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

TEST REPORT

For

802.11a/b/g/n/ac 2T2R + BT4.1LE USB Combo Module

Model: WCBN4502B

Trade Name: LITE-ON

Issued to

Lite-On Technology Corp.
Bldg. C, 90, Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)
http://www.ccsrf.com
service@ccsrf.com
Issued Date: June 16, 2015

Testing Laboratory
1309

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		June 16, 2015		Initial Issue	ALL	Doris Chu

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1. TEST RESULT CERTIFICATION

Applicant:	Lite-On Technology Corp. Bldg. C, 90, Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C
Manufacturer:	LITE-ON TECHNOLOGY (Changzhou) CO., LTD A9 Building, No.88, Yanghu Road, Wujin Hi-Tech Industrial Development Zone, Changzhou City, Jiangsu Province, P. R. China
Equipment Under Test:	802.11a/b/g/n/ac 2T2R + BT4.1LE USB Combo Module
Trade Name:	LITE-ON
Model:	WCBN4502B
Date of Test:	June 8 ~ 9, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR Part 15 Subpart E & Industry Canada RSS-247 Issue 1	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 for IC, ANSI C63.10: 2009 for FCC 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 and Industry Canada RSS-247 Issue 1.

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	802.11a/b/g/n/ac 2T2R + BT4.1LE USB Combo Module
Trade Name	LITE-ON
Model Number	WCBN4502B
Model Discrepancy	N/A
Received Date	May 28, 2015
Power Supply	Power form host device

Operating Frequency Range & Number of Channels

	Mode	Frequency Range (MHz)	Number of Channels
UNII Band I	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
	IEEE 802.11ac VHT 80 MHz	5210	1 Channels
UNII Band II	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
	IEEE 802.11ac VHT 80 MHz	5290	1 Channels
UNII Band III	IEEE 802.11a	5500 ~ 5720	12 Channels
	IEEE 802.11n HT 20 MHz	5500 ~ 5720	12 Channels
	IEEE 802.11n HT 40 MHz	5510 ~ 5710	6 Channels
	IEEE 802.11ac VHT 80 MHz	5530 ~ 5690	3 Channels

Transmit Power

	Mode	Frequency Range (MHz)	Output Power (dBm)	Output Power (w)
UNII Band I	IEEE 802.11a	5180 – 5240	18.71	0.0743
	IEEE 802.11n HT 20 MHz	5180 – 5240	19.56	0.0904
	IEEE 802.11n HT 40 MHz	5190 ~ 5230	19.21	0.0834
	IEEE 802.11ac VHT 80 MHz	5210	13.93	0.0247
UNII Band II	IEEE 802.11a	5260 - 5320	18.84	0.0766
	IEEE 802.11n HT 20 MHz	5260 - 5320	18.68	0.0738
	IEEE 802.11n HT 40 MHz	5270 ~ 5310	19.04	0.0802
	IEEE 802.11ac VHT 80 MHz	5290	13.82	0.0241
UNII Band III	IEEE 802.11a	5500 ~ 5720	18.64	0.0731
	IEEE 802.11n HT 20 MHz	5500 ~ 5720	19.14	0.0820
	IEEE 802.11n HT 40 MHz	5510 ~ 5710	18.99	0.0793
	IEEE 802.11ac VHT 80 MHz	5530 ~ 5690	18.47	0.0703

Modulation Technique	OFDM (QPSK, BPSK, 16-QAM, 64-QAM)
Transmit Data Rate	EEE 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	1. HONGLIN / 290-10031 PIFA Antenna Ant_1: Gain: 4.6 dBi Ant_2: Gain: 4.7 dBi (Worst) 2. Walsin / RFMTA200700NNLB002 PIFA Antenna ANT0: Gain: 2.48 dBi ANT2: Gain: 3.22 dBi

Remark: *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*

3. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013 for IC, ANSI C63.10: 2009 for FCC Radiated testing was performed at an antenna to EUT distance 3 meters.

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 for IC, ANSI C63.10: 2009 for FCC and FCC CFR 47 Part 15.207, 15.209 and 15.407, RSS-GEN Issue 2, and RSS-247 Issue 1.

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

The EUT is placed on the turntable, which is positioned at 0.8 m above the ground plane. According to the requirements in ANSI C63.10: 2013 for IC, ANSI C63.10: 2009 for FCC, 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 for IC, ANSI C63.10: 2009 for FCC.

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: WCBN4502B) had been tested under operating condition.

The EUT is a 2x2 configuration spatial MIMO (2Tx & 2Rx) without beam forming function that operate in double TX chains and double RX chains. The 2x2 configuration is implemented with two outside TX & RX chains (Chain 0 and 1).

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.

UNII Band I:

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.

IEEE 802.11ac VHT 80 MHz Channel for 5210MHz:
Channel Low(5210MHz) with 29.3Mbps data rate were chosen for full testing.

UNII Band II:

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.

IEEE 802.11ac VHT 80 MHz for 5290MHz:
Channel Low(5290MHz) with 29.3Mbps data rate were chosen for full testing.

UNII Band III:

IEEE 802.11a for 5500 ~ 5720MHz:
Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5720MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5500 ~ 5720MHz:
Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5720MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz for 5510 ~ 5710MHz:
Channel Low (5510MHz), Channel Mid (5550MHz) and Channel High (5710MHz) with 13.5Mbps data rate were chosen for full testing.

IEEE 802.11ac VHT 80 MHz for 5530 ~ 5690MHz:
Channel Low (5530MHz) and Channel High (5690MHz) with 29.3Mbps data rate were chosen for full testing.

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

4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

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

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

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

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	US42510252	11/23/2015
Thermostatic/Hrgrosatic Chamber	TAICHY	MHG-150LF	930619	10/07/2015
AC Power Source	EXTECH	6205	1140845	N.C.R
DC Power Supply	ABM	8301HD	D011531	N.C.R
Power Meter	Anritsu	ML2495A	1012009	06/07/2016
Power Sensor	Anritsu	MA2411A	0917072	06/08/2016
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40	101073	07/09/2015

Wugu 966 Chamber A				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	US42510268	09/18/2015
EMI Test Receiver	R&S	ESCI	100064	06/04/2016
Bilog Antenna	Sunol Sciences	JB3	A030105	08/19/2015
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 01265	4035	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.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.
Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

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

☐ No.81-1, Lane 210, Bade 2nd Rd., 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 for IC, ANSI C63.10: 2009 for FCC and CISPR Publication 22.

5.2 EQUIPMENT

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

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

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

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

5.3 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-247, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12,2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method –47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11	TAF Testing Laboratory 1309
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	Canada IC 2324G-1 IC 2324G-2

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

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

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

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1	Notebook PC	ASUS	M5200AE	5BN0AG019631	PD9WM3B2100	N/A	AC I/P: Unshielded, 1.8m with a core DC O/P: Unshielded, 1.8m

Remark:

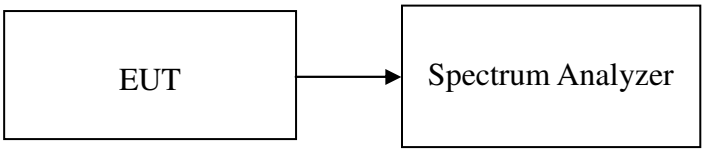
1. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

7. FCC PART 15 REQUIREMENTS & RSS-247 REQUIREMENTS

7.1 99% BANDWIDTH

Test Configuration

TEST PROCEDURE



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

TEST RESULTS

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

Channel	Frequency (MHz)	99% Bandwidth (MHz)
36	5180	17.6677
44	5220	17.8216
48	5240	17.8008

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

Channel	Frequency (MHz)	99% Bandwidth (MHz)
36	5180	18.7081
44	5220	18.4275
48	5240	18.4009

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

Channel	Frequency (MHz)	99% Bandwidth (MHz)
36	5180	18.2232
44	5220	18.1109
48	5240	18.1568

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

Channel	Frequency (MHz)	99% Bandwidth (MHz)
38	5190	36.6665
46	5230	36.6374

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

Channel	Frequency (MHz)	99% Bandwidth (MHz)
38	5190	36.4391
46	5230	36.5125

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5210MHz / Chain 0

Channel	Frequency (MHz)	99% Bandwidth (MHz)
42	5210	75.7615

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5210MHz / Chain 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
42	5210	75.8279

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

Channel	Frequency (MHz)	99% Bandwidth (MHz)
52	5260	17.3997
56	5280	17.3876
60	5300	17.4962
64	5320	17.3891

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

Channel	Frequency (MHz)	99% Bandwidth (MHz)
52	5260	18.4432
56	5280	18.3677
60	5300	18.4316
64	5320	18.4893

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

Channel	Frequency (MHz)	99% Bandwidth (MHz)
52	5260	18.1992
56	5280	18.1785
60	5300	18.1353
64	5320	18.1360

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

Channel	Frequency (MHz)	99% Bandwidth (MHz)
54	5270	36.8546
62	5310	36.6674

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

Channel	Frequency (MHz)	99% Bandwidth (MHz)
54	5270	38.0435
62	5310	36.5180

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 0

Channel	Frequency (MHz)	99% Bandwidth (MHz)
58	5290	76.0368

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
58	5290	76.0520

Test mode: IEEE 802.11a mode / 5500 ~ 5720MHz

Channel	Frequency (MHz)	99% Bandwidth (MHz)
100	5500	17.6600
116	5580	17.9196
140	5700	17.4956
144	5720	17.8484

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz / Chain 0

Channel	Frequency (MHz)	99% Bandwidth (MHz)
100	5500	18.4819
116	5580	18.4581
140	5700	18.4350
144	5720	18.5032

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz / Chain 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
100	5500	18.3020
116	5580	18.2886
140	5700	18.2804
144	5720	18.2962

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz / Chain 0

Channel	Frequency (MHz)	99% Bandwidth (MHz)
102	5510	36.6337
118	5590	36.6200
134	5670	36.6473
142	5710	36.7683

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz / Chain 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
102	5510	36.6155
118	5590	37.2649
134	5670	36.4592
142	5710	36.8130

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz / Chain 0

Channel	Frequency (MHz)	99% Bandwidth (MHz)
106	5530	76.1664
122	5610	75.7763
138	5690	76.0874

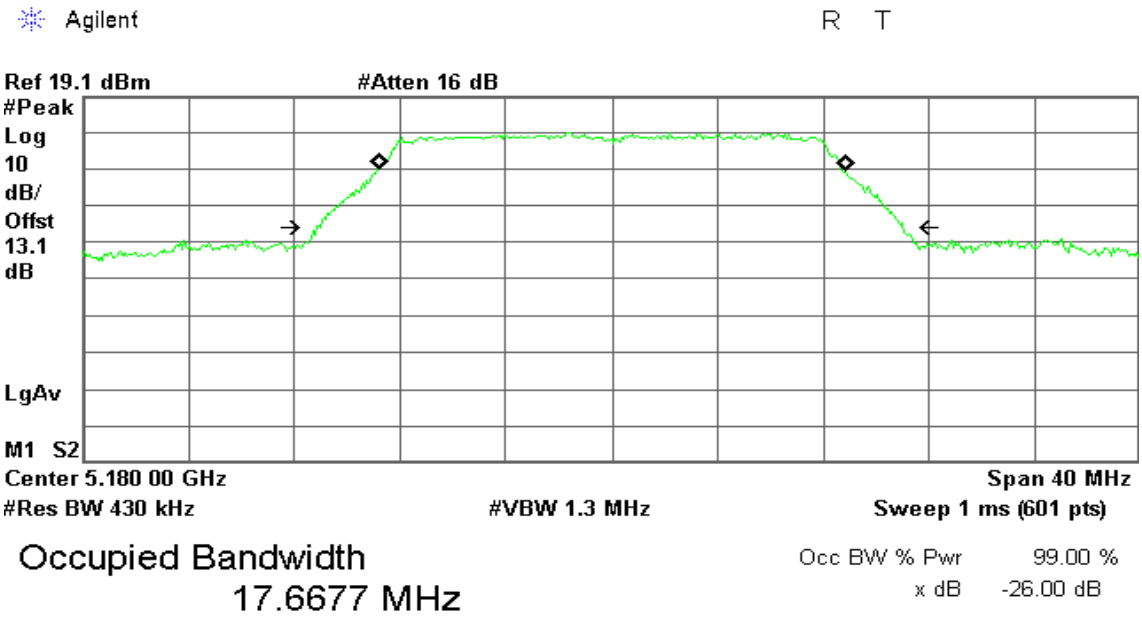
Test mode: IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz / Chain 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
106	5530	75.5029
122	5610	76.4482
138	5690	76.2157

Test Plot

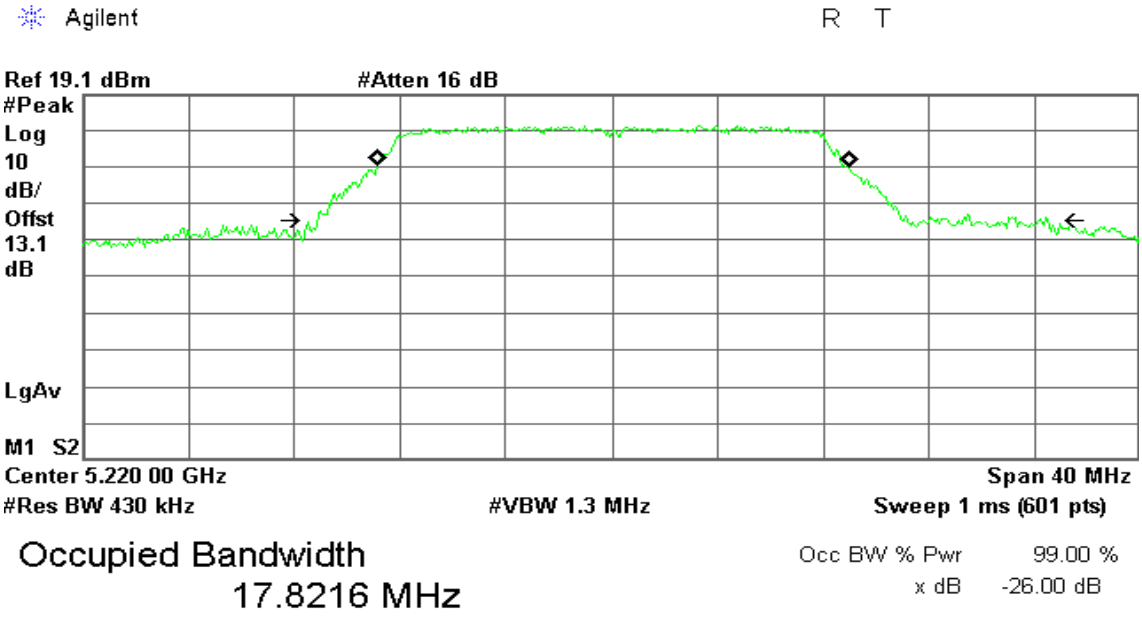
IEEE 802.11a mode / 5180 ~ 5240MHz

99% Bandwidth (5180 MHz)



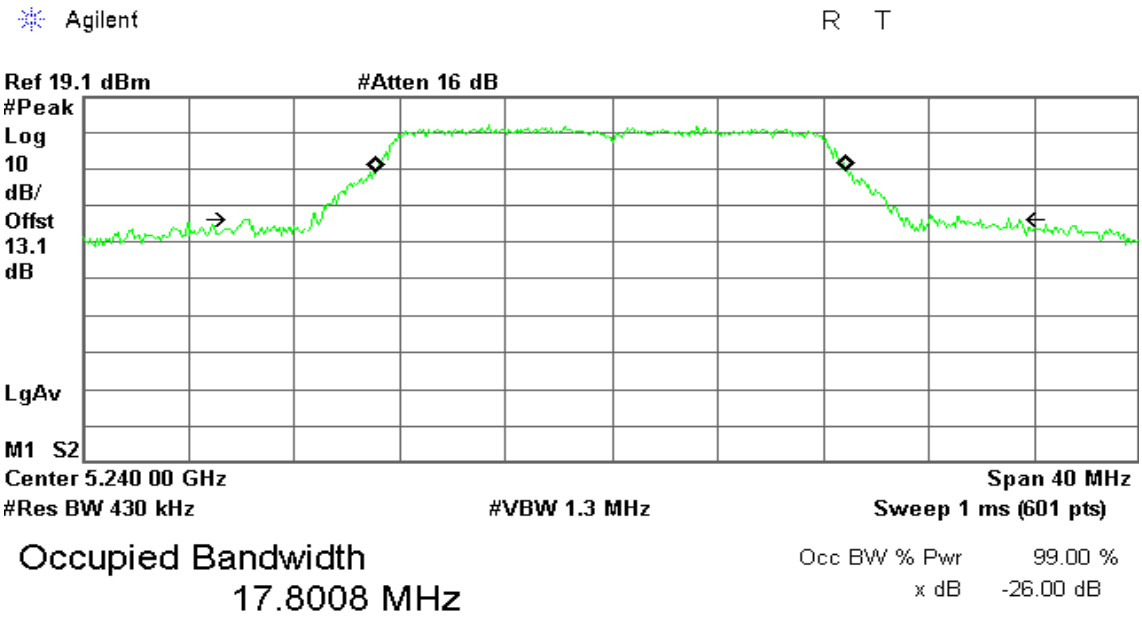
Transmit Freq Error	19.144 kHz
x dB Bandwidth	22.178 MHz

99% Bandwidth (5220 MHz)



Transmit Freq Error	74.441 kHz
x dB Bandwidth	27.657 MHz

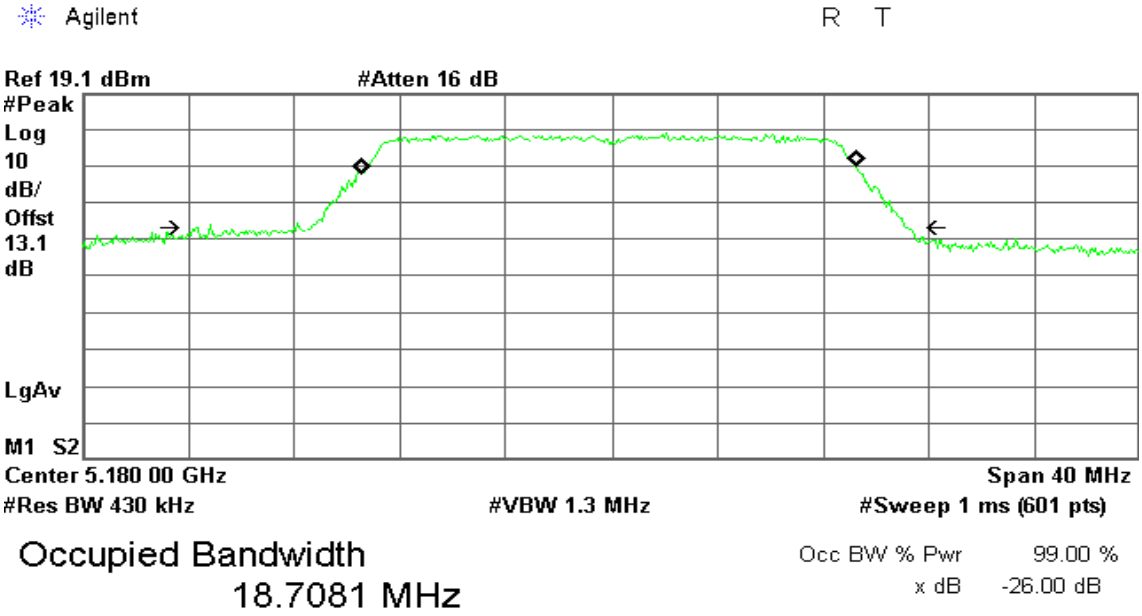
99% Bandwidth (5240 MHz)



Transmit Freq Error	-14.447 kHz
x dB Bandwidth	28.924 MHz

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

99% Bandwidth (5180 MHz)

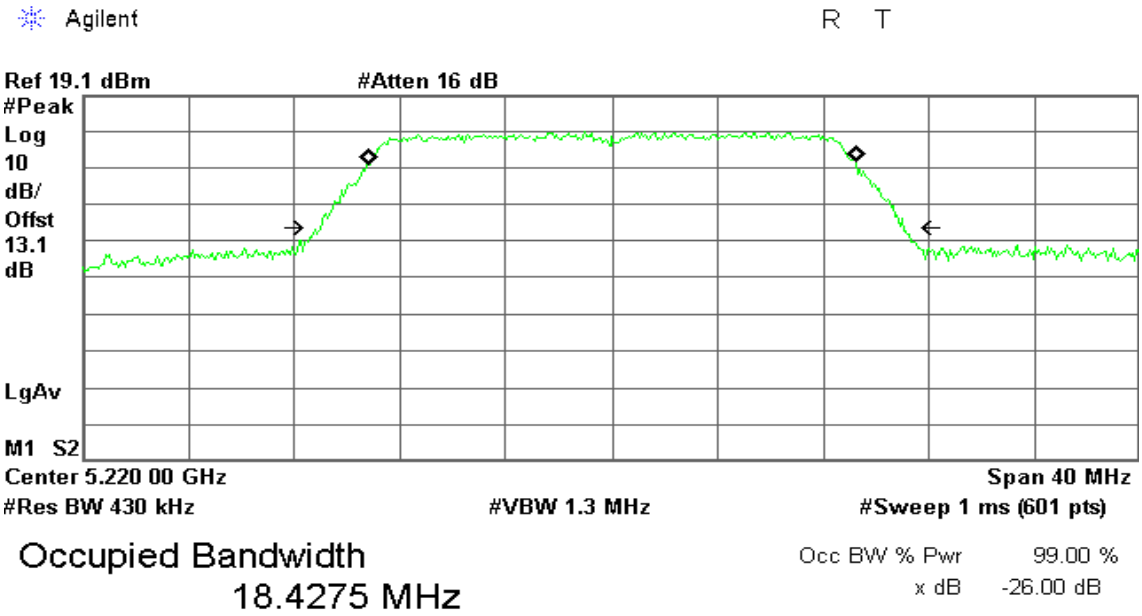


Occupied Bandwidth
18.7081 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -105.323 kHz
x dB Bandwidth 26.919 MHz

99% Bandwidth (5220 MHz)

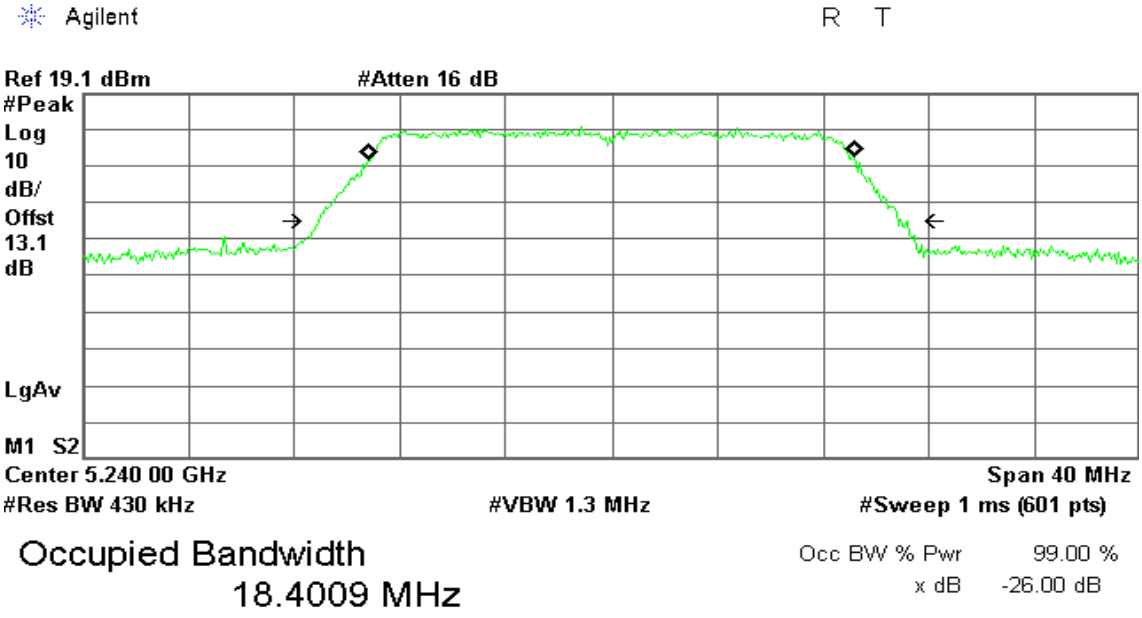


Occupied Bandwidth
18.4275 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 36.387 kHz
x dB Bandwidth 22.034 MHz

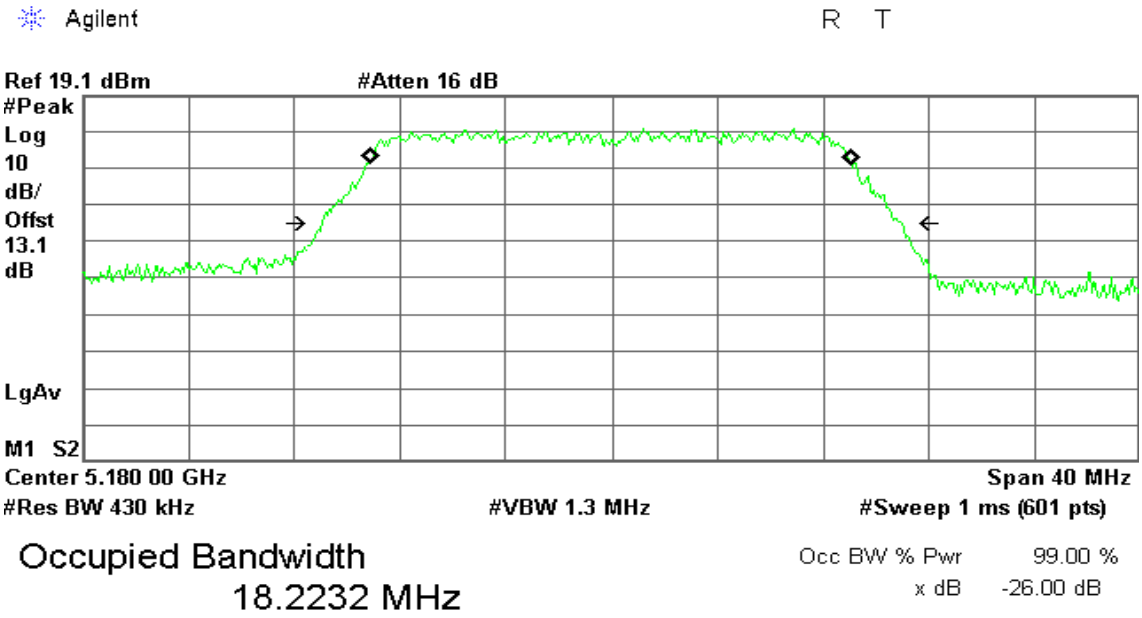
99% Bandwidth (5240 MHz)



Transmit Freq Error	-15.687 kHz
x dB Bandwidth	22.265 MHz

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

99% Bandwidth (5180 MHz)

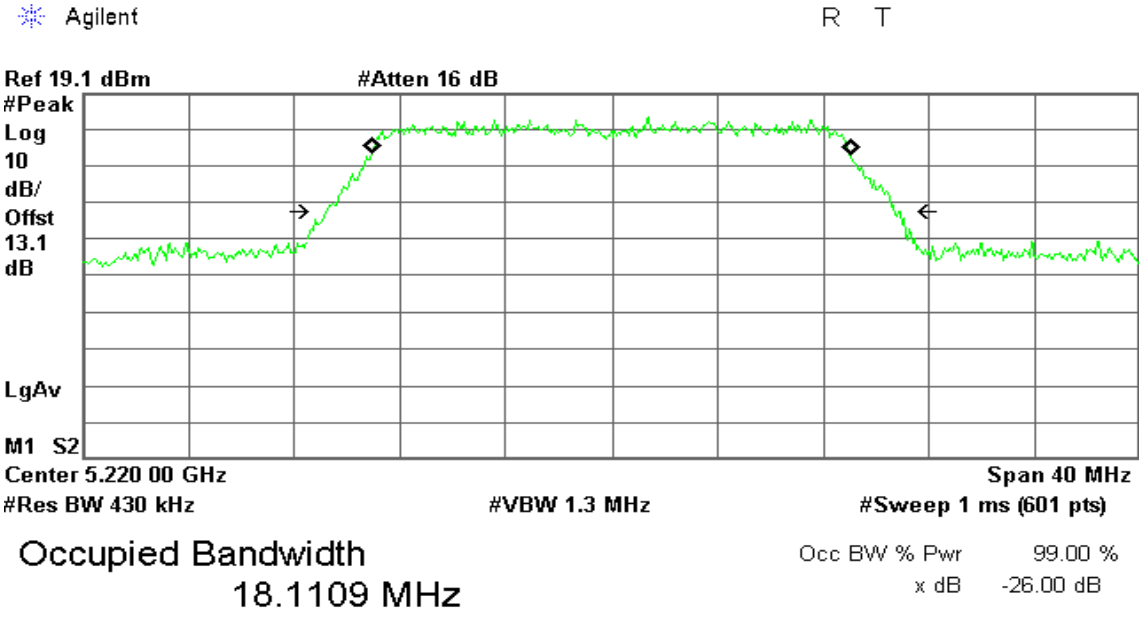


Occupied Bandwidth
18.2232 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -12.620 kHz
x dB Bandwidth 21.937 MHz

99% Bandwidth (5220 MHz)

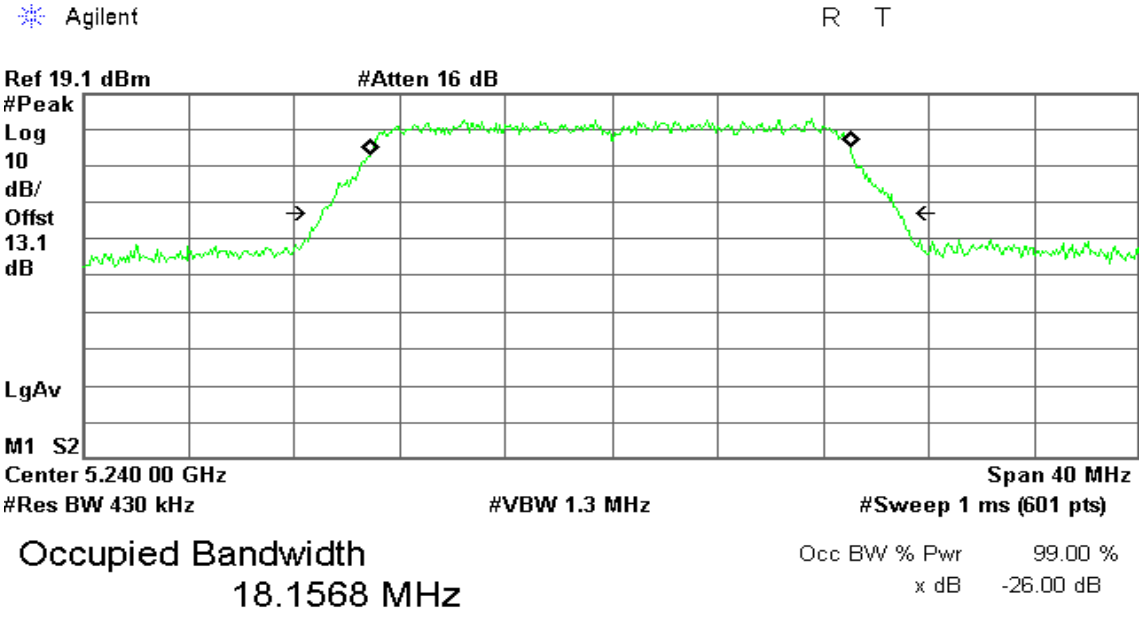


Occupied Bandwidth
18.1109 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -18.493 kHz
x dB Bandwidth 21.752 MHz

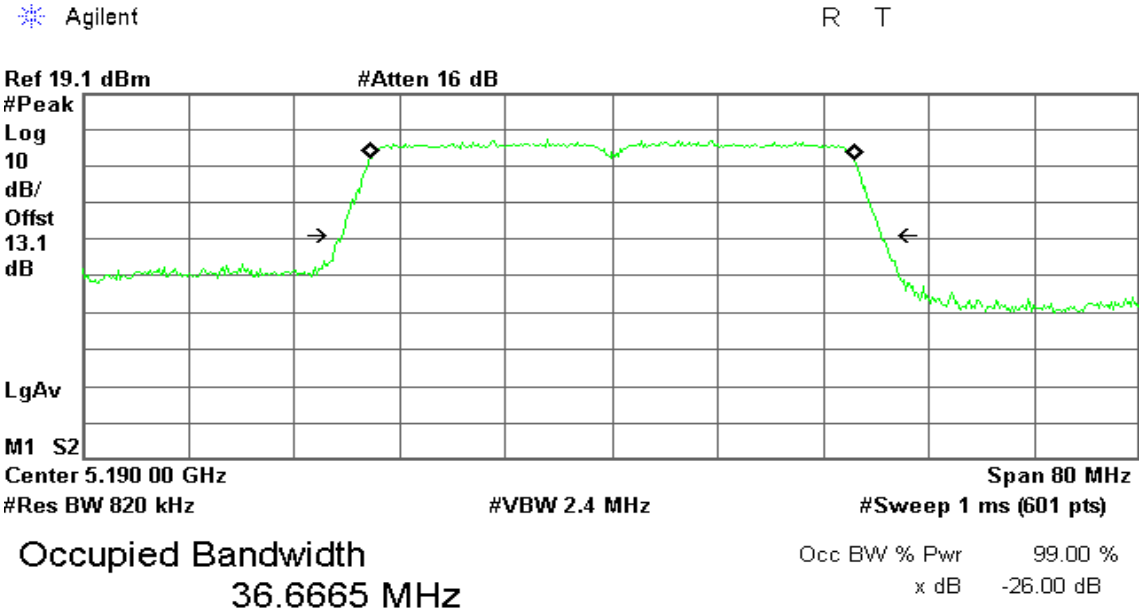
99% Bandwidth (5240 MHz)



Transmit Freq Error	-36.909 kHz
x dB Bandwidth	21.825 MHz

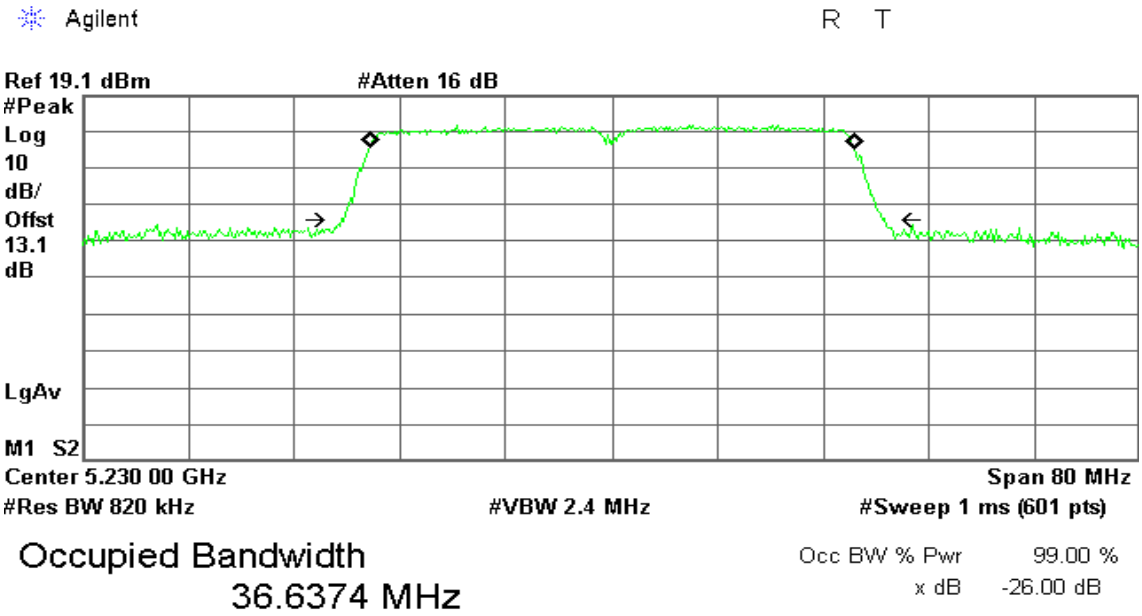
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

99% Bandwidth (5190 MHz)



Transmit Freq Error	29.555 kHz
x dB Bandwidth	40.740 MHz

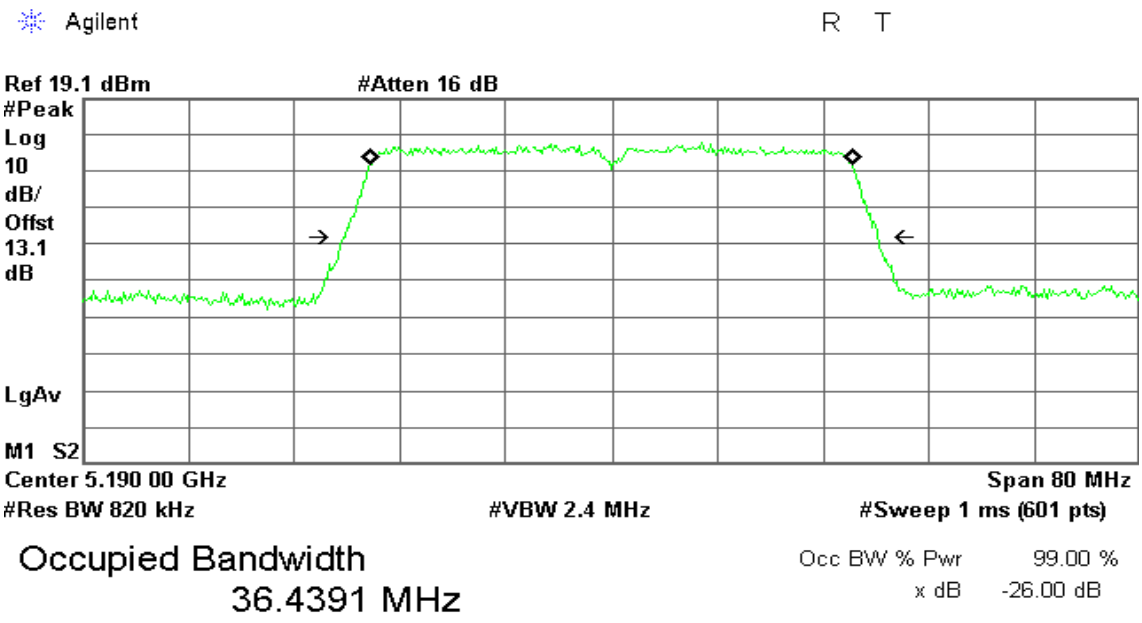
99% Bandwidth (5230 MHz)



Transmit Freq Error	48.949 kHz
x dB Bandwidth	41.100 MHz

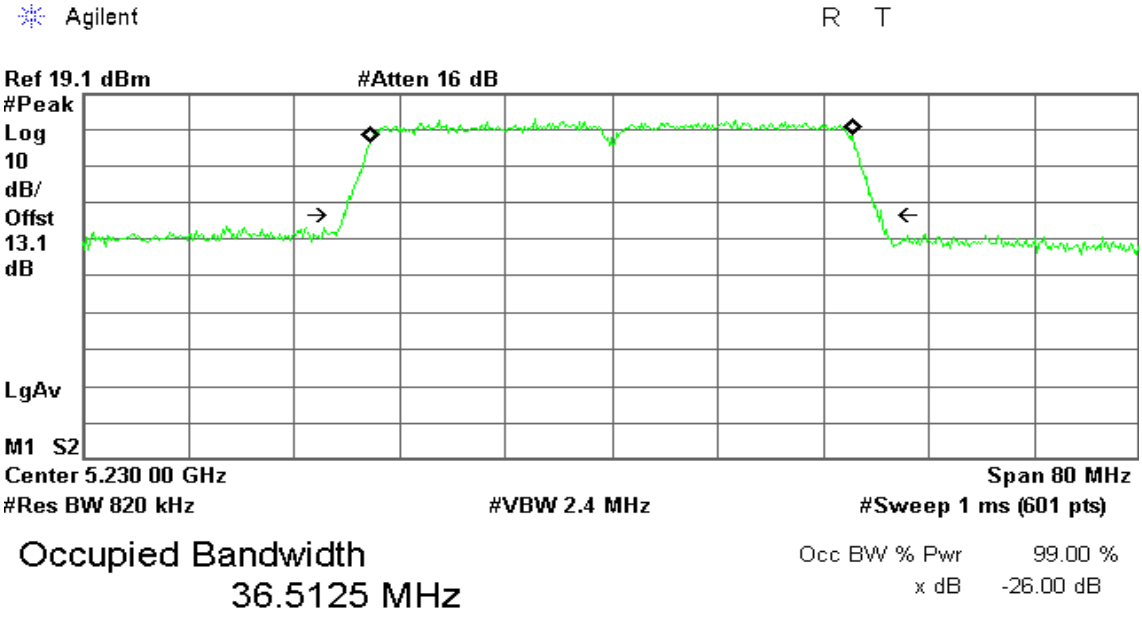
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

99% Bandwidth (5190 MHz)



Transmit Freq Error -14.263 kHz
x dB Bandwidth 40.318 MHz

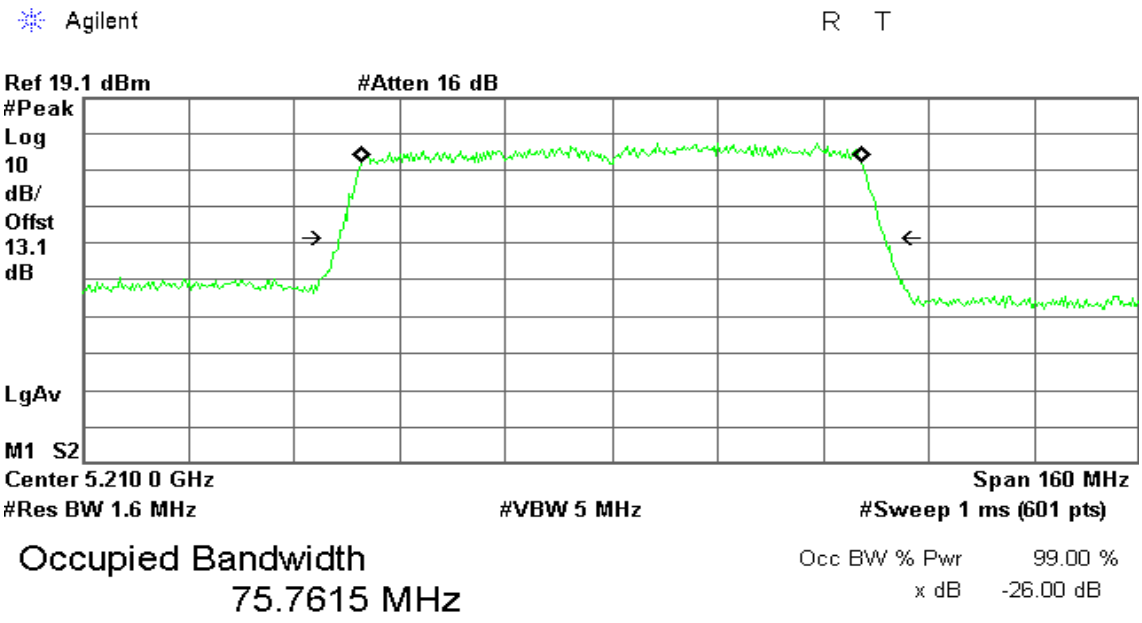
99% Bandwidth (5230 MHz)



Transmit Freq Error 20.824 kHz
x dB Bandwidth 40.722 MHz

IEEE 802.11ac VHT 80 MHz mode / 5210MHz / Chain 0

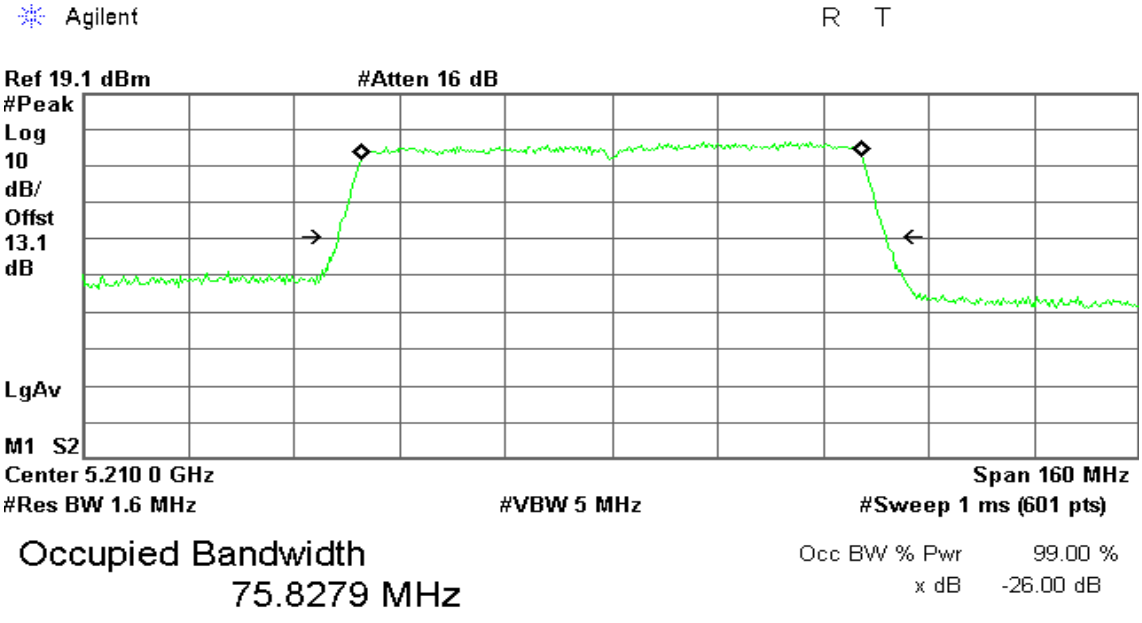
99% Bandwidth (5210 MHz)



Transmit Freq Error	79.140 kHz
x dB Bandwidth	82.625 MHz

IEEE 802.11ac VHT 80 MHz mode / 5210MHz / Chain 1

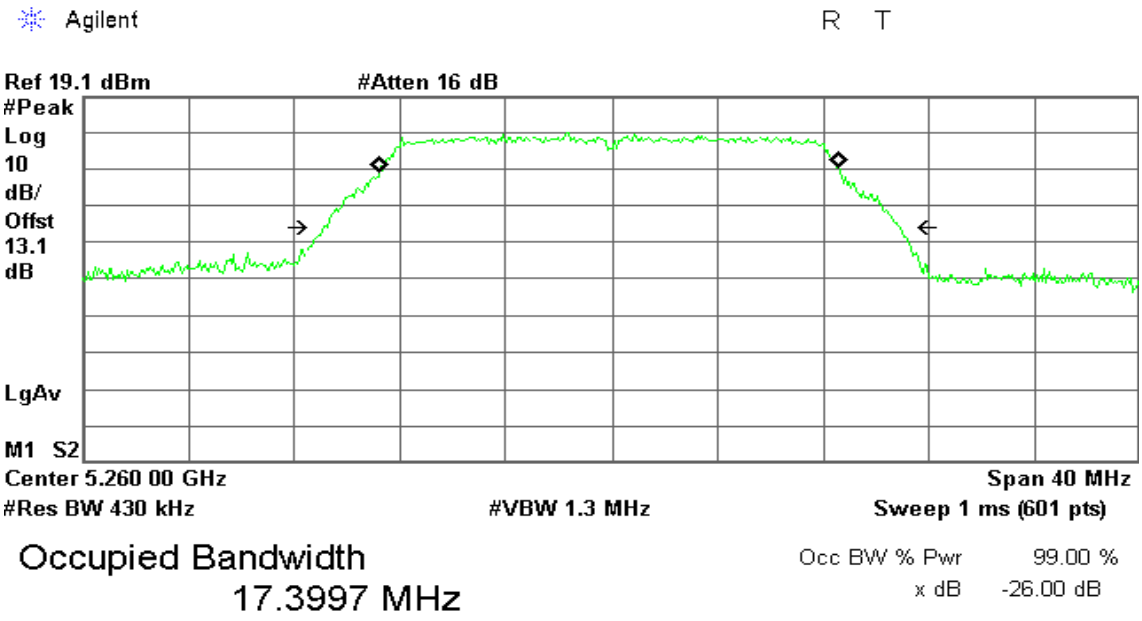
99% Bandwidth (5210 MHz)



Transmit Freq Error	70.753 kHz
x dB Bandwidth	82.902 MHz

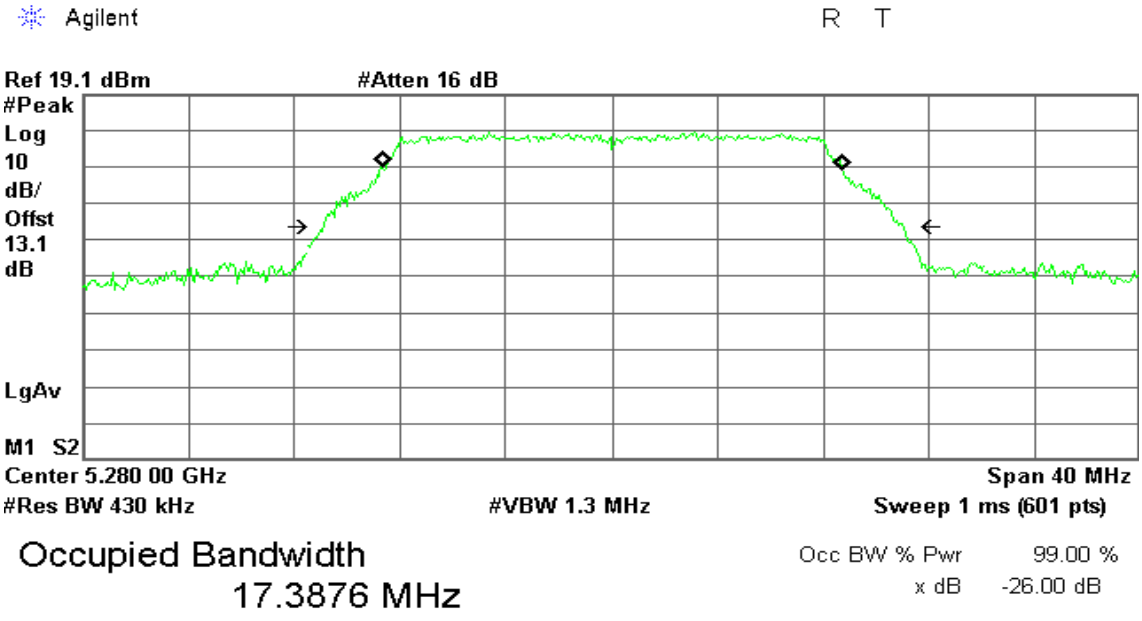
IEEE 802.11a mode / 5260 ~ 5320MHz

99% Bandwidth (5260 MHz)



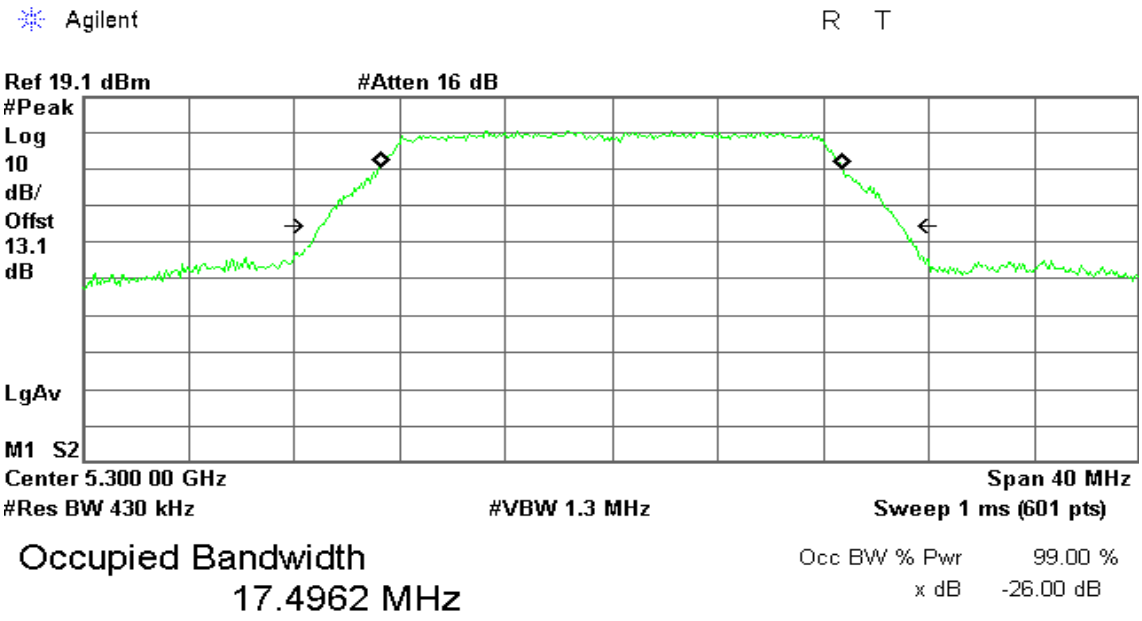
Transmit Freq Error	-75.654 kHz
x dB Bandwidth	21.825 MHz

99% Bandwidth (5280 MHz)



Transmit Freq Error	35.004 kHz
x dB Bandwidth	21.964 MHz

99% Bandwidth (5300 MHz)

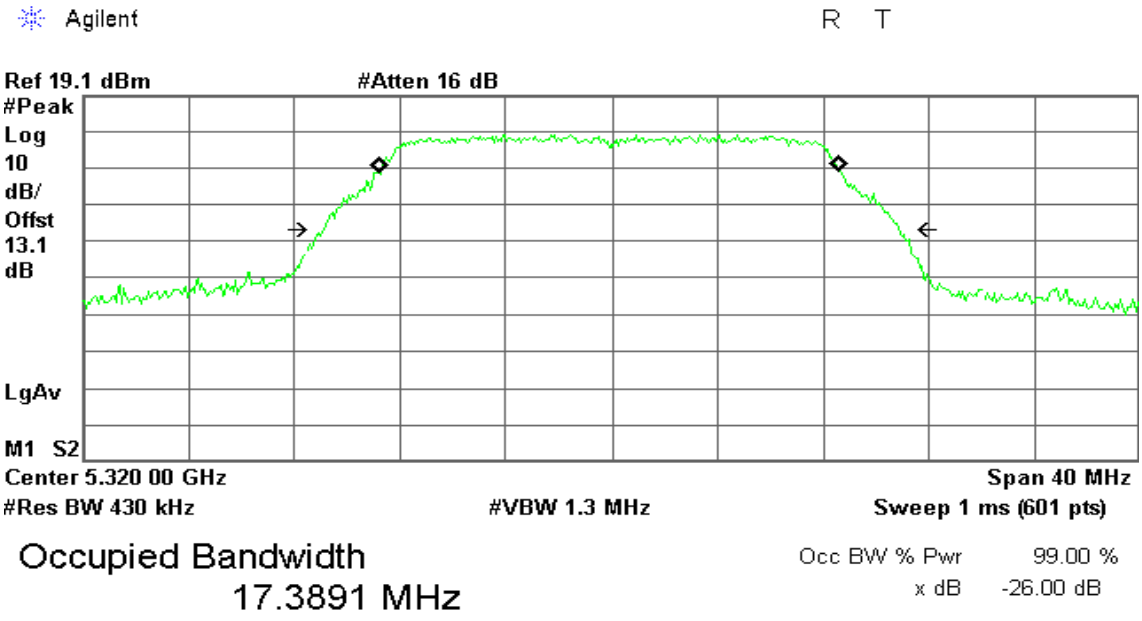


Occupied Bandwidth
17.4962 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -4.508 kHz
x dB Bandwidth 21.931 MHz

99% Bandwidth (5320 MHz)



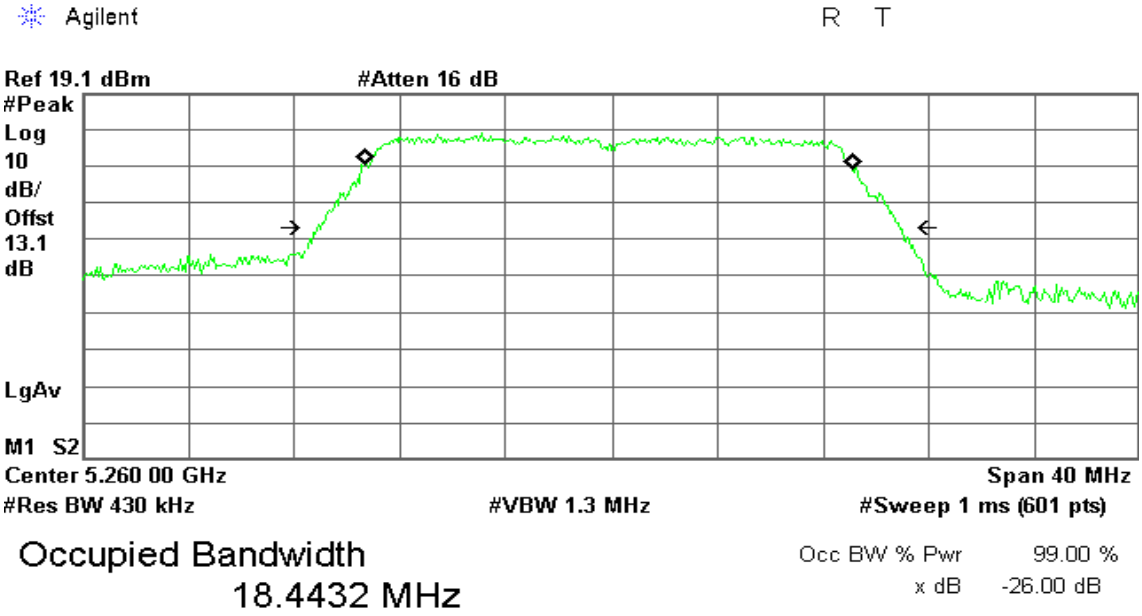
Occupied Bandwidth
17.3891 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -75.402 kHz
x dB Bandwidth 21.786 MHz

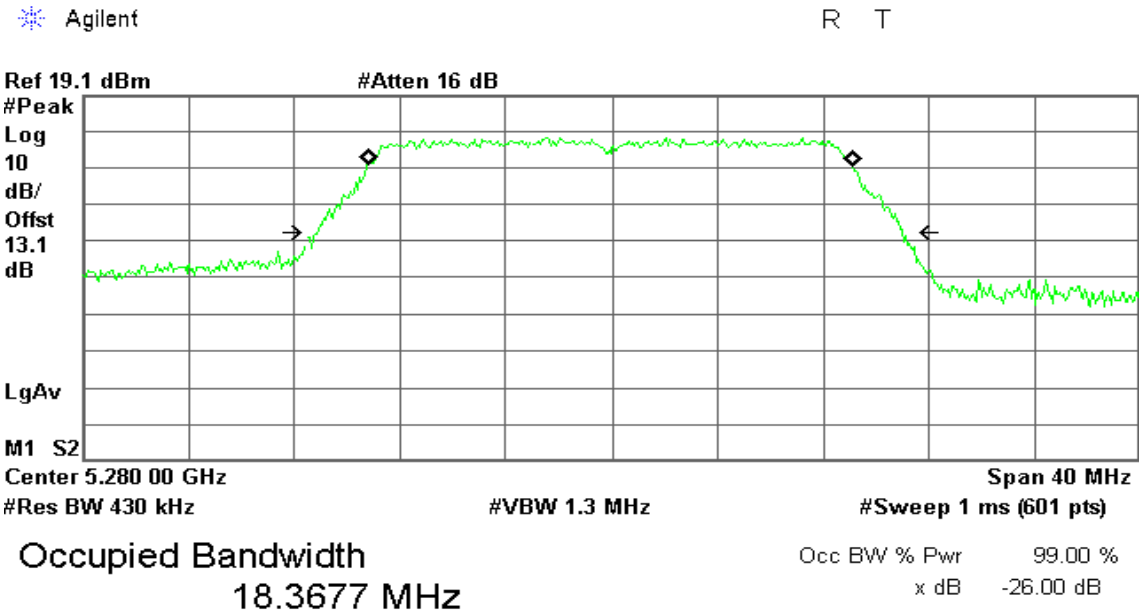
IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

99% Bandwidth (5260 MHz)



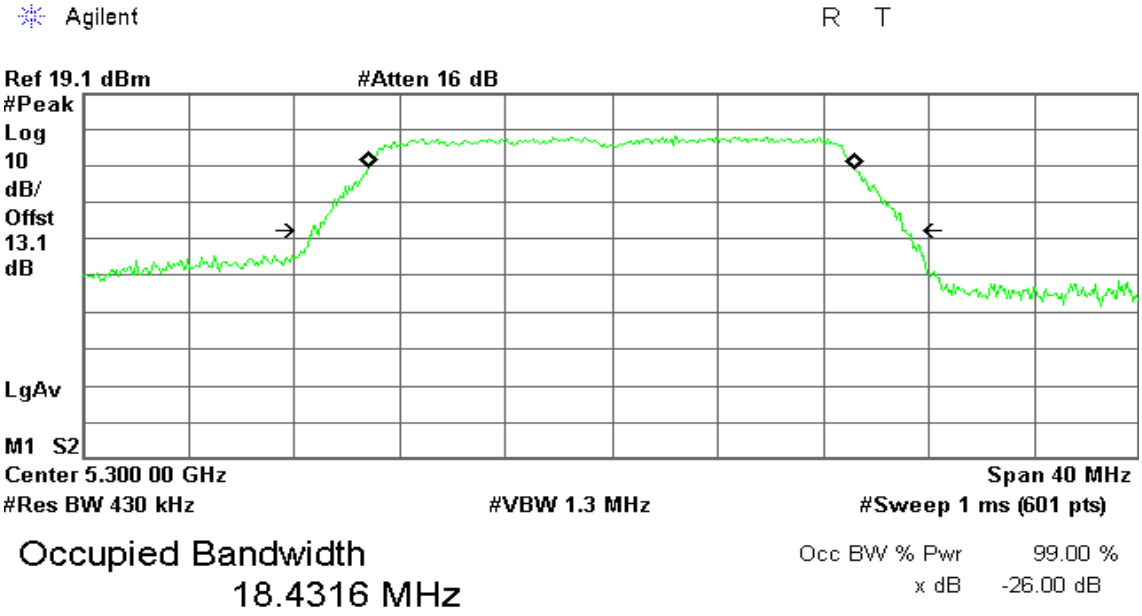
Transmit Freq Error	-111.455 kHz
x dB Bandwidth	22.040 MHz

99% Bandwidth (5280 MHz)



Transmit Freq Error	-34.955 kHz
x dB Bandwidth	22.115 MHz

99% Bandwidth (5300 MHz)

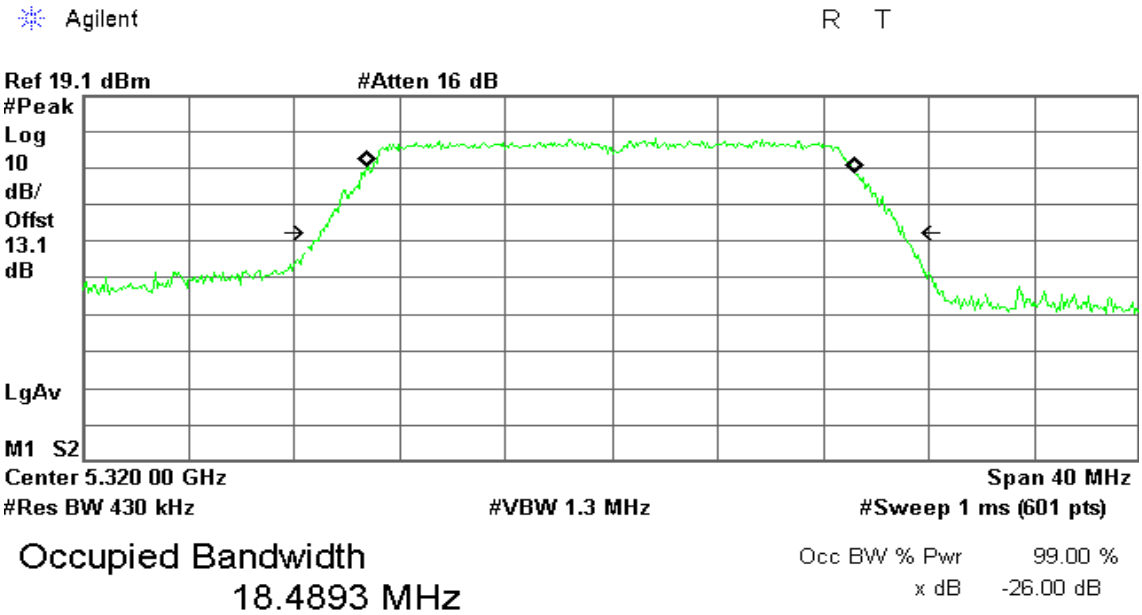


Occupied Bandwidth
18.4316 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 15.998 kHz
x dB Bandwidth 22.461 MHz

99% Bandwidth (5320 MHz)



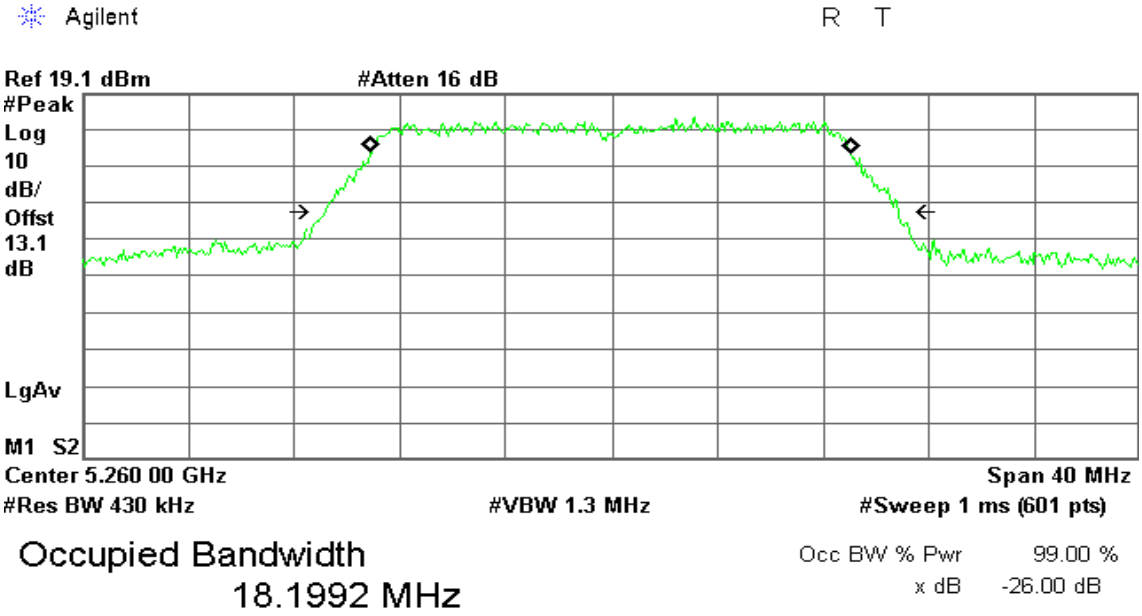
Occupied Bandwidth
18.4893 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -22.490 kHz
x dB Bandwidth 22.033 MHz

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

99% Bandwidth (5260 MHz)

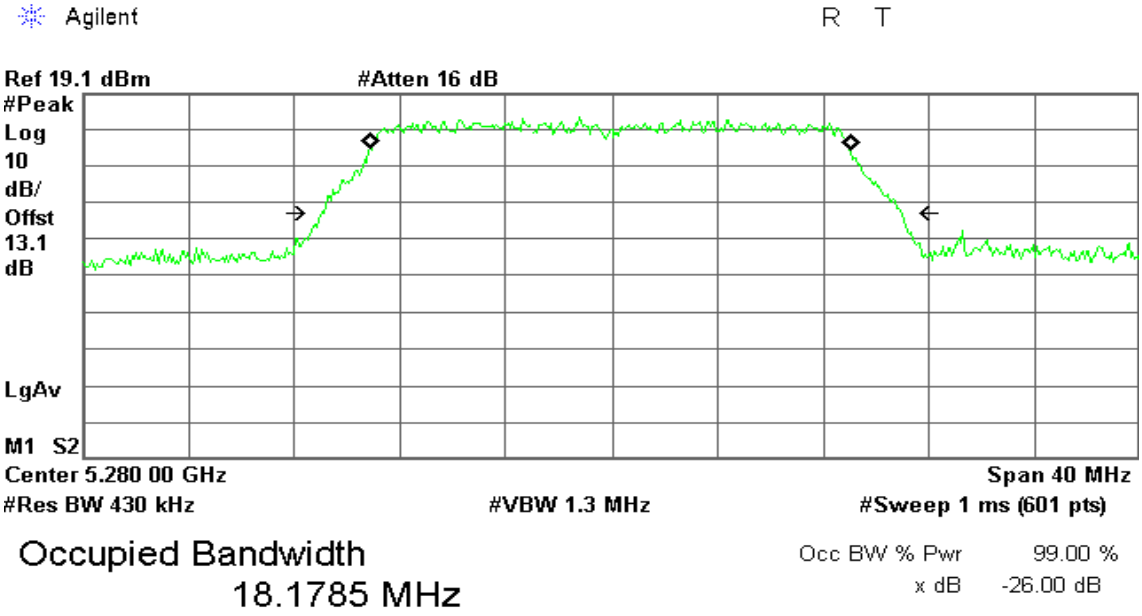


Occupied Bandwidth
18.1992 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -13.360 kHz
x dB Bandwidth 21.692 MHz

99% Bandwidth (5280 MHz)

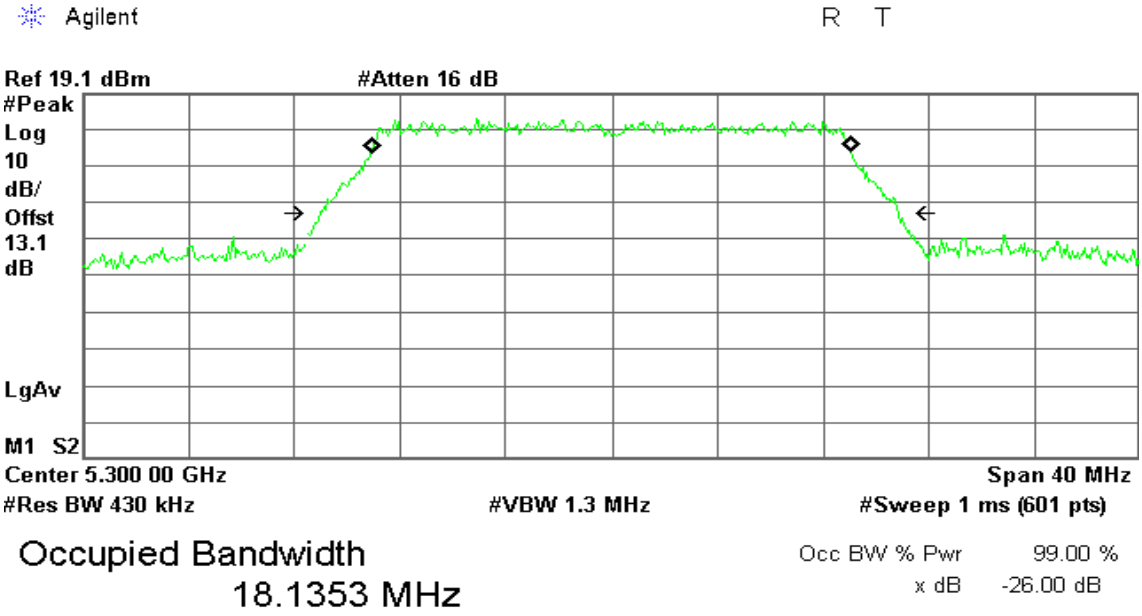


Occupied Bandwidth
18.1785 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -37.878 kHz
x dB Bandwidth 21.917 MHz

99% Bandwidth (5300 MHz)

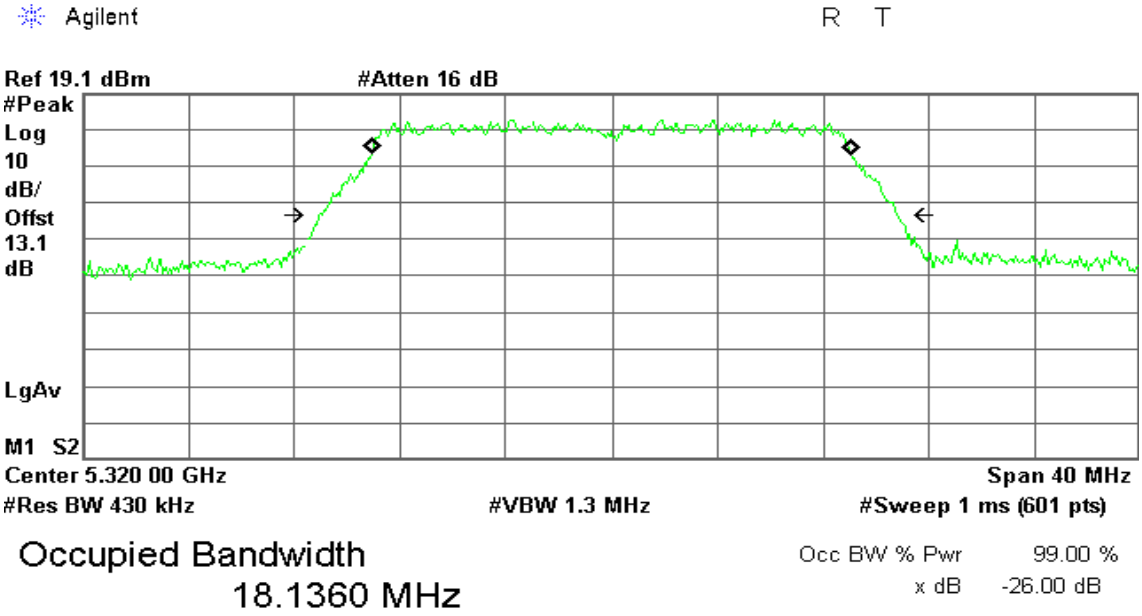


Occupied Bandwidth
18.1353 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -17.878 kHz
x dB Bandwidth 21.880 MHz

99% Bandwidth (5320 MHz)



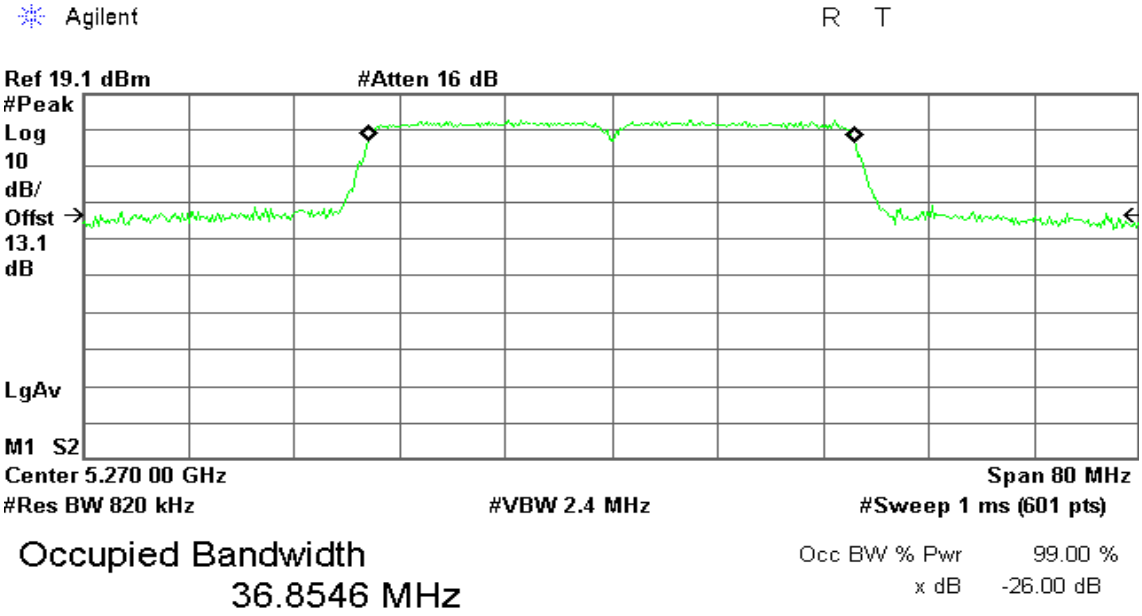
Occupied Bandwidth
18.1360 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 11.214 kHz
x dB Bandwidth 21.806 MHz

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

99% Bandwidth (5270 MHz)

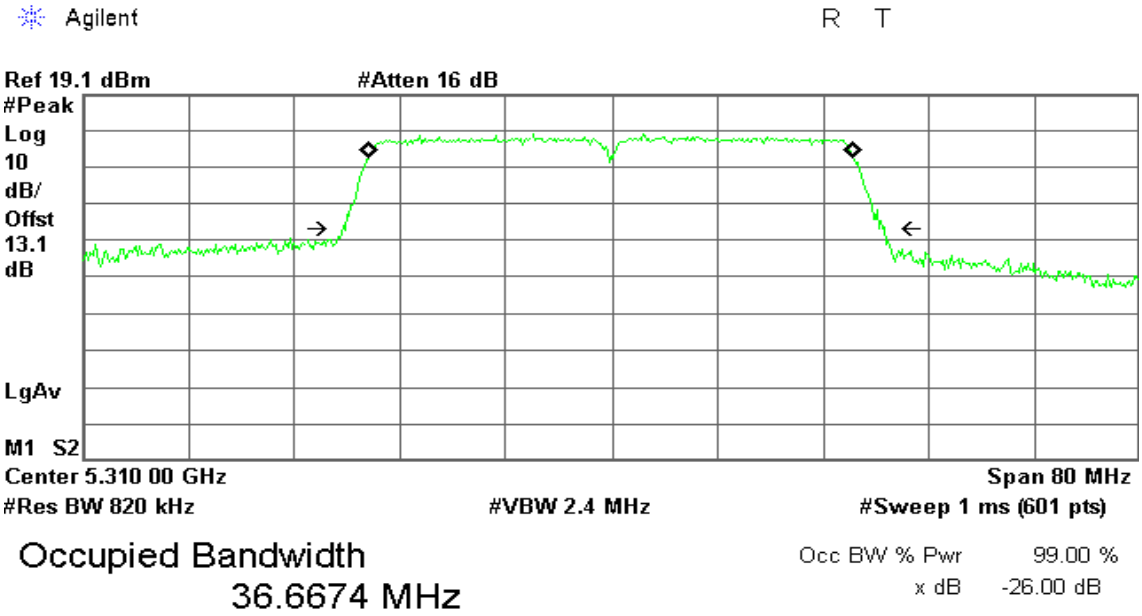


Occupied Bandwidth
36.8546 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -1.530 kHz
x dB Bandwidth 76.191 MHz

99% Bandwidth (5310 MHz)



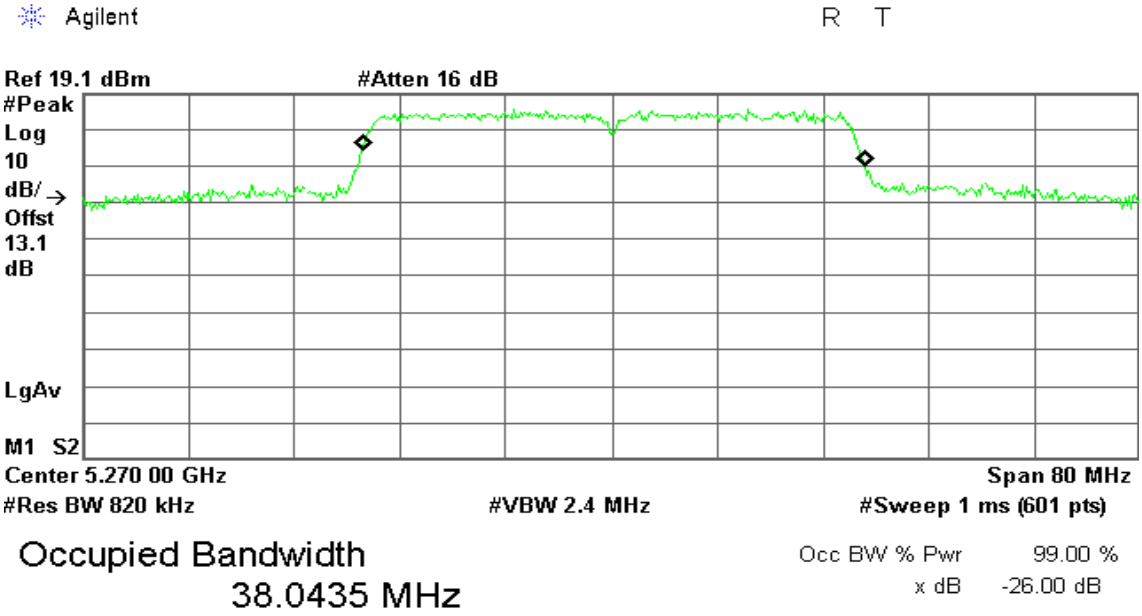
Occupied Bandwidth
36.6674 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -19.602 kHz
x dB Bandwidth 41.002 MHz

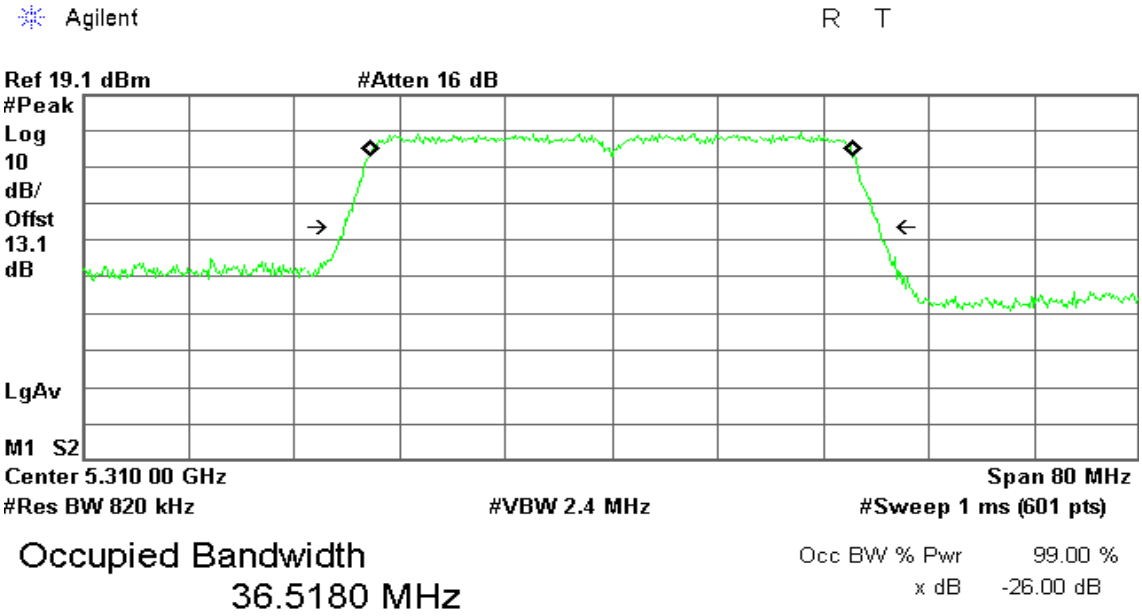
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

99% Bandwidth (5270 MHz)



Transmit Freq Error	204.489 kHz
x dB Bandwidth	79.967 MHz

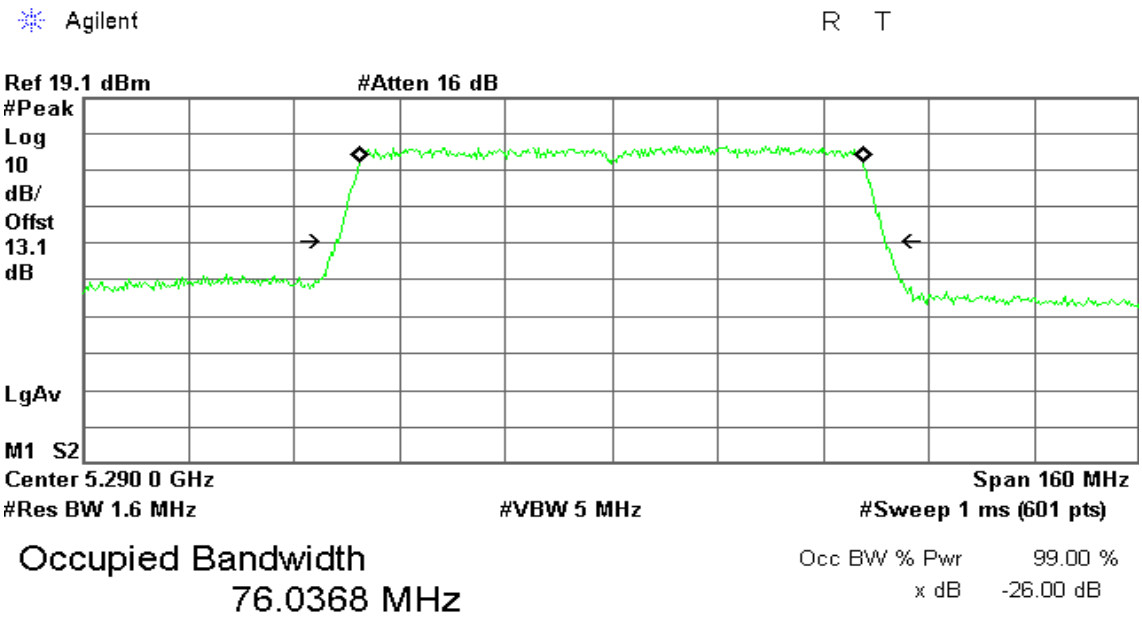
99% Bandwidth (5310 MHz)



Transmit Freq Error	-139.321 Hz
x dB Bandwidth	40.529 MHz

IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 0

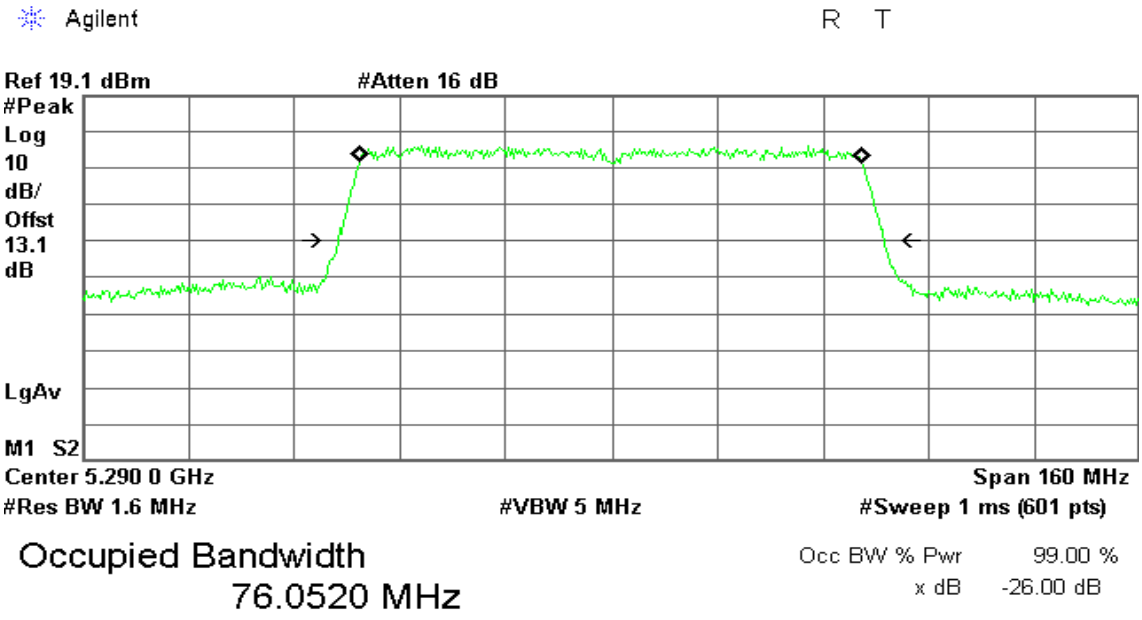
99% Bandwidth (5290 MHz)



Transmit Freq Error 12.314 kHz
x dB Bandwidth 83.084 MHz

IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 1

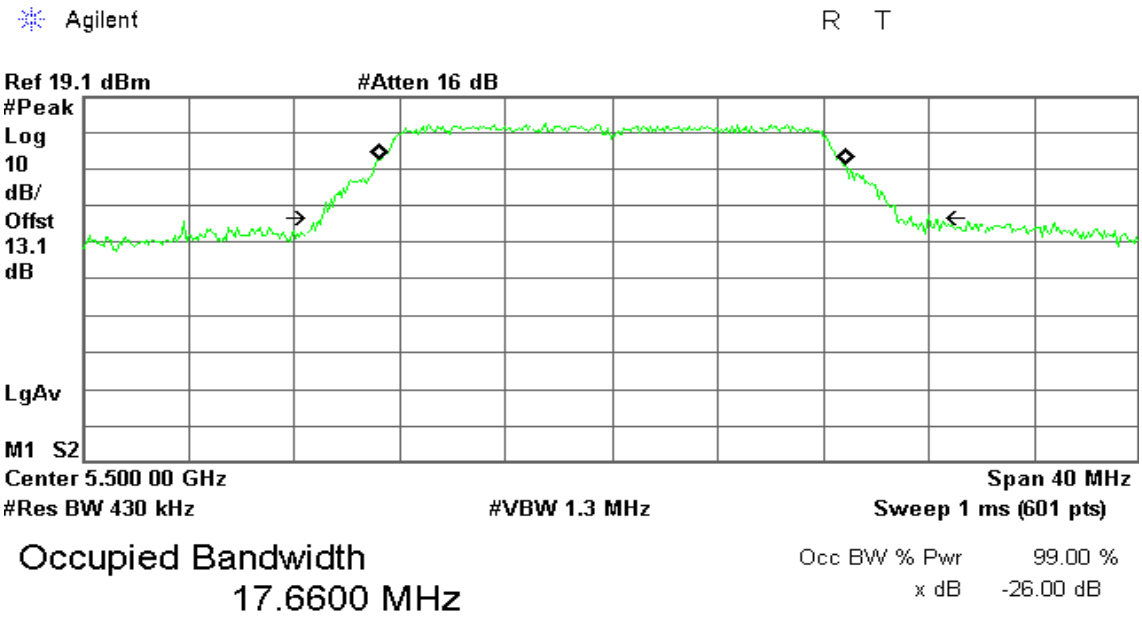
99% Bandwidth (5290 MHz)



Transmit Freq Error -40.305 kHz
x dB Bandwidth 82.567 MHz

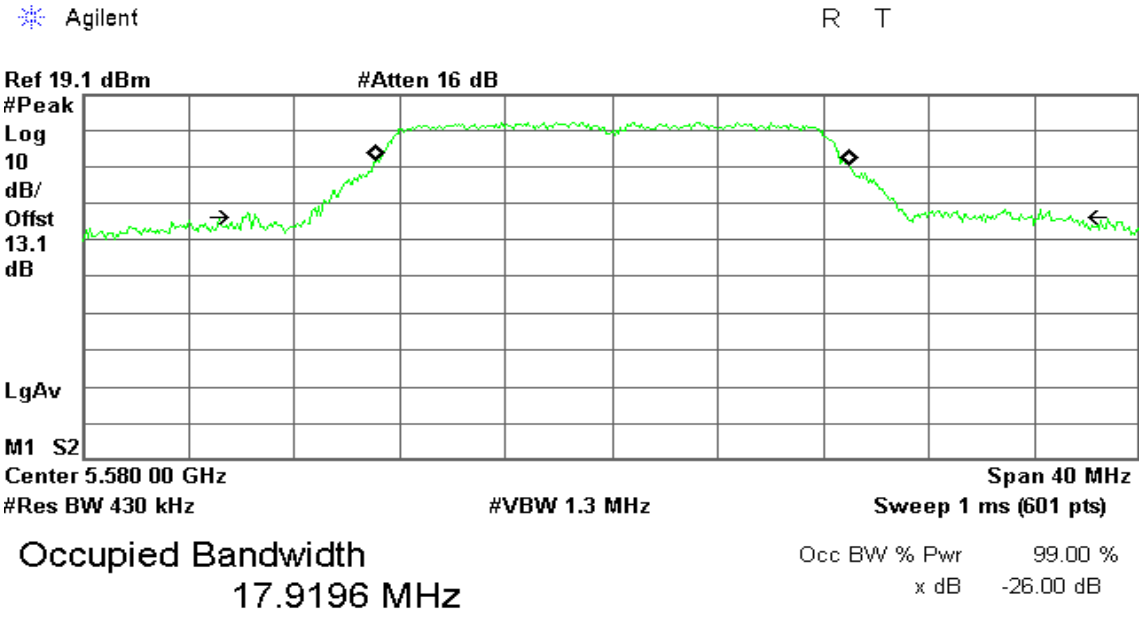
Test mode: IEEE 802.11a mode / 5500 ~ 5720MHz

99% Bandwidth (5500 MHz)



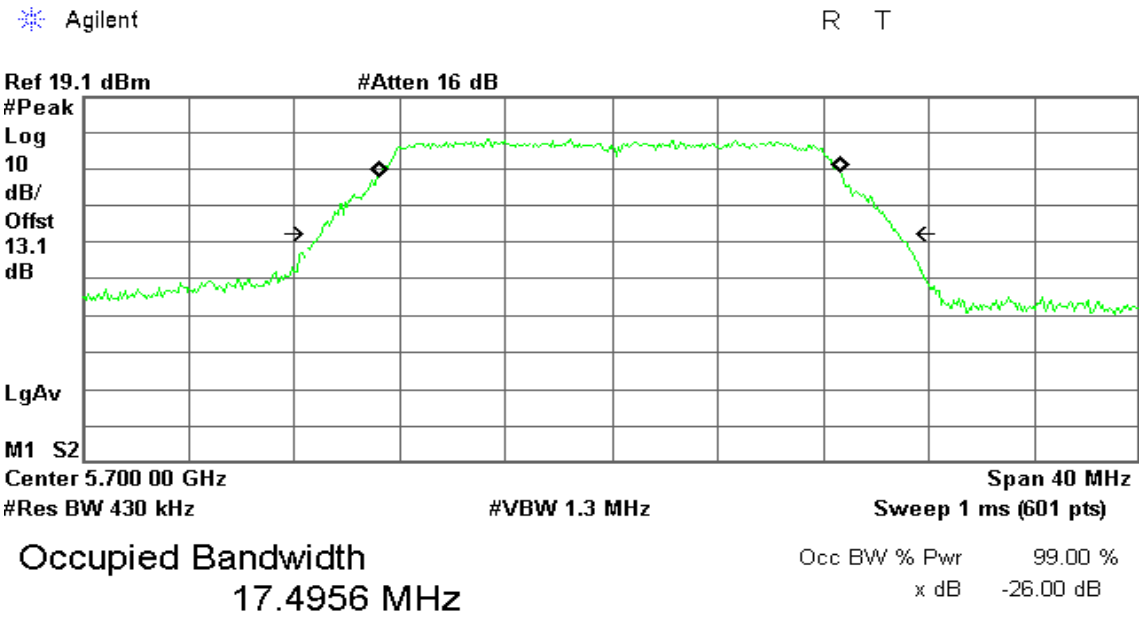
Transmit Freq Error	22.612 kHz
x dB Bandwidth	22.990 MHz

99% Bandwidth (5580 MHz)



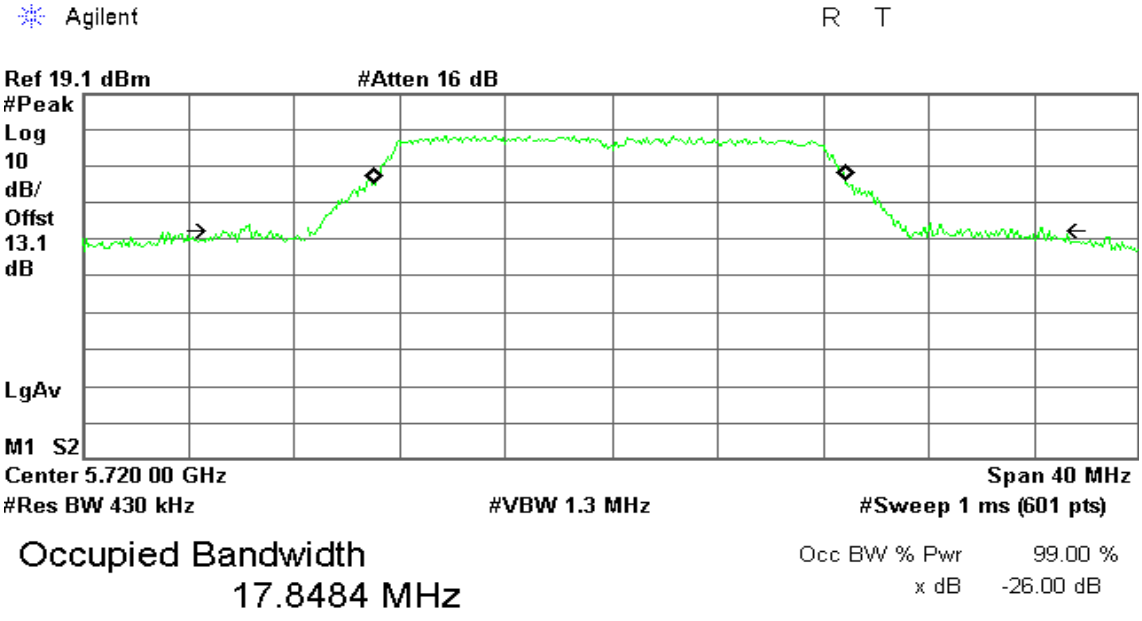
Transmit Freq Error	53.492 kHz
x dB Bandwidth	31.209 MHz

99% Bandwidth (5700 MHz)



Transmit Freq Error	-61.483 kHz
x dB Bandwidth	21.821 MHz

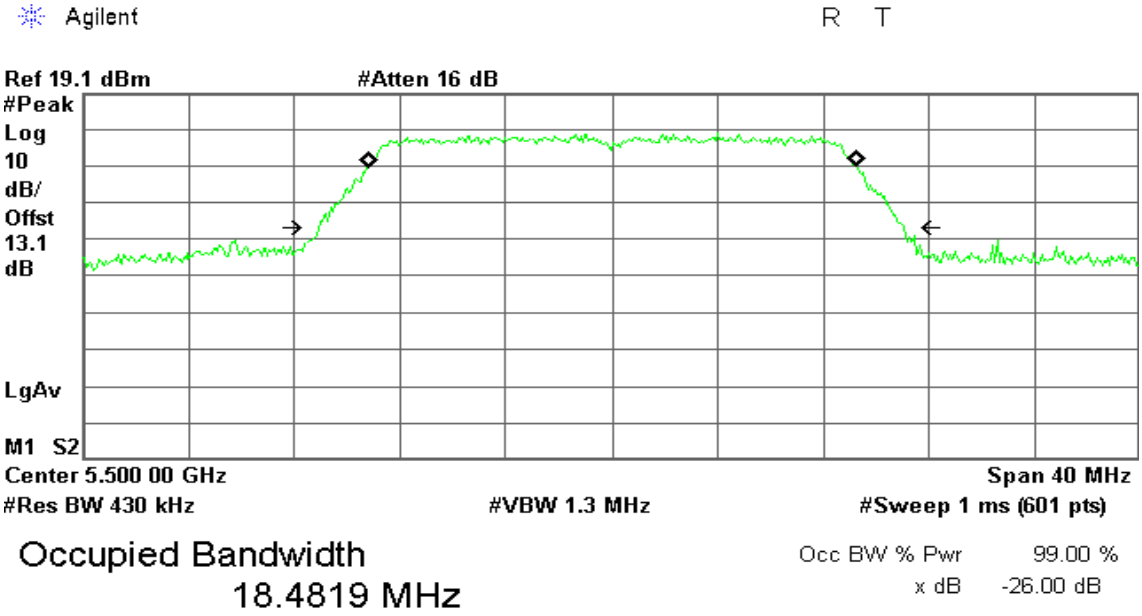
99% Bandwidth (5720 MHz)



Transmit Freq Error	-83.315 kHz
x dB Bandwidth	31.281 MHz

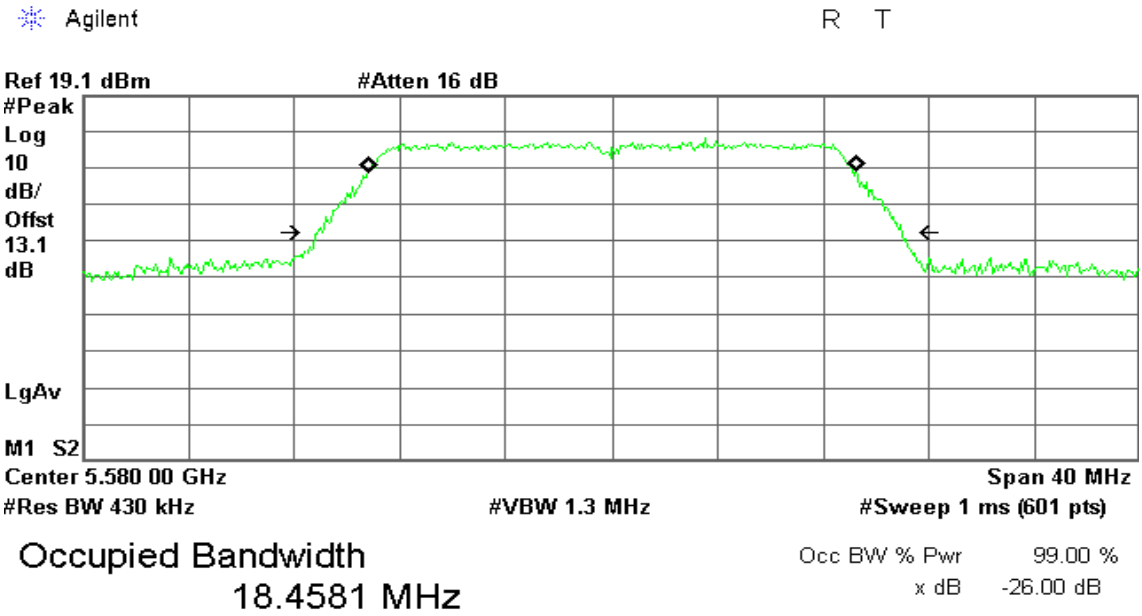
IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz / Chain 0

99% Bandwidth (5500 MHz)



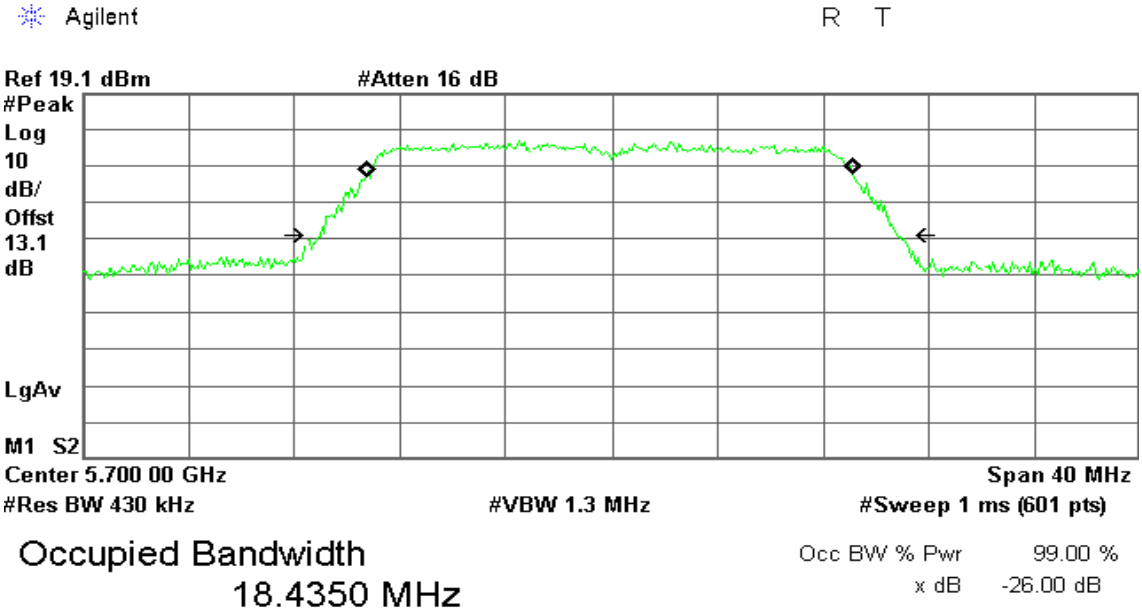
Transmit Freq Error	20.363 kHz
x dB Bandwidth	22.151 MHz

99% Bandwidth (5580 MHz)



Transmit Freq Error	11.222 kHz
x dB Bandwidth	22.100 MHz

99% Bandwidth (5700MHz)

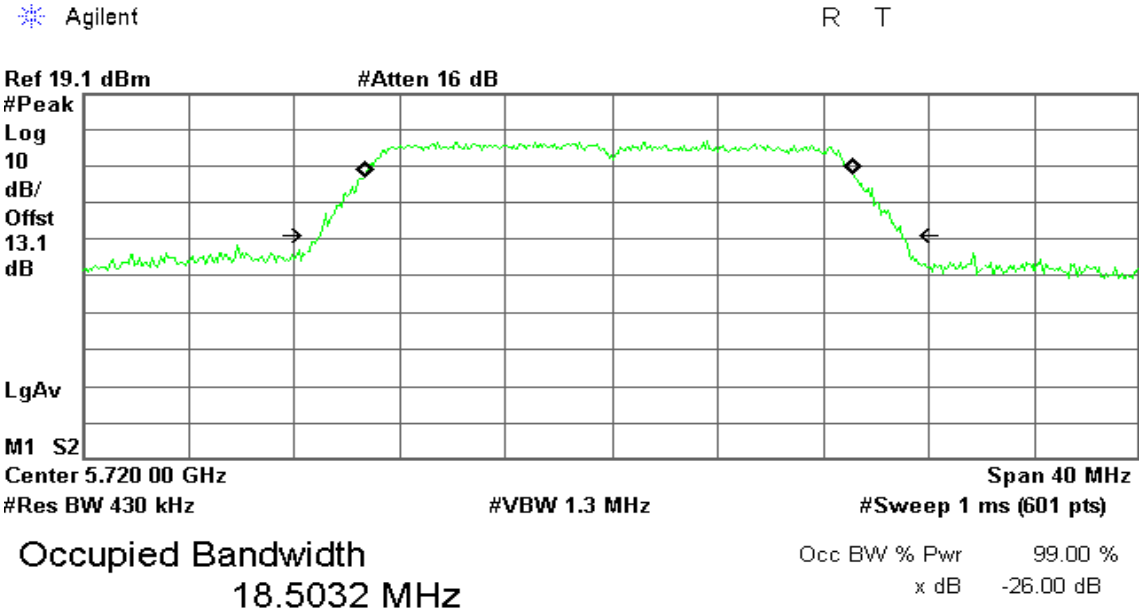


Occupied Bandwidth
18.4350 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -69.509 kHz
x dB Bandwidth 21.848 MHz

99% Bandwidth (5720MHz)



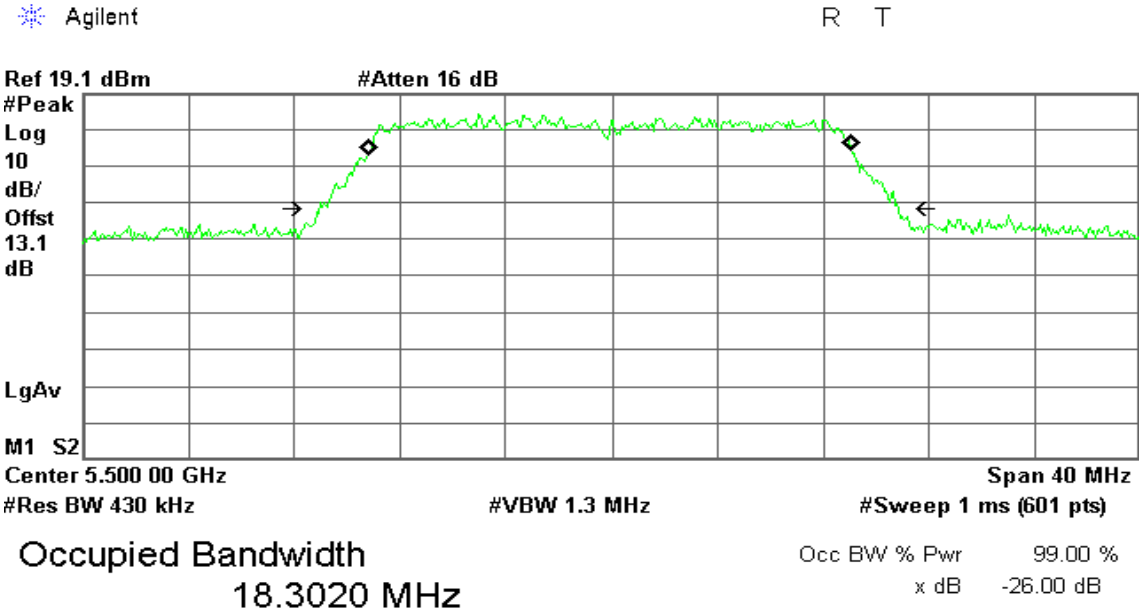
Occupied Bandwidth
18.5032 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -92.179 kHz
x dB Bandwidth 22.027 MHz

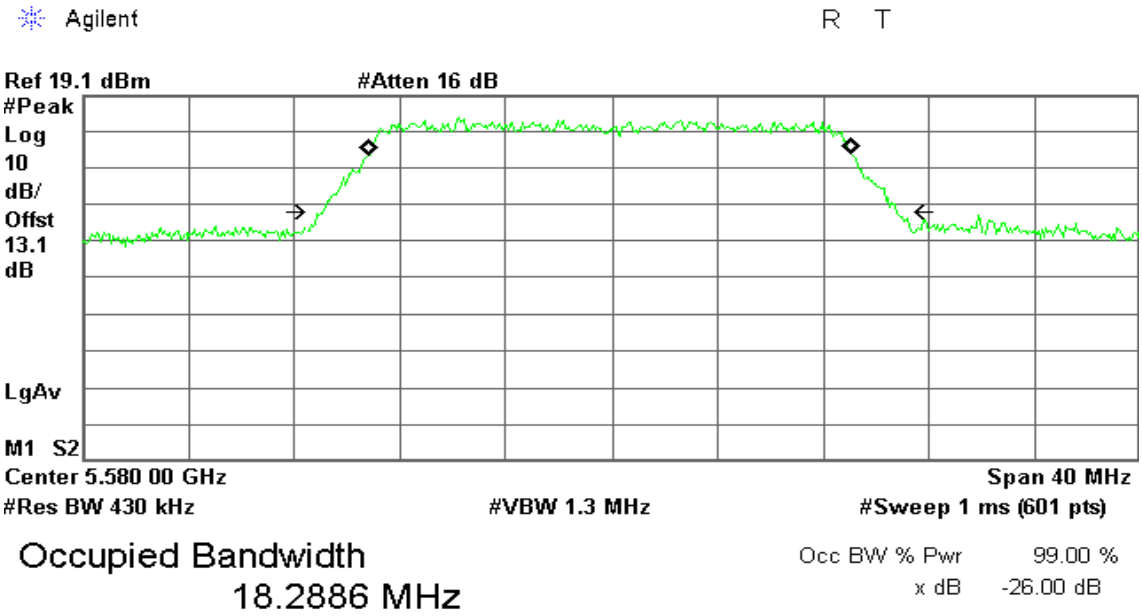
IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz / Chain 1

99% Bandwidth (5500 MHz)



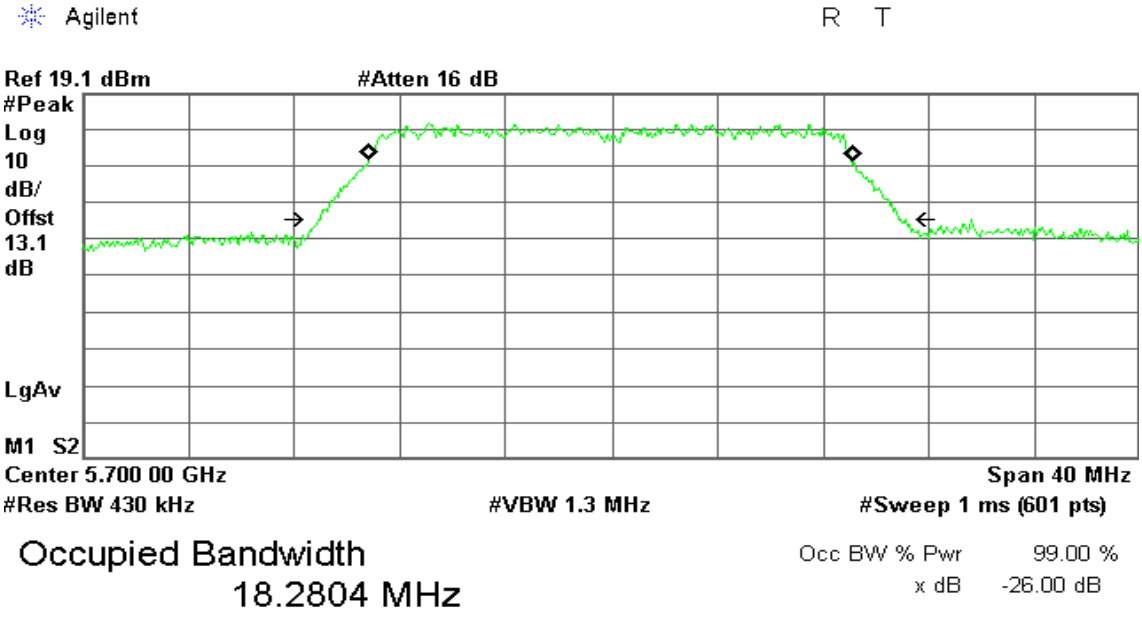
Transmit Freq Error	-57.965 kHz
x dB Bandwidth	21.906 MHz

99% Bandwidth (5580 MHz)



Transmit Freq Error	-56.293 kHz
x dB Bandwidth	21.720 MHz

99% Bandwidth (5700 MHz)

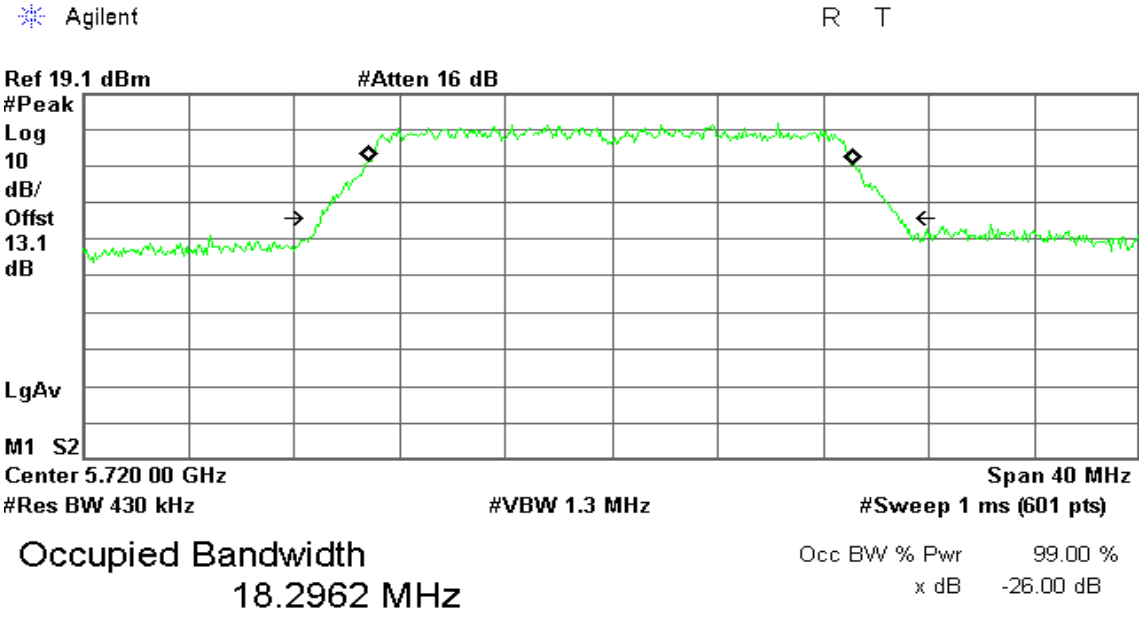


Occupied Bandwidth
18.2804 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -36.939 kHz
x dB Bandwidth 21.859 MHz

99% Bandwidth (5720 MHz)



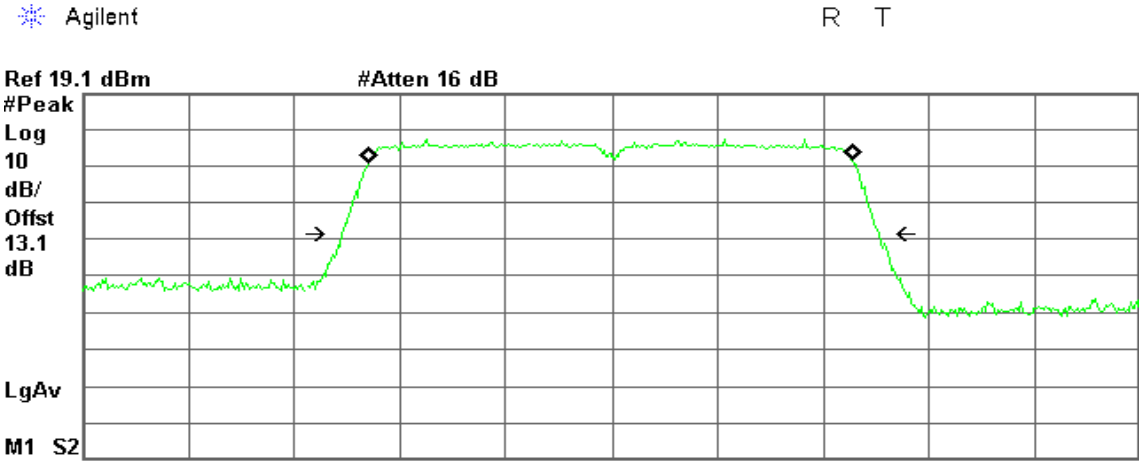
Occupied Bandwidth
18.2962 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -27.231 kHz
x dB Bandwidth 21.844 MHz

IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz / Chain 0

99% Bandwidth (5510 MHz)

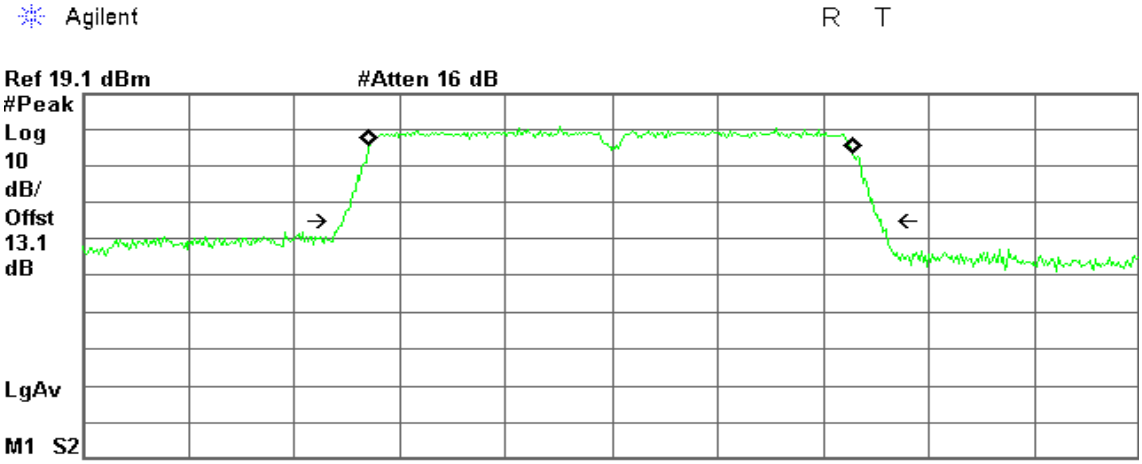


Occupied Bandwidth
36.6337 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -16.567 kHz
x dB Bandwidth 40.694 MHz

99% Bandwidth (5590 MHz)

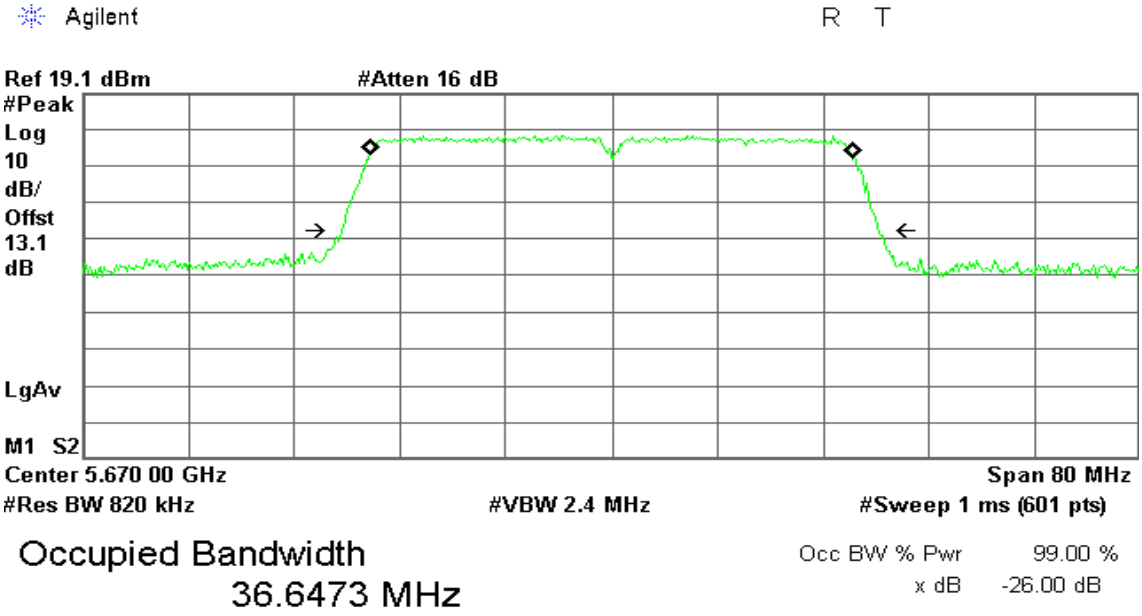


Occupied Bandwidth
36.6200 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

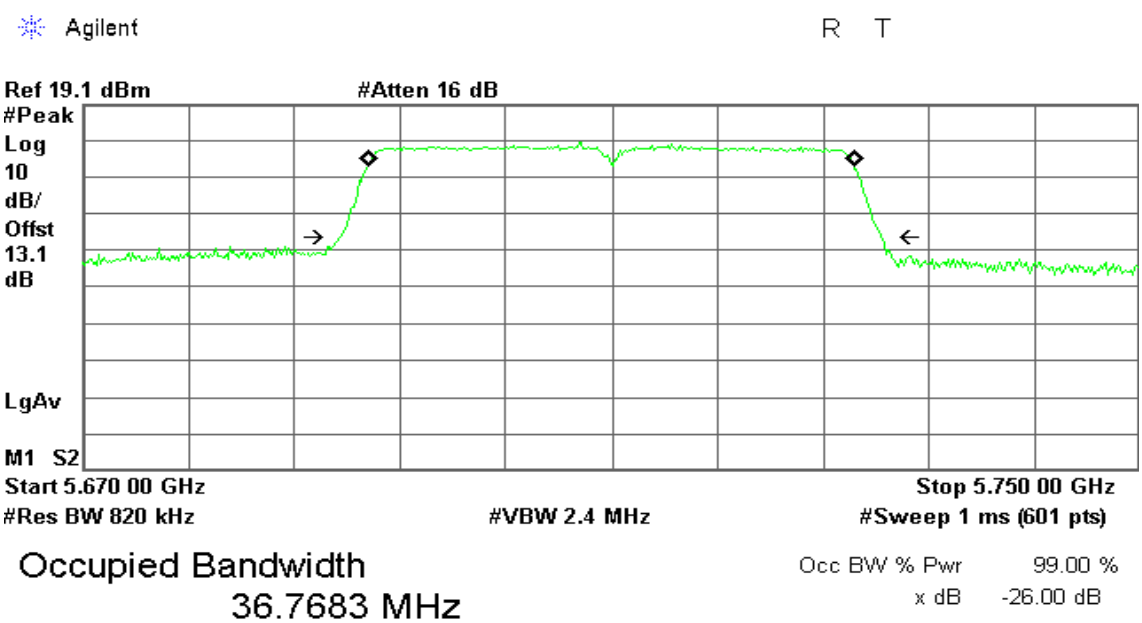
Transmit Freq Error -29.993 kHz
x dB Bandwidth 40.747 MHz

99% Bandwidth (5670 MHz)



Transmit Freq Error	6.599 kHz
x dB Bandwidth	40.603 MHz

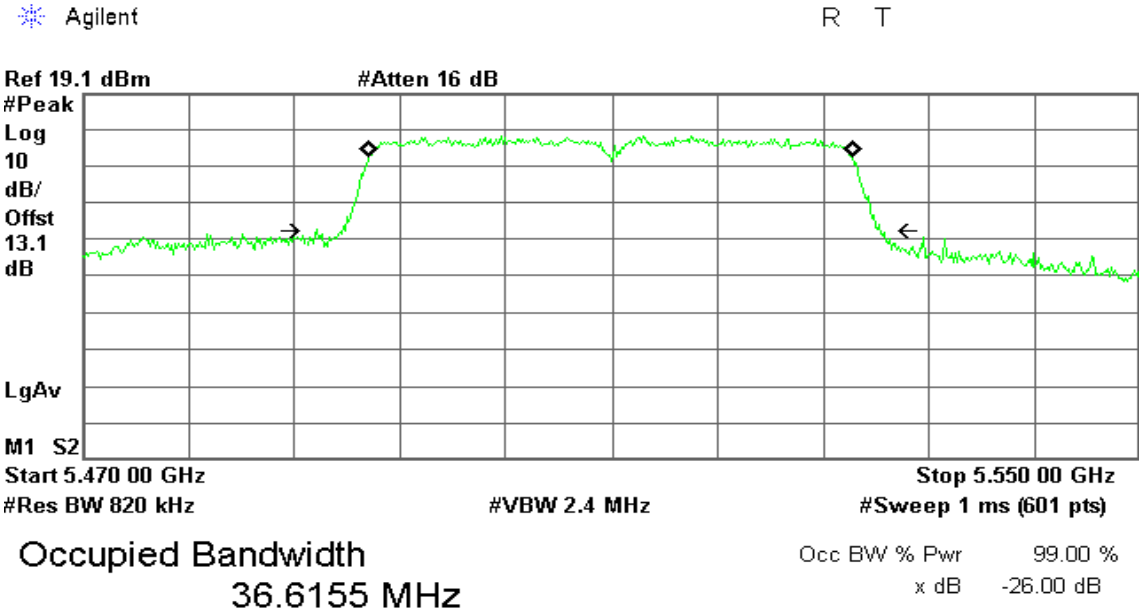
99% Bandwidth (5710 MHz)



Transmit Freq Error	-46.776 kHz
x dB Bandwidth	40.974 MHz

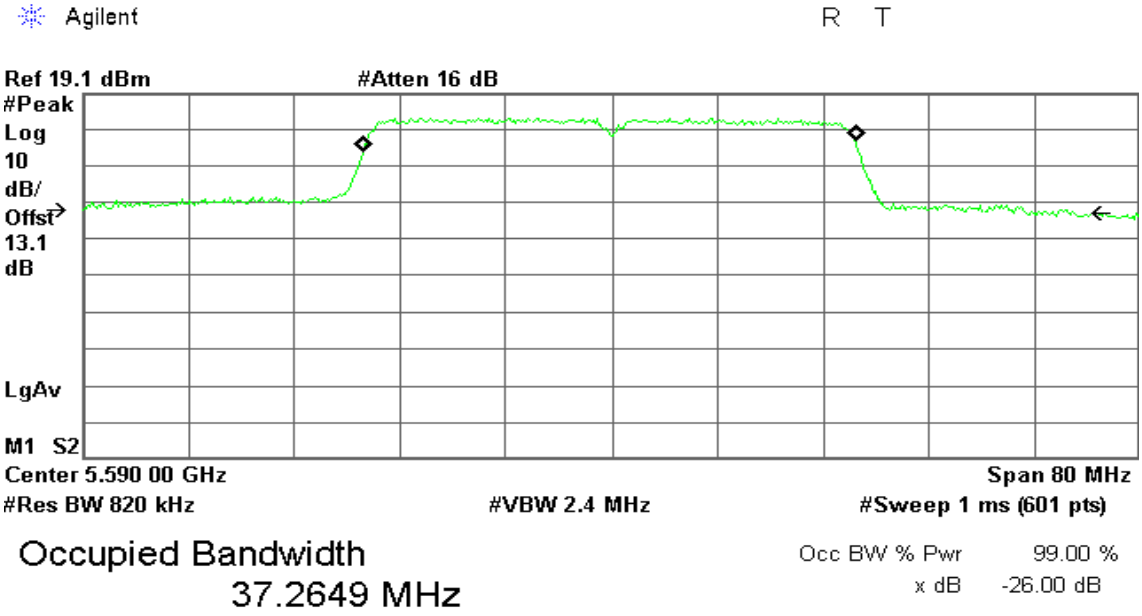
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz / Chain 1

99% Bandwidth (5510 MHz)



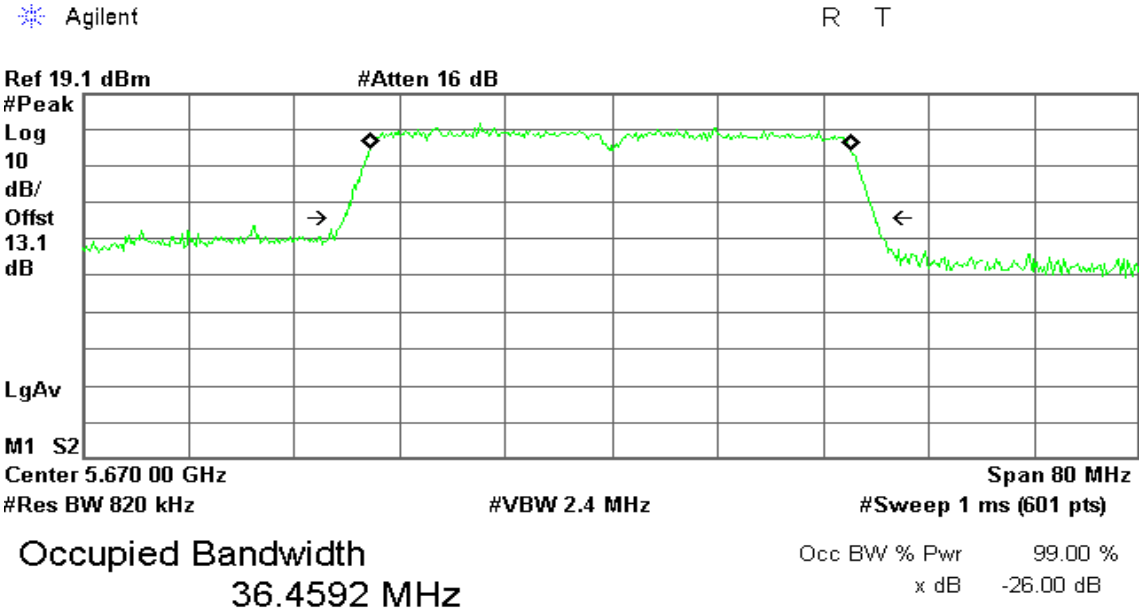
Transmit Freq Error -62.250 kHz
x dB Bandwidth 42.660 MHz

99% Bandwidth (5590 MHz)



