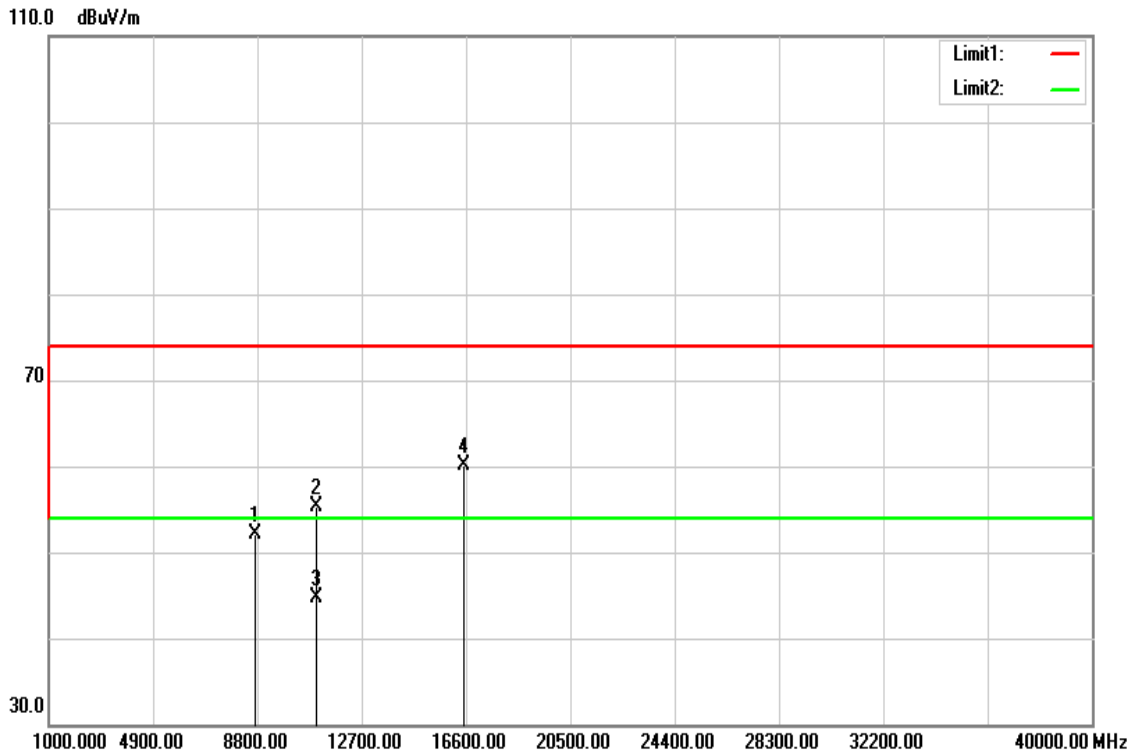
Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8642.000	38.42	15.35	53.77	74.00	-20.23	peak	V
11400.000	36.97	18.15	55.12	74.00	-18.88	peak	V
11400.000	28.17	18.15	46.32	54.00	-7.68	AVG	V
17100.000	38.05	26.01	64.06	74.00	-9.94	peak	V
N/A							
8633.000	38.80	15.33	54.13	74.00	-19.87	peak	H
11400.000	38.96	18.15	57.11	74.00	-16.89	peak	H
11400.000	29.12	18.15	47.27	54.00	-6.73	AVG	H
17100.000	38.30	26.01	64.31	74.00	-9.69	peak	H
N/A							

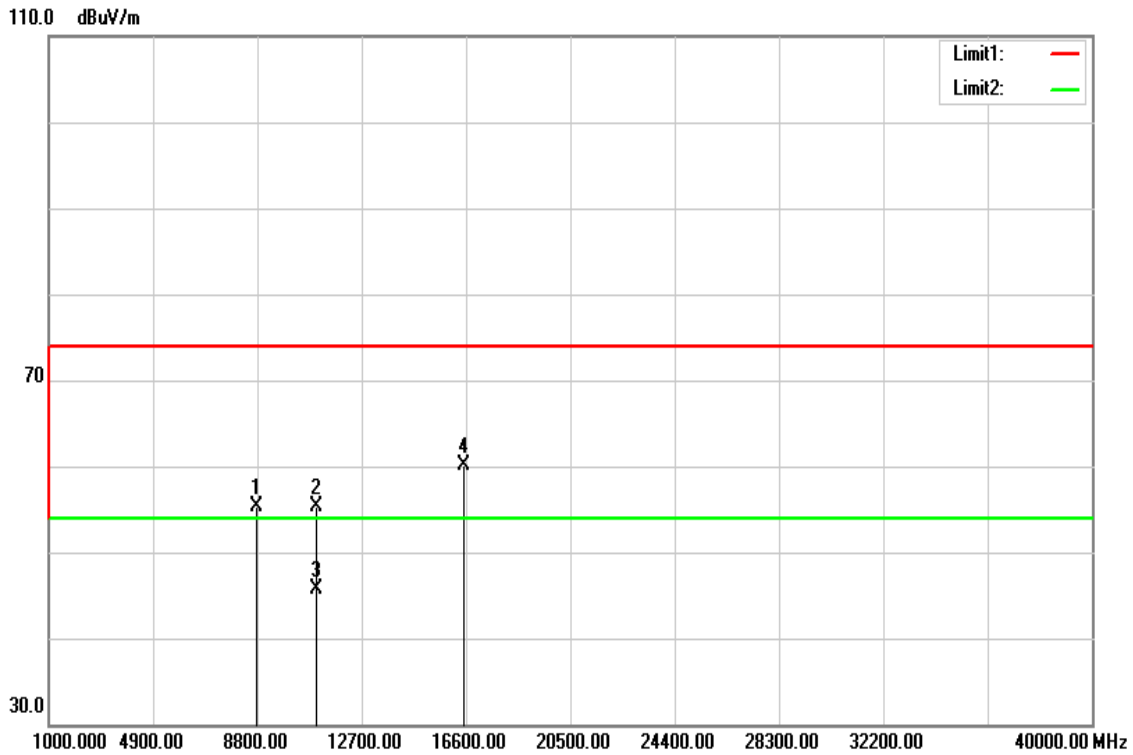
Remark:

