

FCC 47 CFR PART 15 SUBPART E

TEST REPORT

For

Computer

Model:

TREK-688, TREK-688XXXXXXXXXXXXXXXXXX (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: January 7, 2016



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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
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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-688, TREK-688XXXXXXXXXXXXXXXXXX (where "X"
may be any alphanumeric character , "-" or blank)

Date of Test: December 18, 2015 ~ January 3, 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:



Miller Lee
Manager
Compliance Certification Services Inc.

Reviewed by:



Angel Cheng
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	Computer				
Trade Name	ADVANTECH				
Model Number	TREK-688, TREK-688XXXXXXXXXXXXXXX (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	October 5, 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	16.90	0.0490
		IEEE 802.11n HT 20 MHz	5180 ~ 5240	16.70	0.0468
		IEEE 802.11n HT 40 MHz	5190 ~ 5230	16.59	0.0456
	U-NII-2A	IEEE 802.11a	5260 - 5320	16.78	0.0476
		IEEE 802.11n HT 20 MHz	5260 - 5320	16.61	0.0458
		IEEE 802.11n HT 40 MHz	5270 ~ 5310	16.88	0.0488
	U-NII-2C	IEEE 802.11a	5500 ~ 5700	17.34	0.0542
		IEEE 802.11n HT 20 MHz	5500 ~ 5700	17.54	0.0568
		IEEE 802.11n HT 40 MHz	5510 ~ 5670	17.52	0.0565
Modulation Technique	OFDM (QPSK, BPSK, 16-QAM, 64-QAM)				

Transmit Data Rate	IEEE 802.11a mode: 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, 28.89, 28.9, 39, 43.3, 43.33 52, 57.78, 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) IEEE 802.11n HT 80 mode: OFDM (29.3, 58.5, 87.8, 117, 175.5, 234, 263.3, 292.5, 351, 390, 468, 526.5, 585, 702, 780 Mbps)
Antenna Specification	WIESON / GPOT113-020 Gain: -5.96 dBi
Antenna Designation	Dipole Antenna

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-TREK688LTE** filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 and FCC CFR 47 Part 15.207, 15.209, 15.407, KDB 644545 D03 v01 and KDB 789033 D02 v01r01 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 the turntable, which is 1.5 m above the ground plane. The turntable is then rotated for 360 degrees to determine the proper orientation for the maximum emission level. The EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission level. And, each emission is to be maximized by changing the horizontal and vertical polarization of the receiving antenna. 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-688) 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.

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	01/25/2016
EMI Test Receiver	R&S	ESCI	100064	06/03/2016
Bilog Antenna	Sunol Sciences	JB3	A030105	08/05/2016
Horn Antenna	EMCO	3117	00055165	01/26/2016
Horn Antenna	EMCO	3116	26370	12/25/2015
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	12/25/2015
Coaxial Cable	Huber+Suhner	102	29212/2	12/25/2015
Coaxial Cable	Huber+Suhner	102	29406/2	12/25/2015
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.

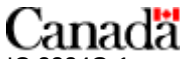
Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

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.

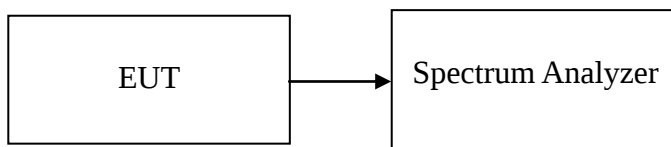
7. FCC PART 15 REQUIREMENTS

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	44.7916	27.3237
Mid	5220	45.5128	30.7692
High	5240	46.1538	30.7692

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	47.0352	27.6442
Mid	5220	49.3589	32.6121
High	5240	48.3173	32.1314

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	61.0576	37.5000
High	5230	95.5128	58.8141

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	45.5128	31.0897
Mid	5280	45.0320	28.6858
High	5320	45.2724	29.1666

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	48.5576	31.2500
Mid	5280	48.3173	30.0480
High	5320	48.8782	30.9294

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	93.1089	54.6474
High	5310	79.8076	39.1025

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	43.9102	26.5224
Mid	5580	44.7115	28.4455
High	5700	45.9935	31.3301

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	46.4743	25.2403
Mid	5580	48.1570	29.0865
High	5700	48.5576	32.6121

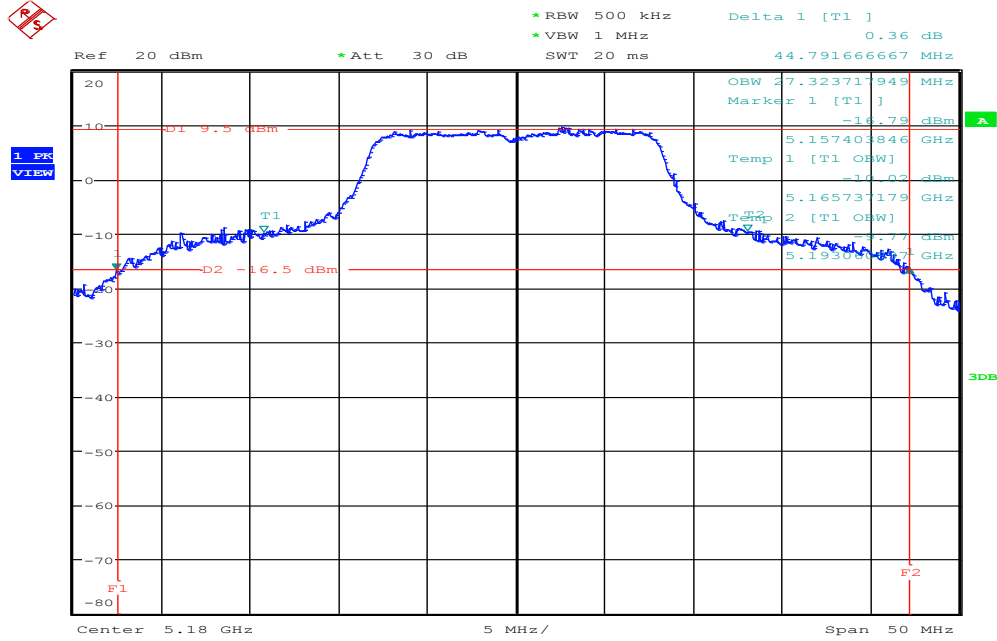
Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz

Channel	Frequency (MHz)	26db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	82.5320	40.8653
Mid	5550	96.3141	58.4935
High	5670	97.2756	63.4615

Test Plot

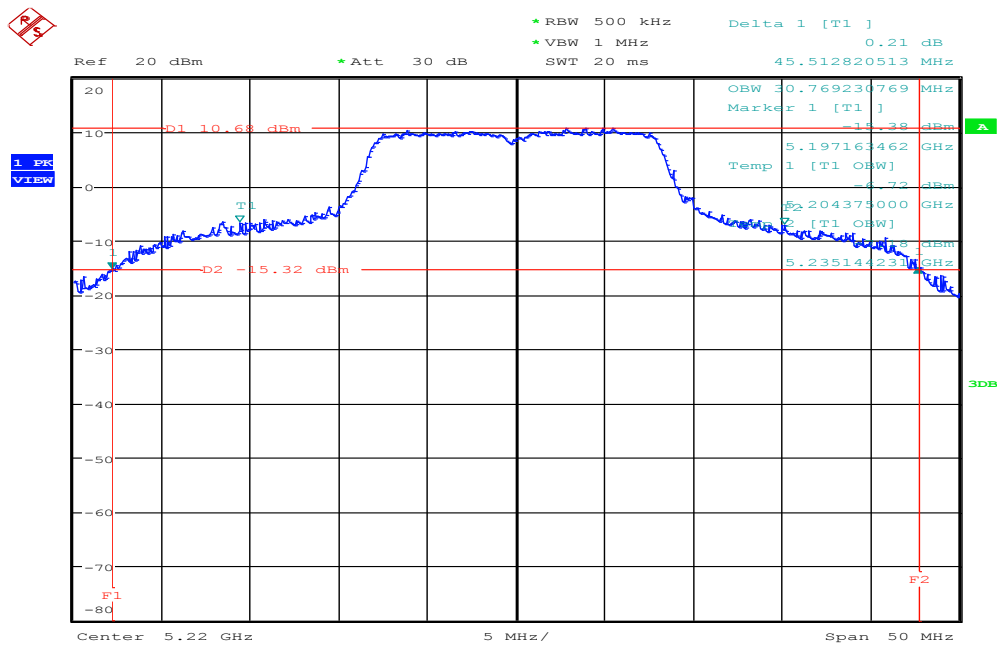
IEEE 802.11a for 5180 ~ 5240MHz

CH Low



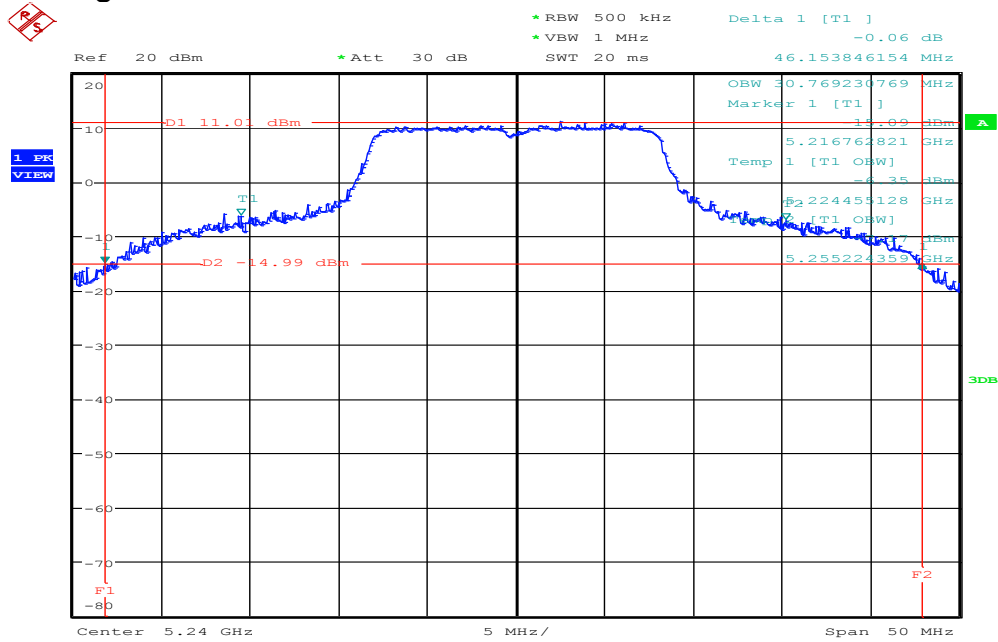
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CH Mid



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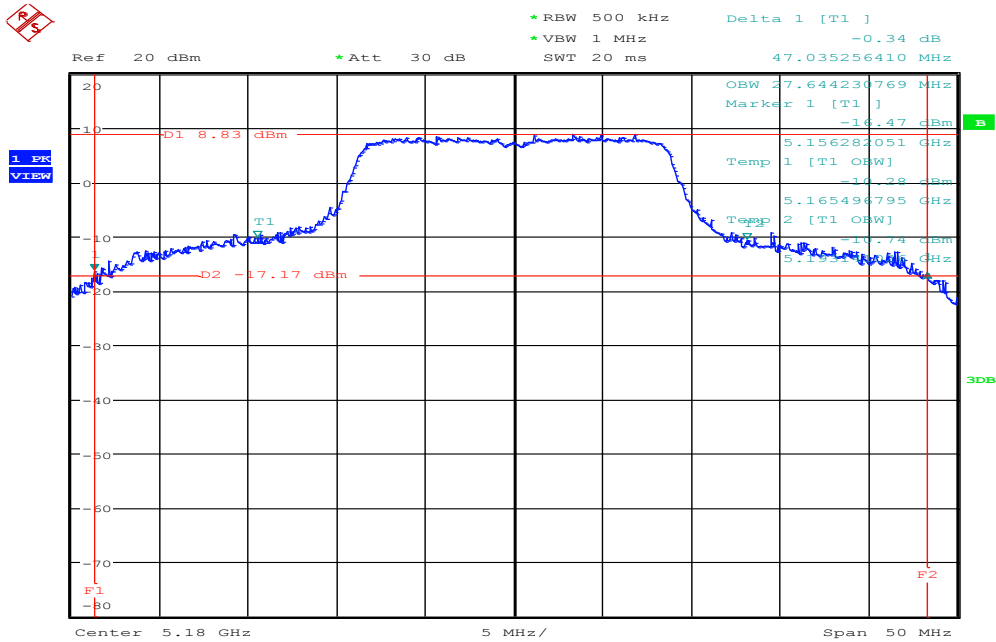
CH High



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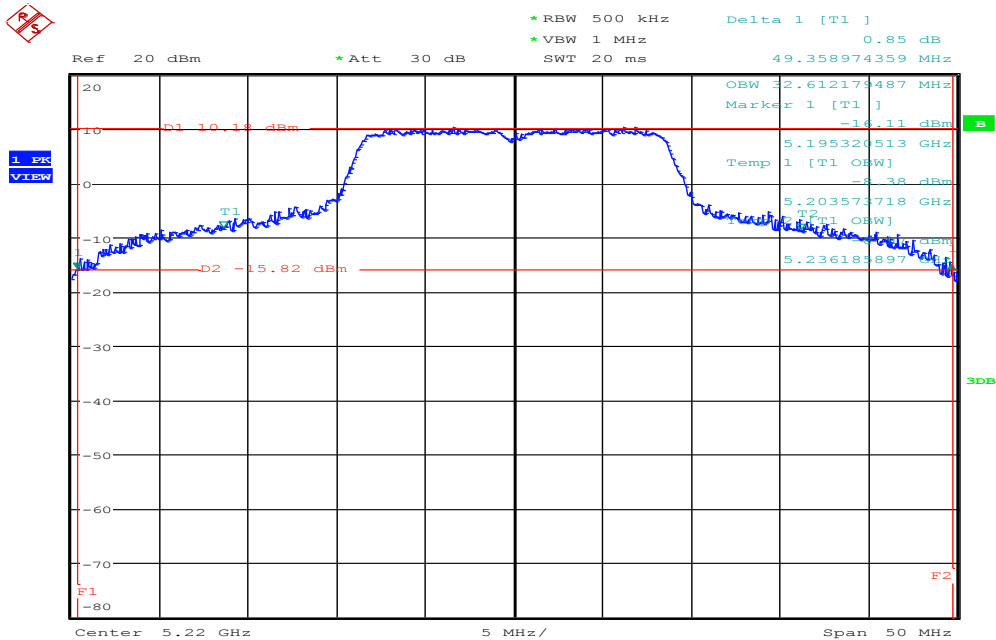
IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz

CH Low



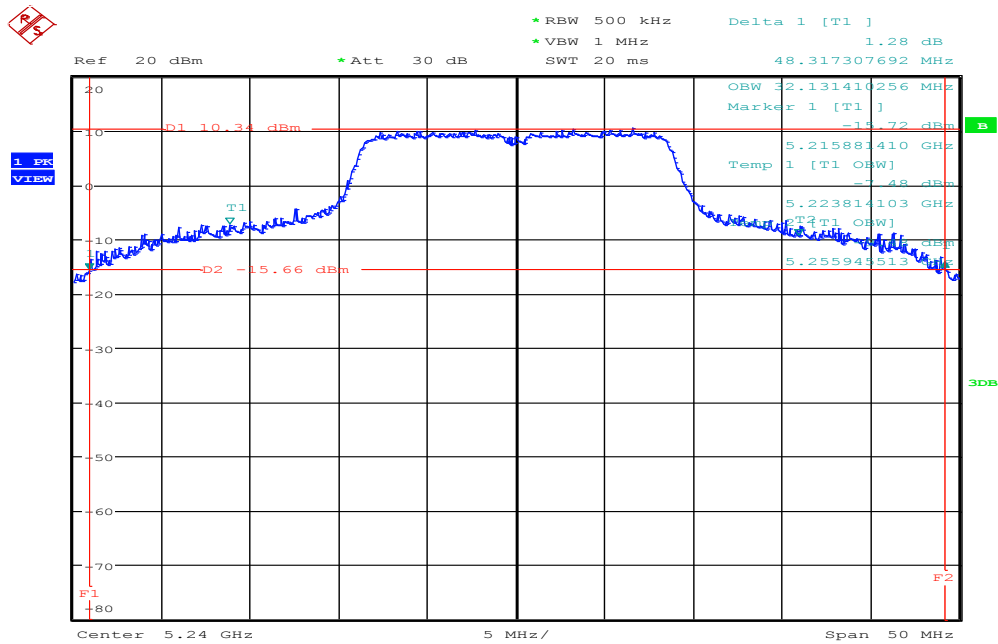
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CH Mid



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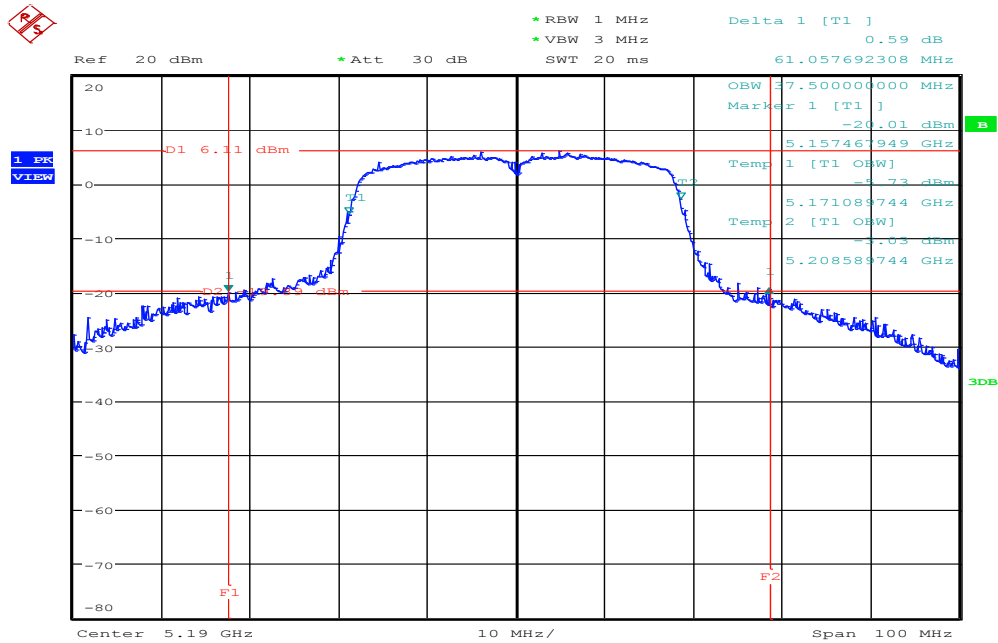
CH High



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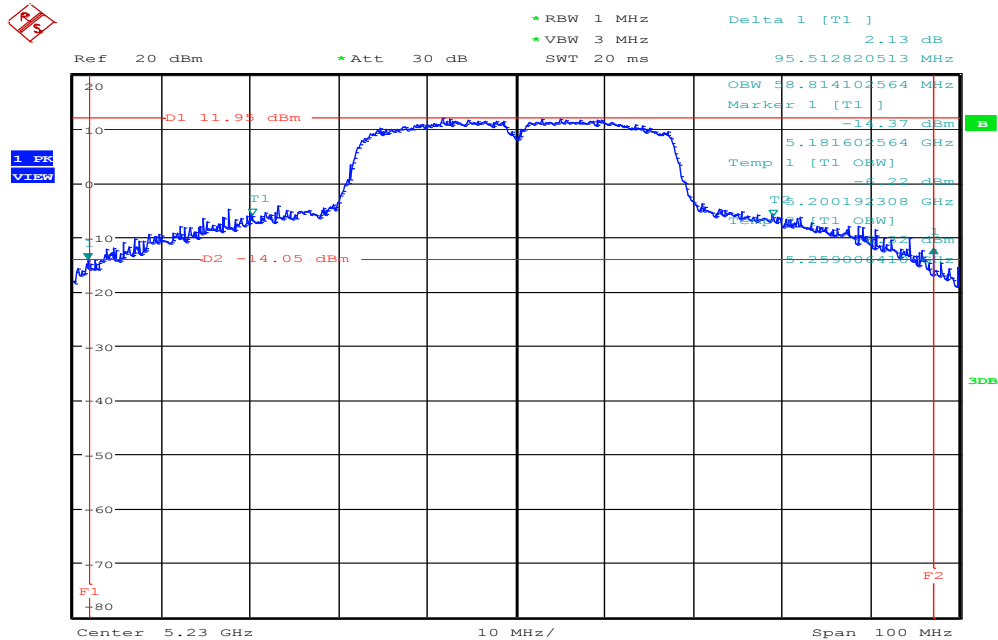
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

CH Low



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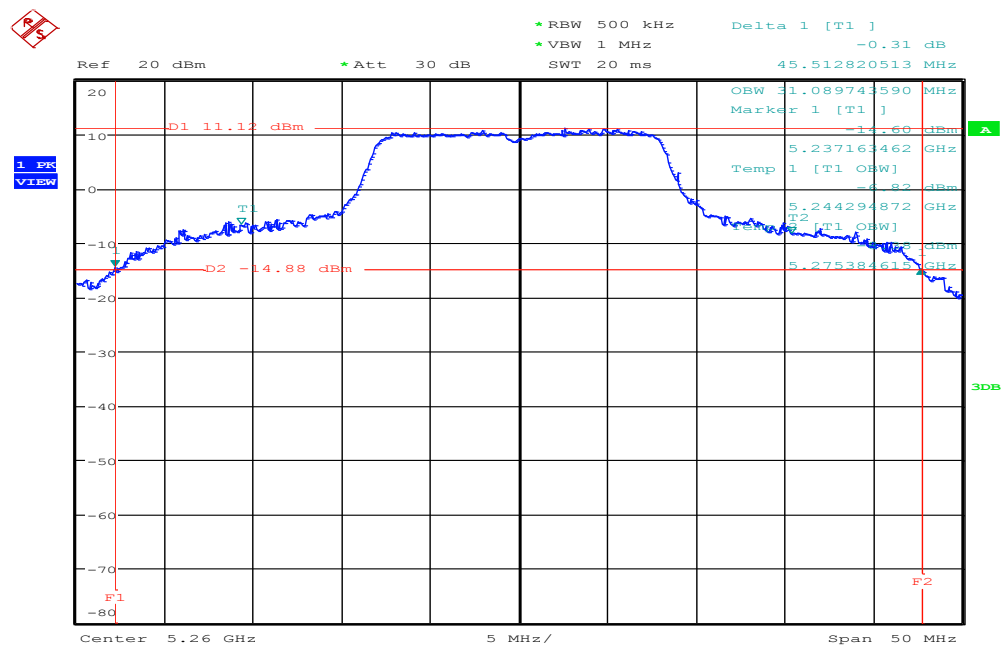
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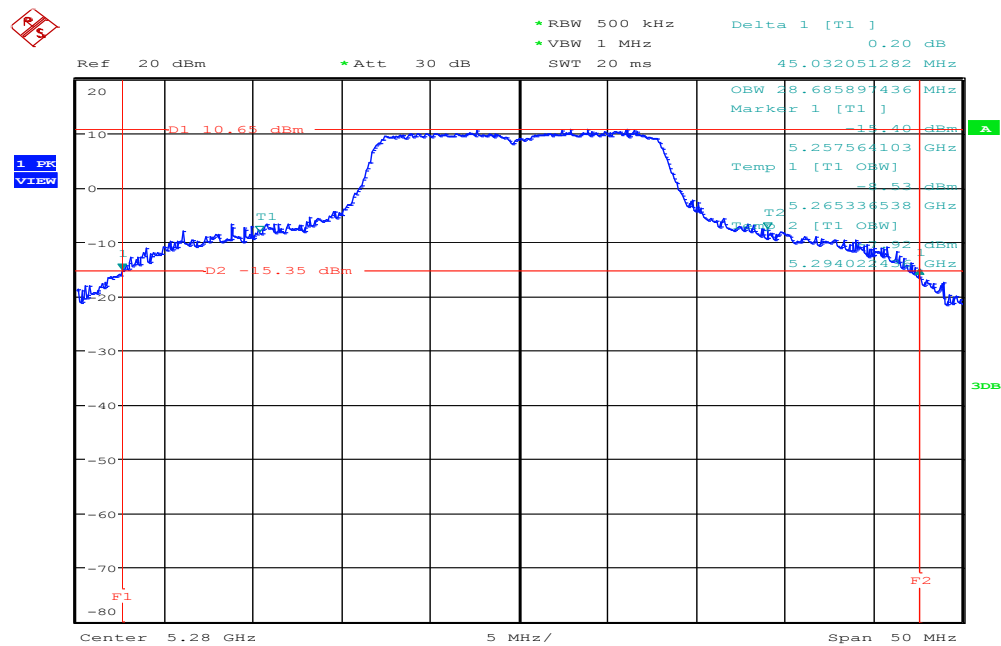
IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low



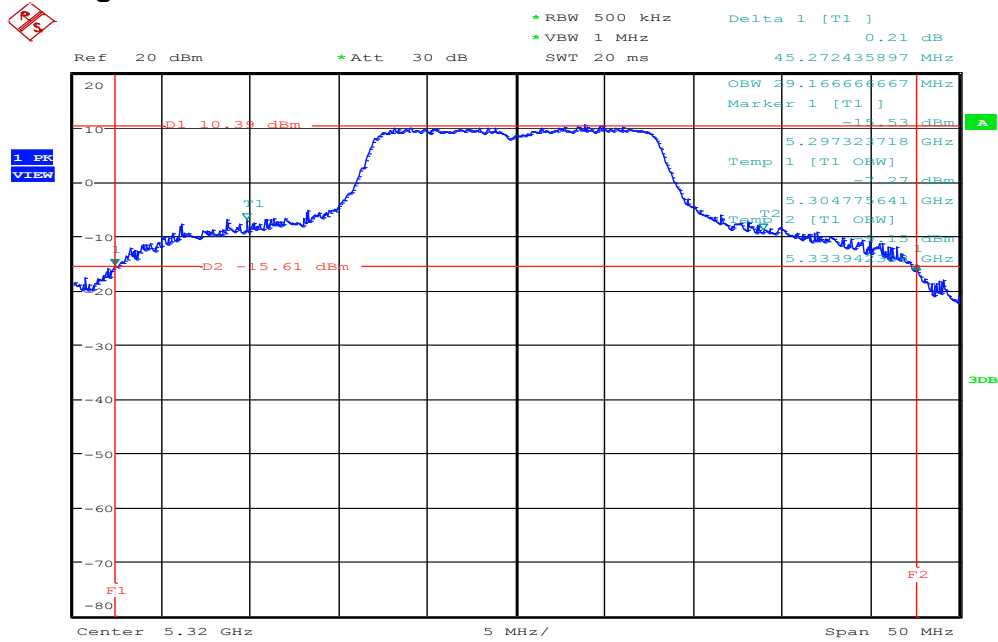
Date: 31.DEC.2015 16:59:35

CH Mid



Date: 31.DEC.2015 17:13:50

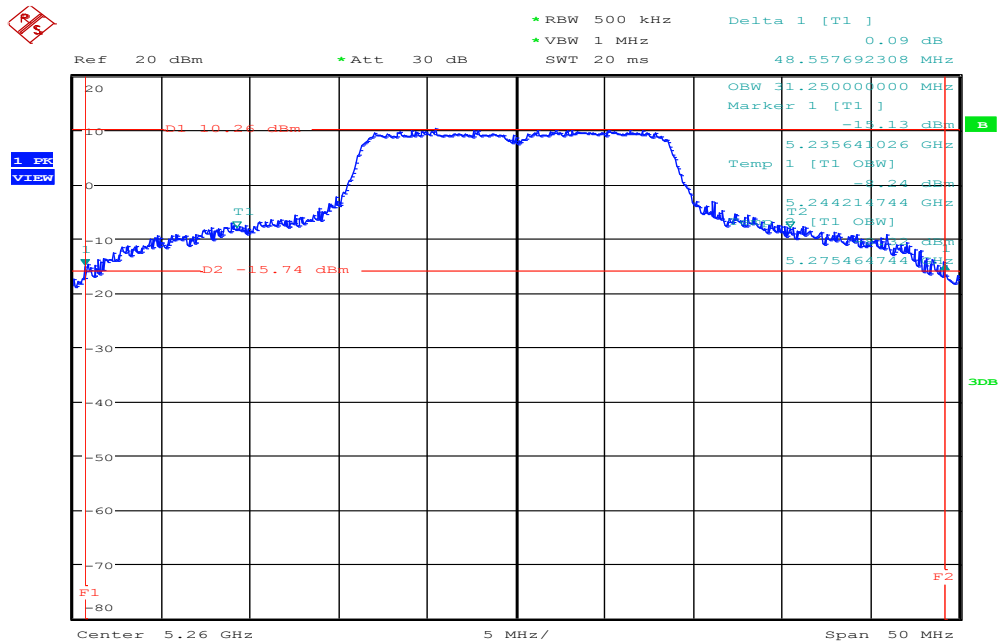
CH High



Date: 31.DEC.2015 17:15:47

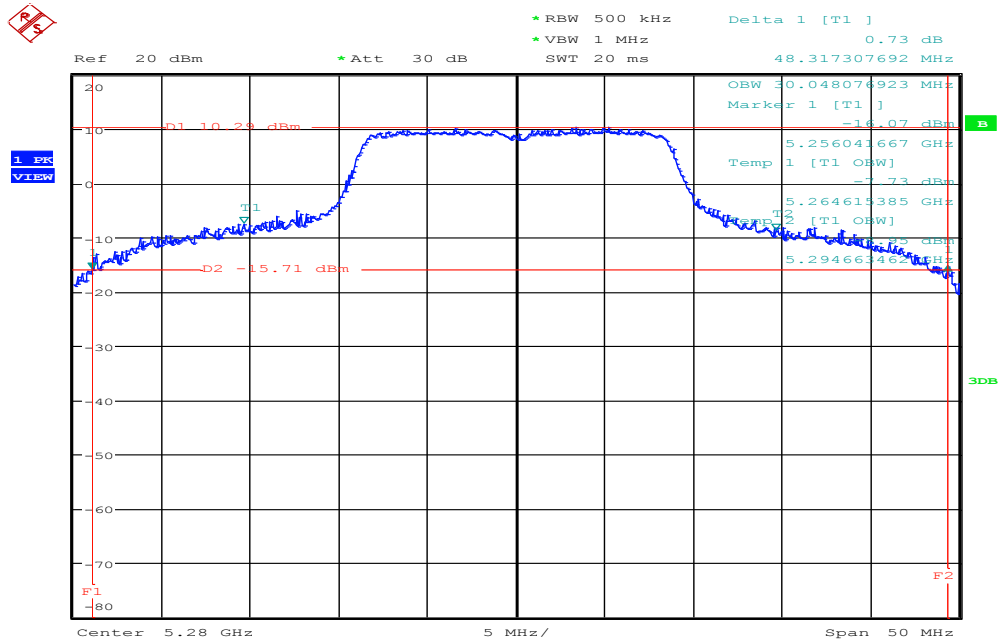
IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz

CH Low



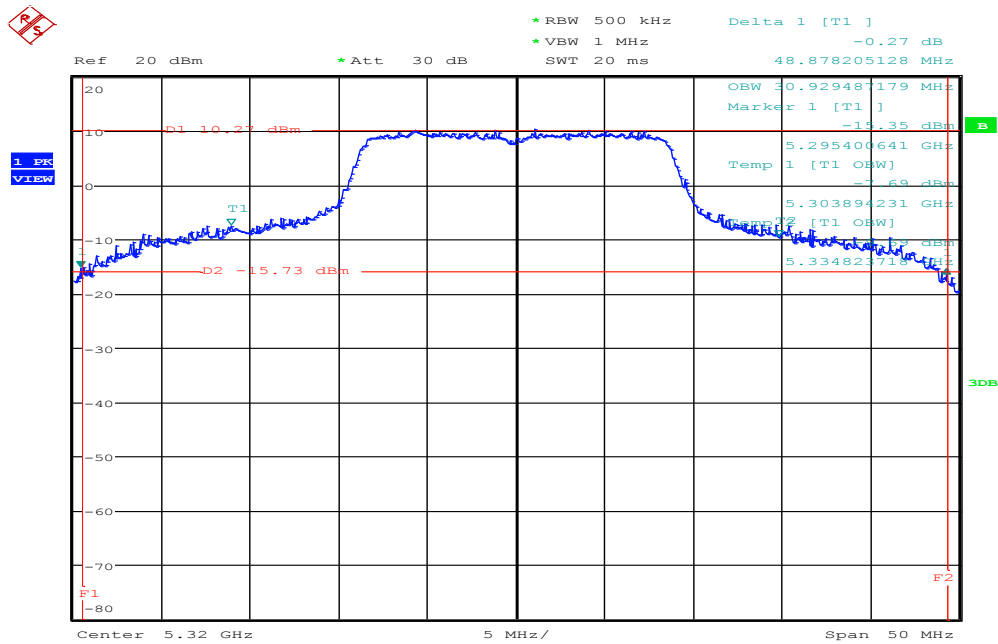
Date: 3.JAN.2016 10:28:08

CH Mid



Date: 3.JAN.2016 10:29:40

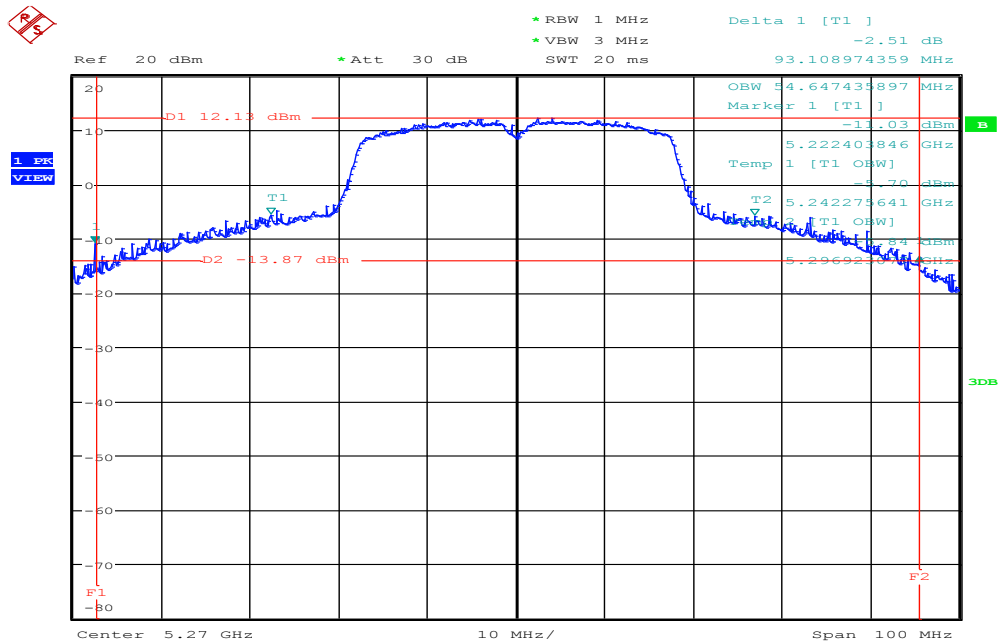
CH High



Date: 3.JAN.2016 10:31:18

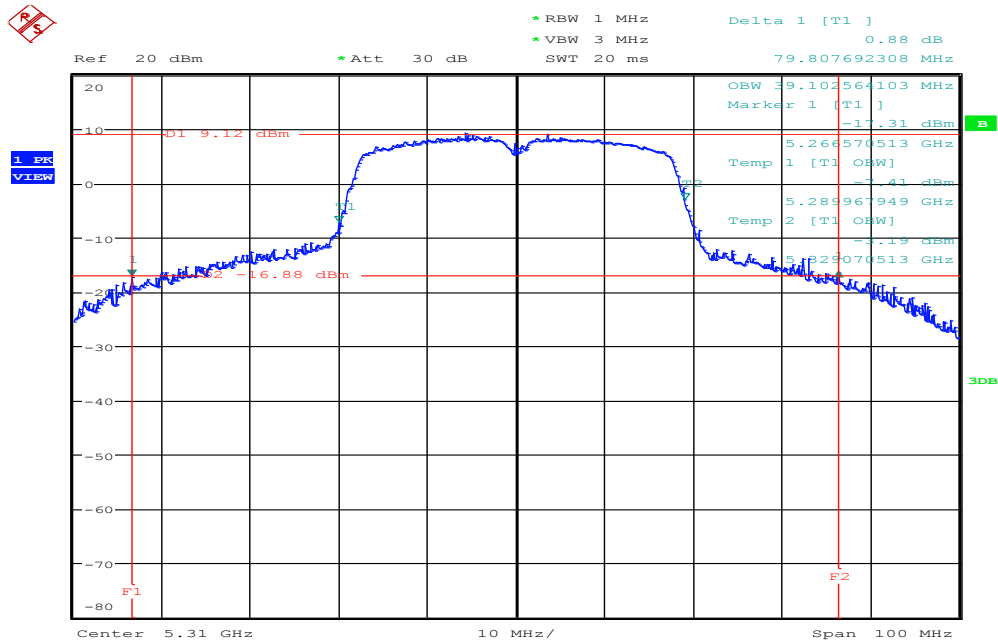
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz

CH Low



Date: 3.JAN.2016 11:56:20

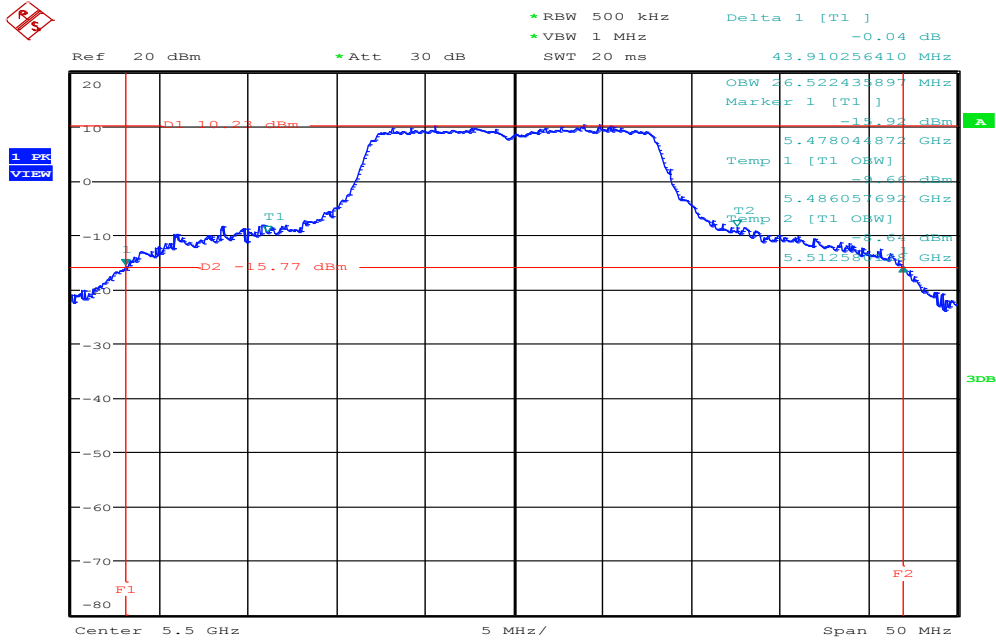
CH High



Date: 3.JAN.2016 12:12:20

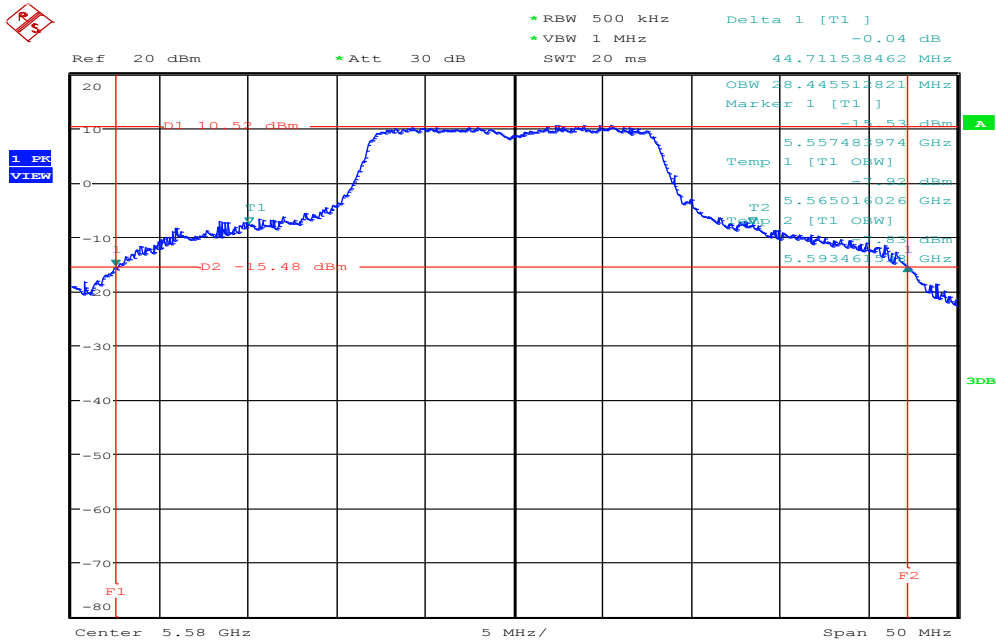
Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low



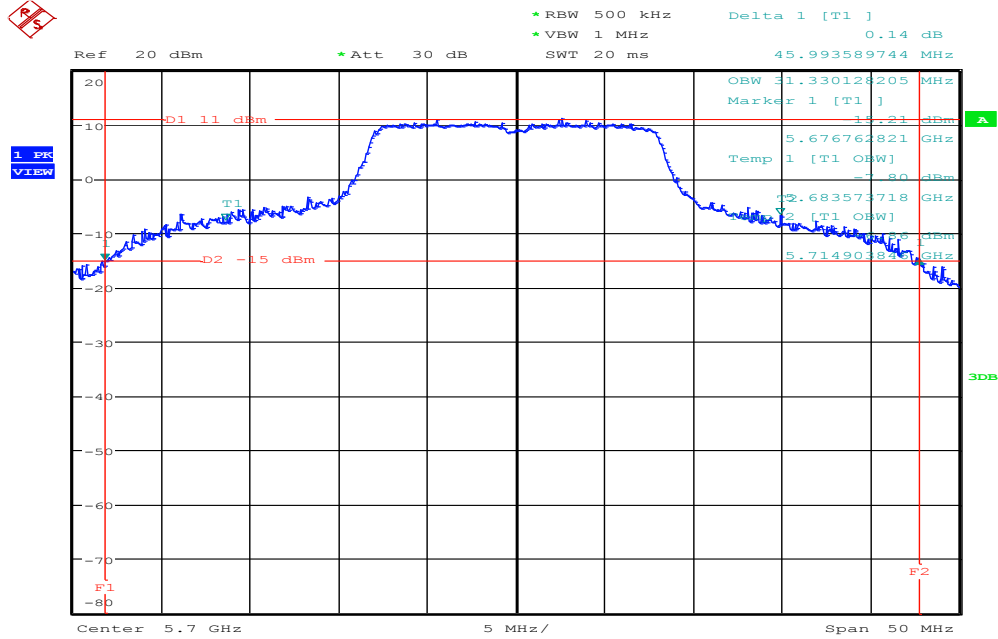
Date: 31.DEC.2015 17:17:55

CH Mid



Date: 31.DEC.2015 17:20:17

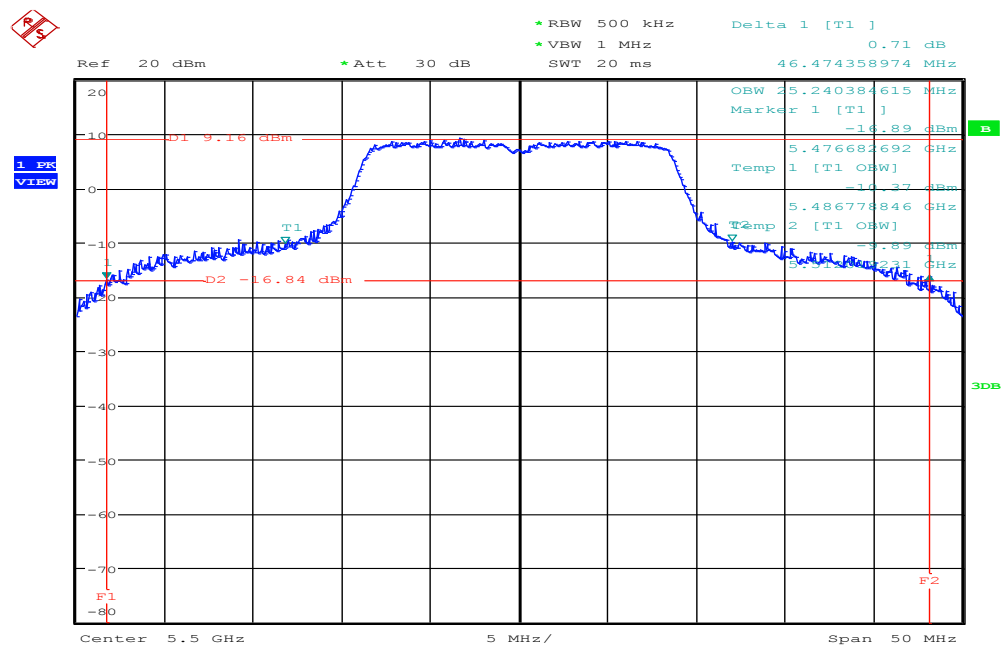
CH High



Date: 31.DEC.2015 17:24:22

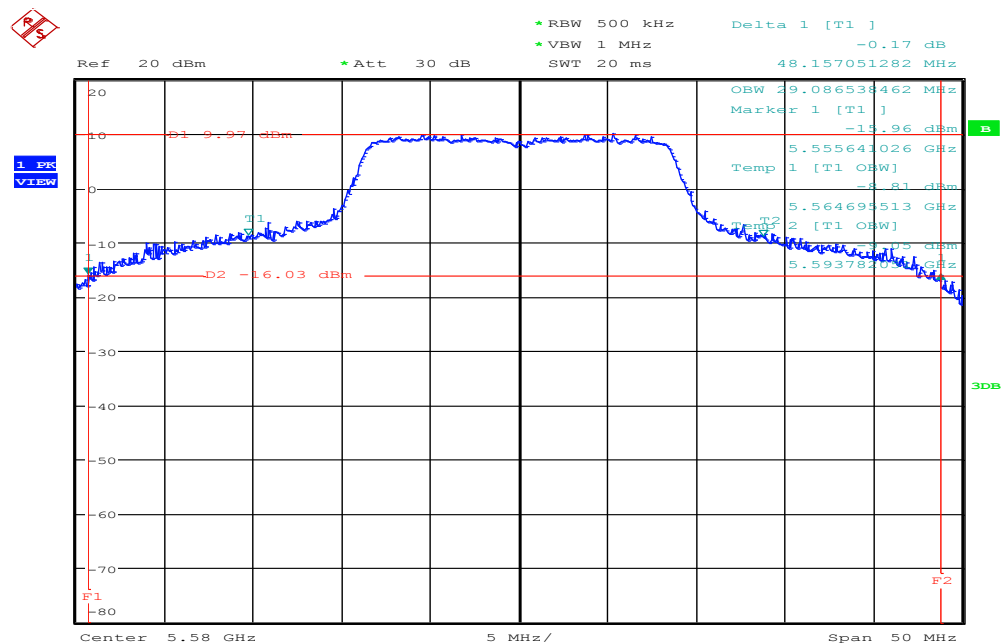
IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz

CH Low



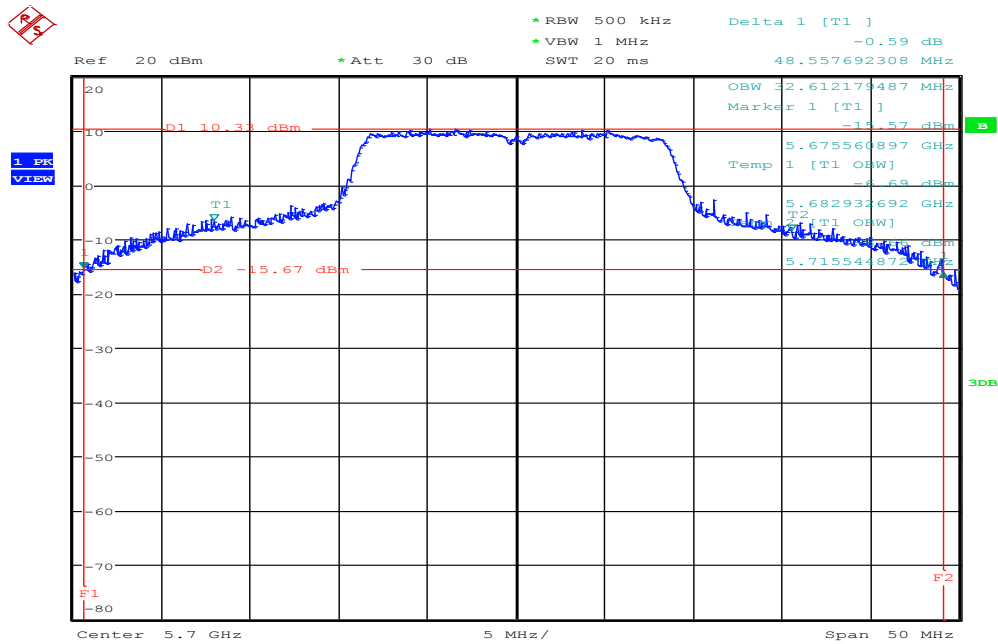
Date: 3.JAN.2016 10:33:37

CH Mid



Date: 3.JAN.2016 10:35:25

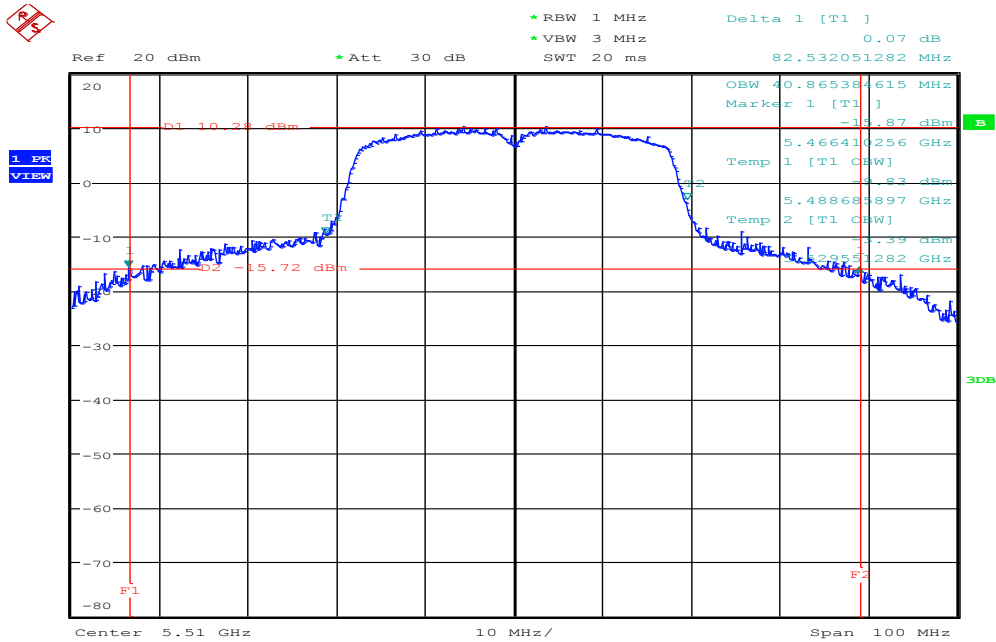
CH High



Date: 3.JAN.2016 10:37:39

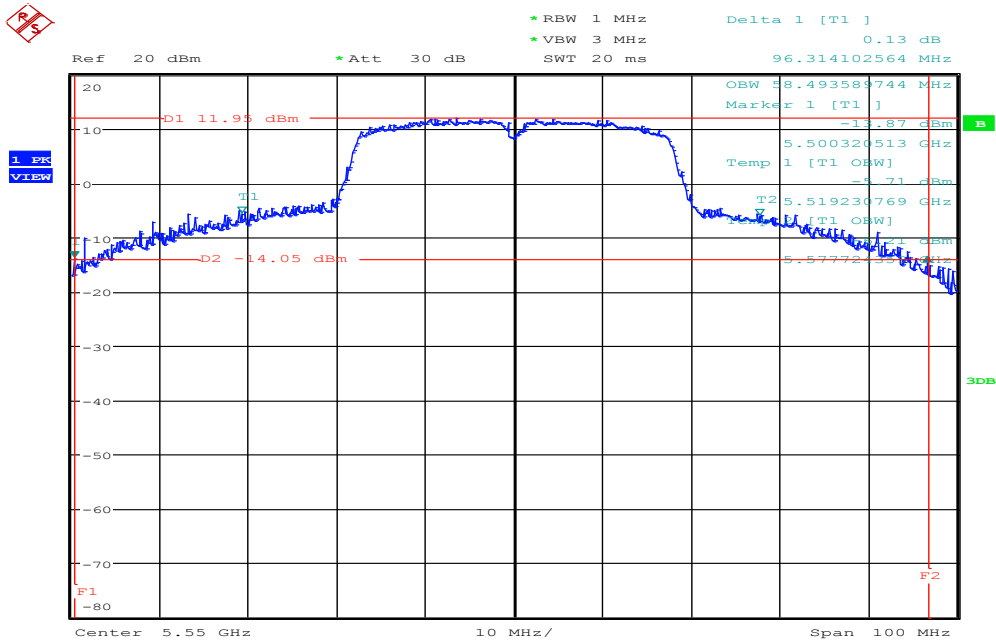
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz

CH Low



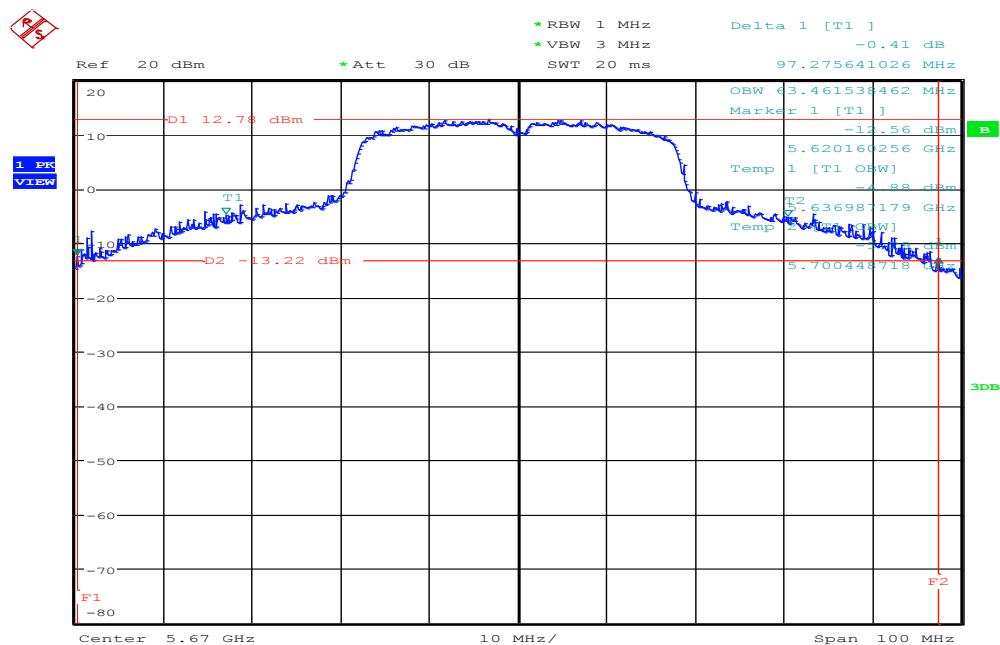
Date: 3.JAN.2016 12:18:12

CH Mid



Date: 3.JAN.2016 12:19:53

CH High



Date: 3.JAN.2016 12:21:48

7.2 MAXIMUM CONDUCTED OUTPUT POWER

LIMIT

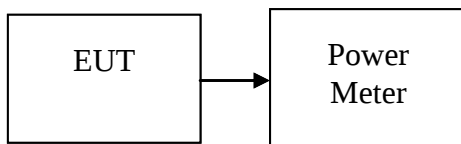
According to §15.407(a),

- (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	16.00	24.00
Mid	5220	16.45	24.00
High	5240	*16.90	24.00

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

Channel	Frequency (MHz)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5180	14.73	24.00
Mid	5220	16.46	24.00
High	5240	*16.70	24.00

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

Channel	Frequency (MHz)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5190	11.37	24.00
High	5230	*16.59	24.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	*16.78	24.00
Mid	5280	15.83	24.00
High	5320	15.07	24.00

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

Channel	Frequency (MHz)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	*16.61	24.00
Mid	5280	15.60	24.00
High	5320	15.53	24.00

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

Channel	Frequency (MHz)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5270	*16.88	24.00
High	5310	13.44	24.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	15.10	24.00
Mid	5580	15.40	24.00
High	5700	*17.34	24.00

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

Channel	Frequency (MHz)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	15.20	24.00
Mid	5580	16.04	24.00
High	5700	*17.54	24.00

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

Channel	Frequency (MHz)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5510	14.82	24.00
Mid	5550	17.45	24.00
High	5670	*17.52	24.00

7.3 BAND EDGES MEASUREMENT

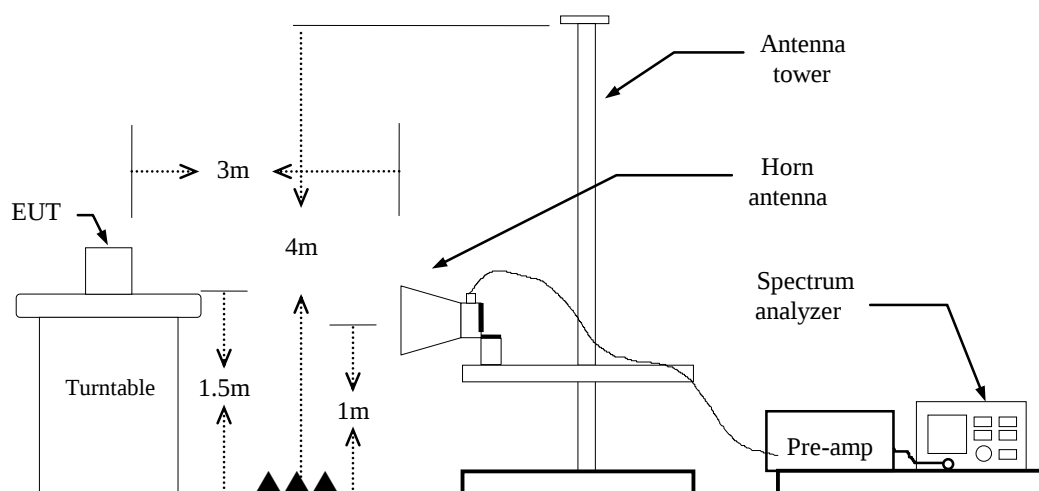
LIMIT

According to §15.407(b)

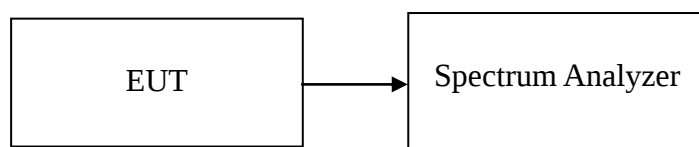
- (1) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
- (2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

Test Configuration

For Radiated Emission above 1GHz



For Conducted



TEST PROCEDURE

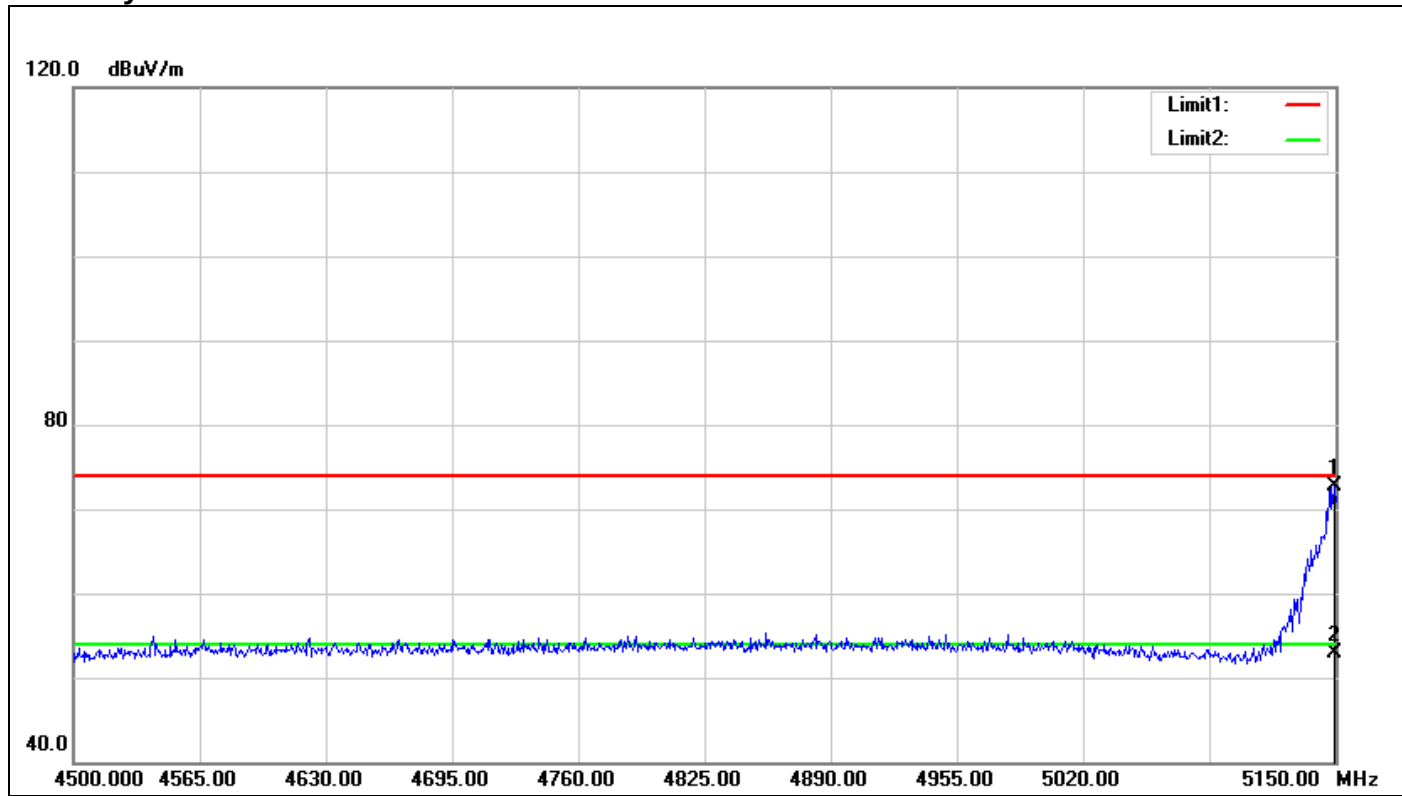
1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the 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.