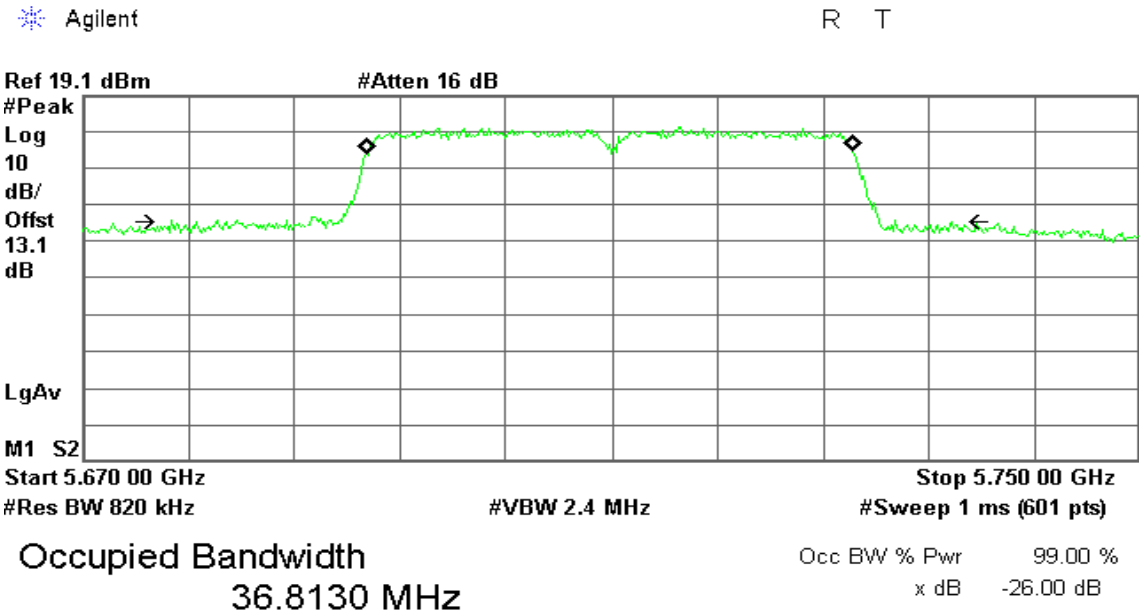
Transmit Freq Error -153.500 kHz
x dB Bandwidth 75.004 MHz

99% Bandwidth (5670 MHz)



Transmit Freq Error	-70.915 kHz
x dB Bandwidth	40.206 MHz

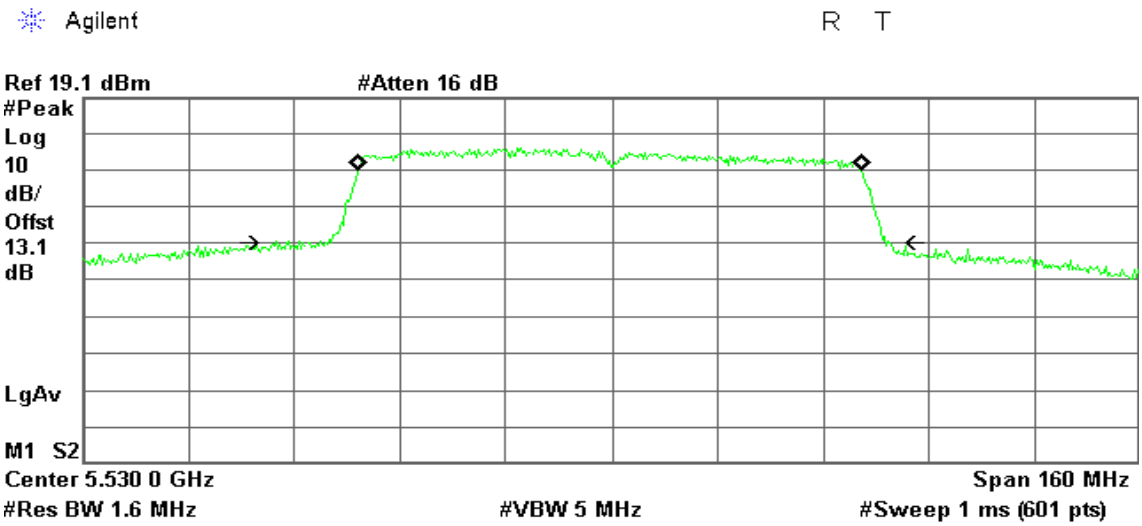
99% Bandwidth (5710MHz)



Transmit Freq Error	-86.394 kHz
x dB Bandwidth	59.115 MHz

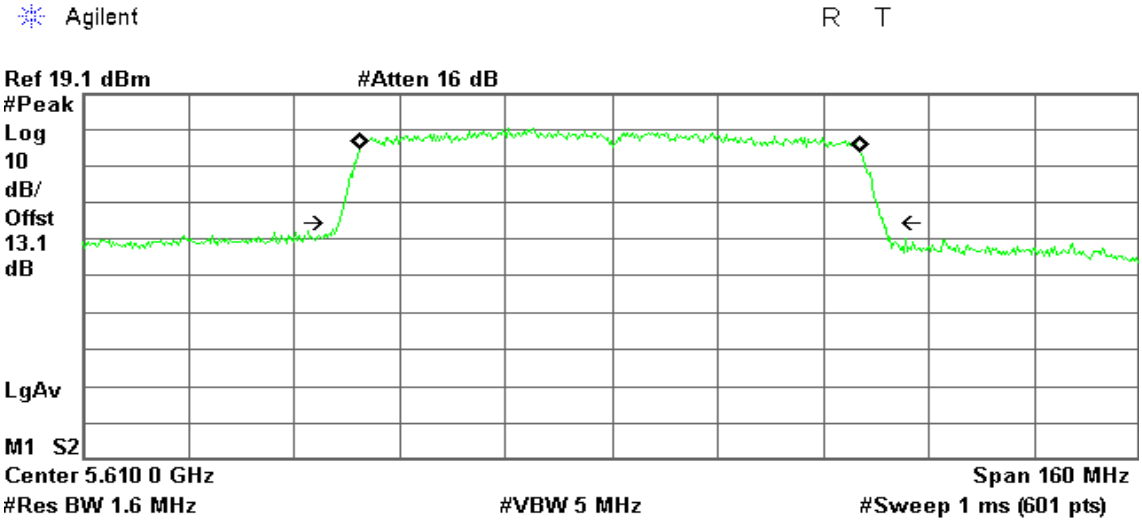
IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz/ Chain 0

99% Bandwidth (5530 MHz)



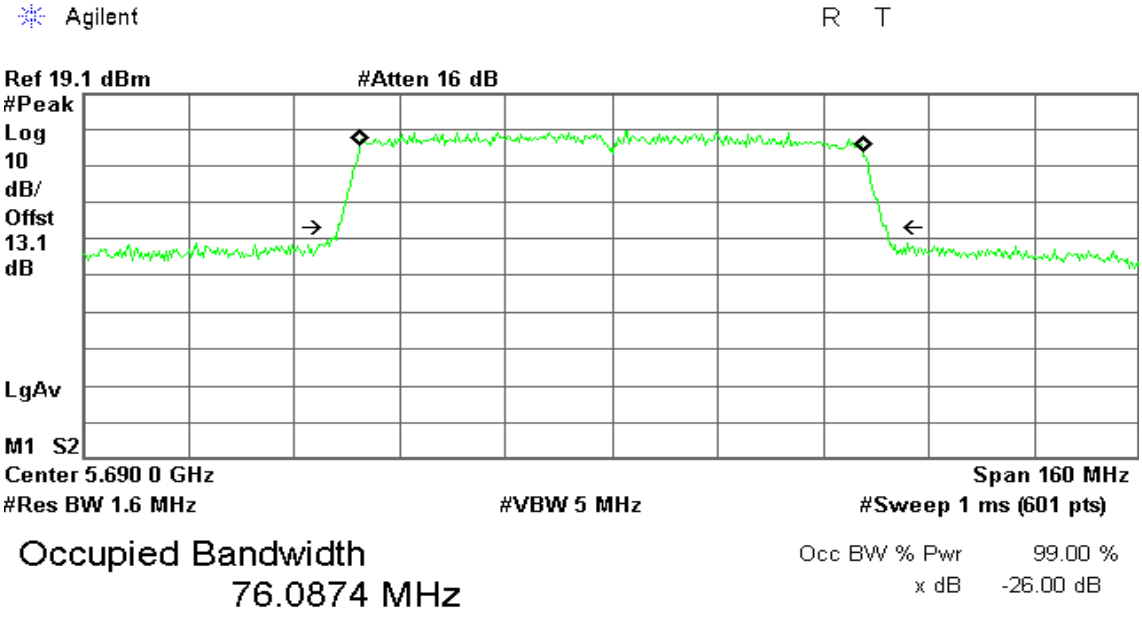
Transmit Freq Error -212.011 kHz
x dB Bandwidth 92.690 MHz

99% Bandwidth (5610 MHz)



Transmit Freq Error -209.826 kHz
x dB Bandwidth 82.387 MHz

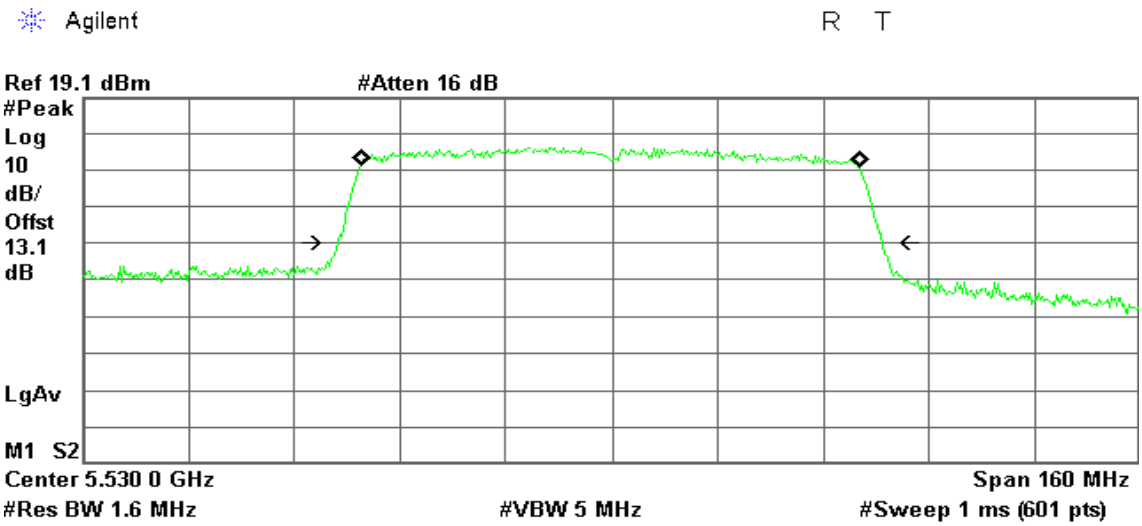
99% Bandwidth (5690 MHz)



Transmit Freq Error	3.164 kHz
x dB Bandwidth	83.032 MHz

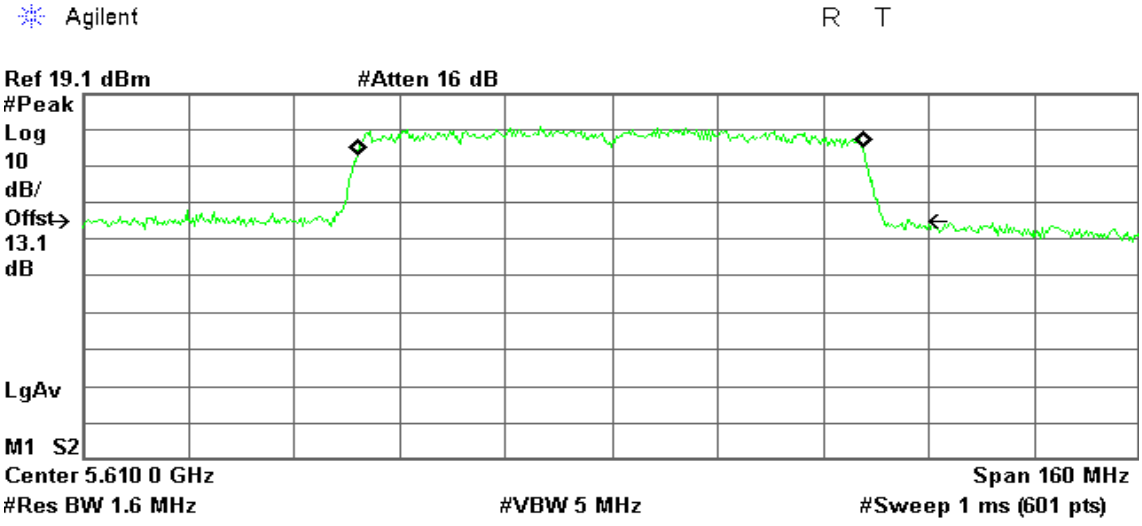
IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz/ Chain 1

99% Bandwidth (5530 MHz)



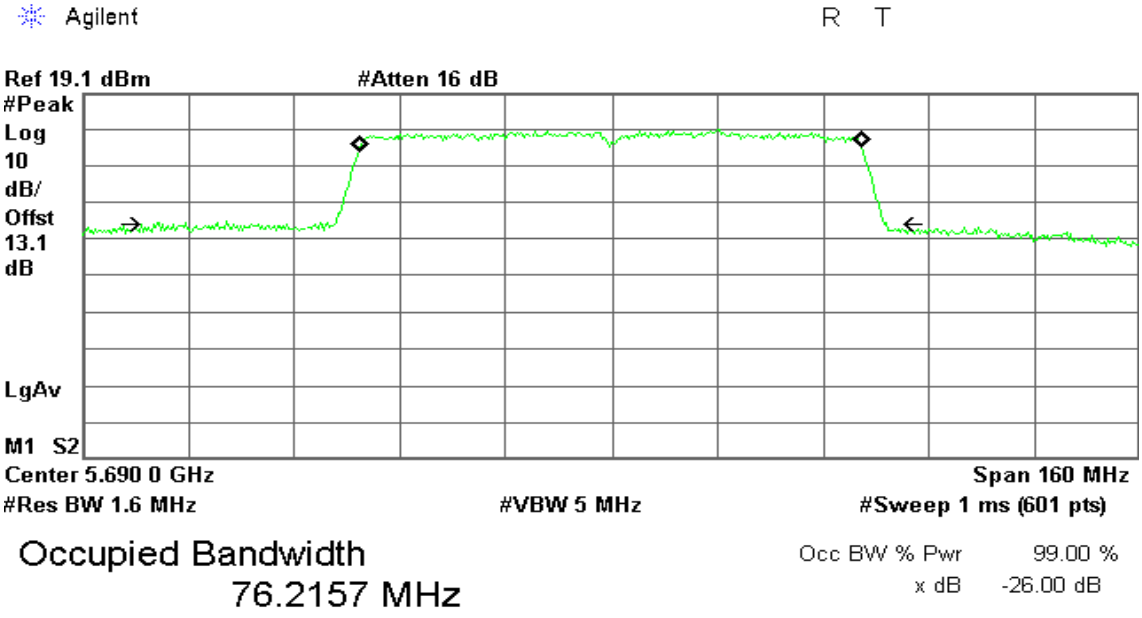
Transmit Freq Error -209.975 kHz
x dB Bandwidth 82.345 MHz

99% Bandwidth (5610 MHz)



Transmit Freq Error -217.300 kHz
x dB Bandwidth 124.775 MHz

99% Bandwidth (5690 MHz)



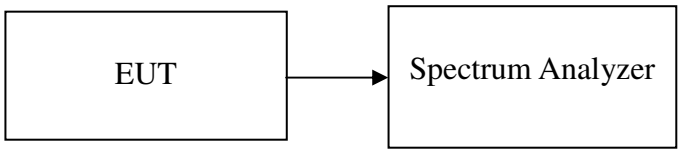
Transmit Freq Error	-151.940 kHz
x dB Bandwidth	110.605 MHz

7.2 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)
36	5180	22.178
44	5220	27.657
48	5240	28.924

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)
36	5180	26.919
44	5220	22.034
48	5240	22.265

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)
36	5180	21.937
44	5220	21.752
48	5240	21.825

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)
38	5190	40.740
46	5230	41.100

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)
38	5190	40.318
46	5230	40.722

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5210MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)
42	5210	82.625

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5210MHz / Chain 1

Channel	Frequency (MHz)	26db Bandwidth (MHz)
42	5210	82.902

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)
52	5260	21.825
56	5280	21.964
60	5300	21.931
64	5320	21.786

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)
52	5180	22.040
56	5260	22.115
60	5300	22.461
64	5320	22.033

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)
52	5180	21.692
56	5260	21.917
60	5300	21.880
64	5320	21.806

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)
54	5270	76.191
62	5310	41.002

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

Channel	Frequency (MHz)	26db Bandwidth (MHz)
54	5270	79.967
62	5310	40.529

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)
58	5290	83.084

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 1

Channel	Frequency (MHz)	26db Bandwidth (MHz)
58	5290	82.567

Test mode: IEEE 802.11a mode / 5500 ~ 5720MHz

Channel	Frequency (MHz)	26db Bandwidth (MHz)
100	5500	22.990
116	5580	31.209
140	5700	21.821
144	5720 (Band III)	16
144	5720 (Band IV)	12.53

BAND III = mark 2 – 3R=16
BAND IV = (3R+3Δ) - mark 2=12.53

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)
100	5500	22.151
116	5580	22.100
140	5700	21.848
144	5720 (Band III)	21.93
144	5720 (Band IV)	6.2

BAND III = mark 2 – 3R=21.93
BAND IV = (3R+3Δ) - mark 2=6.2

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz / Chain 1

Channel	Frequency (MHz)	26db Bandwidth (MHz)
100	5500	21.906
116	5580	21.720
140	5700	21.859
144	5720 (Band III)	16.53
144	5720 (Band IV)	9.54

BAND III = mark 2 – 3R=16.53
BAND IIII = (3R+3Δ) - mark2=9.54

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)
102	5510	40.694
118	5590	40.747
134	5670	40.603
142	5710 (Band III)	35.27
142	5710 (Band IV)	5.26

BAND III = mark 2 – 3R=35.27
BAND IV = (3R+3Δ) - mark2=5.26

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz / Chain 1

Channel	Frequency (MHz)	26db Bandwidth (MHz)
102	5510	42.660
118	5590	75.004
134	5670	40.206
142	5710 (Band III)	36.2
142	5710 (Band IV)	5.27

BAND III = mark 2 - 3R=36.2
BAND IV = (3R+3Δ) – mark 2=5.27

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz / Chain 0

Channel	Frequency (MHz)	26db Bandwidth (MHz)
106	5530	92.690
122	5610	82.387
138	5690 (Band III)	75.8
138	5690 (Band IV)	5.3

BAND III = mark 2 - 3R=75.8
BAND IV = (3R+3Δ) – mark 2=5.3

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz / Chain 1

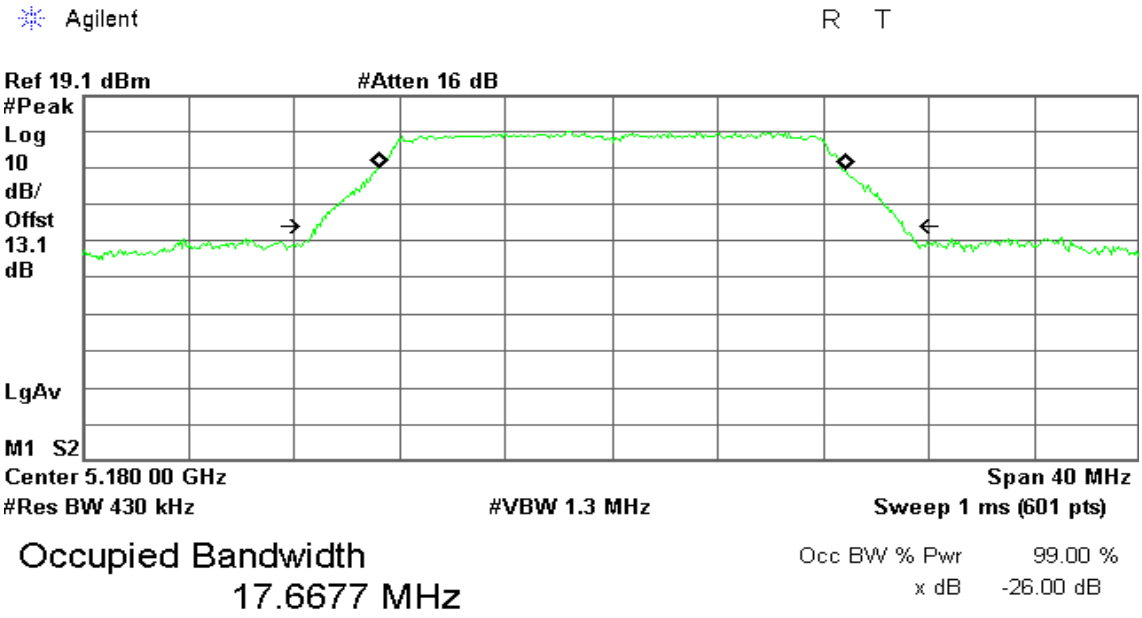
Channel	Frequency (MHz)	26db Bandwidth (MHz)
106	5530	82.345
122	5610	124.775
138	5690 (Band III)	87.8
138	5690 (Band IV)	6.9

BAND III = mark 2 - 3R=87.8
BAND IV = (3R+3Δ) – mark 2=6.9

Test Plot

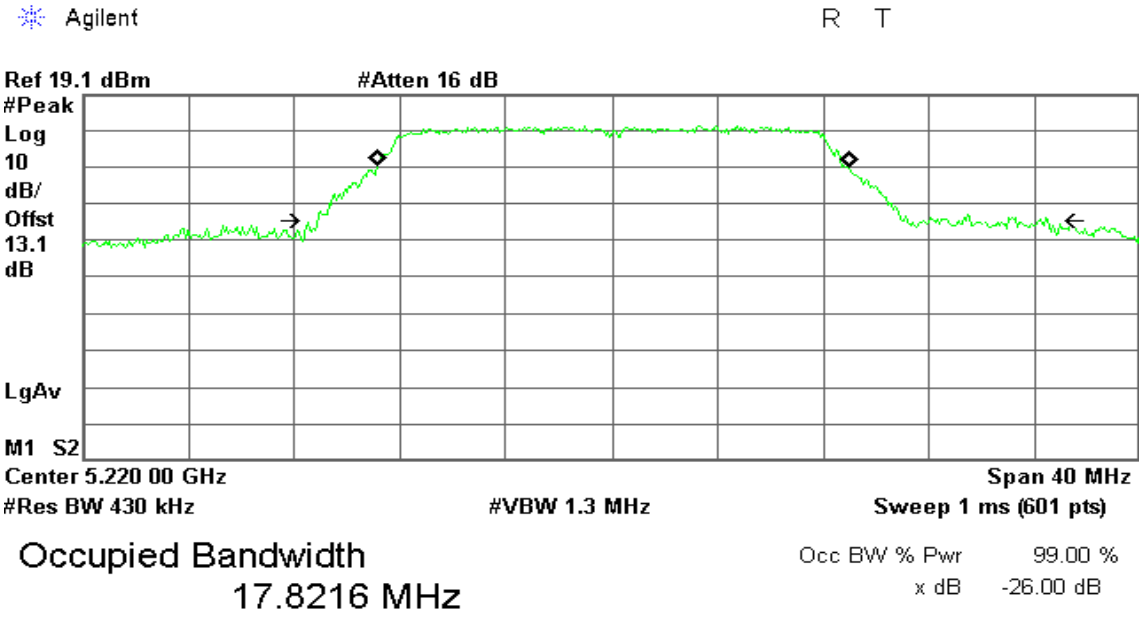
IEEE 802.11a for 5180 ~ 5240MHz

5180 MHz



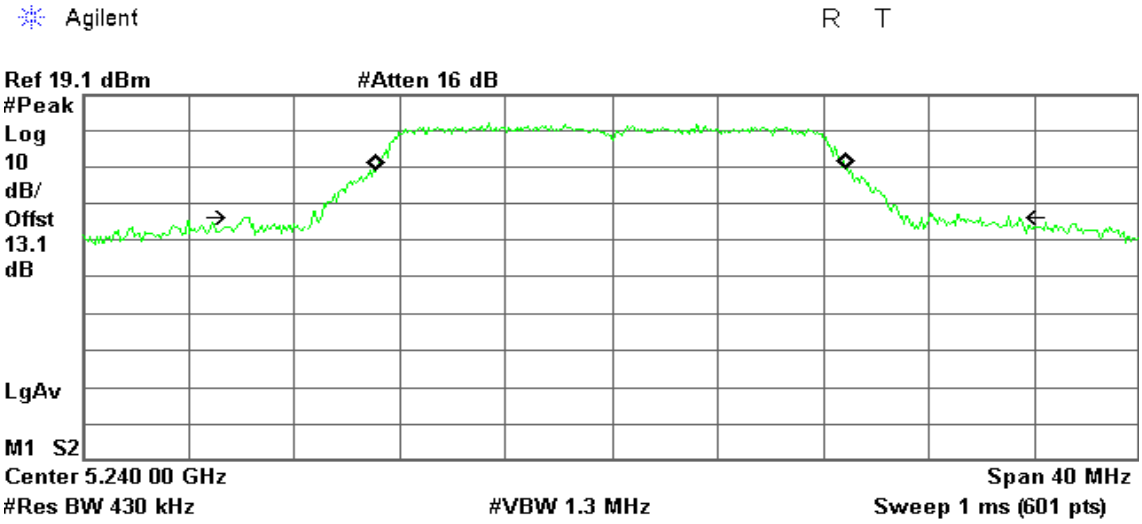
Transmit Freq Error	19.144 kHz
x dB Bandwidth	22.178 MHz

5220 MHz



Transmit Freq Error	74.441 kHz
x dB Bandwidth	27.657 MHz

5240 MHz



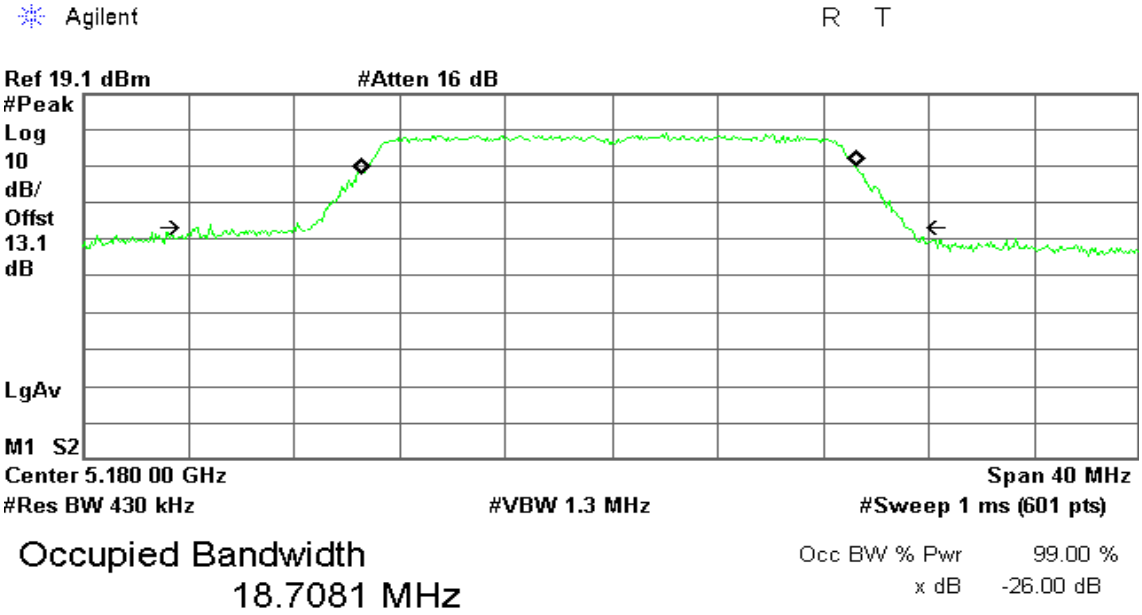
Occupied Bandwidth
17.8008 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -14.447 kHz
x dB Bandwidth 28.924 MHz

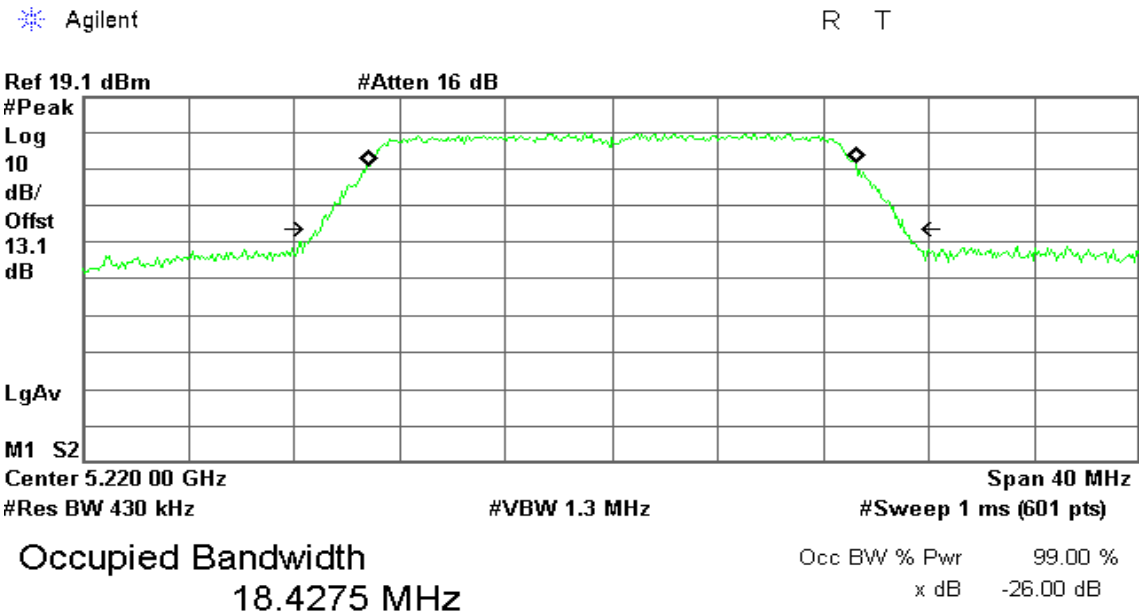
IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

5180 MHz



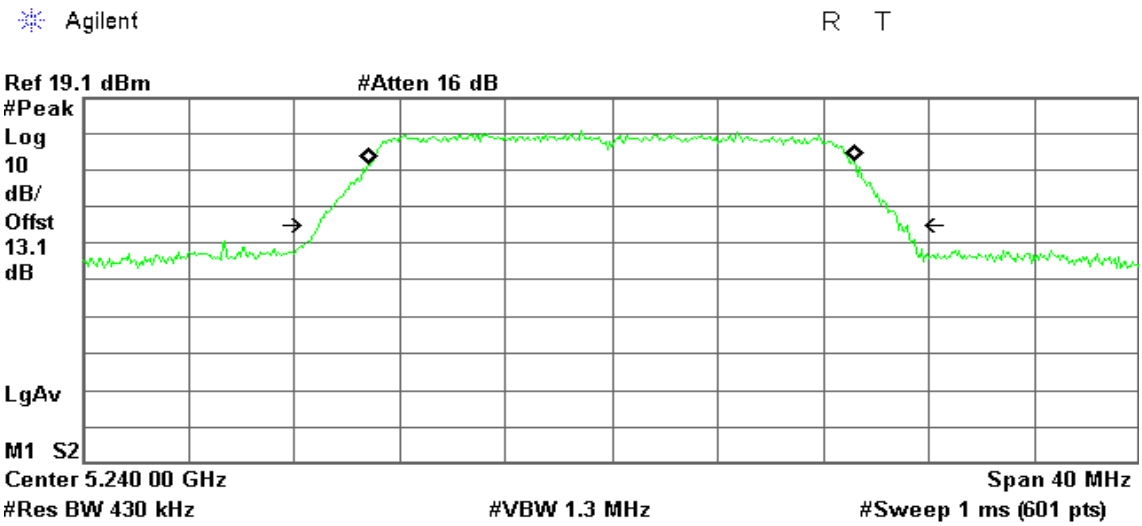
Transmit Freq Error	-105.323 kHz
x dB Bandwidth	26.919 MHz

5220 MHz



Transmit Freq Error	36.387 kHz
x dB Bandwidth	22.034 MHz

5240 MHz



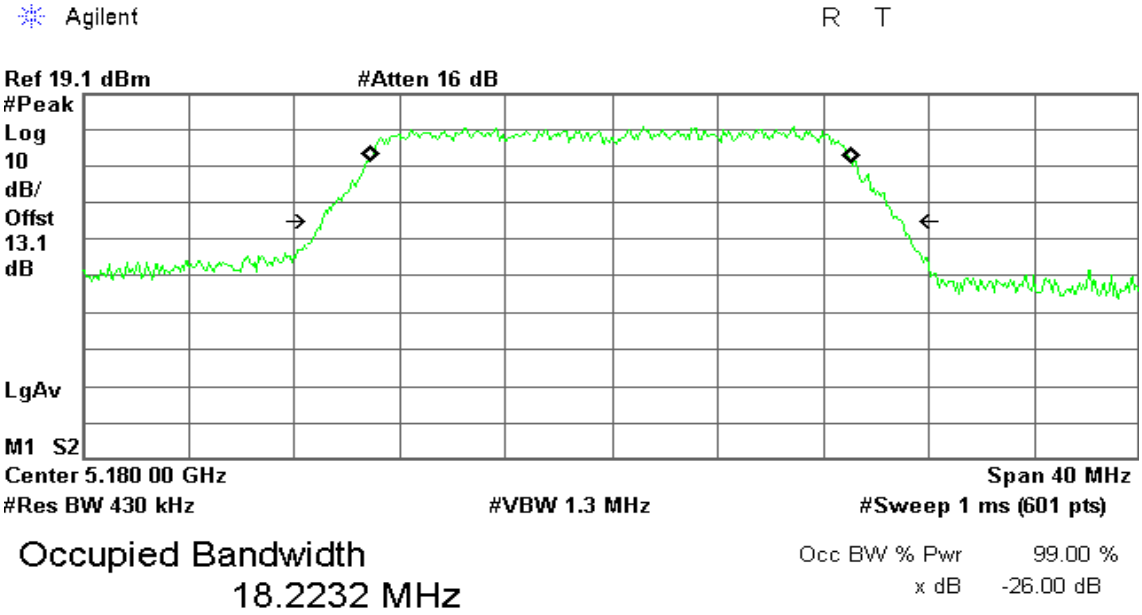
Occupied Bandwidth
18.4009 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error	-15.687 kHz
x dB Bandwidth	22.265 MHz

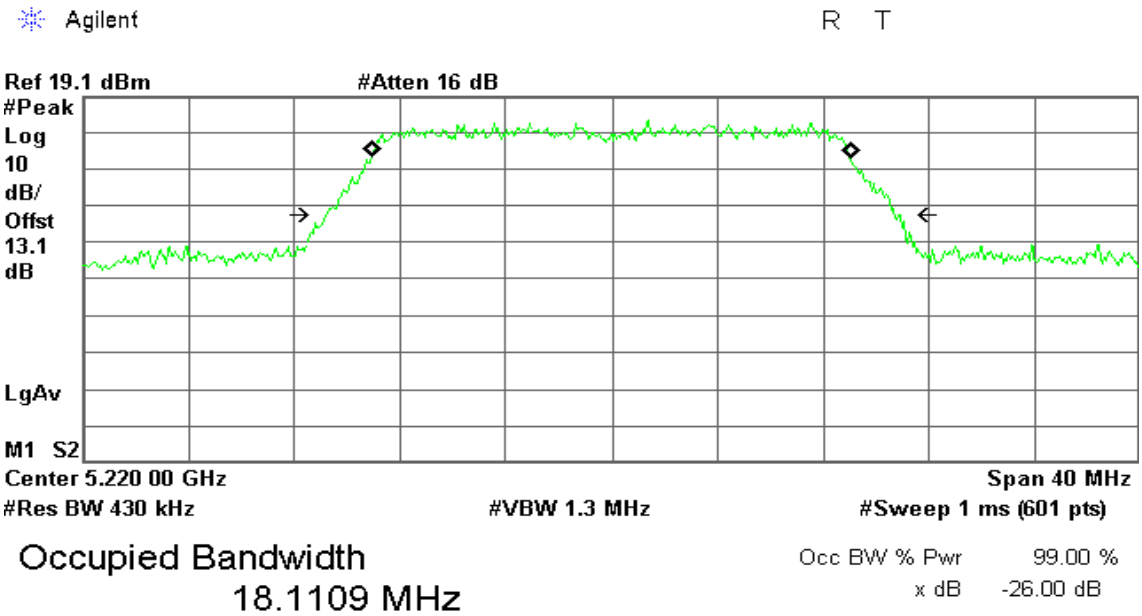
IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

5180 MHz



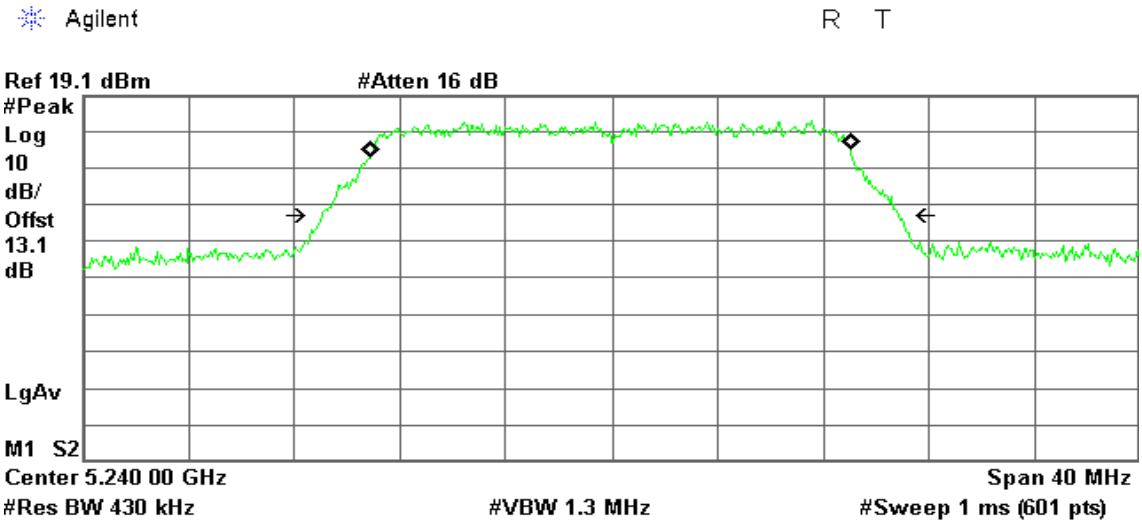
Transmit Freq Error	-12.620 kHz
x dB Bandwidth	21.937 MHz

5220 MHz



Transmit Freq Error	-18.493 kHz
x dB Bandwidth	21.752 MHz

5240 MHz



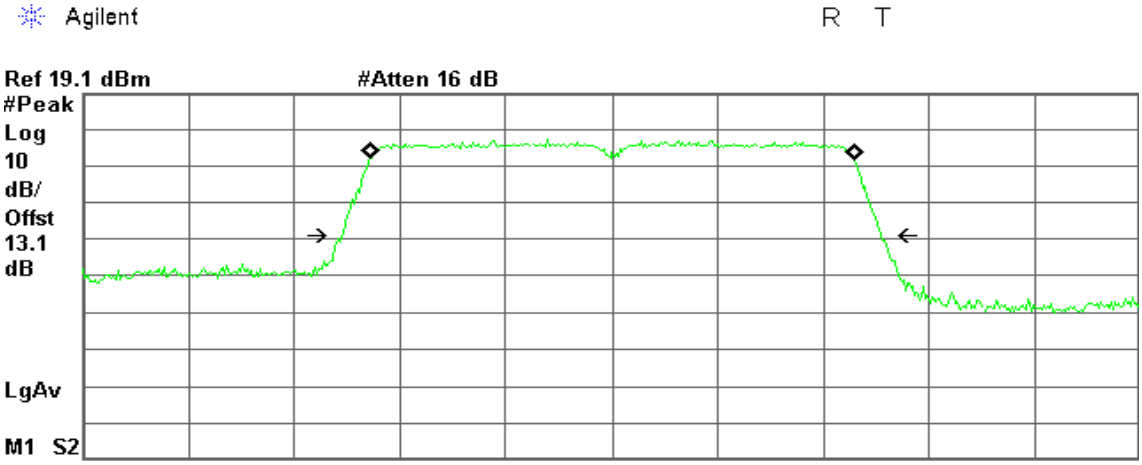
Occupied Bandwidth
18.1568 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error	-36.909 kHz
x dB Bandwidth	21.825 MHz

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

5190 MHz

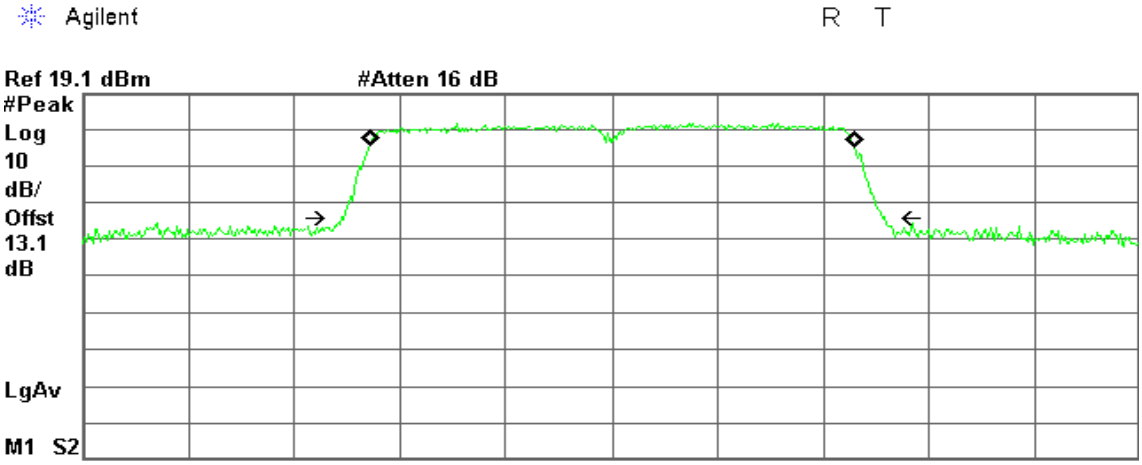


Occupied Bandwidth
36.6665 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 29.555 kHz
x dB Bandwidth 40.740 MHz

5230 MHz



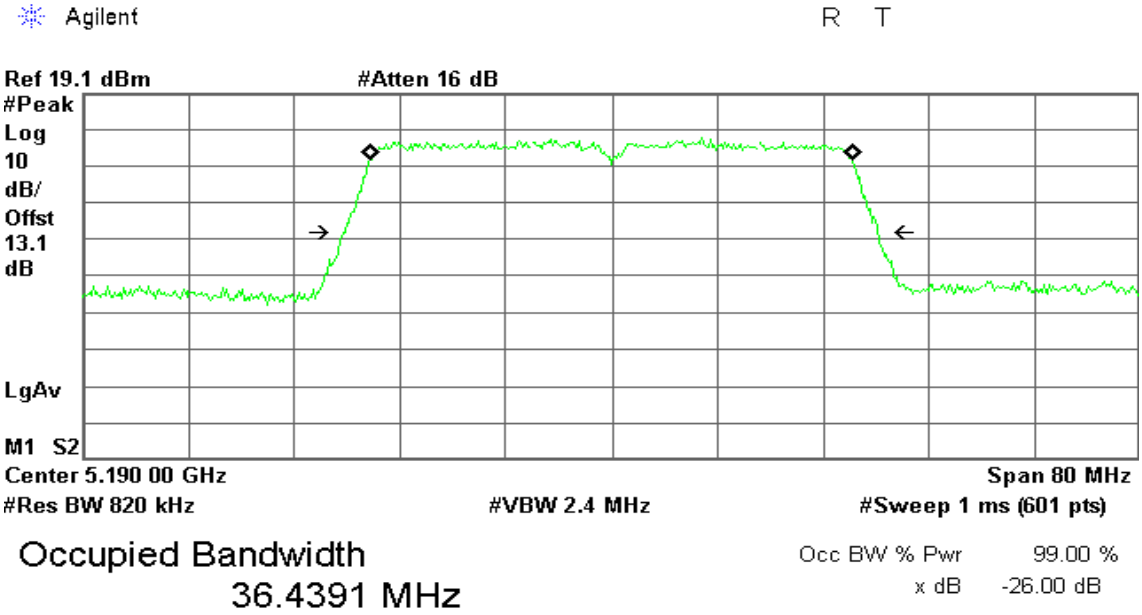
Occupied Bandwidth
36.6374 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 48.949 kHz
x dB Bandwidth 41.100 MHz

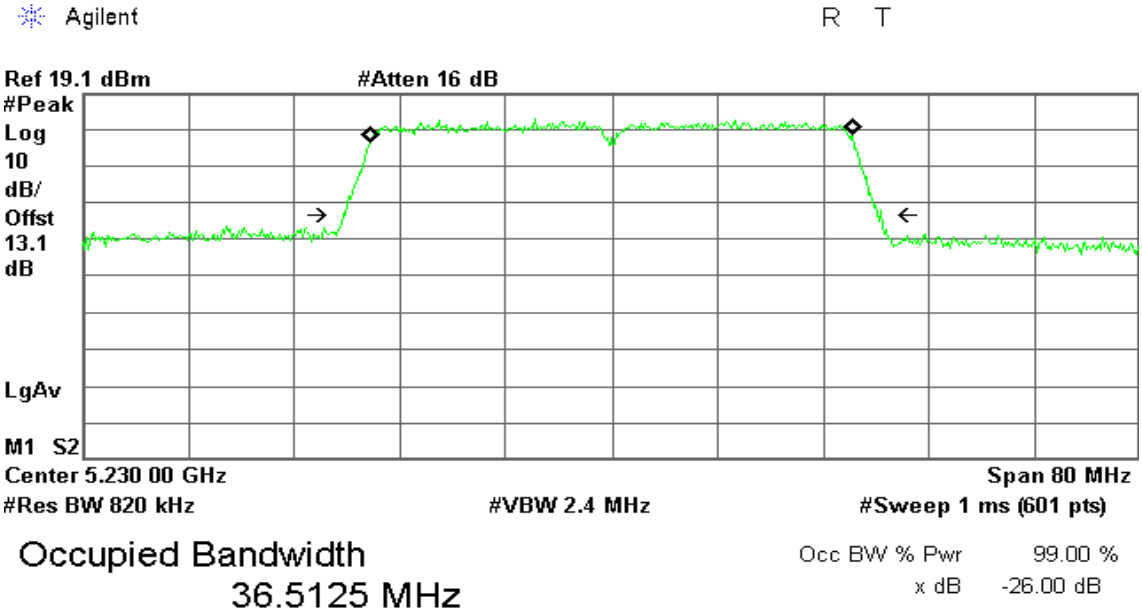
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

5190 MHz



Transmit Freq Error	-14.263 kHz
x dB Bandwidth	40.318 MHz

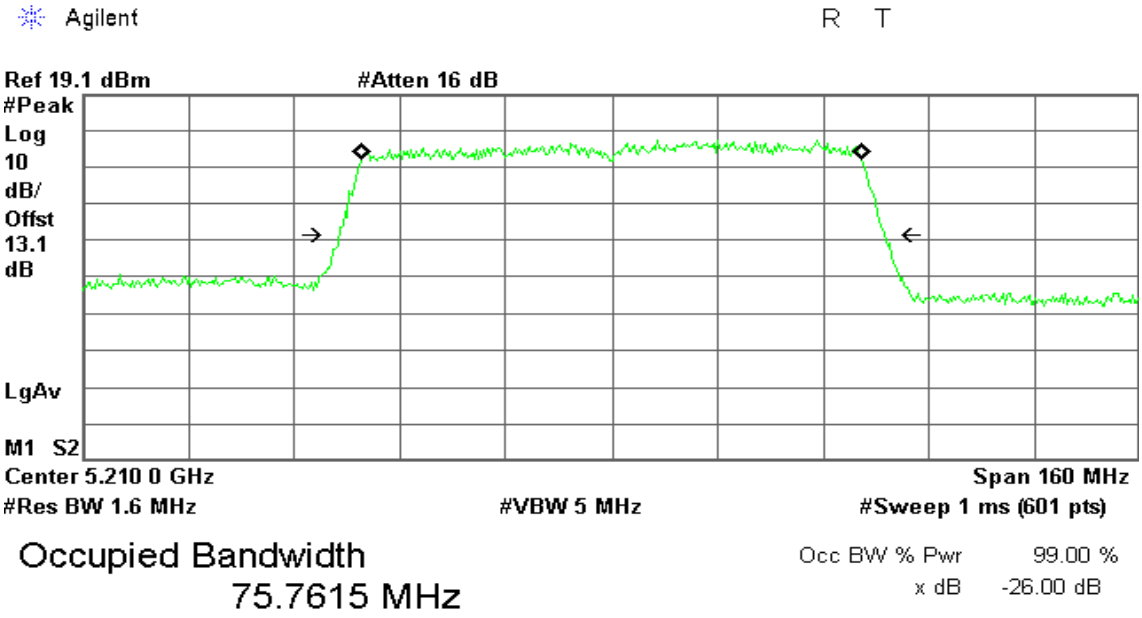
5230 MHz



Transmit Freq Error	20.824 kHz
x dB Bandwidth	40.722 MHz

IEEE 802.11ac VHT 80 MHz mode / 5210MHz / Chain 0

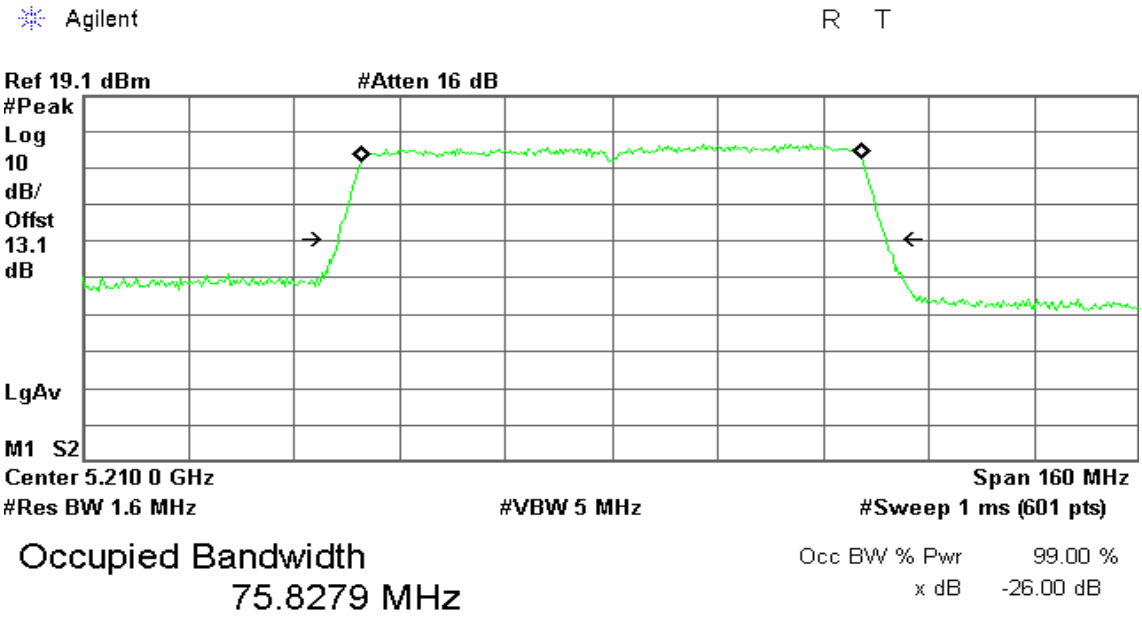
5210 MHz



Transmit Freq Error	79.140 kHz
x dB Bandwidth	82.625 MHz

IEEE 802.11ac VHT 80 MHz mode / 5210MHz / Chain 1

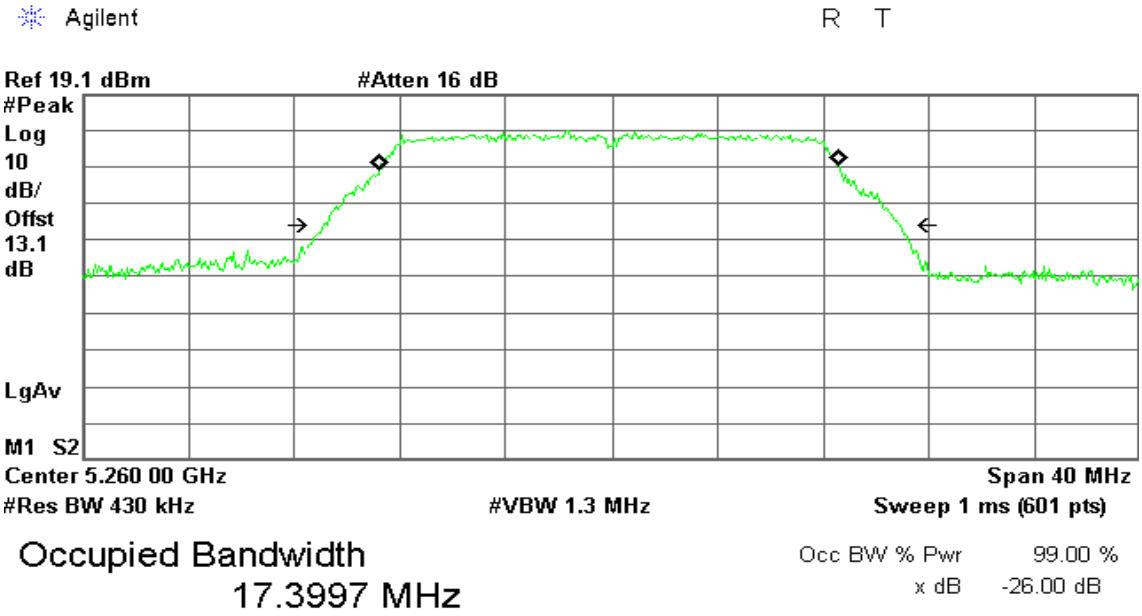
5210 MHz



Transmit Freq Error	70.753 kHz
x dB Bandwidth	82.902 MHz

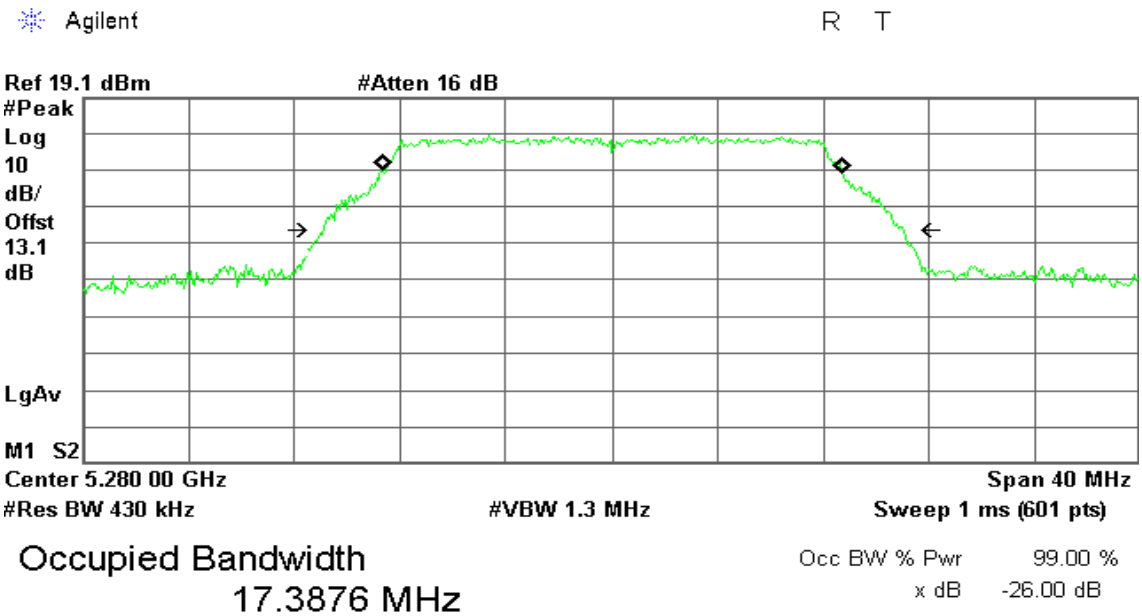
IEEE 802.11a mode / 5260 ~ 5320MHz

5260 MHz



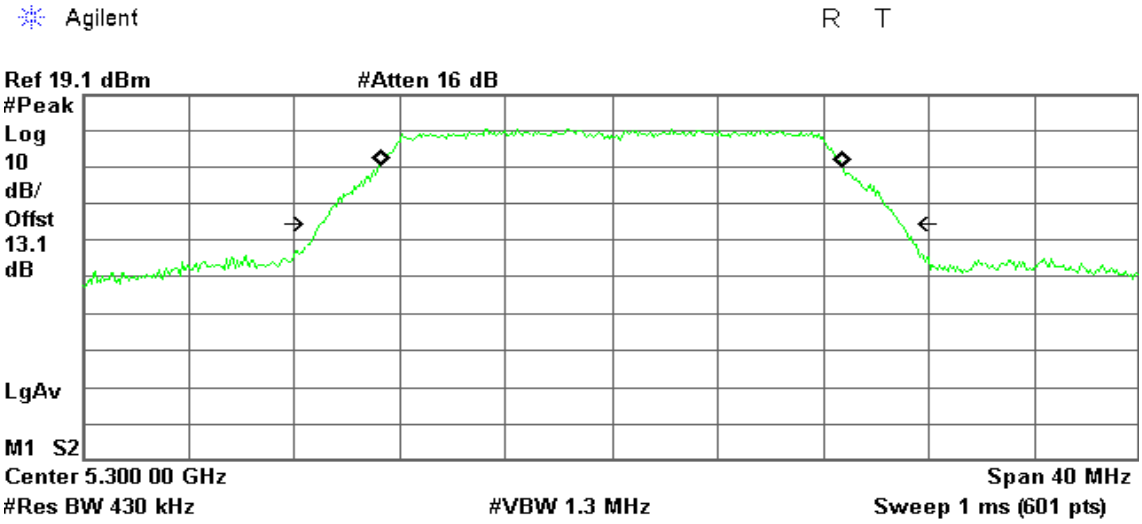
Transmit Freq Error	-75.654 kHz
x dB Bandwidth	21.825 MHz

5280 MHz



Transmit Freq Error	35.004 kHz
x dB Bandwidth	21.964 MHz

5300 MHz

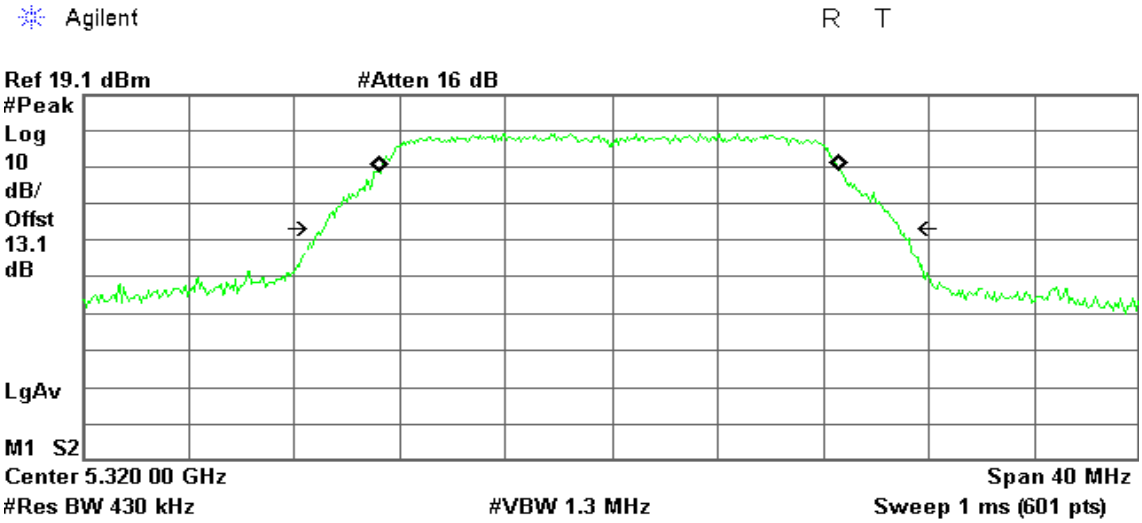


Occupied Bandwidth
17.4962 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -4.508 kHz
x dB Bandwidth 21.931 MHz

5320 MHz



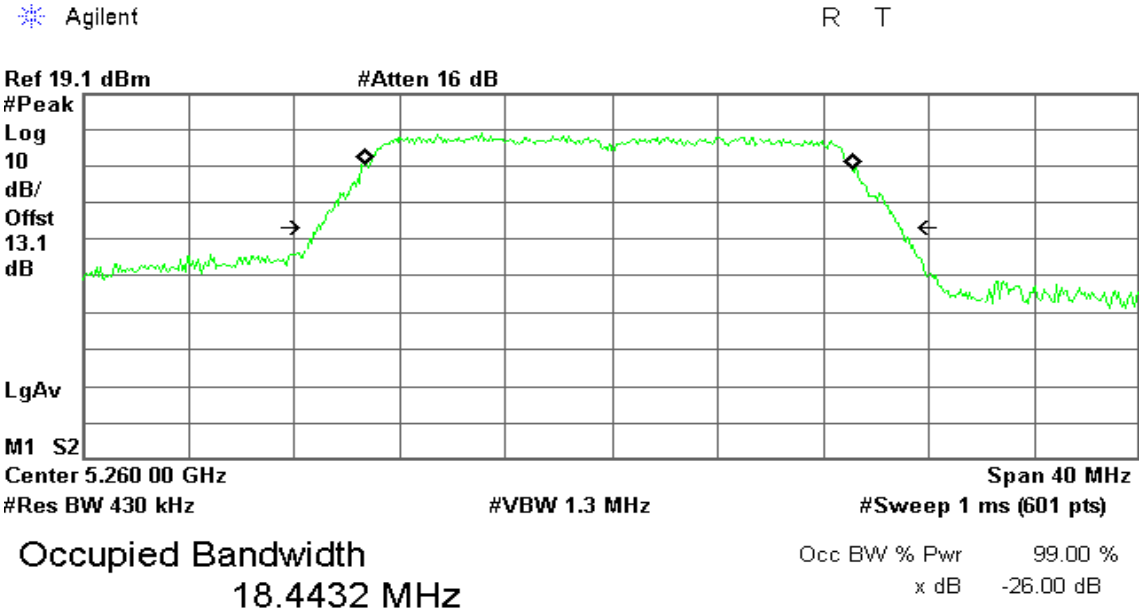
Occupied Bandwidth
17.3891 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -75.402 kHz
x dB Bandwidth 21.786 MHz

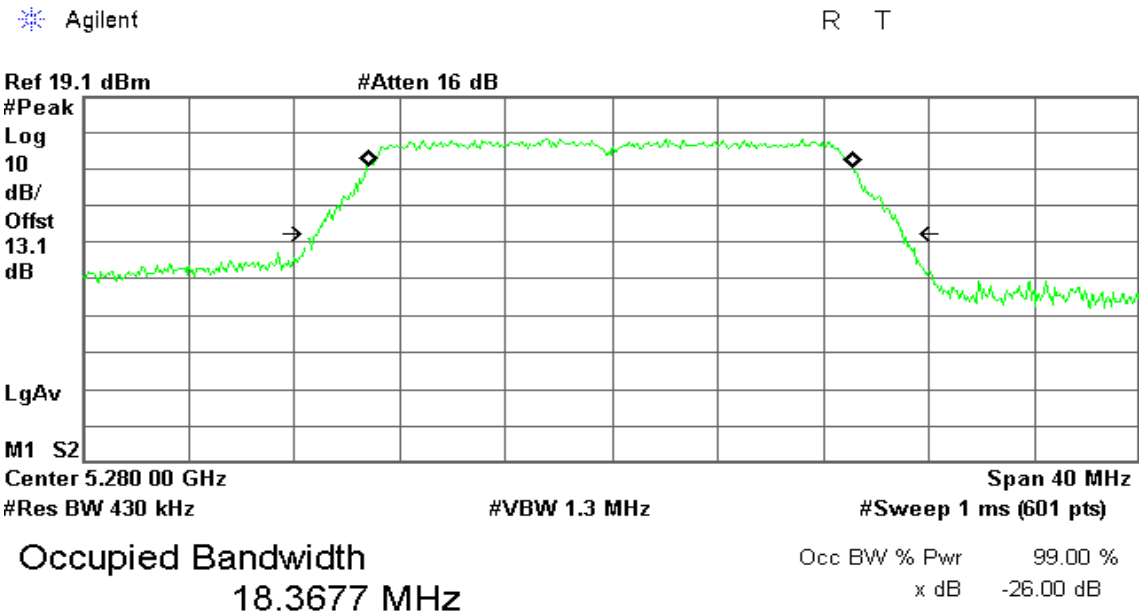
IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

5260 MHz



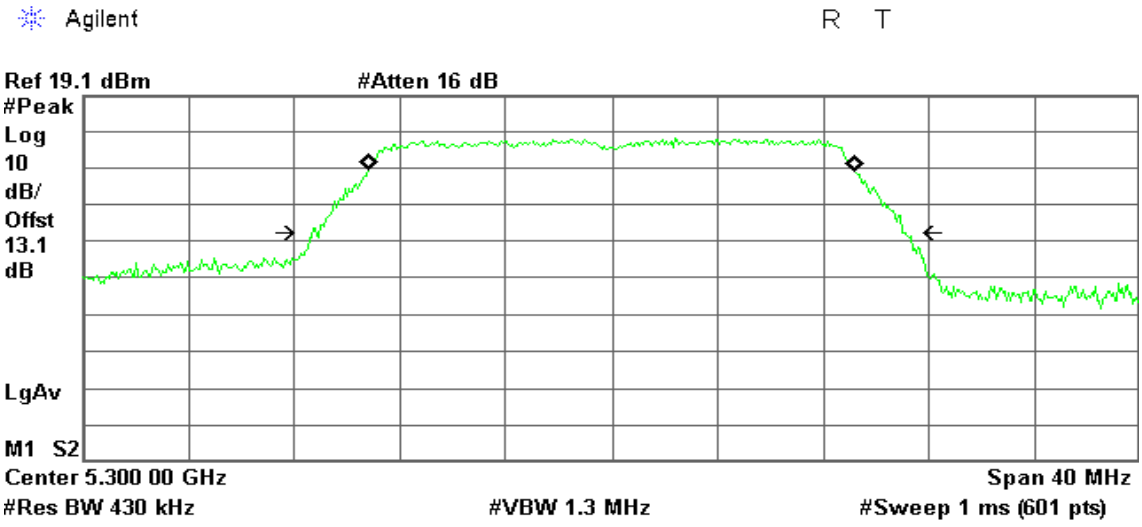
Transmit Freq Error	-111.455 kHz
x dB Bandwidth	22.040 MHz

5280 MHz



Transmit Freq Error	-34.955 kHz
x dB Bandwidth	22.115 MHz

5300 MHz

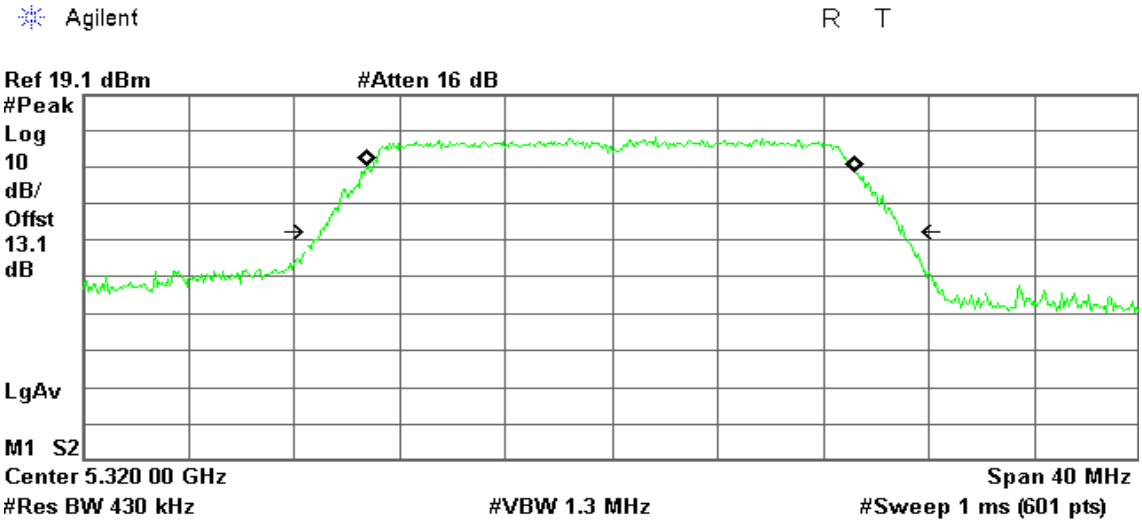


Occupied Bandwidth
18.4316 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 15.998 kHz
x dB Bandwidth 22.461 MHz

5320 MHz



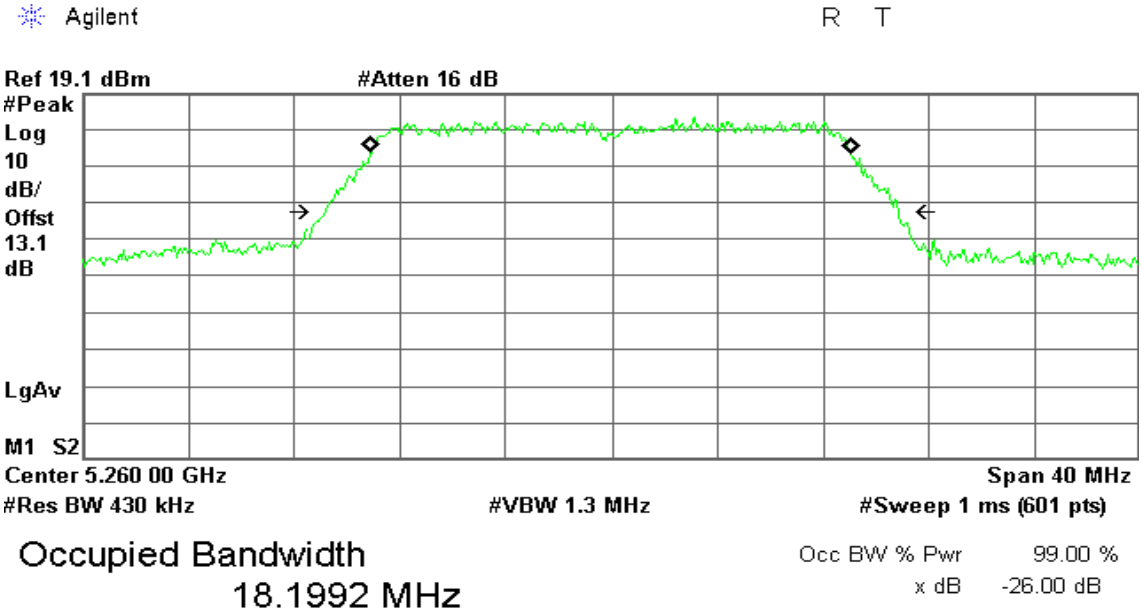
Occupied Bandwidth
18.4893 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -22.490 kHz
x dB Bandwidth 22.033 MHz

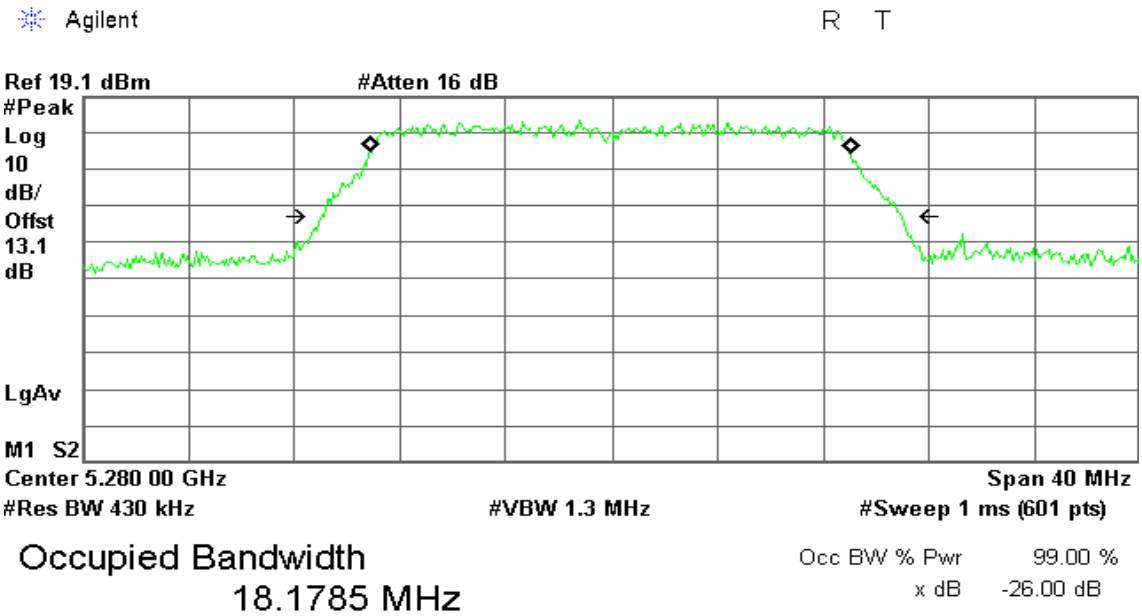
IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

5260 MHz



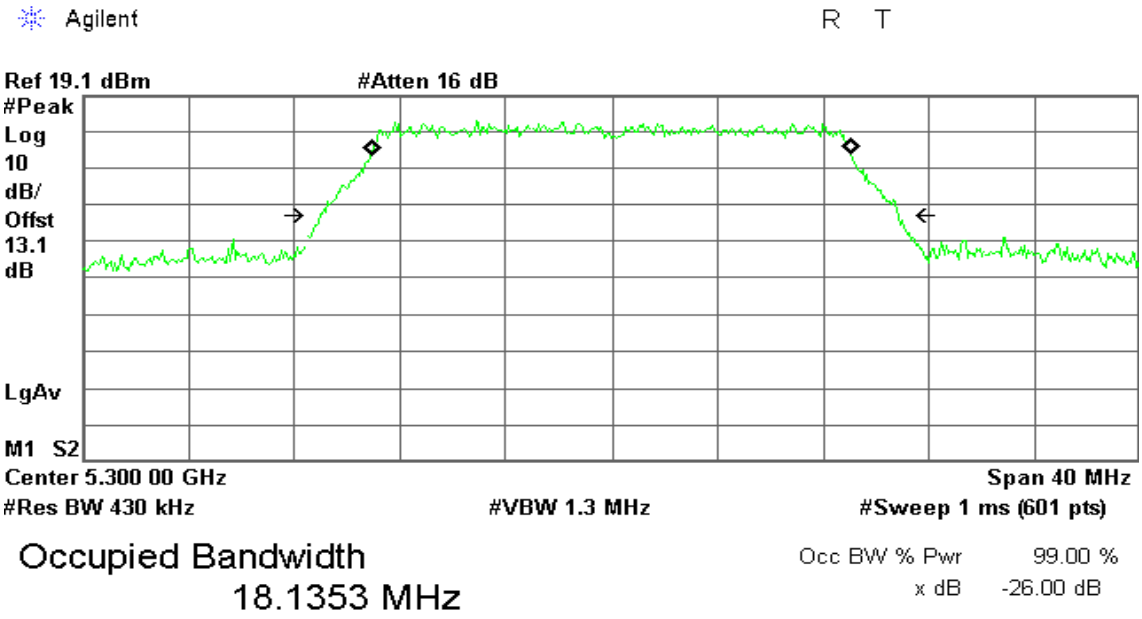
Transmit Freq Error	-13.360 kHz
x dB Bandwidth	21.692 MHz

5280 MHz



Transmit Freq Error	-37.878 kHz
x dB Bandwidth	21.917 MHz

5300 MHz

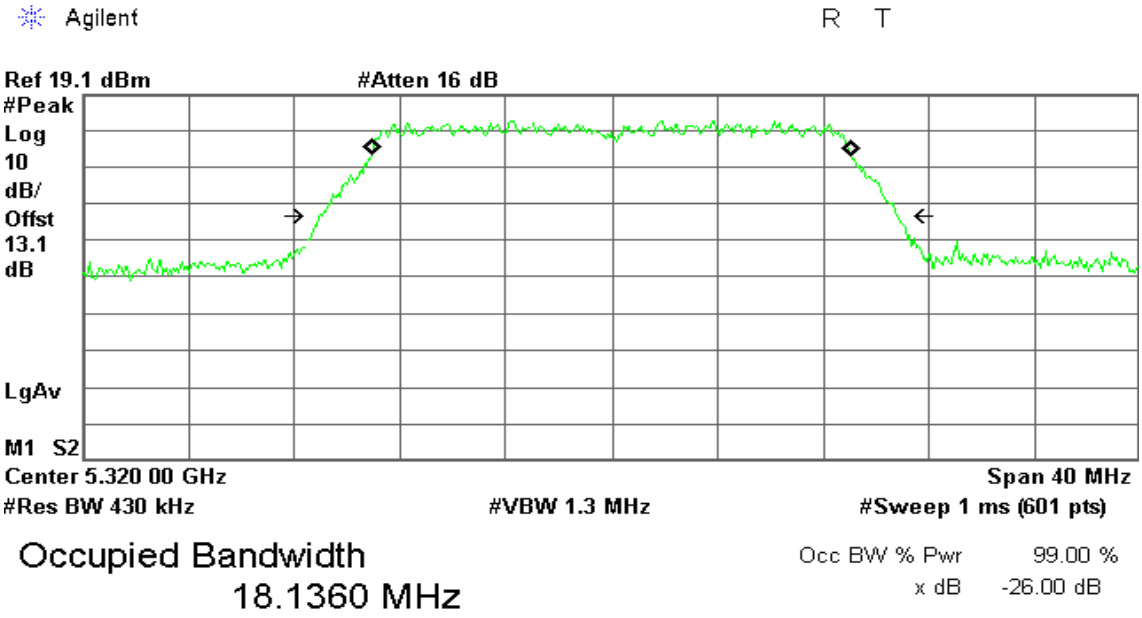


Occupied Bandwidth
18.1353 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -17.878 kHz
x dB Bandwidth 21.880 MHz

5320 MHz



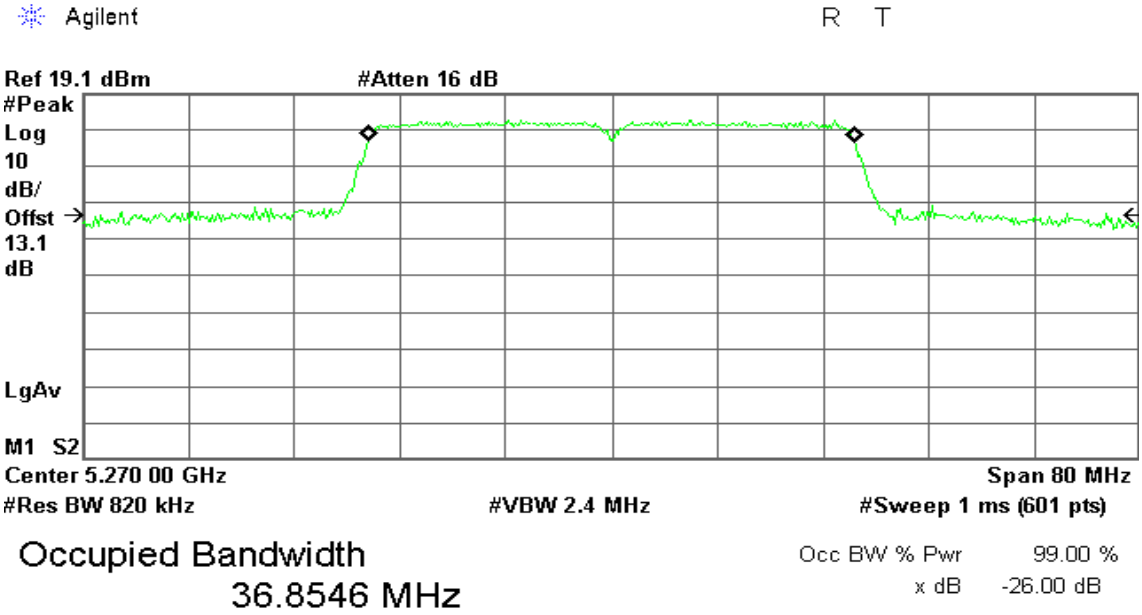
Occupied Bandwidth
18.1360 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 11.214 kHz
x dB Bandwidth 21.806 MHz

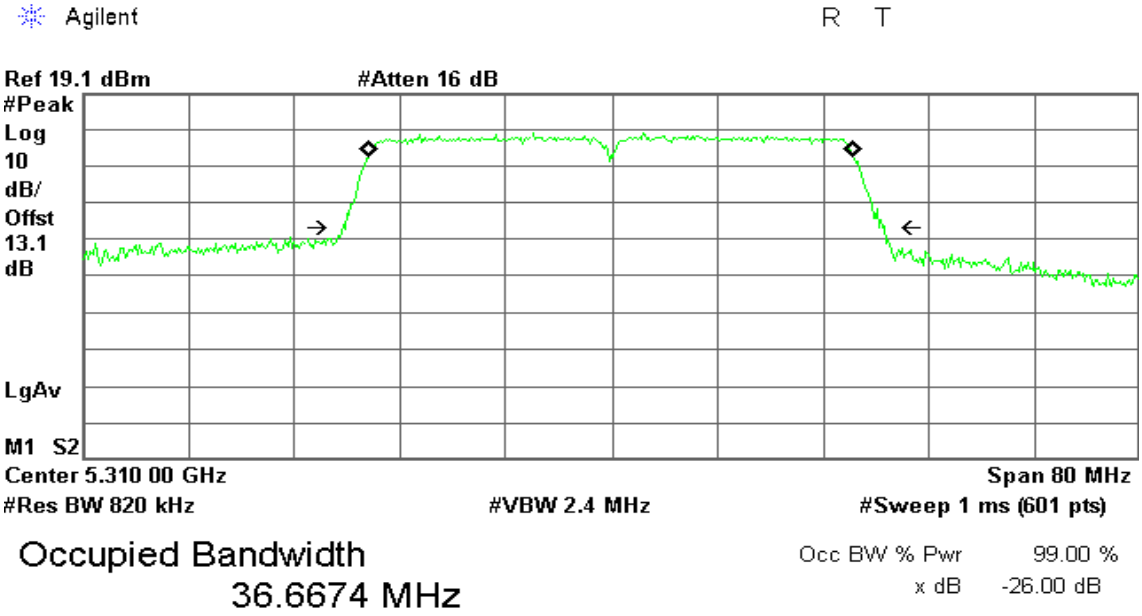
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

5270 MHz



Transmit Freq Error -1.530 kHz
x dB Bandwidth 76.191 MHz

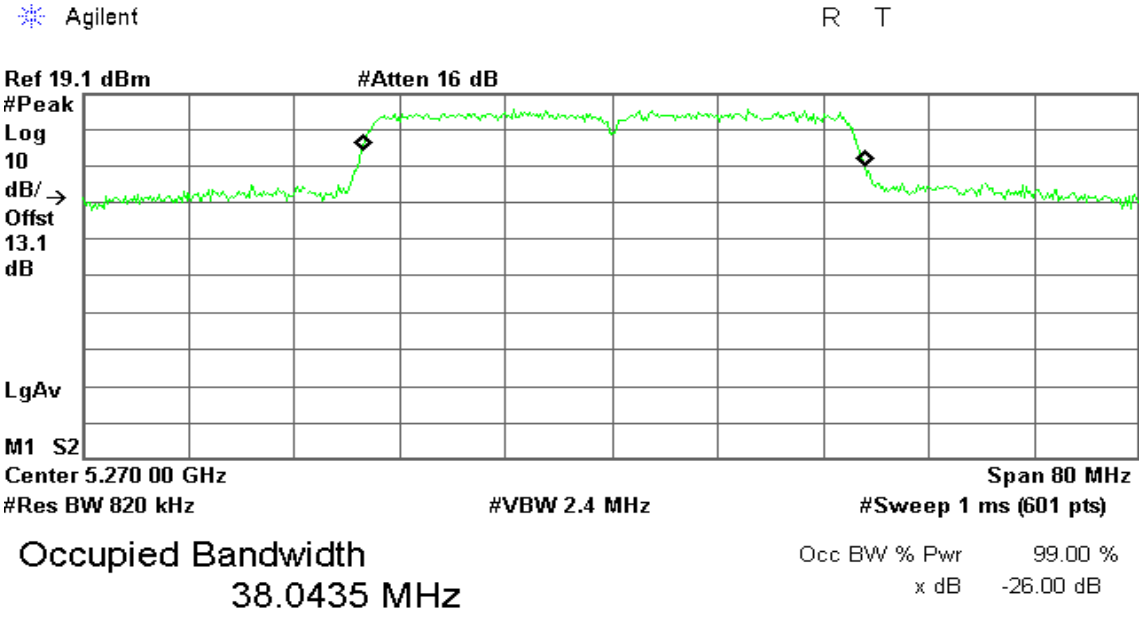
5310 MHz



Transmit Freq Error -19.602 kHz
x dB Bandwidth 41.002 MHz

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

5270 MHz

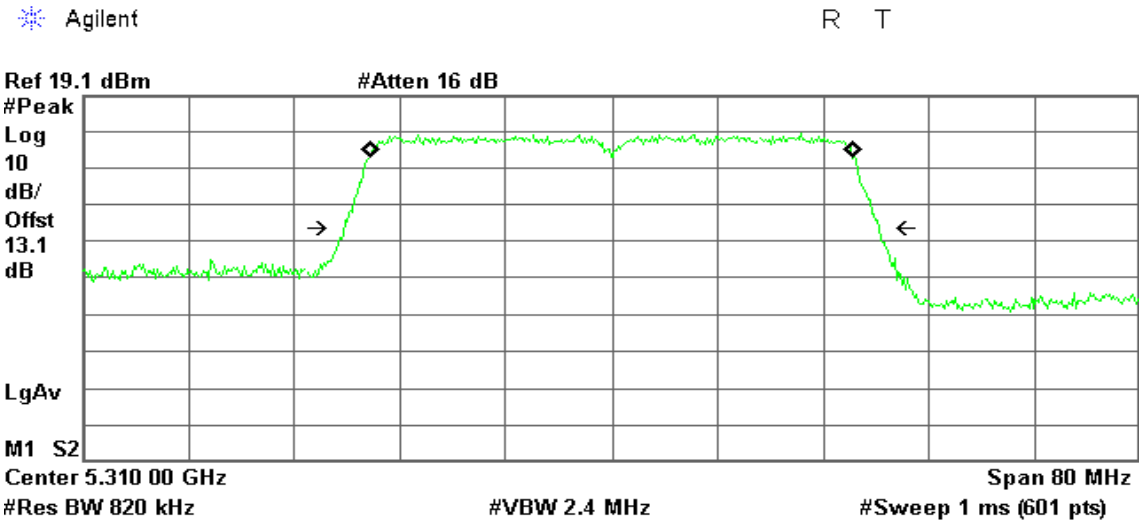


Occupied Bandwidth
38.0435 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 204.489 kHz
x dB Bandwidth 79.967 MHz

5310 MHz



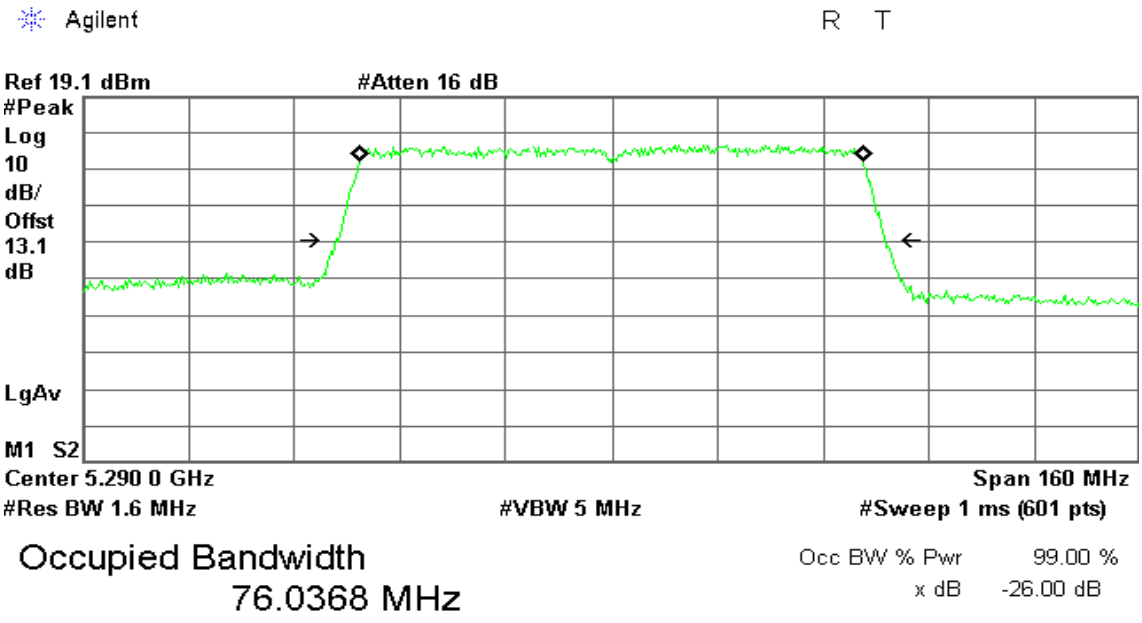
Occupied Bandwidth
36.5180 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -139.321 Hz
x dB Bandwidth 40.529 MHz

IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 0

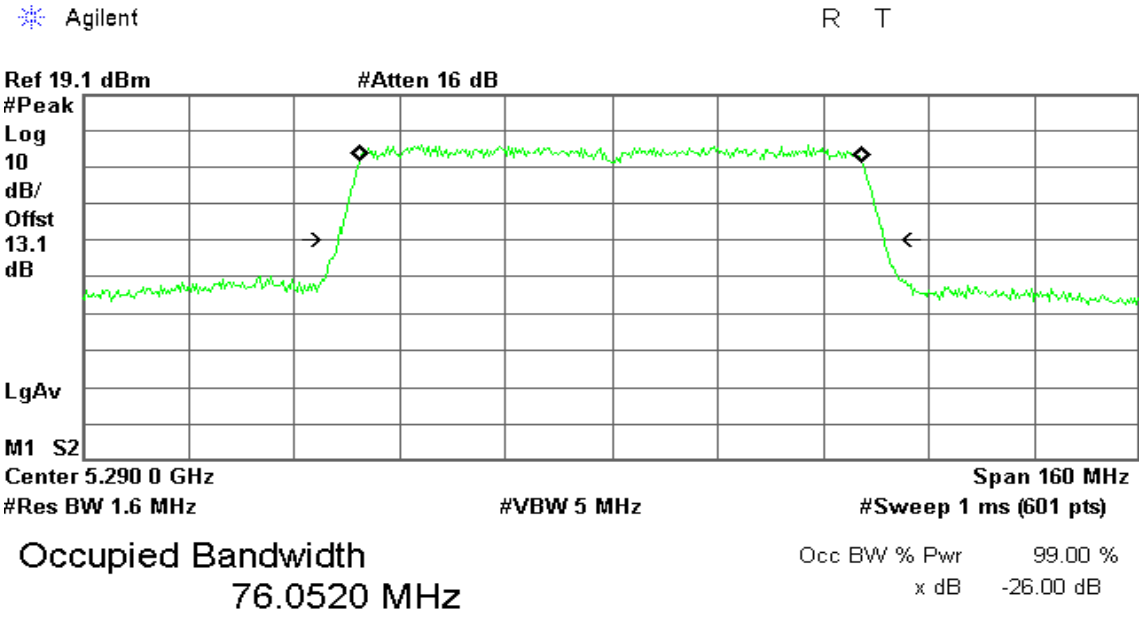
5290 MHz



Transmit Freq Error	12.314 kHz
x dB Bandwidth	83.084 MHz

IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 1

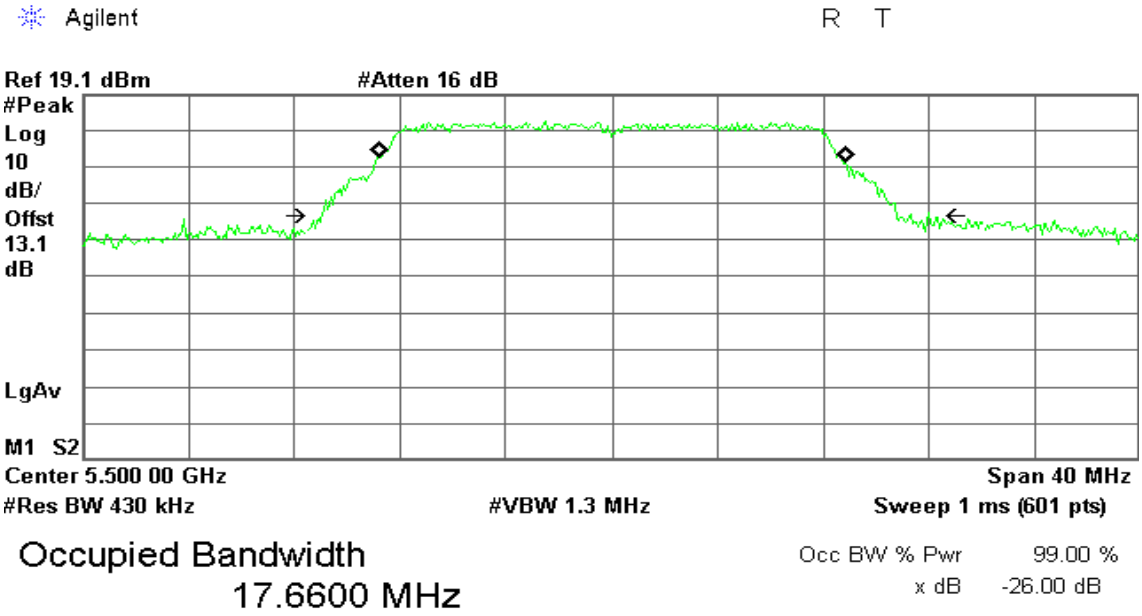
5290 MHz



Transmit Freq Error	-40.305 kHz
x dB Bandwidth	82.567 MHz

Test mode: IEEE 802.11a mode / 5500 ~ 5720MHz

5500 MHz

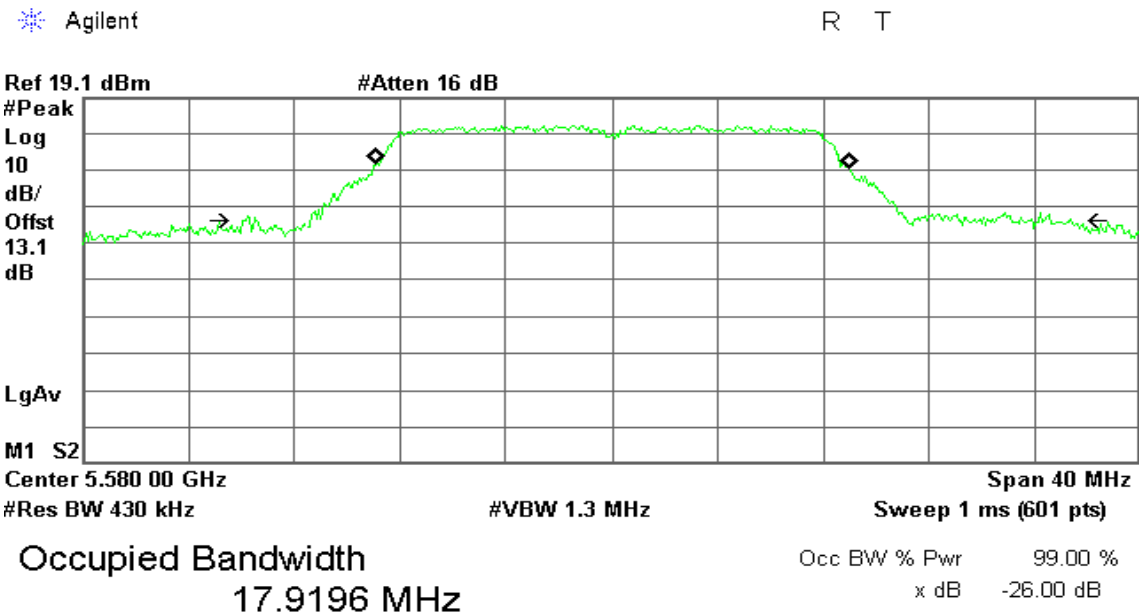


Occupied Bandwidth
17.6600 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error	22.612 kHz
x dB Bandwidth	22.990 MHz

5580 MHz

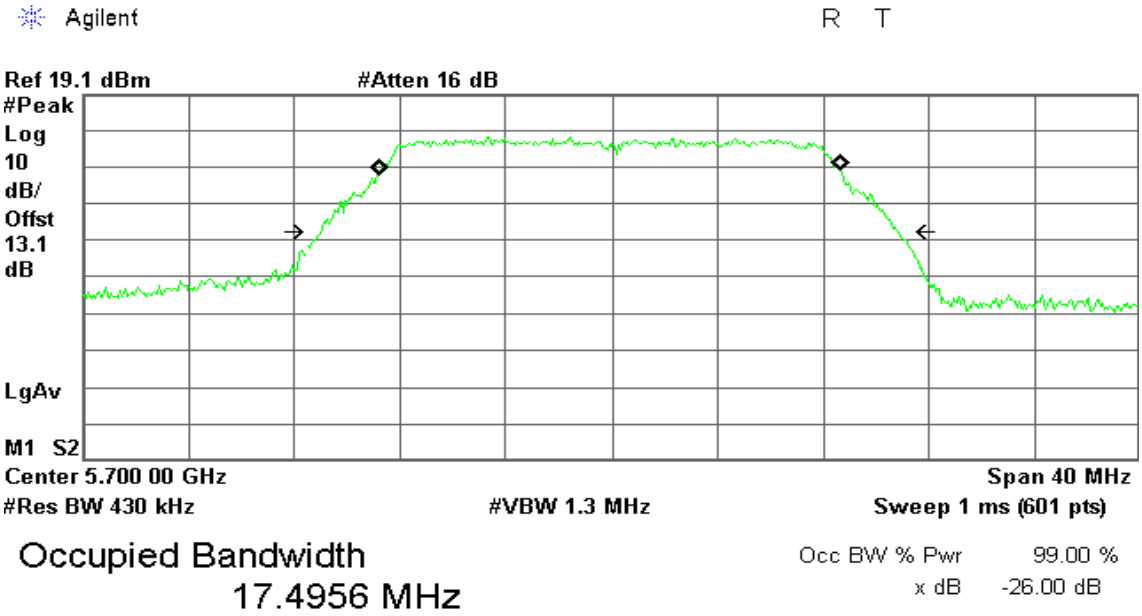


Occupied Bandwidth
17.9196 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error	53.492 kHz
x dB Bandwidth	31.209 MHz

5700 MHz

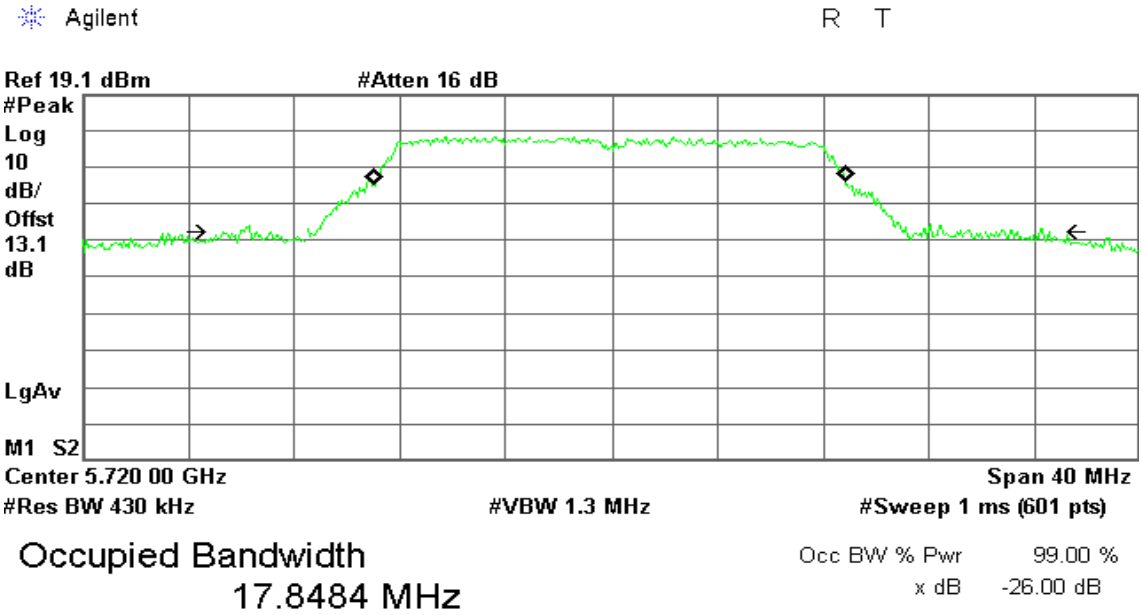


Occupied Bandwidth
17.4956 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -61.483 kHz
x dB Bandwidth 21.821 MHz

5720 MHz (Band III)

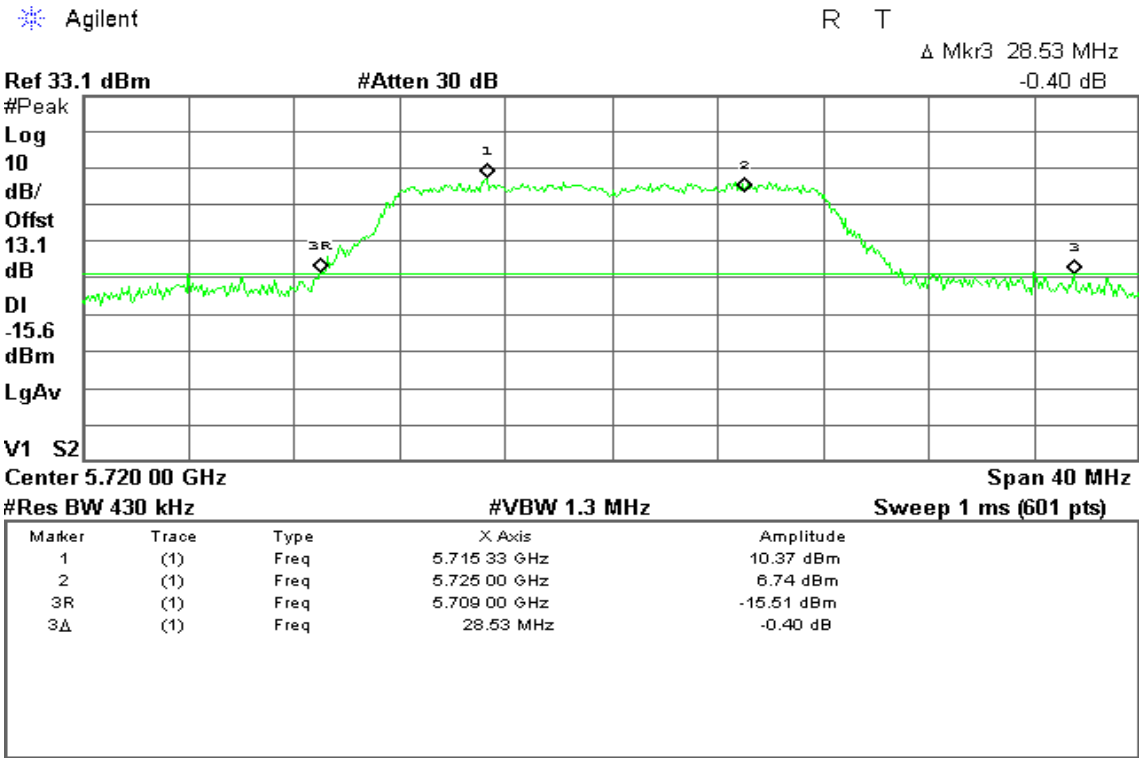


Occupied Bandwidth
17.8484 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

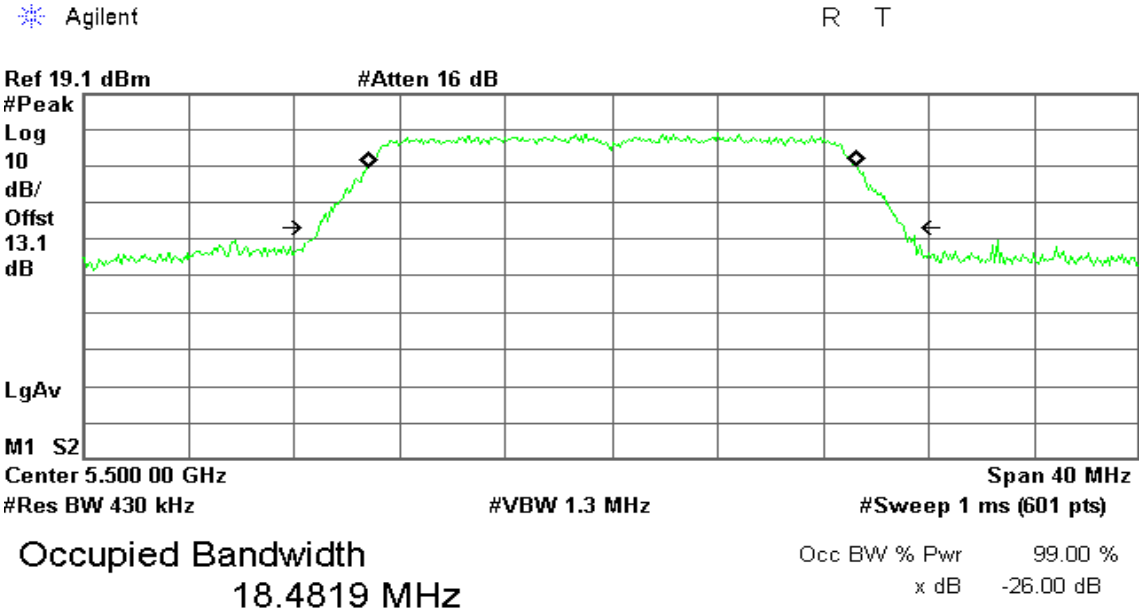
Transmit Freq Error -83.315 kHz
x dB Bandwidth 31.281 MHz

5720 MHz (Band IV)



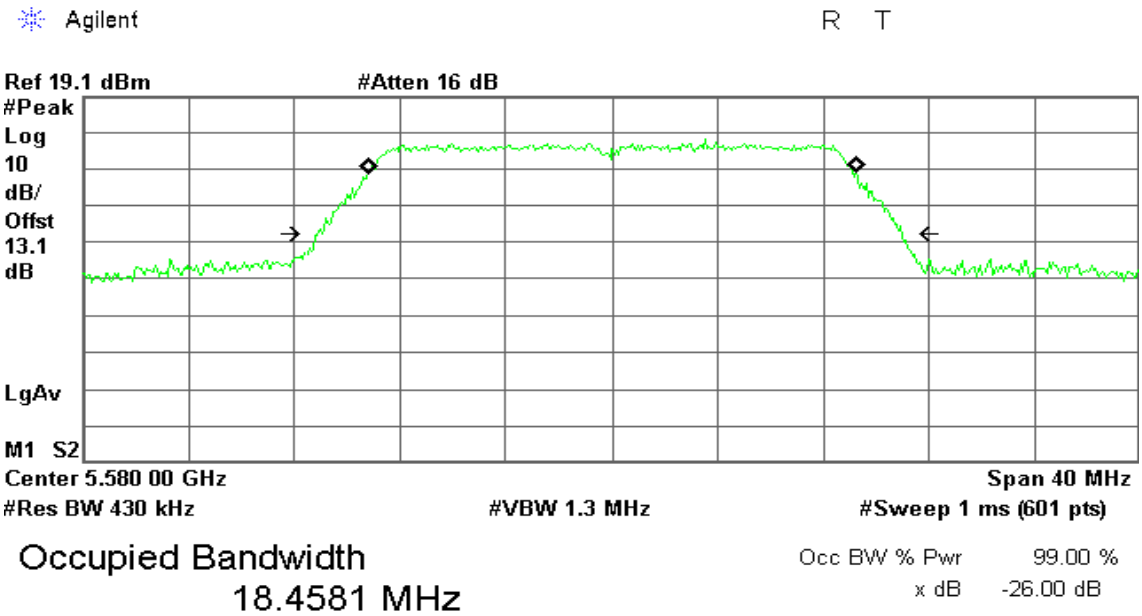
IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz / Chain 0

5500 MHz



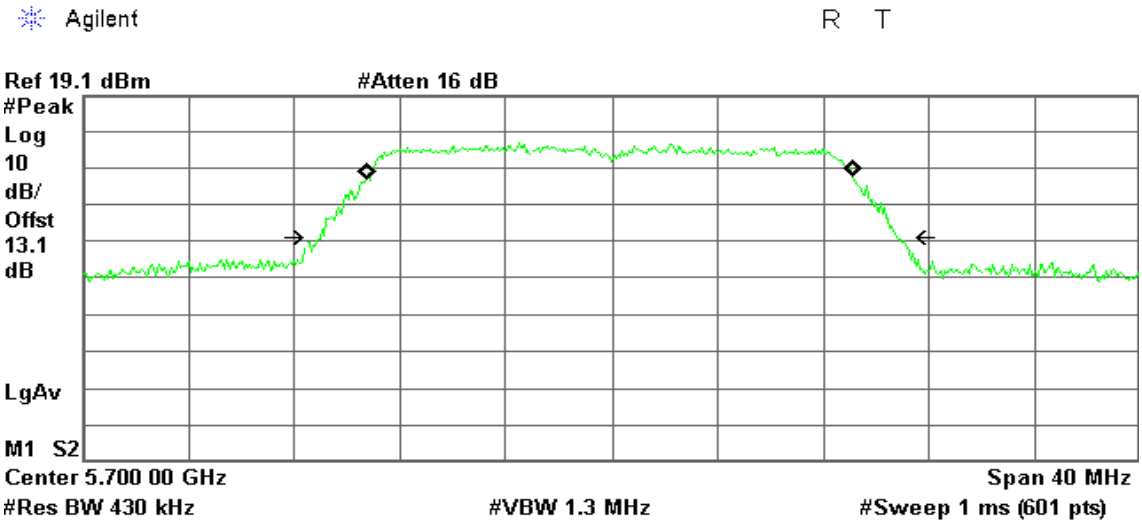
Transmit Freq Error	20.363 kHz
x dB Bandwidth	22.151 MHz

5580 MHz



Transmit Freq Error	11.222 kHz
x dB Bandwidth	22.100 MHz

5700 MHz

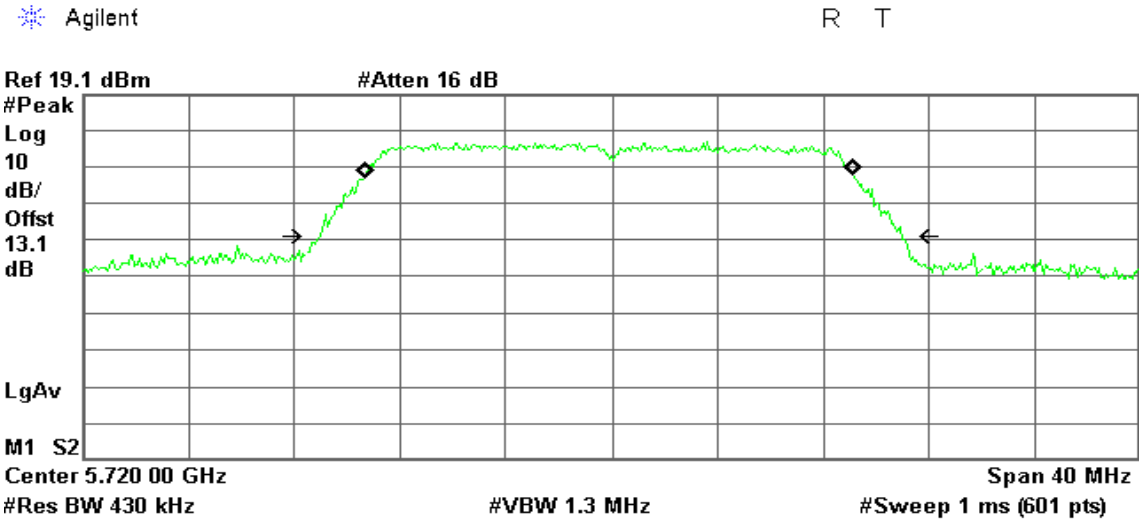


Occupied Bandwidth
18.4350 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -69.509 kHz
x dB Bandwidth 21.848 MHz

5720 MHz (Band III)

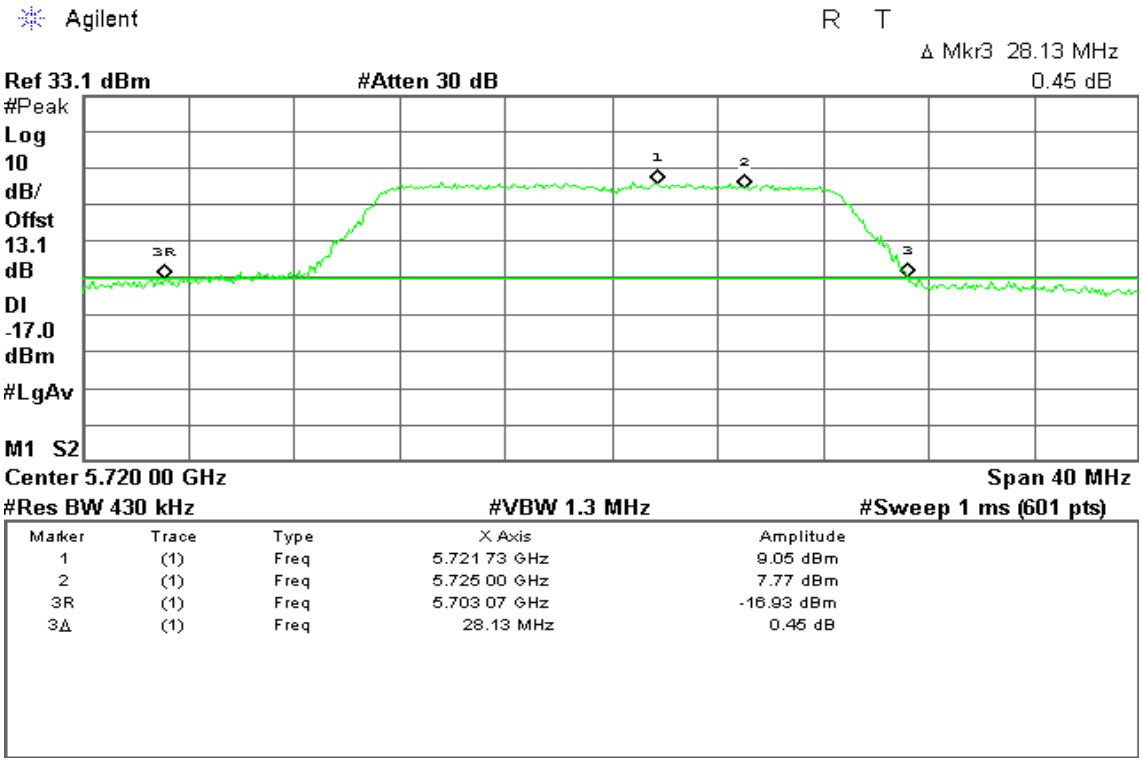


Occupied Bandwidth
18.5032 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

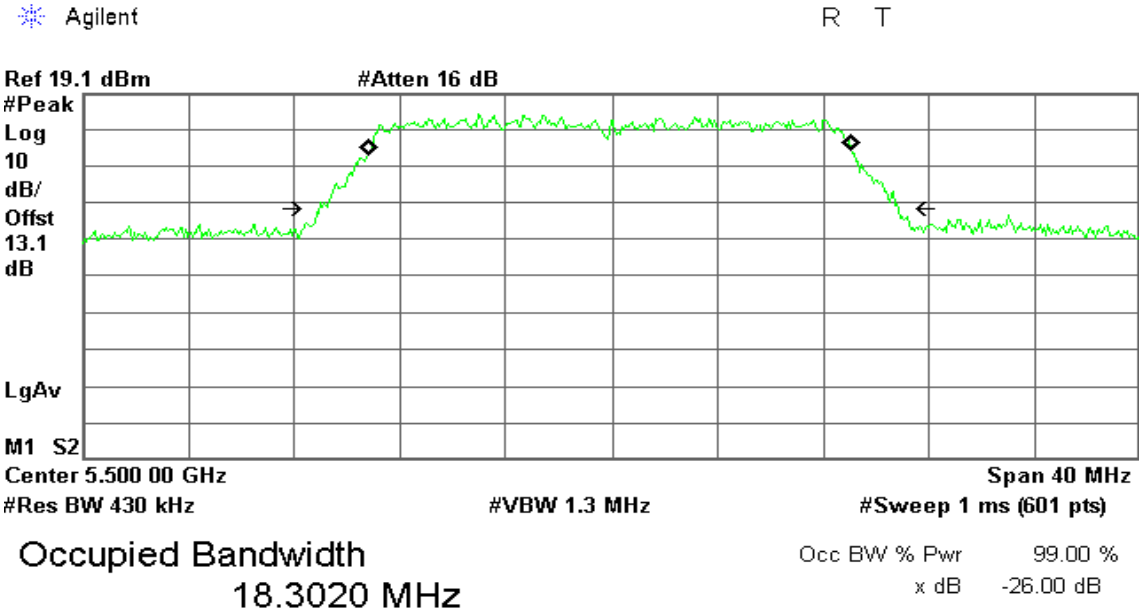
Transmit Freq Error -92.179 kHz
x dB Bandwidth 22.027 MHz

5720 MHz (Band IV)



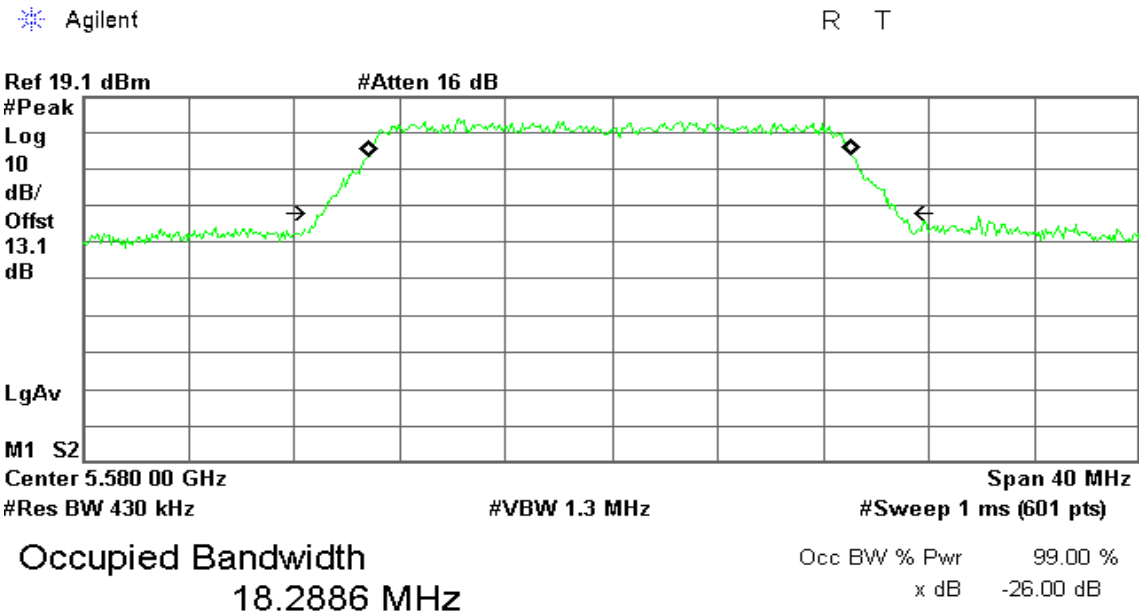
IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz / Chain 1

5500 MHz



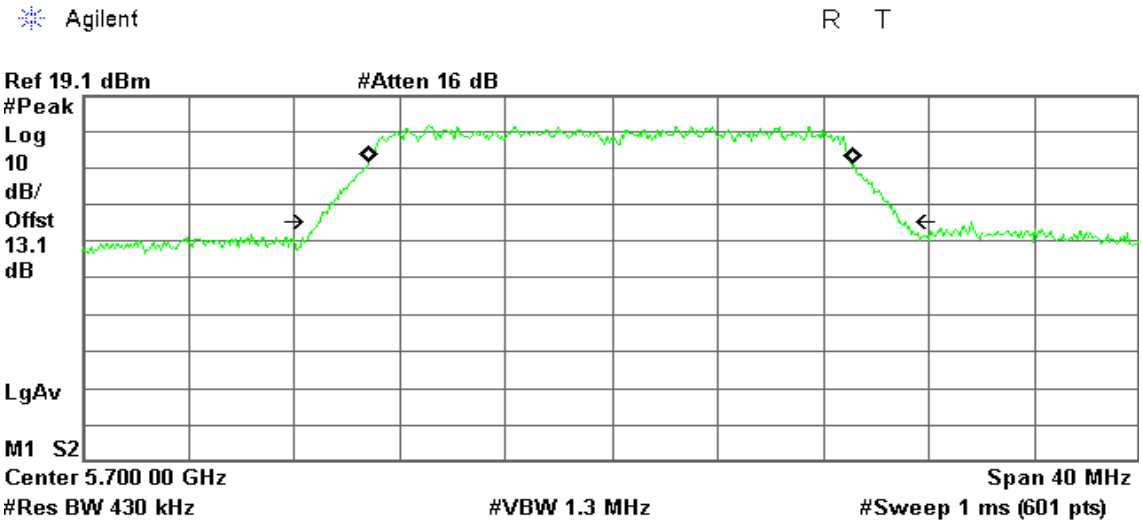
Transmit Freq Error	-57.965 kHz
x dB Bandwidth	21.906 MHz

5580 MHz



Transmit Freq Error	-56.293 kHz
x dB Bandwidth	21.720 MHz

5700 MHz

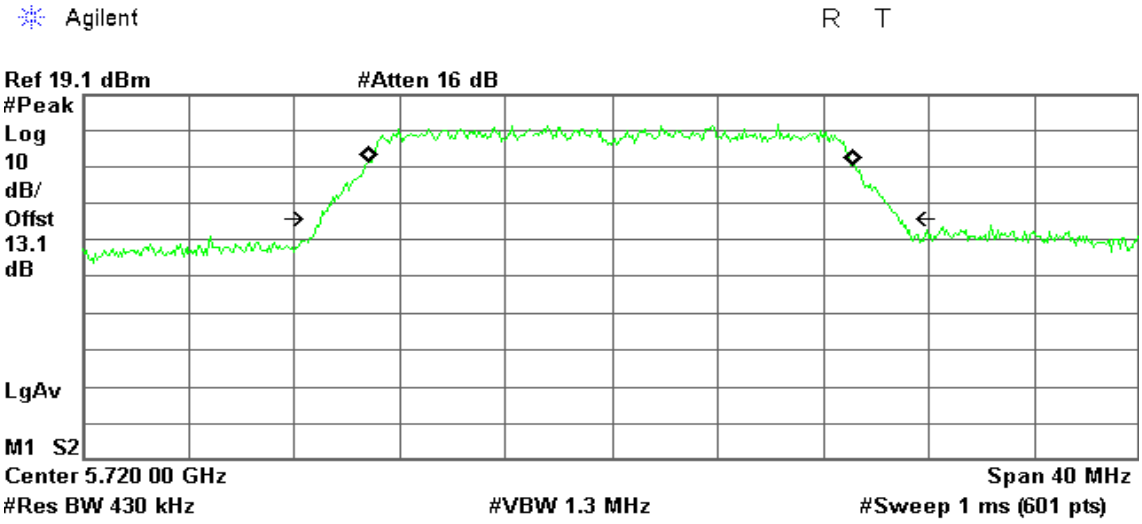


Occupied Bandwidth
18.2804 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -36.939 kHz
x dB Bandwidth 21.859 MHz

5720 MHz (Band III)

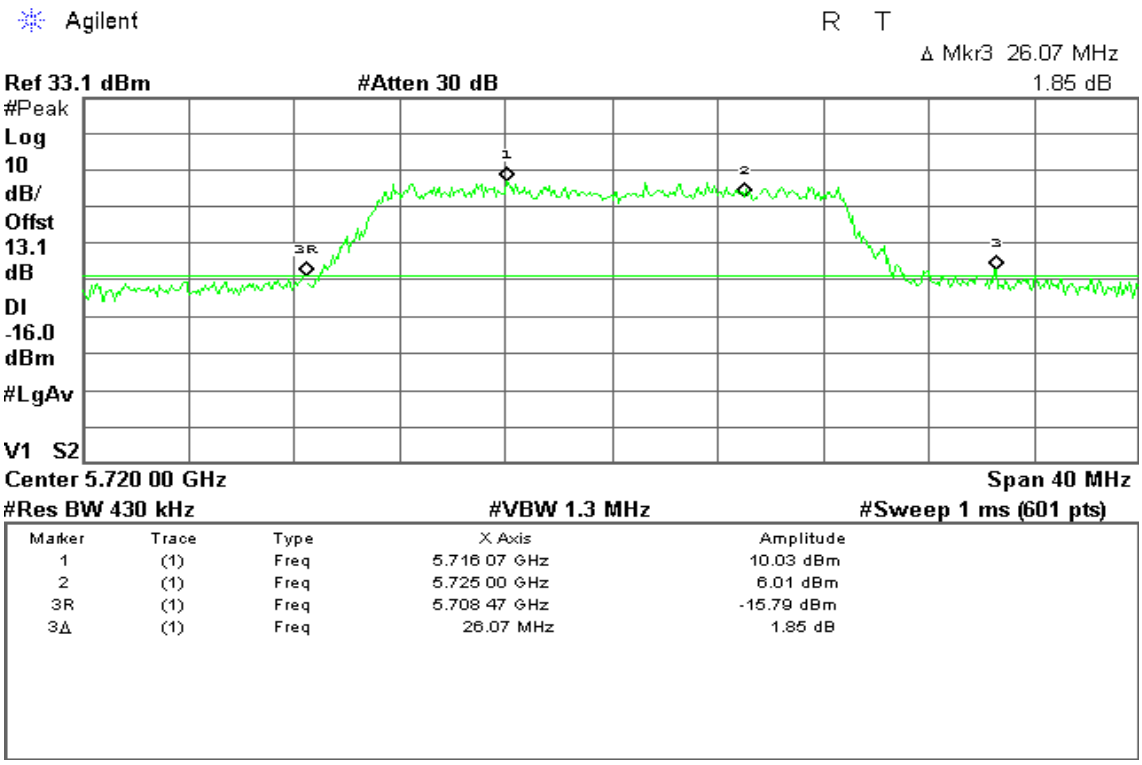


Occupied Bandwidth
18.2962 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

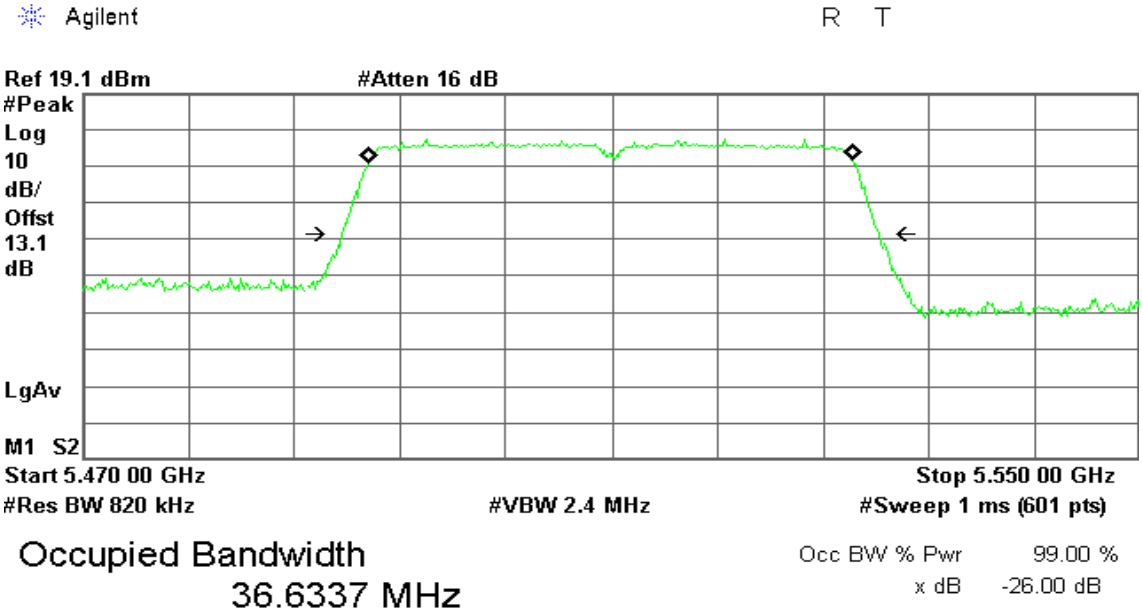
Transmit Freq Error -27.231 kHz
x dB Bandwidth 21.844 MHz

5720 MHz (Band IV)



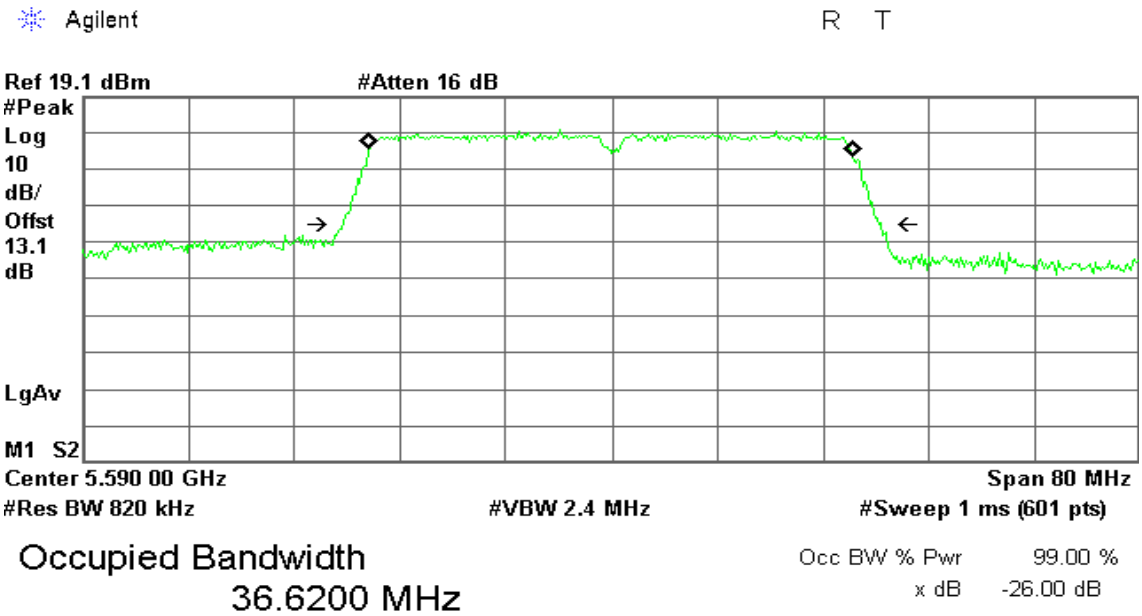
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz / Chain 0

