FCC 47 CFR PART 15 SUBPART E

TEST REPORT

For

802.11a/b/g/n/ac, 2T2R Wireless LAN USB2.0 Module

Model: WN4505L

Trade Name: LITE-ON

Issued to

Lite-On Technology Corp.
4F, 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: July 17, 2014

Testing Laboratory
1309

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		July 17, 2014		Initial Issue	ALL	Angel Cheng

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1. TEST RESULT CERTIFICATION

Applicant:	Lite-On Technology Corp. 4F, 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 213100 China
Equipment Under Test:	802.11a/b/g/n/ac, 2T2R Wireless LAN USB2.0 Module
Trade Name:	LITE-ON
Model:	WN4505L
Date of Test:	April 22 ~ May 9, 2014

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

We hereby certify that:

Compliance Certification Services Inc. tested the above equipment. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in **ANSI C63.4: 2009** and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.407.

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

Approved by:

Miller Lee
Section Manager
Compliance Certification Services Inc.

Reviewed by:

Angel Cheng
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

<table>
<tr><td>Product</td><td>802.11a/b/g/n/ac, 2T2R Wireless LAN USB2.0 Module</td></tr>
<tr><td>Trade Name</td><td>LITE-ON</td></tr>
<tr><td>Model Number</td><td>WN4505L</td></tr>
<tr><td>Model Discrepancy</td><td>N/A</td></tr>
<tr><td>Received Date</td><td>July 9, 2014</td></tr>
<tr><td>Power Supply</td><td>Powered from host device</td></tr>
<tr><td>Operating Frequency Range &
Number of Channels</td><td>
<table>
<tr><th></th><th>Mode</th><th>Frequency Range (MHz)</th><th>Number of Channels</th></tr>
<tr><td rowspan="4">UNII Band I</td><td>IEEE 802.11a</td><td>5180 – 5240</td><td>4 Channels</td></tr>
<tr><td>IEEE 802.11n HT 20 MHz</td><td>5180 – 5240</td><td>4 Channels</td></tr>
<tr><td>IEEE 802.11n HT 40 MHz</td><td>5190 ~ 5230</td><td>2 Channels</td></tr>
<tr><td>IEEE 802.11ac (VHT80)</td><td>5210</td><td>1 Channels</td></tr>
<tr><td rowspan="4">UNII Band II</td><td>IEEE 802.11a</td><td>5260 - 5320</td><td>4 Channels</td></tr>
<tr><td>IEEE 802.11n HT 20 MHz</td><td>5260 - 5320</td><td>4 Channels</td></tr>
<tr><td>IEEE 802.11n HT 40 MHz</td><td>5270 ~ 5310</td><td>2 Channels</td></tr>
<tr><td>IEEE 802.11ac (VHT80)</td><td>5290</td><td>1 Channels</td></tr>
<tr><td rowspan="4">UNII Band III</td><td>IEEE 802.11a</td><td>5500 ~ 5700</td><td>11 Channels</td></tr>
<tr><td>IEEE 802.11n HT 20 MHz</td><td>5500 ~ 5700</td><td>11 Channels</td></tr>
<tr><td>IEEE 802.11n HT 40 MHz</td><td>5510 ~ 5670</td><td>3 Channels</td></tr>
<tr><td>IEEE 802.11ac (VHT80)</td><td>5530 ~ 5690</td><td>2 Channels</td></tr>
</table>
</td></tr>
<tr><td>Transmit Power</td><td>
<table>
<tr><th></th><th>Mode</th><th>Frequency Range (MHz)</th><th>Output Power (dBm)</th><th>Output Power (w)</th></tr>
<tr><td rowspan="4">UNII Band I</td><td>IEEE 802.11a</td><td>5180 – 5240</td><td>16.40</td><td>0.0437</td></tr>
<tr><td>IEEE 802.11n HT 20 MHz</td><td>5180 – 5240</td><td>16.52</td><td>0.0449</td></tr>
<tr><td>IEEE 802.11n HT 40 MHz</td><td>5190 ~ 5230</td><td>16.47</td><td>0.0444</td></tr>
<tr><td>IEEE 802.11ac (VHT80)</td><td>5210</td><td>16.36</td><td>0.0433</td></tr>
<tr><td rowspan="4">UNII Band II</td><td>IEEE 802.11a</td><td>5260 - 5320</td><td>19.60</td><td>0.0912</td></tr>
<tr><td>IEEE 802.11n HT 20 MHz</td><td>5260 - 5320</td><td>17.26</td><td>0.0532</td></tr>
<tr><td>IEEE 802.11n HT 40 MHz</td><td>5270 ~ 5310</td><td>18.11</td><td>0.0647</td></tr>
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<tr><td rowspan="4">UNII Band III</td><td>IEEE 802.11a</td><td>5500 ~ 5700</td><td>19.10</td><td>0.0813</td></tr>
<tr><td>IEEE 802.11n HT 20 MHz</td><td>5500 ~ 5700</td><td>18.15</td><td>0.0653</td></tr>
<tr><td>IEEE 802.11n HT 40 MHz</td><td>5510 ~ 5670</td><td>18.14</td><td>0.0652</td></tr>
<tr><td>IEEE 802.11ac (VHT80)</td><td>5530 ~ 5690</td><td>17.80</td><td>0.0603</td></tr>
</table>
</td></tr>
<tr><td>Modulation Technique</td><td>OFDM (QPSK, BPSK, 16-QAM, 64-QAM)</td></tr>
<tr><td>Transmit Data Rate</td><td>IEEE 802.11a mode: 54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11n HT 20 mode: OFDM (6.5, 7.2, 13, 14.4, 14.44, 19.5, 21.7, 26, 28.89, 28.9, 39, 43.3, 43.33 52, 57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67, 104, 115.56, 117, 130, 144.44 Mbps)
IEEE 802.11n HT 40 mode: OFDM (13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps)
IEEE 802.11ac (VHT80) 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)</td></tr>
<tr><td>Antenna Specification</td><td>LITE-ON / 3010000271ID
Antenna Gain: 1.74 dBi</td></tr>
<tr><td>Antenna Designation</td><td>Integral Antenna</td></tr>
</table>

Operation Frequency:

UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII)					
CHANNEL	**MHz**	**CHANNEL**	**MHz**	**CHANNEL**	**MHz**
36	5.18	68	5.34	100	5.5
37	5.185	69	5.345	101	5.505
38	5.19	70	5.35	102	5.51
39	5.195	71	5.355	103	5.515
40	5.2	72	5.36	104	5.52
41	5.205	73	5.365	105	5.525
42	5.21	74	5.37	106	5.53
43	5.215	75	5.375	107	5.535
44	5.22	76	5.38	108	5.54
45	5.225	77	5.385	109	5.545
46	5.23	78	5.39	110	5.55
47	5.235	79	5.395	111	5.555
48	5.24	80	5.4	112	5.56
49	5.245	81	5.405	113	5.565
50	5.25	82	5.41	114	5.57
51	5.255	83	5.415	115	5.575
52	5.26	84	5.42	116	5.58
53	5.265	85	5.425	117	5.585
54	5.27	86	5.43	118	5.59
55	5.275	87	5.435	119	5.595
56	5.28	88	5.44	130	5.65
57	5.285	89	5.445	131	5.655
58	5.29	90	5.45	132	5.66
59	5.295	91	5.455	133	5.665
60	5.3	92	5.46	134	5.67
61	5.305	93	5.465	135	5.675
62	5.31	94	5.47	136	5.68
63	5.315	95	5.475	137	5.685
64	5.32	96	5.48	138	5.69
65	5.325	97	5.485	139	5.695
66	5.33	98	5.49	140	5.7
67	5.335	99	5.495		

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 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 and FCC CFR 47 Part 15.207, 15.209.

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 Section 13.1.4.1 of ANSI C63.10, 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 0.8 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 Section 13.1.4.1 of ANSI C63.10

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: WN4505L) had been tested under operating condition.

The EUT is a 2x2 configuration spatial MIMO (2Tx & 2Rx) without beam forming function. The 2x2 configuration is implemented with three outside TX & RX chains (Chain 0, Chain 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 (VHT80) 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 (VHT80) for 5290MHz:

Channel Low(5290MHz) with 29.3Mbps data rate were chosen for full testing.

UNII Band III:

IEEE 802.11a for 5500 ~ 5700MHz:
Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5500 ~ 5700MHz:
Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz for 5510 ~ 5670MHz:
Channel Low (5510MHz), Channel Mid (5550MHz) and Channel High (5670MHz) with 13.5Mbps data rate were chosen for full testing.

IEEE 802.11ac (VHT80) for 5530 ~ 5690MHz:
Channel Low (5530MHz), Channel High (5690MHz) with 29.3Mbps data rate were chosen for full testing.

4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

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

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

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

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY43360131	03/19/2015
Power Meter	Anritsu	ML2495A	1012009	06/03/2015
Power Sensor	Anritsu	MA2411A	0917072	06/03/2015

3M Chamber Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	US42510268	11/05/2014
EMI Test Receiver	R&S	ESCI	100064	02/27/2015
Pre-Amplifier	Mini-Circults	ZFL-1000LN	SF350700823	01/11/2015
Pre-Amplifier	MITEQ	AFS44-00102650-42-10P-44	1415367	11/18/2014
Bilog Antenna	Sunol Sciences	JB3	A030105	10/01/2014
Horn Antenna	EMCO	3117	00055165	02/12/2015
Horn Antenna	EMCO	3116	2487	10/09/2014
Loop Antenna	EMCO	6502	8905/2356	06/08/2015
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
Site NSA	CCS	N/A	N/A	12/21/2014
Test S/W	EZ-EMC (CCS-3A1RE)			

Conducted Emission room # A				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESI	101203	09/12/2014
LISN	R&S	ESH3-Z5	848773/014	12/05/2014
Coaxial Cable	Commate	CFD300-NL	NA	12/05/2014
Test S/W	CCS-3A1-CE			

4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	+/- 1.2159
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 C63.4 and CISPR Publication 22.

5.2 EQUIPMENT

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

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

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

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

5.3 LABORATORY ACCREDITATIONS AND LISTING

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

5.4 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3M Semi Anechoic Chamber (FCC MRA: TW1039) to perform FCC Part 15 measurements	FCC MRA: TW1039
Taiwan	TAF	LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-210, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12,2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method –47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11	Testing Laboratory 1309
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	IC 2324G-1 IC 2324G-2

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

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

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

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1	Notebook PC	IBM	7663 (T61)	L3E9812	N/A	N/A	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
2	Notebook PC	DELL	PP19L	7B3ZP1S	N/A	N/A	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core

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. APPLICABLE RULES

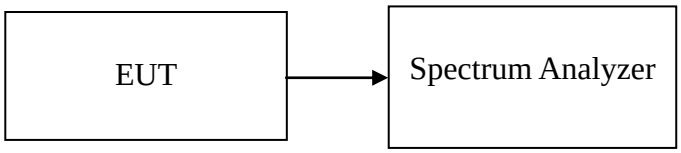
8. FCC PART 15 REQUIREMENTS

8.1 26 DB EMISSION BANDWIDTH

LIMIT

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

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low-loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW > 1%EBW, VBW > RBW, Span >26dB bandwidth, and Sweep = auto.
4. Mark the peak frequency and –26dB (upper and lower) frequency.
5. Repeat until all the rest channels were investigated.

TEST RESULTS

No non-compliance noted

Test Data

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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	17.0880
Mid	5220	17.0940
High	5240	17.0763

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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	18.0645
Mid	5220	18.0684
High	5240	18.0227

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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	18.8398
Mid	5220	18.7708
High	5240	18.7860

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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	36.9519
High	5230	36.9852

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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	36.6159
High	5230	36.4929

Test mode: IEEE 802.11n HT 80 MHz mode / 5210MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Mid	5210	76.1136

Test mode: IEEE 802.11n HT 80 MHz mode/ 5210MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Mid	5210	76.0703

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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5260	17.0660
Mid	5280	17.0246
High	5320	17.0855

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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	17.9414
Mid	5260	18.0747
High	5320	18.0785

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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	18.8120
Mid	5260	18.7852
High	5320	18.8532

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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	36.8894
High	5310	36.8641

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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	36.5278
High	5310	36.5111

Test mode: IEEE 802.11n HT 80 MHz mode / 5290MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Mid	5290	76.1835

Test mode: IEEE 802.11n HT 80 MHz mode/ 5290MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Mid	5290	76.0432

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	17.0865
Mid	5580	17.0378
High	5700	17.1014

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	17.9359
Mid	5580	18.0032
High	5700	17.9745

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	18.8094
Mid	5580	18.8072
High	5700	18.7879

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	36.9391
Mid	5550	36.9115
High	5670	36.8798

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	36.5091
Mid	5550	36.5589
High	5670	36.5142

Test mode: IEEE 802.11n HT 80 MHz mode / 5530 ~ 5690MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5530	76.2550
High	5690	76.2662

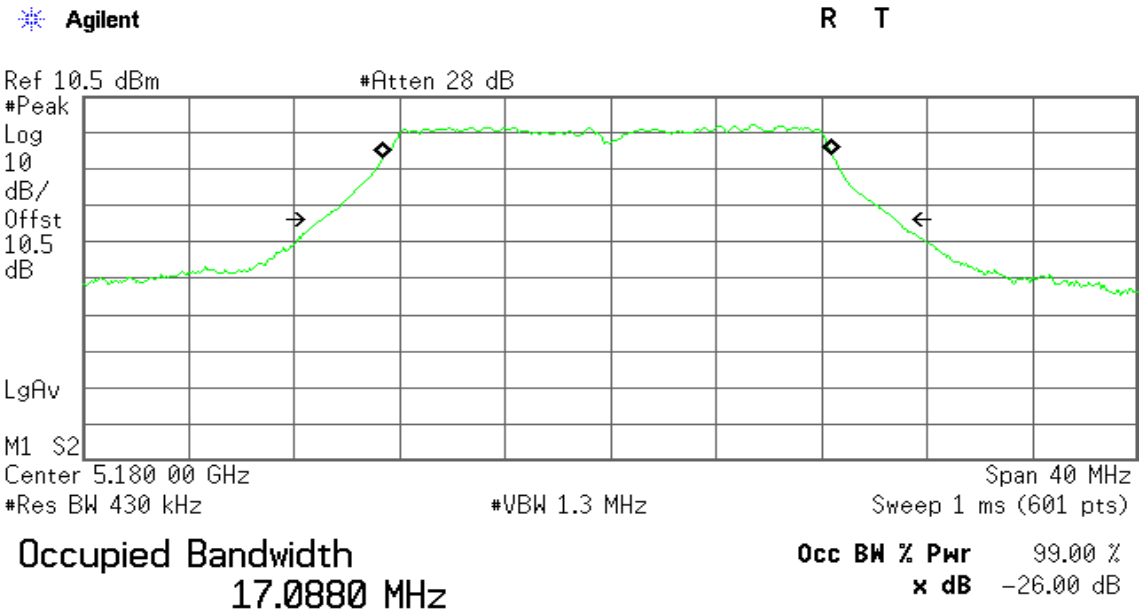
Test mode: IEEE 802.11n HT 80 MHz mode / 5510 ~ 5670MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5530	76.1641
High	5690	76.1136

Test Plot

IEEE 802.11a for 5180 ~ 5240MHz

CH Low

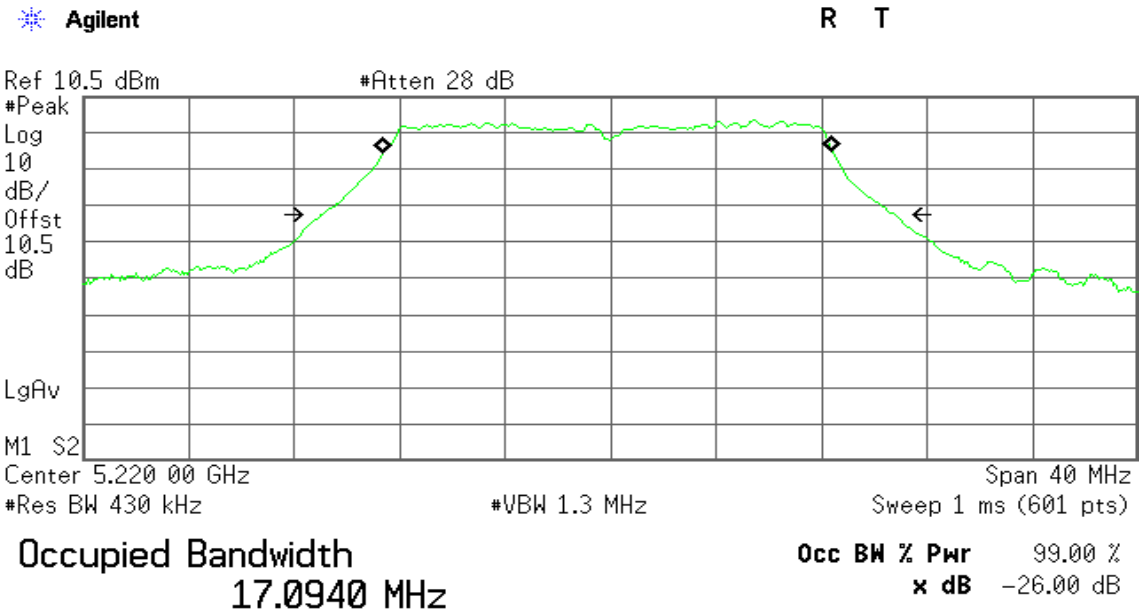


Occupied Bandwidth
17.0880 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -116.529 kHz
x dB Bandwidth 21.741 MHz