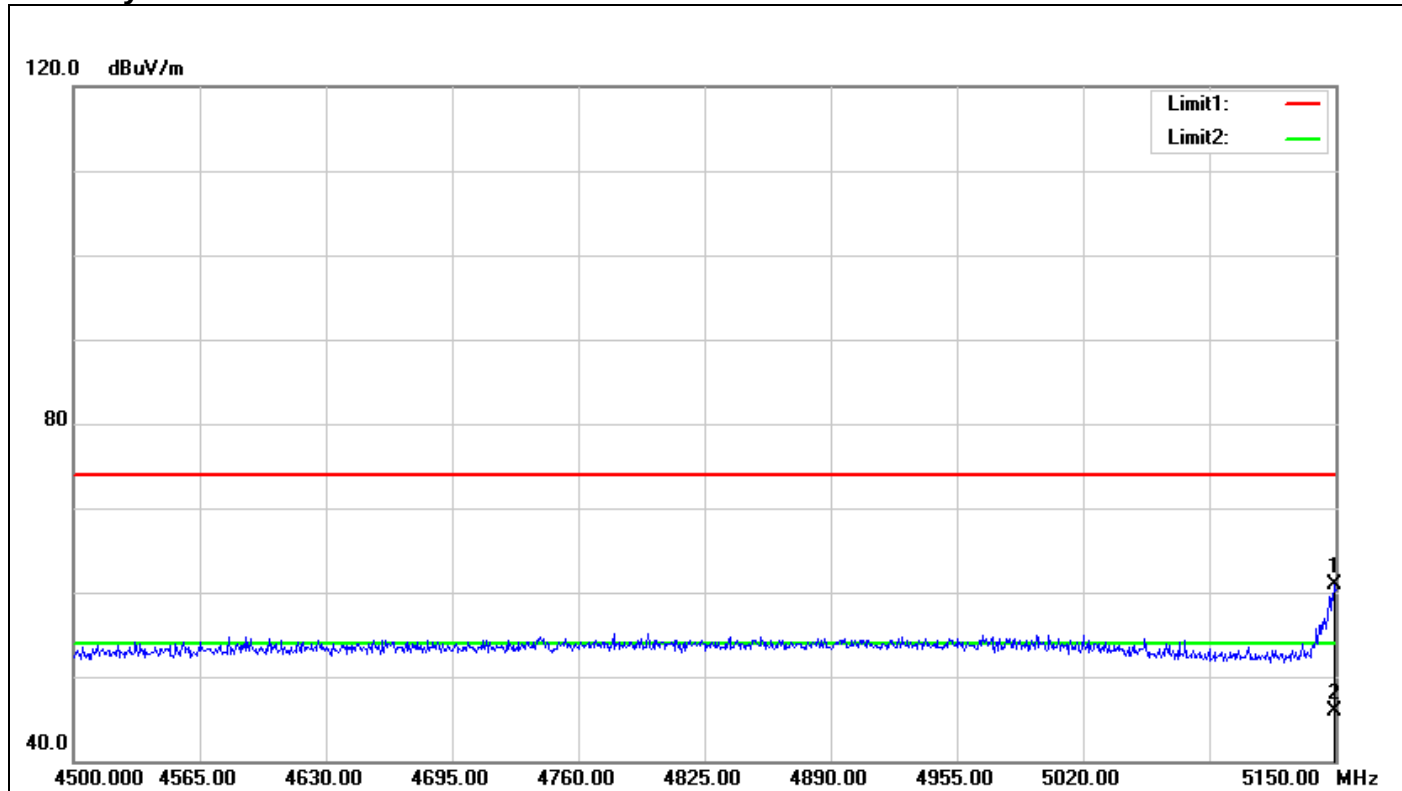
Band Edges (IEEE 802.11a mode / CH 5180 MHz)

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5149.350	69.61	3.04	72.65	74.00	-1.35	130	79	peak
2	5149.350	49.83	3.04	52.87	54.00	-1.13	130	79	AVG

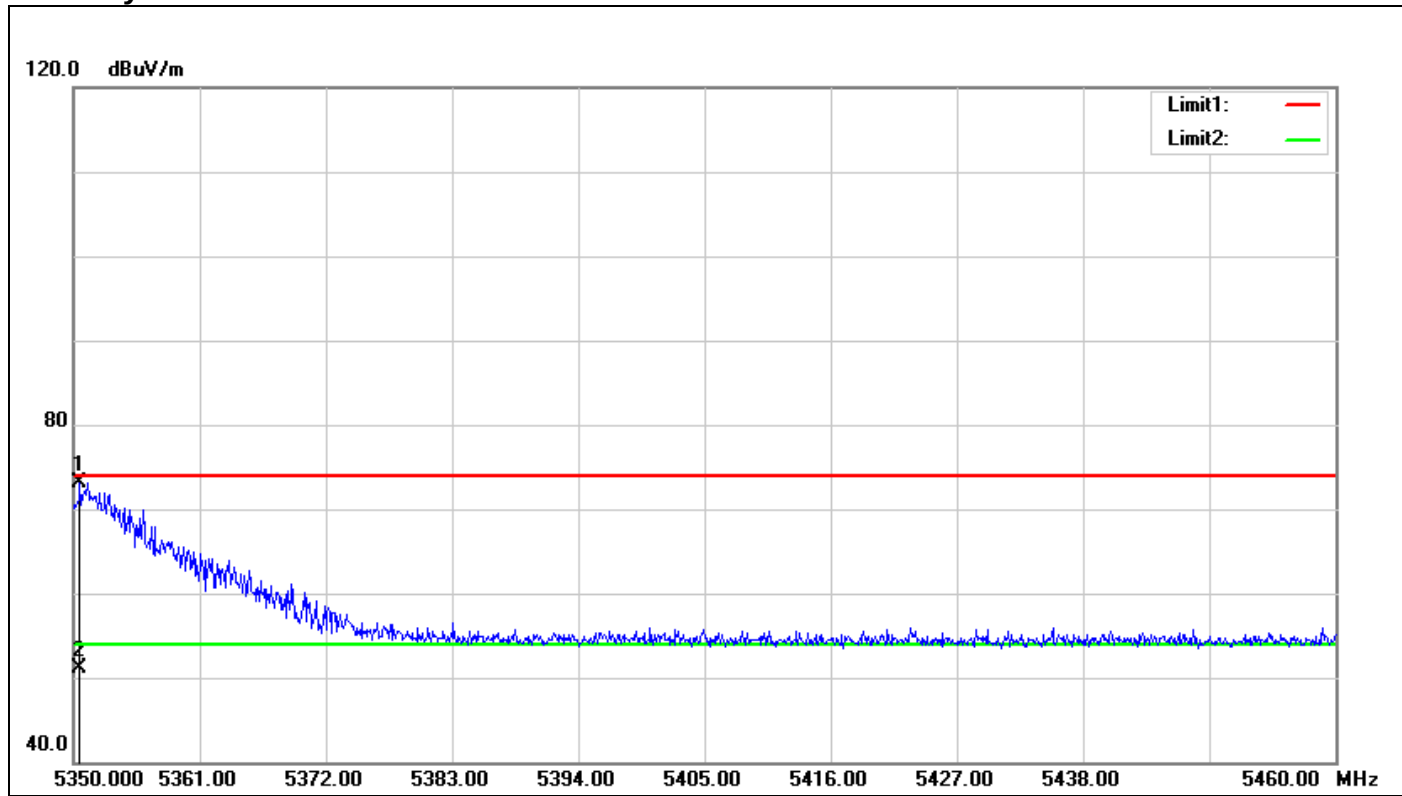
Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5149.350	57.80	3.04	60.84	74.00	-13.16	140	63	peak
2	5149.350	42.96	3.04	46.00	54.00	-8.00	140	63	AVG

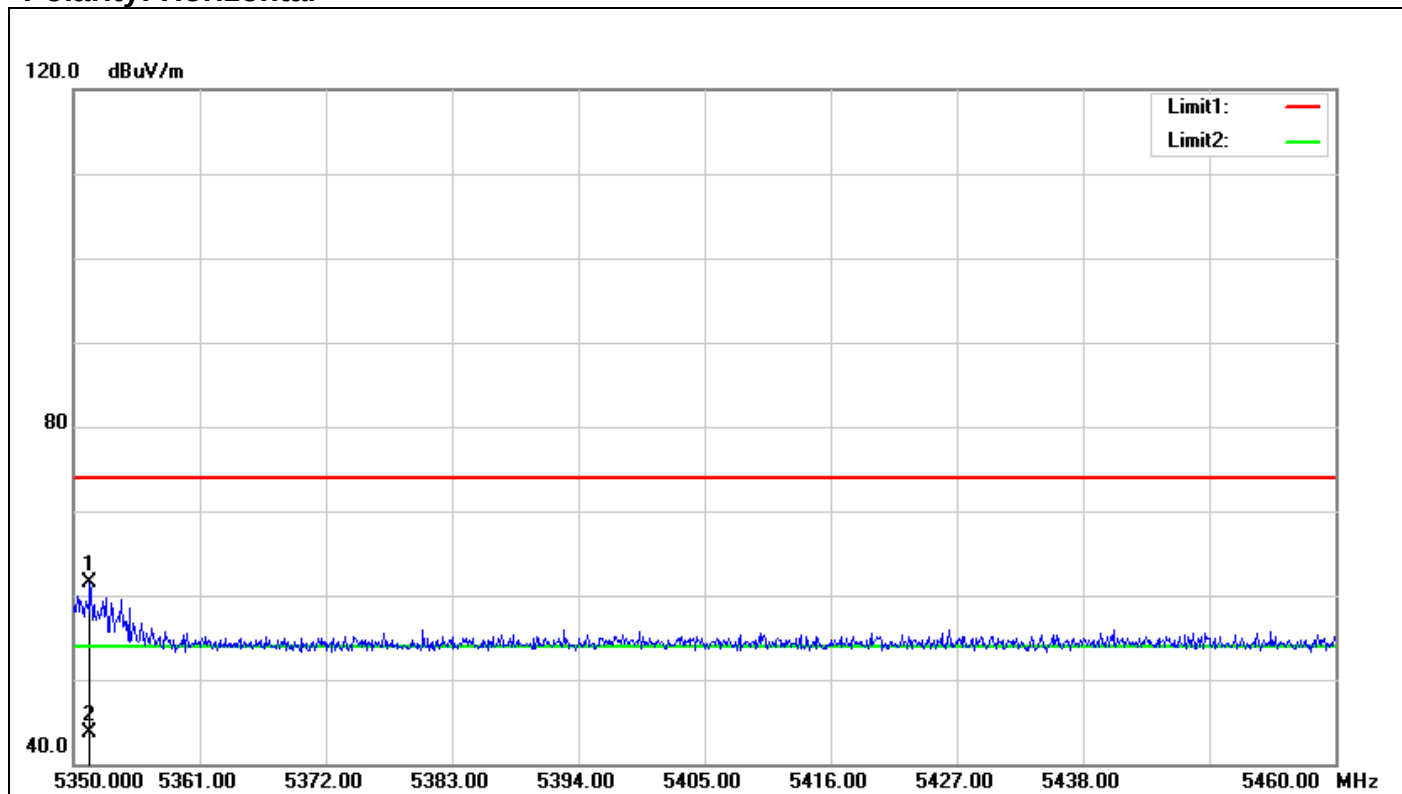
Band Edges (IEEE 802.11a mode / CH 5320 MHz)

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5350.550	67.88	5.31	73.19	74.00	-0.81	140	70	peak
2	5350.550	45.82	5.31	51.13	54.00	-2.87	140	70	AVG

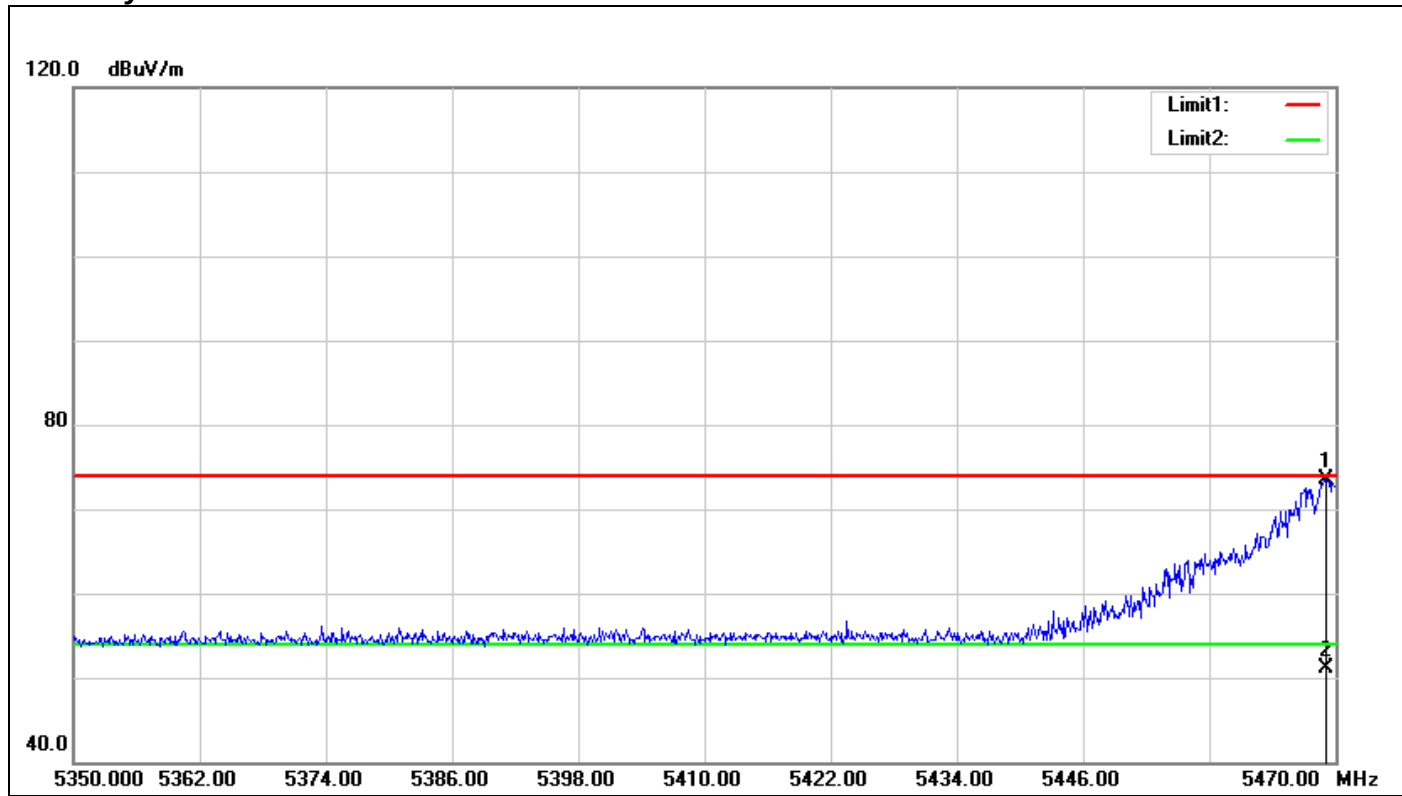
Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5351.430	56.09	5.32	61.41	74.00	-12.59	160	205	peak
2	5351.430	38.45	5.32	43.77	54.00	-10.23	160	205	AVG

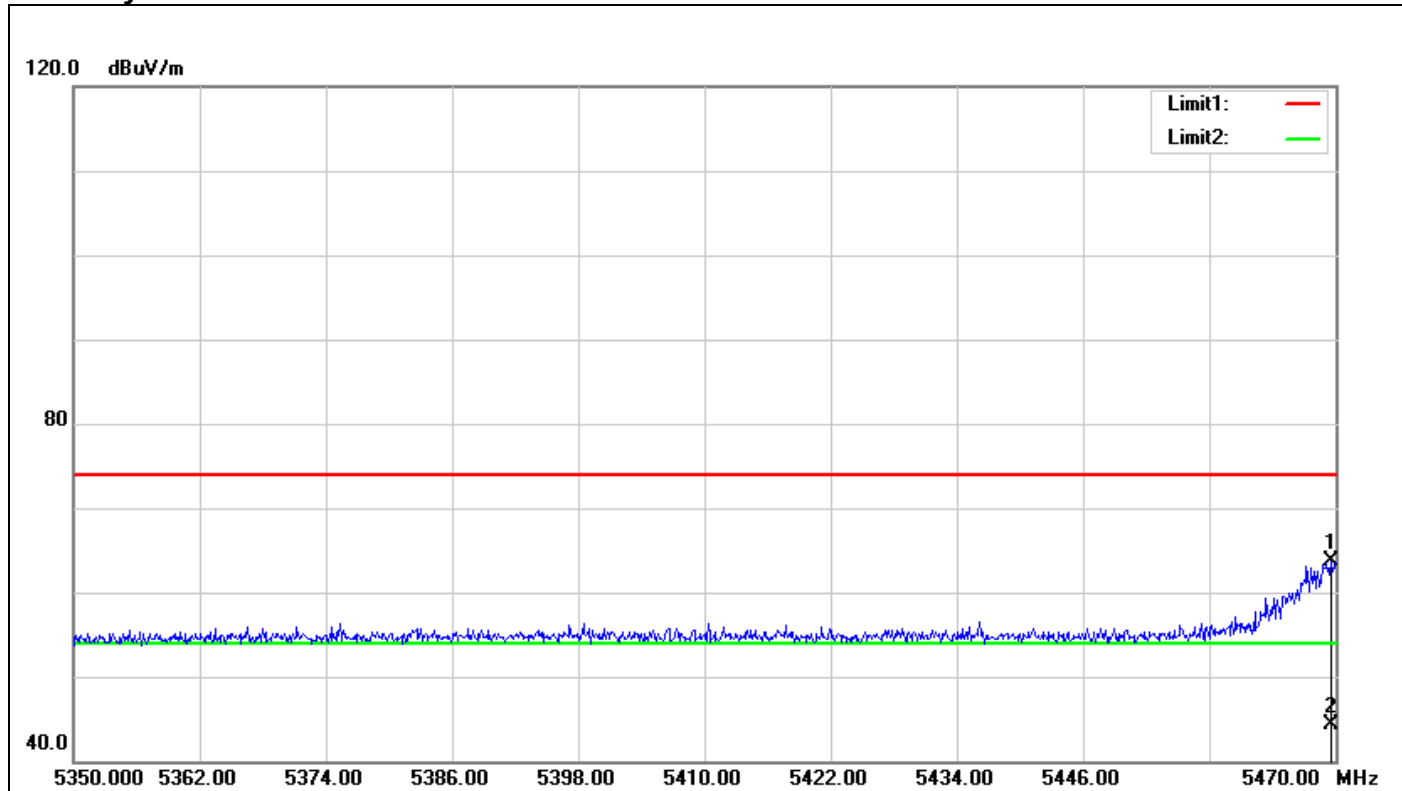
Band Edges (IEEE 802.11a mode / CH 5500 MHz)

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5469.040	68.08	5.40	73.48	74.00	-0.52	150	67	peak
2	5469.040	45.61	5.40	51.01	54.00	-2.99	150	67	AVG

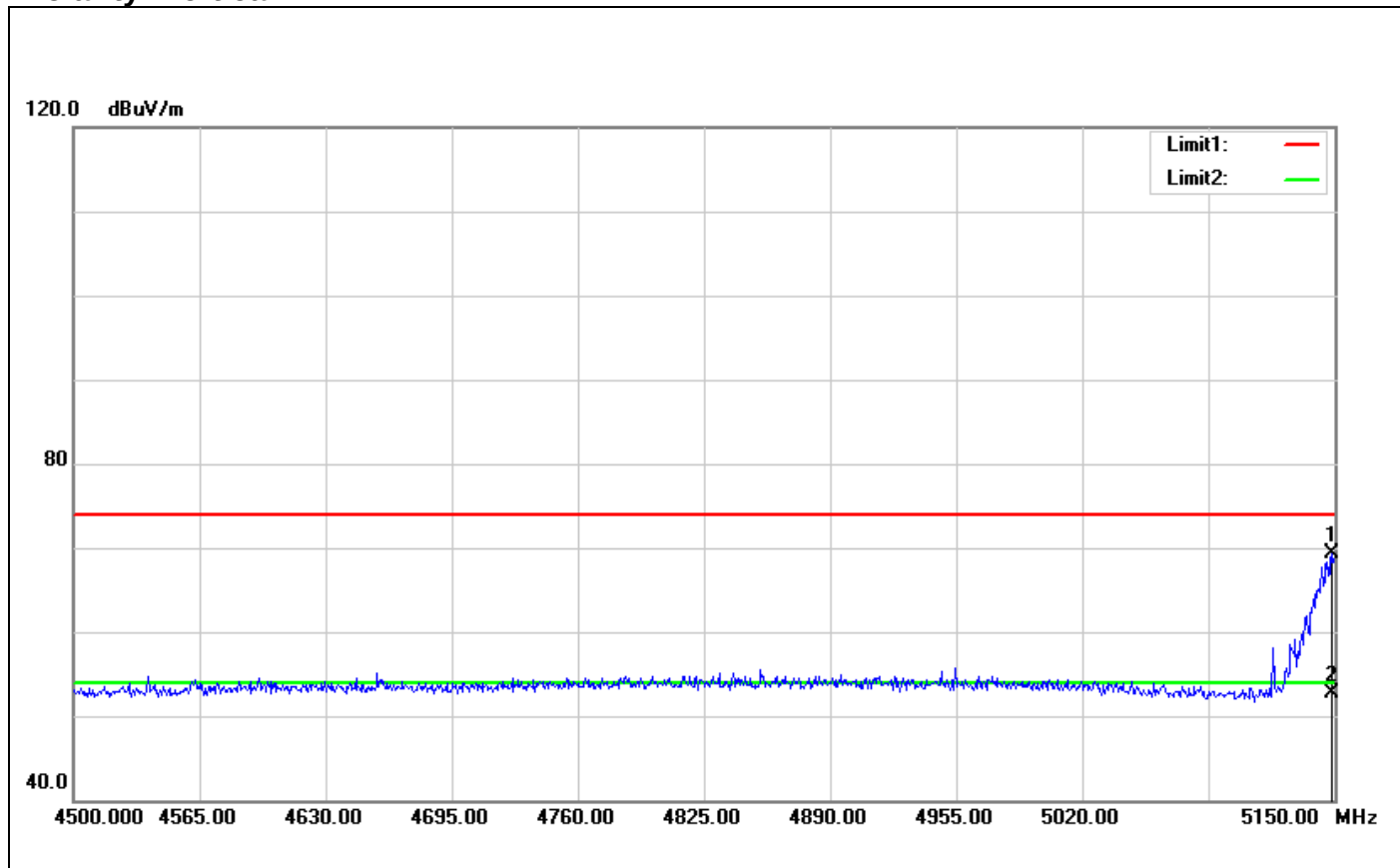
Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5469.640	58.36	5.39	63.75	74.00	-10.25	150	204	peak
2	5469.640	38.87	5.39	44.26	54.00	-9.74	150	204	AVG

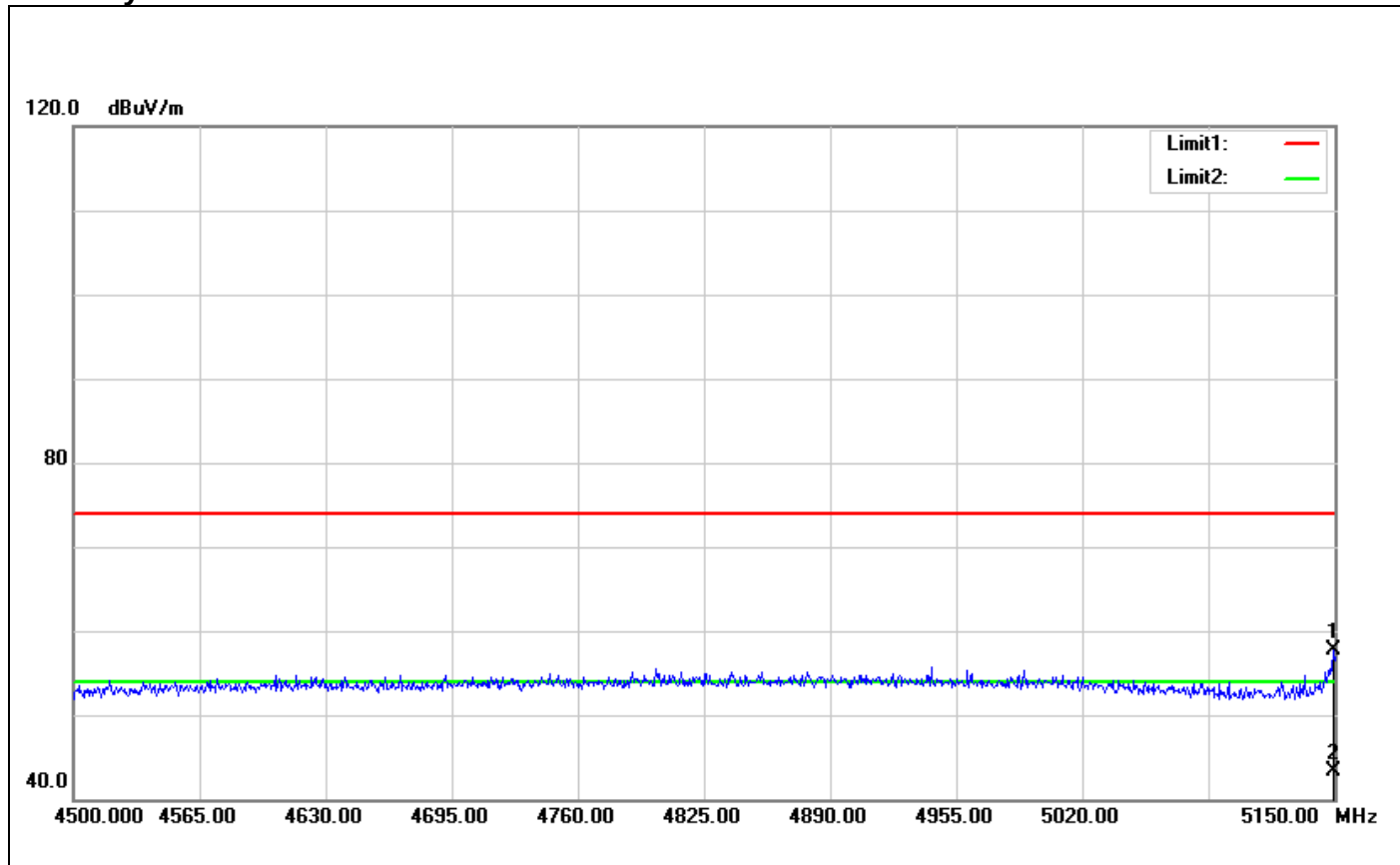
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5180 MHz)

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5148.700	66.36	3.03	69.39	74.00	-4.61	150	28	peak
2	5148.700	49.62	3.03	52.65	54.00	-1.35	150	28	AVG

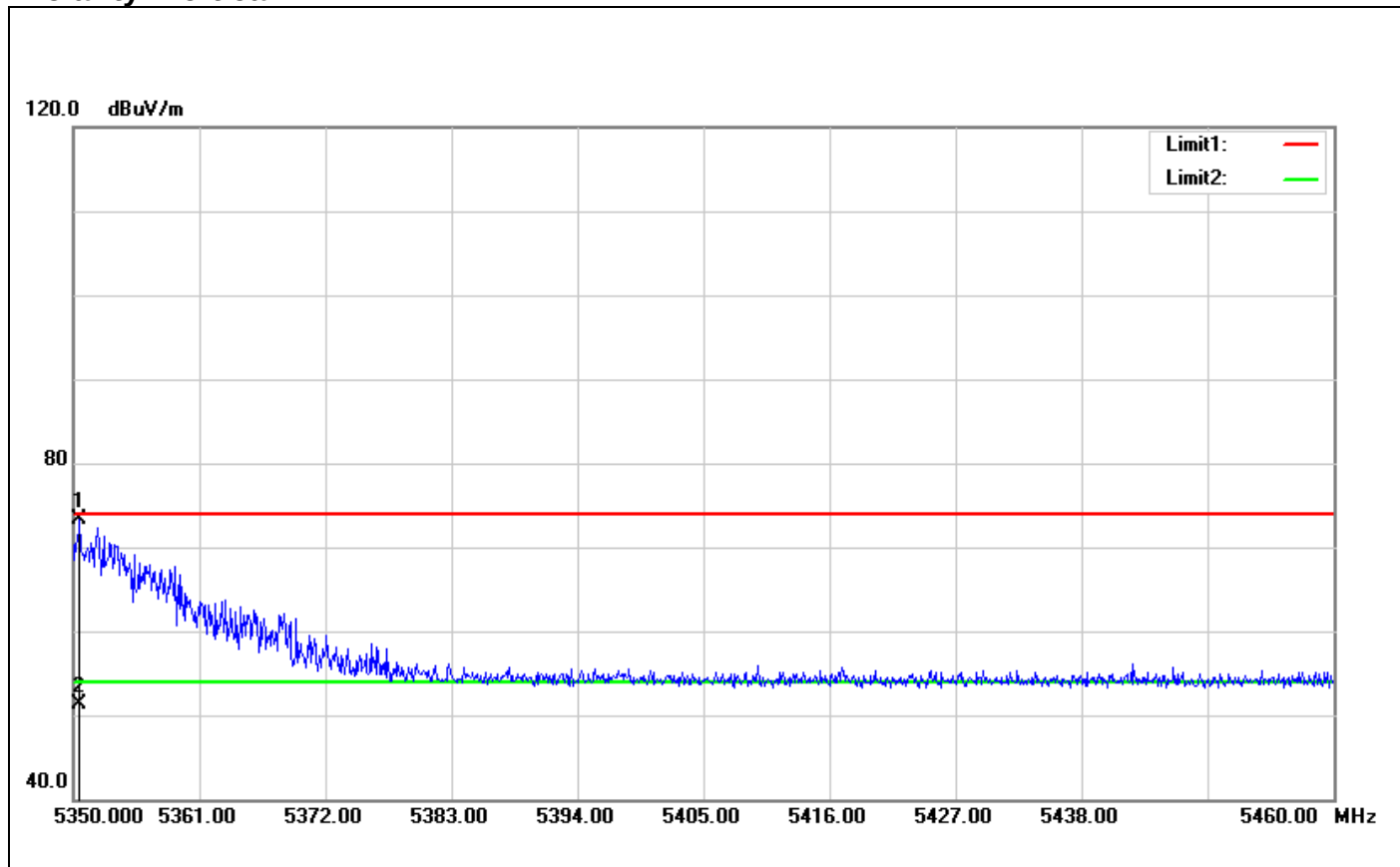
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5149.350	54.59	3.04	57.63	74.00	-16.37	150	72	peak
2	5149.350	40.31	3.04	43.35	54.00	-10.65	150	72	AVG

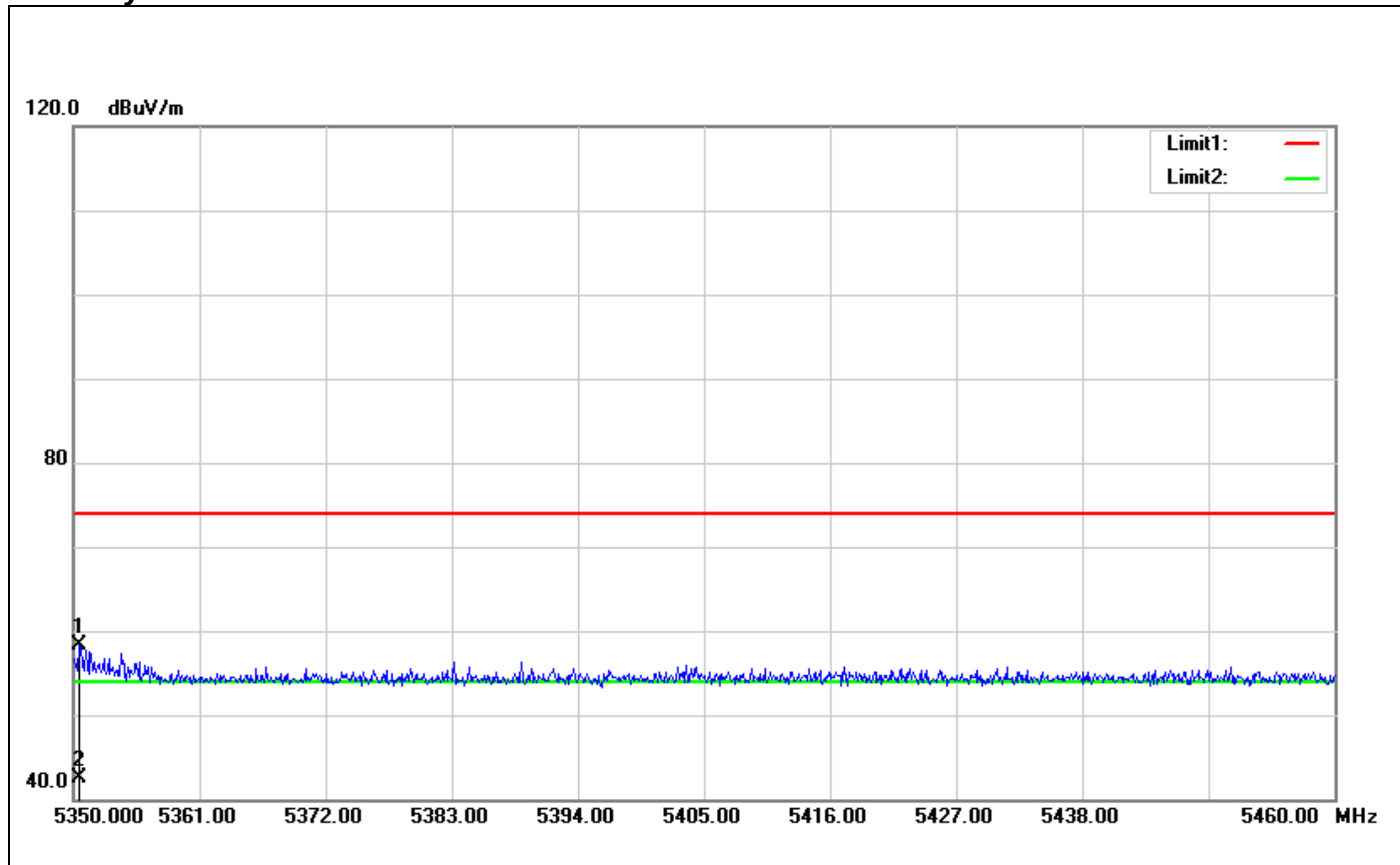
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5320 MHz)

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5350.550	67.93	5.31	73.24	74.00	-0.76	130	329	peak
2	5350.550	45.96	5.31	51.27	54.00	-2.73	130	329	AVG

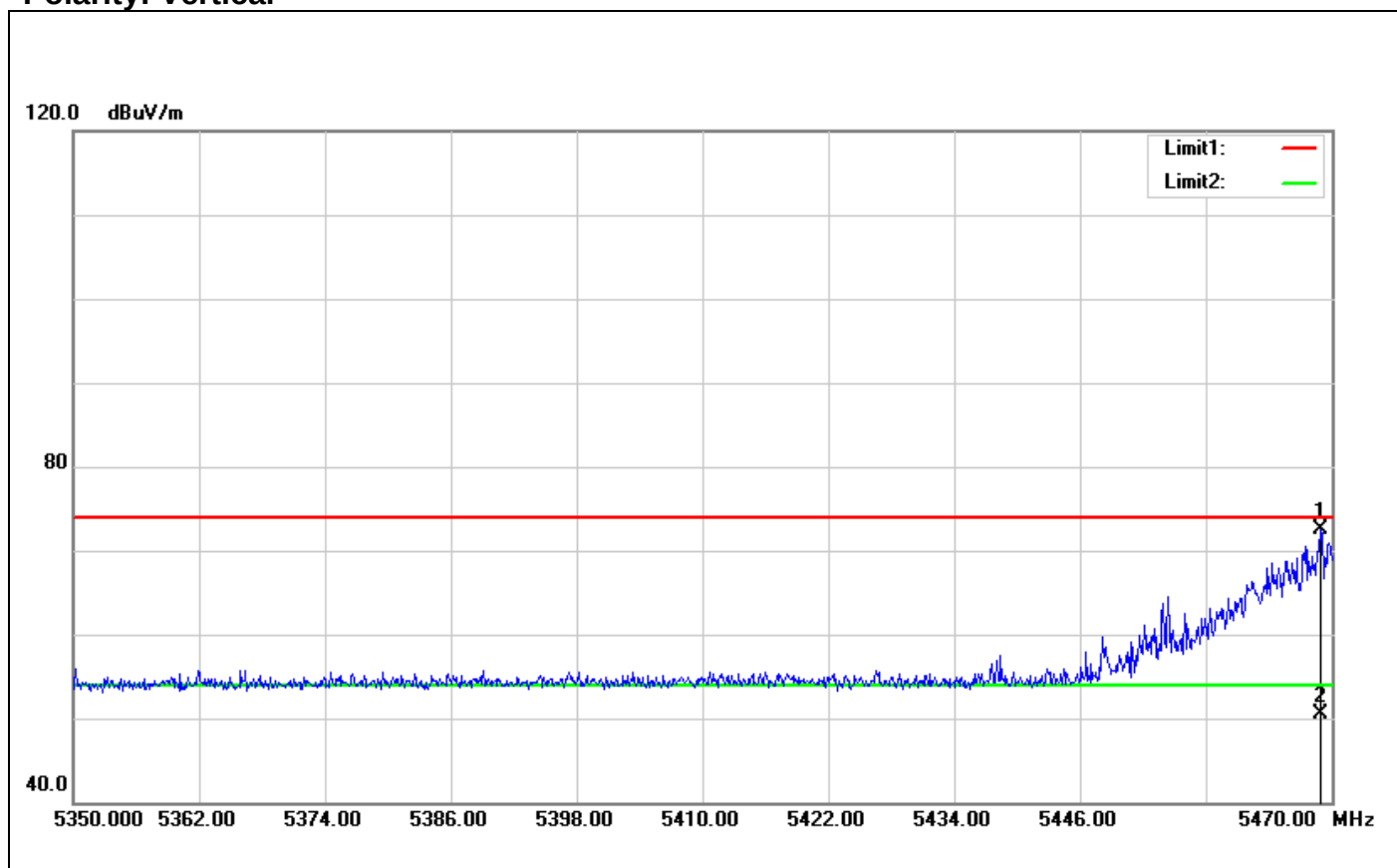
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5350.440	53.06	5.31	58.37	74.00	-15.63	150	135	peak
2	5350.440	37.16	5.31	42.47	54.00	-11.53	150	135	AVG

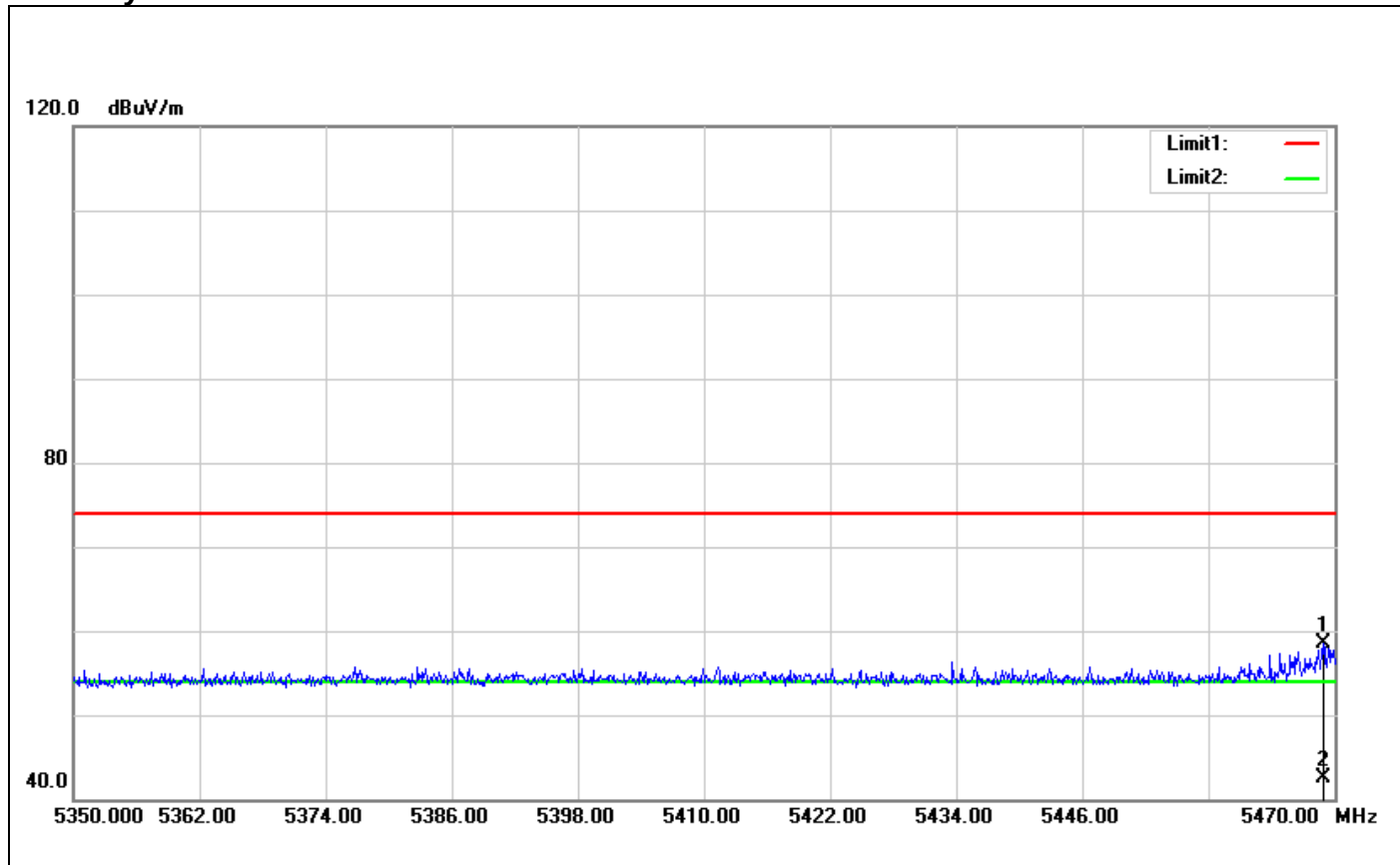
Band Edges (IEEE 802.11n HT 20 MHz mode / CH 5500 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5468.920	67.04	5.40	72.44	74.00	-1.56	150	323	peak
2	5468.920	45.08	5.40	50.48	54.00	-3.52	150	323	AVG

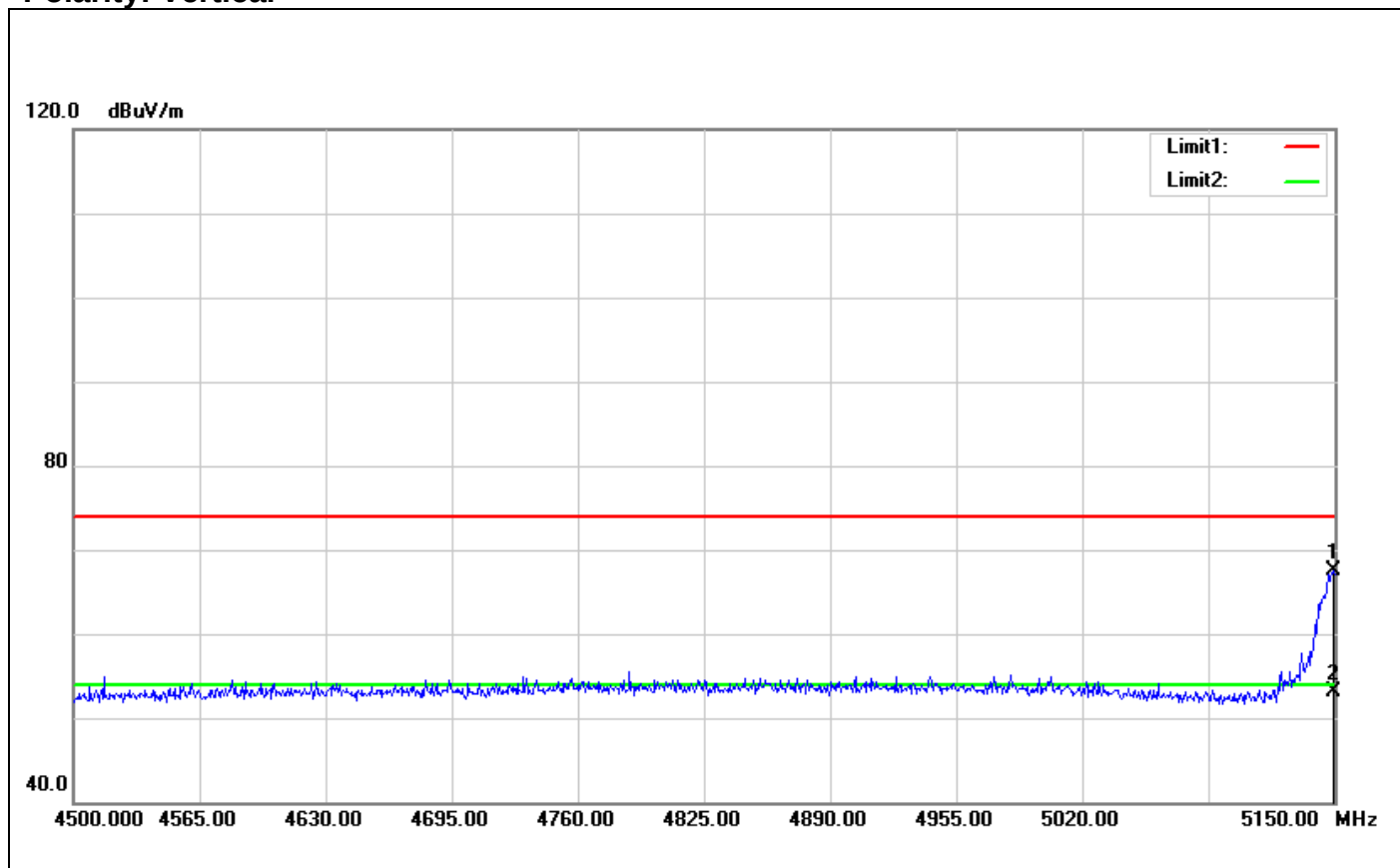
Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5468.920	53.19	5.40	58.59	74.00	-15.41	150	79	peak
2	5468.920	37.13	5.40	42.53	54.00	-11.47	150	79	AVG

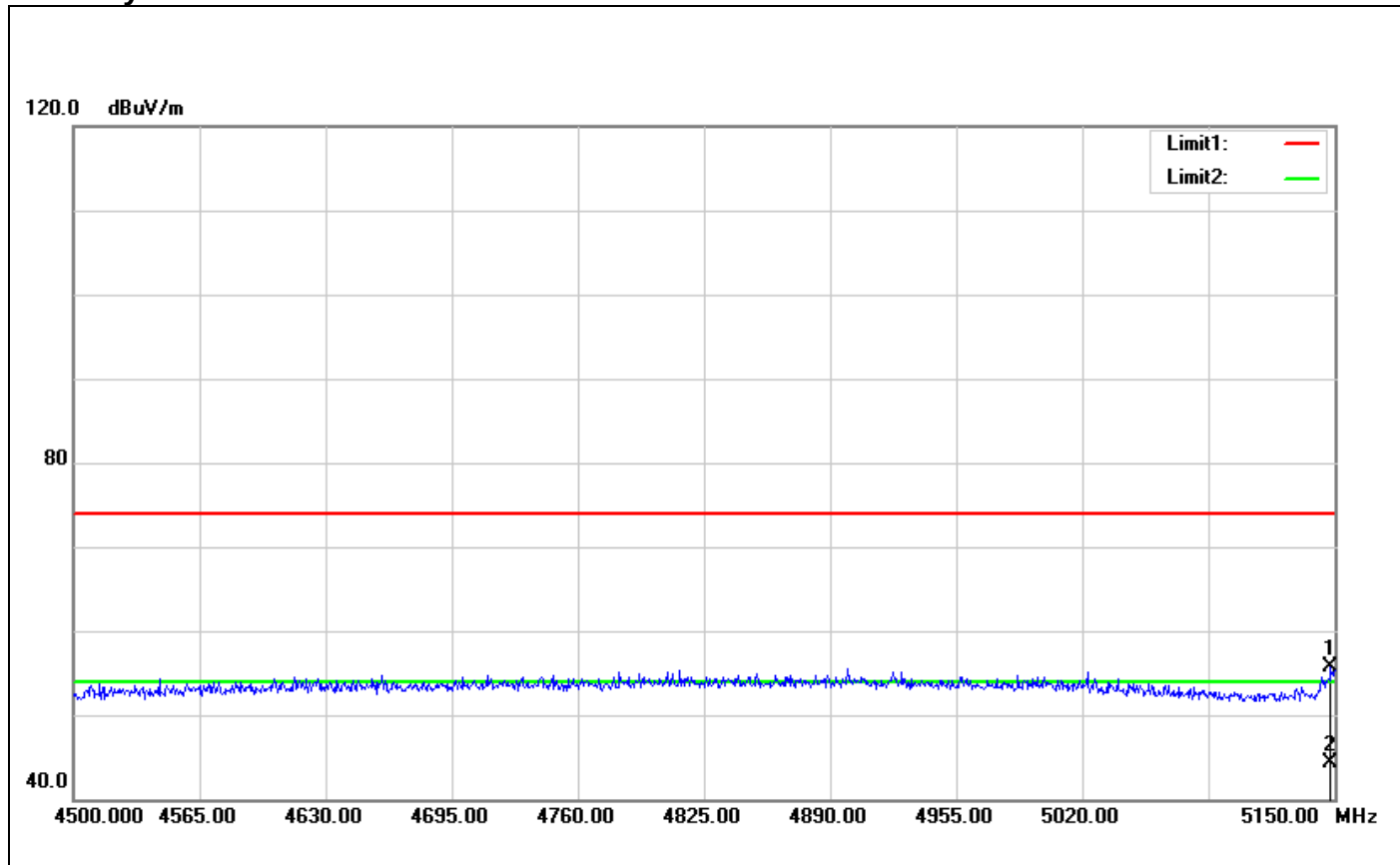
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5190 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5149.350	64.54	3.04	67.58	74.00	-6.42	150	28	peak
2	5149.350	50.15	3.04	53.19	54.00	-0.81	150	28	AVG

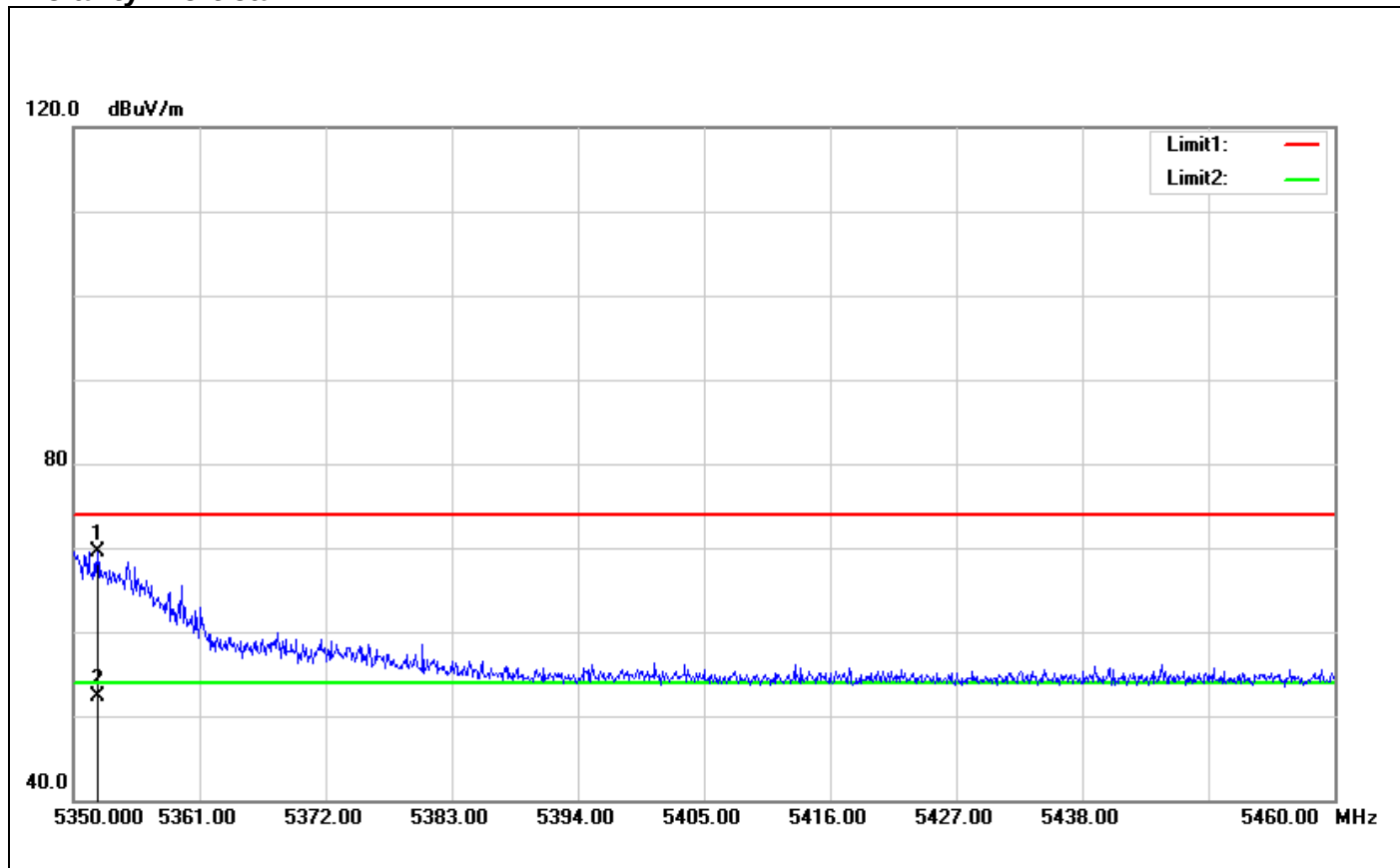
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5148.050	52.67	3.03	55.70	74.00	-18.30	160	138	peak
2	5148.050	41.27	3.03	44.30	54.00	-9.70	160	138	AVG

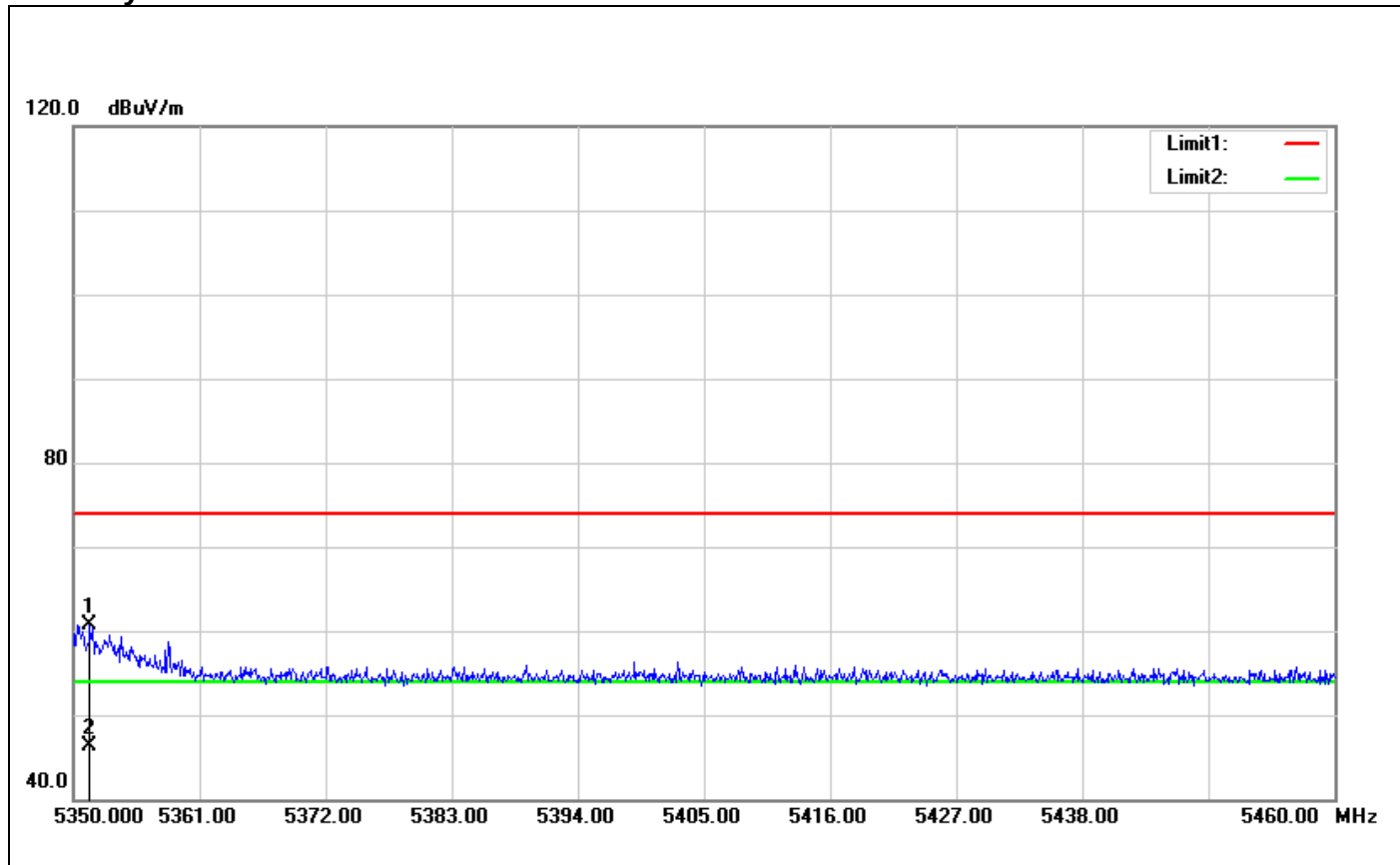
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5310 MHz)

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5352.090	64.22	5.33	69.55	74.00	-4.45	115	202	peak
2	5352.090	47.01	5.33	52.34	54.00	-1.66	115	202	AVG

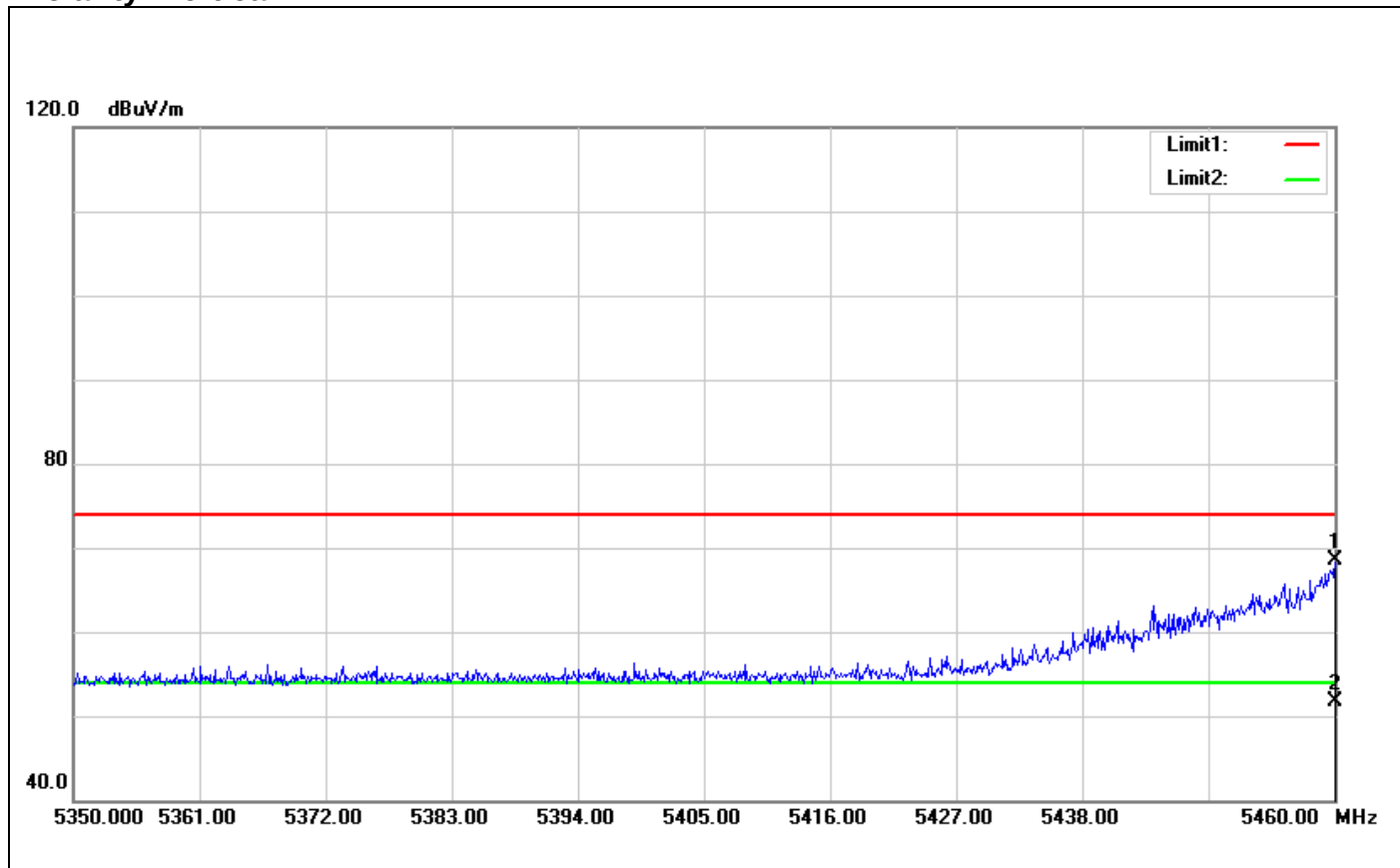
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5351.430	55.43	5.32	60.75	74.00	-13.25	135	139	peak
2	5351.430	40.96	5.32	46.28	54.00	-7.72	135	139	AVG

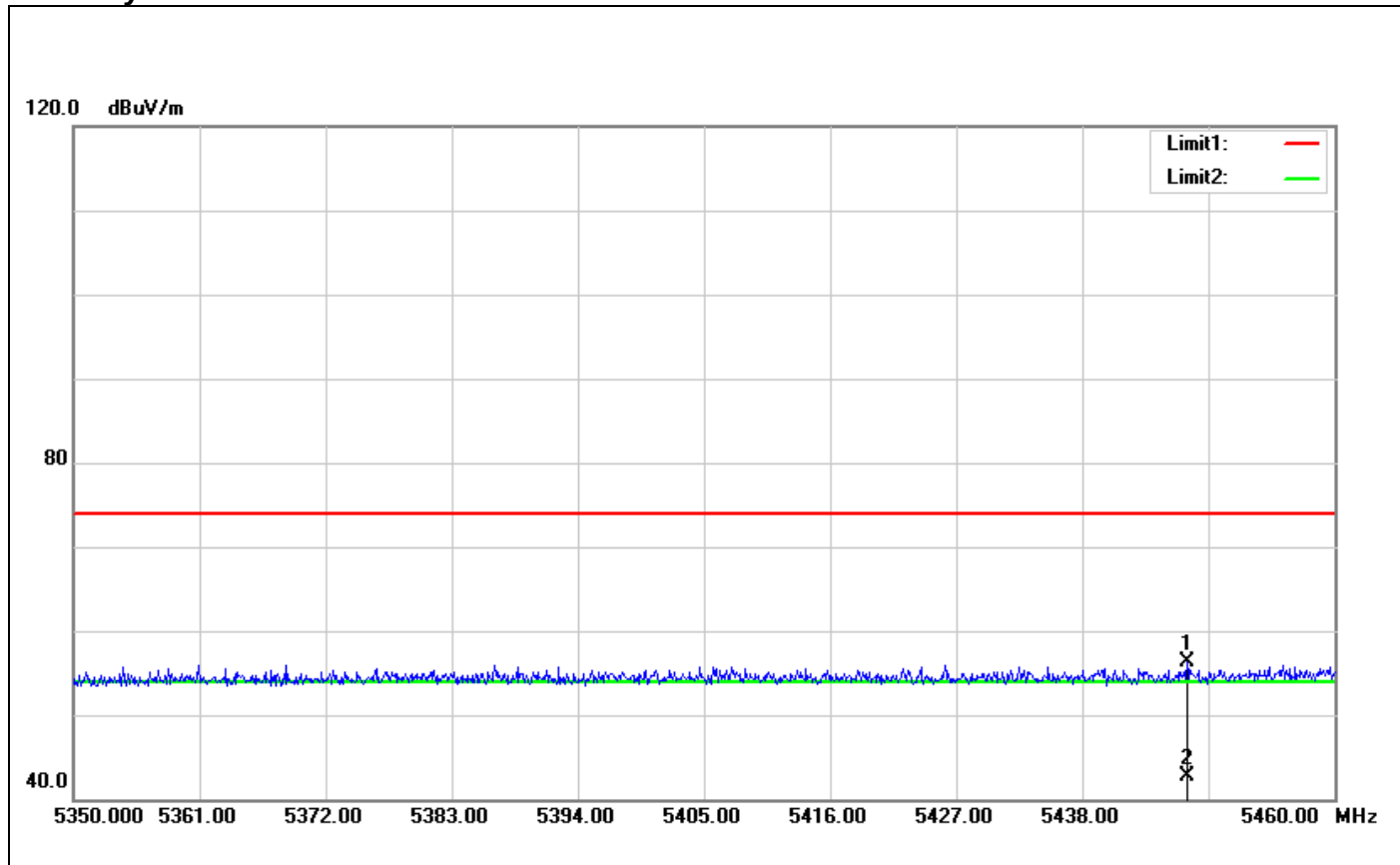
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5510 MHz)

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5460.000	62.97	5.44	68.41	74.00	-5.59	140	321	peak
2	5460.000	46.21	5.44	51.65	54.00	-2.35	140	321	AVG

Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5447.130	50.83	5.50	56.33	74.00	-17.67	140	73	peak
2	5447.130	37.26	5.50	42.76	54.00	-11.24	140	73	AVG

7.4 PEAK POWER SPECTRAL DENSITY

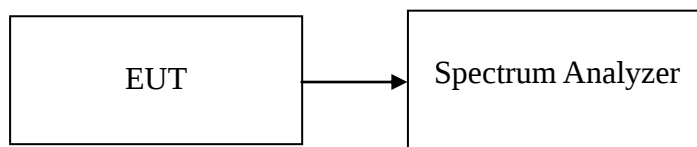
LIMIT

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)	Margin	Result
Low	5180	5.43	11.00	-5.57	PASS
Mid	5220	6.88	11.00	-4.12	PASS
High	5240	7.06	11.00	-3.94	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5180	5.74	11.00	-5.26	PASS
Mid	5220	7.32	11.00	-3.68	PASS
High	5240	7.65	11.00	-3.35	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5190	4.78	11.00	-6.22	PASS
High	5230	-0.95	11.00	-11.95	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	7.75	11.00	-3.25	PASS
Mid	5280	7.40	11.00	-3.60	PASS
High	5320	7.00	11.00	-4.00	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	7.59	11.00	-3.41	PASS
Mid	5280	7.26	11.00	-3.74	PASS
High	5320	7.42	11.00	-3.58	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5270	5.27	11.00	-5.73	PASS
High	5310	2.05	11.00	-8.95	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	6.77	11.00	-4.23	PASS
Mid	5580	7.17	11.00	-3.83	PASS
High	5700	7.97	11.00	-3.03	PASS

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

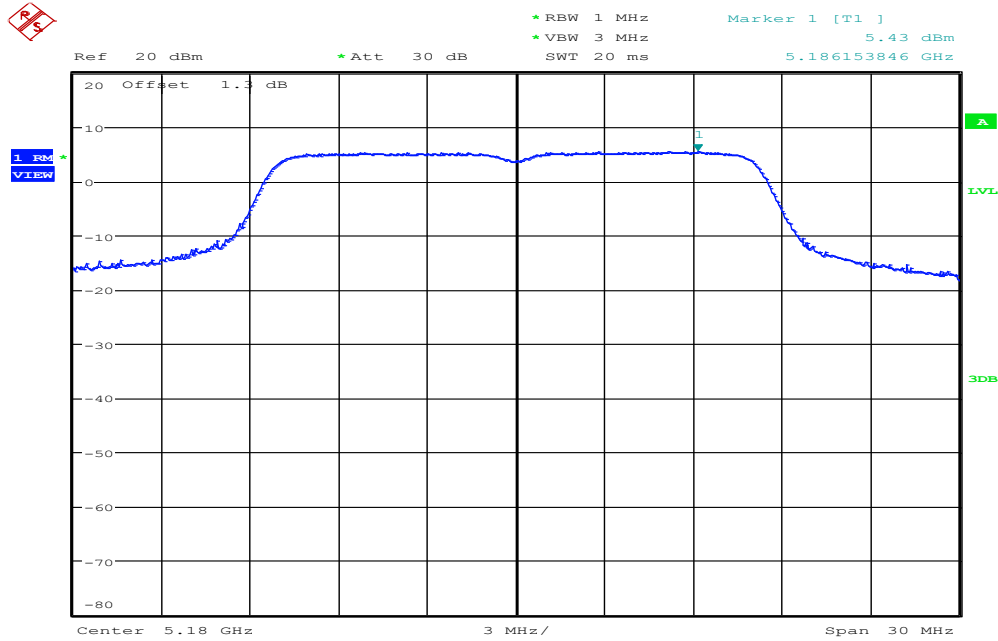
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	6.10	11.00	-4.9	PASS
Mid	5580	7.02	11.00	-3.98	PASS
High	5700	7.96	11.00	-3.04	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5510	3.27	11.00	-7.73	PASS
Mid	5550	5.57	11.00	-5.43	PASS
High	5670	5.87	11.00	-5.13	PASS