5510 MHz



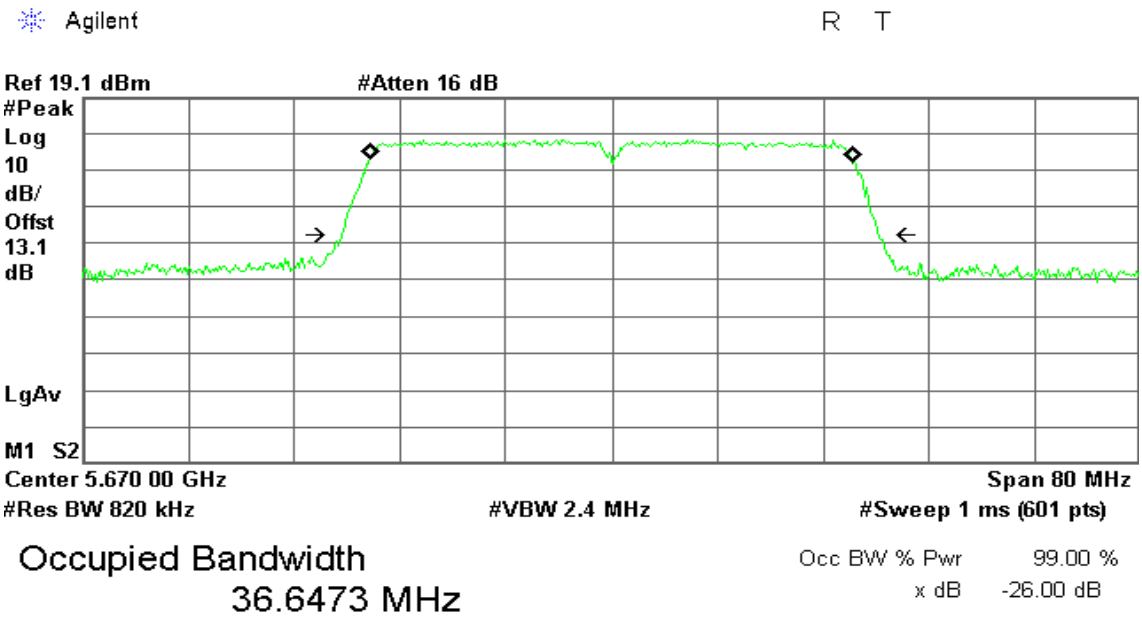
Transmit Freq Error	-16.567 kHz
x dB Bandwidth	40.694 MHz

5590 MHz



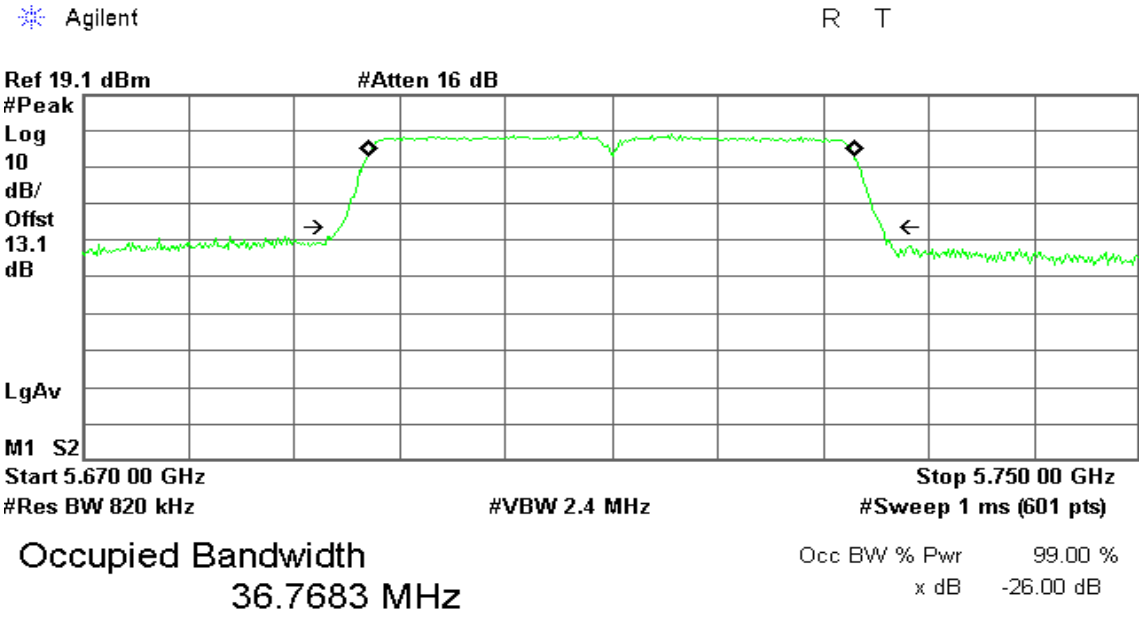
Transmit Freq Error	-29.993 kHz
x dB Bandwidth	40.747 MHz

5670 MHz



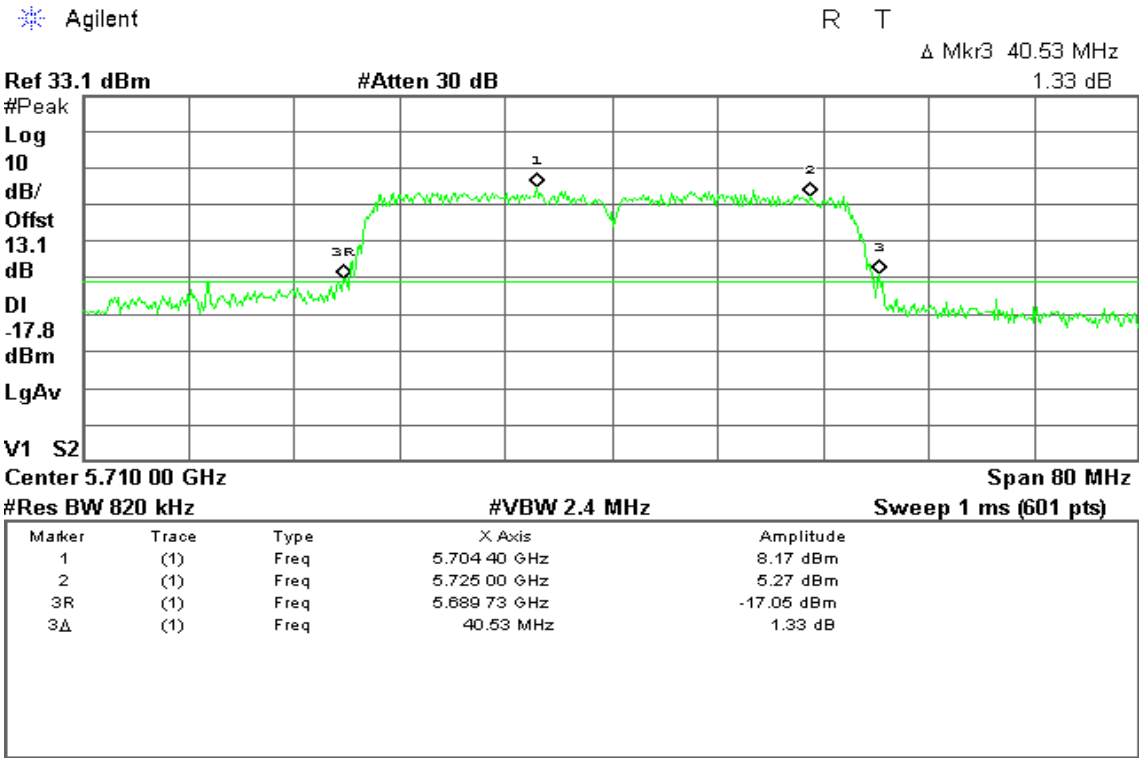
Transmit Freq Error	6.599 kHz
x dB Bandwidth	40.603 MHz

5710 MHz (Band III)



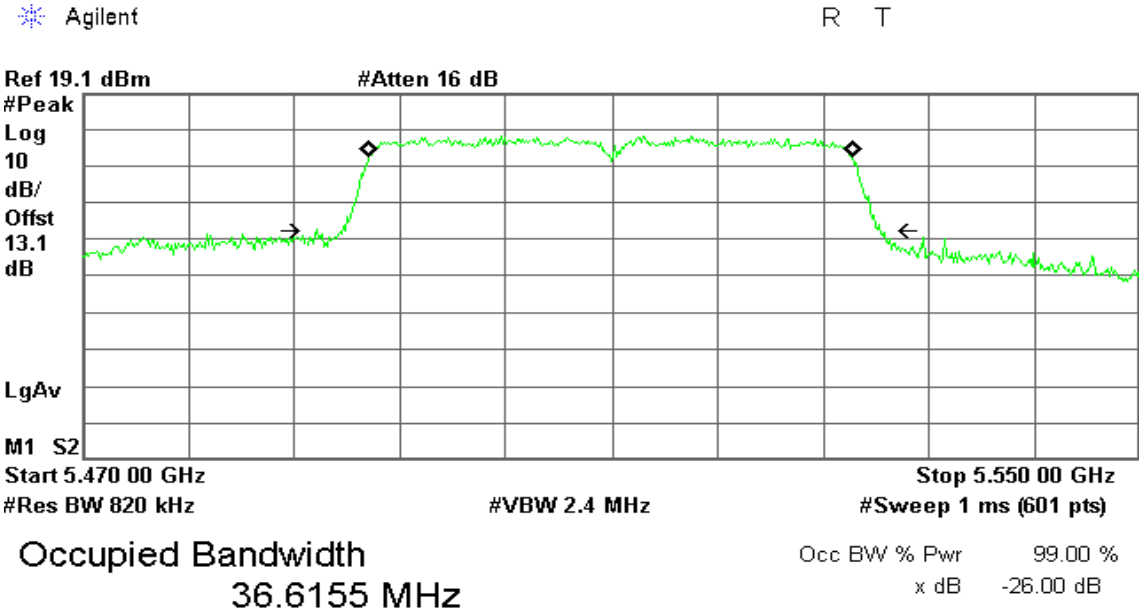
Transmit Freq Error	-46.776 kHz
x dB Bandwidth	40.974 MHz

5710 MHz (Band IV)



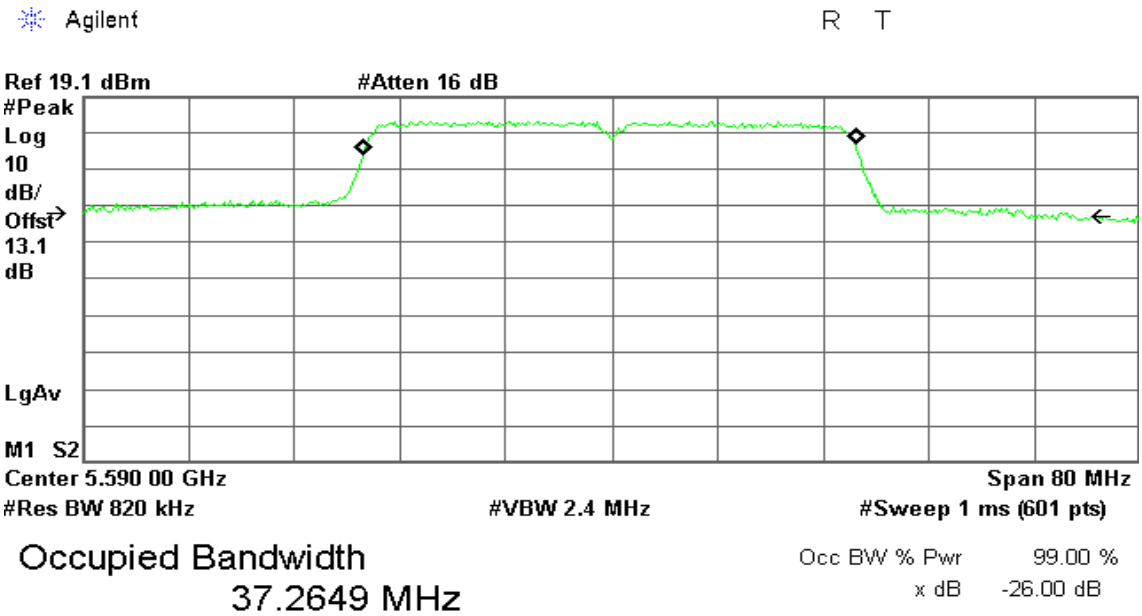
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz / Chain 1

5510 MHz



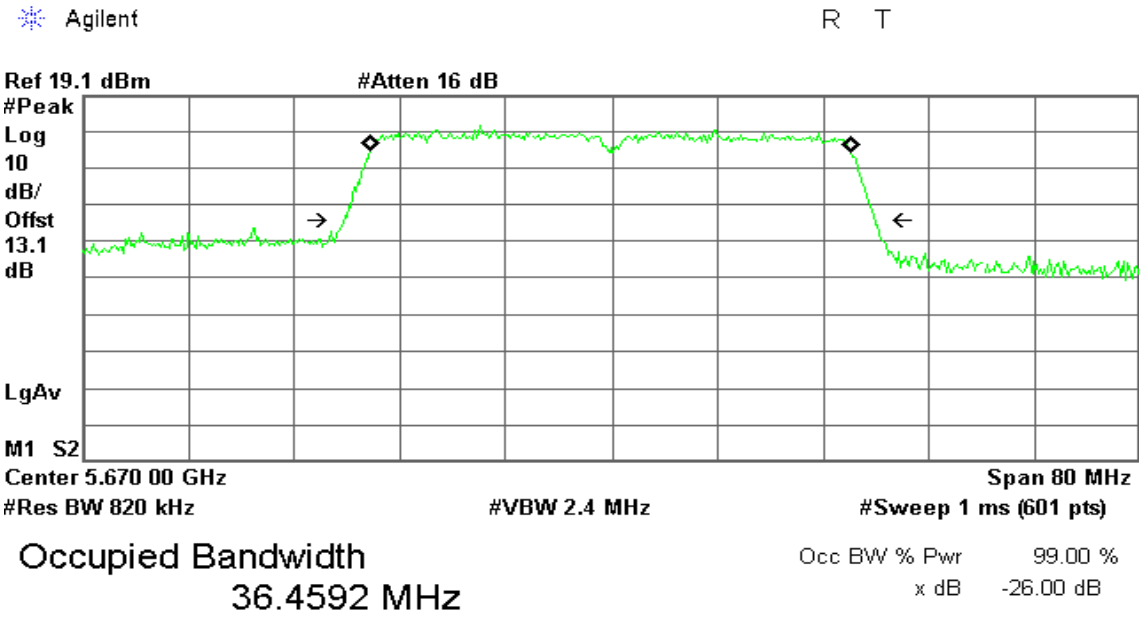
Transmit Freq Error	-62.250 kHz
x dB Bandwidth	42.660 MHz

5590 MHz



Transmit Freq Error	-153.500 kHz
x dB Bandwidth	75.004 MHz

5670 MHz

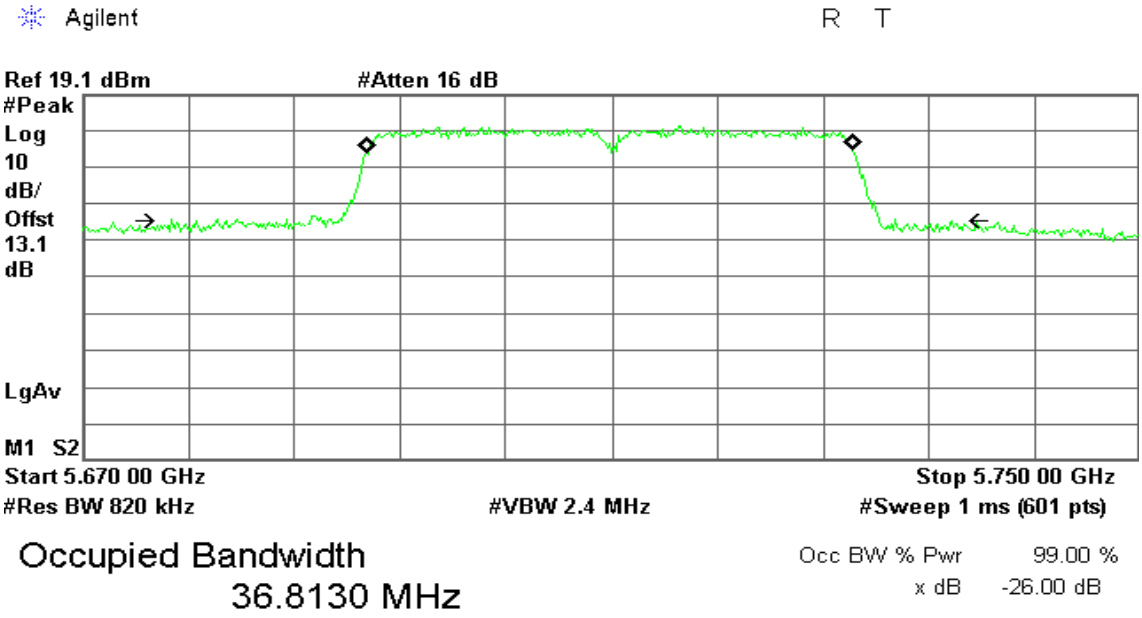


Occupied Bandwidth
36.4592 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -70.915 kHz
x dB Bandwidth 40.206 MHz

5710 MHz (Band III)

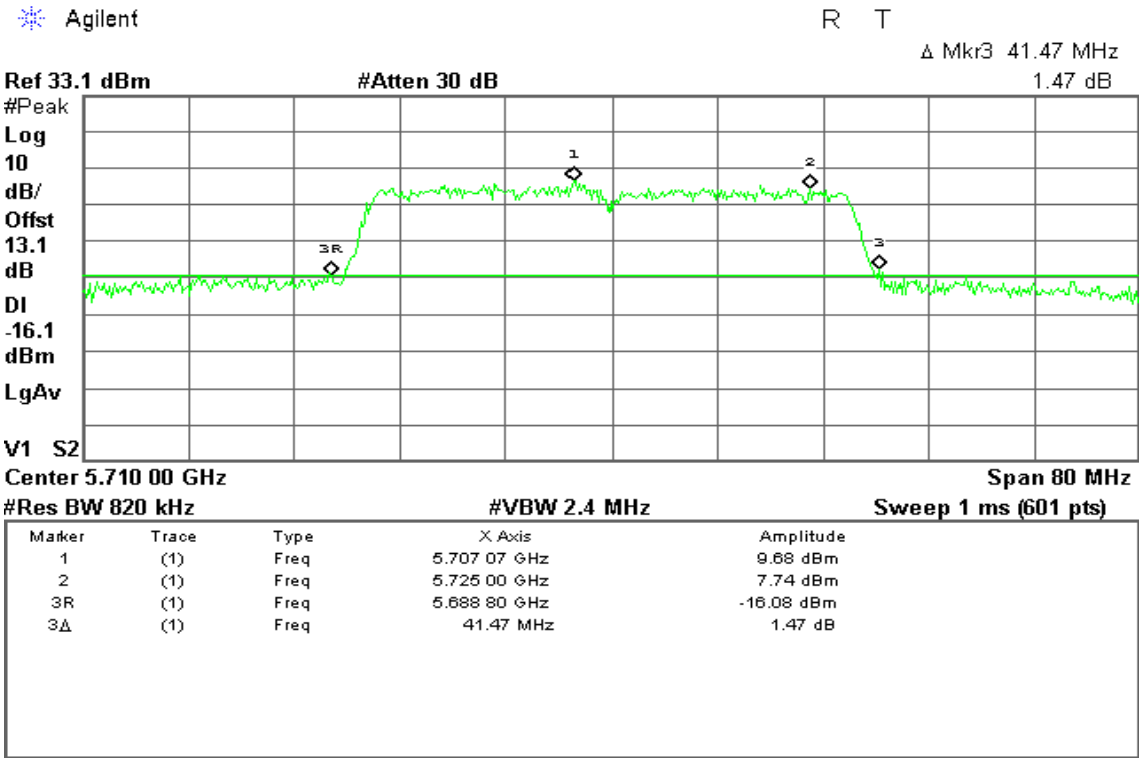


Occupied Bandwidth
36.8130 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

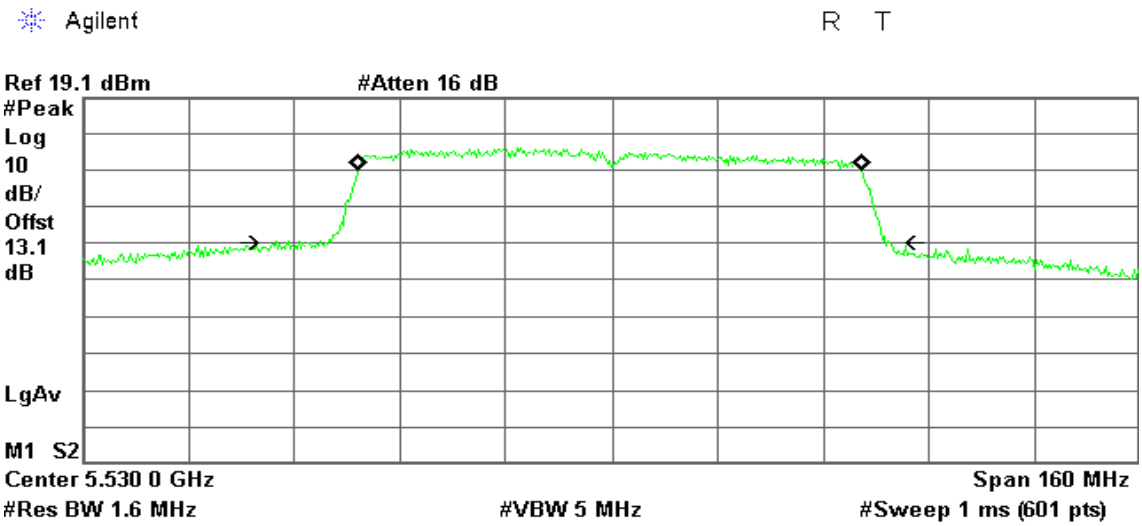
Transmit Freq Error -86.394 kHz
x dB Bandwidth 59.115 MHz

5710 MHz (Band IV)



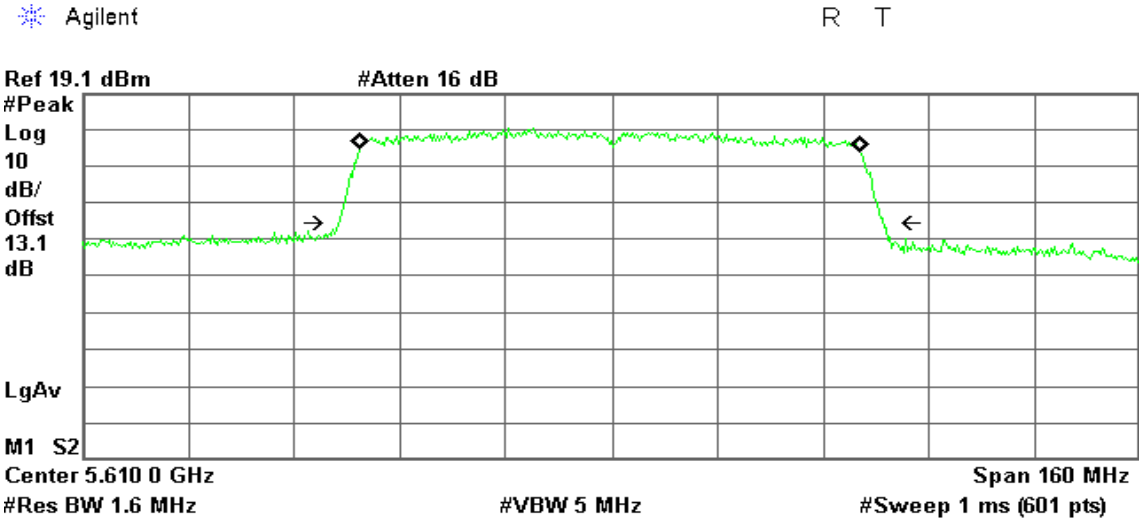
IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz/ Chain 0

5530 MHz



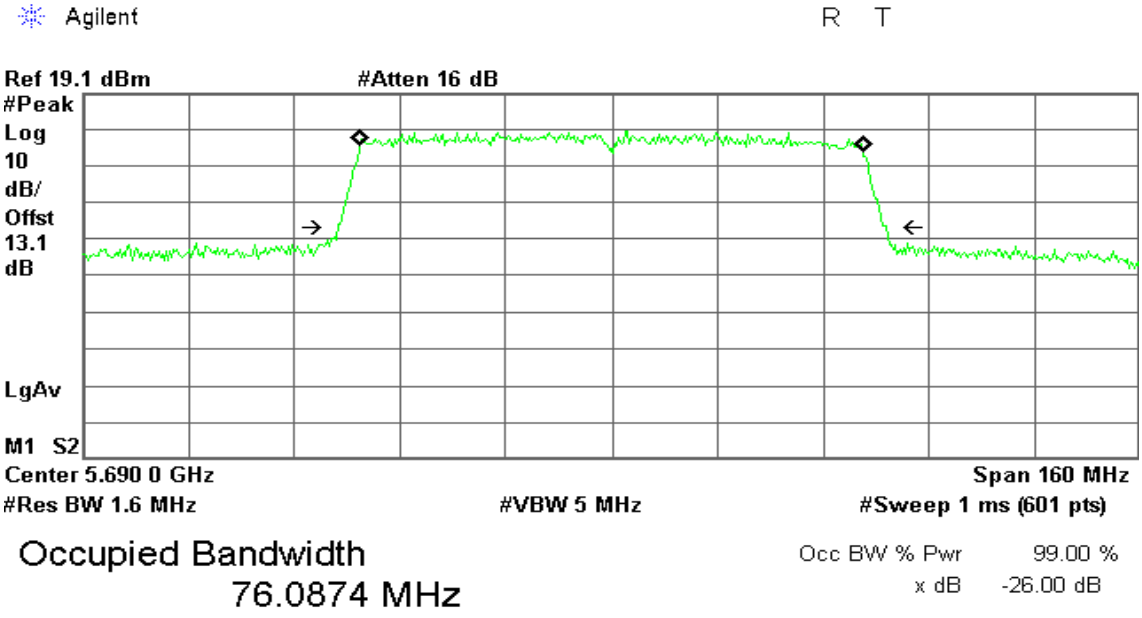
Transmit Freq Error -212.011 kHz
x dB Bandwidth 92.690 MHz

5610 MHz



Transmit Freq Error -209.826 kHz
x dB Bandwidth 82.387 MHz

5690 MHz (Band III)

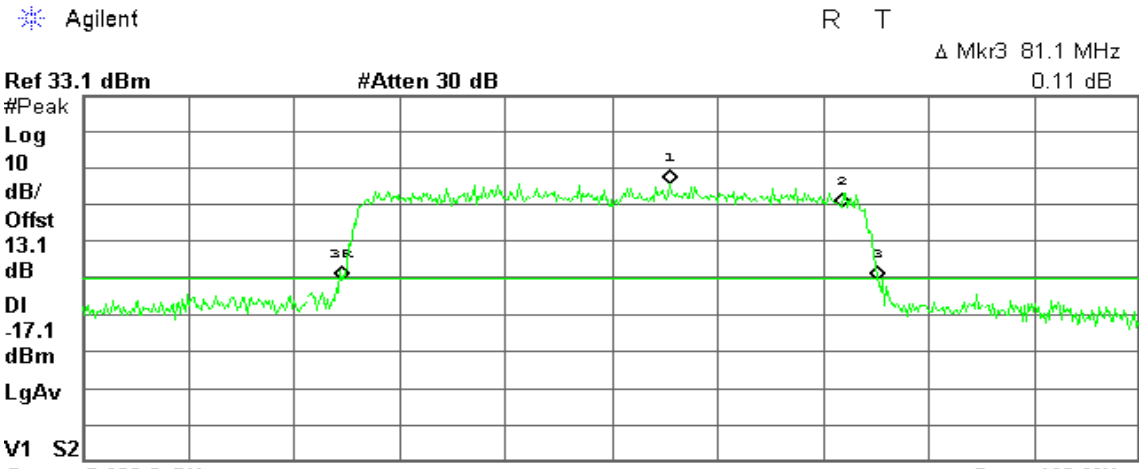


Occupied Bandwidth
76.0874 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 3.164 kHz
x dB Bandwidth 83.032 MHz

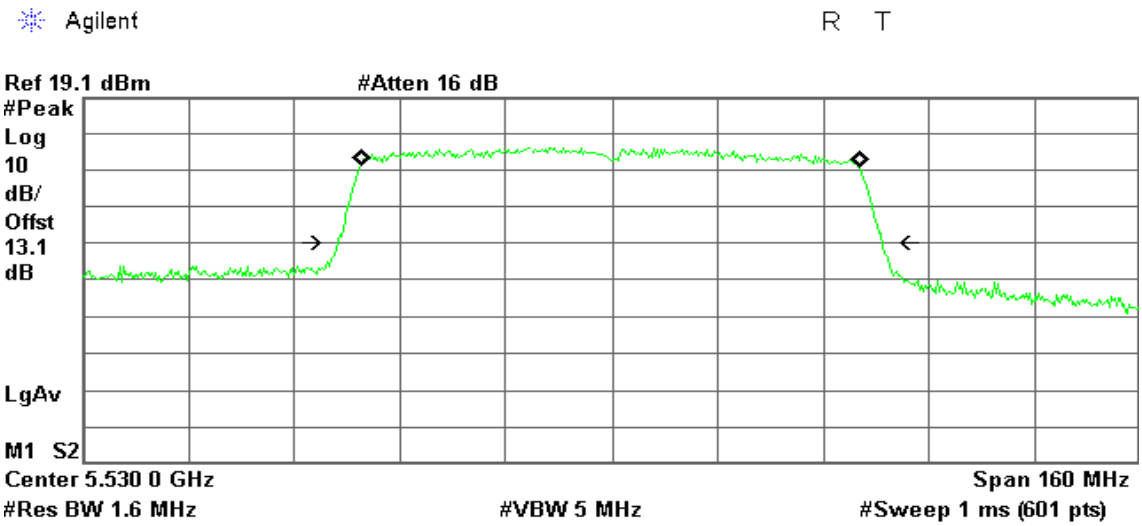
5690 MHz (Band IV)



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.698 8 GHz	8.85 dBm
2	(1)	Freq	5.725 0 GHz	2.27 dBm
3R	(1)	Freq	5.649 2 GHz	-17.76 dBm
3Δ	(1)	Freq	81.1 MHz	0.11 dB

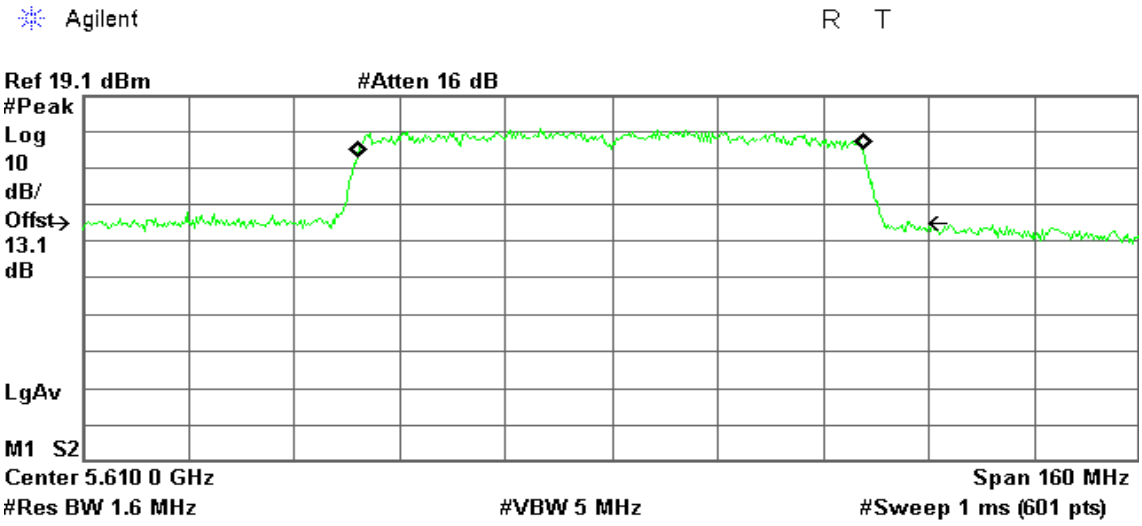
IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz/ Chain 1

5530 MHz



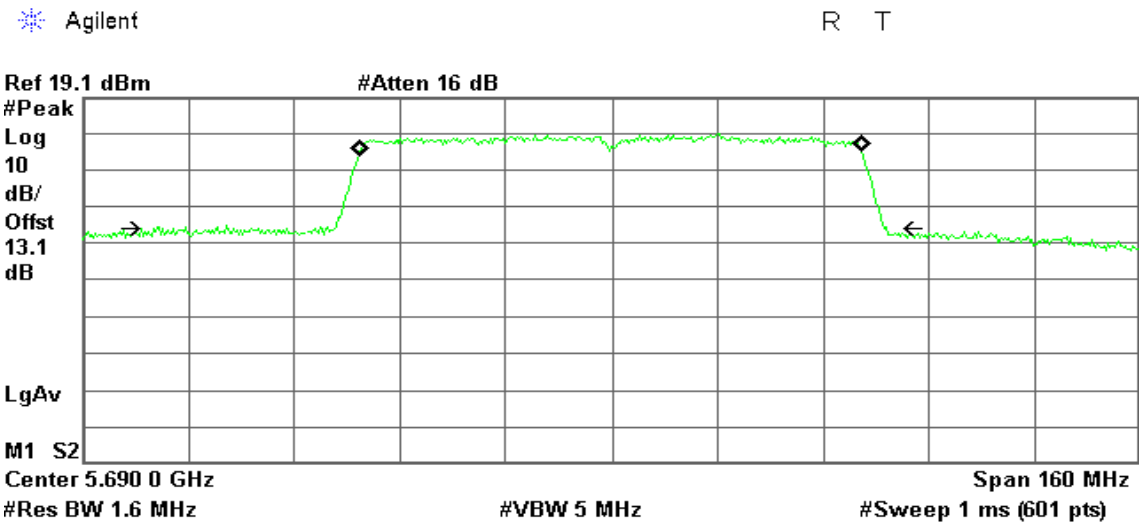
Transmit Freq Error	-209.975 kHz
x dB Bandwidth	82.345 MHz

5610 MHz



Transmit Freq Error	-217.300 kHz
x dB Bandwidth	124.775 MHz

5690 MHz (Band III)

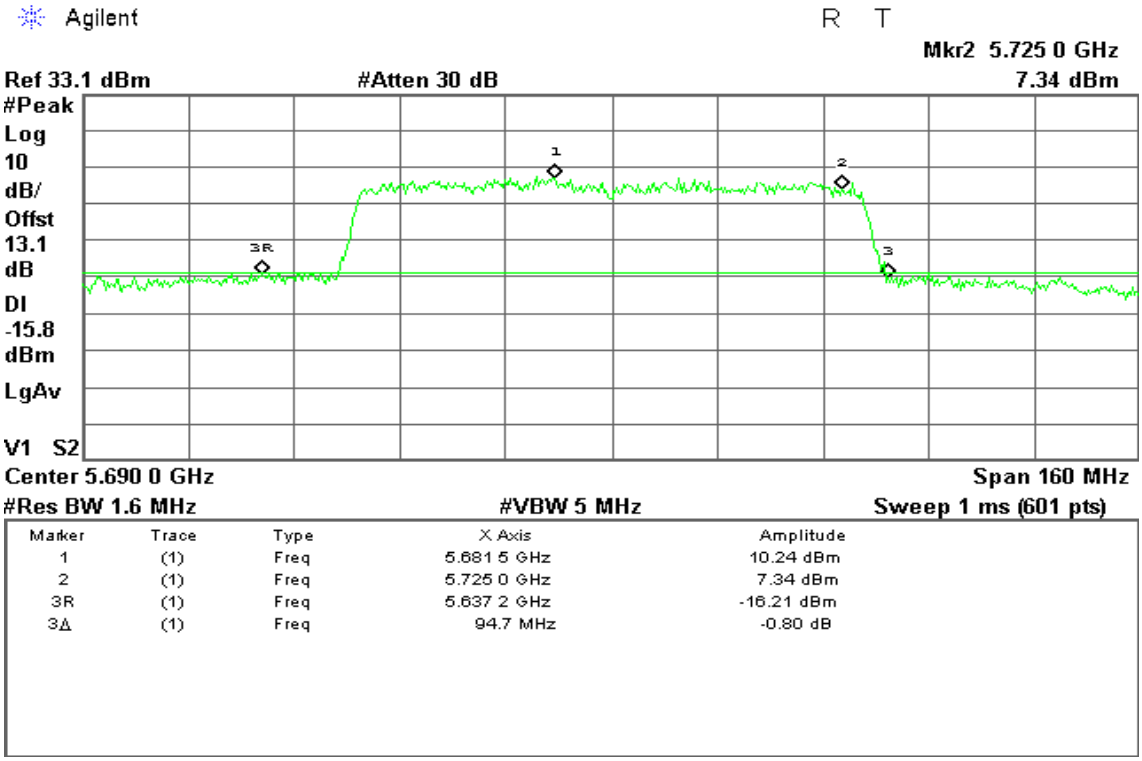


Occupied Bandwidth
76.2157 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -151.940 kHz
x dB Bandwidth 110.605 MHz

5690 MHz (Band IV)



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.681 5 GHz	10.24 dBm
2	(1)	Freq	5.725 0 GHz	7.34 dBm
3R	(1)	Freq	5.637 2 GHz	-16.21 dBm
3Δ	(1)	Freq	94.7 MHz	-0.80 dB

7.3 MAXIMUM CONDUCTED OUTPUT POWER

LIMIT

According to §15.407(a)

For the band 5.15-5.25 GHz, 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, 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

According to RSS-247,

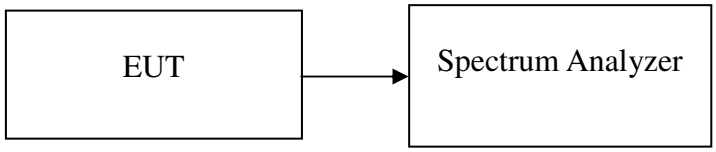
(1) For the band 5150-5250 MHz, the maximum equivalent isotropically radiated power (e.i.r.p.) shall not exceed 200 mW or 10 + 10 Log_{10} B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

(2) For the band 5250-5350 MHz and 5470-5725 MHz, the maximum conducted output power shall not exceed 250 mW or 11 + 10 Log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 Log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

In addition, devices with maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.
The peak power shall not exceed the limit as follow:

Test Configuration

The EUT was connected to a spectrum analyzer through a 50Ω RF cable.



TEST PROCEDURE

Set span to encompass the entire emission bandwidth (EBW) of the signal.

Set RBW = 1 MHz / Set VBW = 3 MHz.

Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to "free run".·Trace average 100 traces in power averaging mode. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

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)
36	5180	17.39	24.00
44	5220	18.69	24.00
48	5240	***18.71**	24.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
36	5180	15.94	15.23	18.61	24.00
44	5220	16.57	16.52	***19.56**	24.00
48	5240	16.51	16.48	19.51	24.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
38	5190	12.11	11.37	14.76	24.00
46	5230	16.19	16.22	***19.21**	24.00

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5210MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
42	5210	11.31	10.49	***13.93**	24.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
52	5260	18.73	24.00
56	5280	***18.84**	24.00
60	5300	18.78	24.00
64	5320	14.77	24.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
52	5260	14.75	16.37	18.65	24.00
56	5280	14.81	16.39	***18.68**	24.00
60	5300	14.77	16.38	18.66	24.00
64	5320	14.38	15.59	18.04	24.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
54	5270	15.98	16.08	***19.04**	24.00
62	5310	13.38	13.08	16.24	24.00

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5290MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
58	5290	11.02	10.59	***13.82**	24.00

Test mode: IEEE 802.11a mode / 5500 ~ 5720MHz

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
100	5500	14.45	24.00
116	5580	***18.64**	24.00
140	5700	14.23	24.00
144	5720	15.67 (Band III)	24.00
144	5720	10.96 (Band IV)	30.00

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
100	5500	14.40	15.68	18.10	24.00
116	5580	15.82	16.41	***19.14**	24.00
140	5700	13.81	14.49	17.18	24.00
144	5720	15.08	15.77	18.45 (Band III)	24.00
144	5720	7.87	7.56	10.73 (Band IV)	30.00

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
102	5510	11.10	11.57	14.35	24.00
118	5590	15.89	16.08	***18.99**	24.00
134	5670	14.33	15.05	17.71	24.00
142	5710	15.37	15.19	18.29 (Band III)	24.00
142	5710	4.93	5.36	8.16 (Band IV)	30.00

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
106	5530	10.19	10.68	13.45	24.00
138	5610	15.67	15.07	18.39	24.00
138	5690	14.74	16.08	***18.47** (Band III)	24.00
138	5690	-0.15	1.15	3.56 (Band IV)	30.00

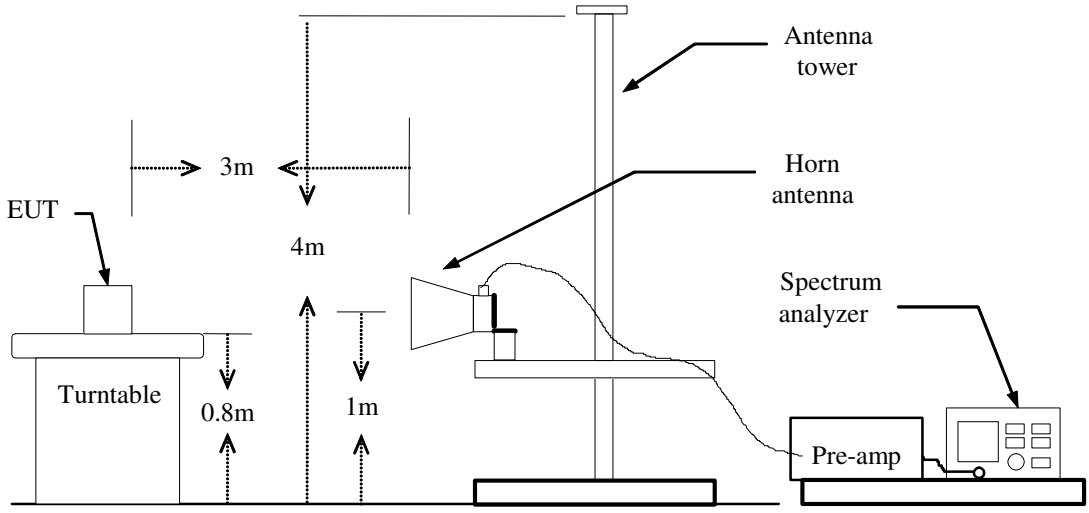
Remark: *Total Output Power (w) = Chain 0 (10^(Output Power /10)/1000) + Chain 1 (10^(Output Power /10)/1000)*

7.4 BAND EDGES MEASUREMENT

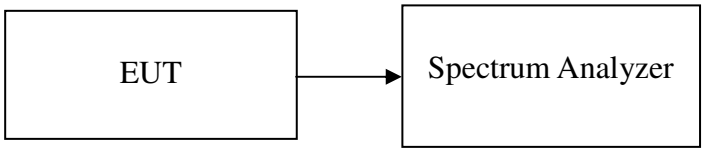
LIMIT

According to §15.407 & RSS-247 §, in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Test Configuration



For Conducted



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m 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=VBW=1MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz,
   if duty cycle≧98%, VBW=10Hz.
   if duty cycle<98% VBW=1/T.
   IEEE 802.11b mode: = 96%, VBW=510Hz
   IEEE 802.11g mode: =92%, VBW=1.1KHz
   IEEE 802.11n HT 20 MHz mode: = 84%, VBW=2KHz
   IEEE 802.11n HT 40 MHz mode: = 73%, VBW=15KHz
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

For Conducted

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

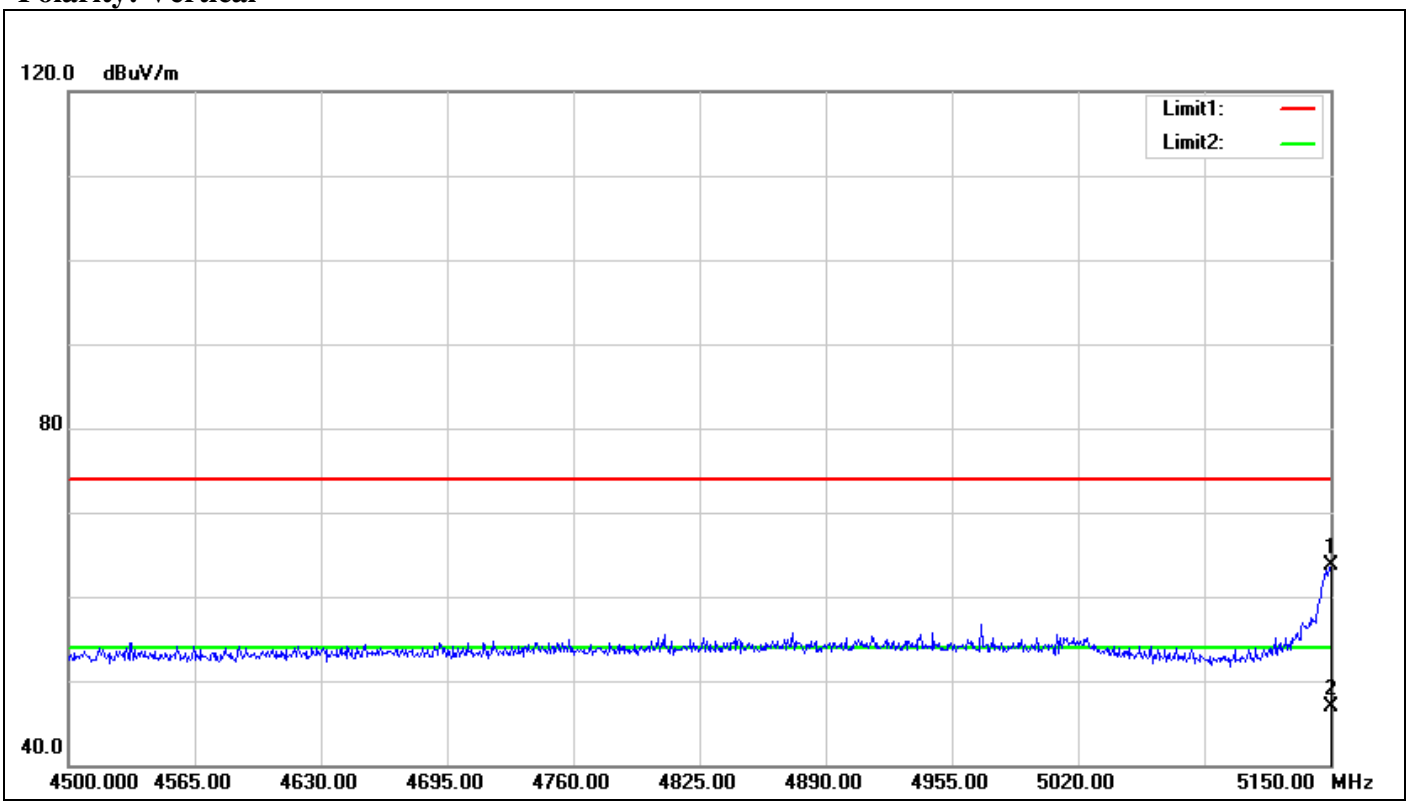
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 100 kHz.

TEST RESULTS

Refer to attach spectrum analyzer data chart.

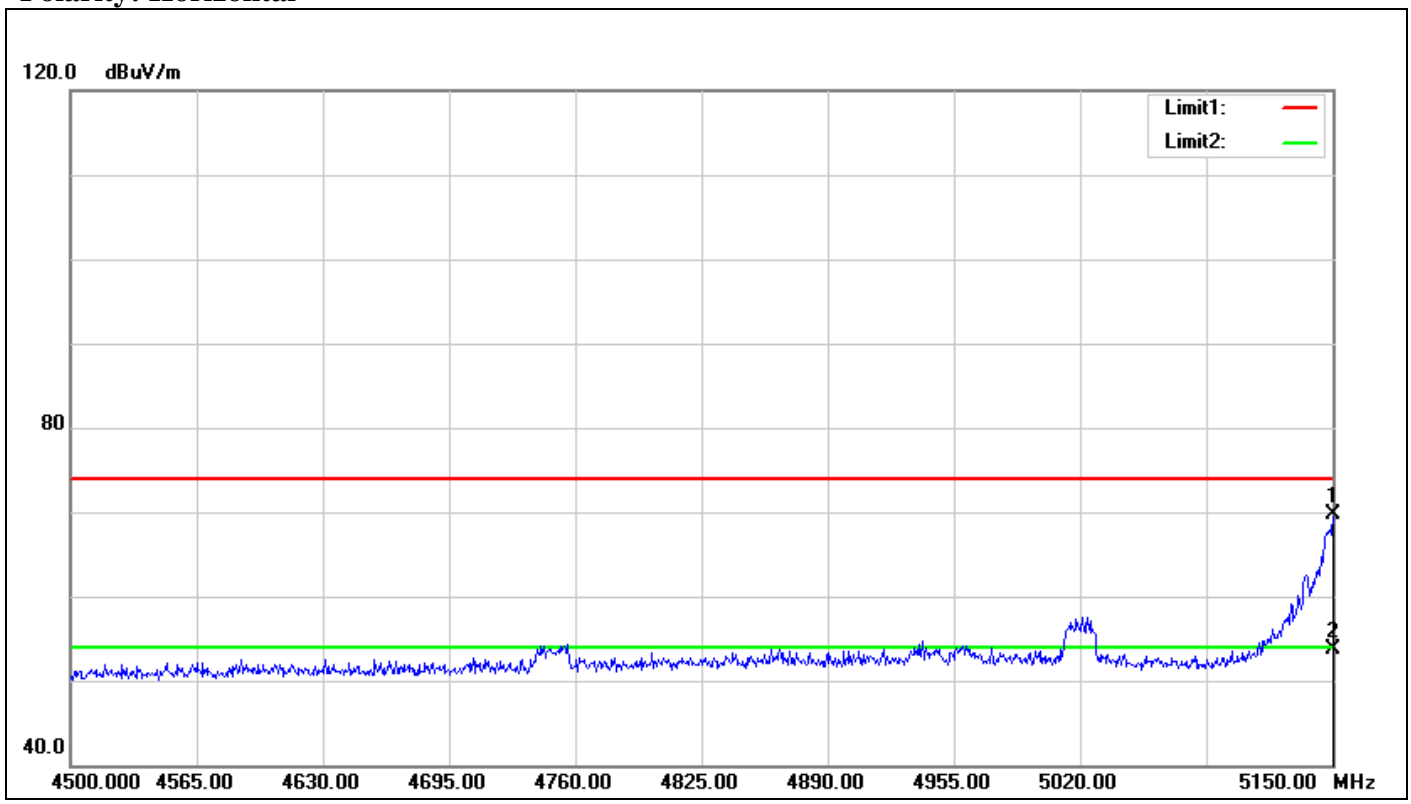
Band Edges (IEEE 802.11a mode / CH 5180 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5150.000	60.69	3.04	63.73	74.00	-10.27	100	296	peak
2	5150.000	43.80	3.04	46.84	54.00	-7.16	100	296	AVG

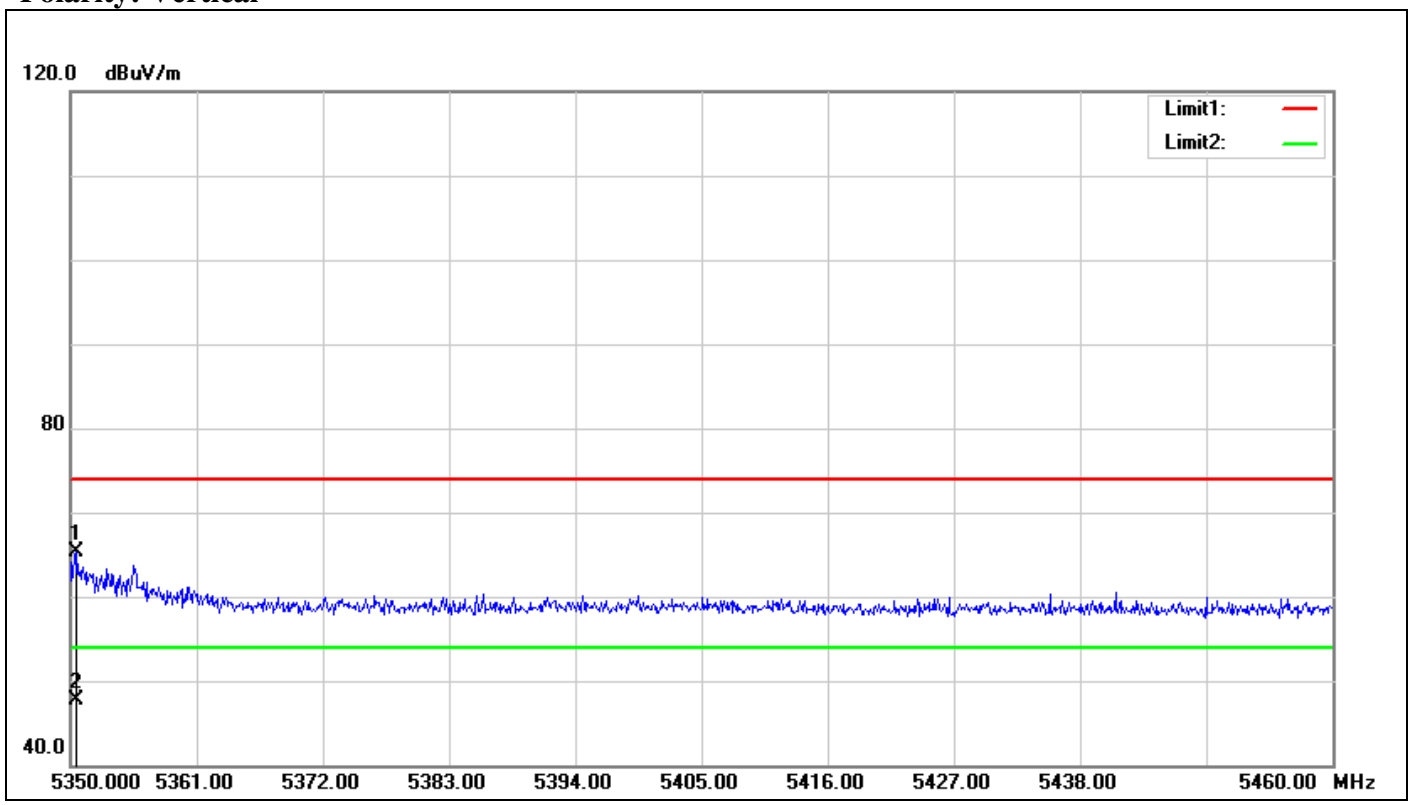
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5150.000	66.58	3.04	69.62	74.00	-4.38	100	263	peak
2	5150.000	50.65	3.04	53.69	54.00	-0.31	100	263	AVG

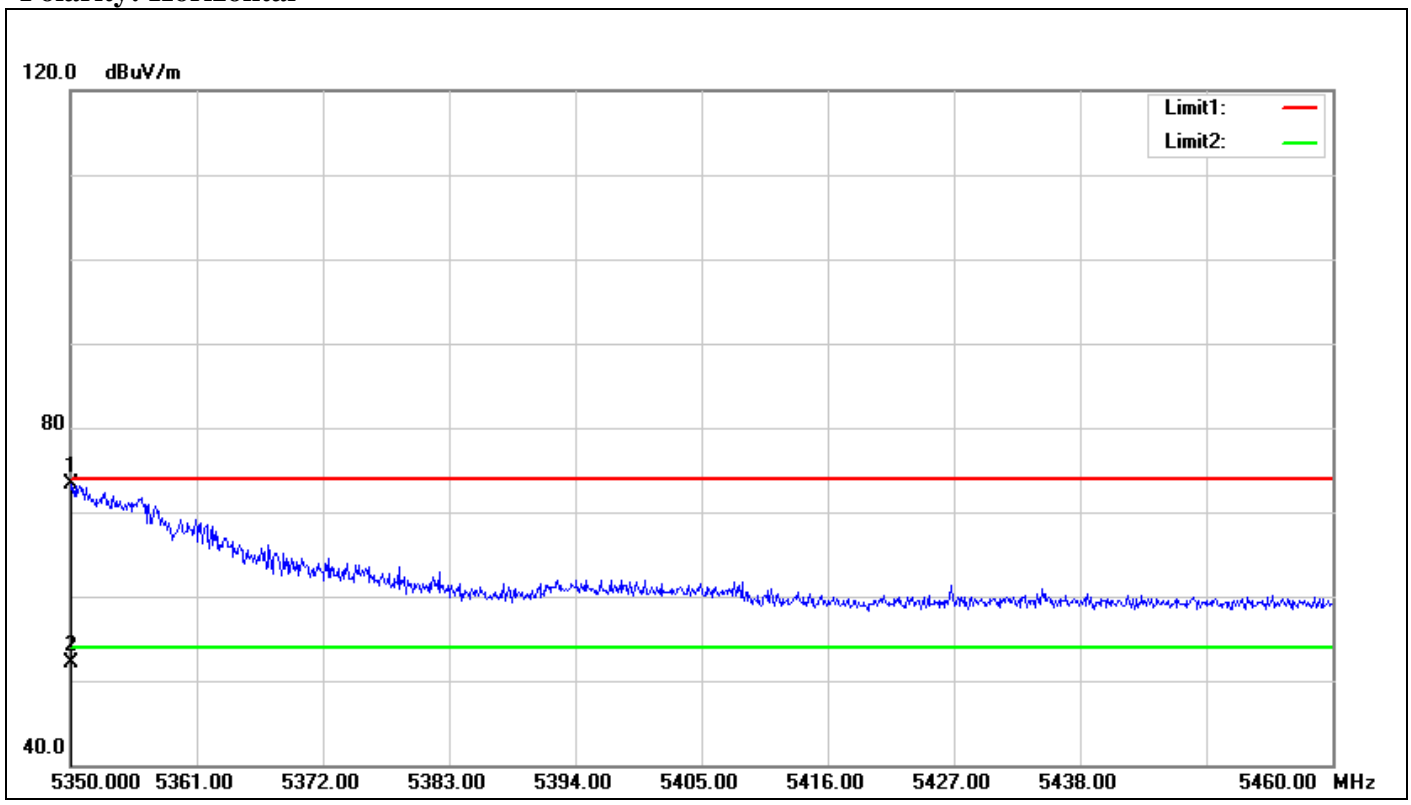
Band Edges (IEEE 802.11a mode / CH 5320 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5350.550	59.97	5.31	65.28	74.00	-8.72	100	20	peak
2	5350.550	42.32	5.31	47.63	54.00	-6.37	100	20	AVG

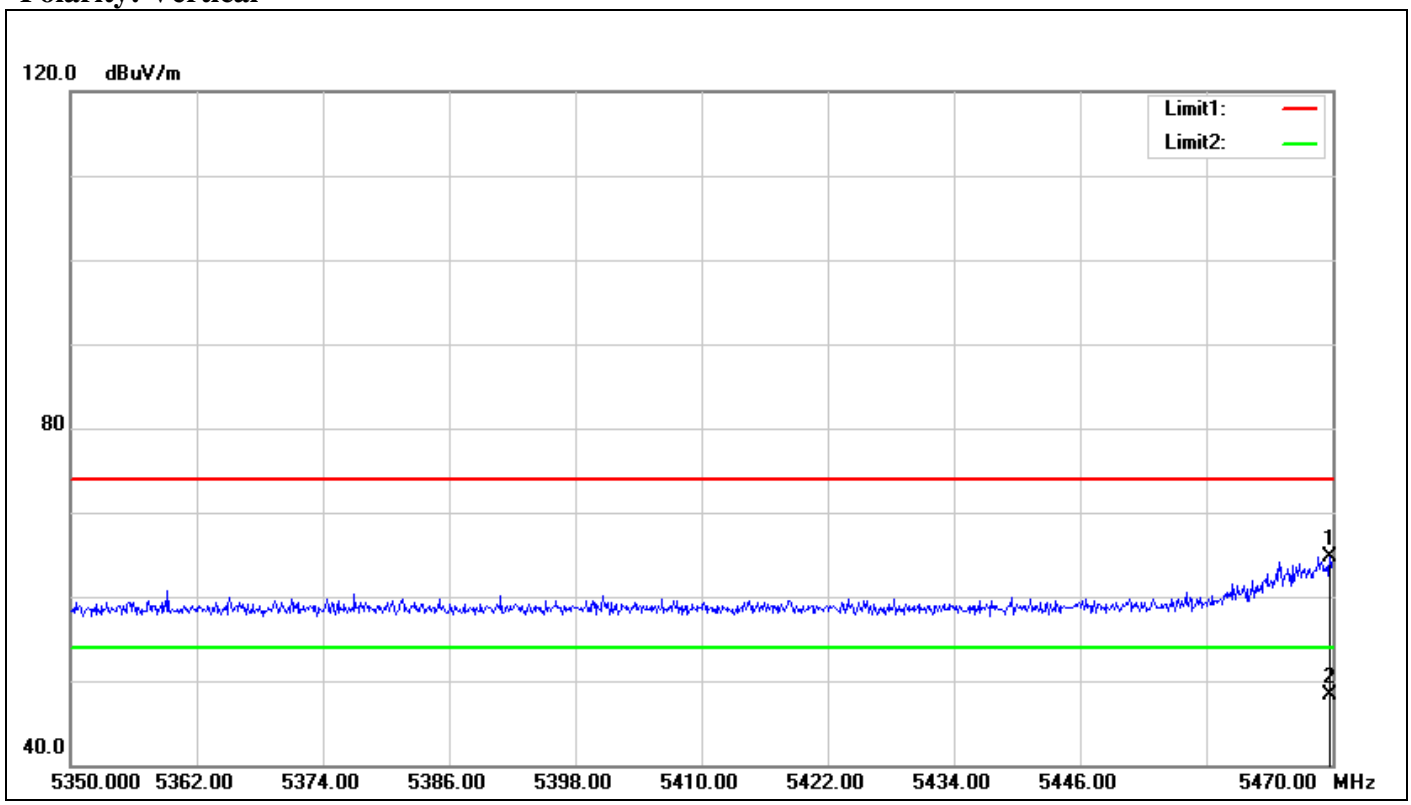
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5350.110	68.03	5.31	73.34	74.00	-0.66	100	28	peak
2	5350.110	46.73	5.31	52.04	54.00	-1.96	100	28	AVG

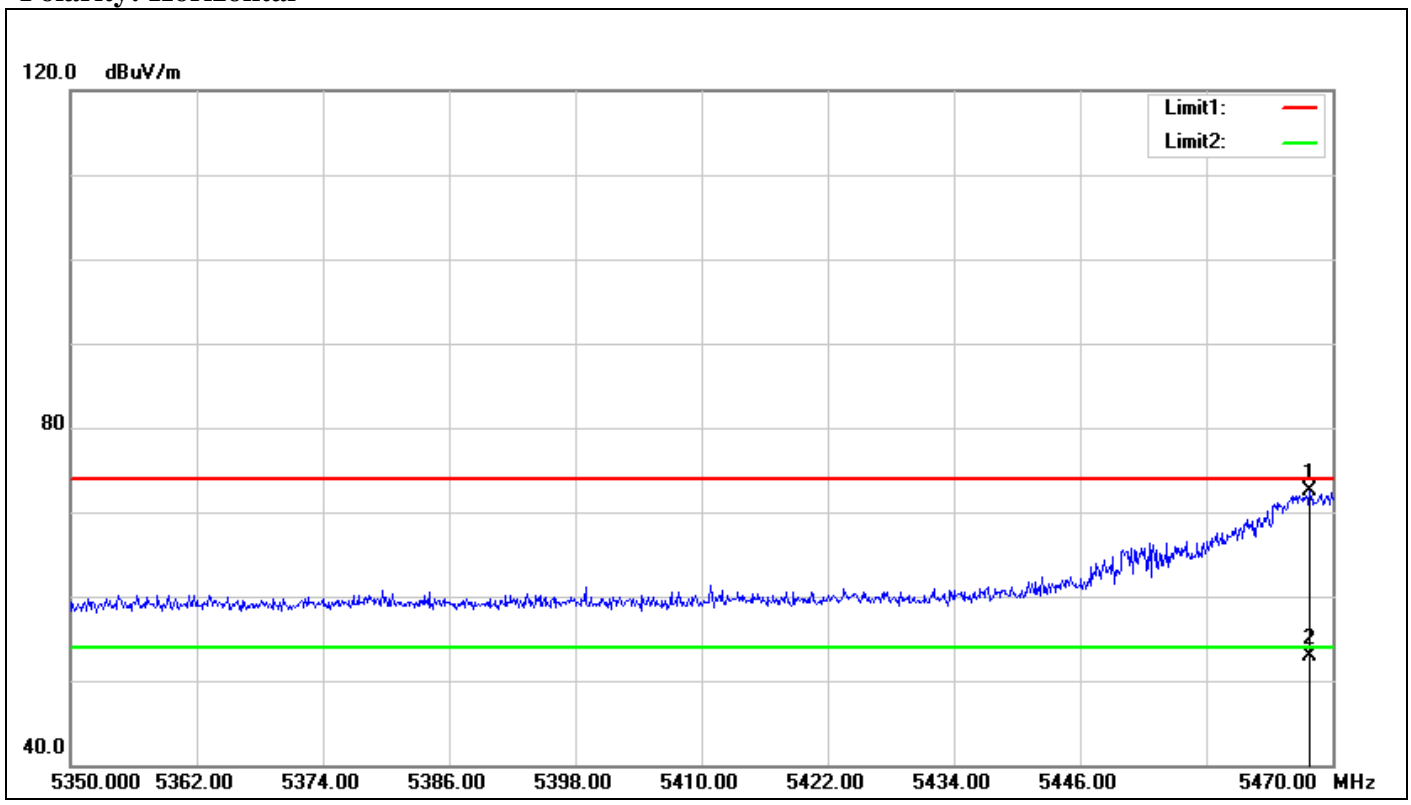
Band Edges (IEEE 802.11a mode / CH 5500 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5469.760	59.29	5.39	64.68	74.00	-9.32	100	142	peak
2	5469.760	42.86	5.39	48.25	54.00	-5.75	100	142	AVG

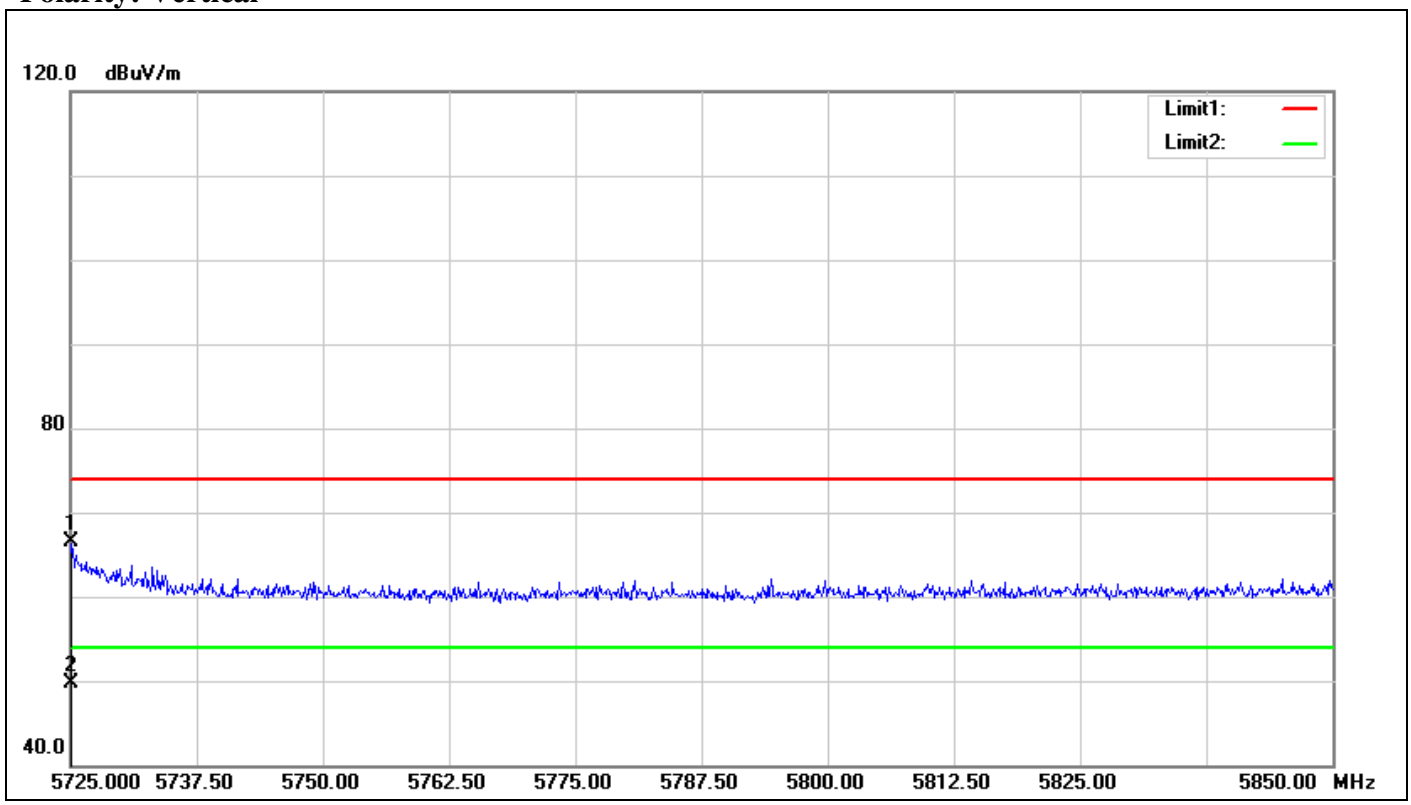
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5467.840	67.14	5.40	72.54	74.00	-1.46	100	35	peak
2	5467.840	47.50	5.40	52.90	54.00	-1.10	100	35	AVG

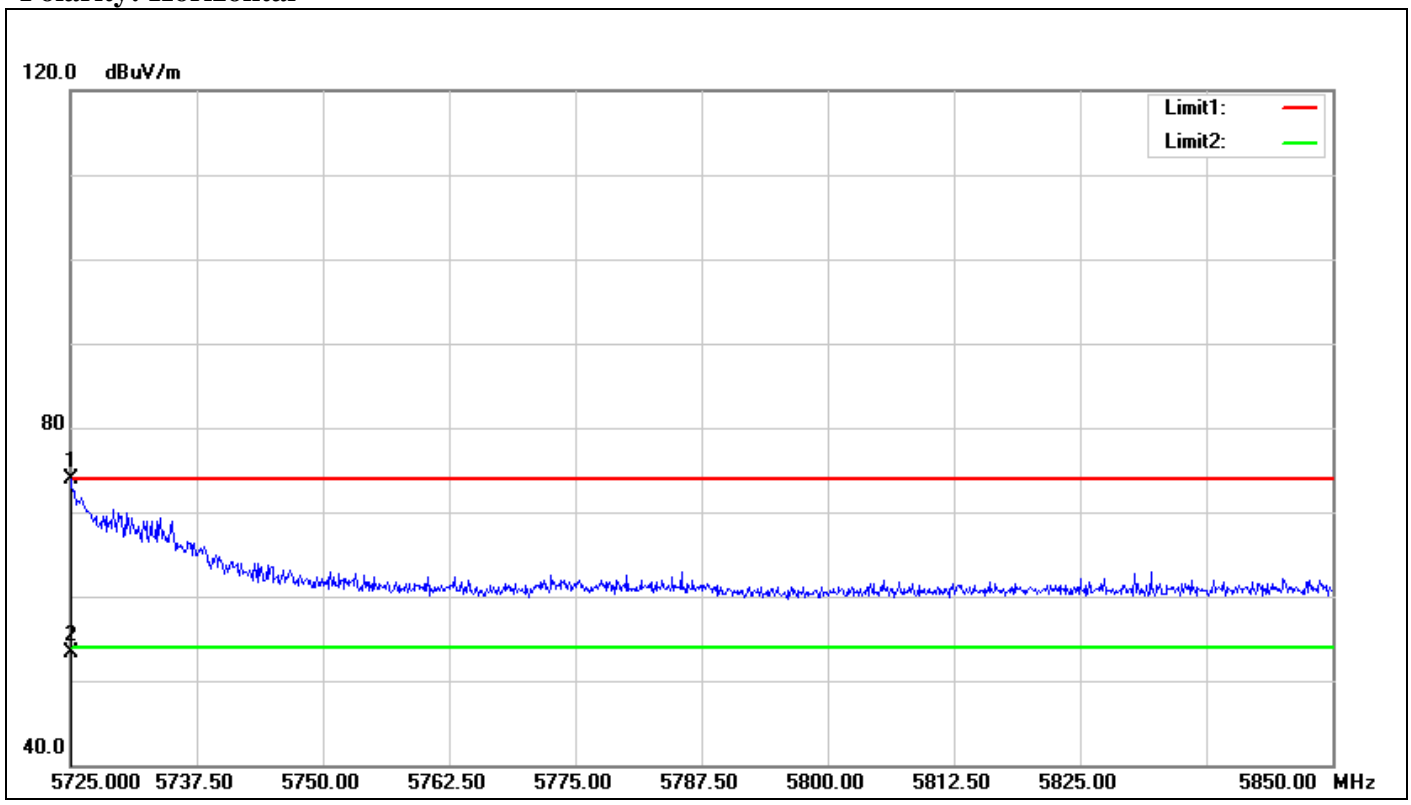
Band Edges (IEEE 802.11a mode / CH 5700 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5725.000	60.19	6.21	66.40	74.00	-7.60	100	340	peak
2	5725.000	43.54	6.21	49.75	54.00	-4.25	100	340	AVG

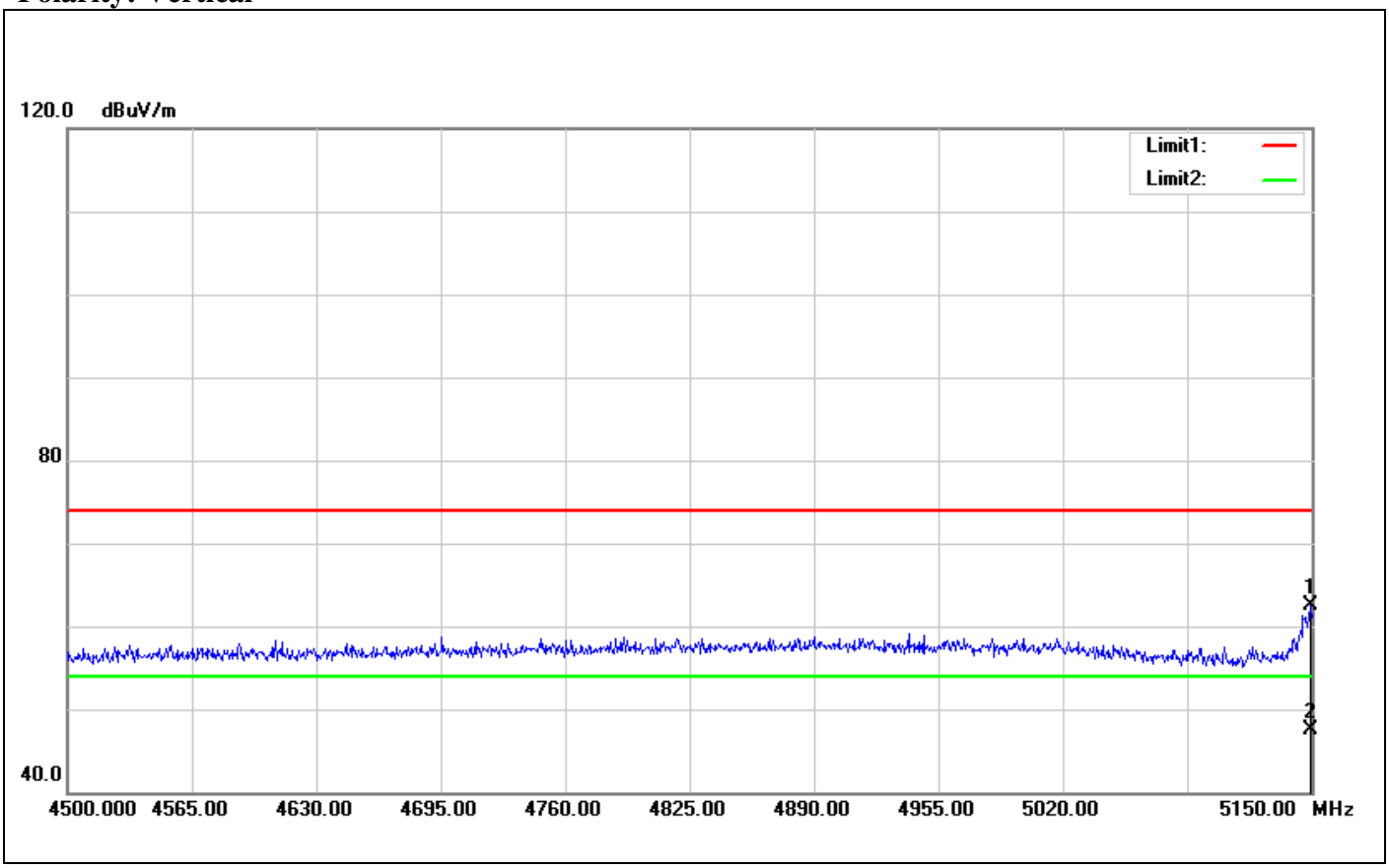
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5725.000	67.70	6.21	73.91	74.00	-0.09	100	72	peak
2	5725.000	47.00	6.21	53.21	54.00	-0.79	100	72	AVG

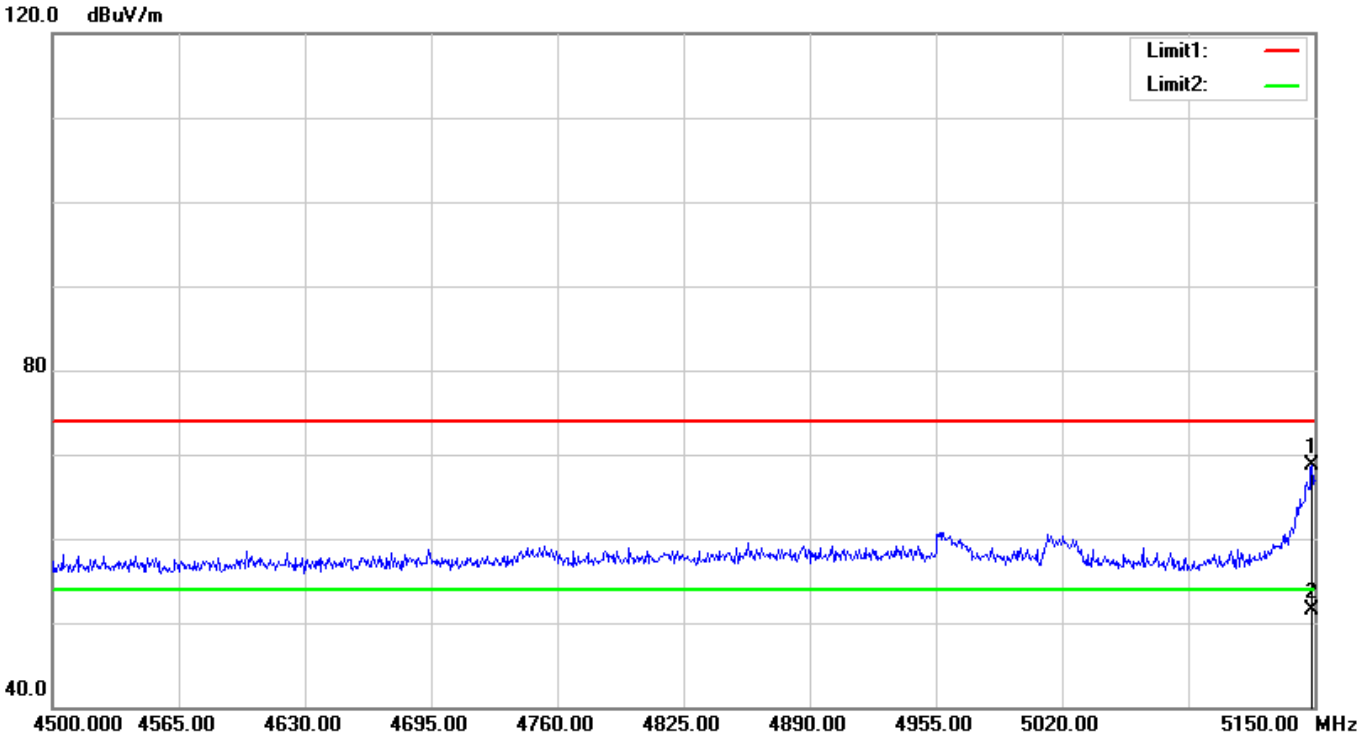
Band Edges (IEEE 802.11n HT 20 MHz Channel mode / CH 5180 MHz)

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	59.51	3.04	62.55	74.00	-11.45	100	273	peak
2	5149.350	44.41	3.04	47.45	54.00	-6.55	100	273	AVG

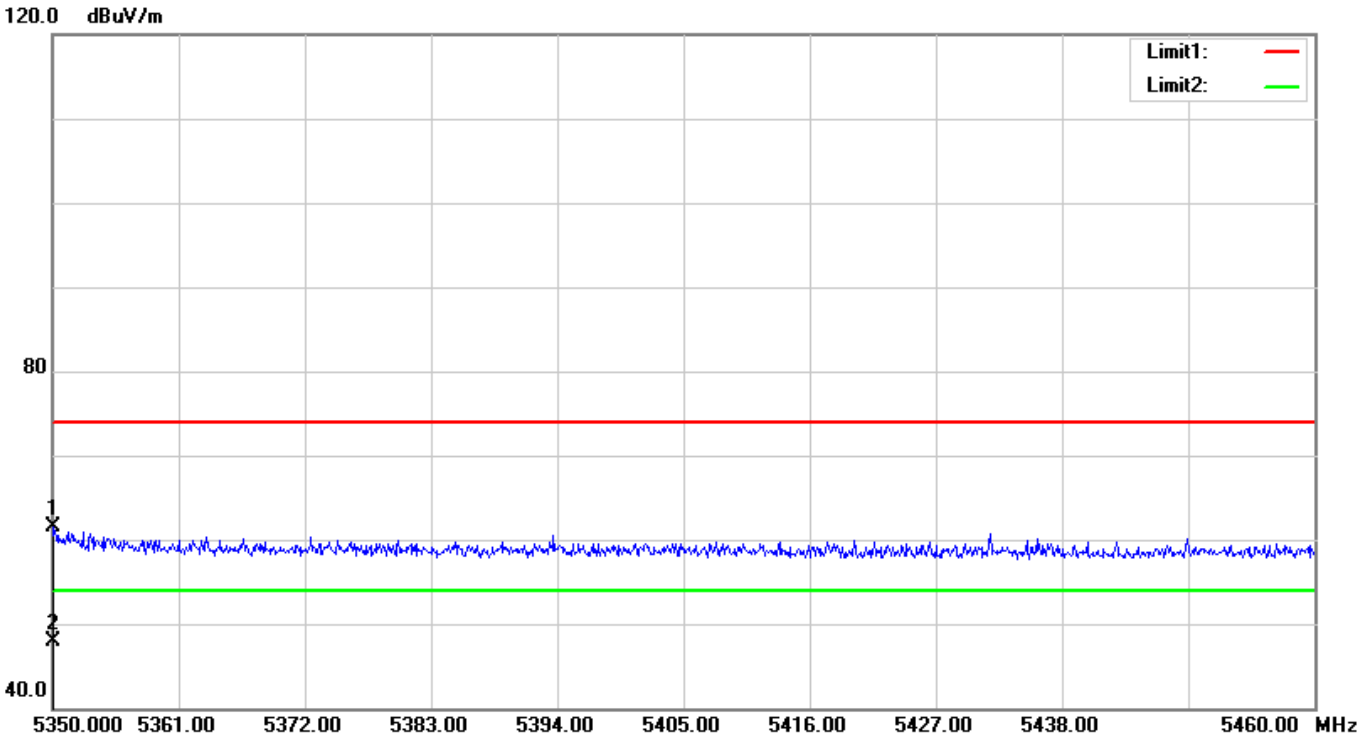
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5148.700	65.70	3.03	68.73	74.00	-5.27	100	296	peak
2	5148.700	48.51	3.03	51.54	54.00	-2.46	100	296	AVG

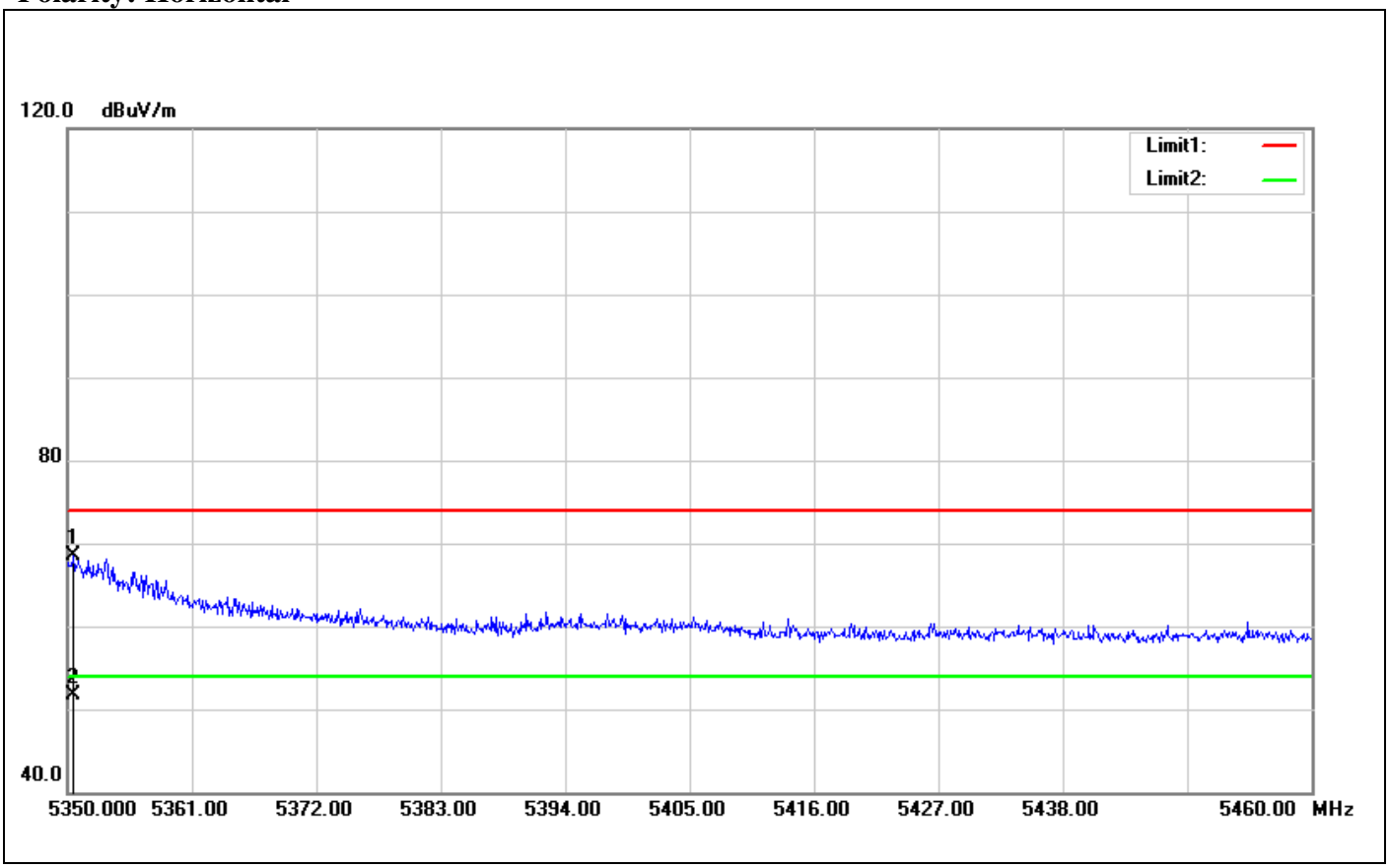
Band Edges (IEEE 802.11n HT 20 MHz Channel mode / CH 5320 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5350.110	56.12	5.31	61.43	74.00	-12.57	100	329	peak
2	5350.110	42.57	5.31	47.88	54.00	-6.12	100	329	AVG

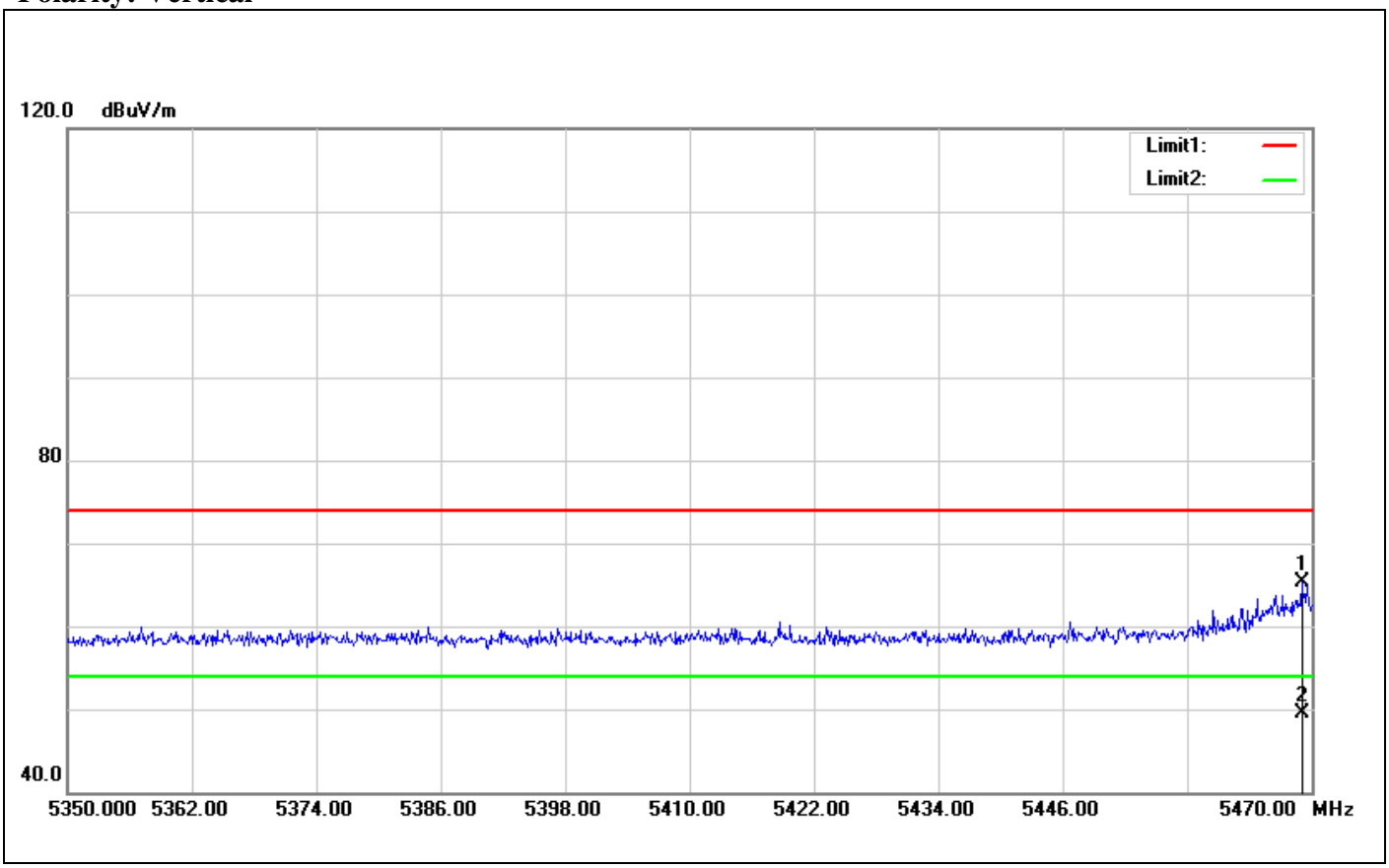
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5350.550	63.11	5.31	68.42	74.00	-5.58	100	1	peak
2	5350.550	46.48	5.31	51.79	54.00	-2.21	100	1	AVG

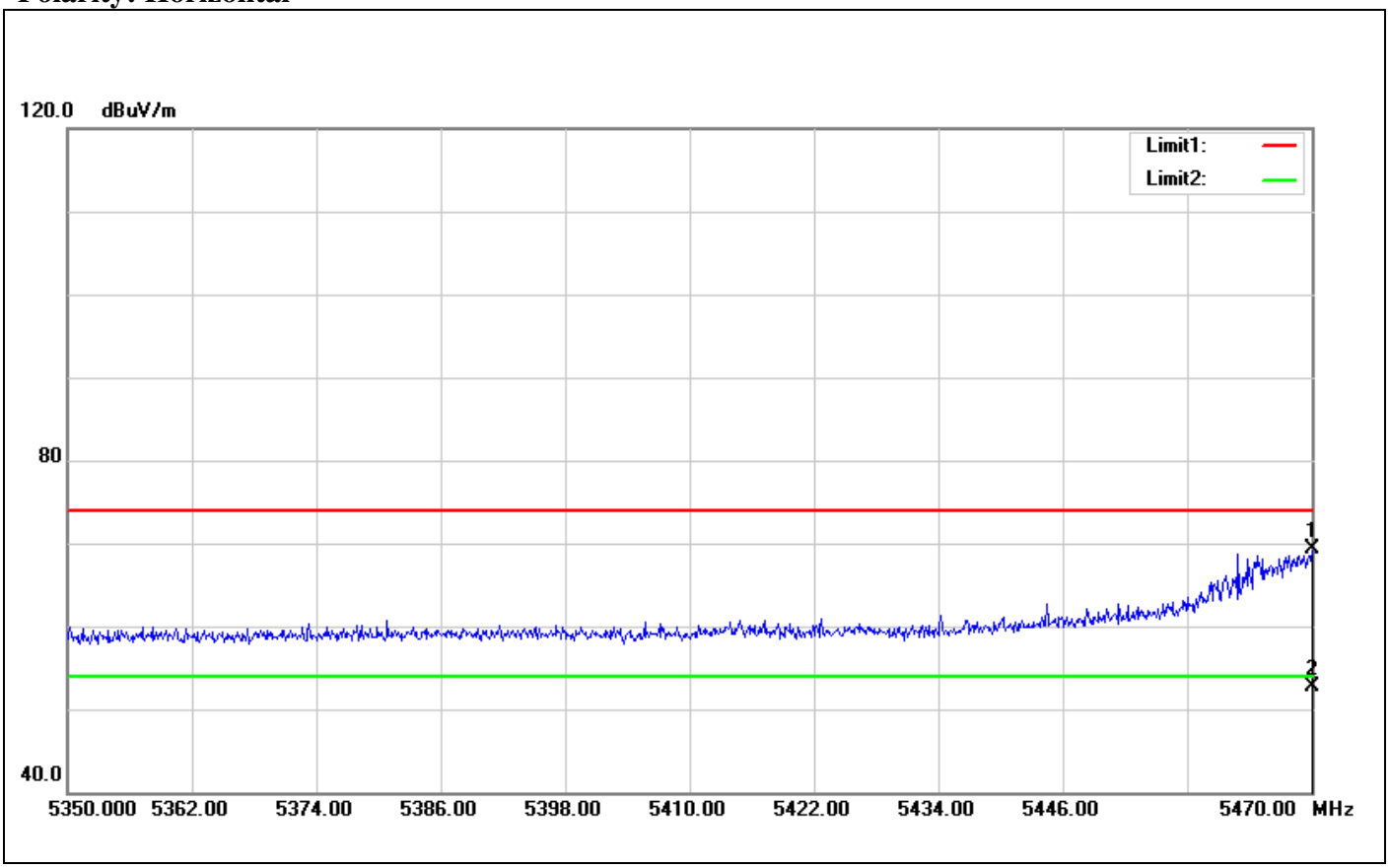
Band Edges (IEEE 802.11n HT 20 MHz Channel mode / CH 5500 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5469.040	59.83	5.40	65.23	74.00	-8.77	100	90	peak
2	5469.040	44.18	5.40	49.58	54.00	-4.42	100	90	AVG

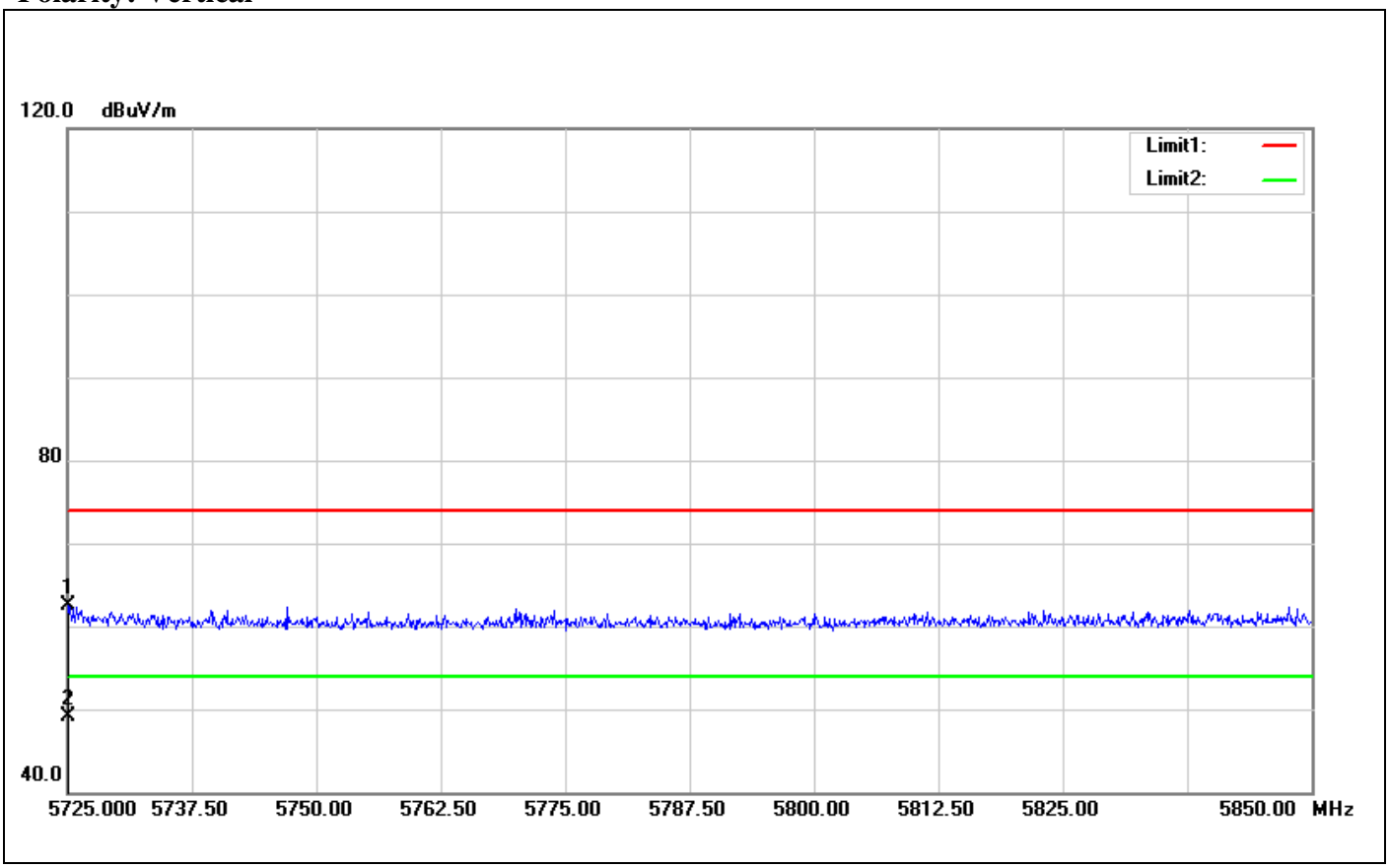
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5470.000	63.87	5.39	69.26	74.00	-4.74	100	322	peak
2	5470.000	47.39	5.39	52.78	54.00	-1.22	100	322	AVG

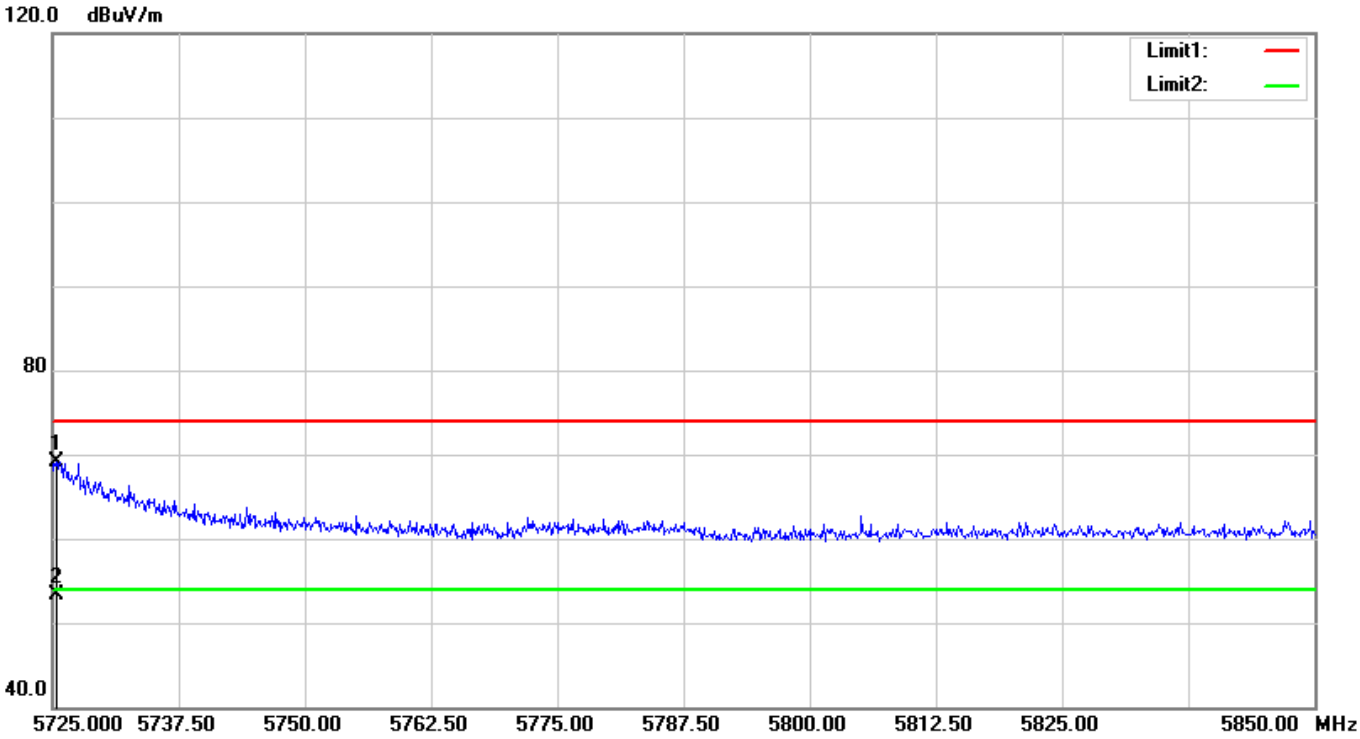
Band Edges (IEEE 802.11n HT 20 MHz Channel mode / CH 5700 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5725.000	56.22	6.21	62.43	74.00	-11.57	100	352	peak
2	5725.000	42.91	6.21	49.12	54.00	-4.88	100	352	AVG

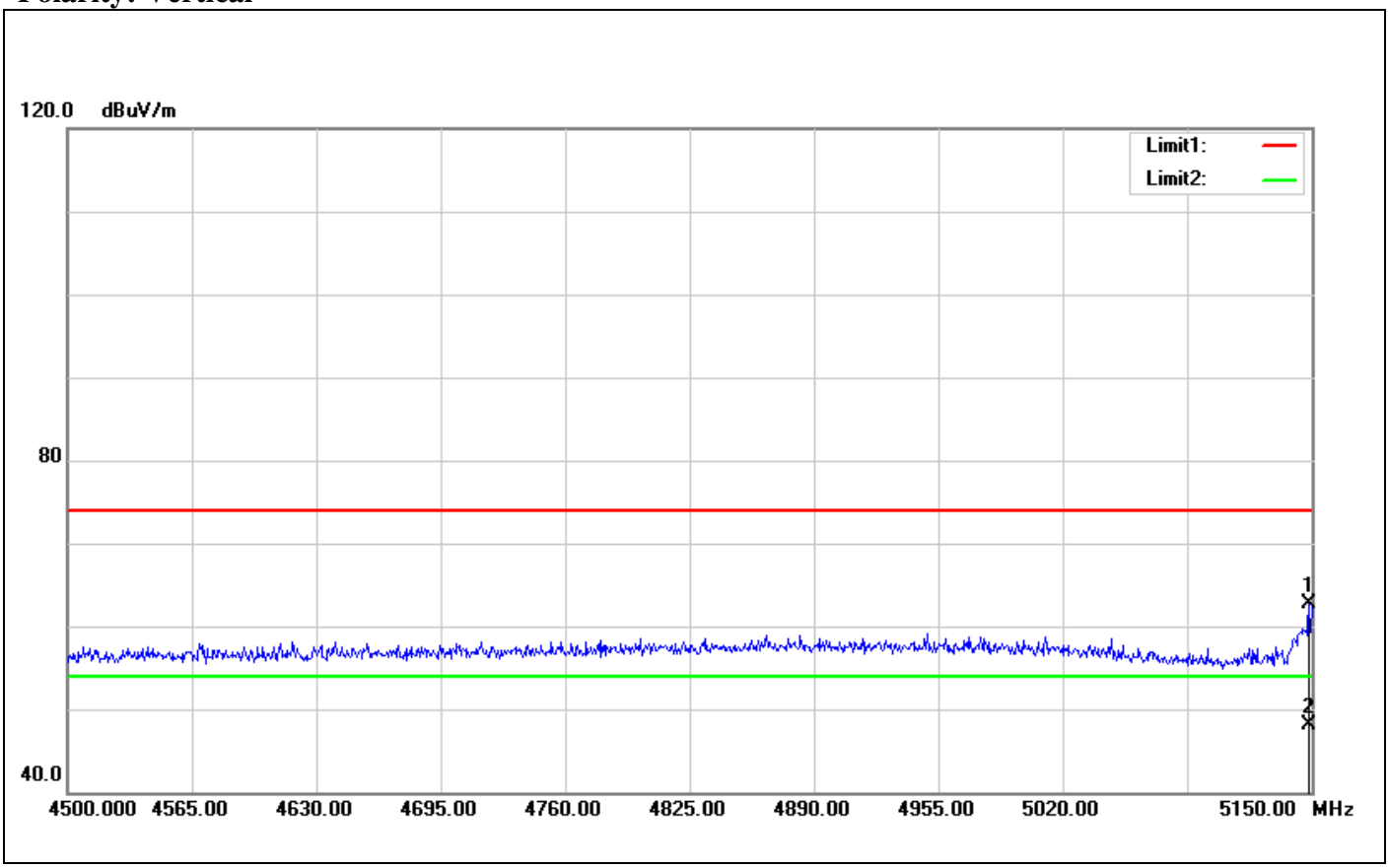
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5725.375	62.95	6.21	69.16	74.00	-4.84	100	359	peak
2	5725.375	47.09	6.21	53.30	54.00	-0.70	100	359	AVG

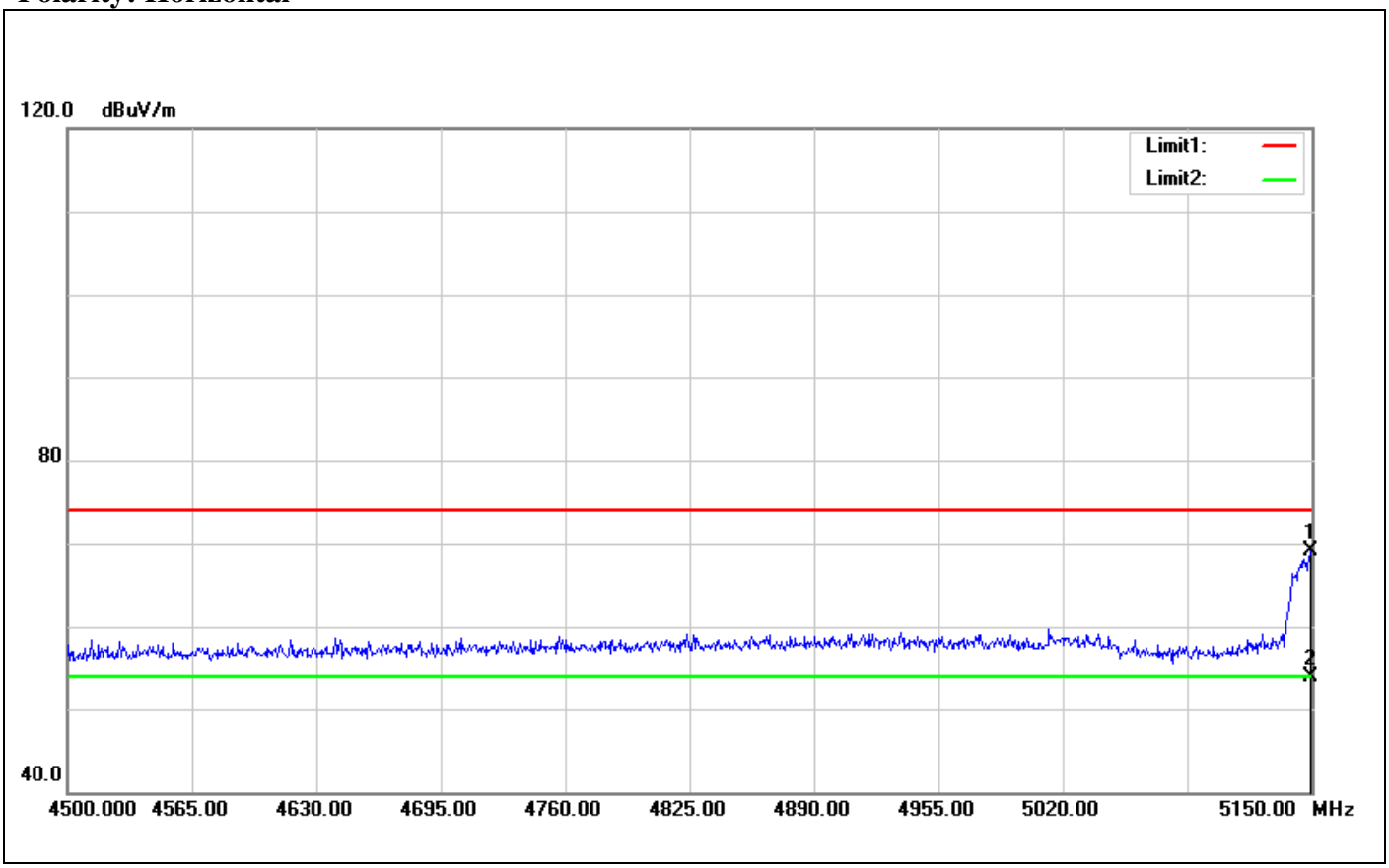
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5190 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5148.700	59.63	3.03	62.66	74.00	-11.34	100	131	peak
2	5148.700	45.16	3.03	48.19	54.00	-5.81	100	131	AVG

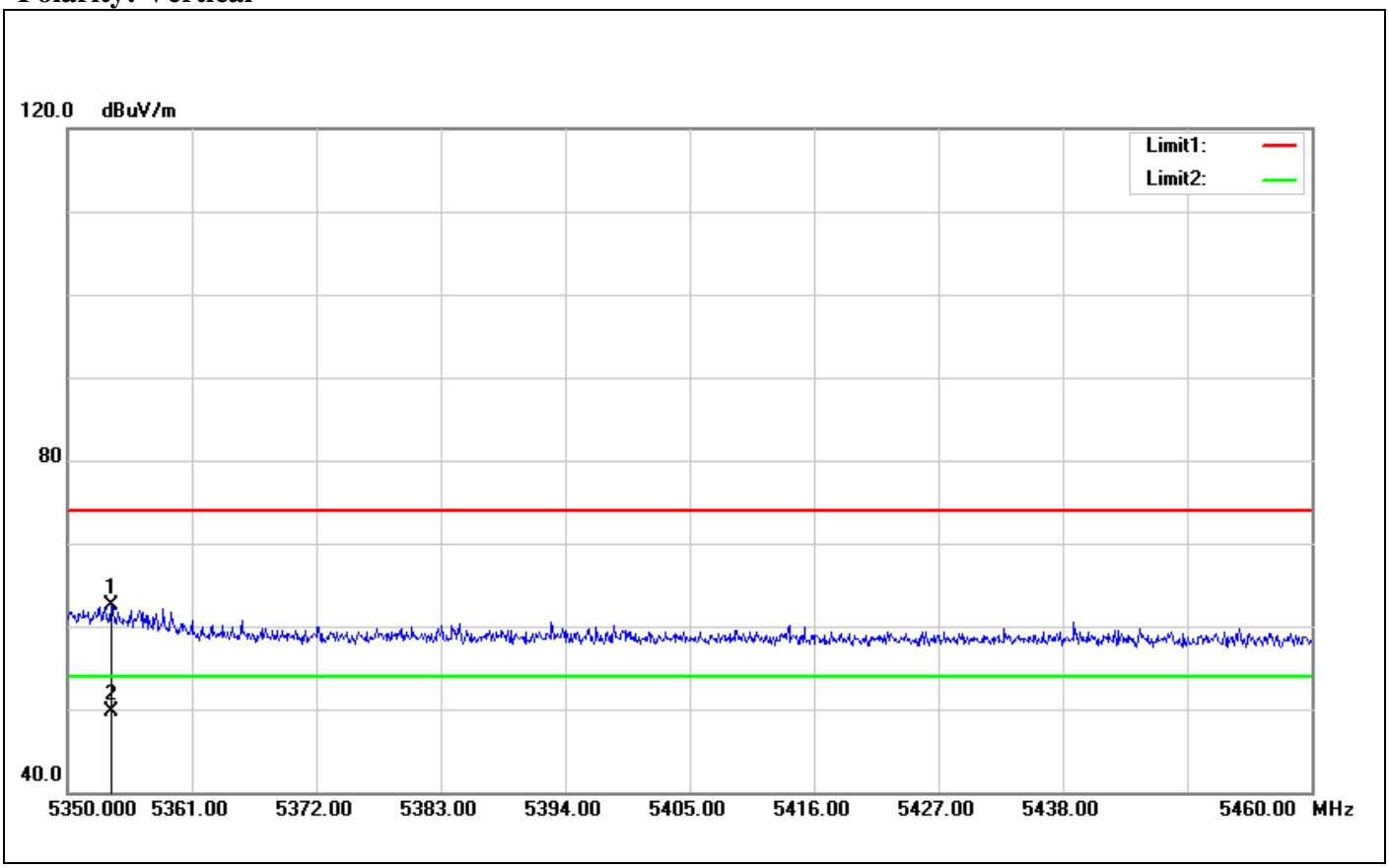
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5149.350	65.97	3.04	69.01	74.00	-4.99	100	186	peak
2	5149.350	50.77	3.04	53.81	54.00	-0.19	100	186	AVG

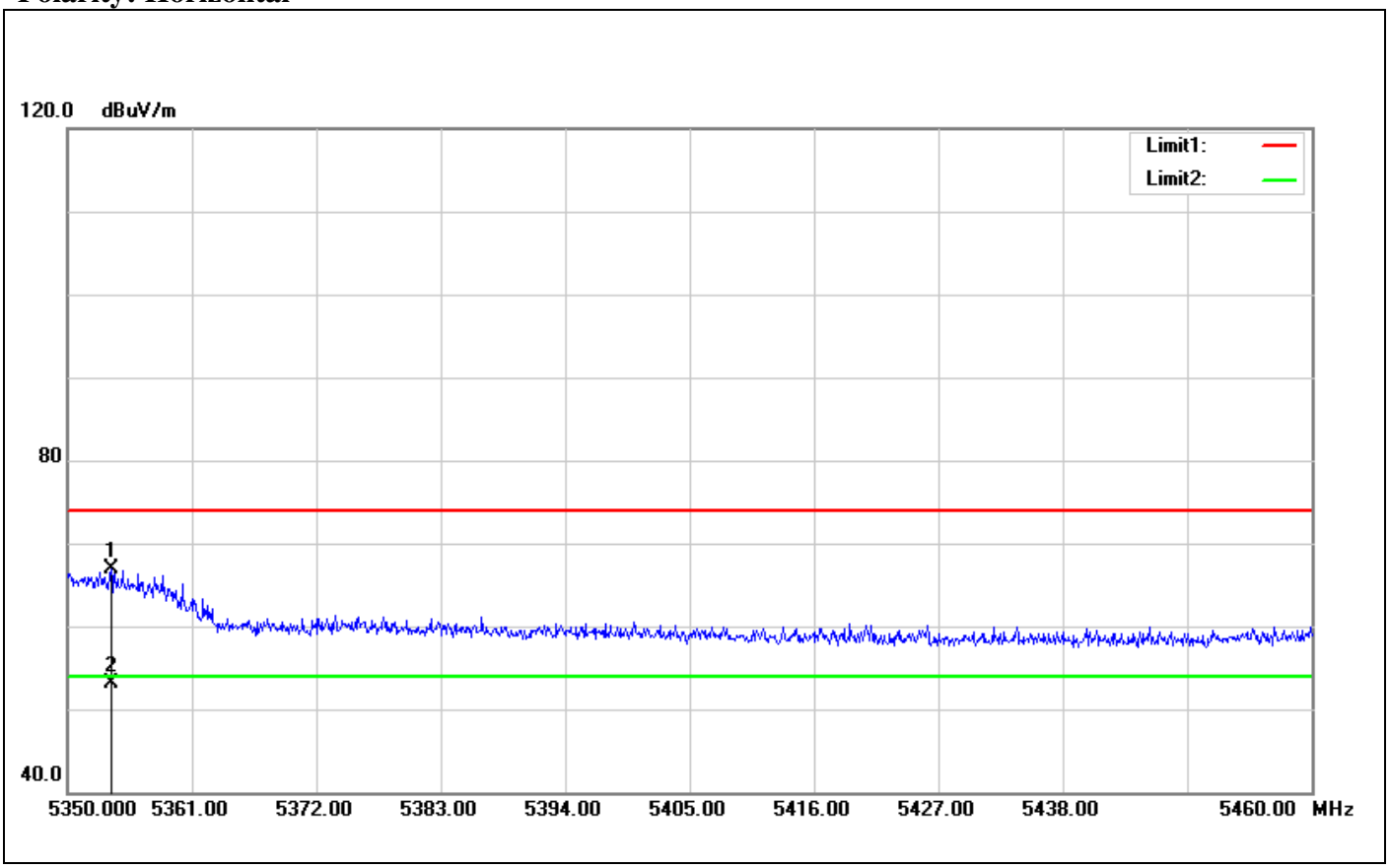
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5310 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5353.850	57.18	5.34	62.52	74.00	-11.48	100	332	peak
2	5353.850	44.33	5.34	49.67	54.00	-4.33	100	332	AVG

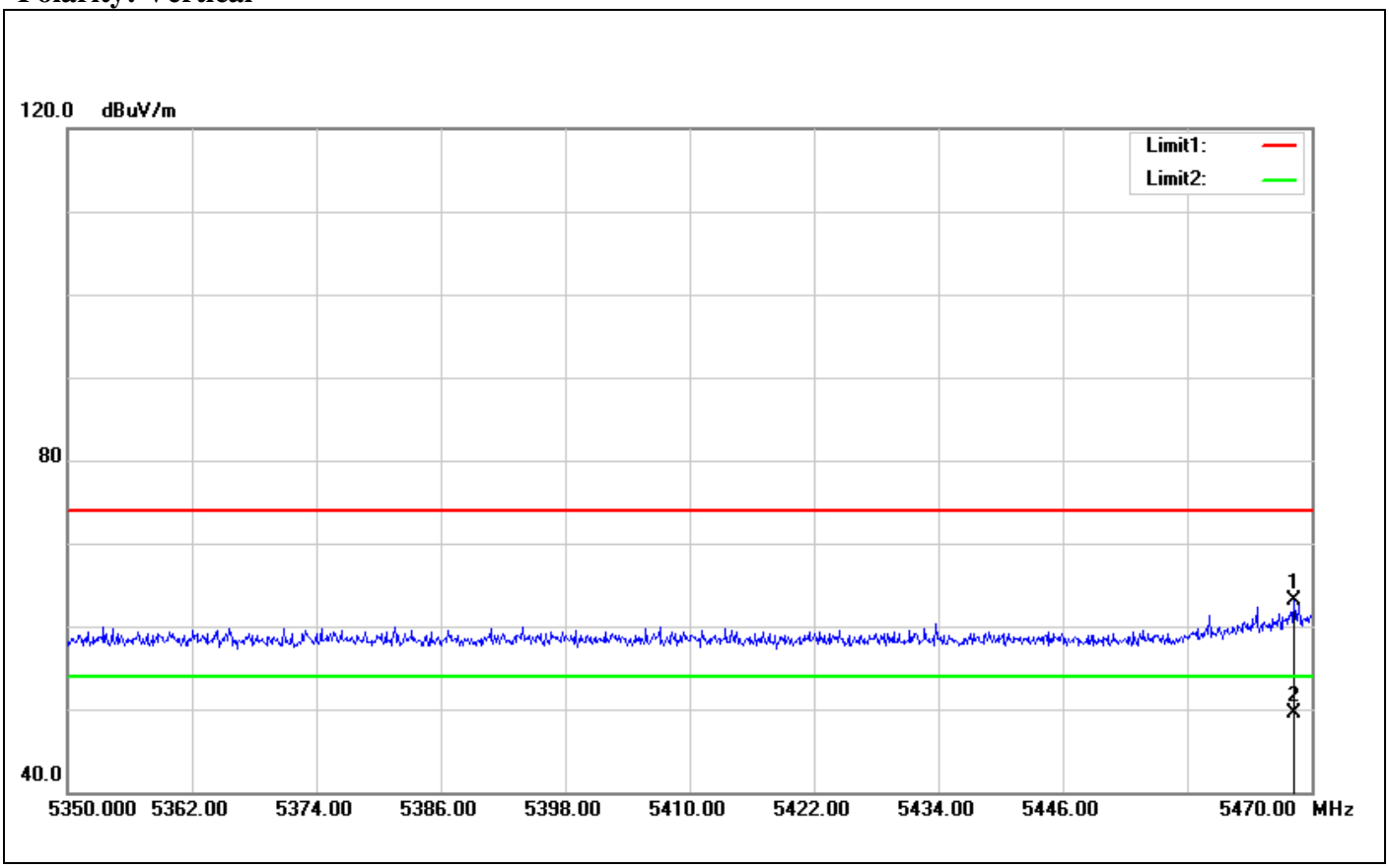
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5353.850	61.54	5.34	66.88	74.00	-7.12	100	233	peak
2	5353.850	47.70	5.34	53.04	54.00	-0.96	100	233	AVG

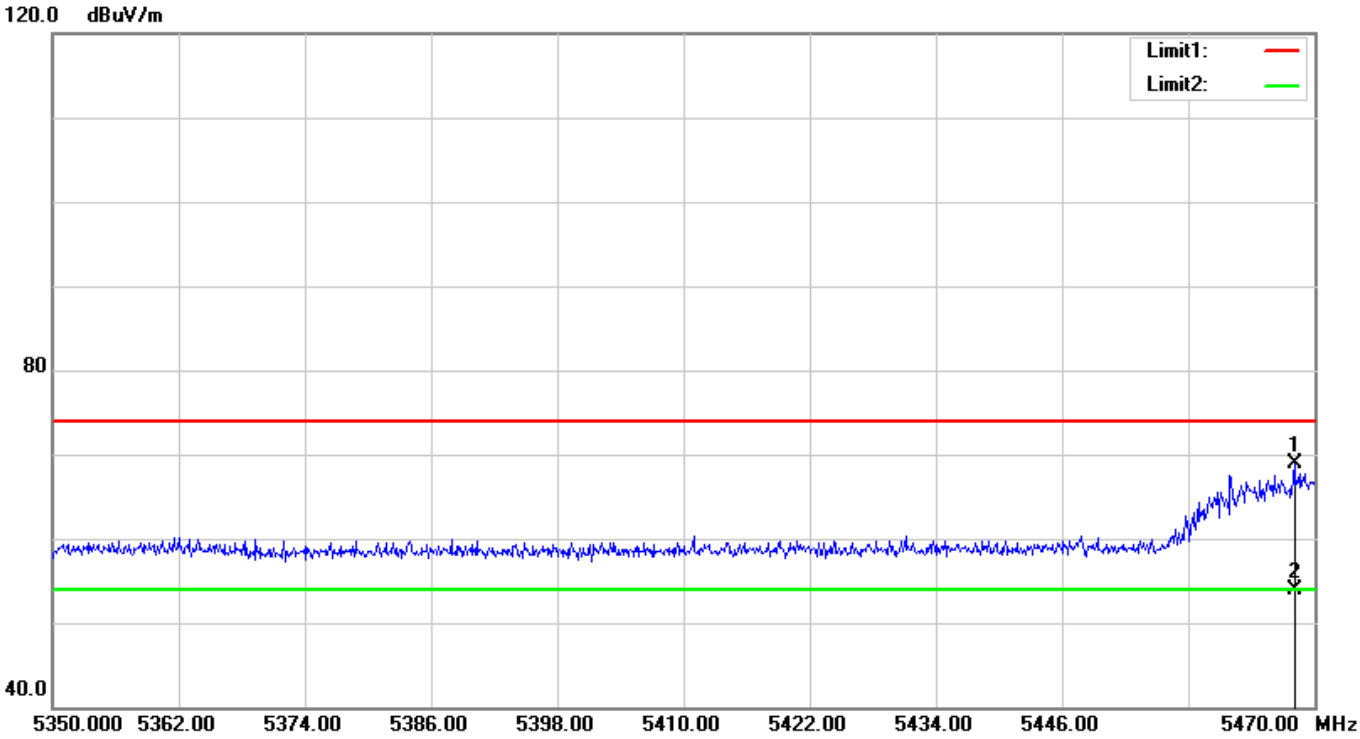
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5510 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5468.320	57.65	5.40	63.05	74.00	-10.95	100	360	peak
2	5468.320	44.14	5.40	49.54	54.00	-4.46	100	360	AVG

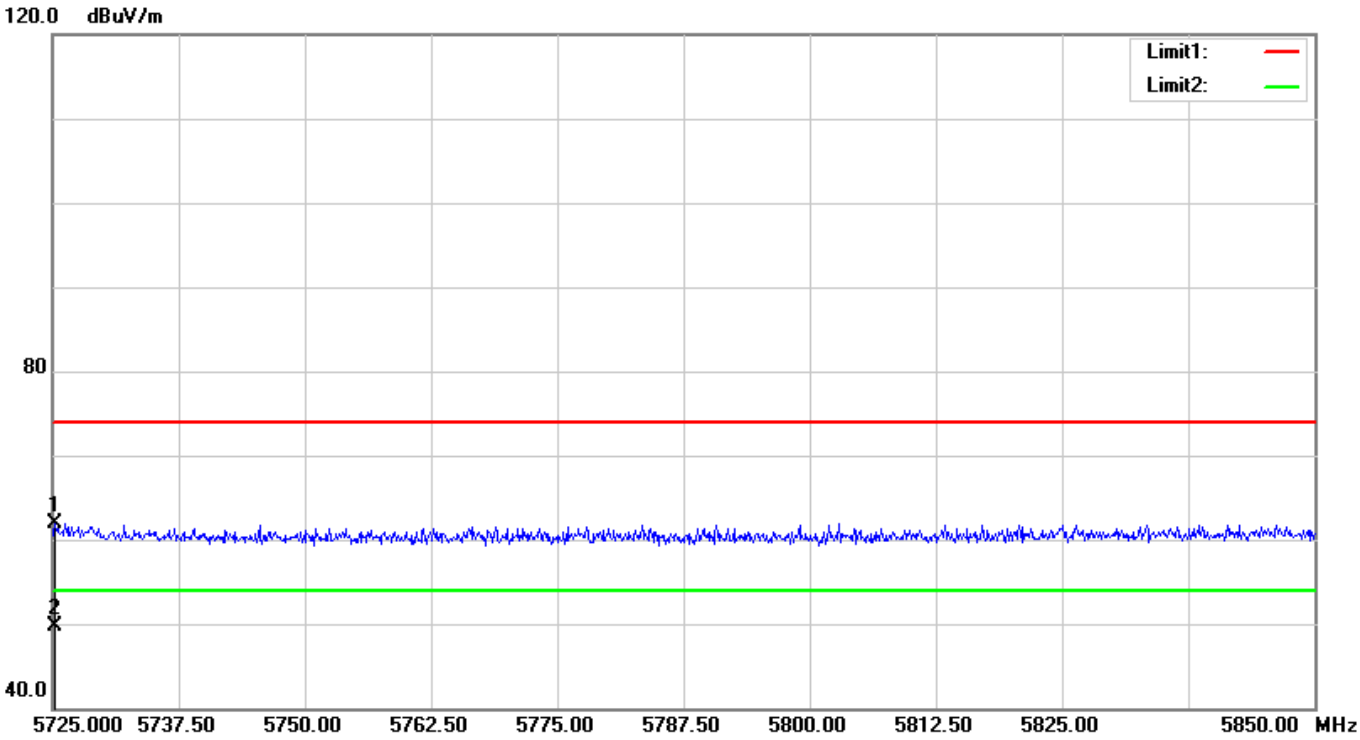
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5468.080	63.47	5.40	68.87	74.00	-5.13	100	233	peak
2	5468.080	48.45	5.40	53.85	54.00	-0.15	100	233	AVG

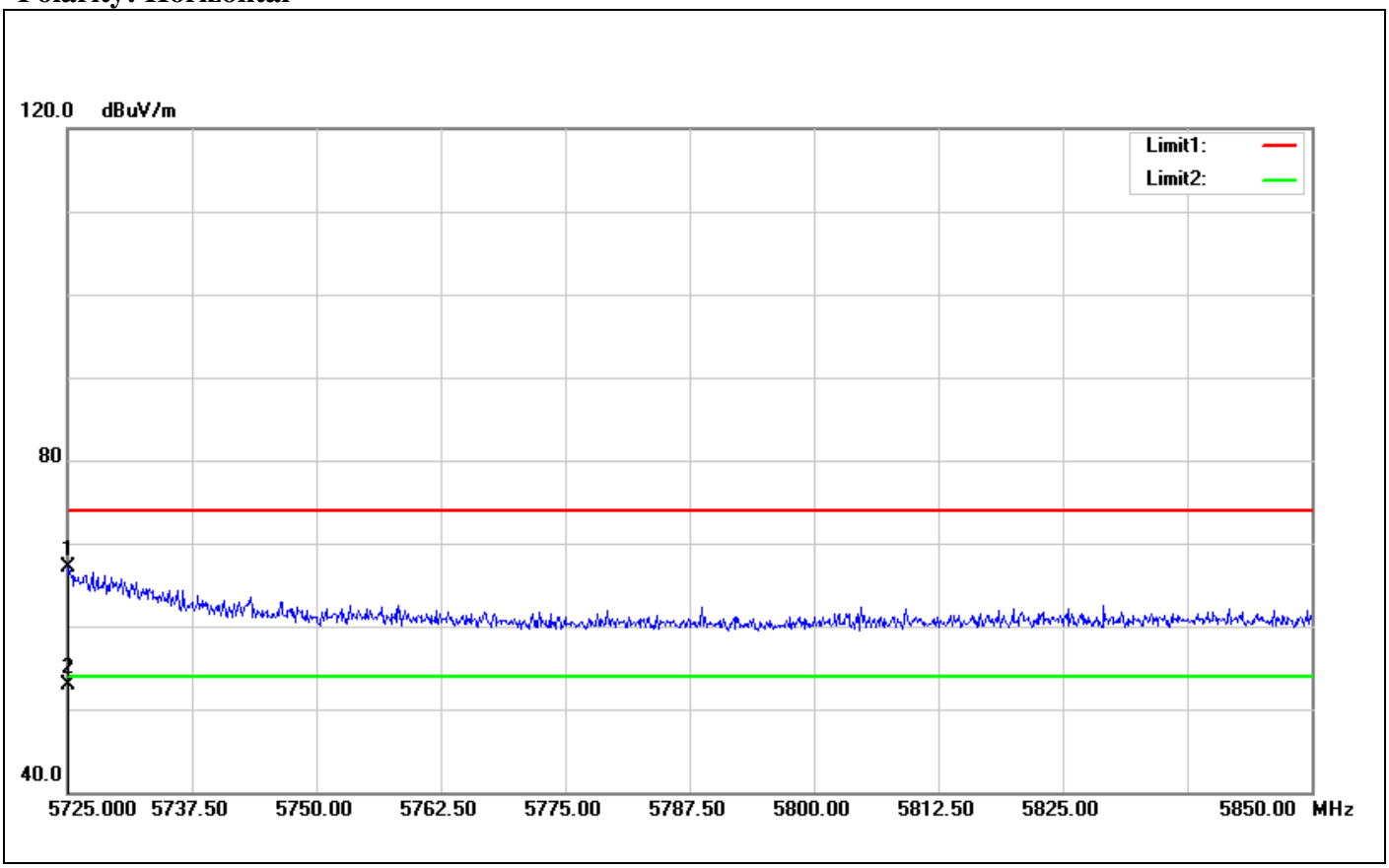
Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5670 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5725.250	55.76	6.21	61.97	74.00	-12.03	100	277	peak
2	5725.250	43.44	6.21	49.65	54.00	-4.35	100	277	AVG