CH Mid

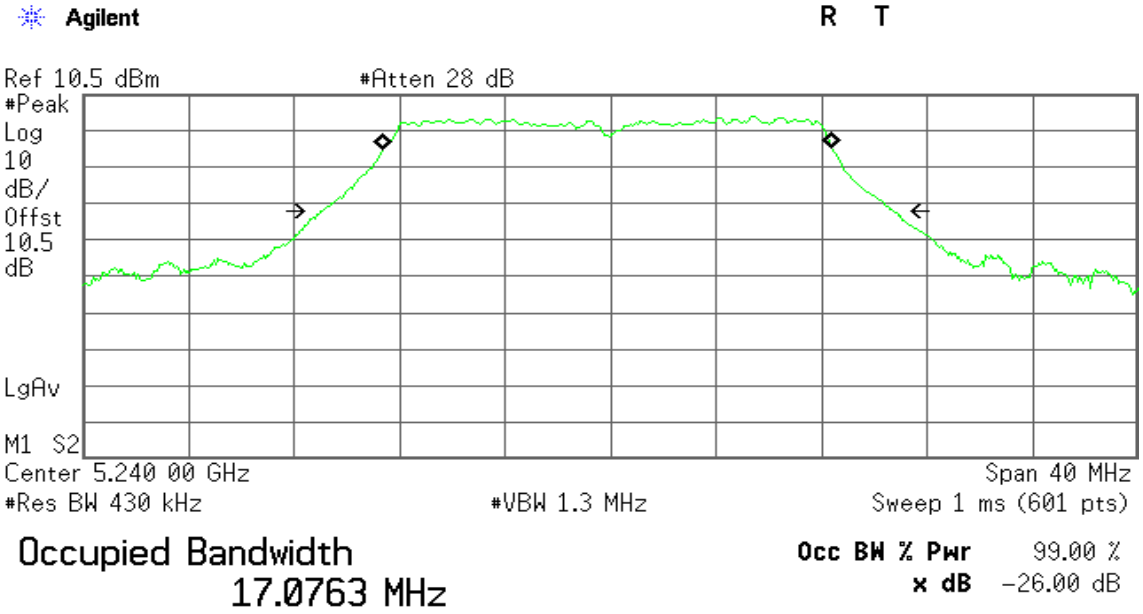


Occupied Bandwidth
17.0940 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -118.423 kHz
x dB Bandwidth 21.818 MHz

CH High



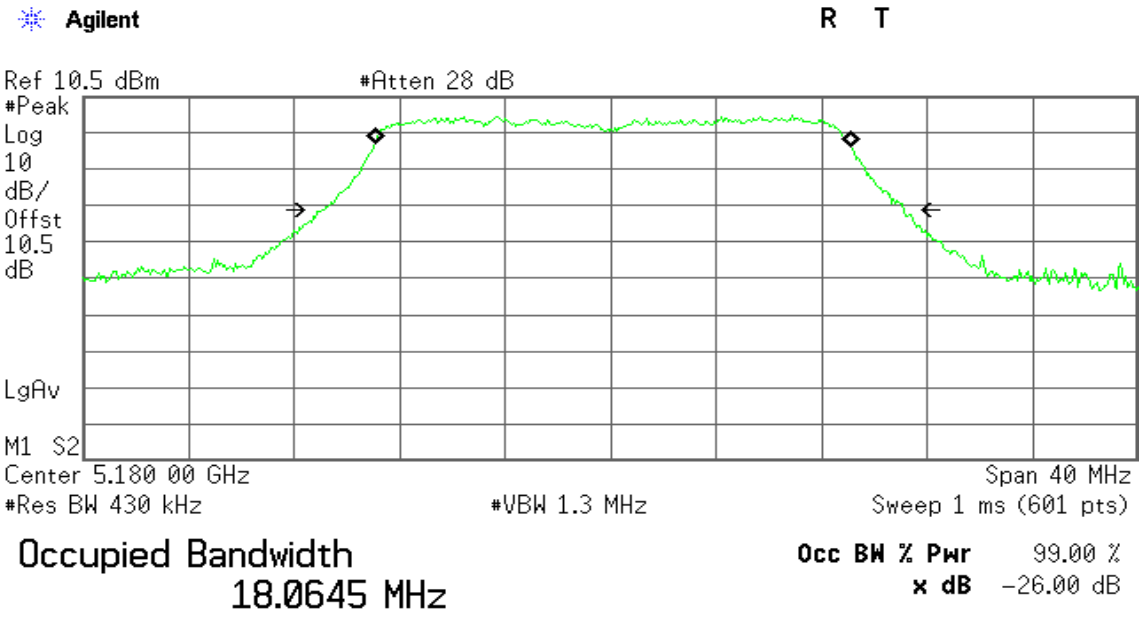
Occupied Bandwidth
17.0763 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -117.397 kHz
x dB Bandwidth 21.678 MHz

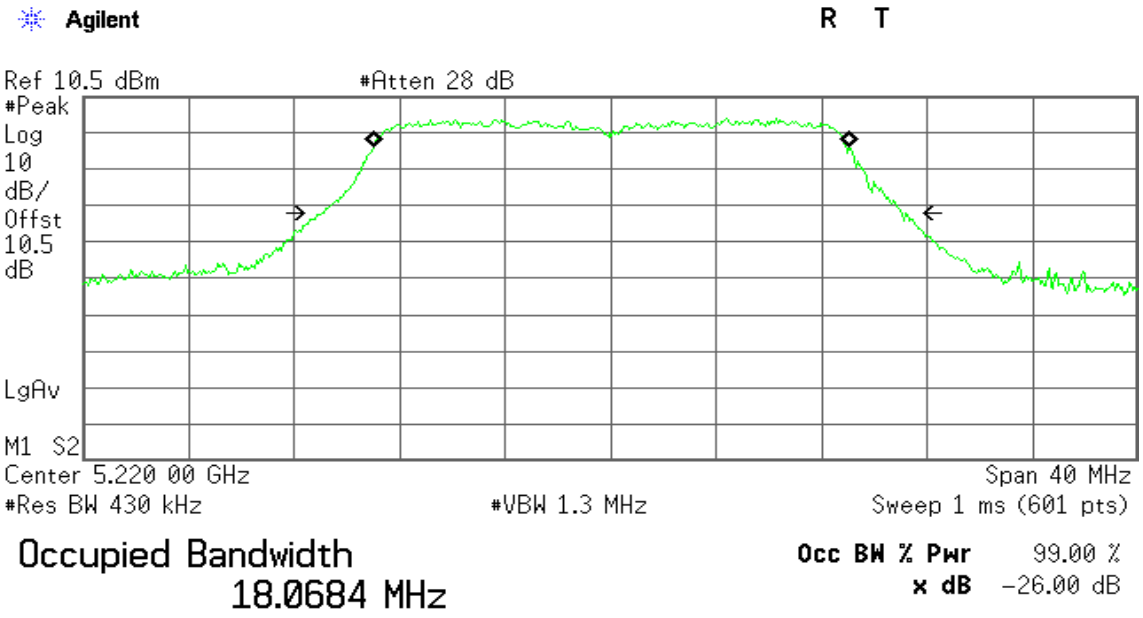
IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

CH Low



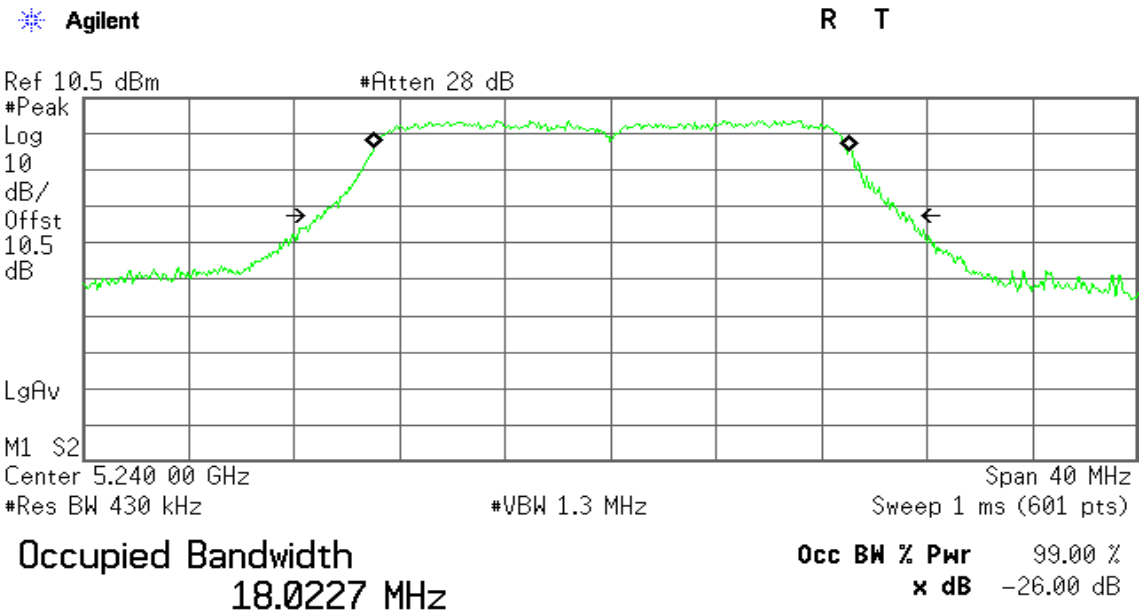
Transmit Freq Error	73.806 kHz
x dB Bandwidth	22.063 MHz

CH Mid



Transmit Freq Error	31.617 kHz
x dB Bandwidth	22.167 MHz

CH High



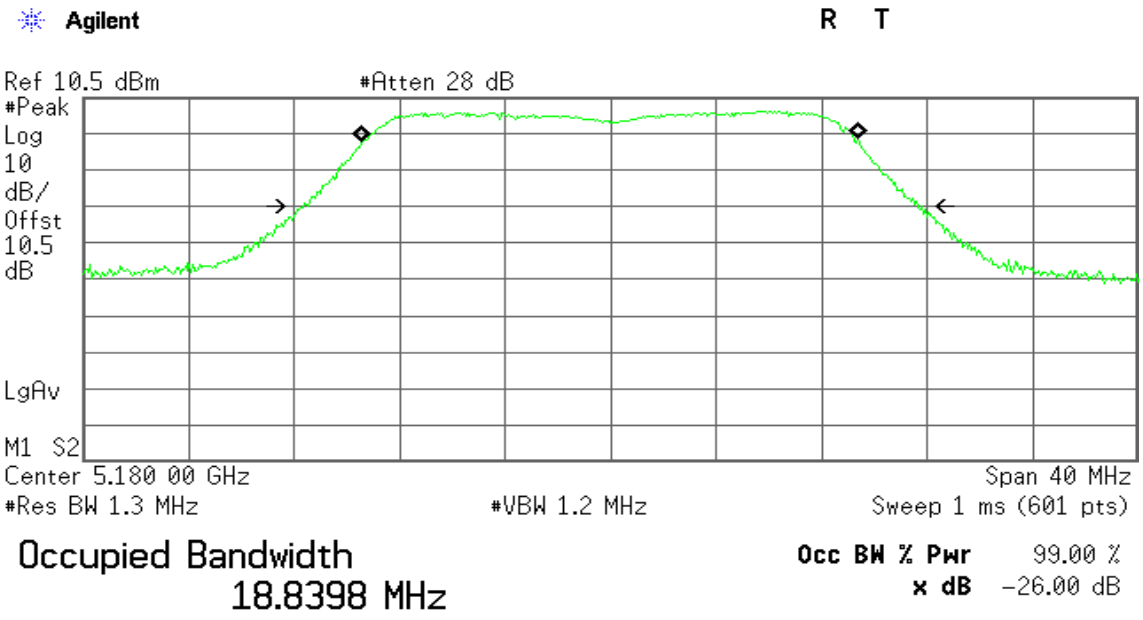
Occupied Bandwidth
18.0227 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 29.849 kHz
x dB Bandwidth 22.083 MHz

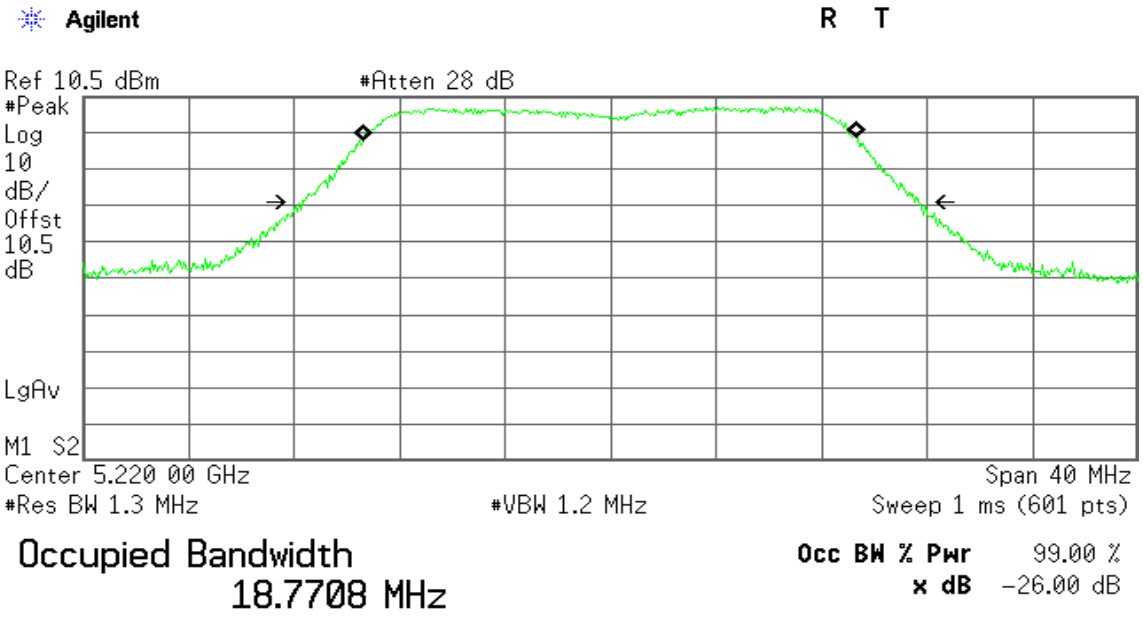
IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

CH Low



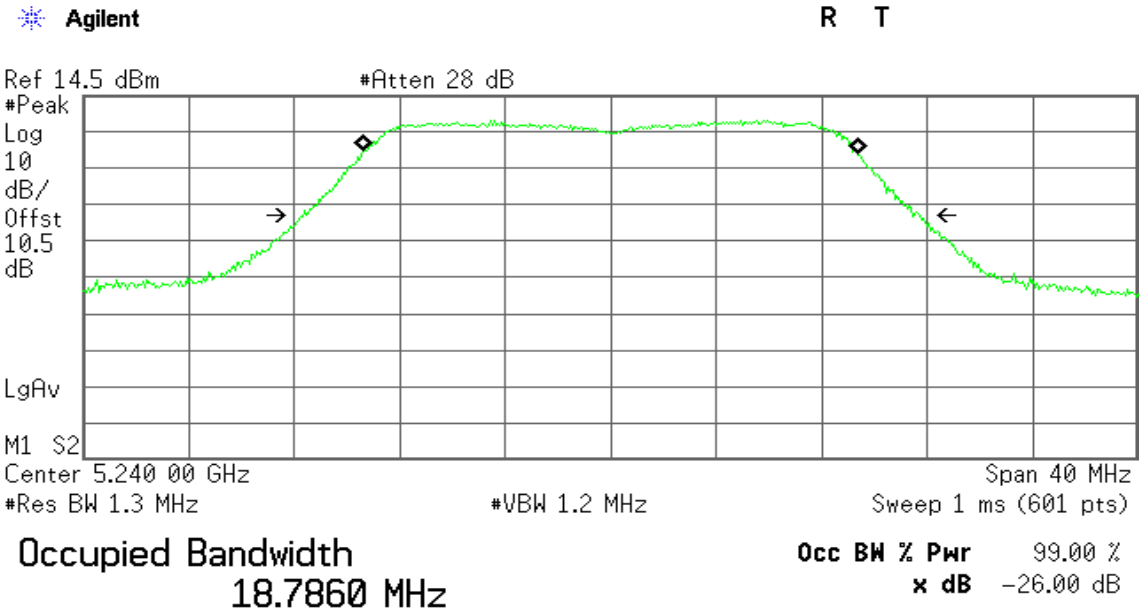
Transmit Freq Error -18.997 kHz
x dB Bandwidth 23.306 MHz