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 or as required by the applicant.
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 / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Low
Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Low **Test Date:** January 30, 2016
Temperature: 27°C **Tested by:** Jason Lu
Humidity: 53% RH **Polarity:** Ver. / Hor.

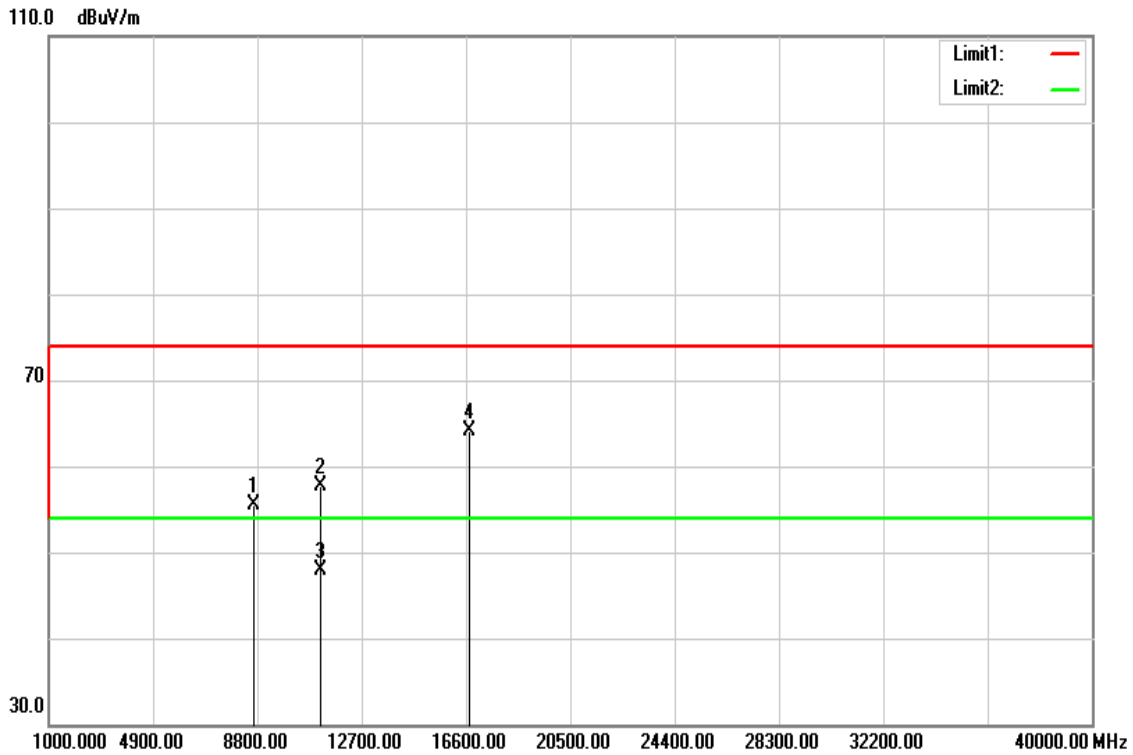
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8729.000	36.67	15.51	52.18	74.00	-21.82	peak	V
11000.000	37.24	18.10	55.34	74.00	-18.66	peak	V
11000.000	26.55	18.10	44.65	54.00	-9.35	AVG	V
16500.000	36.60	23.57	60.17	74.00	-13.83	peak	V
N/A							
8755.000	39.76	15.56	55.32	74.00	-18.68	peak	H
11000.000	37.24	18.10	55.34	74.00	-18.66	peak	H
11000.000	27.56	18.10	45.66	54.00	-8.34	AVG	H
16500.000	36.60	23.57	60.17	74.00	-13.83	peak	H
N/A							

Remark:

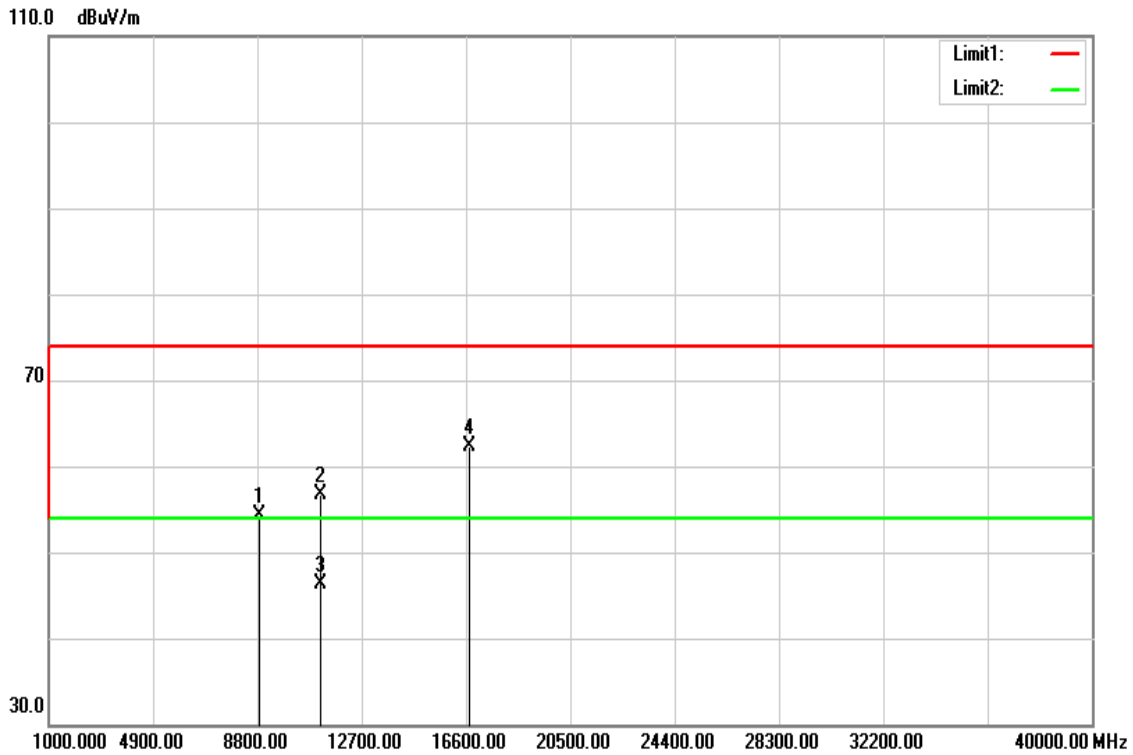
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
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 / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Mid

Polarity: Vertical



Polarity: Horizontal



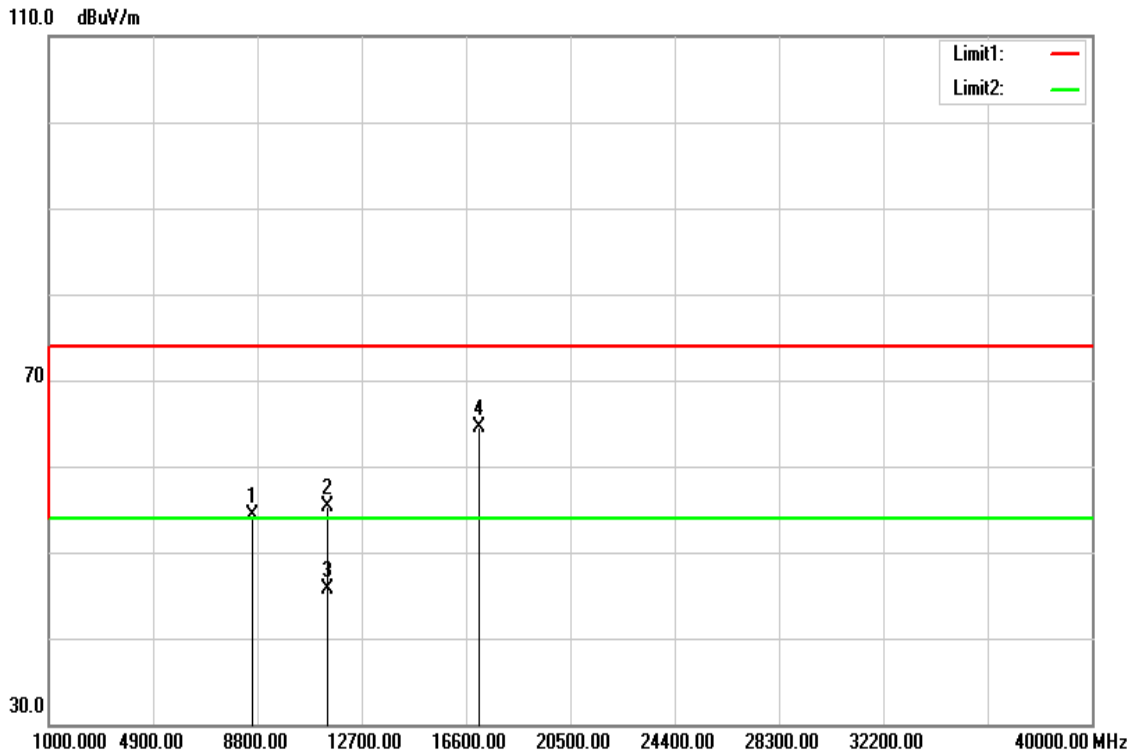
Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Mid **Test Date:** January 30, 2016
Temperature: 27°C **Tested by:** Jason Lu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8678.000	40.04	15.41	55.45	74.00	-18.55	peak	V
11160.000	39.55	18.12	57.67	74.00	-16.33	peak	V
11160.000	29.69	18.12	47.81	54.00	-6.19	AVG	V
16740.000	39.58	24.45	64.03	74.00	-9.97	peak	V
N/A							
8854.000	38.47	15.75	54.22	74.00	-19.78	peak	H
11160.000	38.66	18.12	56.78	74.00	-17.22	peak	H
11160.000	28.13	18.12	46.25	54.00	-7.75	AVG	H
16740.000	37.91	24.45	62.36	74.00	-11.64	peak	H
N/A							