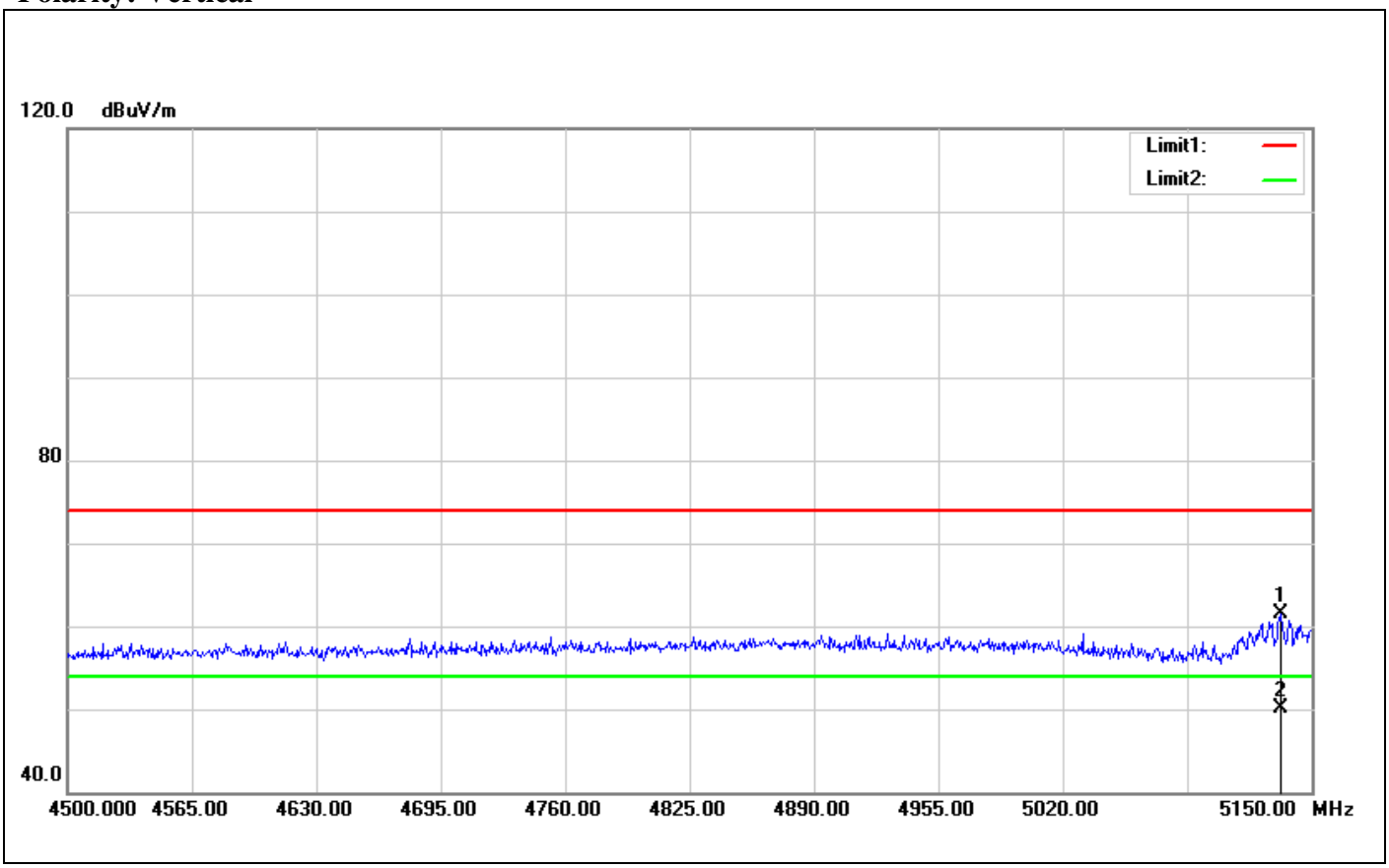
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5725.125	60.84	6.21	67.05	74.00	-6.95	100	50	peak
2	5725.125	46.74	6.21	52.95	54.00	-1.05	100	50	AVG

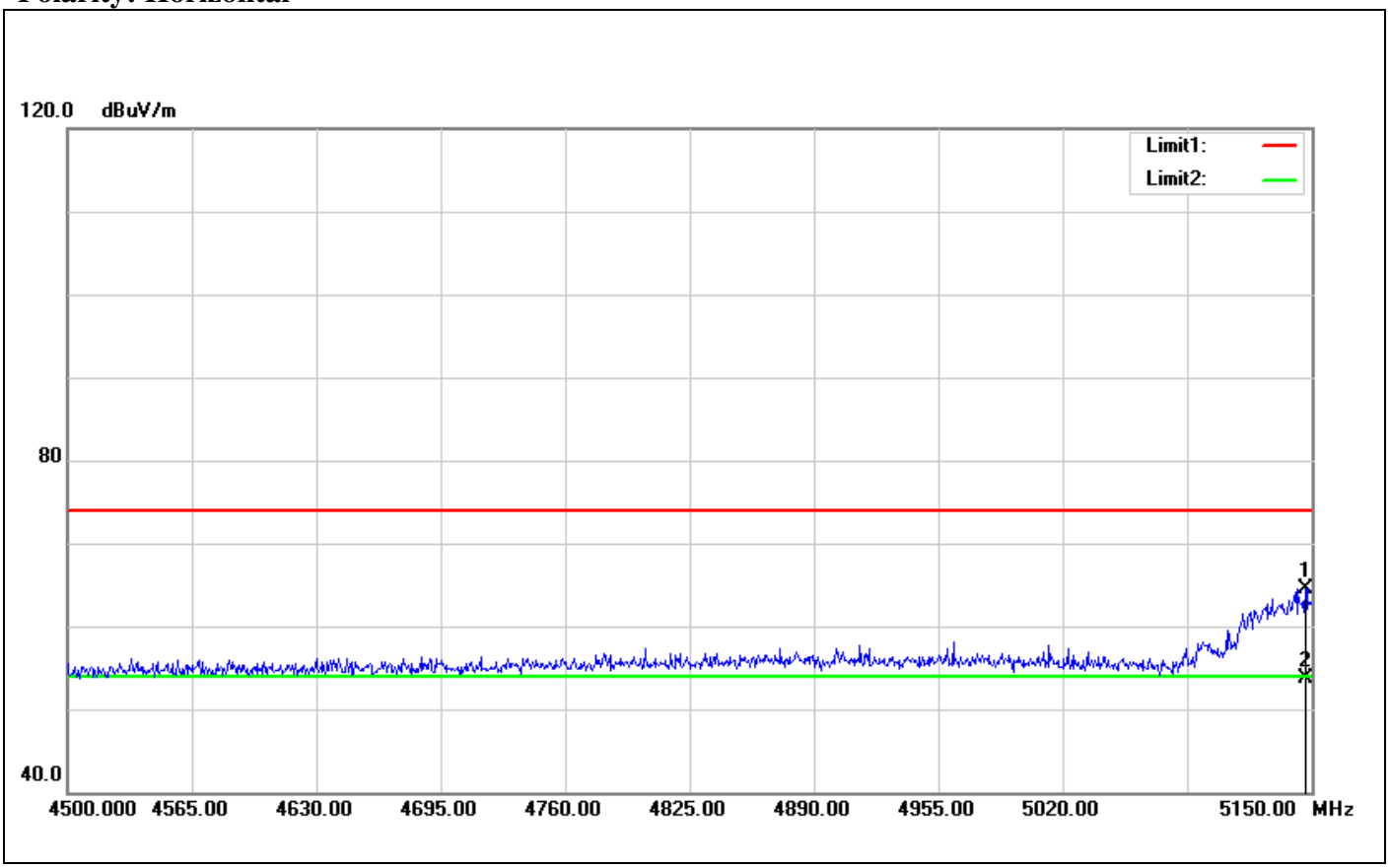
Band Edges (IEEE 802.11ac VHT 80 MHz mode / CH 5210 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5133.750	58.49	2.93	61.42	74.00	-12.58	100	164	peak
2	5133.750	47.20	2.93	50.13	54.00	-3.87	100	164	AVG

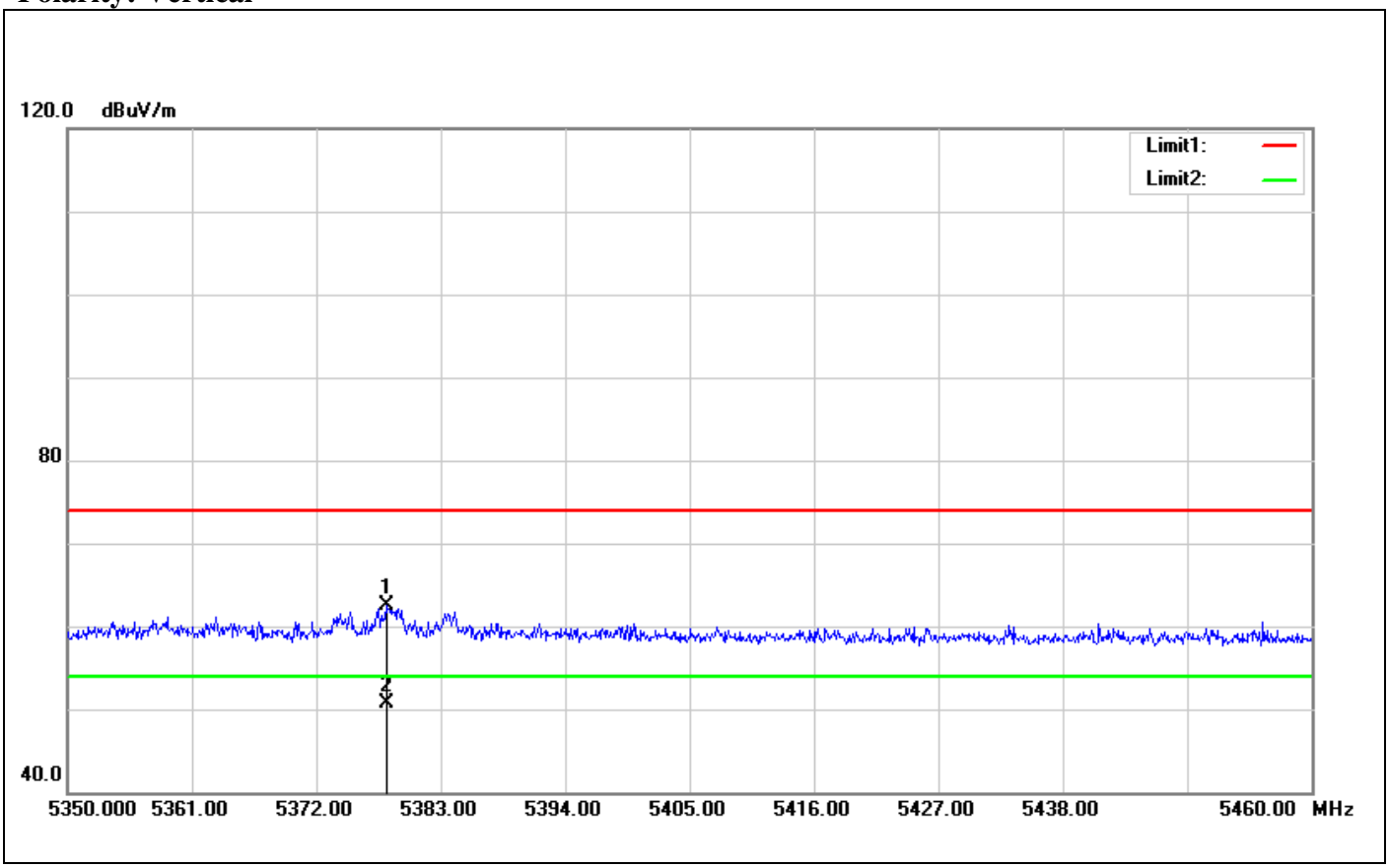
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5146.750	61.58	3.02	64.60	74.00	-9.40	100	259	peak
2	5146.750	50.63	3.02	53.65	54.00	-0.35	100	259	AVG

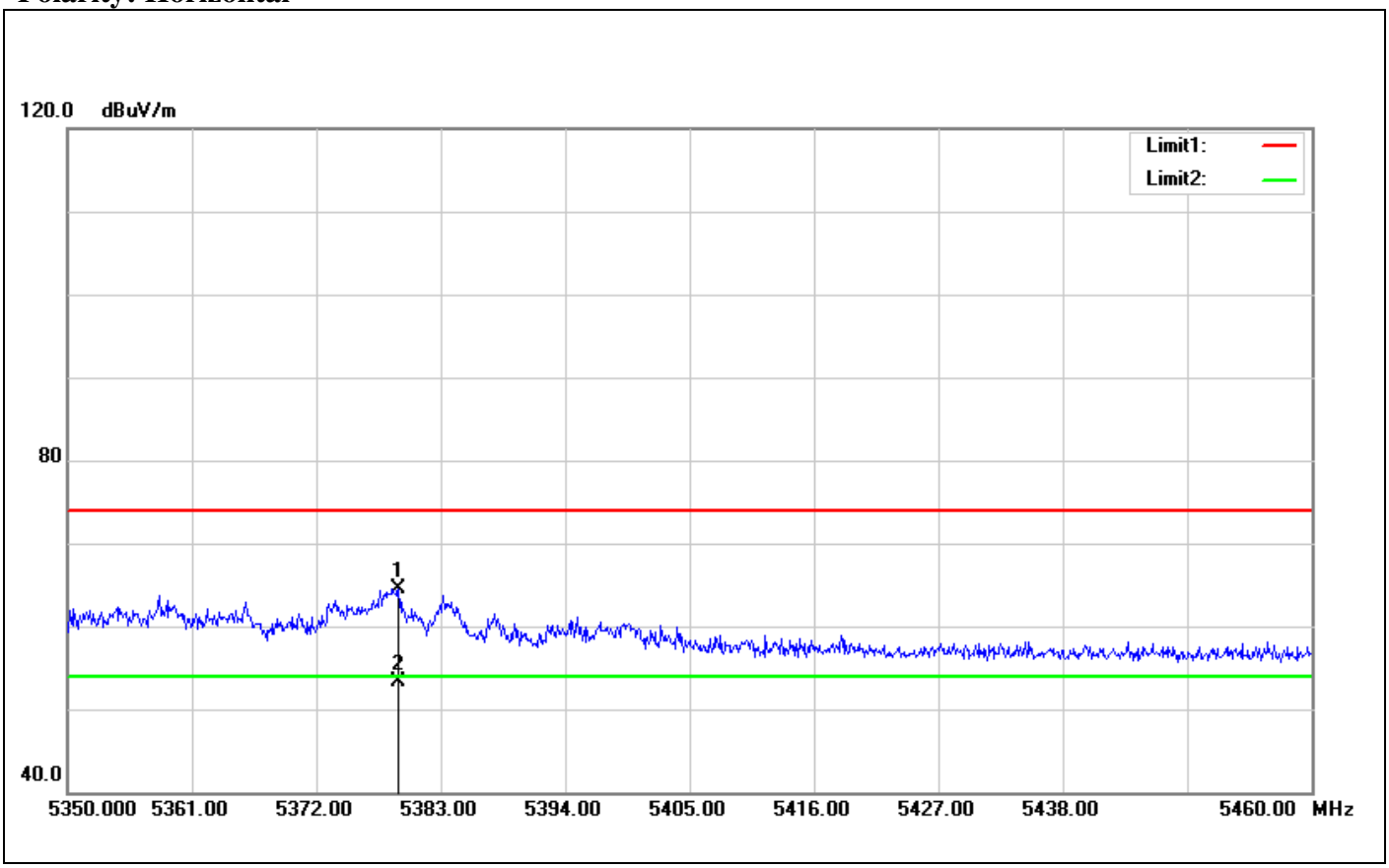
Band Edges (IEEE 802.11ac VHT 80 MHz mode / CH 5290 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5378.160	56.96	5.54	62.50	74.00	-11.50	100	199	peak
2	5378.160	45.17	5.54	50.71	54.00	-3.29	100	199	AVG

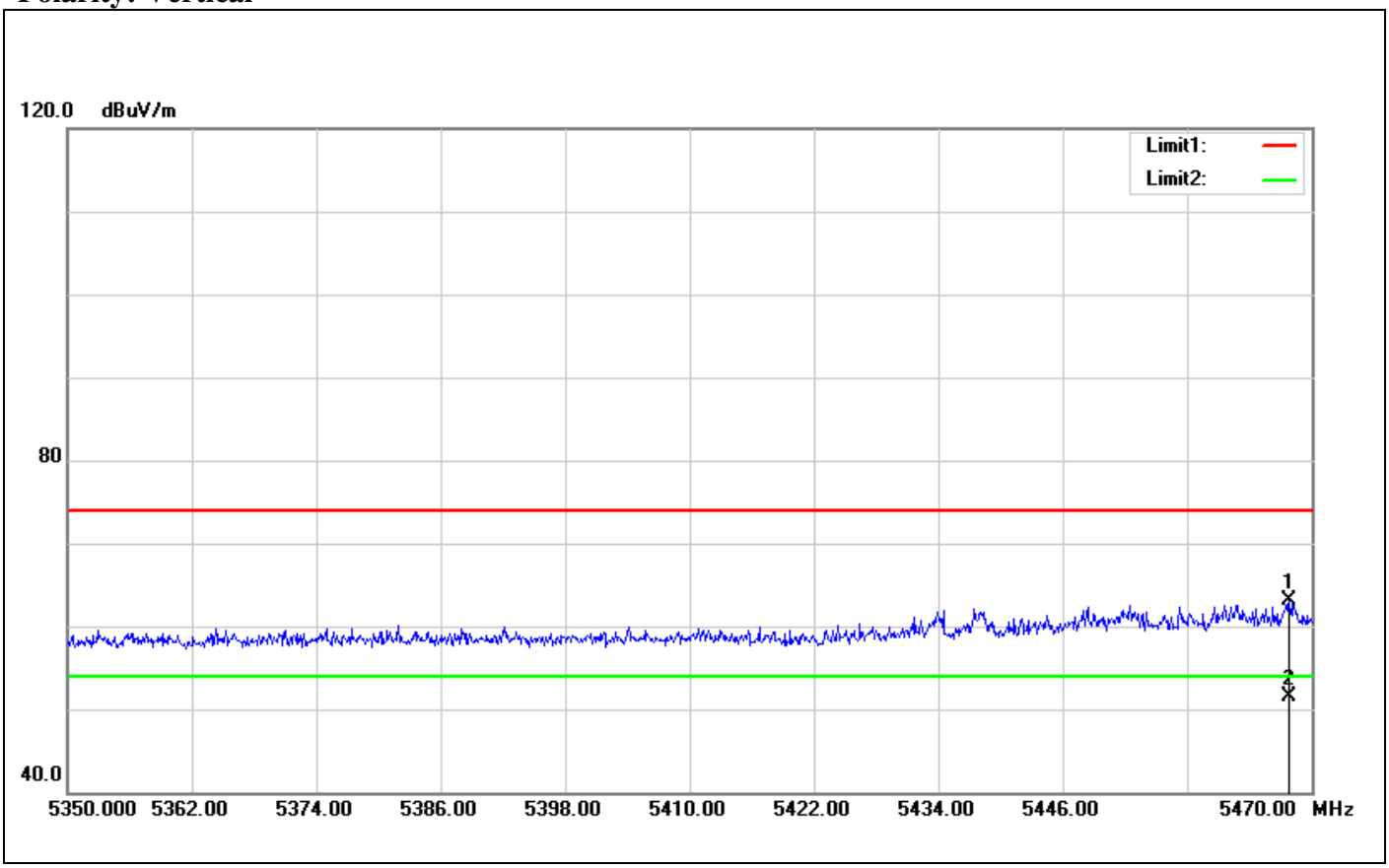
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5379.260	58.99	5.55	64.54	74.00	-9.46	100	138	peak
2	5379.260	47.66	5.55	53.21	54.00	-0.79	100	138	AVG

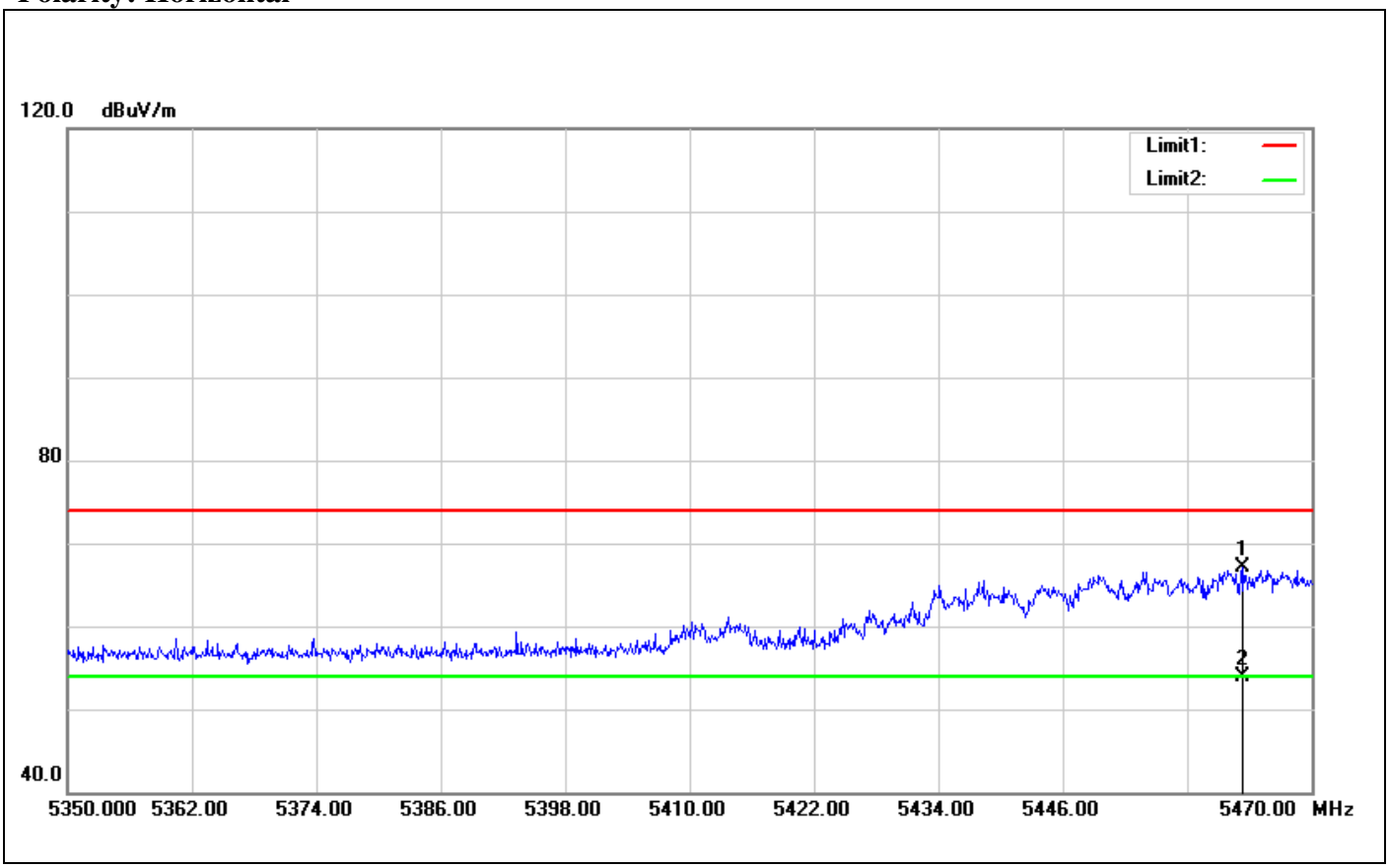
Band Edges (IEEE 802.11ac VHT 80 MHz mode / CH 5530 MHz)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	5467.840	57.65	5.40	63.05	74.00	-10.95	100	200	peak
2	5467.840	46.02	5.40	51.42	54.00	-2.58	100	200	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	5463.280	61.73	5.42	67.15	74.00	-6.85	100	226	peak
2	5463.280	48.45	5.42	53.87	54.00	-0.13	100	226	AVG

7.5 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.

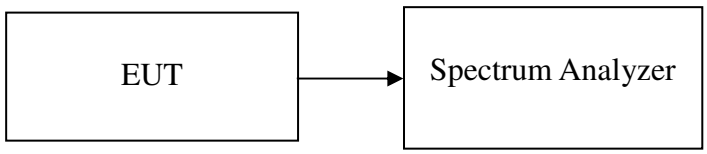
According to RSS-247,

(1) The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

(2) The power spectral density shall not exceed 11 dBm in any 1.0 MHz 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
36	5180	7.07	11.00	-3.93	PASS
44	5220	8.19	11.00	-2.81	PASS
48	5240	8.29	11.00	-2.71	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
36	5180	4.58	3.83	7.23	11.00	-3.77	PASS
44	5220	5.33	5.52	8.44	11.00	-2.56	PASS
48	5240	5.75	5.13	8.46	11.00	-2.54	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
38	5190	-2.84	-3.67	-0.22	11.00	-11.22	PASS
46	5230	2.11	1.37	4.77	11.00	-6.23	PASS

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5210MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
42	5210	-5.35	-6.10	-2.70	11.00	-13.7	PASS

Remark: *Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10)*

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
52	5260	6.29	11.00	-4.71	PASS
56	5280	6.47	11.00	-4.53	PASS
60	5300	6.66	11.00	-4.34	PASS
64	5320	5.20	11.00	-5.8	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
52	5260	3.76	5.79	7.90	11.00	-3.1	PASS
56	5280	3.39	4.89	7.21	11.00	-3.79	PASS
60	5300	3.47	5.73	7.76	11.00	-3.24	PASS
64	5320	3.76	4.13	6.96	11.00	-4.04	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
54	5270	0.38	1.68	4.09	11.00	-6.91	PASS
62	5310	-1.40	-0.14	2.29	11.00	-8.71	PASS

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5290MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
58	5290	-5.44	-5.71	-2.56	11.00	-13.56	PASS

Remark: *Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10)*

Test mode: IEEE 802.11a mode / 5500 ~ 5720MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
100	5500	4.72	11.00	-6.28	PASS
116	5580	7.38	11.00	-3.62	PASS
140	5700	6.45	11.00	-4.55	PASS
144	5720 (Band III)	5.73	11.00	-5.27	PASS
144	5720 (Band IV)	2.58	30.00/500kHz	-27.42	PASS

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
100	5500	3.42	4.36	6.93	11.00	-4.07	PASS
116	5580	4.24	4.92	7.60	11.00	-3.4	PASS
140	5700	1.22	2.48	4.91	11.00	-6.09	PASS
144	5720 (Band III)	3.47	4.65	7.11	11.00	-3.89	PASS
144	5720 (Band IV)	10.03	12.46	14.42	30.00/500kHz	-15.58	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
102	5510	-2.79	-1.49	0.92	11.00	-10.08	PASS
118	5590	0.95	2.73	4.94	11.00	-6.06	PASS
134	5670	-1.25	0.90	2.97	11.00	-8.03	PASS
142	5710 (Band III)	-0.53	1.47	3.59	11.00	-7.41	PASS
142	5710 (Band IV)	6.31	6.25	9.29	30.00/500kHz	-20.71	PASS

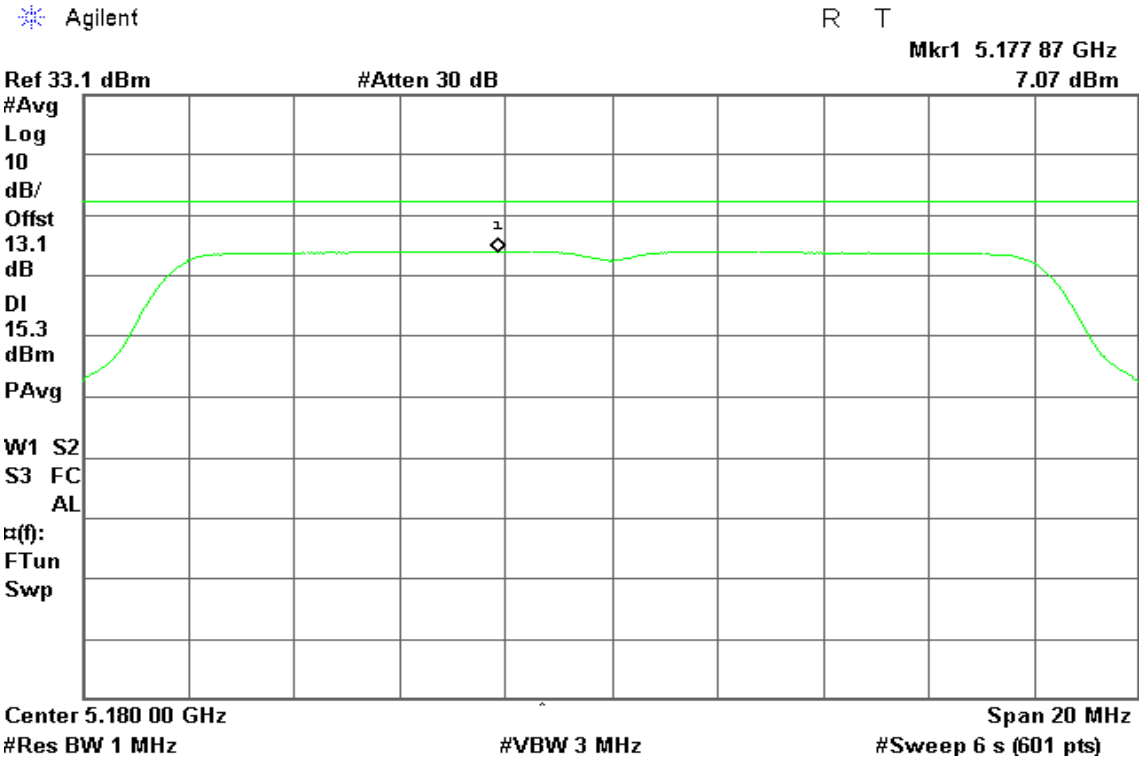
Test mode: IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
106	5530	-5.66	-5.38	-2.51	11.00	-13.51	PASS
122	5610	-1.61	-0.24	2.14	11.00	-8.86	PASS
138	5690 (Band III)	-2.52	-1.14	1.23	11.00	-9.77	PASS
138	5690 (Band IV)	-6.86	-6.48	-3.66	30.00/500kHz	-33.66	PASS

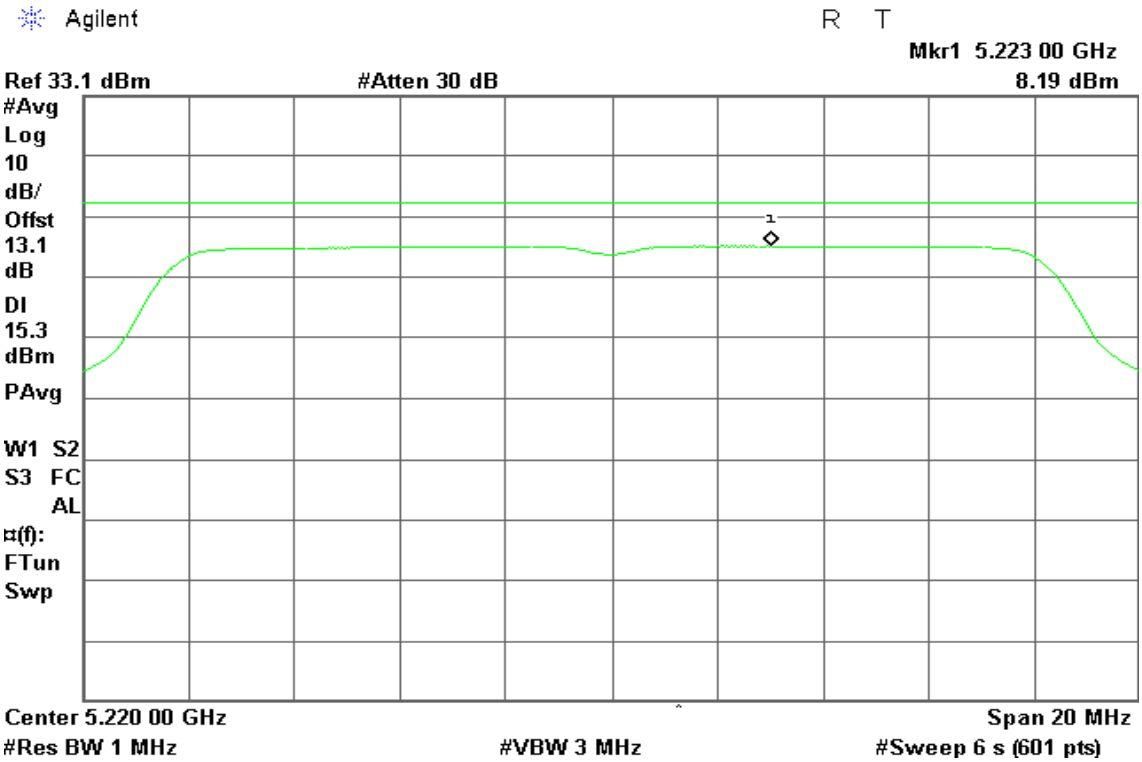
Remark: *Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10)*

Test Plot
IEEE 802.11a mode / 5180 ~ 5240MHz

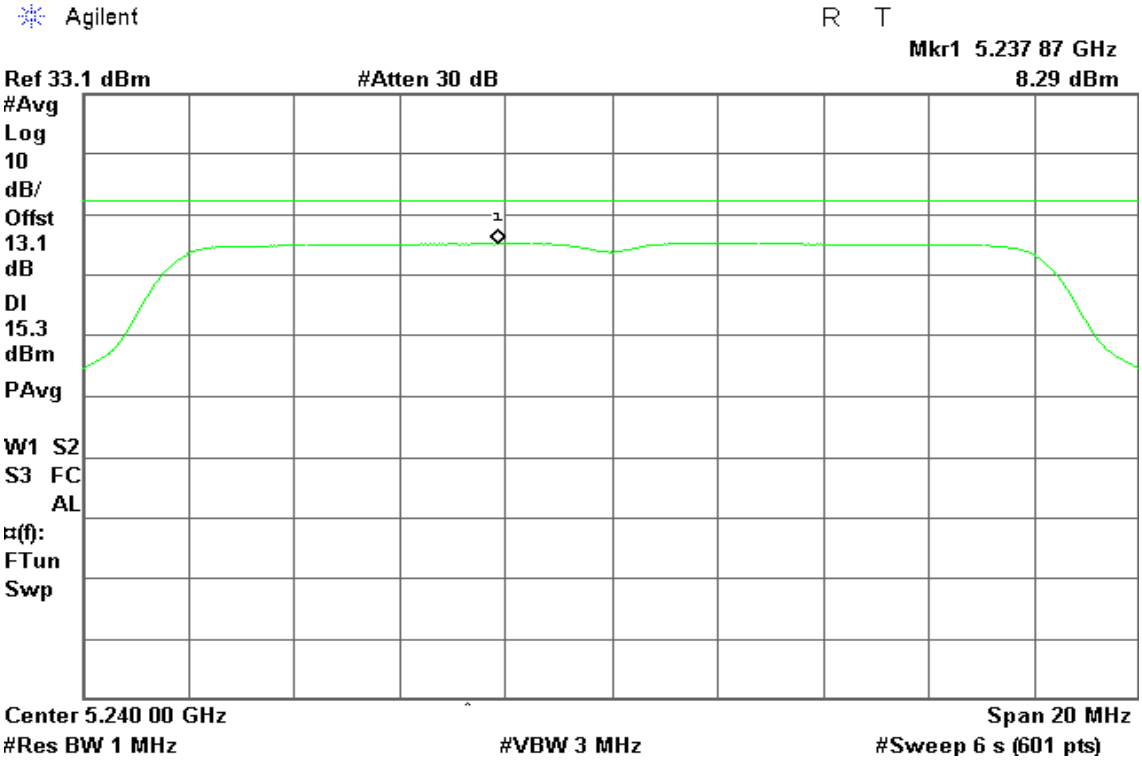
5180 MHz



5220 MHz

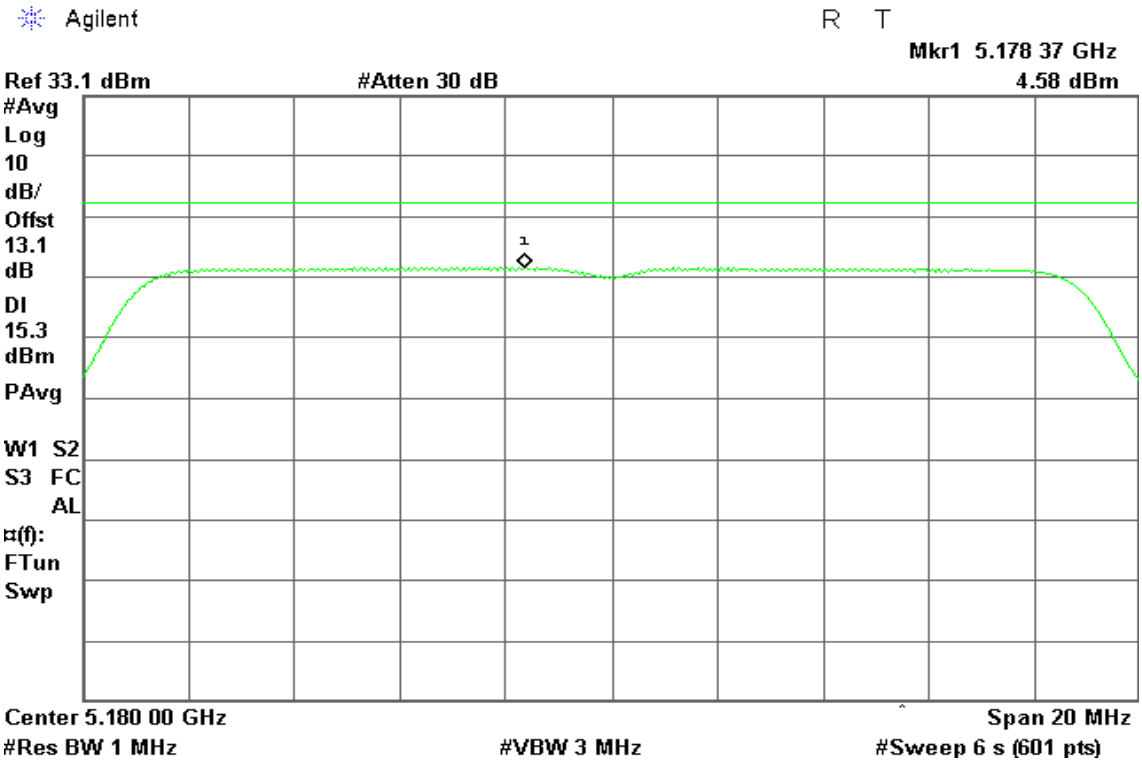


5240 MHz

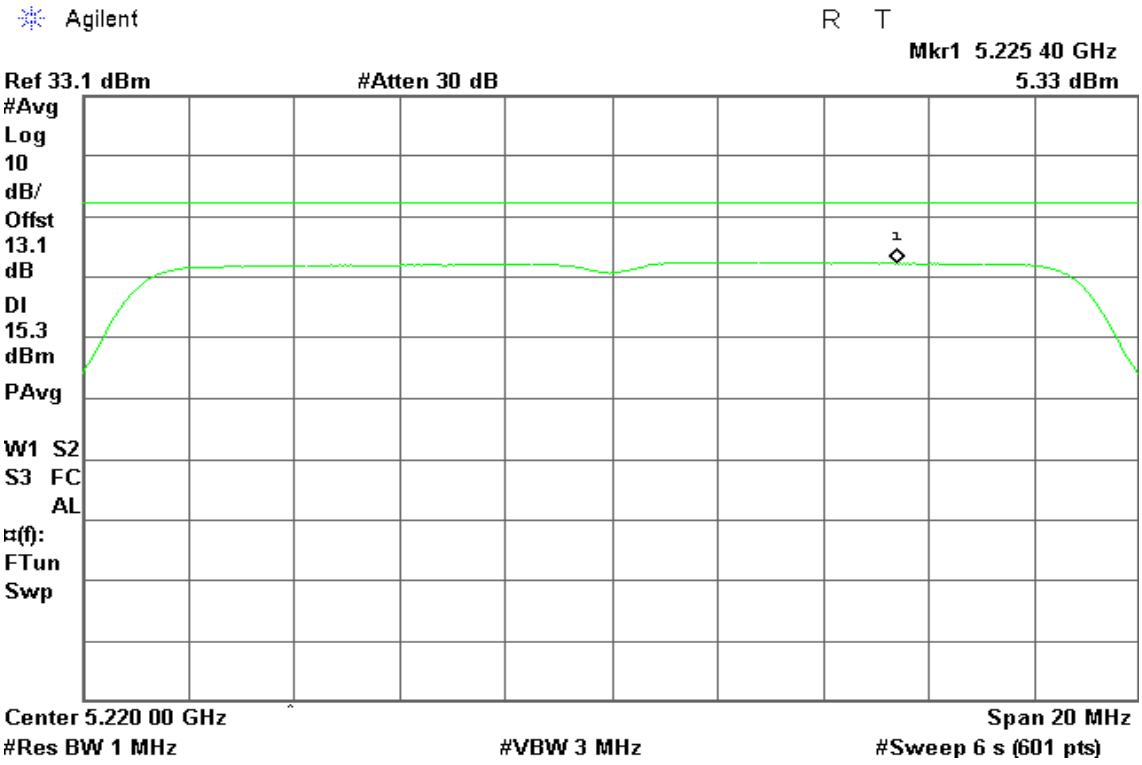

Agilent
R T
Mkr1 5.237 87 GHz
8.29 dBm
Ref 33.1 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
13.1
dB
Dl
15.3
dBm
PAvg
W1 S2
S3 FC
AL
¤(f):
FTun
Swp
Center 5.240 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

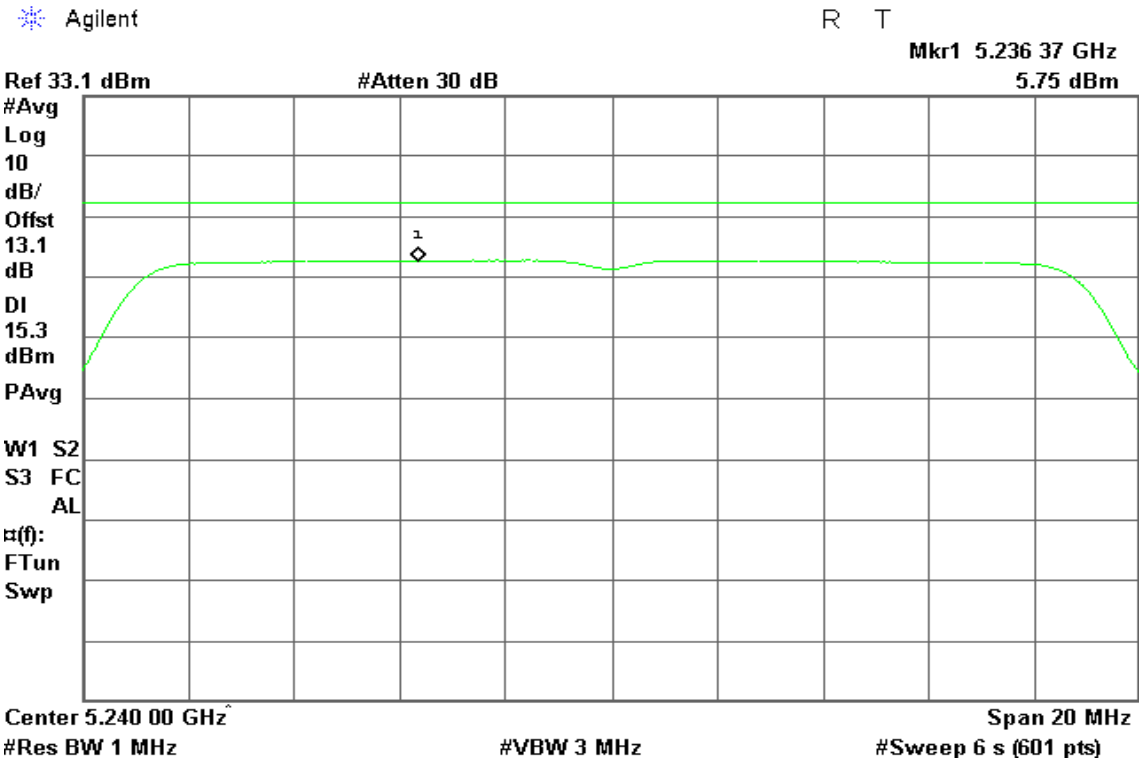
5180 MHz



5220 MHz

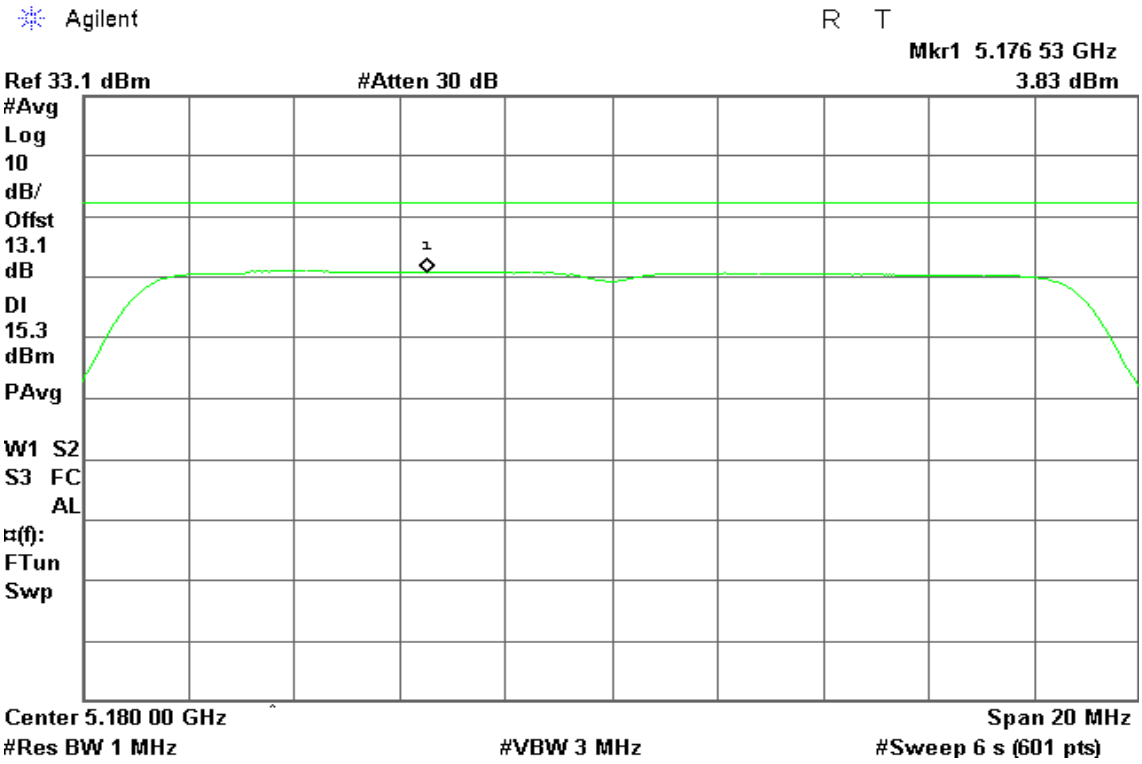


5240 MHz

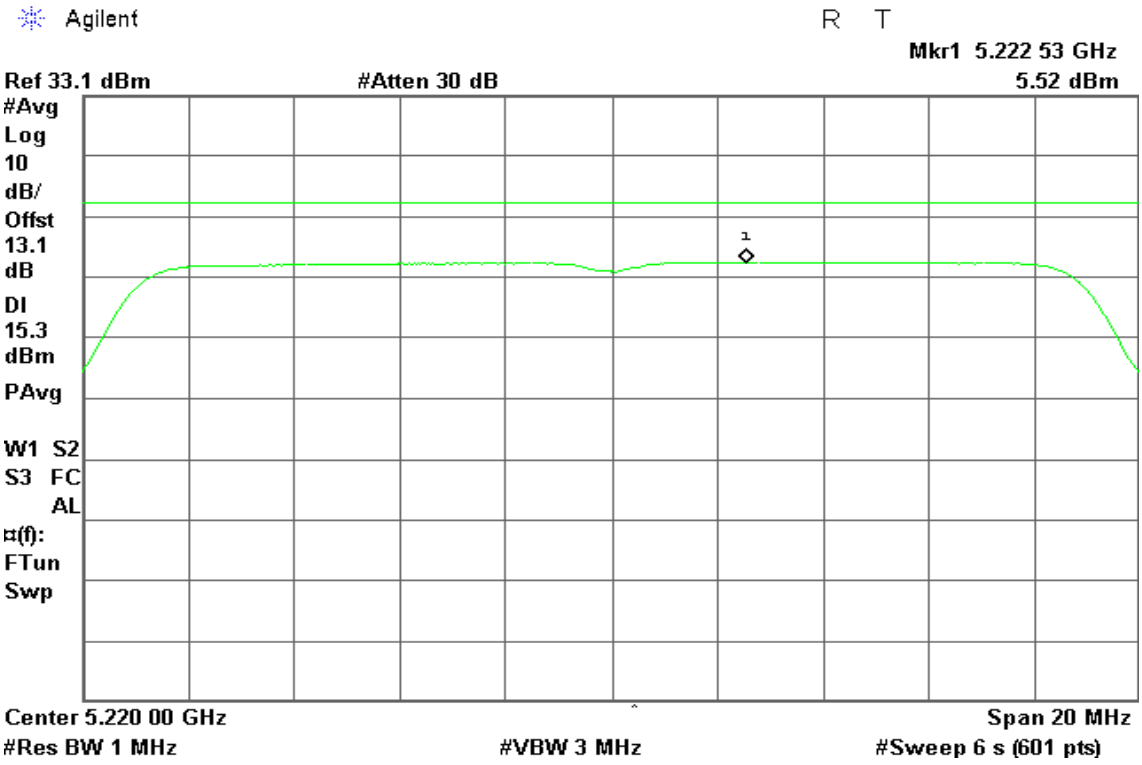

Agilent
R T
Mkr1 5.236 37 GHz
Ref 33.1 dBm
#Atten 30 dB
5.75 dBm
#Avg
Log
10
dB/
Offst
13.1
dB
Dl
15.3
dBm
PAvg
W1 S2
S3 FC
AL
¤(f):
FTun
Swp
1
Center 5.240 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

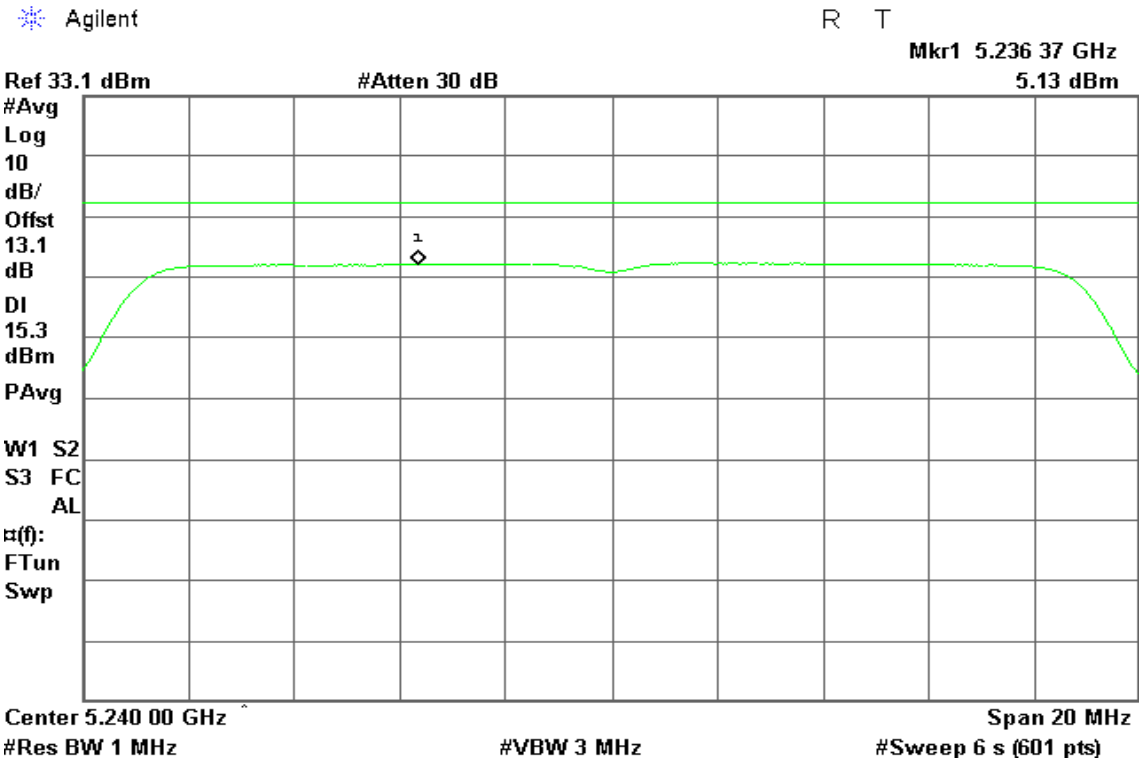
5180 MHz



5220 MHz

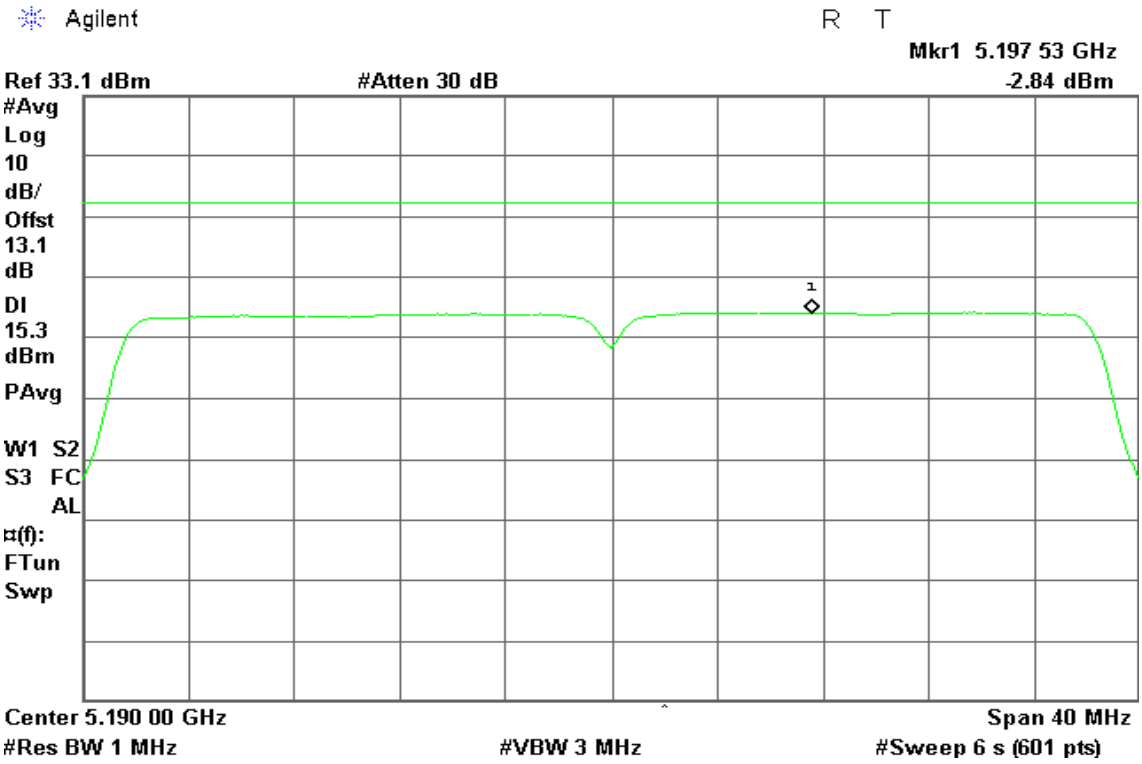


5240 MHz

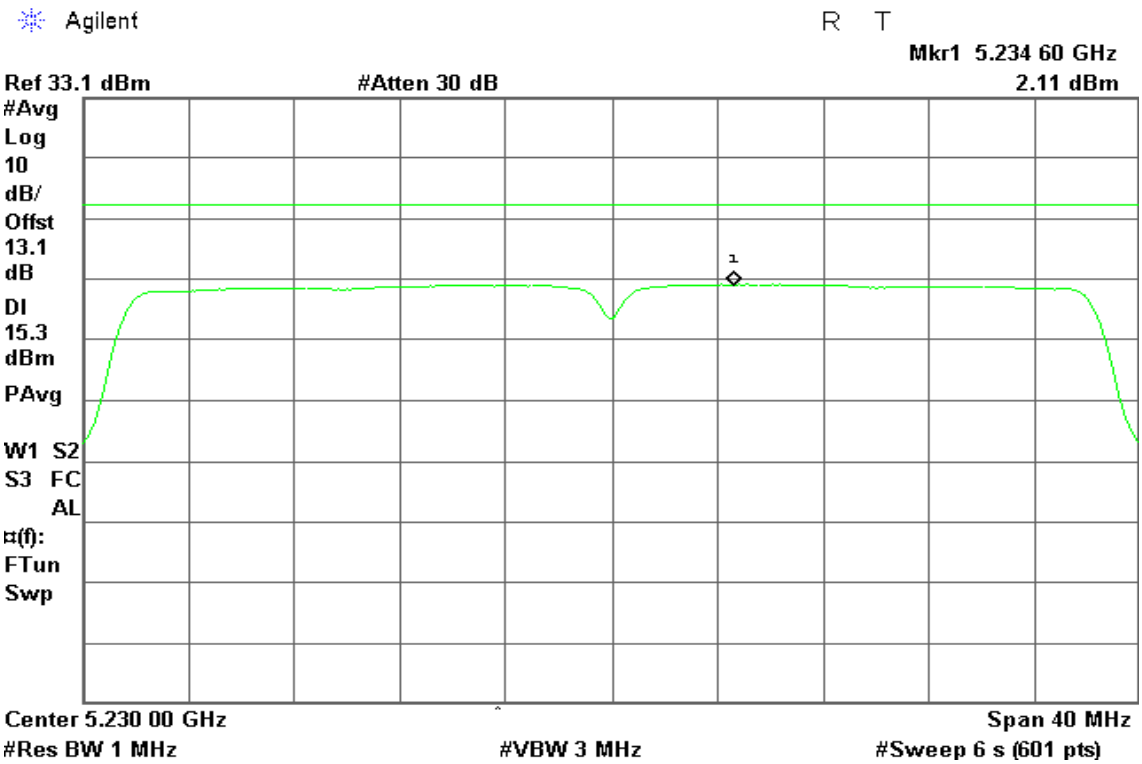

Agilent
R T
Mkr1 5.236 37 GHz
5.13 dBm
Ref 33.1 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
13.1
dB
Dl
15.3
dBm
PAvg
W1 S2
S3 FC
AL
¤(f):
FTun
Swp
Center 5.240 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

5190 MHz

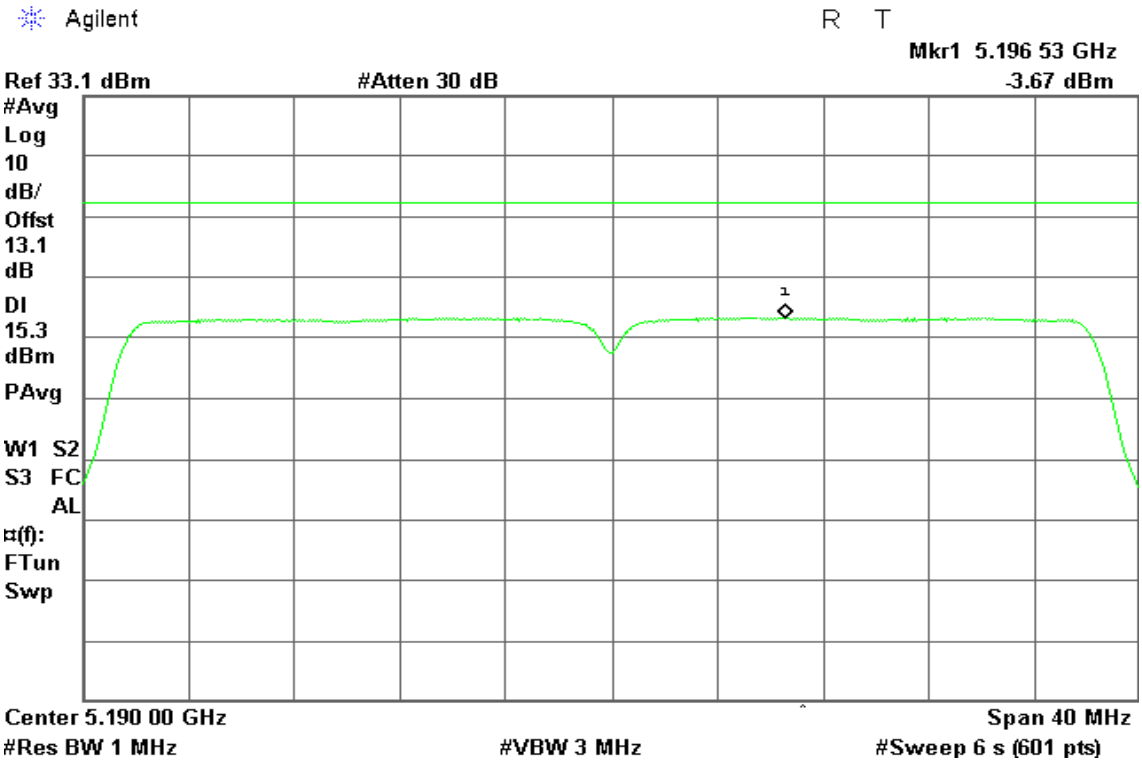


5230 MHz

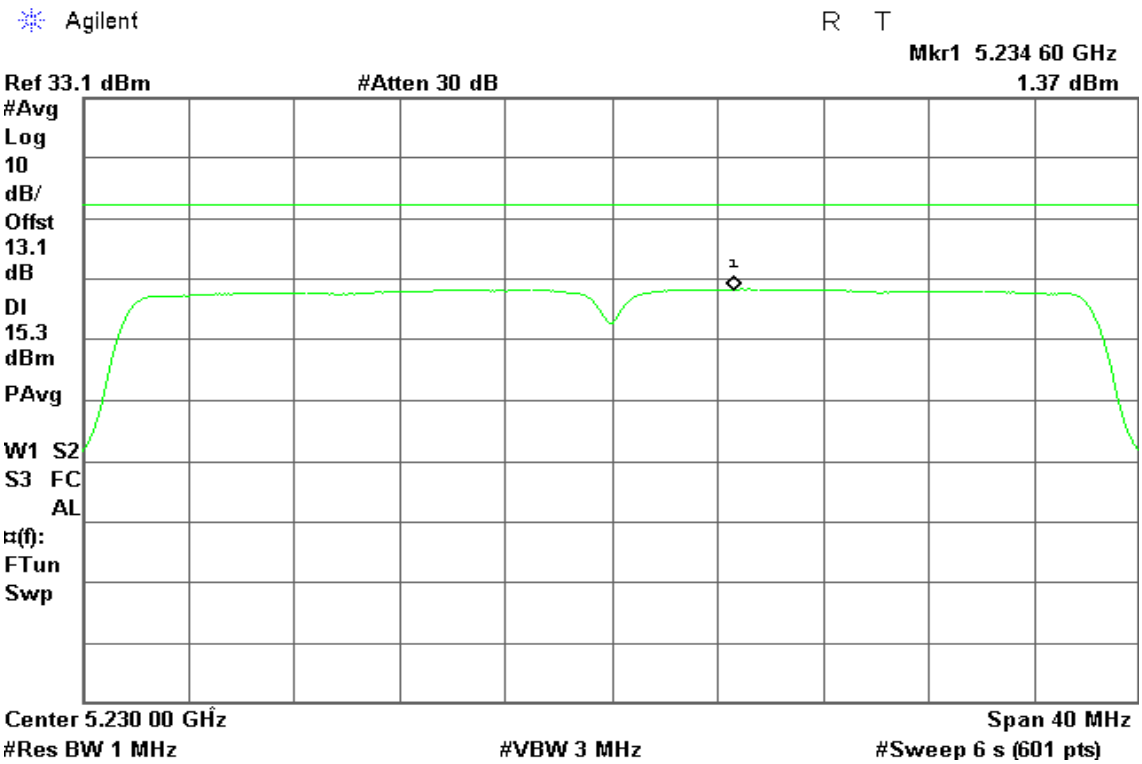


IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

5190 MHz

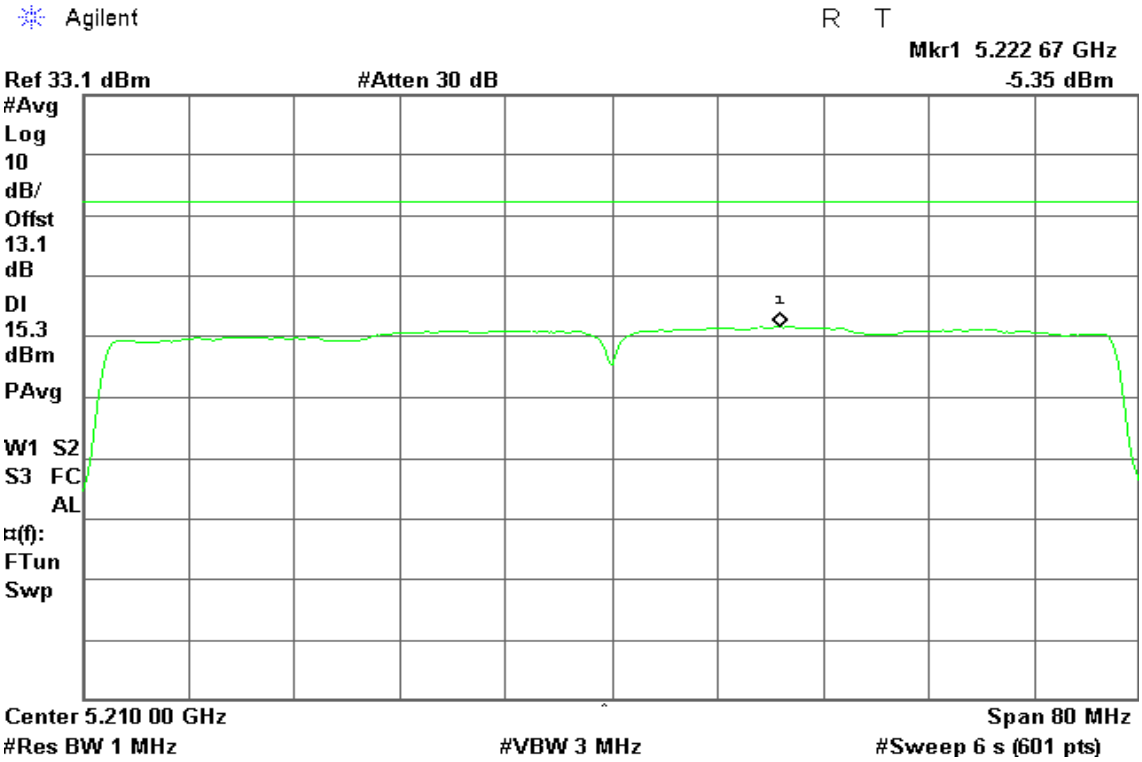


5230 MHz



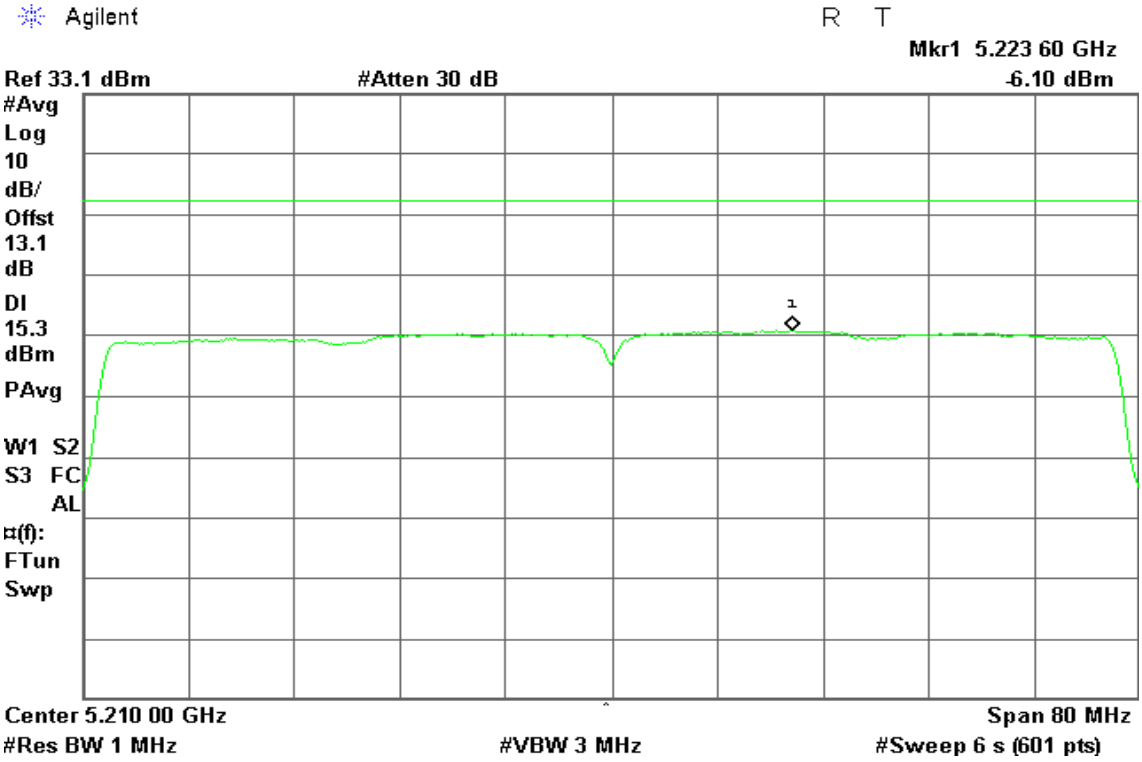
IEEE 802.11ac VHT 80 MHz mode / 5210MHz/ Chain 0

5210 MHz



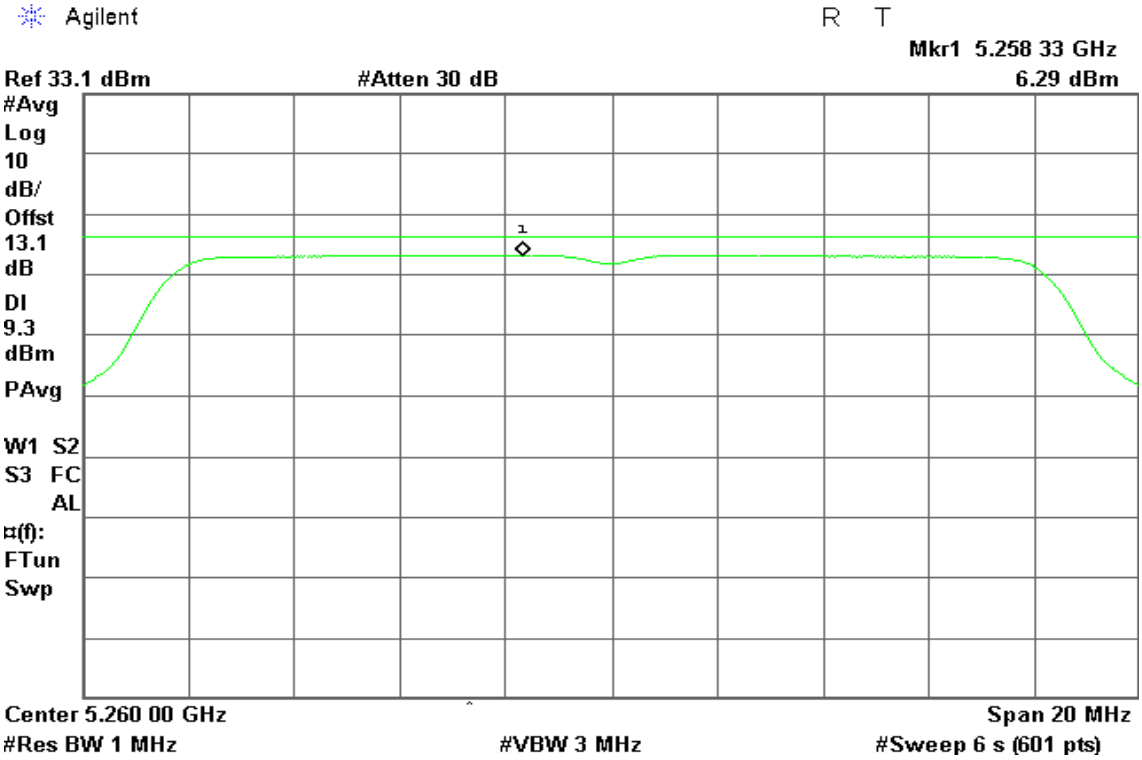
IEEE 802.11ac VHT 80 MHz mode / 5210MHz/ Chain 1

5210 MHz

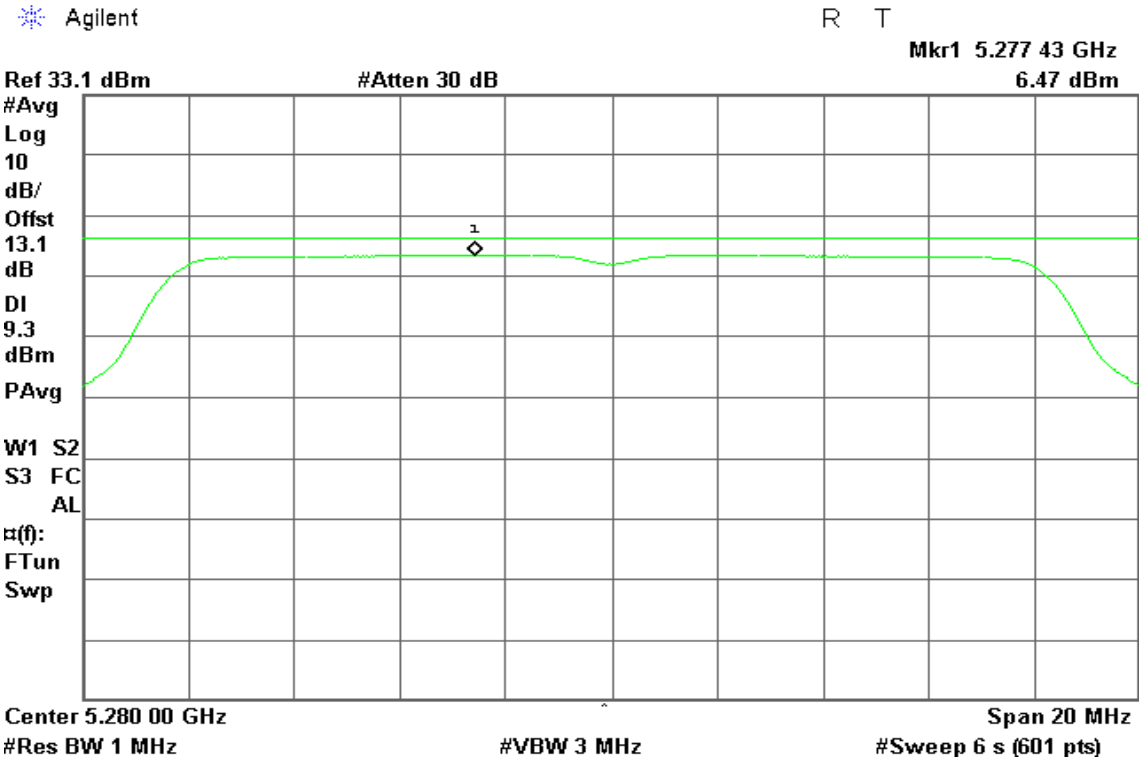


IEEE 802.11a mode / 5260 ~ 5320MHz

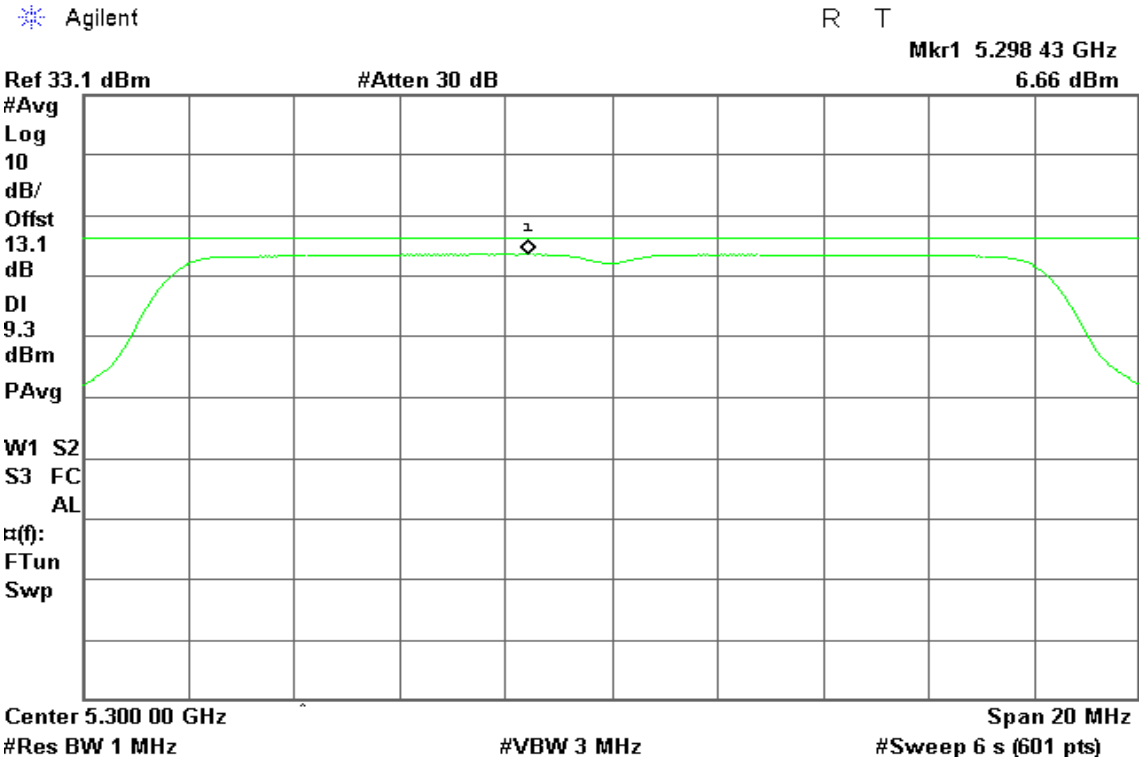
5260 MHz



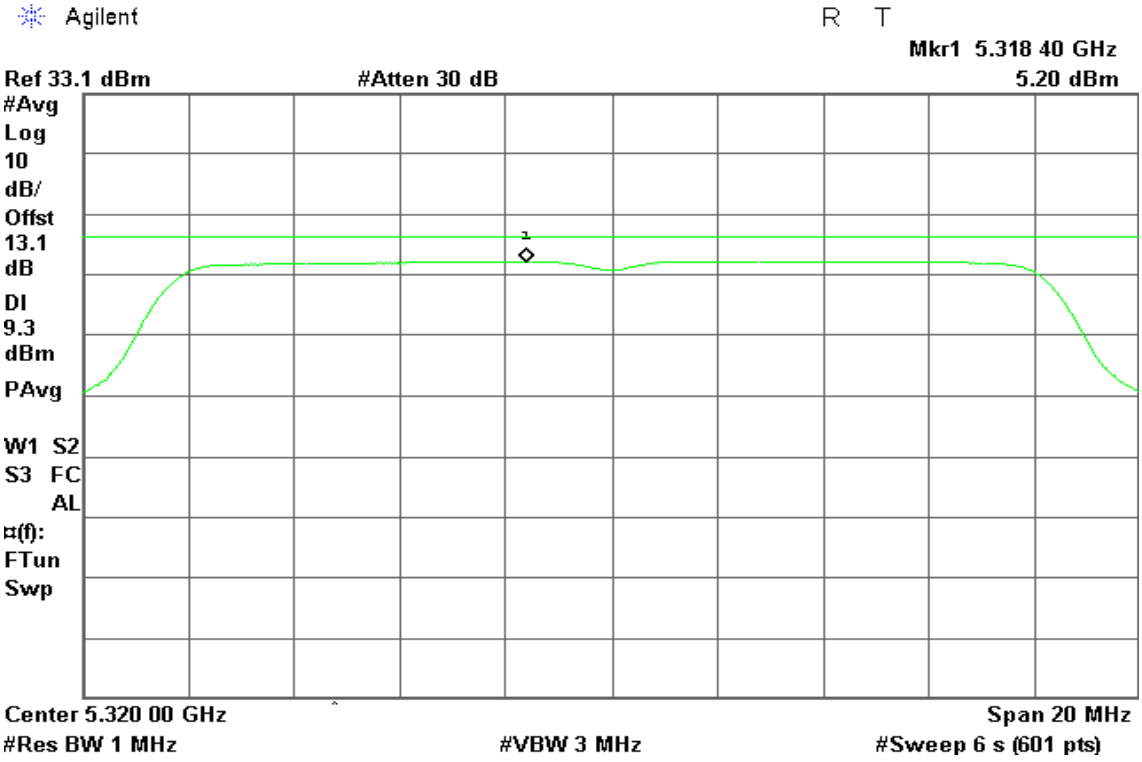
5280 MHz



5300 MHz

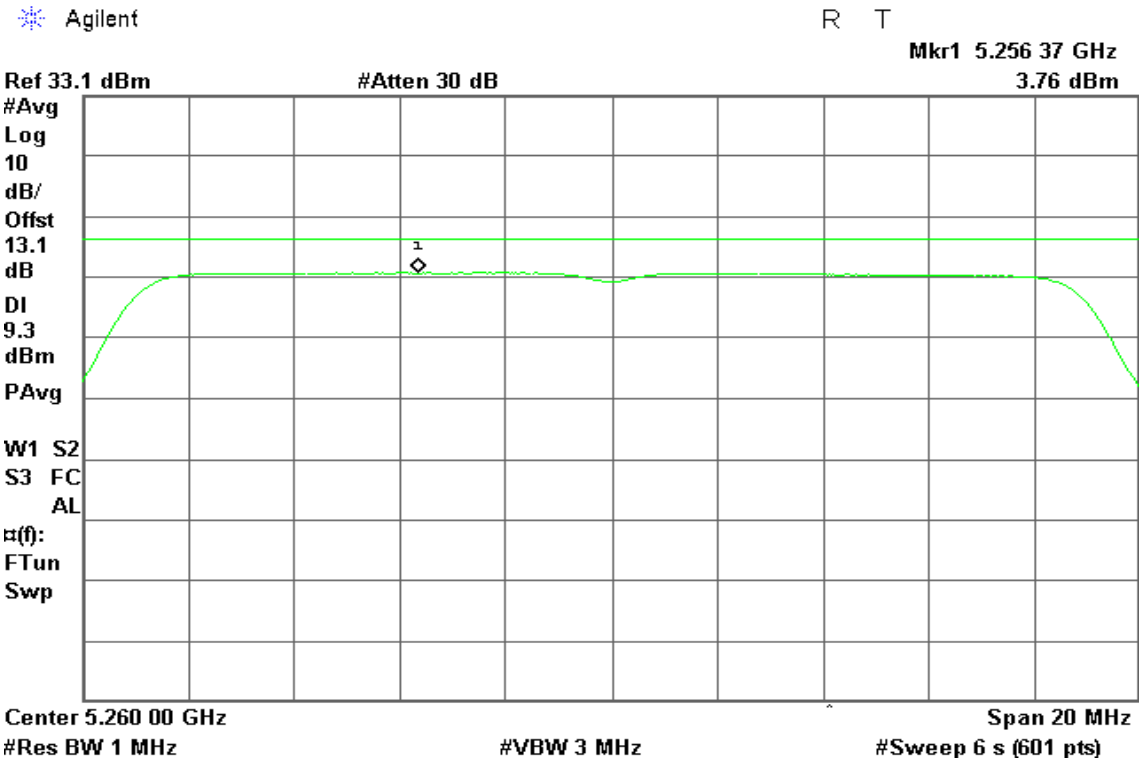


5320 MHz

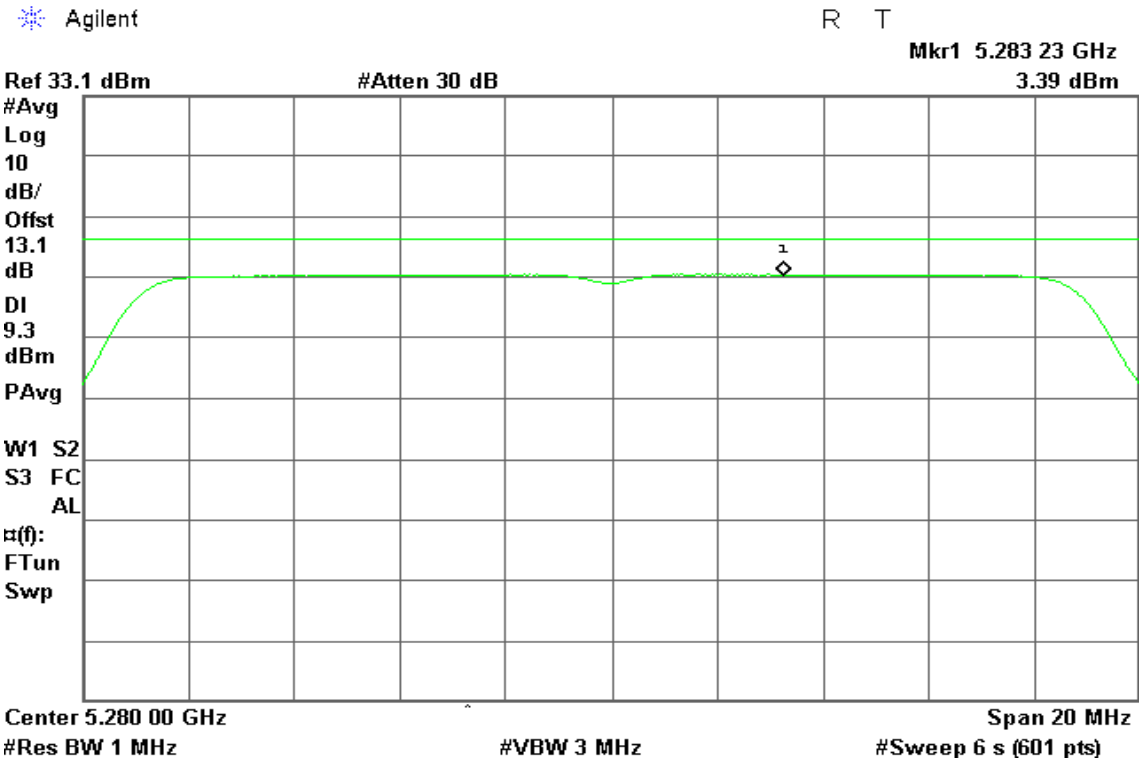


IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

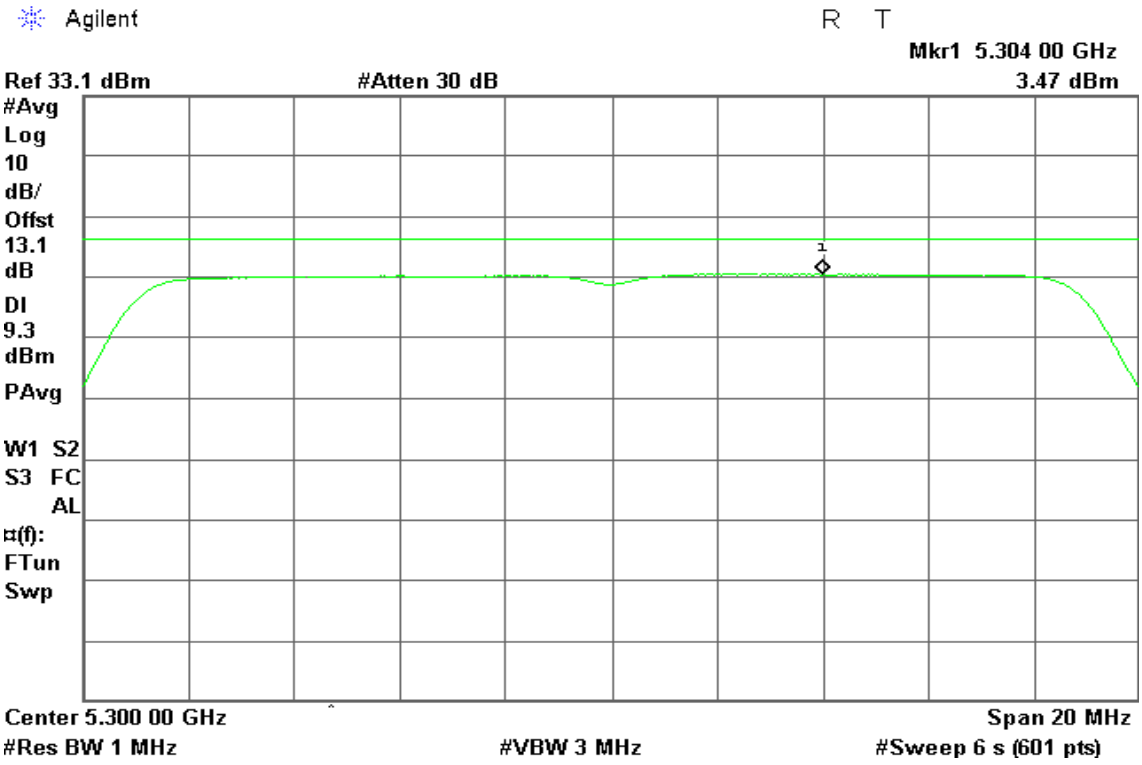
5260 MHz



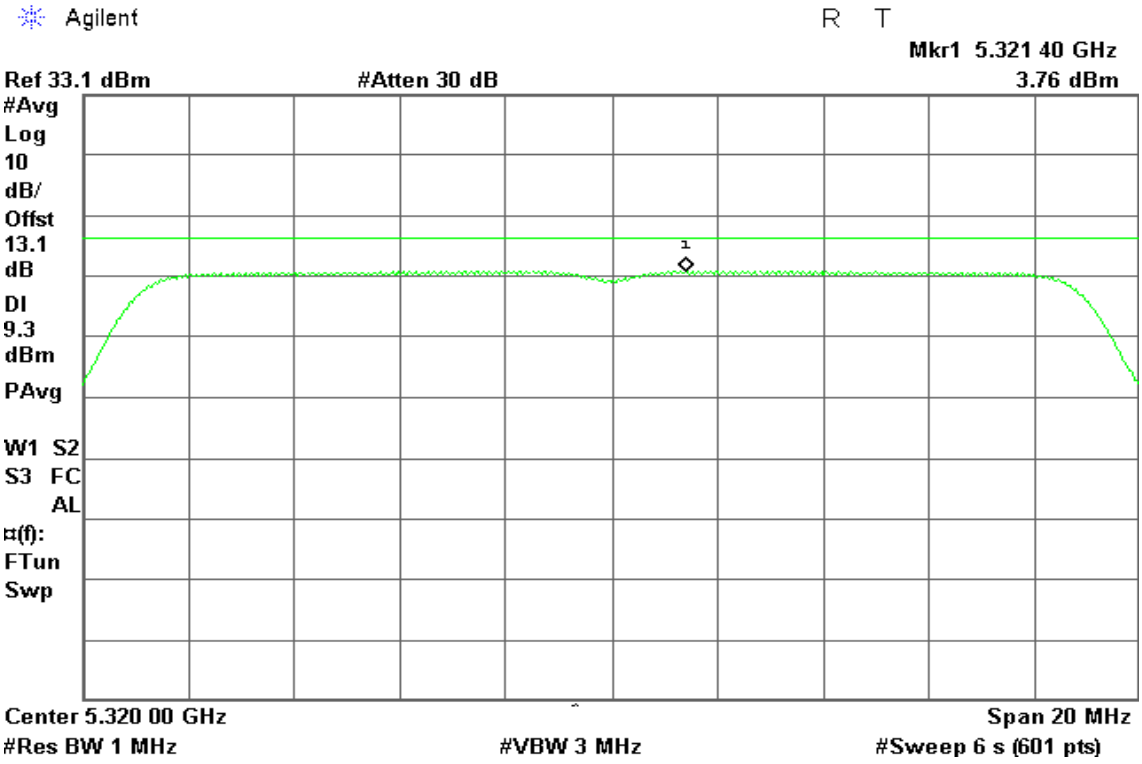
5280 MHz



5300 MHz

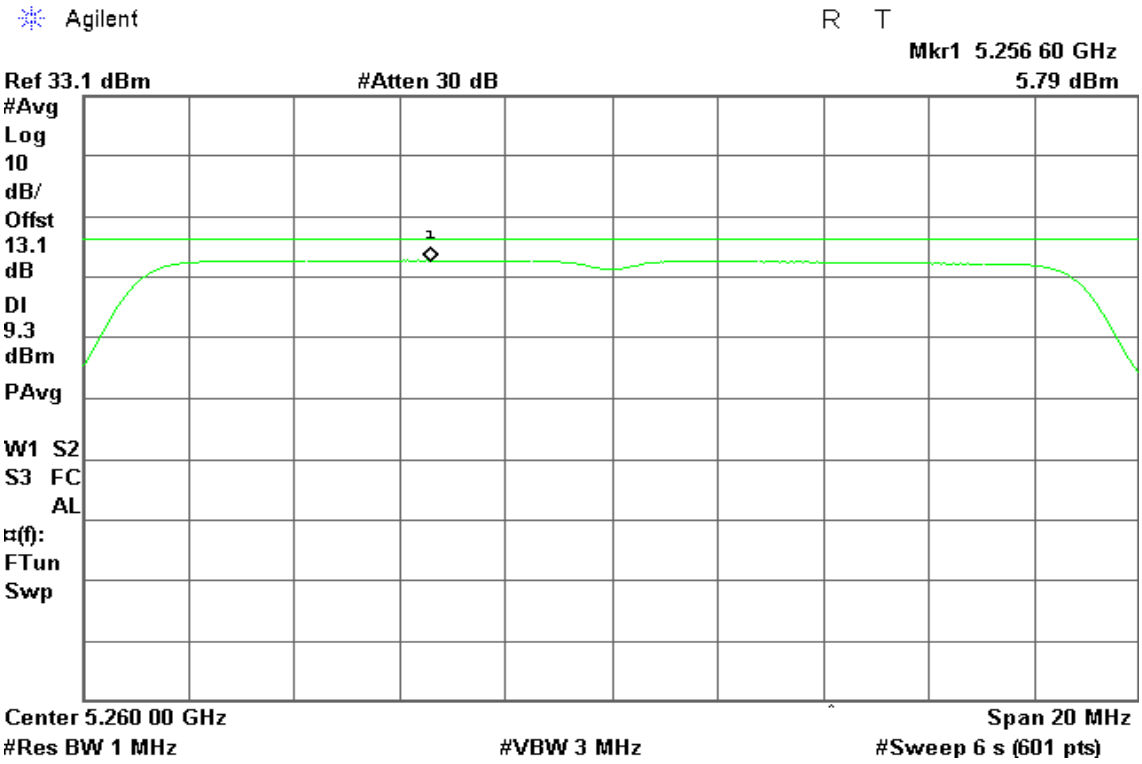


5320 MHz

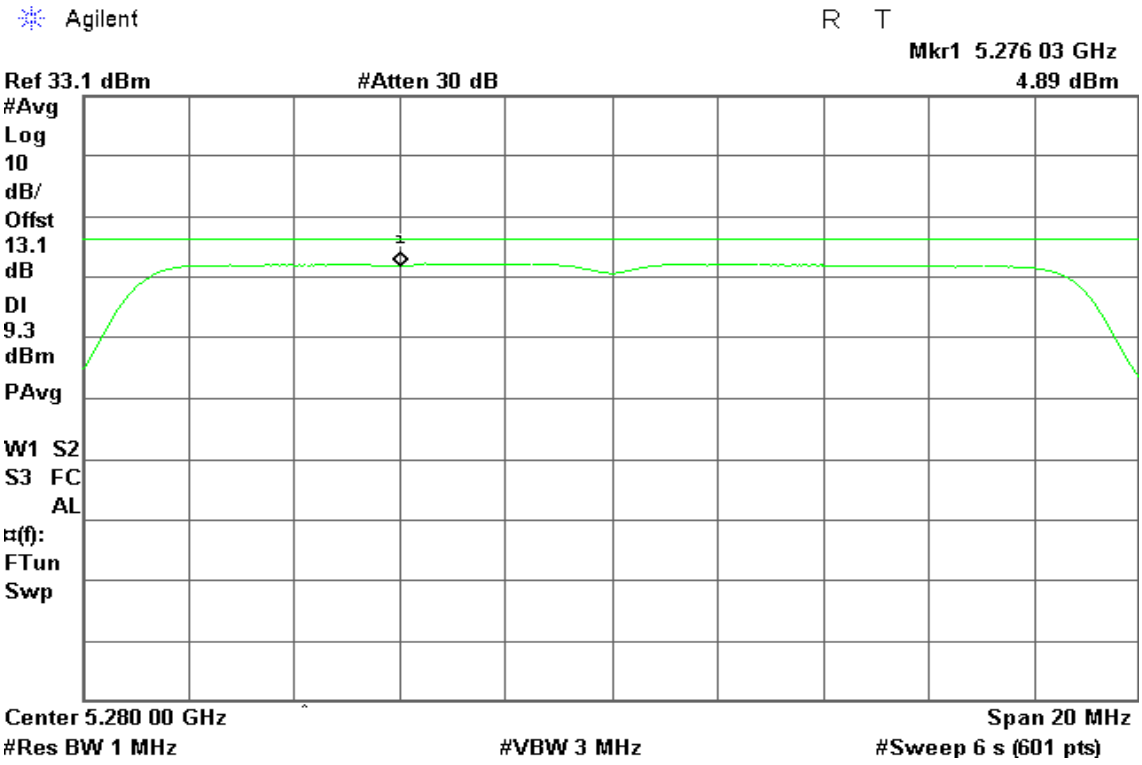


IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

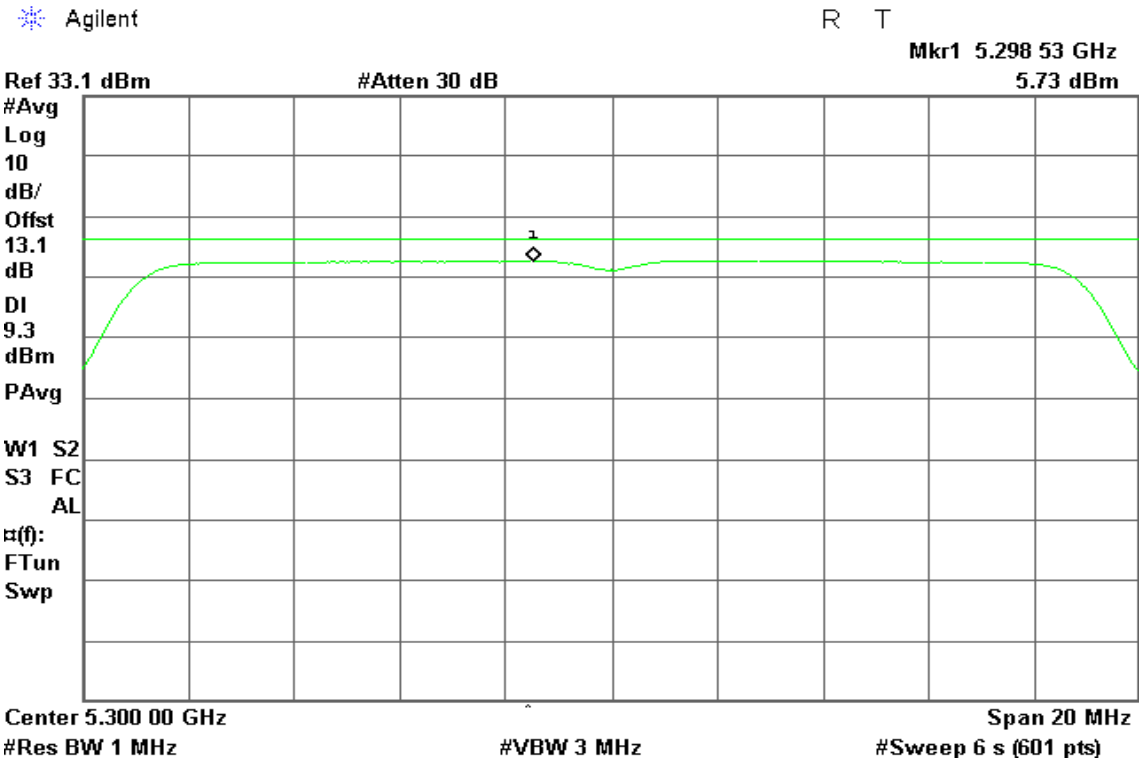
5260 MHz



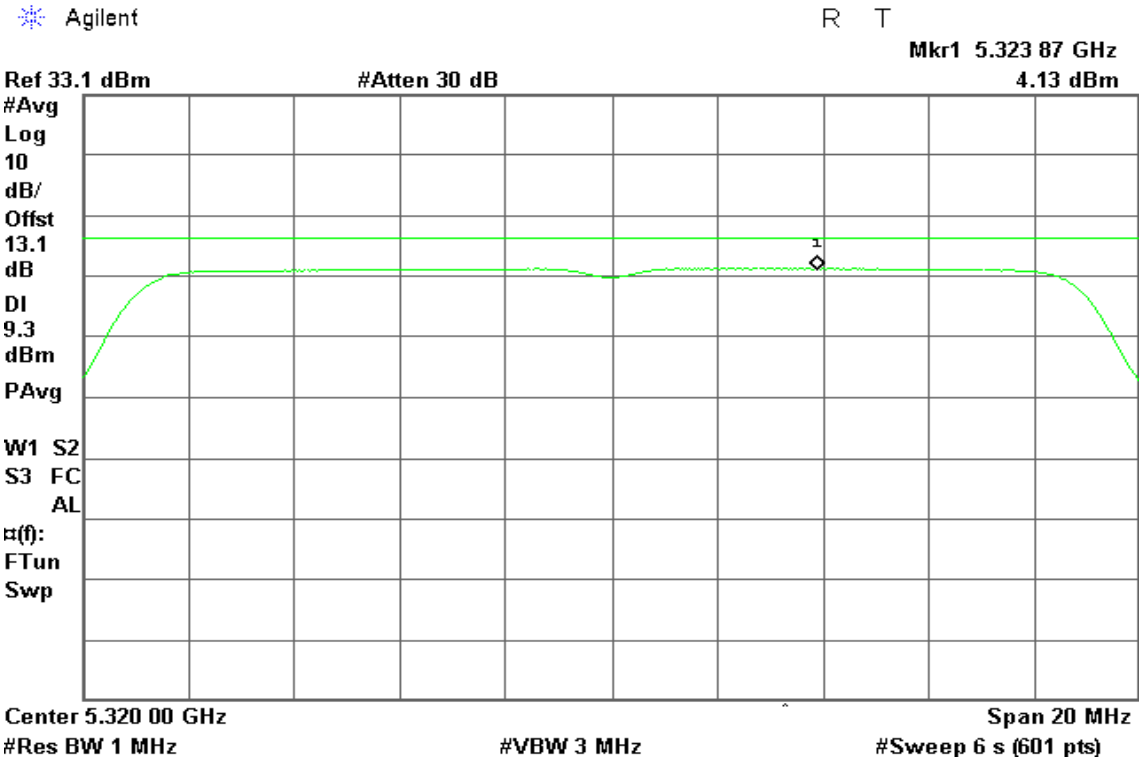
5280 MHz



5300 MHz

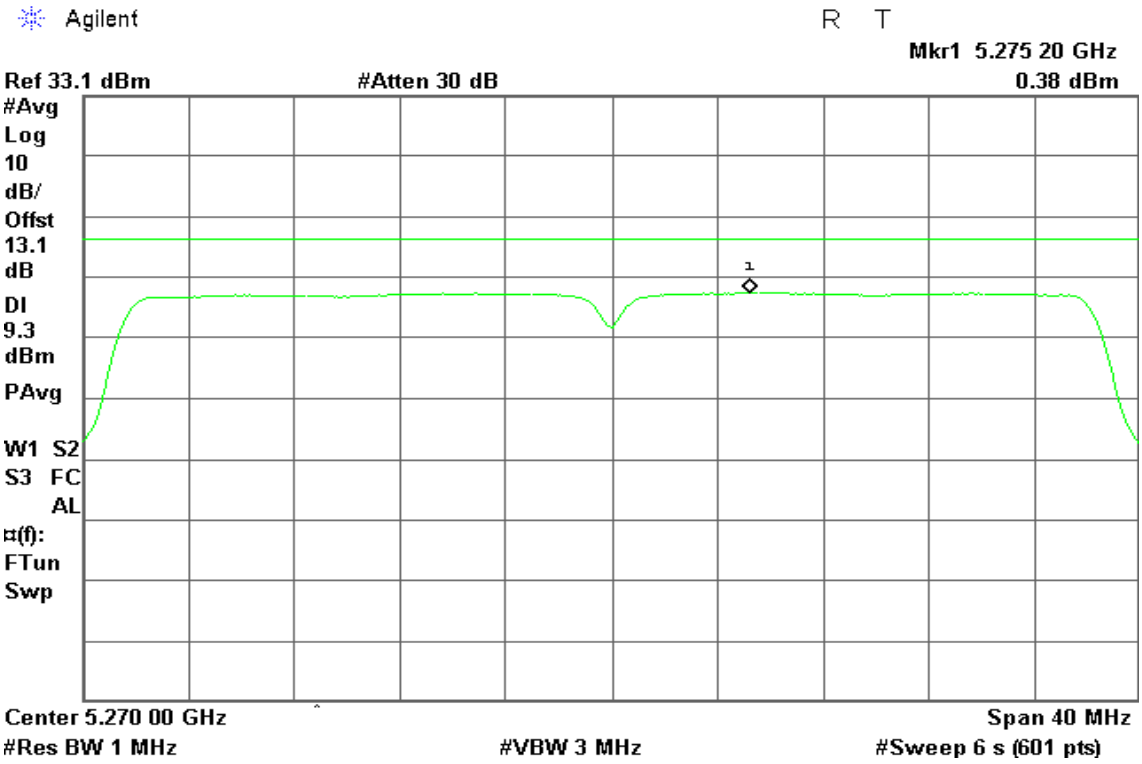


5320 MHz

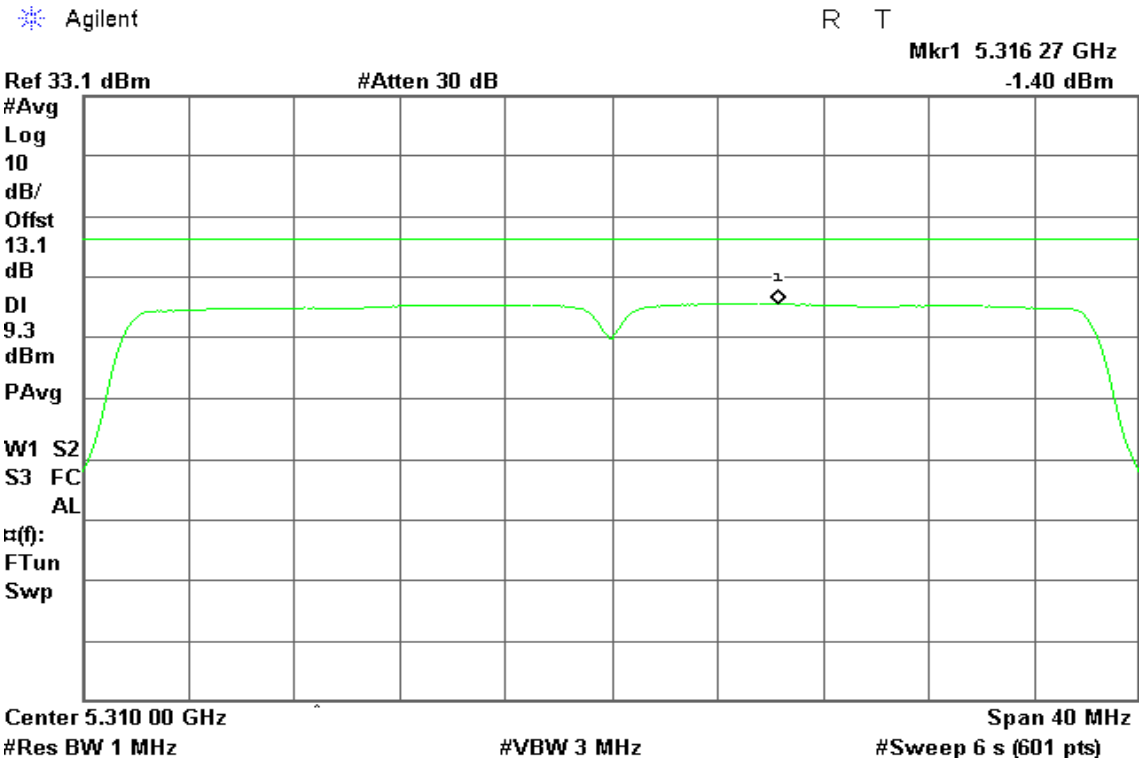


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

5270 MHz

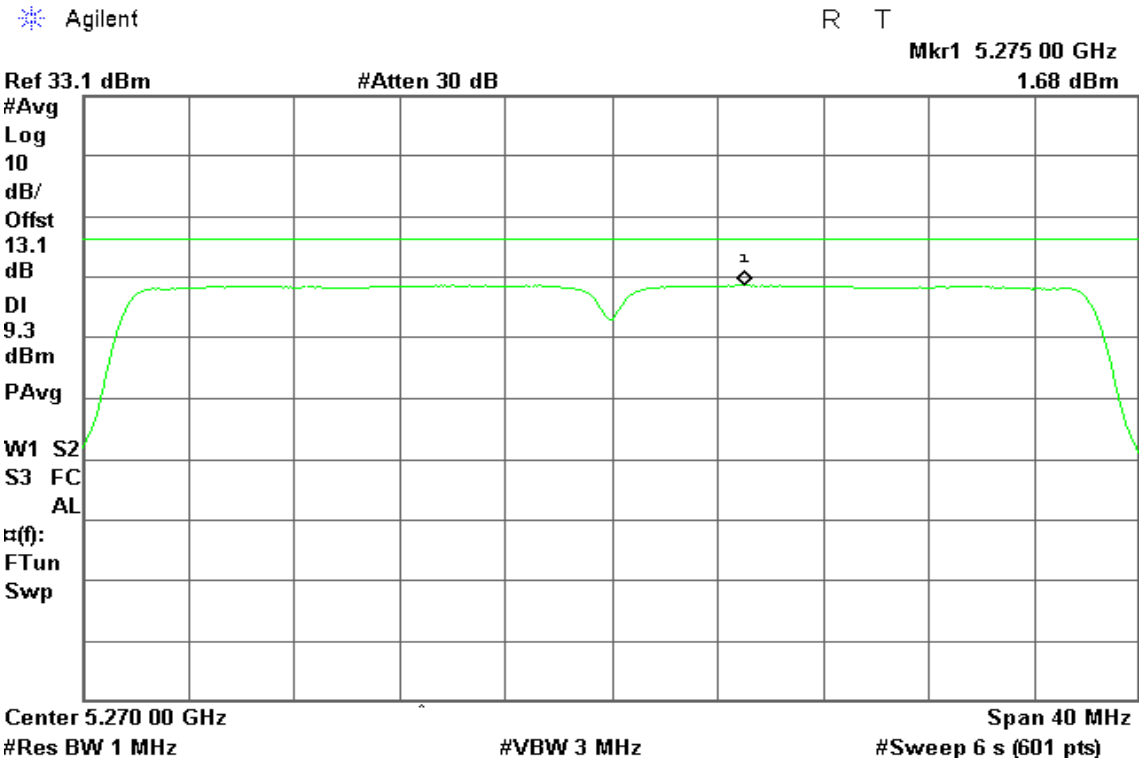


5310 MHz

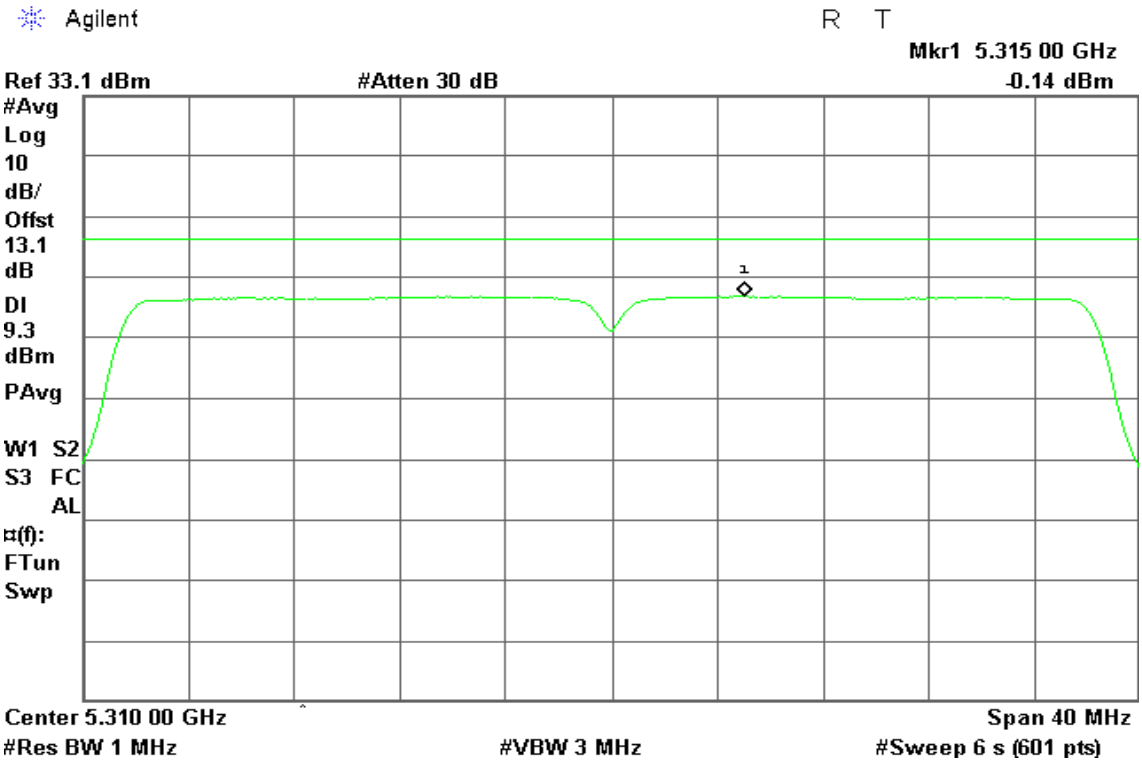


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

5270 MHz

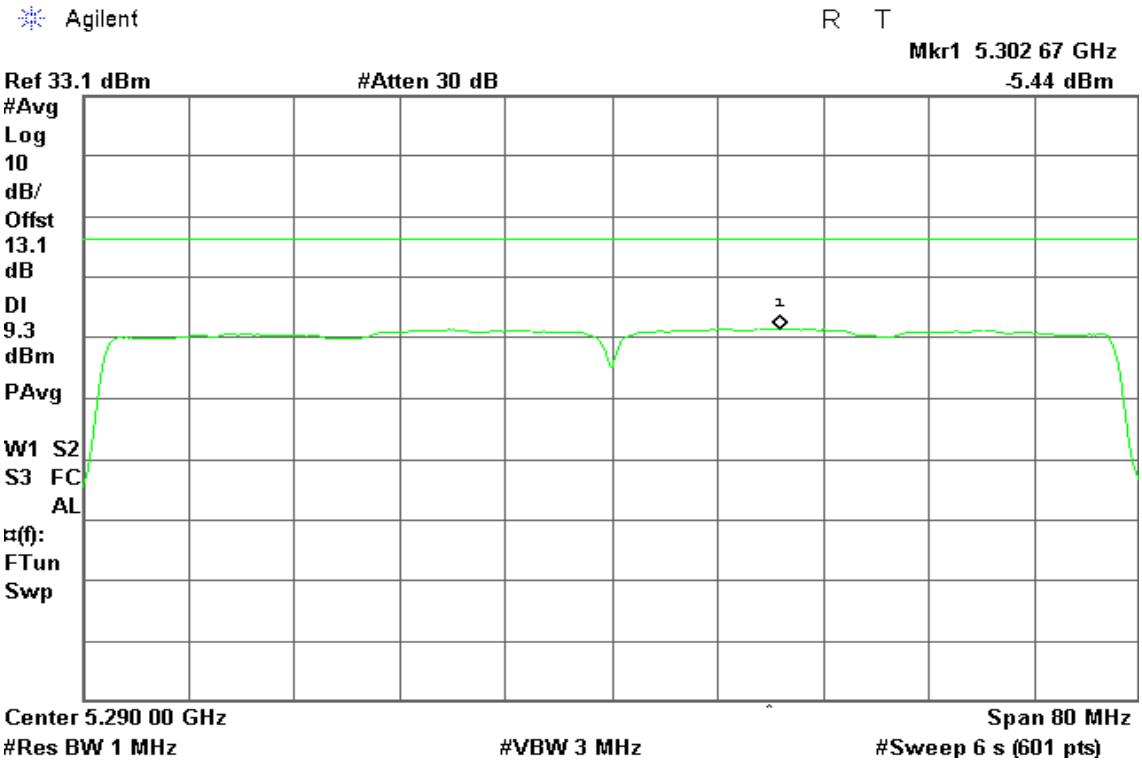


5310 MHz



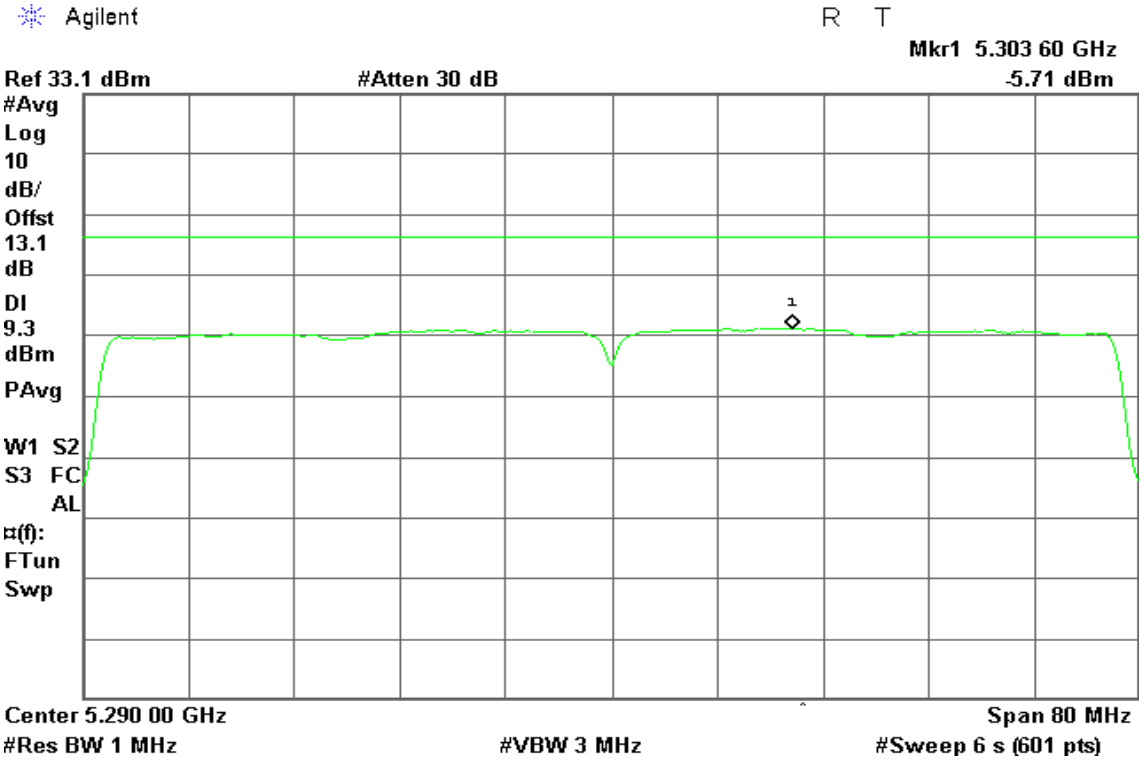
IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 0

5290 MHz



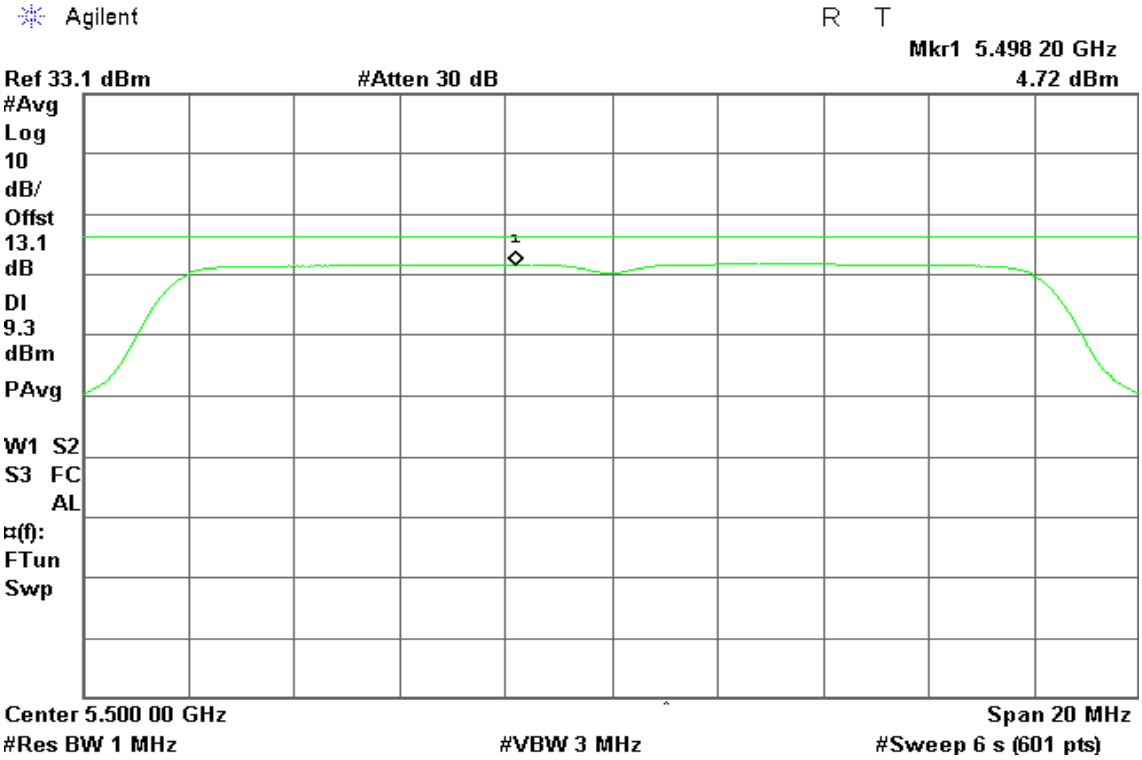
IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 1