CH Mid



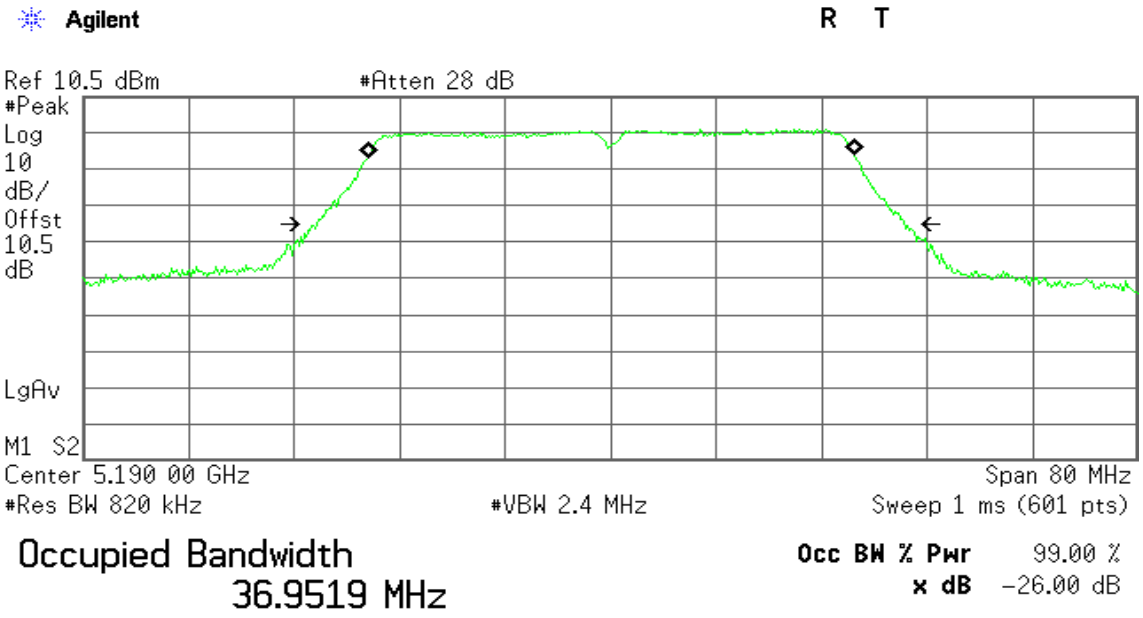
Transmit Freq Error -27.428 kHz
x dB Bandwidth 23.373 MHz

CH High


Agilent
R T
Ref 14.5 dBm
#Atten 28 dB
#Peak
Log
10
dB/
Offst
10.5
dB
LgAv
M1 S2
Center 5.240 00 GHz
Span 40 MHz
#Res BW 1.3 MHz
#VBW 1.2 MHz
Sweep 1 ms (601 pts)
Occupied Bandwidth
18.7860 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error -22.081 kHz
x dB Bandwidth 23.356 MHz

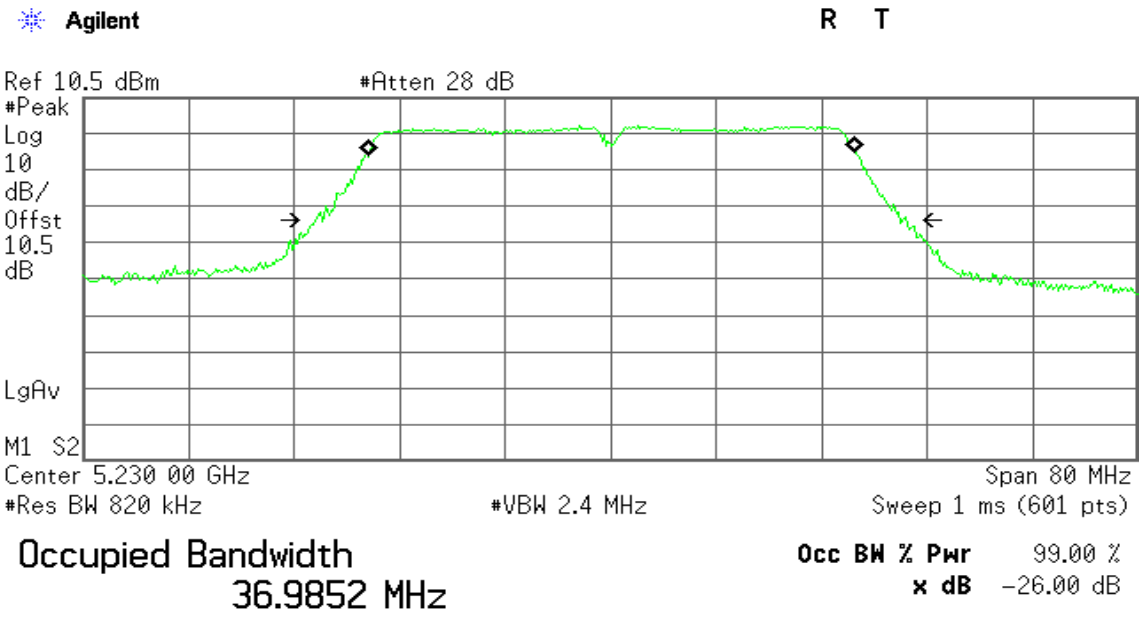
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

CH Low



Transmit Freq Error	37.257 kHz
x dB Bandwidth	44.618 MHz

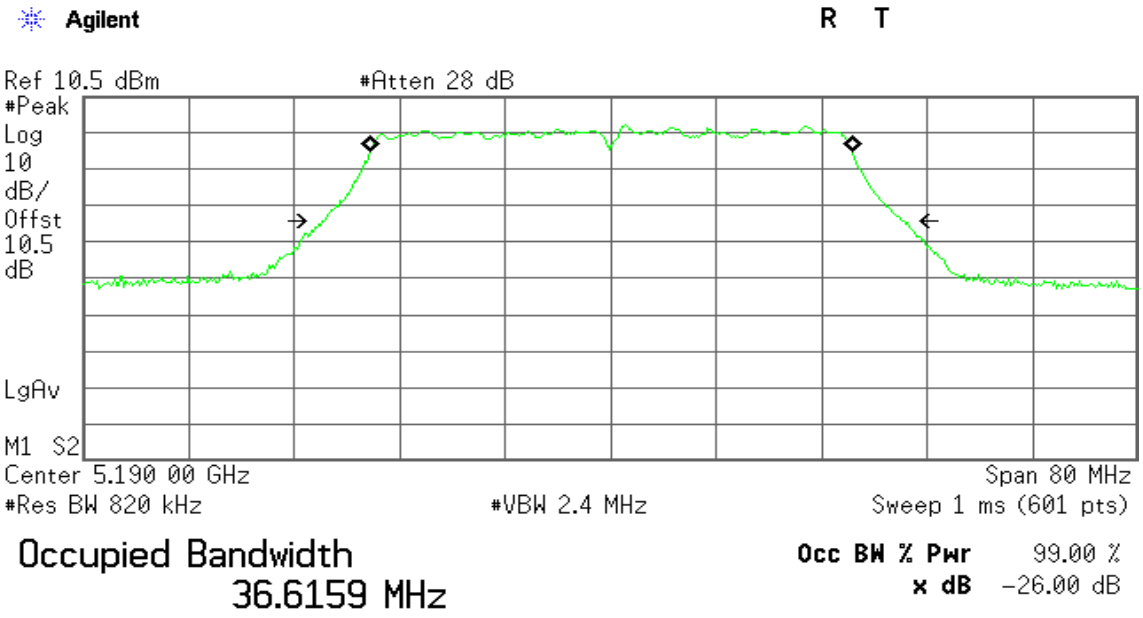
CH High



Transmit Freq Error	52.941 kHz
x dB Bandwidth	44.783 MHz

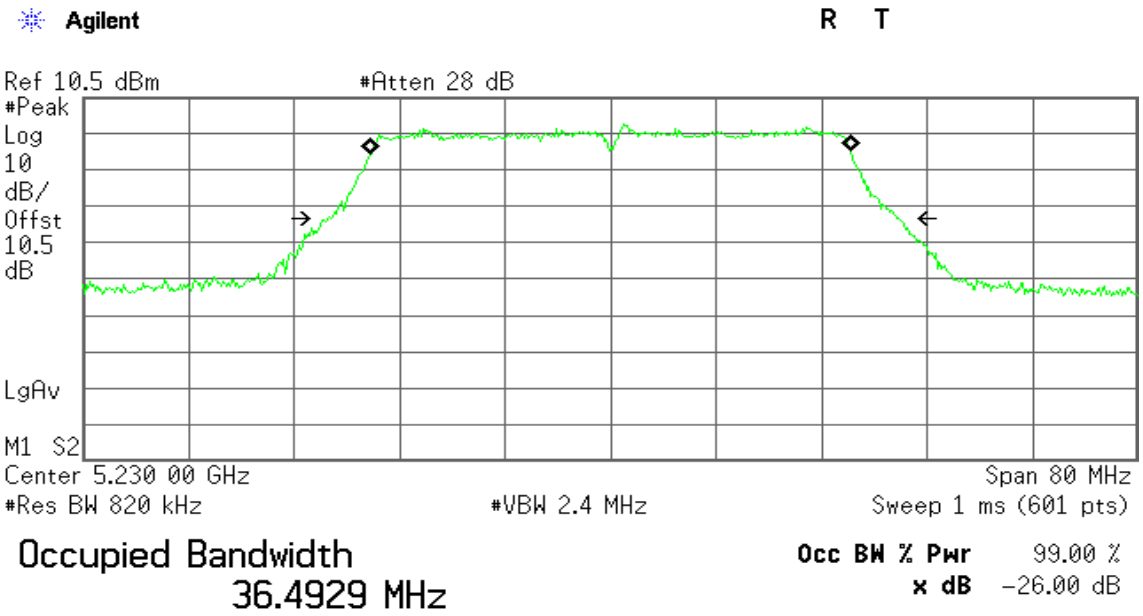
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

CH Low



Transmit Freq Error	37.322 kHz
x dB Bandwidth	43.789 MHz

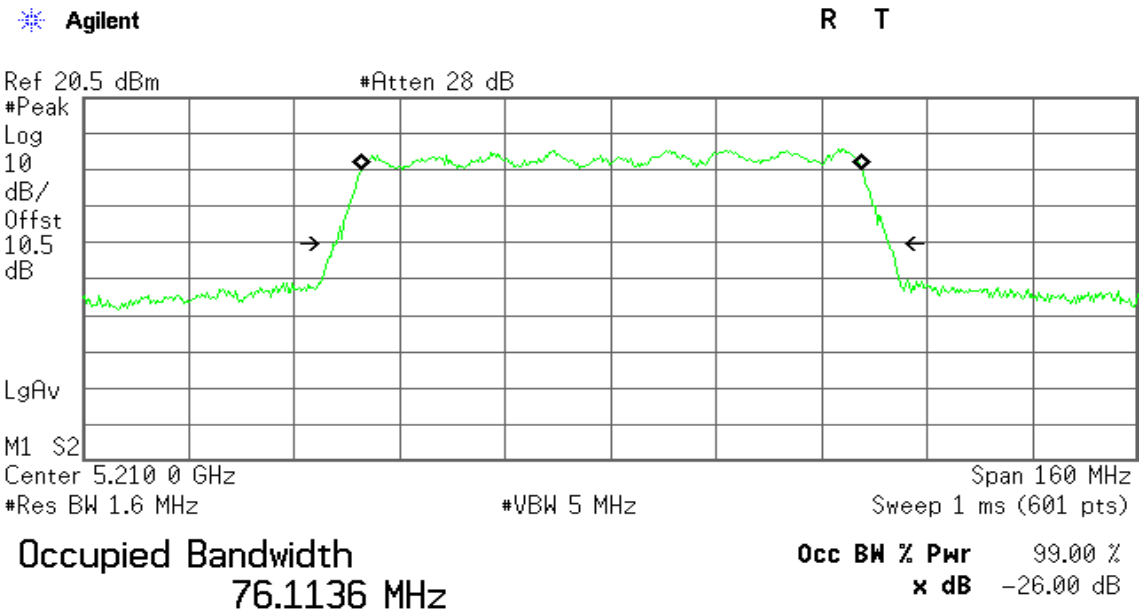
CH High



Transmit Freq Error	11.611 kHz
x dB Bandwidth	43.437 MHz

IEEE 802.11n HT 80 MHz mode / 5210MHz / Chain 0

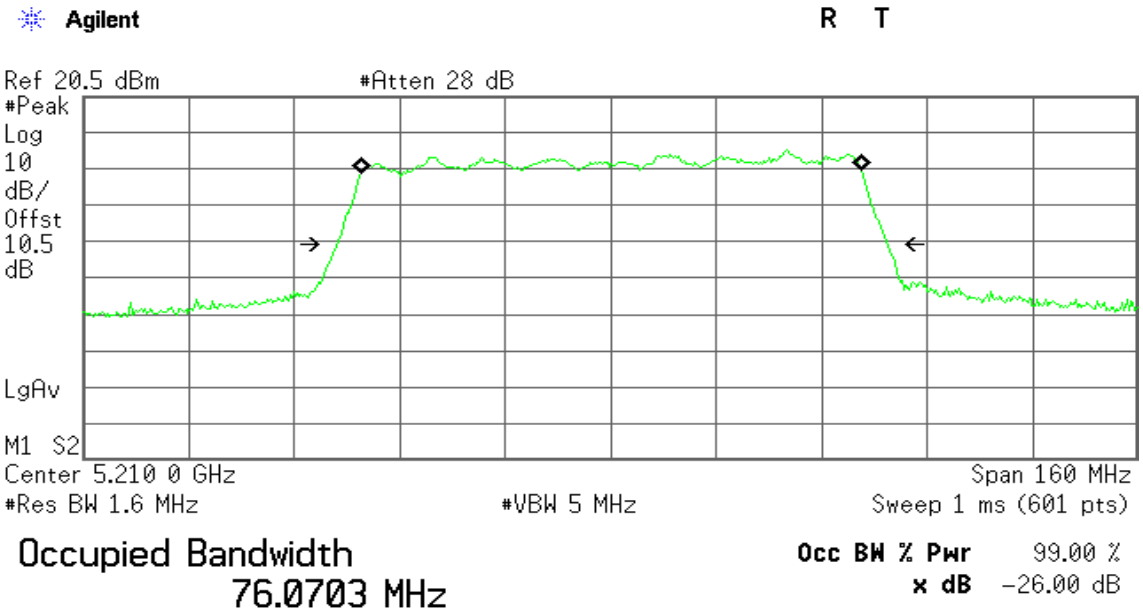
CH Mid



Transmit Freq Error	96.943 kHz
x dB Bandwidth	83.798 MHz

IEEE 802.11n HT 80 MHz mode / 5210MHz / Chain 1

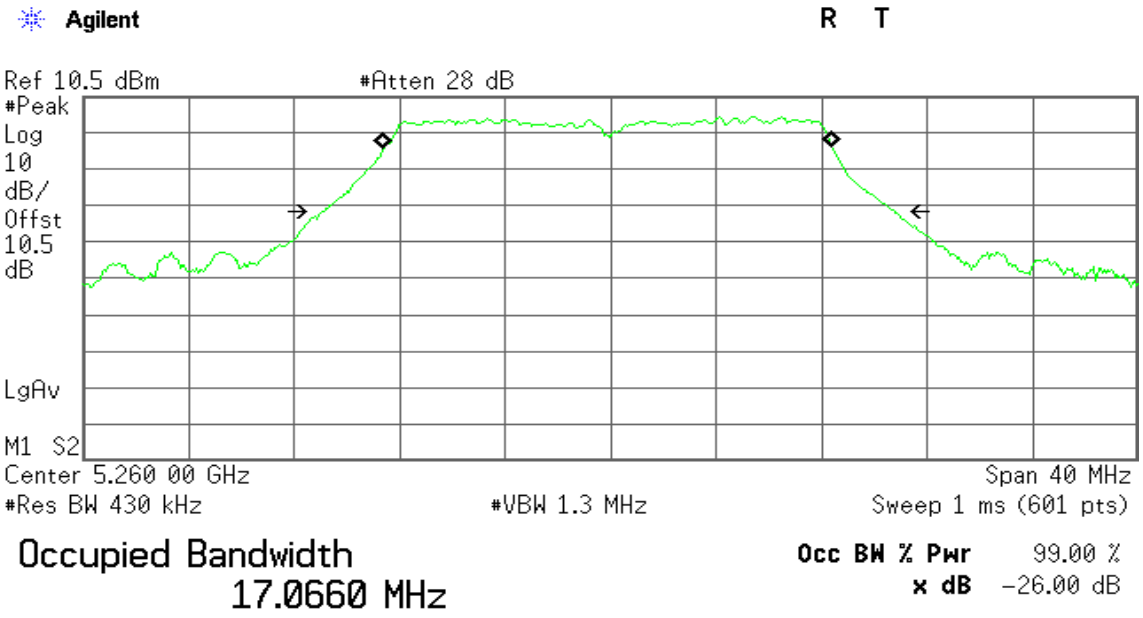
CH Mid



Transmit Freq Error	142.328 kHz
x dB Bandwidth	83.597 MHz

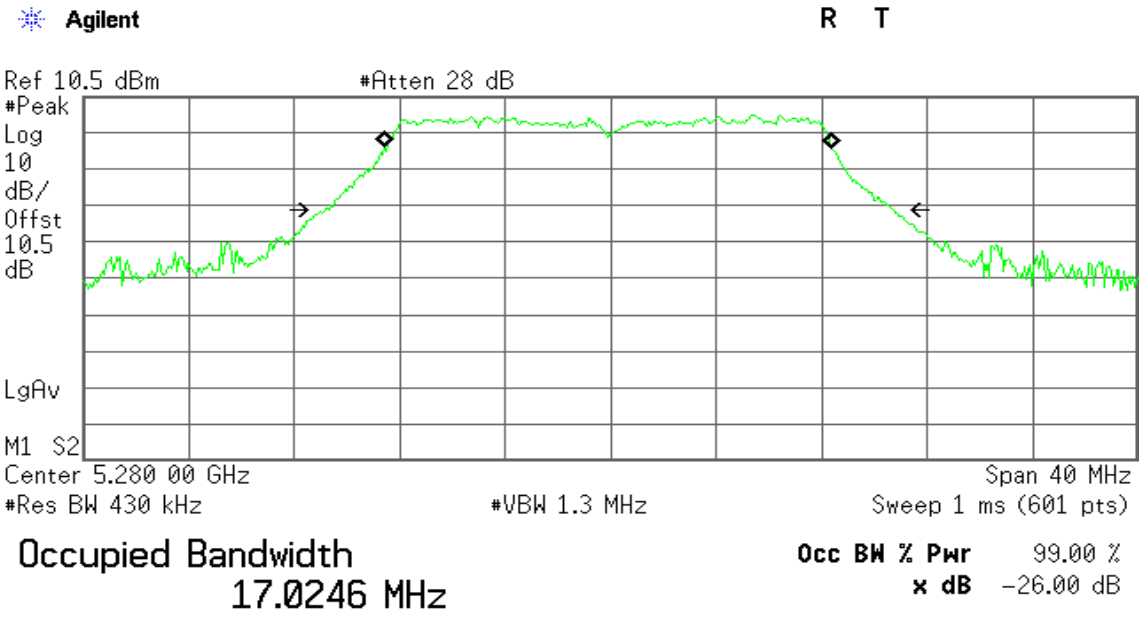
IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low