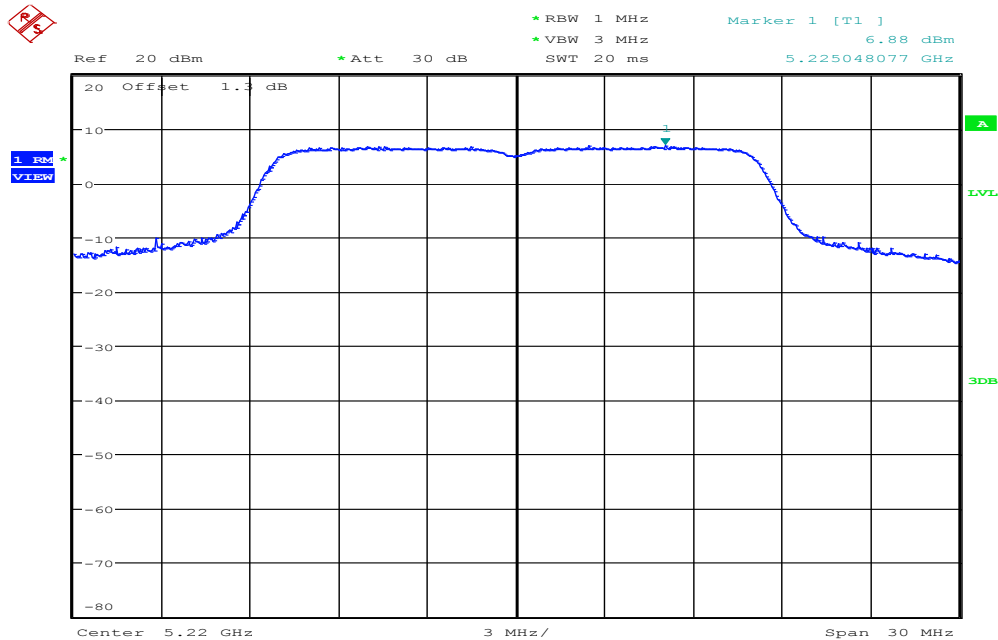
Test Plot IEEE 802.11a mode / 5180 ~ 5240MHz

CH Low



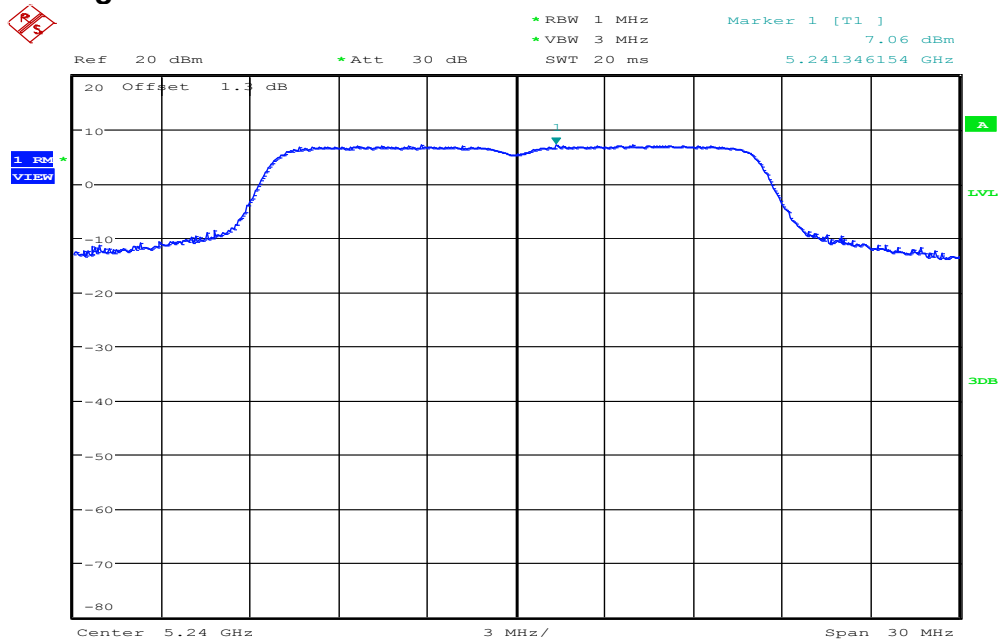
Date: 31.DECEMBER.2015 15:18:26

CH Mid



Date: 31.DECEMBER.2015 15:19:40

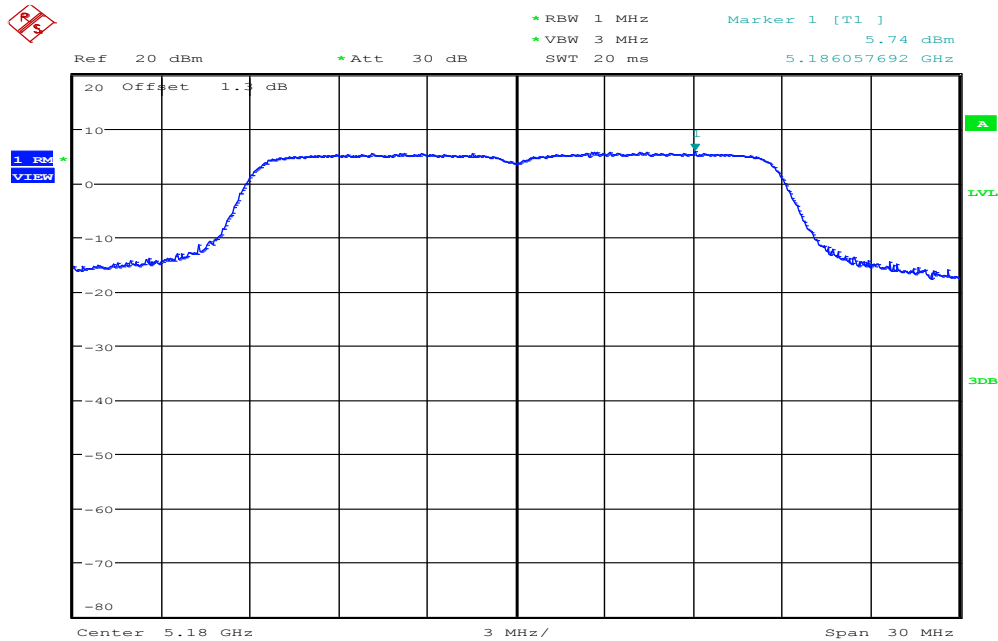
CH High



Date: 31.DEC.2015 15:20:20

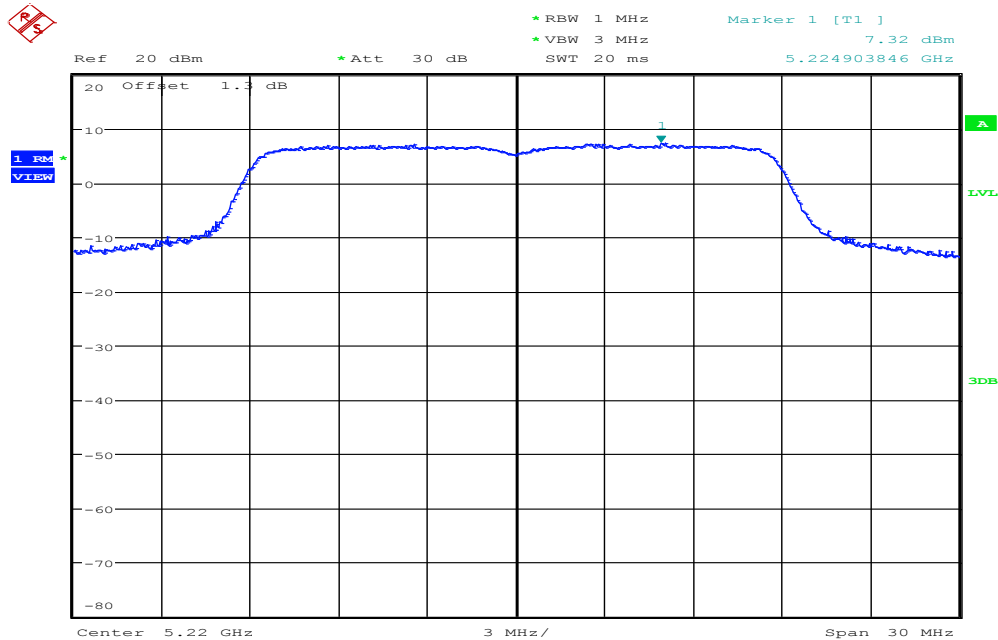
IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz

CH Low



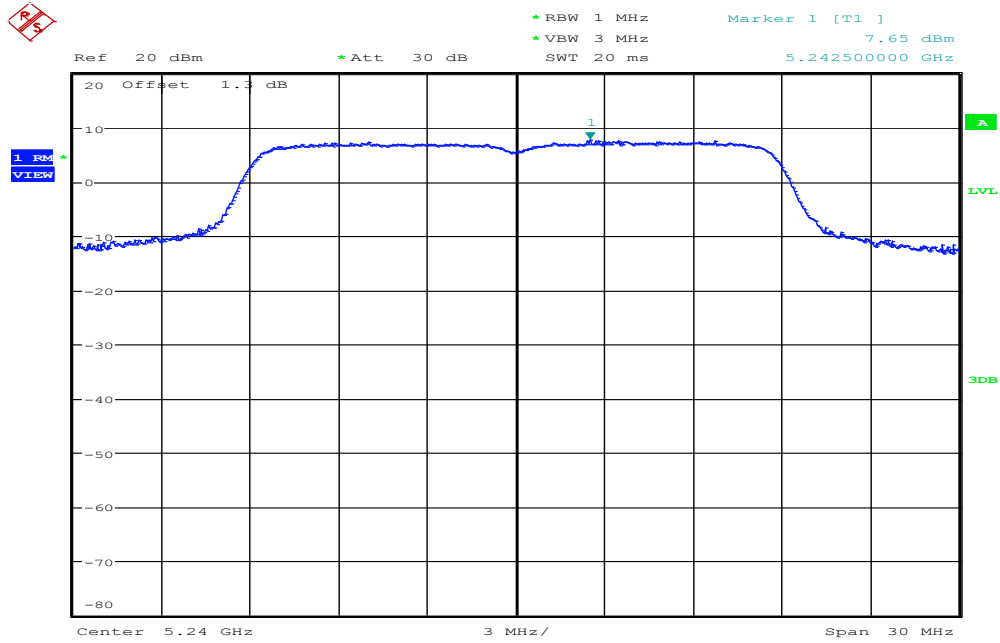
Date: 31.DEC.2015 15:48:28

CH Mid



Date: 31.DEC.2015 15:49:14

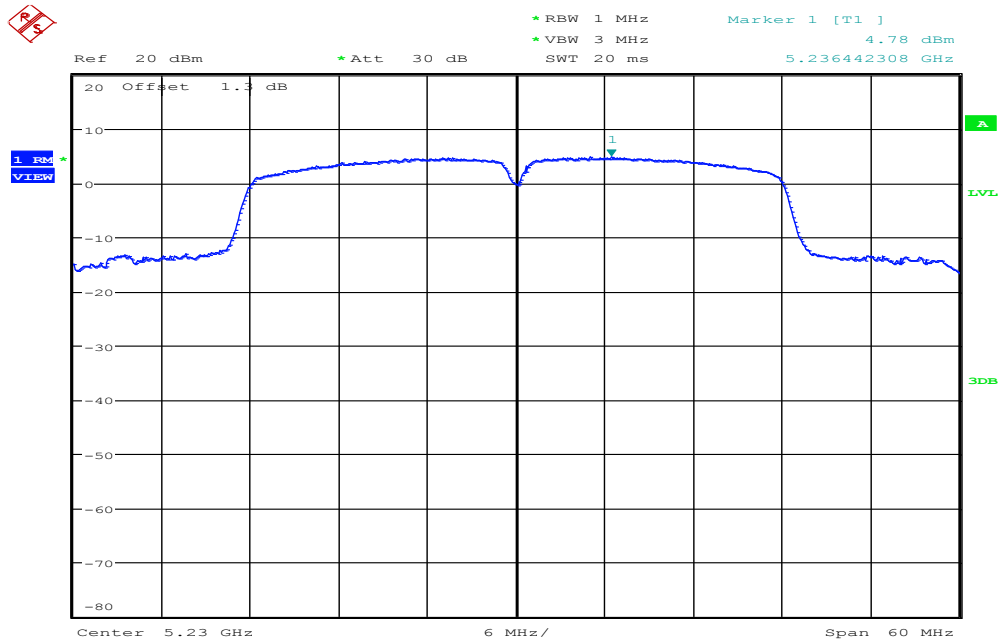
CH High



Date: 31.DEC.2015 15:49:46

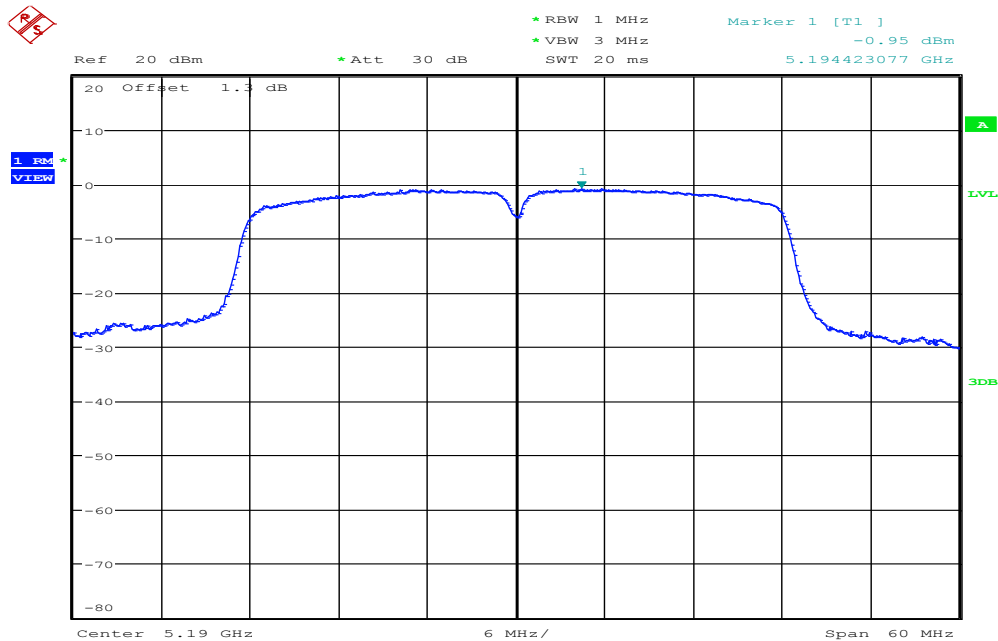
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

CH Low



Date: 31.DEC.2015 16:30:08

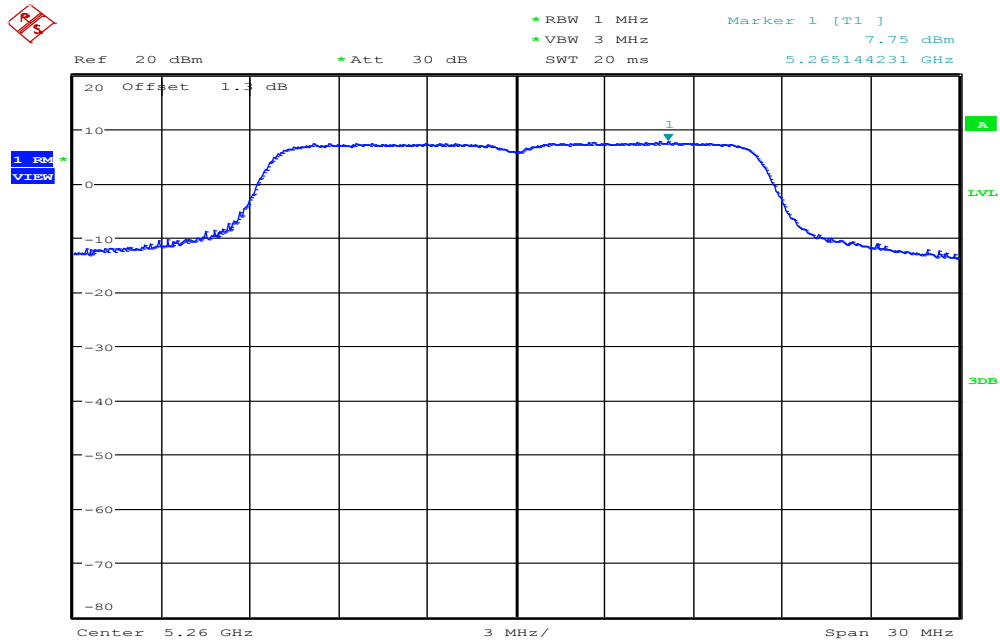
CH High



Date: 31.DEC.2015 16:30:47

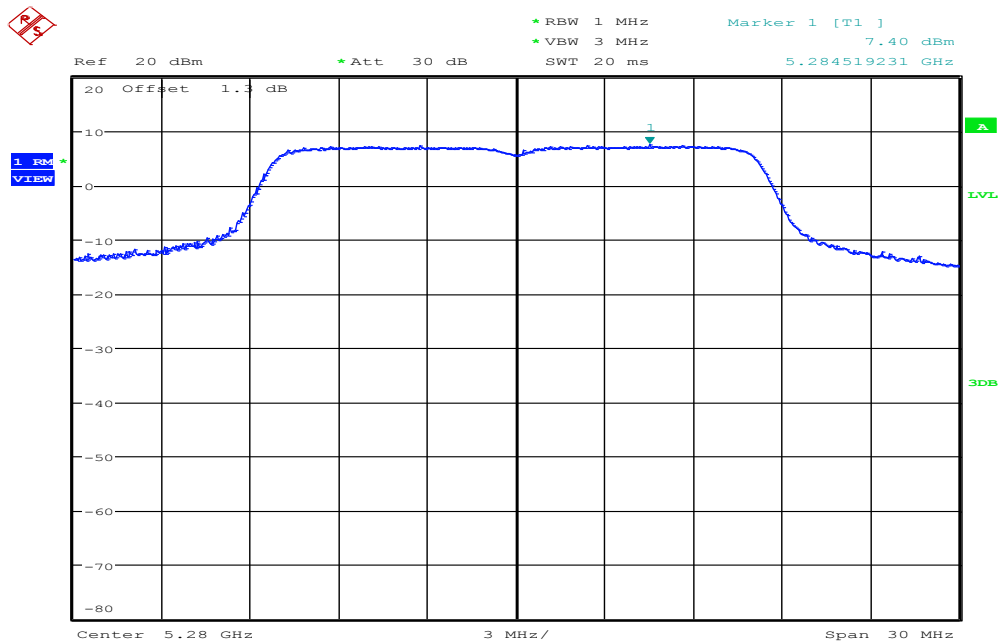
IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low



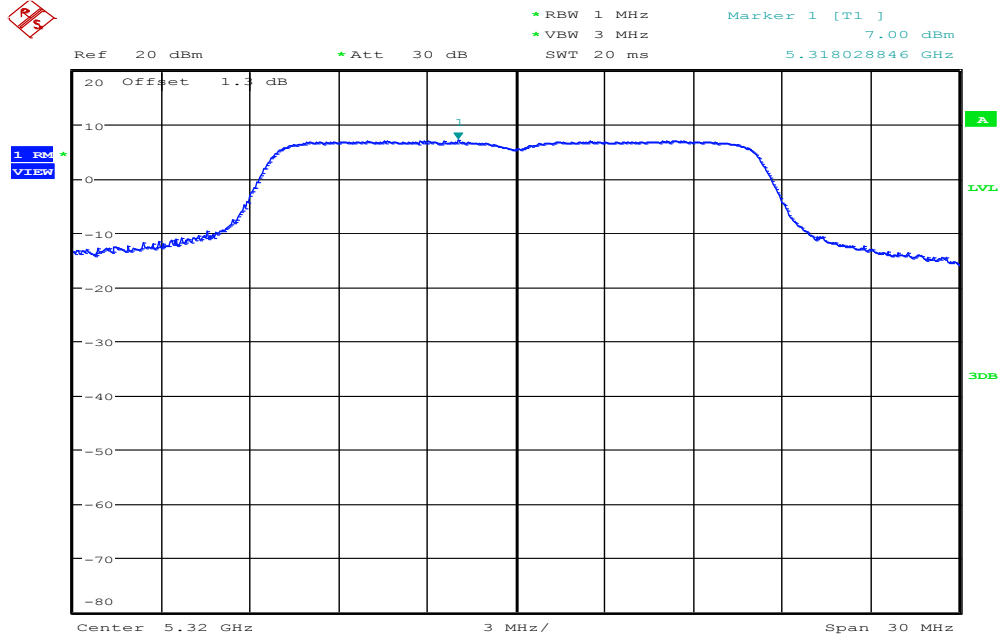
Date: 31.DECEMBER.2015 15:31:31

CH Mid



Date: 31.DECEMBER.2015 15:32:24

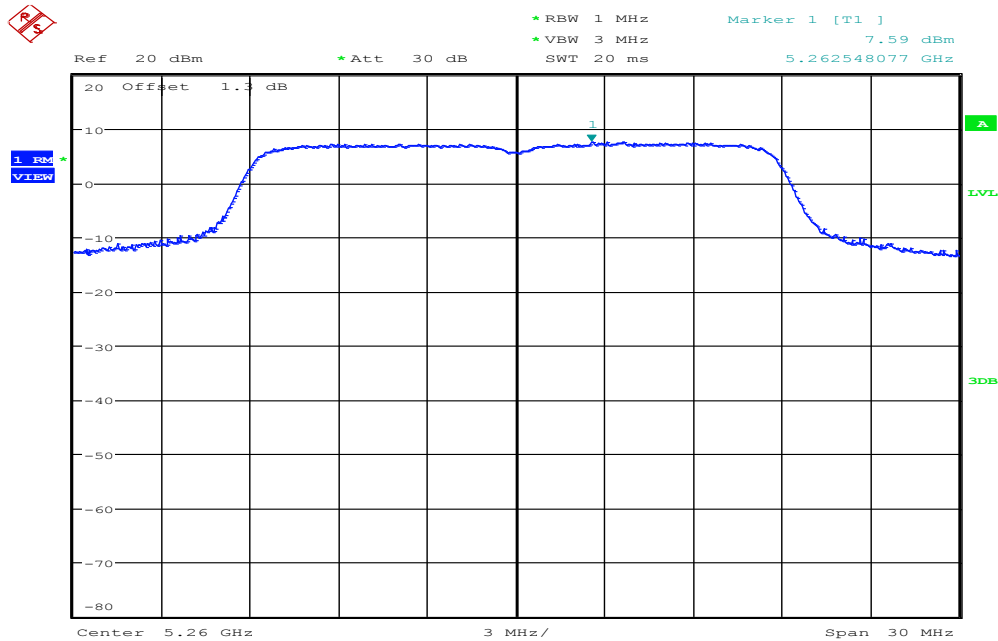
CH High



Date: 31.DEC.2015 15:33:24

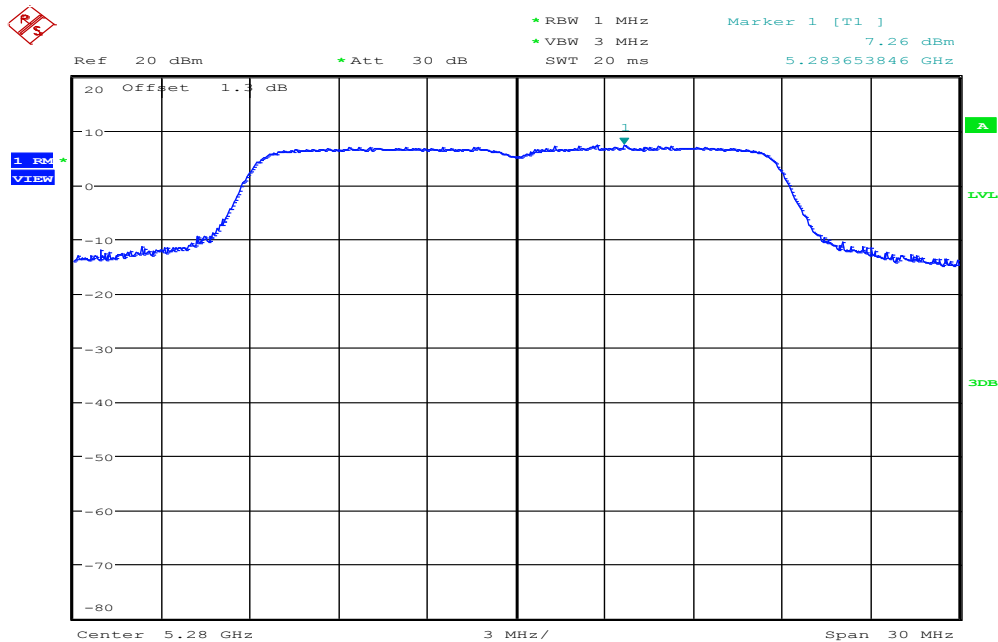
IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz

CH Low



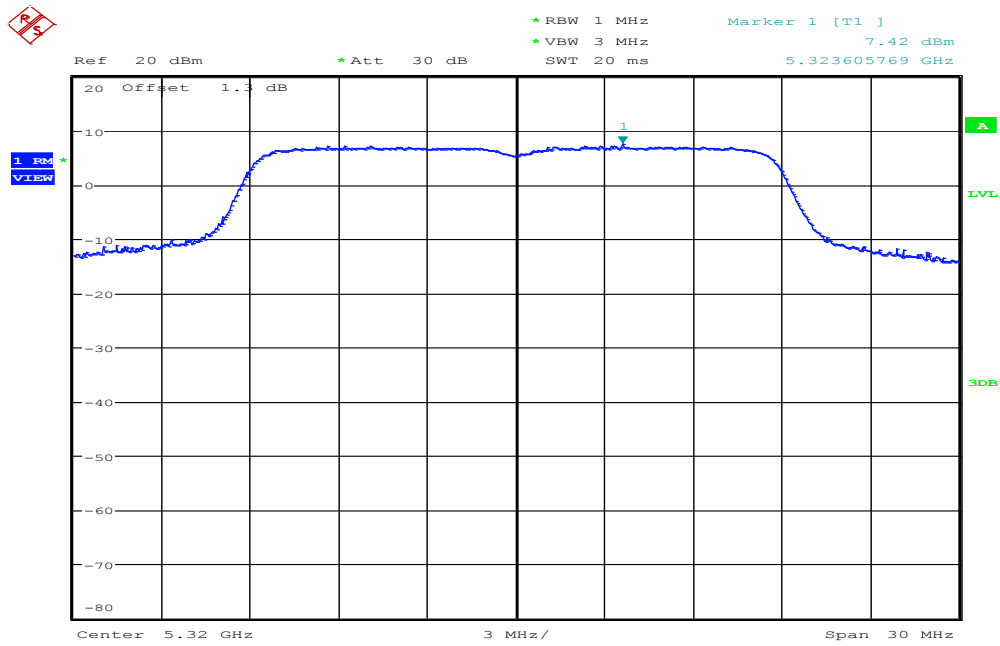
Date: 31.DEC.2015 15:50:25

CH Mid



Date: 31.DEC.2015 15:50:57

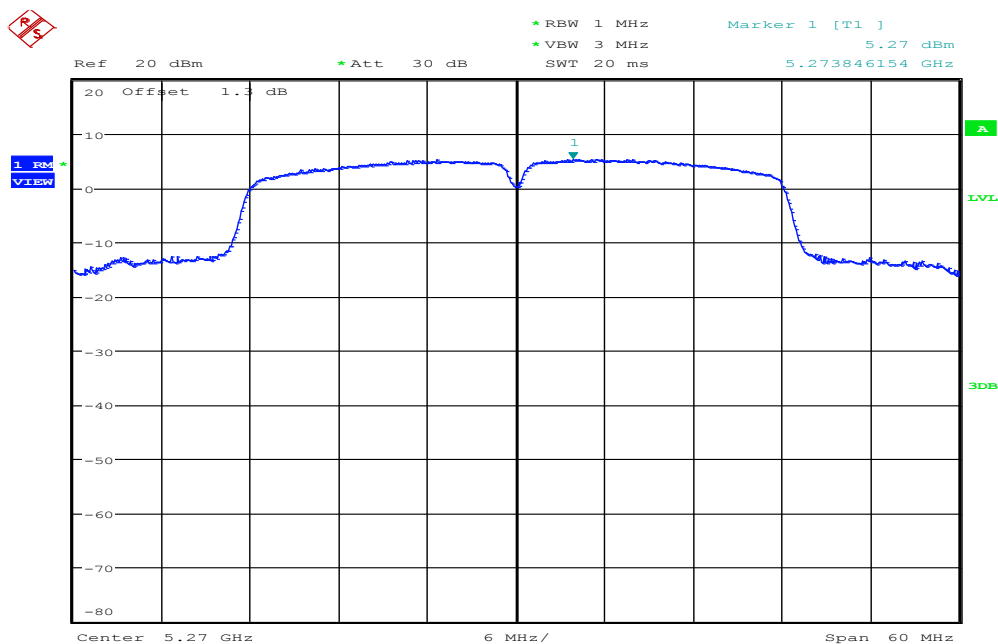
CH High



Date: 31.DEC.2015 15:51:35

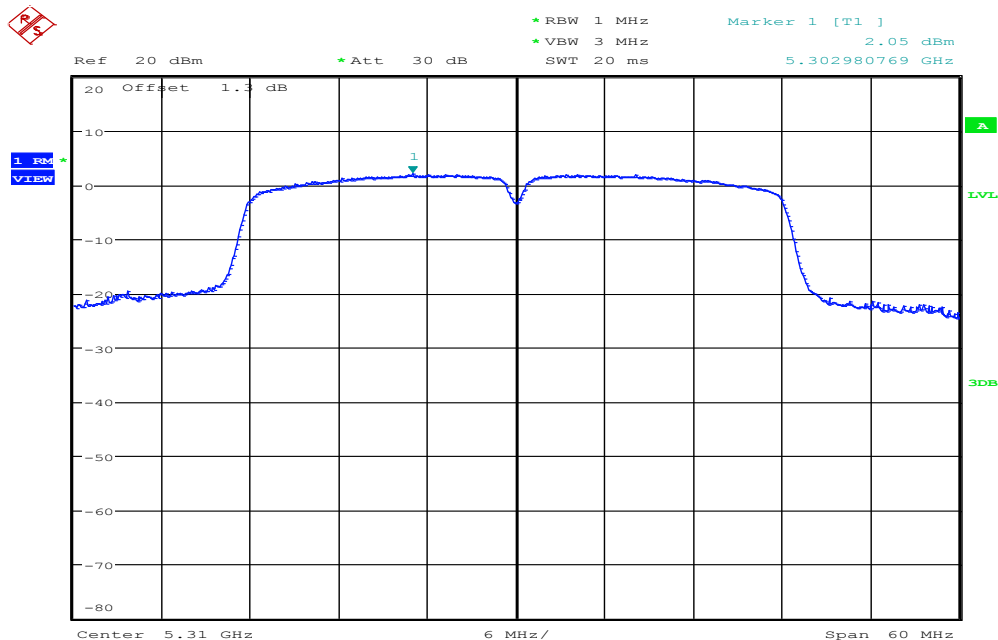
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz

CH Low



Date: 31.DEC.2015 16:31:31

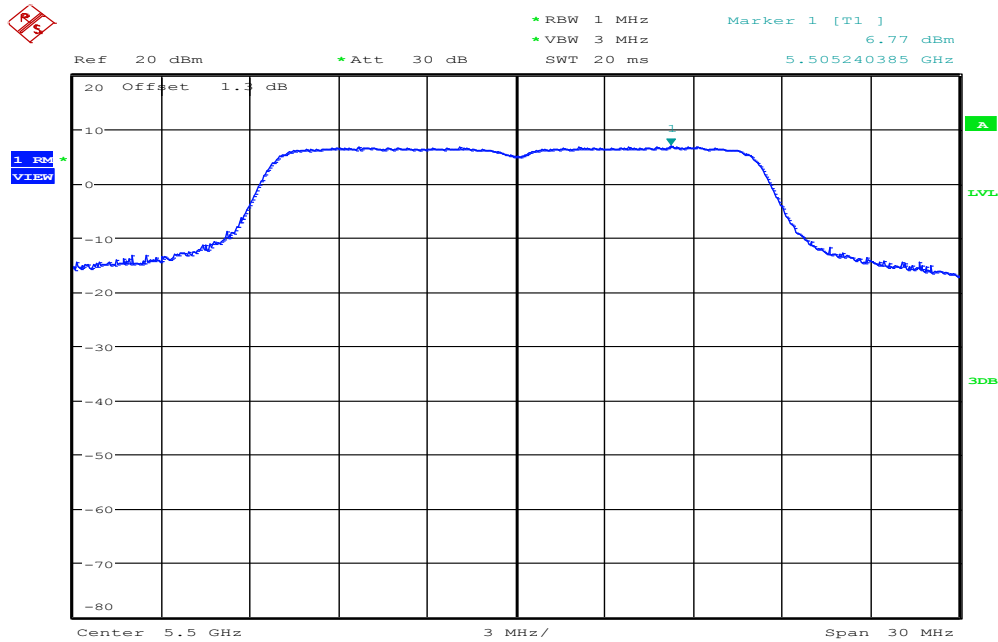
CH High



Date: 31.DEC.2015 16:32:05

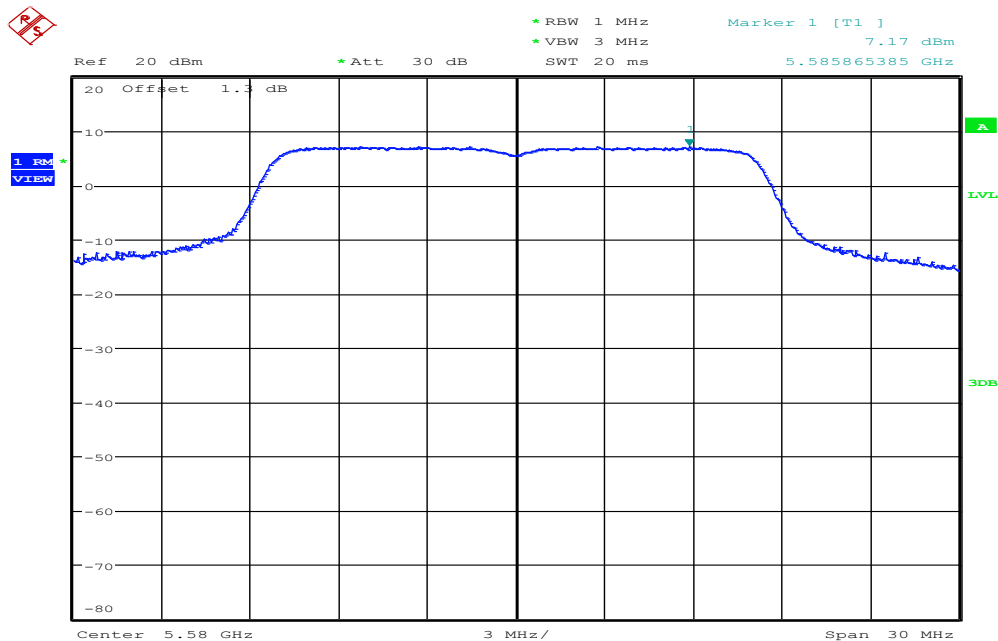
Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low



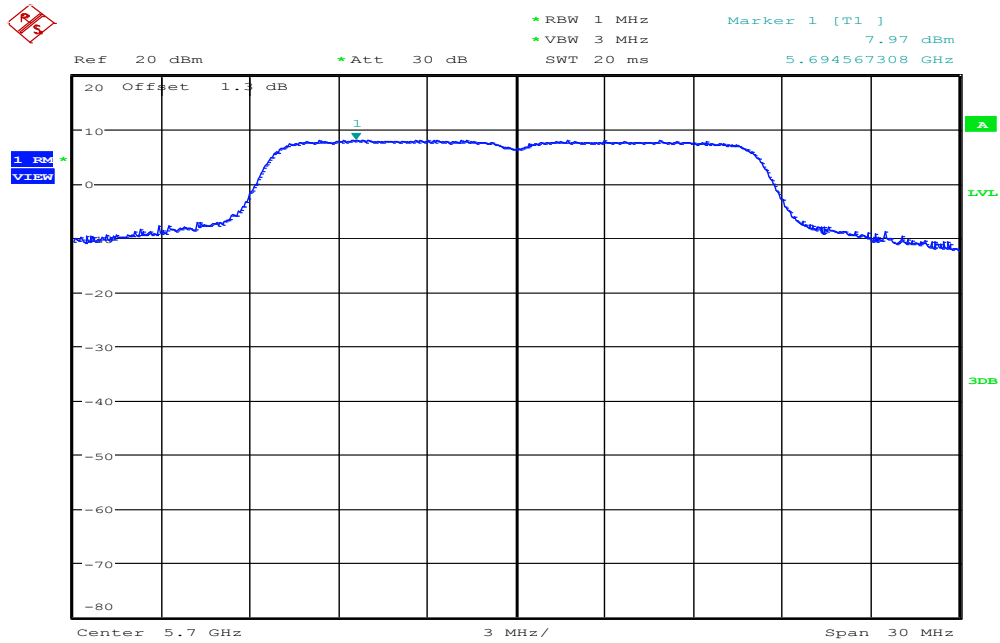
Date: 31.DEC.2015 15:34:32

CH Mid



Date: 31.DEC.2015 15:35:25

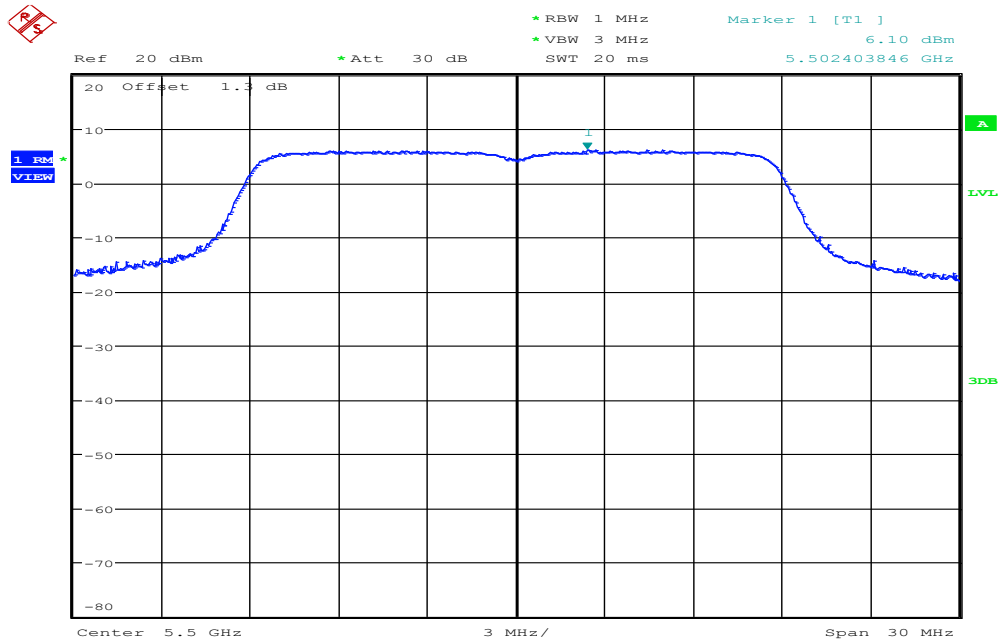
CH High



Date: 31.DEC.2015 15:36:19

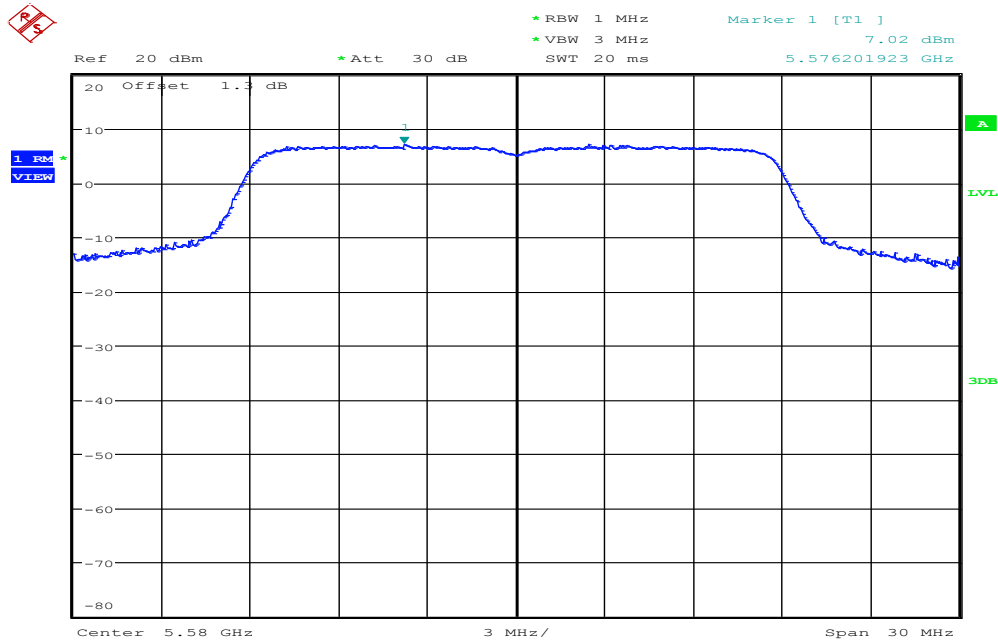
IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz

CH Low



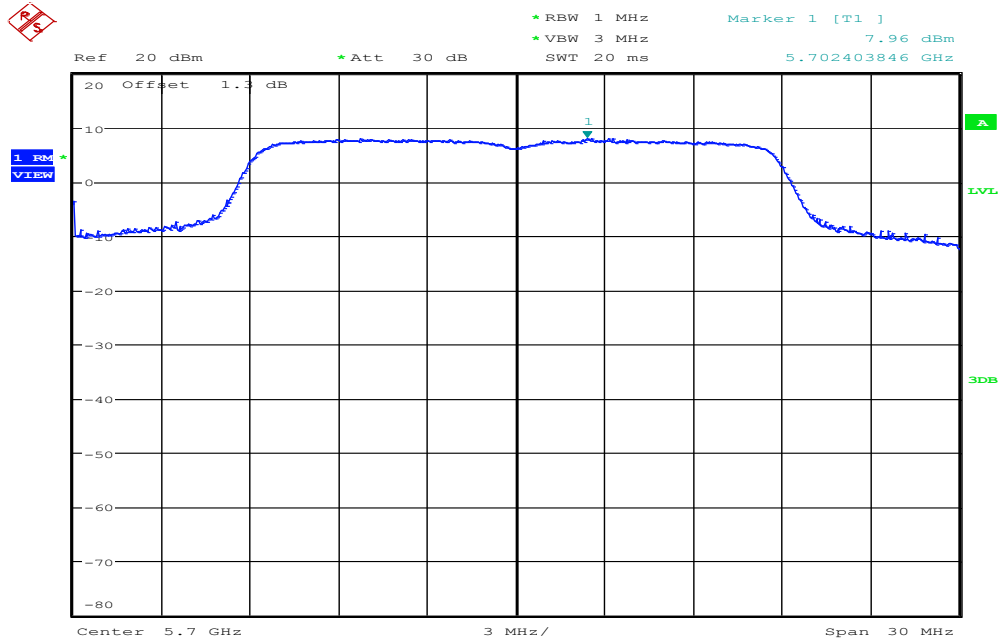
Date: 31.DECEMBER.2015 16:17:17

CH Mid



Date: 31.DECEMBER.2015 16:18:03

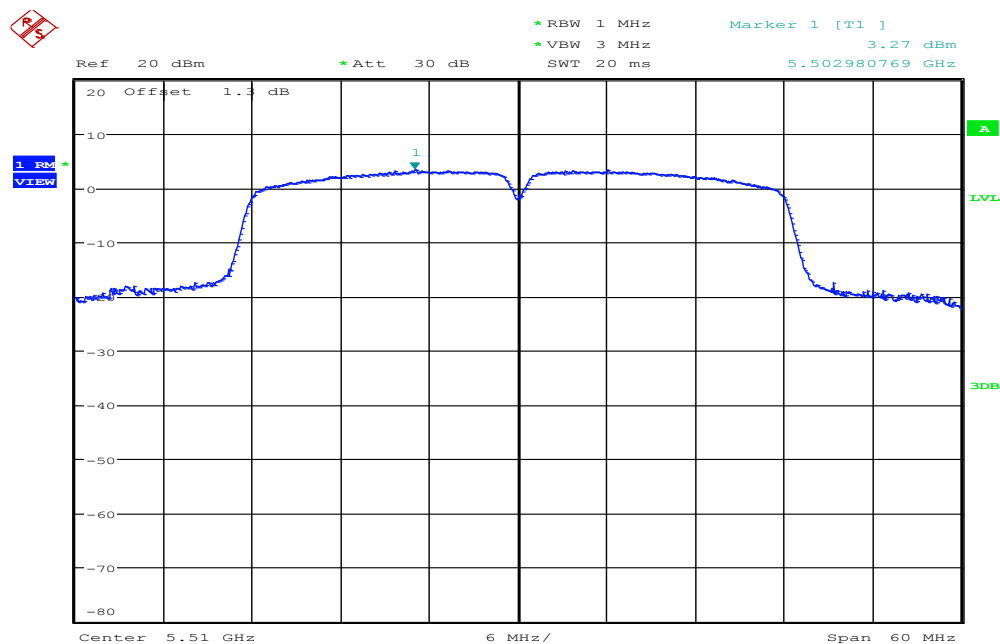
CH High



Date: 31.DEC.2015 16:18:52

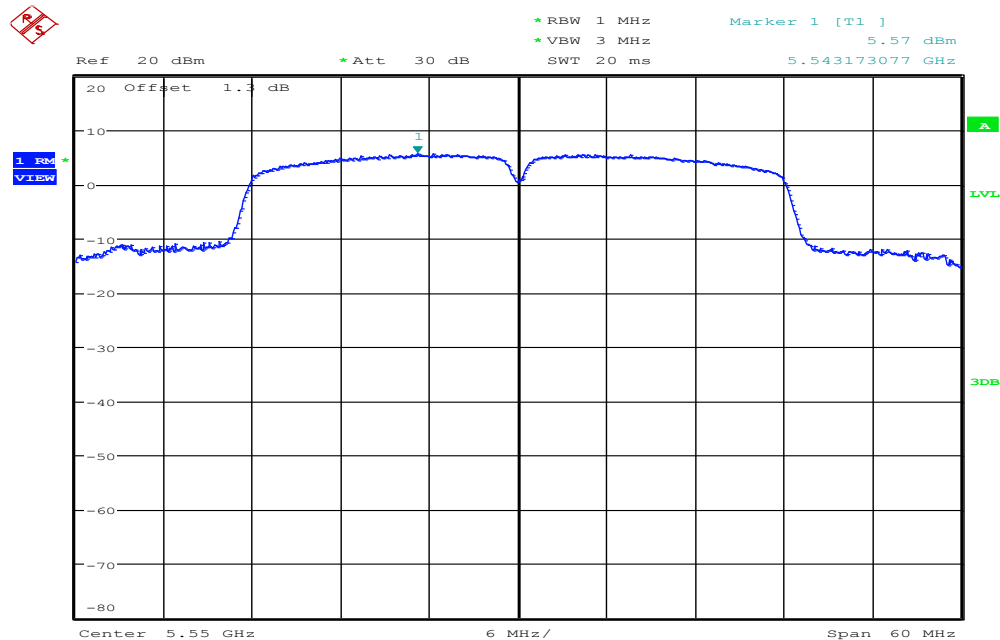
IEEE 802.11n HT 40 MHz mode / 5530 ~ 5690MHz

CH Low



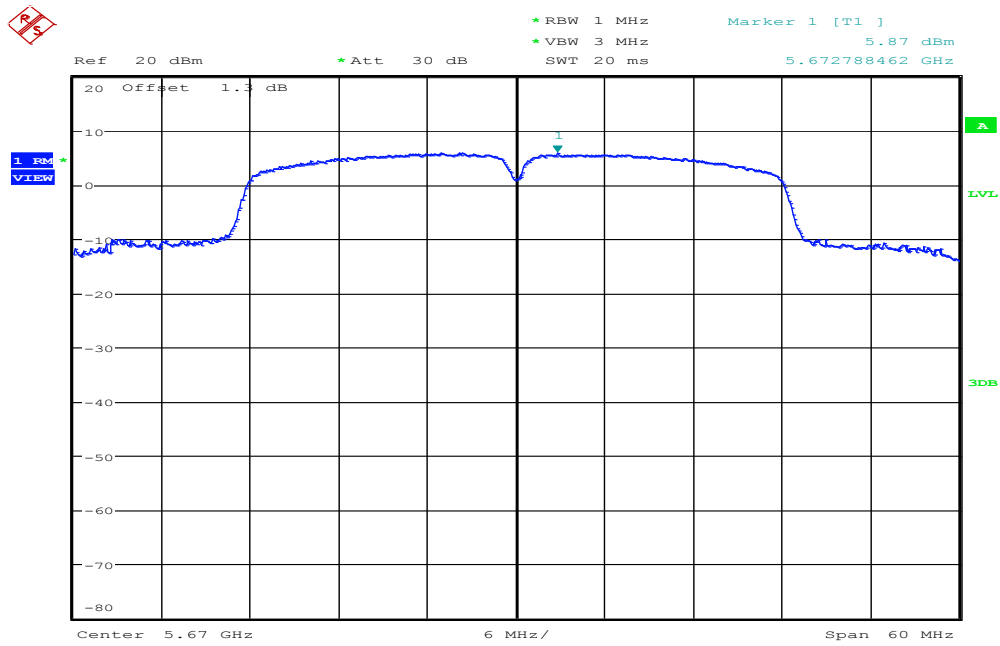
Date: 31.DEC.2015 16:32:42

CH Mid



Date: 31.DEC.2015 16:33:26

CH High



Date: 31.DEC.2015 16:37:11

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

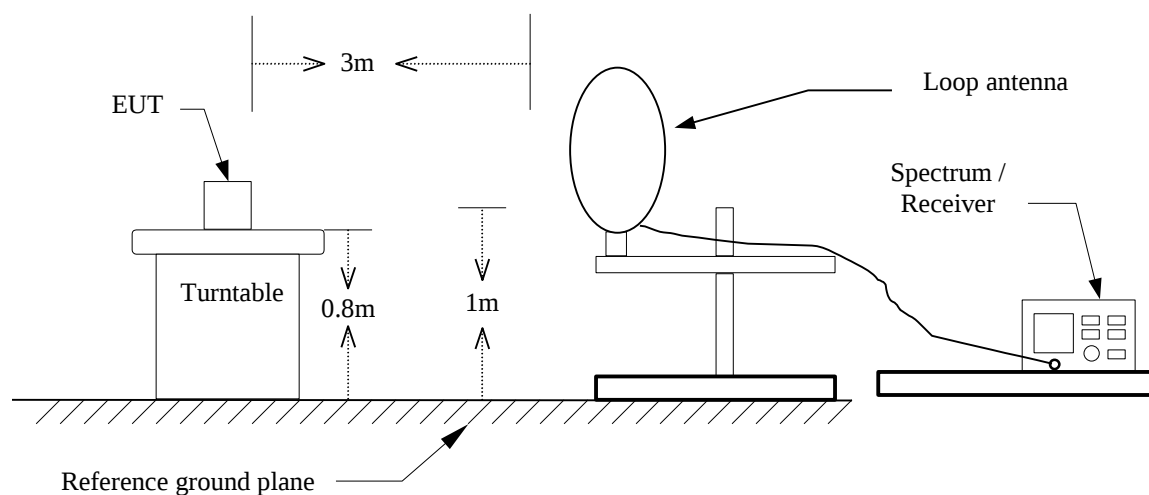
Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

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

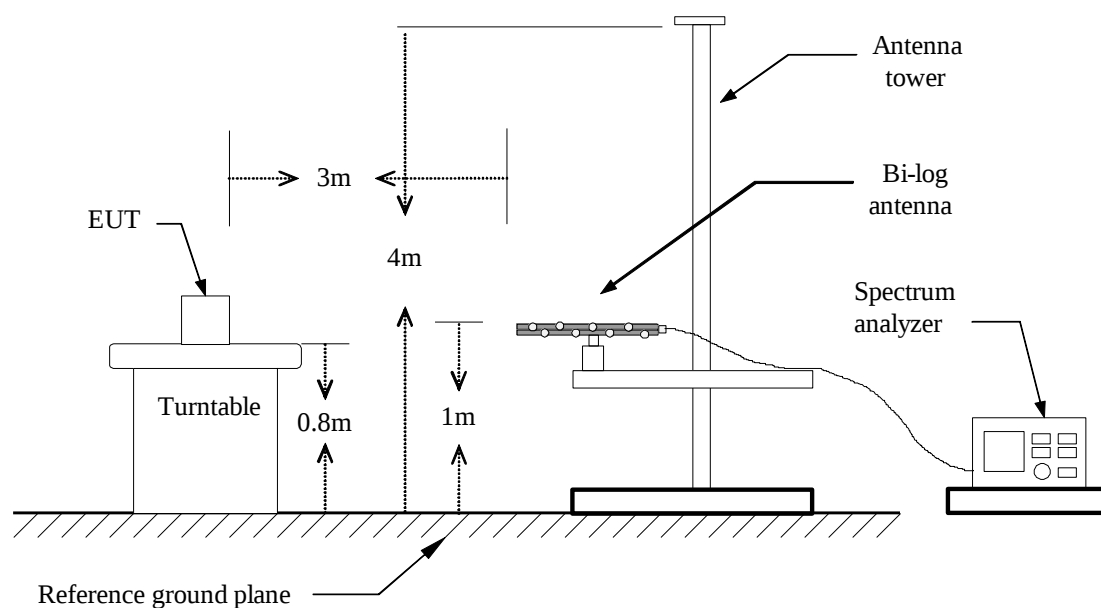
Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

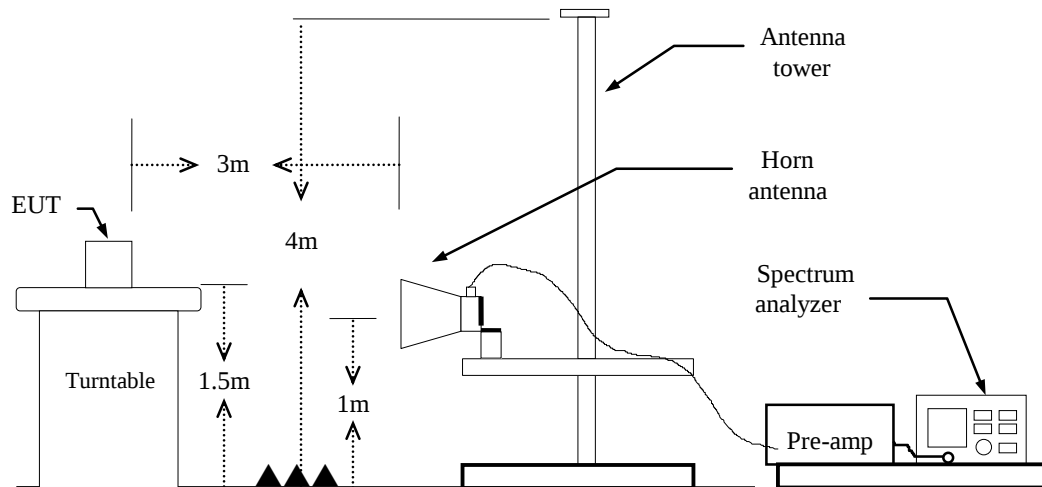
9kHz ~ 30MHz



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

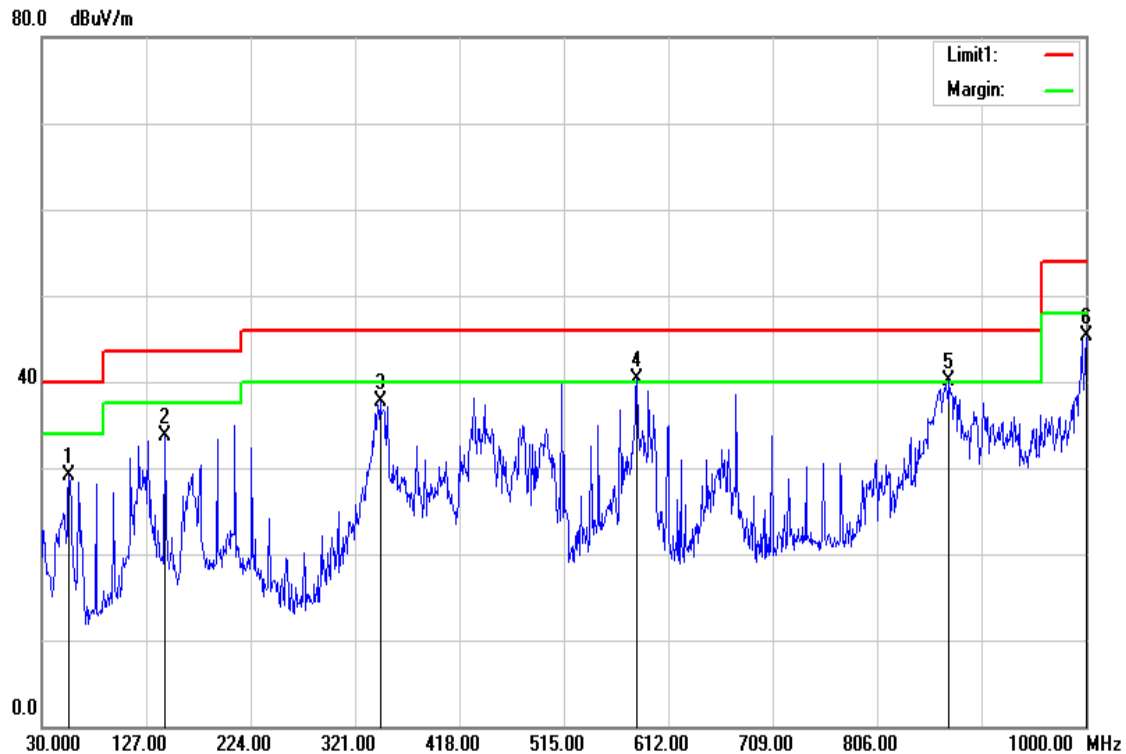
IEEE 802.11n HT 40 MHz mode: $\geq 98\%$, VBW=10Hz

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**

Normal Link

Test Date: December 18, 2015**Mode:****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)
55.2200	50.66	-21.61	29.05	40.00	-10.95	peak	V
144.4600	49.70	-15.91	33.79	43.50	-9.71	peak	V
344.2800	50.67	-13.04	37.63	46.00	-8.37	peak	V
582.9000	48.26	-8.01	40.25	46.00	-5.75	peak	V
872.9300	43.53	-3.51	40.02	46.00	-5.98	peak	V
1000.0000	46.93	-1.58	45.35	54.00	-8.65	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

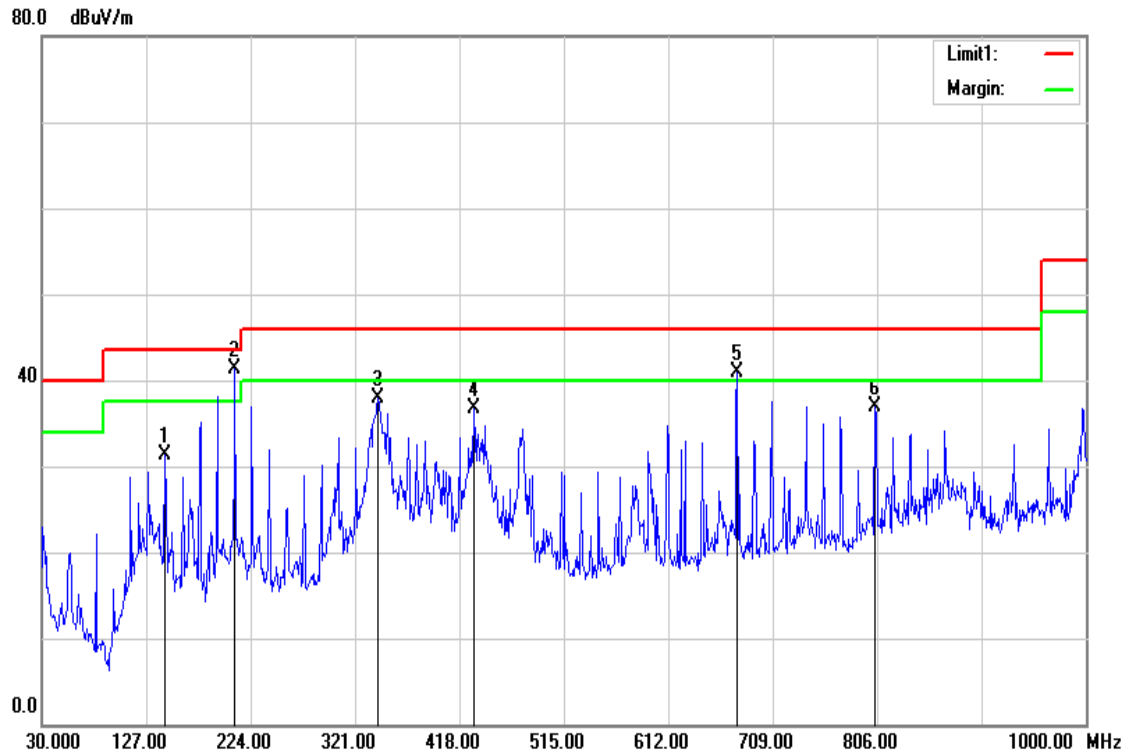
Test Date: December 18, 2015

Temperature: 27°C

Tested by: Jason Lu

Humidity: 53% RH

Polarity: Hor.



Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant. Pol. (H/V)
144.4600	47.30	-15.91	31.39	43.50	-12.11	peak	H
209.4500	57.43	-16.22	41.21	43.50	-2.29	peak	H
342.3400	51.03	-13.10	37.93	46.00	-8.07	peak	H
431.5800	47.54	-10.75	36.79	46.00	-9.21	peak	H
676.0200	47.29	-6.31	40.98	46.00	-5.02	peak	H
804.0600	41.29	-4.44	36.85	46.00	-9.15	peak	H

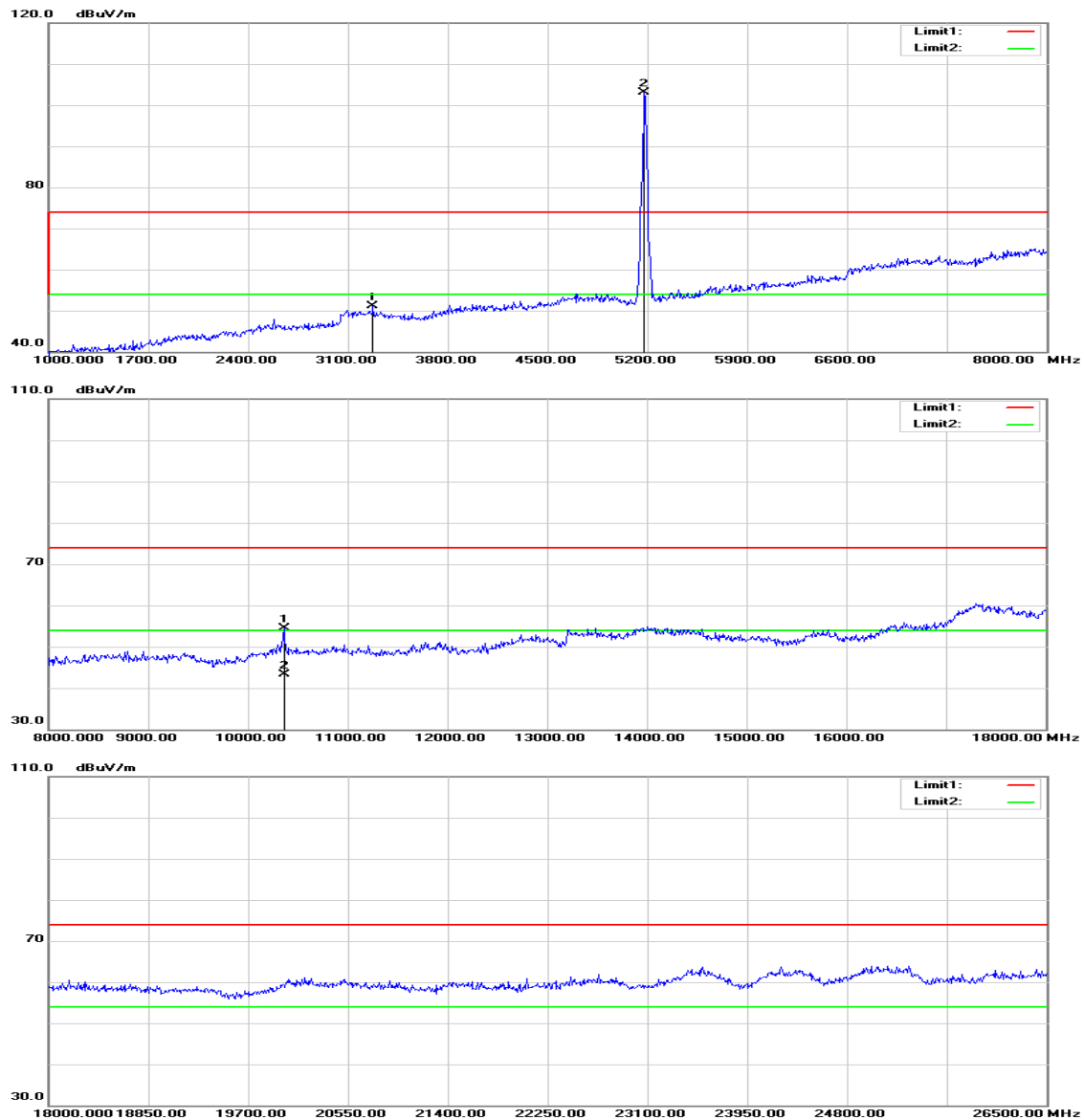
Remark:

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

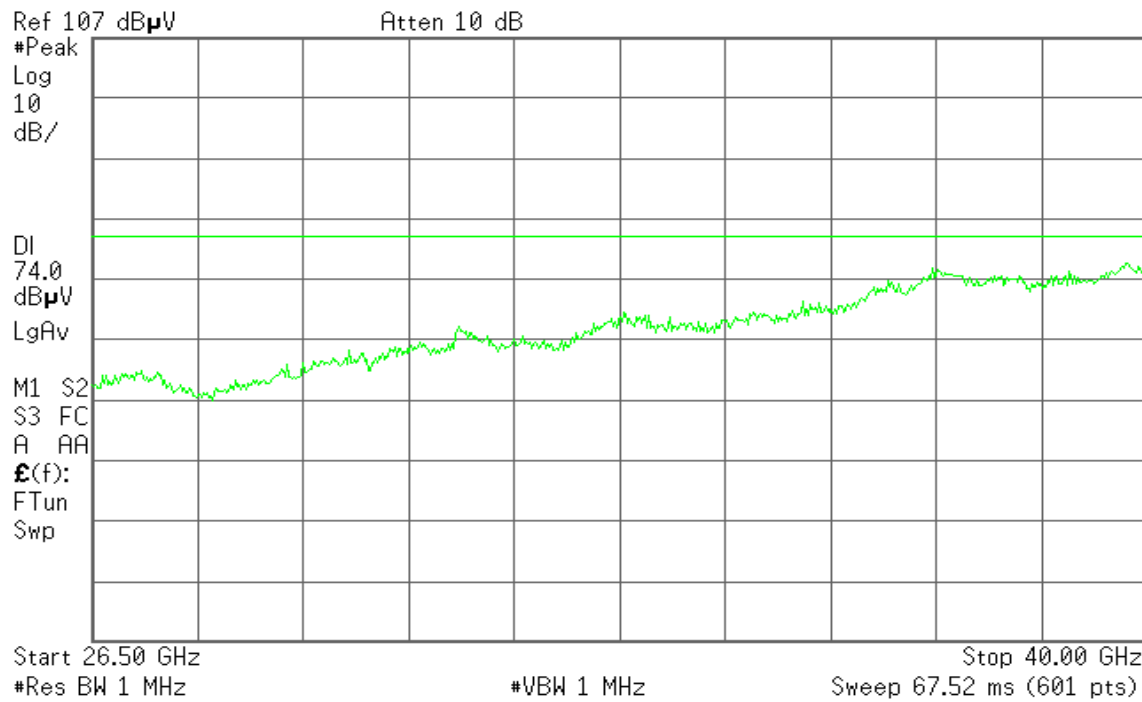
Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Low

Polarity: Vertical

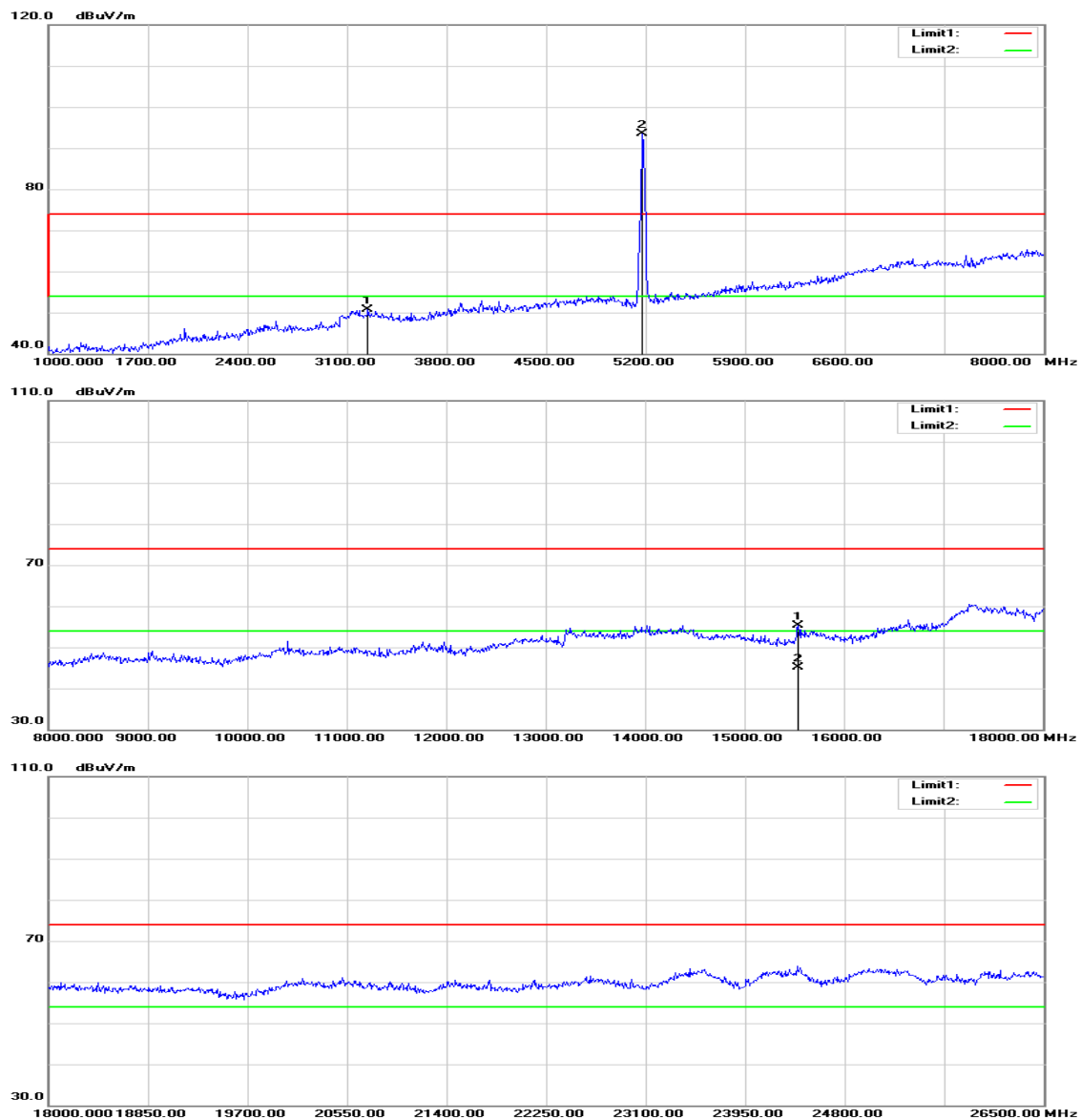


 **Agilent**

R L

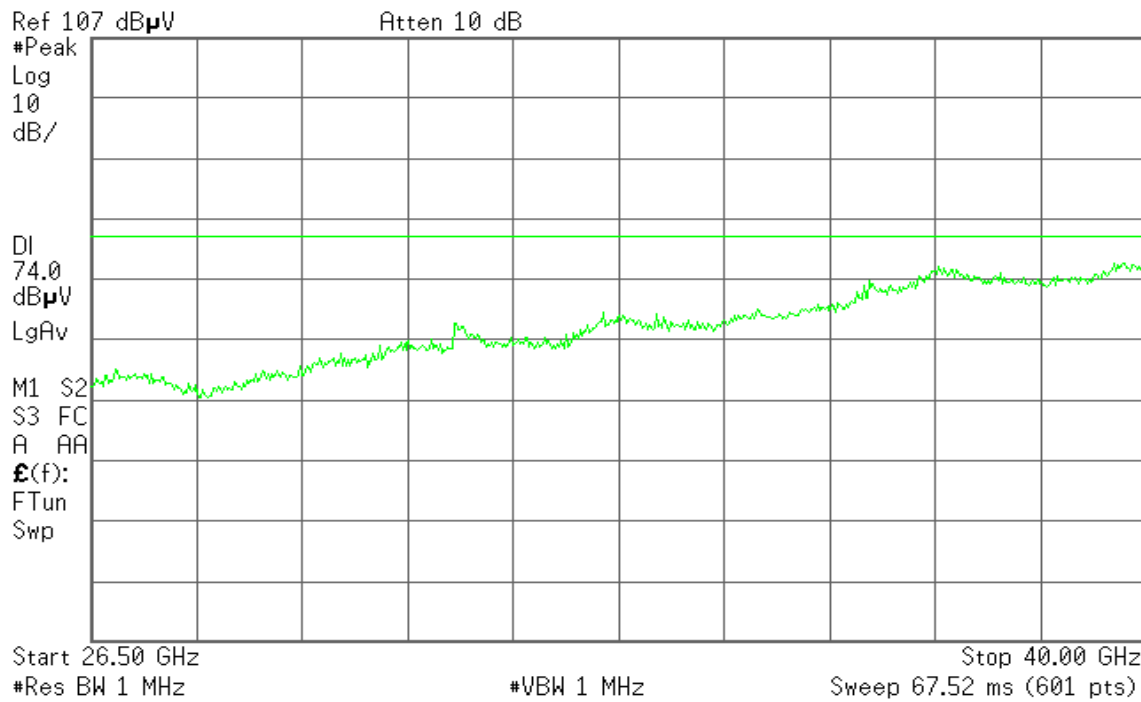


Polarity: Horizontal



 **Agilent**

R L



Above 1 GHz

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

Test Date: December 24, 2015

Temperature: 27°C

Tested by: Jason Lu

Humidity: 53% RH

Polarity: Ver. / Hor.

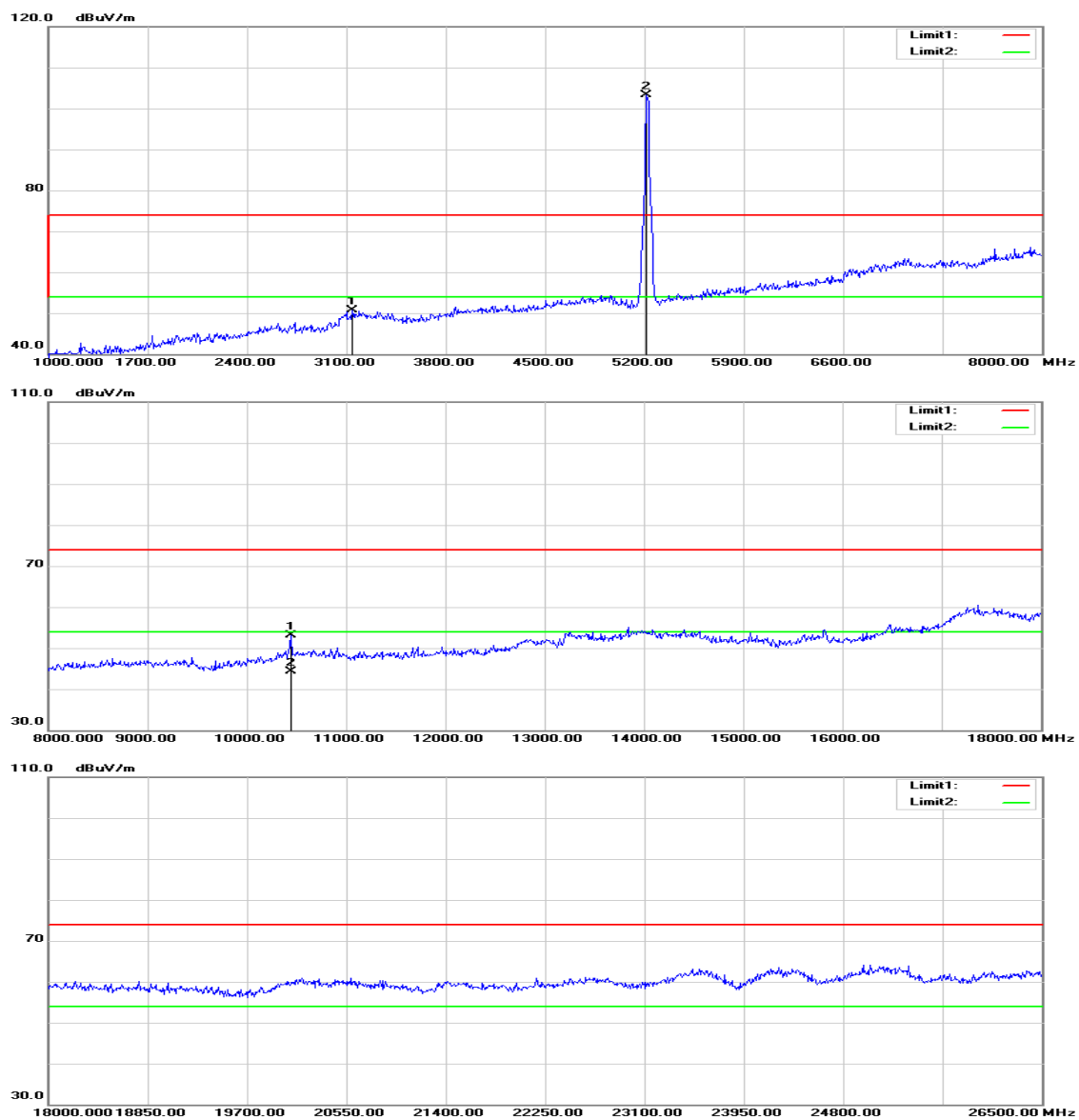
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3275.000	52.46	-1.45	51.01	74.00	-22.99	peak	V
10360.000	37.90	16.52	54.42	74.00	-19.58	peak	V
10360.000	26.80	16.52	43.32	54.00	-10.68	AVG	V
N/A							
3247.000	52.21	-1.52	50.69	74.00	-23.31	peak	H
15540.000	36.16	19.04	55.20	74.00	-18.80	peak	H
15540.000	26.07	19.04	45.11	54.00	-8.89	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).

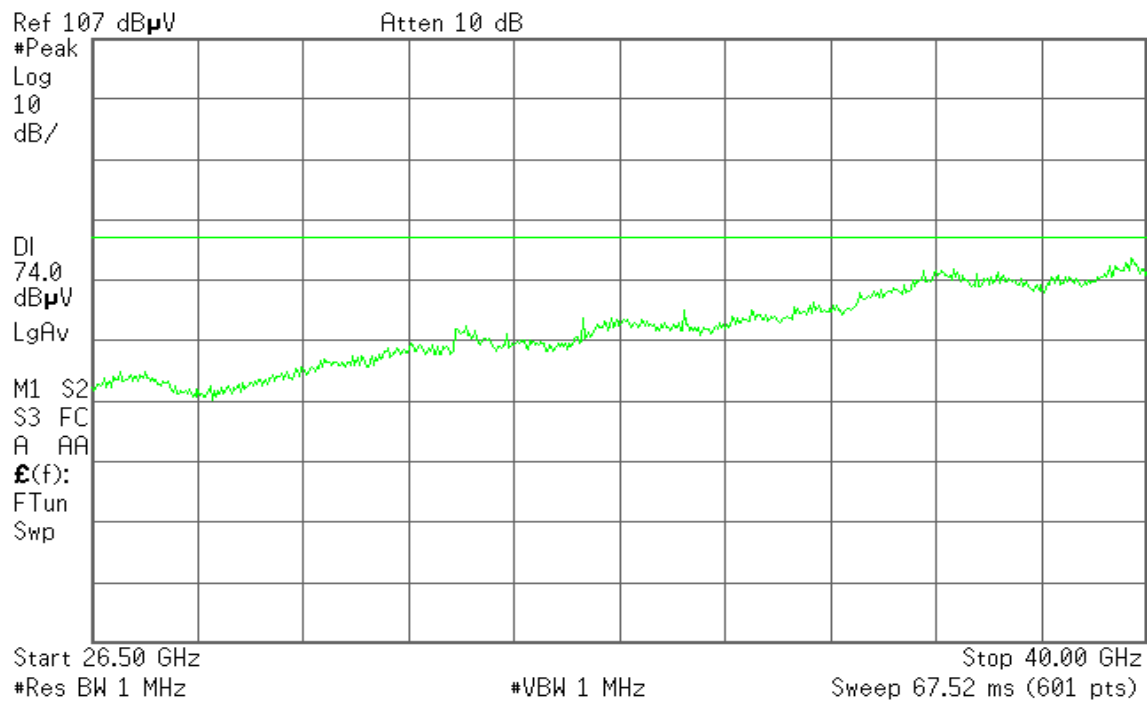
Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Mid

Polarity: Vertical

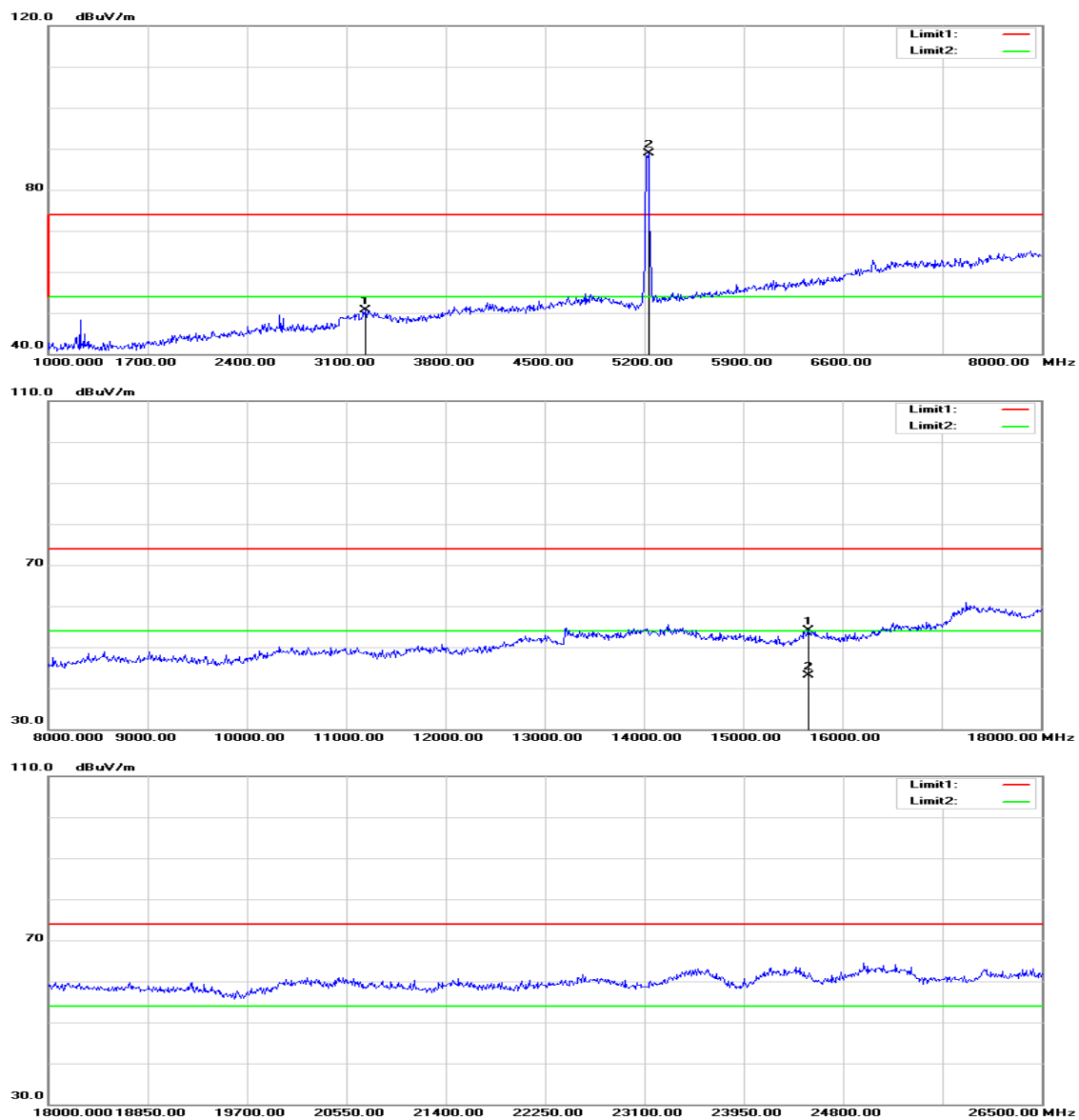


 **Agilent**

R L

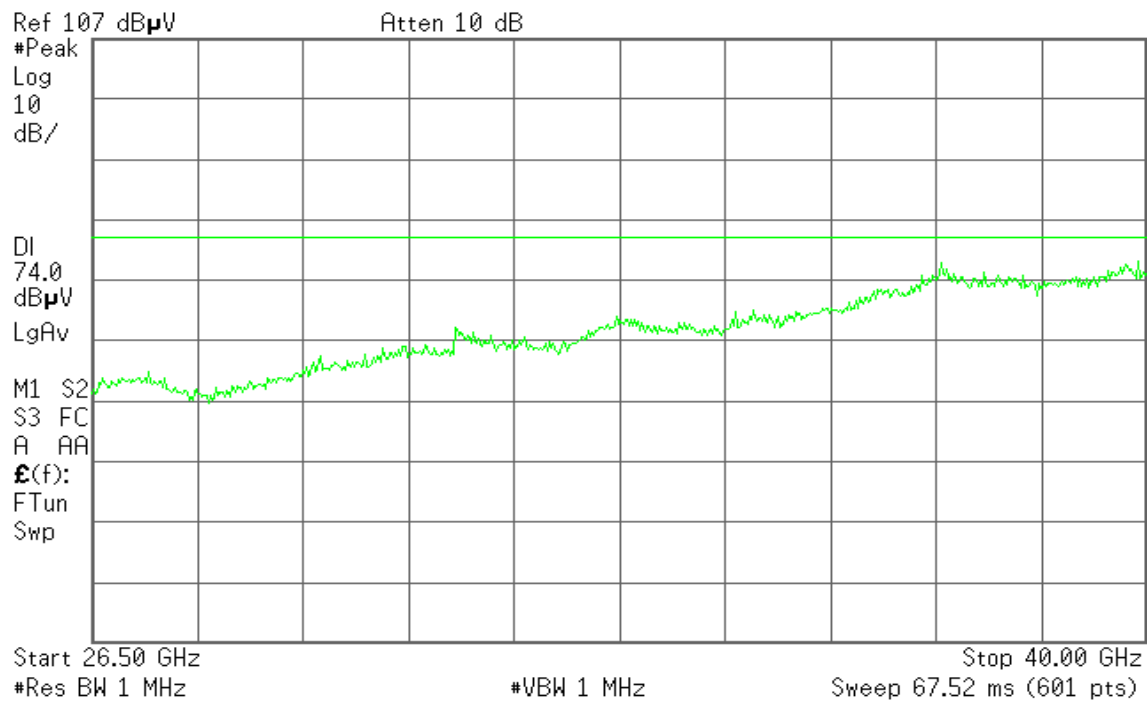


Polarity: Horizontal



 **Agilent**

R L



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

Test Date: December 24, 2015

Tested by: Jason Lu

Polarity: Ver. / Hor.

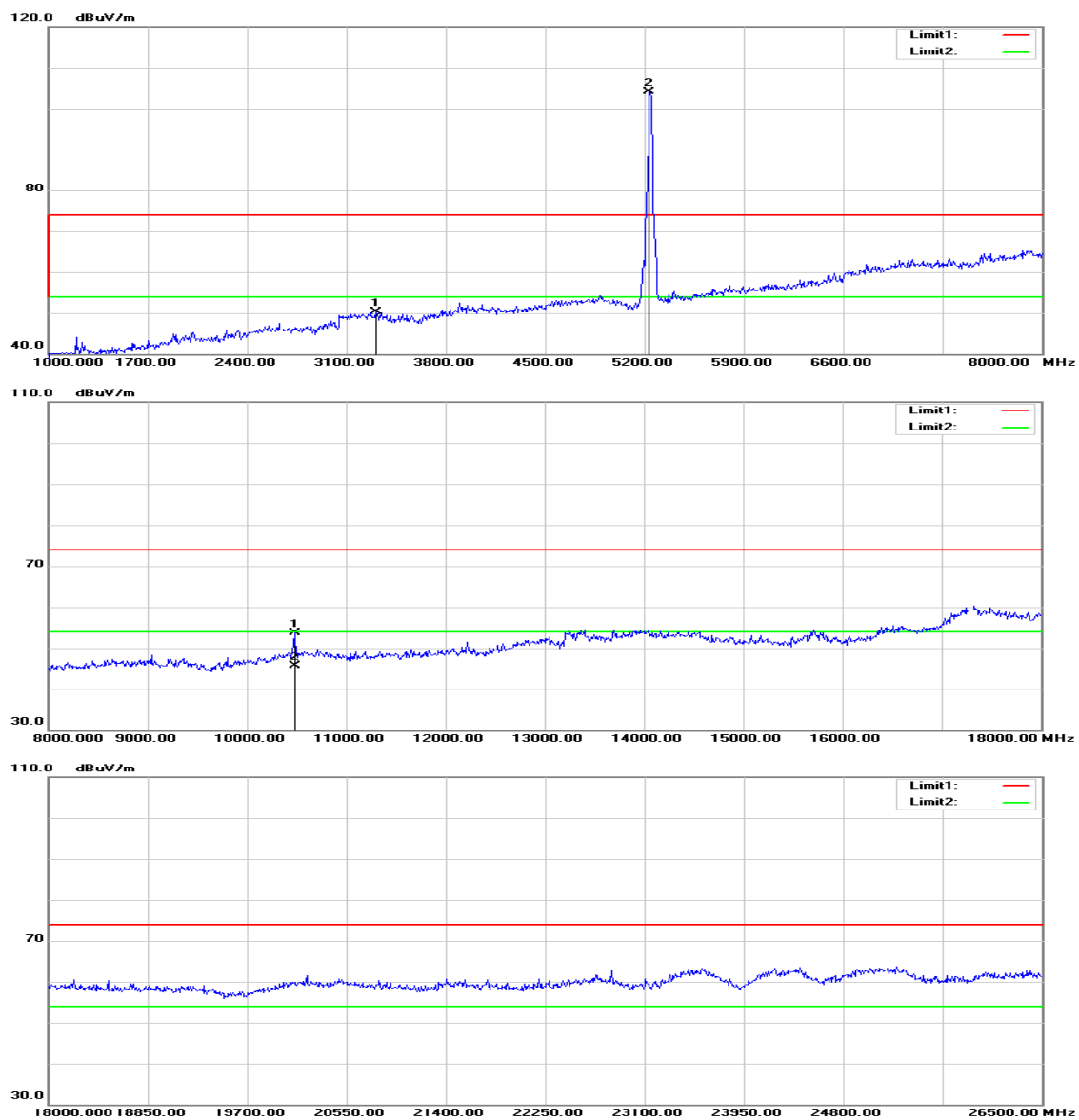
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3142.000	52.46	-1.77	50.69	74.00	-23.31	peak	V
10440.000	36.27	16.89	53.16	74.00	-20.84	peak	V
10440.000	27.42	16.89	44.31	54.00	-9.69	AVG	V
N/A							
3233.000	52.20	-1.55	50.65	74.00	-23.35	peak	H
15660.000	34.91	19.14	54.05	74.00	-19.95	peak	H
15660.000	23.94	19.14	43.08	54.00	-10.92	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).

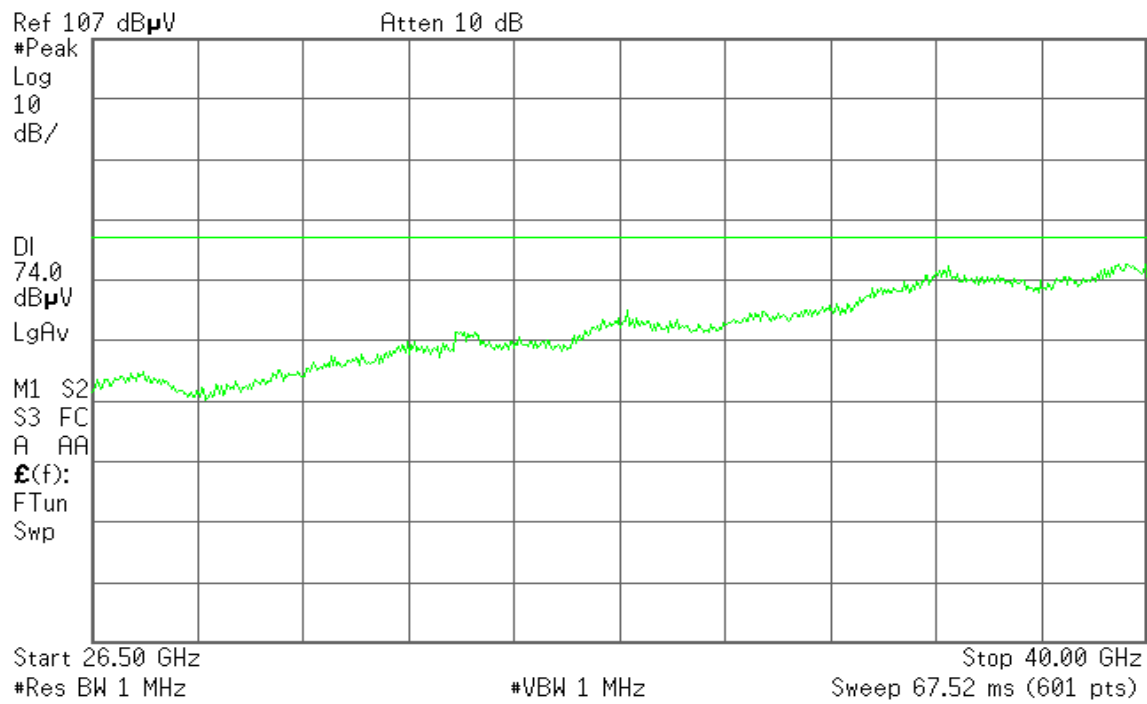
Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH High

Polarity: Vertical

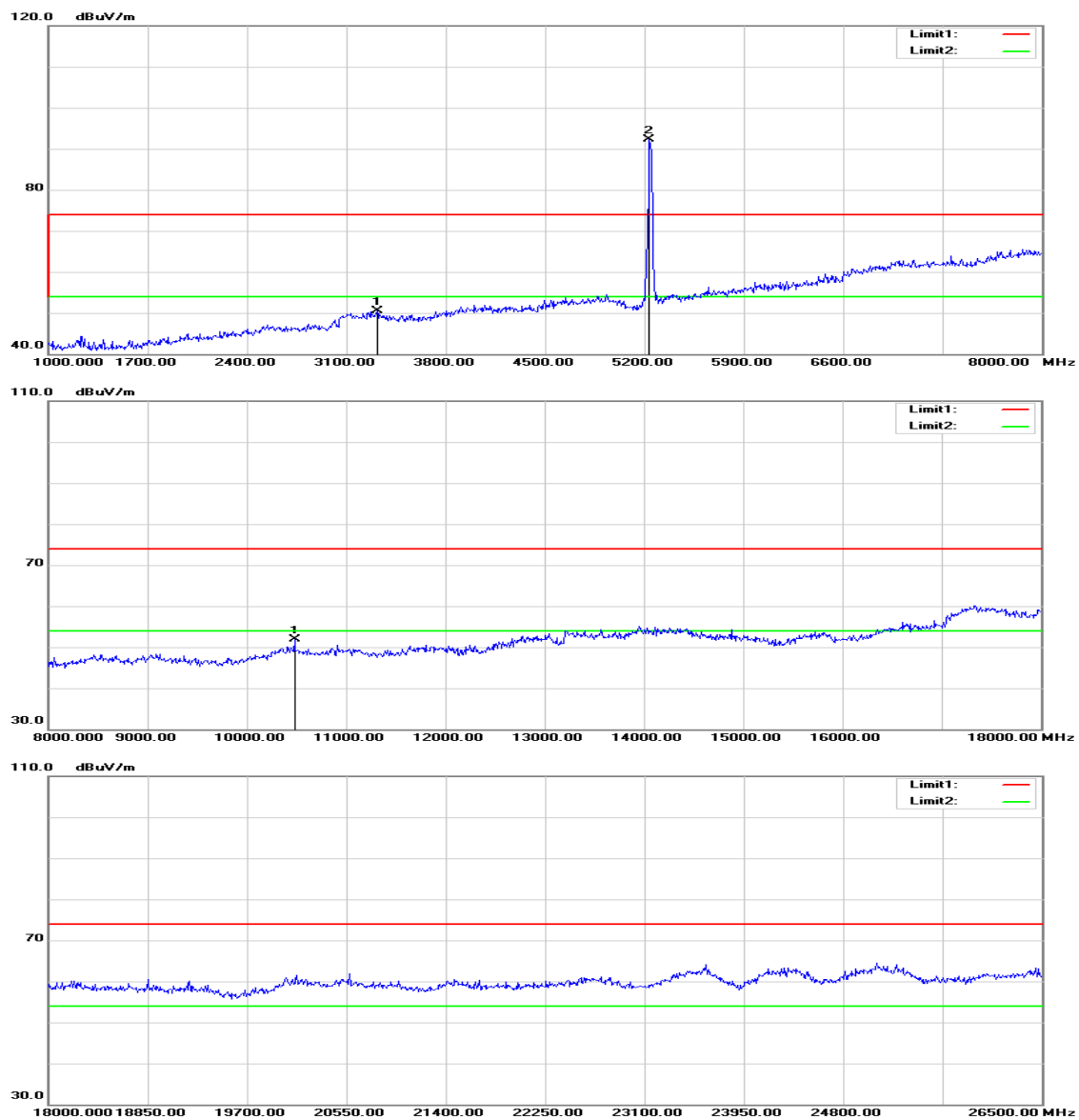


 **Agilent**

R L

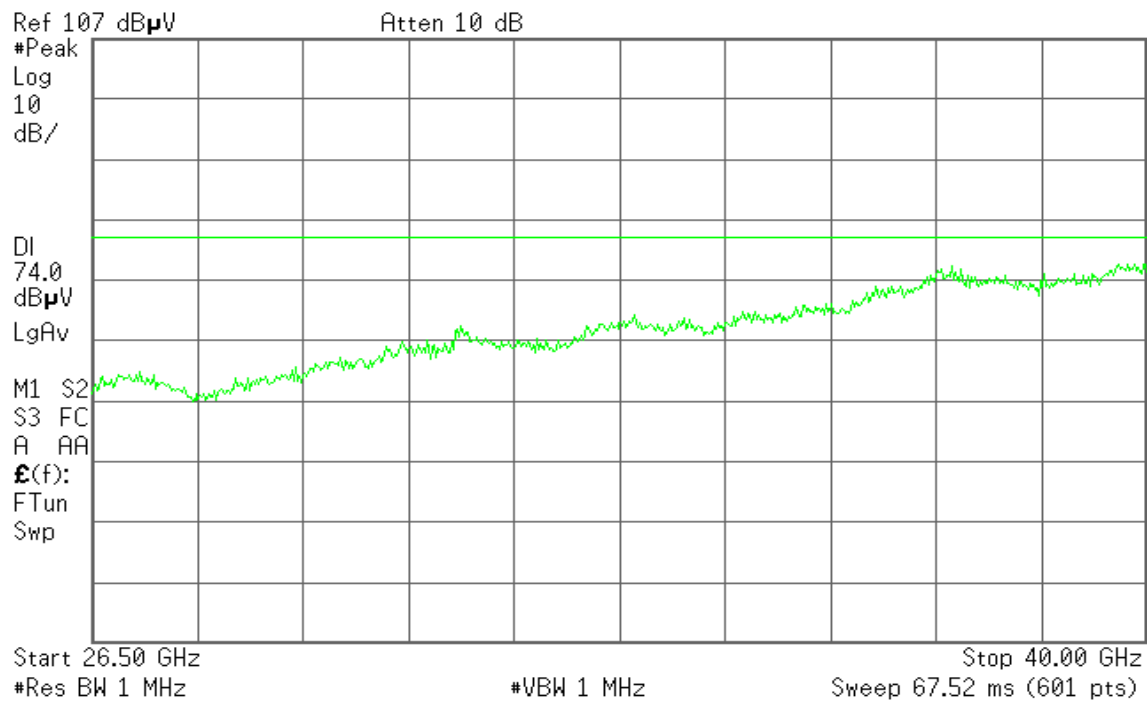


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH High
Temperature: 27°C
Humidity: 53% RH
Test Date: December 24, 2015
Tested by: Jason Lu
Polarity: Ver. / Hor.

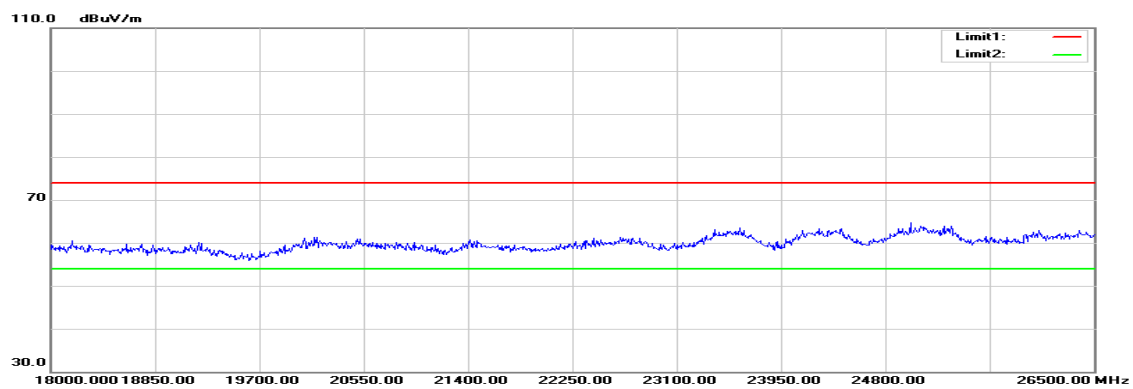
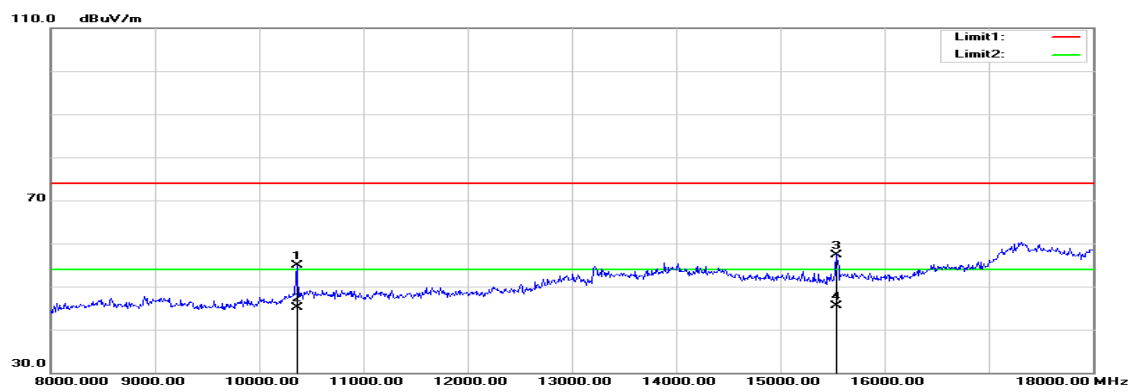
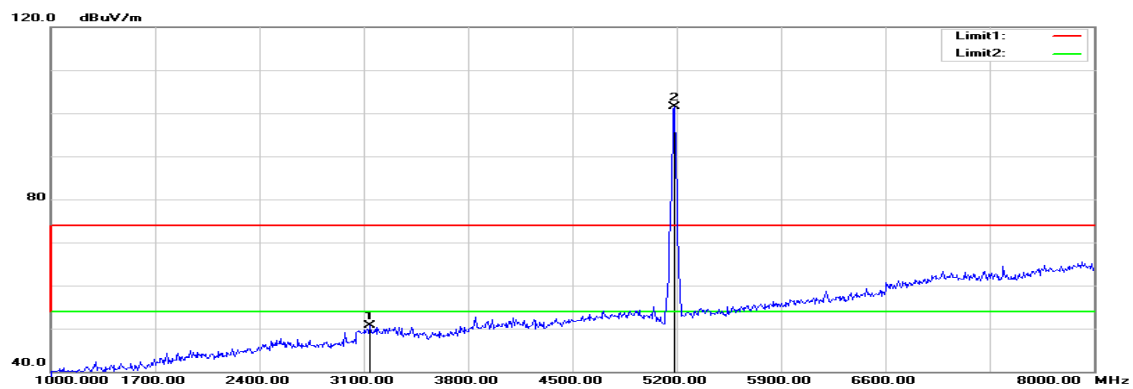
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3310.000	51.58	-1.37	50.21	74.00	-23.79	peak	V
10480.000	36.64	17.07	53.71	74.00	-20.29	peak	V
10480.000	28.57	17.07	45.64	54.00	-8.36	AVG	V
N/A							
3317.000	51.85	-1.35	50.50	74.00	-23.50	peak	H
10480.000	34.91	17.07	51.98	74.00	-22.02	peak	H
N/A							

Remark:

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

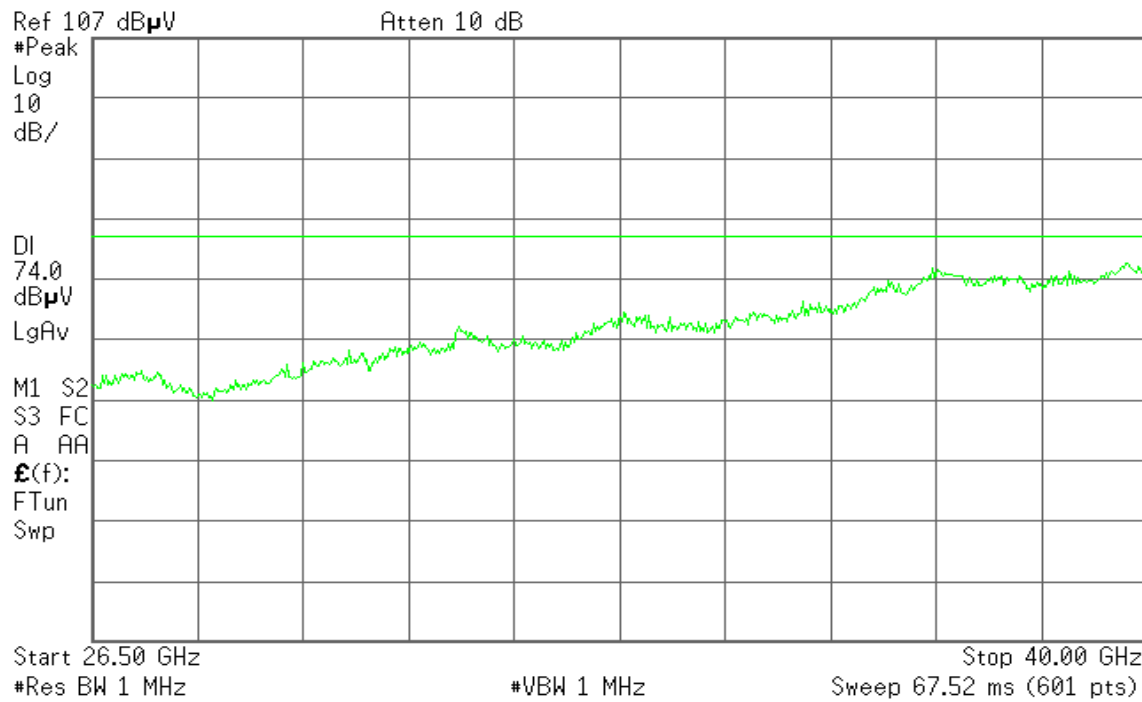
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH Low

Polarity: Vertical

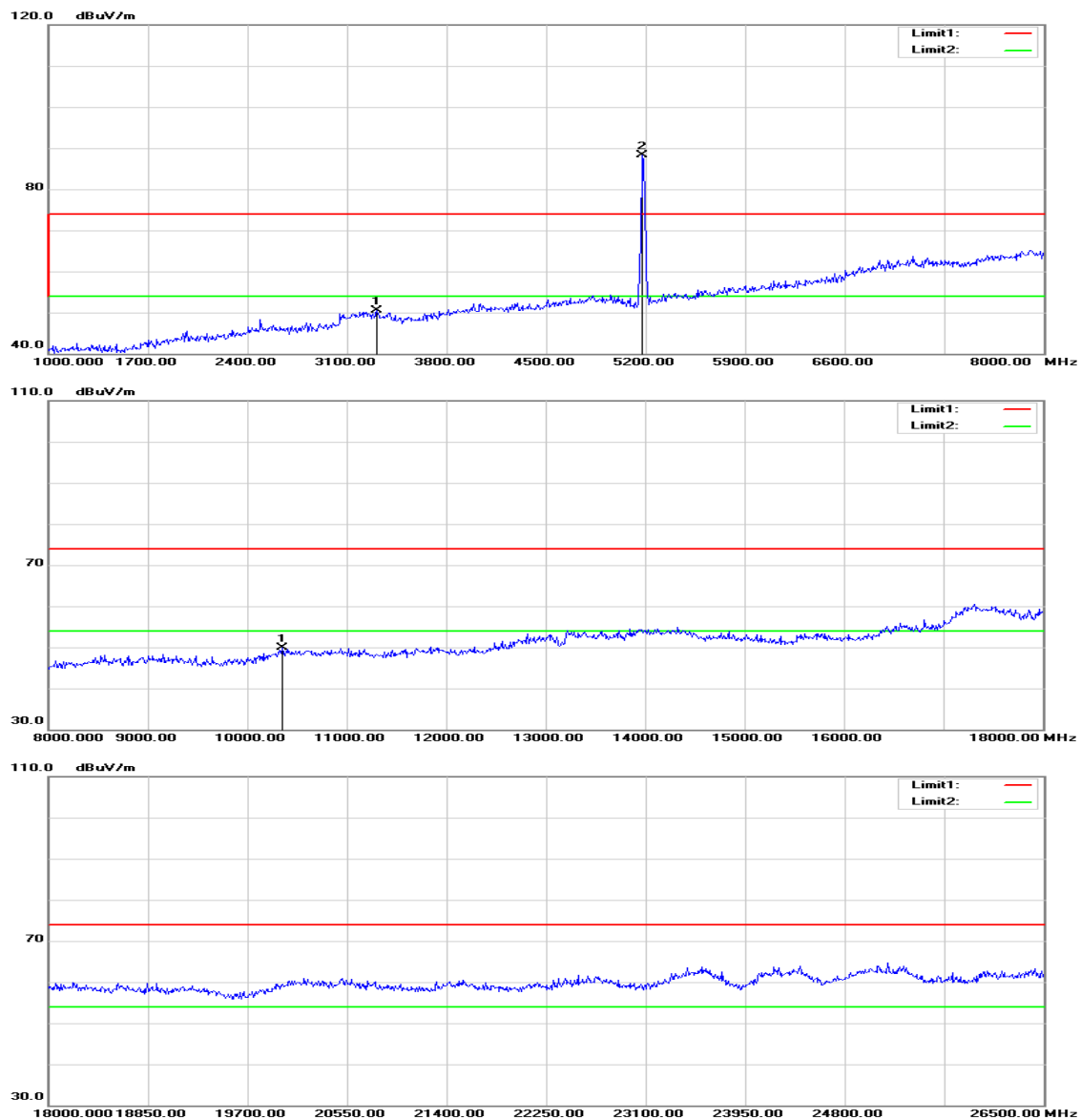


 **Agilent**

R L

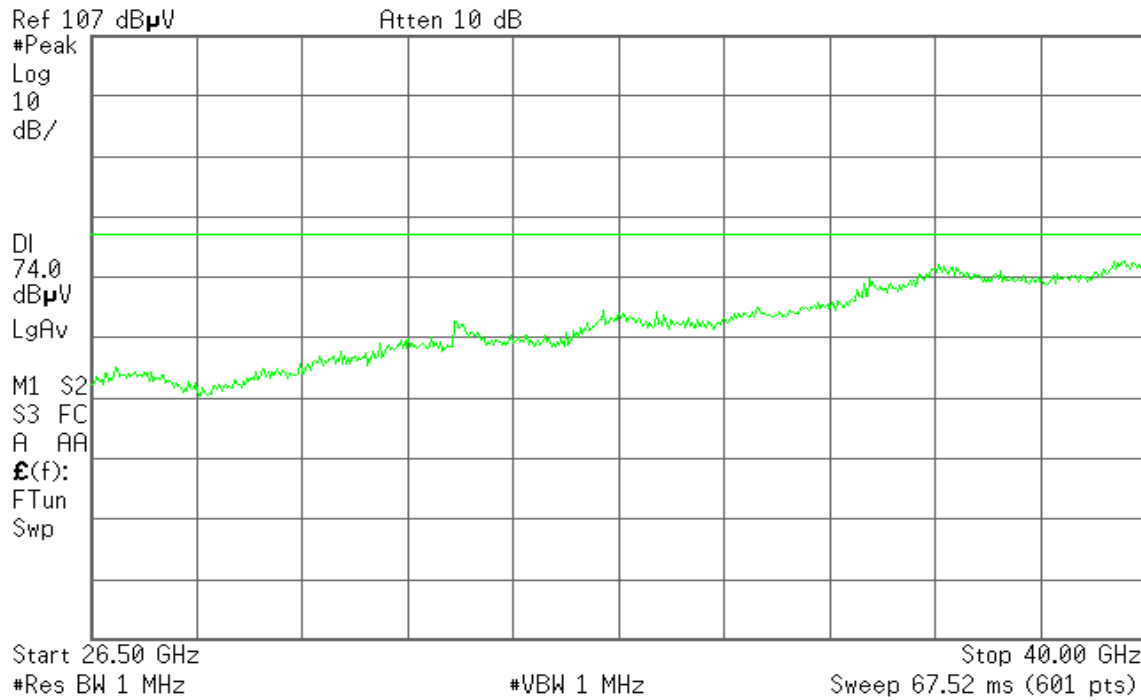


Polarity: Horizontal



 **Agilent**

R L



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

Temperature: 27°C

Humidity: 53% RH

Test Date: December 24, 2015

Tested by: Jason Lu

Polarity: Ver. / Hor.

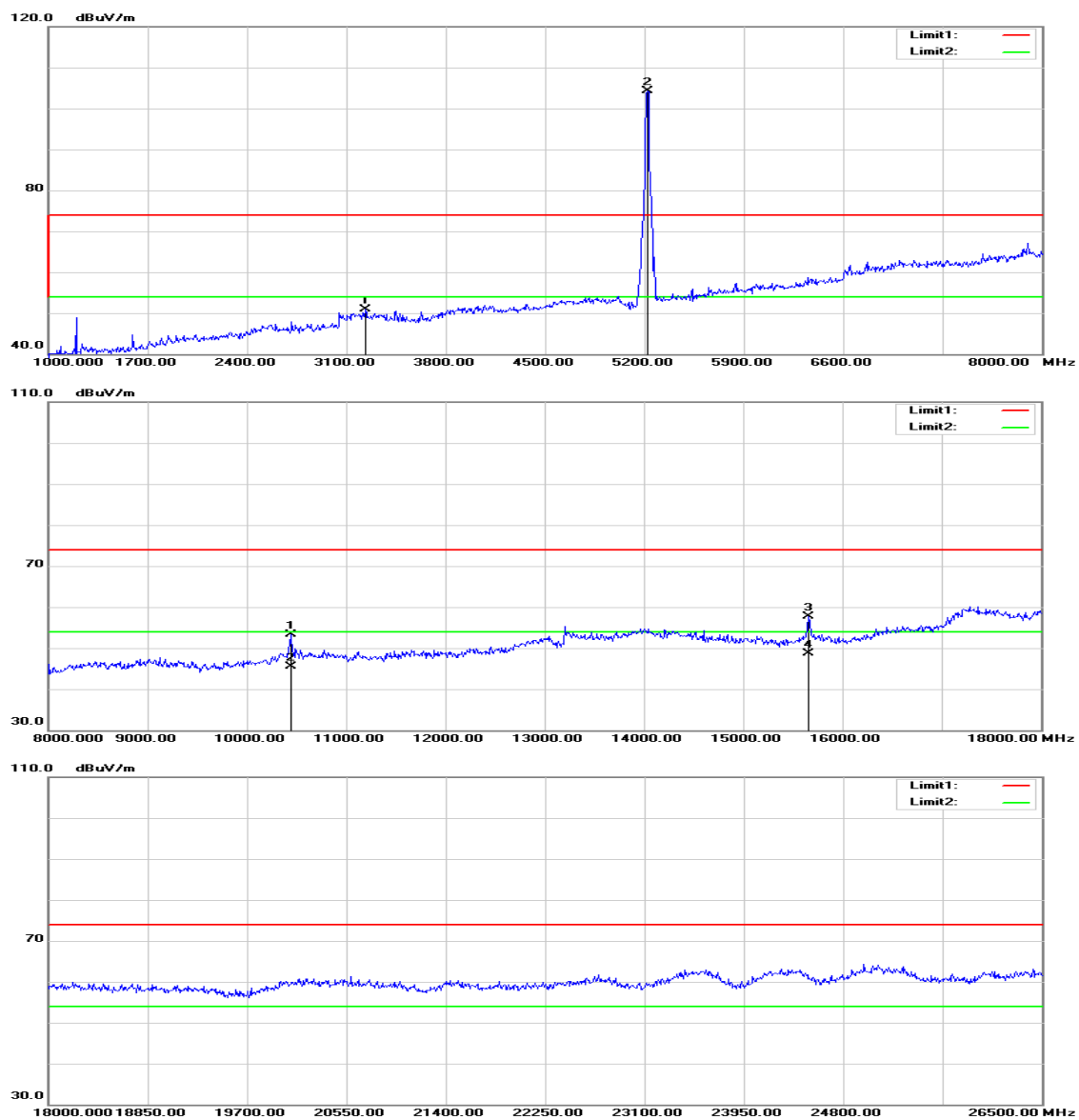
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3142.000	52.48	-1.77	50.71	74.00	-23.29	peak	V
10360.000	38.39	16.52	54.91	74.00	-19.09	peak	V
10360.000	28.67	16.52	45.19	54.00	-8.81	AVG	V
15540.000	38.36	19.04	57.40	74.00	-16.60	peak	V
15540.000	26.51	19.04	45.55	54.00	-8.45	AVG	V
N/A							
3310.000	51.94	-1.37	50.57	74.00	-23.43	peak	H
10350.000	33.33	16.48	49.81	74.00	-24.19	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.
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).

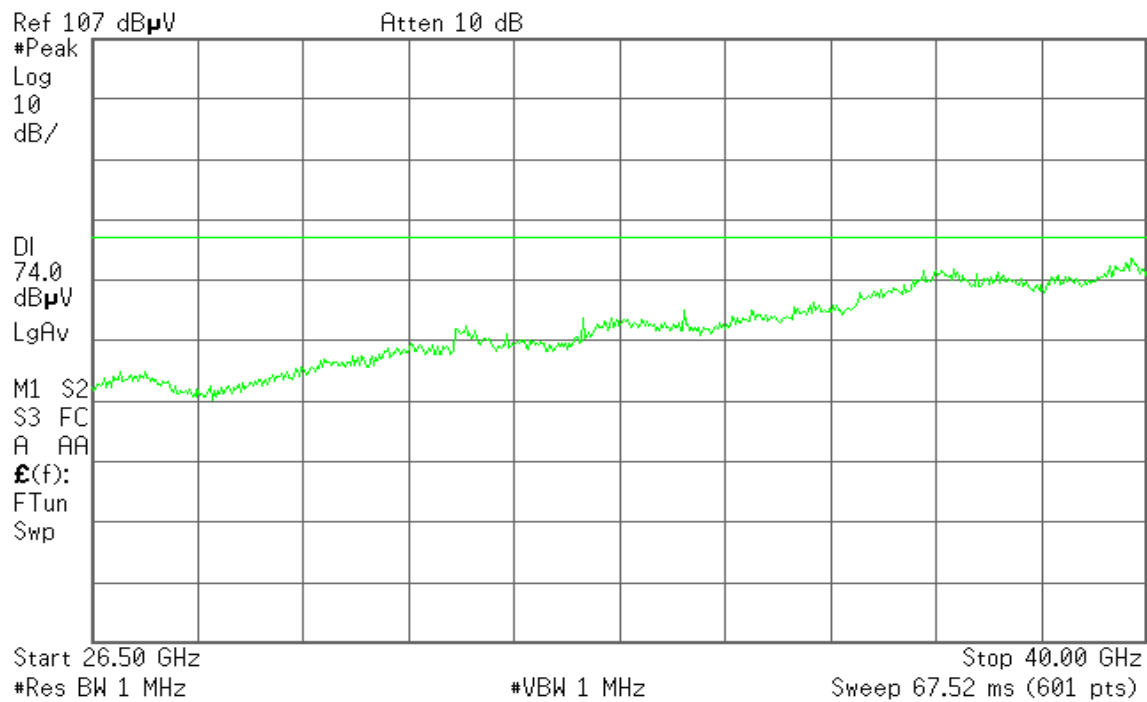
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH Mid

Polarity: Vertical

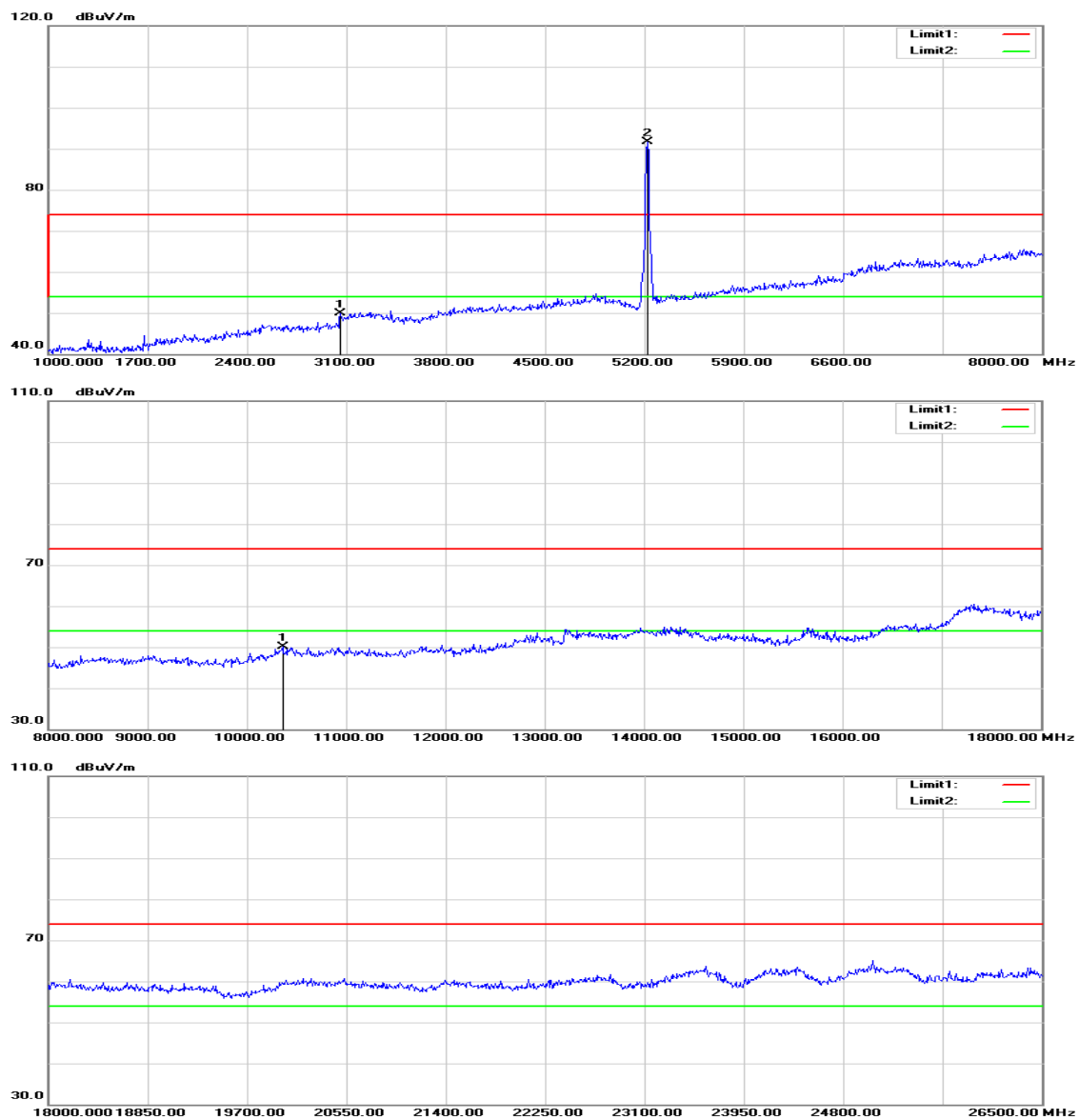


 **Agilent**

R L

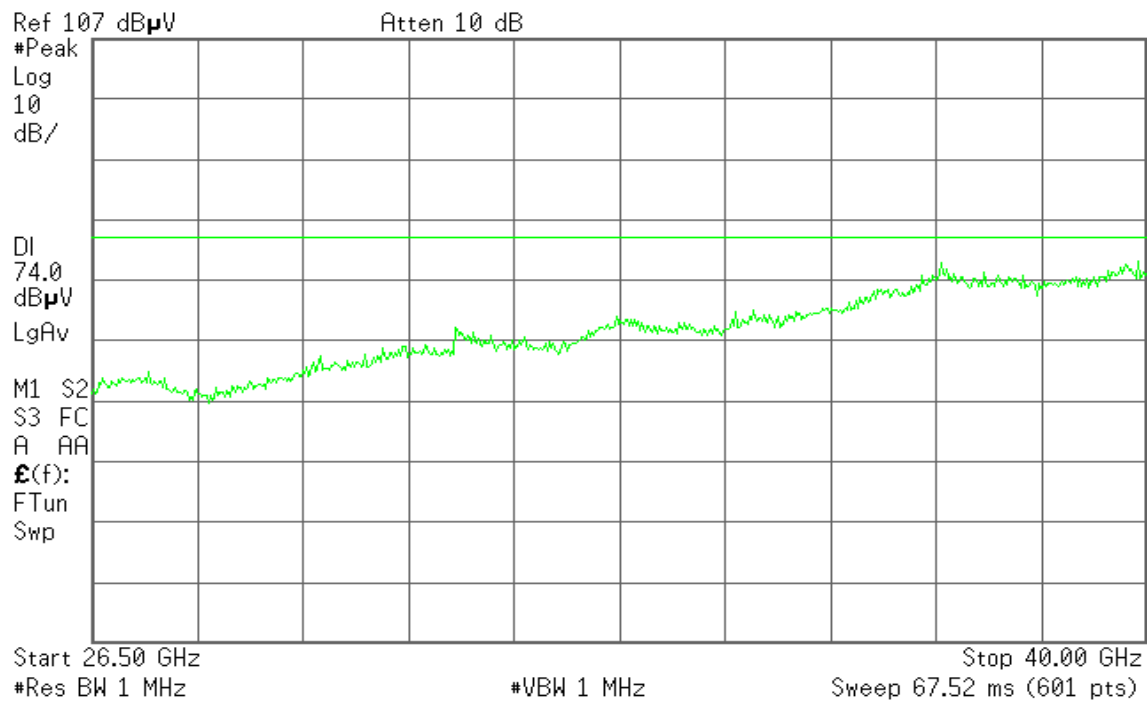


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH Mid

Temperature: 27°C

Humidity: 53% RH

Test Date: December 24, 2015

Tested by: Jason Lu

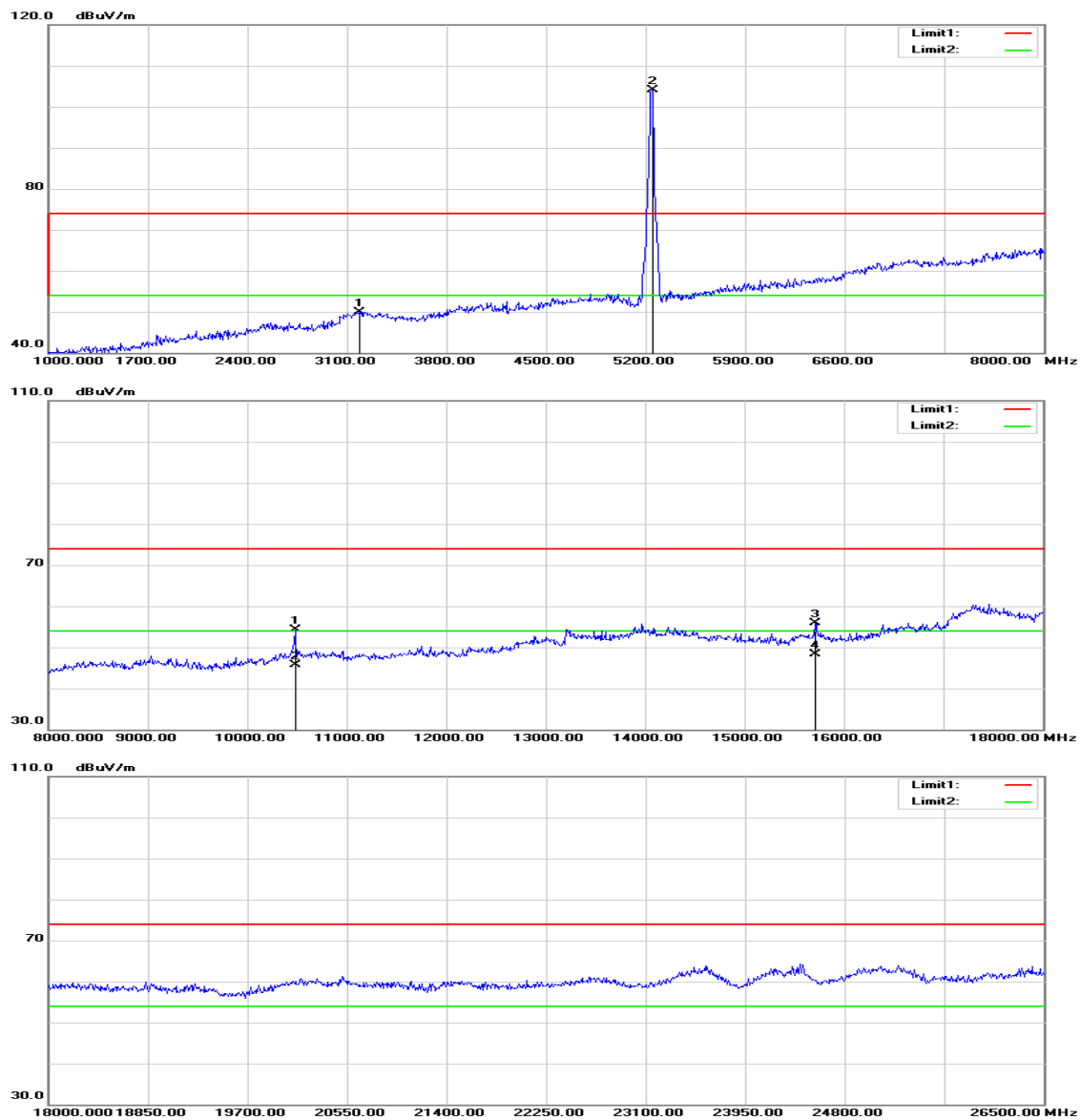
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3233.000	52.47	-1.55	50.92	74.00	-23.08	peak	V
10440.000	36.45	16.89	53.34	74.00	-20.66	peak	V
10440.000	28.70	16.89	45.59	54.00	-8.41	AVG	V
15660.000	38.54	19.14	57.68	74.00	-16.32	peak	V
15660.000	29.52	19.14	48.66	54.00	-5.34	AVG	V
N/A							
3058.000	51.82	-1.97	49.85	74.00	-24.15	peak	H
10360.000	33.66	16.52	50.18	74.00	-23.82	peak	H
N/A							

Remark:

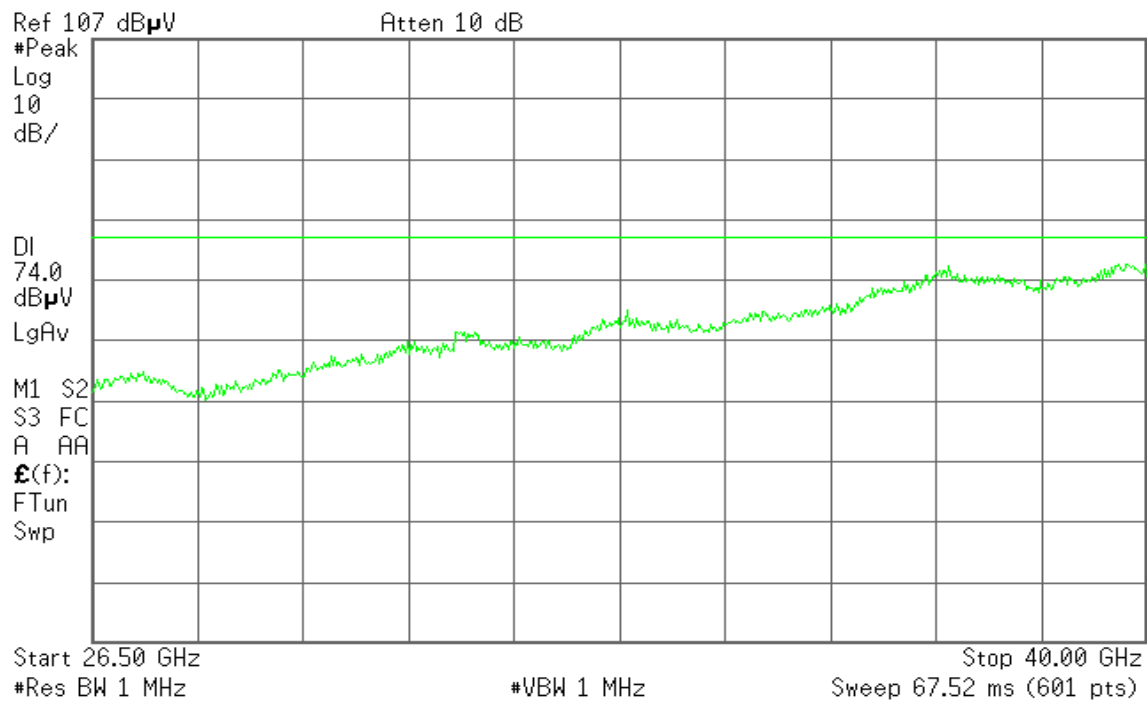
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.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

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

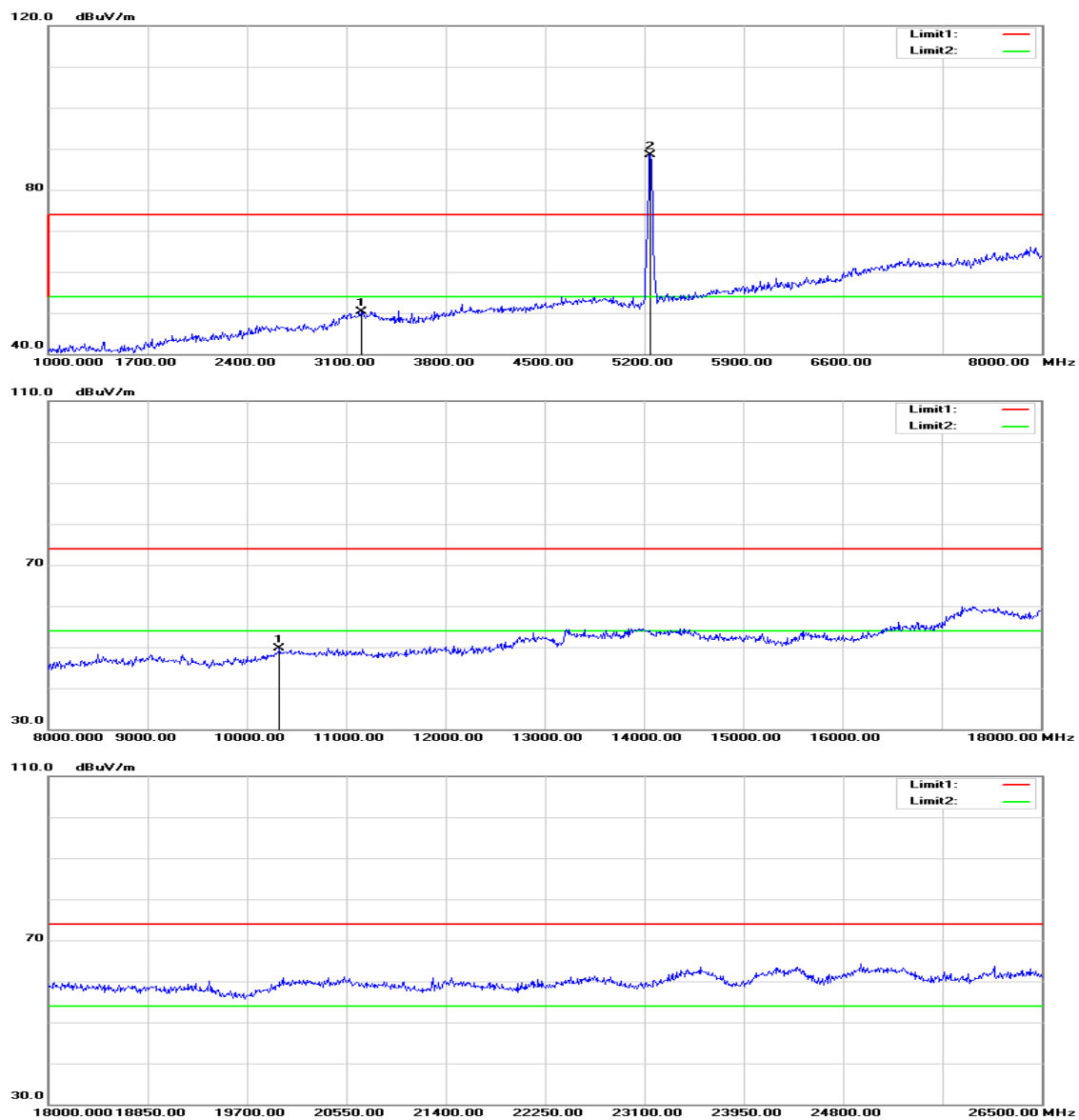


 **Agilent**

R L

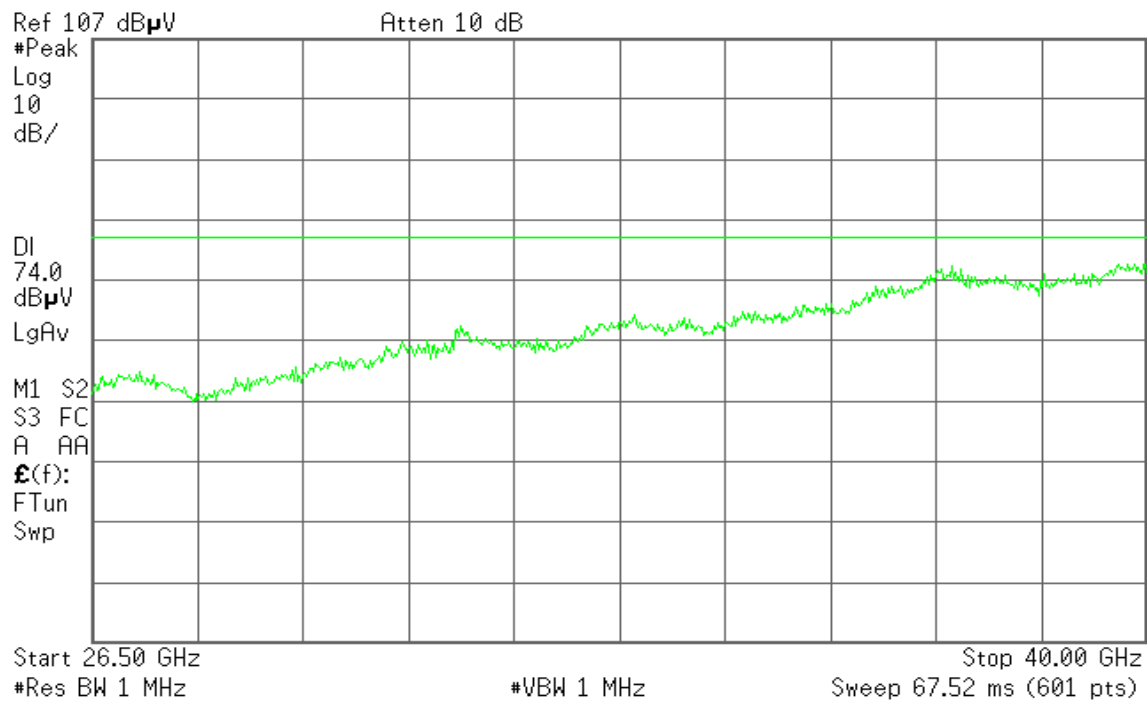


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH High
Temperature: 27°C
Humidity: 53% RH

Test Date: December 24, 2015
Tested by: Jason Lu
Polarity: Ver. / Hor.