5290 MHz

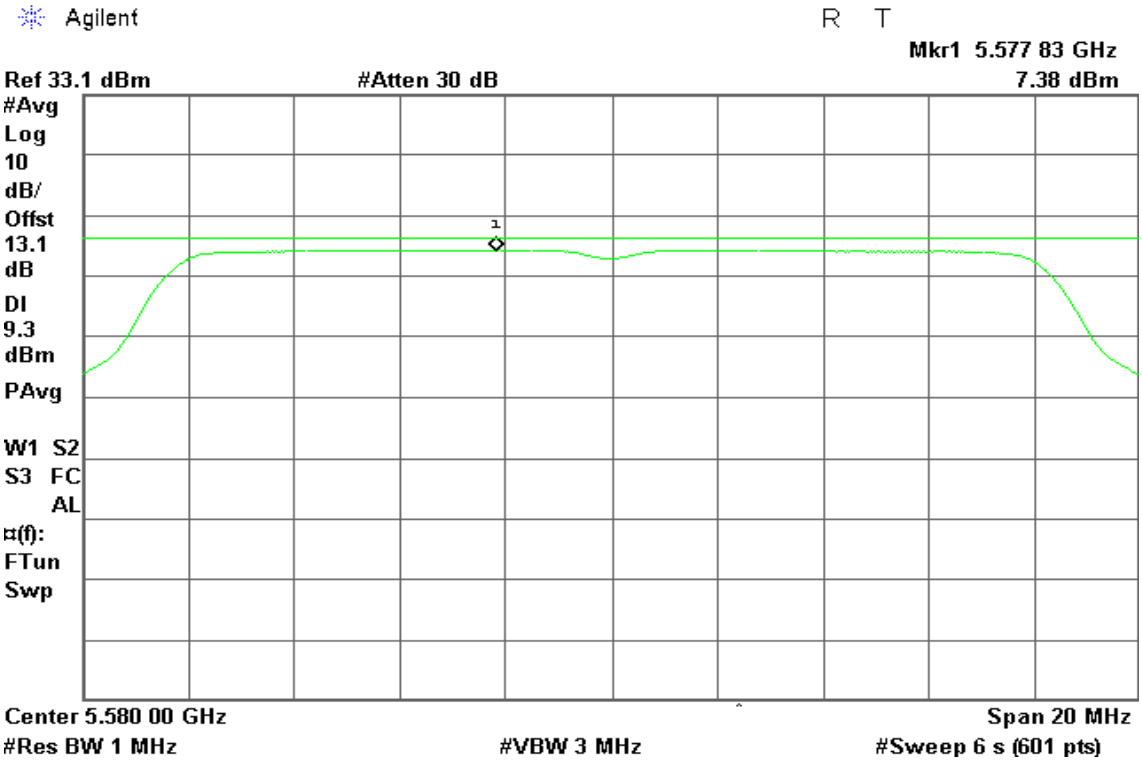


Test mode: IEEE 802.11a mode / 5500 ~ 5720MHz

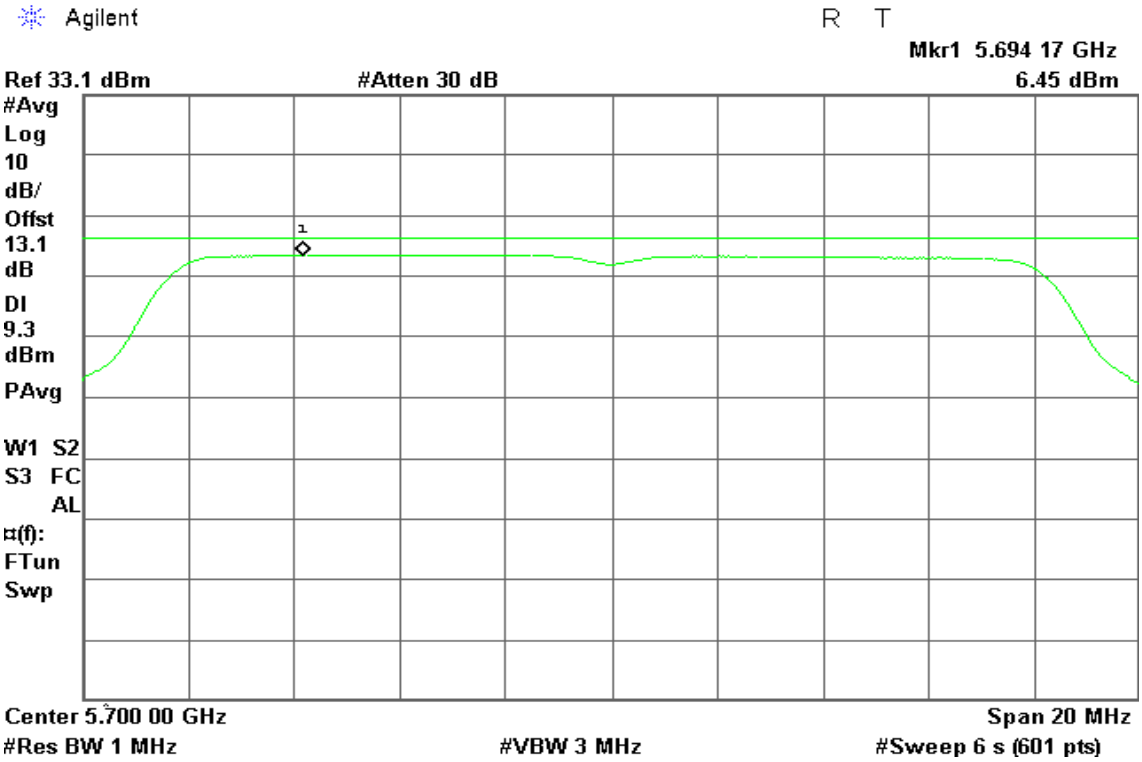
5500 MHz



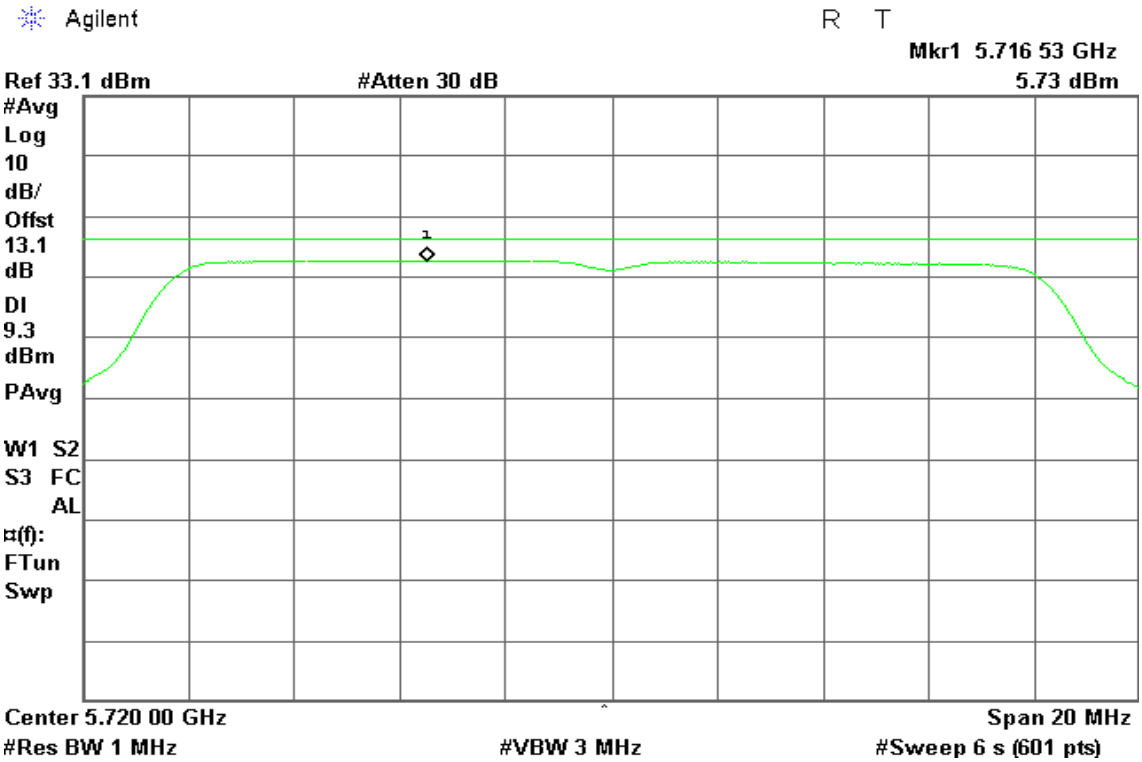
5580 MHz



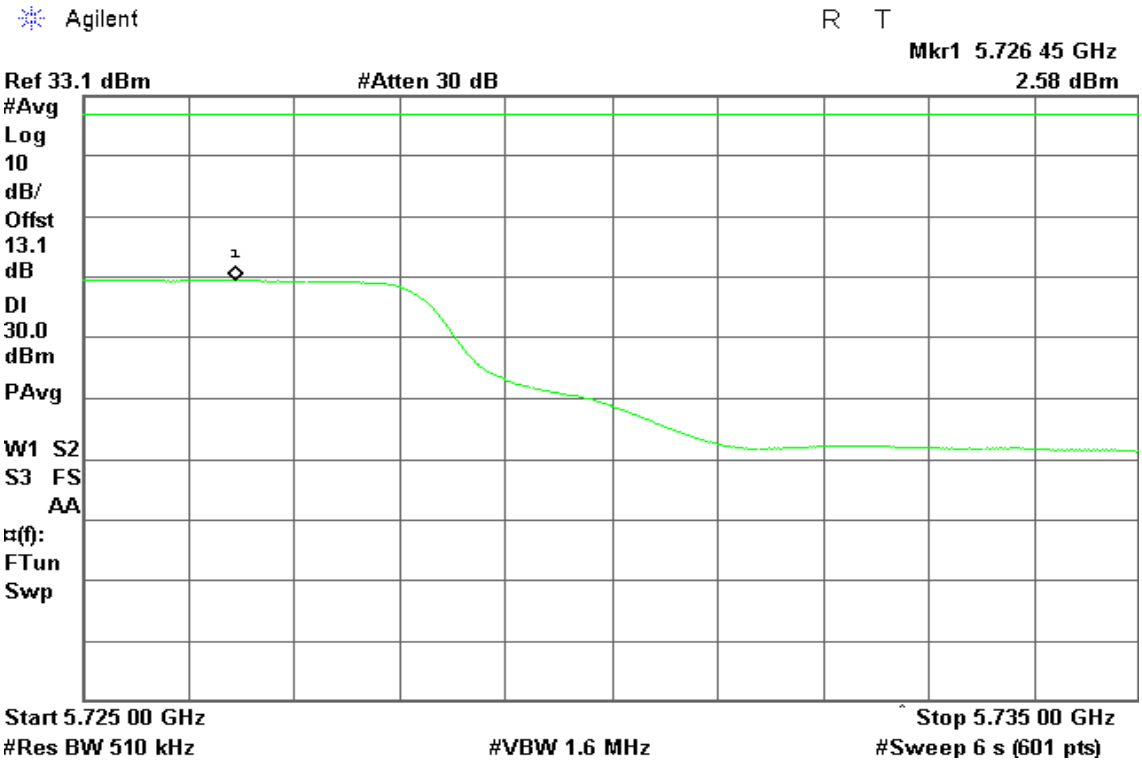
5700 MHz



5720 MHz (Band III)

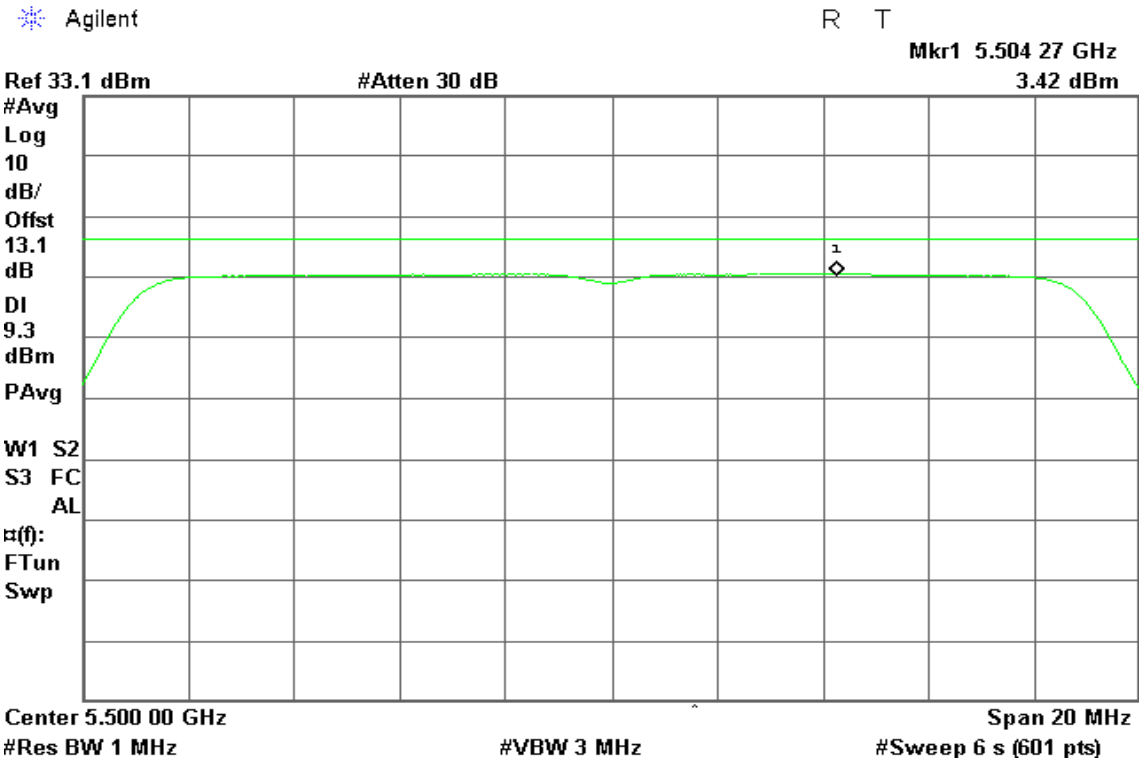


5720 MHz (Band IV)

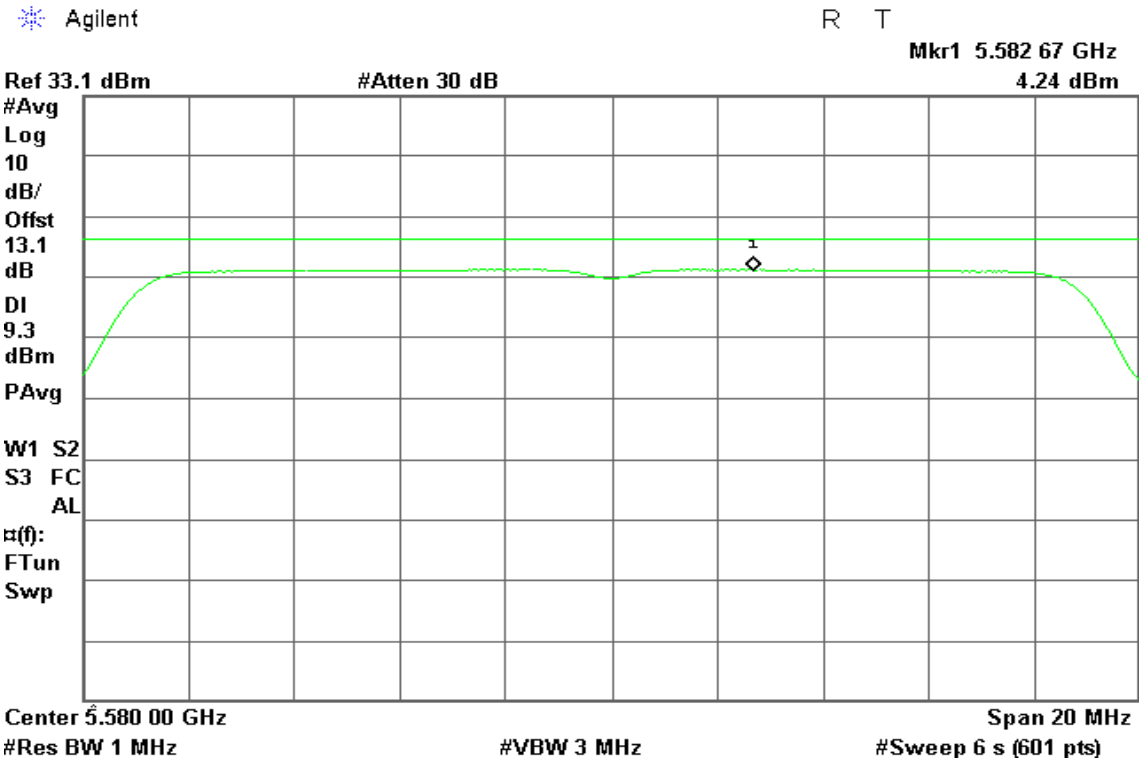


IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz / Chain 0

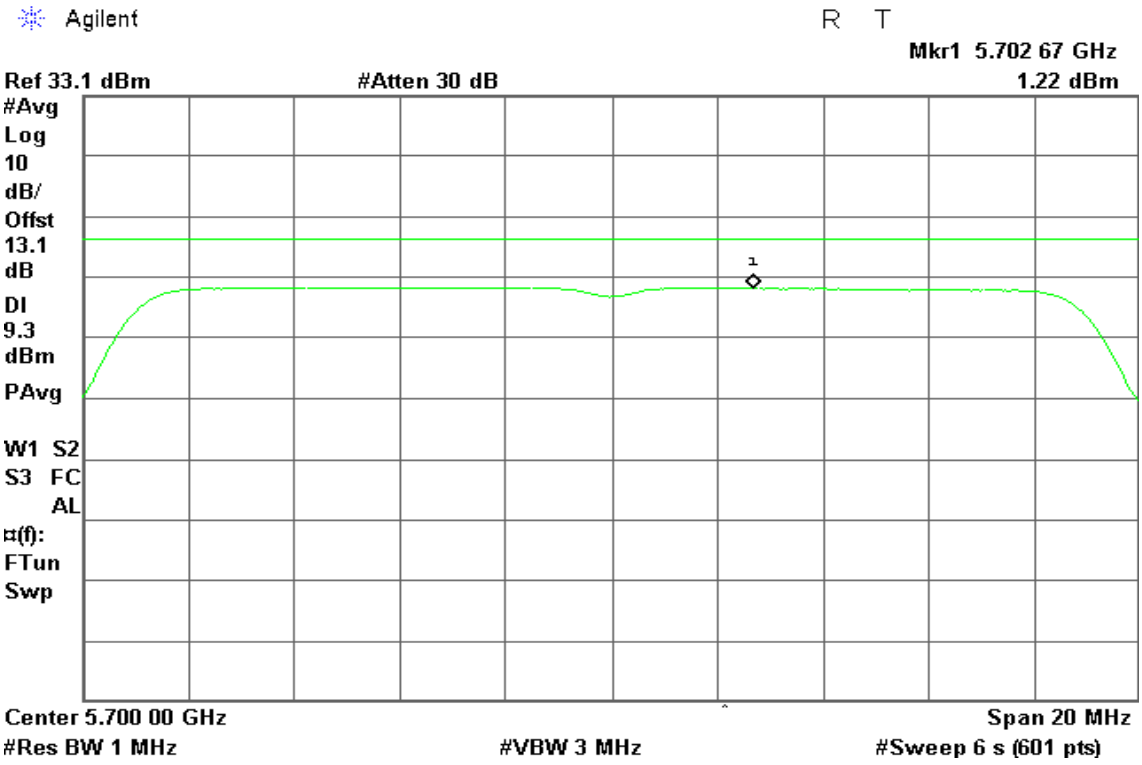
5500 MHz



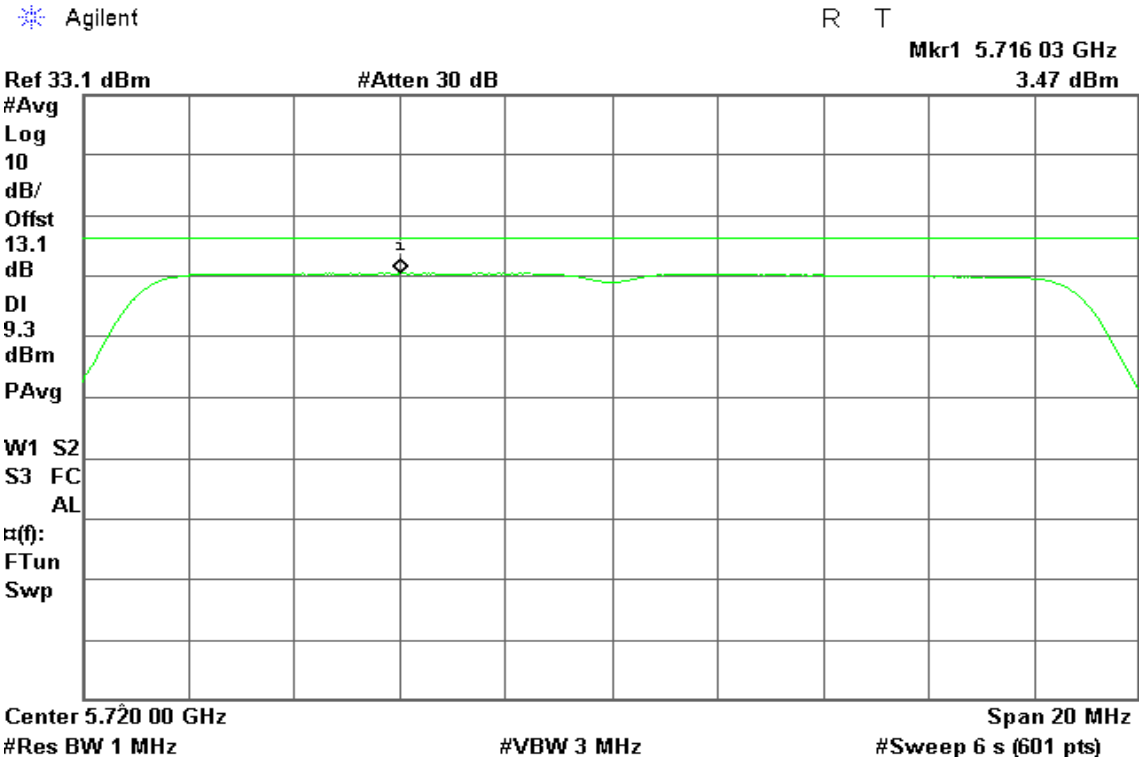
5580 MHz



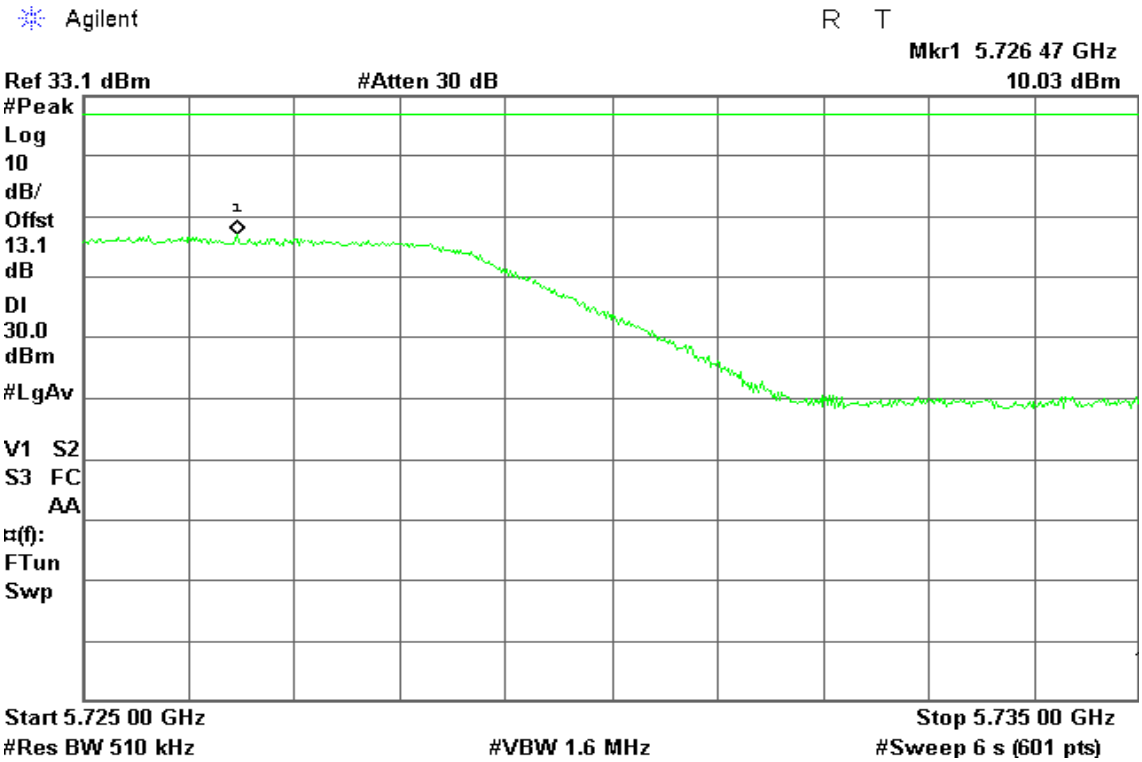
5700 MHz



5720 MHz (Band III)

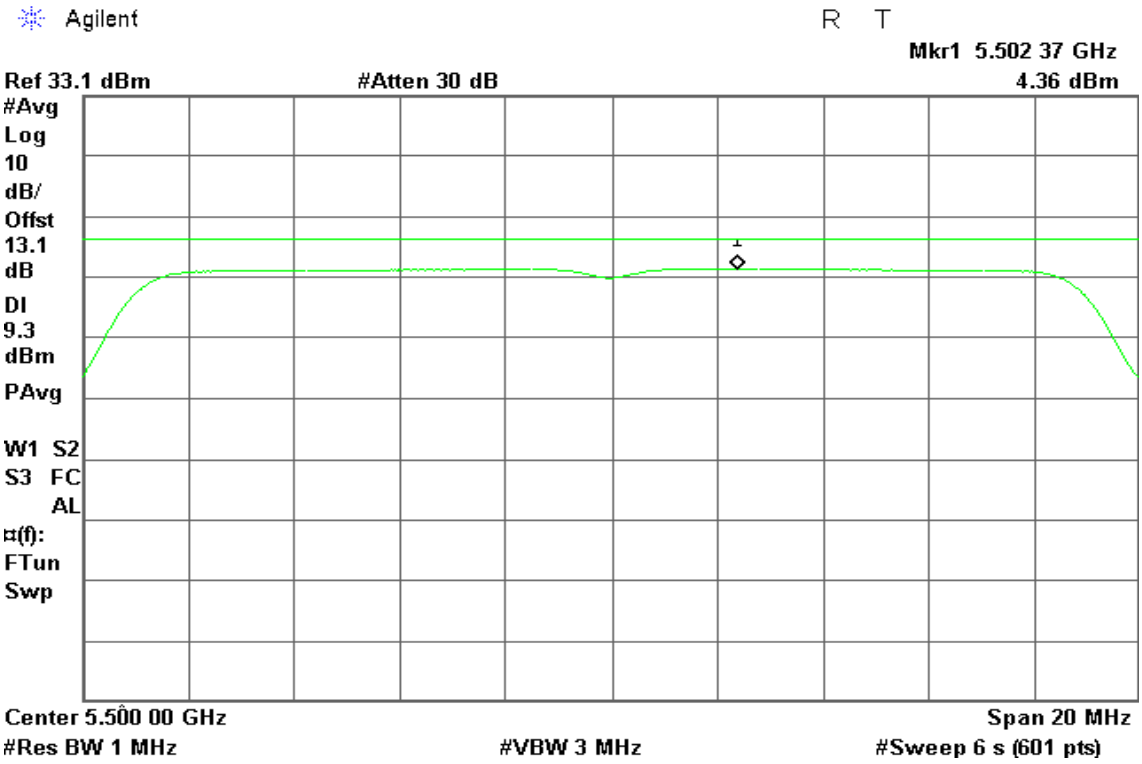


5720 MHz (Band IV)

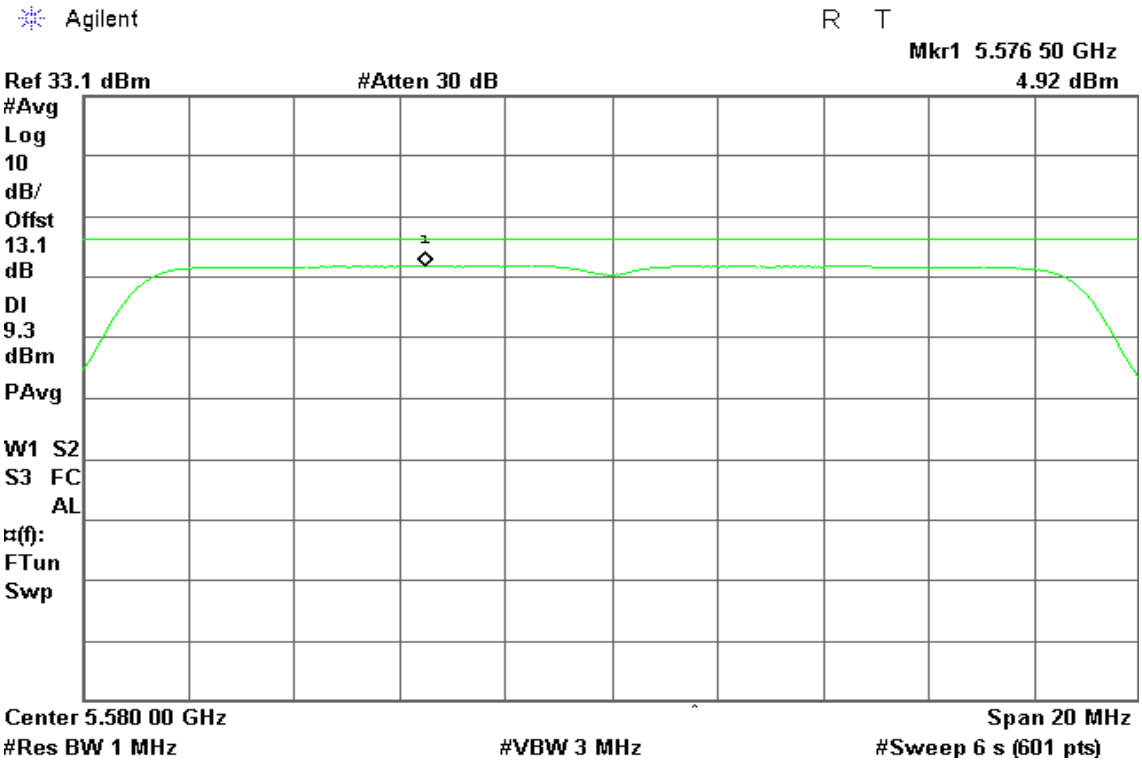


IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720MHz / Chain 1

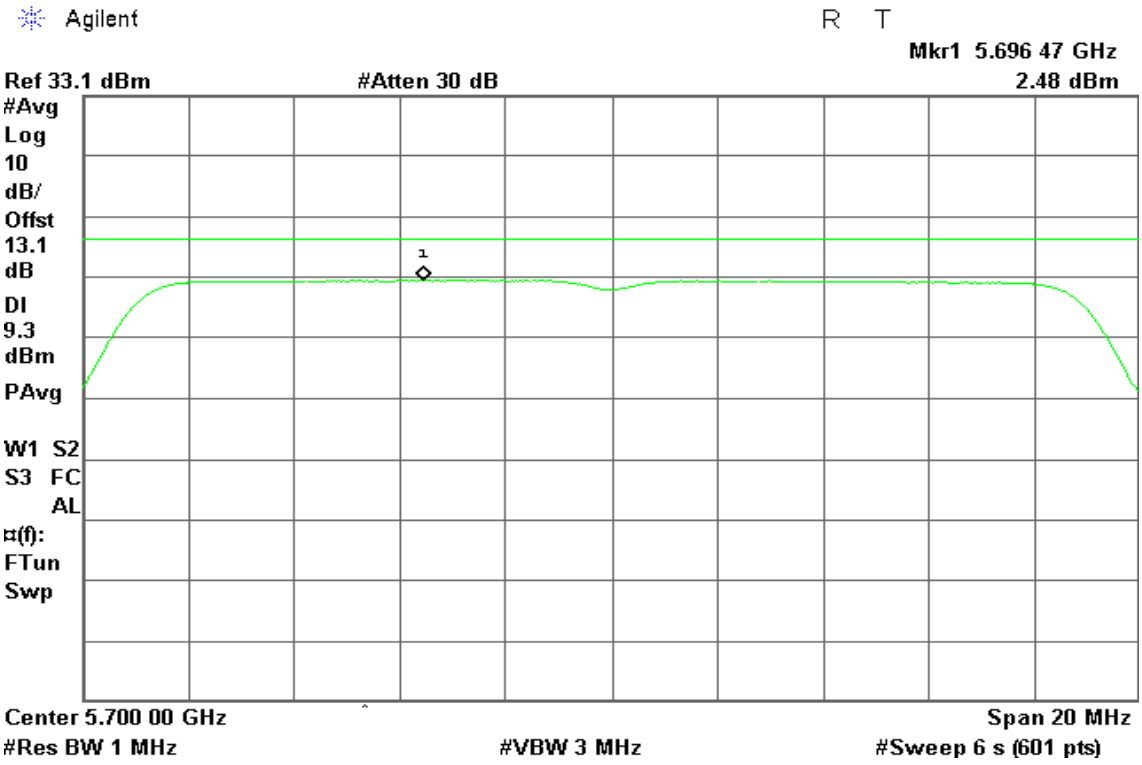
5500 MHz



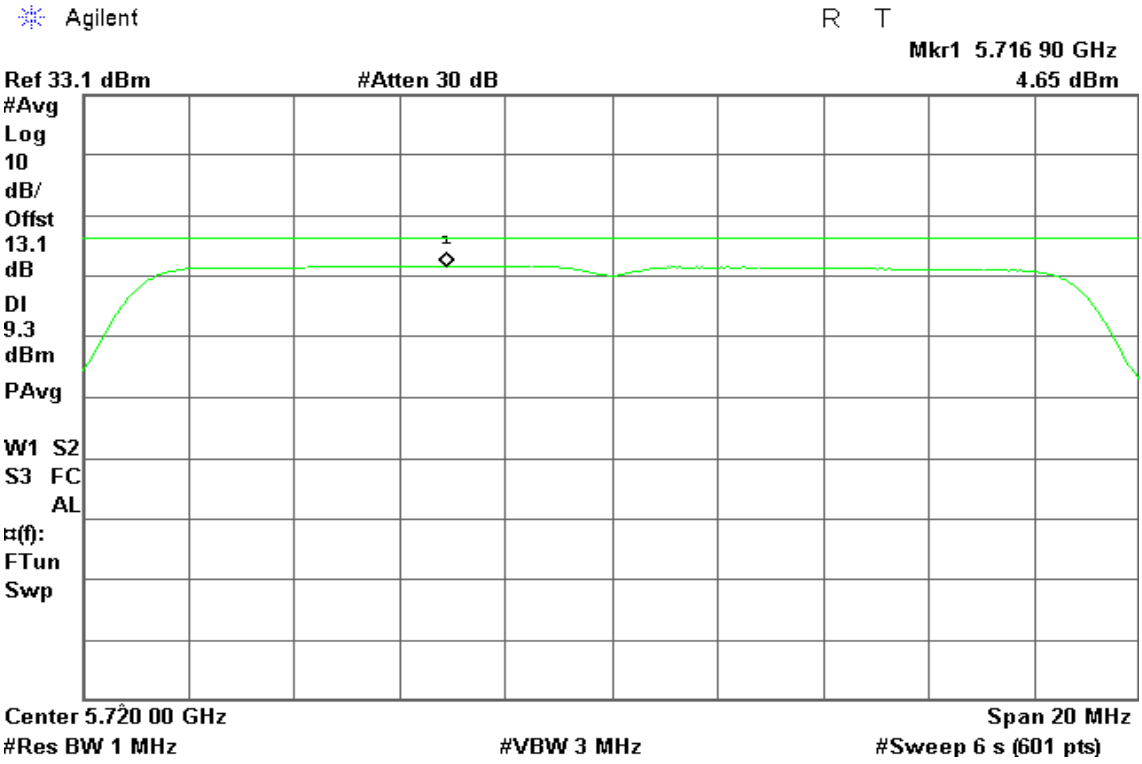
5580 MHz



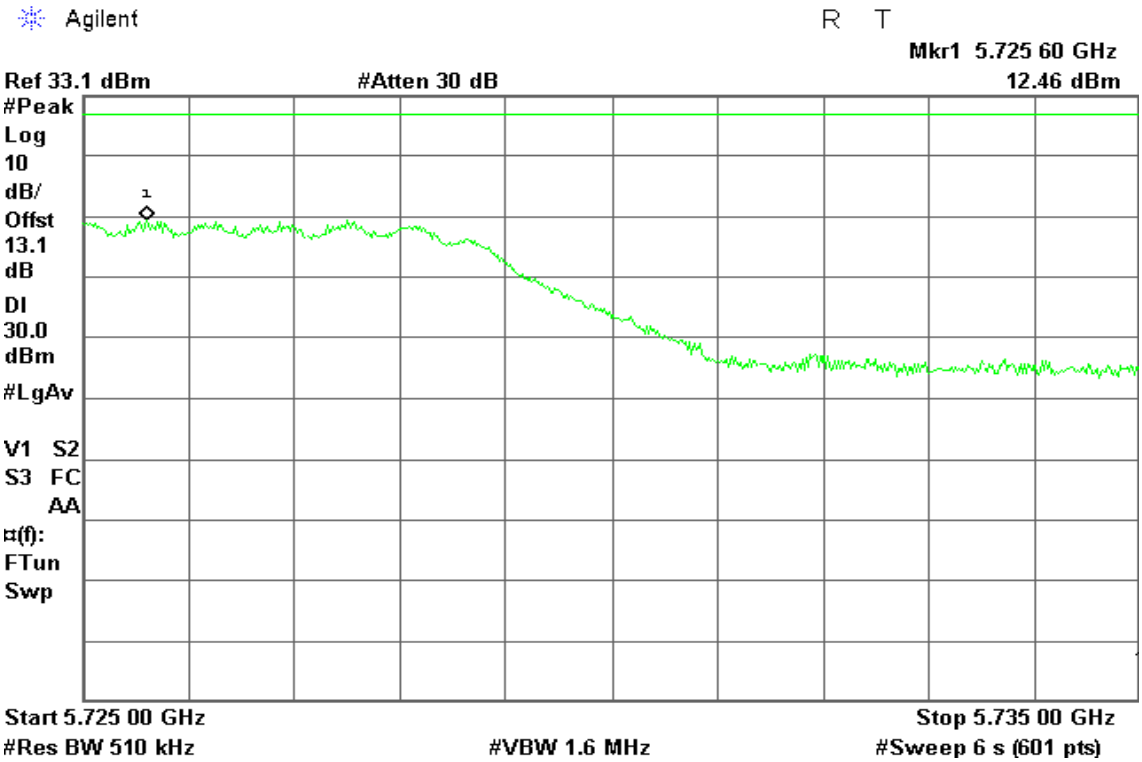
5700 MHz



5720 MHz (Band III)

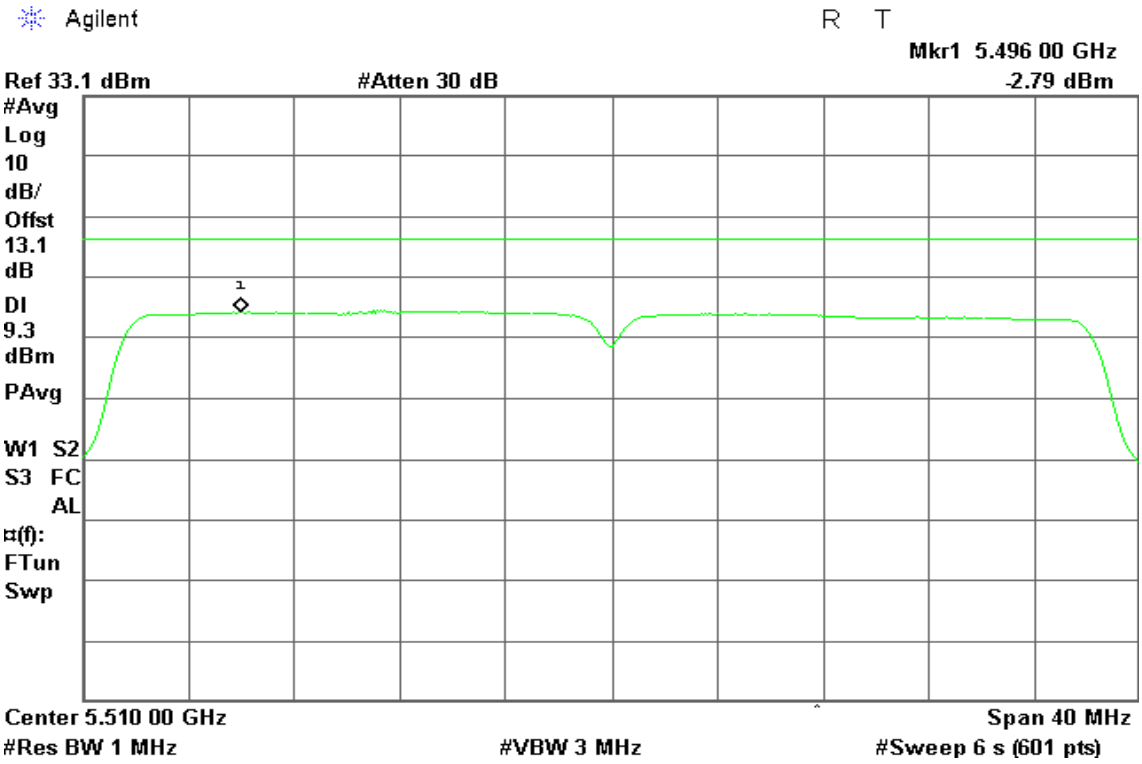


5720 MHz (Band IV)

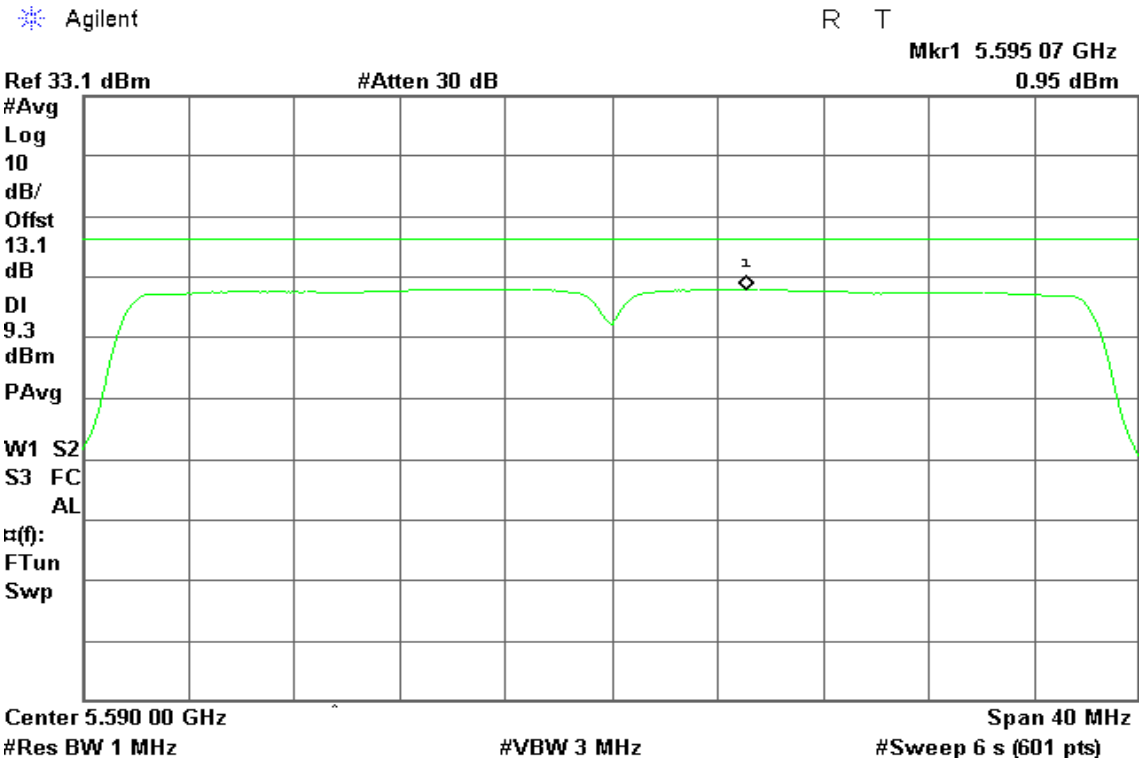


IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz / Chain 0

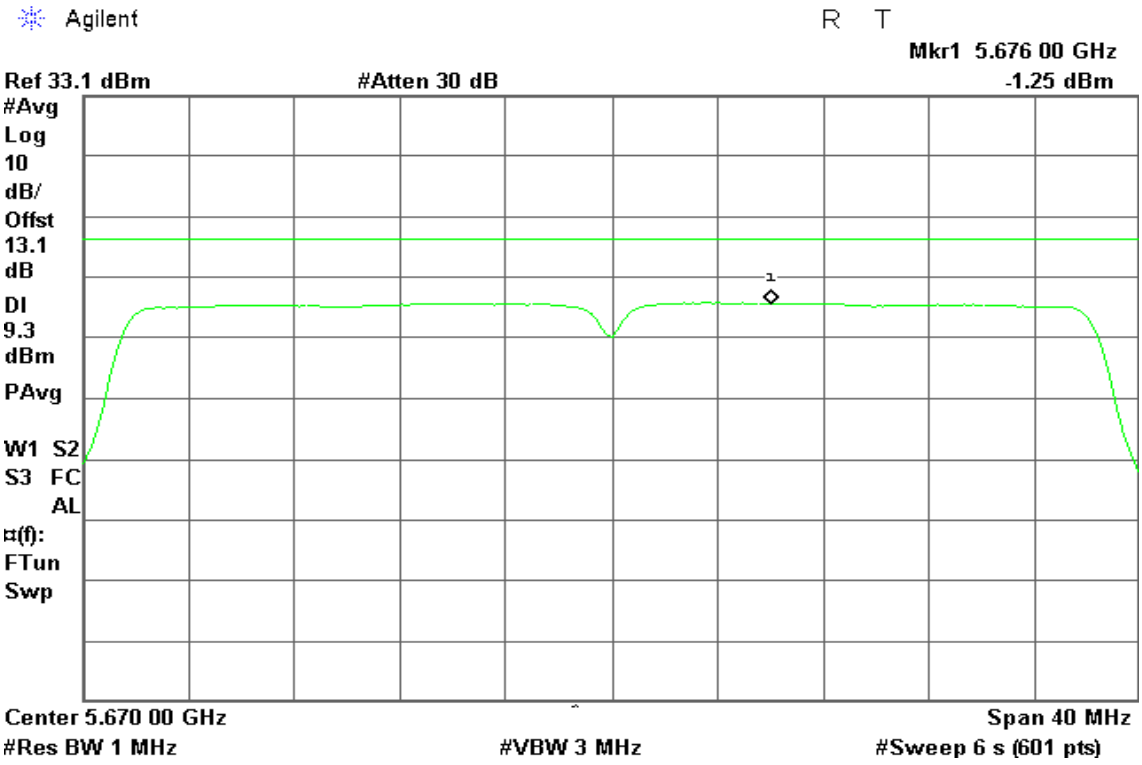
5510 MHz



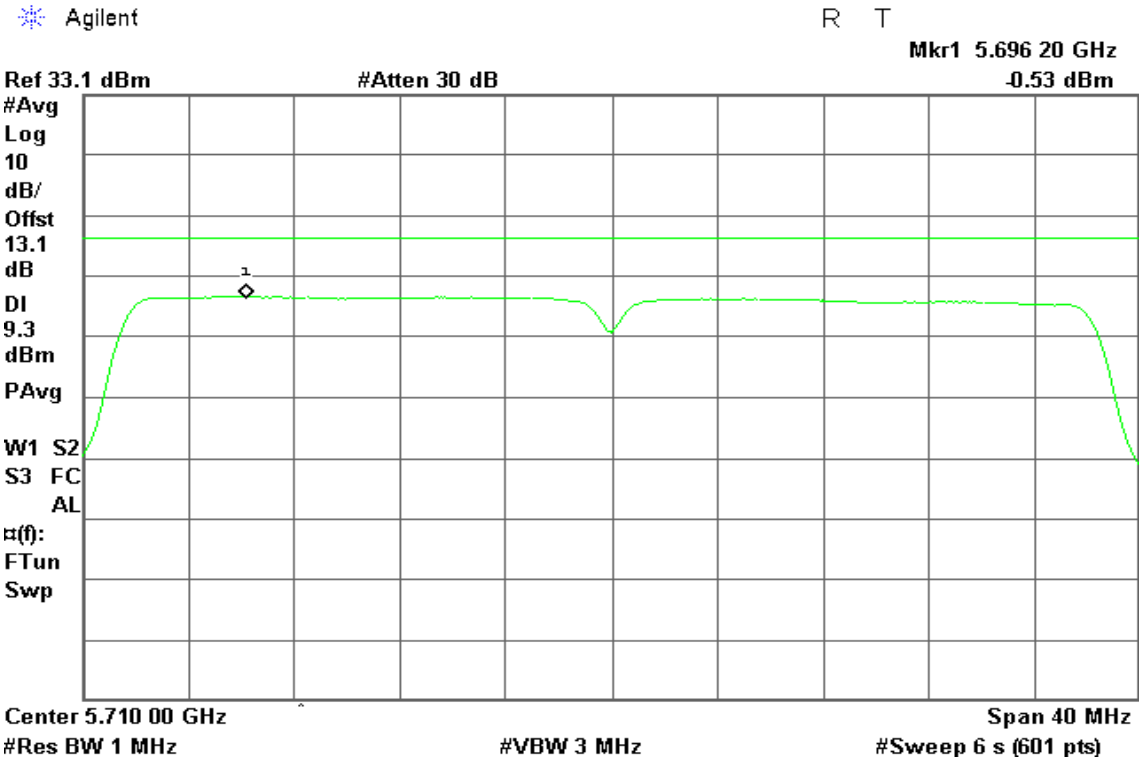
5590 MHz



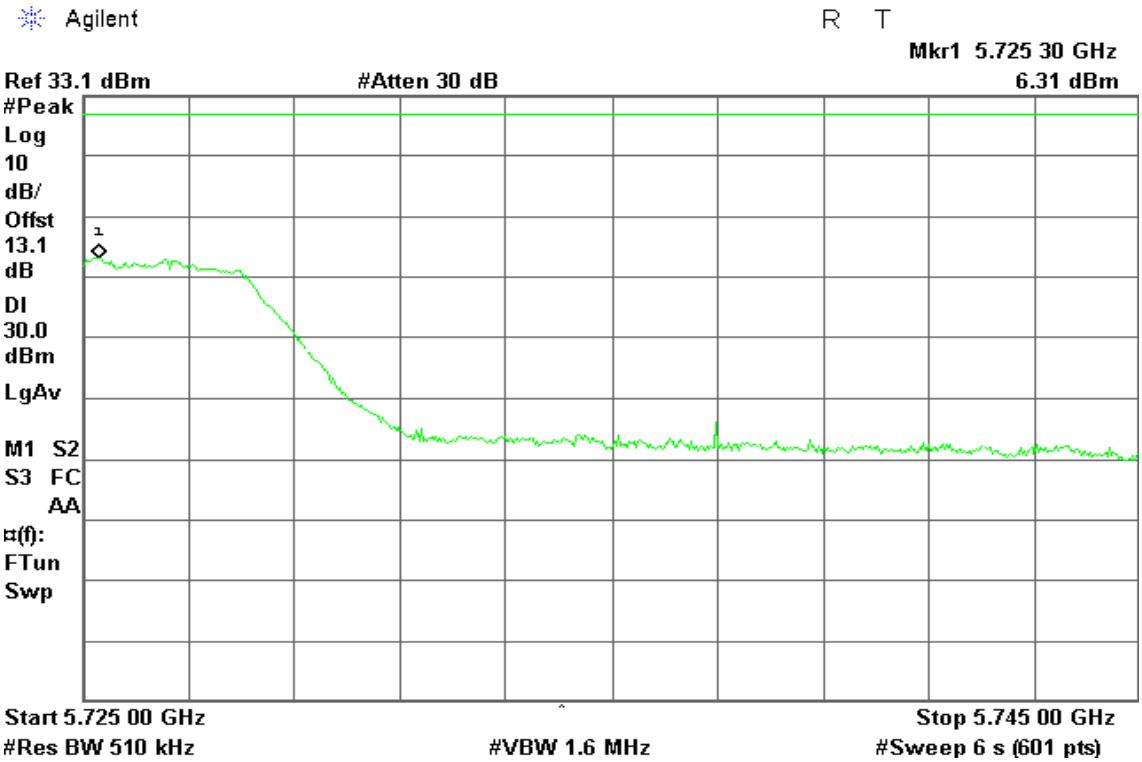
5670 MHz



5710 MHz (Band III)

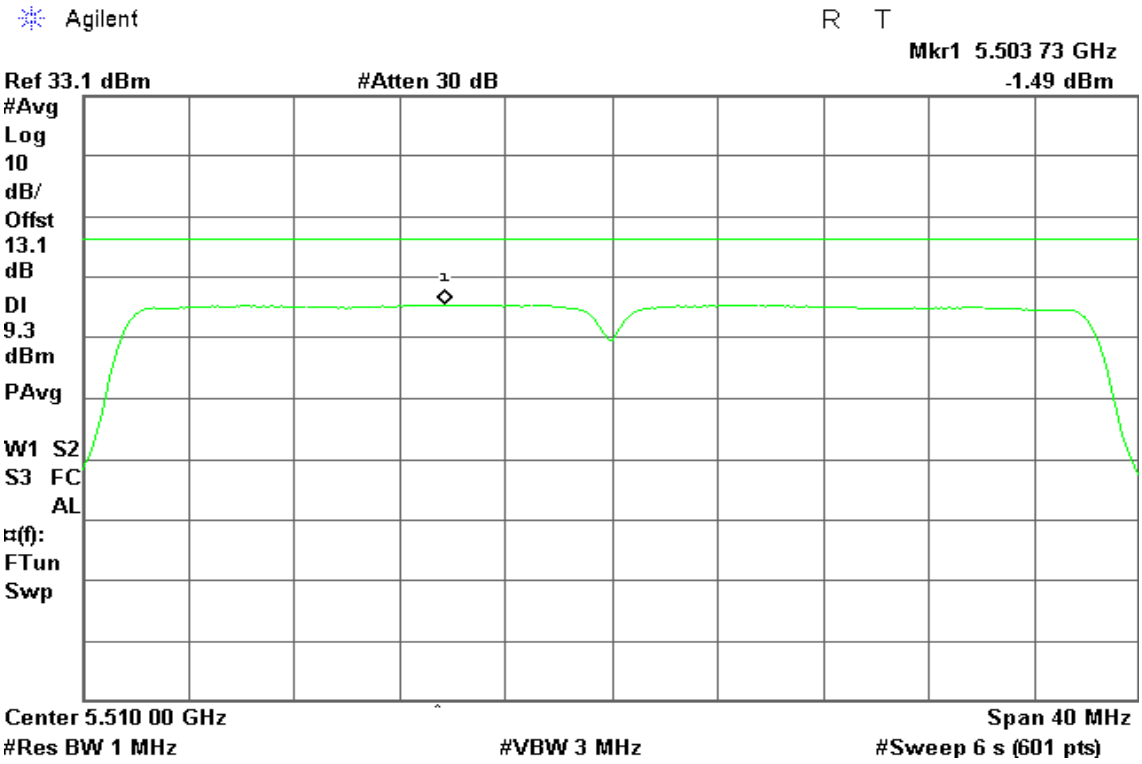


5710 MHz (Band IV)

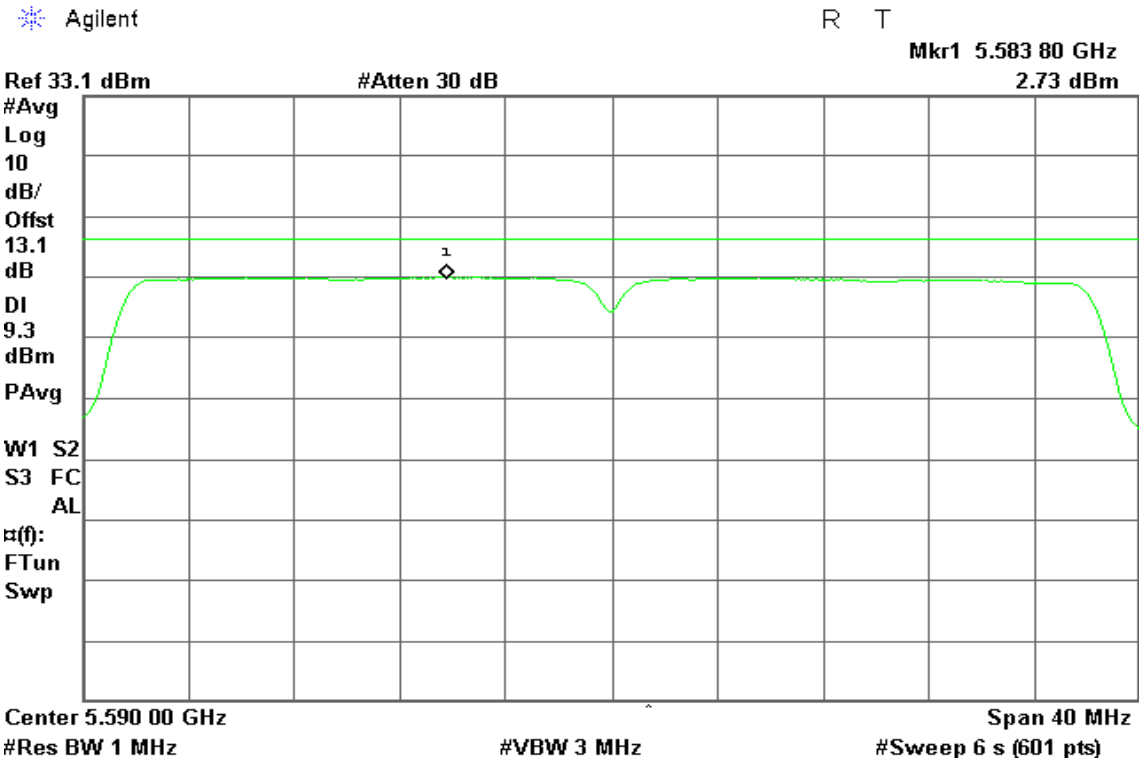


IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710MHz / Chain 1

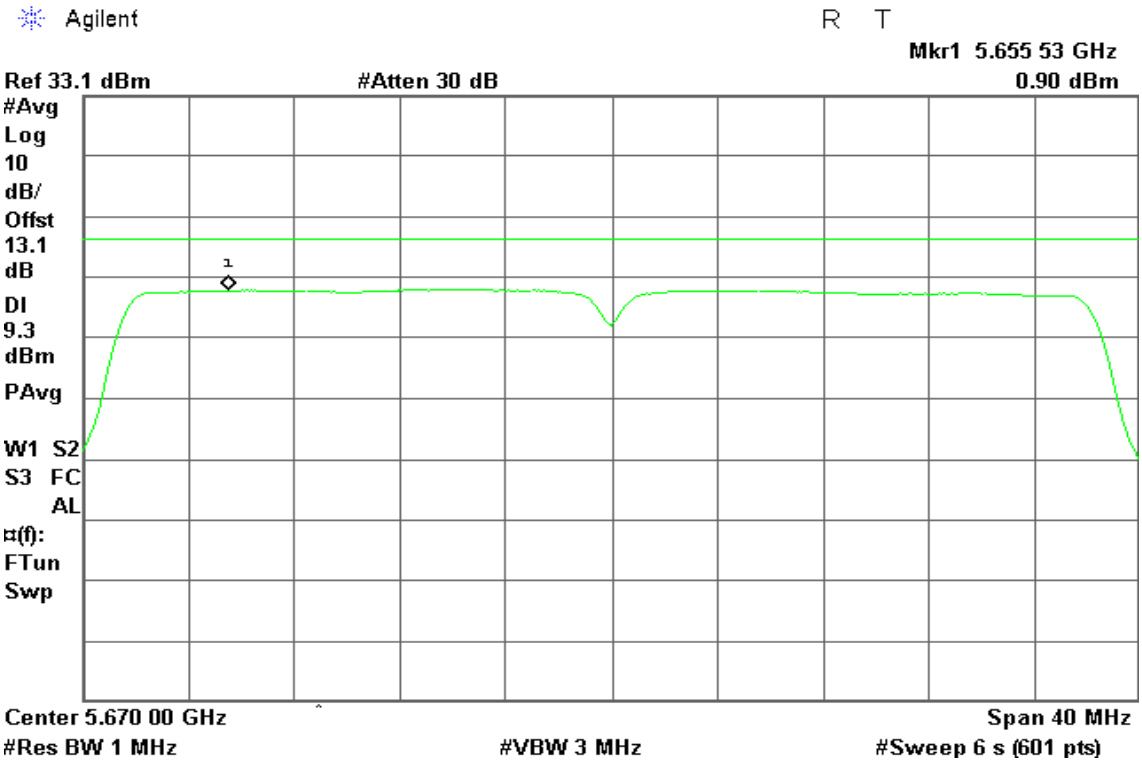
5510 MHz



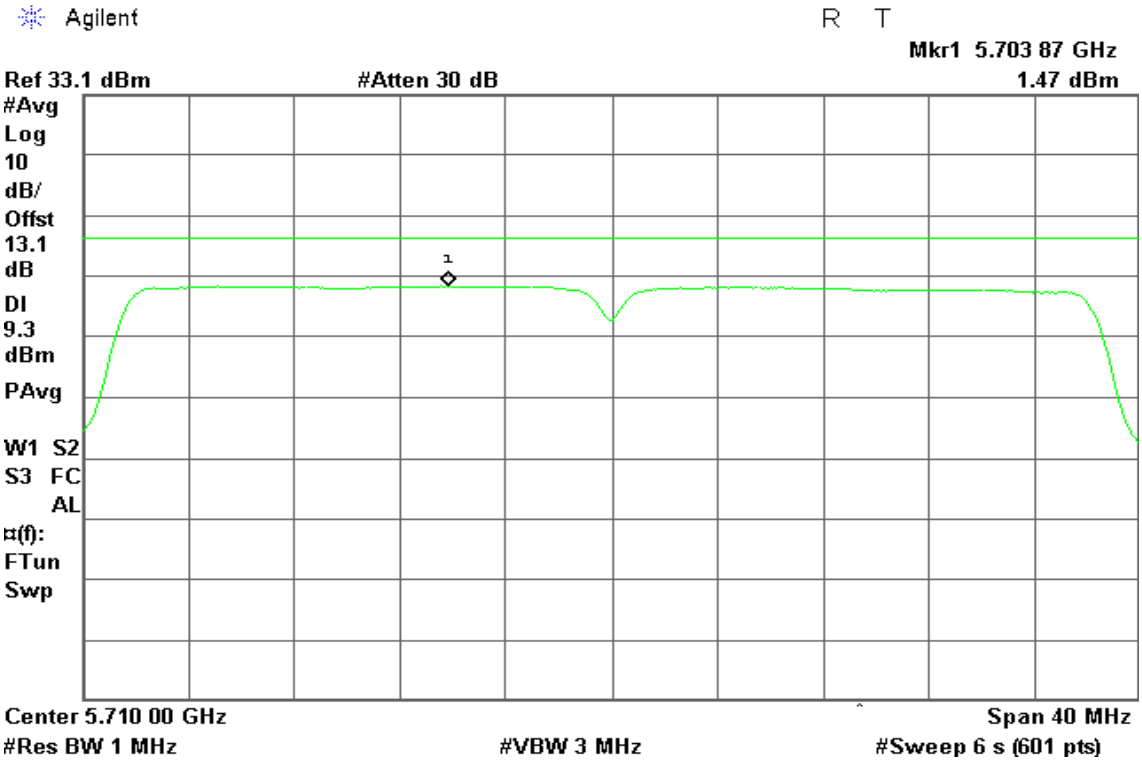
5590 MHz



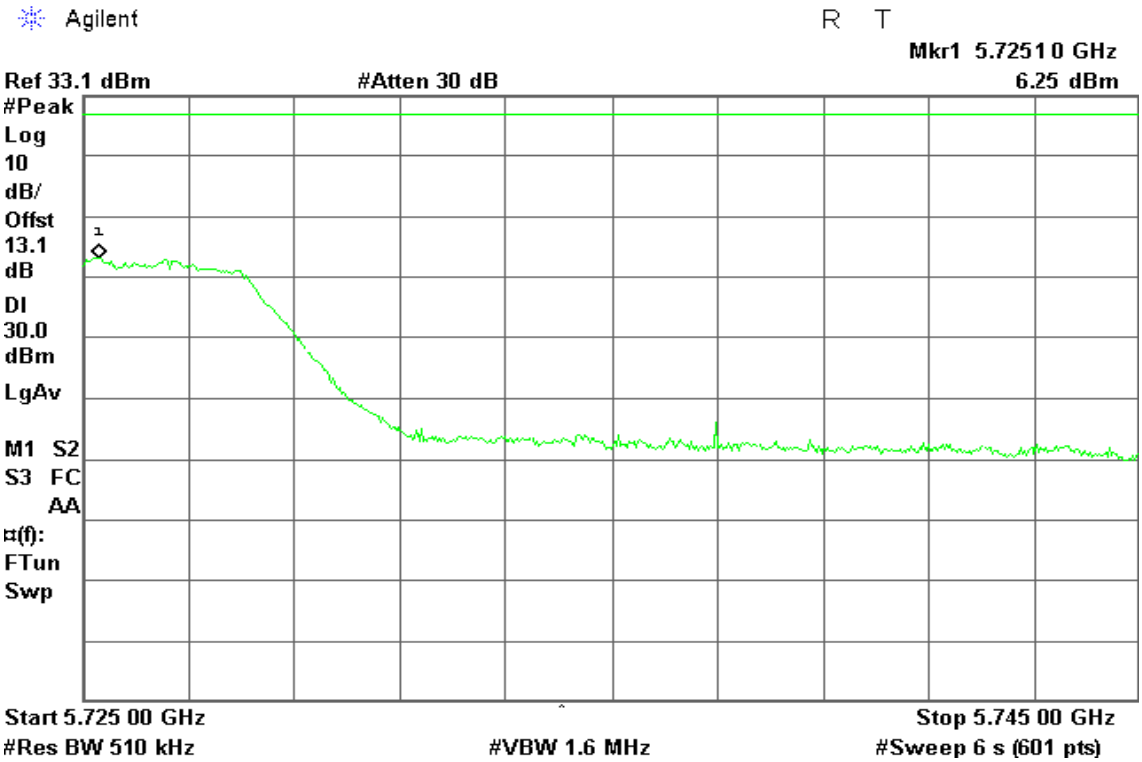
5670 MHz



5710 MHz (Band III)

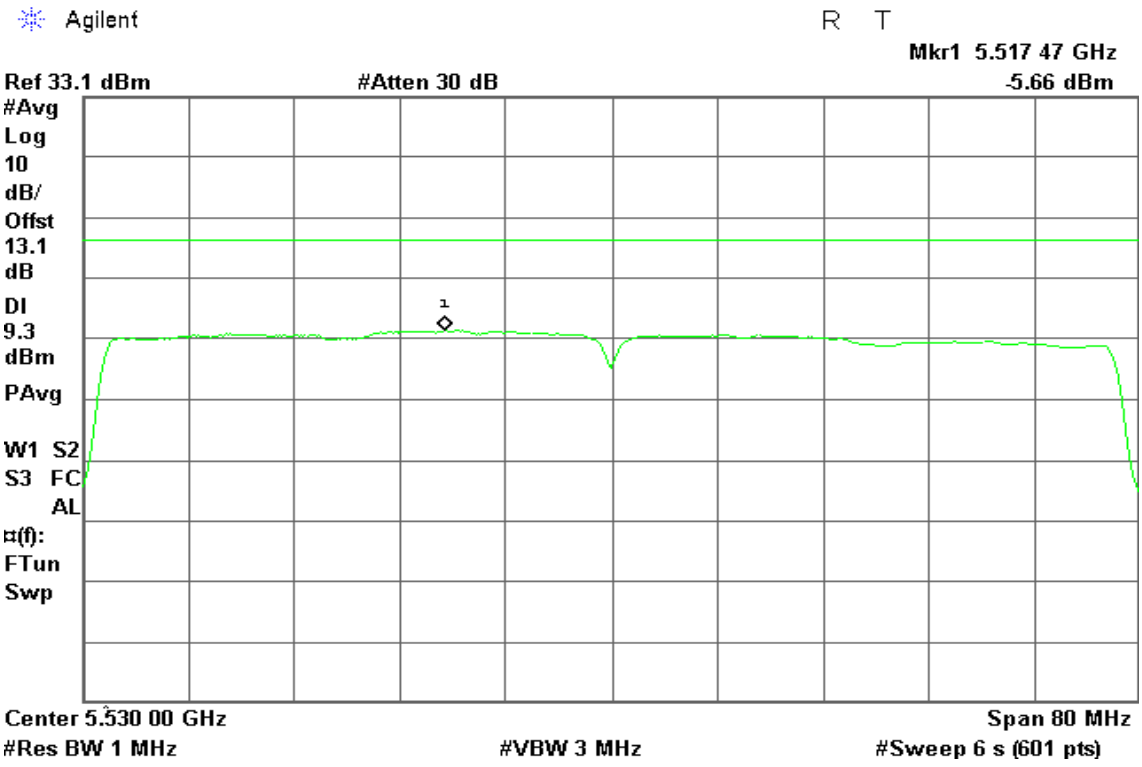


5710 MHz (Band IV)

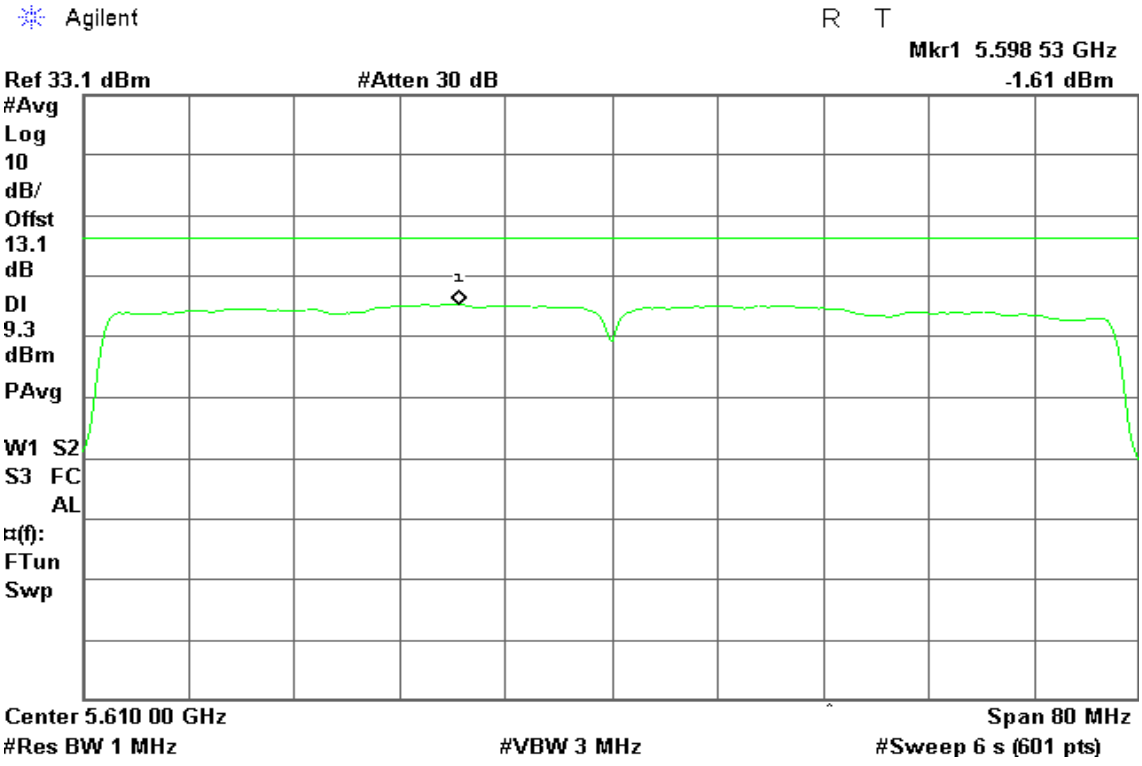


IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz / Chain 0

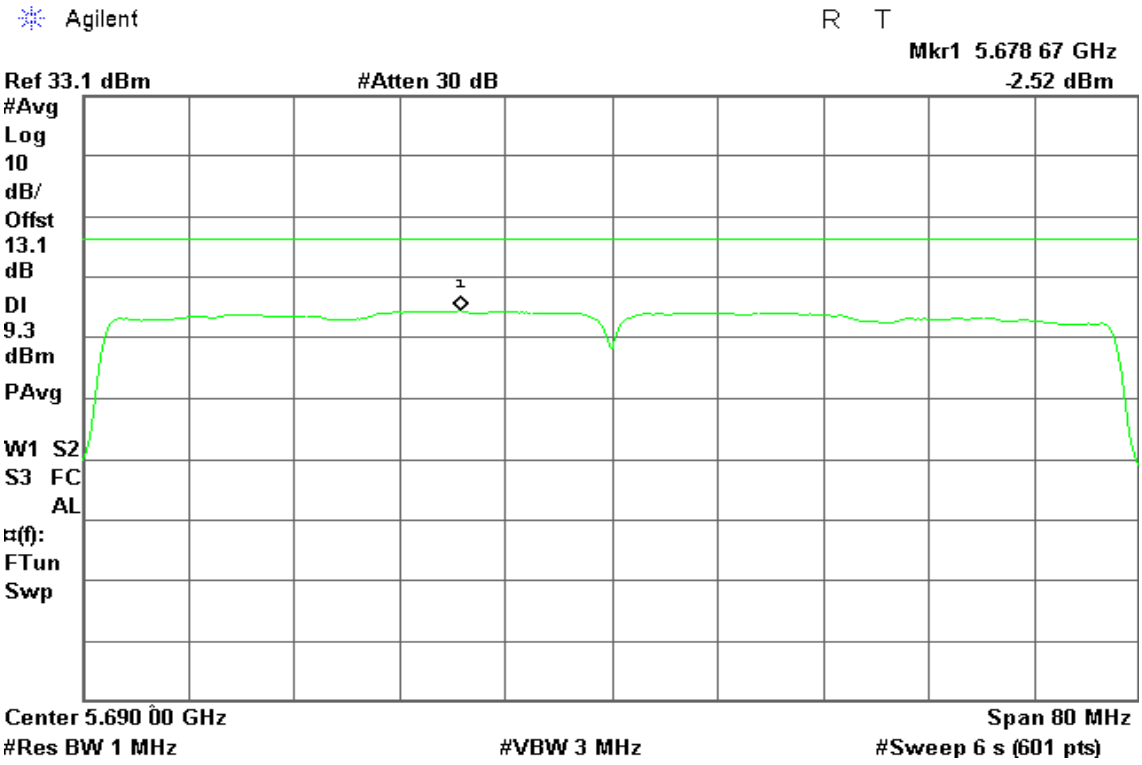
5530 MHz



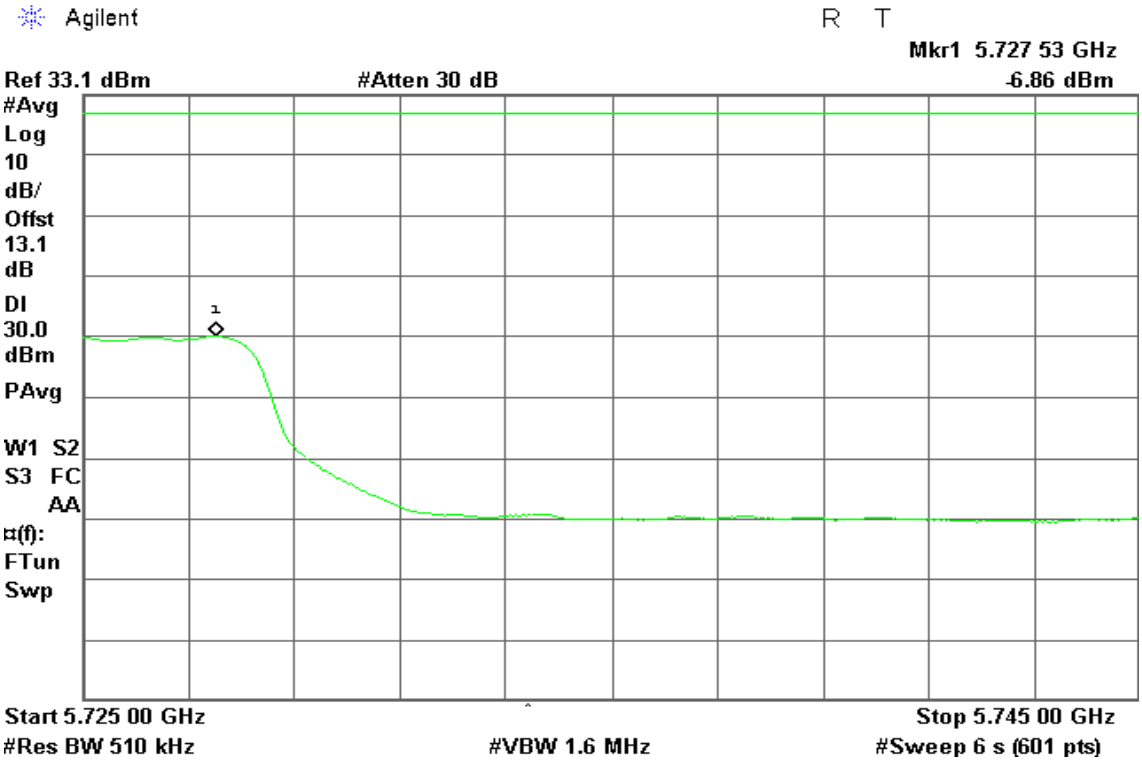
5610 MHz



5690 MHz (Band III)

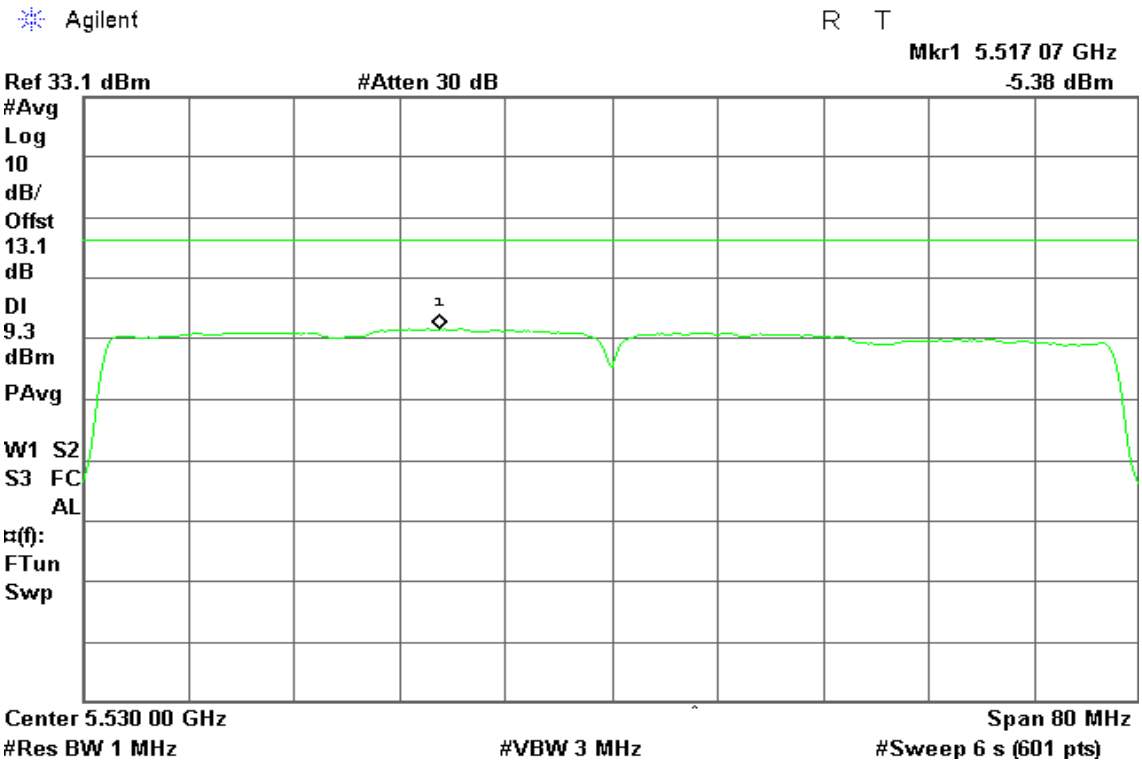


5690 MHz (Band IV)

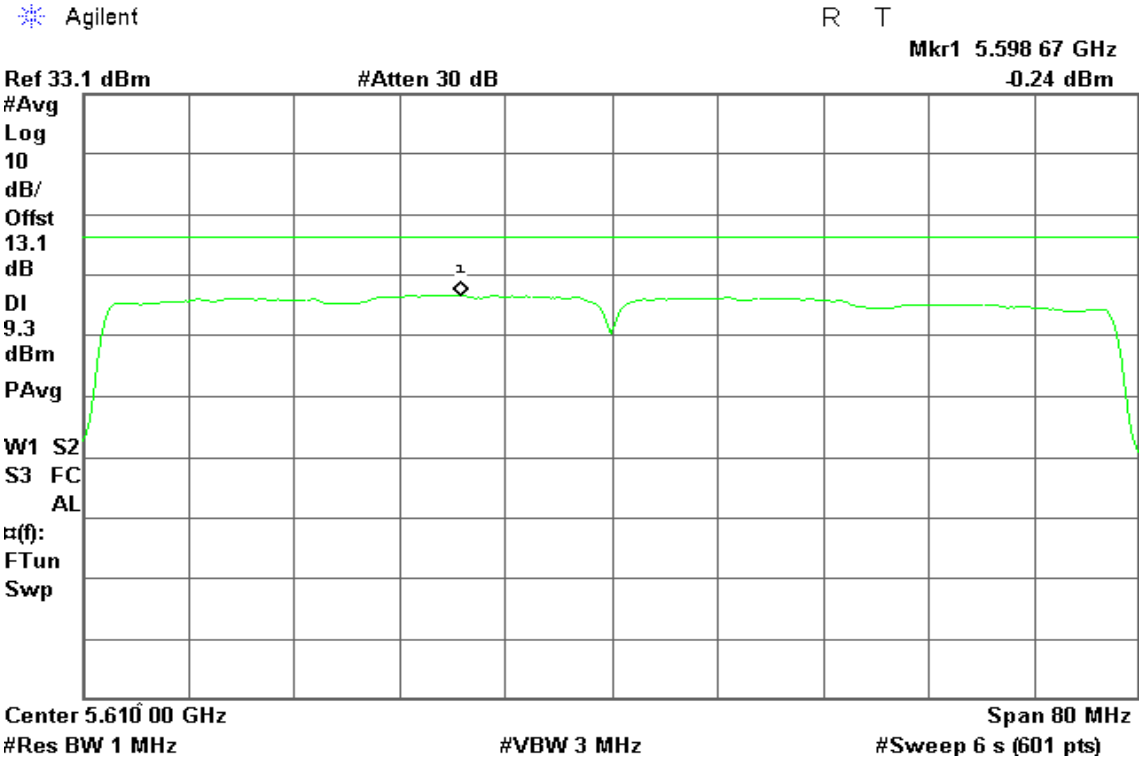


IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690MHz / Chain 1

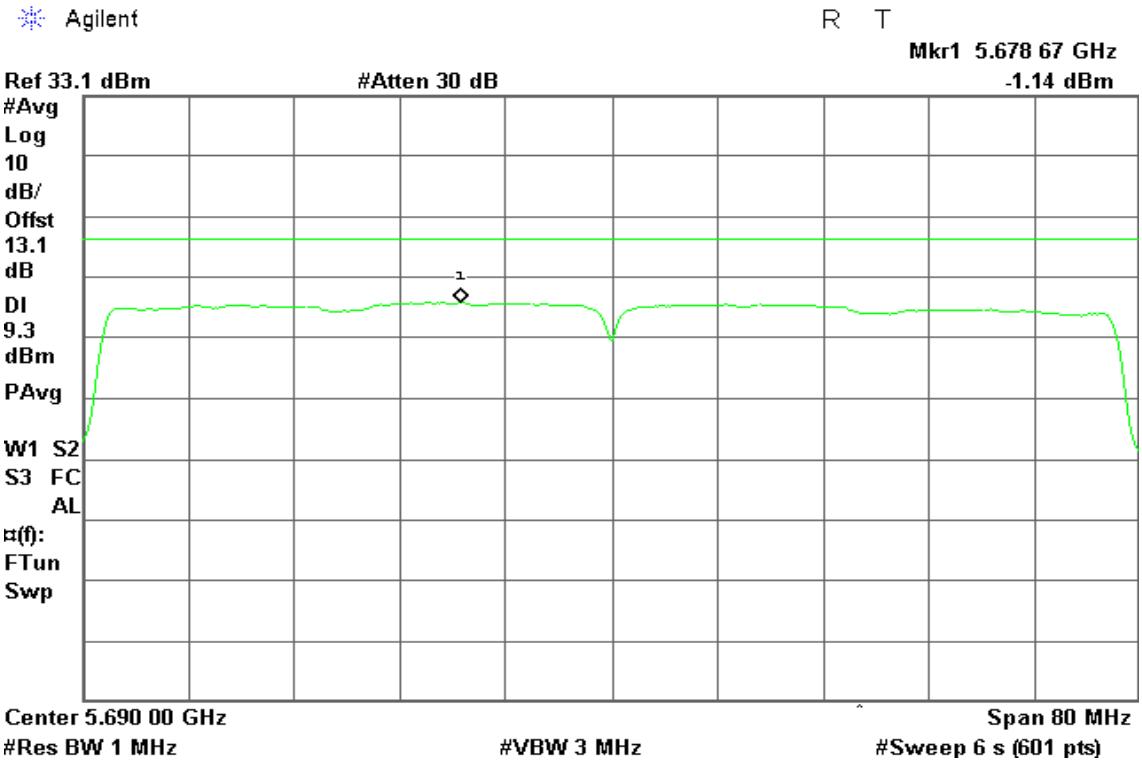
5530 MHz



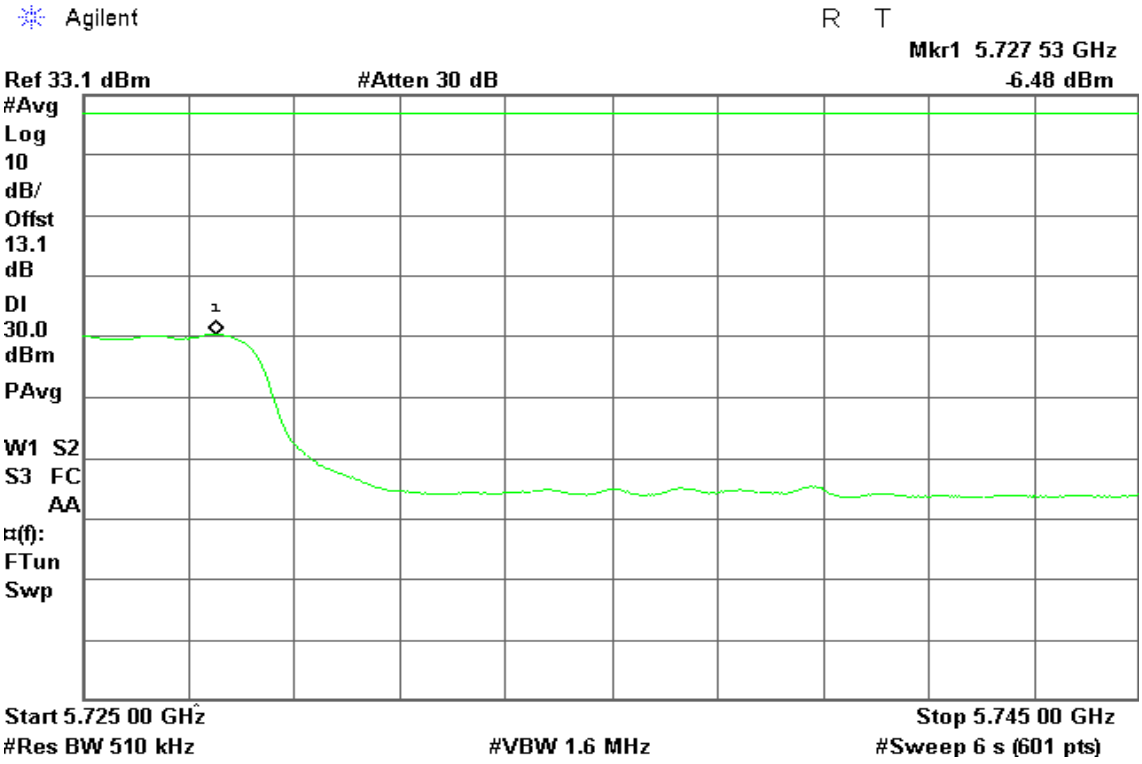
5610 MHz



5690 MHz (Band III)



5690 MHz (Band IV)



7.6 RADIATED UNDESIRABLE EMISSION

1. According to §15.209(a) & RSS-247, 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

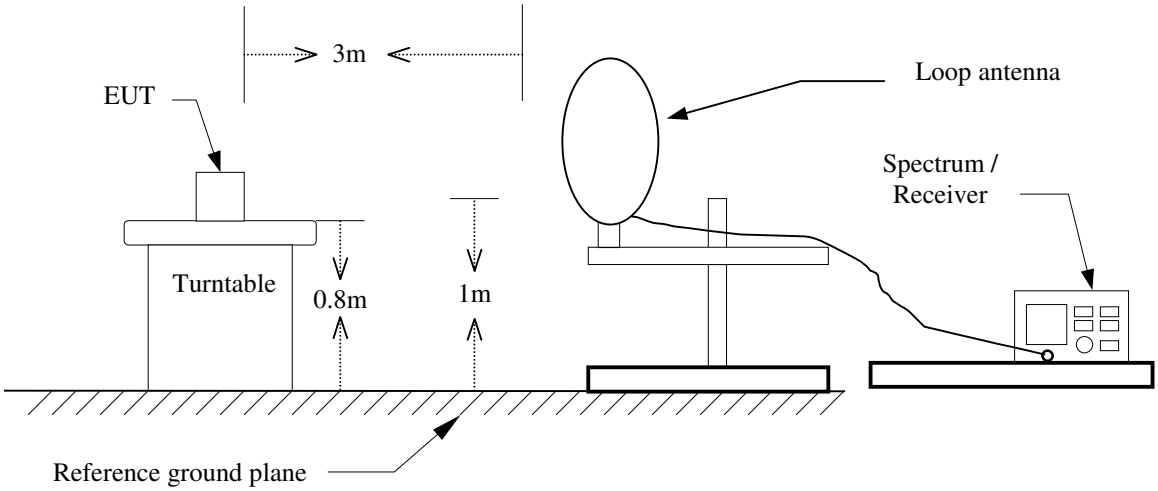
Remark: *Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

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

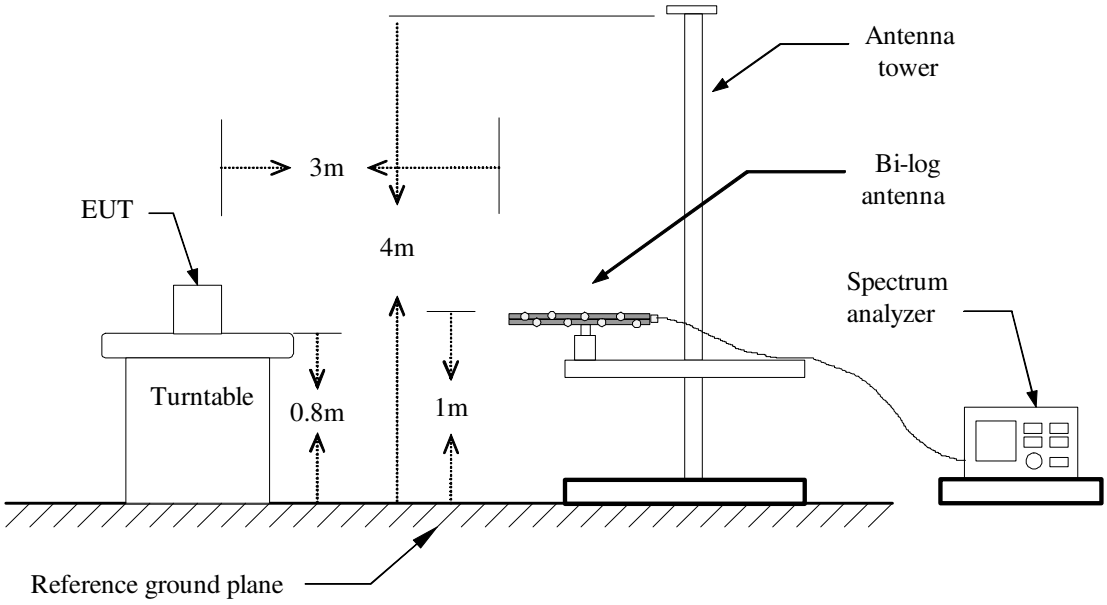
Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

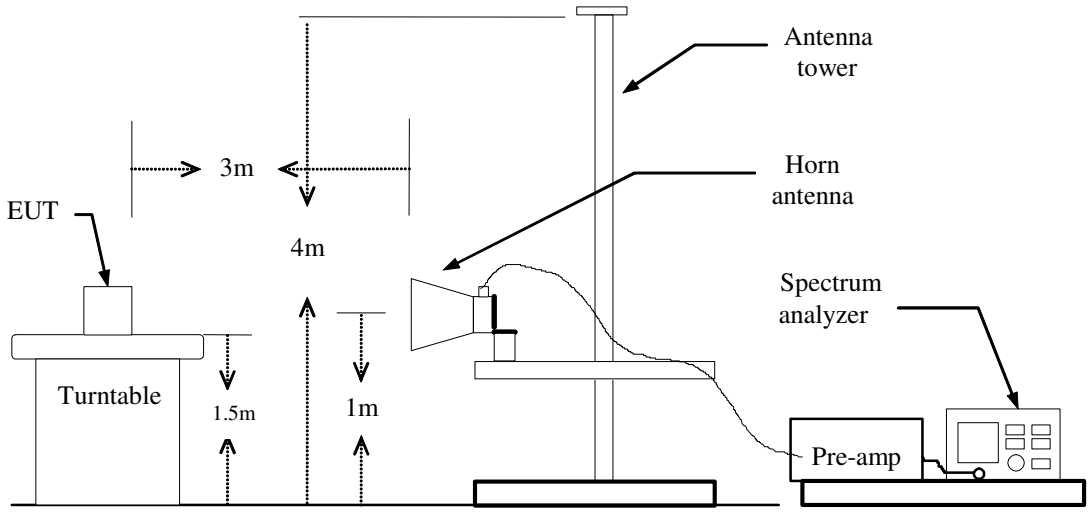
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1 GHz


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

TEST PROCEDURE

1. The EUT is placed on a turntable, which is 1.5m 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:

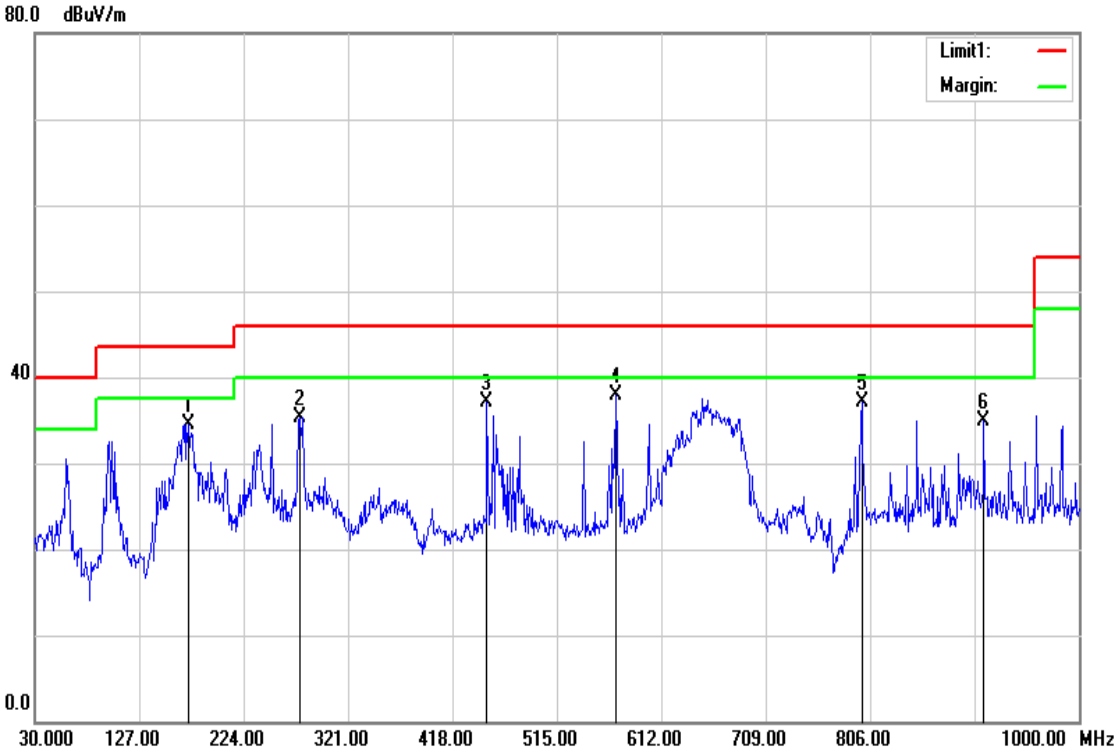
   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
   (b)AVERAGE: RBW=1MHz,
   if duty cycle≧98%, VBW=10Hz.
   if duty cycle<98% VBW=1/T.
   IEEE 802.11b mode: = 96%, VBW=510Hz
   IEEE 802.11g mode: =92%, VBW=1.1KHz
   IEEE 802.11n HT 20 MHz mode: = 84%, VBW=2KHz
   IEEE 802.11n HT 40 MHz mode: = 73%, VBW=15KHz
7. Repeat above procedures until the measurements for all frequencies are complete.

Below 1 GHz

Operation Mode: Normal Link **Test Date:** June 6, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.



Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
172.5900	51.48	-16.98	34.50	43.50	-9.00	Peak	V
276.3800	50.05	-14.68	35.37	46.00	-10.63	Peak	V
450.0100	47.20	-10.19	37.01	46.00	-8.99	Peak	V
570.2900	46.14	-8.19	37.95	46.00	-8.05	Peak	V
798.2400	41.61	-4.51	37.10	46.00	-8.90	Peak	V
911.7300	38.00	-3.00	35.00	46.00	-11.00	Peak	V

Remark:

1 *Measuring frequencies from 30 MHz to the 1GHz.*

2 *Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*

3 *Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.*

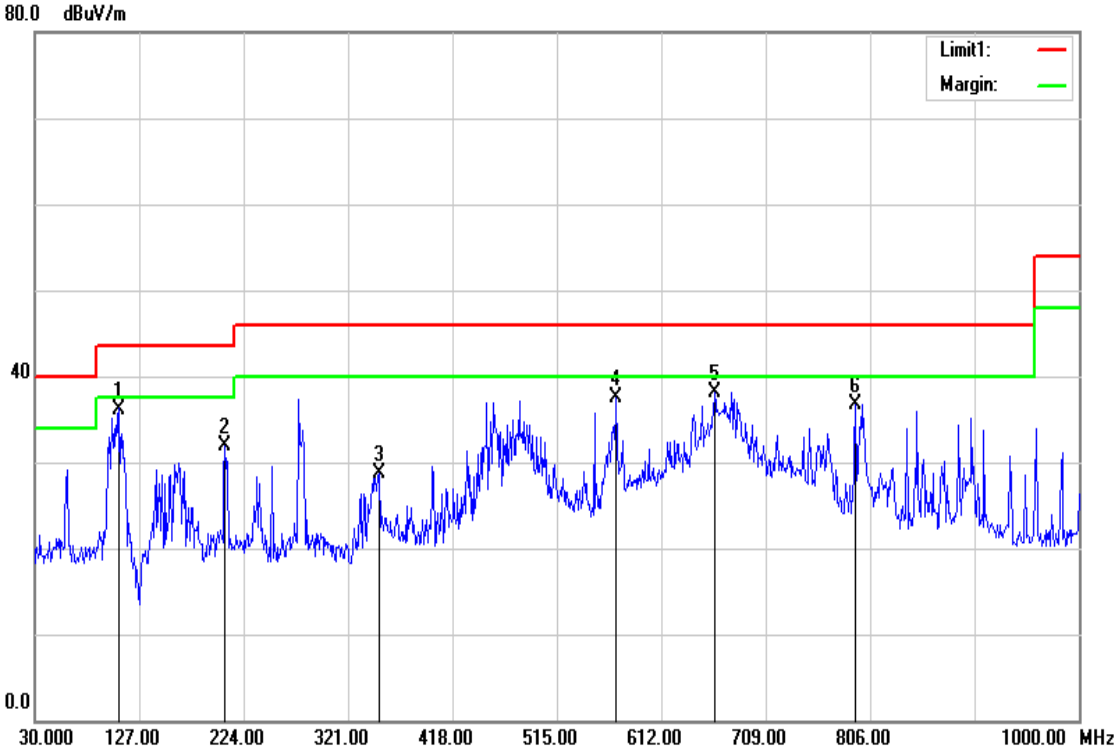
4 *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

5 *Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).*

Operation Mode: Normal Link **Test Date:** June 6, 2015

Temperature: 27°C **Tested by:** David Shu

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)
108.5700	53.72	-17.52	36.20	43.50	-7.30	peak	H
206.5400	47.87	-16.01	31.86	43.50	-11.64	peak	H
350.1000	41.60	-12.89	28.71	46.00	-17.29	peak	H
570.2900	45.70	-8.19	37.51	46.00	-8.49	peak	H
661.4700	44.55	-6.46	38.09	46.00	-7.91	peak	H
792.4200	41.36	-4.56	36.80	46.00	-9.20	peak	H

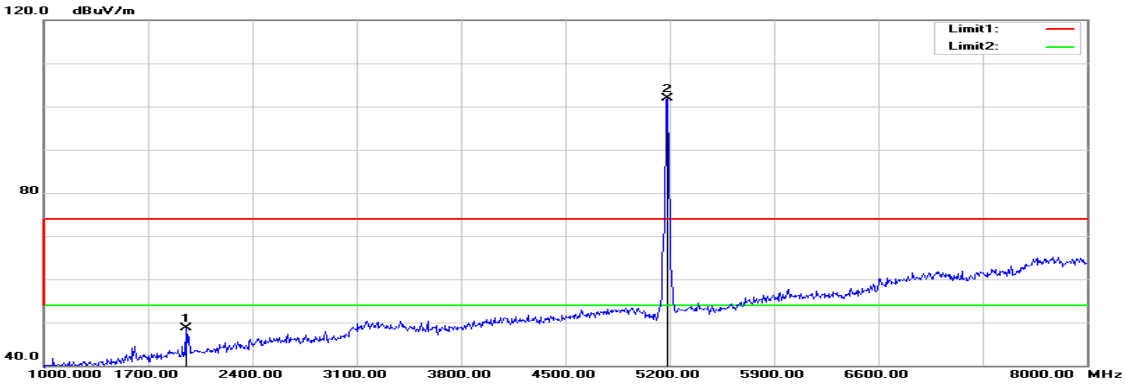
Remark:

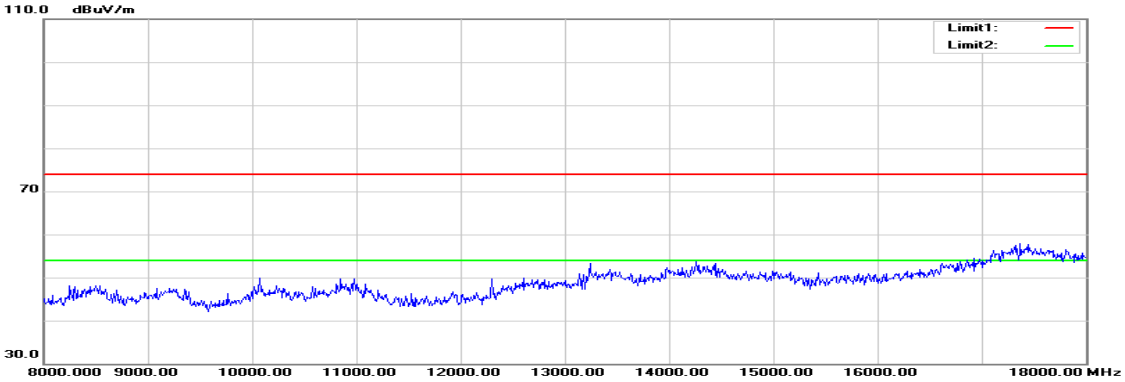
1. *No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).*
2. *Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*
3. *Quasi-peak test would be performed if the peak result were greater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

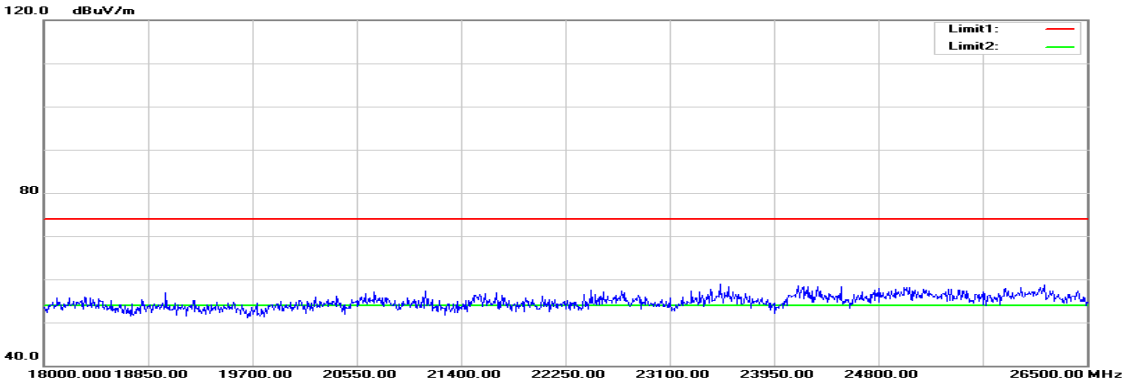
Above 1 GHz

Tx / IEEE 802.11a mode / 5180 MHz

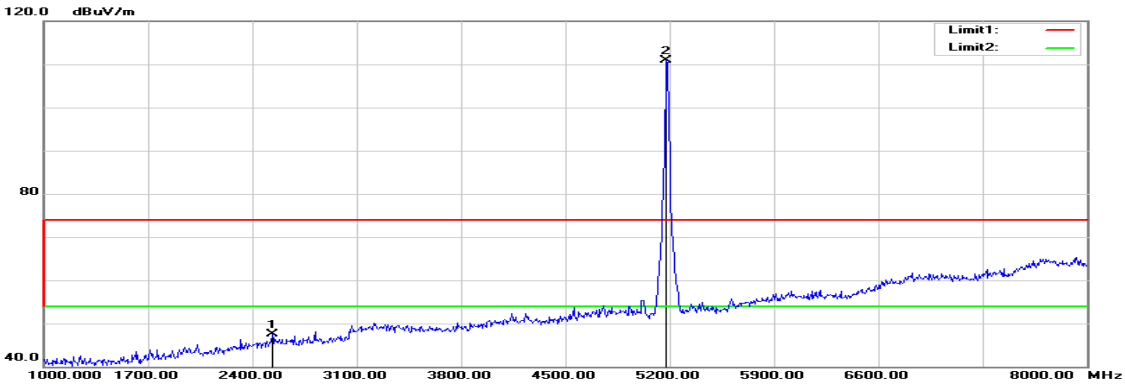
Polarity: Vertical

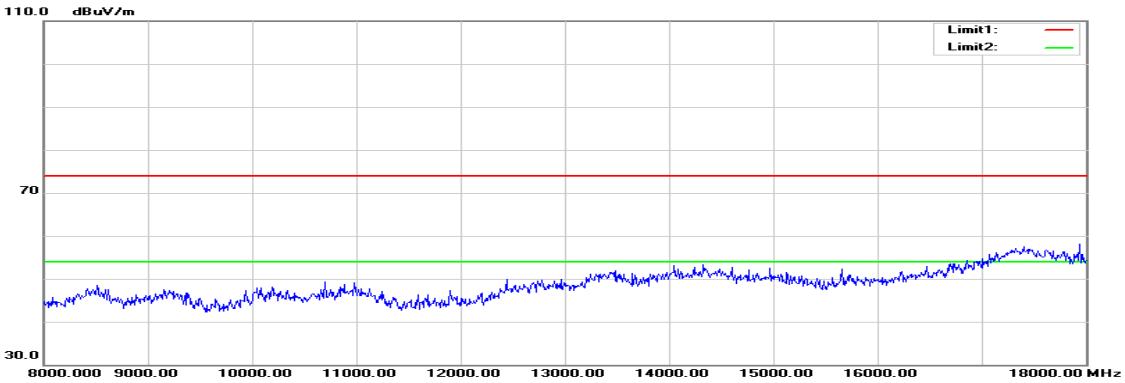


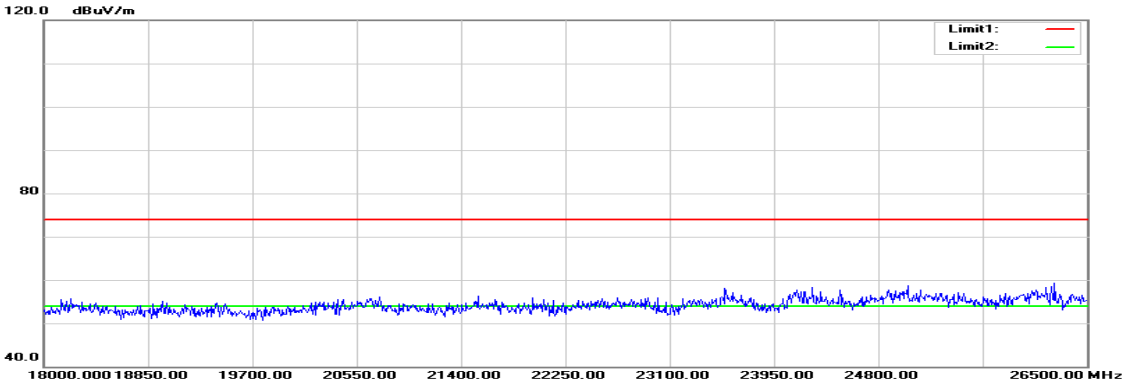




Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11a mode / 5180 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

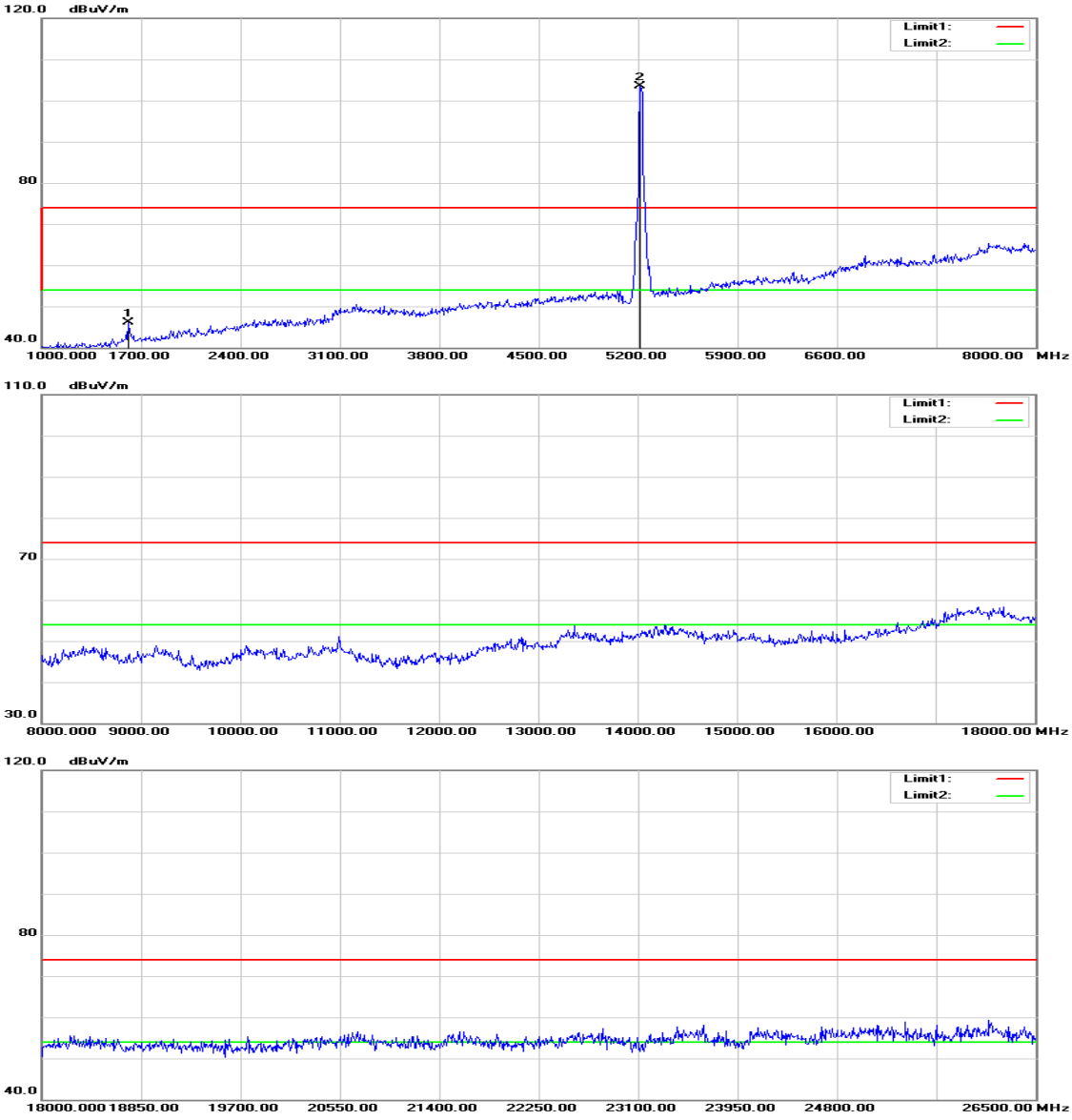
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
1952.000	53.91	-5.13	48.78	74.00	-25.22	peak	V
N/A							
2533.000	50.60	-3.05	47.55	74.00	-26.45	peak	H
N/A							

Remark:

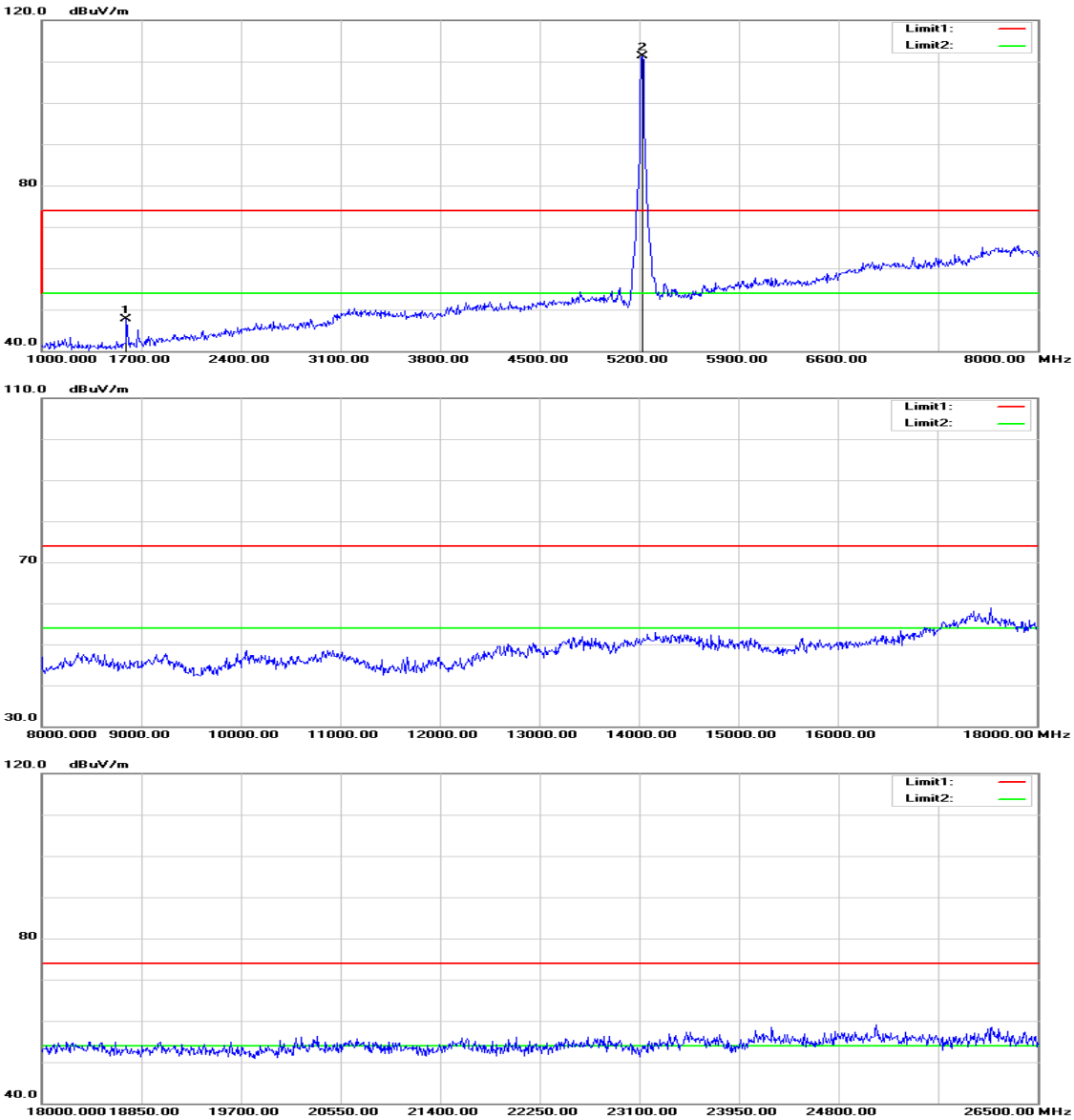
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average 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 / 5220 MHz

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / 5220 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

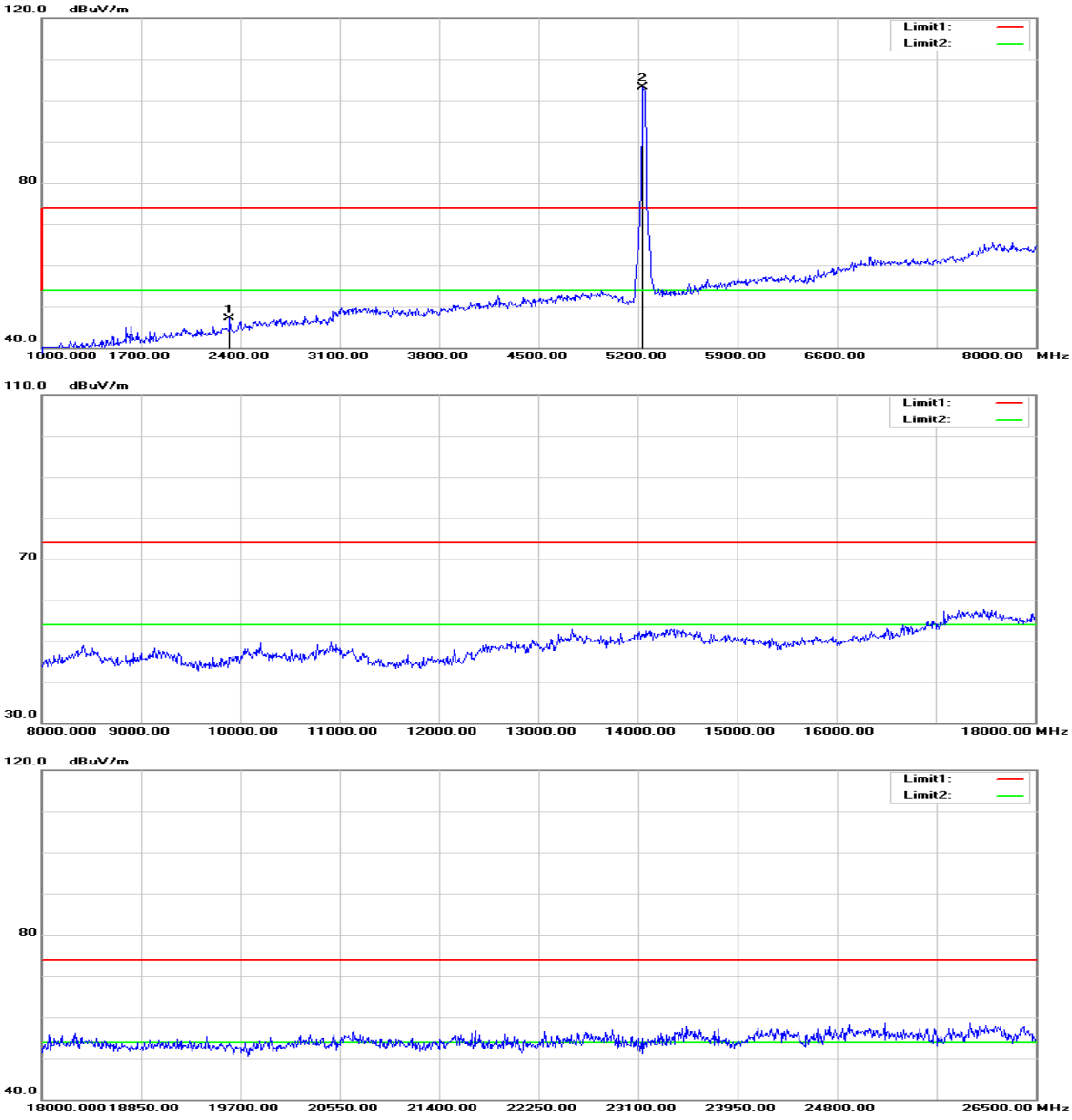
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
1609.000	53.03	-6.95	46.08	74.00	-27.92	peak	V
N/A							
1595.000	54.69	-7.03	47.66	74.00	-26.34	peak	H
N/A							

Remark:

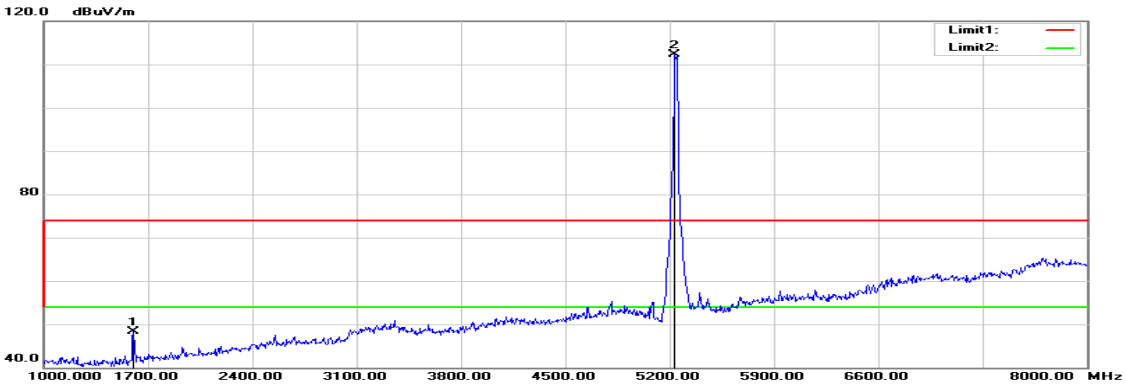
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

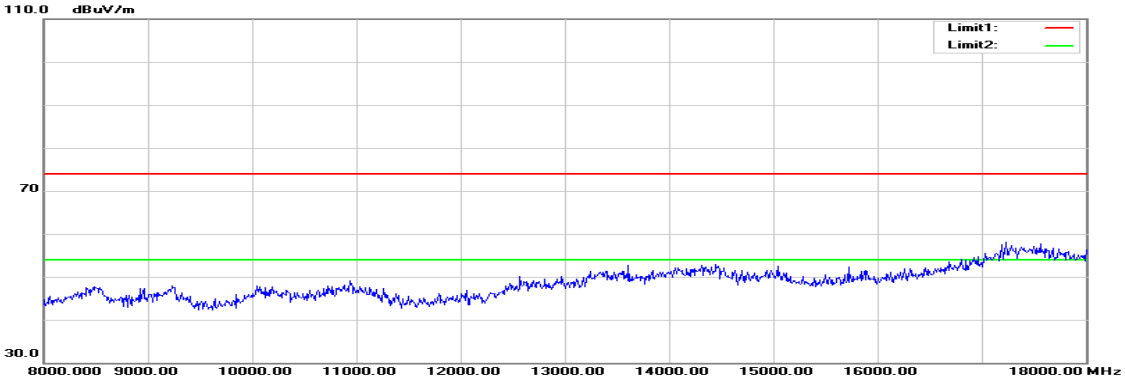
Tx / IEEE 802.11a mode / 5240 MHz

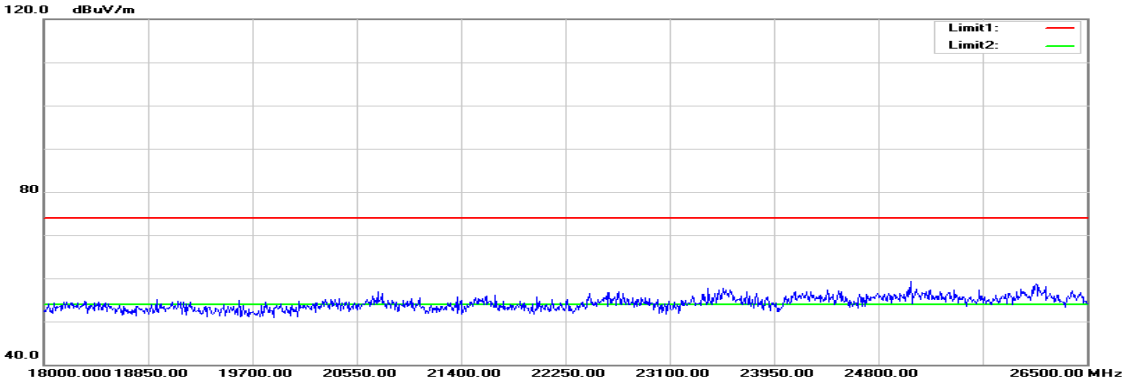
Polarity: Vertical



Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11a mode / 5240 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

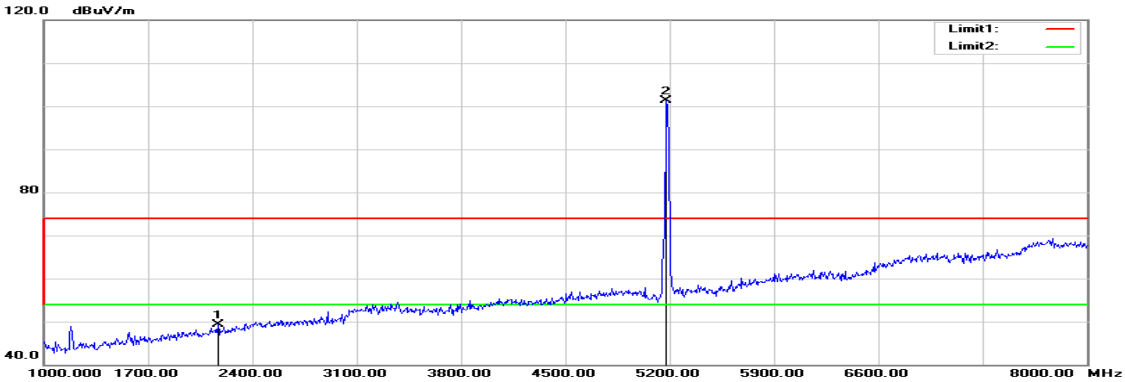
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2323.000	51.29	-4.24	47.05	74.00	-26.95	peak	V
N/A							
1602.000	55.21	-6.99	48.22	74.00	-25.78	peak	H
N/A							

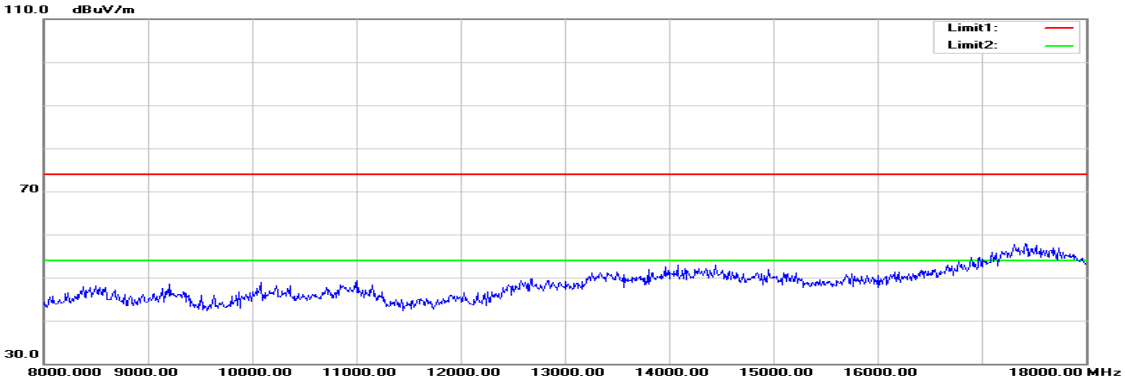
Remark:

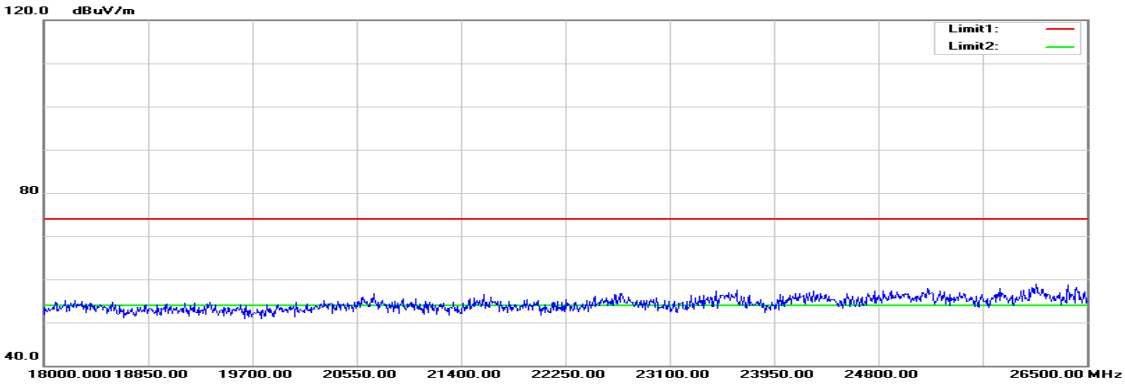
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

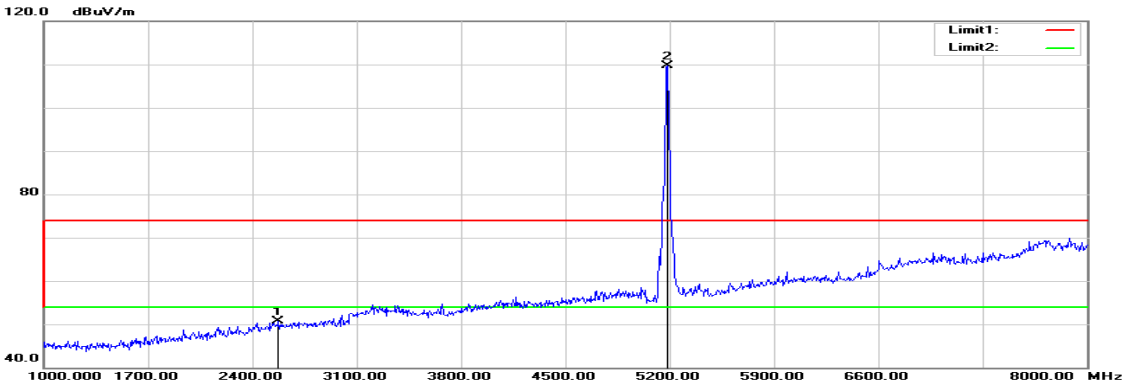
Polarity: Vertical

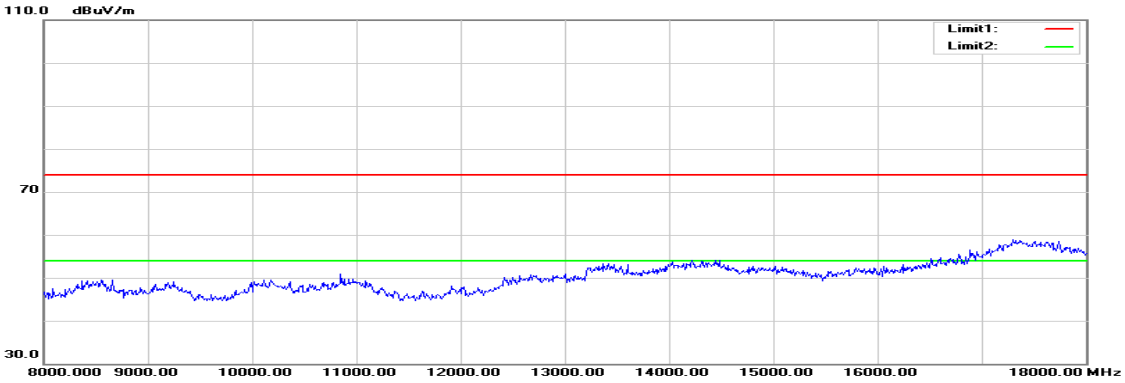


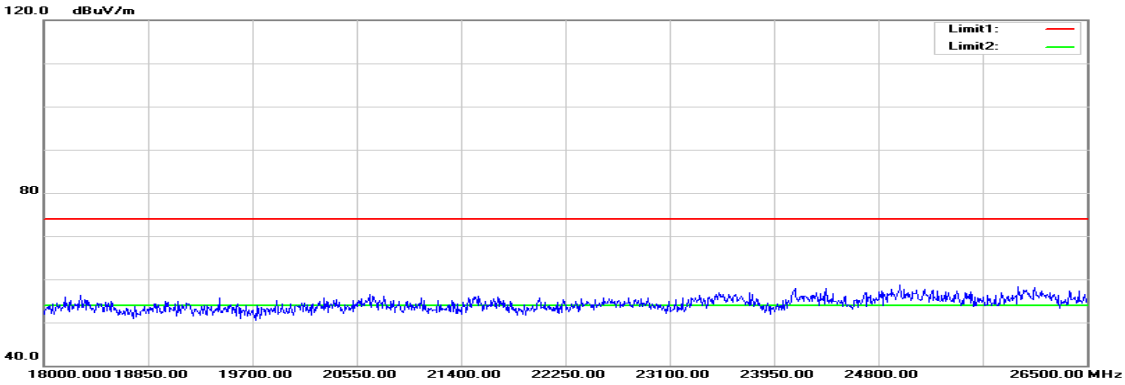




Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

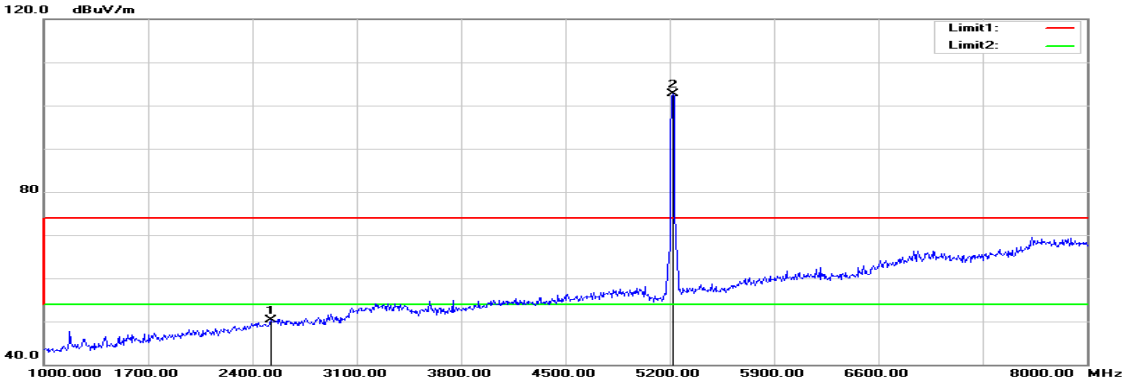
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2169.000	53.91	-4.60	49.31	74.00	-24.69	peak	V
N/A							
2575.000	53.59	-2.97	50.62	74.00	-23.38	peak	H
N/A							

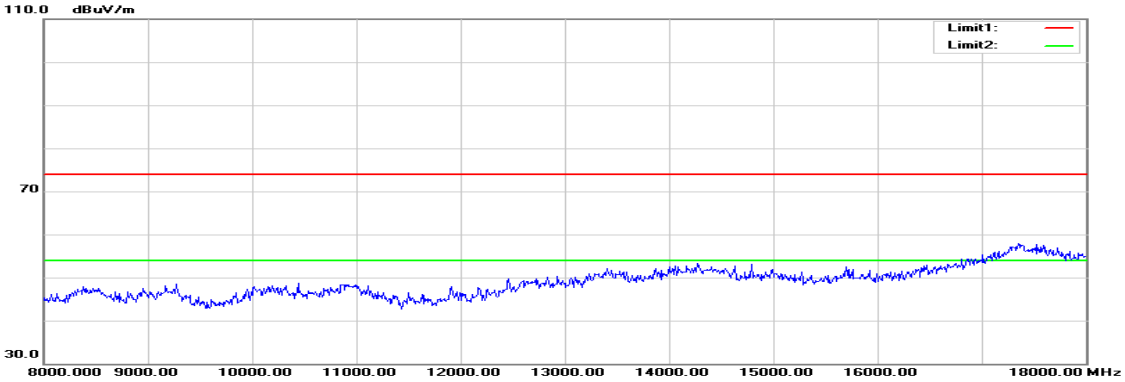
Remark:

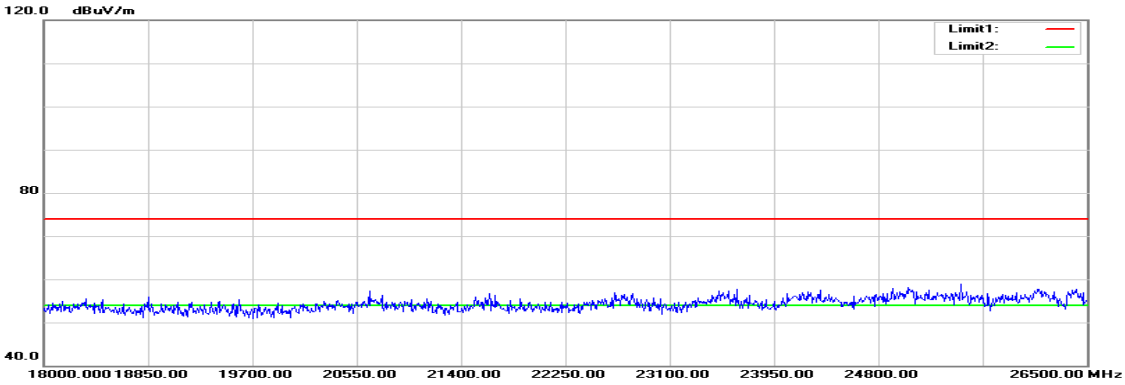
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
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 / 5220 MHz