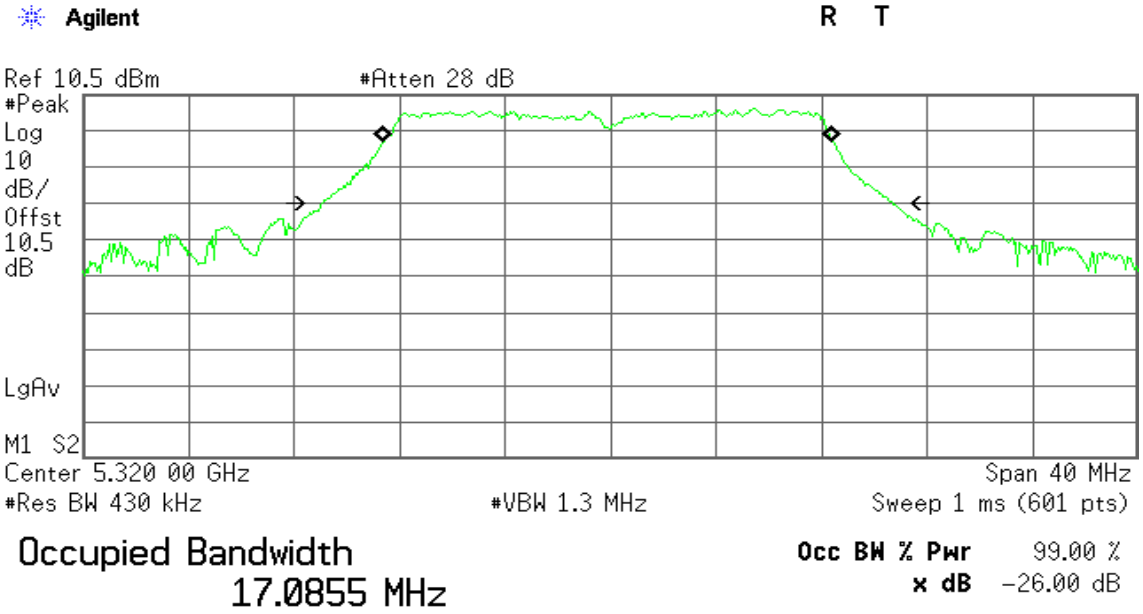
Transmit Freq Error −117.217 kHz
x dB Bandwidth 21.606 MHz

CH Mid



Transmit Freq Error −102.171 kHz
x dB Bandwidth 21.553 MHz

CH High



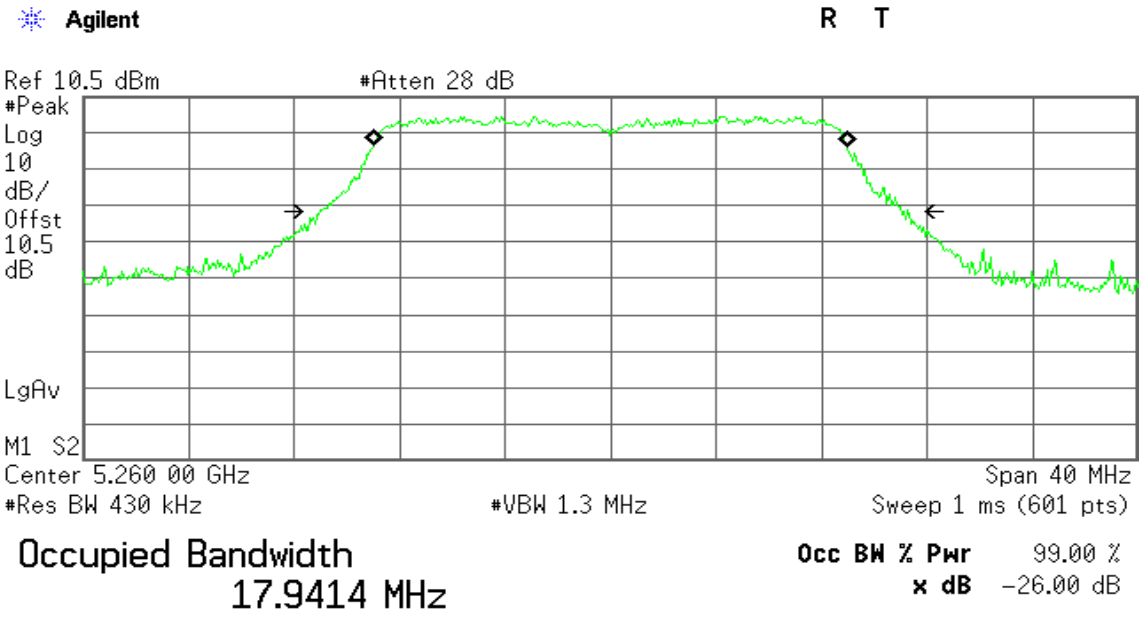
Occupied Bandwidth
17.0855 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -118.983 kHz
x dB Bandwidth 21.665 MHz

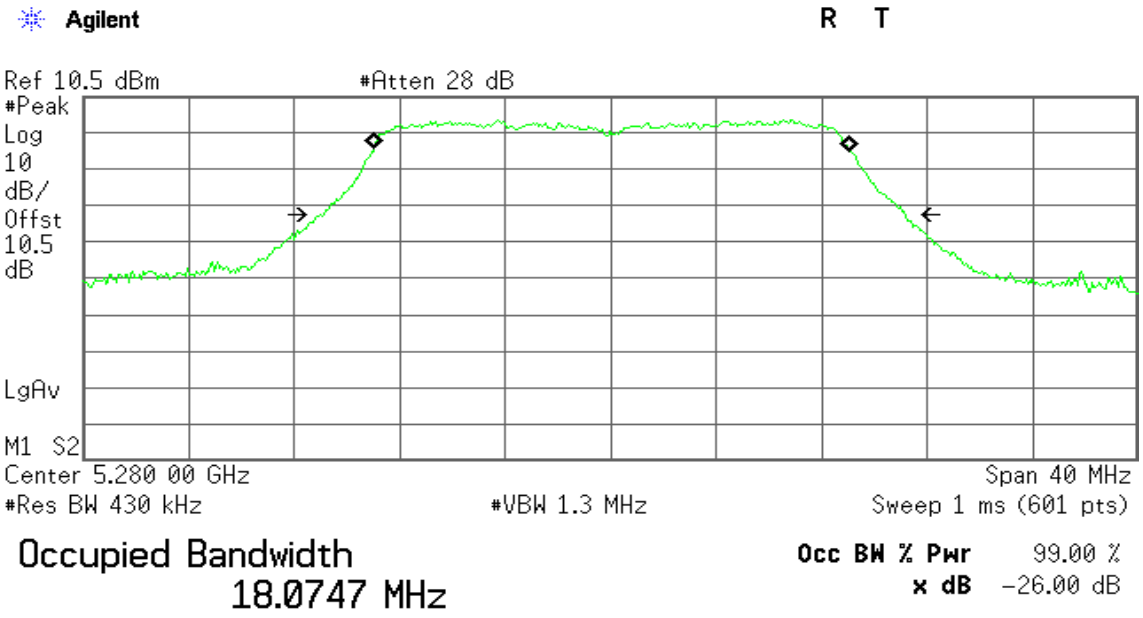
IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

CH Low



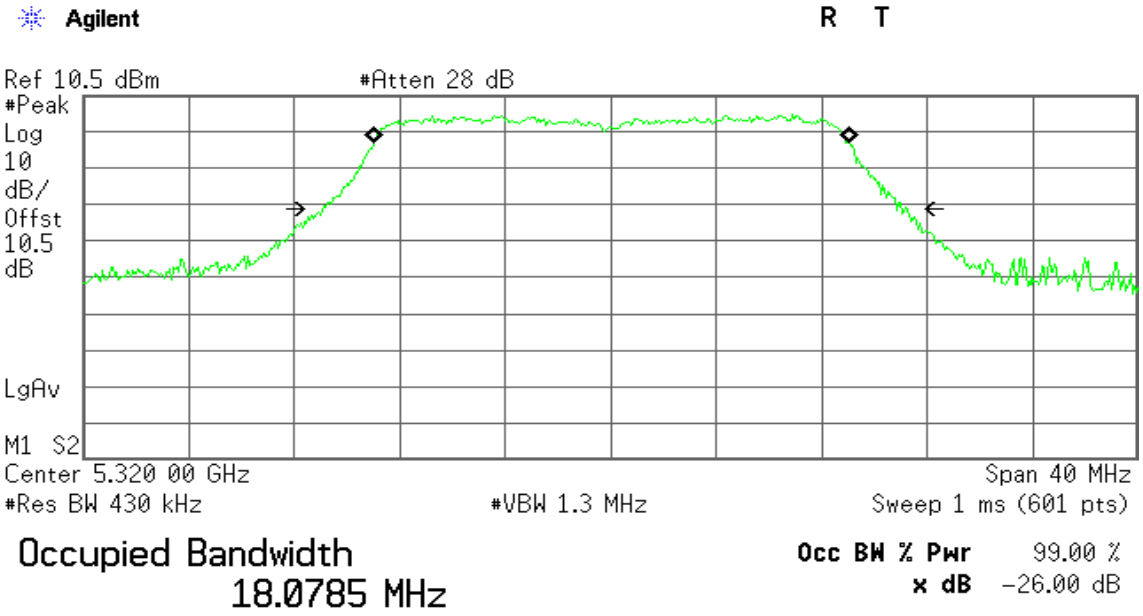
Transmit Freq Error	-3.082 kHz
x dB Bandwidth	22.296 MHz

CH Mid



Transmit Freq Error	61.091 kHz
x dB Bandwidth	22.051 MHz

CH High



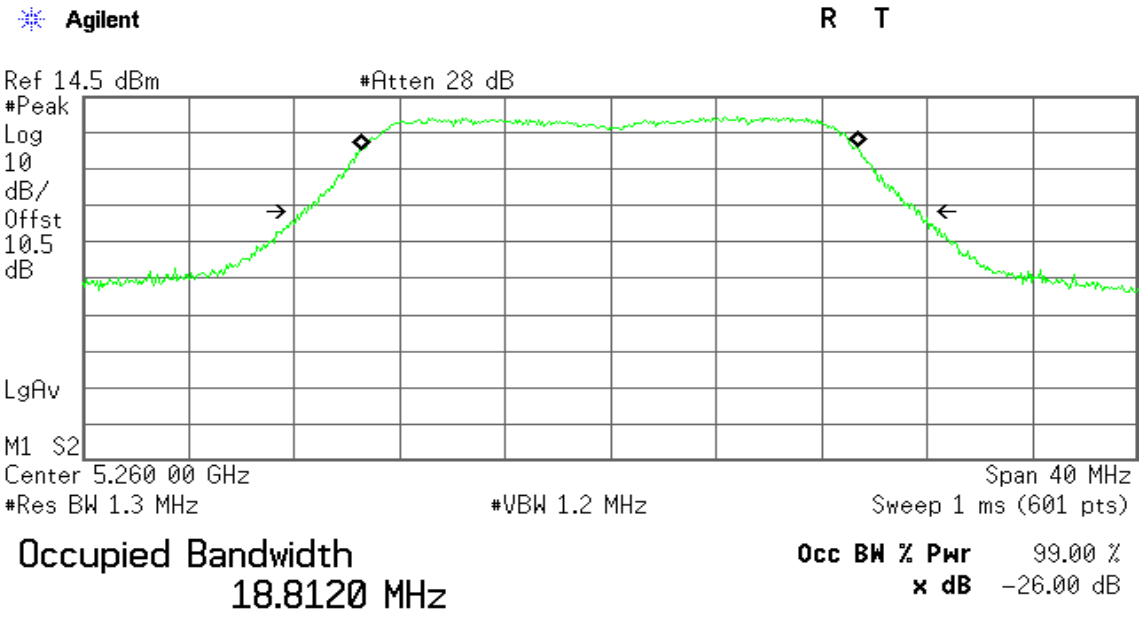
Occupied Bandwidth
18.0785 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 46.224 kHz
x dB Bandwidth 22.171 MHz

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

CH Low

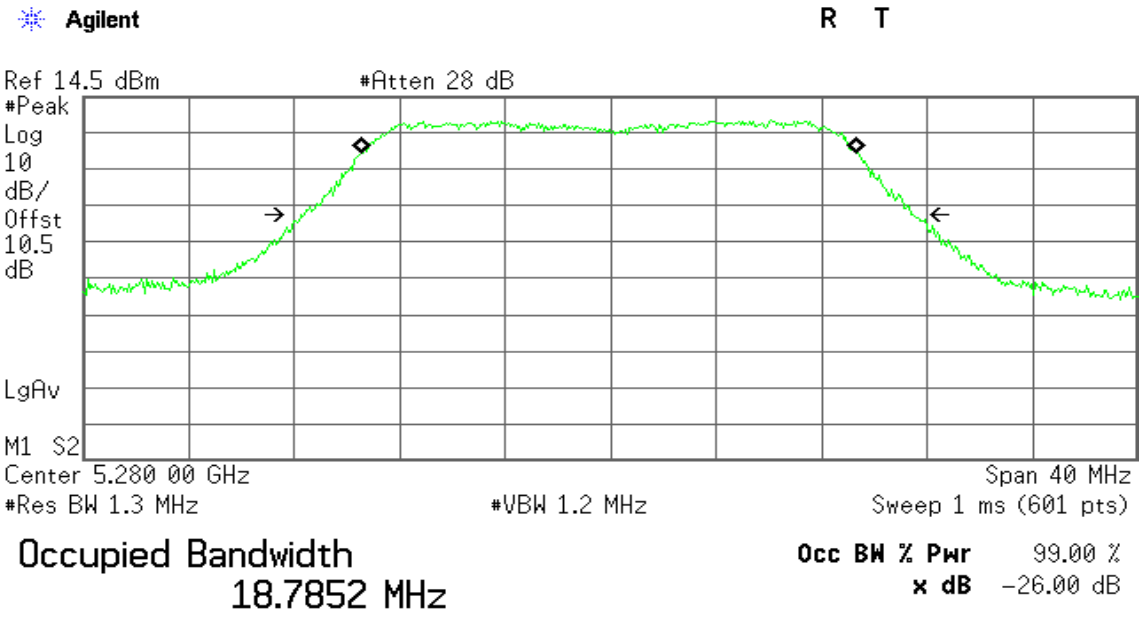


Occupied Bandwidth
18.8120 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -34.206 kHz
x dB Bandwidth 23.360 MHz