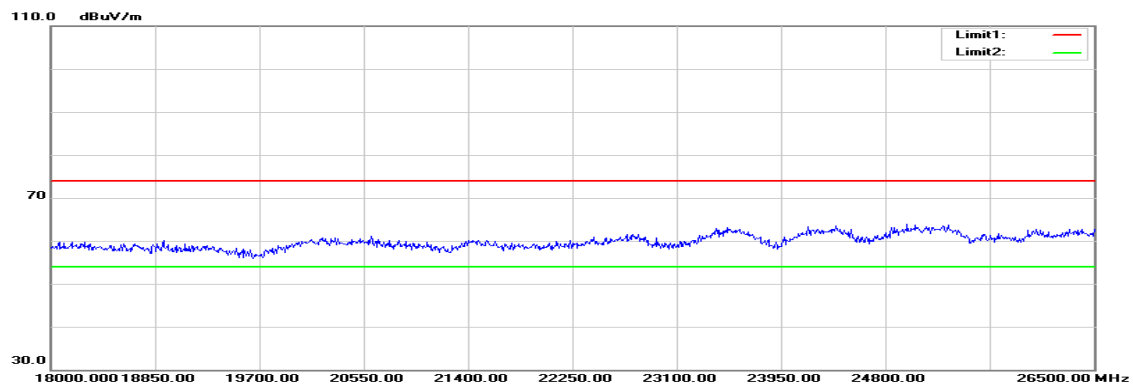
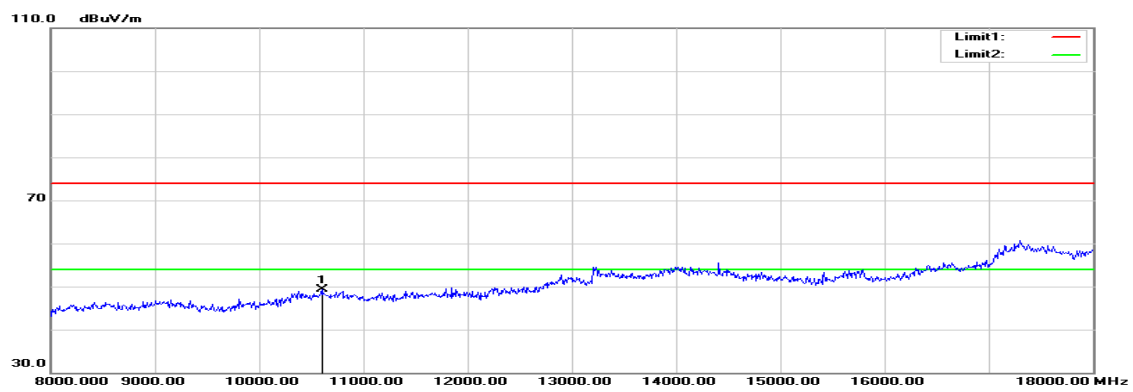
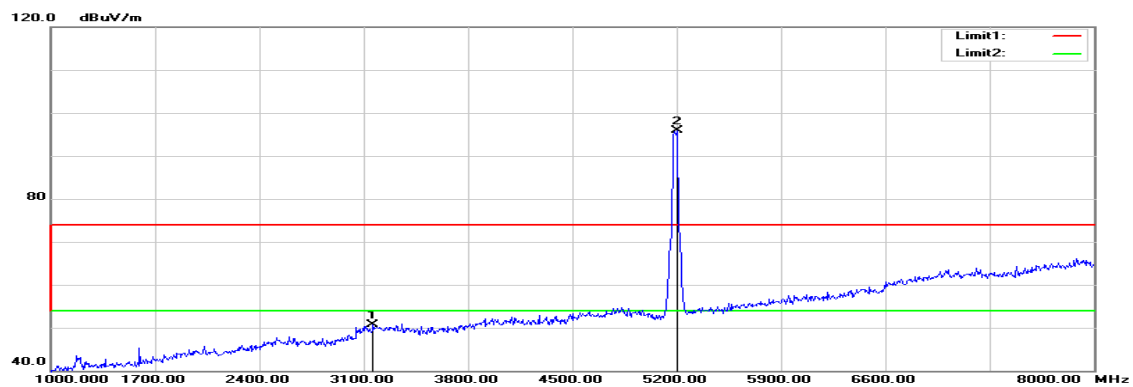
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3184.000	51.65	-1.67	49.98	74.00	-24.02	peak	V
10480.000	37.25	17.07	54.32	74.00	-19.68	peak	V
10480.000	28.56	17.07	45.63	54.00	-8.37	AVG	V
15710.000	36.62	19.19	55.81	74.00	-18.19	peak	V
15710.000	29.03	19.19	48.22	54.00	-5.78	AVG	V
N/A							
3205.000	51.88	-1.62	50.26	74.00	-23.74	peak	H
10330.000	33.24	16.39	49.63	74.00	-24.37	peak	H
N/A							

Remark:

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

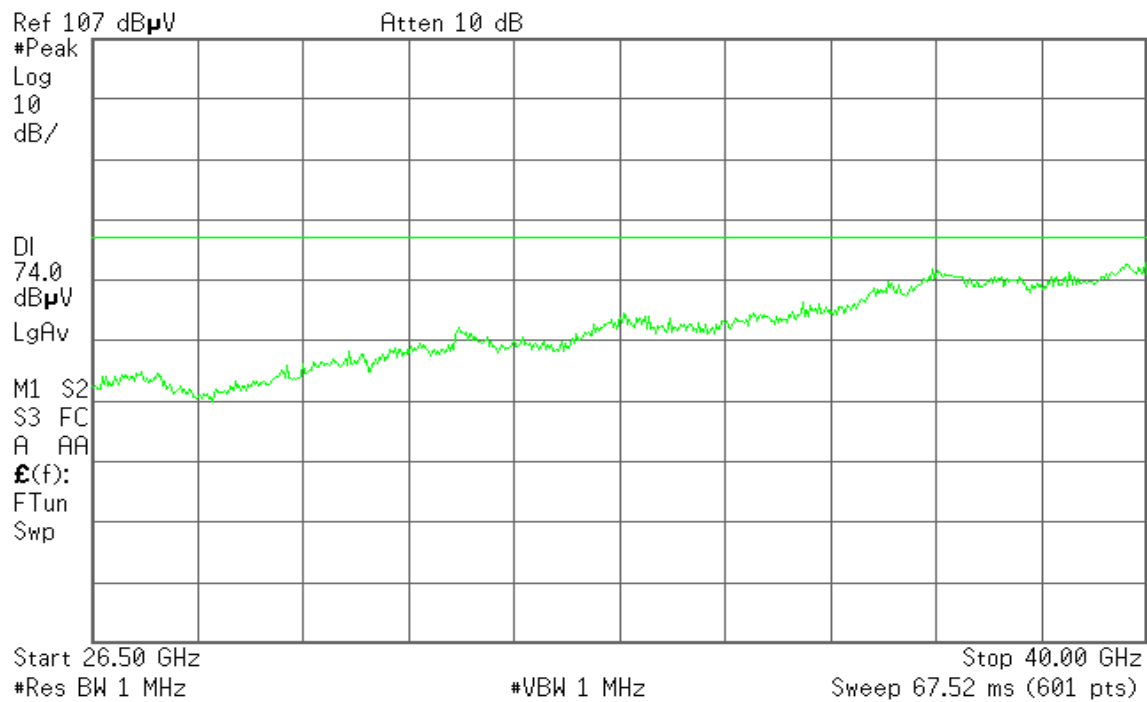
Tx / IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH Low

Polarity: Vertical

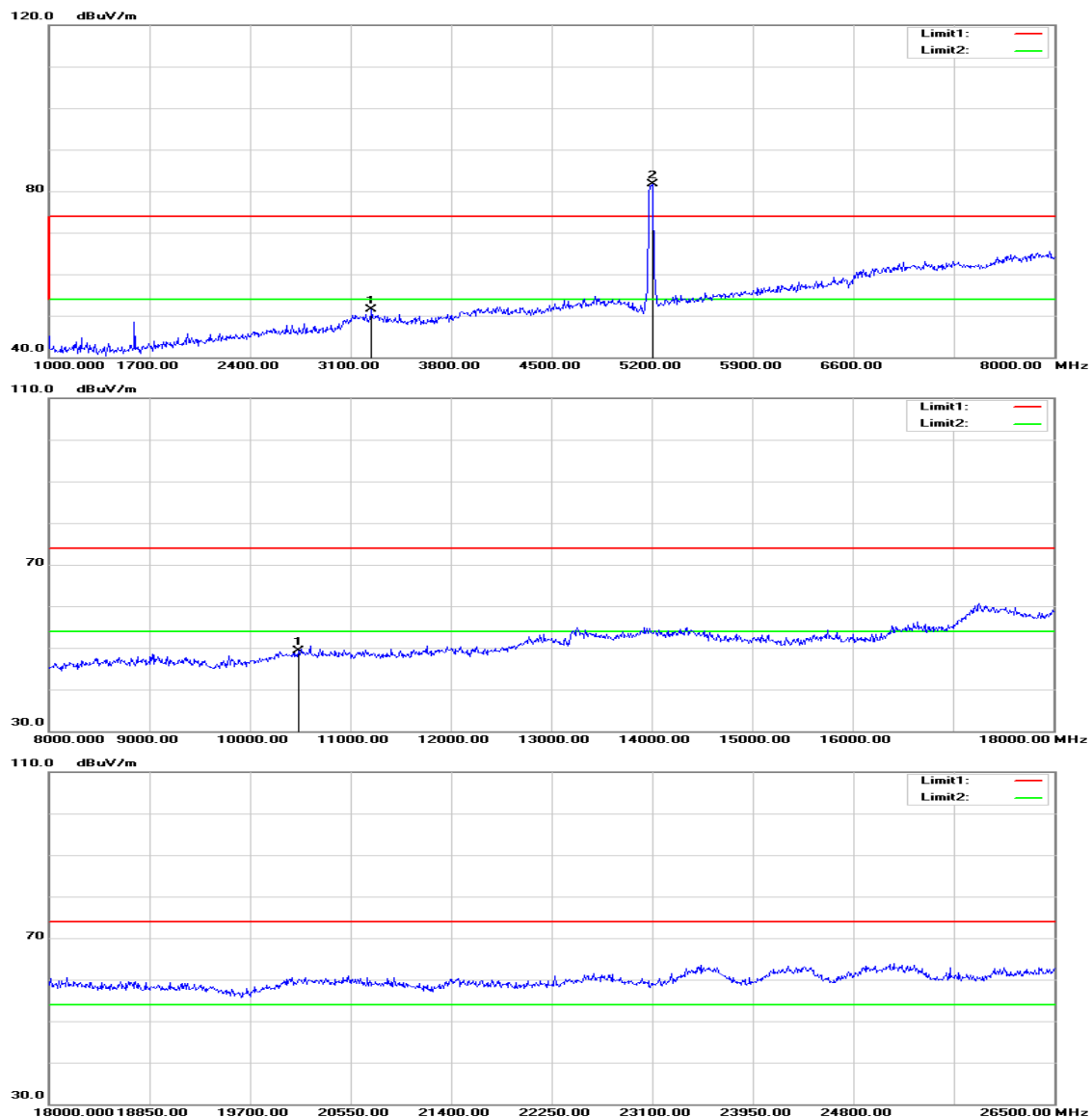


 **Agilent**

R L

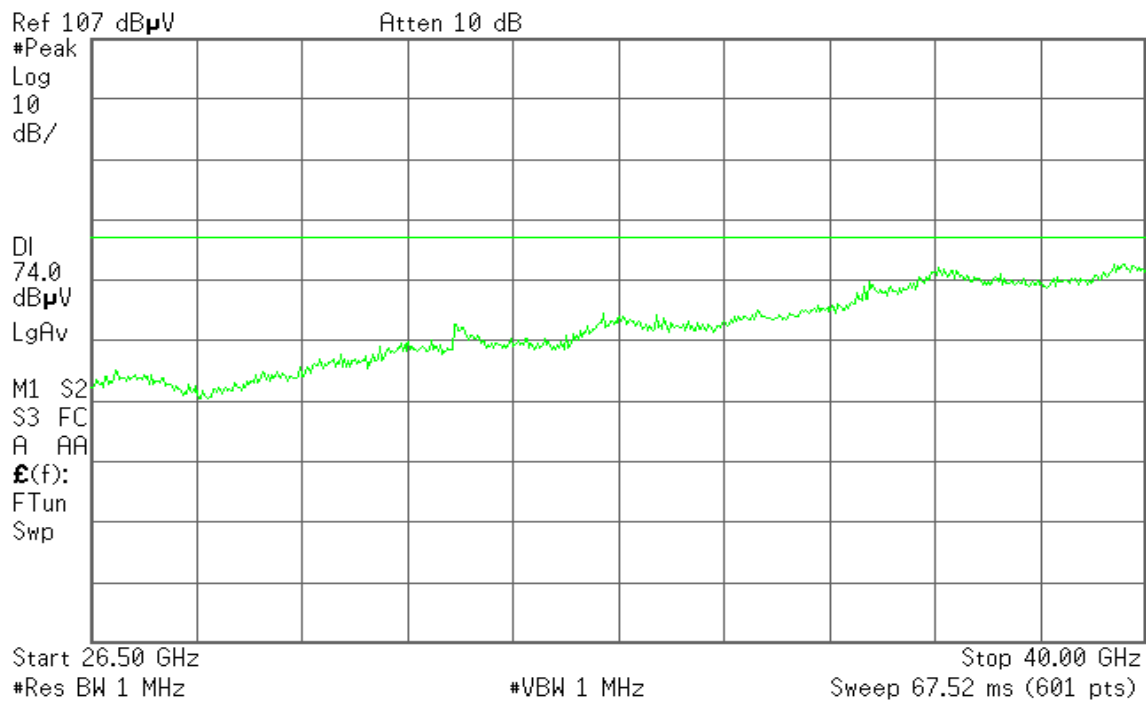


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH Low

Test Date: December 24, 2015

Temperature: 27°C

Tested by: Jason Lu

Humidity: 53% RH

Polarity: Ver. / Hor.

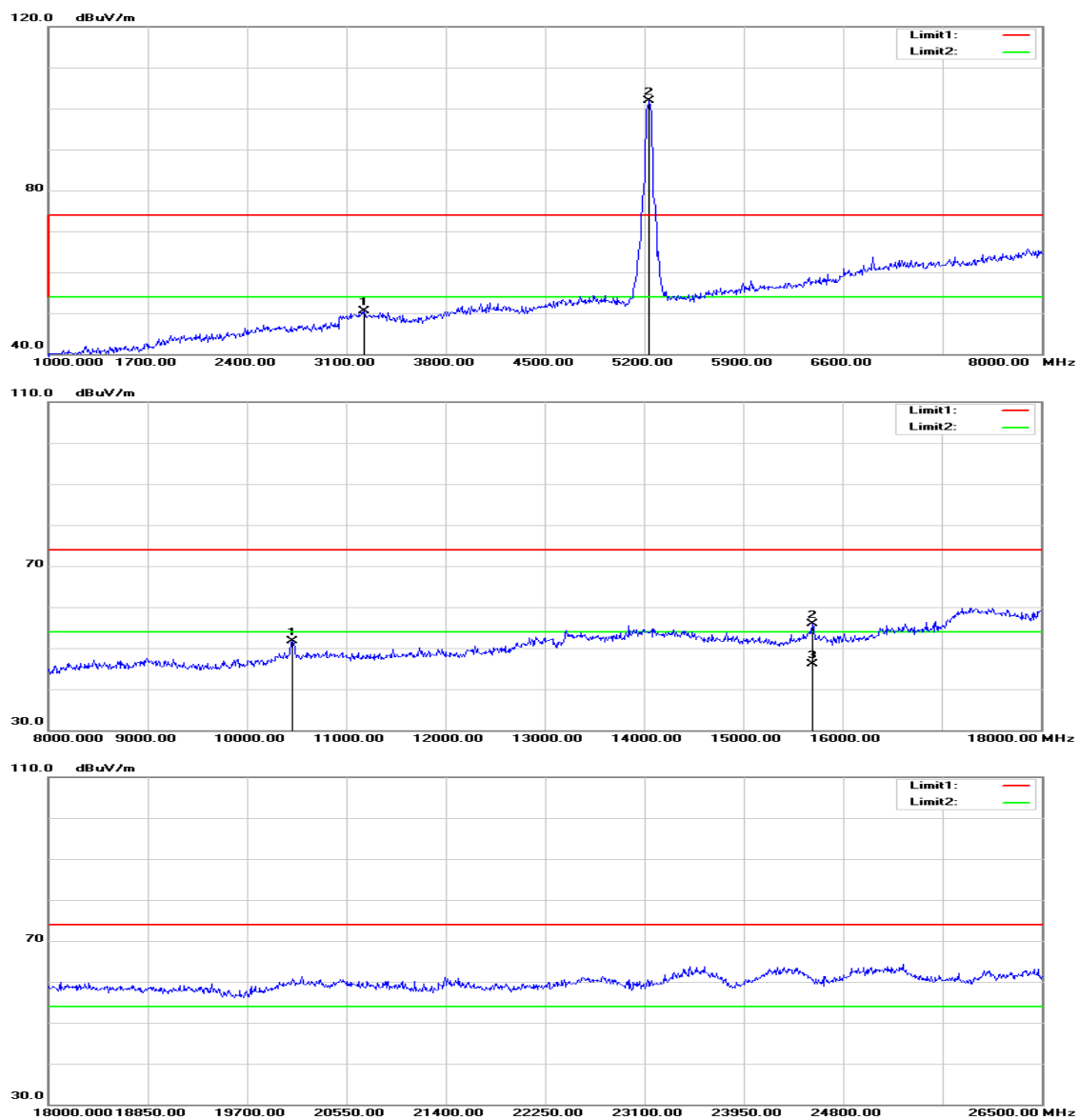
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3163.000	52.40	-1.72	50.68	74.00	-23.32	peak	V
10600.000	32.21	17.07	49.28	74.00	-24.72	peak	V
N/A							
3247.000	52.99	-1.52	51.47	74.00	-22.53	peak	H
10490.000	32.20	17.11	49.31	74.00	-24.69	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.
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).

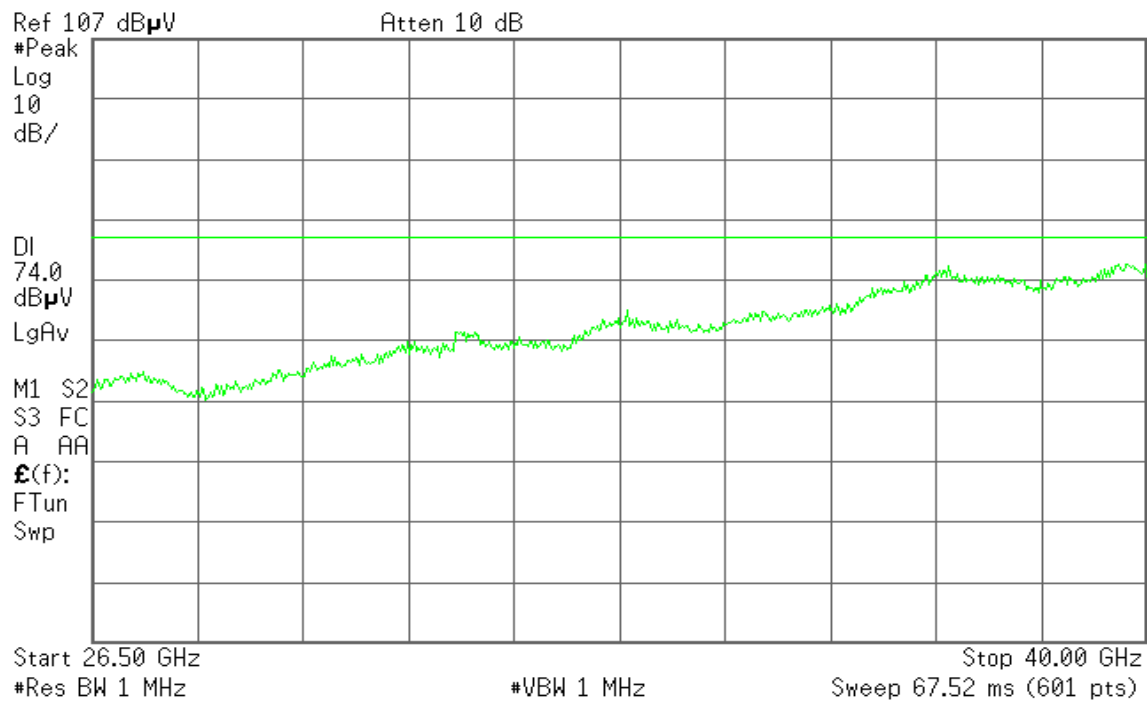
Tx / IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH High

Polarity: Vertical

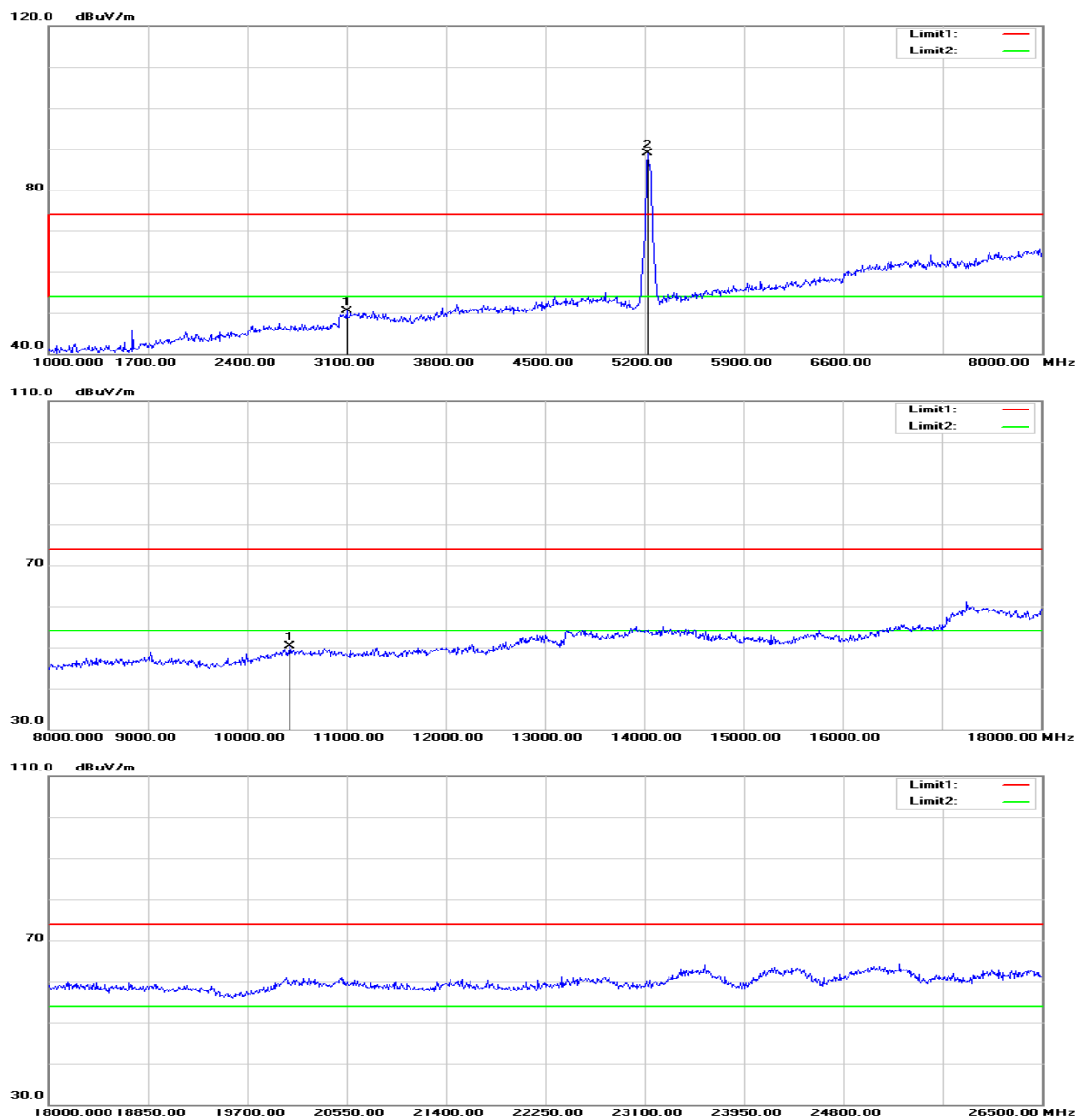


 **Agilent**

R L

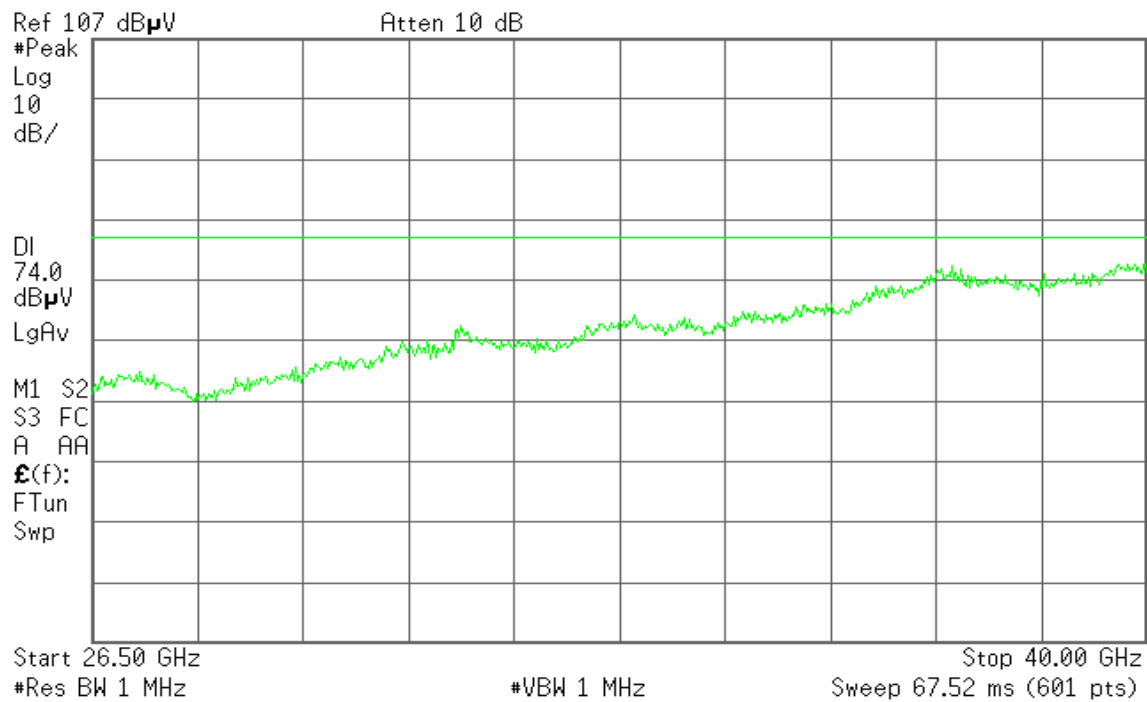


Polarity: Horizontal



 **Agilent**

R L



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

Test Date: December 24, 2015
Tested by: Jason Lu
Polarity: Ver. / Hor.

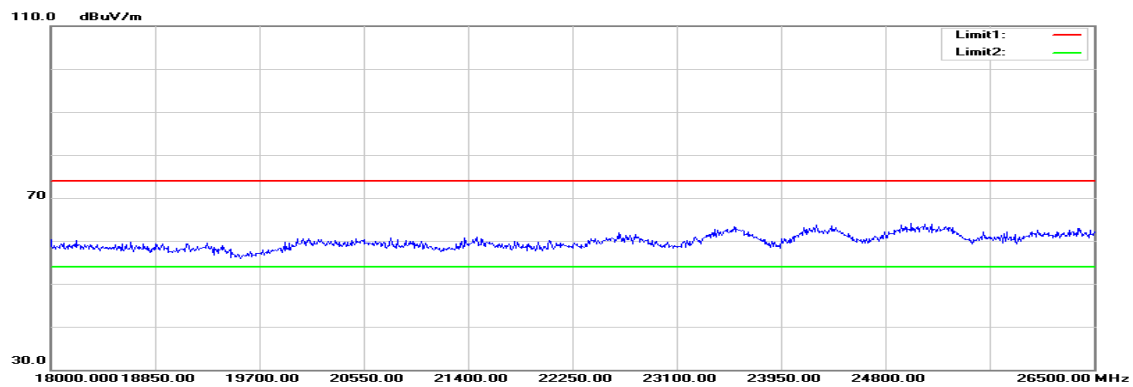
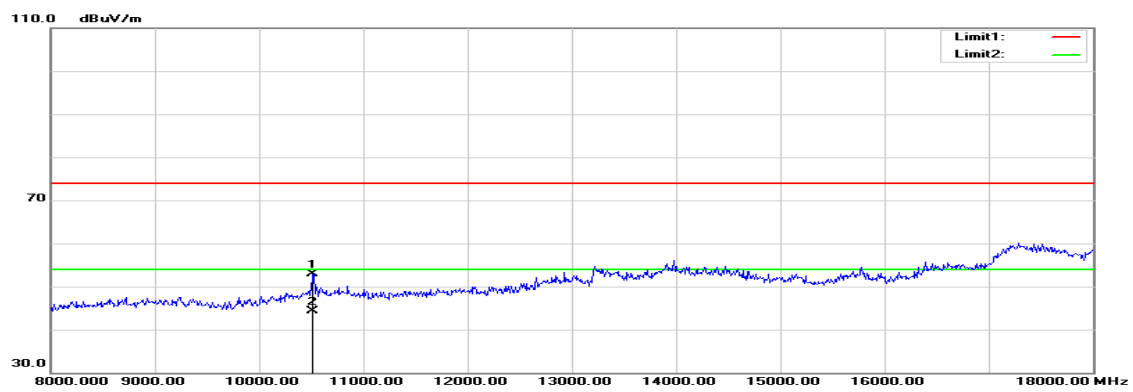
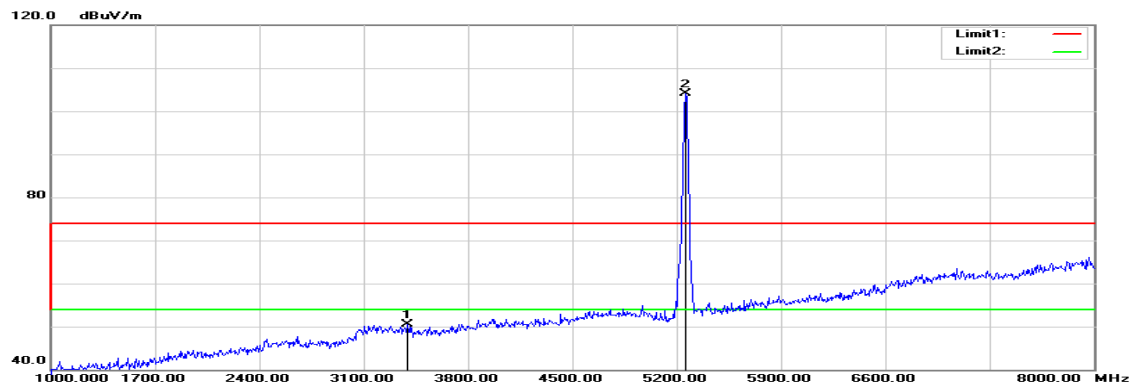
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3226.000	52.05	-1.57	50.48	74.00	-23.52	peak	V
10460.000	34.75	16.98	51.73	74.00	-22.27	peak	V
15700.000	36.82	19.18	56.00	74.00	-18.00	peak	V
15700.000	26.83	19.18	46.01	54.00	-7.99	AVG	V
N/A							
3100.000	52.46	-1.87	50.59	74.00	-23.41	peak	H
10430.000	33.41	16.84	50.25	74.00	-23.75	peak	H
N/A							

Remark:

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

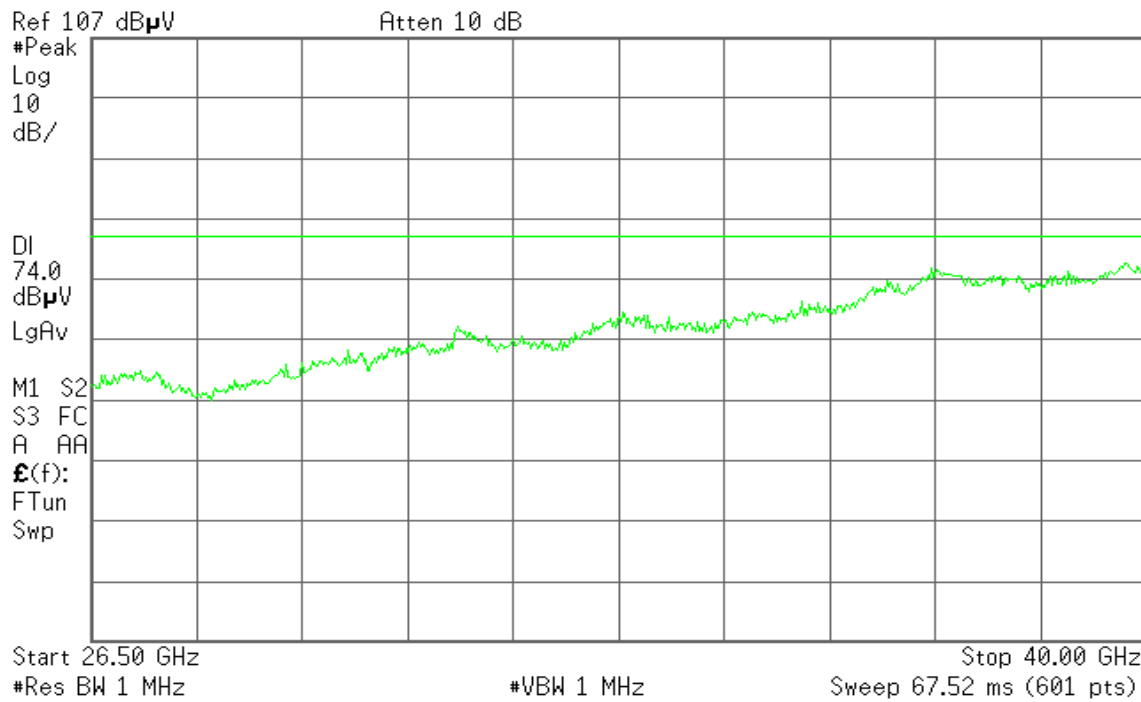
Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Low

Polarity: Vertical

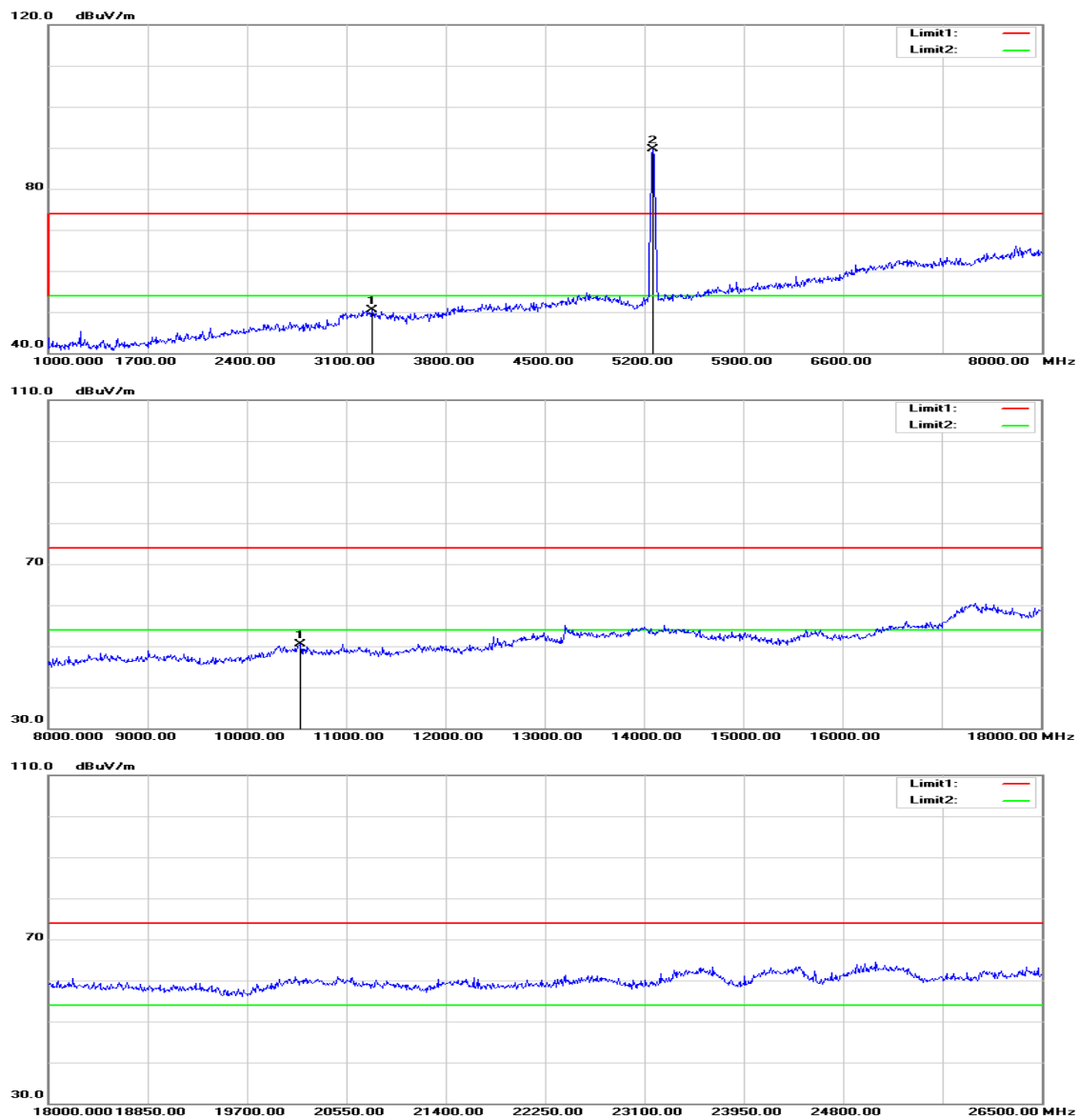


 **Agilent**

R L

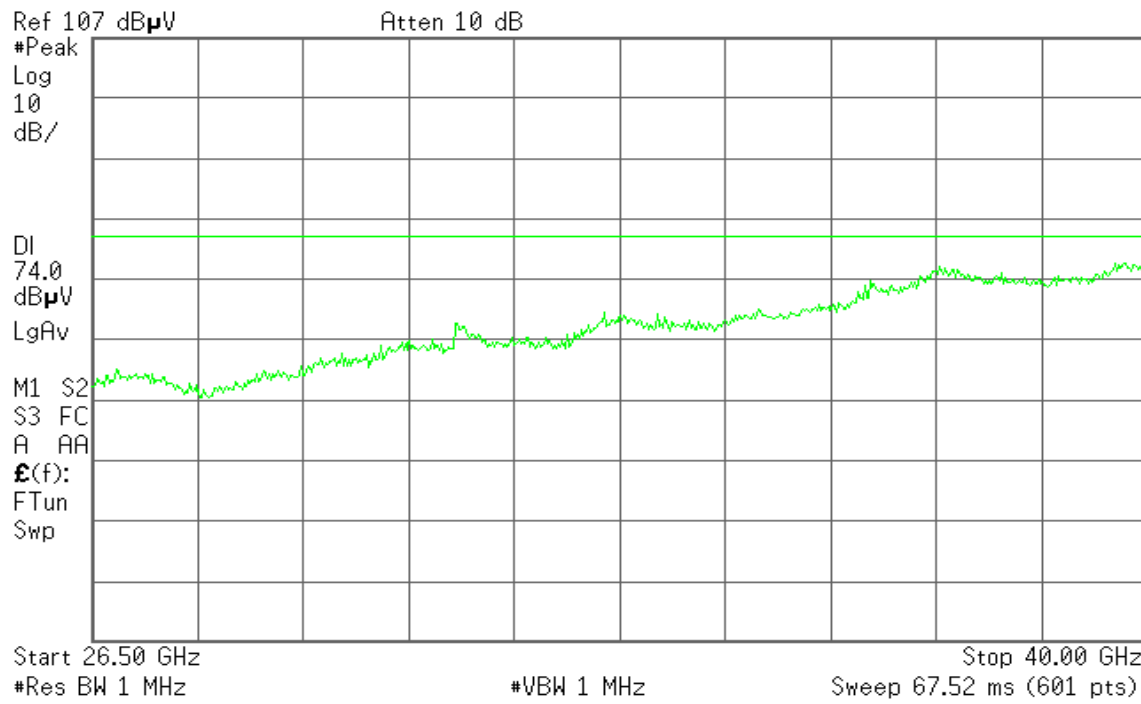


Polarity: Horizontal



 **Agilent**

R L



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

Test Date: December 24, 2015

Tested by: Jason Lu

Polarity: Ver. / Hor.

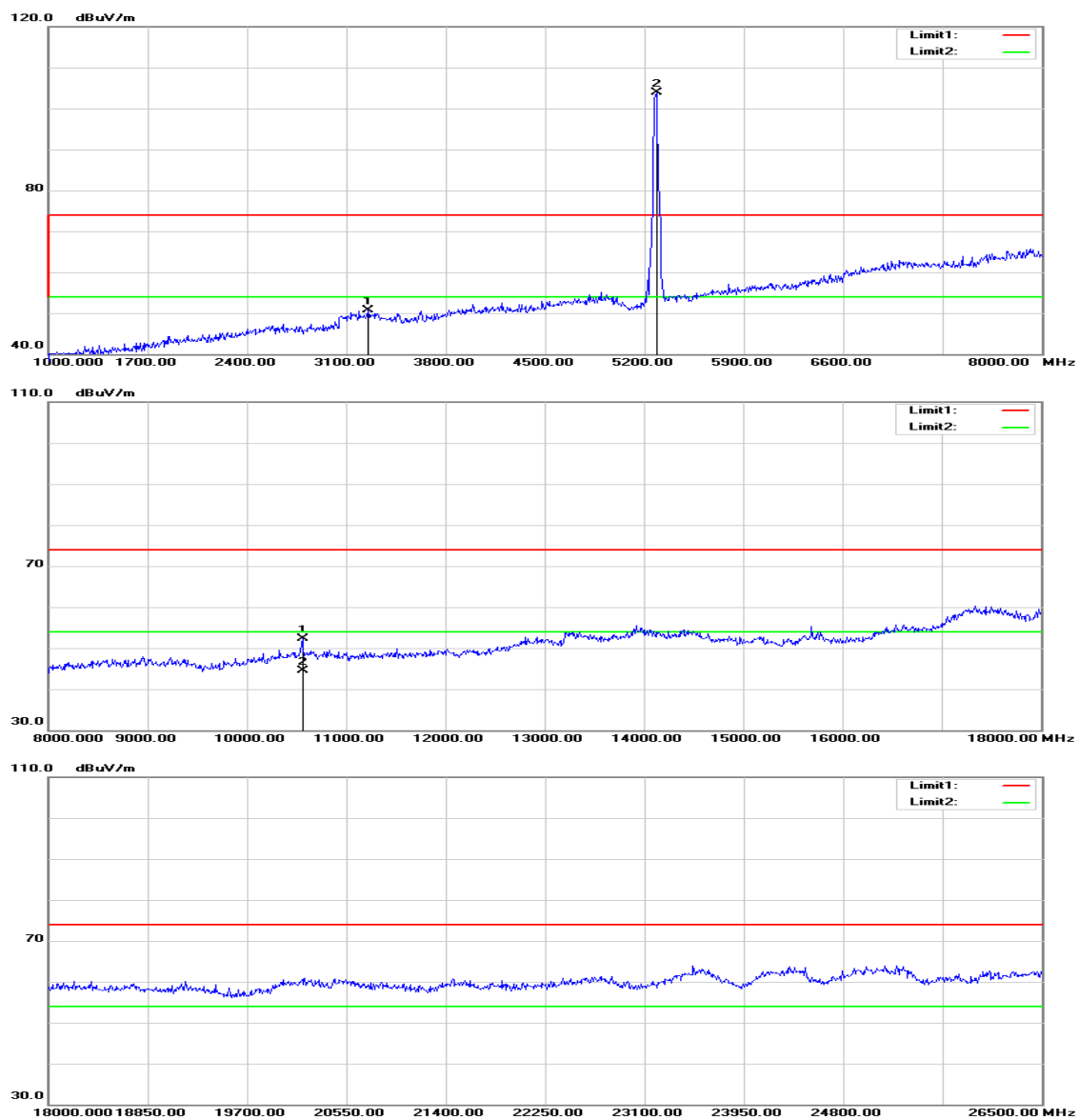
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3394.000	51.63	-1.16	50.47	74.00	-23.53	peak	V
10510.000	35.73	17.15	52.88	74.00	-21.12	peak	V
10510.000	27.07	17.15	44.22	54.00	-9.78	AVG	V
N/A							
3282.000	52.02	-1.43	50.59	74.00	-23.41	peak	H
10540.000	33.40	17.13	50.53	74.00	-23.47	peak	H
N/A							

Remark:

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

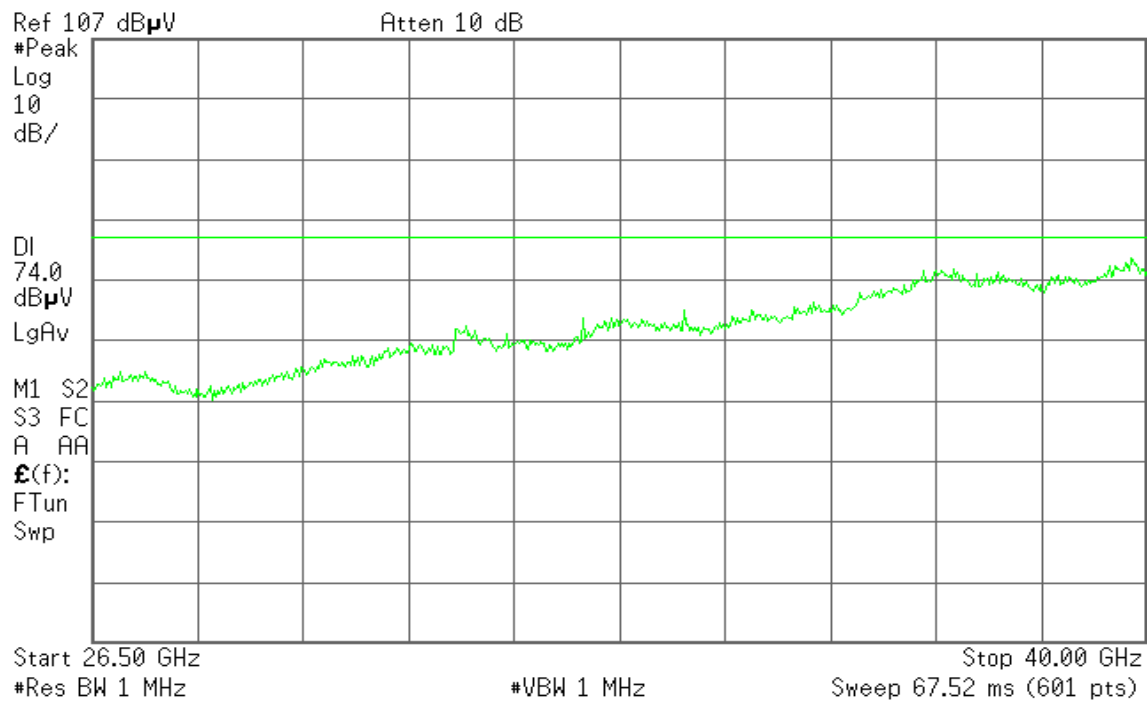
Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Mid

Polarity: Vertical

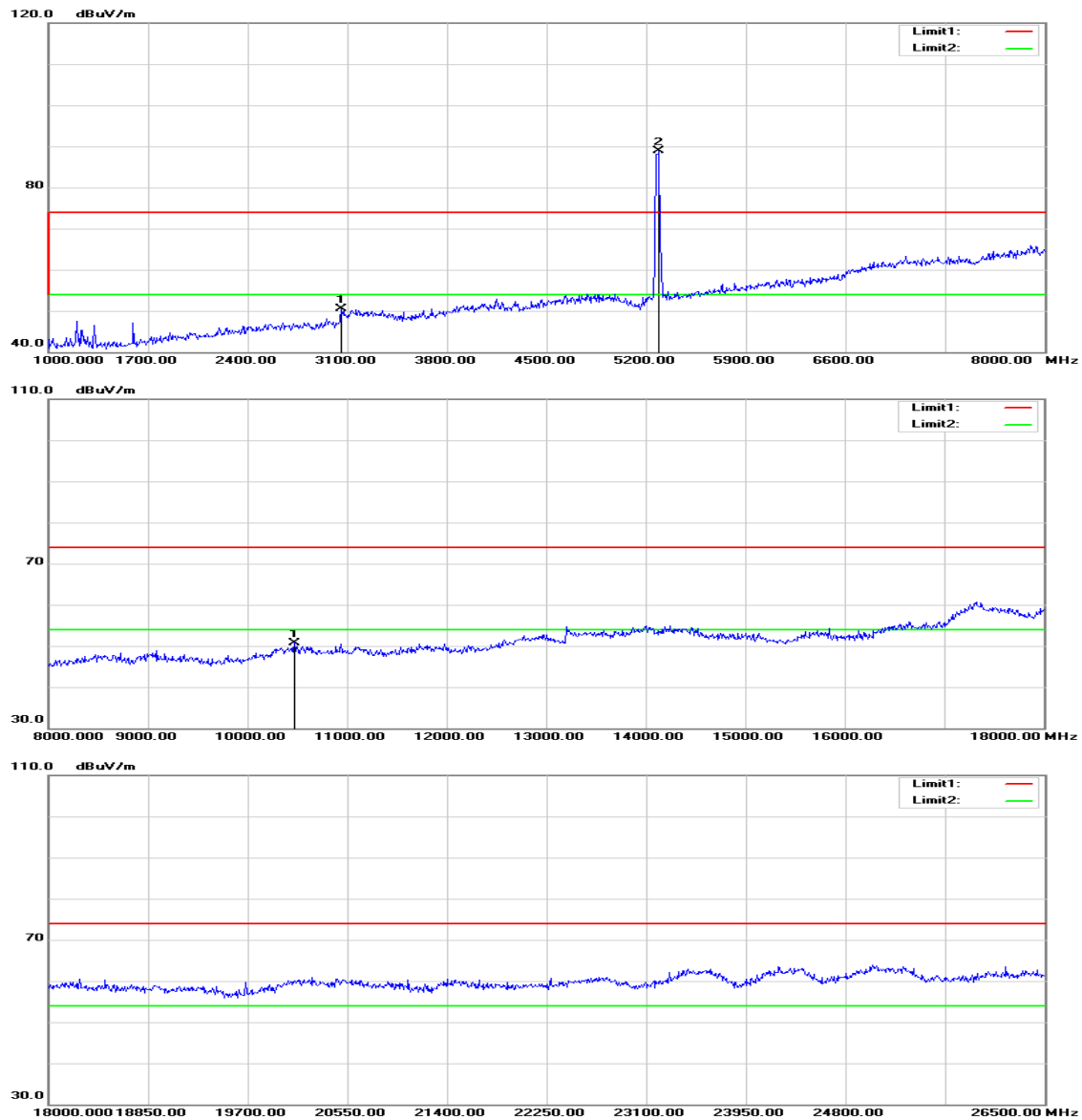


 **Agilent**

R L

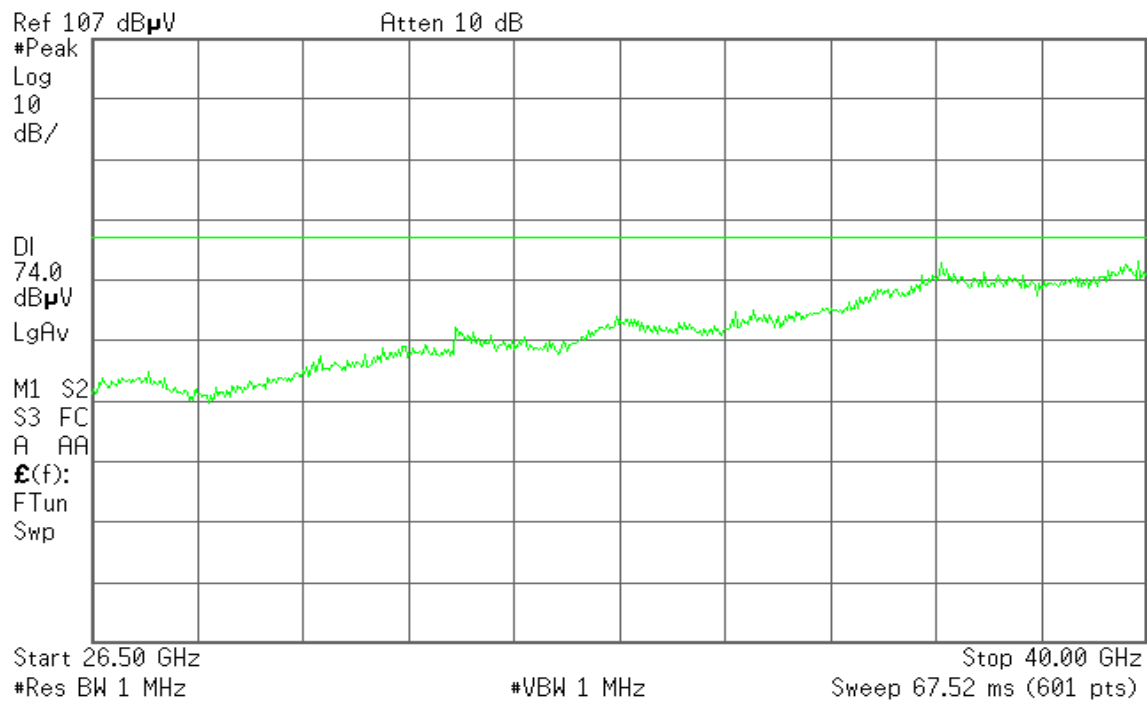


Polarity: Horizontal



 **Agilent**

R L



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

Test Date: December 24, 2015

Tested by: Jason Lu

Polarity: Ver. / Hor.