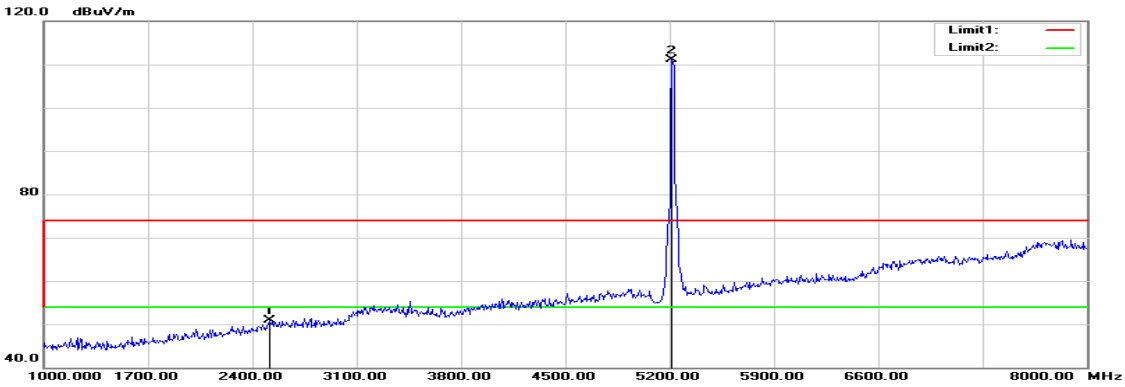
Polarity: Vertical

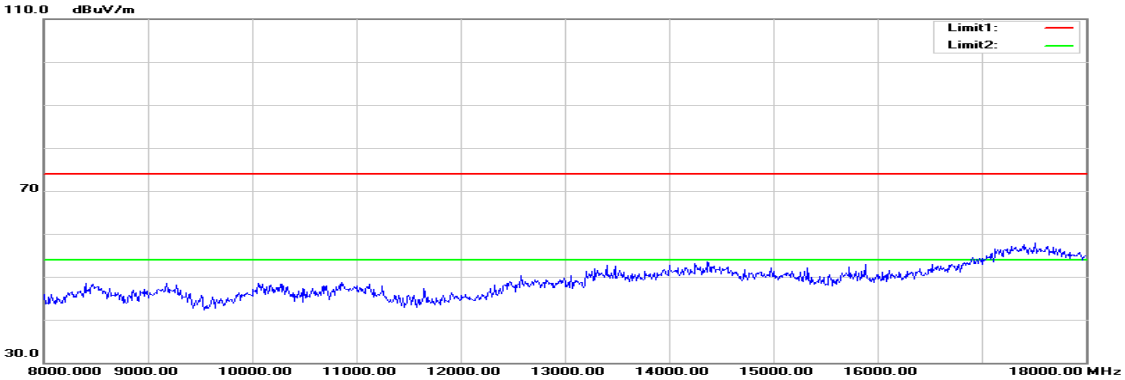


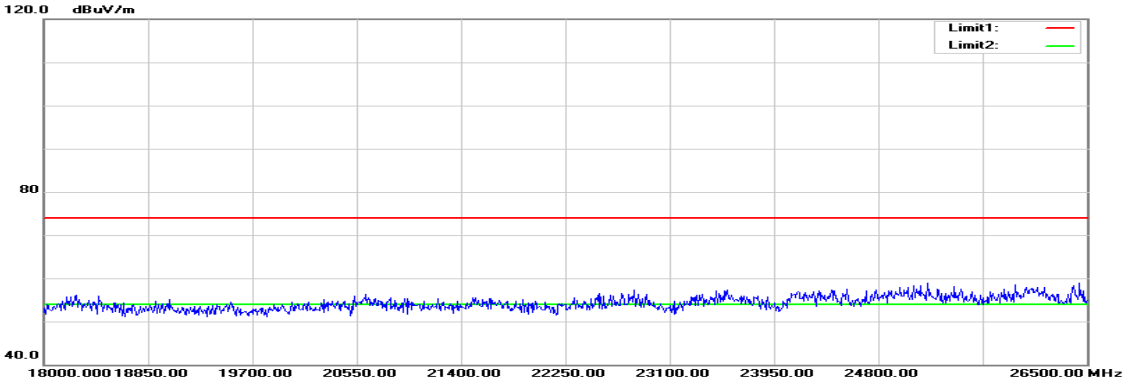




Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5220 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

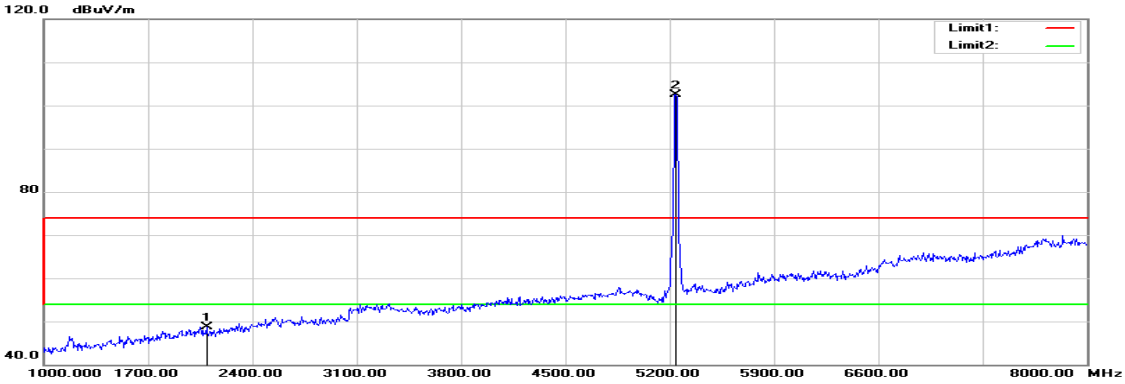
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2526.000	53.40	-3.07	50.33	74.00	-23.67	peak	V
N/A							
2519.000	53.95	-3.08	50.87	74.00	-23.13	peak	H
N/A							

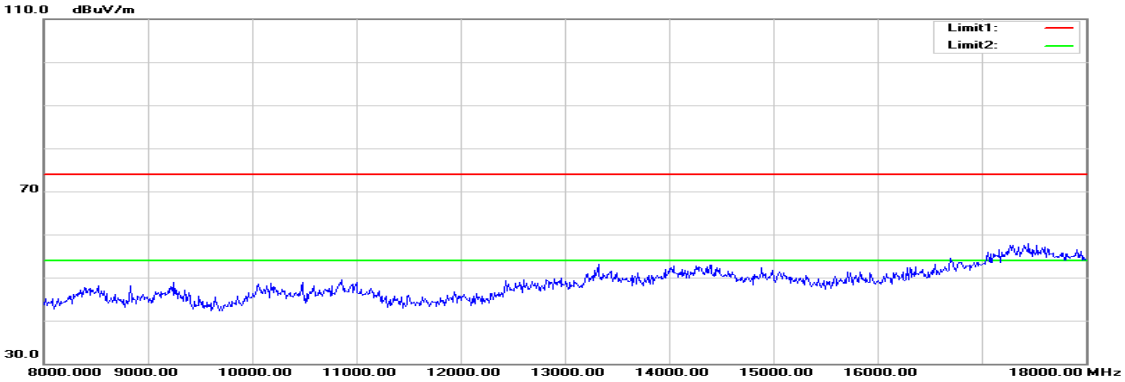
Remark:

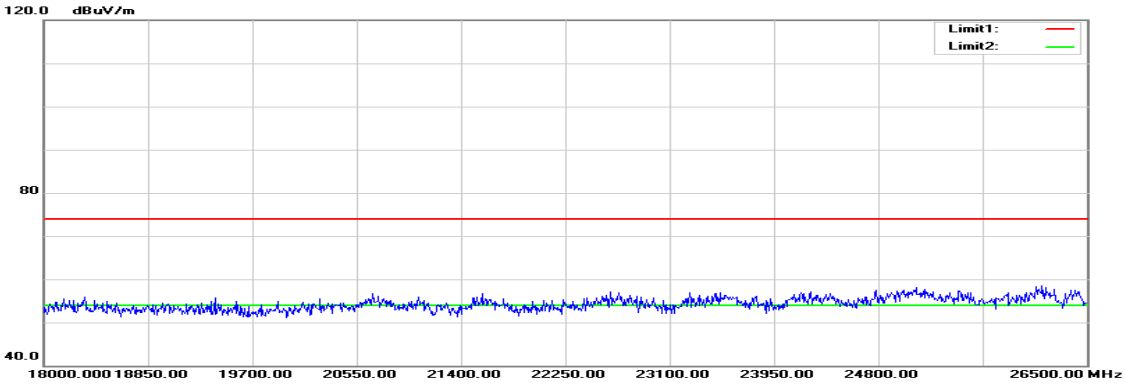
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

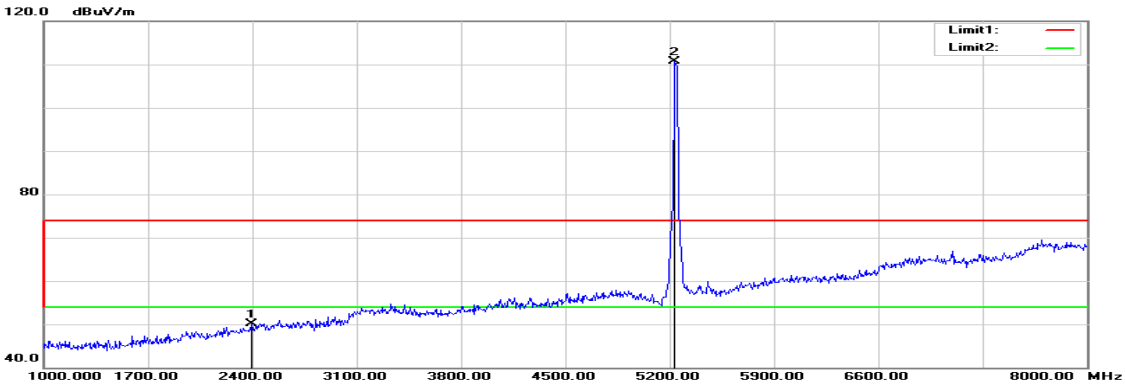
Polarity: Vertical

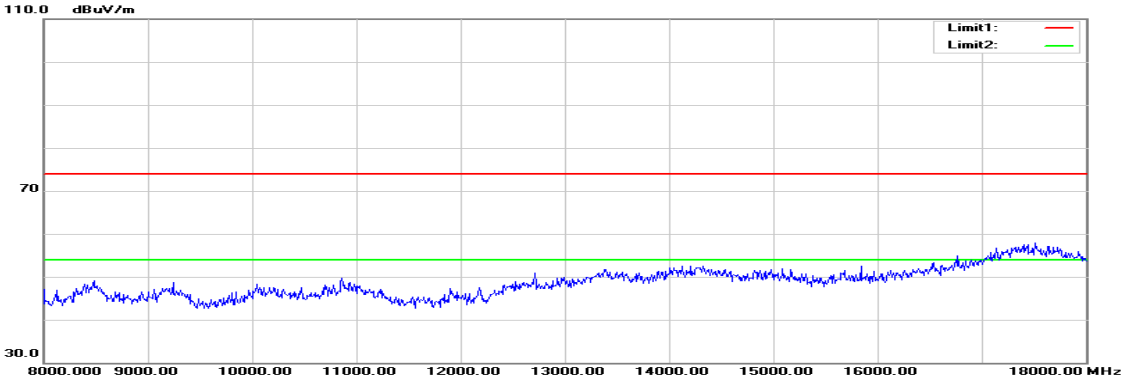


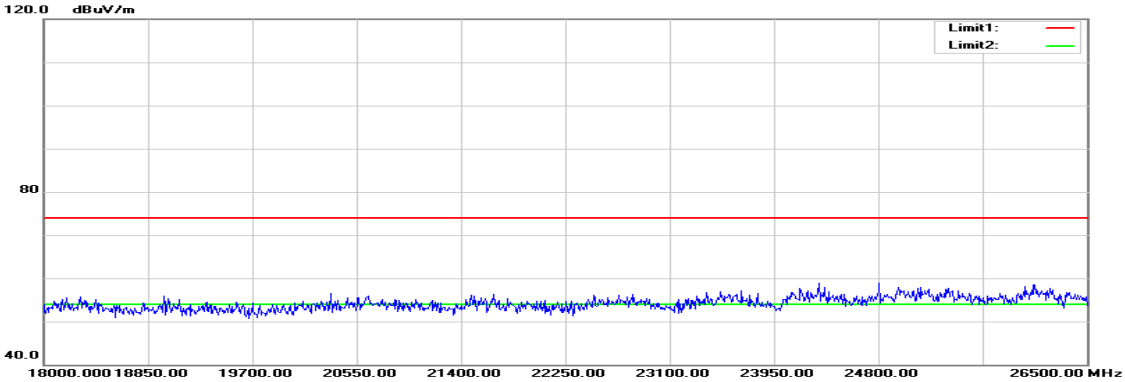




Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5240 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

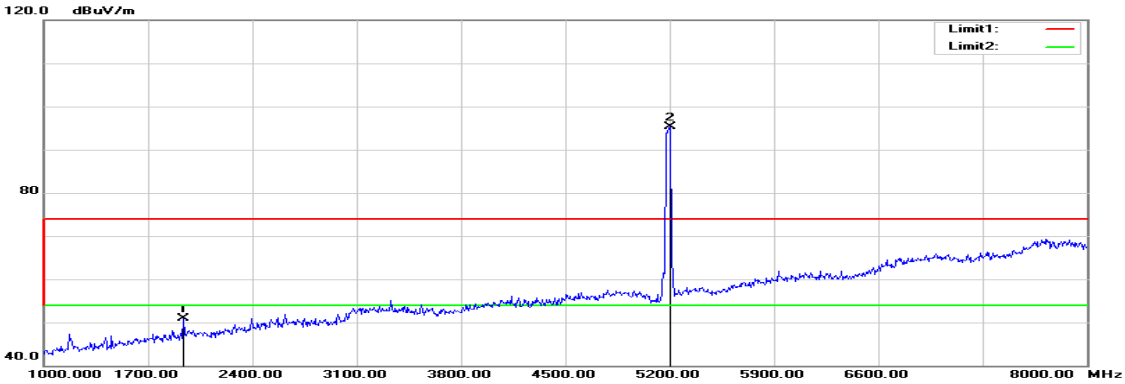
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2092.000	53.68	-4.97	48.71	74.00	-25.29	peak	V
N/A							
2393.000	53.80	-3.75	50.05	74.00	-23.95	peak	H
N/A							

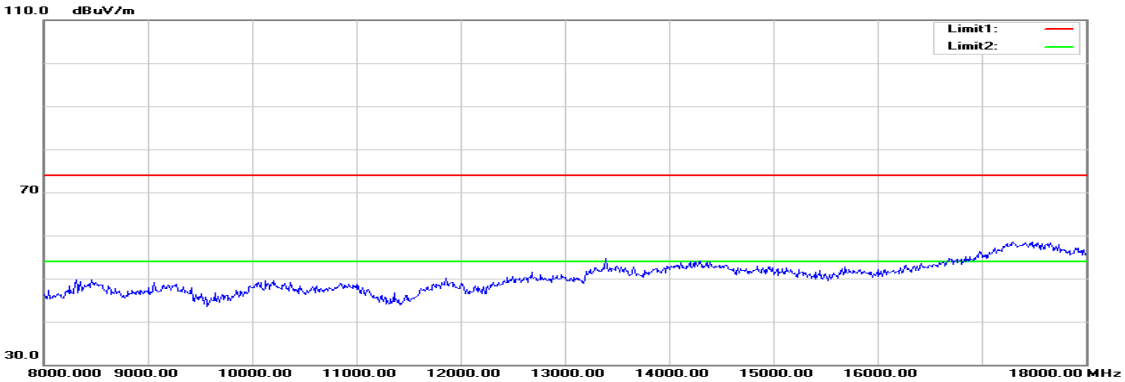
Remark:

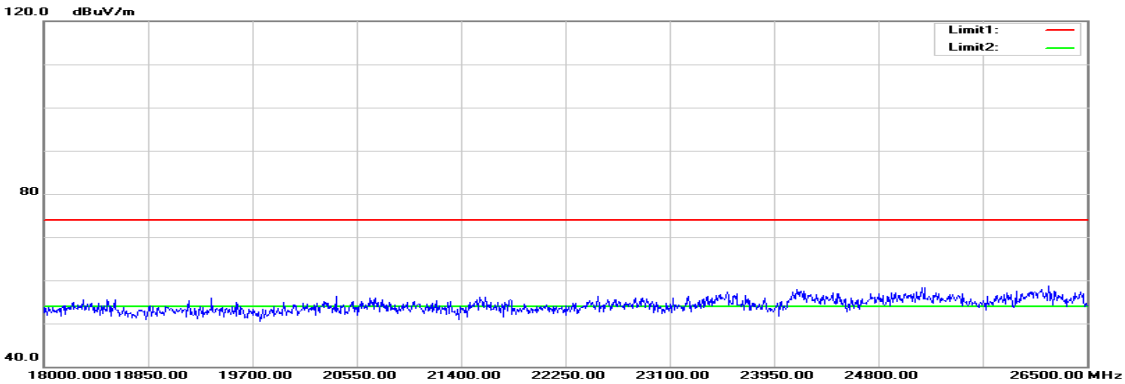
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

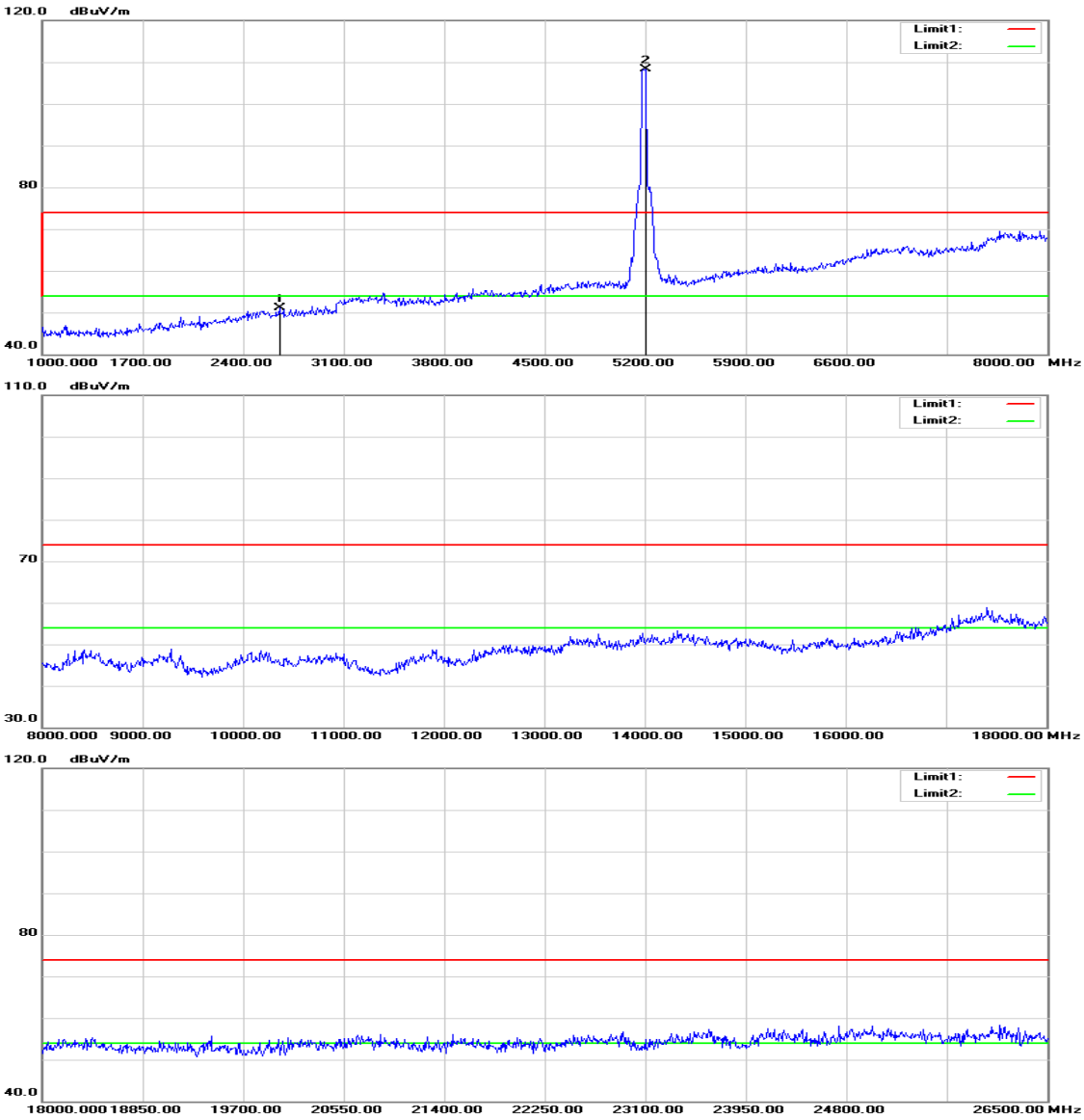
Polarity: Vertical







Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5190 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

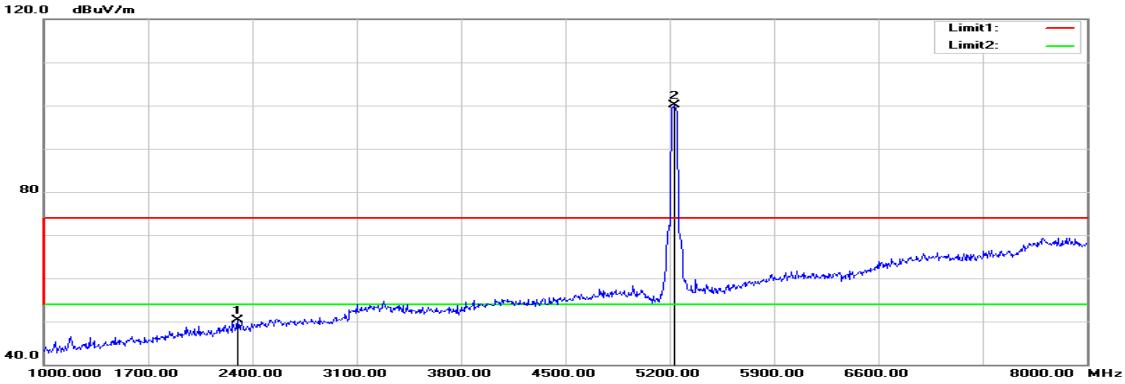
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
1938.000	56.12	-5.21	50.91	74.00	-23.09	peak	V
N/A							
2652.000	53.94	-2.81	51.13	74.00	-22.87	peak	H
N/A							

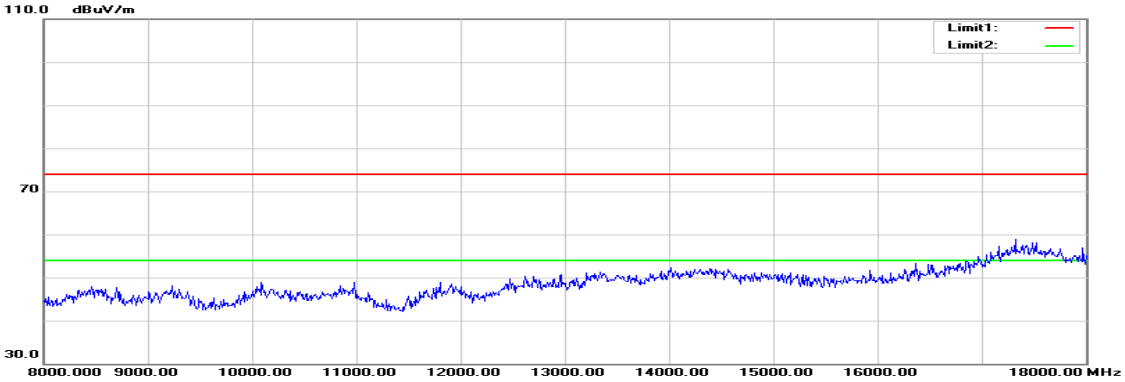
Remark:

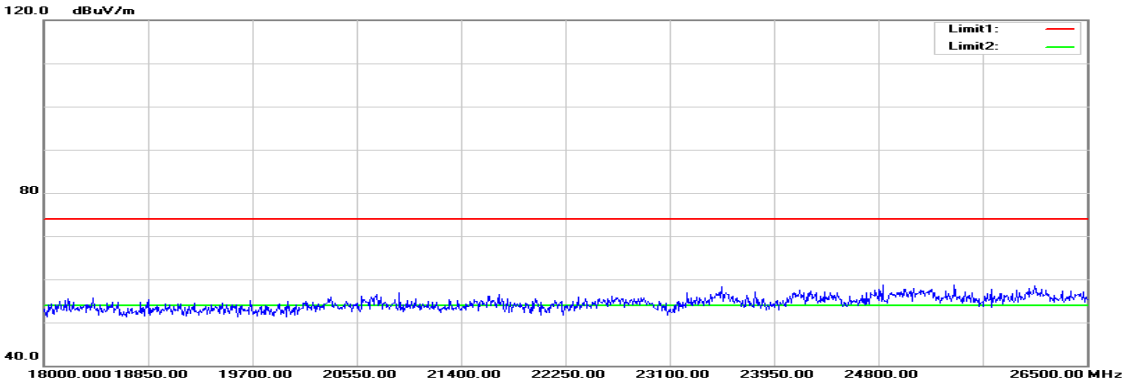
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

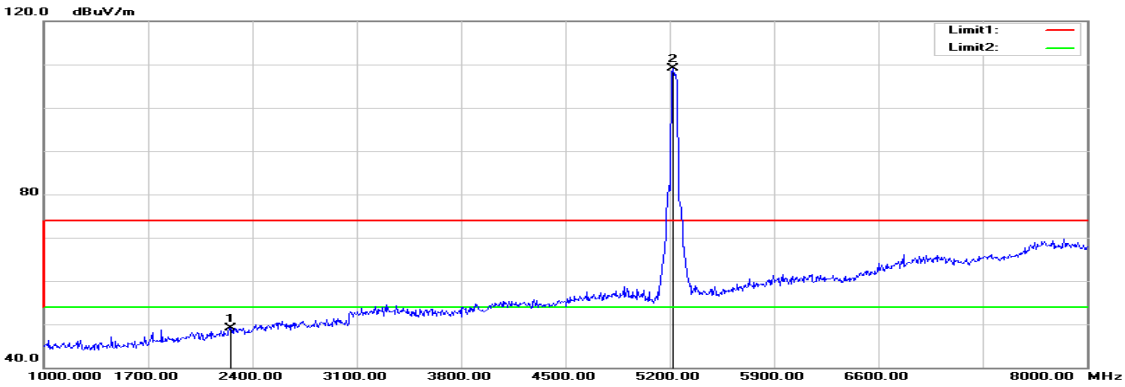
Polarity: Vertical

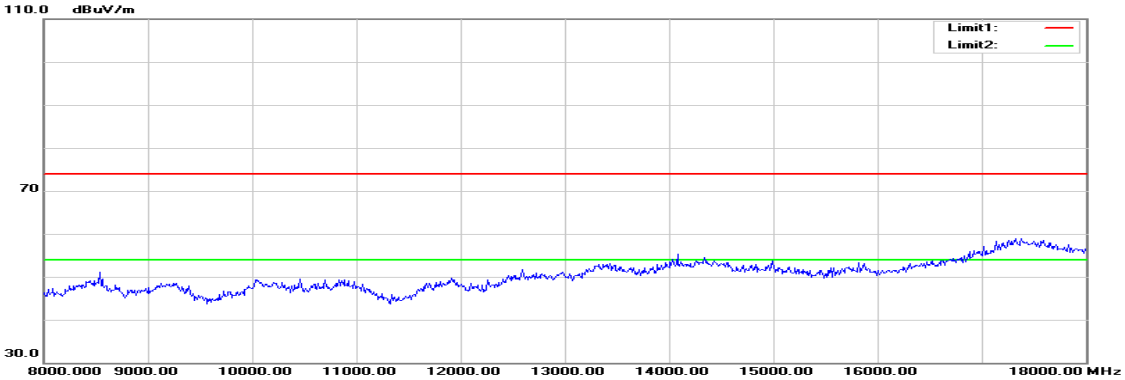


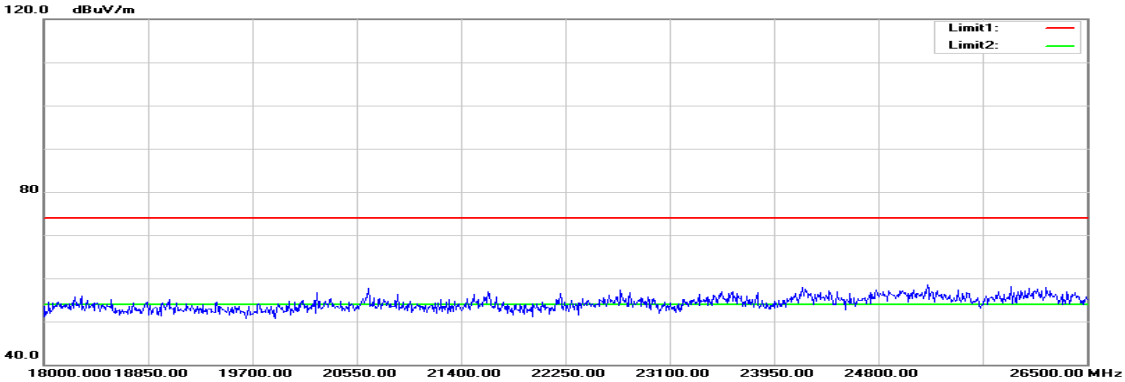




Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5230 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

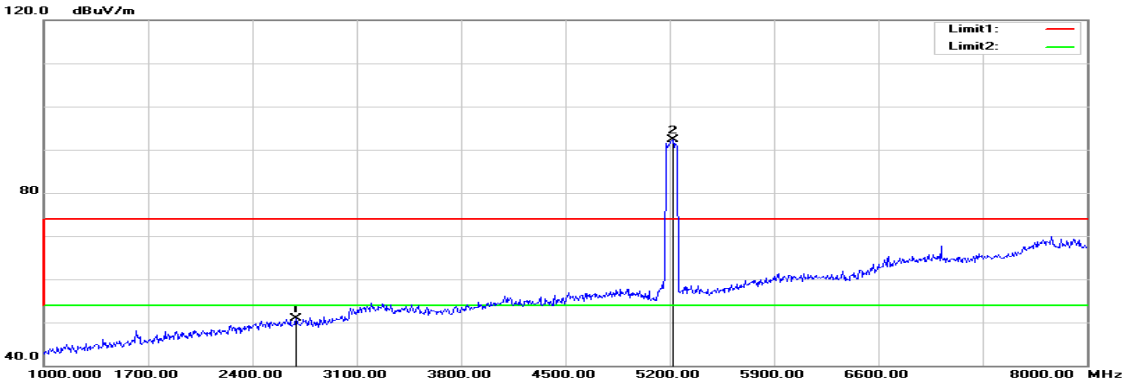
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2302.000	54.56	-4.29	50.27	74.00	-23.73	peak	V
N/A							
2253.000	53.54	-4.36	49.18	74.00	-24.82	peak	H
N/A							

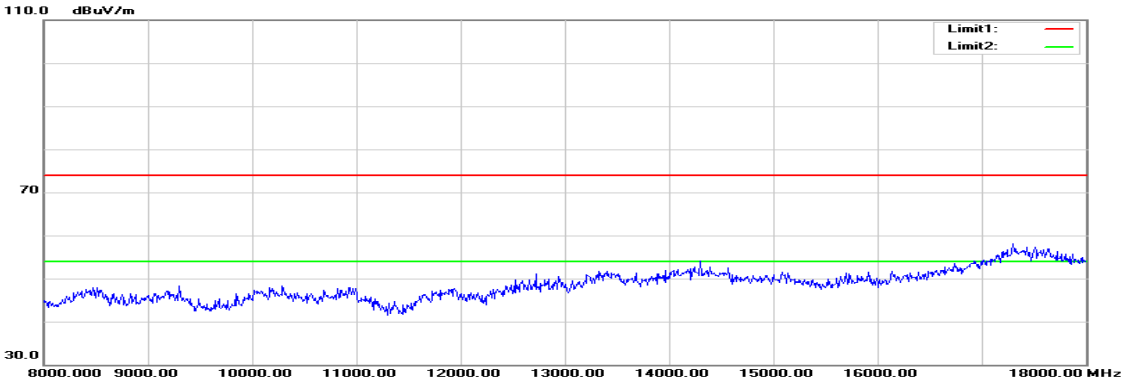
Remark:

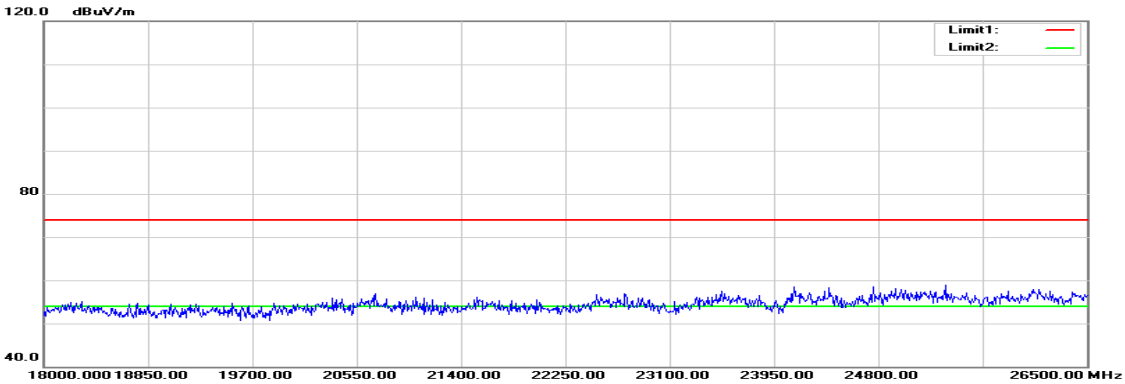
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average 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 802.11ac VHT 80 MHz mode / 5210MHz

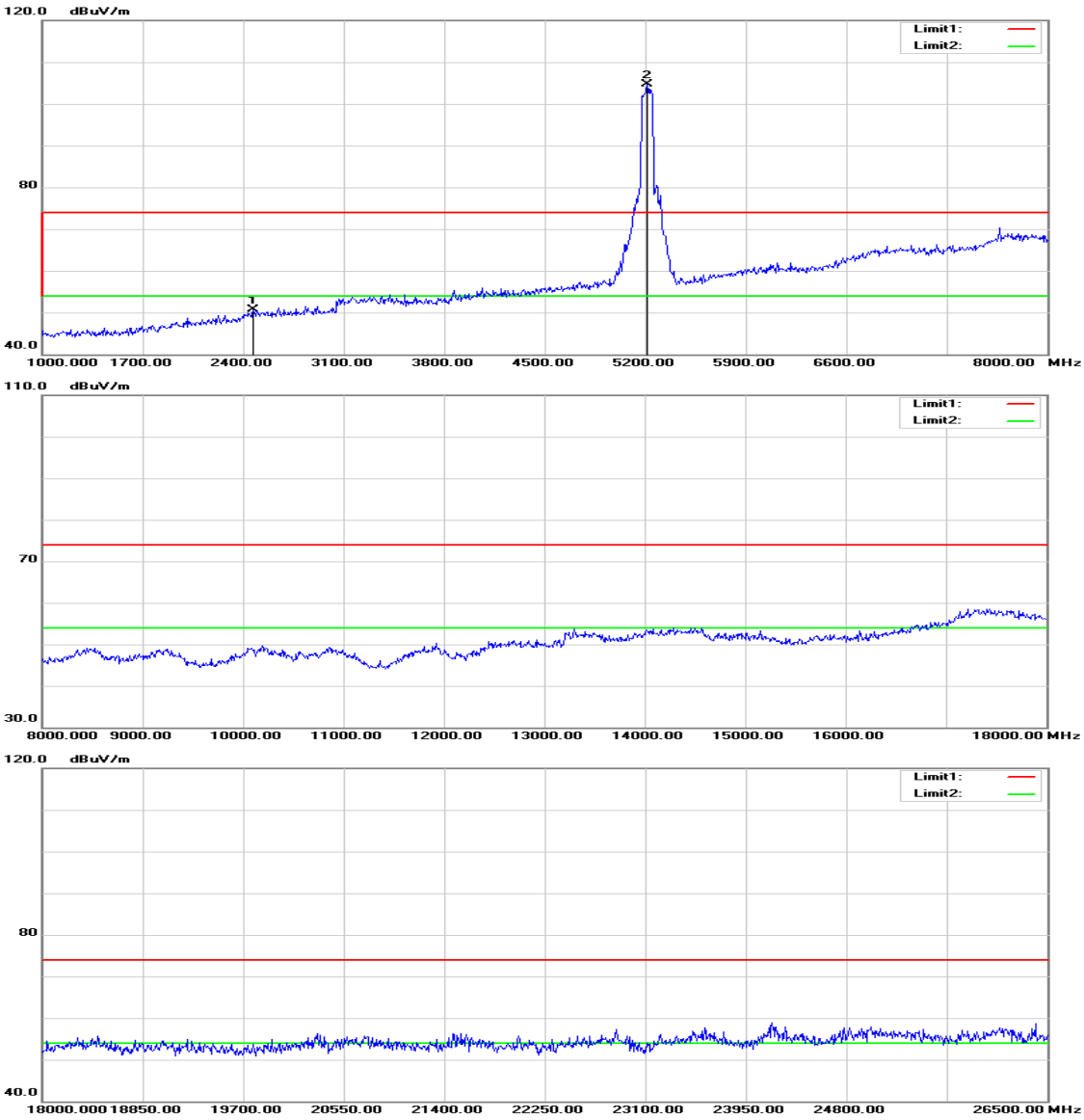
Polarity: Vertical







Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11ac VHT 80 MHz mode / 5210MHz **Test Date:** June 9, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

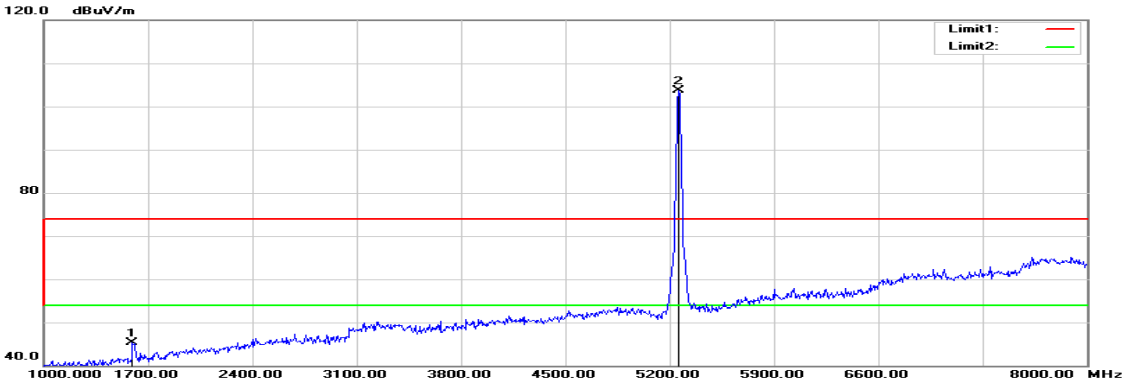
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2694.000	53.62	-2.73	50.89	74.00	-23.11	peak	V
N/A							
2470.000	53.96	-3.35	50.61	74.00	-23.39	peak	H
N/A							

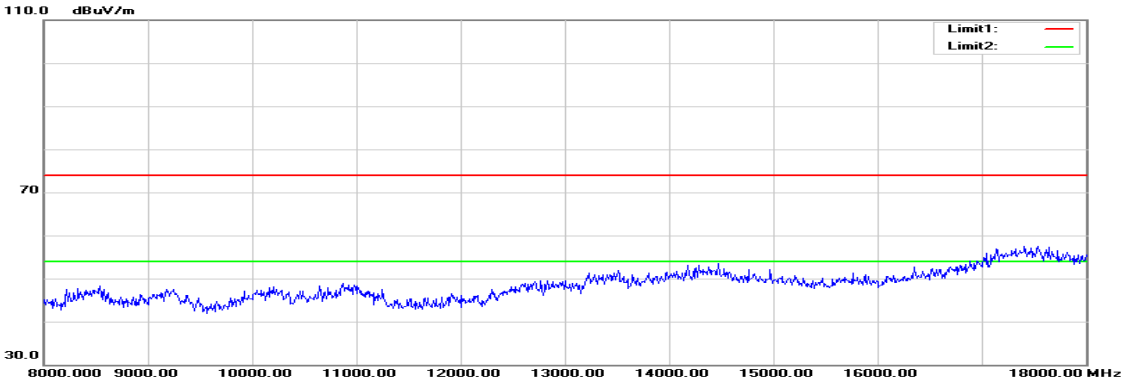
Remark:

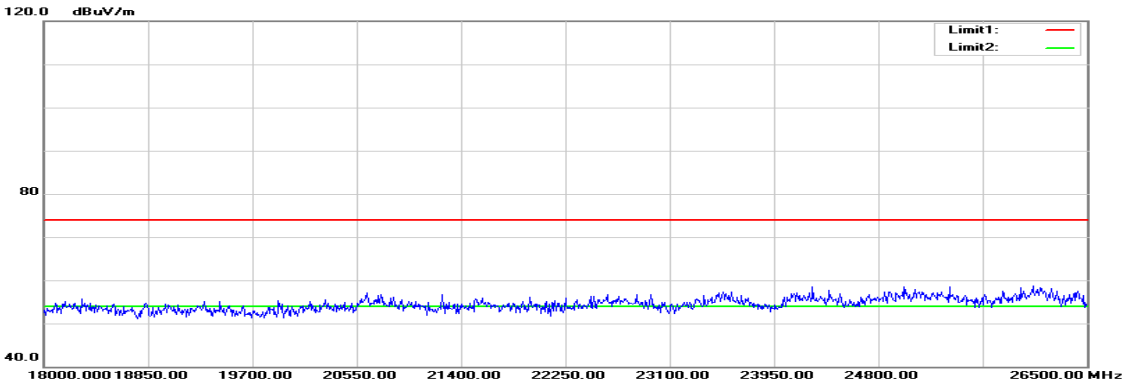
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

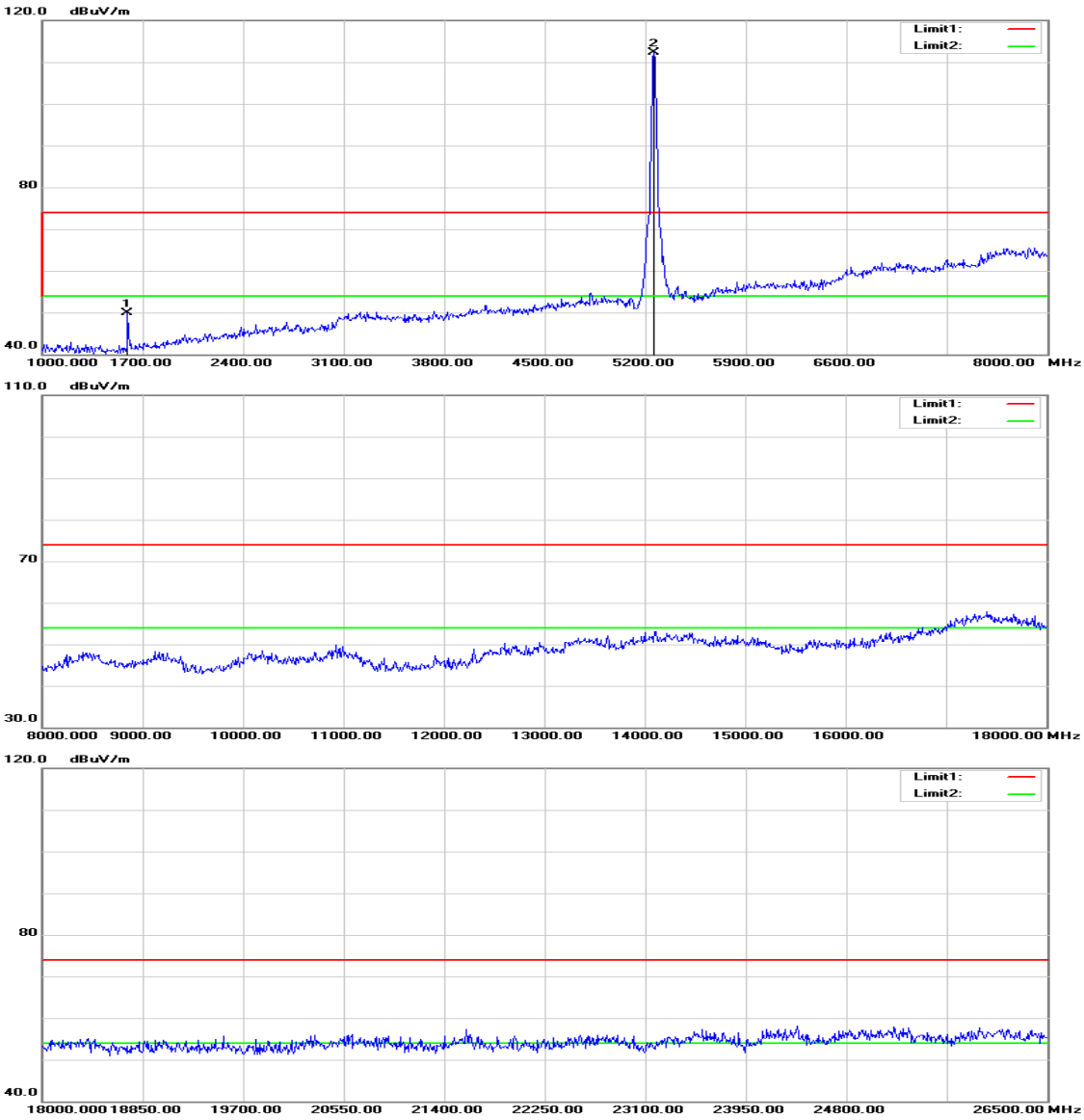
Polarity: Vertical







Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / 5260 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

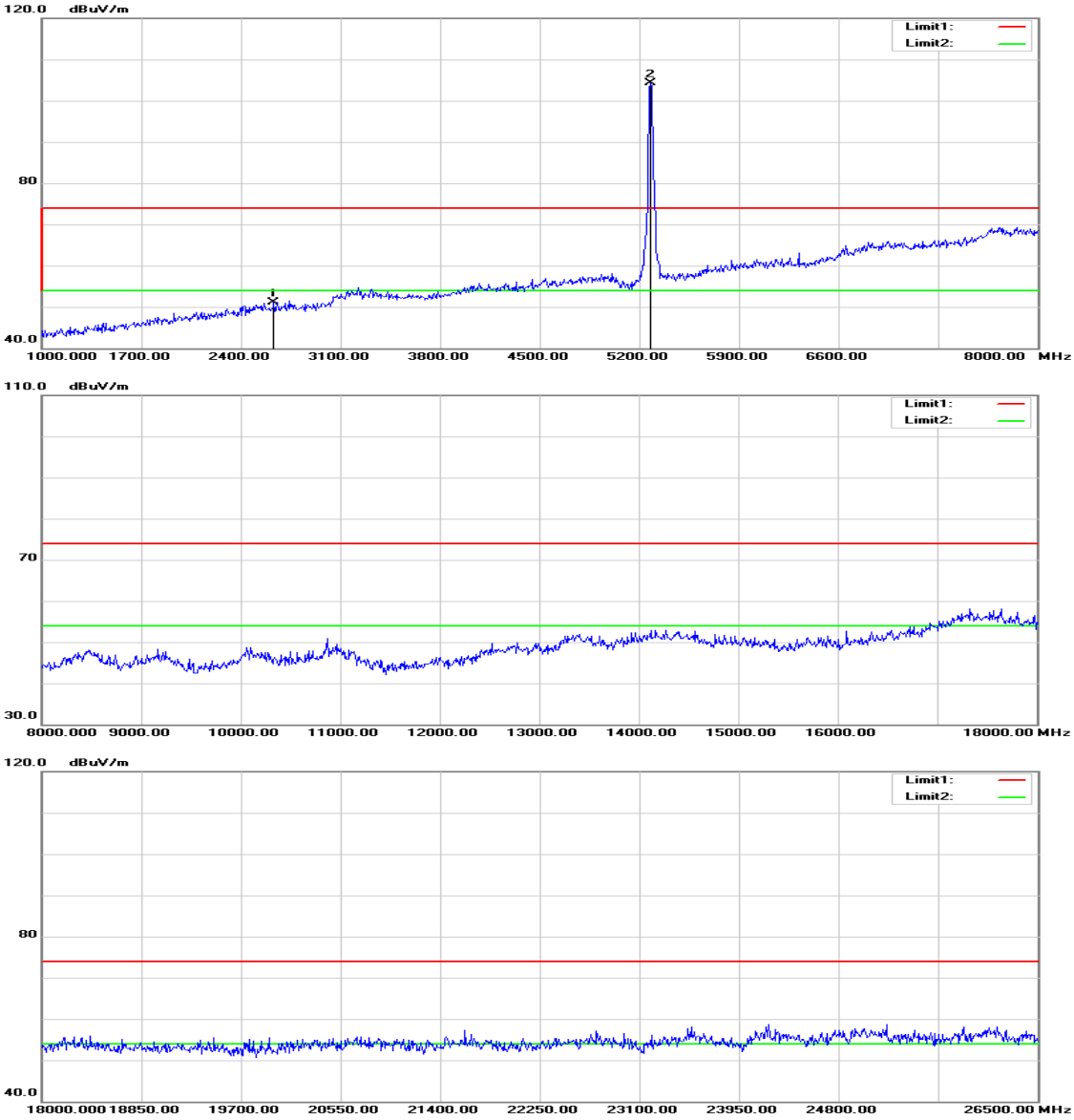
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
1595.000	52.32	-7.03	45.29	74.00	-28.71	peak	V
N/A							
1595.000	56.90	-7.03	49.87	74.00	-24.13	peak	H
N/A							

Remark:

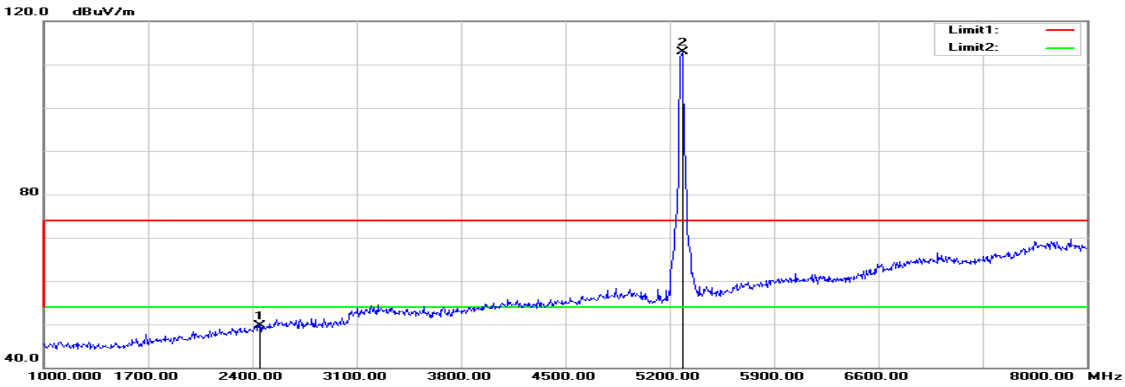
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

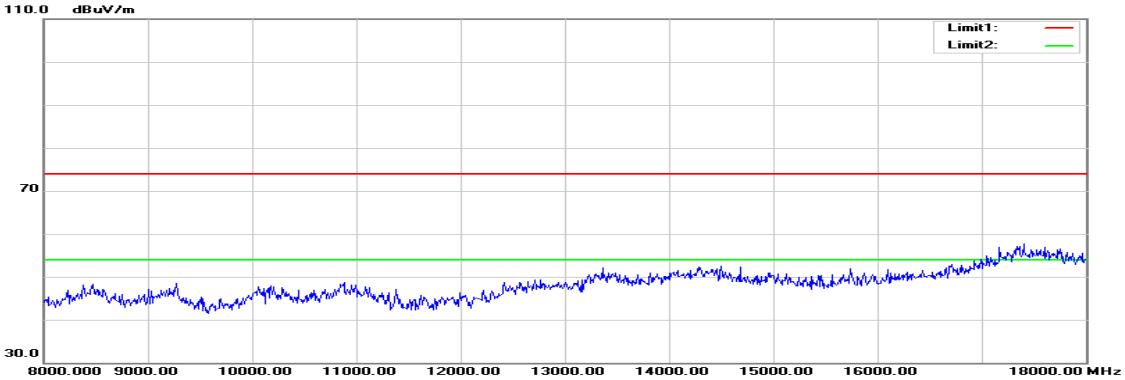
Tx / IEEE 802.11a mode / 5280 MHz

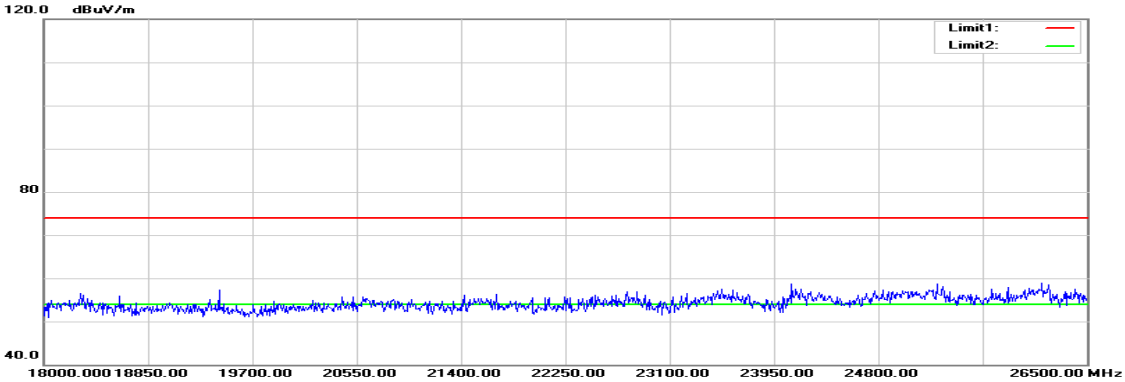
Polarity: Vertical



Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11a mode / 5280 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

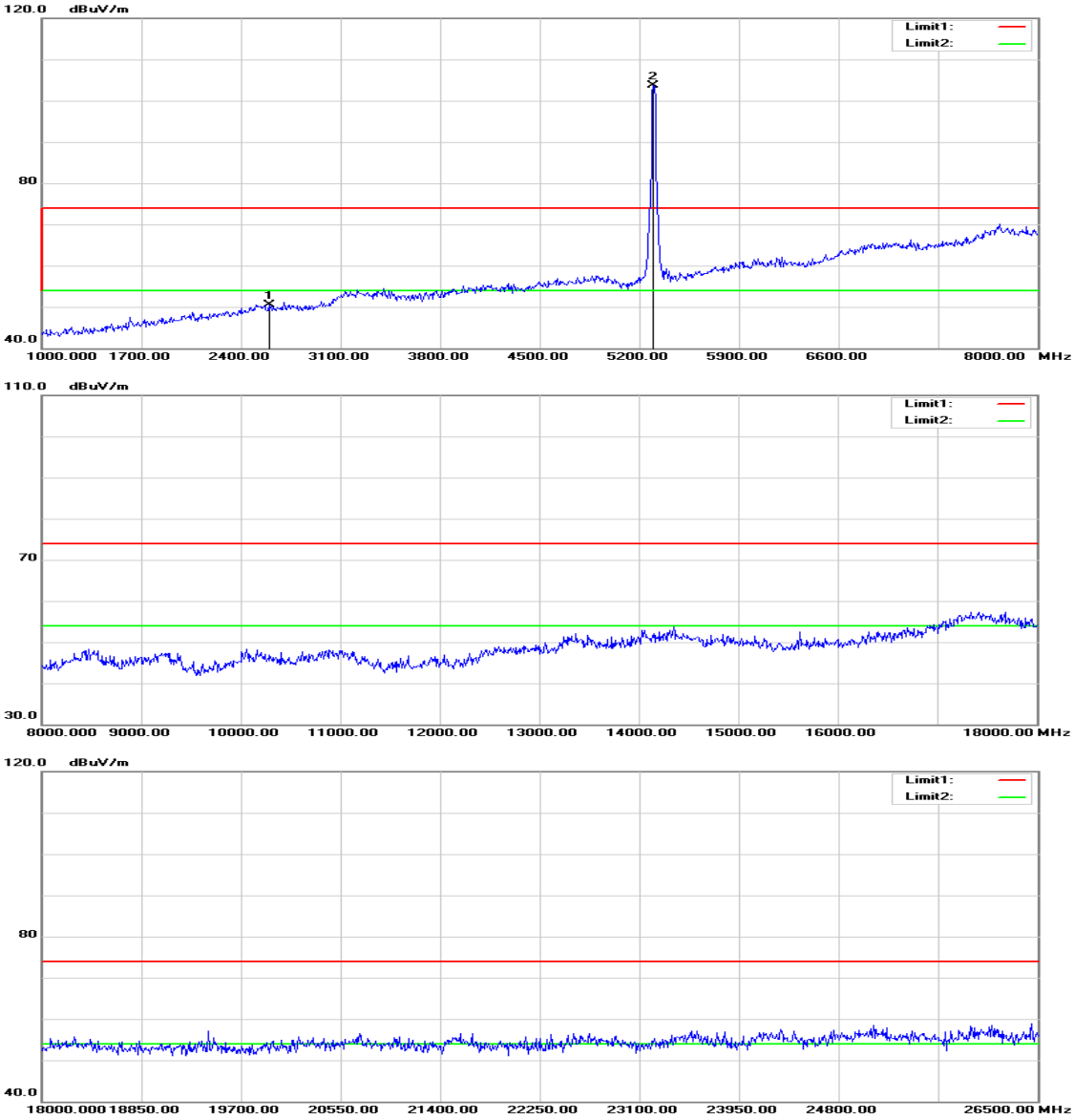
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2631.000	54.05	-2.86	51.19	74.00	-22.81	peak	V
N/A							
2449.000	53.15	-3.43	49.72	74.00	-24.28	peak	H
N/A							

Remark:

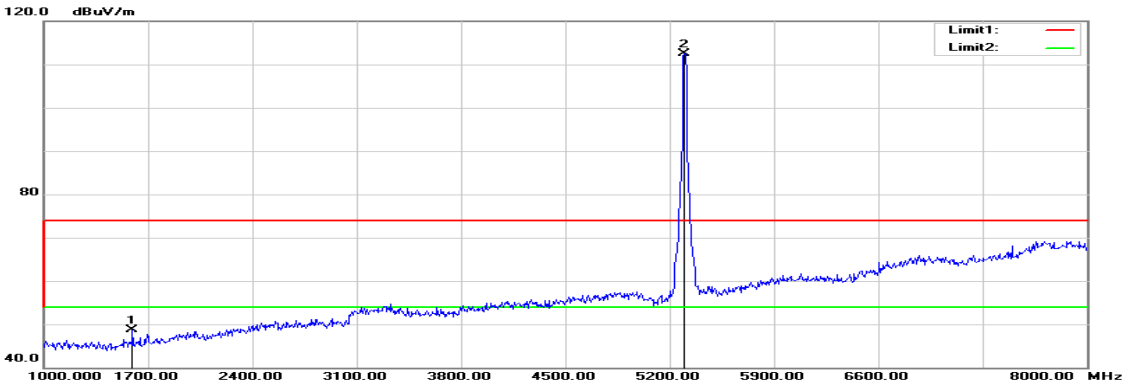
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

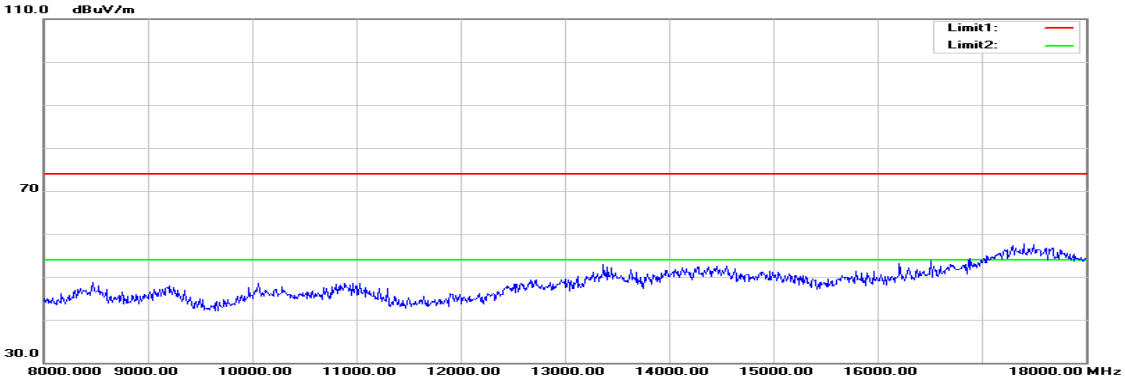
Tx / IEEE 802.11a mode / 5300 MHz

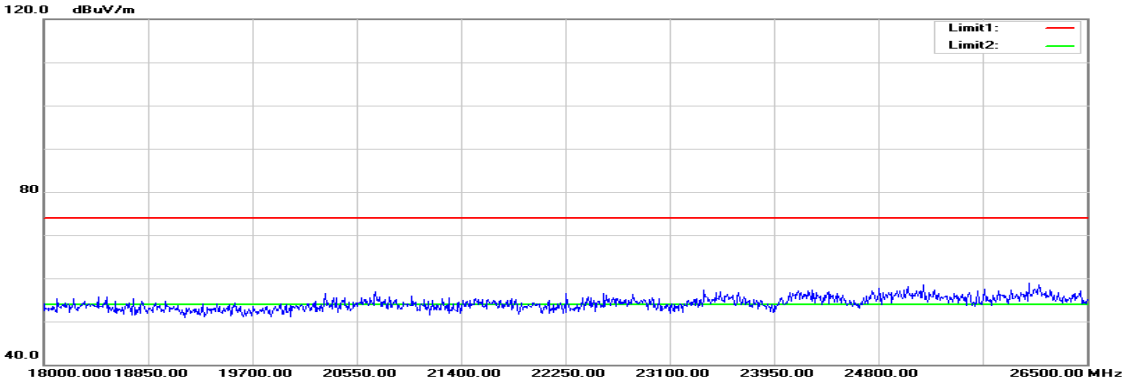
Polarity: Vertical



Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11a mode / 5300 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

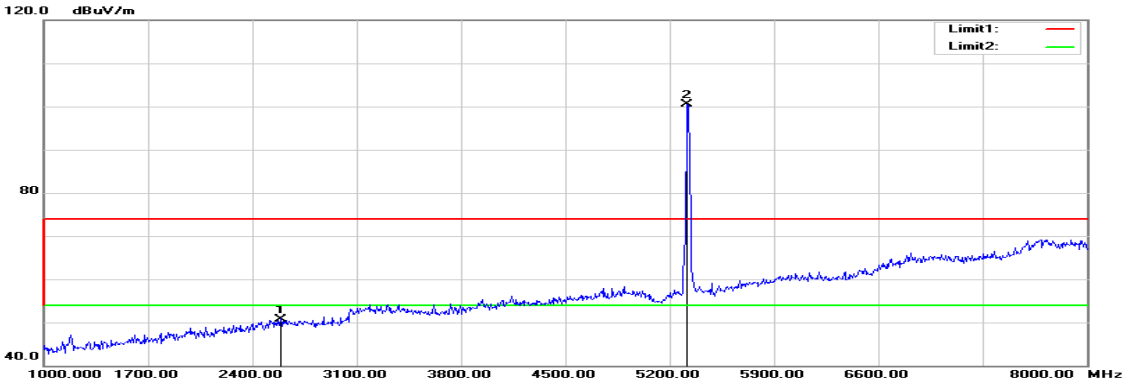
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2596.000	53.41	-2.93	50.48	74.00	-23.52	peak	V
N/A							
1595.000	55.71	-7.03	48.68	74.00	-25.32	peak	H
N/A							

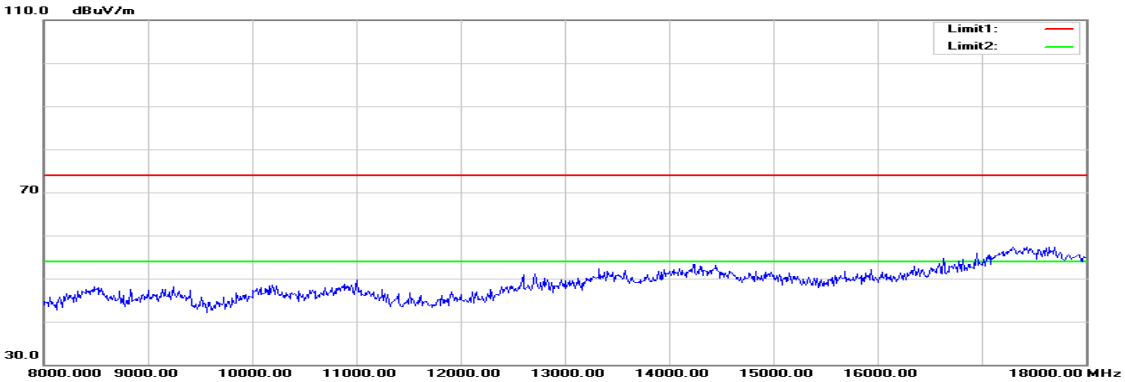
Remark:

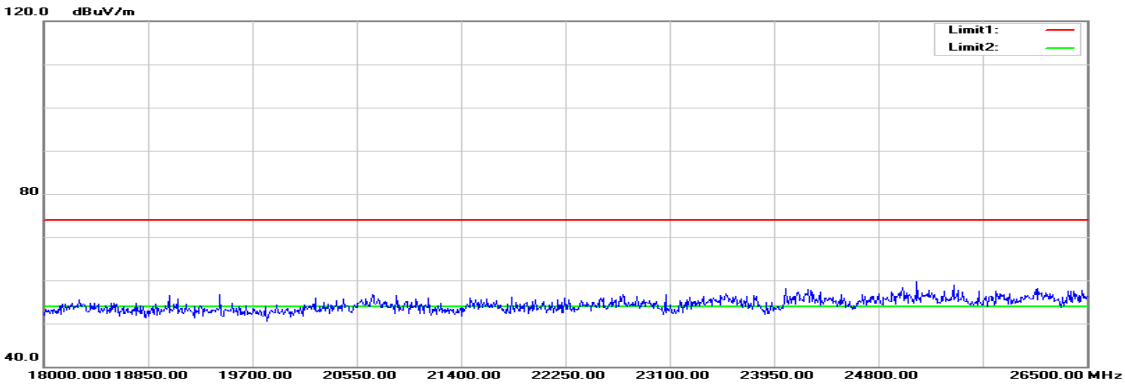
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

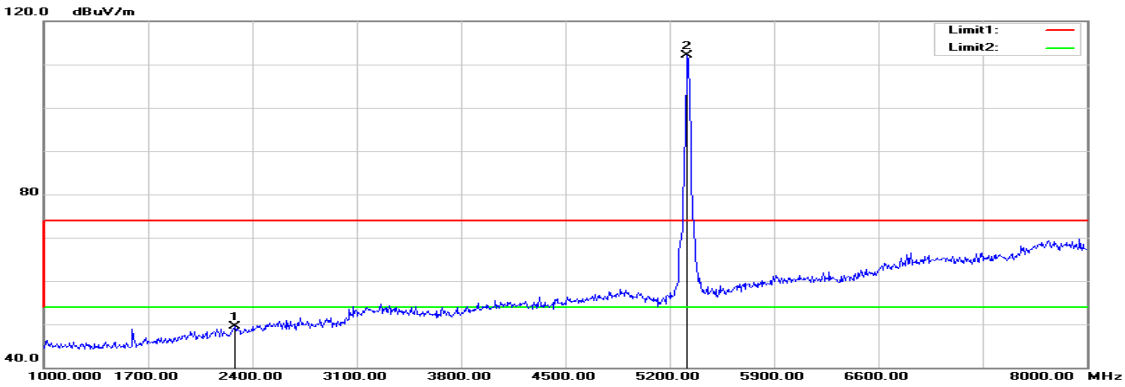
Polarity: Vertical

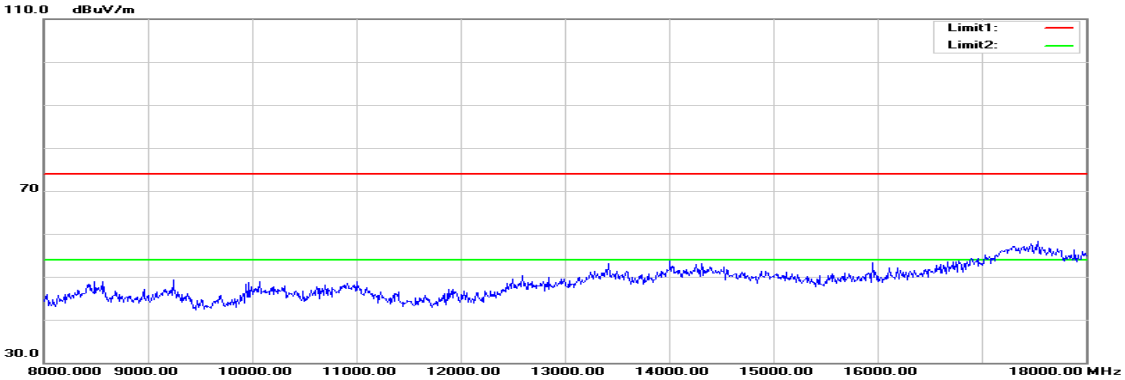


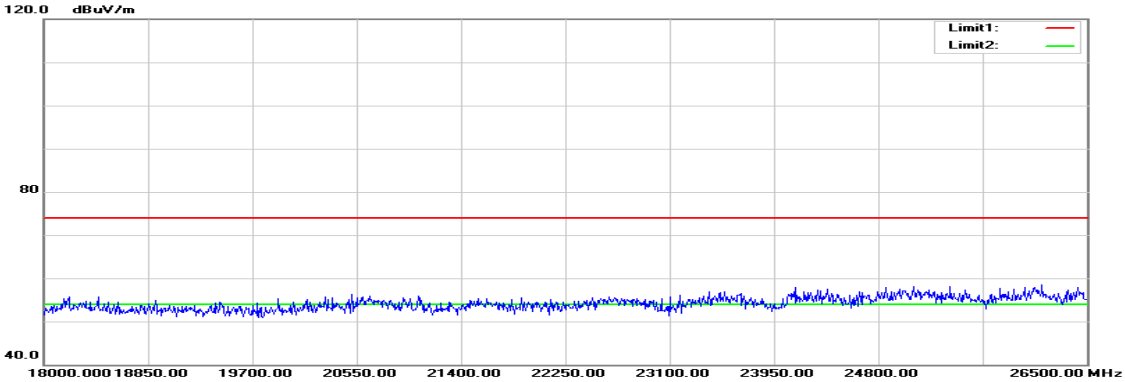




Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11a mode / 5320 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

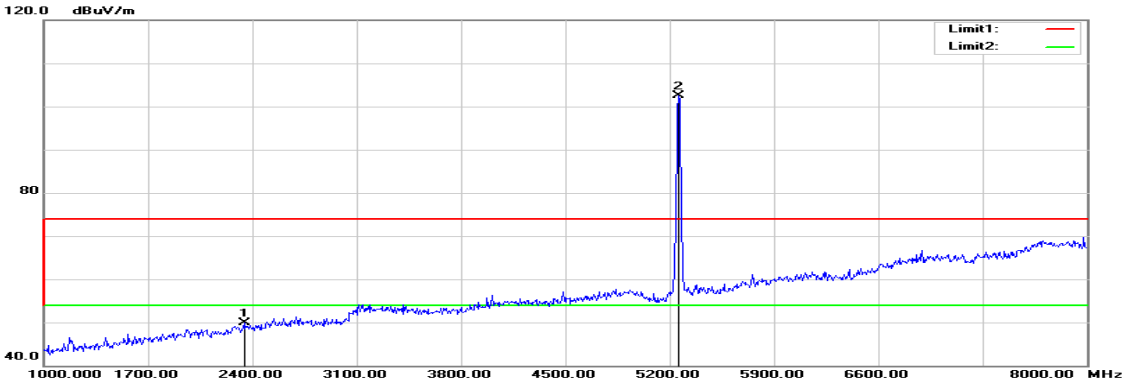
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2589.000	53.74	-2.94	50.80	74.00	-23.20	peak	V
N/A							
2281.000	53.90	-4.32	49.58	74.00	-24.42	peak	H
N/A							

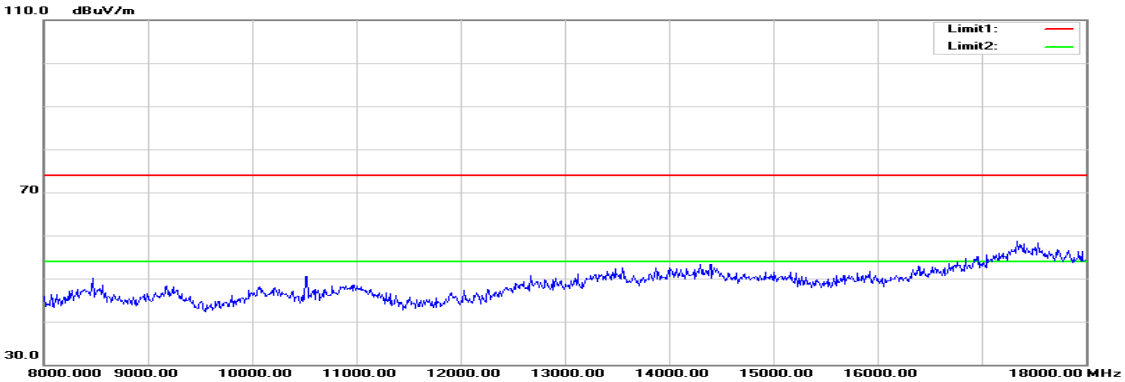
Remark:

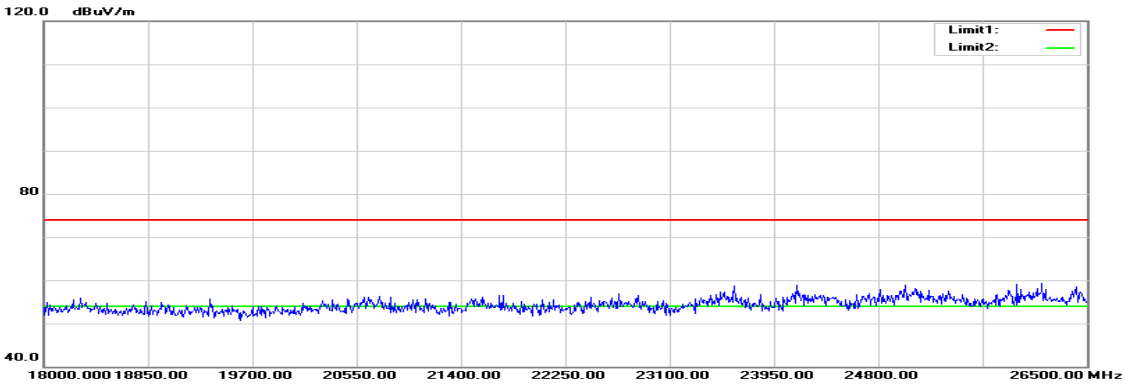
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

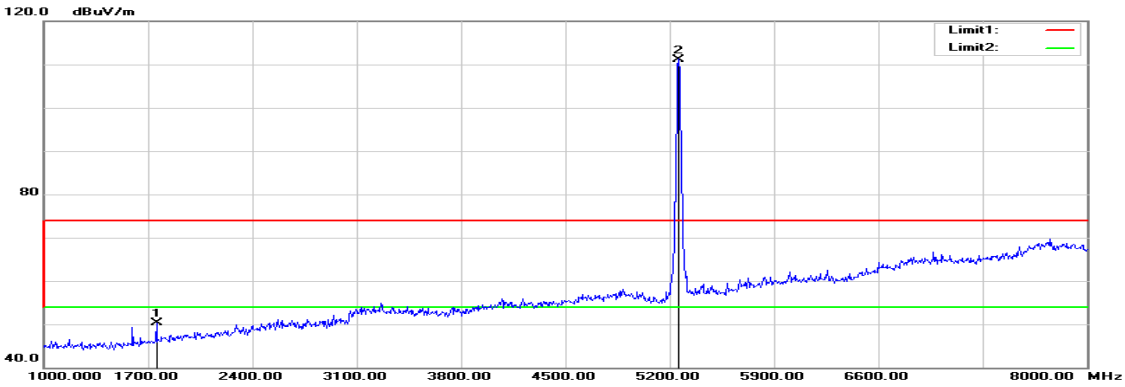
Polarity: Vertical

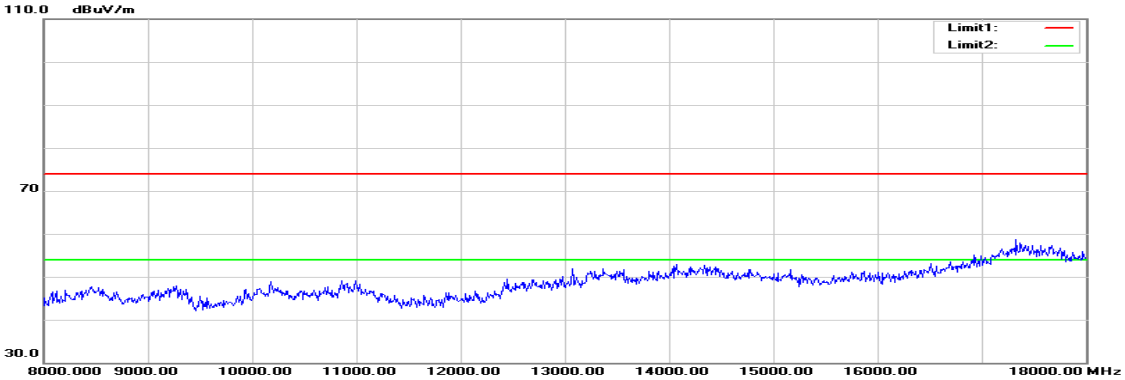


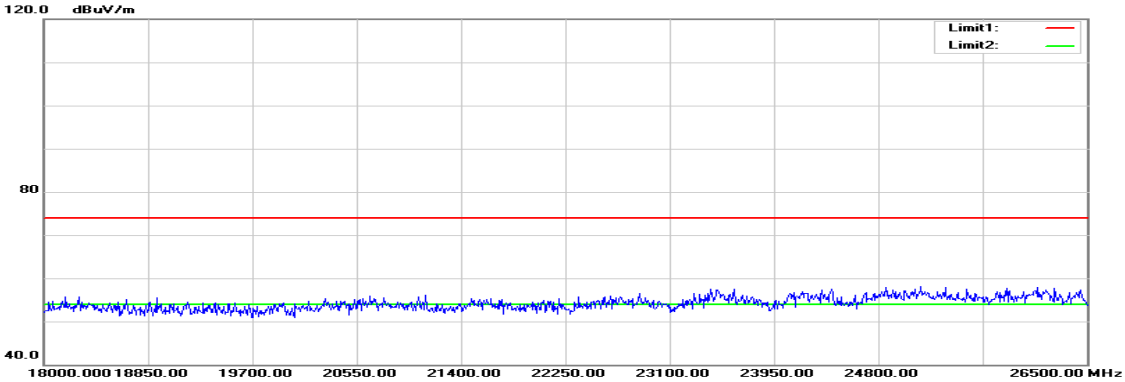




Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

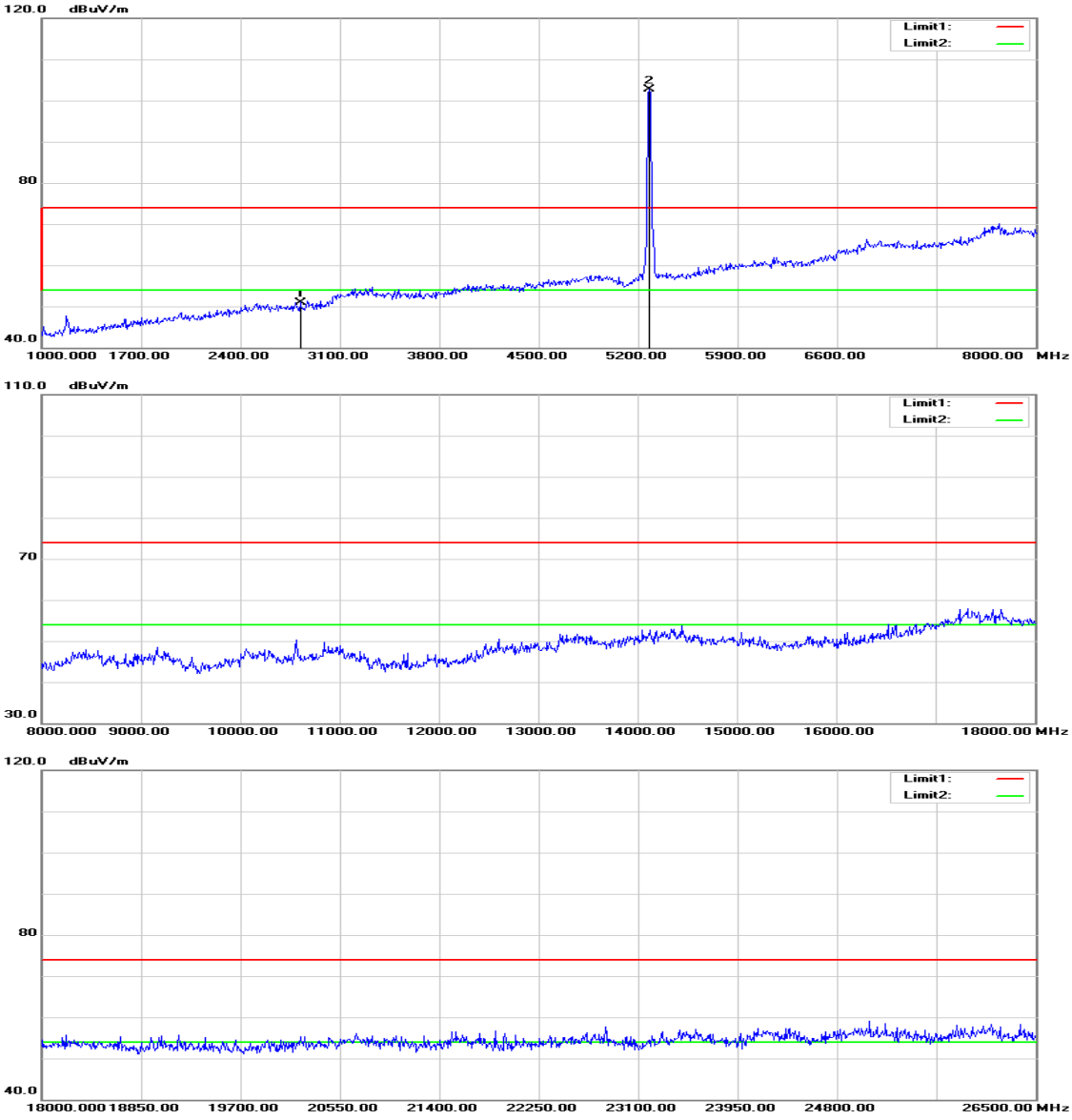
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2344.000	54.01	-4.18	49.83	74.00	-24.17	peak	V
N/A							
1756.000	56.42	-6.17	50.25	74.00	-23.75	peak	H
N/A							

Remark:

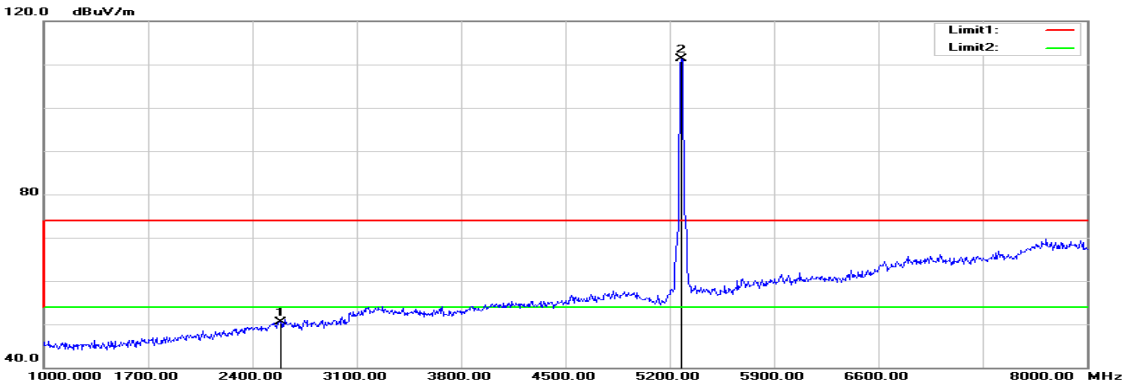
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

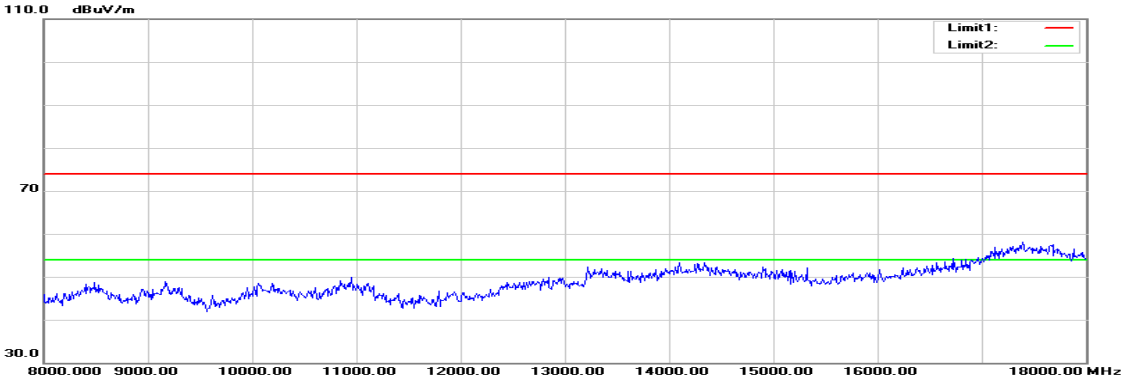
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5280 MHz

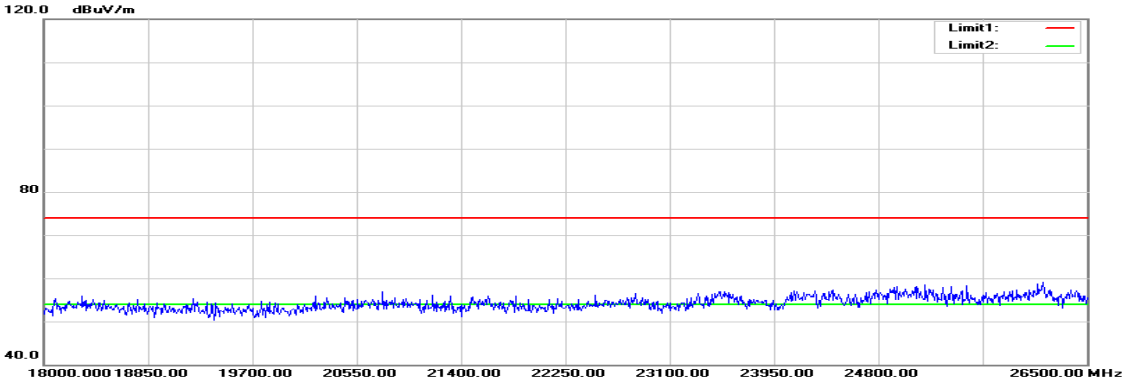
Polarity: Vertical



Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5280 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

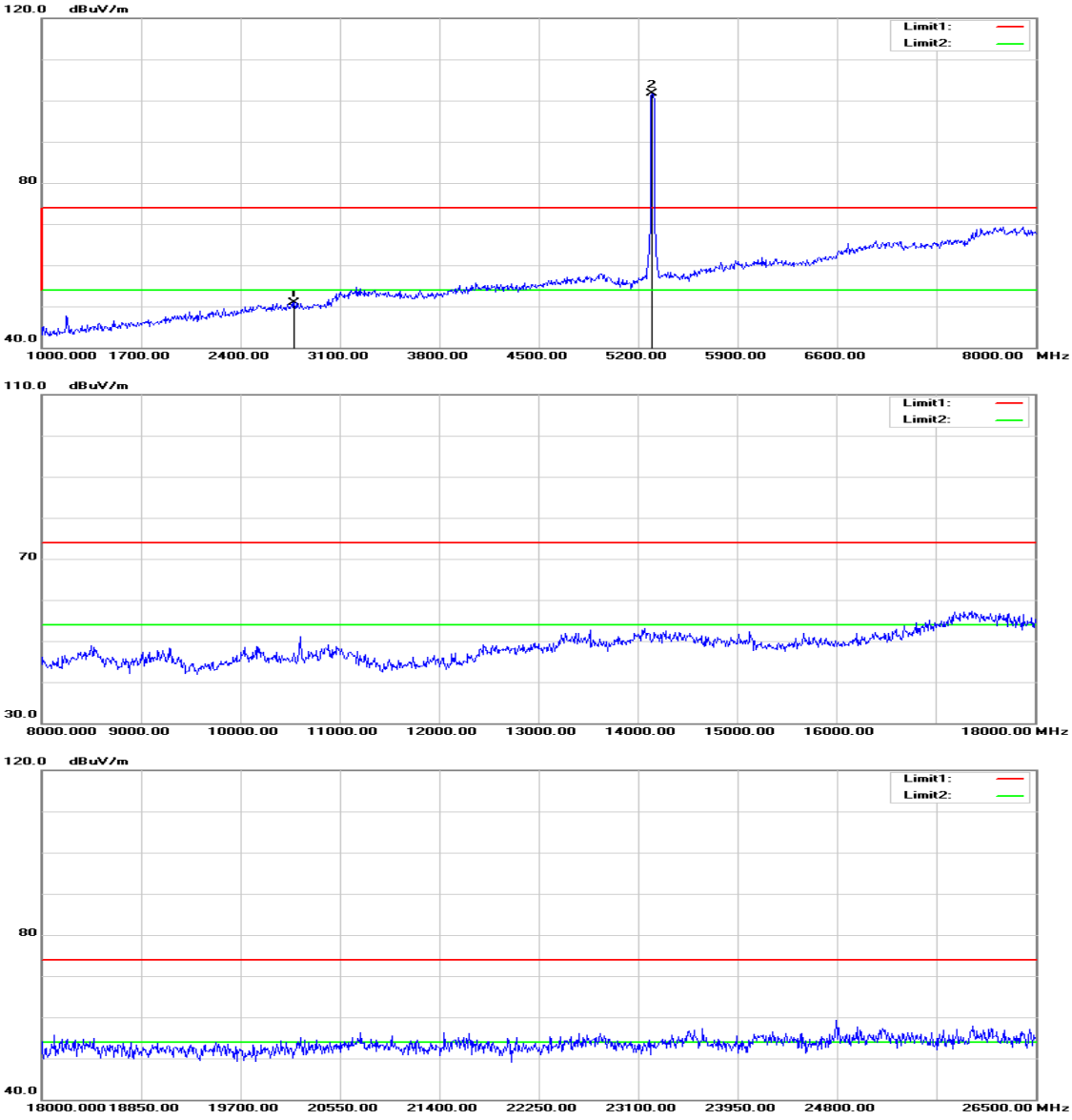
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2820.000	53.47	-2.47	51.00	74.00	-23.00	peak	V
N/A							
2589.000	53.44	-2.94	50.50	74.00	-23.50	peak	H
N/A							

Remark:

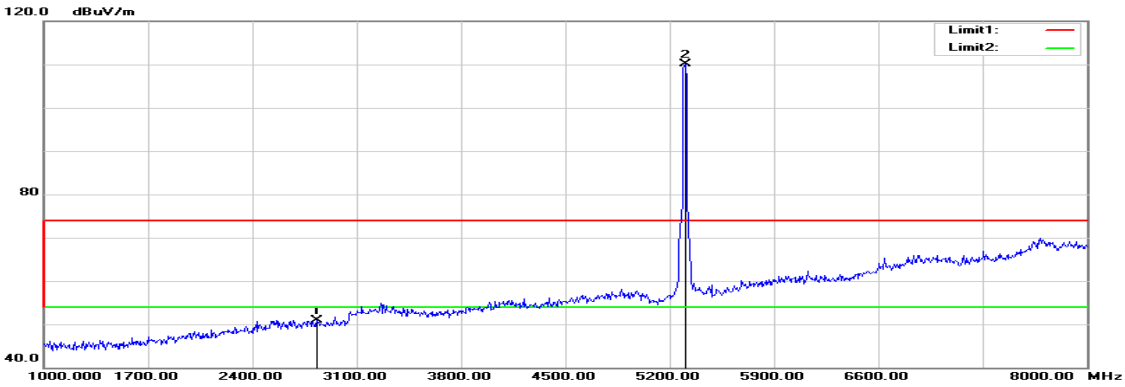
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

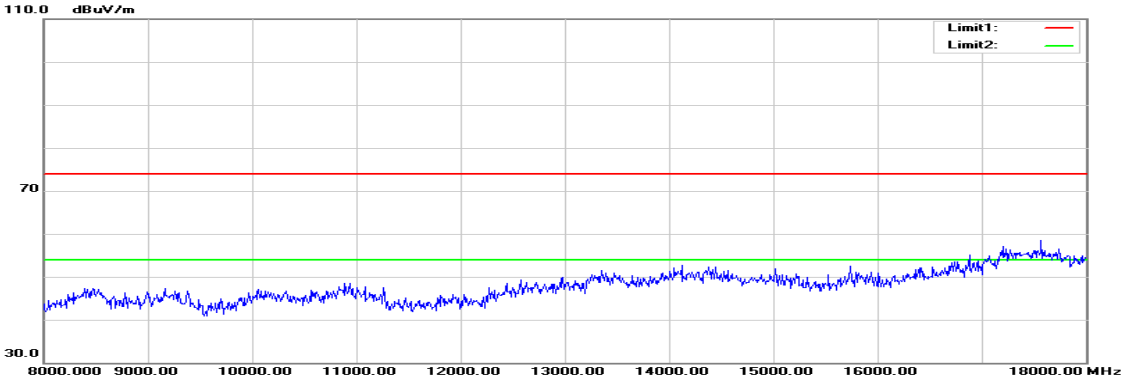
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5300 MHz

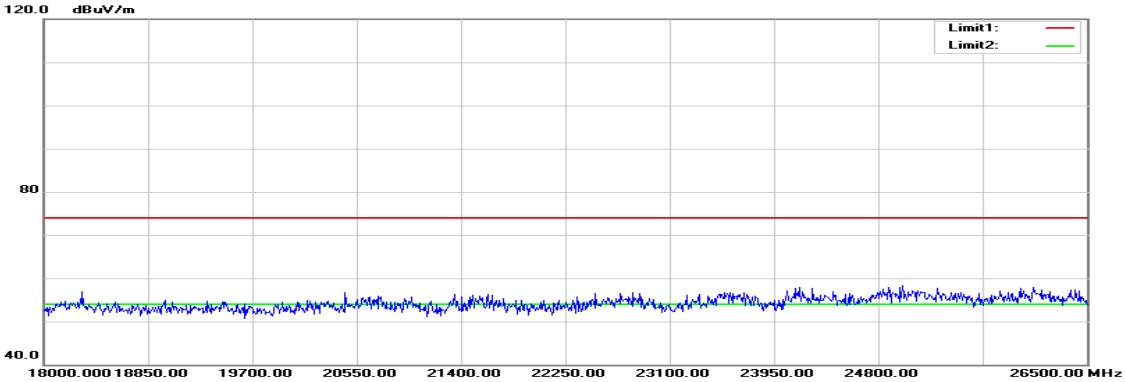
Polarity: Vertical



Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5300 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

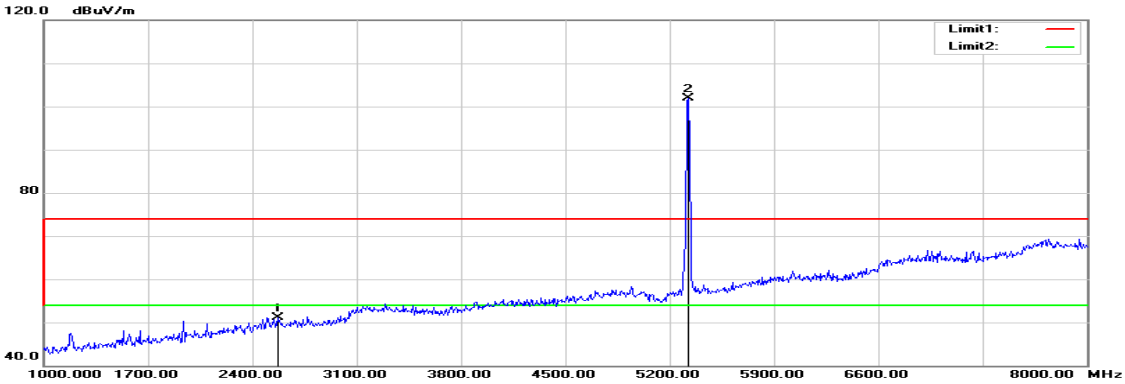
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2778.000	53.54	-2.56	50.98	74.00	-23.02	peak	V
N/A							
2834.000	53.43	-2.45	50.98	74.00	-23.02	peak	H
N/A							

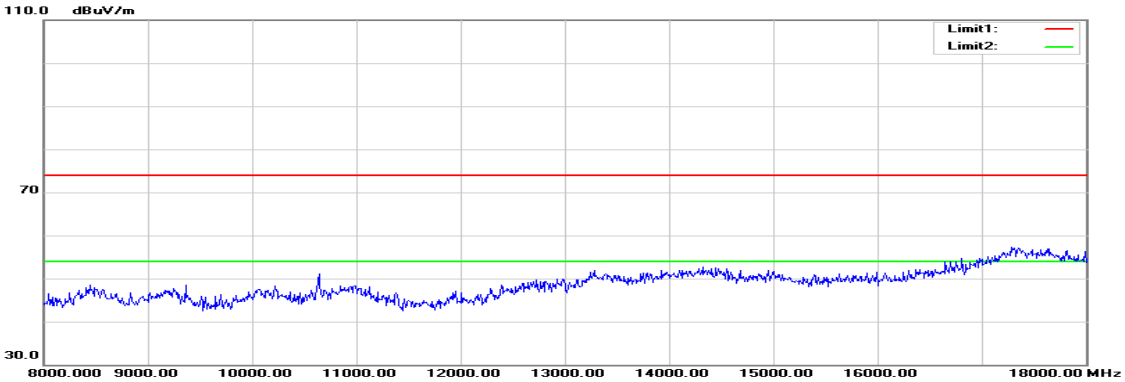
Remark:

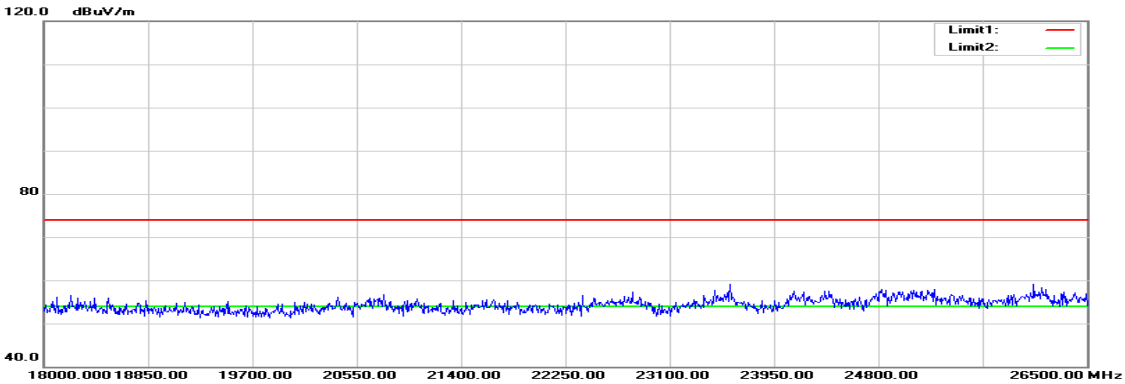
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average 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 / 5320 MHz

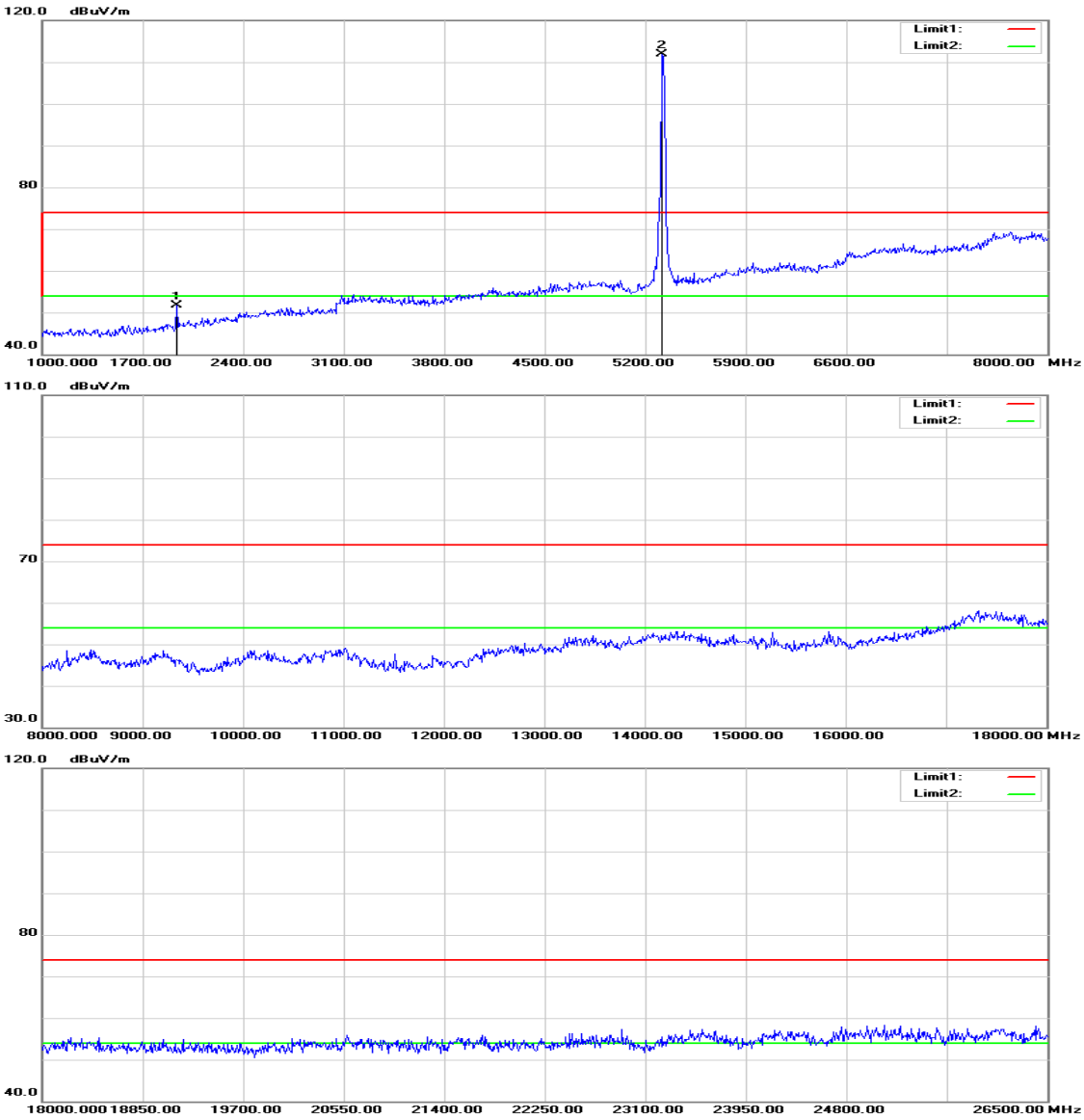
Polarity: Vertical







Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5320 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

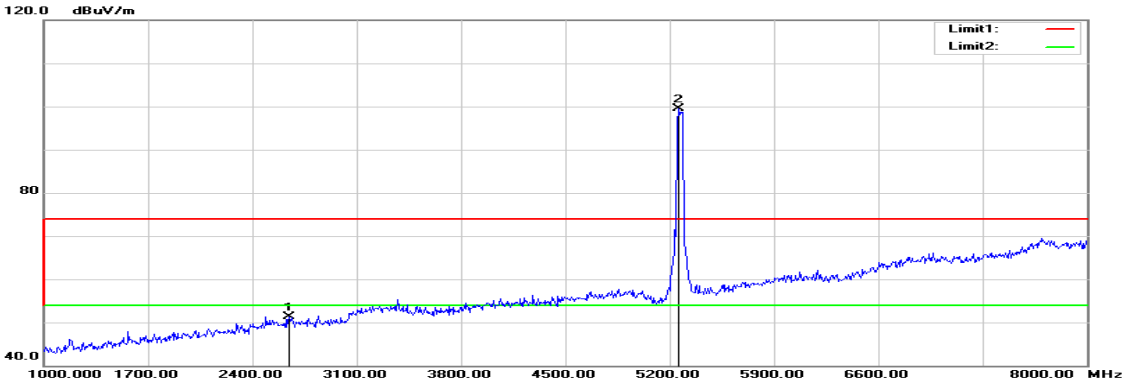
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2568.000	54.17	-2.98	51.19	74.00	-22.81	peak	V
N/A							
1938.000	56.83	-5.21	51.62	74.00	-22.38	peak	H
N/A							

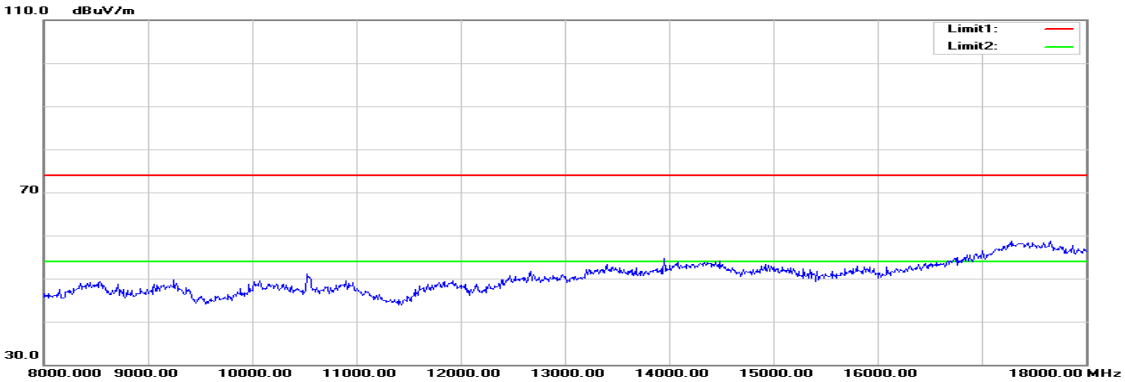
Remark:

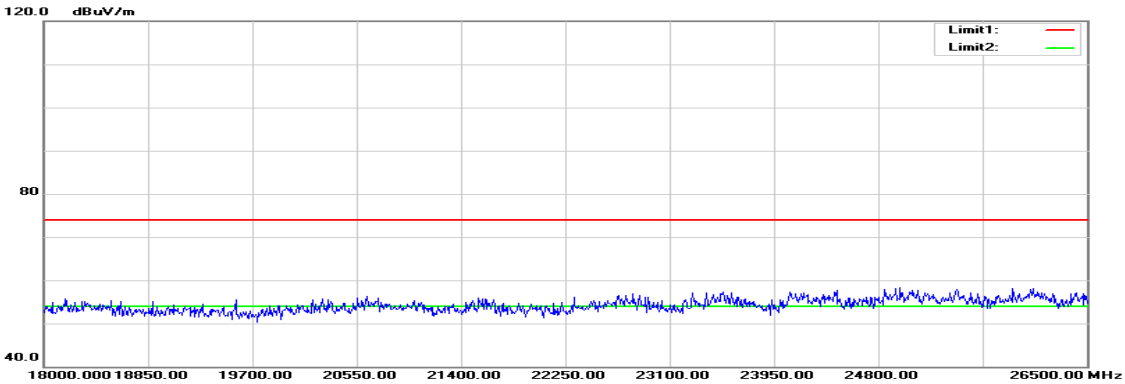
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

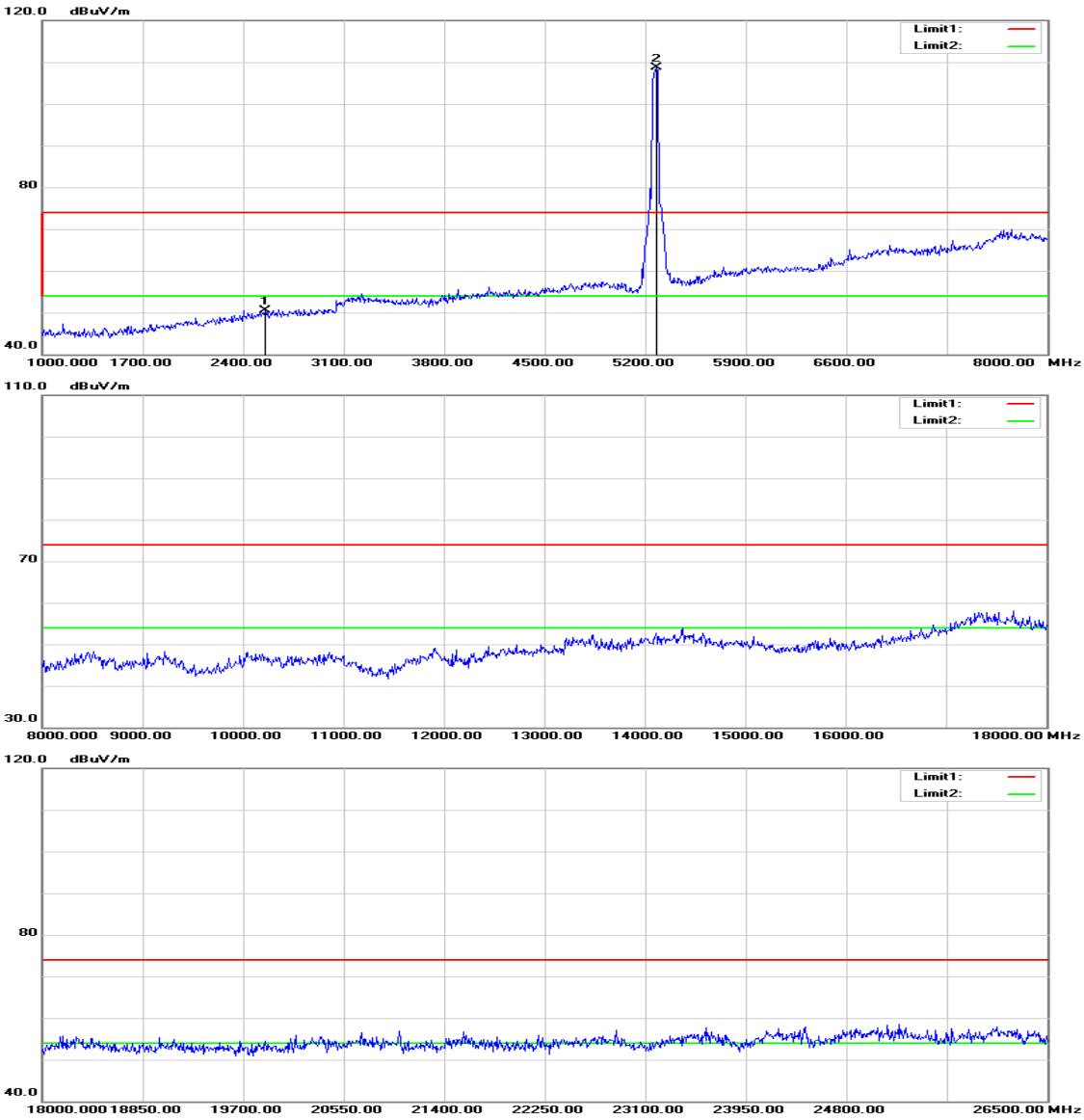
Polarity: Vertical







Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5270 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

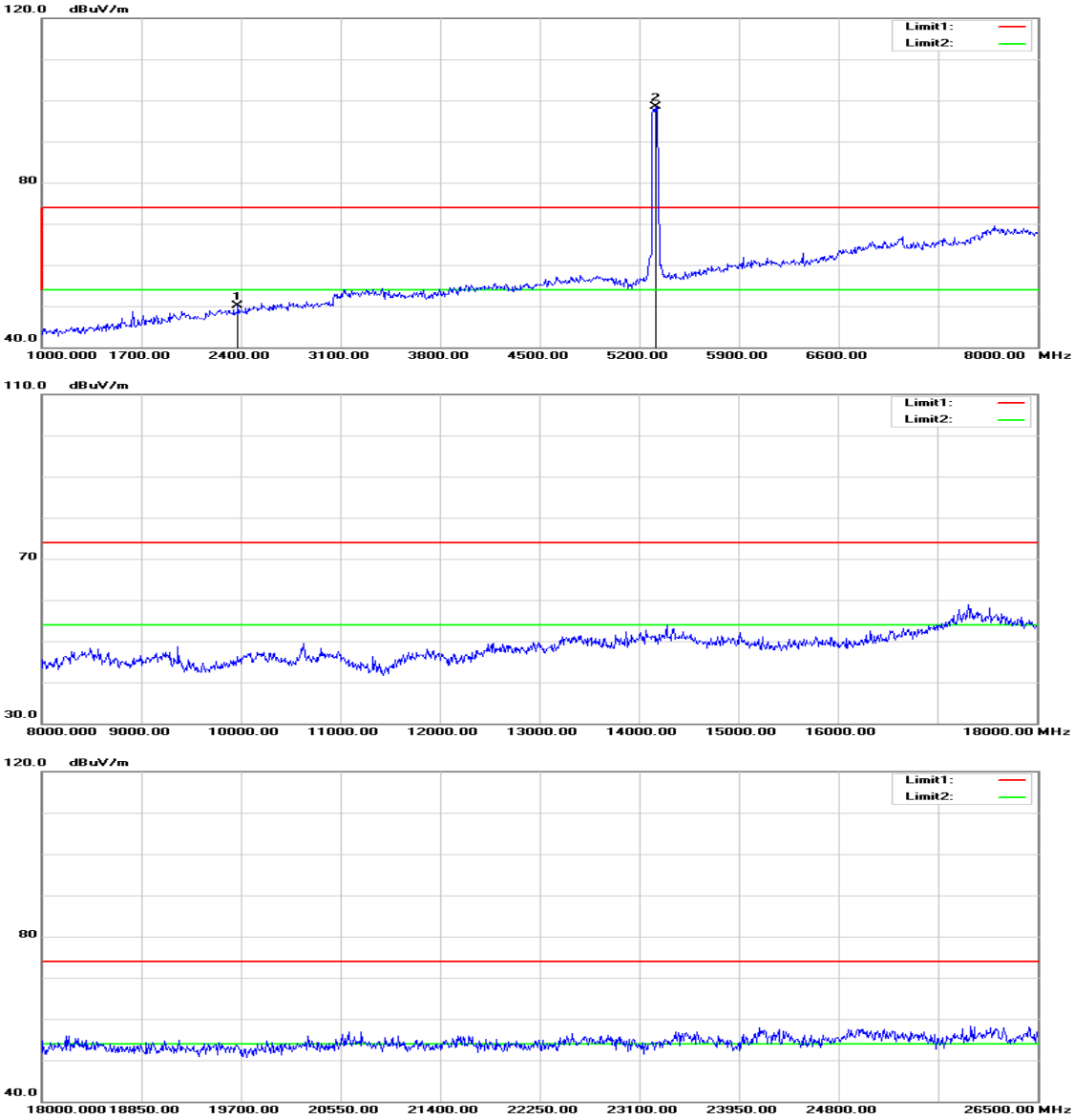
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2645.000	54.19	-2.83	51.36	74.00	-22.64	peak	V
N/A							
2554.000	53.52	-3.01	50.51	74.00	-23.49	peak	H
N/A							

Remark:

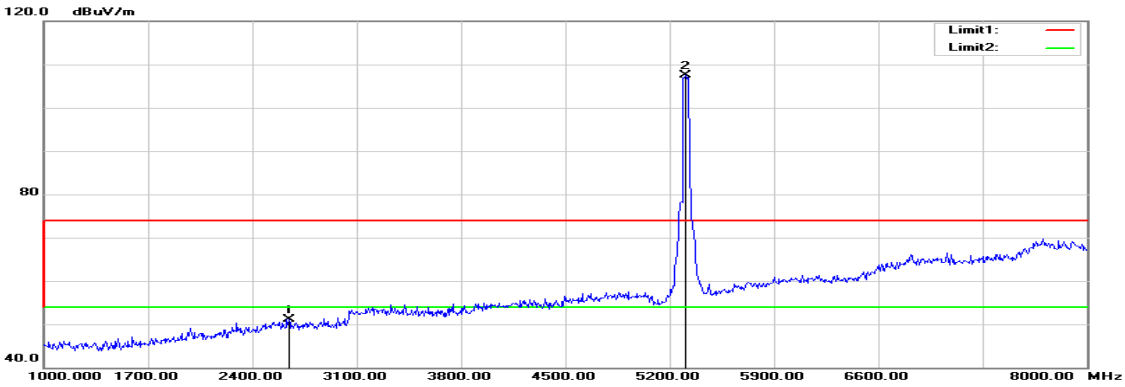
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

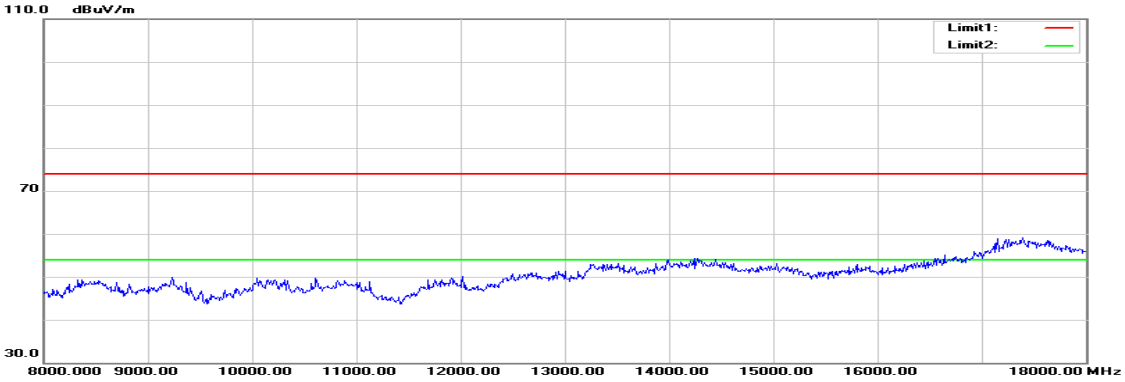
Tx / IEEE 802.11n HT 40 MHz mode / 5310 MHz

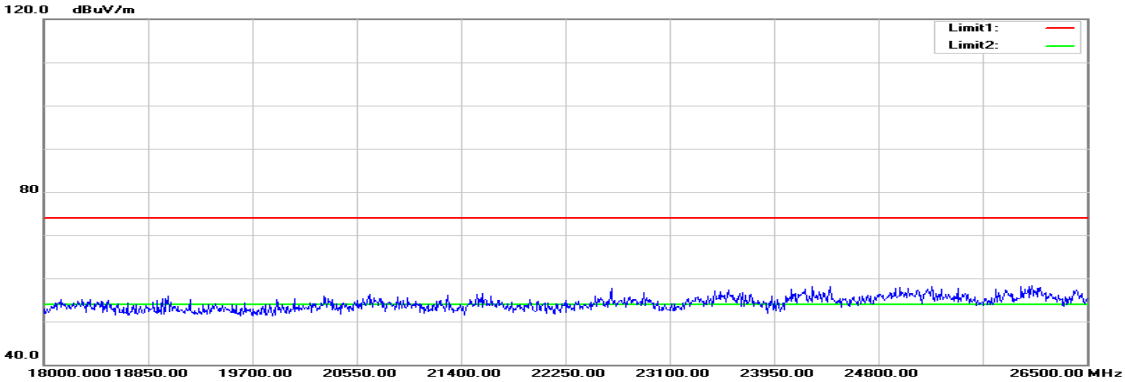
Polarity: Vertical



Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5310 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

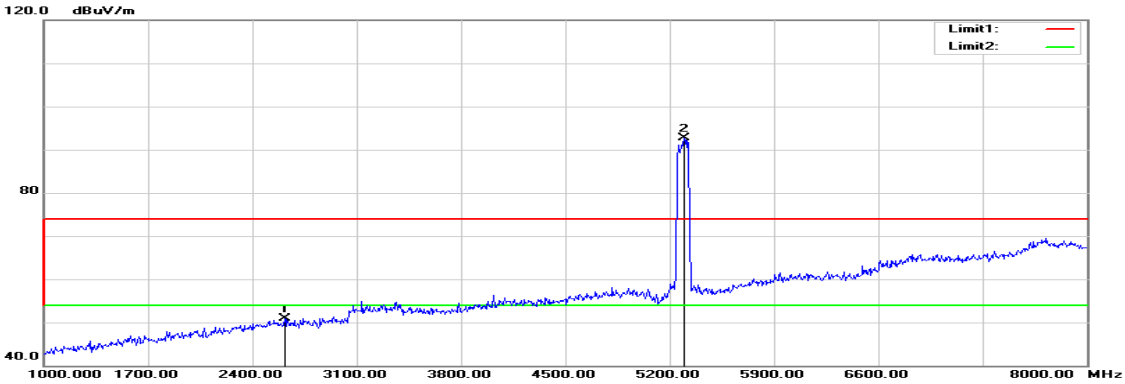
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2379.000	53.96	-3.87	50.09	74.00	-23.91	peak	V
N/A							
2645.000	54.02	-2.83	51.19	74.00	-22.81	peak	H
N/A							

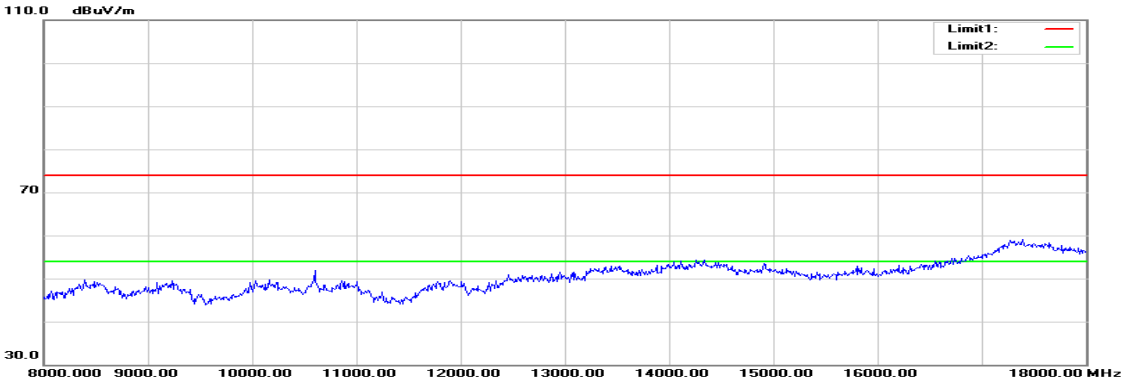
Remark:

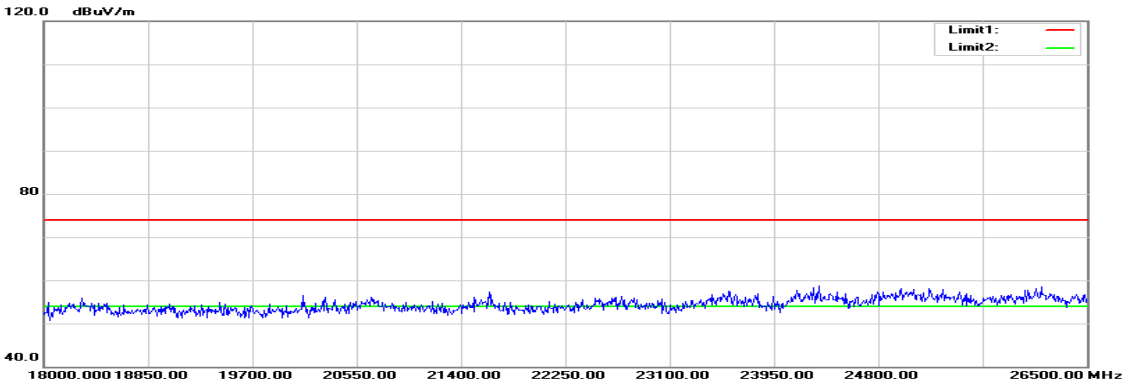
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average 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 802.11ac VHT 80 MHz mode / 5290 MHz

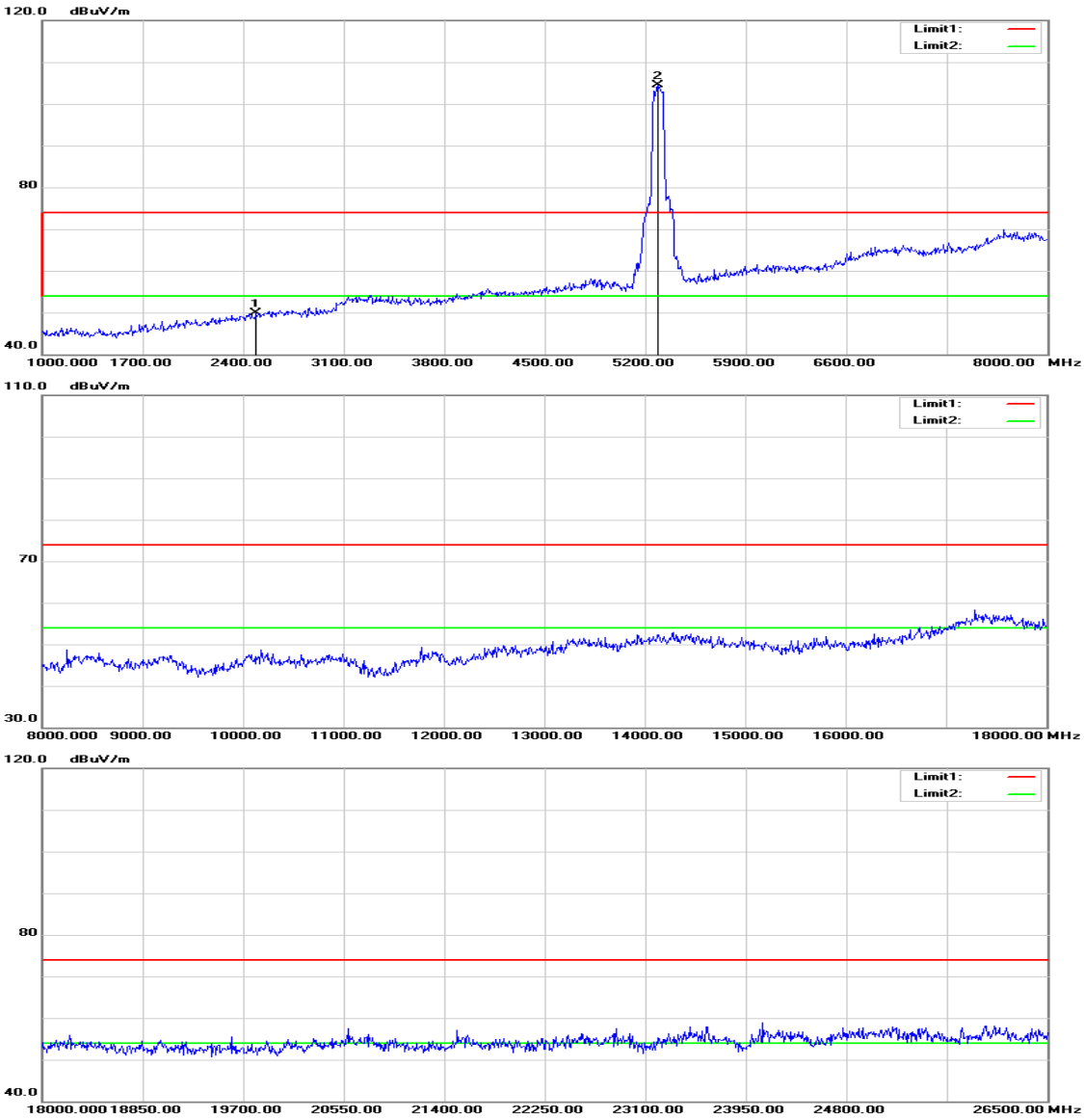
Polarity: Vertical







Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11ac VHT 80 MHz mode / 5290 MHz **Test Date:** June 9, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

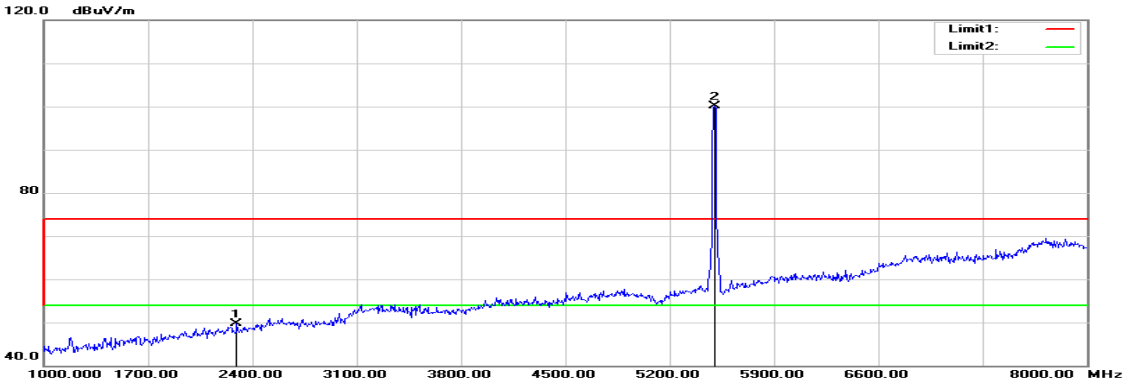
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2617.000	53.84	-2.88	50.96	74.00	-23.04	peak	V
N/A							
2491.000	53.15	-3.20	49.95	74.00	-24.05	peak	H
N/A							

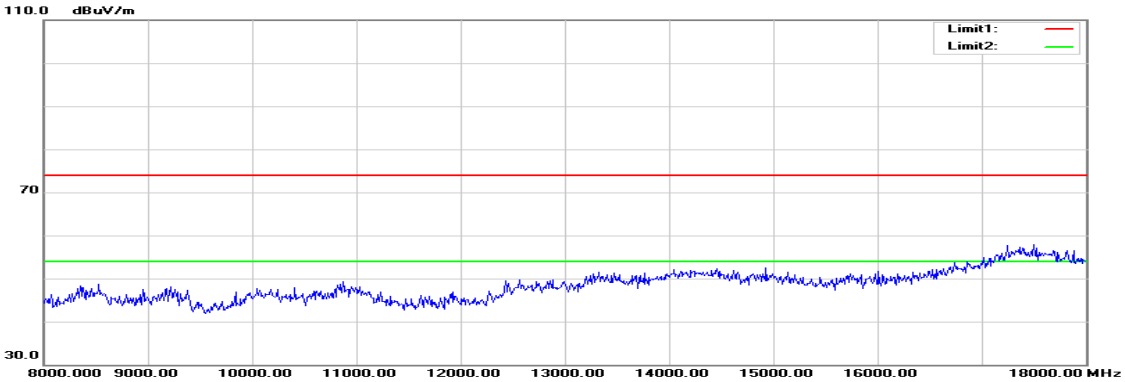
Remark:

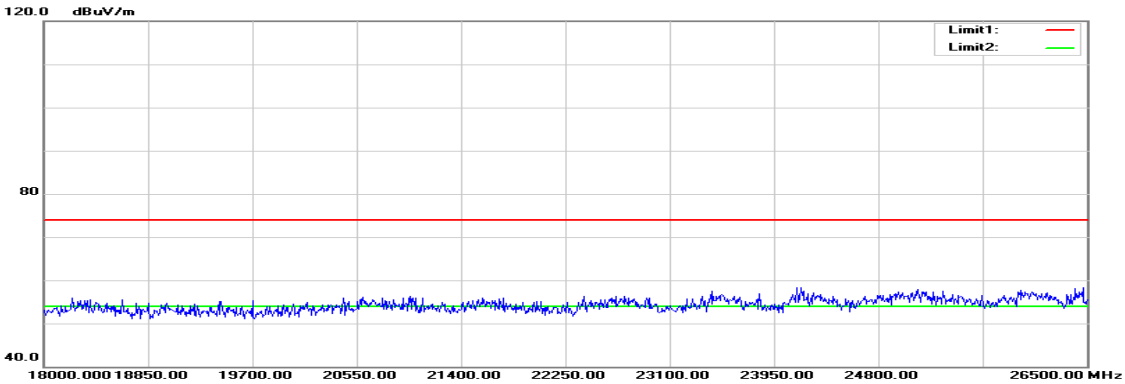
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