CH Mid

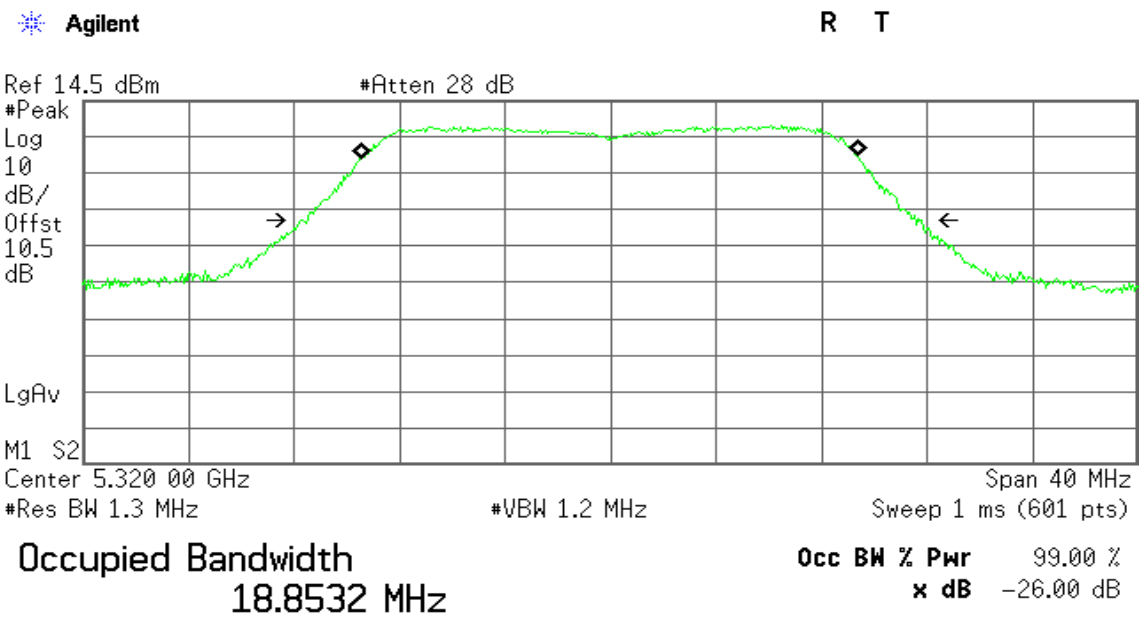


Occupied Bandwidth
18.7852 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -50.891 kHz
x dB Bandwidth 23.213 MHz

CH High



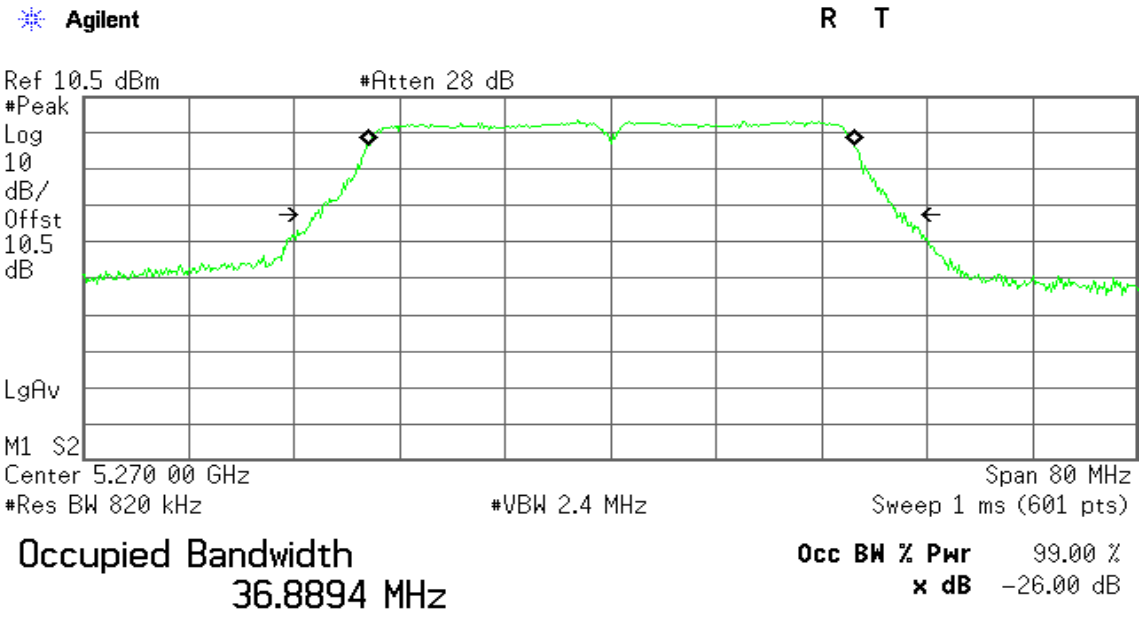
Occupied Bandwidth
18.8532 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -34.000 kHz
x dB Bandwidth 23.480 MHz

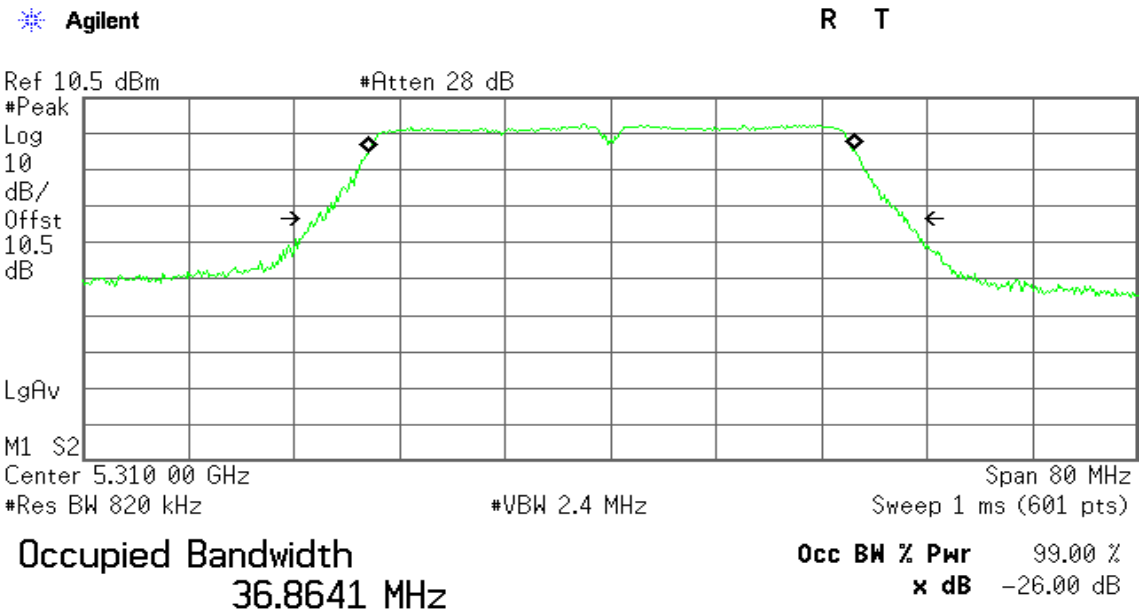
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

CH Low



Transmit Freq Error 37.186 kHz
x dB Bandwidth 44.764 MHz

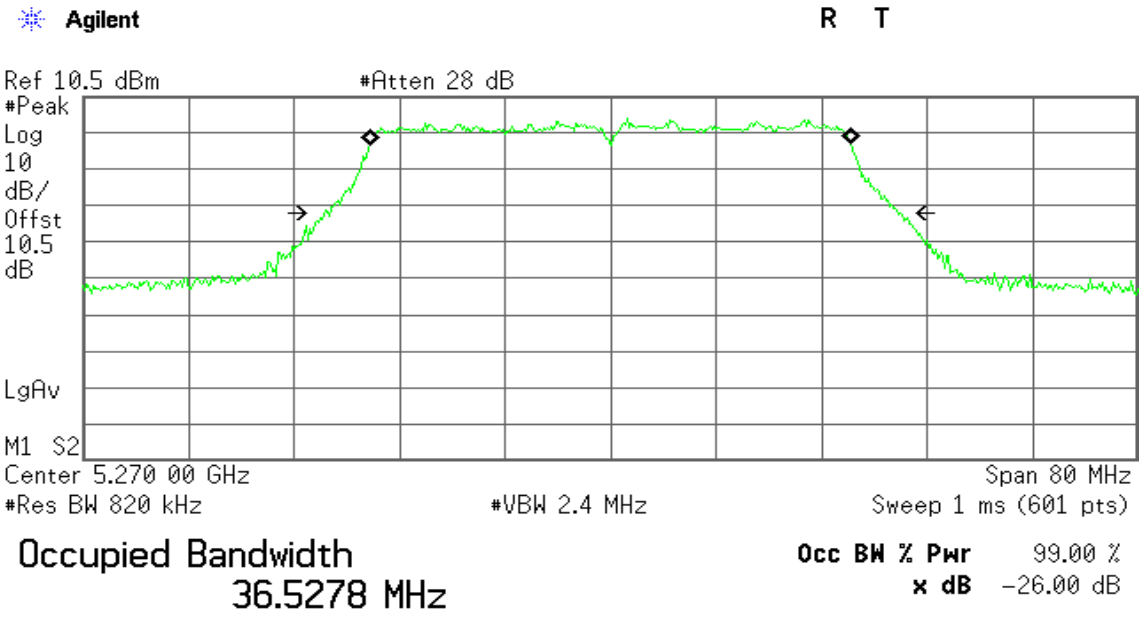
CH High



Transmit Freq Error 84.440 kHz
x dB Bandwidth 44.696 MHz

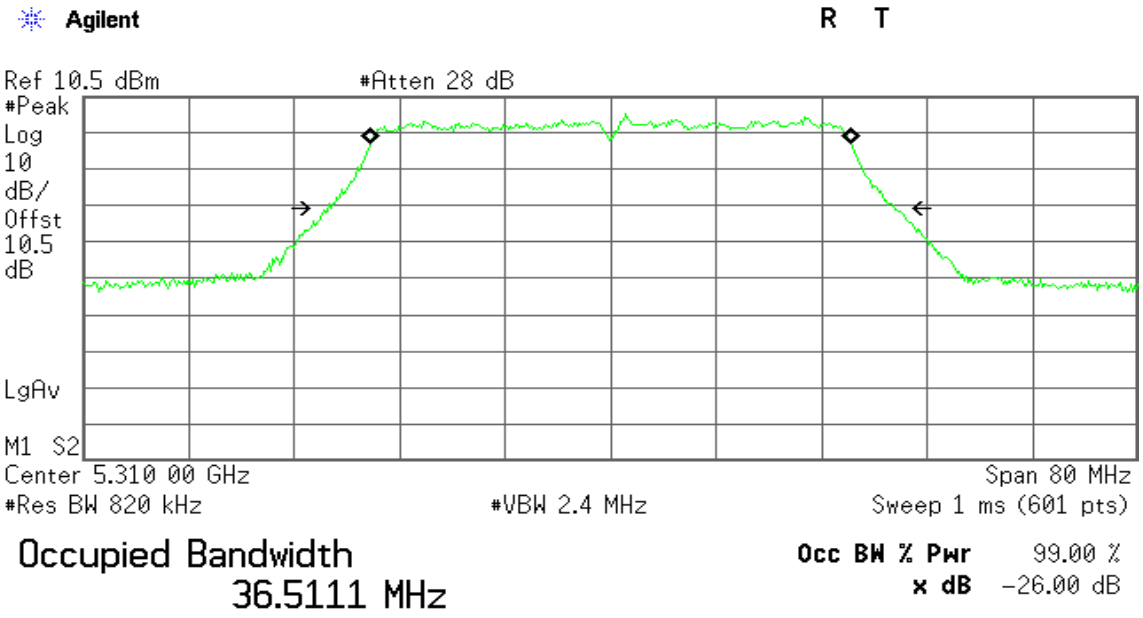
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