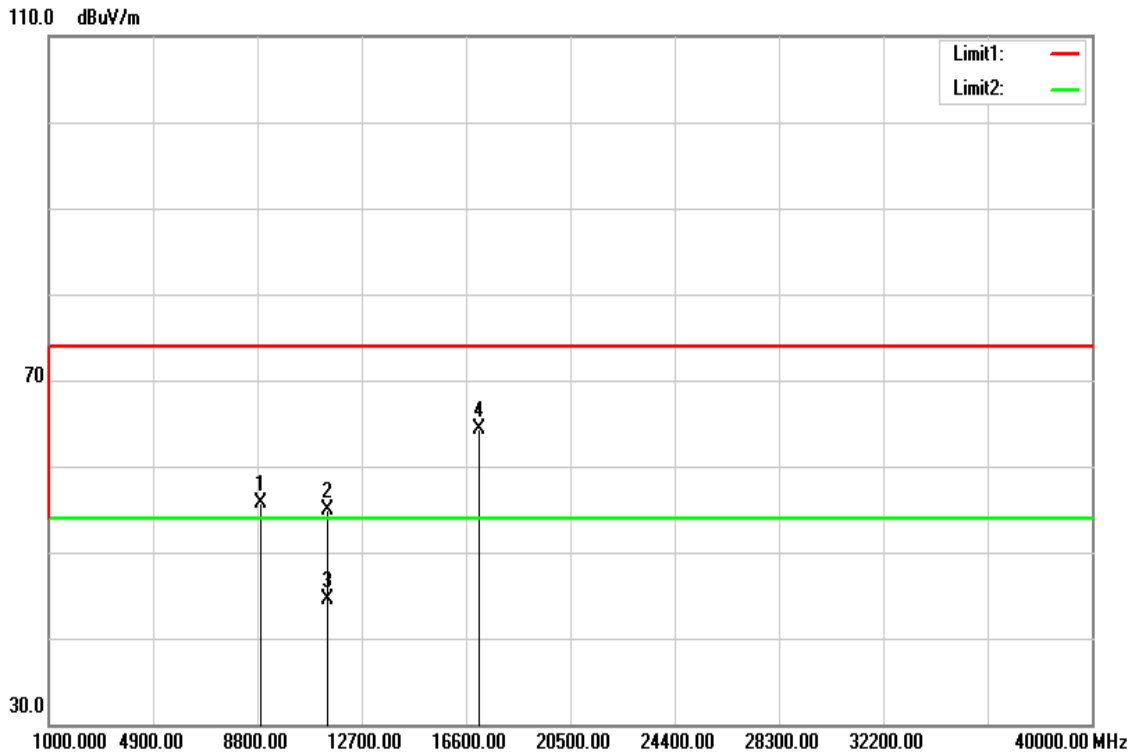
Remark:

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 or as required by the applicant.
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 / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH High
Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH High **Test Date:** January 30, 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)
8636.000	39.00	15.34	54.34	74.00	-19.66	peak	V
11400.000	37.13	18.15	55.28	74.00	-18.72	peak	V
11400.000	27.59	18.15	45.74	54.00	-8.26	AVG	V
17100.000	38.44	26.01	64.45	74.00	-9.55	peak	V
N/A							
8912.000	39.76	15.85	55.61	74.00	-18.39	peak	H
11400.000	36.72	18.15	54.87	74.00	-19.13	peak	H
11400.000	26.27	18.15	44.42	54.00	-9.58	AVG	H
17100.000	38.32	26.01	64.33	74.00	-9.67	peak	H
N/A							