Tx / IEEE 802.11a mode / 5500 MHz

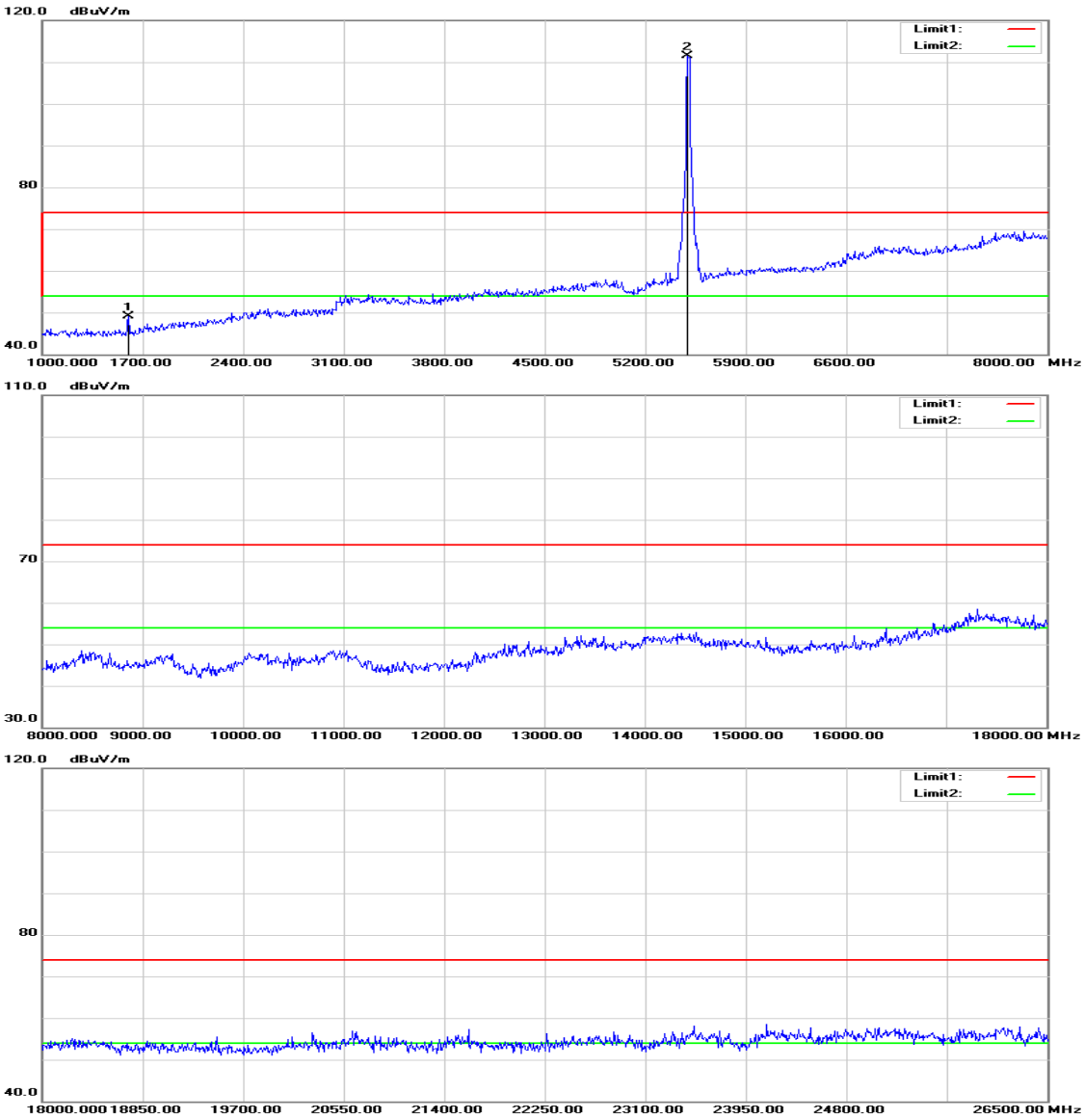
Polarity: Vertical







Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / 5500 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

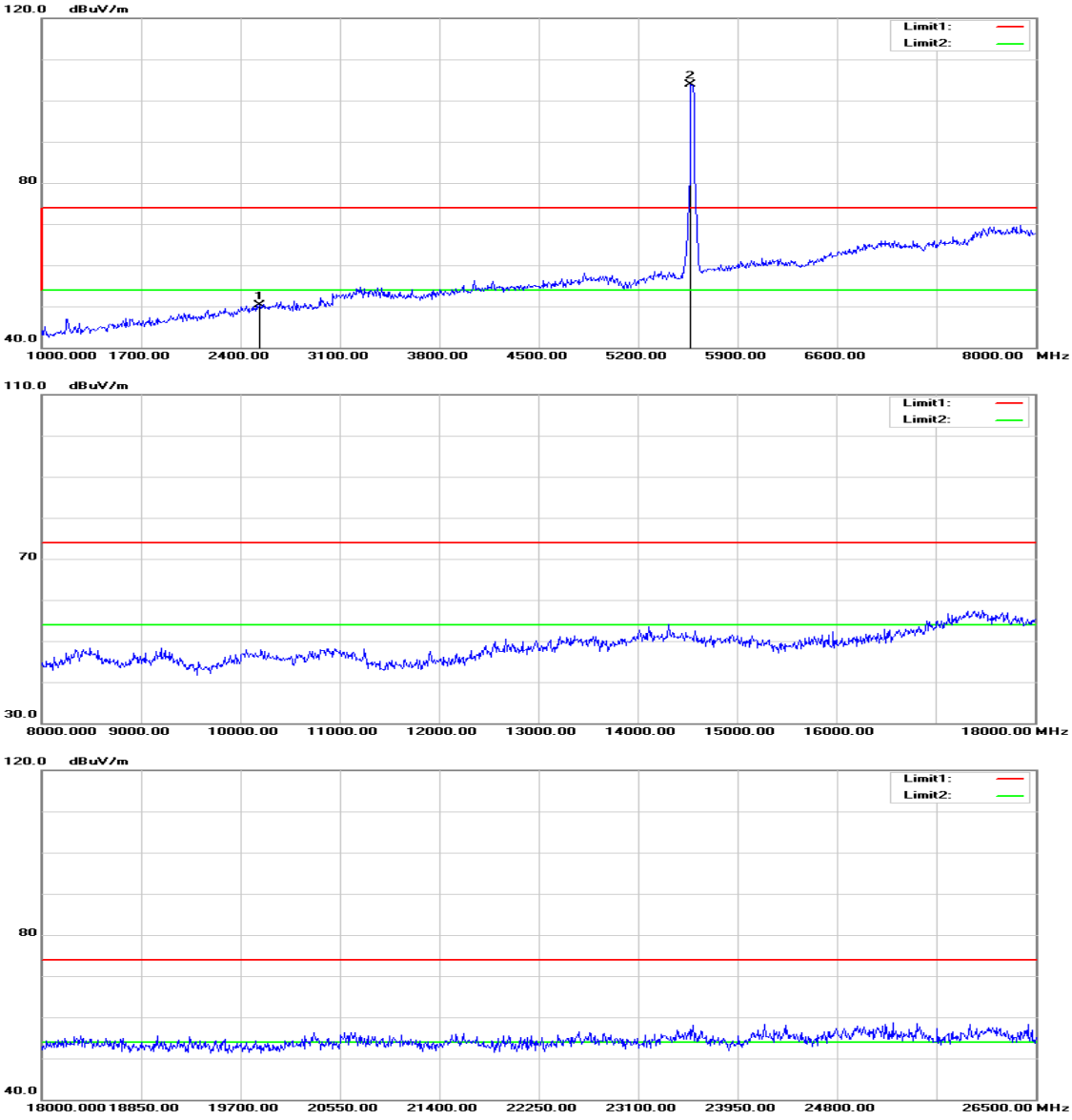
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2295.000	54.06	-4.30	49.76	74.00	-24.24	peak	V
N/A							
1602.000	56.18	-6.99	49.19	74.00	-24.81	peak	H
N/A							

Remark:

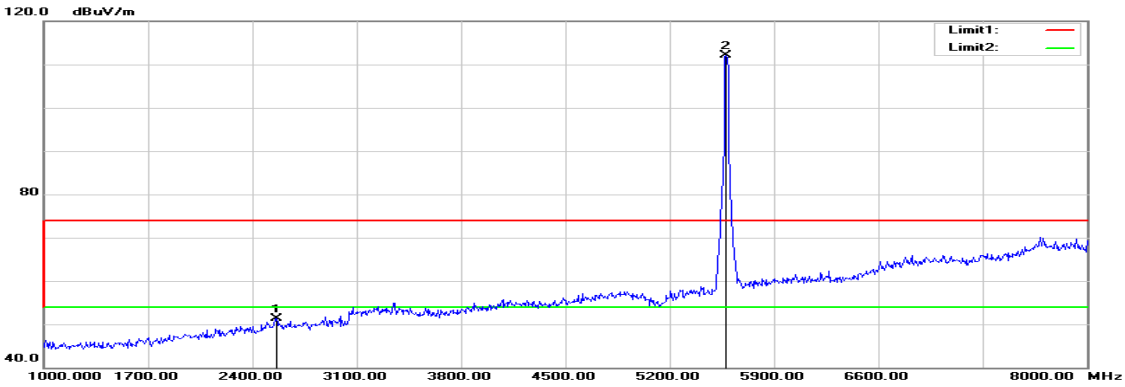
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

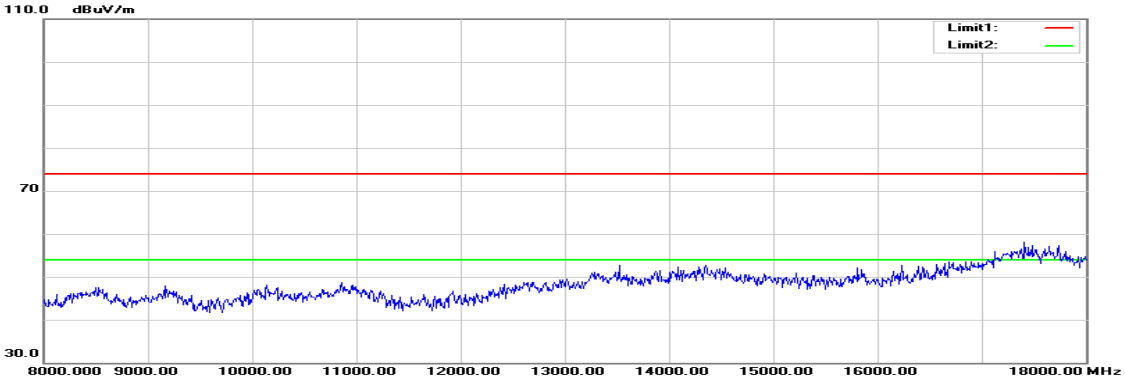
Tx / IEEE 802.11a mode / 5580 MHz

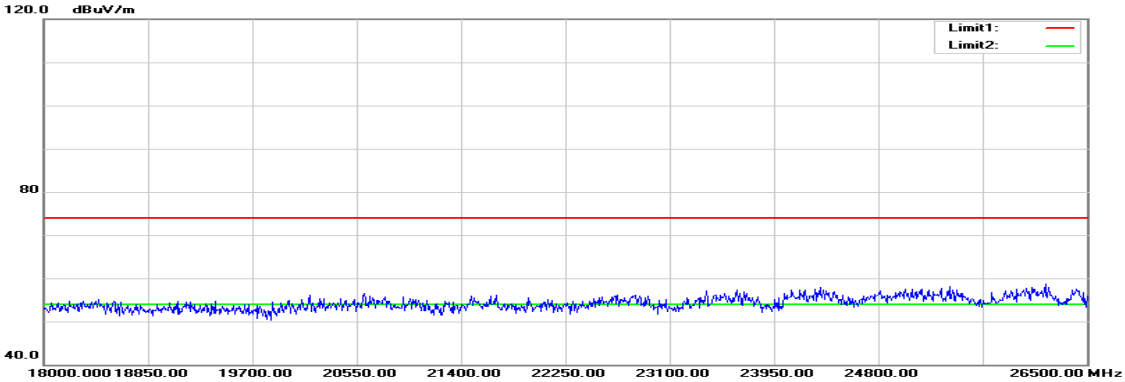
Polarity: Vertical



Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11a mode / 5580 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

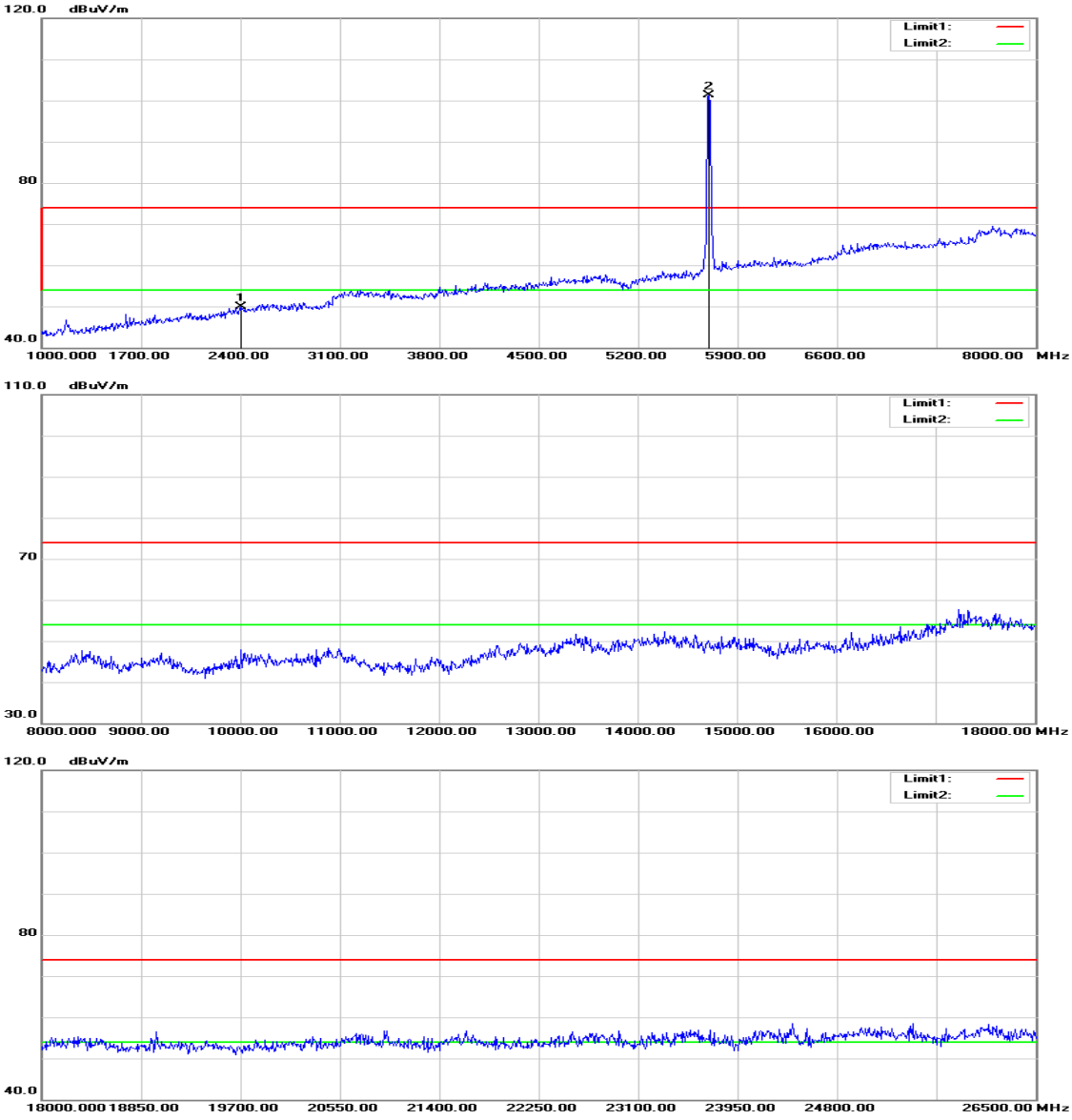
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2533.000	53.28	-3.05	50.23	74.00	-23.77	peak	V
N/A							
2561.000	54.25	-3.00	51.25	74.00	-22.75	peak	H
N/A							

Remark:

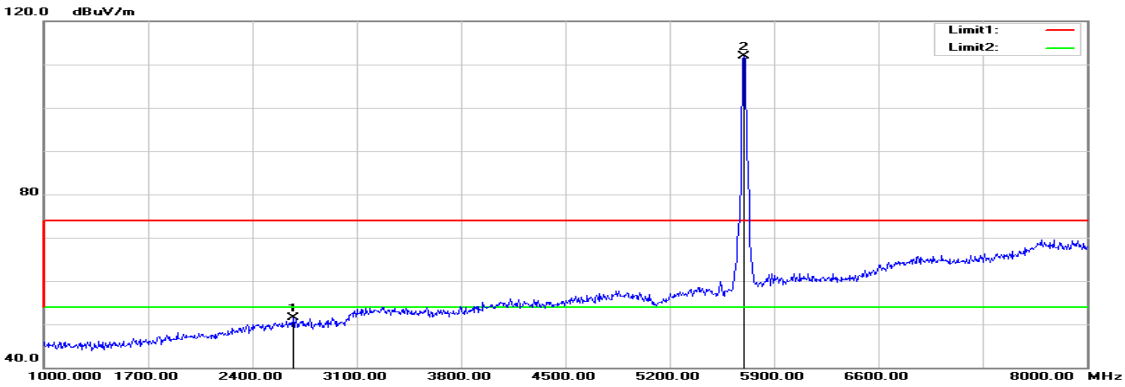
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

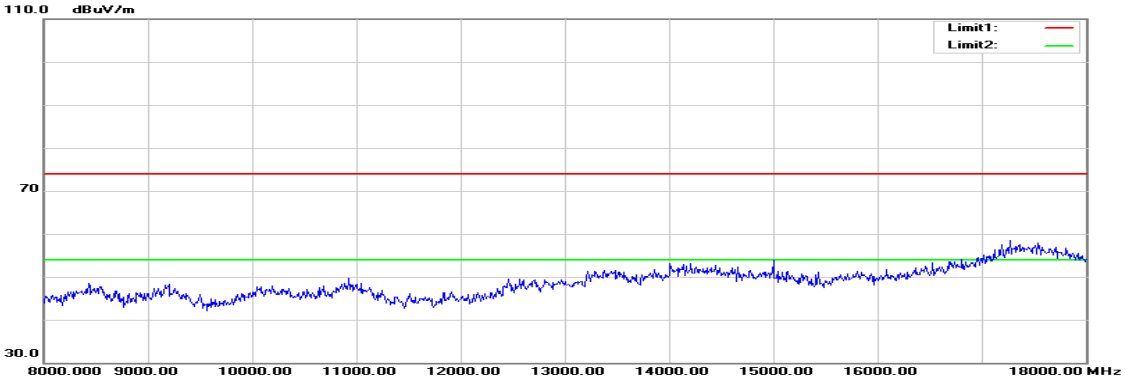
Tx / IEEE 802.11a mode / 5700 MHz

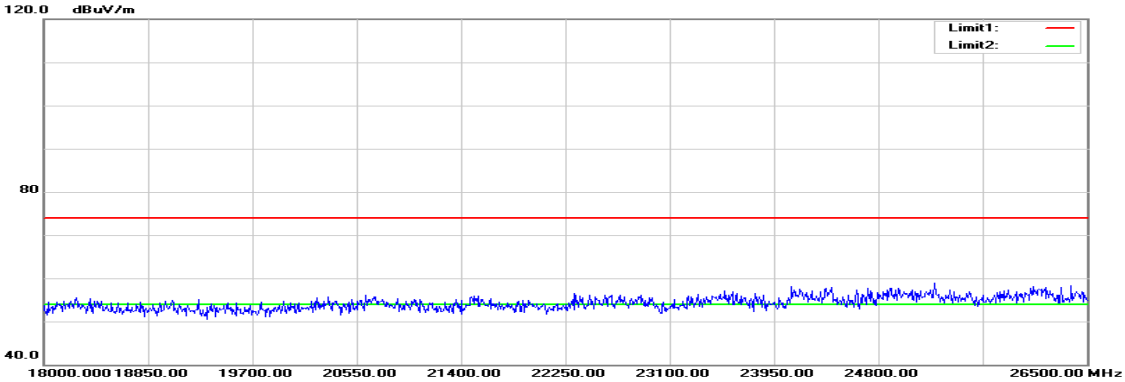
Polarity: Vertical



Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11a mode / 5700 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

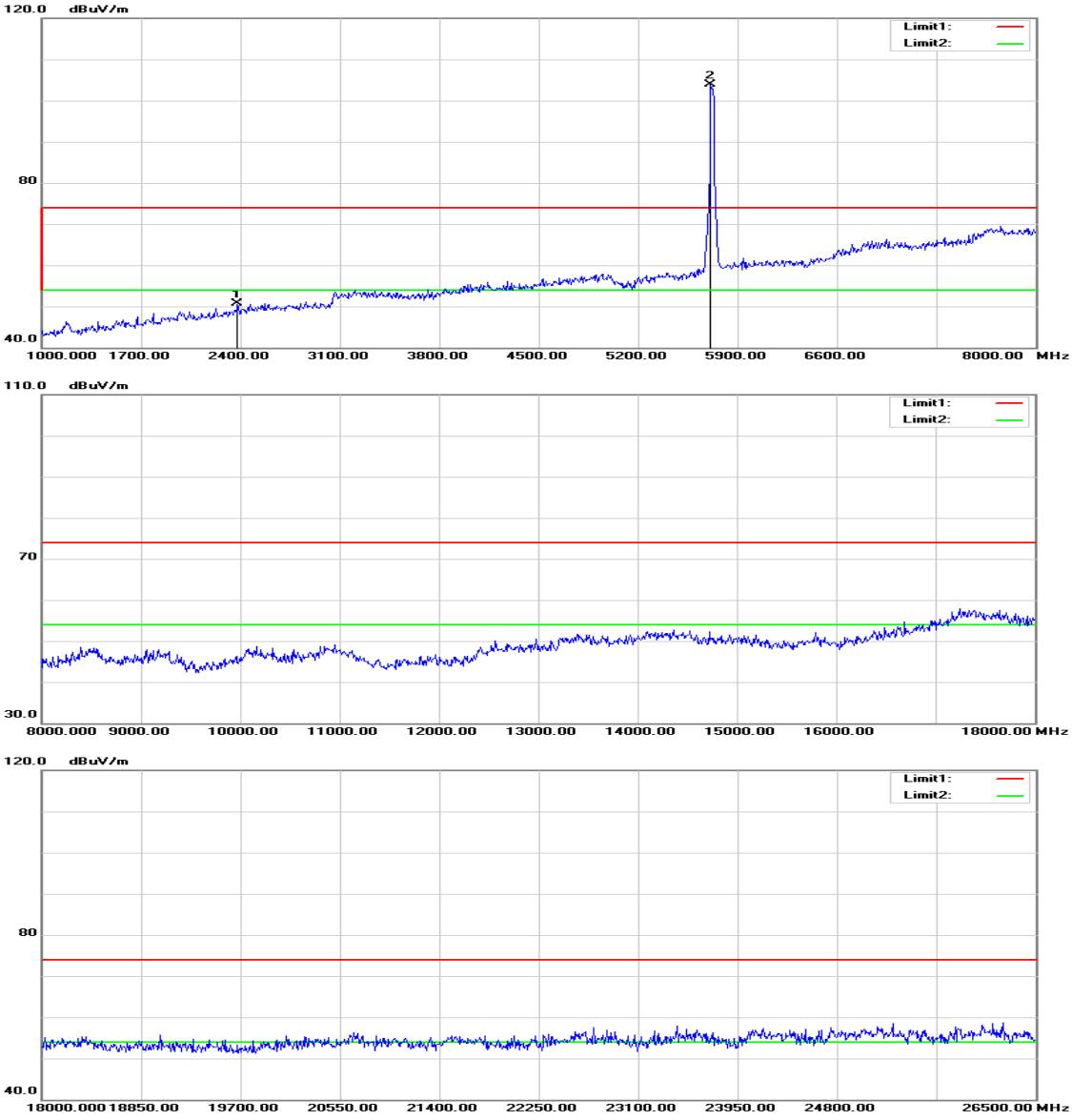
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2400.000	53.51	-3.69	49.82	74.00	-24.18	peak	V
N/A							
2673.000	54.26	-2.77	51.49	74.00	-22.51	peak	H
N/A							

Remark:

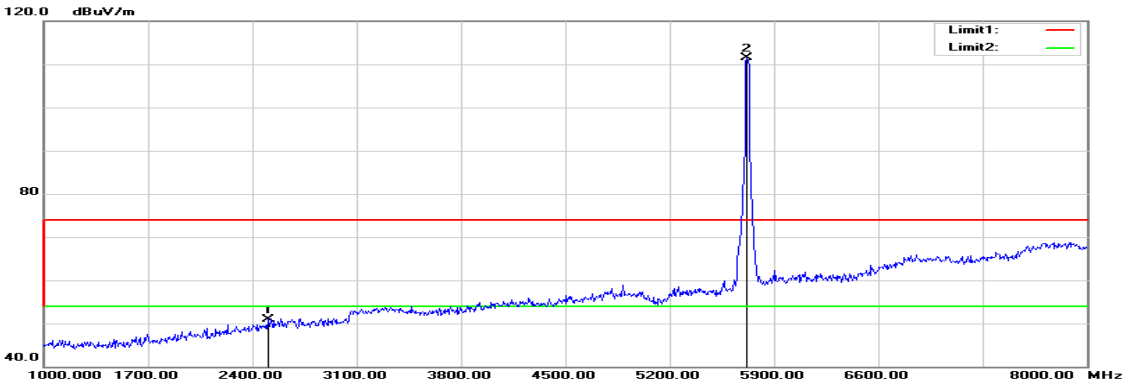
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

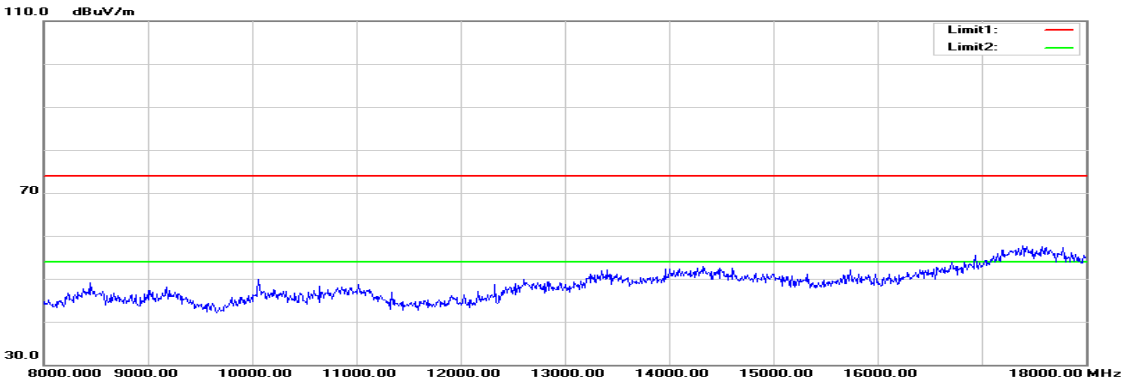
Tx / IEEE 802.11a mode / 5720 MHz

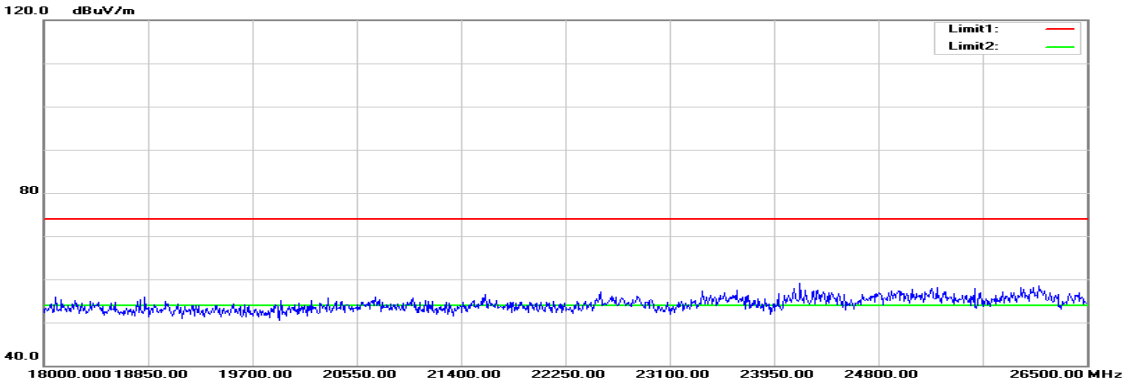
Polarity: Vertical



Polarity: Horizontal







Operation Mode: Tx / IEEE 802.11a mode / 5720 MHz **Test Date:** June 8, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

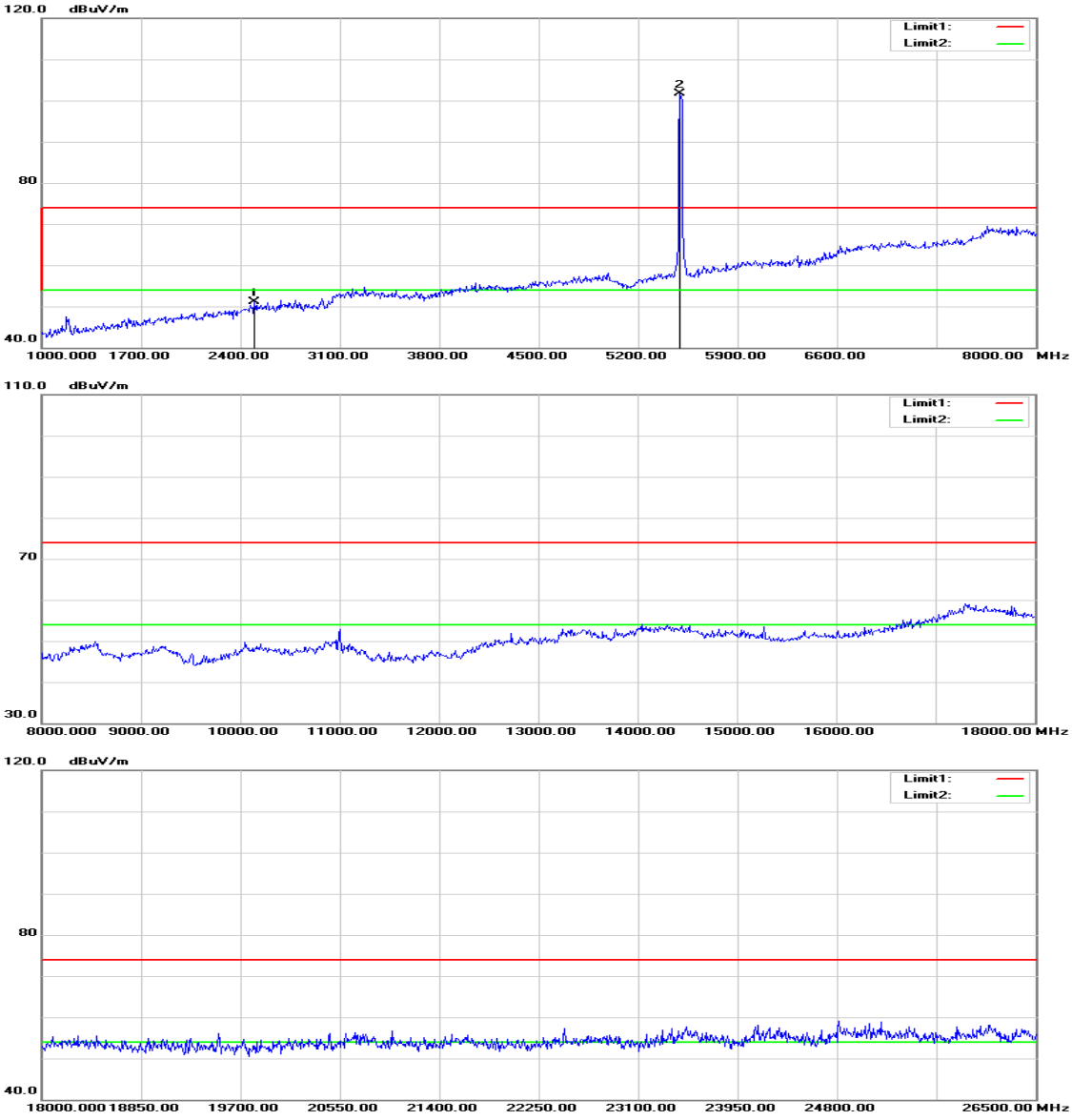
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2379.000	54.47	-3.87	50.60	74.00	-23.40	peak	V
N/A							
2505.000	54.00	-3.11	50.89	74.00	-23.11	peak	H
N/A							

Remark:

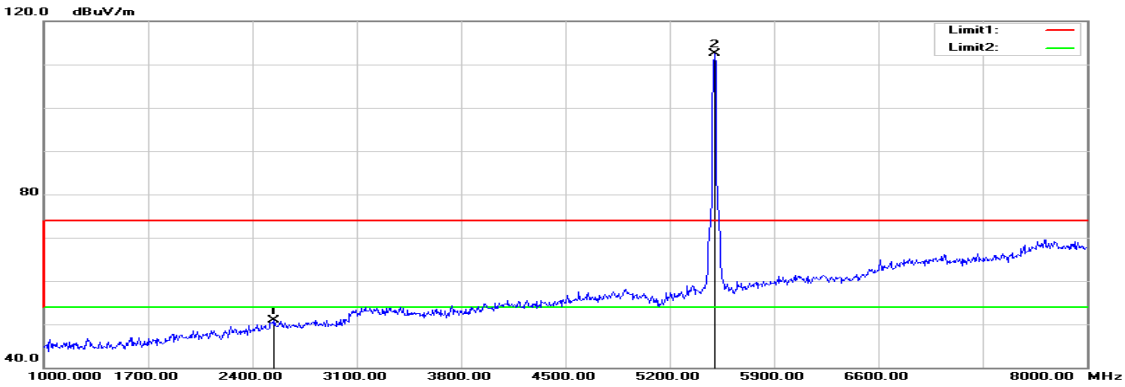
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

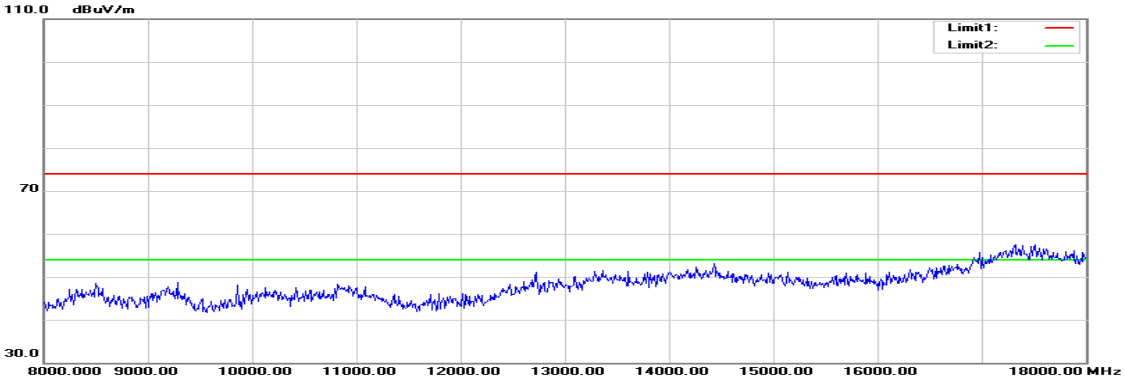
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 MHz

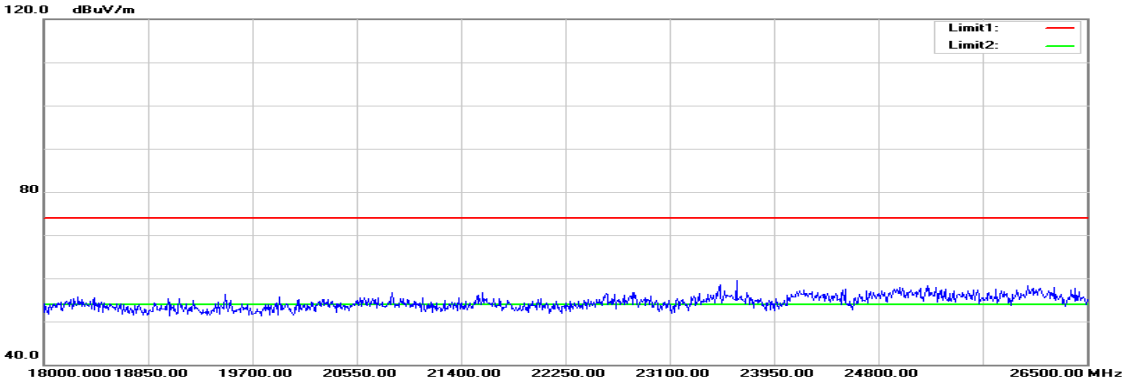
Polarity: Vertical



Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

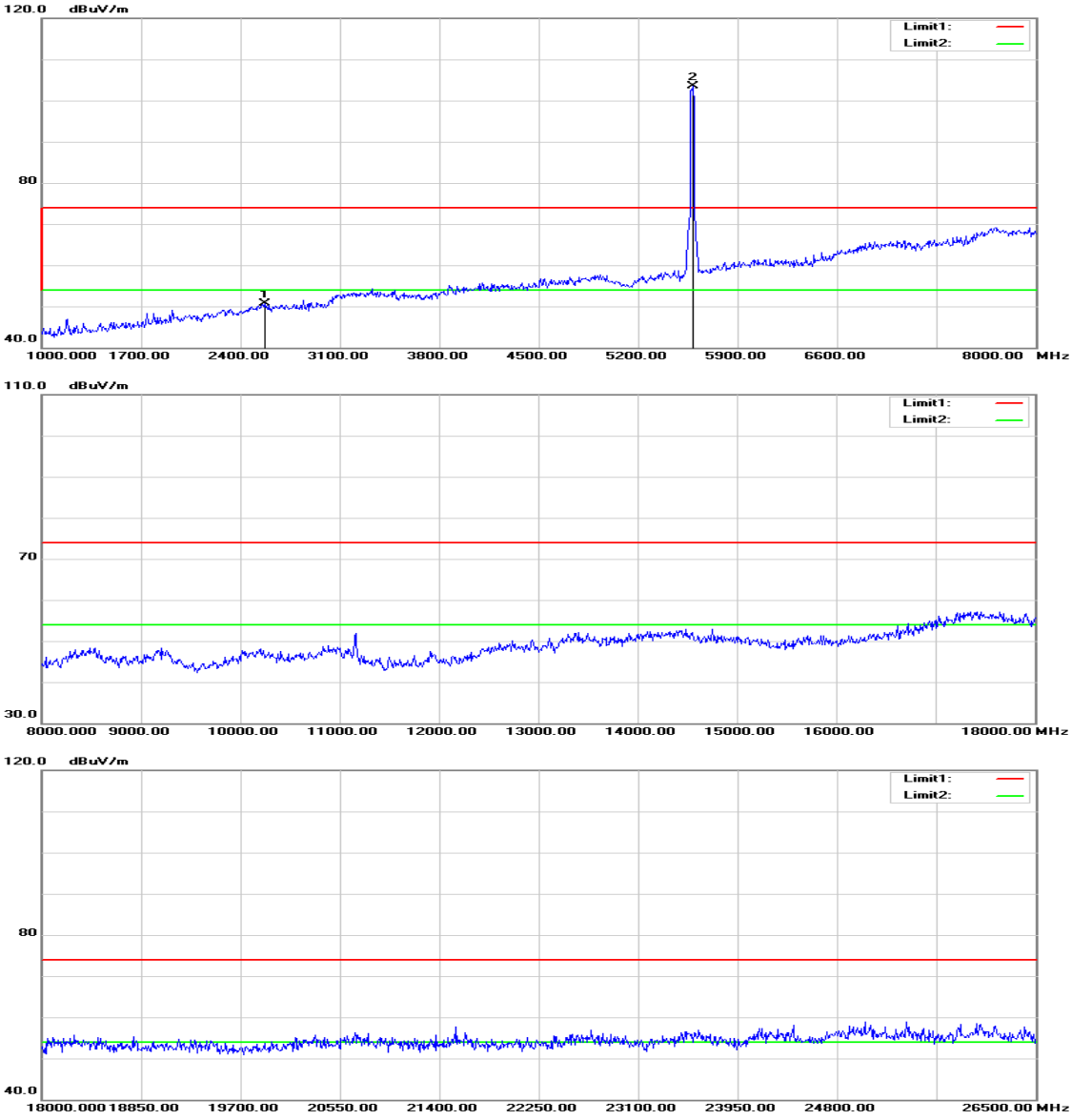
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2498.000	54.22	-3.14	51.08	74.00	-22.92	peak	V
N/A							
2547.000	53.89	-3.03	50.86	74.00	-23.14	peak	H
N/A							

Remark:

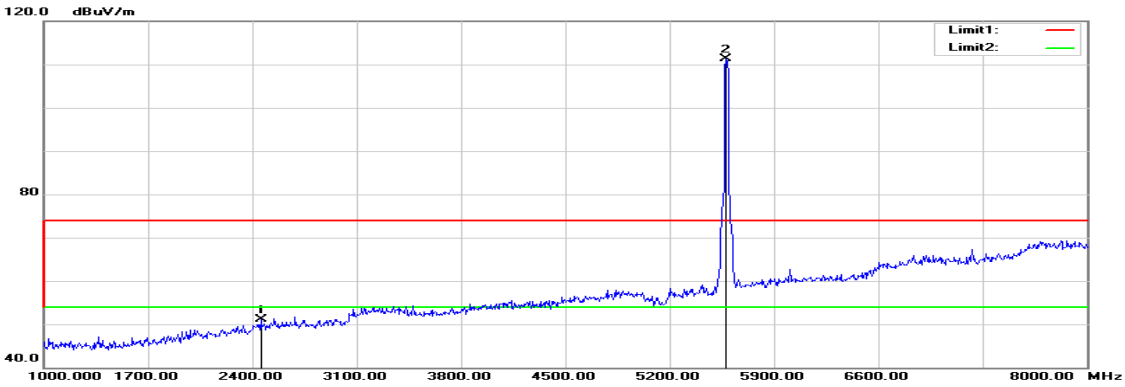
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

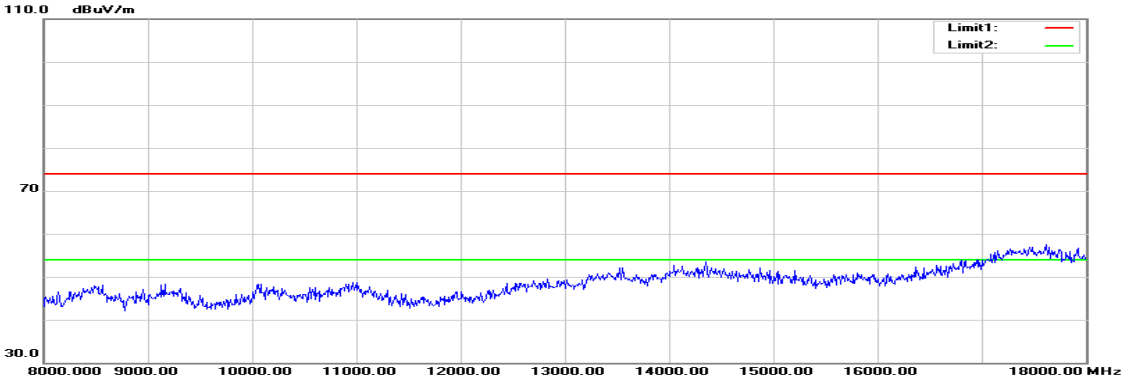
Tx / IEEE 802.11n HT 20 MHz Channel mode / 5580 MHz

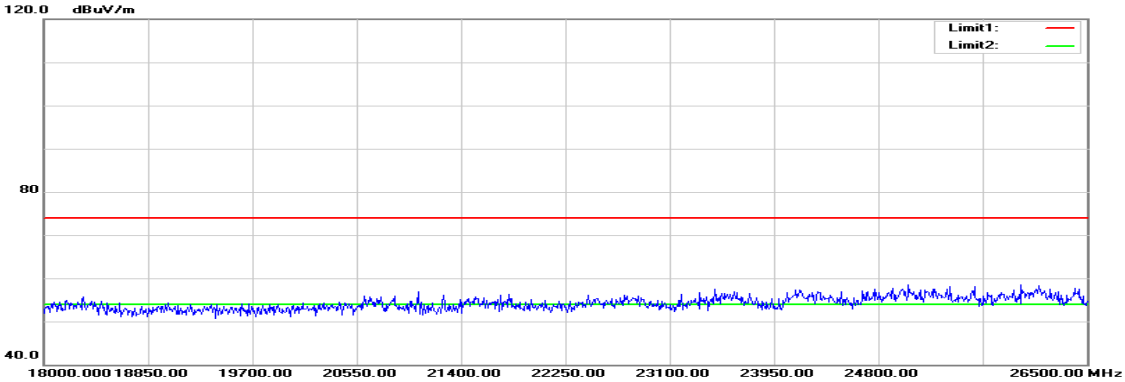
Polarity: Vertical



Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5580 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

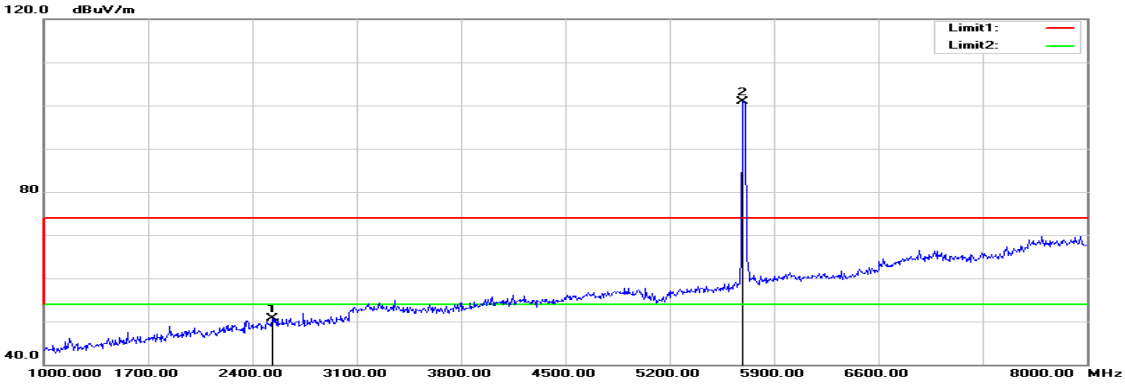
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2568.000	53.61	-2.98	50.63	74.00	-23.37	peak	V
N/A							
2456.000	54.58	-3.40	51.18	74.00	-22.82	peak	H
N/A							

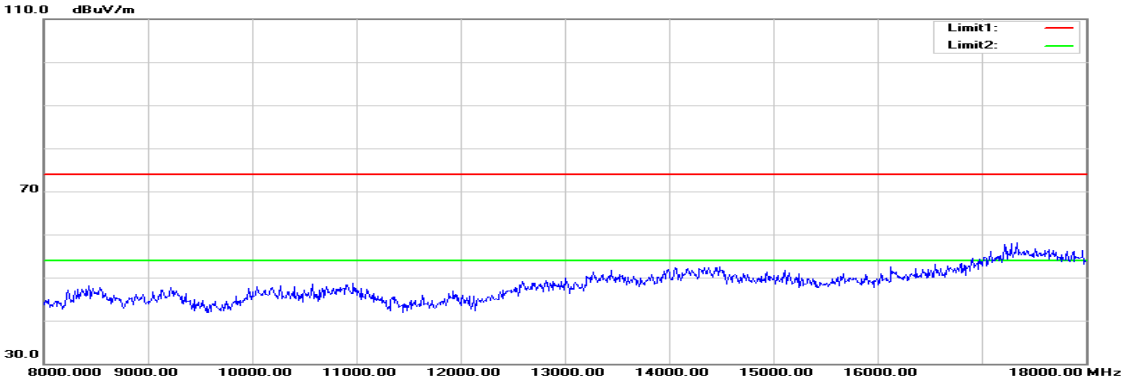
Remark:

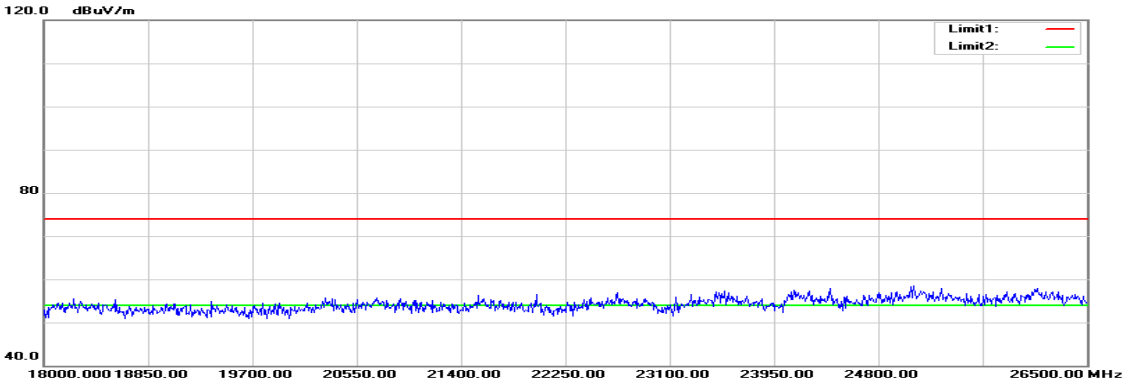
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average 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 / 5700 MHz

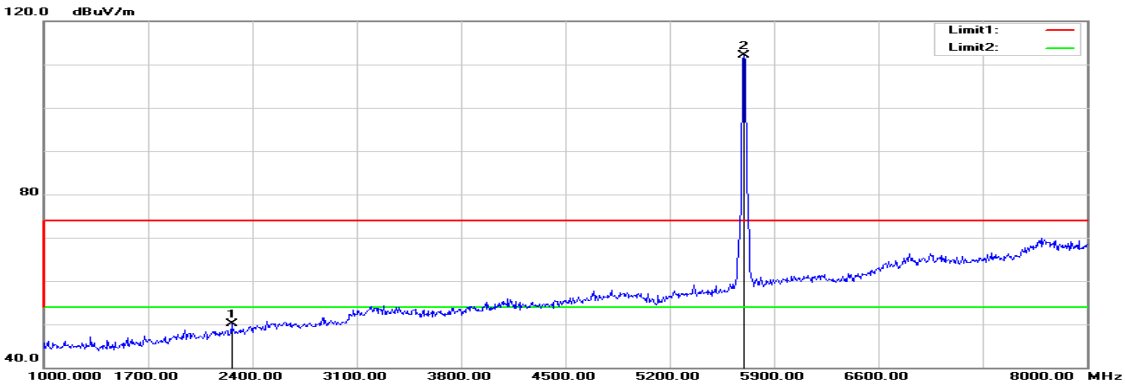
Polarity: Vertical

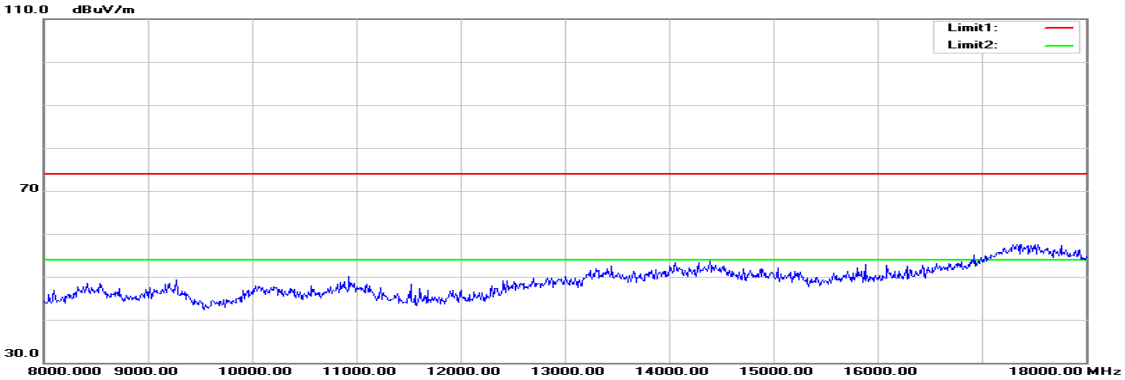


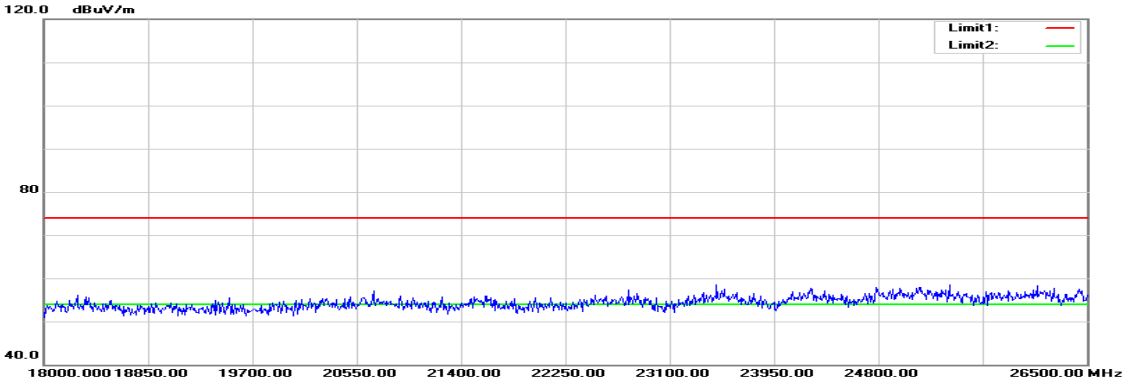




Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5700 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

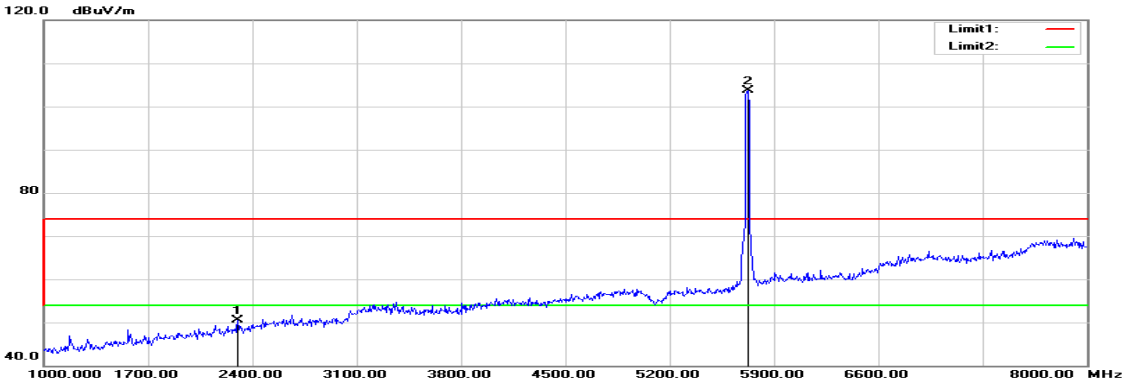
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2533.000	53.72	-3.05	50.67	74.00	-23.33	peak	V
N/A							
2260.000	54.50	-4.35	50.15	74.00	-23.85	peak	H
N/A							

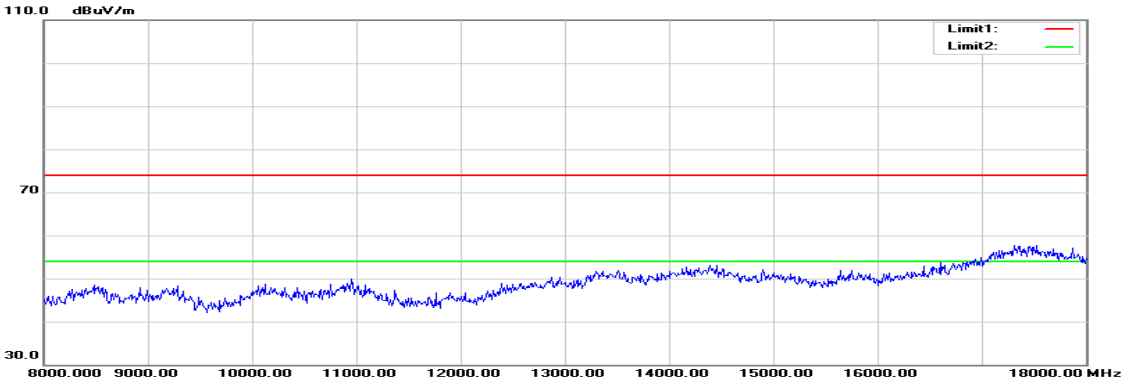
Remark:

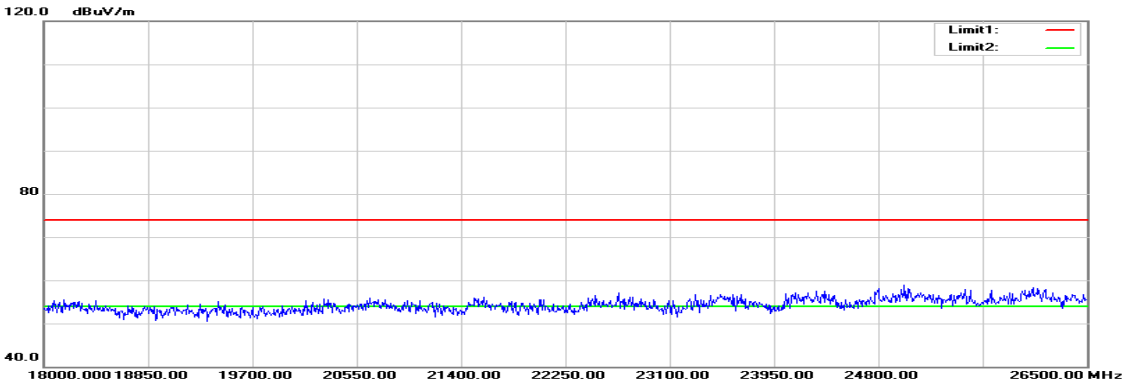
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average 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 20 MHz Channel mode / 5720 MHz

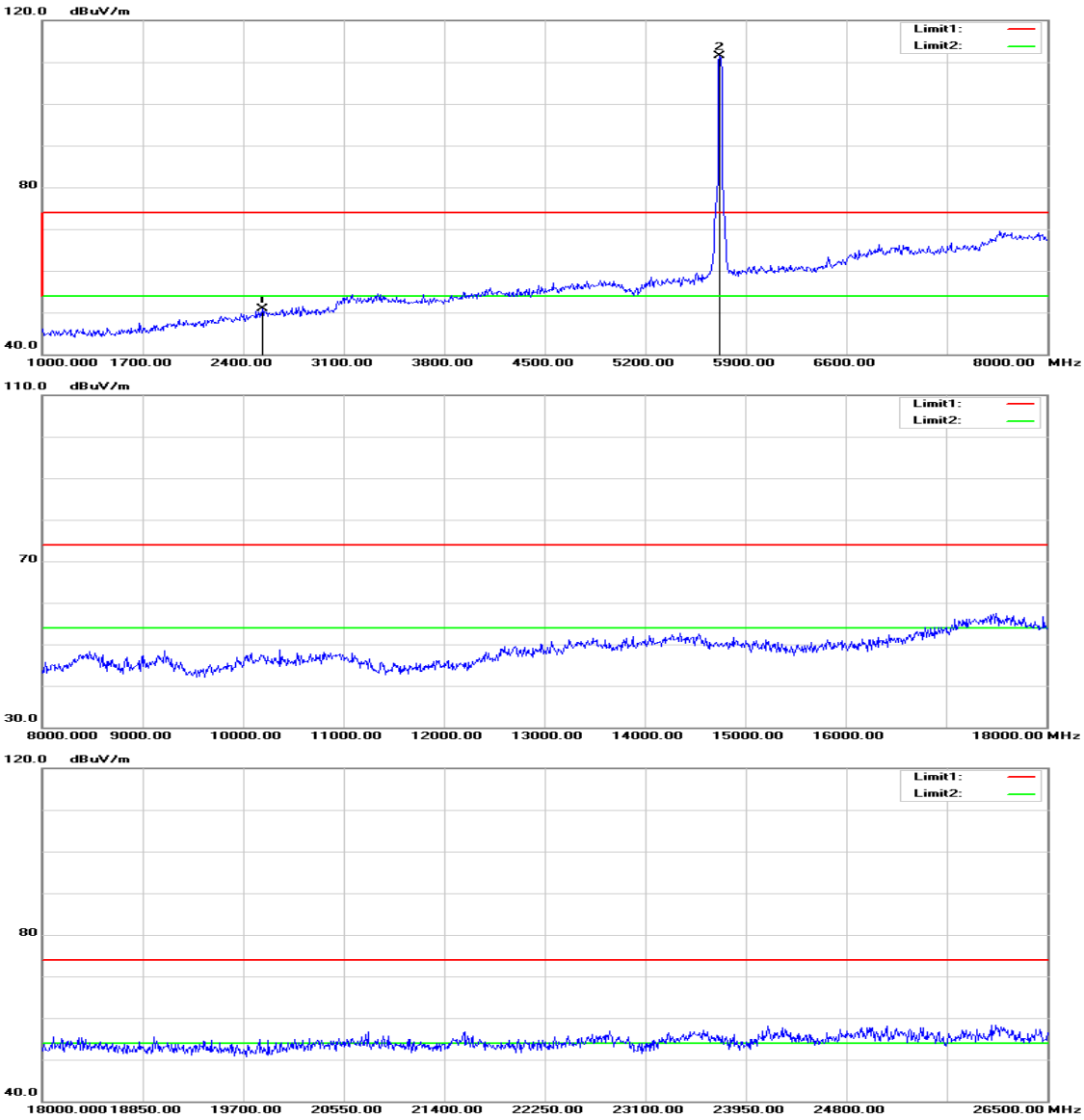
Polarity: Vertical







Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5720 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

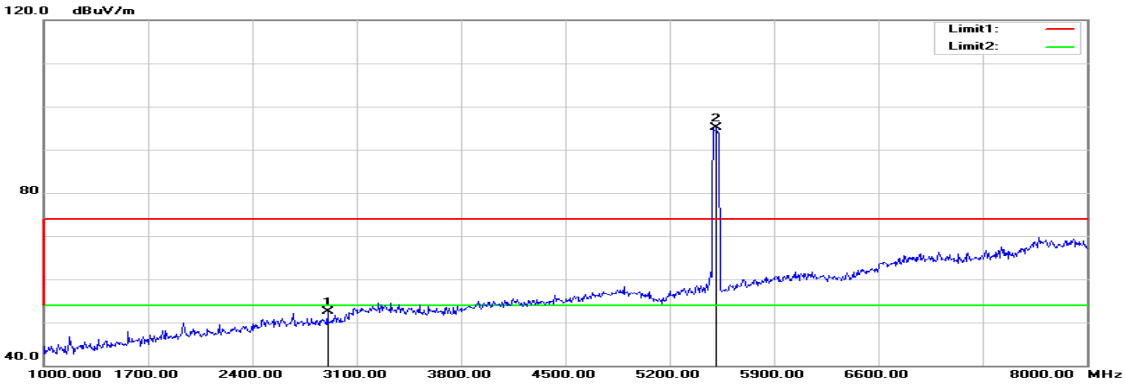
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2302.000	54.85	-4.29	50.56	74.00	-23.44	peak	V
N/A							
2533.000	53.91	-3.05	50.86	74.00	-23.14	peak	H
N/A							

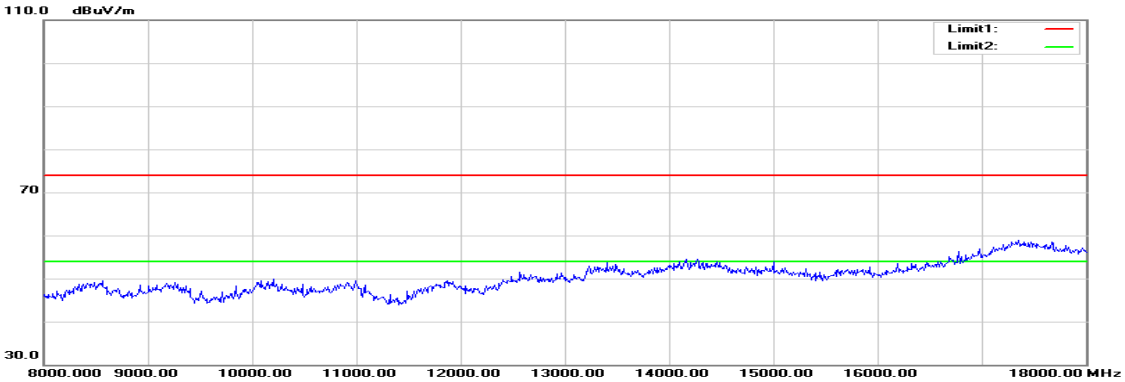
Remark:

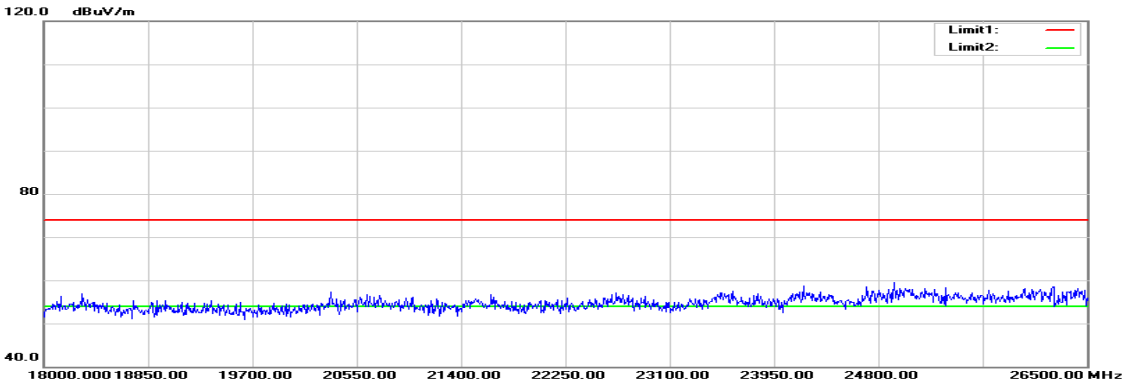
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

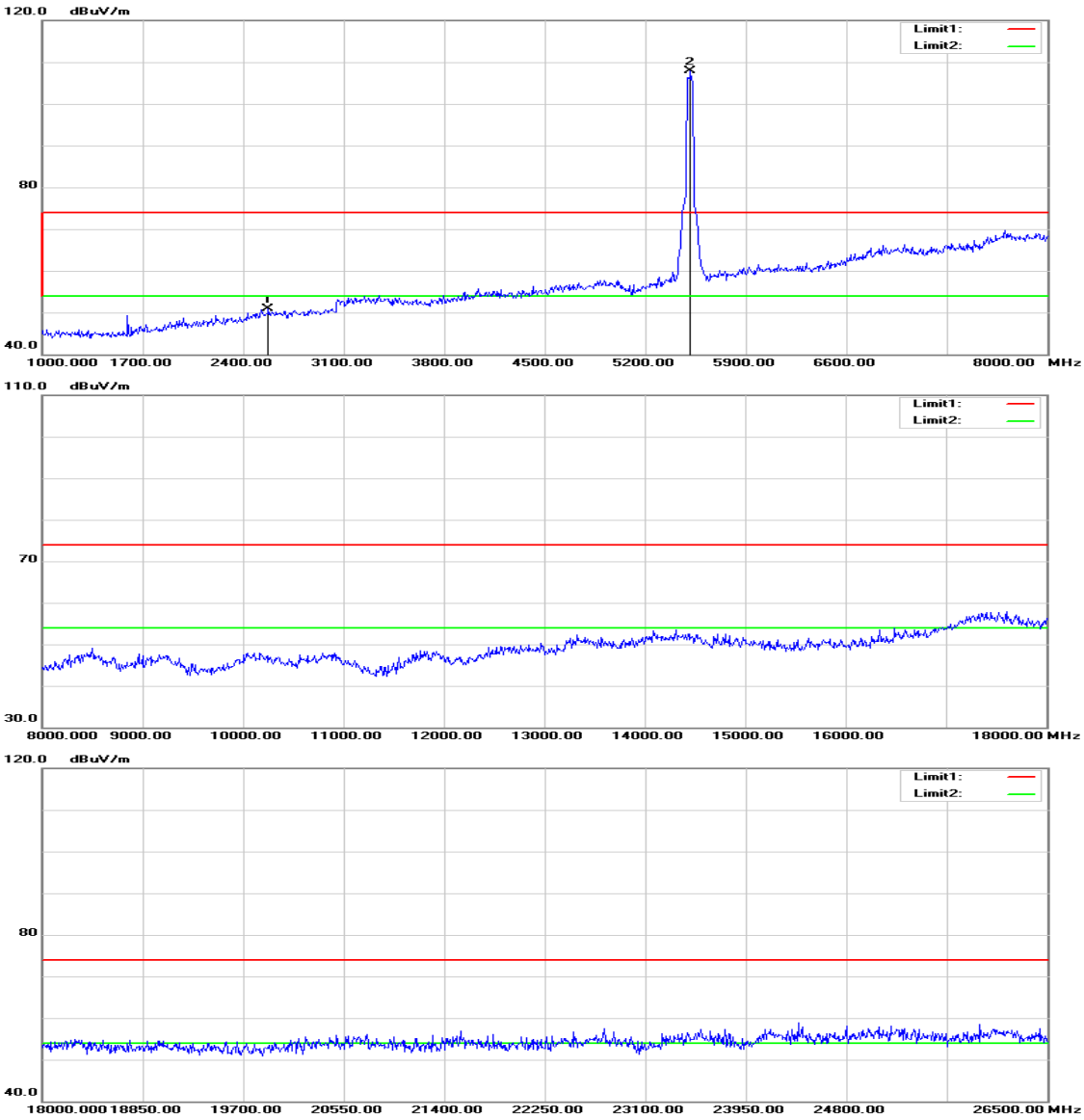
Polarity: Vertical







Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5510 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

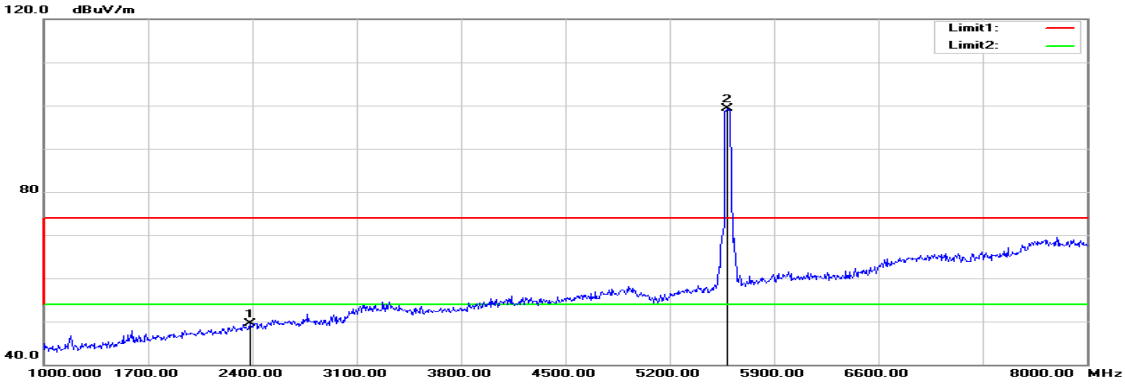
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2904.000	54.80	-2.30	52.50	74.00	-21.50	peak	V
N/A							
2575.000	53.81	-2.97	50.84	74.00	-23.16	peak	H
N/A							

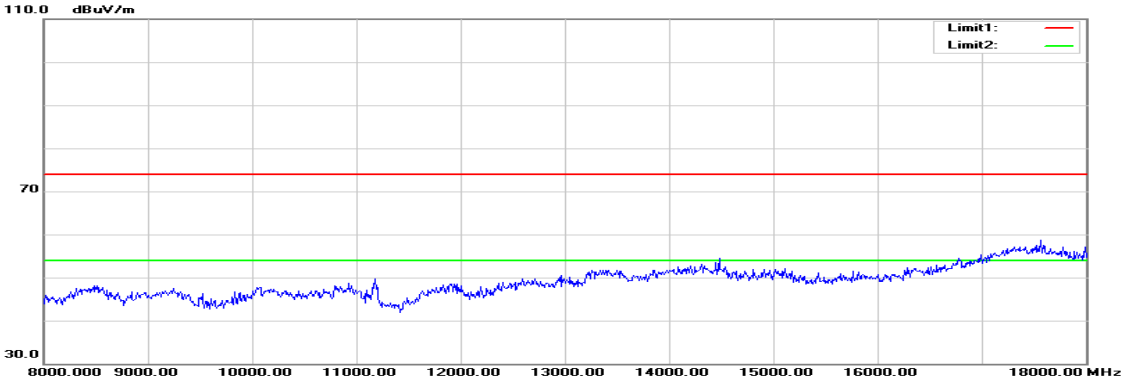
Remark:

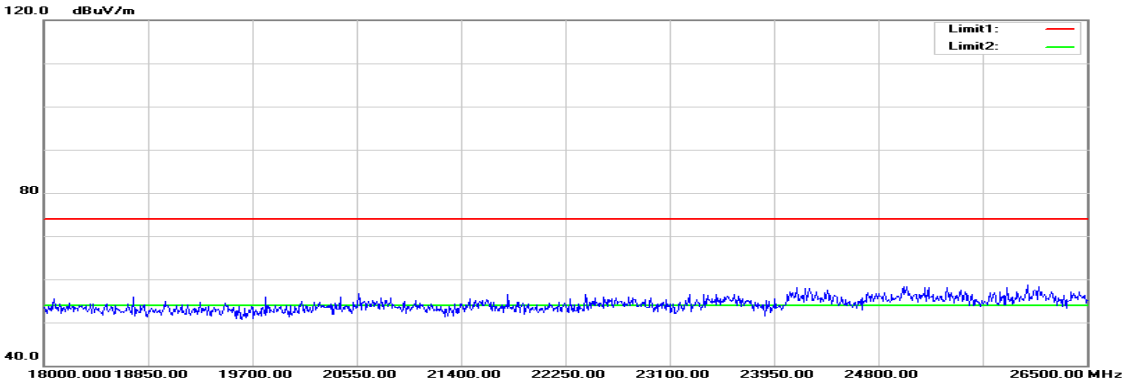
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average 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 / 5590 MHz

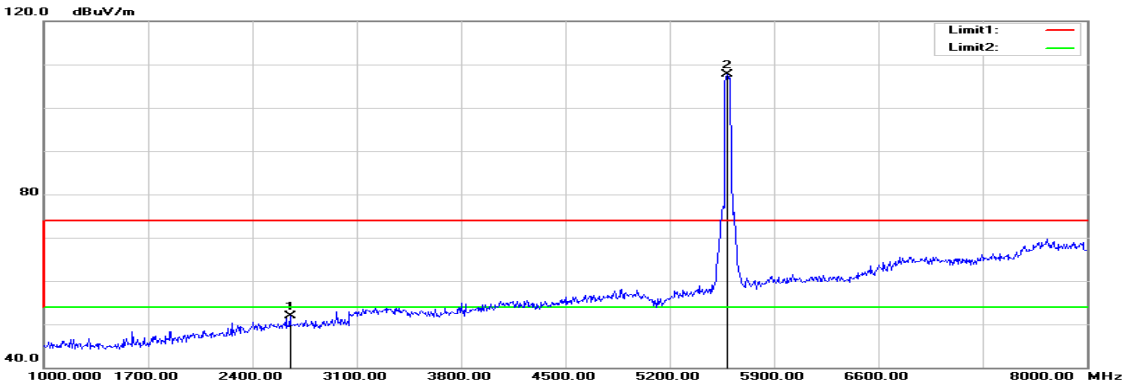
Polarity: Vertical

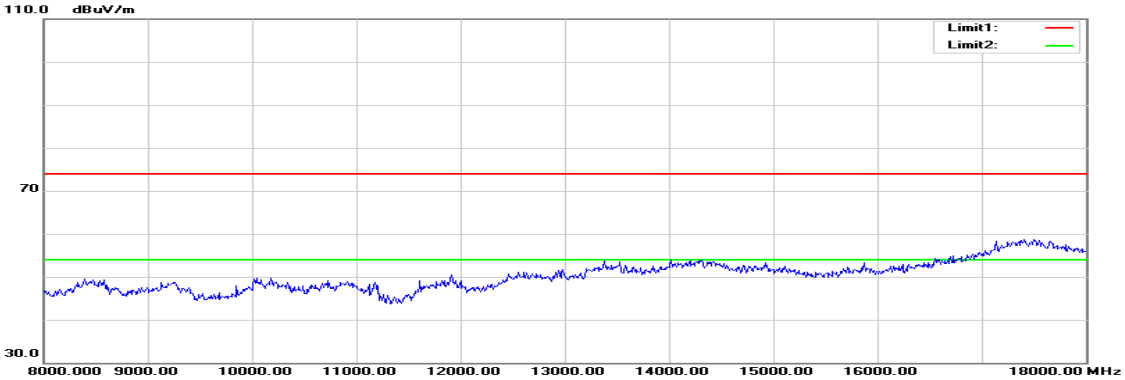


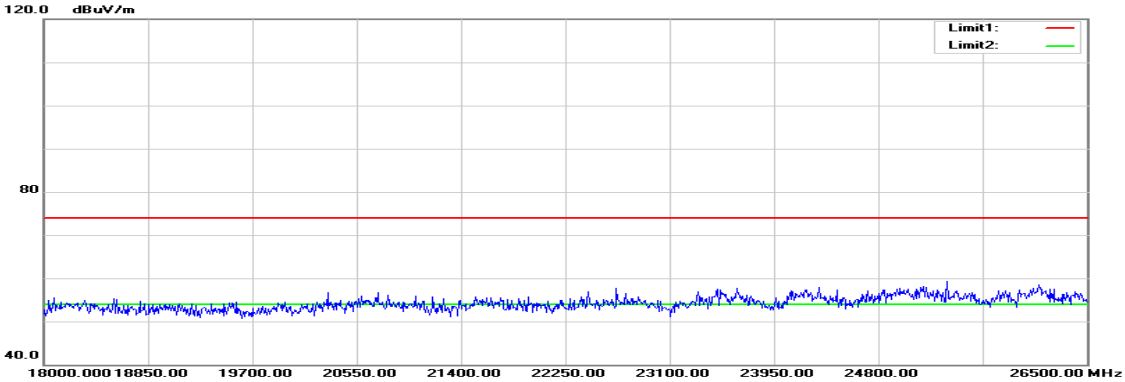




Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5590 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

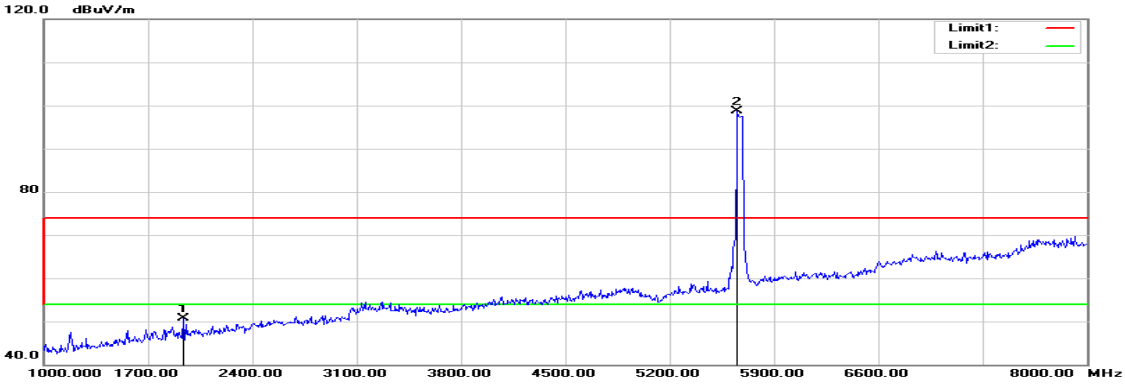
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2386.000	53.34	-3.81	49.53	74.00	-24.47	peak	V
N/A							
2652.000	54.76	-2.81	51.95	74.00	-22.05	peak	H
N/A							

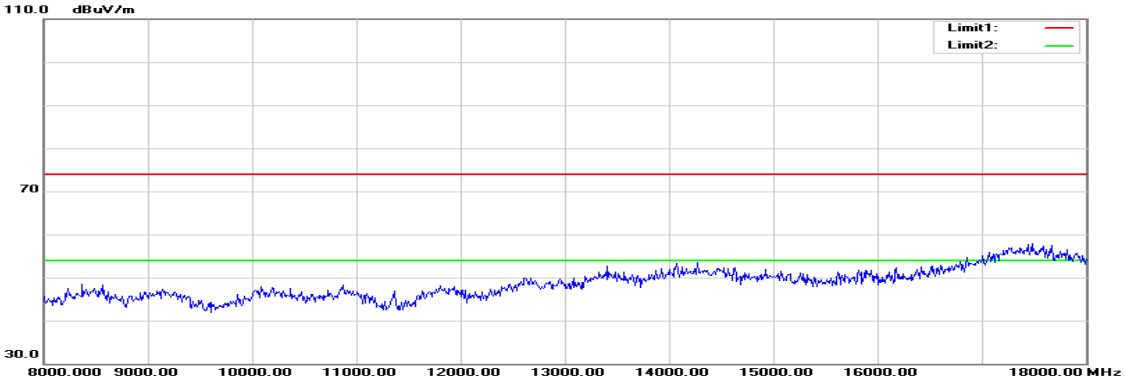
Remark:

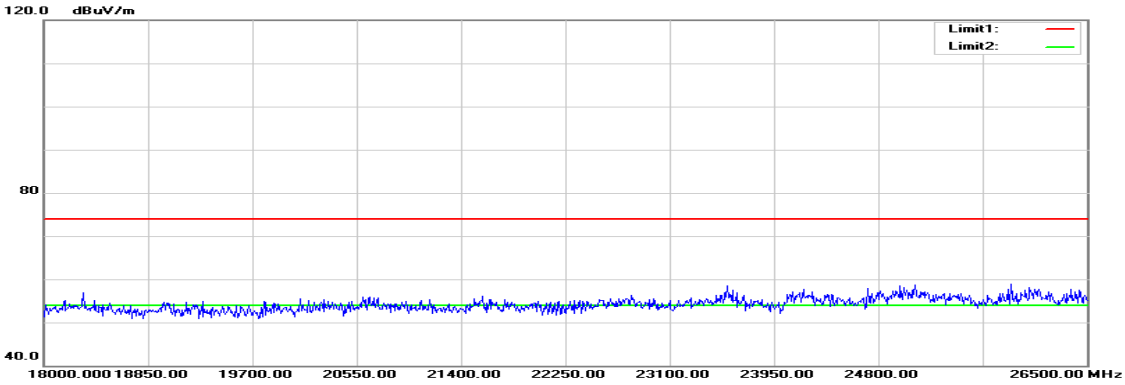
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

Tx / IEEE 802.11n HT 40 MHz mode / 5670 MHz

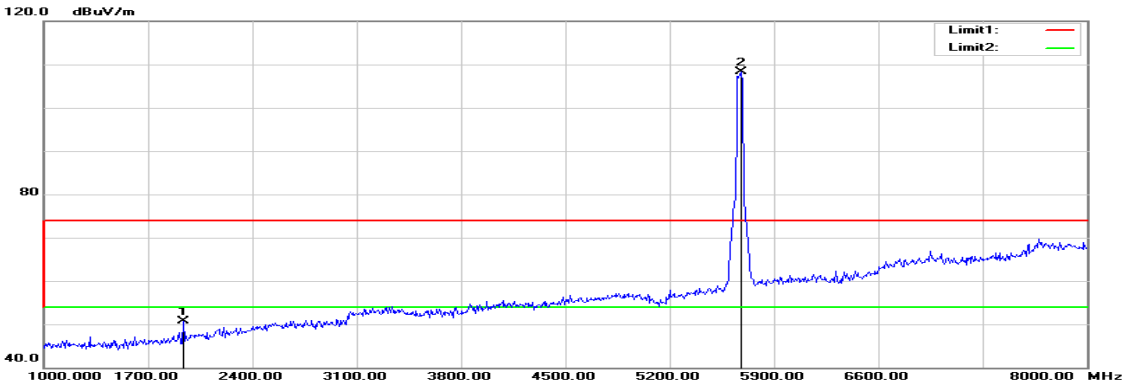
Polarity: Vertical

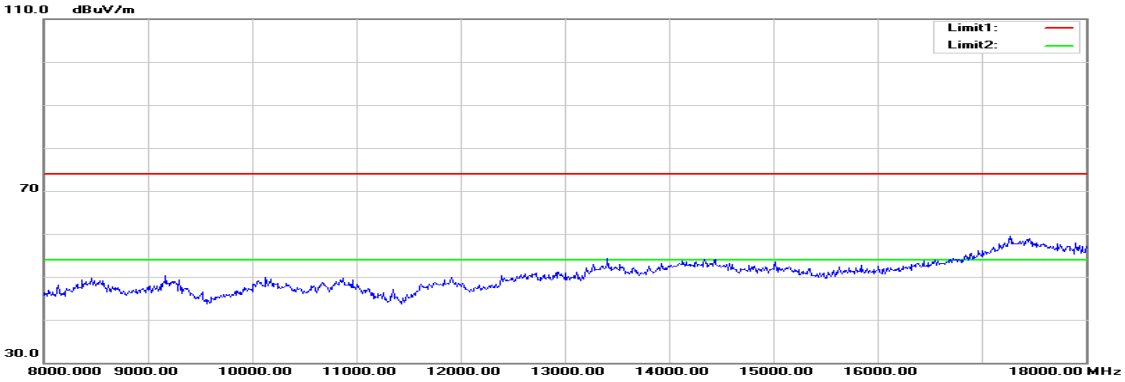


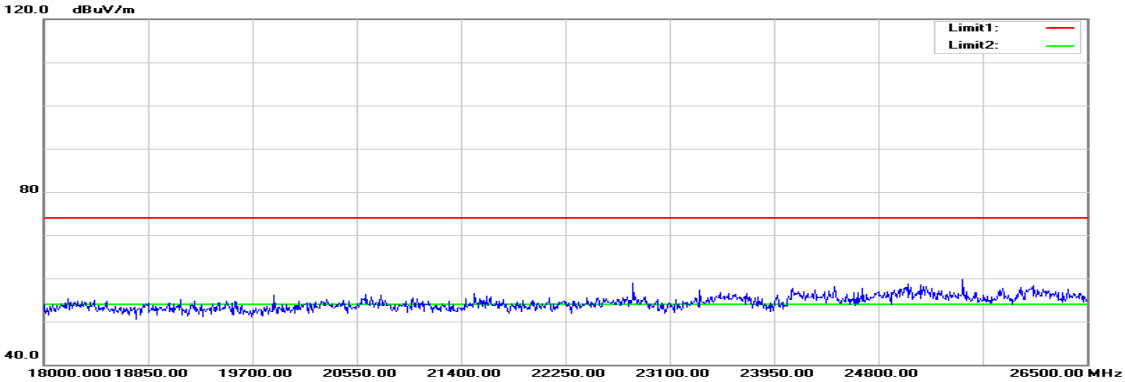




Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5670 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

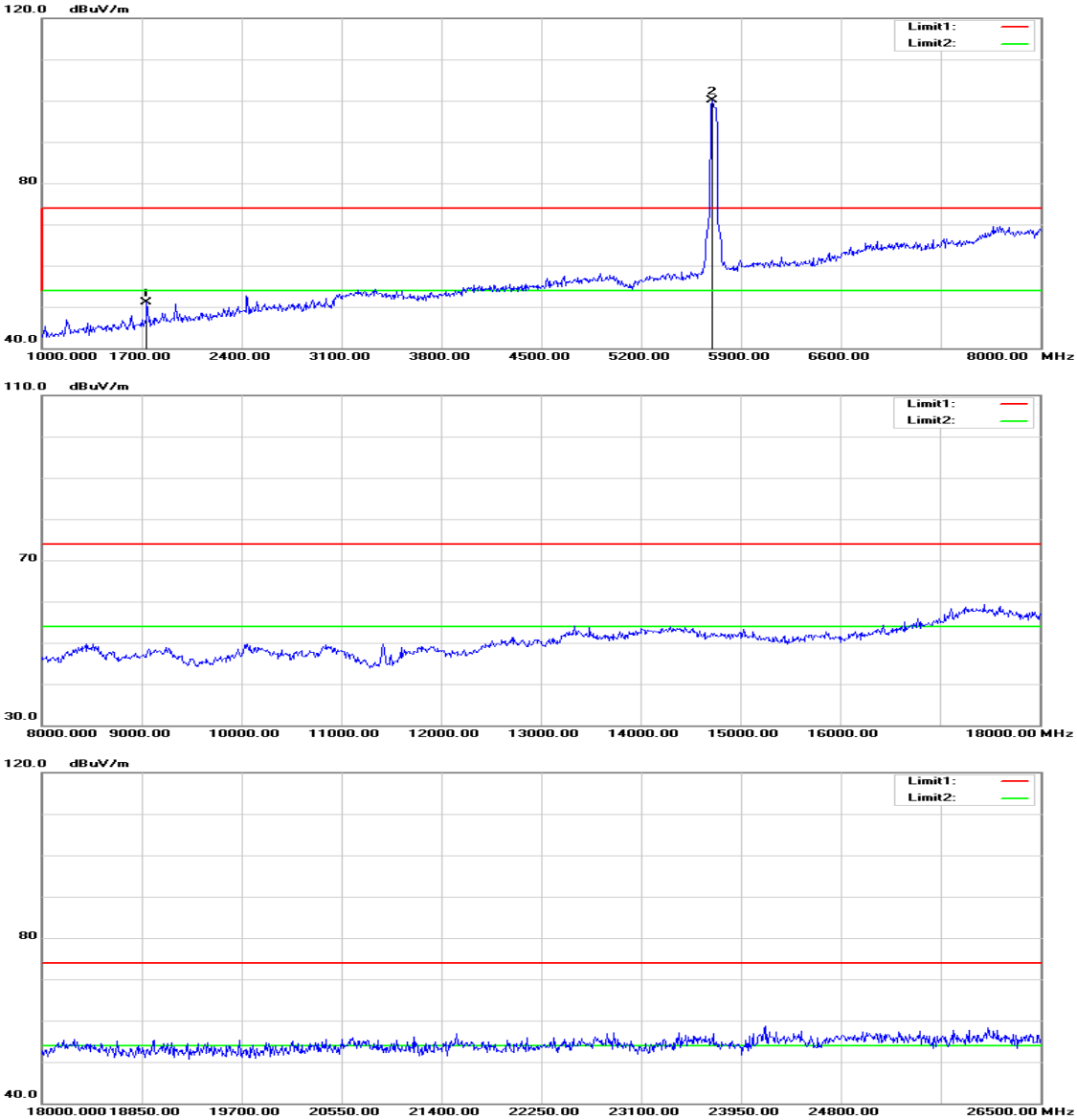
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
1938.000	55.88	-5.21	50.67	74.00	-23.33	peak	V
N/A							
1938.000	55.97	-5.21	50.76	74.00	-23.24	peak	H
N/A							

Remark:

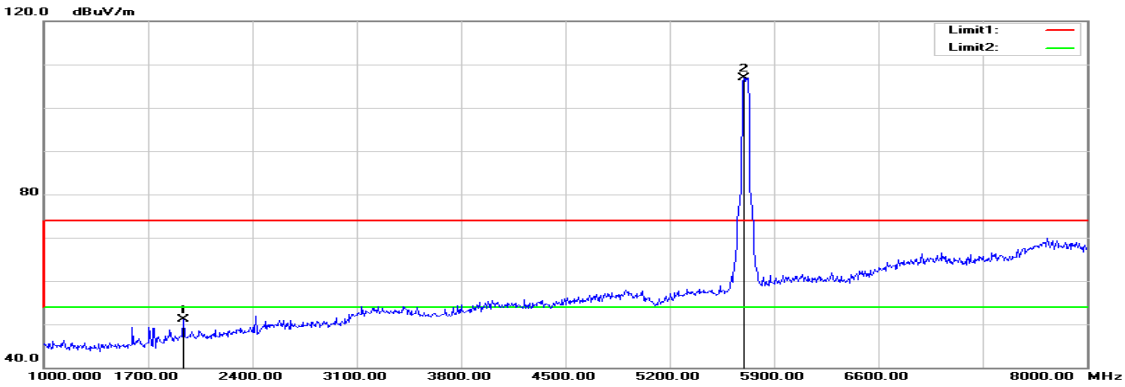
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

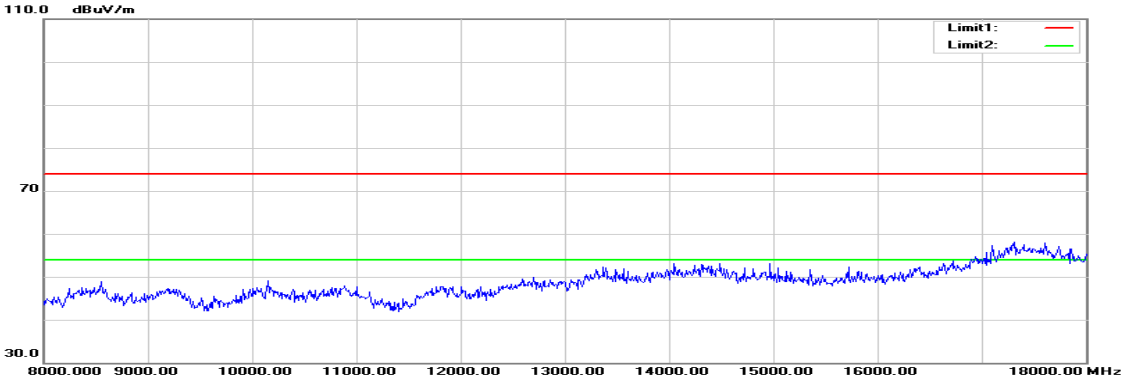
Tx / IEEE 802.11n HT 40 MHz mode / 5710 MHz

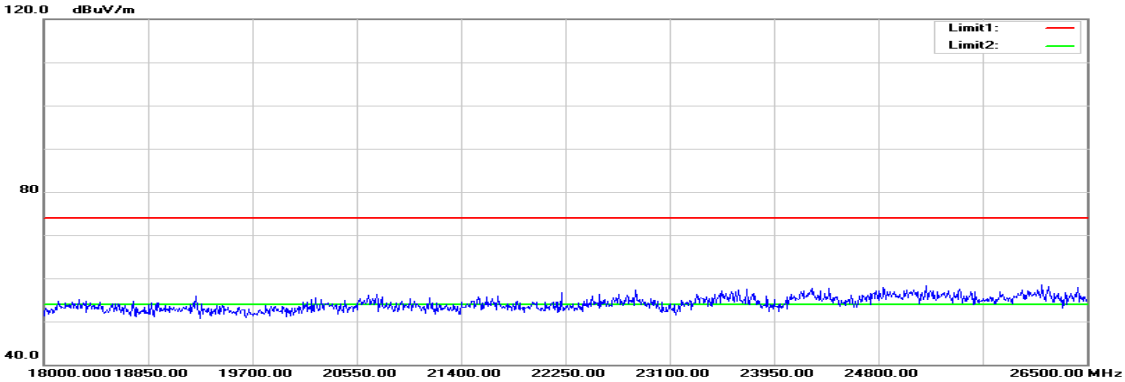
Polarity: Vertical



Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5710 MHz	**Test Date:**	June 8, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

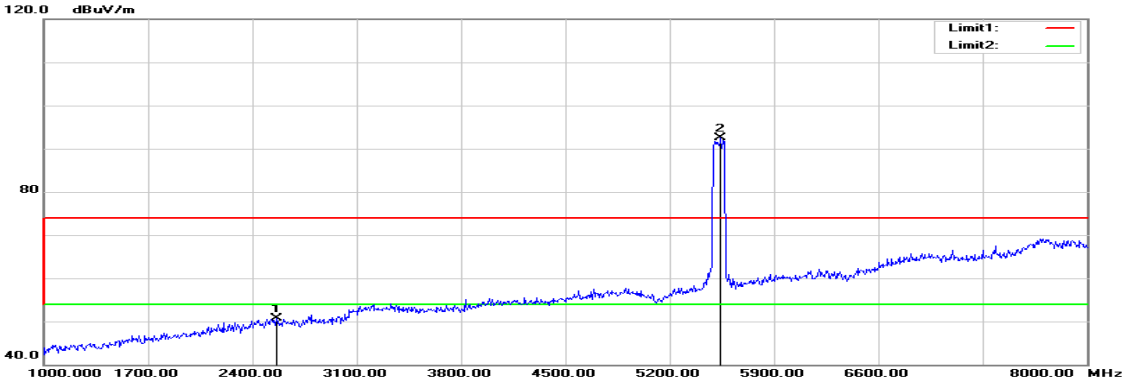
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
1735.000	57.31	-6.28	51.03	74.00	-22.97	peak	V
N/A							
1938.000	56.29	-5.21	51.08	74.00	-22.92	peak	H
N/A							

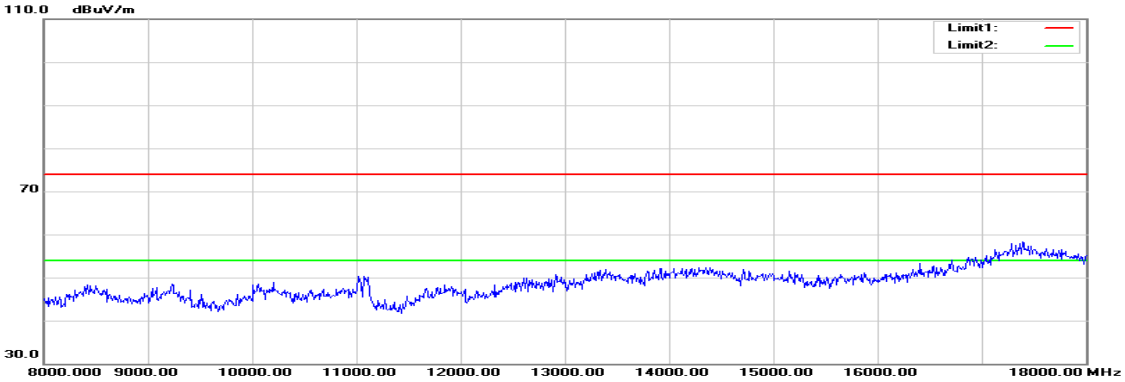
Remark:

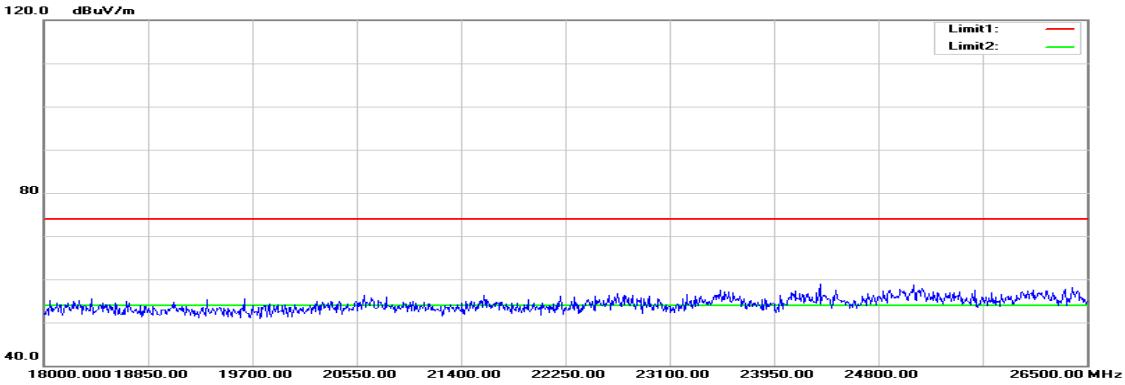
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average 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 802.11ac VHT 80 MHz mode / 5530 MHz

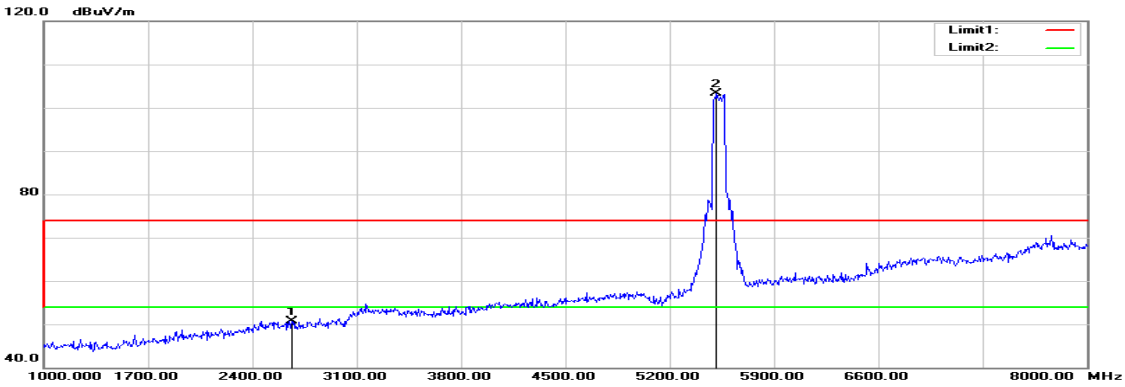
Polarity: Vertical

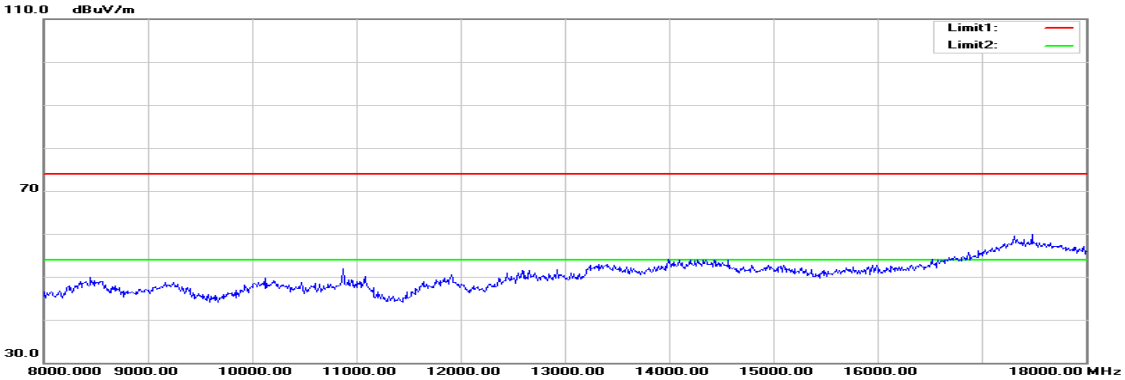


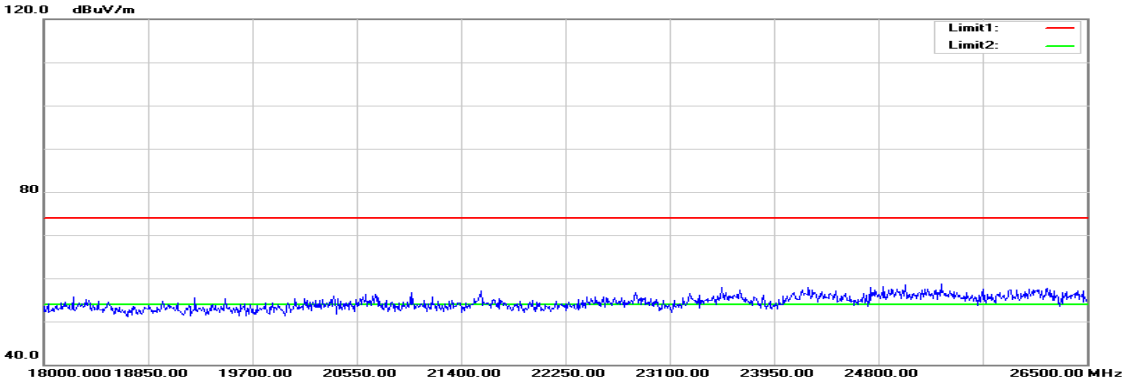




Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11ac VHT 80 MHz mode / 5530 MHz	**Test Date:**	June 9, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

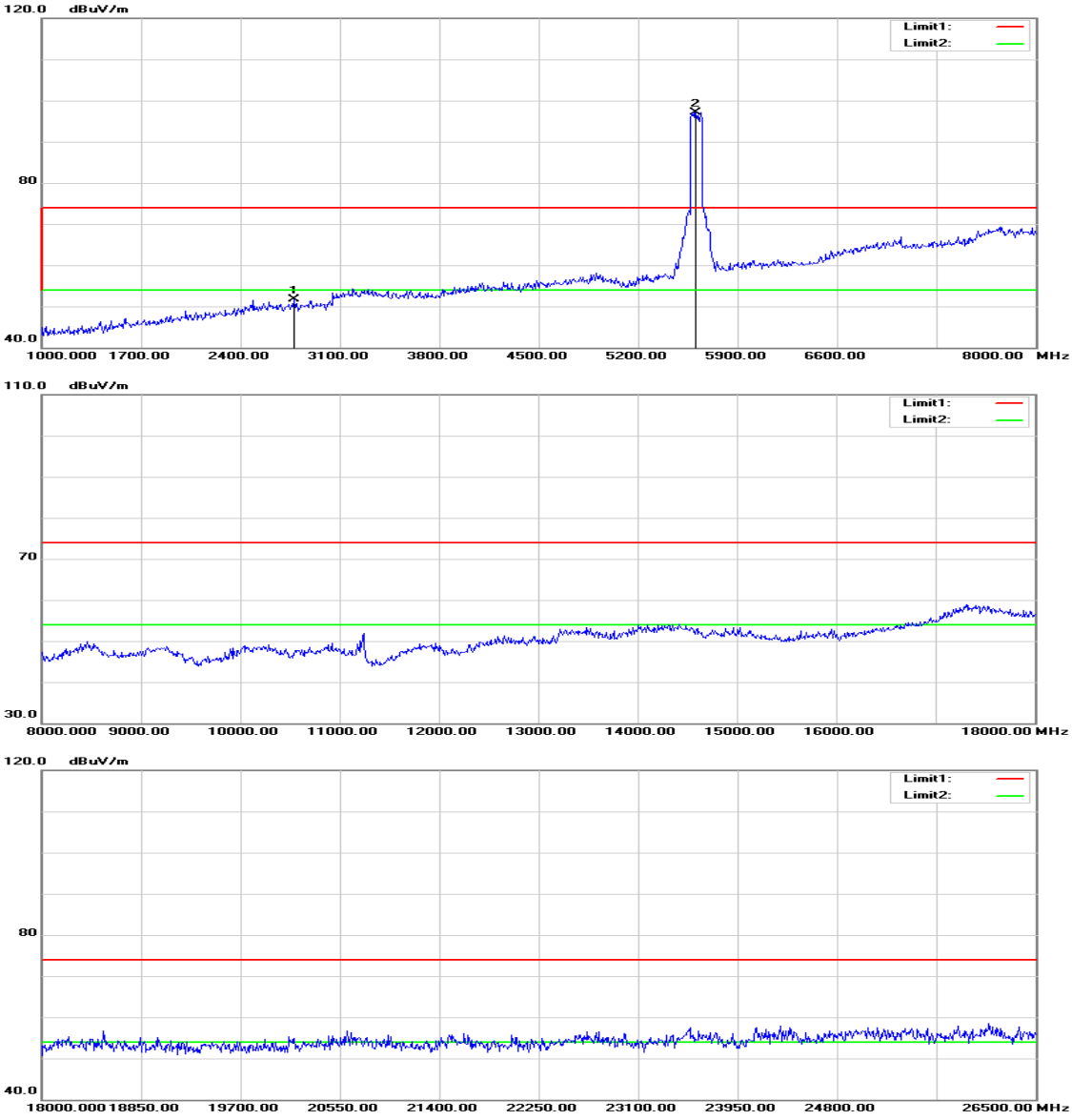
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2561.000	53.68	-3.00	50.68	74.00	-23.32	peak	V
N/A							
2666.000	53.53	-2.78	50.75	74.00	-23.25	peak	H
N/A							

Remark:

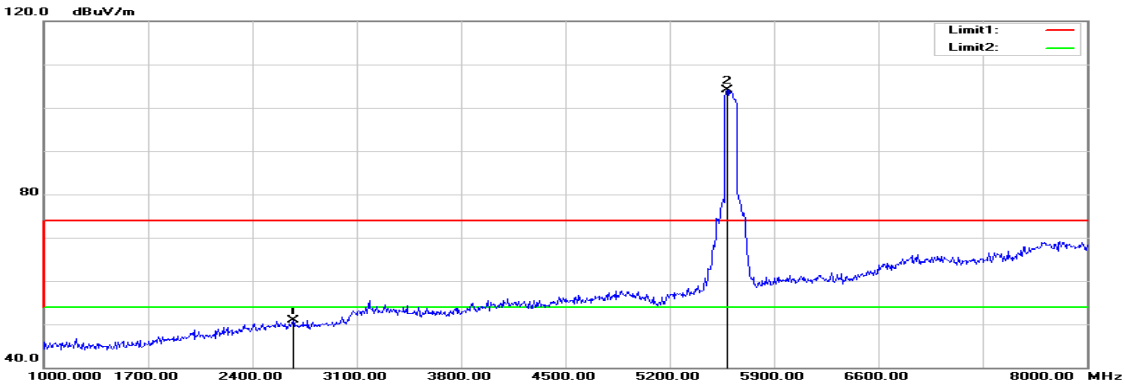
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

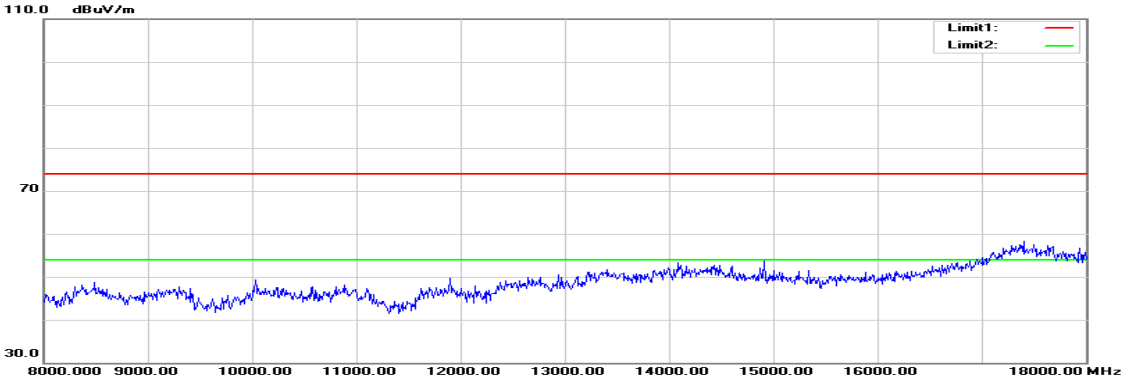
Tx / IEEE 802.11ac VHT 80 MHz mode / 5610 MHz

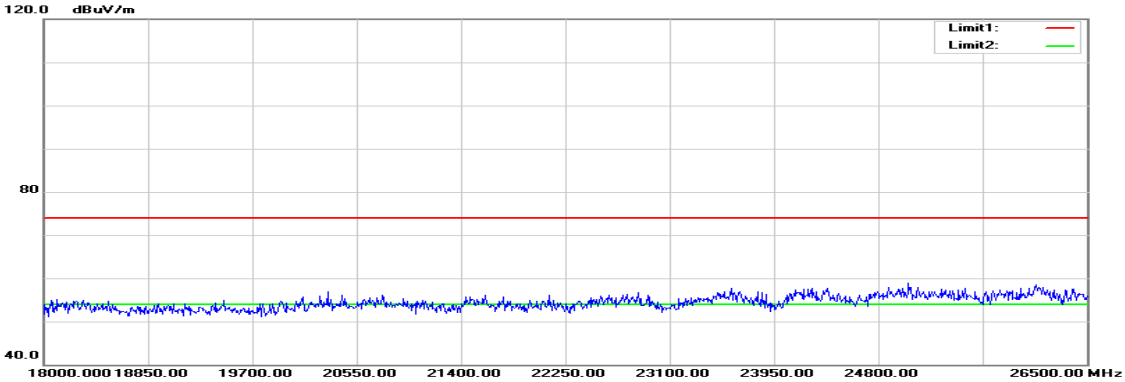
Polarity: Vertical



Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11ac VHT 80 MHz mode / 5610 MHz	**Test Date:**	June 9, 2015
Temperature:	27°C	**Tested by:**	David Shu
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

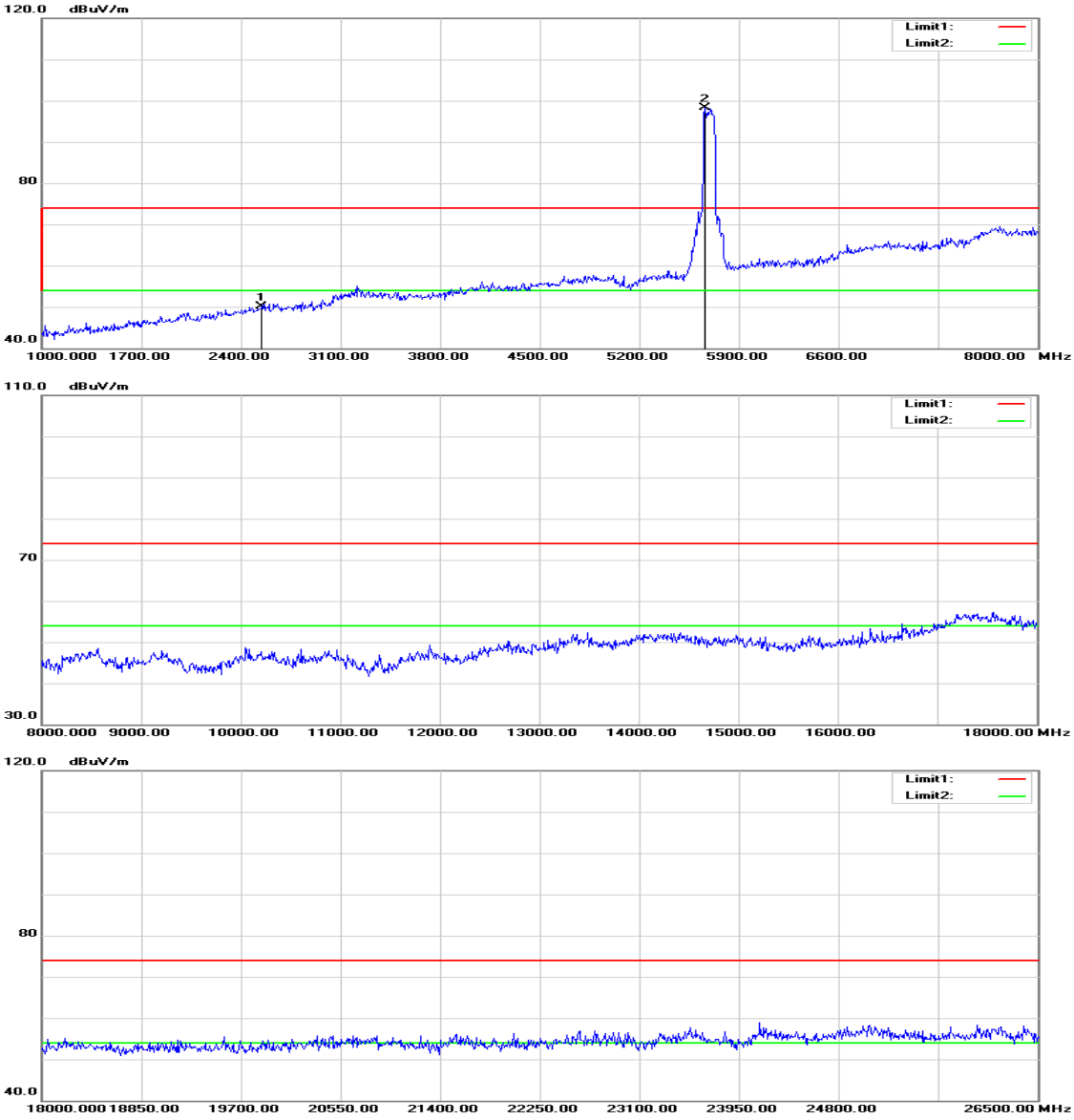
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2778.000	54.17	-2.56	51.61	74.00	-22.39	peak	V
N/A							
2673.000	53.66	-2.77	50.89	74.00	-23.11	peak	H
N/A							

Remark:

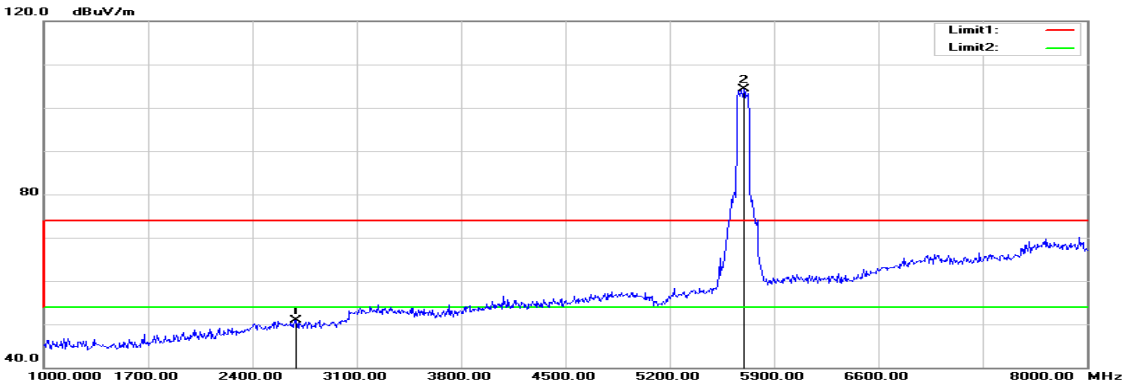
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average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

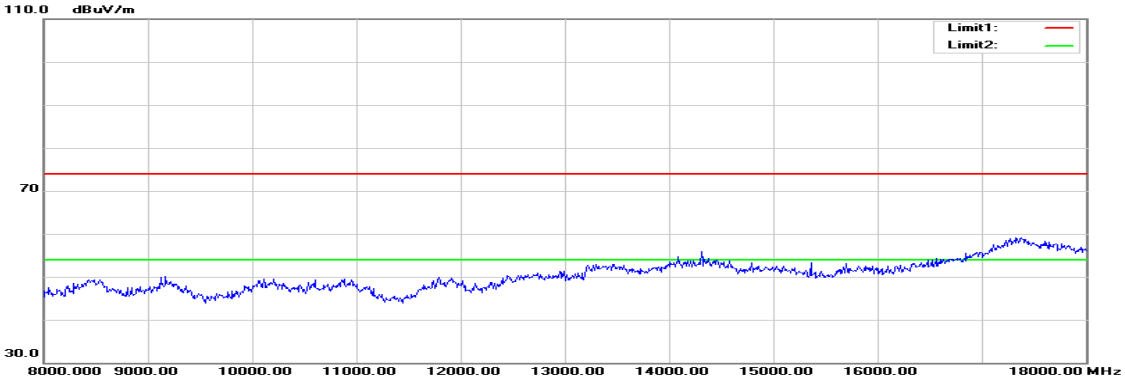
Tx / IEEE 802.11ac VHT 80 MHz mode / 5690 MHz

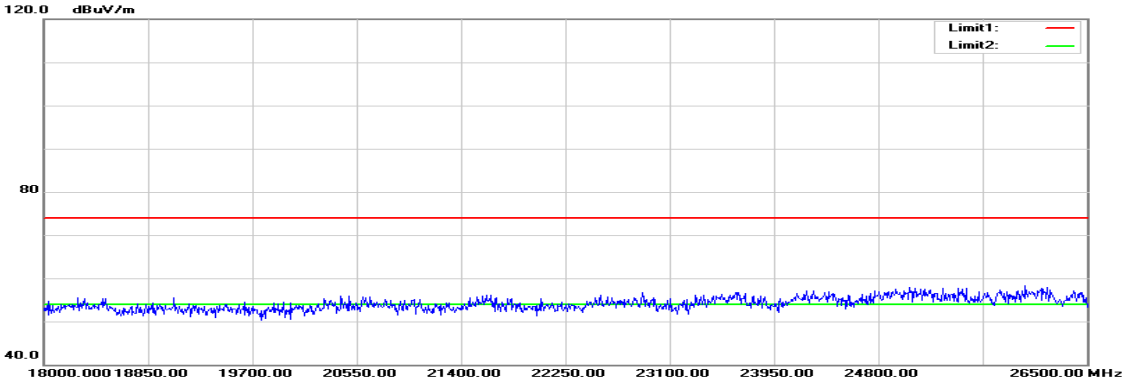
Polarity: Vertical



Polarity: Horizontal







Operation Mode:	Tx / IEEE 802.11ac VHT 80 MHz mode / 5690 MHz	**Test Date:**	June 9, 2015
Temperature:	27°C	**Tested by:**	David Shu
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)
2547.000	53.17	-3.03	50.14	74.00	-23.86	peak	V
N/A							
2694.000	53.67	-2.73	50.94	74.00	-23.06	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).*

7.7 POWERLINE CONDUCTED EMISSIONS

LIMIT

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

Frequency Range (MHz)	Limits (dBµV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

** Decreases with the logarithm of the frequency.*

Test Configuration

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

TEST PROCEDURE

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

TEST RESULTS

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

Test Data

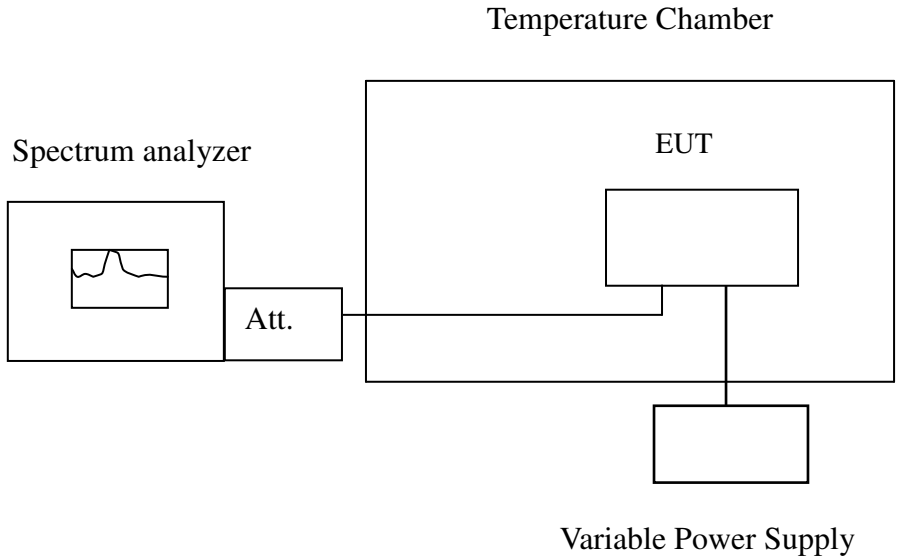
Not applicable, because EUT not connect to AC Main Source direct.

7.8 FREQUENCY STABILITY

LIMIT

According to §15.407(g) & RSS-247, 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.