CH Low



Transmit Freq Error -10.007 kHz
x dB Bandwidth 43.499 MHz

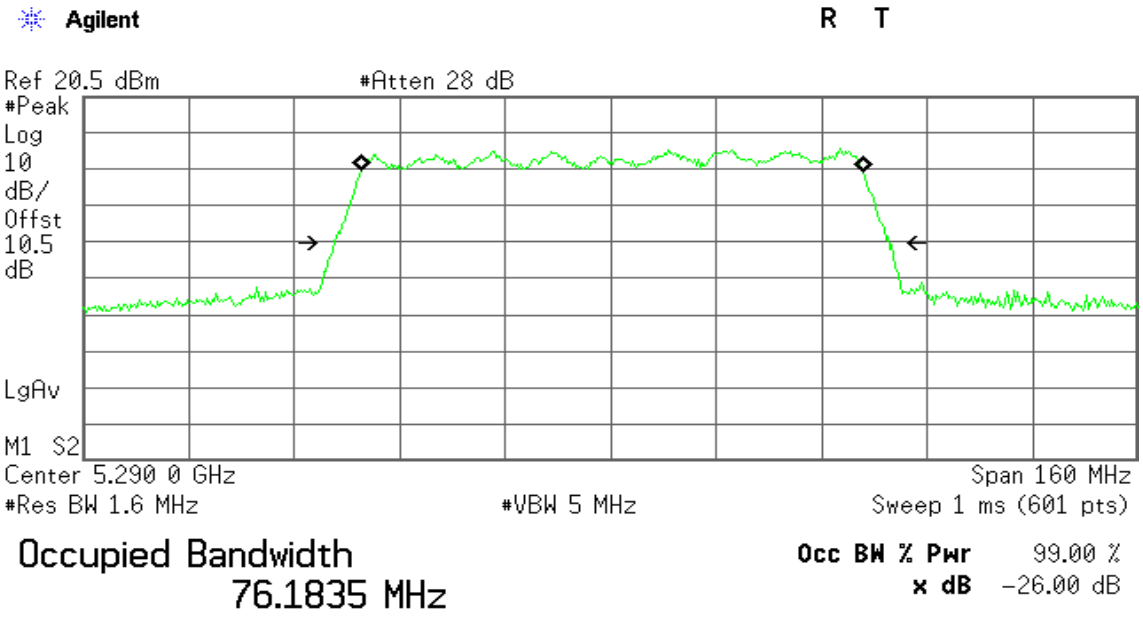
CH High



Transmit Freq Error 21.082 kHz
x dB Bandwidth 42.992 MHz

IEEE 802.11n HT 80 MHz mode / 5290MHz / Chain 0

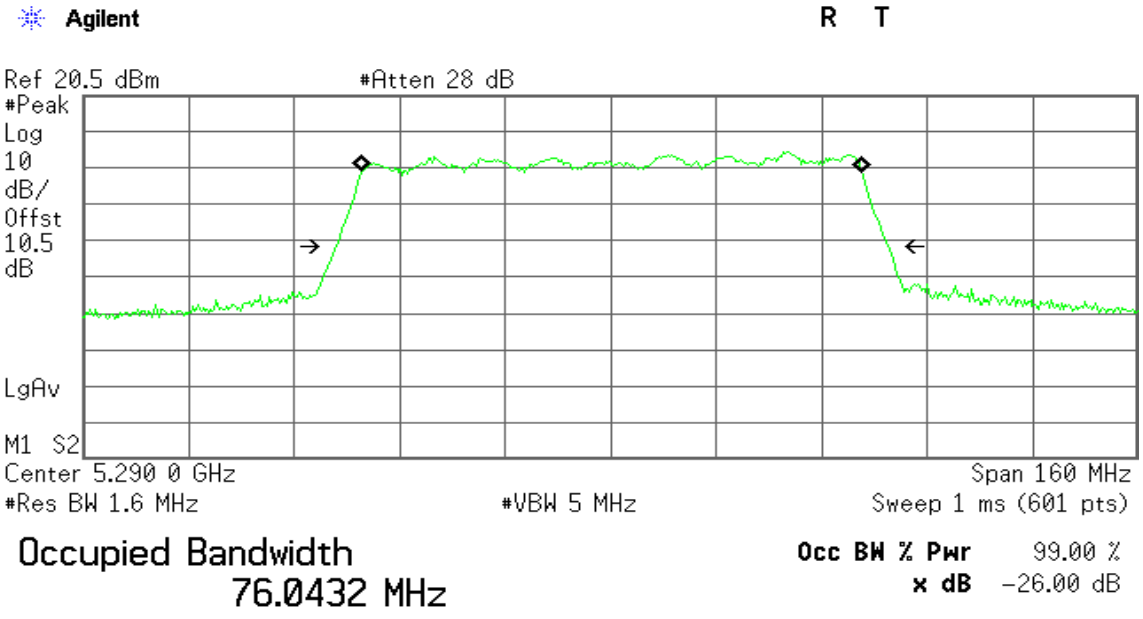
CH Mid



Transmit Freq Error 195.334 kHz
x dB Bandwidth 84.209 MHz

IEEE 802.11n HT 80 MHz mode / 5290MHz / Chain 1

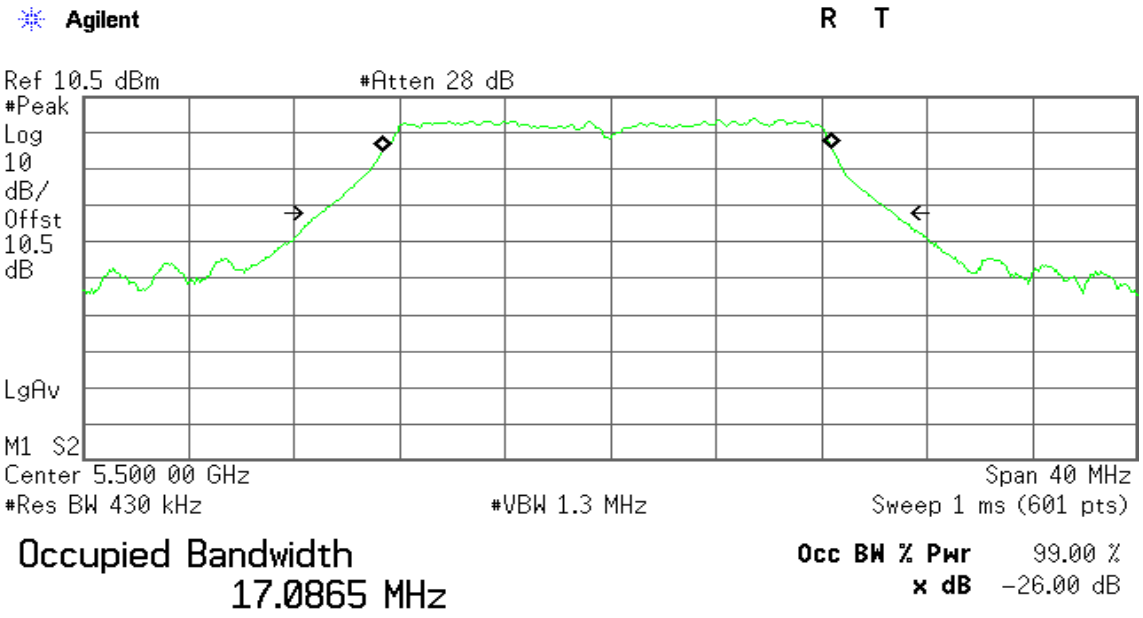
CH Mid



Transmit Freq Error 133.114 kHz
x dB Bandwidth 83.704 MHz

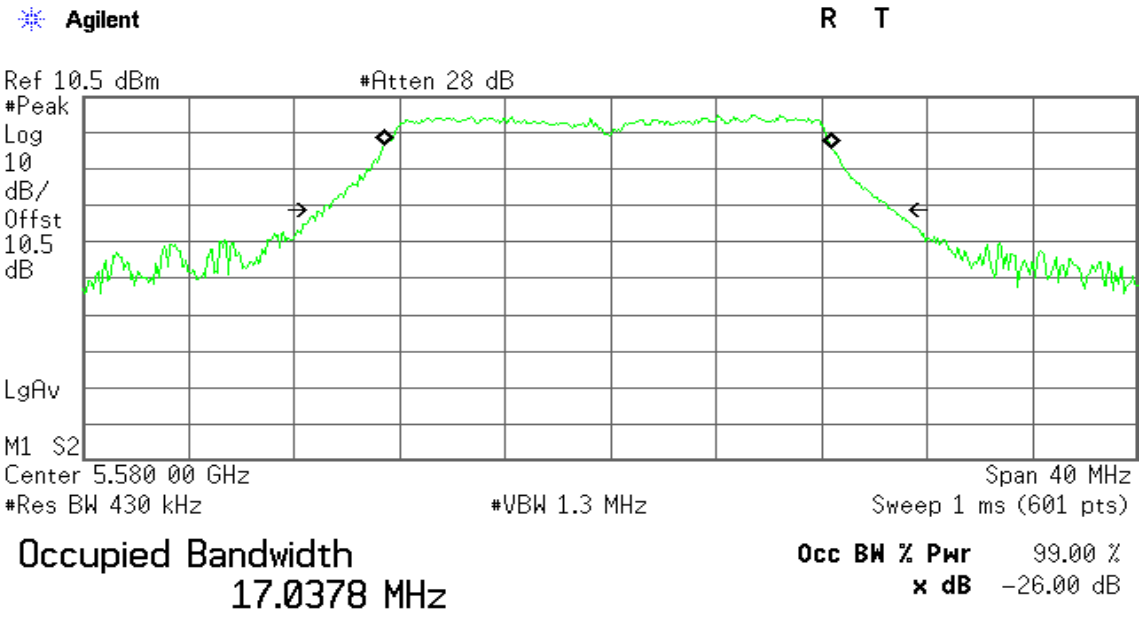
Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low



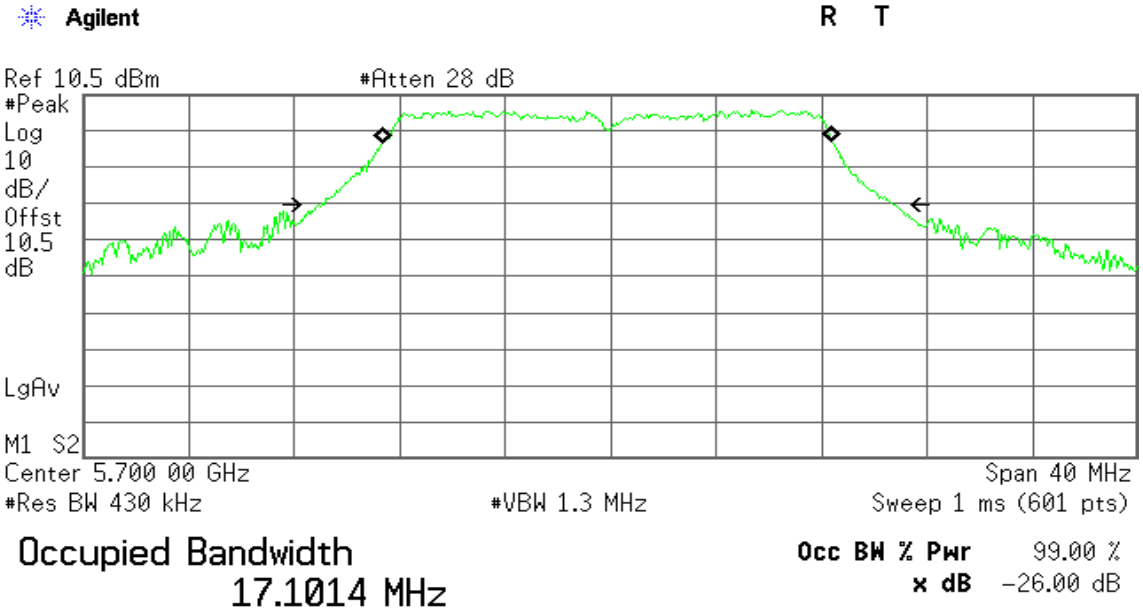
Transmit Freq Error −135.612 kHz
x dB Bandwidth 21.761 MHz

CH Mid



Transmit Freq Error −108.671 kHz
x dB Bandwidth 21.535 MHz

CH High



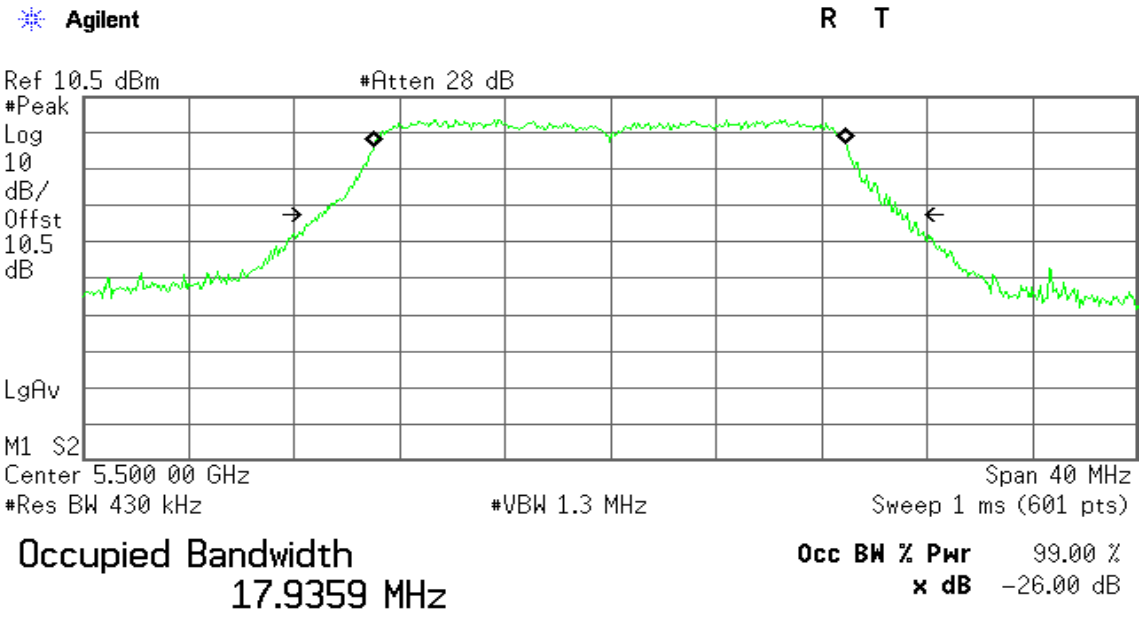
Occupied Bandwidth
17.1014 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -139.837 kHz
x dB Bandwidth 21.787 MHz

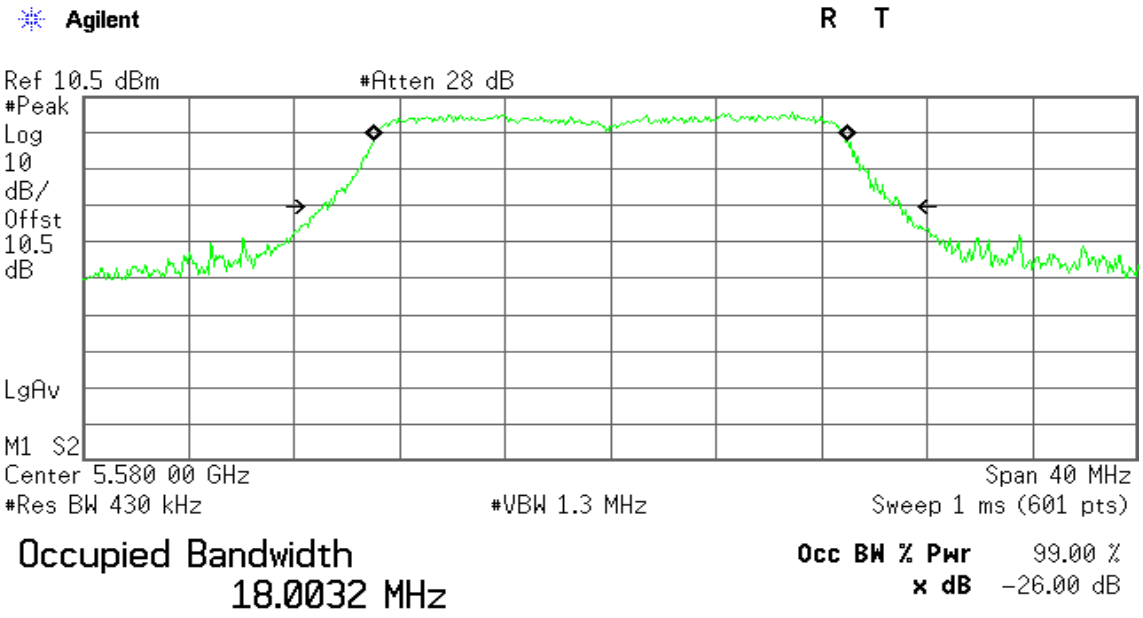
IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

CH Low



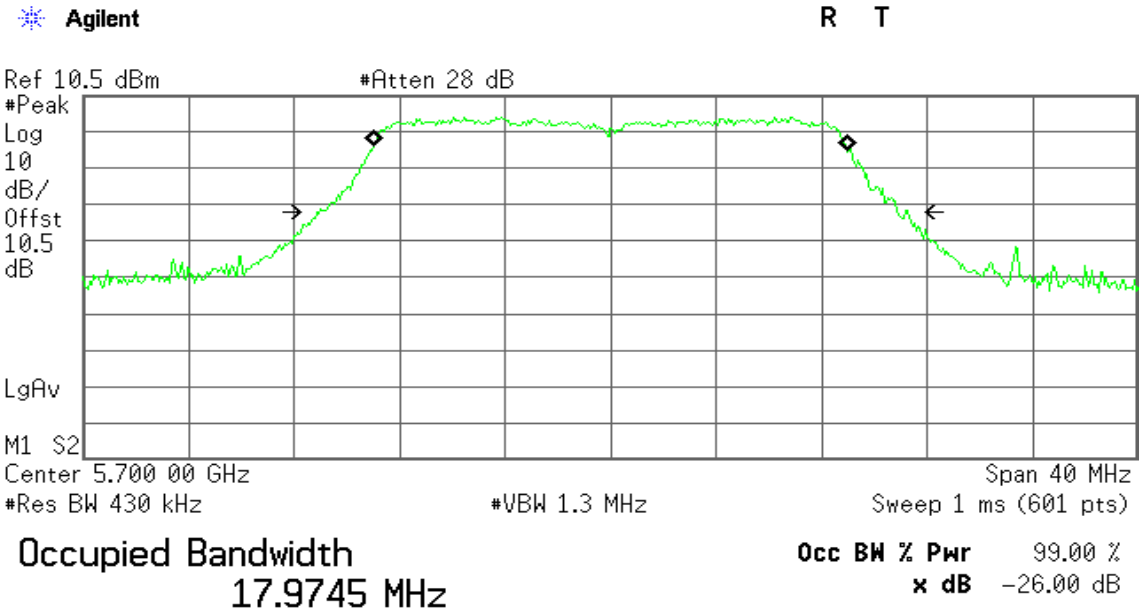
Transmit Freq Error -6.172 kHz
x dB Bandwidth 22.313 MHz

CH Mid



Transmit Freq Error 7.670 kHz
x dB Bandwidth 21.960 MHz

CH High



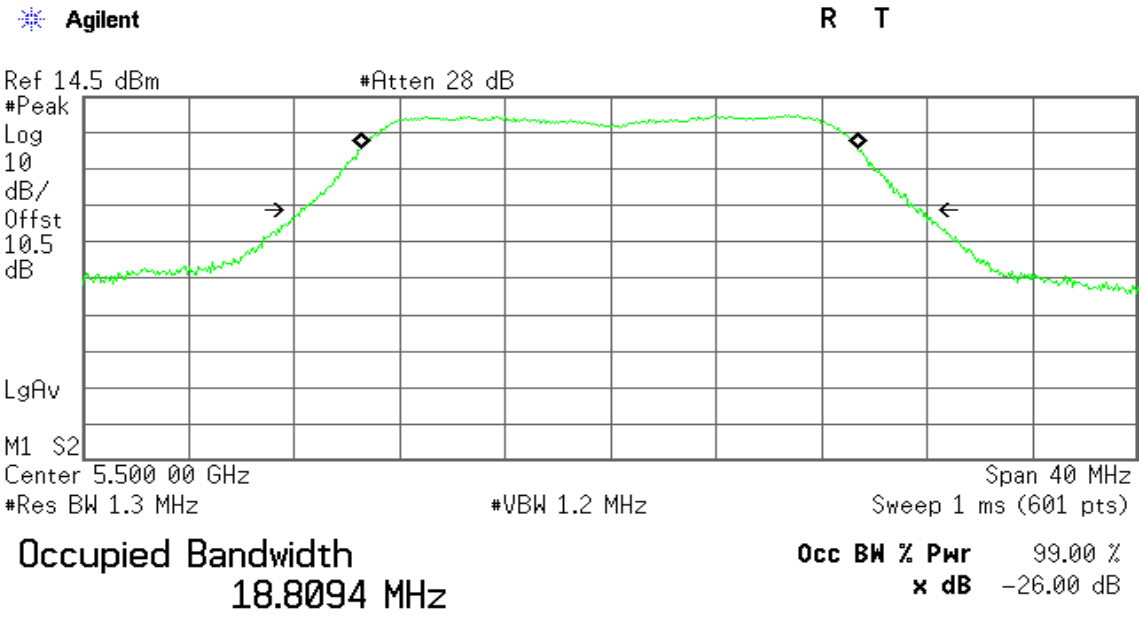
Occupied Bandwidth
17.9745 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 4.170 kHz
x dB Bandwidth 22.311 MHz