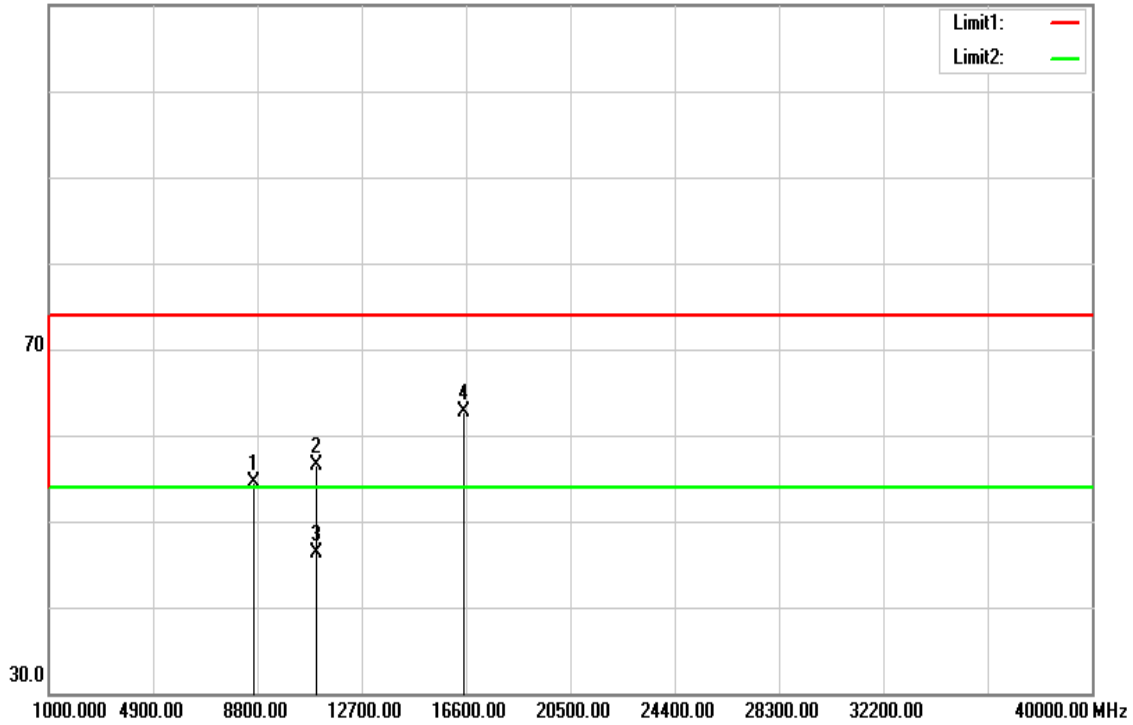
Remark:

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 or as required by the applicant.
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 / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Low

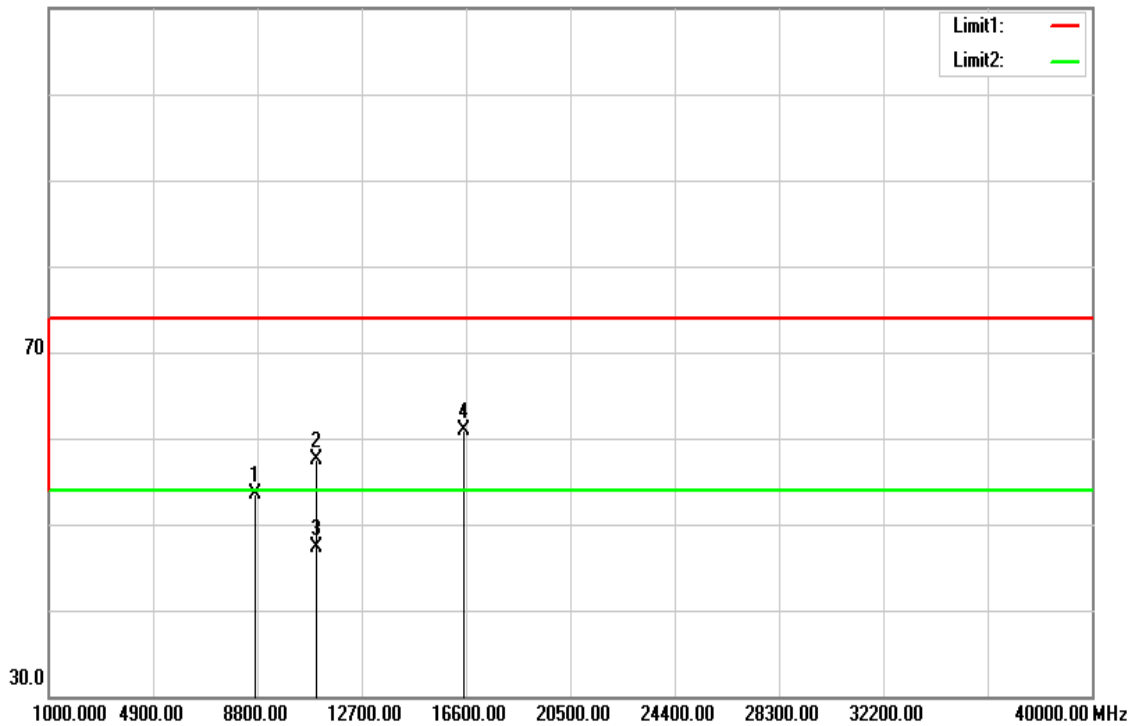
Polarity: Vertical

110.0 dBuV/m



Polarity: Horizontal

110.0 dBuV/m



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Low
Temperature: 27°C
Humidity: 53% RH

Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

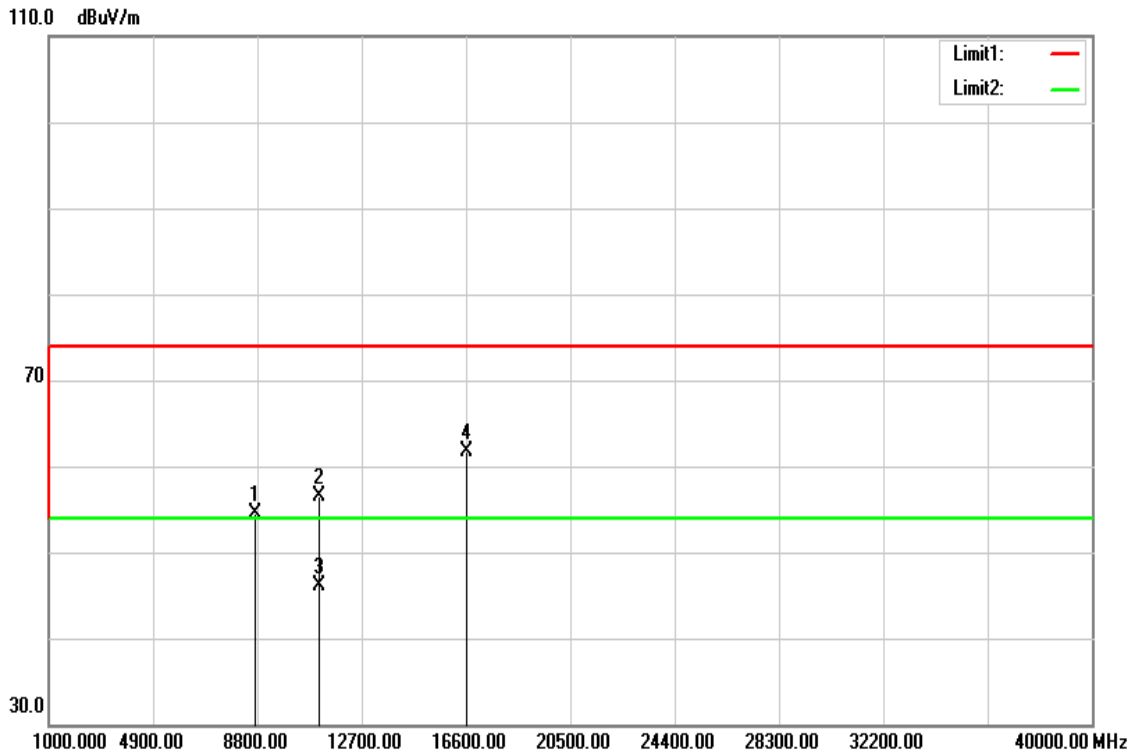
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8651.000	39.08	15.36	54.44	74.00	-19.56	peak	V
11020.000	38.40	18.10	56.50	74.00	-17.50	peak	V
11020.000	28.25	18.10	46.35	54.00	-7.65	AVG	V
16530.000	39.02	23.68	62.70	74.00	-11.30	peak	V
N/A							
8725.000	37.99	15.50	53.49	74.00	-20.51	peak	H
11020.000	39.43	18.10	57.53	74.00	-16.47	peak	H
11020.000	29.23	18.10	47.33	54.00	-6.67	AVG	H
16530.000	37.25	23.68	60.93	74.00	-13.07	peak	H
N/A							

Remark:

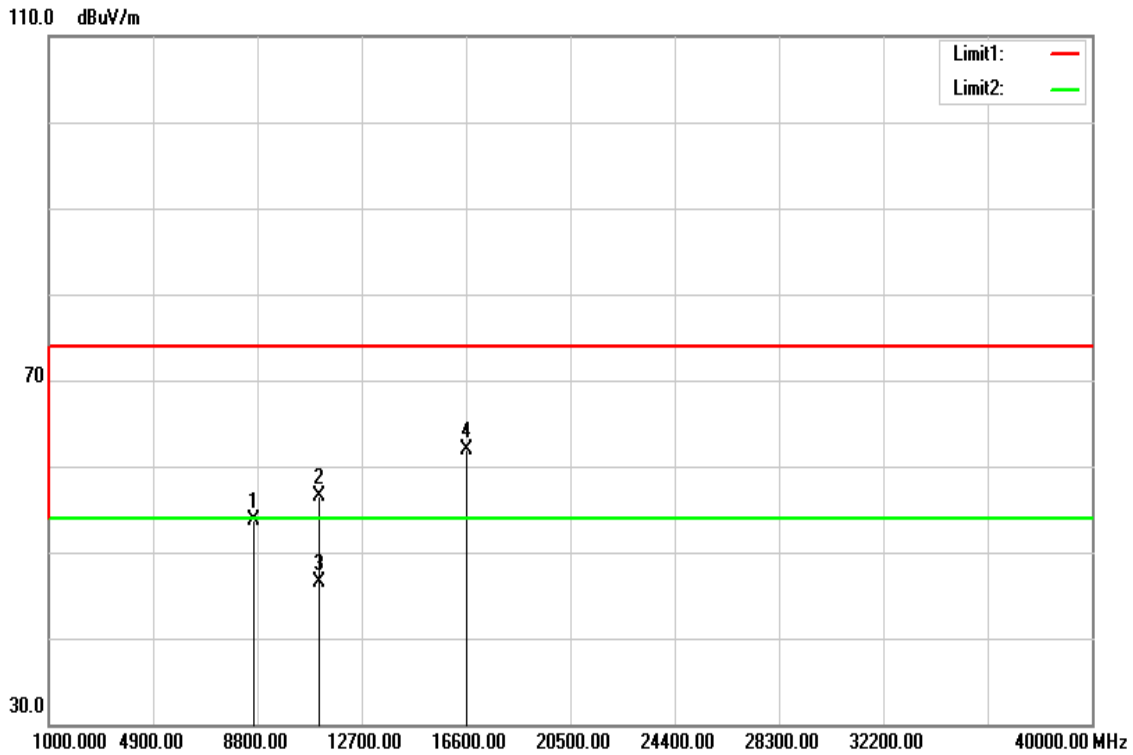
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
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 / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Mid
Temperature: 27°C
Humidity: 53% RH

Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

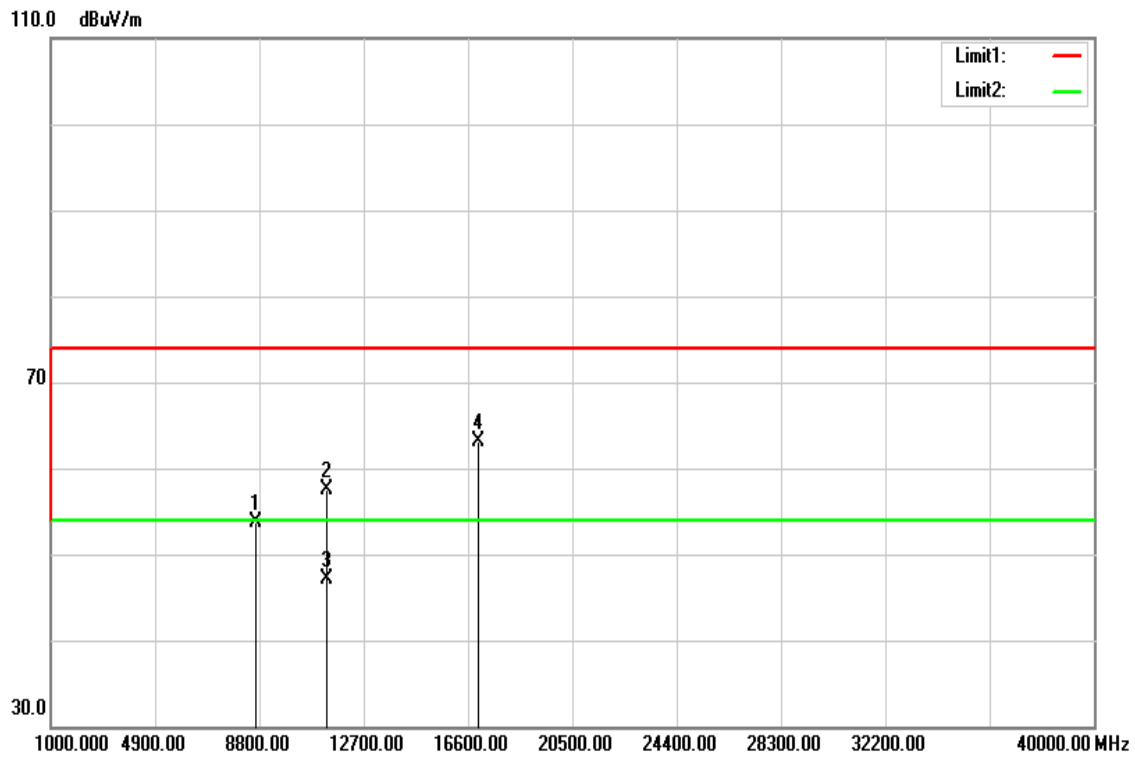
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8715.000	39.07	15.48	54.55	74.00	-19.45	peak	V
11100.000	38.46	18.11	56.57	74.00	-17.43	peak	V
11100.000	27.99	18.11	46.10	54.00	-7.90	AVG	V
16650.000	37.63	24.12	61.75	74.00	-12.25	peak	V
N/A							
8655.000	38.25	15.37	53.62	74.00	-20.38	peak	H
11100.000	38.46	18.11	56.57	74.00	-17.43	peak	H
11100.000	28.44	18.11	46.55	54.00	-7.45	AVG	H
16650.000	37.69	24.12	61.81	74.00	-12.19	peak	H
N/A							

Remark:

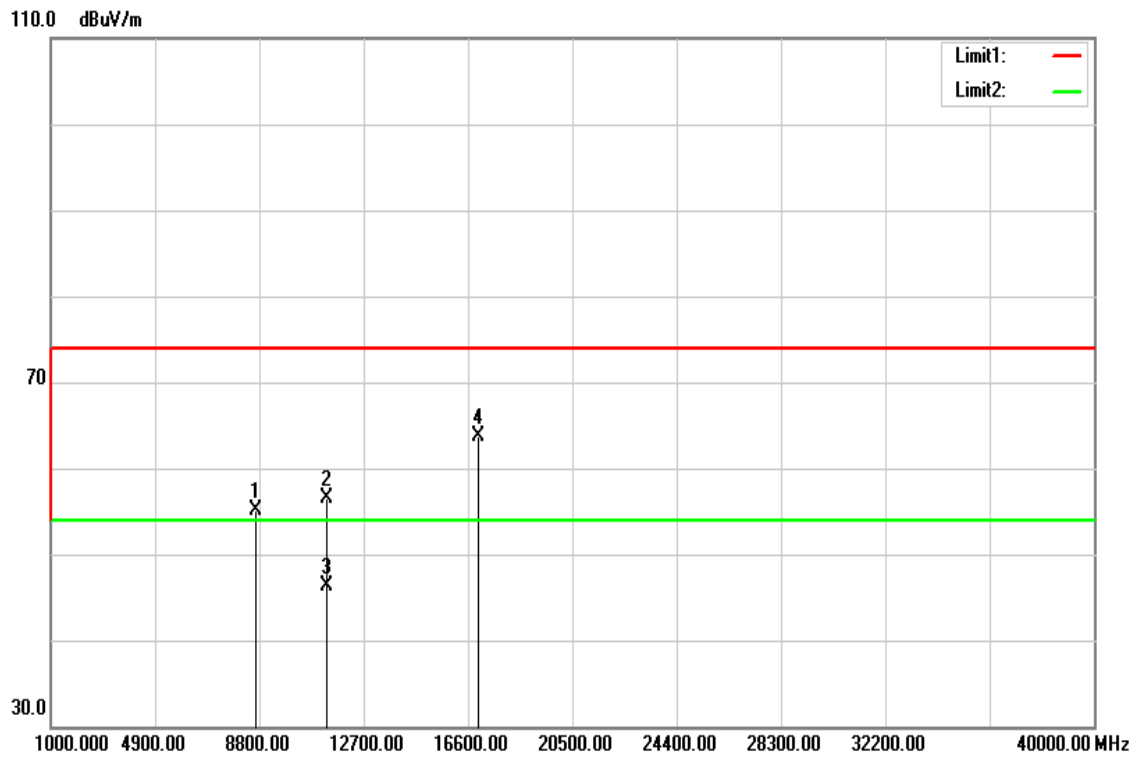
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
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 / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH High
Temperature: 27°C
Humidity: 53% RH

Test Date: January 30, 2016
Tested by: Jason Lu
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8666.000	38.22	15.39	53.61	74.00	-20.39	peak	V
11340.000	39.46	18.14	57.60	74.00	-16.40	peak	V
11340.000	28.89	18.14	47.03	54.00	-6.97	AVG	V
17010.000	37.66	25.46	63.12	74.00	-10.88	peak	V
N/A							
8670.000	39.64	15.40	55.04	74.00	-18.96	peak	H
11340.000	38.29	18.14	56.43	74.00	-17.57	peak	H
11340.000	28.17	18.14	46.31	54.00	-7.69	AVG	H
17010.000	38.22	25.46	63.68	74.00	-10.32	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 or as required by the applicant.
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).

7.6 POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a), 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 μ H/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 (dB μ V)	
	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

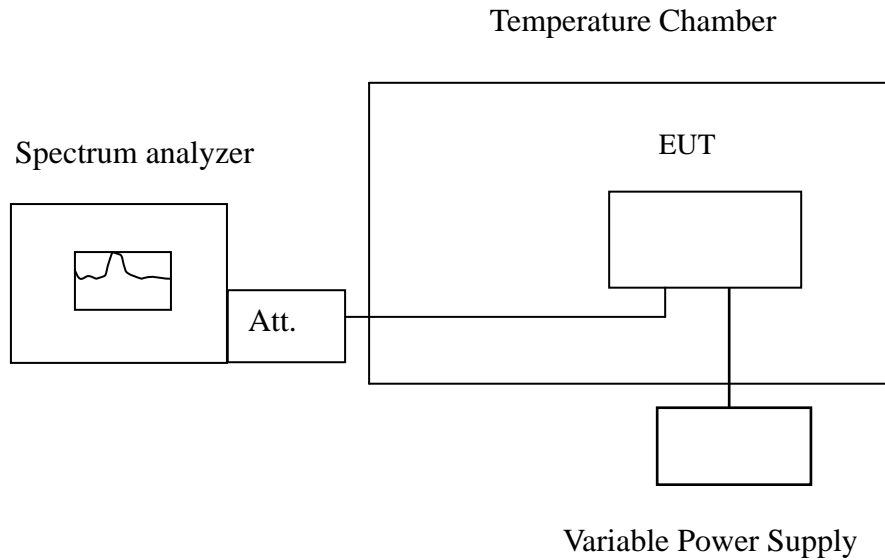
Not applicable, because EUT not connect to AC Main Source direct.

7.7 FREQUENCY STABILITY

LIMIT

According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the operational description.

Test Configuration



Remark: Measurement setup for testing on Antenna connector

TEST PROCEDURE

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

TEST RESULTS

No non-compliance noted.

5280 MHz:

Operating Frequency: 5280 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit	Result
			±20ppm	(Pass/Fail)
50	12	5279.969610	-5.755681818	Pass
40	12	5279.973080	-5.098484849	Pass
30	12	5279.981330	-3.535984849	Pass
20	12	5279.992620	-1.397727273	Pass
10	12	5280.004340	0.821969697	Pass
0	12	5280.014330	2.714015152	Pass
-10	12	5280.020840	3.946969697	Pass
-20	12	5280.022580	4.276515151	Pass

Operating Frequency: 5280 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit	Result
			±20ppm	(Pass/Fail)
20	10.2	5279.992620	-1.397727273	Pass
	12	5279.992620	-1.397727273	Pass
	13.8	5279.992620	-1.397727273	Pass