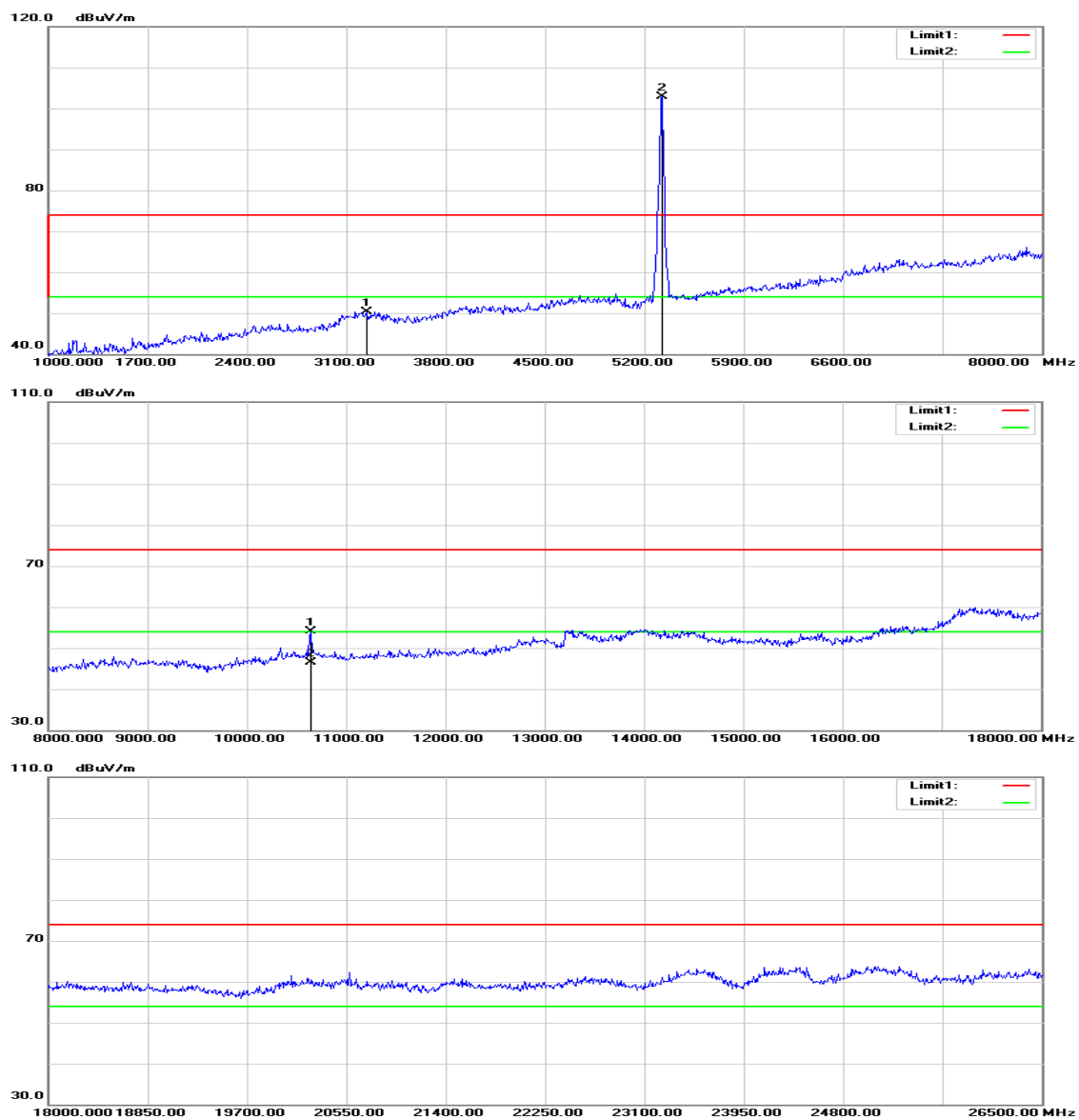
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3254.000	52.16	-1.50	50.66	74.00	-23.34	peak	V
10560.000	35.17	17.11	52.28	74.00	-21.72	peak	V
10560.000	27.40	17.11	44.51	54.00	-9.49	AVG	V
N/A							
3058.000	52.41	-1.97	50.44	74.00	-23.56	peak	H
10470.000	33.78	17.02	50.80	74.00	-23.20	peak	H
N/A							

Remark:

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

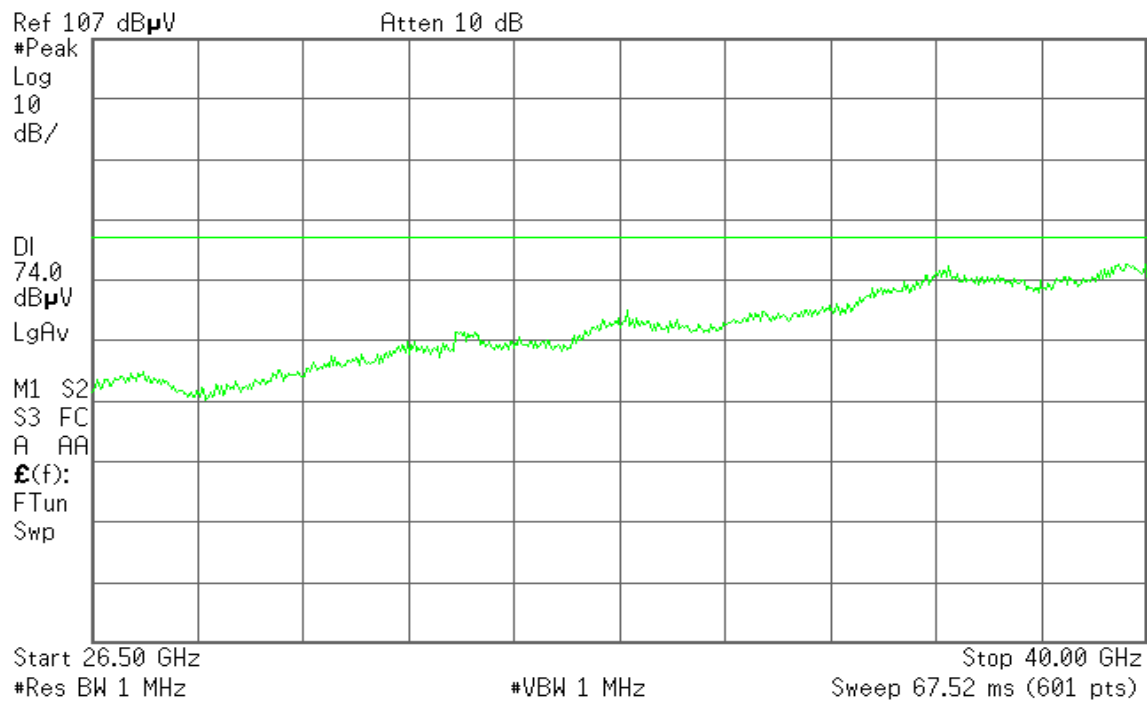
Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH High

Polarity: Vertical

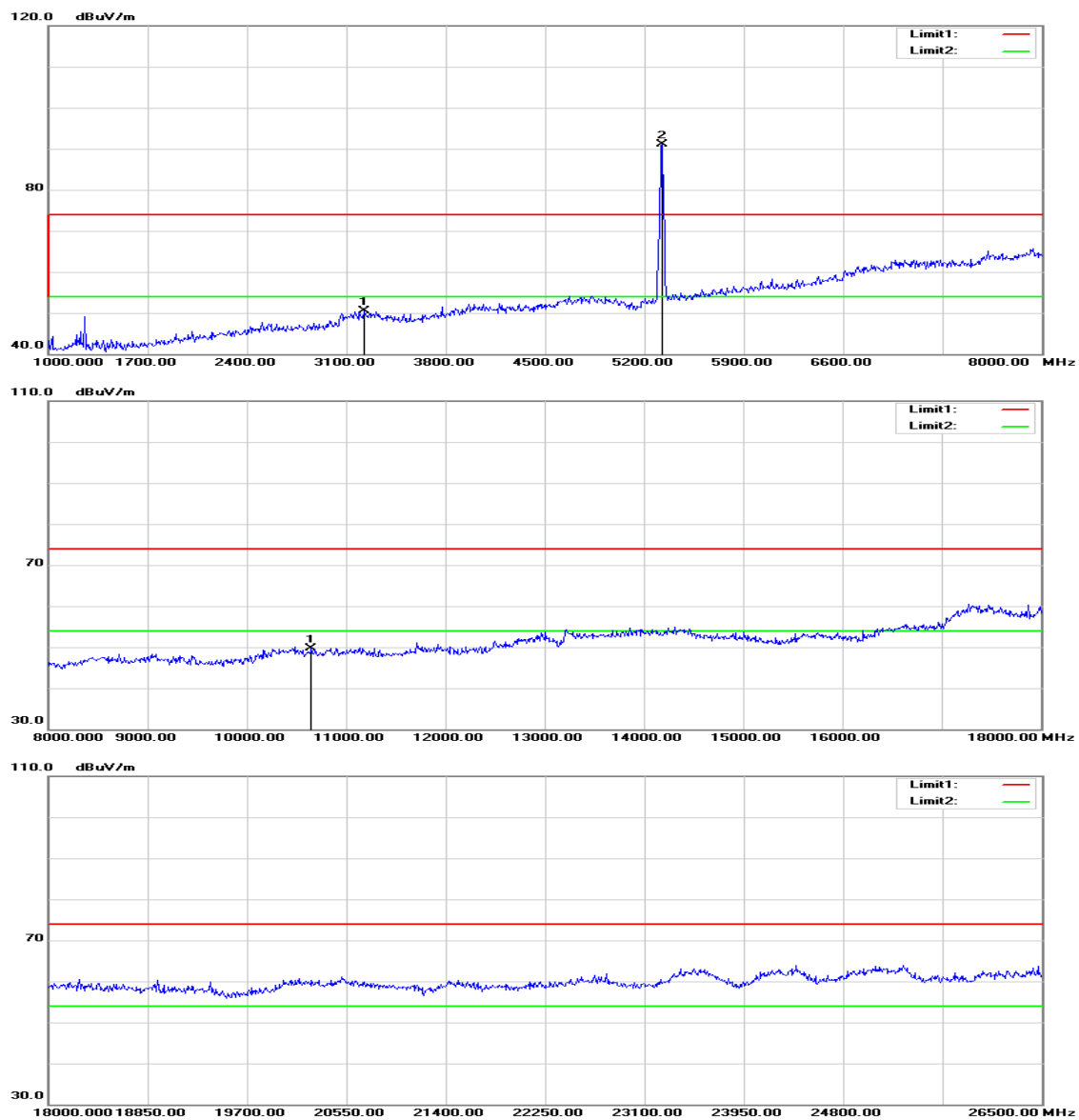


 **Agilent**

R L

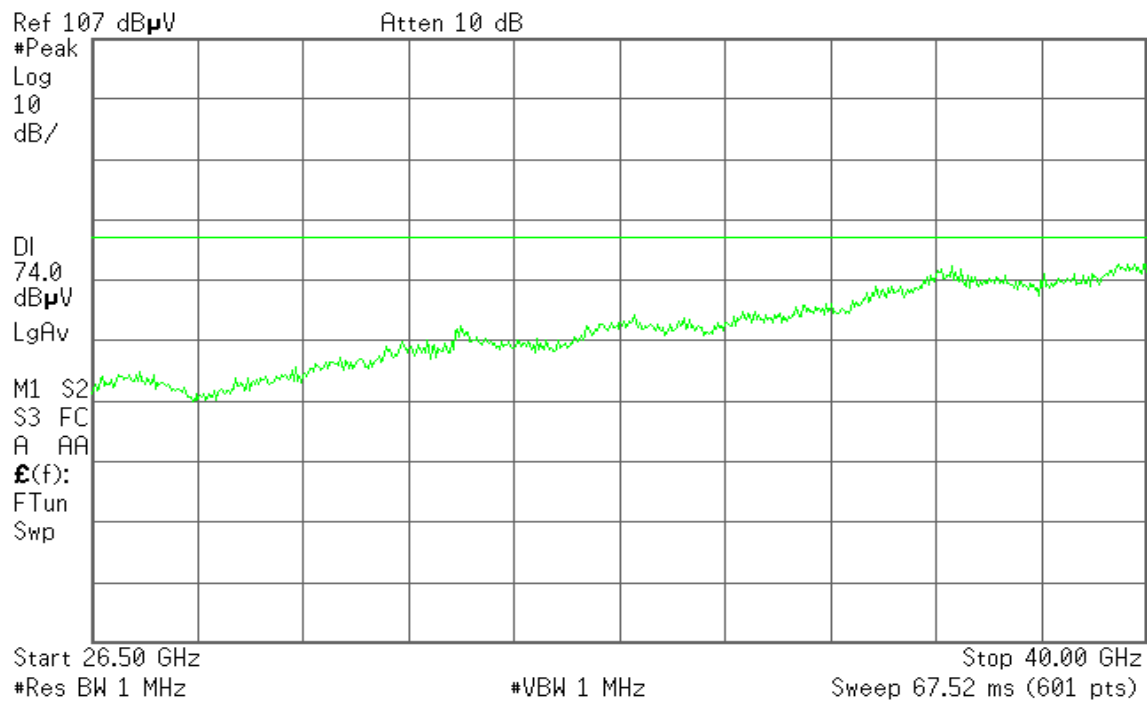


Polarity: Horizontal



 **Agilent**

R L



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

Test Date: December 24, 2015
Tested by: Jason Lu
Polarity: Ver. / Hor.

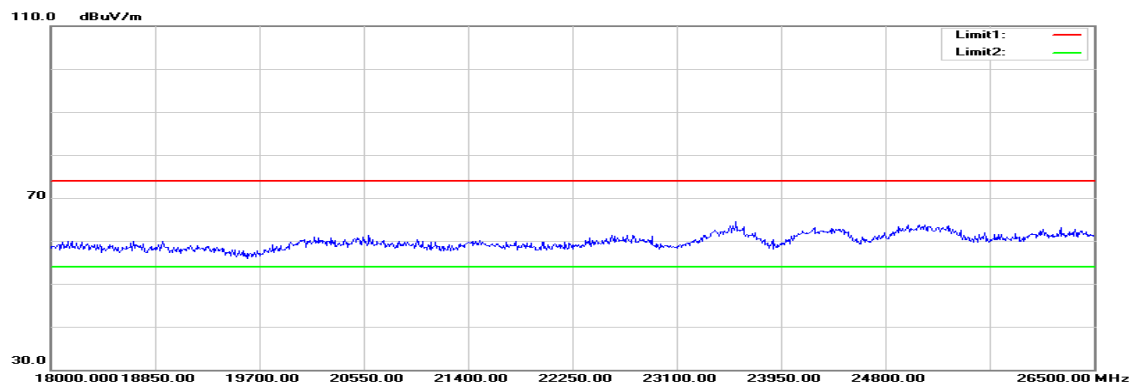
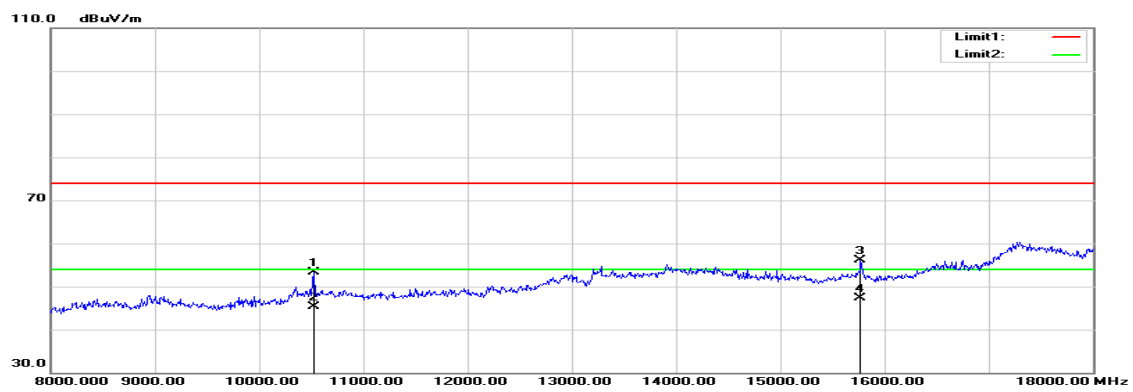
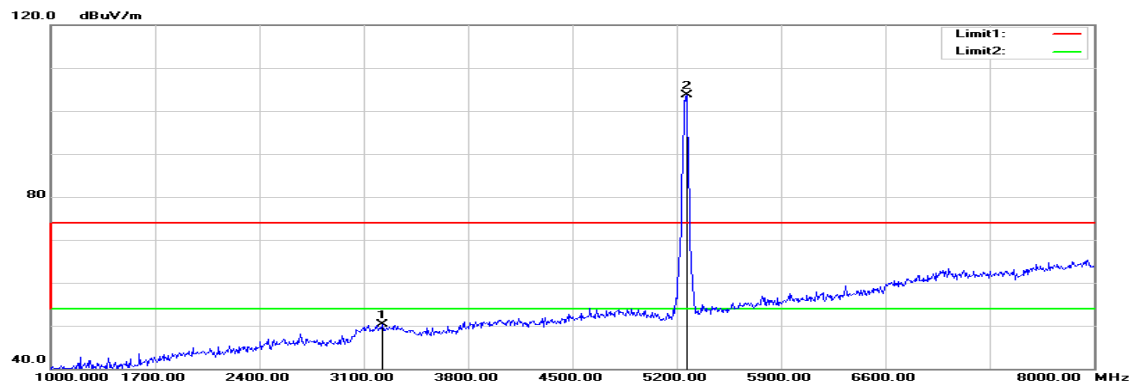
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3240.000	51.92	-1.53	50.39	74.00	-23.61	peak	V
10640.000	37.01	17.04	54.05	74.00	-19.95	peak	V
10640.000	29.52	17.04	46.56	54.00	-7.44	AVG	V
N/A							
3226.000	52.06	-1.57	50.49	74.00	-23.51	peak	H
10650.000	32.72	17.03	49.75	74.00	-24.25	peak	H
N/A							

Remark:

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

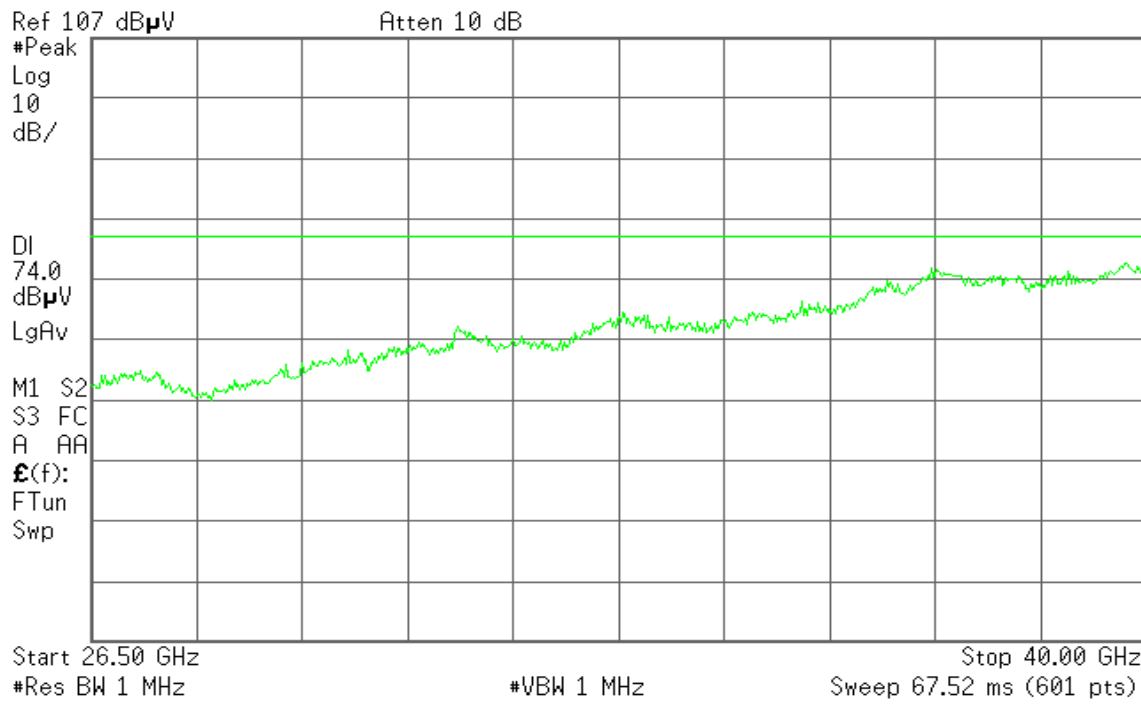
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH Low

Polarity: Vertical

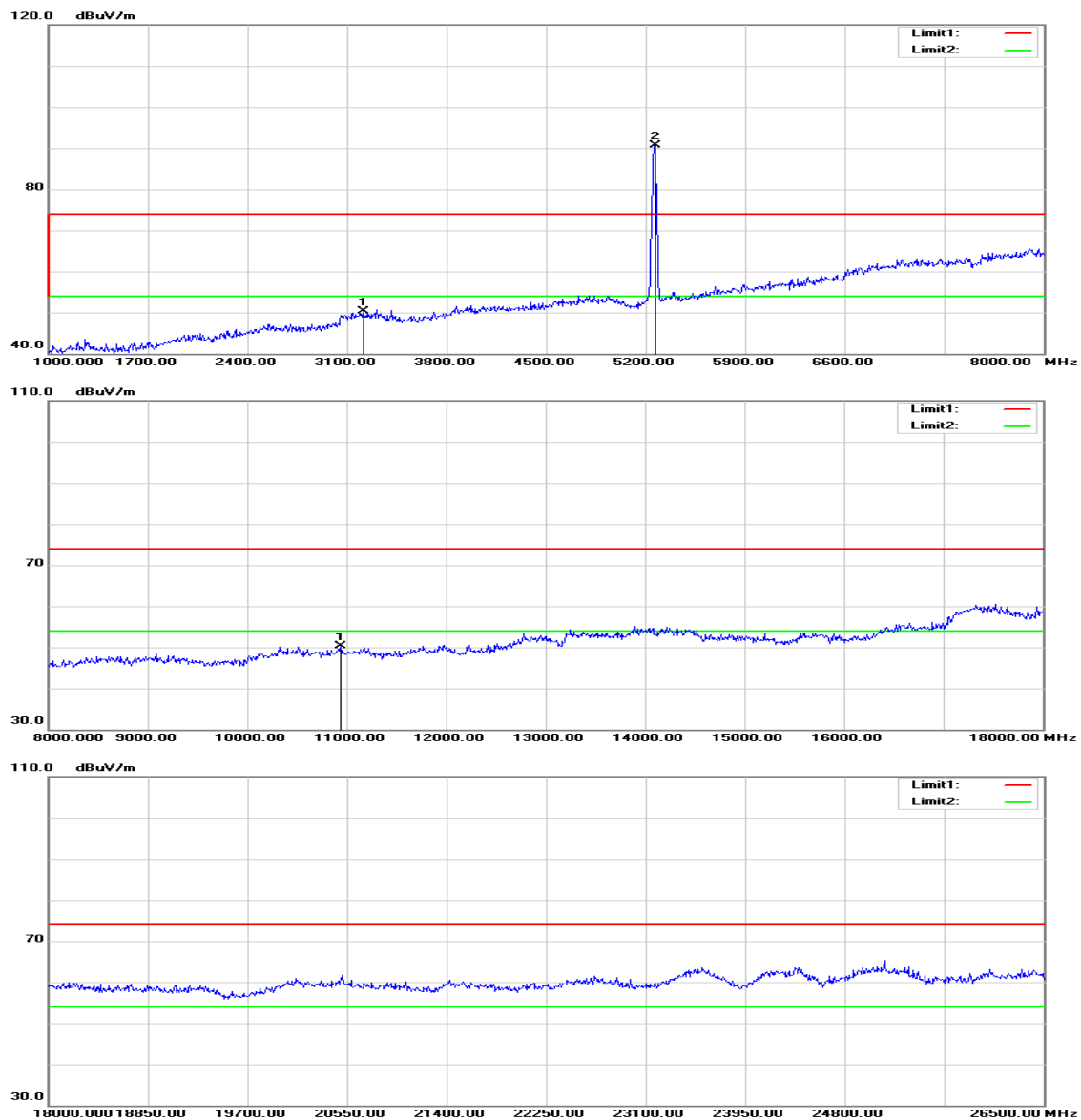


 **Agilent**

R L

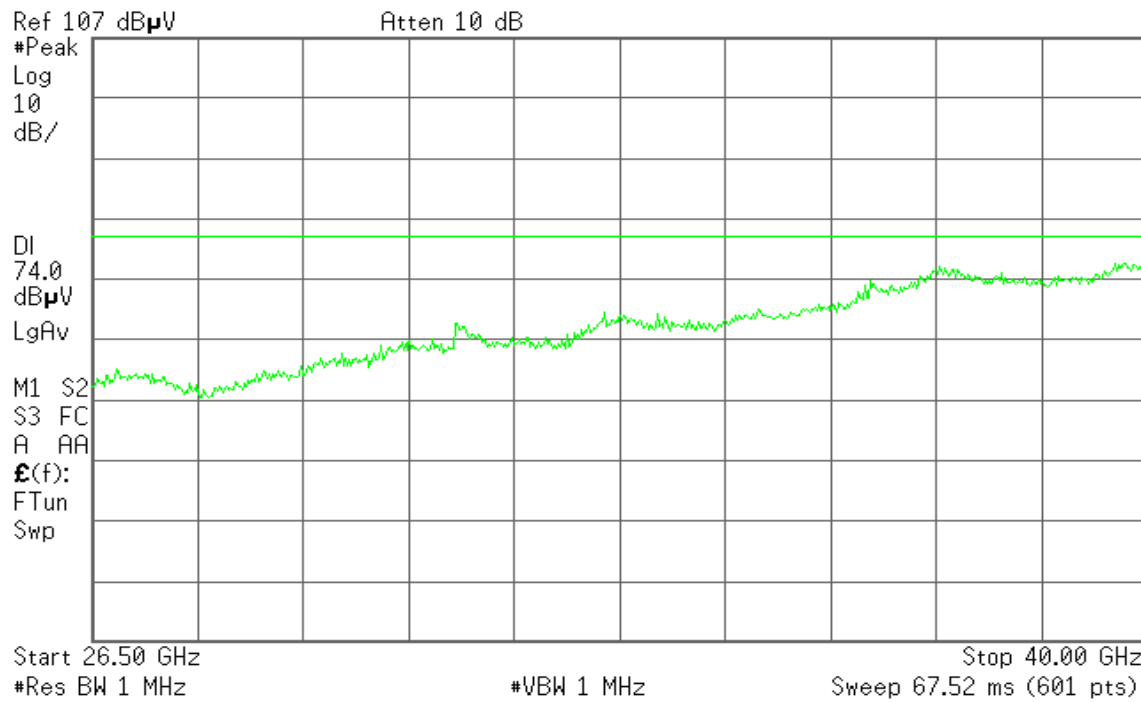


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH Low
Temperature: 27°C
Humidity: 53% RH

Test Date: December 24, 2015

Tested by: Jason Lu

Polarity: Ver. / Hor.

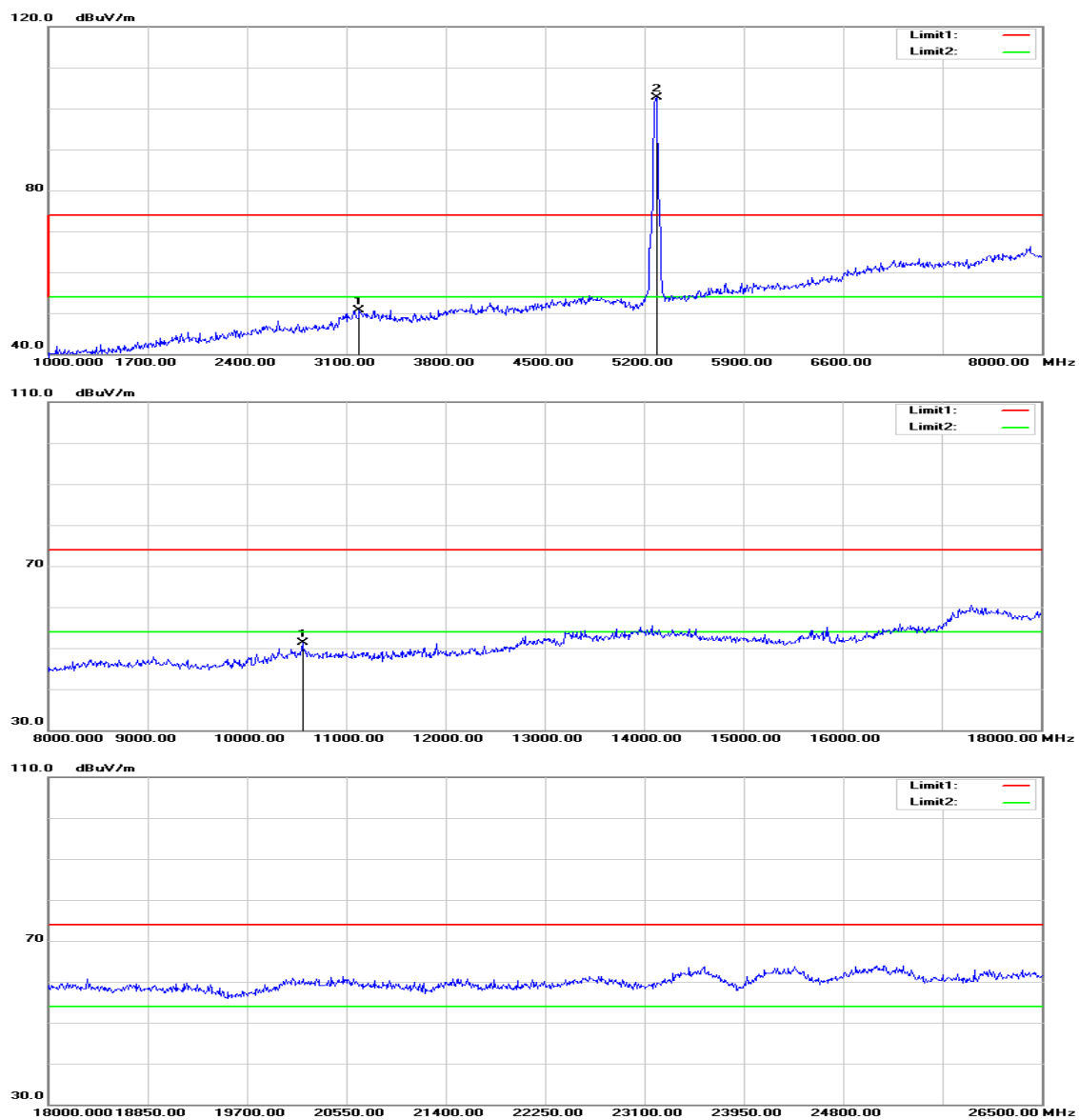
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3226.000	51.90	-1.57	50.33	74.00	-23.67	peak	V
10520.000	36.12	17.14	53.26	74.00	-20.74	peak	V
10520.000	28.26	17.14	45.40	54.00	-8.60	AVG	V
15770.000	36.90	19.24	56.14	74.00	-17.86	peak	V
15770.000	28.00	19.24	47.24	54.00	-6.76	AVG	V
N/A							
3212.000	51.97	-1.60	50.37	74.00	-23.63	peak	H
10940.000	33.52	16.78	50.30	74.00	-23.70	peak	H
N/A							

Remark:

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

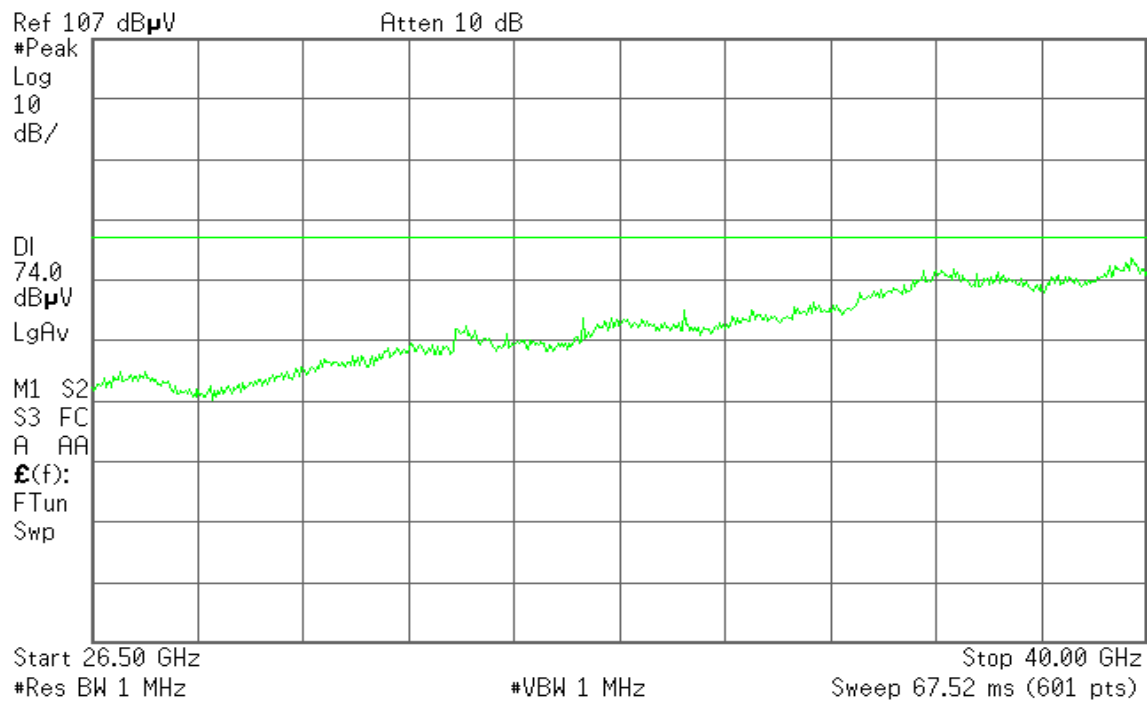
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH Mid

Polarity: Vertical

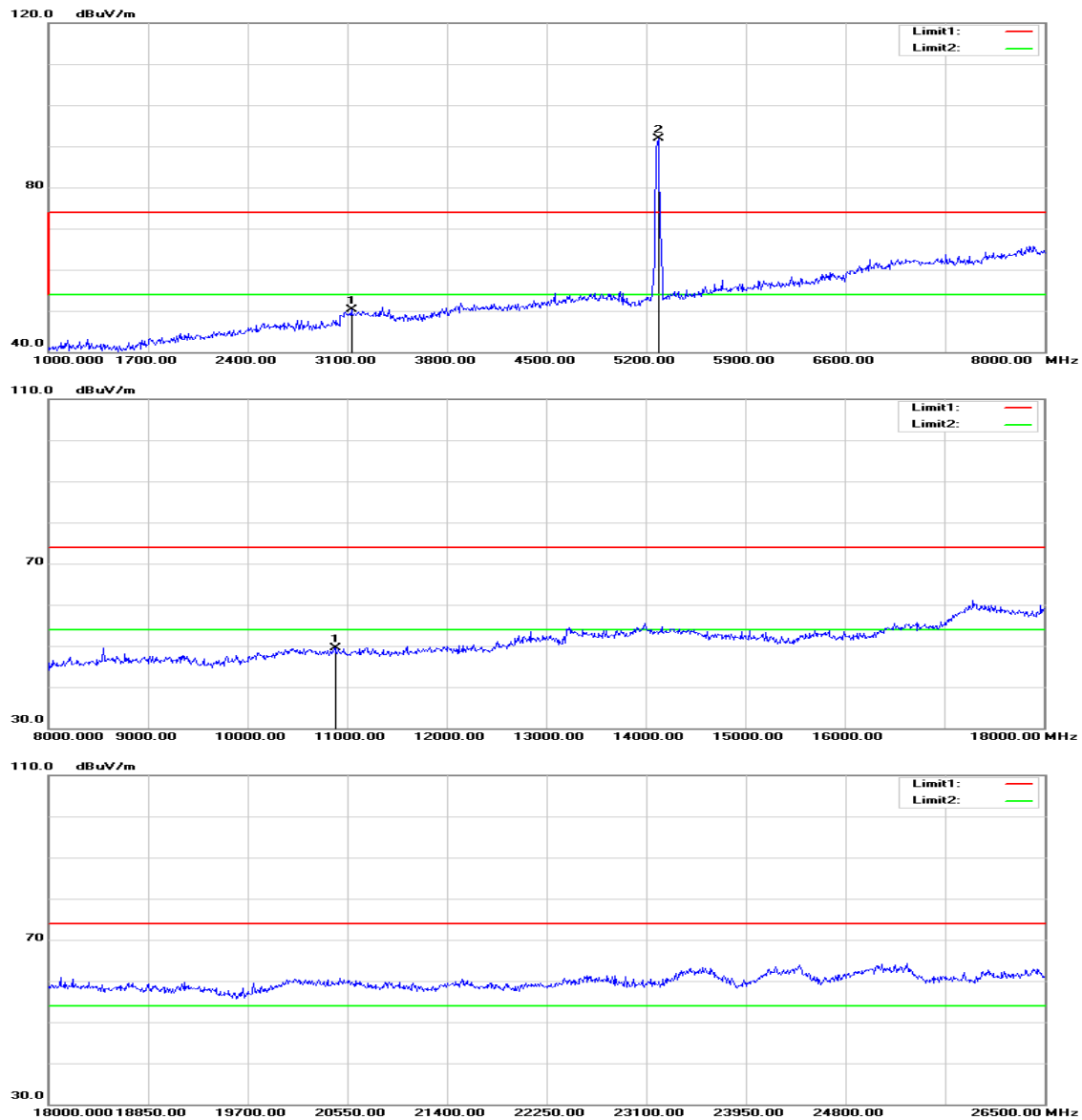


 **Agilent**

R L

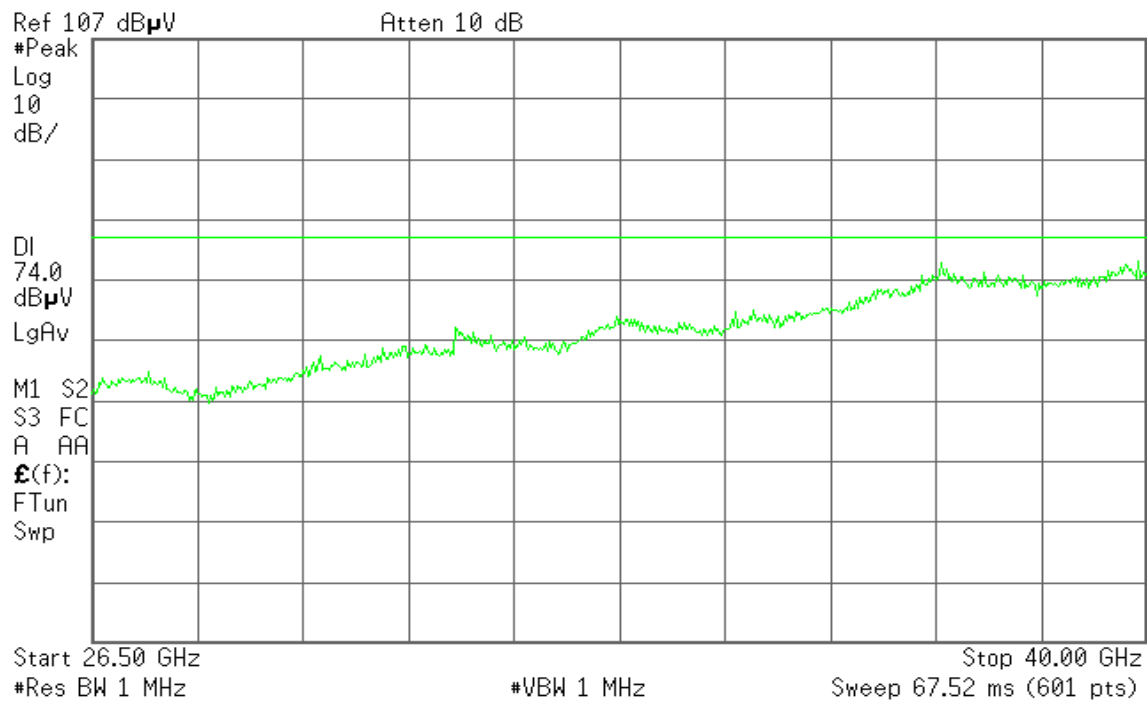


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH Mid
Temperature: 27°C
Humidity: 53% RH

Test Date: December 24, 2015

Tested by: Jason Lu

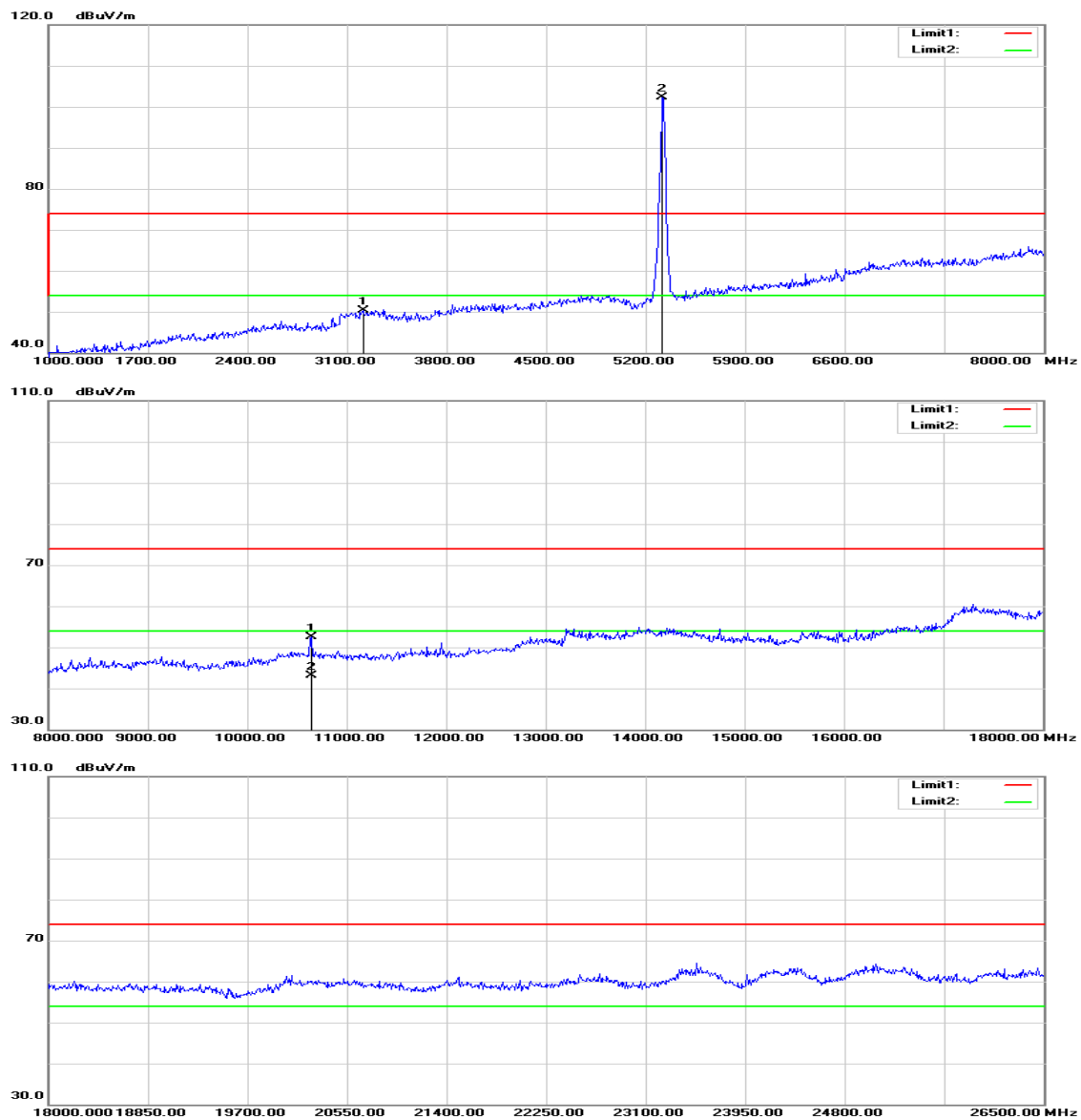
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3191.000	52.27	-1.65	50.62	74.00	-23.38	peak	V
10560.000	34.13	17.11	51.24	74.00	-22.76	peak	V
N/A							
							V
3128.000	52.08	-1.80	50.28	74.00	-23.72	peak	H
10880.000	32.68	16.83	49.51	74.00	-24.49	peak	H
N/A							

Remark:

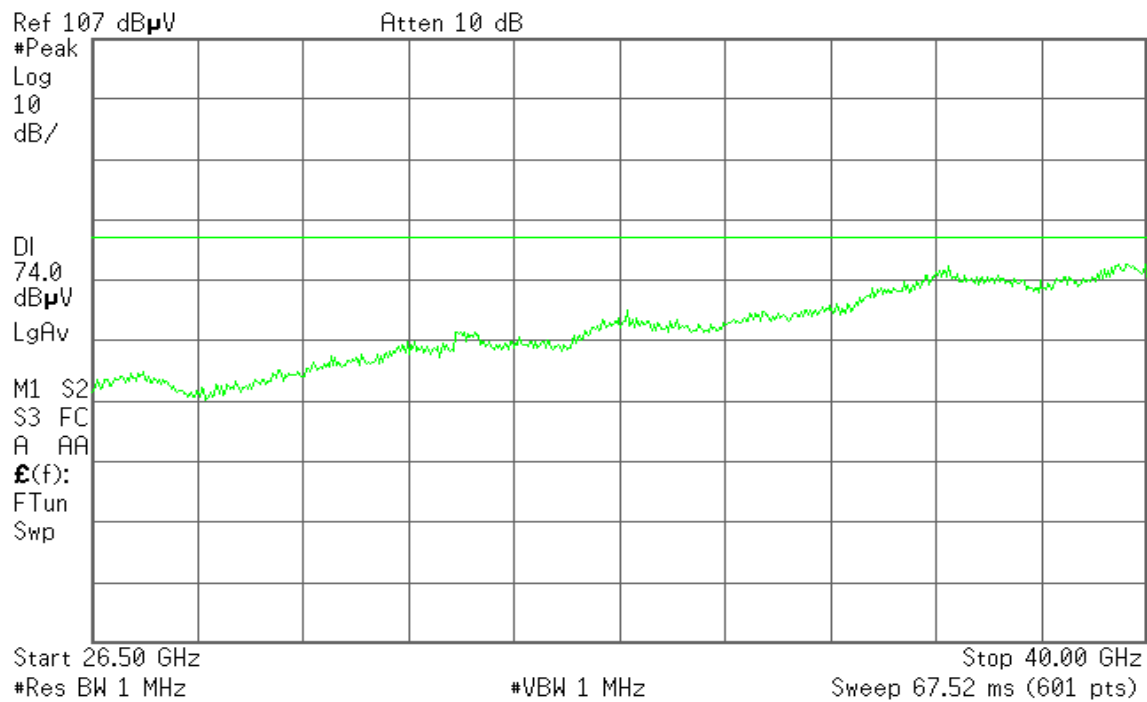
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.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

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

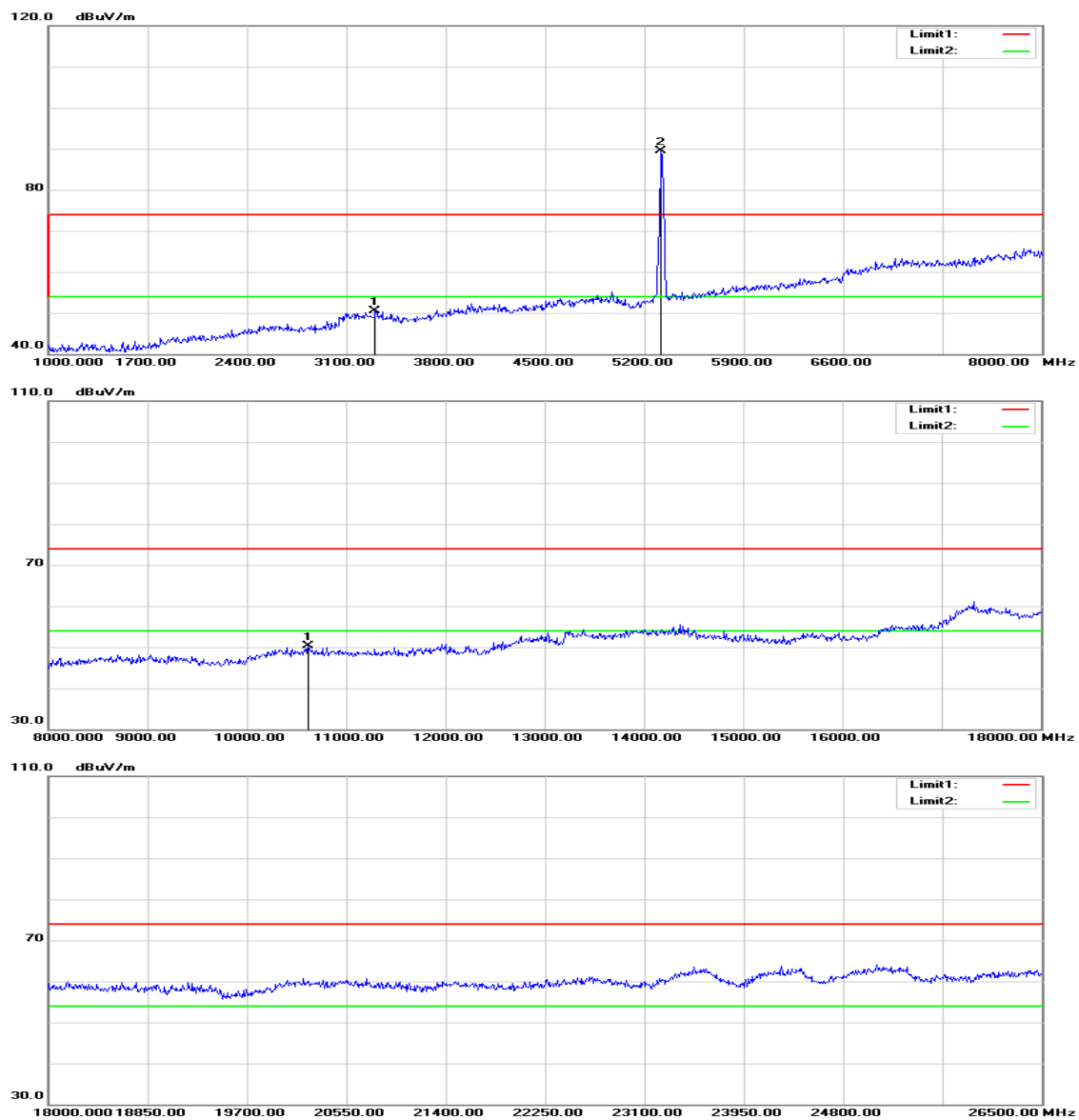


 **Agilent**

R L

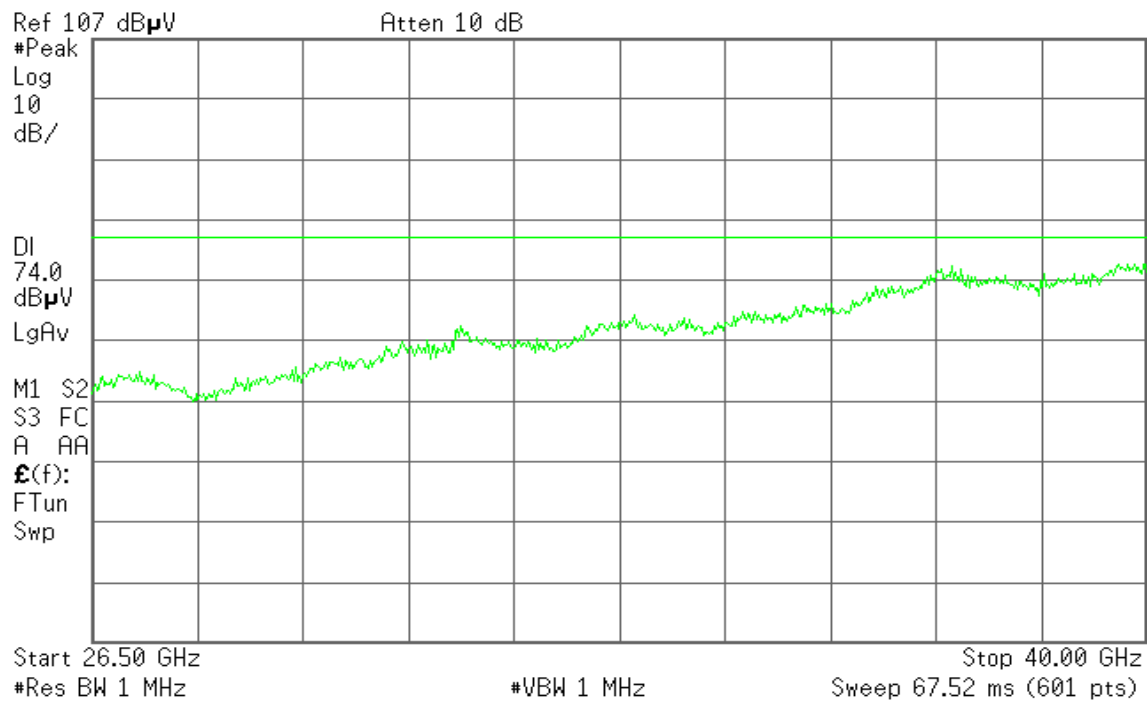


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH High
Temperature: 27°C
Humidity: 53% RH

Test Date: December 24, 2015
Tested by: Jason Lu
Polarity: Ver. / Hor.

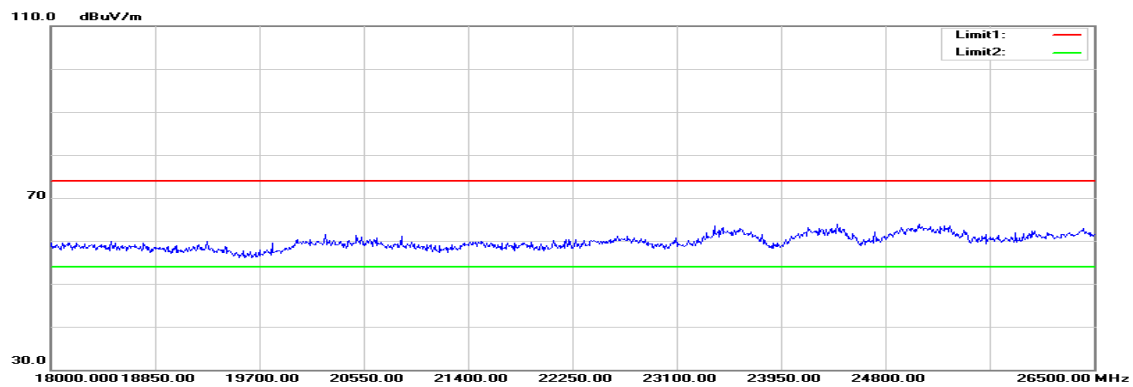
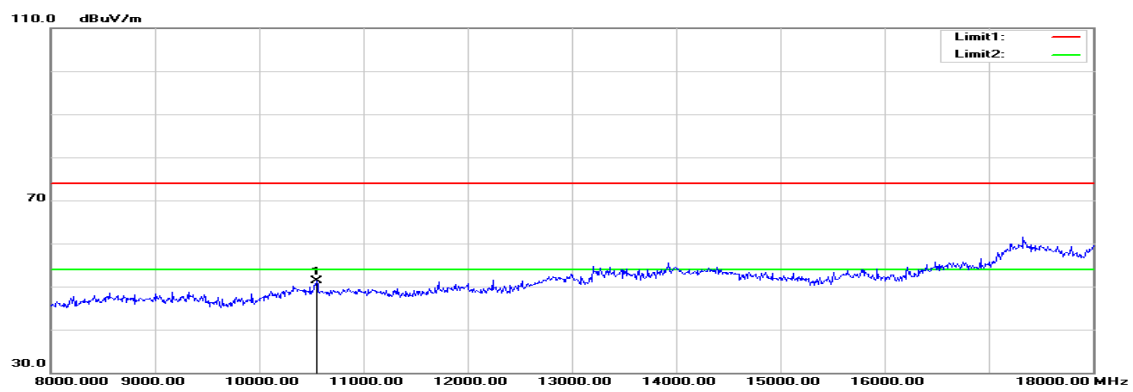
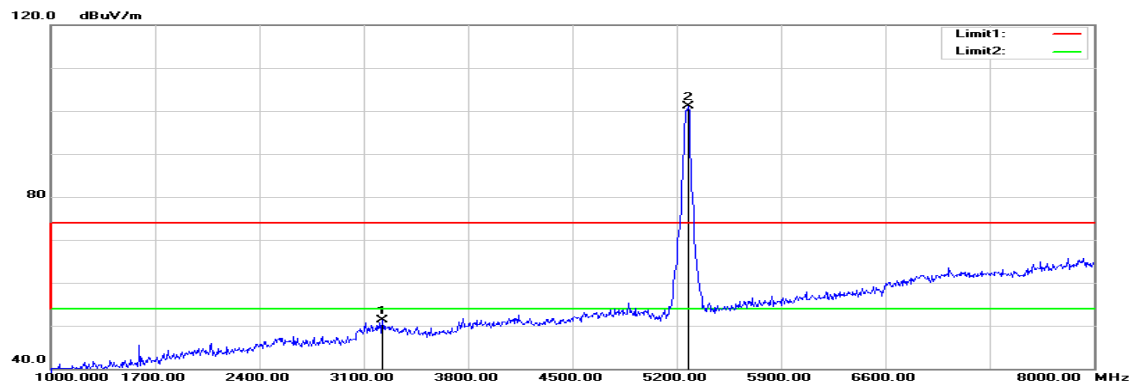
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3212.000	51.84	-1.60	50.24	74.00	-23.76	peak	V
10640.000	35.53	17.04	52.57	74.00	-21.43	peak	V
10640.000	26.03	17.04	43.07	54.00	-10.93	AVG	V
N/A							
3303.000	51.90	-1.38	50.52	74.00	-23.48	peak	H
10620.000	33.18	17.06	50.24	74.00	-23.76	peak	H
N/A							

Remark:

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

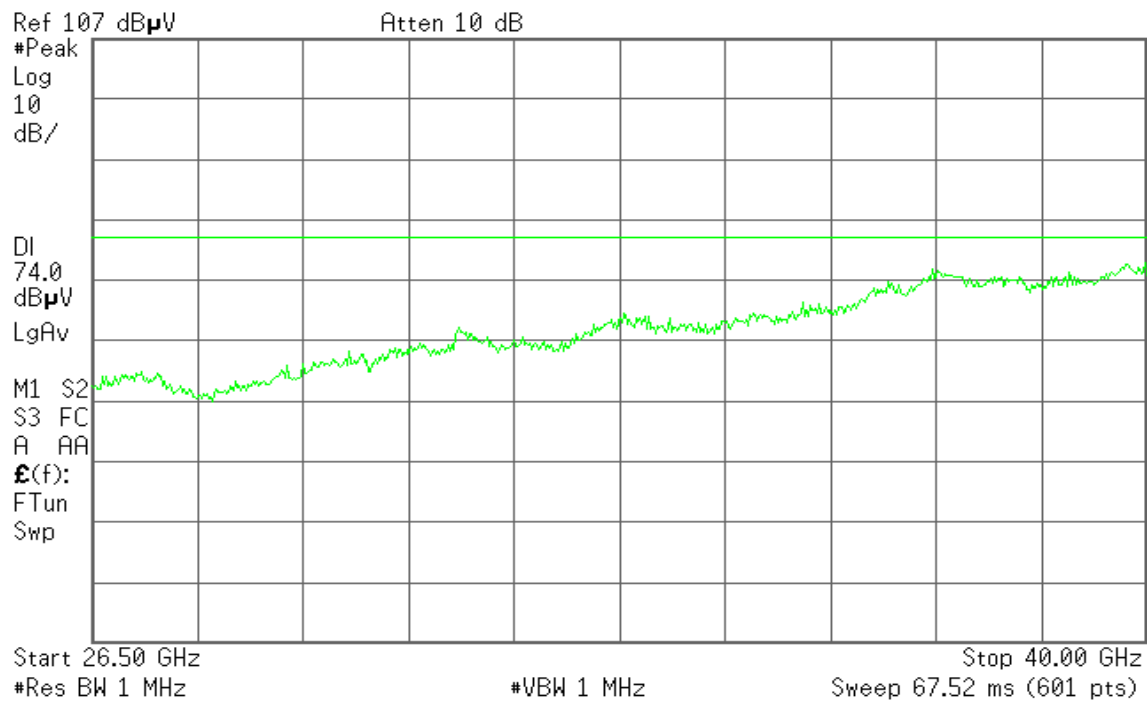
Tx / IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH Low

Polarity: Vertical

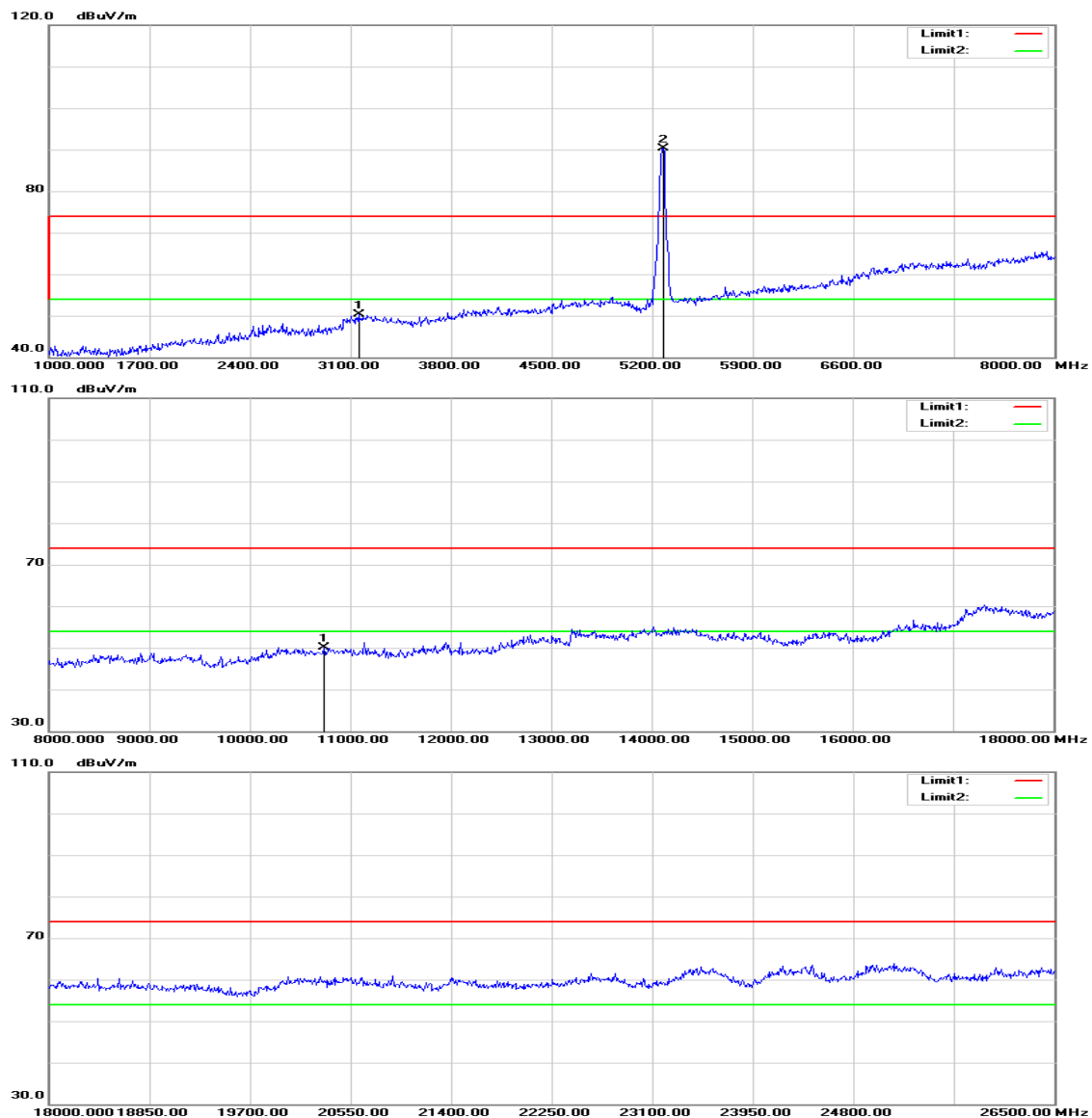


 **Agilent**

R L

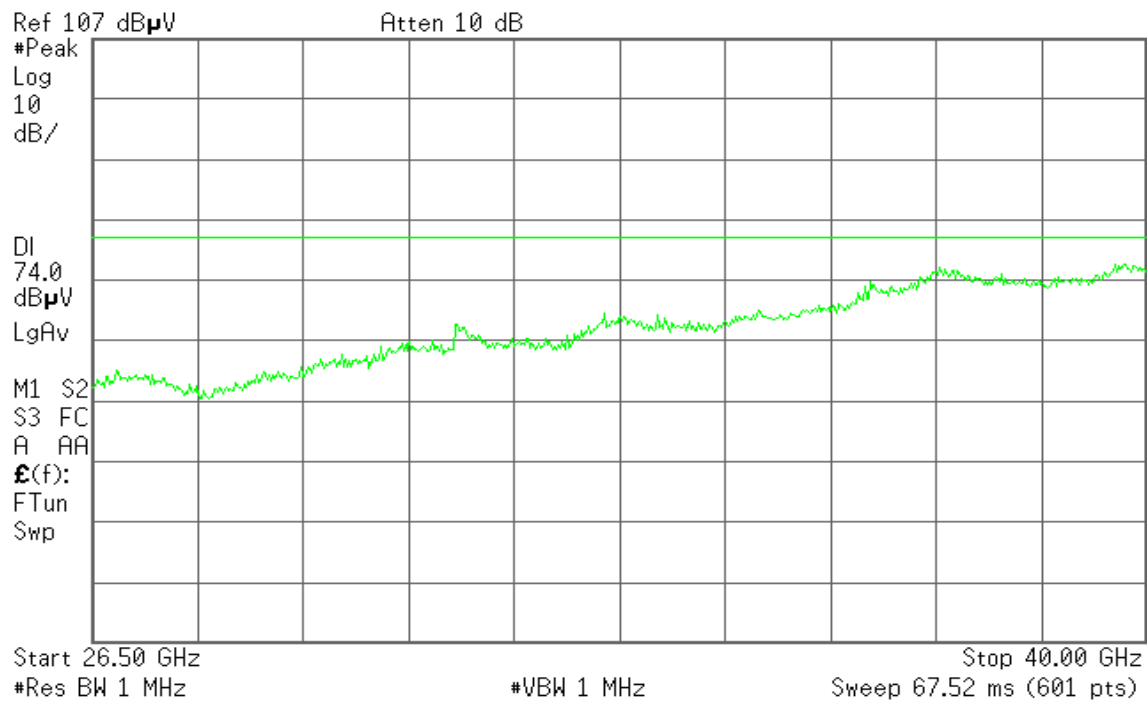


Polarity: Horizontal



 **Agilent**

R L



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

Test Date: December 24, 2015

Tested by: Jason Lu

Polarity: Ver. / Hor.

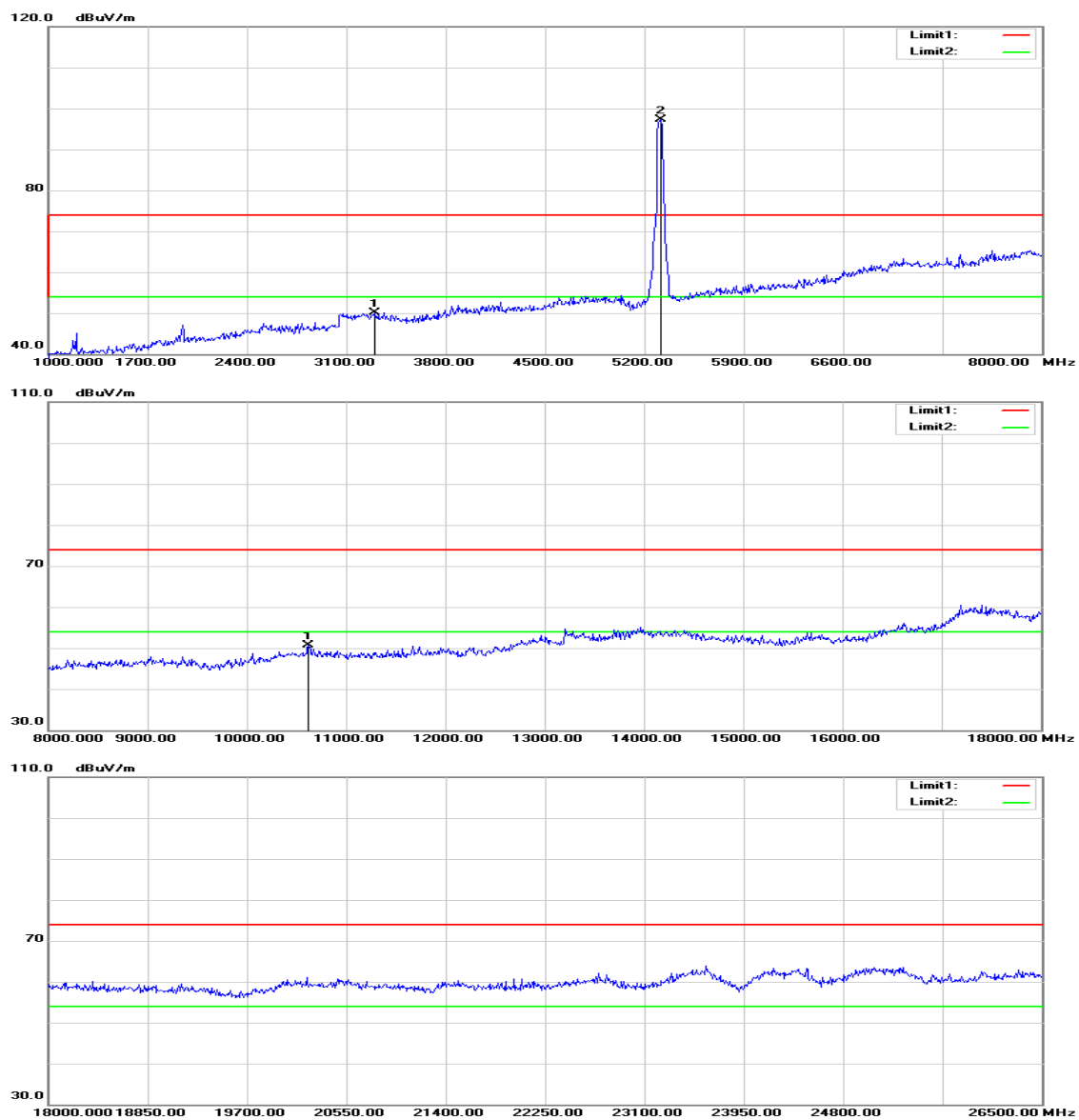
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3226.000	52.78	-1.57	51.21	74.00	-22.79	peak	V
10550.000	34.09	17.12	51.21	74.00	-22.79	peak	V
N/A							
3156.000	52.01	-1.74	50.27	74.00	-23.73	peak	H
10740.000	33.22	16.95	50.17	74.00	-23.83	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.
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).