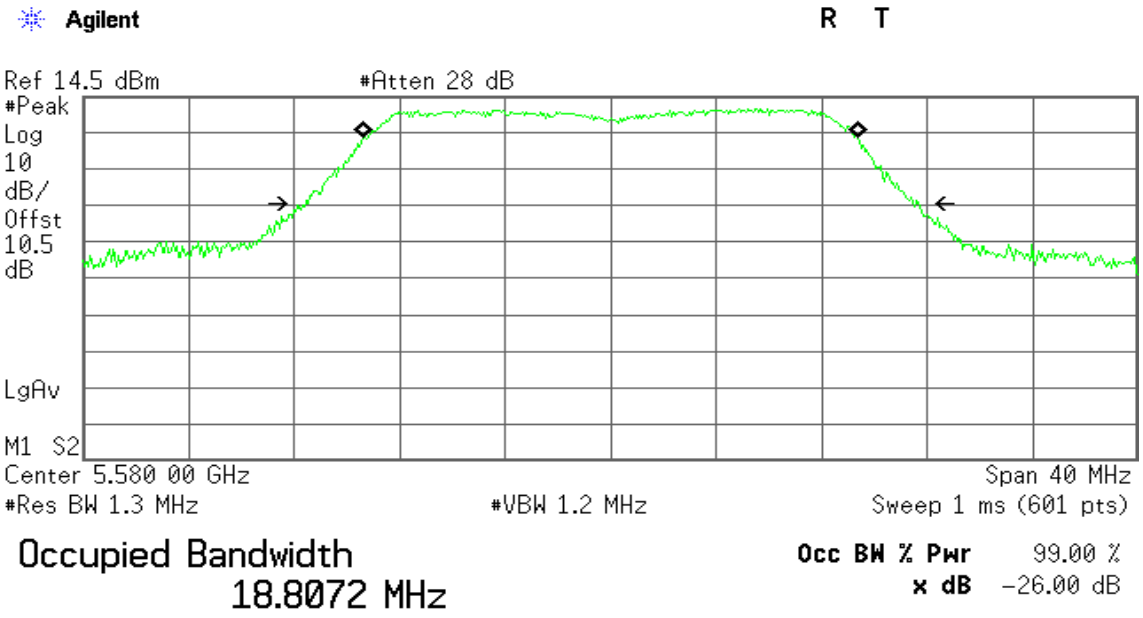
IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

CH Low



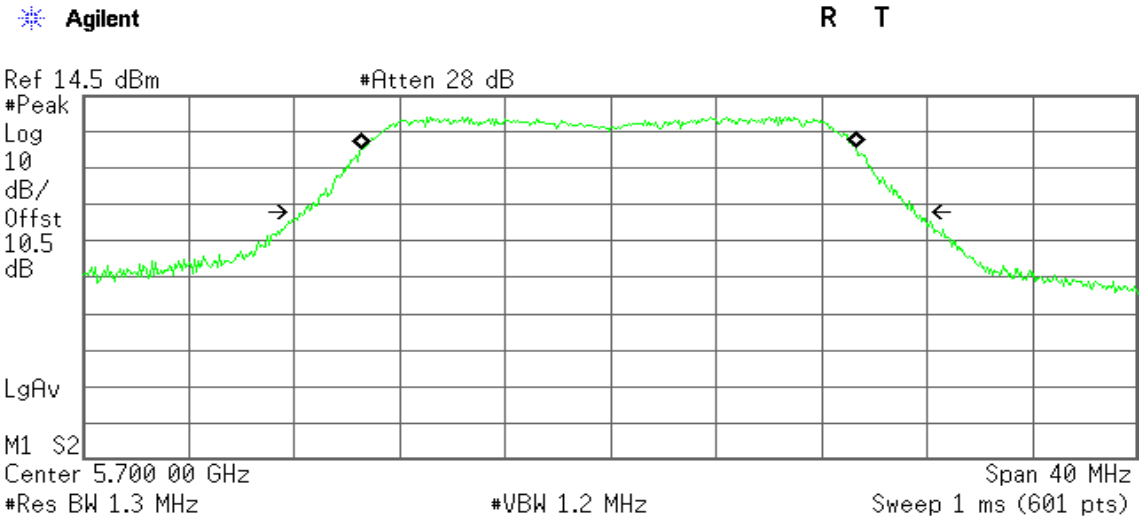
Transmit Freq Error -35.017 kHz
x dB Bandwidth 23.547 MHz

CH Mid



Transmit Freq Error -13.943 kHz
x dB Bandwidth 23.249 MHz

CH High



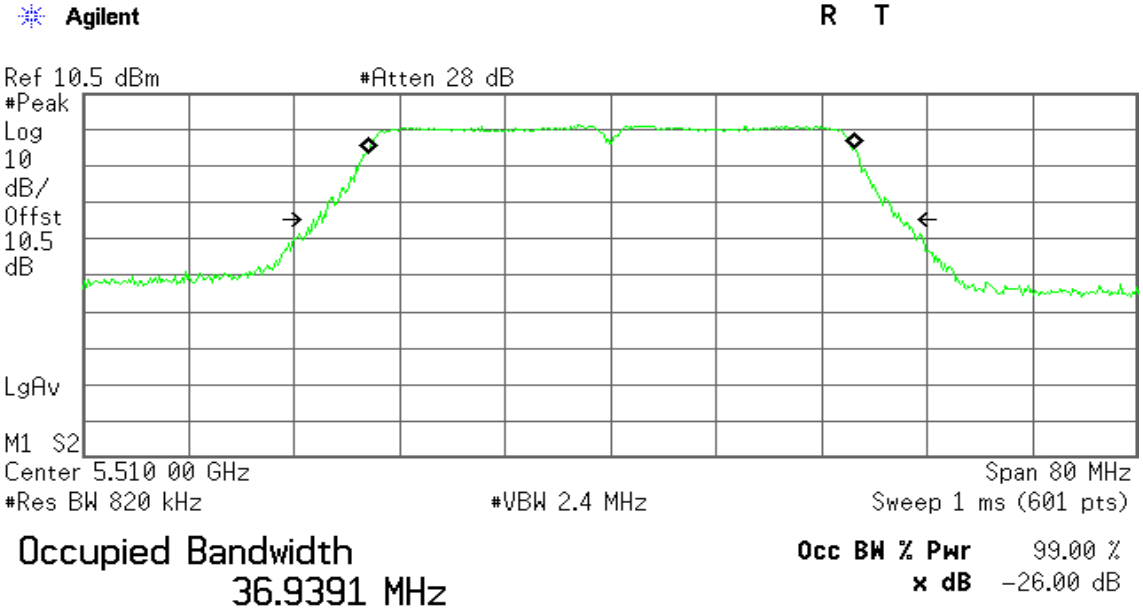
Occupied Bandwidth
18.7879 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -56.928 kHz
x dB Bandwidth 23.124 MHz

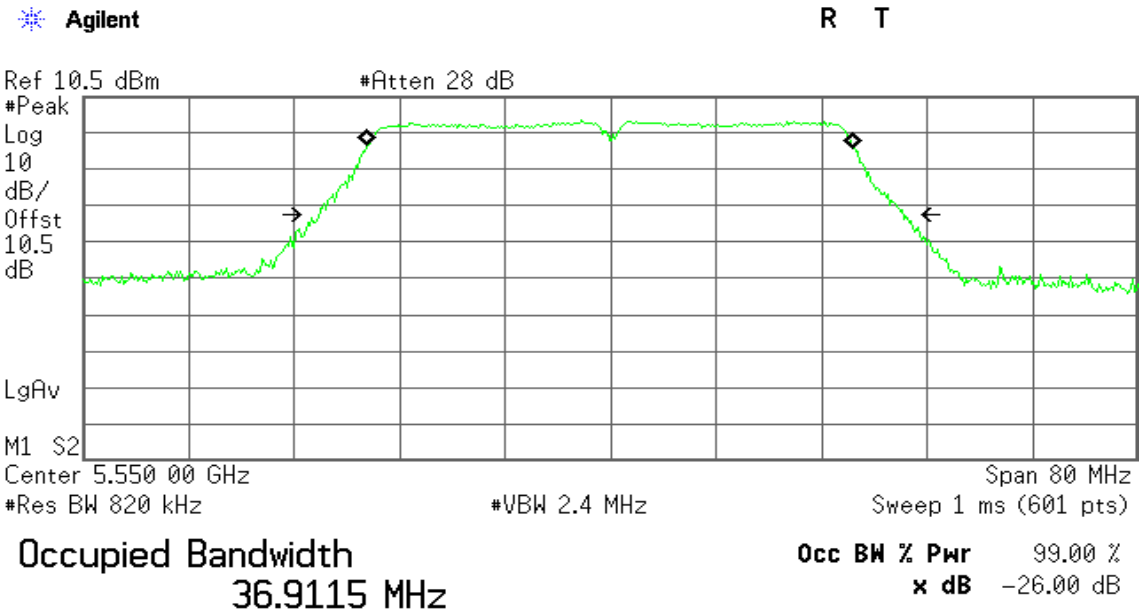
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

CH Low



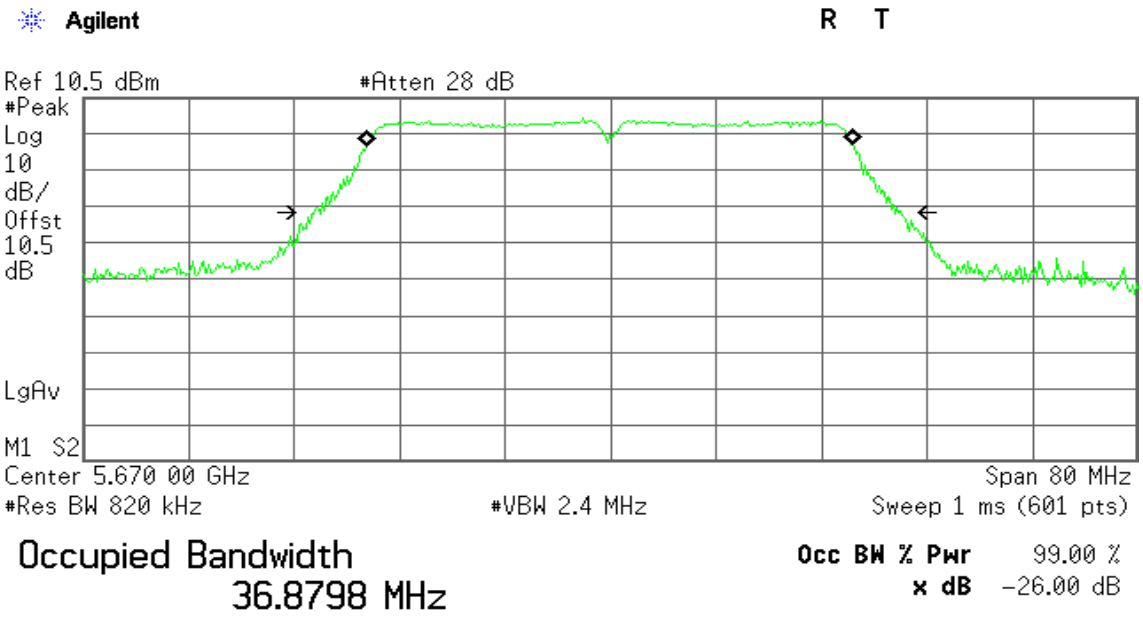
Transmit Freq Error 7.960 kHz
x dB Bandwidth 44.154 MHz

CH Mid



Transmit Freq Error -38.447 kHz
x dB Bandwidth 44.323 MHz

CH High



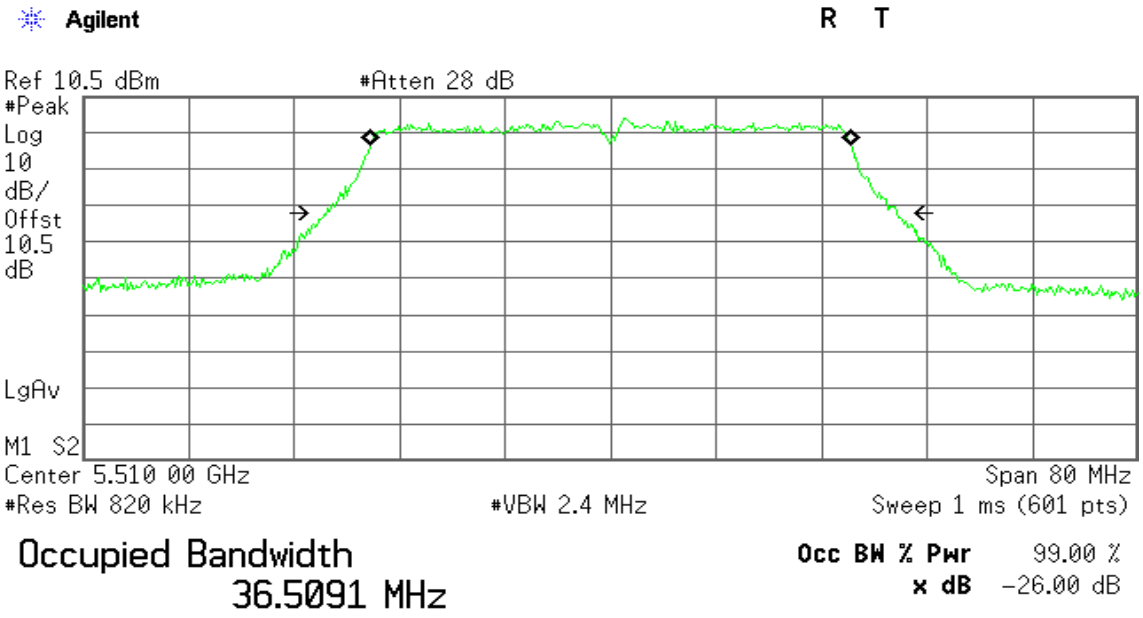
Occupied Bandwidth
36.8798 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -53.391 kHz
x dB Bandwidth 44.515 MHz

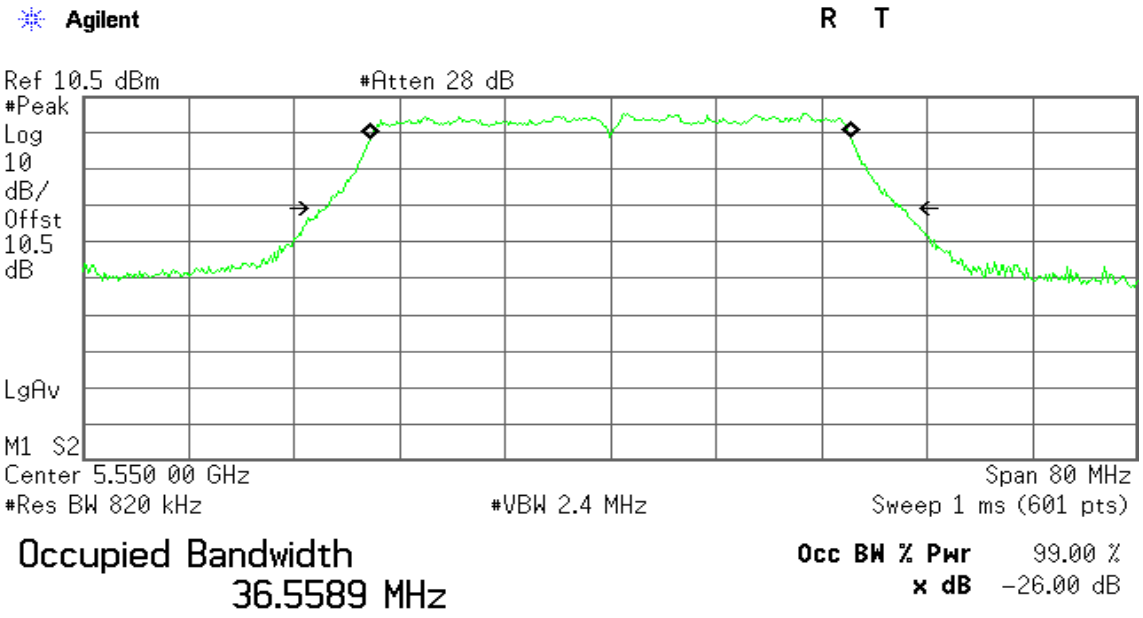
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

CH Low



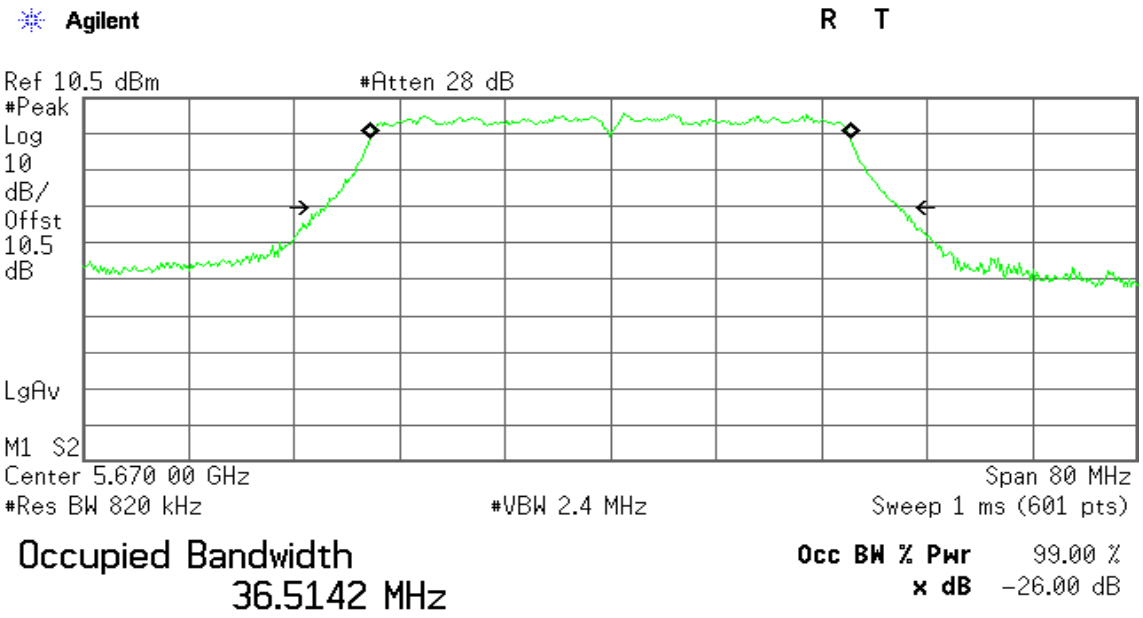
Transmit Freq Error −2.093 kHz
x dB Bandwidth 43.296 MHz