IEEE 802.11a mode / 5180 ~ 5240 MHz:

CH Low

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5179.995232	5150~5250	Pass
40	110	5180.004976	5150~5250	Pass
30	110	5180.001477	5150~5250	Pass
20	110	5179.997130	5150~5250	Pass
10	110	5179.995793	5150~5250	Pass
0	110	5180.008208	5150~5250	Pass
-10	110	5180.006937	5150~5250	Pass
-20	110	5179.991488	5150~5250	Pass

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5180.005028	5150~5250	Pass
	110	5179.994235	5150~5250	Pass
	126.5	5179.990042	5150~5250	Pass

CH High

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5240.003068	5150~5250	Pass
40	110	5239.992997	5150~5250	Pass
30	110	5239.996601	5150~5250	Pass
20	110	5240.007699	5150~5250	Pass
10	110	5240.001980	5150~5250	Pass
0	110	5240.001286	5150~5250	Pass
-10	110	5240.001340	5150~5250	Pass
-20	110	5239.991269	5150~5250	Pass

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5240.005788	5150~5250	Pass
	110	5240.010114	5150~5250	Pass
	126.5	5240.007708	5150~5250	Pass

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

CH Low

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5180.010176	5150~5250	Pass
40	110	5179.997744	5150~5250	Pass
30	110	5180.005780	5150~5250	Pass
20	110	5180.002410	5150~5250	Pass
10	110	5180.007447	5150~5250	Pass
0	110	5179.994465	5150~5250	Pass
-10	110	5179.996388	5150~5250	Pass
-20	110	5180.010134	5150~5250	Pass

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5180.00201	5150~5250	Pass
	110	5179.995397	5150~5250	Pass
	126.5	5179.99072	5150~5250	Pass

CH High

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5240.009045	5150~5250	Pass
40	110	5240.002753	5150~5250	Pass
30	110	5239.990029	5150~5250	Pass
20	110	5240.008508	5150~5250	Pass
10	110	5240.007761	5150~5250	Pass
0	110	5239.993533	5150~5250	Pass
-10	110	5239.993015	5150~5250	Pass
-20	110	5240.000341	5150~5250	Pass

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5240.000762	5150~5250	Pass
	110	5240.001156	5150~5250	Pass
	126.5	5240.001131	5150~5250	Pass

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

CH Low

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5239.991894	5150~5250	Pass
40	110	5240.004650	5150~5250	Pass
30	110	5239.991504	5150~5250	Pass
20	110	5239.994063	5150~5250	Pass
10	110	5240.001236	5150~5250	Pass
0	110	5240.005201	5150~5250	Pass
-10	110	5239.993704	5150~5250	Pass
-20	110	5240.008495	5150~5250	Pass

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5240.006142	5150~5250	Pass
	110	5240.006526	5150~5250	Pass
	126.5	5239.991894	5150~5250	Pass

CH High

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5239.991894	5150~5250	Pass
40	110	5240.004650	5150~5250	Pass
30	110	5239.991504	5150~5250	Pass
20	110	5239.994063	5150~5250	Pass
10	110	5240.001236	5150~5250	Pass
0	110	5240.005201	5150~5250	Pass
-10	110	5239.993704	5150~5250	Pass
-20	110	5240.008495	5150~5250	Pass

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5239.992471	5150~5250	Pass
	110	5240.006142	5150~5250	Pass
	126.5	5240.006526	5150~5250	Pass

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

CH Low

Operating Frequency: 5190 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5190.004625	5150~5250	Pass
40	110	5190.004017	5150~5250	Pass
30	110	5189.992959	5150~5250	Pass
20	110	5189.992410	5150~5250	Pass
10	110	5189.997500	5150~5250	Pass
0	110	5189.998642	5150~5250	Pass
-10	110	5190.002731	5150~5250	Pass
-20	110	5190.001900	5150~5250	Pass

Operating Frequency: 5190 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5190.002956	5150~5250	Pass
	110	5189.999239	5150~5250	Pass
	126.5	5190.002086	5150~5250	Pass

CH High

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5229.997719	5150~5250	Pass
40	110	5229.994554	5150~5250	Pass
30	110	5230.001893	5150~5250	Pass
20	110	5229.999128	5150~5250	Pass
10	110	5229.992584	5150~5250	Pass
0	110	5230.000487	5150~5250	Pass
-10	110	5229.992537	5150~5250	Pass
-20	110	5229.990594	5150~5250	Pass

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5230.004659	5150~5250	Pass
	110	5230.002301	5150~5250	Pass
	126.5	5230.00126	5150~5250	Pass

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

CH Low

Operating Frequency: 5190 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	110	5190.007342	5150~5250	Pass
40	110	5189.992485	5150~5250	Pass
30	110	5189.990221	5150~5250	Pass
20	110	5189.995182	5150~5250	Pass
10	110	5189.996504	5150~5250	Pass
0	110	5189.997429	5150~5250	Pass
-10	110	5190.008872	5150~5250	Pass
-20	110	5190.002410	5150~5250	Pass

Operating Frequency: 5190 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	93.5	5189.996583	5150~5250	Pass
	110	5190.0073	5150~5250	Pass
	126.5	5189.996893	5150~5250	Pass

CH High

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5229.992956	5150~5250	Pass
40	110	5229.990857	5150~5250	Pass
30	110	5230.008006	5150~5250	Pass
20	110	5229.992949	5150~5250	Pass
10	110	5230.008640	5150~5250	Pass
0	110	5229.998049	5150~5250	Pass
-10	110	5230.004649	5150~5250	Pass
-20	110	5229.991705	5150~5250	Pass

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5229.998897	5150~5250	Pass
	110	5230.002139	5150~5250	Pass
	126.5	5230.001025	5150~5250	Pass

IEEE 802.11ac VHT 80 MHz mode / 5210 MHz / Chain 0:

CH Mid

Operating Frequency: 5210 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5209.994390	5150~5250	Pass
40	110	5210.004127	5150~5250	Pass
30	110	5210.009006	5150~5250	Pass
20	110	5210.000689	5150~5250	Pass
10	110	5209.996031	5150~5250	Pass
0	110	5210.000256	5150~5250	Pass
-10	110	5209.995643	5150~5250	Pass
-20	110	5209.997542	5150~5250	Pass

Operating Frequency: 5210 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5210.005213	5150~5250	Pass
	110	5209.995305	5150~5250	Pass
	126.5	5209.993694	5150~5250	Pass

IEEE 802.11ac VHT 80 MHz mode / 5210 MHz / Chain 1:

CH Mid

Operating Frequency: 5210 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5210.009925	5150~5250	Pass
40	110	5210.002155	5150~5250	Pass
30	110	5209.992687	5150~5250	Pass
20	110	5210.010950	5150~5250	Pass
10	110	5210.010613	5150~5250	Pass
0	110	5209.991090	5150~5250	Pass
-10	110	5210.008418	5150~5250	Pass
-20	110	5209.994426	5150~5250	Pass

Operating Frequency: 5210 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5210.004288	5150~5250	Pass
	110	5210.006052	5150~5250	Pass
	126.5	5210.002822	5150~5250	Pass

IEEE 802.11a mode / 5260 ~ 5320 MHz:

CH Low

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5259.993032	5250~5350	Pass
40	110	5260.007856	5250~5350	Pass
30	110	5260.002240	5250~5350	Pass
20	110	5259.994598	5250~5350	Pass
10	110	5259.992880	5250~5350	Pass
0	110	5259.992480	5250~5350	Pass
-10	110	5260.006968	5250~5350	Pass
-20	110	5260.004006	5250~5350	Pass

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5260.010788	5250~5350	Pass
	110	5259.996091	5250~5350	Pass
	126.5	5260.007801	5250~5350	Pass

CH High

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5319.999835	5250~5350	Pass
40	110	5319.997759	5250~5350	Pass
30	110	5319.992893	5250~5350	Pass
20	110	5320.000620	5250~5350	Pass
10	110	5320.004392	5250~5350	Pass
0	110	5320.000548	5250~5350	Pass
-10	110	5319.998538	5250~5350	Pass
-20	110	5320.002071	5250~5350	Pass

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5320.008058	5250~5350	Pass
	110	5319.992435	5250~5350	Pass
	126.5	5320.003438	5250~5350	Pass

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

CH Low

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5260.007000	5250~5350	Pass
40	110	5259.993246	5250~5350	Pass
30	110	5260.004211	5250~5350	Pass
20	110	5259.998475	5250~5350	Pass
10	110	5260.008382	5250~5350	Pass
0	110	5260.005985	5250~5350	Pass
-10	110	5259.998098	5250~5350	Pass
-20	110	5260.008863	5250~5350	Pass

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5260.006482	5250~5350	Pass
	110	5259.996163	5250~5350	Pass
	126.5	5260.010221	5250~5350	Pass

CH High

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5319.993578	5250~5350	Pass
40	110	5320.005239	5250~5350	Pass
30	110	5319.990750	5250~5350	Pass
20	110	5319.993874	5250~5350	Pass
10	110	5319.992636	5250~5350	Pass
0	110	5320.007318	5250~5350	Pass
-10	110	5319.990090	5250~5350	Pass
-20	110	5320.006265	5250~5350	Pass

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5319.990041	5250~5350	Pass
	110	5320.007475	5250~5350	Pass
	126.5	5319.992711	5250~5350	Pass

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

CH Low

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5259.997686	5250~5350	Pass
40	110	5259.994542	5250~5350	Pass
30	110	5259.990199	5250~5350	Pass
20	110	5259.994611	5250~5350	Pass
10	110	5259.995437	5250~5350	Pass
0	110	5259.993798	5250~5350	Pass
-10	110	5260.002440	5250~5350	Pass
-20	110	5260.002824	5250~5350	Pass

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5259.999627	5250~5350	Pass
	110	5260.005518	5250~5350	Pass
	126.5	5260.00325	5250~5350	Pass

CH High

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5319.999033	5250~5350	Pass
40	110	5320.008745	5250~5350	Pass
30	110	5320.000209	5250~5350	Pass
20	110	5320.006023	5250~5350	Pass
10	110	5320.001794	5250~5350	Pass
0	110	5319.994289	5250~5350	Pass
-10	110	5319.992132	5250~5350	Pass
-20	110	5319.995404	5250~5350	Pass

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5320.009785	5250~5350	Pass
	110	5320.006036	5250~5350	Pass
	126.5	5320.001702	5250~5350	Pass

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

CH Low

Operating Frequency: 5270 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5269.997090	5250~5350	Pass
40	110	5269.994186	5250~5350	Pass
30	110	5270.009817	5250~5350	Pass
20	110	5269.998906	5250~5350	Pass
10	110	5269.990223	5250~5350	Pass
0	110	5270.006633	5250~5350	Pass
-10	110	5270.003644	5250~5350	Pass
-20	110	5270.005533	5250~5350	Pass

Operating Frequency: 5270 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5269.9998	5250~5350	Pass
	110	5269.991934	5250~5350	Pass
	126.5	5269.996582	5250~5350	Pass

CH High

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5310.007398	5250~5350	Pass
40	110	5309.995664	5250~5350	Pass
30	110	5310.001810	5250~5350	Pass
20	110	5309.990661	5250~5350	Pass
10	110	5310.006936	5250~5350	Pass
0	110	5309.993536	5250~5350	Pass
-10	110	5309.992540	5250~5350	Pass
-20	110	5309.992515	5250~5350	Pass

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5309.990618	5250~5350	Pass
	110	5310.006341	5250~5350	Pass
	126.5	5309.991945	5250~5350	Pass

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

CH Low

Operating Frequency: 5270 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5269.998781	5250~5350	Pass
40	110	5269.990289	5250~5350	Pass
30	110	5269.995449	5250~5350	Pass
20	110	5270.010586	5250~5350	Pass
10	110	5270.007479	5250~5350	Pass
0	110	5269.999326	5250~5350	Pass
-10	110	5270.003533	5250~5350	Pass
-20	110	5270.003541	5250~5350	Pass

Operating Frequency: 5270 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5269.996711	5250~5350	Pass
	110	5269.998808	5250~5350	Pass
	126.5	5269.998777	5250~5350	Pass

CH High

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5310.006734	5250~5350	Pass
40	110	5310.010674	5250~5350	Pass
30	110	5309.990022	5250~5350	Pass
20	110	5310.006305	5250~5350	Pass
10	110	5309.990704	5250~5350	Pass
0	110	5310.006085	5250~5350	Pass
-10	110	5310.010151	5250~5350	Pass
-20	110	5309.997704	5250~5350	Pass

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5309.994344	5250~5350	Pass
	110	5310.00402	5250~5350	Pass
	126.5	5309.996598	5250~5350	Pass

IEEE 802.11ac VHT 80 MHz mode / 5290 MHz / Chain 0:

CH Mid

Operating Frequency: 5290 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	110	5290.010453	5150~5250	Pass
40	110	5289.999960	5150~5250	Pass
30	110	5289.993968	5150~5250	Pass
20	110	5290.006418	5150~5250	Pass
10	110	5289.990675	5150~5250	Pass
0	110	5289.991368	5150~5250	Pass
-10	110	5289.999329	5150~5250	Pass
-20	110	5290.000279	5150~5250	Pass

Operating Frequency: 5290 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	93.5	5290.003645	5150~5250	Pass
	110	5290.001503	5150~5250	Pass
	126.5	5289.992839	5150~5250	Pass

IEEE 802.11ac VHT 80 MHz mode / 5290 MHz / Chain 1:

CH Mid

Operating Frequency: 5290 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5290.000817	5150~5250	Pass
40	110	5289.998561	5150~5250	Pass
30	110	5290.004163	5150~5250	Pass
20	110	5289.998249	5150~5250	Pass
10	110	5290.005732	5150~5250	Pass
0	110	5289.997215	5150~5250	Pass
-10	110	5290.010601	5150~5250	Pass
-20	110	5290.000440	5150~5250	Pass

Operating Frequency: 5290 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5290.001419	5150~5250	Pass
	110	5290.00389	5150~5250	Pass
	126.5	5289.99086	5150~5250	Pass

IEEE 802.11a mode / 5500 ~ 5720 MHz:

CH Low

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5499.995911	5470~5725	Pass
40	110	5500.004169	5470~5725	Pass
30	110	5500.004446	5470~5725	Pass
20	110	5500.009372	5470~5725	Pass
10	110	5499.996207	5470~5725	Pass
0	110	5500.001924	5470~5725	Pass
-10	110	5499.990563	5470~5725	Pass
-20	110	5499.991839	5470~5725	Pass

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5499.991	5470~5725	Pass
	110	5499.997308	5470~5725	Pass
	126.5	5500.005446	5470~5725	Pass

CH High

Operating Frequency: 5720 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5719.996401	5470~5725	Pass
40	110	5719.996529	5470~5725	Pass
30	110	5720.009496	5470~5725	Pass
20	110	5719.990338	5470~5725	Pass
10	110	5720.008881	5470~5725	Pass
0	110	5720.003820	5470~5725	Pass
-10	110	5719.991841	5470~5725	Pass
-20	110	5720.001252	5470~5725	Pass

Operating Frequency: 5720 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5719.994614	5470~5725	Pass
	110	5719.994413	5470~5725	Pass
	126.5	5719.994109	5470~5725	Pass

IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720 MHz / Chain 0:

CH Low

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5500.010773	5470~5725	Pass
40	110	5500.009827	5470~5725	Pass
30	110	5500.005435	5470~5725	Pass
20	110	5500.003790	5470~5725	Pass
10	110	5500.004219	5470~5725	Pass
0	110	5499.992860	5470~5725	Pass
-10	110	5499.998512	5470~5725	Pass
-20	110	5499.994437	5470~5725	Pass

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5500.001486	5470~5725	Pass
	110	5500.009972	5470~5725	Pass
	126.5	5500.006893	5470~5725	Pass

CH High

Operating Frequency: 5720 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5699.995879	5470~5725	Pass
40	110	5699.998141	5470~5725	Pass
30	110	5700.010760	5470~5725	Pass
20	110	5700.000493	5470~5725	Pass
10	110	5699.998640	5470~5725	Pass
0	110	5699.999686	5470~5725	Pass
-10	110	5700.004217	5470~5725	Pass
-20	110	5700.005366	5470~5725	Pass

Operating Frequency: 5720 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5700.00815	5470~5725	Pass
	110	5700.005676	5470~5725	Pass
	121	5700.002645	5470~5725	Pass

IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5720 MHz / Chain 1:

CH Low

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	110	5579.993870	5470~5725	Pass
40	110	5580.002159	5470~5725	Pass
30	110	5580.002840	5470~5725	Pass
20	110	5580.010142	5470~5725	Pass
10	110	5579.997839	5470~5725	Pass
0	110	5580.005482	5470~5725	Pass
-10	110	5579.996012	5470~5725	Pass
-20	110	5579.992812	5470~5725	Pass

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	93.5	5579.992863	5470~5725	Pass
	110	5580.00861	5470~5725	Pass
	126.5	5579.993904	5470~5725	Pass

CH High

Operating Frequency: 5720 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5720.007992	5470~5725	Pass
40	110	5720.010014	5470~5725	Pass
30	110	5720.000420	5470~5725	Pass
20	110	5720.000070	5470~5725	Pass
10	110	5720.003351	5470~5725	Pass
0	110	5719.992629	5470~5725	Pass
-10	110	5720.000240	5470~5725	Pass
-20	110	5719.991008	5470~5725	Pass

Operating Frequency: 5720 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5719.998708	5470~5725	Pass
	110	5719.9961	5470~5725	Pass
	121	5720.002703	5470~5725	Pass

IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710 MHz / Chain 0:

CH Low

Operating Frequency: 5510 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	110	5510.002633	5470~5725	Pass
40	110	5510.009868	5470~5725	Pass
30	110	5510.006641	5470~5725	Pass
20	110	5510.004497	5470~5725	Pass
10	110	5509.996333	5470~5725	Pass
0	110	5510.007776	5470~5725	Pass
-10	110	5510.008036	5470~5725	Pass
-20	110	5510.007244	5470~5725	Pass

Operating Frequency: 5510 MHz				
Environment Temperature (oC)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	93.5	5510.002383	5470~5725	Pass
	110	5509.998952	5470~5725	Pass
	126.5	5509.99998	5470~5725	Pass

CH High

Operating Frequency: 5710 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5710.007481	5470~5725	Pass
40	110	5710.001028	5470~5725	Pass
30	110	5710.006808	5470~5725	Pass
20	110	5710.008403	5470~5725	Pass
10	110	5710.996528	5470~5725	Pass
0	110	5710.002785	5470~5725	Pass
-10	110	5710.994054	5470~5725	Pass
-20	110	5710.998906	5470~5725	Pass

Operating Frequency: 5710 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5710.00123	5470~5725	Pass
	110	5710.990331	5470~5725	Pass
	126.5	5710.007187	5470~5725	Pass

IEEE 802.11n HT 40 MHz mode / 5510 ~ 5710 MHz / Chain 1:

CH Low

Operating Frequency: 5510 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	110	5509.999854	5470~5725	Pass
40	110	5510.001914	5470~5725	Pass
30	110	5509.992120	5470~5725	Pass
20	110	5510.000029	5470~5725	Pass
10	110	5510.005373	5470~5725	Pass
0	110	5510.001142	5470~5725	Pass
-10	110	5510.001053	5470~5725	Pass
-20	110	5510.000751	5470~5725	Pass

Operating Frequency: 5510 MHz				
Environment Temperature (oC)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	93.5	5509.991097	5470~5725	Pass
	110	5509.99371	5470~5725	Pass
	126.5	5510.000558	5470~5725	Pass

CH High

Operating Frequency: 5710 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5710.004963	5470~5725	Pass
40	110	5710.999988	5470~5725	Pass
30	110	5710.008444	5470~5725	Pass
20	110	5710.001424	5470~5725	Pass
10	110	5710.991391	5470~5725	Pass
0	110	5710.998772	5470~5725	Pass
-10	110	5710.995287	5470~5725	Pass
-20	110	5710.007572	5470~5725	Pass

Operating Frequency: 5710 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	93.5	5710.991745	5470~5725	Pass
	110	5710.009557	5470~5725	Pass
	126.5	5710.993068	5470~5725	Pass

IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690 MHz / Chain 0:

CH Low

Operating Frequency: 5530 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	110	5529.990299	5470~5725	Pass
40	110	5529.997134	5470~5725	Pass
30	110	5530.010172	5470~5725	Pass
20	110	5530.008838	5470~5725	Pass
10	110	5530.006109	5470~5725	Pass
0	110	5529.994303	5470~5725	Pass
-10	110	5530.000519	5470~5725	Pass
-20	110	5529.997046	5470~5725	Pass

Operating Frequency: 5530 MHz				
Environment Temperature (oC)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	93.5	5529.992365	5470~5725	Pass
	110	5529.992652	5470~5725	Pass
	126.5	5529.991569	5470~5725	Pass

CH High

Operating Frequency: 5690 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5689.997986	5470~5725	Pass
40	110	5690.005919	5470~5725	Pass
30	110	5690.008705	5470~5725	Pass
20	110	5689.995884	5470~5725	Pass
10	110	5690.008977	5470~5725	Pass
0	110	5690.005603	5470~5725	Pass
-10	110	5690.004297	5470~5725	Pass
-20	110	5690.006959	5470~5725	Pass

Operating Frequency: 5690 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5690.009412	5470~5725	Pass
	110	5689.995601	5470~5725	Pass
	121	5690.004878	5470~5725	Pass

IEEE 802.11ac VHT 80 MHz mode / 5530 ~ 5690 MHz / Chain 1:

CH Low

Operating Frequency: 5530 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	110	5530.006149	5470~5725	Pass
40	110	5529.992892	5470~5725	Pass
30	110	5529.997867	5470~5725	Pass
20	110	5530.001282	5470~5725	Pass
10	110	5529.995064	5470~5725	Pass
0	110	5529.990256	5470~5725	Pass
-10	110	5529.991135	5470~5725	Pass
-20	110	5529.990026	5470~5725	Pass

Operating Frequency: 5530 MHz				
Environment Temperature (oC)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	93.5	5529.996021	5470~5725	Pass
	110	5530.00462	5470~5725	Pass
	126.5	5529.993505	5470~5725	Pass

CH High

Operating Frequency: 5690 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5689.993976	5470~5725	Pass
40	110	5689.993044	5470~5725	Pass
30	110	5689.993826	5470~5725	Pass
20	110	5689.996924	5470~5725	Pass
10	110	5689.995502	5470~5725	Pass
0	110	5690.006976	5470~5725	Pass
-10	110	5690.005230	5470~5725	Pass
-20	110	5690.001606	5470~5725	Pass

Operating Frequency: 5690 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5690.000271	5470~5725	Pass
	110	5689.997682	5470~5725	Pass
	121	5689.995715	5470~5725	Pass

7.9 DYNAMIC FREQUENCY SELECTION

LIMIT

According to §15.407 (h) and FCC 06-96 appendix "compliance measurement procedures for unlicensed-national information infrastructure devices operating in the 5250-5350 MHz and 5470-5725 MHz bDFSands incorporating dynamic frequency selection".

***Remark**: IC RSS-247 is closely harmonized with FCC Part 15 DFS rules.*

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client(with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client(with radar detection)
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 3: Interference Threshold values, Master or Client incorporating In-Service

Maximum Transmit Power	Value (see note)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions. Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (Microseconds)	PRI (Microseconds)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{\text{PRI}_{\mu\text{sec}}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 µsec, with a minimum increment of 1 µsec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

Table 6 – Long Pulse Radar Test Signal

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform	Pulse Width (µsec)	PRI (µsec)	Pulses Per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	0.33	**300**	70%	30

DESCRIPTION OF EUT

Overview Of EUT With Respect To §15.407 (H) Requirements

The firmware installed in the EUT during testing was:
Firmware Rev: 7.35.143.36

The EUT operates over the 5250-5350 MHz range as a Client Device that does not have radar detection capability.

The antenna assembly utilized with the EUT has a gain of 7.3dBi.

The EUT uses one transmitter connected to two 50-ohm coaxial antenna ports via a diversity switch. Only one antenna port is connected to the test system since the EUT has one antenna only.

The Slave device associated with the EUT during these tests does not have radar detection capability.

WLAN traffic is generated by streaming the video file TestFile.mp2 “6 ½ Magic Hours” from the Master to the Slave in full motion video mode using the media player with the V2.61 Codec package.

The EUT utilizes the 802.11a architecture, with a nominal channel bandwidth of 20 MHz.

The Master Device is a 802.11a/b/g/n/ac 2T2R + BT4.1LE USB Combo Module, FCC ID: PPQ-WCBN4502B.

The rated output power of the Master unit is < 23dBm (EIRP). Therefore the required interference threshold level is -62 dBm. After correction for antenna gain and procedural adjustments, the required conducted threshold at the antenna port is –62 + 5 = -57dBm.

The calibrated conducted DFS Detection Threshold level is set to -57 dBm. The tested level is lower than the required level hence it provides margin to the limit.

Manufacturer’s Statement Regarding Uniform Channel Spreading

The end product implements an automatic channel selection feature at startup such that operation commences on channels distributed across the entire set of allowed 5GHz channels. This feature will ensure uniform spreading is achieved while avoiding non-allowed channels due to prior radar events.

TEST AND MEASUREMENT SYSTEM

System Overview

The measurement system is based on a conducted test method.

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

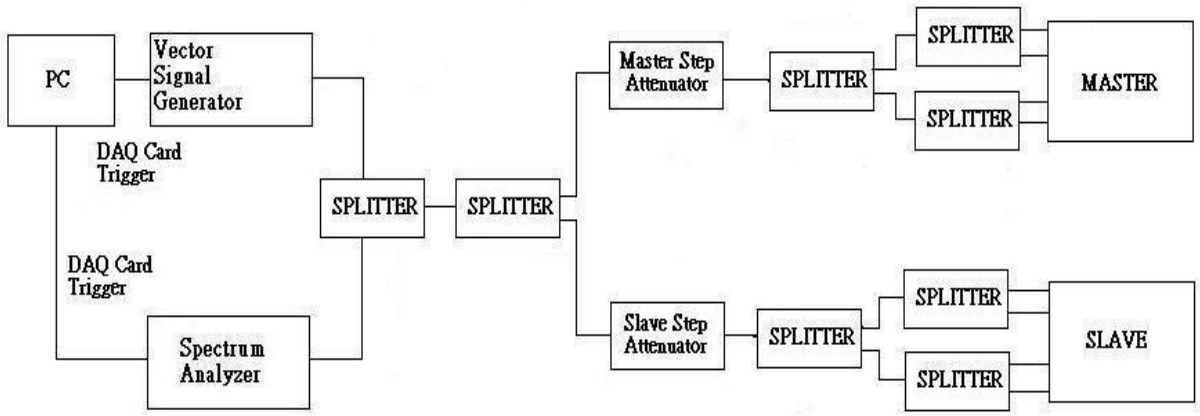
The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from FL to FH for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer set to display 8001 bins on the horizontal axis. The time-domain resolution is 2 msec / bin with a 16 second sweep time, meeting the 10 second short pulse reporting criteria. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold. The time-domain resolution is 3 msec / bin with a 24 second sweep time, meeting the 22 second long pulse reporting criteria and allowing a minimum of 10 seconds after the end of the long pulse waveform.

Should multiple RF ports be utilized for the Master and/or Slave devices (for example, for diversity or MIMO implementations), 50 ohm termination would be removed from the splitter so that connection can be established between splitter and the Master and/or Slave devices.

Conducted Method System Block Diagram



System Calibration

Connect the spectrum analyzer to the test system in place of the master device. Set the signal generator to CW mode. Adjust the amplitude of the signal generator to yield a measured level of –62 dBm on the spectrum analyzer.

Without changing any of the instrument settings, reconnect the spectrum analyzer to the Common port of the Spectrum Analyzer Combiner/Divider and connect a 50 ohm load to the Master Device port of the test system.

Measure the amplitude and calculate the difference from –62 dBm. Adjust the Reference Level Offset of the spectrum analyzer to this difference. Confirm that the signal is displayed at –62 dBm. Readjust the RBW and VBW to 3 MHz, set the span to 10 MHz, and confirm that the signal is still displayed at –62 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –62 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

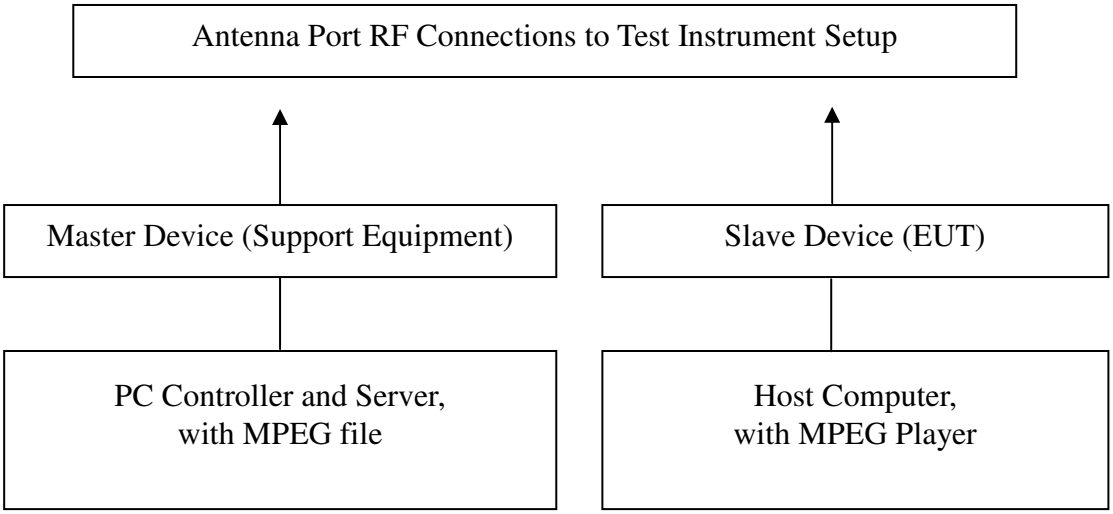
Set the signal generator to produce a radar waveform, trigger a burst manually and measure the level on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.

Adjustment Of Displayed Traffic Level

Establish a link between the Master and Slave, adjusting the Link Step Attenuator as needed to provide a suitable received level at the Master and Slave devices. Stream the video test file to generate WLAN traffic. Confirm that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold. Confirm that the displayed traffic is from the Master Device. For Master Device testing confirm that the displayed traffic does not include Slave Device traffic. For Slave Device testing confirm that the displayed traffic does not include Master Device traffic.

If a different setting of the Master Step Attenuator is required to meet the above conditions, perform a new System Calibration for the new Master Step Attenuator setting.

Test Setup



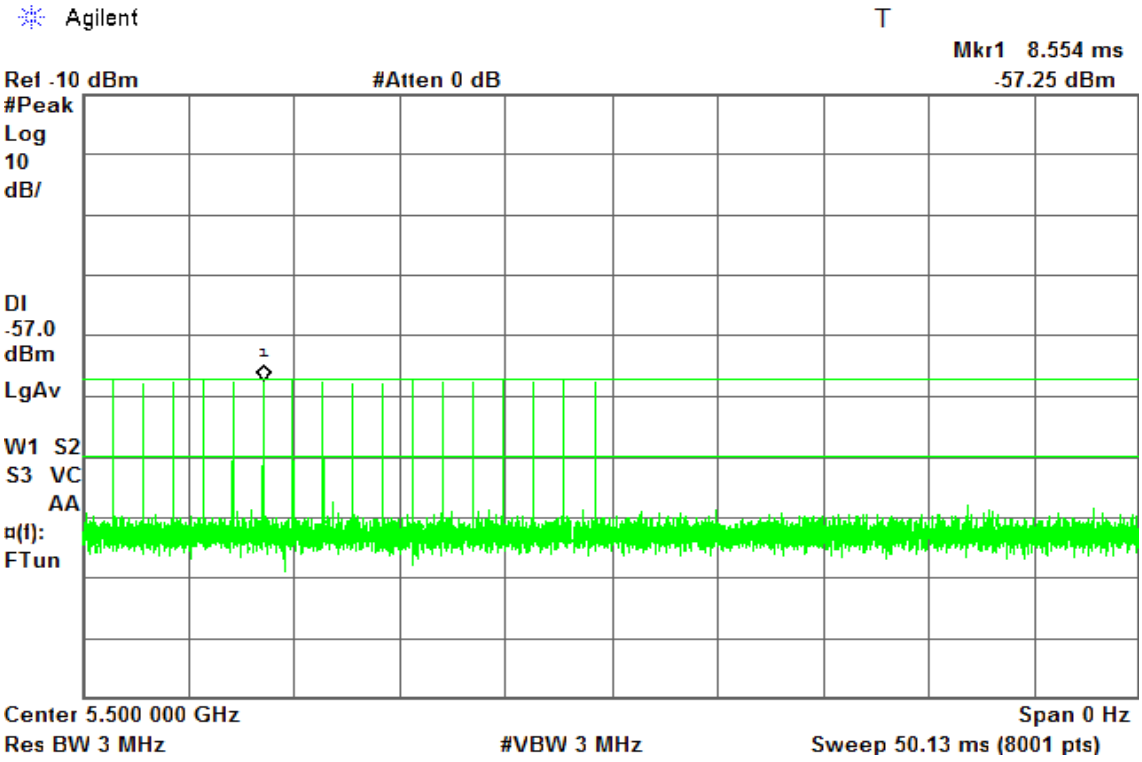
TEST RESULTS

No non-compliance noted

Test Plot

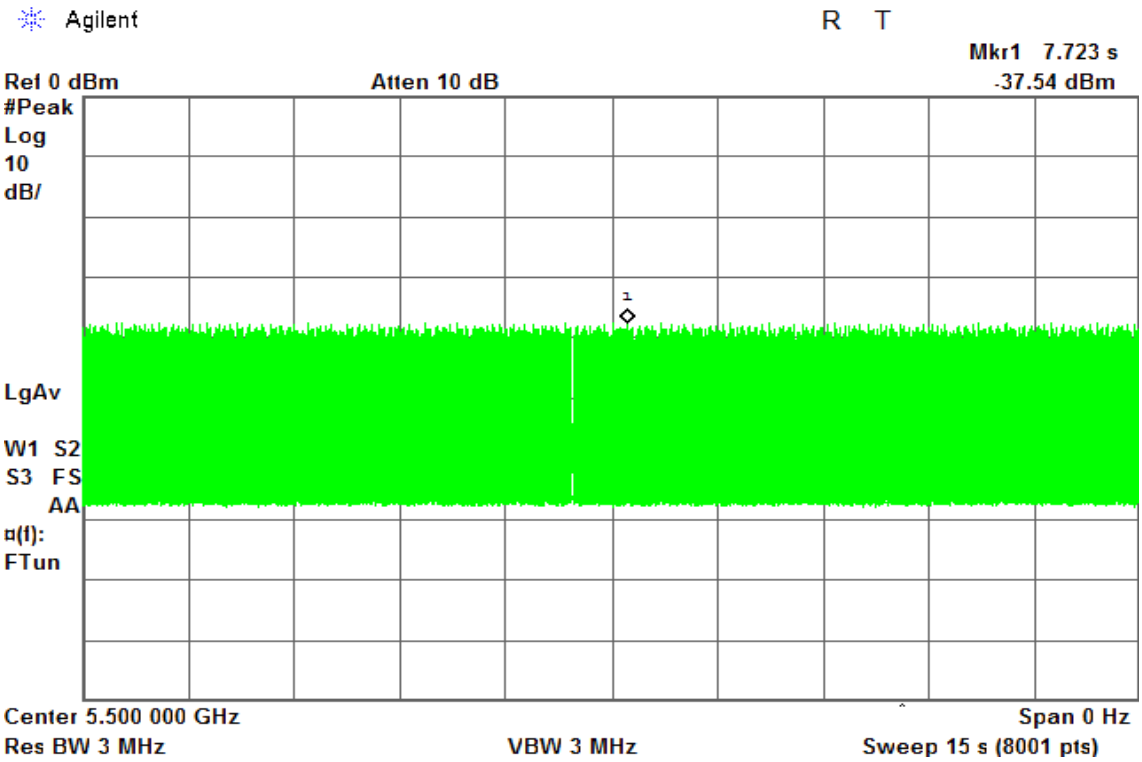
PLOTS OF RADAR WAVEFORMS

Sample of Short Pulse Radar Type 0

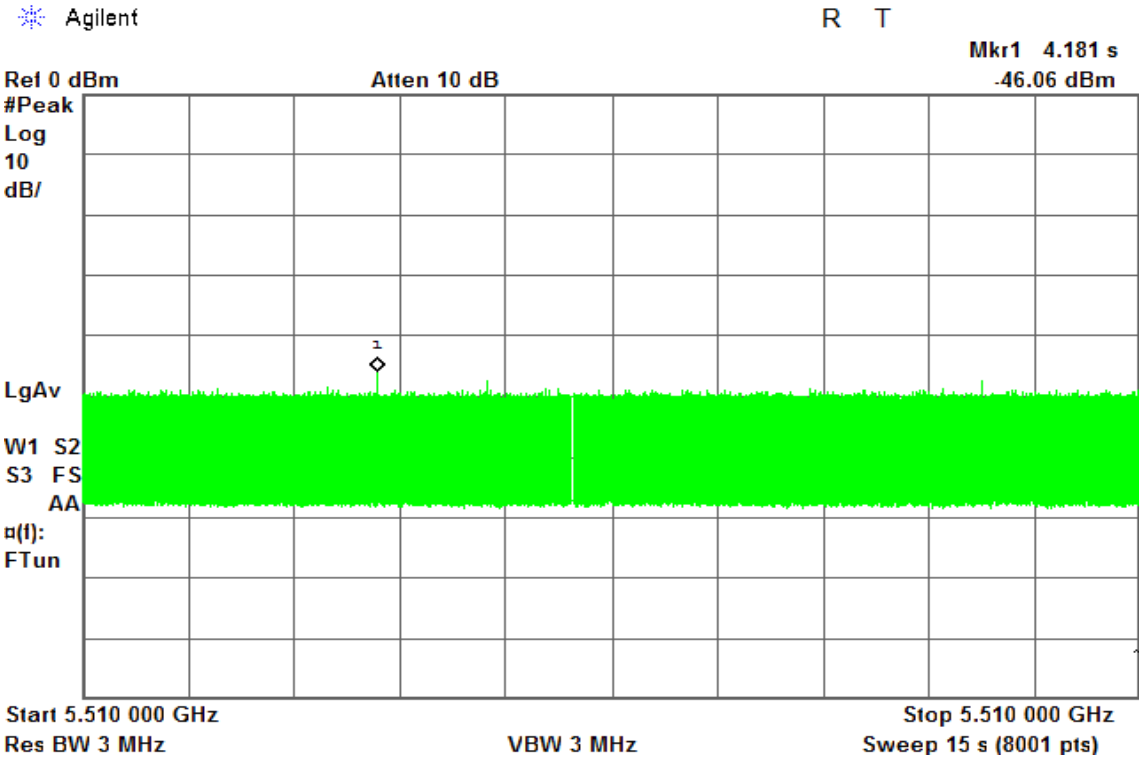


Plot of WLAN Traffic from Slave

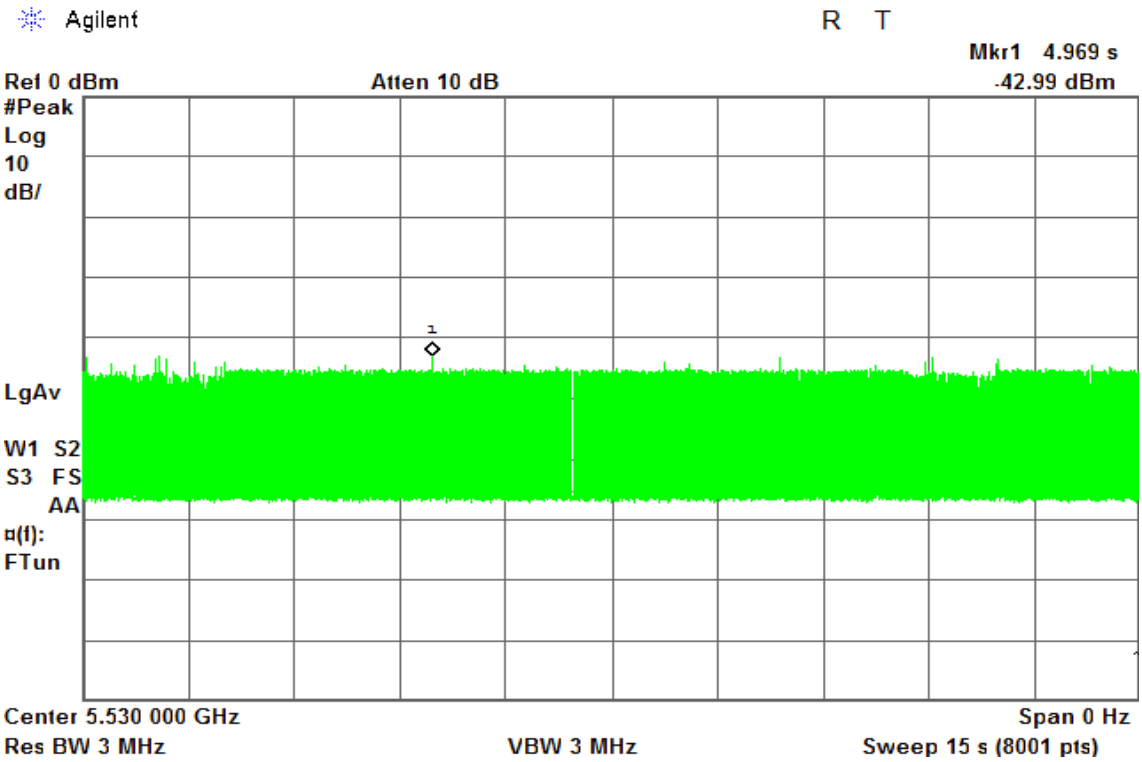
IEEE 802.11n HT 20 MHz mode



IEEE 802.11n HT 40 MHz mode



IEEE 802.11ac VHT 80 MHz mode



TEST CHANNEL AND METHOD

All tests were performed at a channel center frequency of 5300 MHz utilizing a conducted test method.

CHANNEL MOVE TIME AND CHANNEL CLOSING TRANSMISSION TIME

GENERAL REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated

Begins at (Reference Marker + 200 msec) and

Ends no earlier than (Reference Marker + 10 sec).

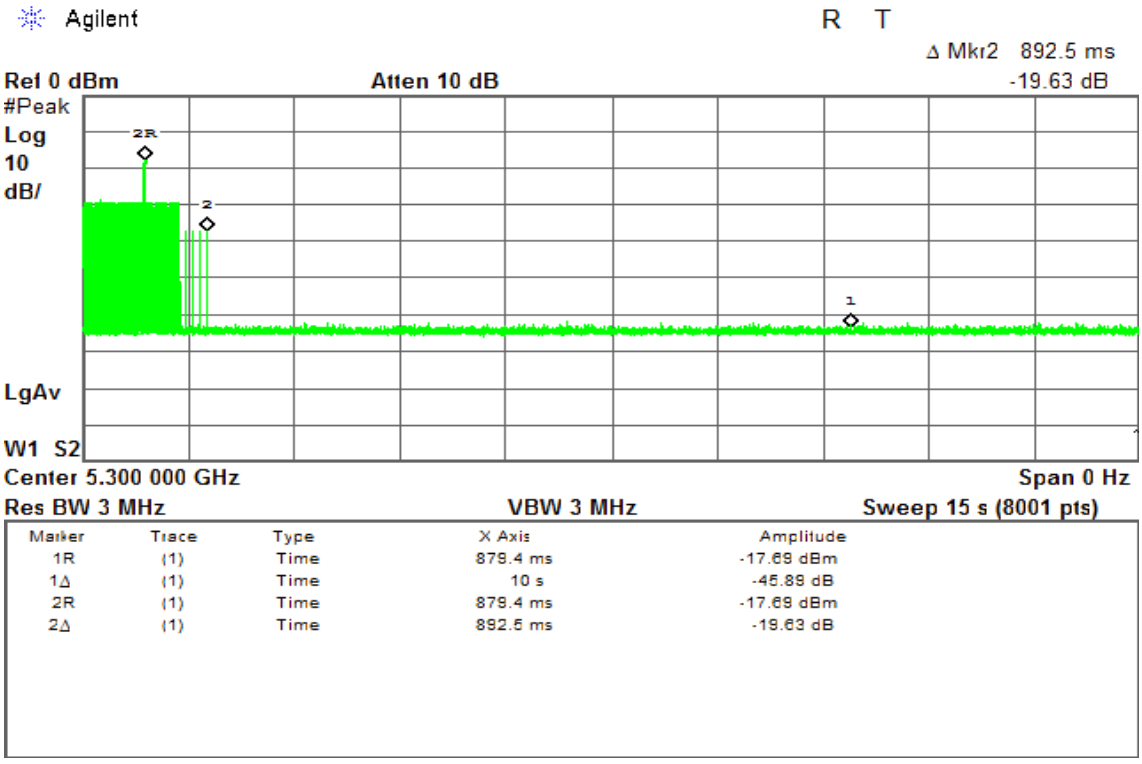
UNII Band II

IEEE 802.11n HT 20 MHz Channel mode

Type 1 Channel Move Time Results

No non-compliance noted.

Channel Move Time (ms)	Limit (s)
892.5	10

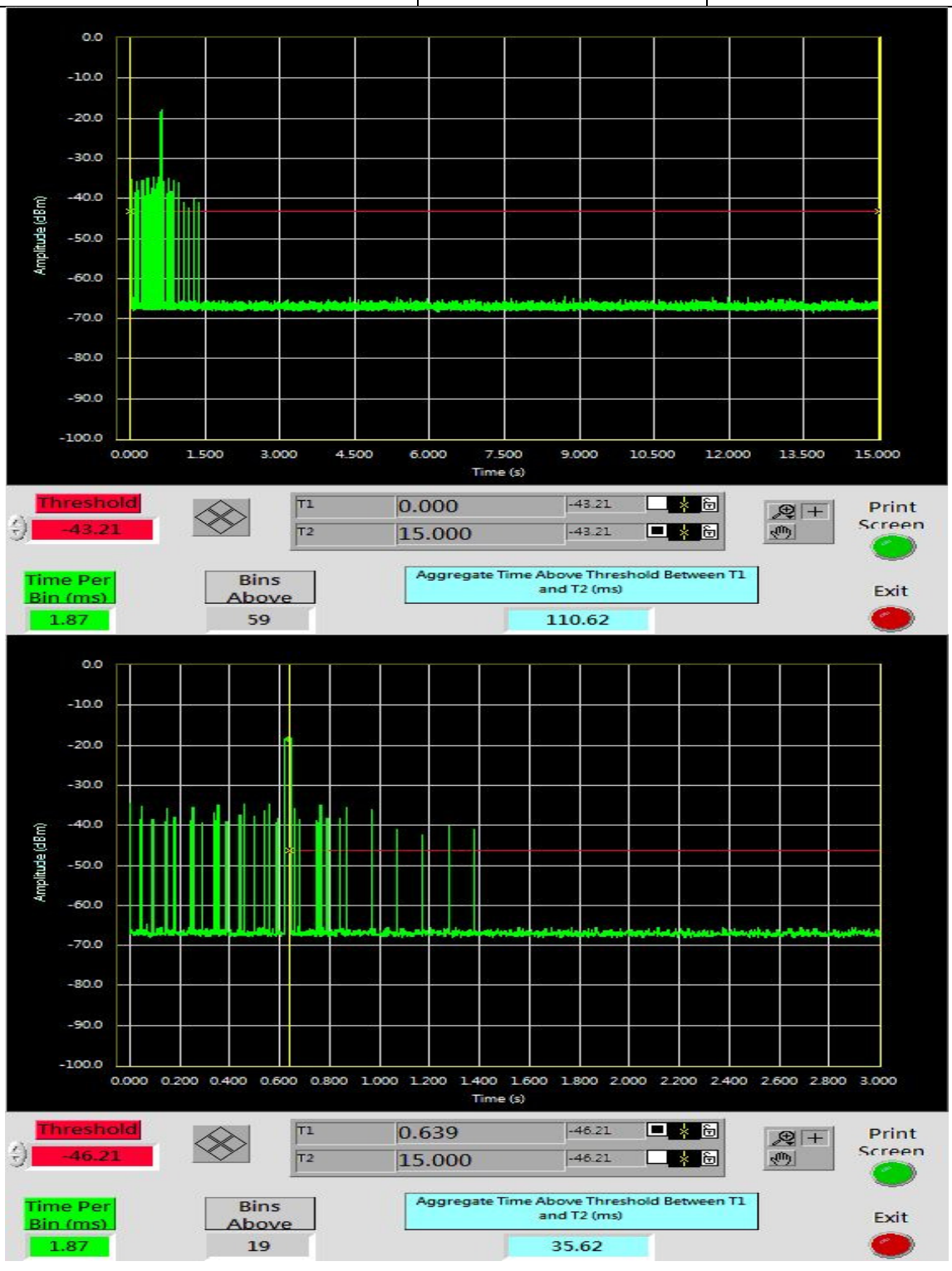


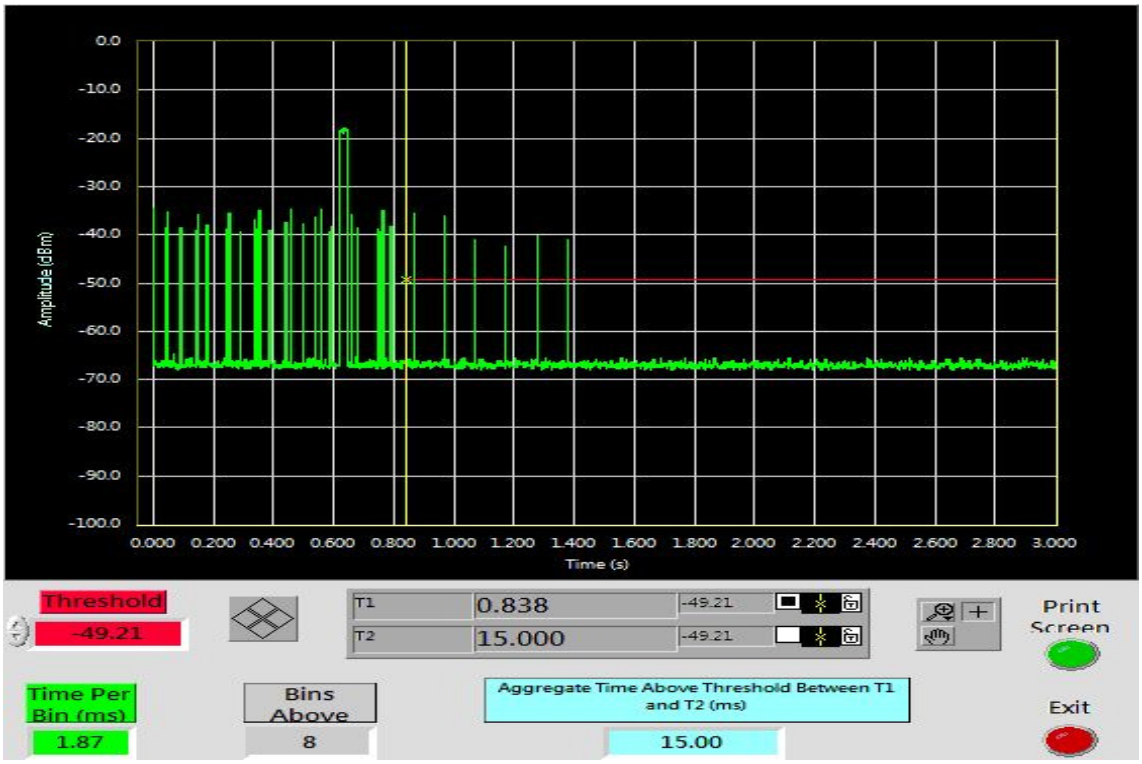
IEEE 802.11n HT 20 MHz Channel mode

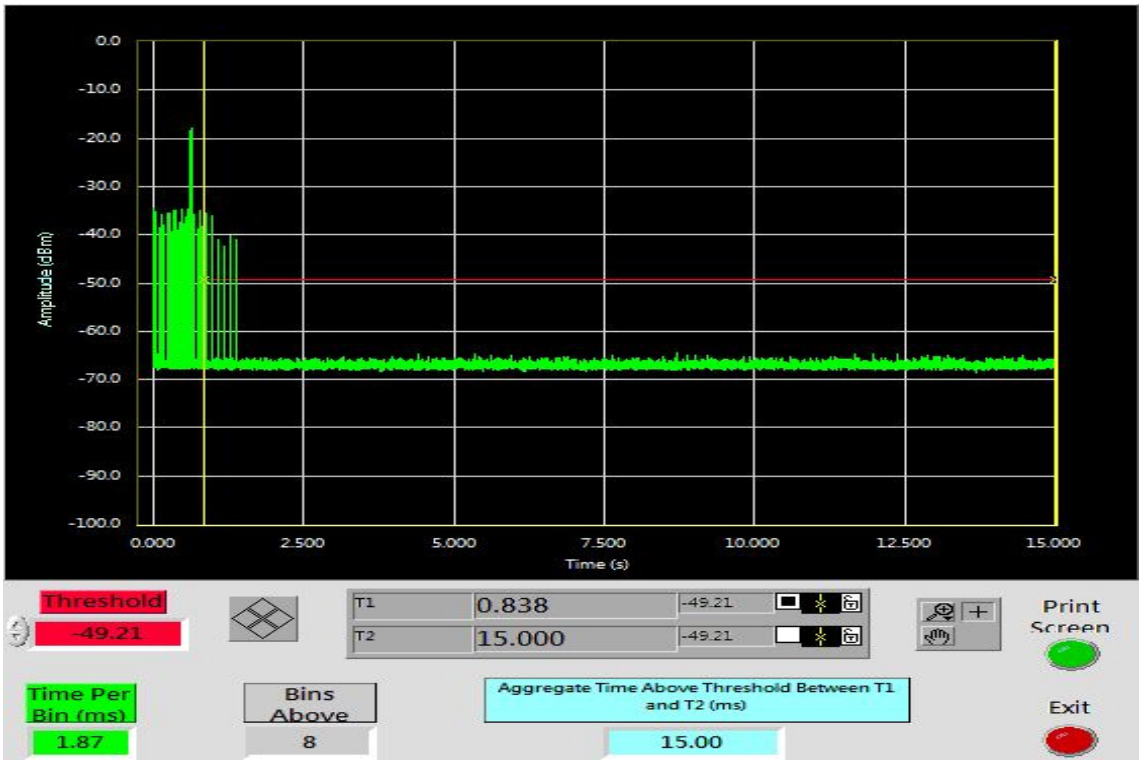
Type 1 Channel Closing Transmission Time Results

No non-compliance noted.

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
15	60	-45




0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
Amplitude (dBm)
0.000 0.200 0.400 0.600 0.800 1.000 1.200 1.400 1.600 1.800 2.000 2.200 2.400 2.600 2.800 3.000
Time (s)
Threshold
-49.21
T1
0.838
-49.21
T2
15.000
-49.21
Print Screen
Time Per Bin (ms)
1.87
Bins Above
8
Aggregate Time Above Threshold Between T1 and T2 (ms)
15.00
Exit

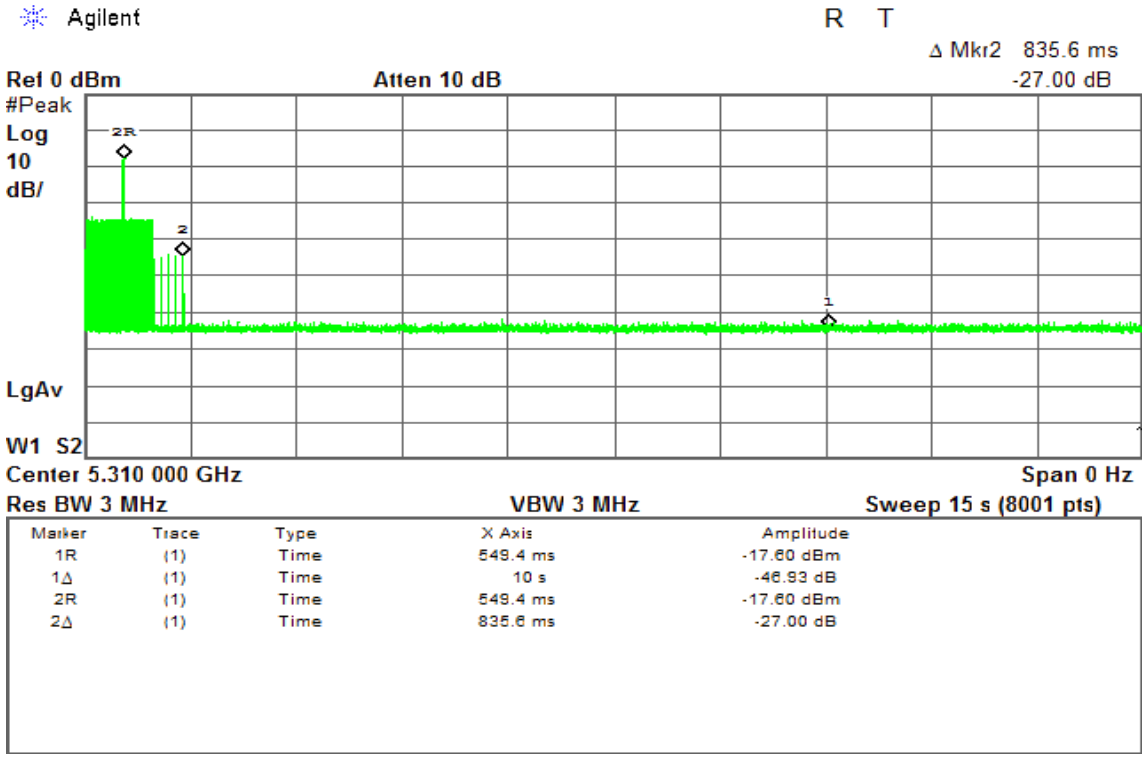

0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
Amplitude (dBm)
0.000 2.500 5.000 7.500 10.000 12.500 15.000
Time (s)
Threshold
-49.21
T1
0.838
-49.21
T2
15.000
-49.21
Print Screen
Time Per Bin (ms)
1.87
Bins Above
8
Aggregate Time Above Threshold Between T1 and T2 (ms)
15.00
Exit

IEEE 802.11n HT 40 MHz mode

Type 1 Channel Move Time Results

No non-compliance noted.

Channel Move Time (ms)	Limit (s)
835.6	10

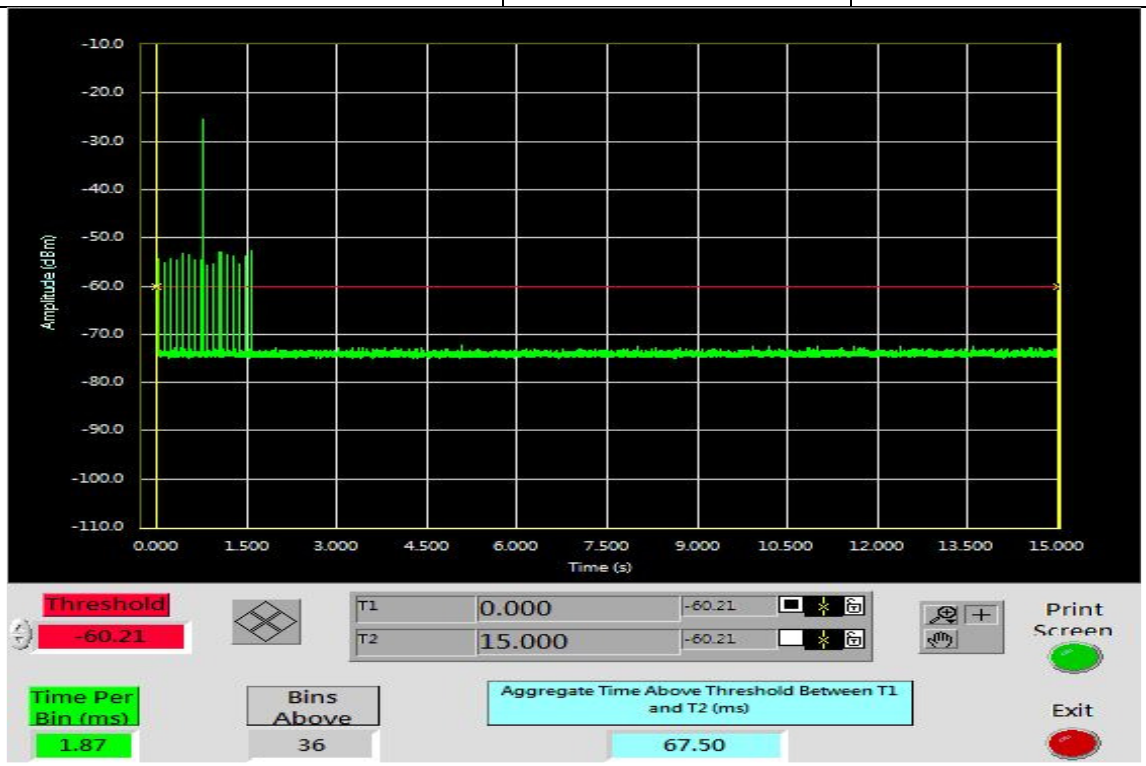


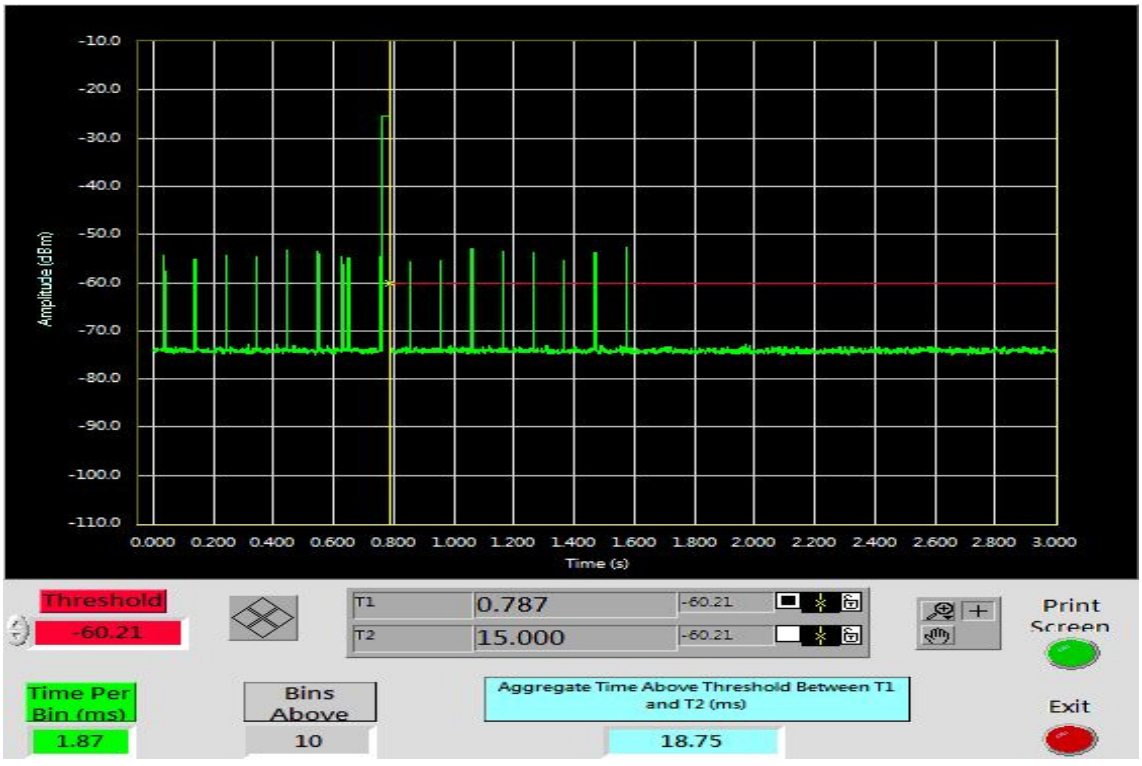
IEEE 802.11n HT 40 MHz mode

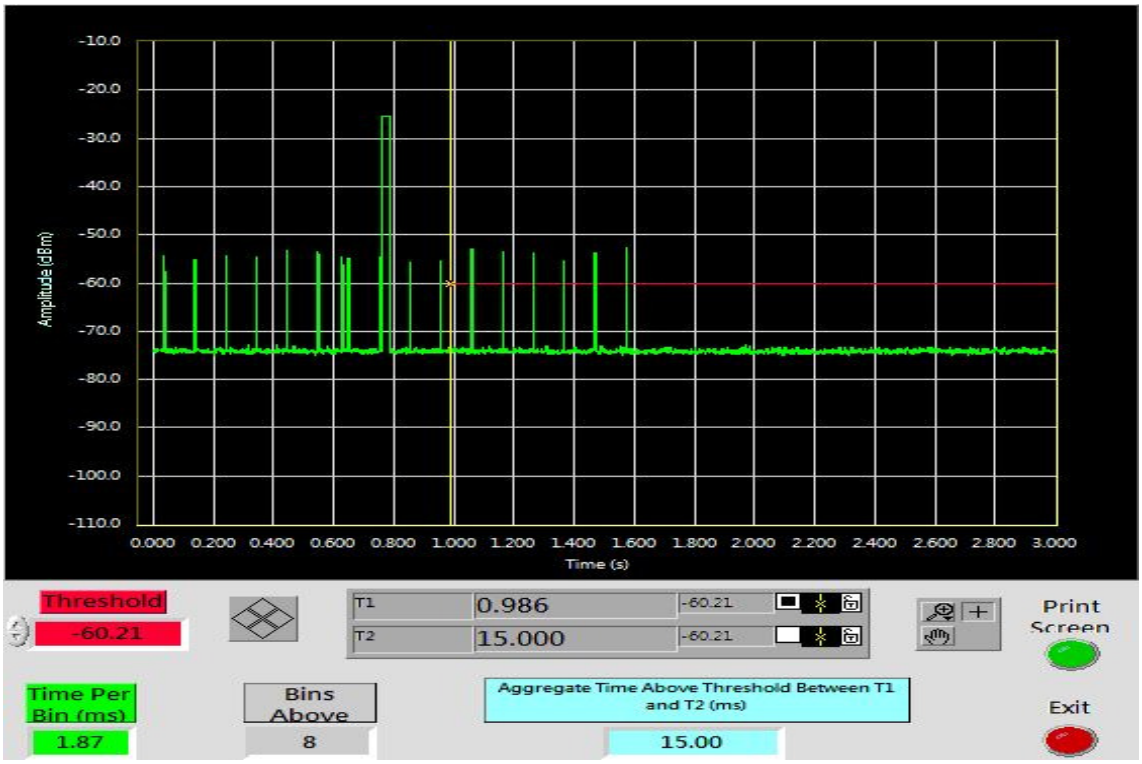
Type 1 Channel Closing Transmission Time Results

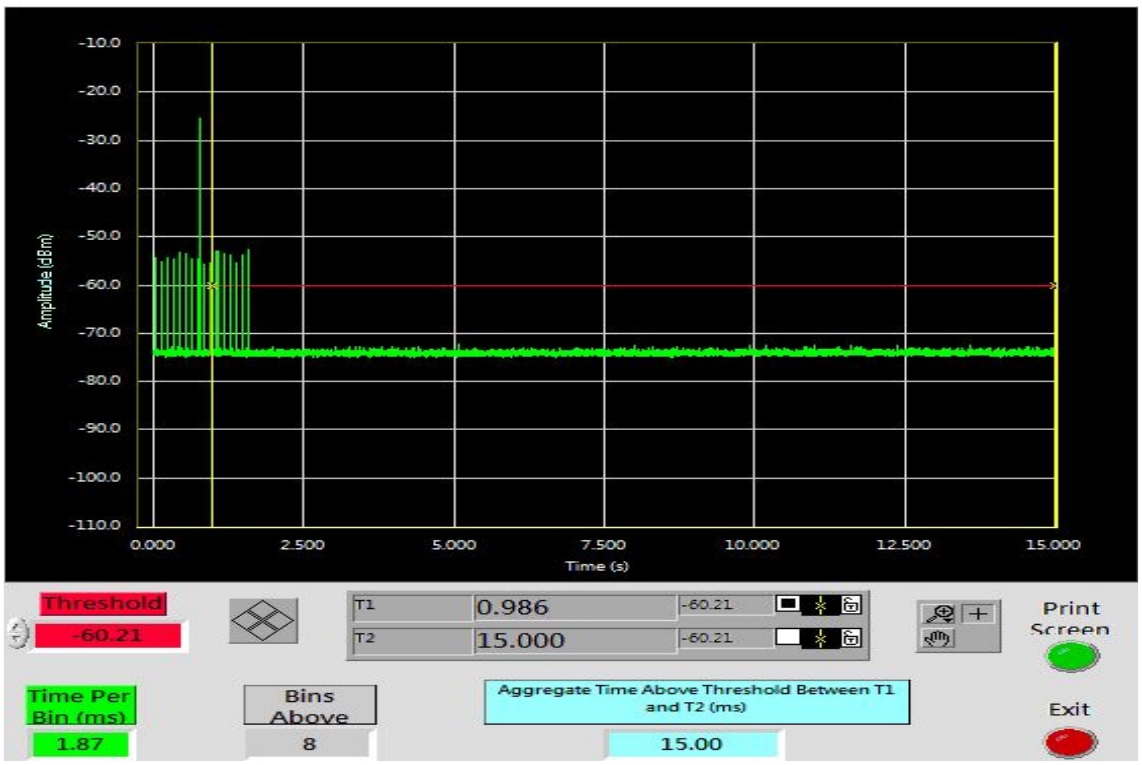
No non-compliance noted.

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
15	60	-45






-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
Amplitude (dBm)
0.000 0.200 0.400 0.600 0.800 1.000 1.200 1.400 1.600 1.800 2.000 2.200 2.400 2.600 2.800 3.000
Time (s)
Threshold
-60.21
T1 0.986 -60.21
T2 15.000 -60.21
Print Screen
Time Per Bin (ms)
1.87
Bins Above
8
Aggregate Time Above Threshold Between T1 and T2 (ms)
15.00
Exit

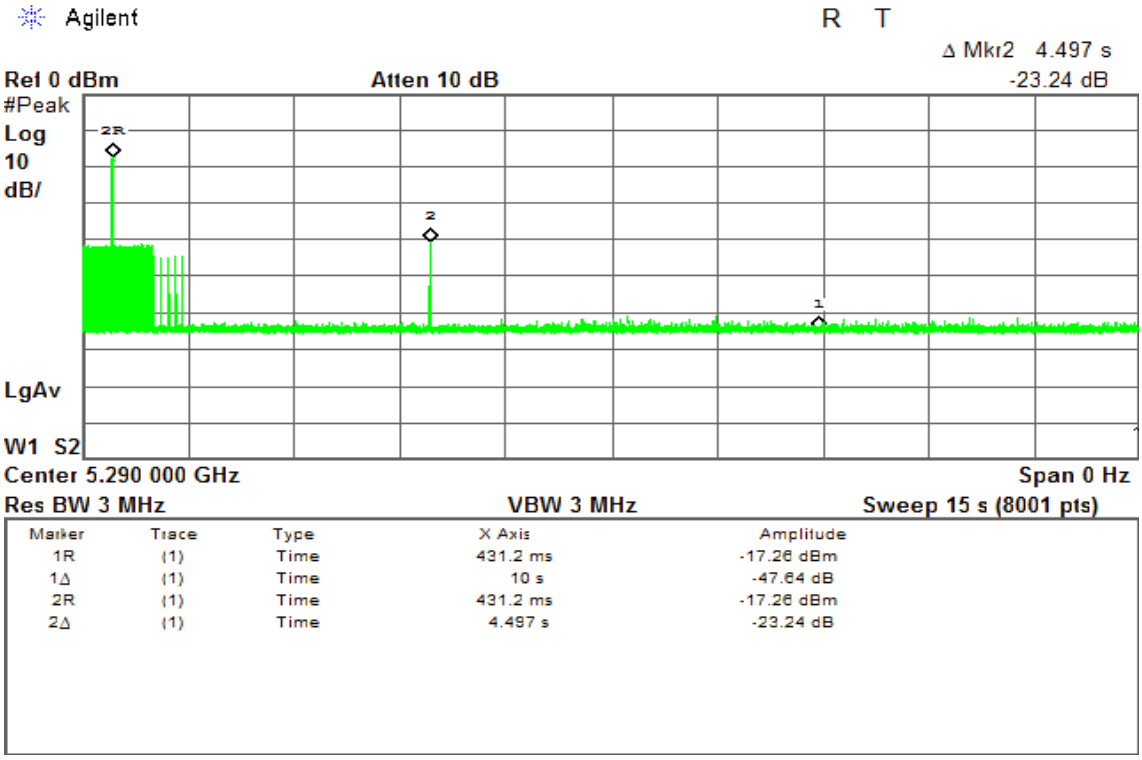

-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
Amplitude (dBm)
0.000 2.500 5.000 7.500 10.000 12.500 15.000
Time (s)
Threshold
-60.21
T1 0.986 -60.21
T2 15.000 -60.21
Print Screen
Time Per Bin (ms)
1.87
Bins Above
8
Aggregate Time Above Threshold Between T1 and T2 (ms)
15.00
Exit

IEEE 802.11 ac VHT 80 MHz Channel mode

Type 1 Channel Move Time Results

No non-compliance noted.

Channel Move Time (s)	Limit (s)
4.497	10

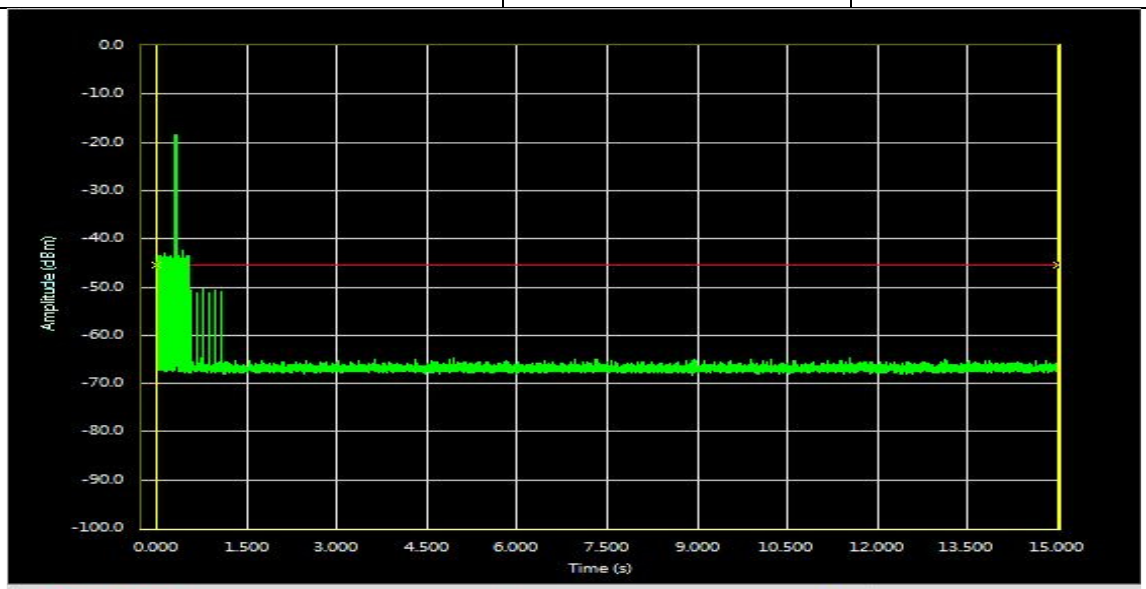


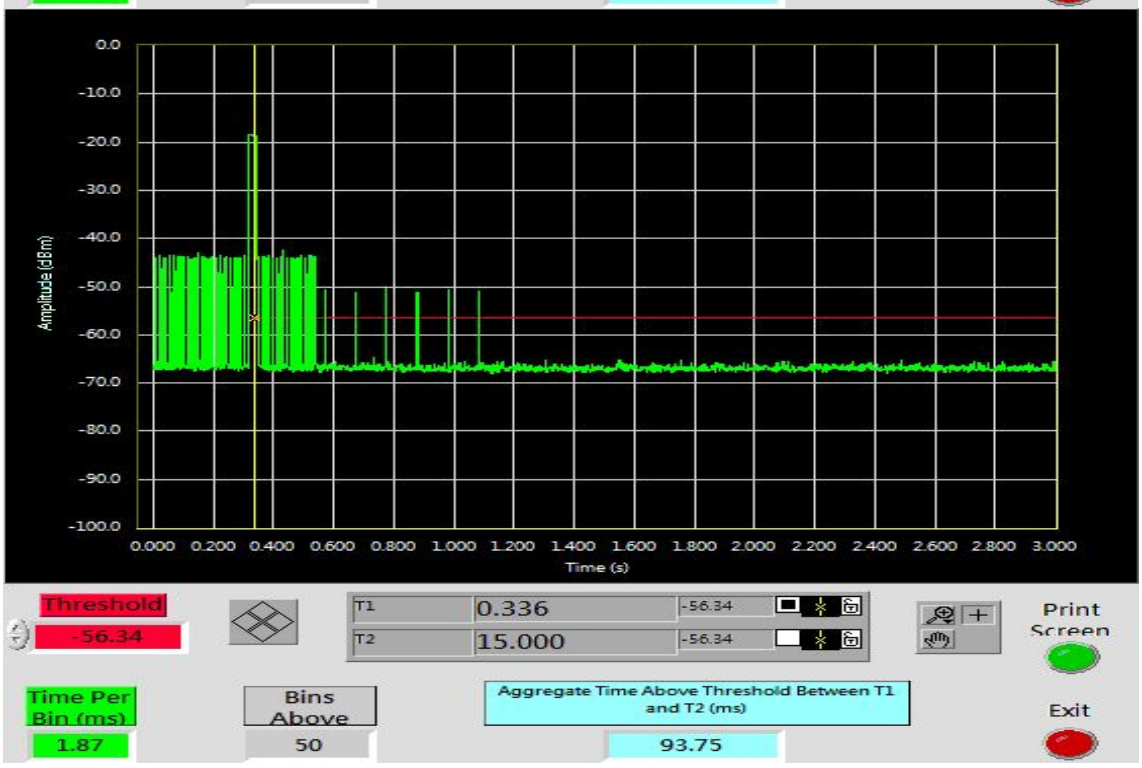
IEEE 802.11 ac VHT 80 MHz Channel mode

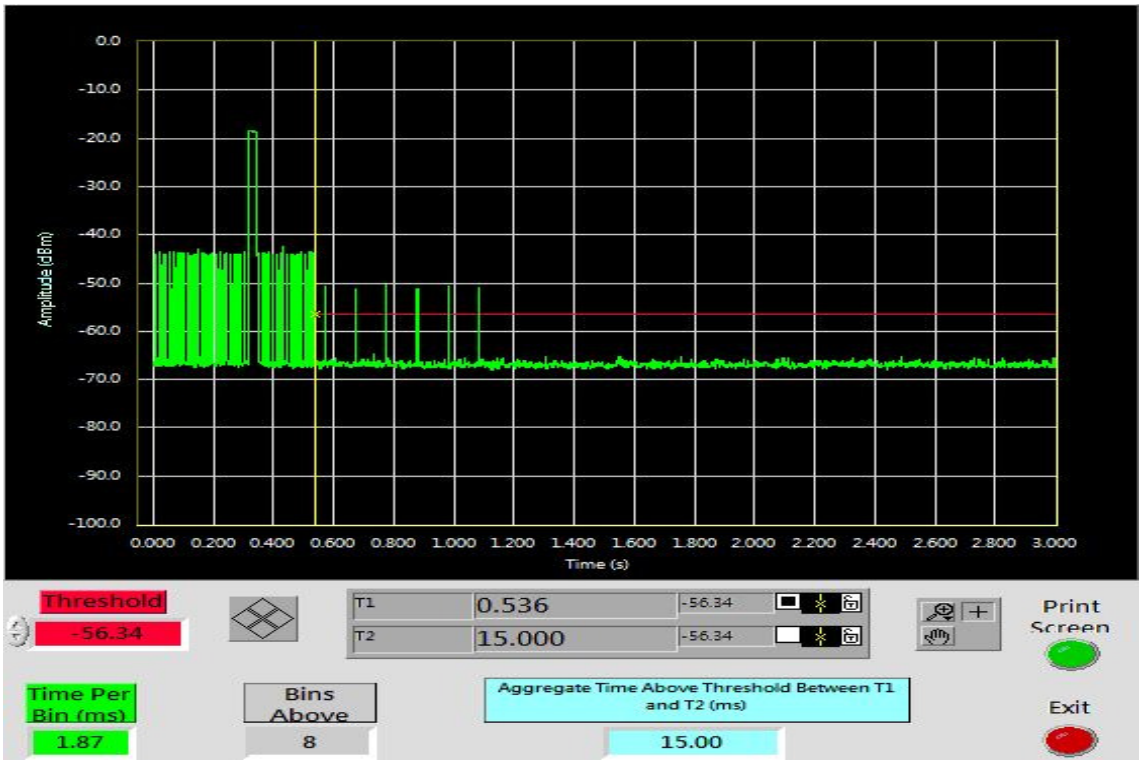
Type 1 Channel Closing Transmission Time Results

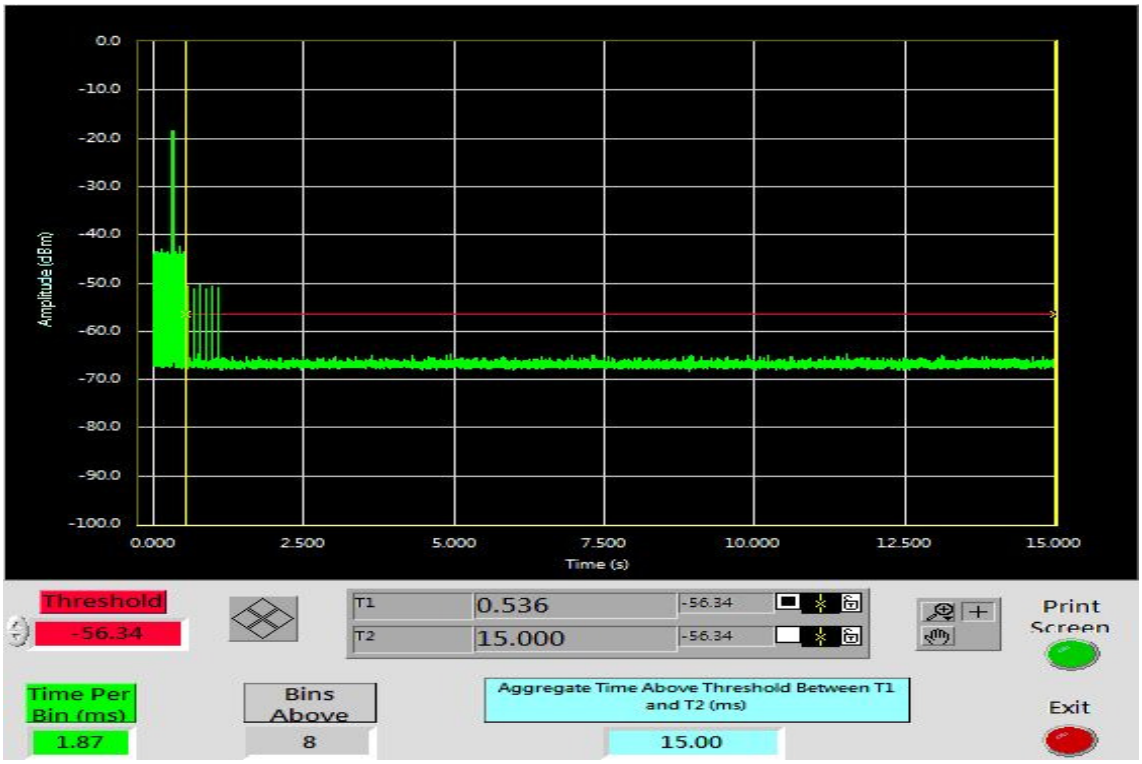
No non-compliance noted.

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
15	60	-45






0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
Amplitude (dBm)
0.000 0.200 0.400 0.600 0.800 1.000 1.200 1.400 1.600 1.800 2.000 2.200 2.400 2.600 2.800 3.000
Time (s)
Threshold
-56.34
T1 0.536 -56.34
T2 15.000 -56.34
Print Screen
Time Per Bin (ms)
1.87
Bins Above
8
Aggregate Time Above Threshold Between T1 and T2 (ms)
15.00
Exit


0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
Amplitude (dBm)
0.000 2.500 5.000 7.500 10.000 12.500 15.000
Time (s)
Threshold
-56.34
T1 0.536 -56.34
T2 15.000 -56.34
Print Screen
Time Per Bin (ms)
1.87
Bins Above
8
Aggregate Time Above Threshold Between T1 and T2 (ms)
15.00
Exit

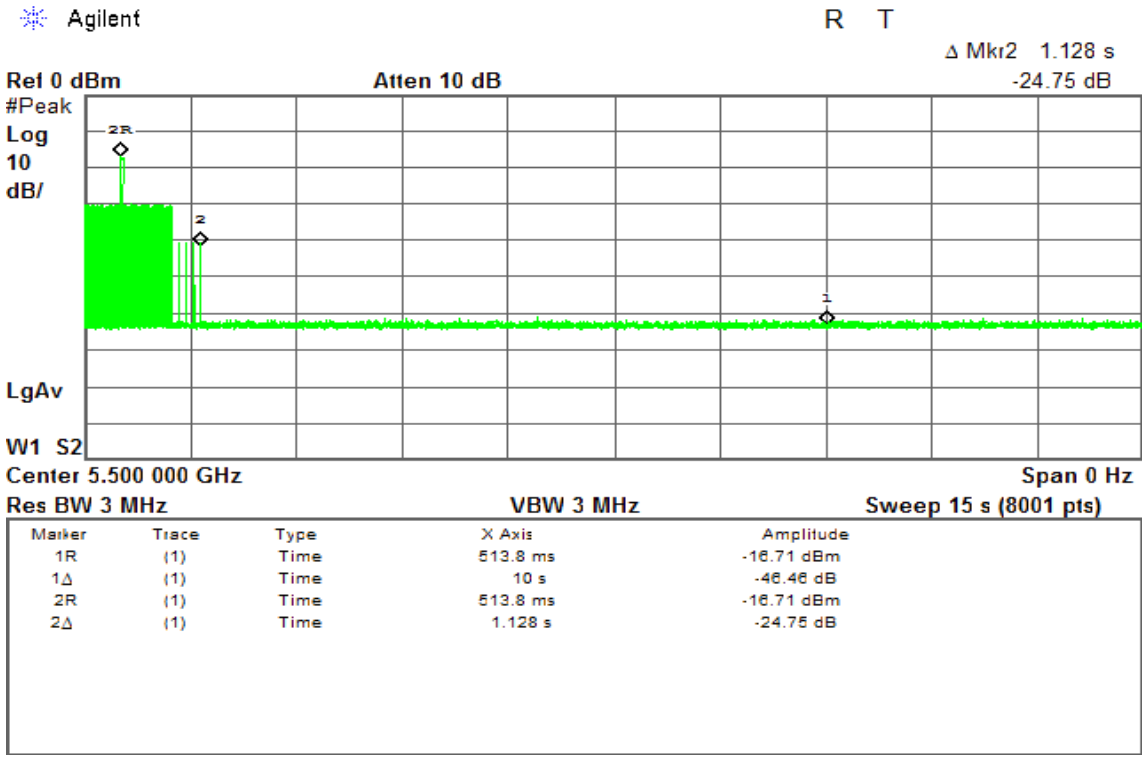
UNII Band III

IEEE 802.11n HT 20 MHz Channel mode

Type 1 Channel Move Time Results

No non-compliance noted.

Channel Move Time (s)	Limit (s)
1.128	10

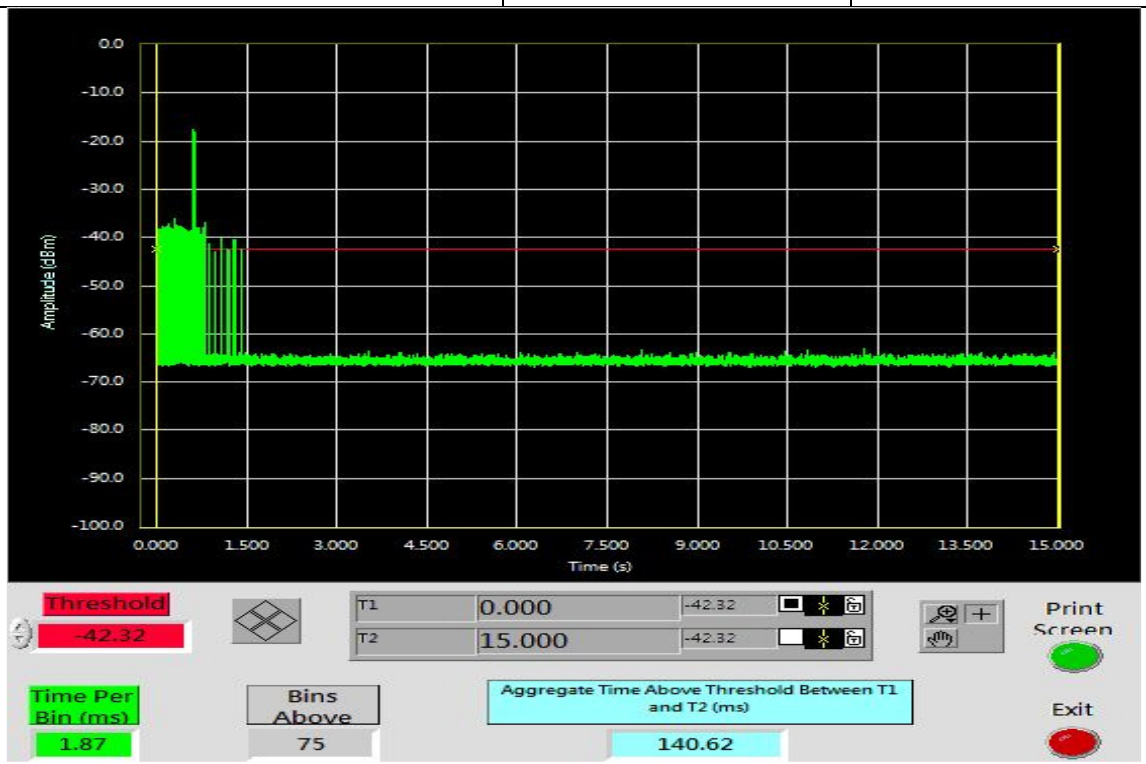


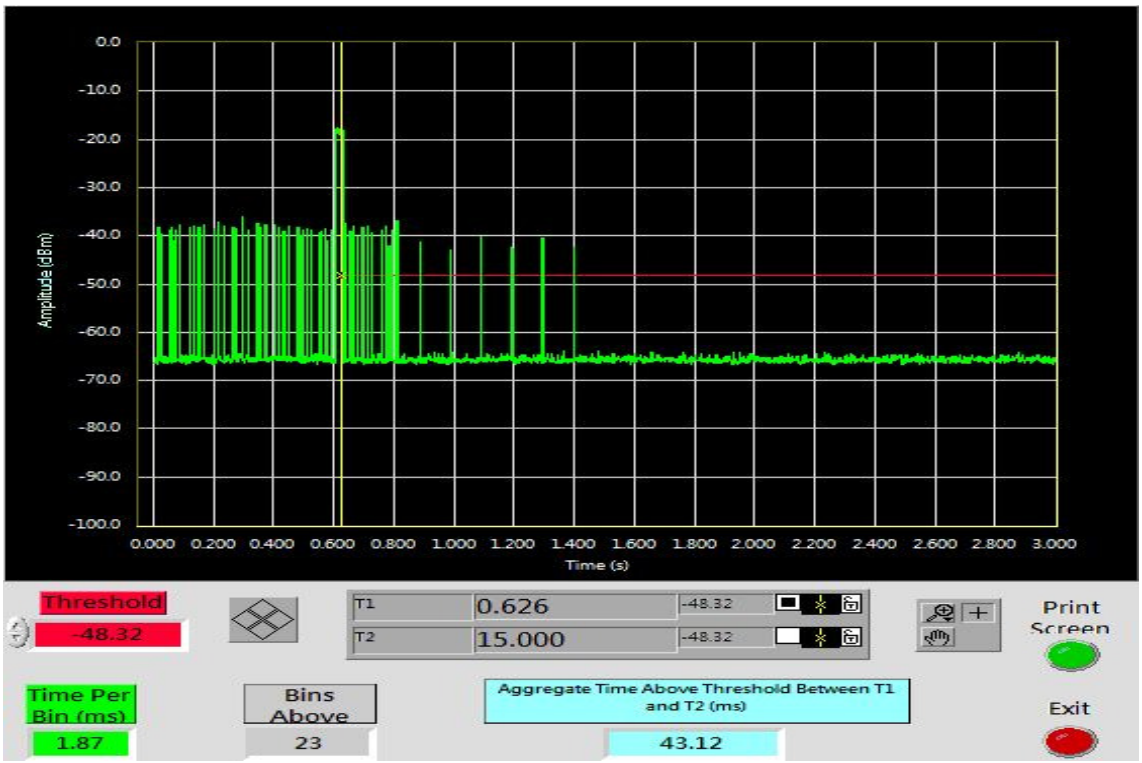
IEEE 802.11n HT 20 MHz Channel mode

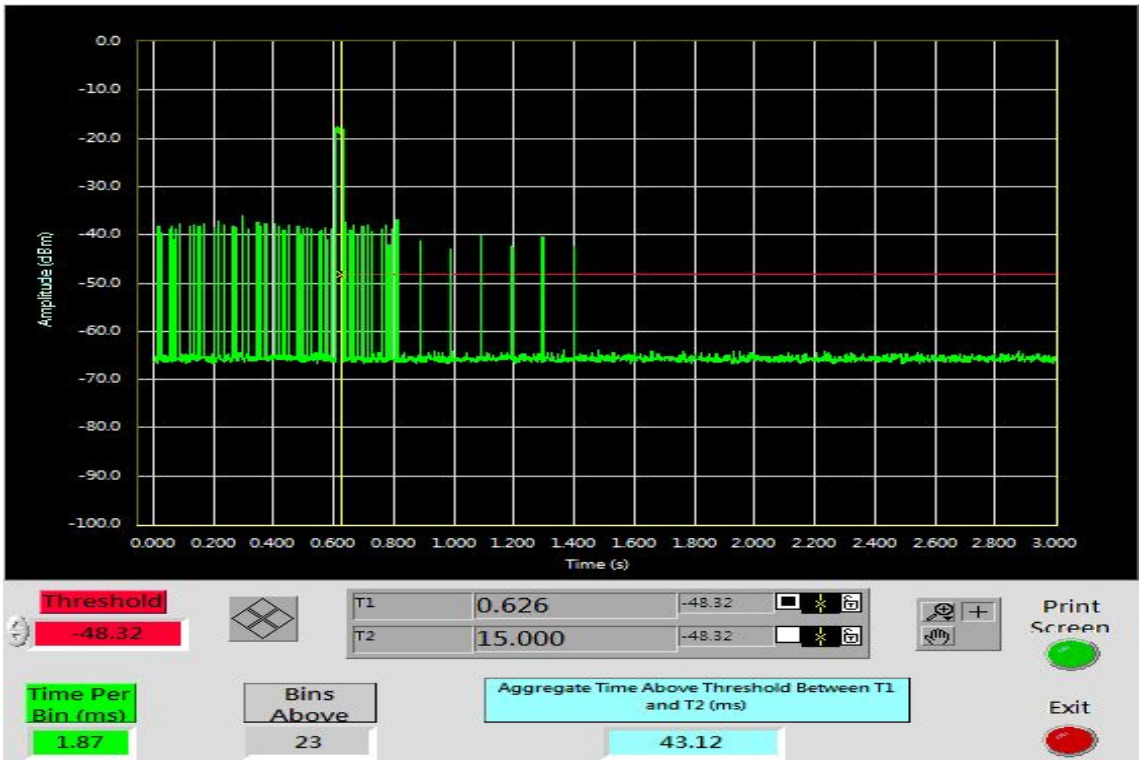
Type 1 Channel Closing Transmission Time Results

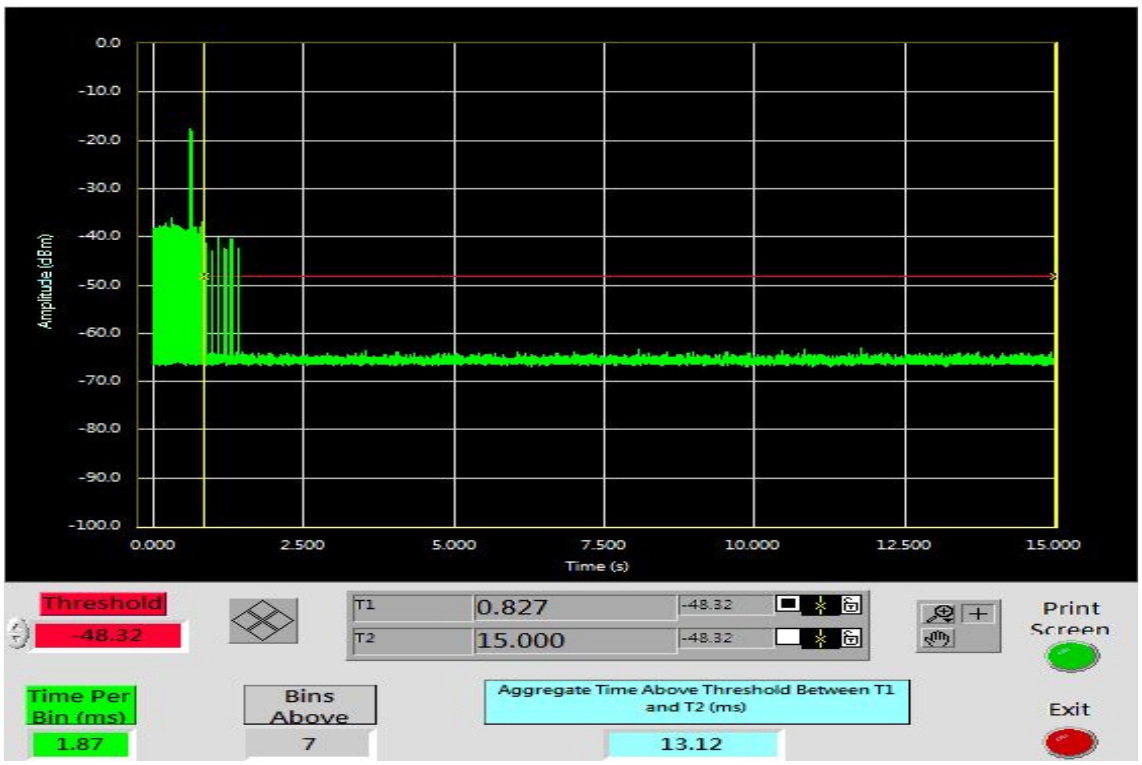
No non-compliance noted.

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
13.12	60	-46.88






0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
Amplitude (dBm)
0.000 0.200 0.400 0.600 0.800 1.000 1.200 1.400 1.600 1.800 2.000 2.200 2.400 2.600 2.800 3.000
Time (s)
Threshold
-48.32
T1
0.626
-48.32
T2
15.000
-48.32
Print Screen
Exit
Time Per Bin (ms)
1.87
Bins Above
23
Aggregate Time Above Threshold Between T1 and T2 (ms)
43.12

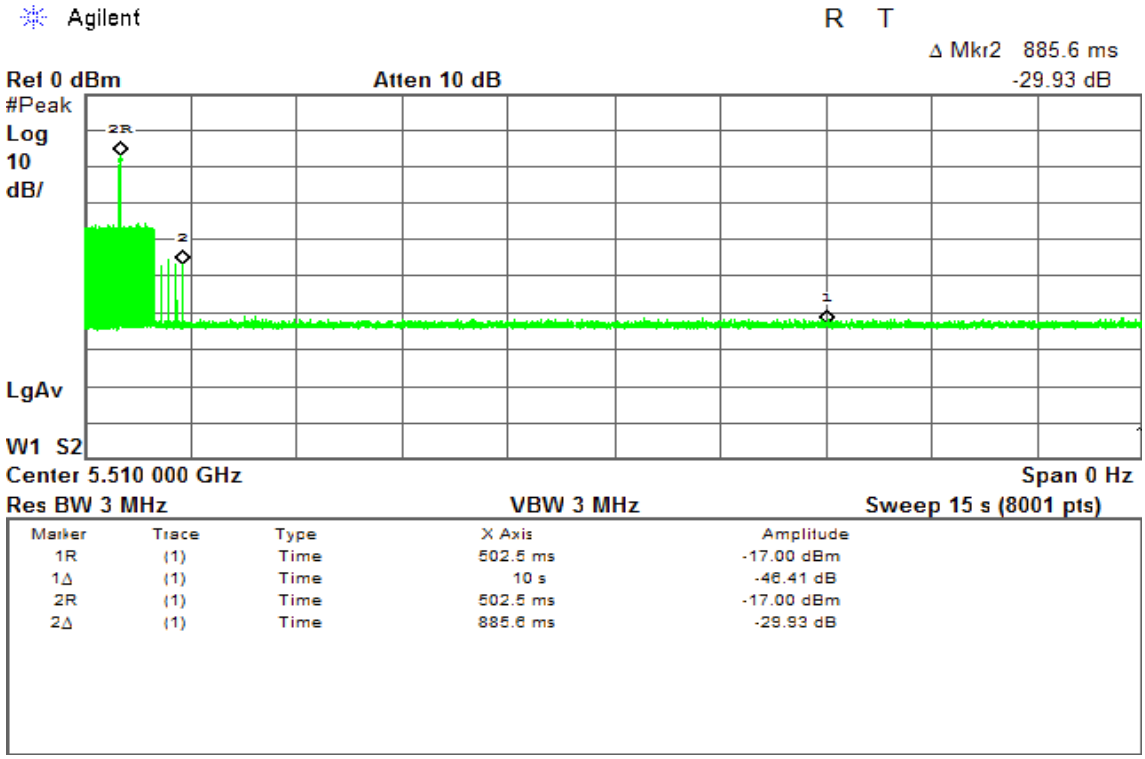

0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
Amplitude (dBm)
0.000 2.500 5.000 7.500 10.000 12.500 15.000
Time (s)
Threshold
-48.32
T1
0.827
-48.32
T2
15.000
-48.32
Print Screen
Exit
Time Per Bin (ms)
1.87
Bins Above
7
Aggregate Time Above Threshold Between T1 and T2 (ms)
13.12

IEEE 802.11n HT 40 MHz mode

Type 1 Channel Move Time Results

No non-compliance noted.

Channel Move Time (ms)	Limit (s)
885.6	10

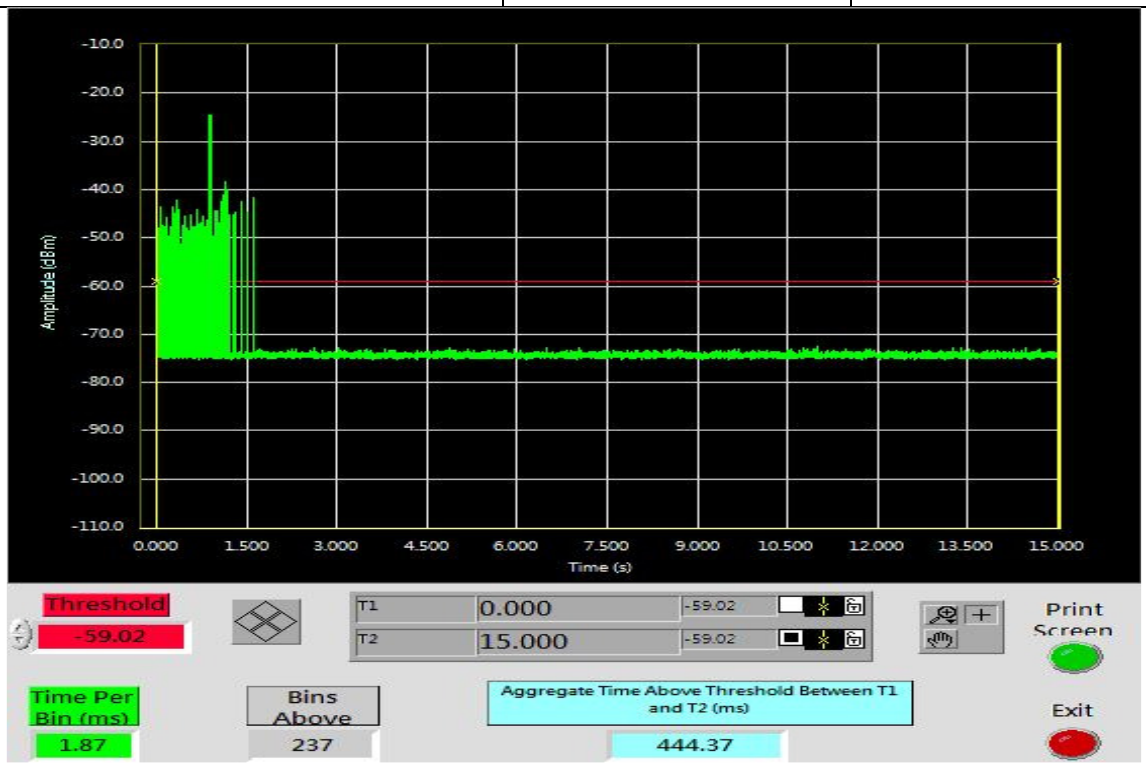


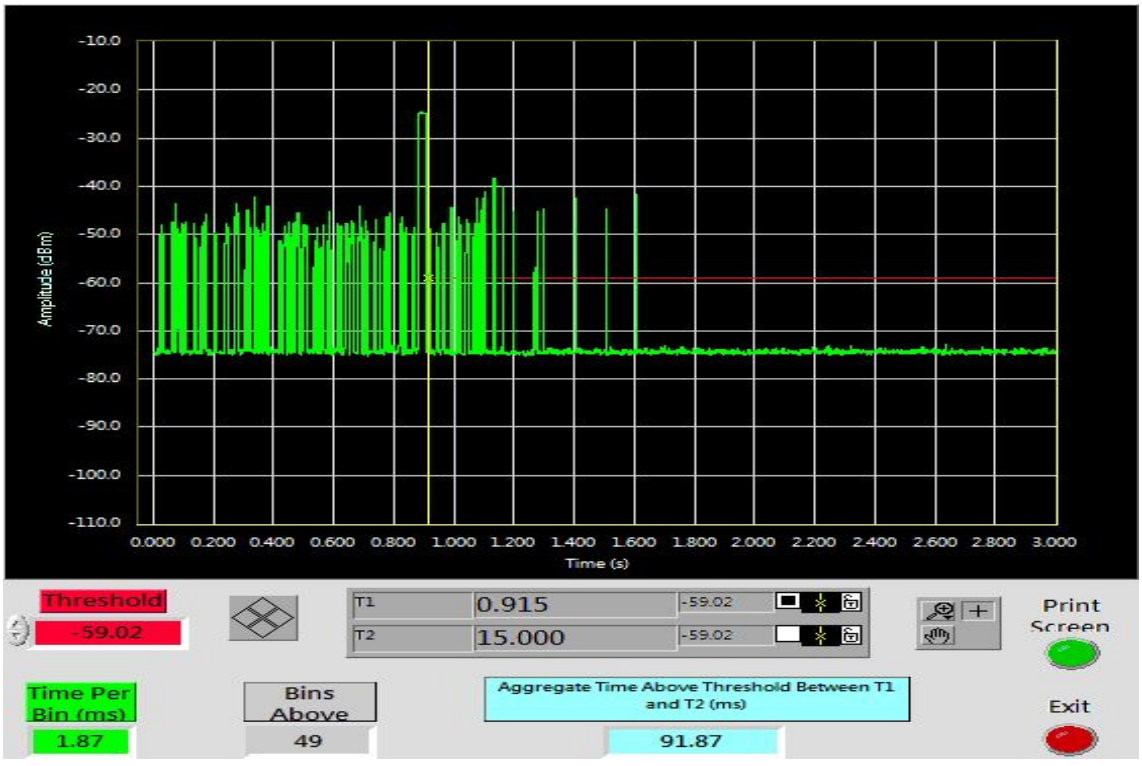
IEEE 802.11n HT 40 MHz mode

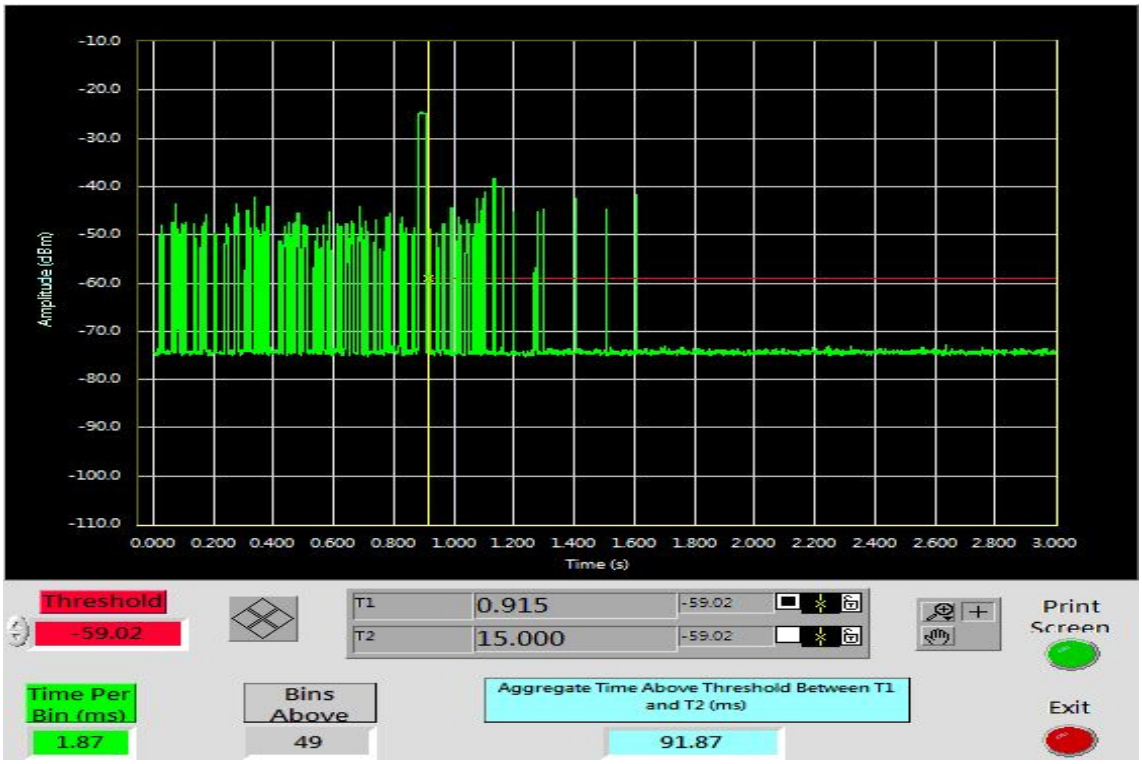
Type 1 Channel Closing Transmission Time Results

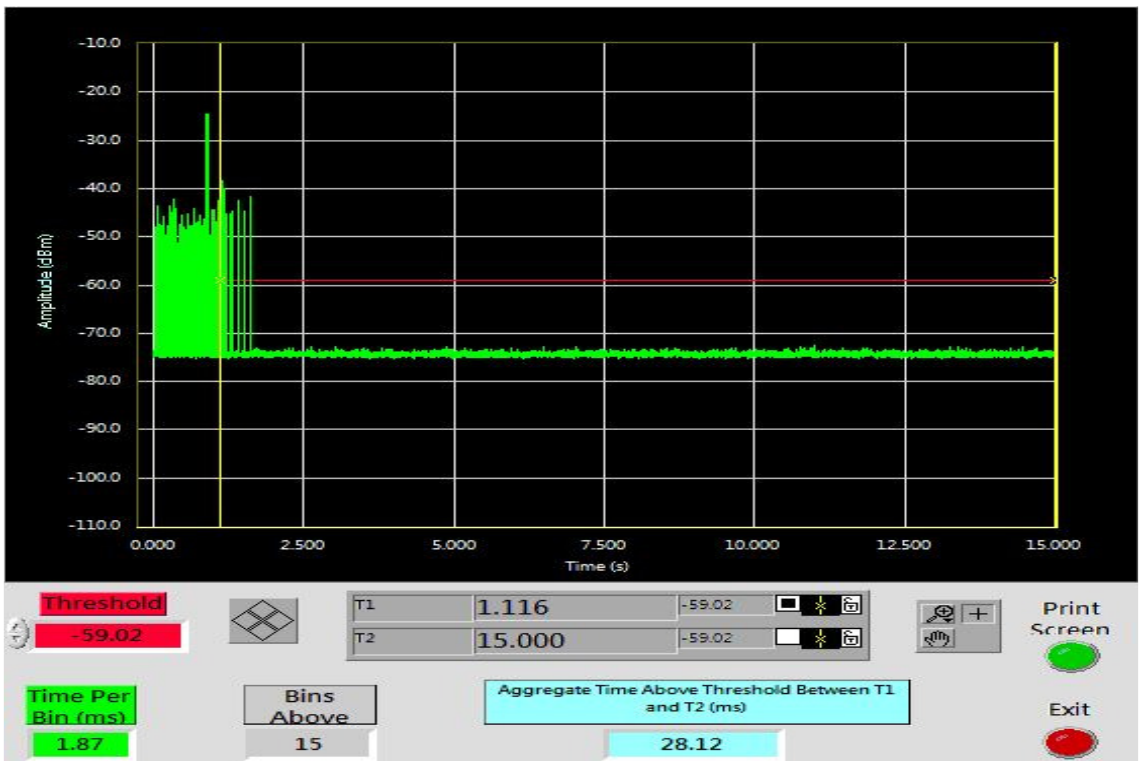
No non-compliance noted.

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
28.12	60	-31.88






-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
Amplitude (dBm)
0.000 0.200 0.400 0.600 0.800 1.000 1.200 1.400 1.600 1.800 2.000 2.200 2.400 2.600 2.800 3.000
Time (s)
Threshold
-59.02
T1
0.915
-59.02
T2
15.000
-59.02
Print Screen
Exit
Time Per Bin (ms)
1.87
Bins Above
49
Aggregate Time Above Threshold Between T1 and T2 (ms)
91.87

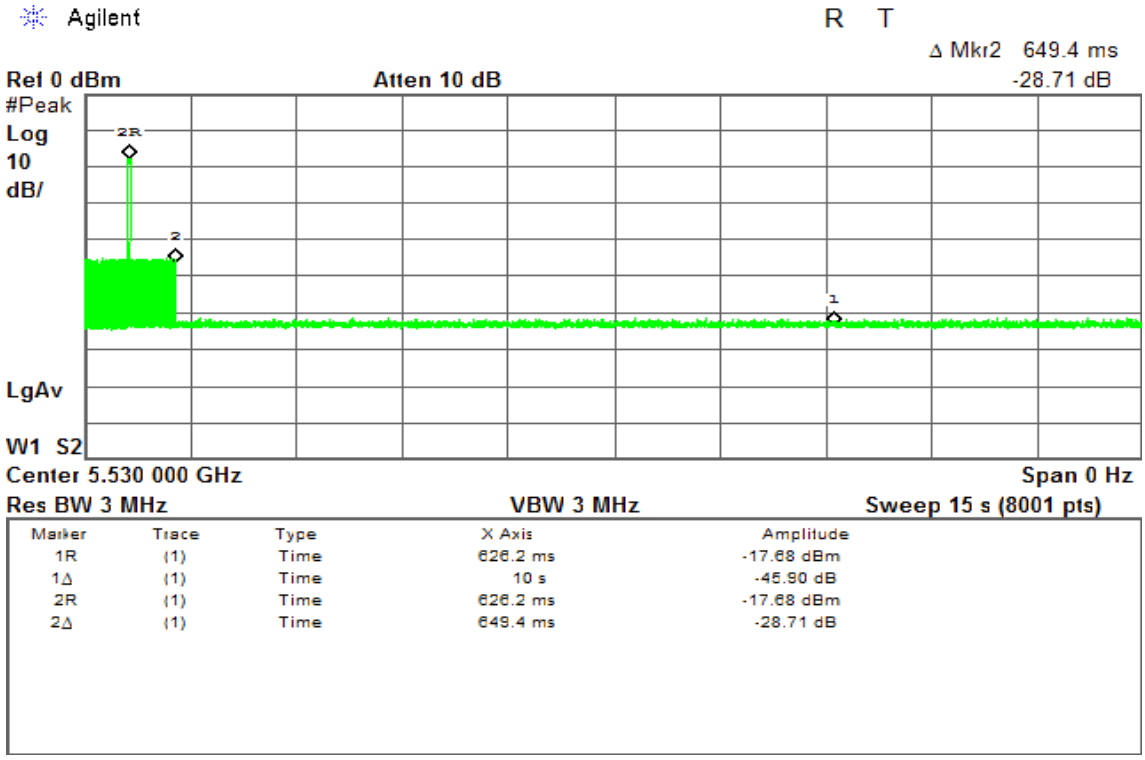

-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0
Amplitude (dBm)
0.000 2.500 5.000 7.500 10.000 12.500 15.000
Time (s)
Threshold
-59.02
T1
1.116
-59.02
T2
15.000
-59.02
Print Screen
Exit
Time Per Bin (ms)
1.87
Bins Above
15
Aggregate Time Above Threshold Between T1 and T2 (ms)
28.12

IEEE 802.11 ac VHT 80 MHz Channel mode

Type 1 Channel Move Time Results

No non-compliance noted.

Channel Move Time (ms)	Limit (s)
649.4	10

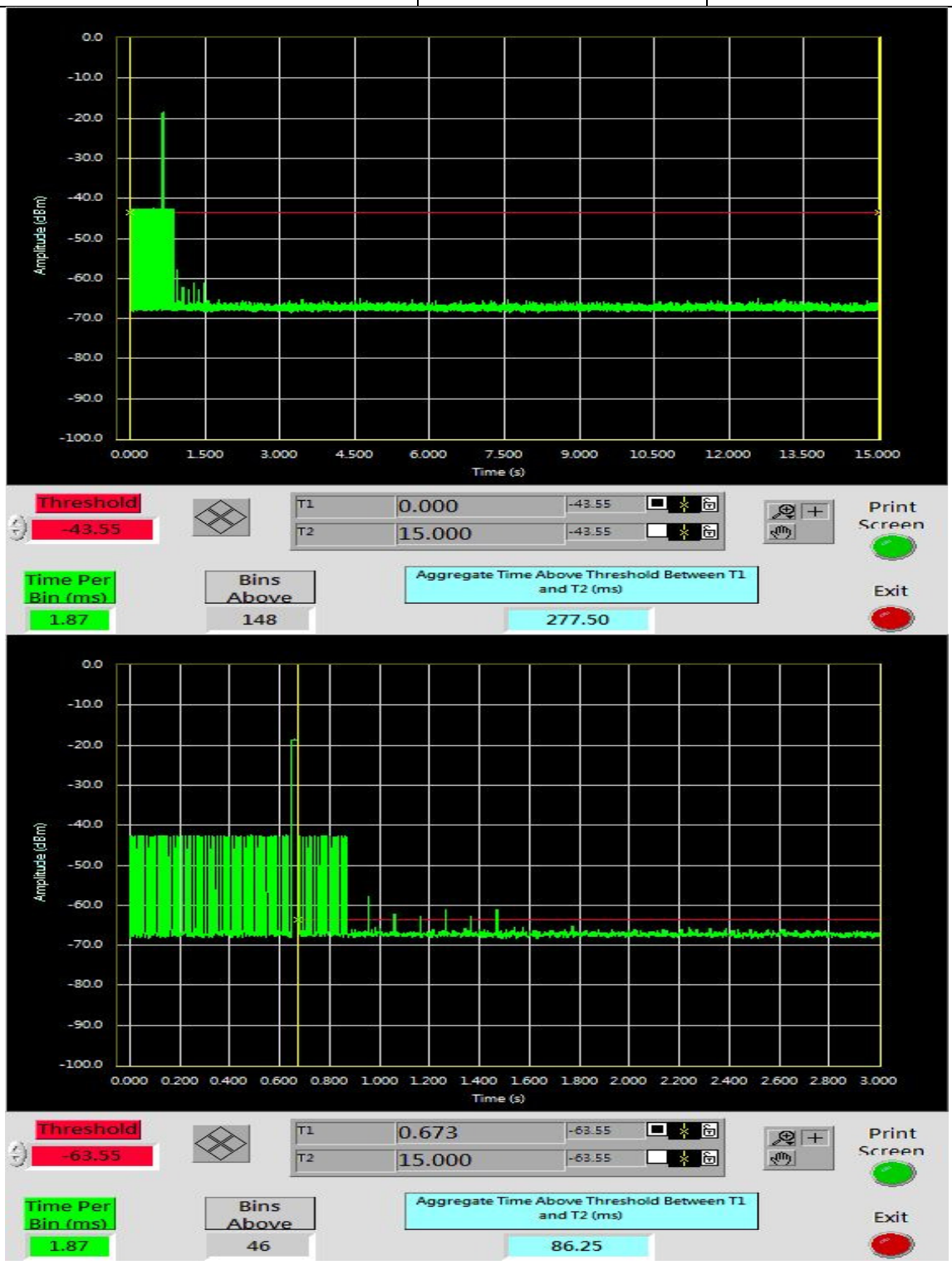


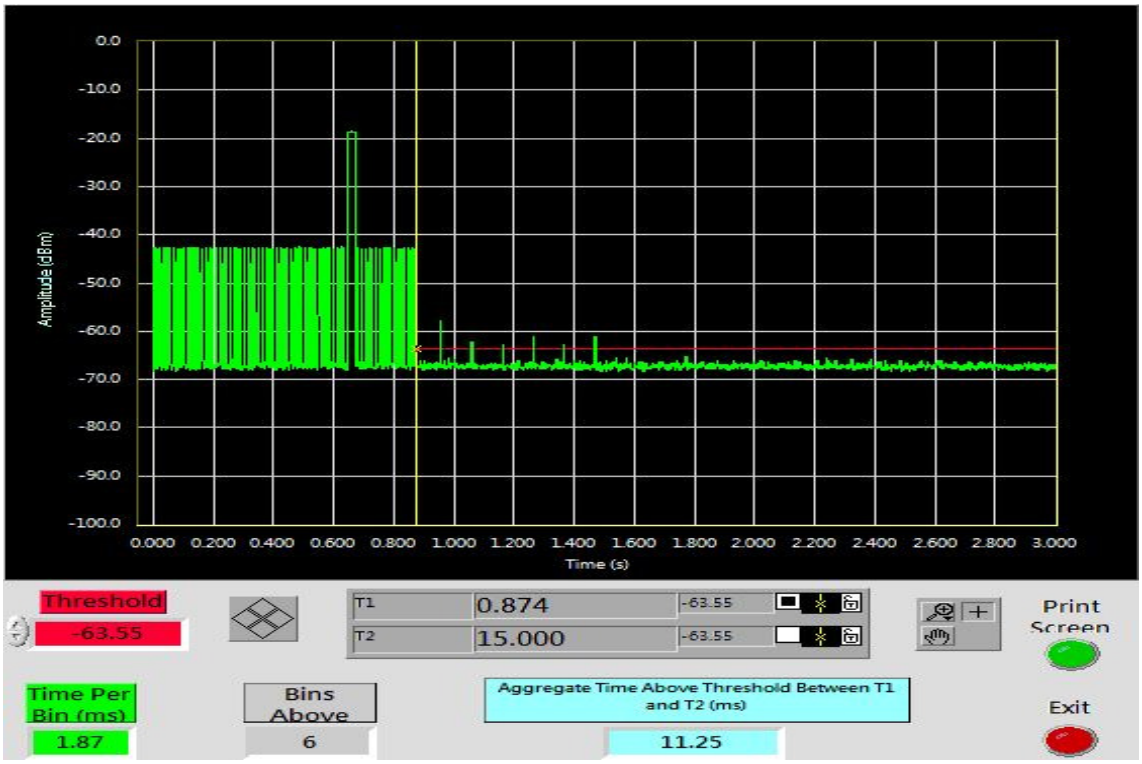
IEEE 802.11 ac VHT 80 MHz Channel mode

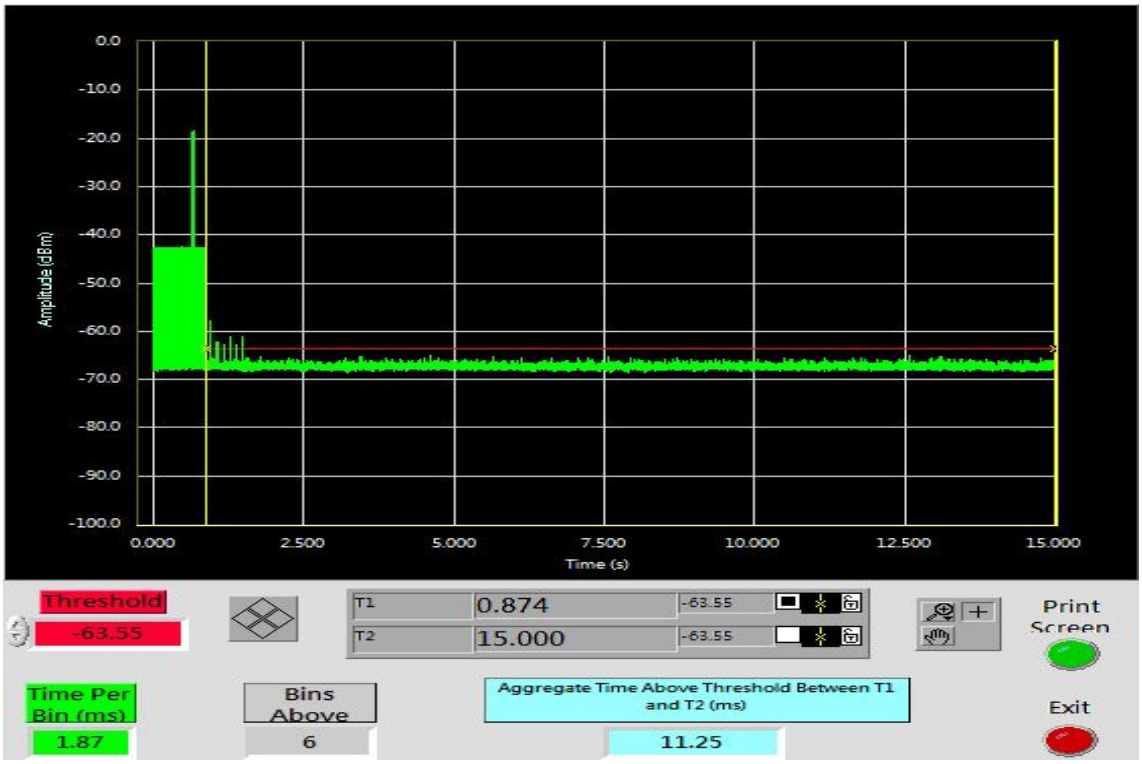
Type 1 Channel Closing Transmission Time Results

No non-compliance noted.

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
11.25	60	-48.75




0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
Amplitude (dBm)
0.000 0.200 0.400 0.600 0.800 1.000 1.200 1.400 1.600 1.800 2.000 2.200 2.400 2.600 2.800 3.000
Time (s)
Threshold
-63.55
T1
0.874
-63.55
T2
15.000
-63.55
Print Screen
Time Per Bin (ms)
1.87
Bins Above
6
Aggregate Time Above Threshold Between T1 and T2 (ms)
11.25
Exit


0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
Amplitude (dBm)
0.000 2.500 5.000 7.500 10.000 12.500 15.000
Time (s)
Threshold
-63.55
T1
0.874
-63.55
T2
15.000
-63.55
Print Screen
Time Per Bin (ms)
1.87
Bins Above
6
Aggregate Time Above Threshold Between T1 and T2 (ms)
11.25
Exit

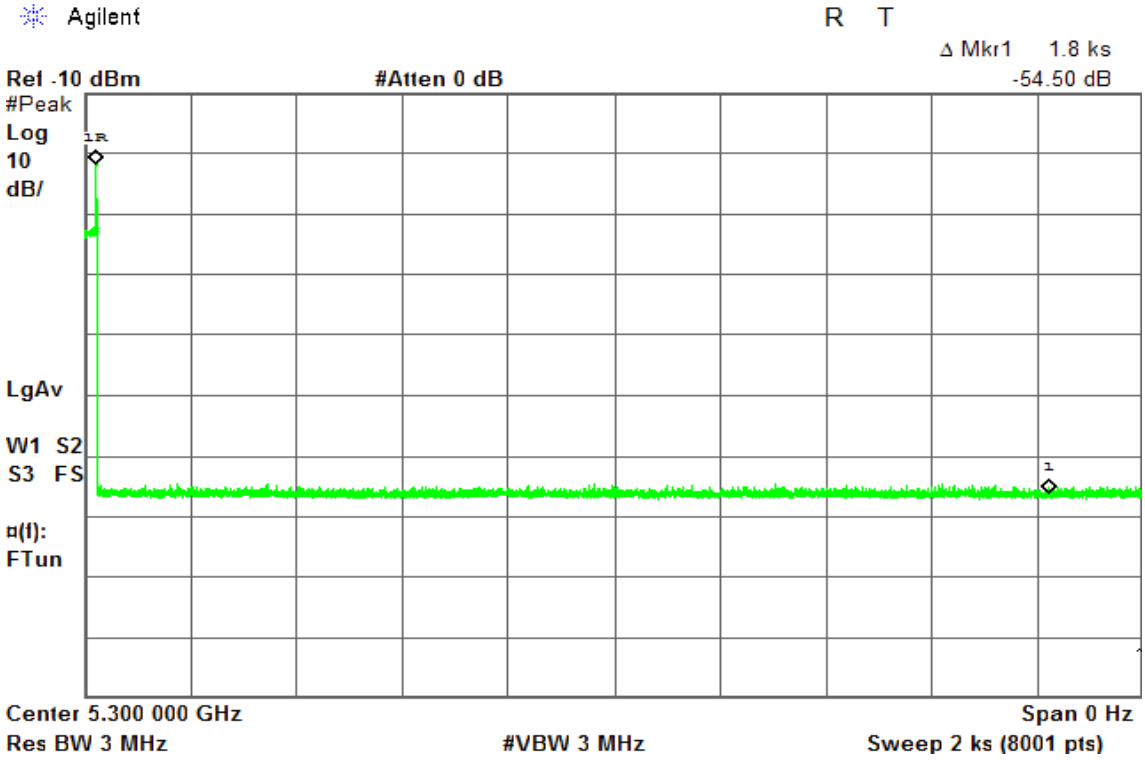
NON-OCCUPANCY PERIOD

UNII Band II / IEEE 802.11n HT 20 MHz Channel mode

Type 1 Non-Occupancy Period Test Results

No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.

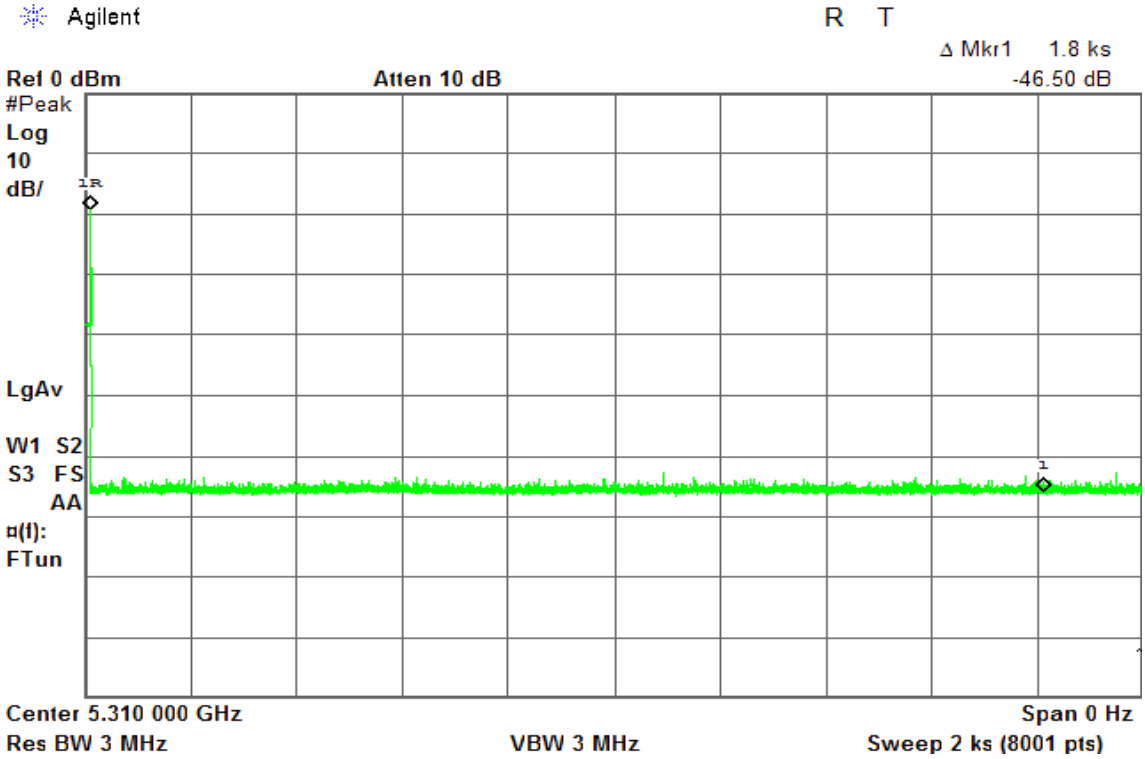


UNII Band II / IEEE 802.11n HT 40 MHz mode

Type 1 Non-Occupancy Period Test Results

No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.

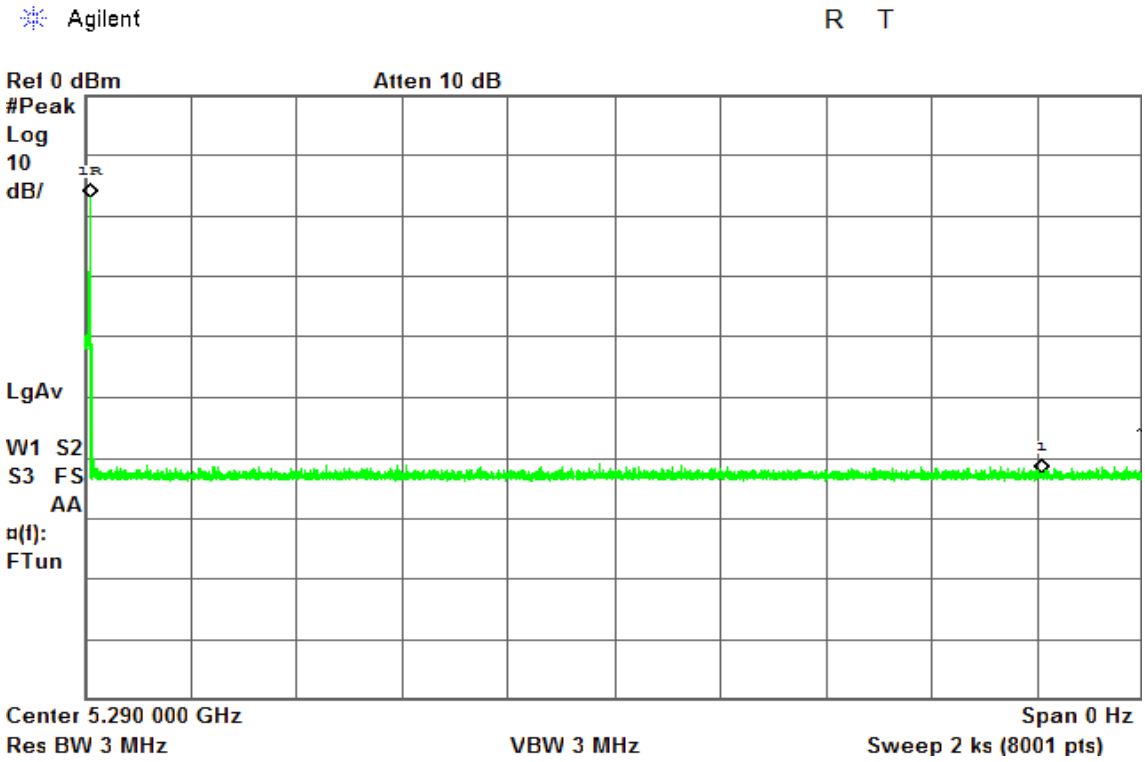


UNII Band II / IEEE 802.11n VHT 80 MHz mode

Type 1 Non-Occupancy Period Test Results

No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.

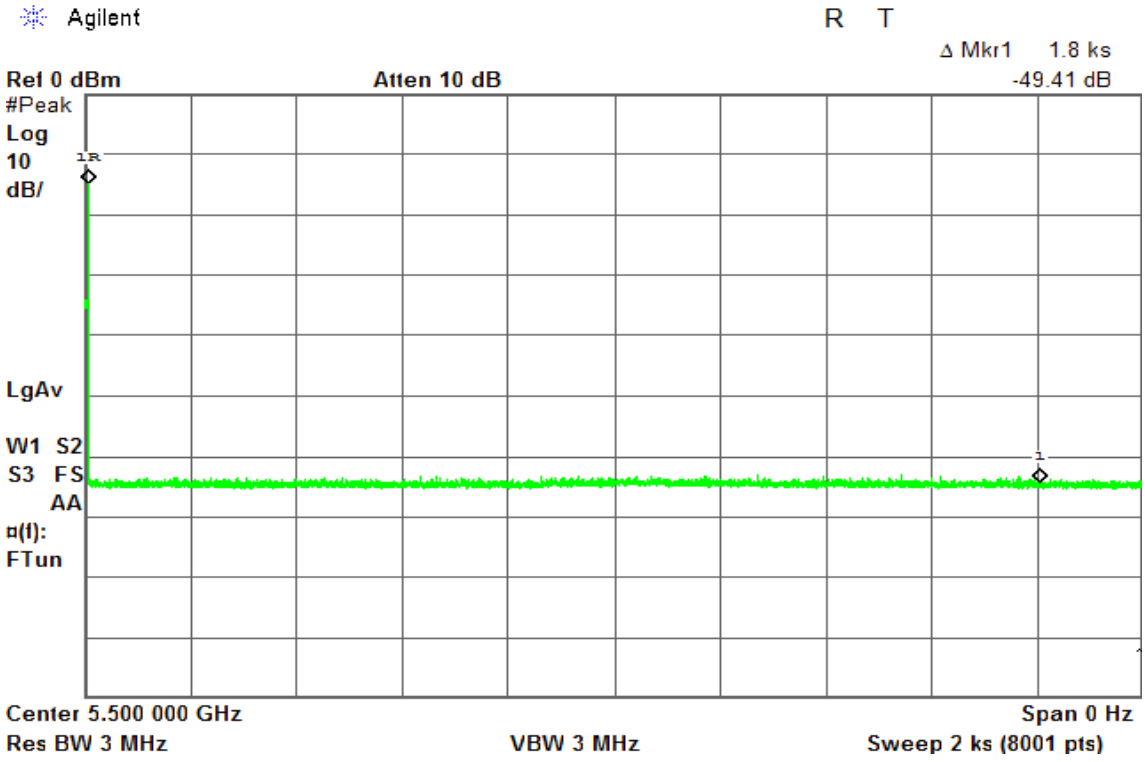


UNII Band III / IEEE 802.11n HT 20 MHz Channel mode

Type 1 Non-Occupancy Period Test Results

No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.

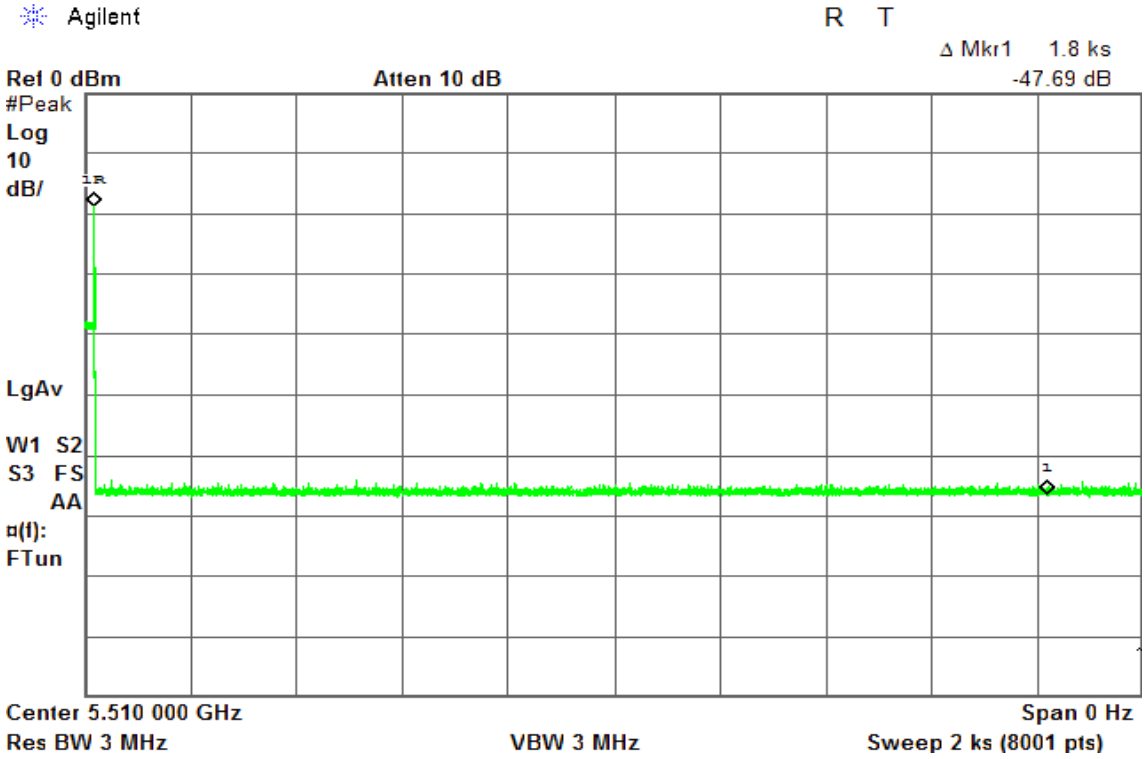


UNII Band III / IEEE 802.11n HT 40 MHz mode

Type 1 Non-Occupancy Period Test Results

No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.



UNII Band III / IEEE 802.11n VHT 80 MHz mode

Type 1 Non-Occupancy Period Test Results

No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.