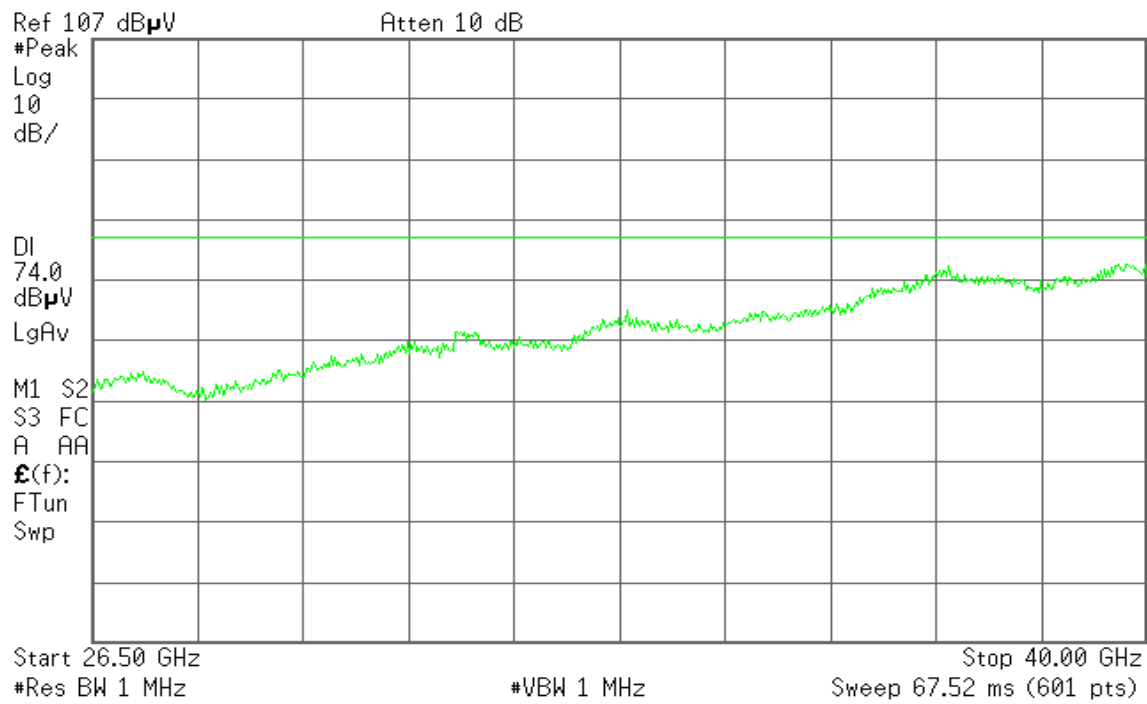
Tx / IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH High

Polarity: Vertical

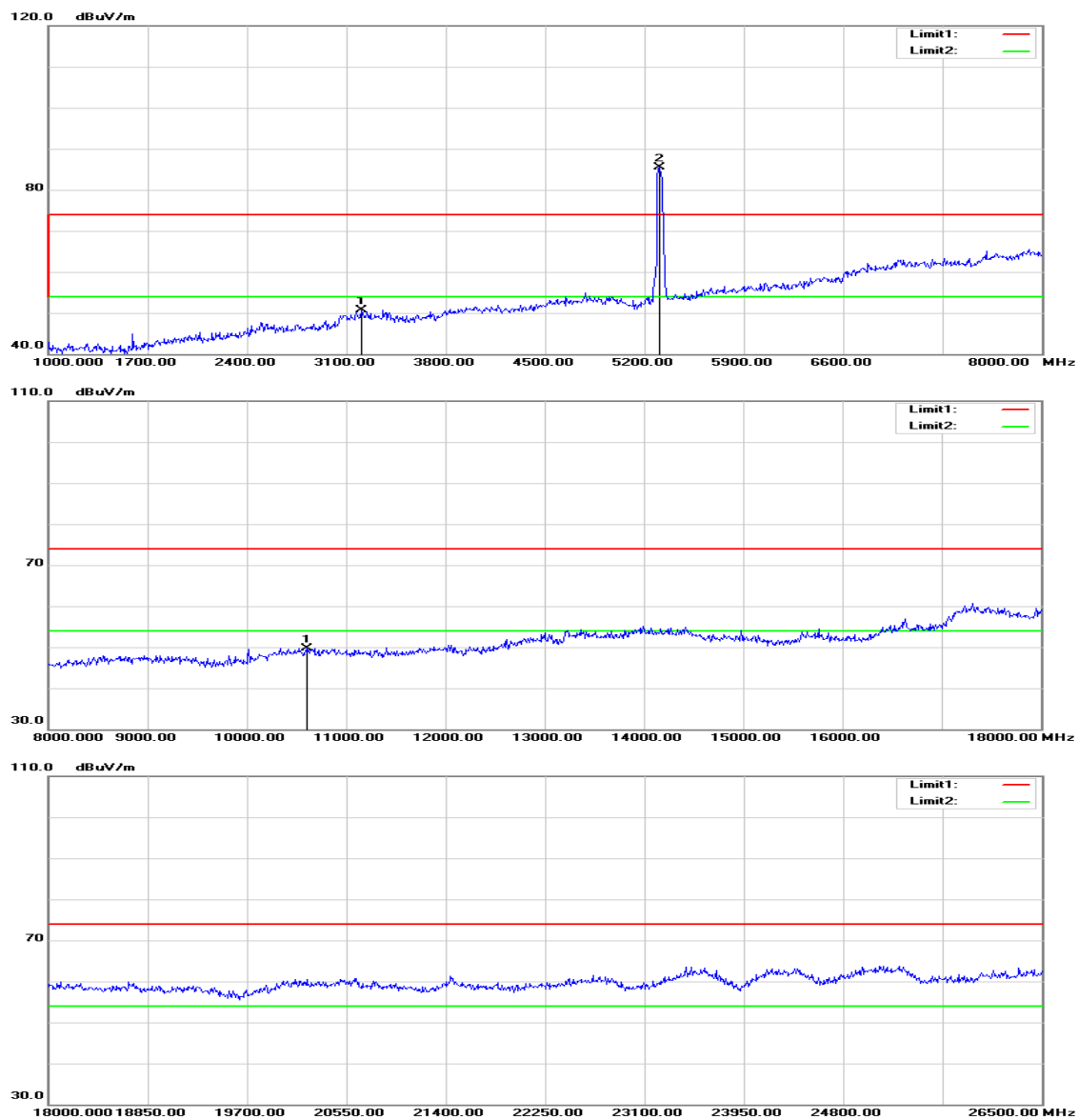


 **Agilent**

R L

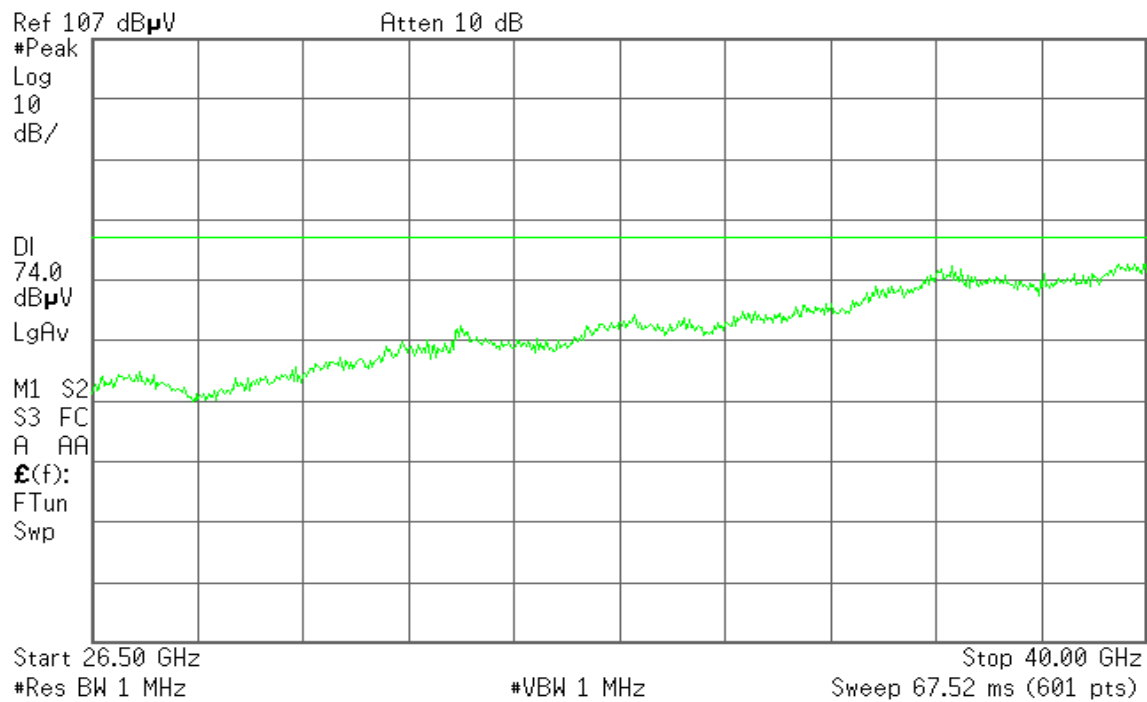


Polarity: Horizontal



 **Agilent**

R L



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

Test Date: December 24, 2015
Tested by: Jason Lu
Polarity: Ver. / Hor.

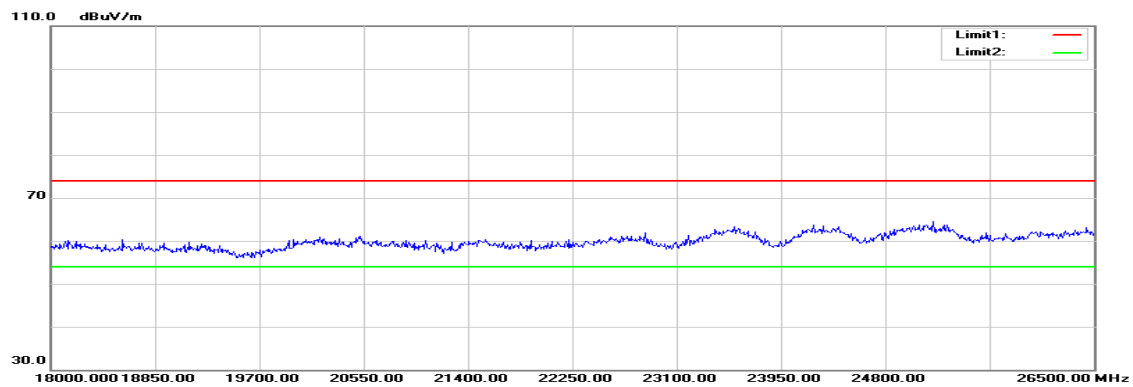
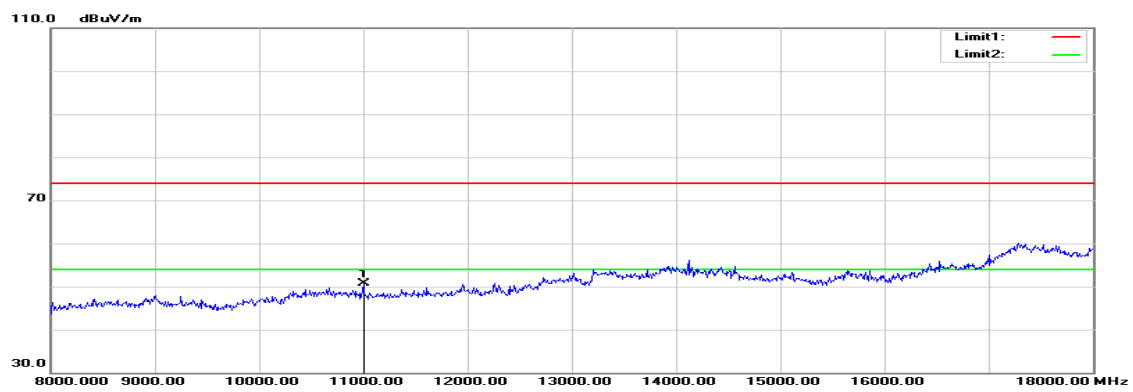
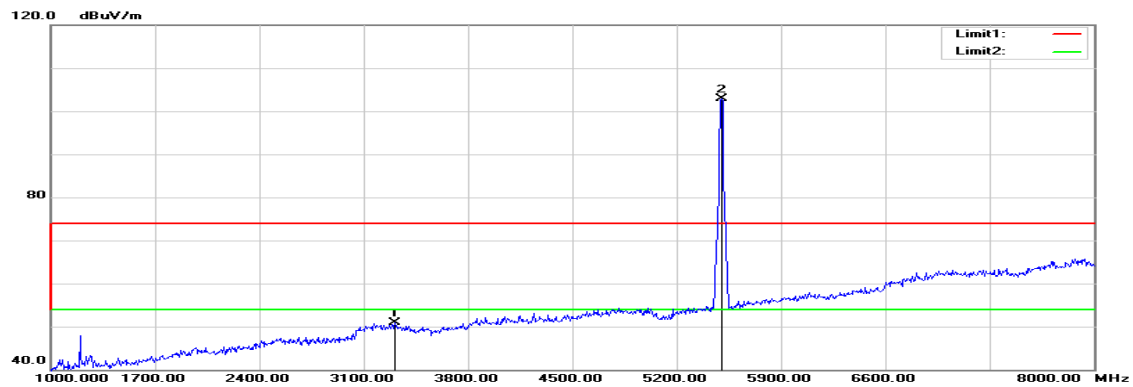
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3303.000	51.54	-1.38	50.16	74.00	-23.84	peak	V
10620.000	33.60	17.06	50.66	74.00	-23.34	peak	V
N/A							
3205.000	52.31	-1.62	50.69	74.00	-23.31	peak	H
10610.000	32.73	17.07	49.80	74.00	-24.20	peak	H
N/A							

Remark:

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

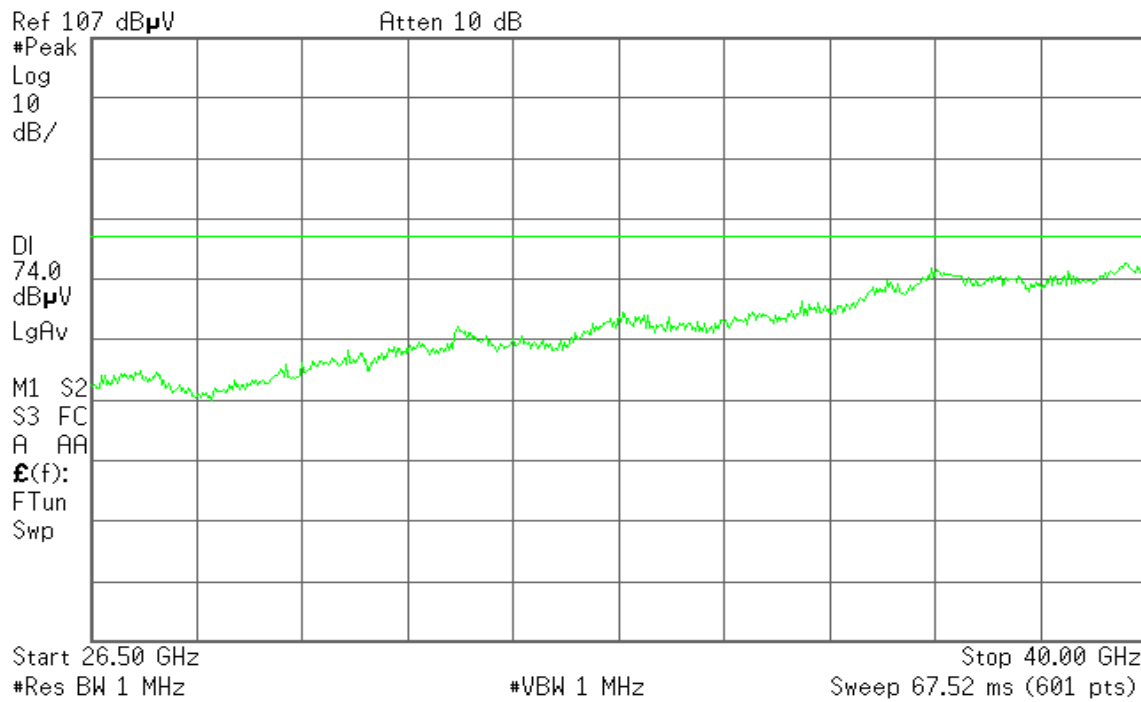
Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH Low

Polarity: Vertical

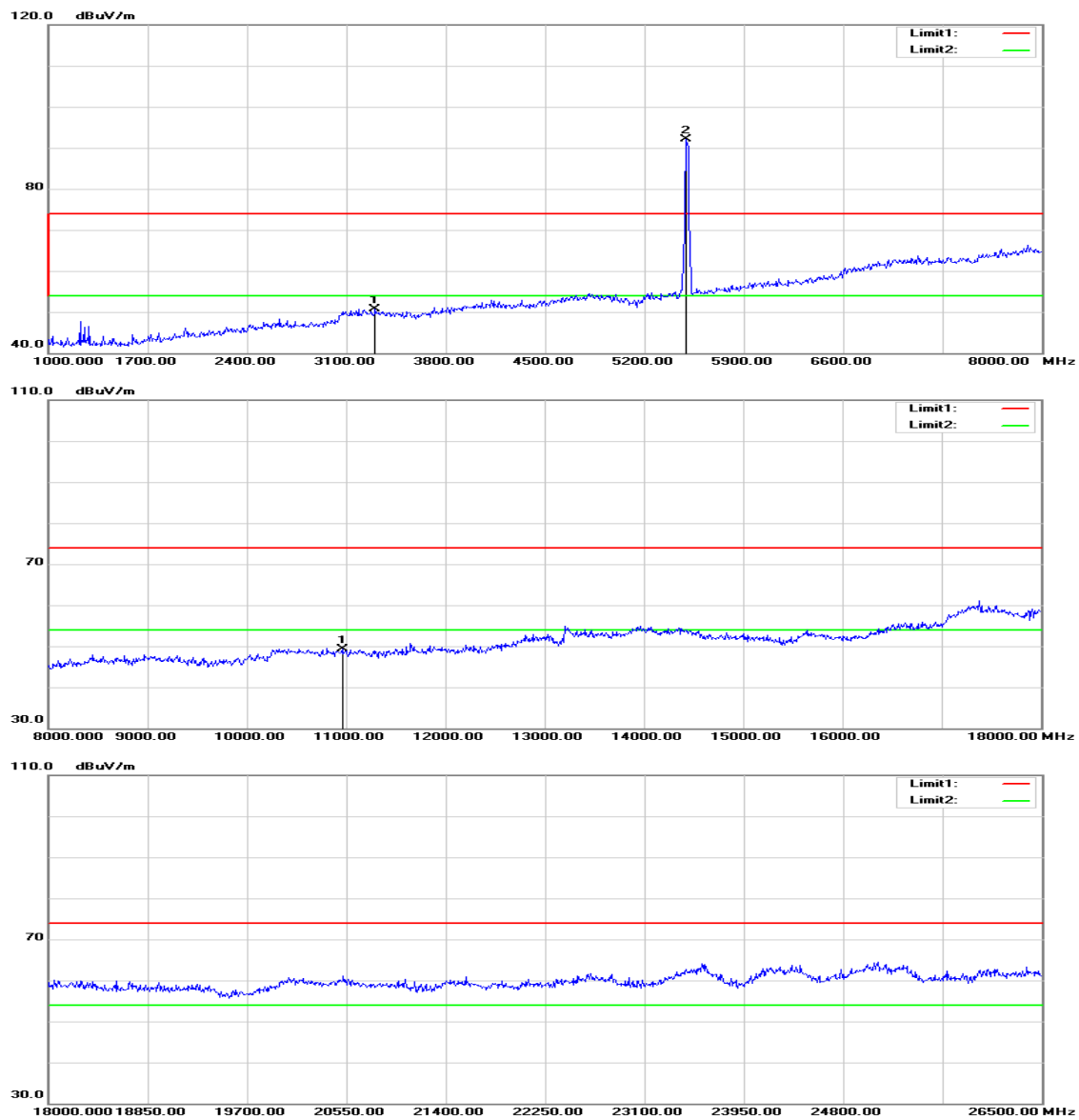


 **Agilent**

R L

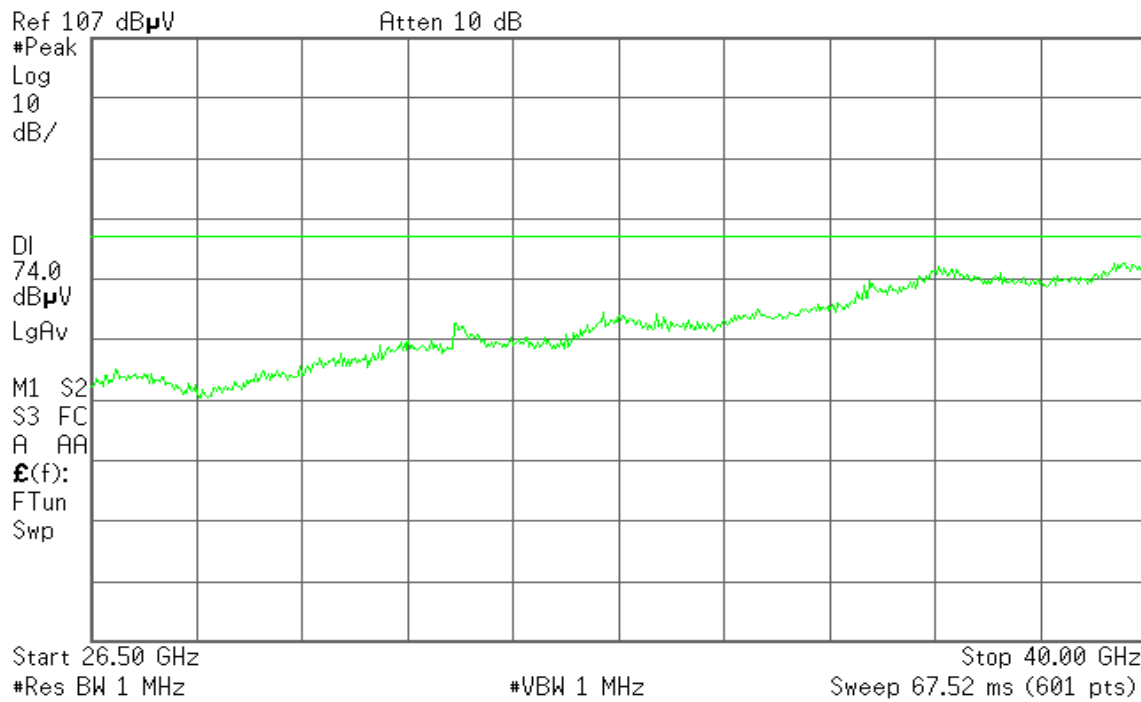


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH Low

Test Date: December 24, 2015

Temperature: 27°C

Tested by: Jason Lu

Humidity: 53% RH

Polarity: Ver. / Hor.

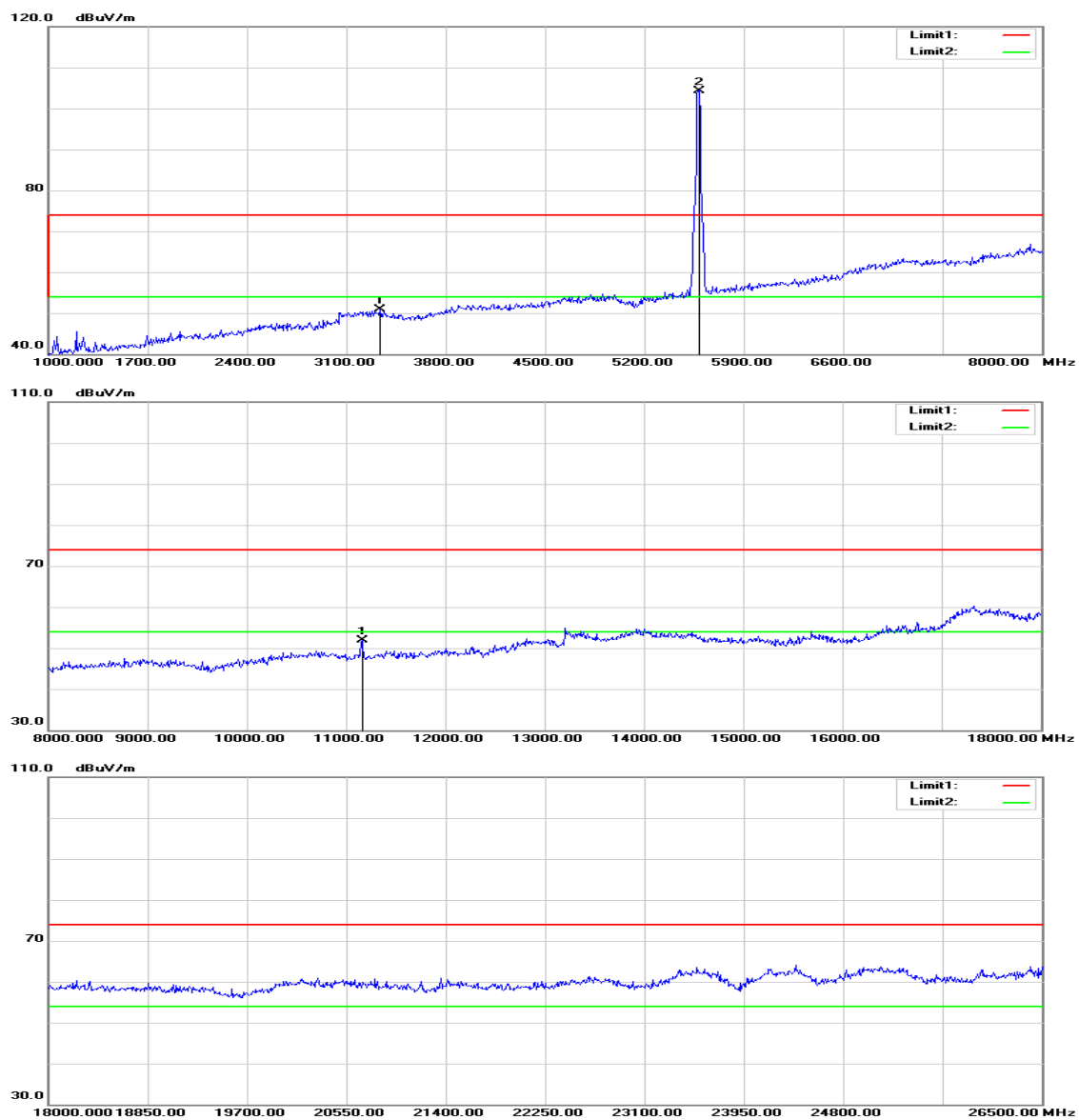
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3310.000	52.30	-1.37	50.93	74.00	-23.07	peak	V
11000.000	33.92	16.73	50.65	74.00	-23.35	peak	V
N/A							
3303.000	52.14	-1.38	50.76	74.00	-23.24	peak	H
10960.000	32.58	16.76	49.34	74.00	-24.66	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).

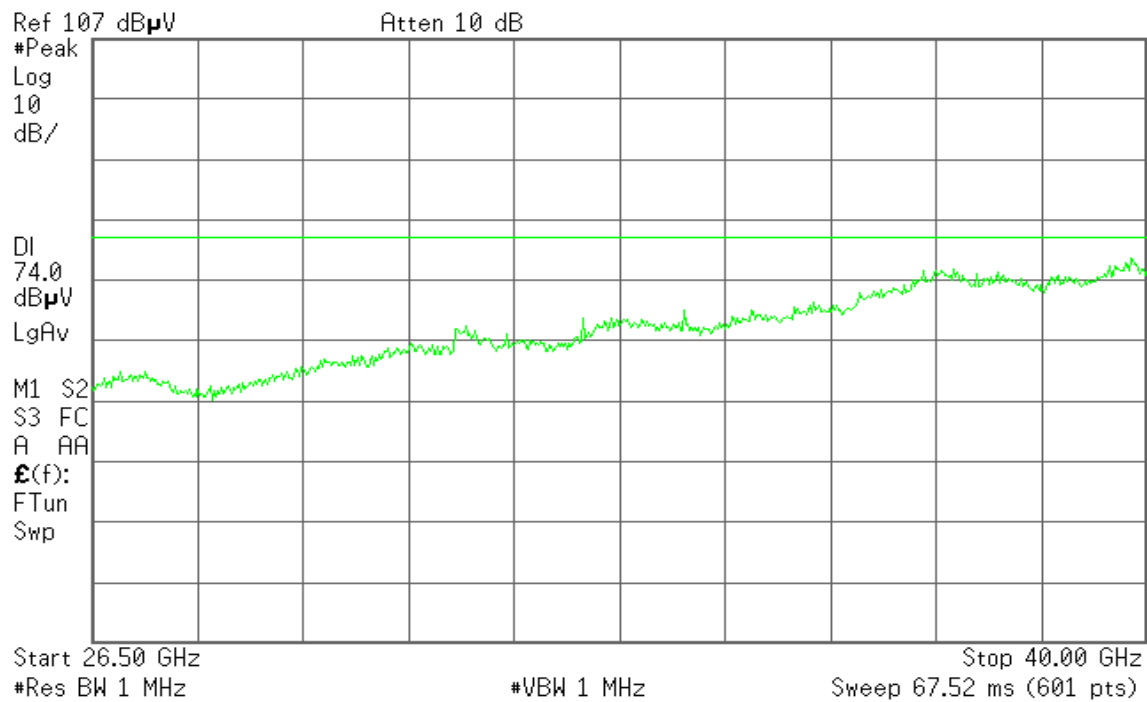
Tx / IEEE 802.11a mode / 5500 ~ 5700MHz /CH Mid

Polarity: Vertical

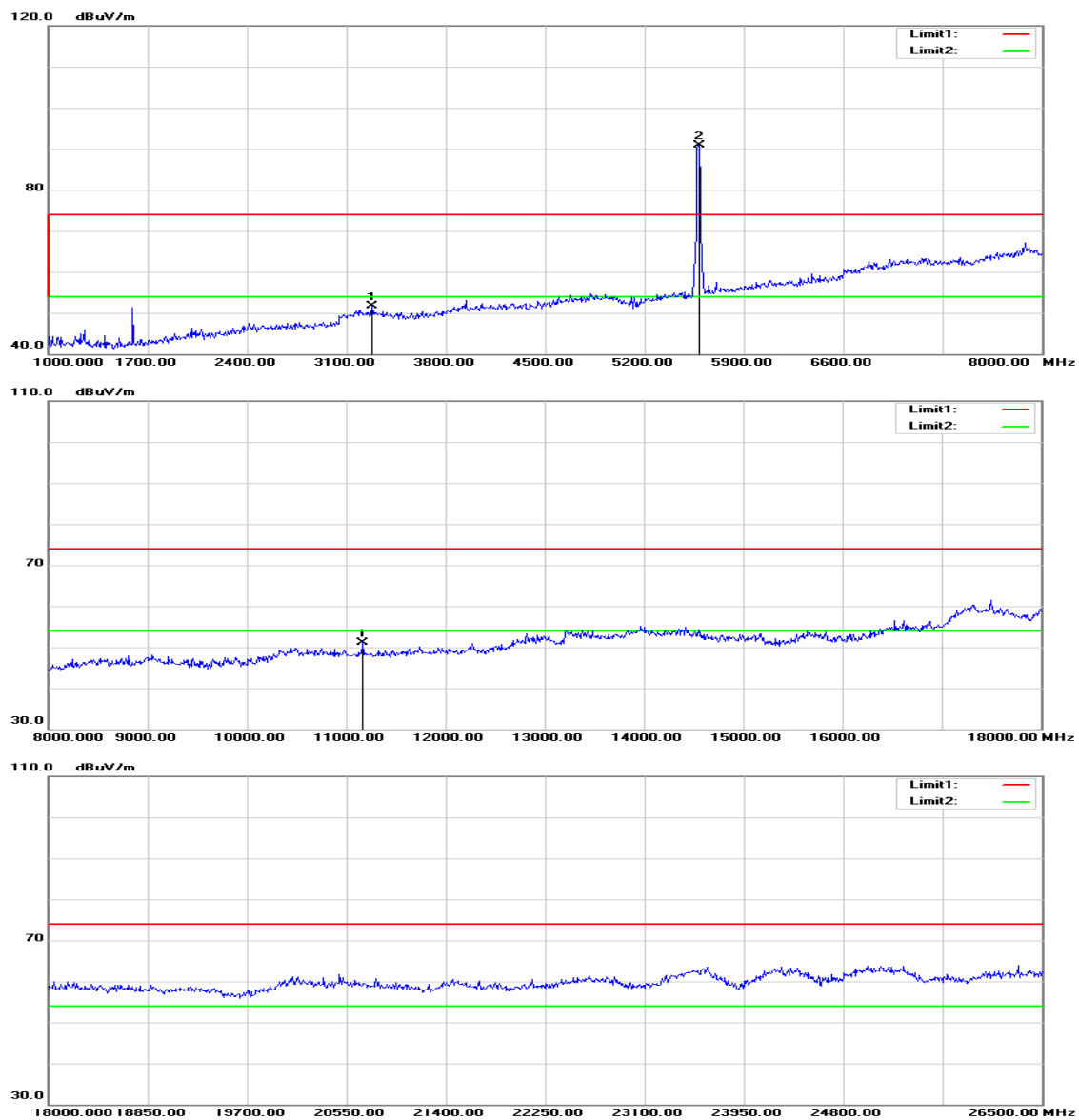


 **Agilent**

R L

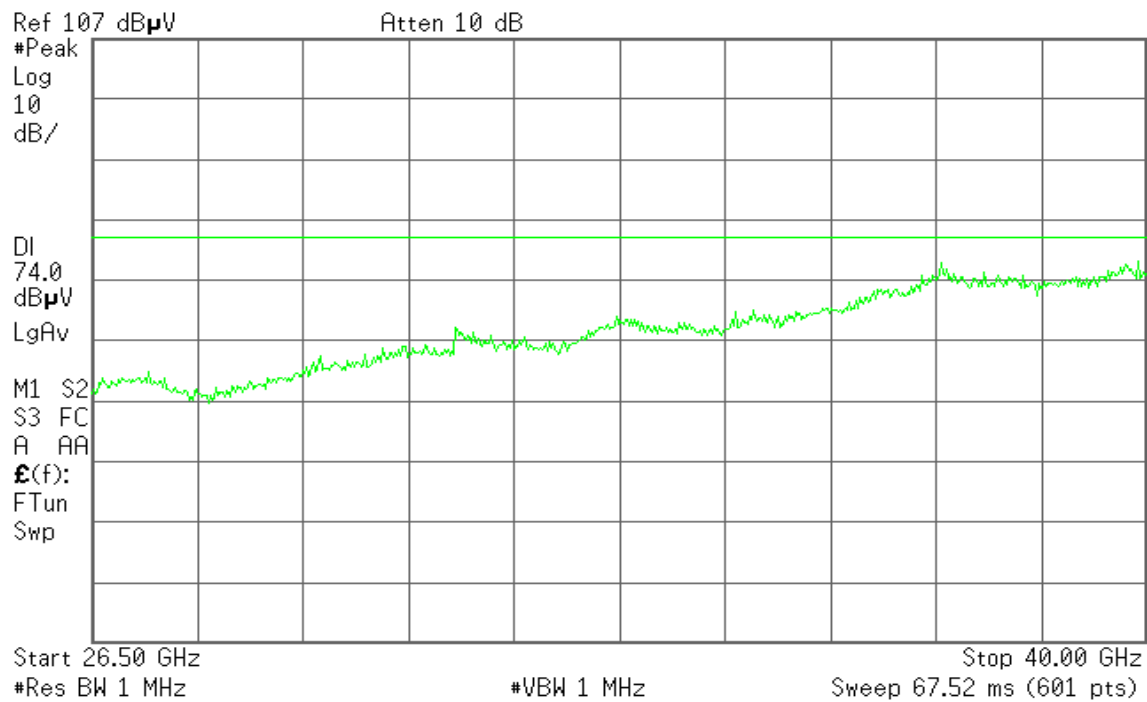


Polarity: Horizontal



 **Agilent**

R L



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

Test Date: December 24, 2015

Tested by: Jason Lu

Polarity: Ver. / Hor.

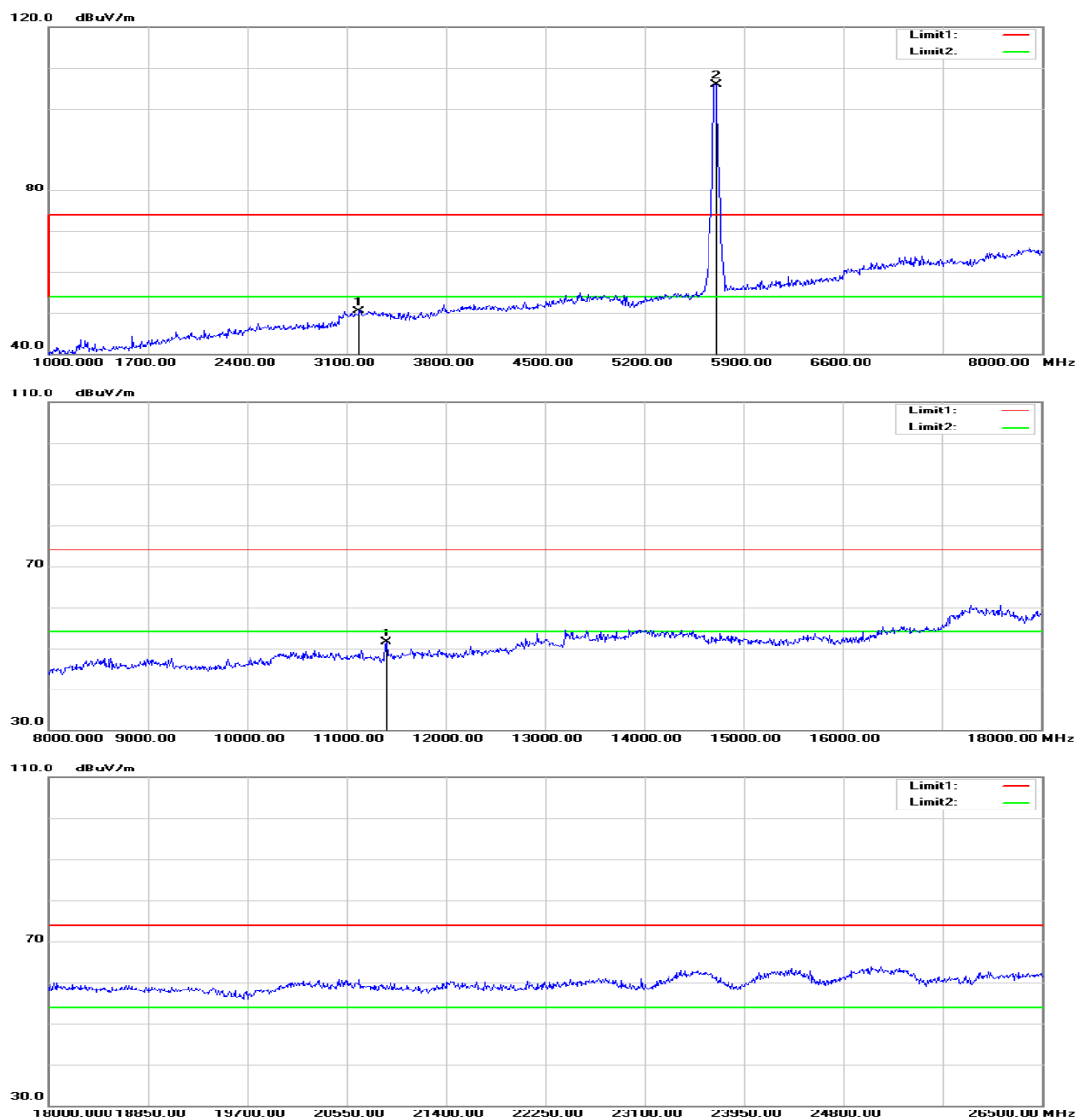
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3338.000	52.22	-1.30	50.92	74.00	-23.08	peak	V
11160.000	35.14	16.75	51.89	74.00	-22.11	peak	V
N/A							
3282.000	53.20	-1.43	51.77	74.00	-22.23	peak	H
11170.000	34.33	16.75	51.08	74.00	-22.92	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).

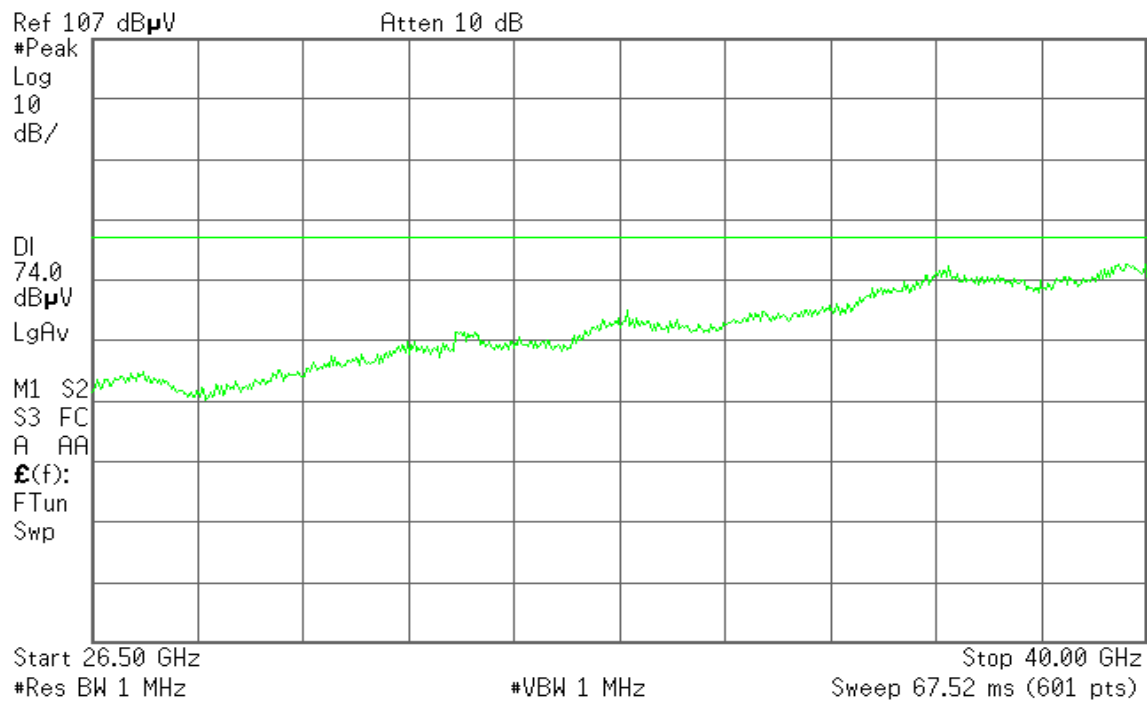
Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH High

Polarity: Vertical

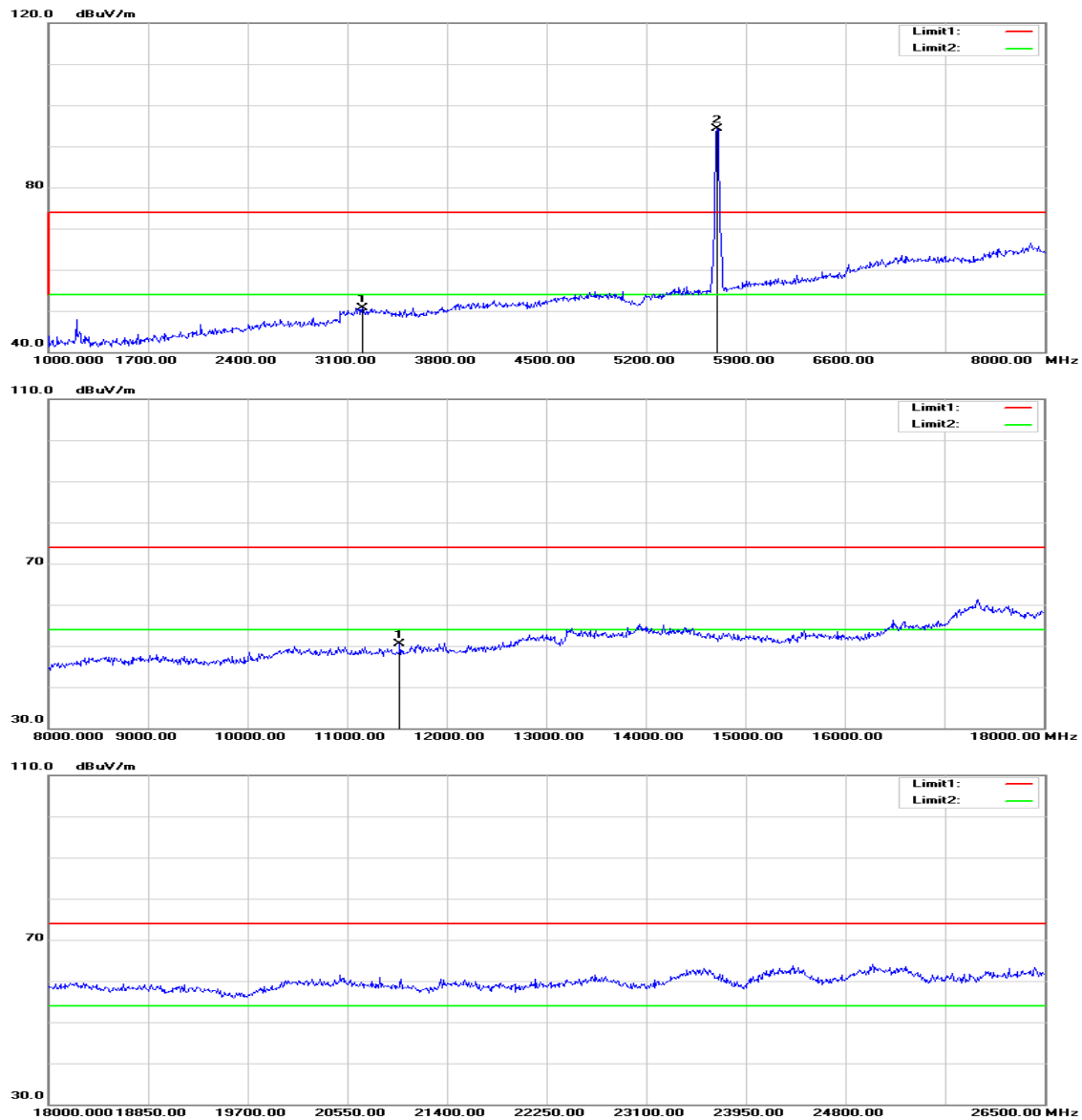


 **Agilent**

R L

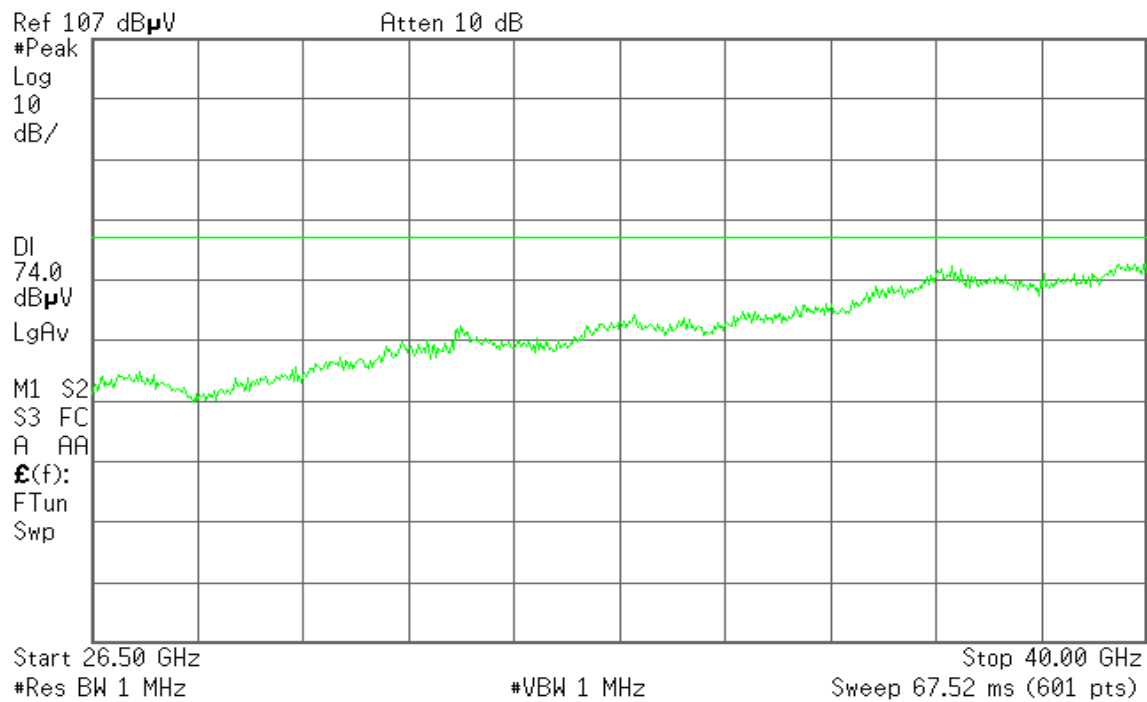


Polarity: Horizontal



 **Agilent**

R L



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

Test Date: December 24, 2015

Tested by: Jason Lu

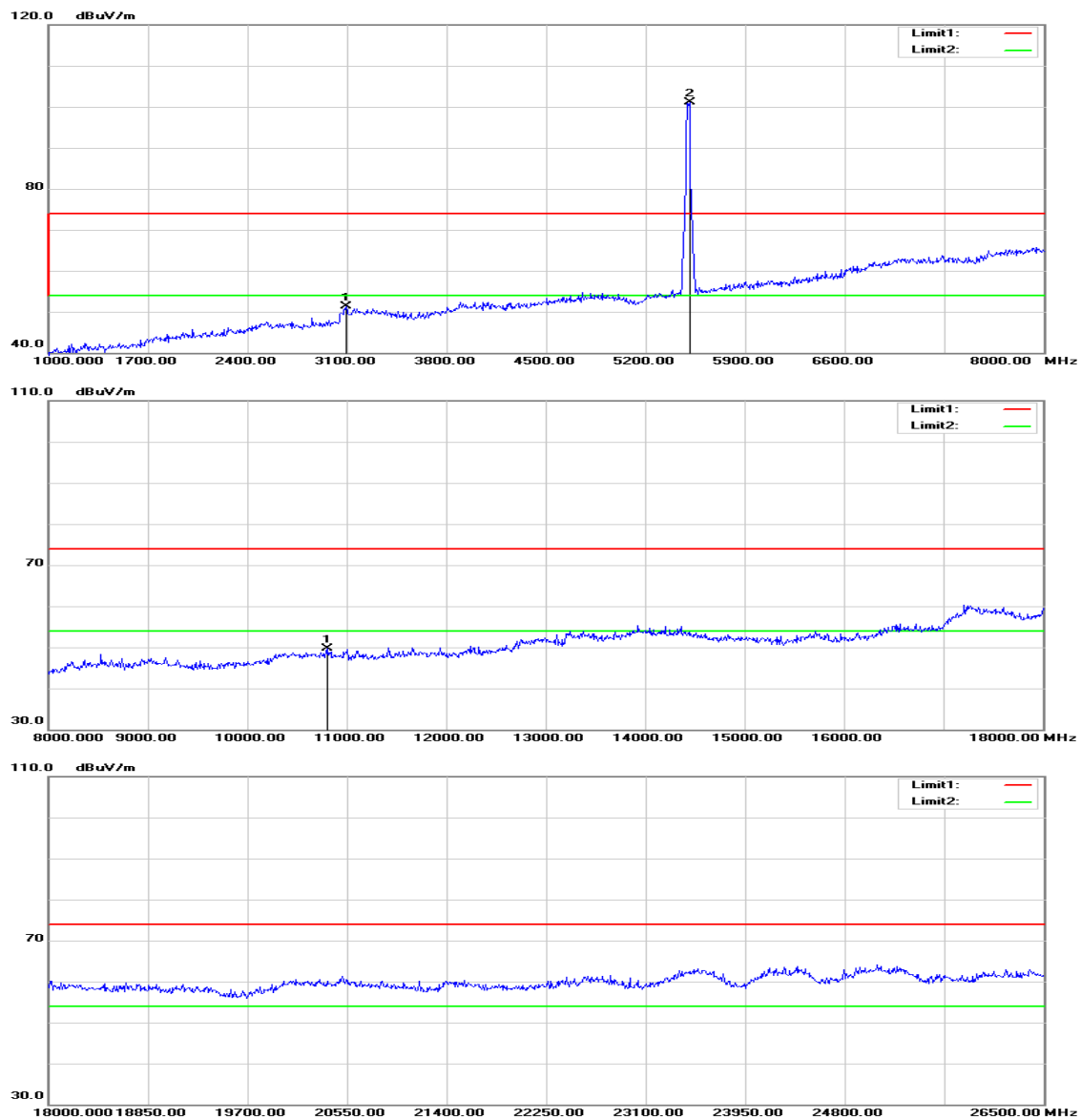
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3191.000	52.14	-1.65	50.49	74.00	-23.51	peak	V
11410.000	34.80	16.77	51.57	74.00	-22.43	peak	V
N/A							
3205.000	52.32	-1.62	50.70	74.00	-23.30	peak	H
11530.000	33.63	16.81	50.44	74.00	-23.56	peak	H
N/A							

Remark:

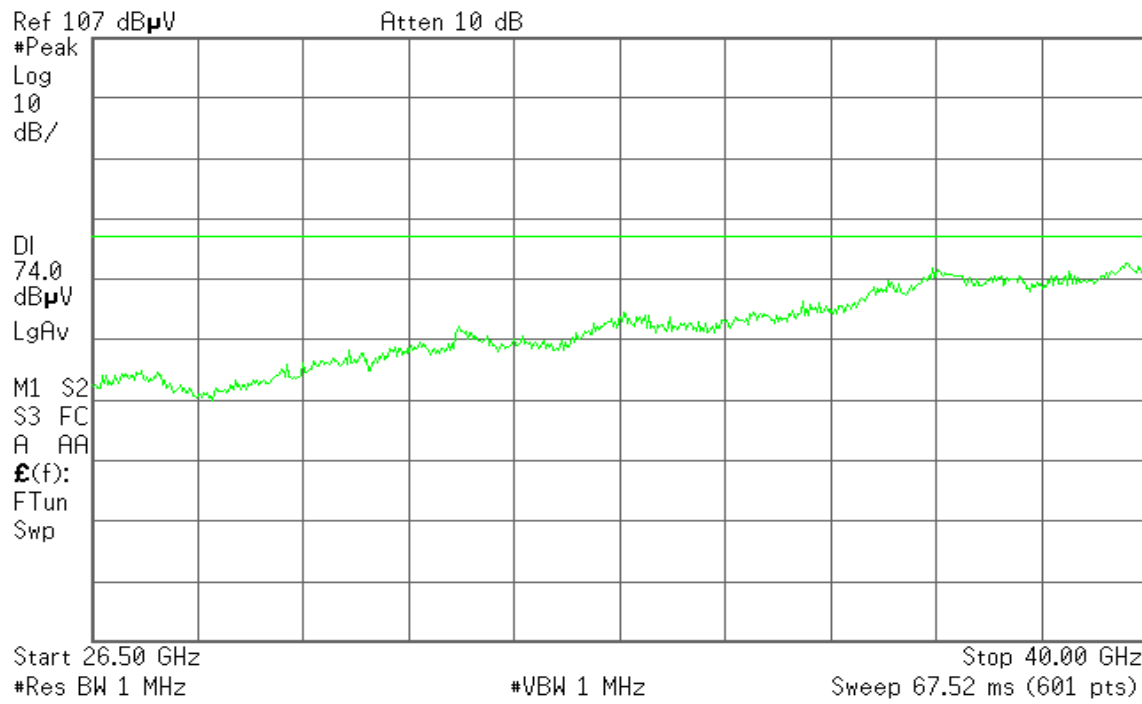
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit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

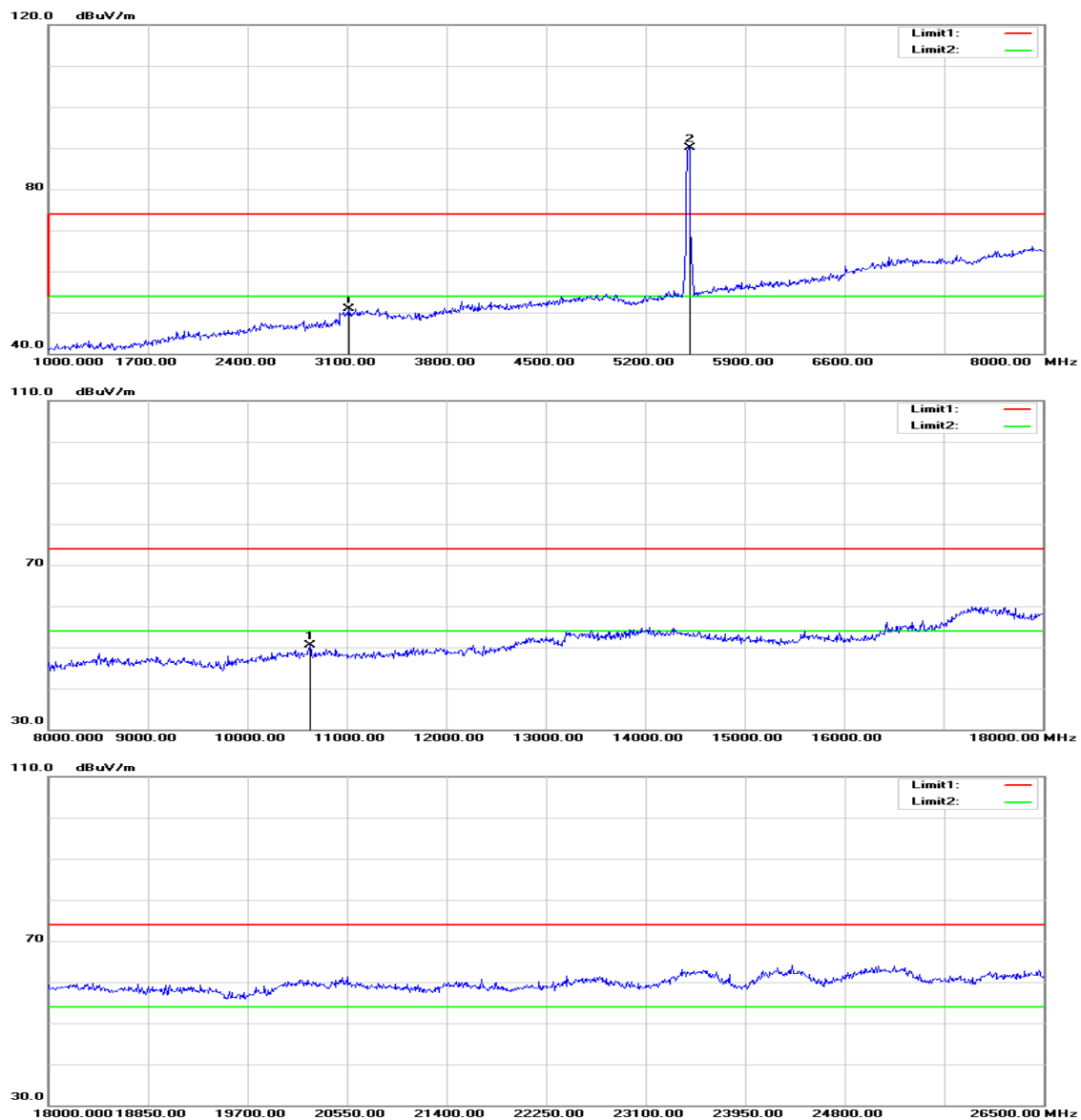


 **Agilent**

R L

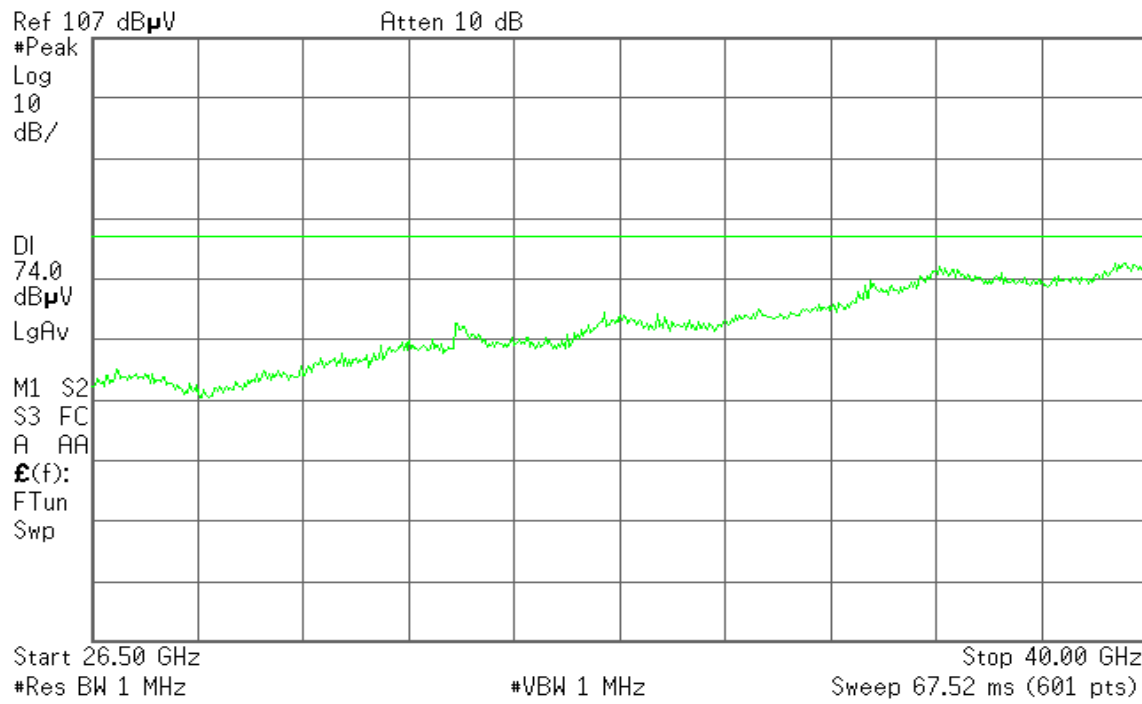


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Low
Temperature: 27°C
Humidity: 53% RH

Test Date: December 24, 2015

Tested by: Jason Lu

Polarity: Ver. / Hor.

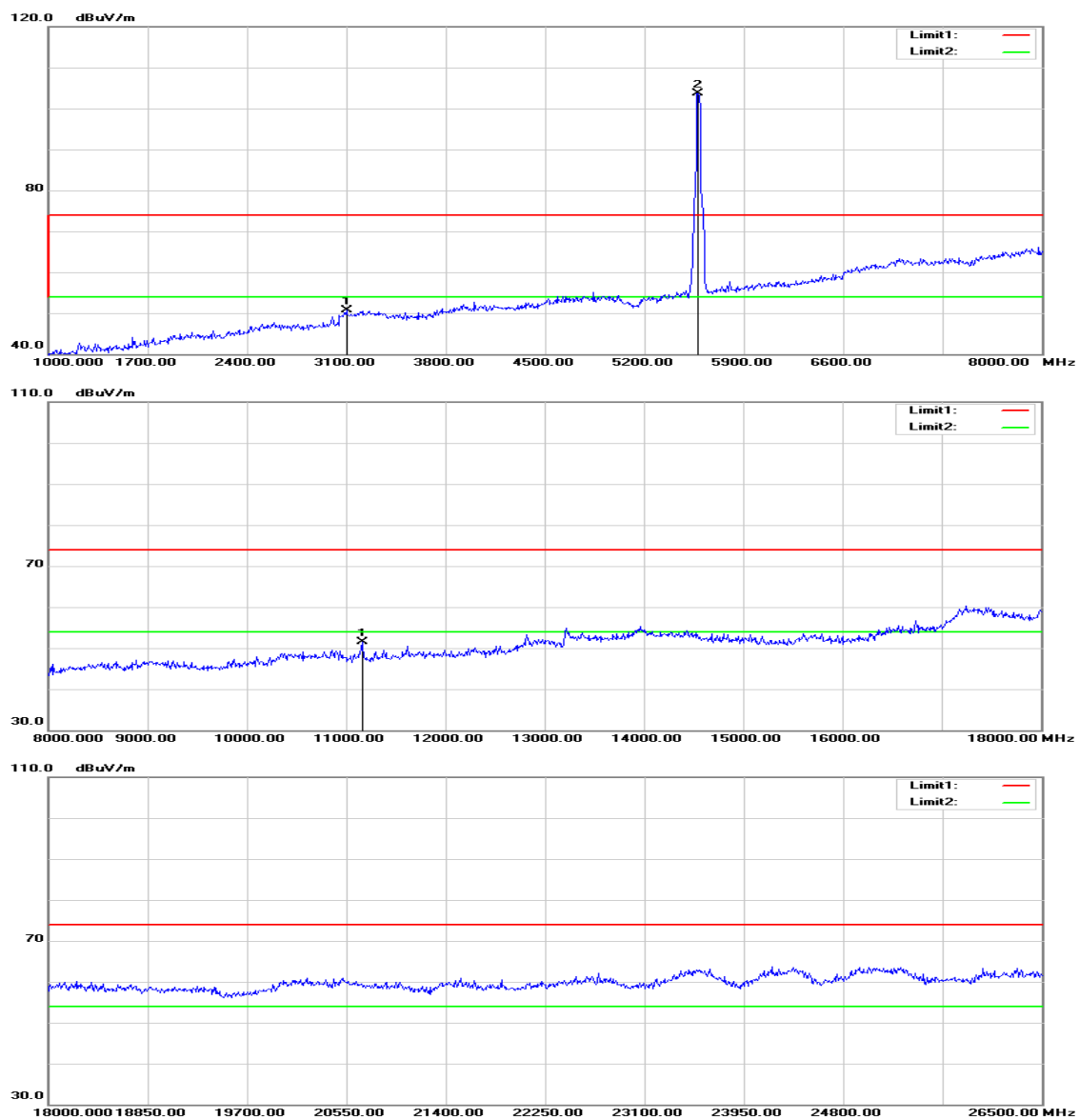
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3093.000	53.12	-1.89	51.23	74.00	-22.77	peak	V
10810.000	32.76	16.89	49.65	74.00	-24.35	peak	V
N/A							
3114.000	52.81	-1.84	50.97	74.00	-23.03	peak	H
10630.000	33.49	17.05	50.54	74.00	-23.46	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).

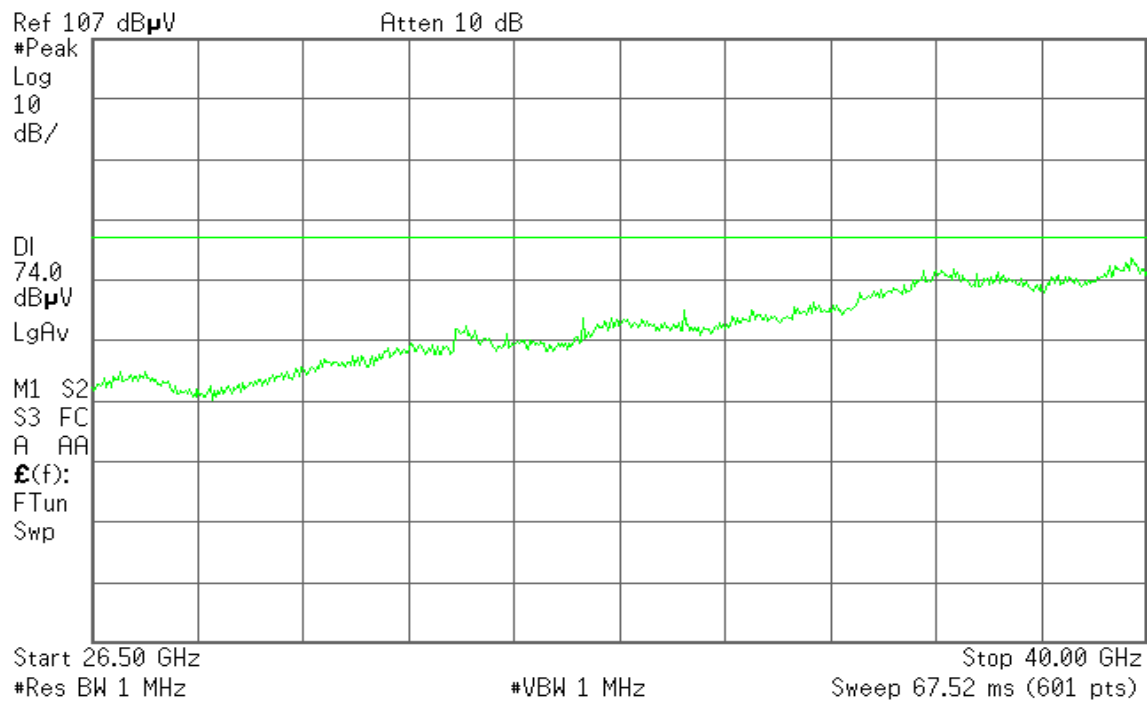
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Mid

Polarity: Vertical

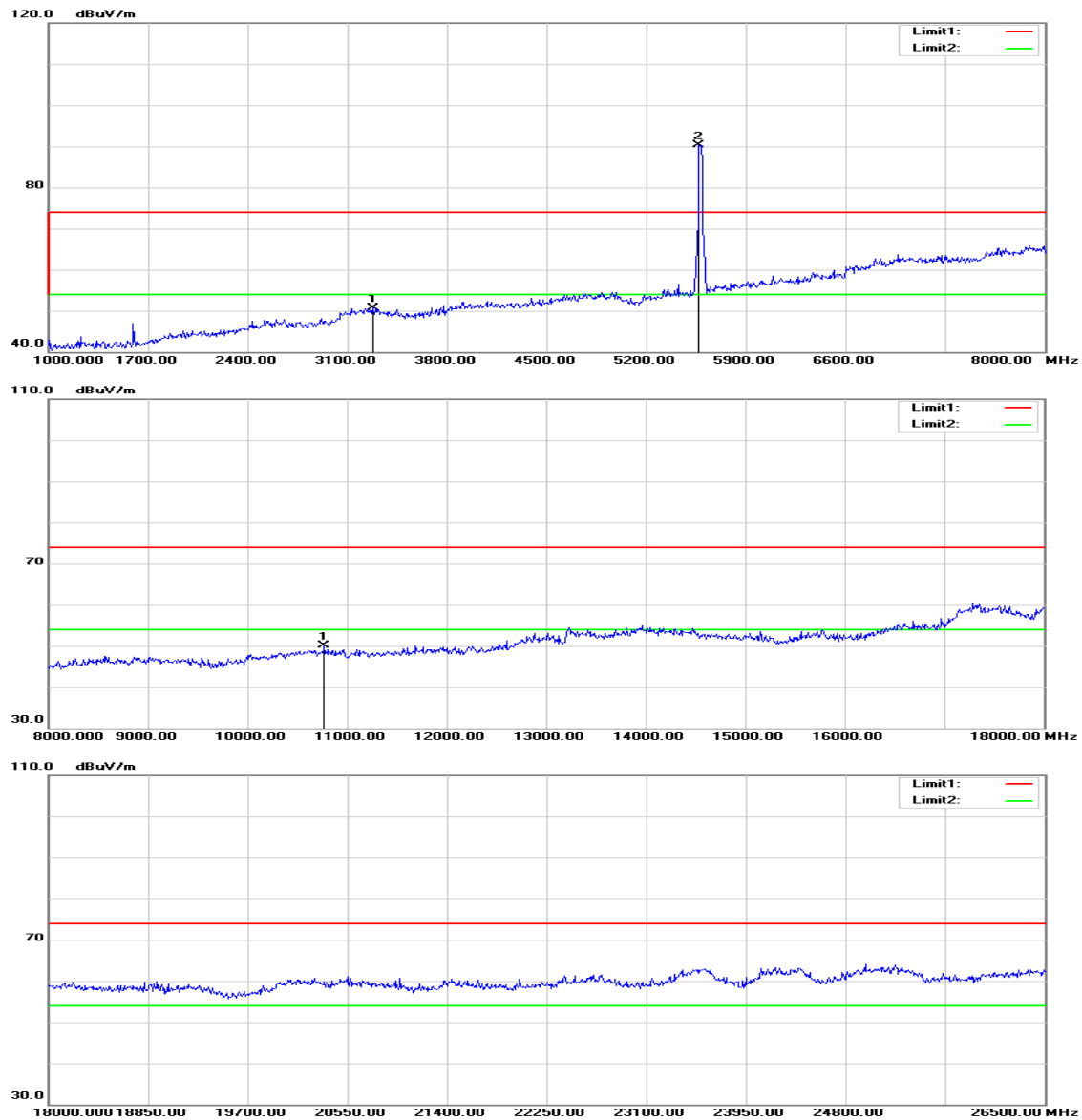


 **Agilent**

R L

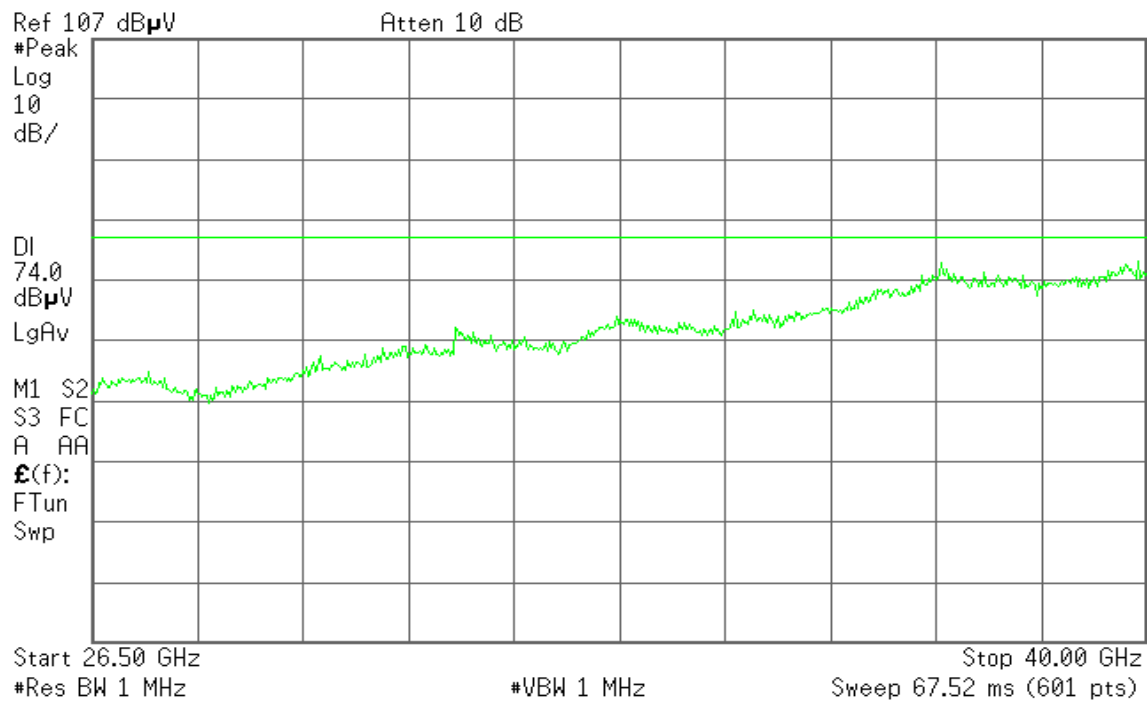


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Mid

Temperature: 27°C

Humidity: 53% RH

Test Date: December 24, 2015

Tested by: Jason Lu

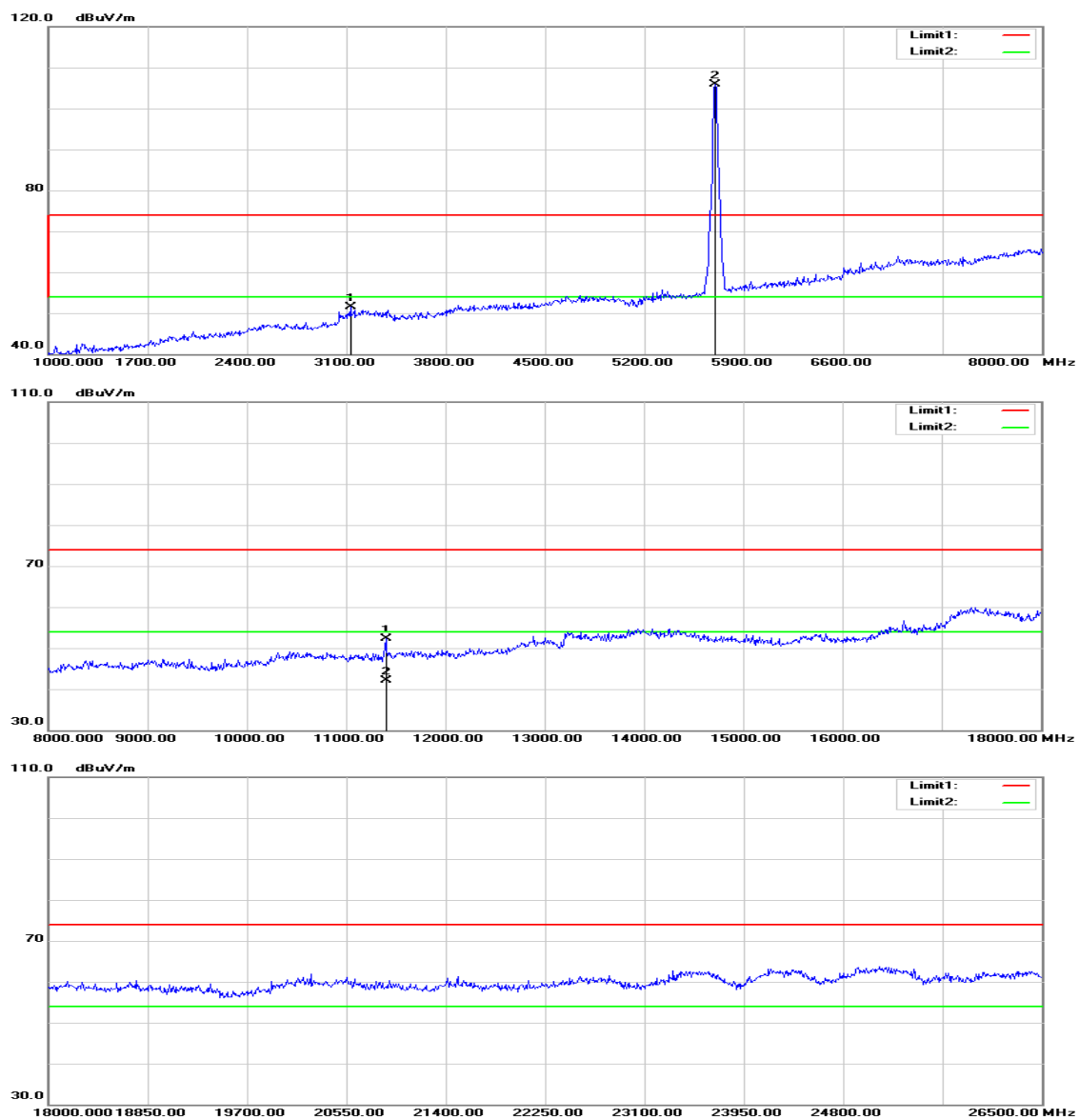
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3100.000	52.64	-1.87	50.77	74.00	-23.23	peak	V
11160.000	34.82	16.75	51.57	74.00	-22.43	peak	V
N/A							
3282.000	52.19	-1.43	50.76	74.00	-23.24	peak	H
10770.000	33.25	16.93	50.18	74.00	-23.82	peak	H
N/A							

Remark:

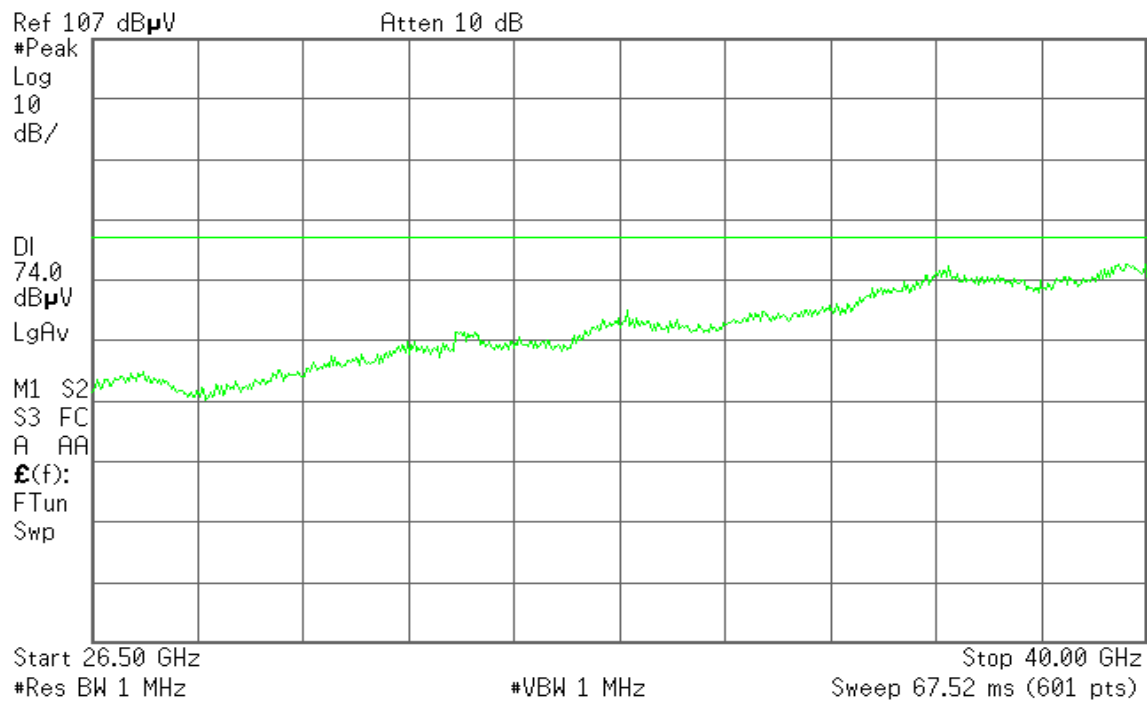
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit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

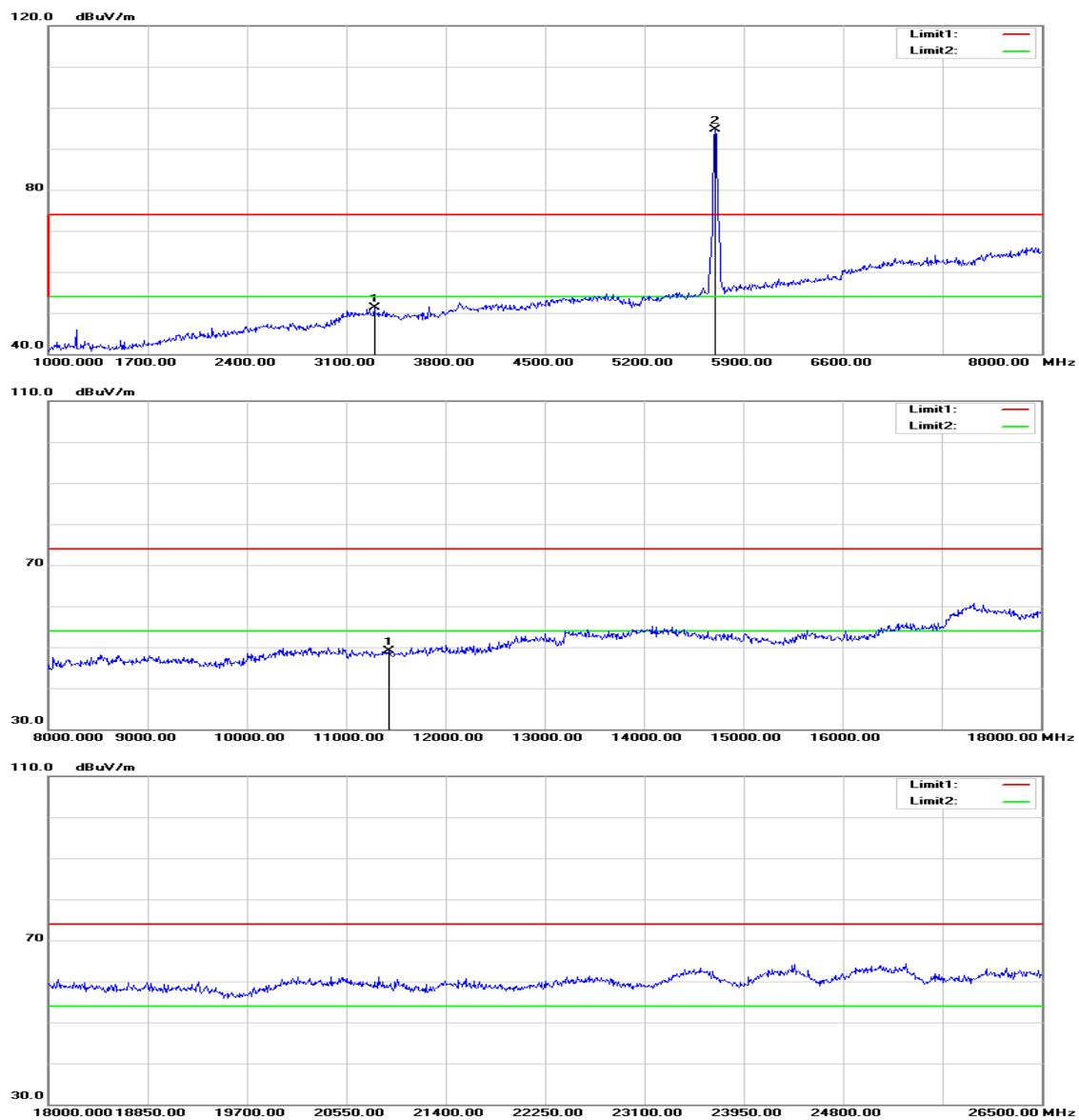


 **Agilent**

R L

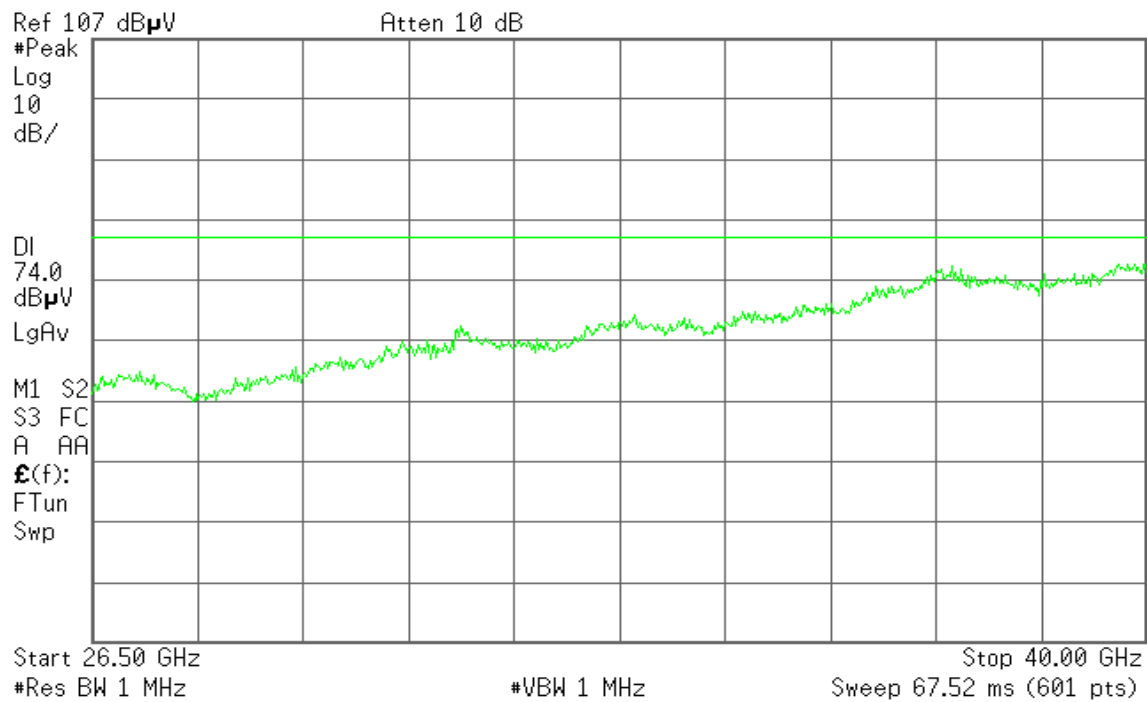


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH High

Test Date: December 24, 2015

Temperature: 27°C

Tested by: Jason Lu

Humidity: 53% RH

Polarity: Ver. / Hor.

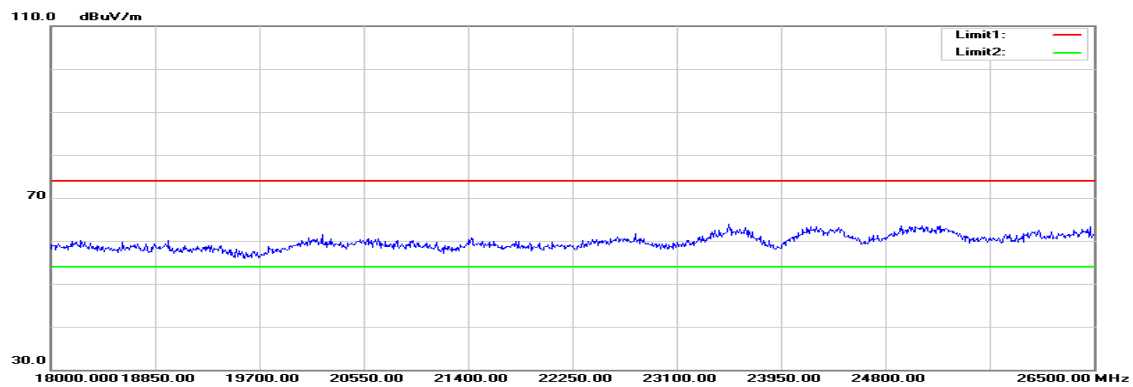
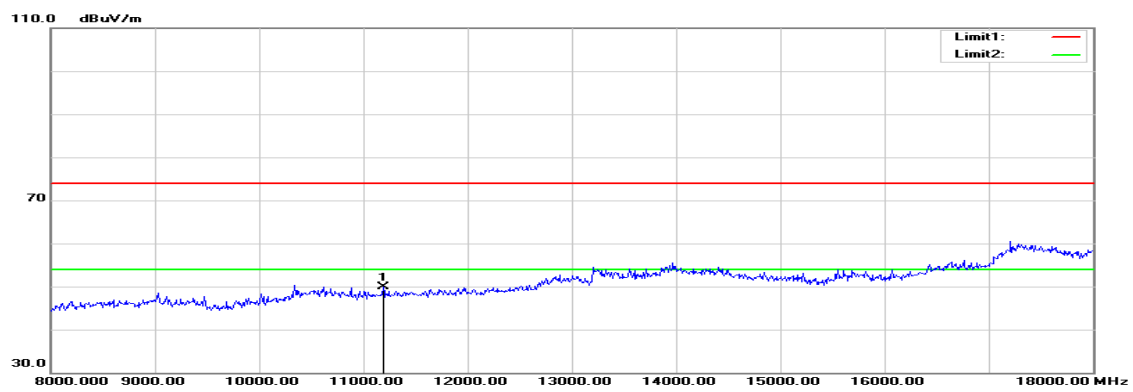
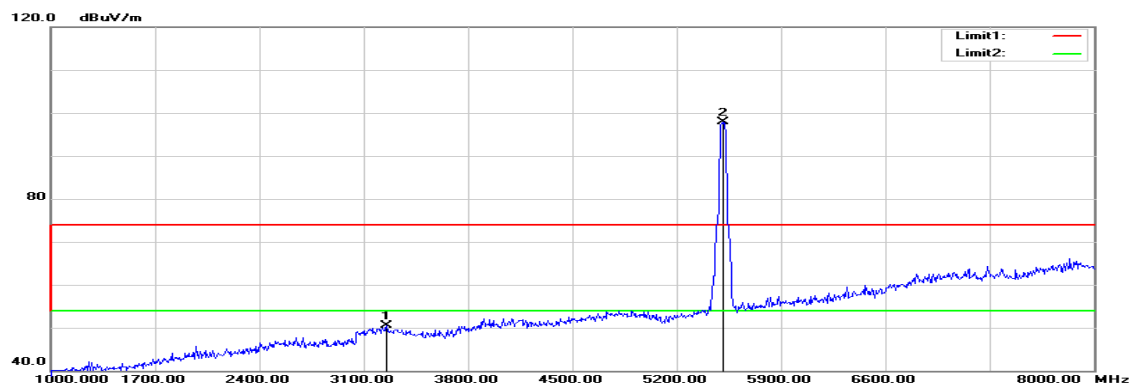
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3128.000	53.24	-1.80	51.44	74.00	-22.56	peak	V
11400.000	35.52	16.77	52.29	74.00	-21.71	peak	V
11400.000	25.33	16.77	42.10	54.00	-11.90	AVG	V
N/A							
3296.000	52.78	-1.40	51.38	74.00	-22.62	peak	H
11430.000	32.38	16.77	49.15	74.00	-24.85	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).

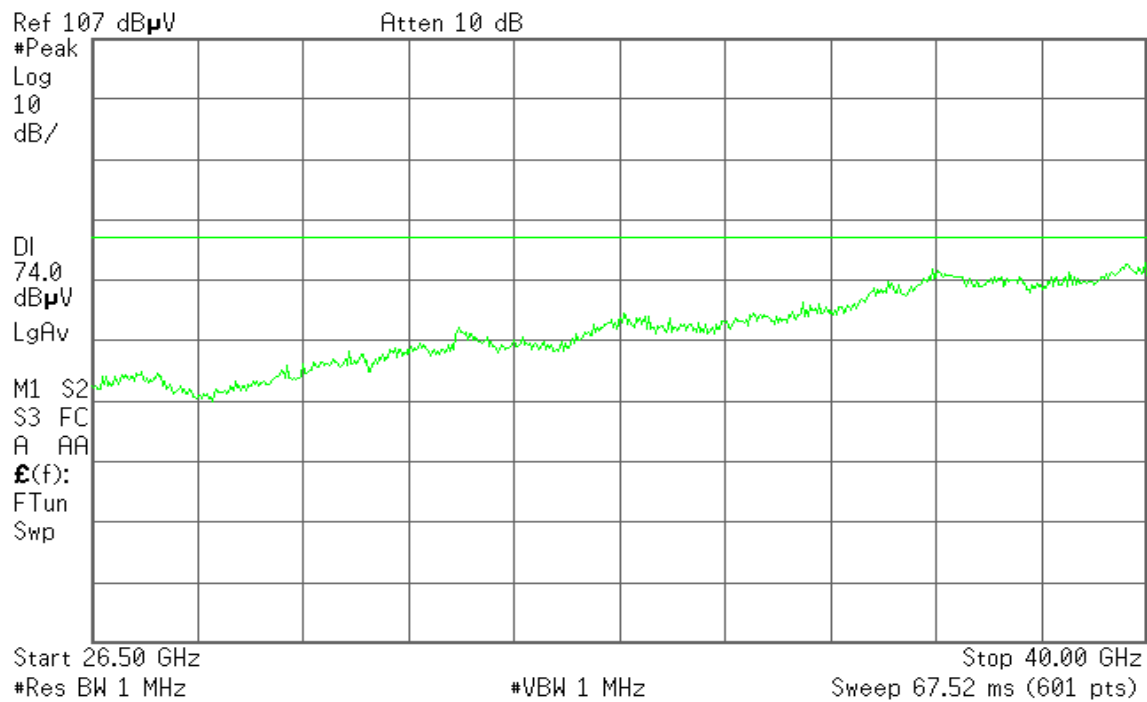
Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Low

Polarity: Vertical

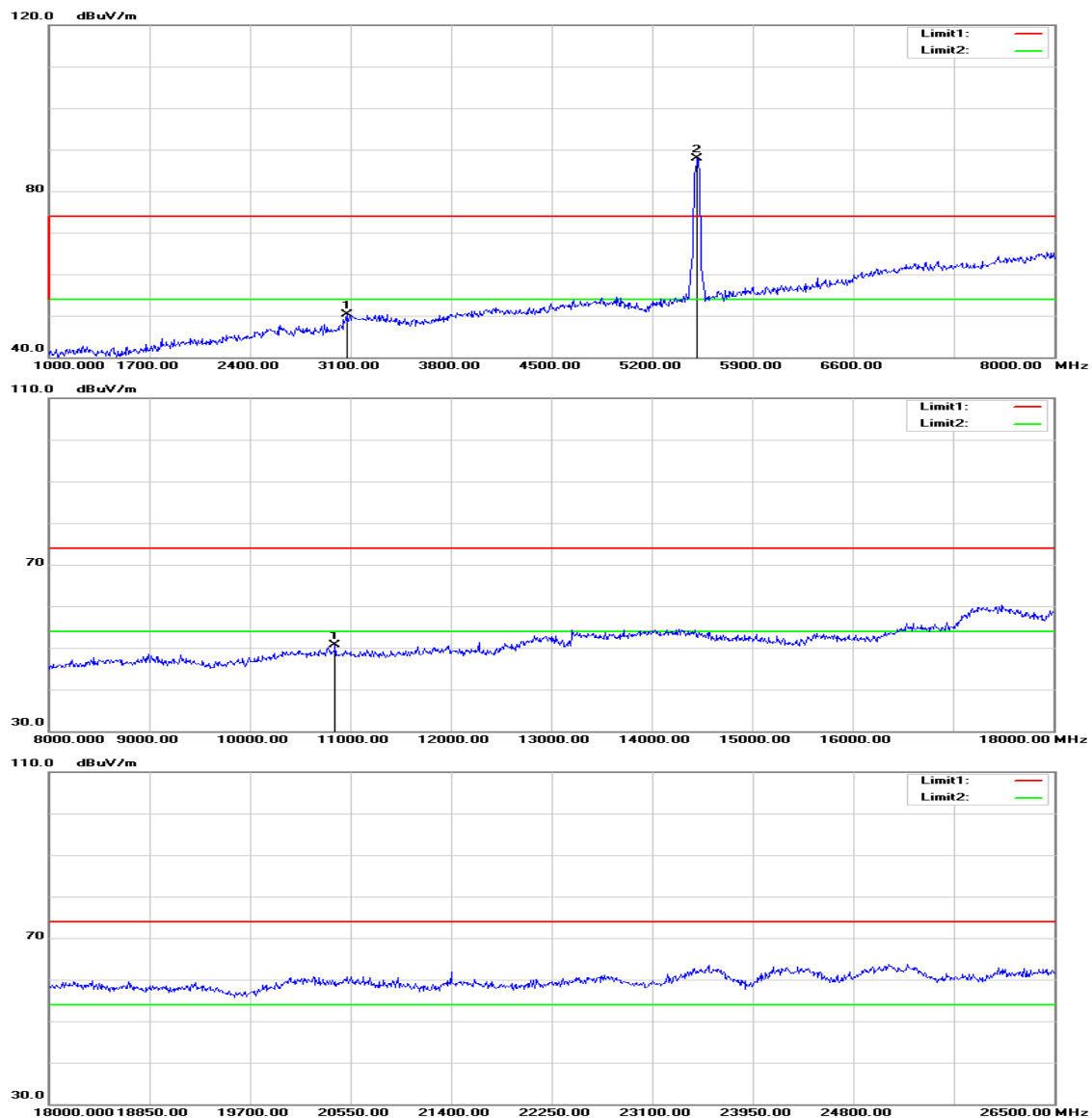


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R L

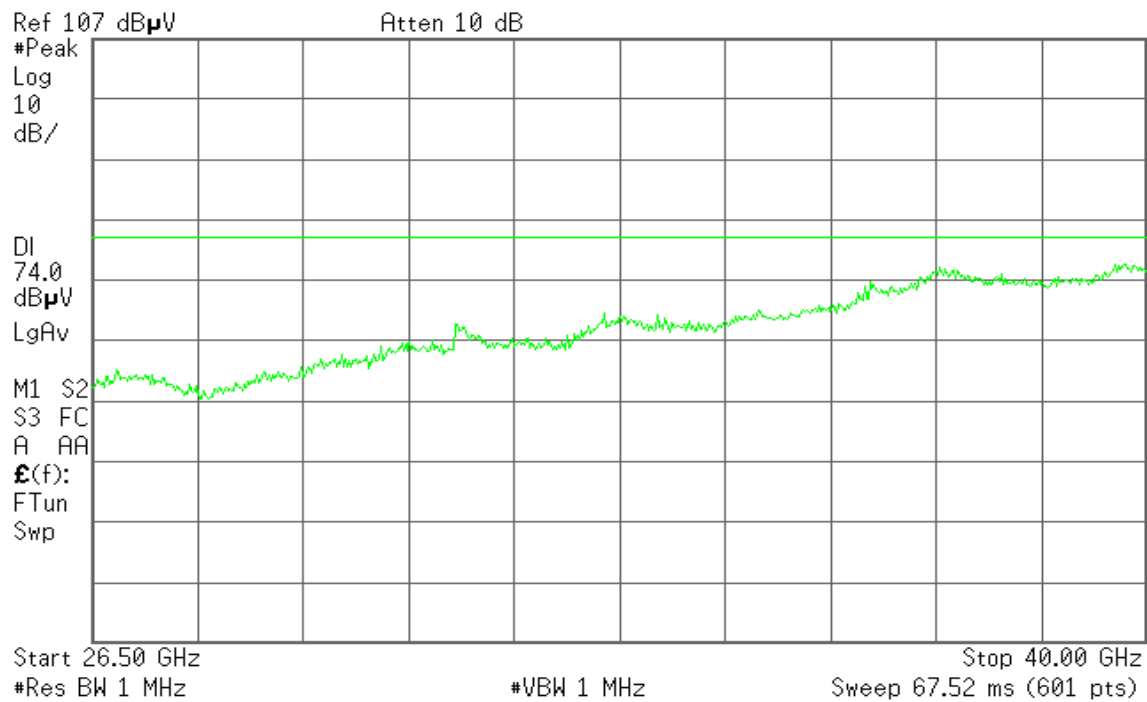


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Low

Test Date: December 24, 2015

Temperature: 27°C

Tested by: Jason Lu

Humidity: 53% RH

Polarity: Ver. / Hor.

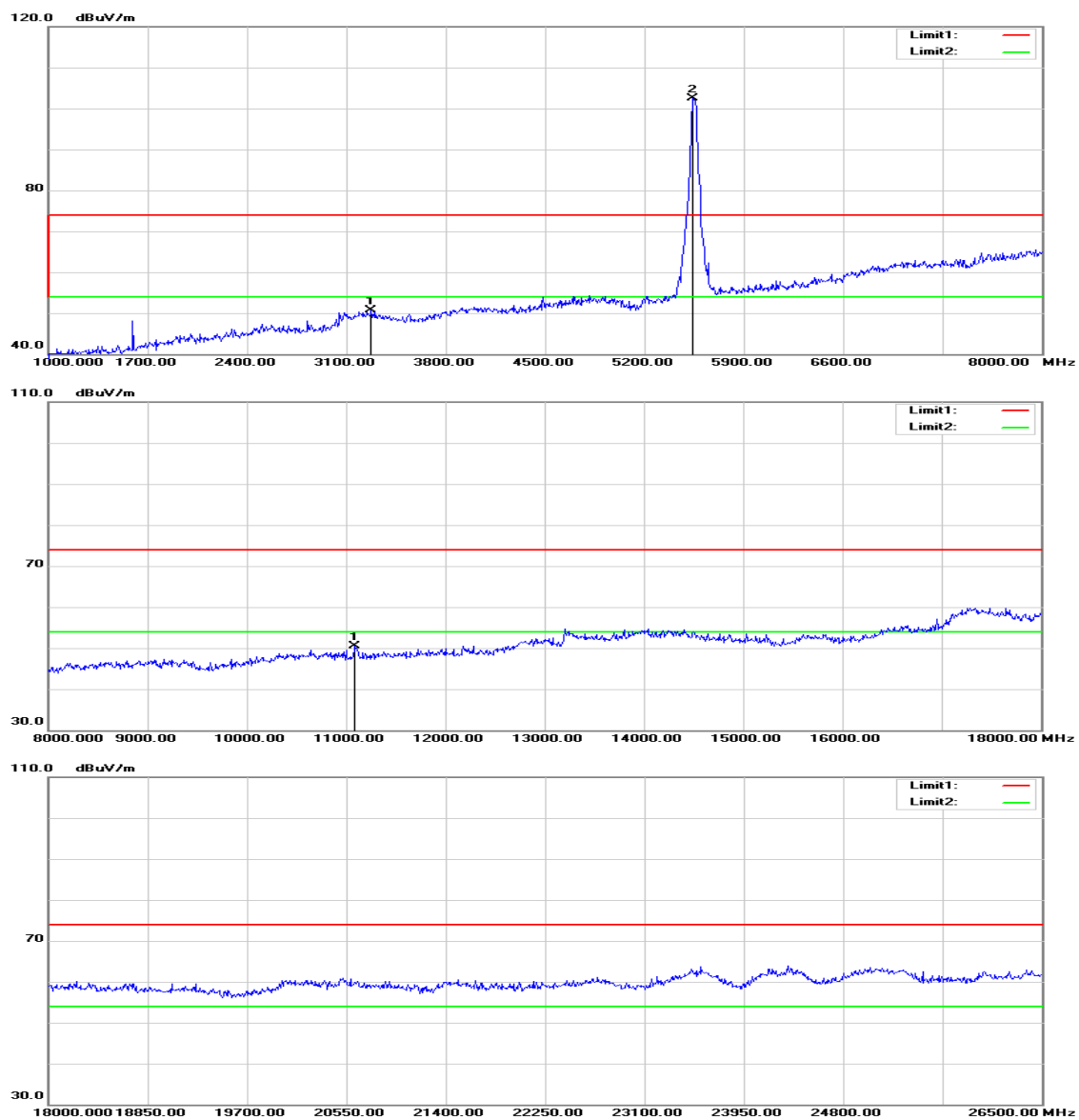
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3254.000	51.93	-1.50	50.43	74.00	-23.57	peak	V
11190.000	33.20	16.75	49.95	74.00	-24.05	peak	V
N/A							
3072.000	52.14	-1.94	50.20	74.00	-23.80	peak	H
10850.000	33.76	16.86	50.62	74.00	-23.38	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).

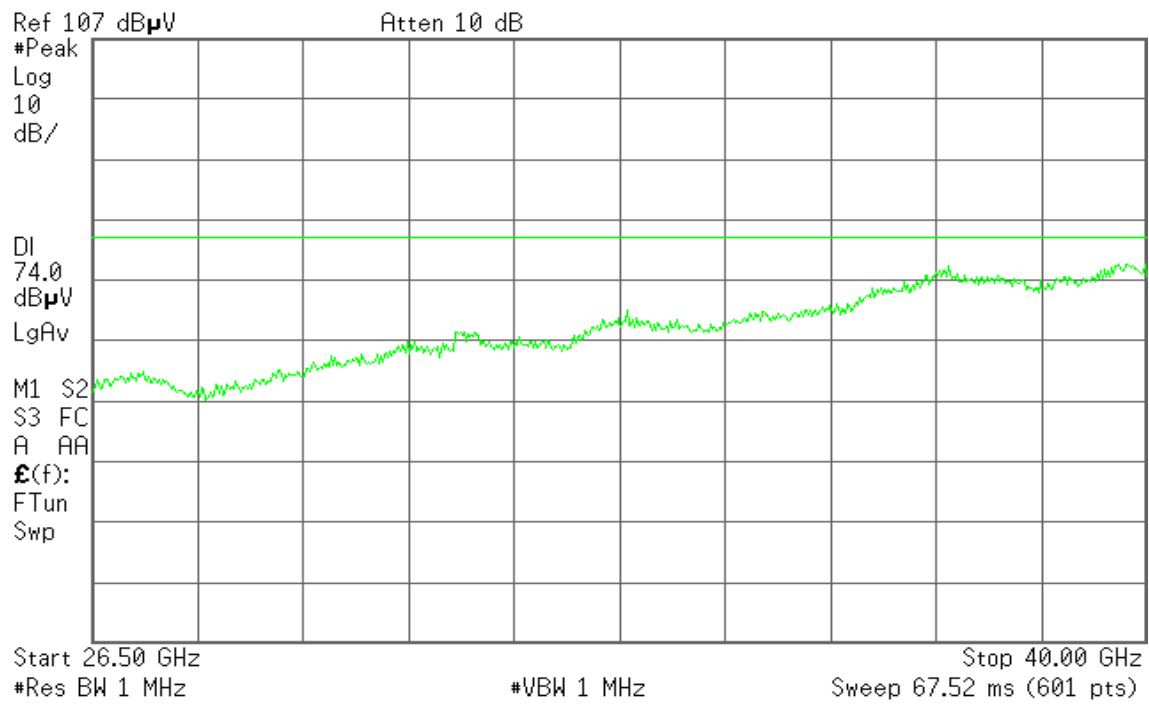
Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Mid

Polarity: Vertical

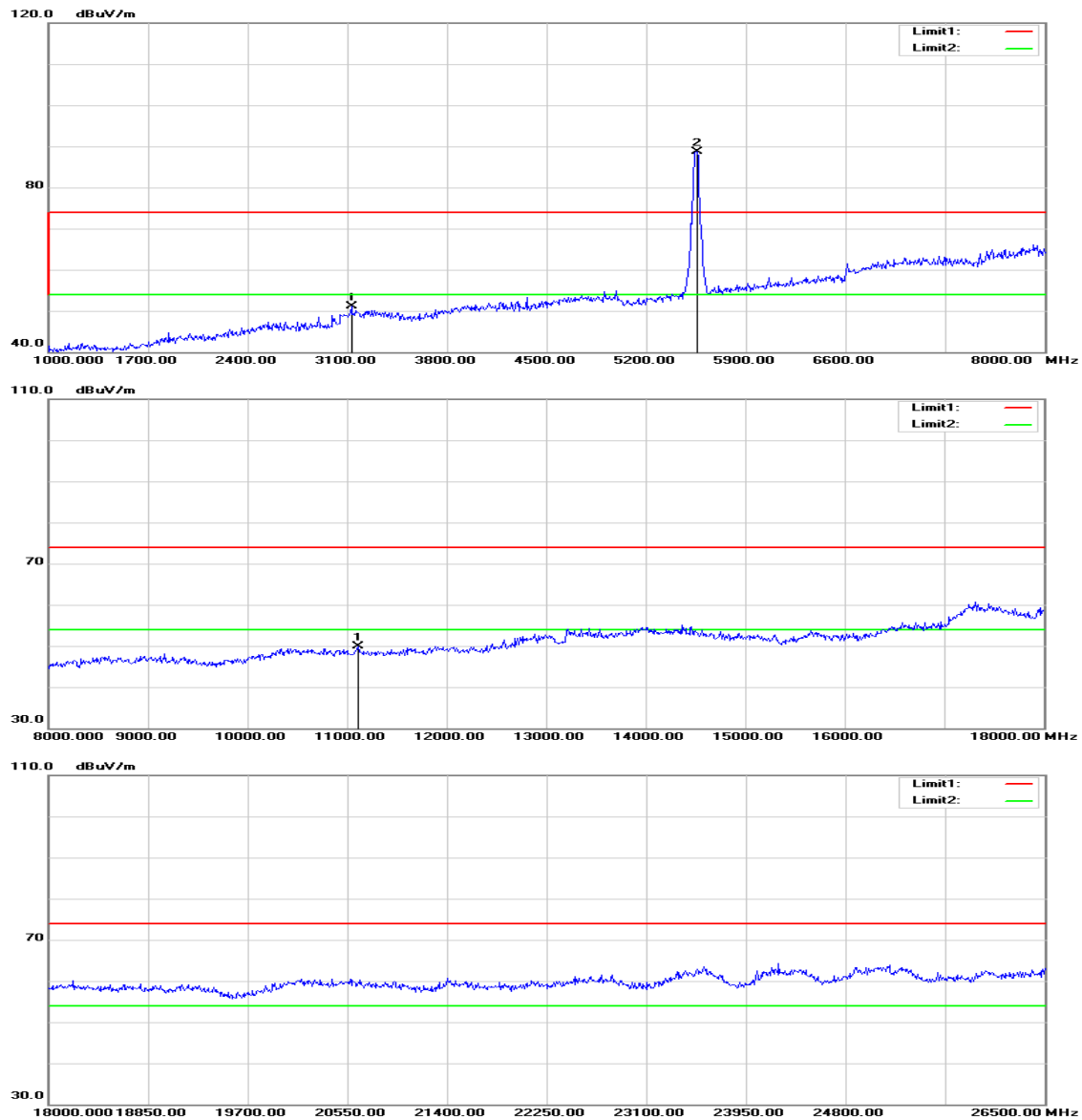


 **Agilent**

R L

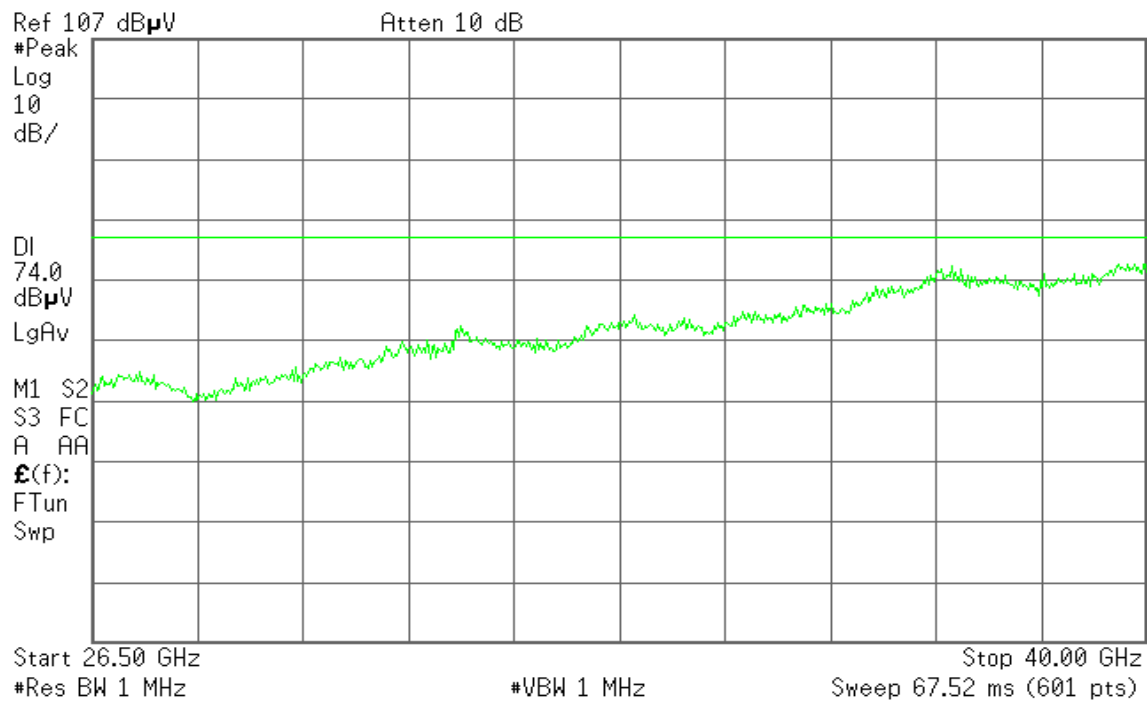


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Mid

Temperature: 27°C

Humidity: 53% RH

Test Date: December 24, 2015

Tested by: Jason Lu

Polarity: Ver. / Hor.

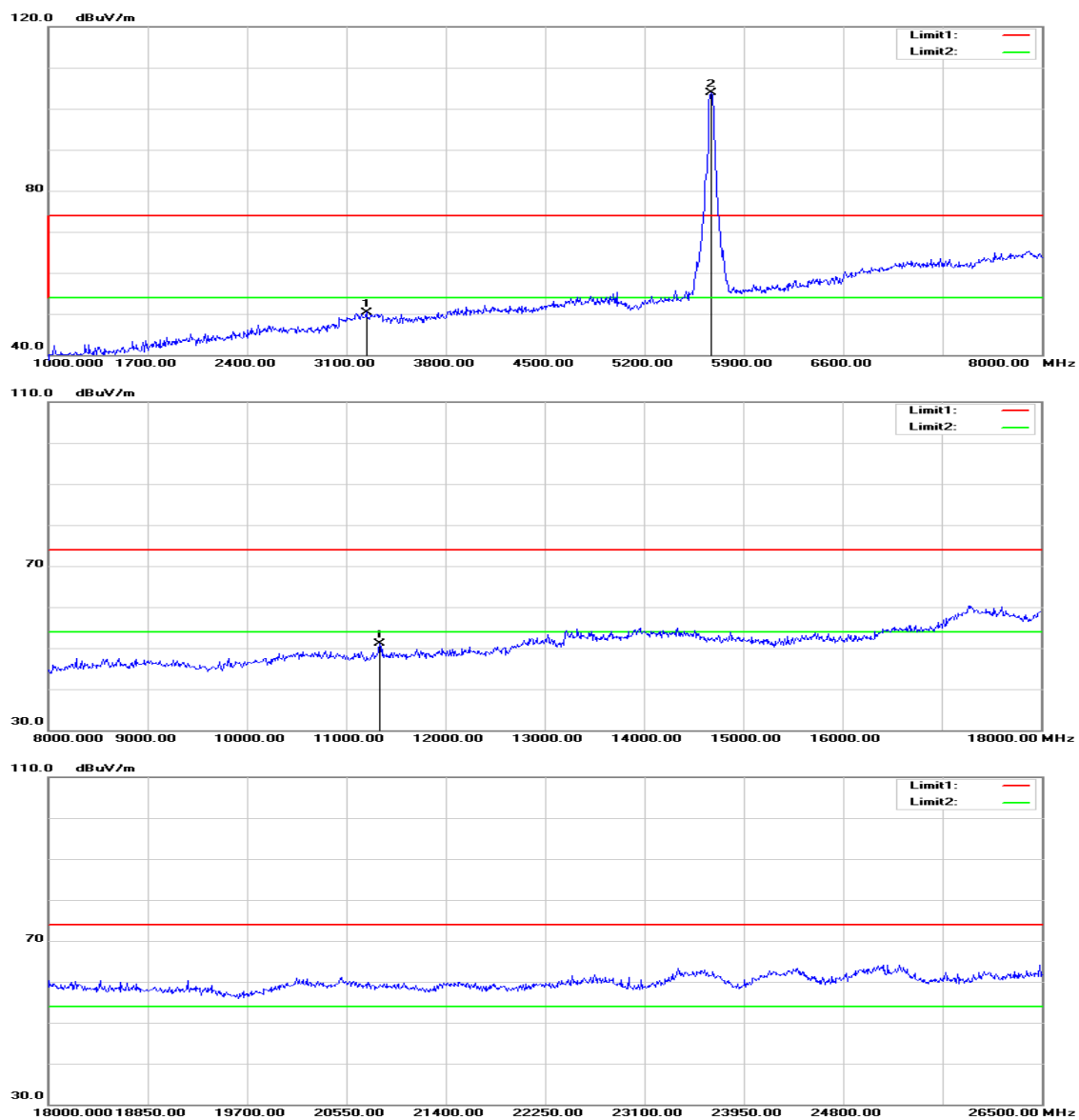
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3275.000	52.19	-1.45	50.74	74.00	-23.26	peak	V
11090.000	33.67	16.74	50.41	74.00	-23.59	peak	V
N/A							
3128.000	52.86	-1.80	51.06	74.00	-22.94	peak	H
11110.000	33.07	16.74	49.81	74.00	-24.19	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).

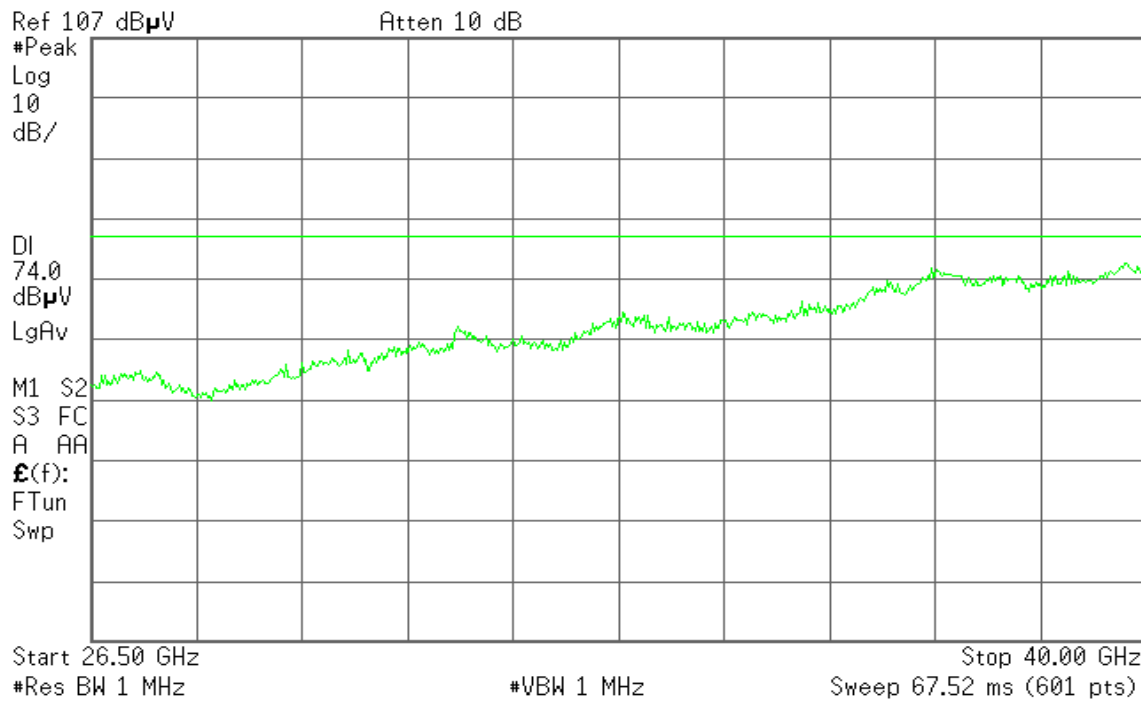
Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH High

Polarity: Vertical

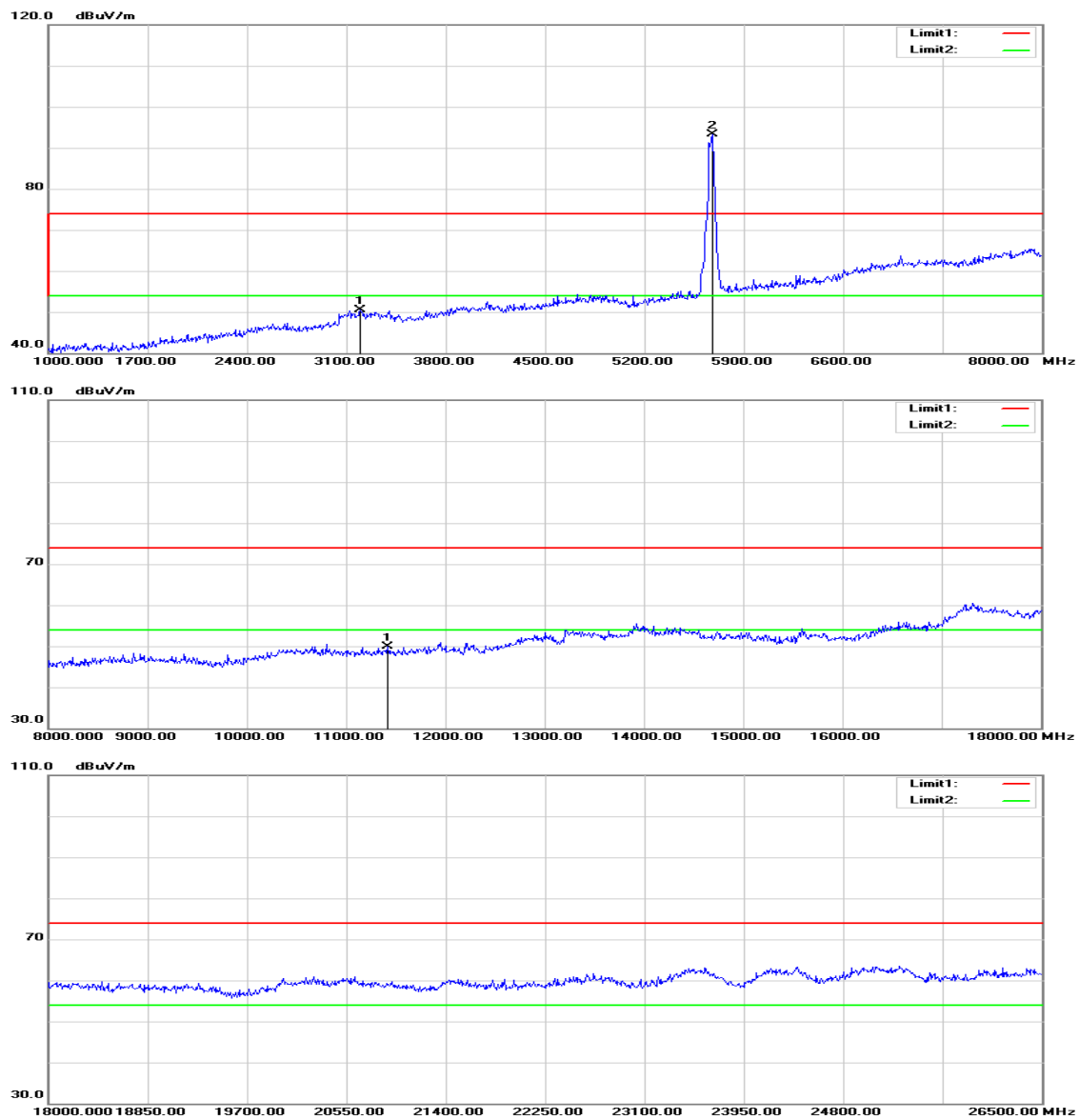


 **Agilent**

R L

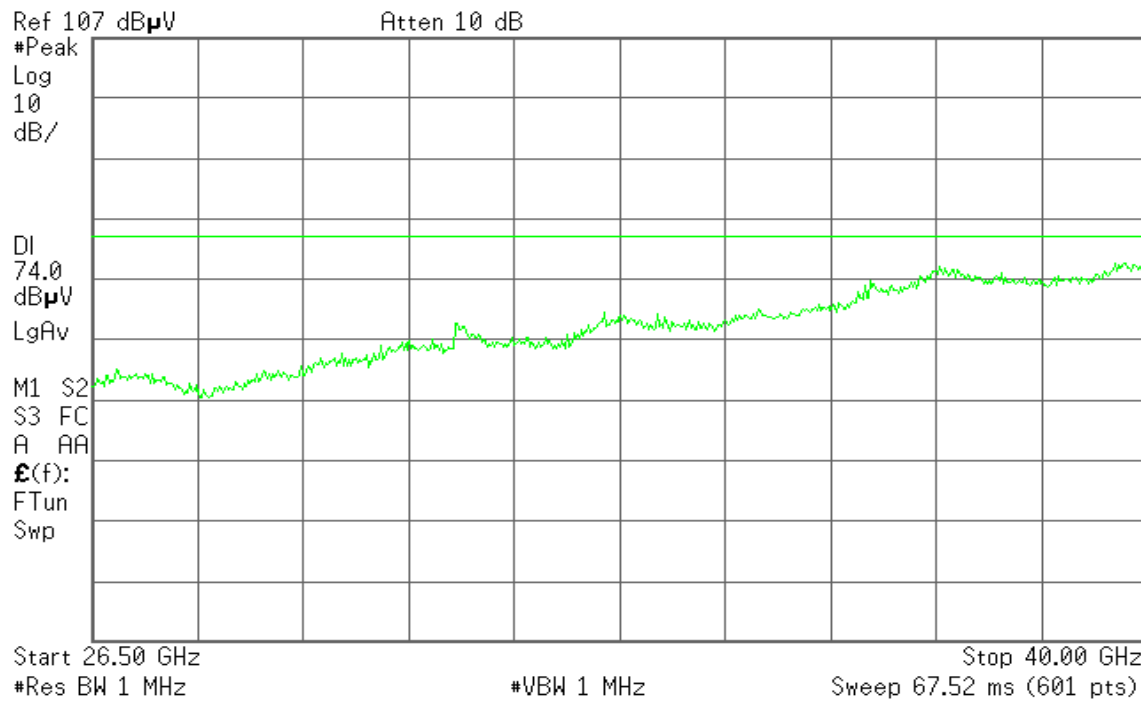


Polarity: Horizontal



 **Agilent**

R L



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH High

Temperature: 27°C

Humidity: 53% RH

Test Date: December 24, 2015

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)
3240.000	51.93	-1.53	50.40	74.00	-23.60	peak	V
11340.000	34.43	16.76	51.19	74.00	-22.81	peak	V
N/A							
3198.000	52.10	-1.63	50.47	74.00	-23.53	peak	H
11420.000	33.20	16.77	49.97	74.00	-24.03	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

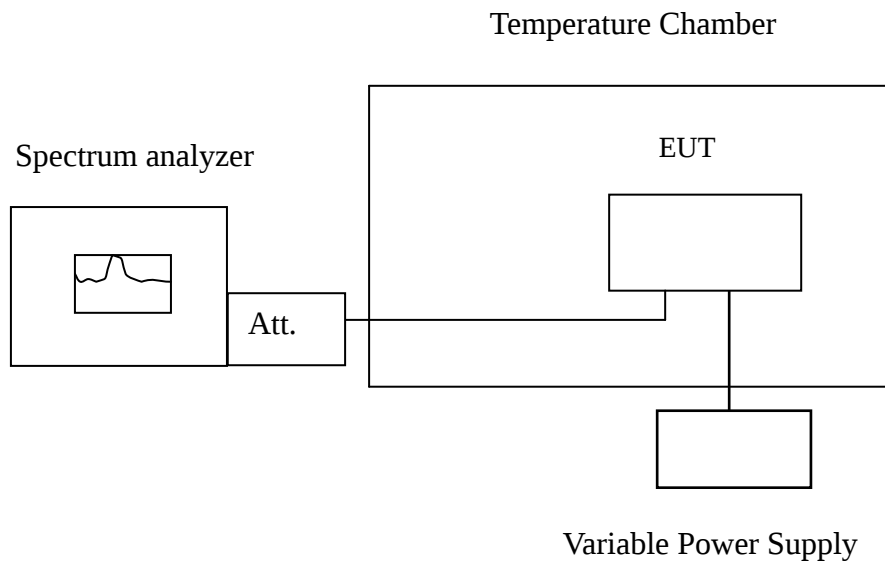
Not applicable, because EUT not connect to AC Main Source direct.

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	5279.941200	-11.13636364	Pass
40	12	5279.942300	-10.9280303	Pass
30	12	5279.952600	-8.977272727	Pass
20	12	5279.967600	-6.136363636	Pass
10	12	5279.988000	-2.272727273	Pass
0	12	5280.003300	0.625	Pass
-10	12	5280.018600	3.522727273	Pass
-20	12	5280.027900	5.284090909	Pass

Operating Frequency: 5280 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit	Result
			±20ppm	(Pass/Fail)
20	10.2	5279.967600	-6.136363636	Pass
	12	5279.967600	-6.136363636	Pass
	13.8	5279.967600	-6.136363636	Pass