CH Mid



Transmit Freq Error 16.206 kHz
x dB Bandwidth 43.702 MHz

CH High



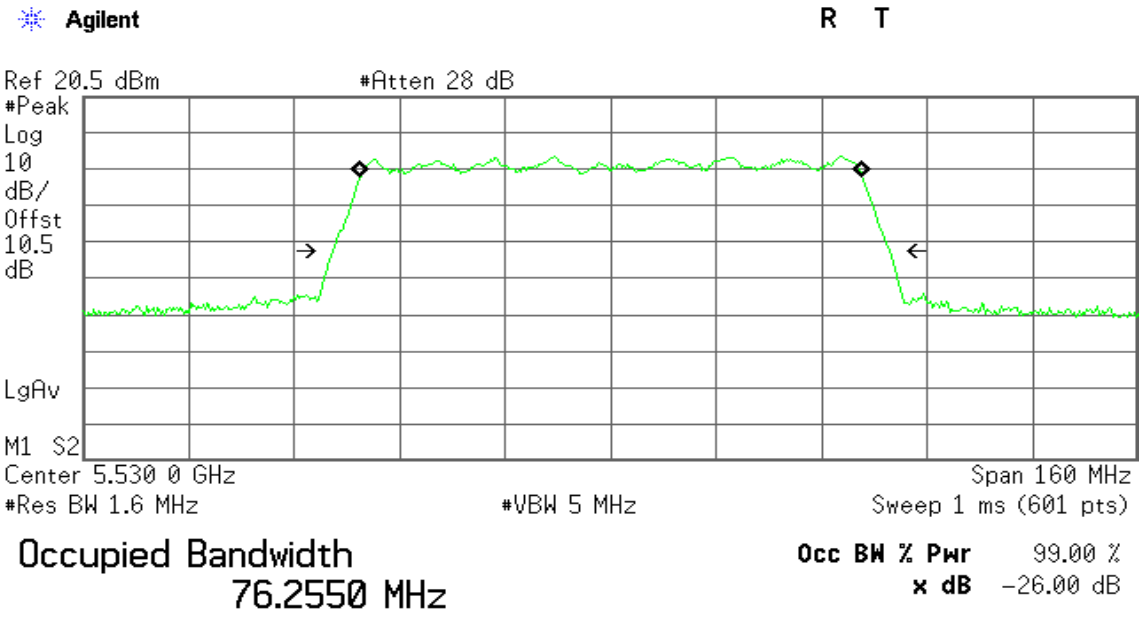
Occupied Bandwidth
36.5142 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -23.389 kHz
x dB Bandwidth 43.552 MHz

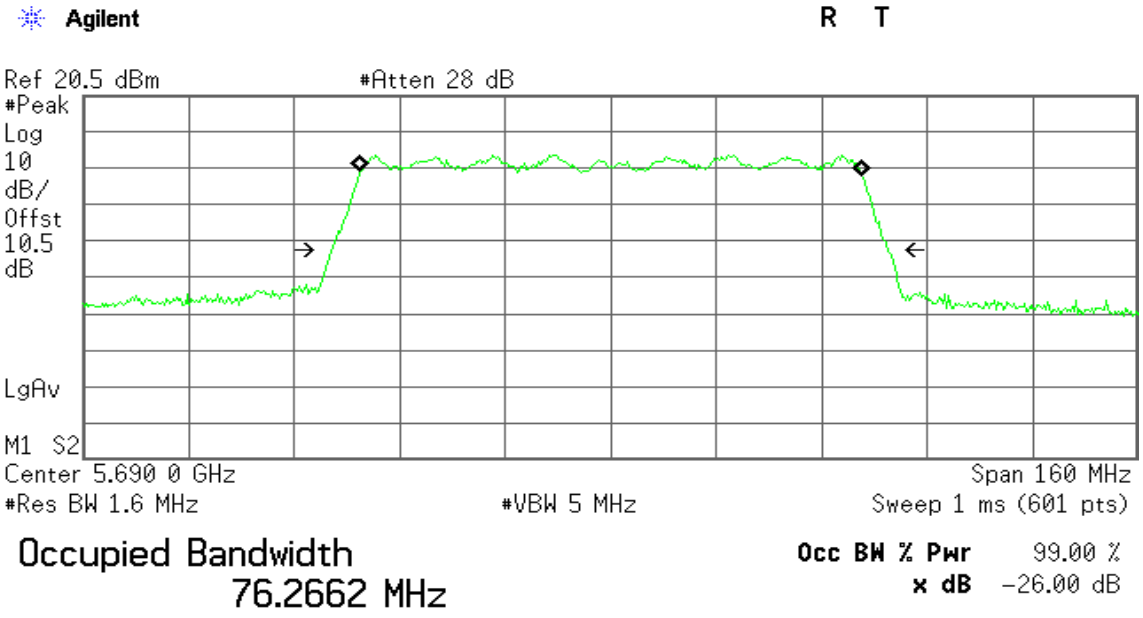
IEEE 802.11n HT 80 MHz mode / 5530 ~ 5690MHz / Chain 0

CH Low



Transmit Freq Error 112.005 kHz
x dB Bandwidth 84.602 MHz

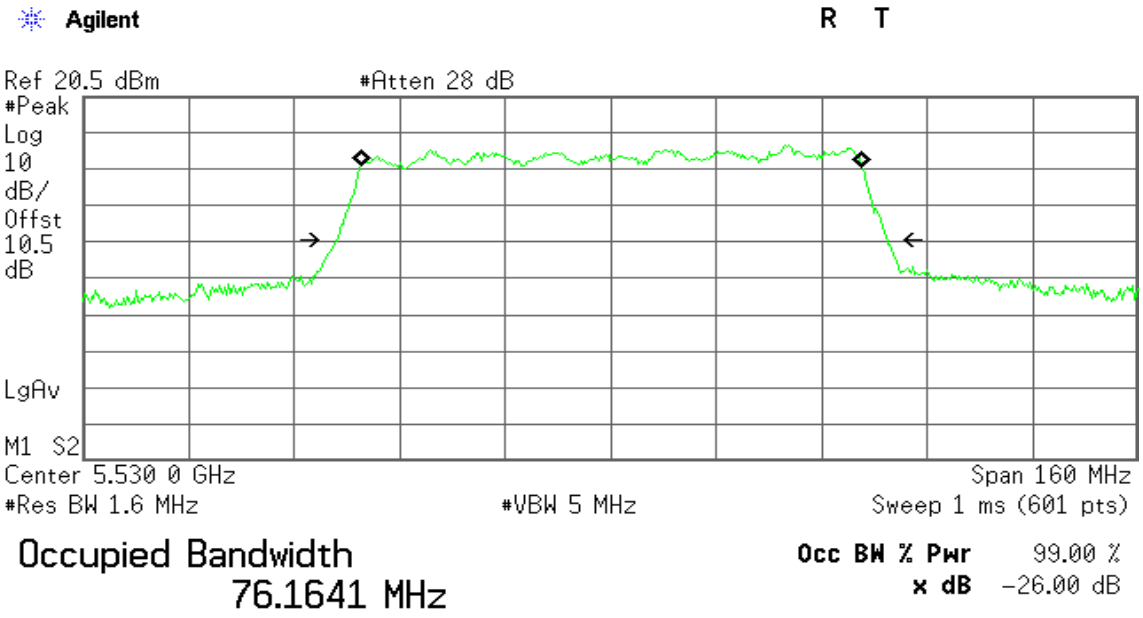
CH High



Transmit Freq Error 10.663 kHz
x dB Bandwidth 84.413 MHz

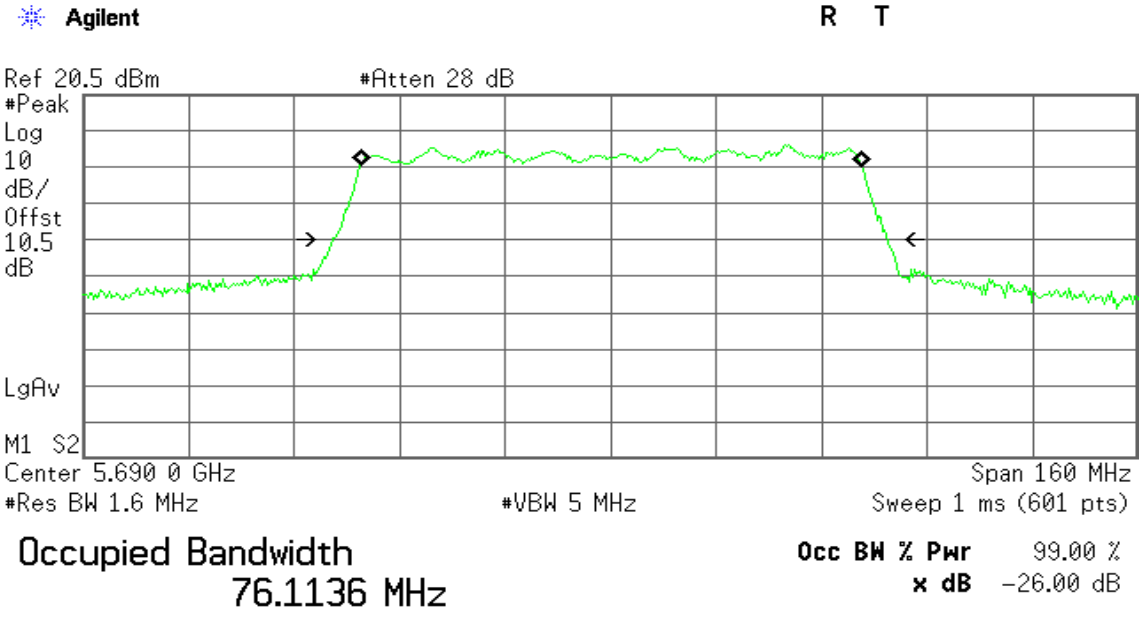
IEEE 802.11n HT 80 MHz mode / 5530 ~ 5690MHz / Chain 1

CH Low



Transmit Freq Error 116.202 kHz
x dB Bandwidth 83.462 MHz

CH High



Transmit Freq Error 57.551 kHz
x dB Bandwidth 84.224 MHz

8.2 MAXIMUM CONDUCTED OUTPUT POWER

LIMIT

According to §15.407(a)

(1) For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10log B, where B is the 26 dB emission bandwidth in MHz.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW 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.

Specified Limit of the Peak Power

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

Channel	Frequency (MHz)	26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5180	17.0880	12.32691	16.3269	17.00
Mid	5220	17.0940	12.32844	16.3284	17.00
High	5240	17.0763	12.32394	16.3239	17.00

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

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5180	18.0645	18.8398	12.7508	16.7508	17.00
Mid	5220	18.0684	18.7708	12.7348	16.7348	17.00
High	5240	18.0227	18.7860	12.7383	16.7383	17.00

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

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5190	36.9519	36.6159	15.6764	19.6764	17.00
High	5230	36.9852	36.4929	15.6803	19.6803	17.00

Test mode: IEEE 802.11n HT 80 MHz mode / 5210MHz

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Mid	5210	76.1136	76.0703	18.8146	22.8146	17.00

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

Channel	Frequency (MHz)	26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5260	17.0660	12.32132	16.3213	24.00
Mid	5280	17.0246	12.31077	16.3108	24.00
High	5320	17.0855	12.32628	16.3263	24.00

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

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5260	17.9414	18.8120	12.7443	16.7443	24.00
Mid	5280	18.0747	18.7852	12.7382	16.7382	24.00
High	5320	18.0785	18.8532	12.7539	16.7539	24.00

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

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5270	36.8894	36.5278	15.6690	19.6690	24.00
High	5310	36.8641	36.5111	15.6660	19.6660	24.00

Test mode: IEEE 802.11n HT 80 MHz mode / 5290MHz

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Mid	5290	76.1835	76.0432	18.8186	22.8186	24.00

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

Channel	Frequency (MHz)	26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5500	17.0865	12.32653	16.3265	24.00
Mid	5580	17.0378	12.31414	16.3141	24.00
High	5700	17.1014	12.33032	16.3303	24.00

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

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5500	17.9359	18.8094	12.7437	16.7437	24.00
Mid	5580	18.0032	18.8072	12.7432	16.7432	24.00
High	5700	17.9745	18.7879	12.7388	16.7388	24.00

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

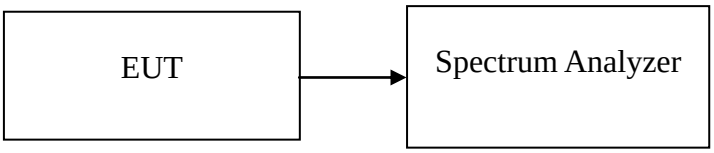
Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5510	36.9391	36.5091	15.6749	19.6749	24.00
Mid	5550	36.9115	36.5589	15.6716	19.6716	24.00
High	5670	36.8798	36.5142	15.6679	19.6679	24.00

Test mode: IEEE 802.11n HT 80 MHz mode / 5530 ~ 5690MHz

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5530	76.2550	76.1641	18.8227	22.8227	24.00
High	5690	76.2662	76.1136	18.8233	22.8233	24.00

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)
Low	5180	16.4	17.00
Mid	5220	16.4	17.00
High	5240	16.3	17.00

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)
Low	5180	13.1	13.8	16.47	17.00
Mid	5220	13.2	13.7	16.47	17.00
High	5240	13.8	13.2	16.52	17.00

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)
Low	5190	13.2	13.7	16.47	17.00
High	5230	13.5	13.4	16.46	17.00

Test mode: IEEE 802.11n HT 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)
Mid	5210	13.3	13.4	16.36	17.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	18	24.00
Mid	5280	18.5	24.00
High	5320	19.6	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)
Low	5260	14.4	14.1	17.26	24.00
Mid	5280	13.1	13.7	16.42	24.00
High	5320	14.3	14.2	17.26	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)
Low	5270	15.1	15.1	18.11	24.00
High	5310	13.5	15	17.32	24.00

Test mode: IEEE 802.11n HT 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)
Mid	5290	13.4	14.4	16.94	24.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	16.7	24.00
Mid	5580	17.6	24.00
High	5700	19.1	24.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	13.3	13.4	16.36	24.00
Mid	5580	14.5	15.7	18.15	24.00
High	5700	13.3	13.4	16.36	24.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5510	13.8	14.3	17.07	24.00
Mid	5550	15.9	14.2	18.14	24.00
High	5670	14.6	14	17.32	24.00

Test mode: IEEE 802.11n HT 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)
Low	5530	14.2	15.3	17.80	24.00
High	5690	14	14.7	17.37	24.00

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

8.3 BAND EDGES MEASUREMENT

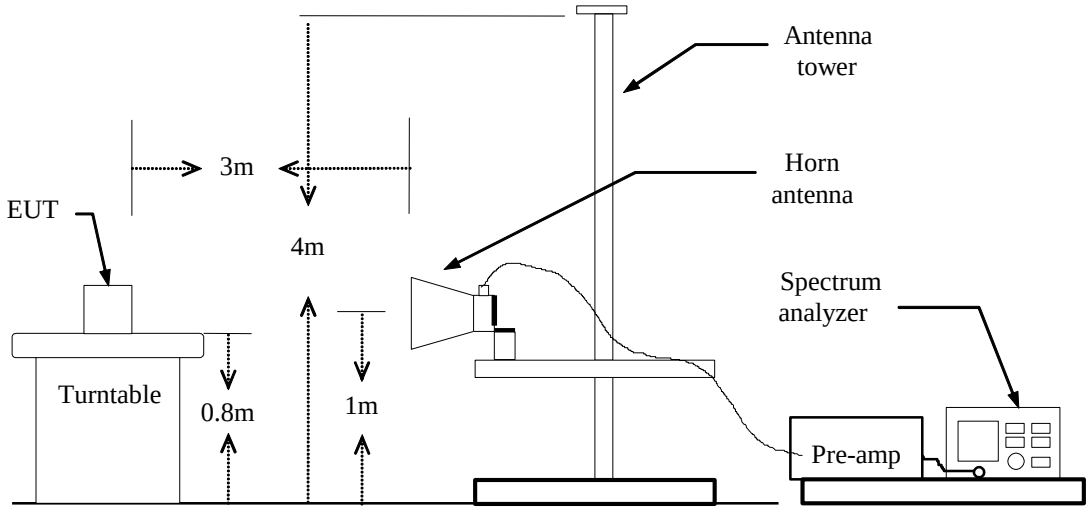
LIMIT

According to §15.407(b),

(1) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

(2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

Test Configuration



TEST PROCEDURE

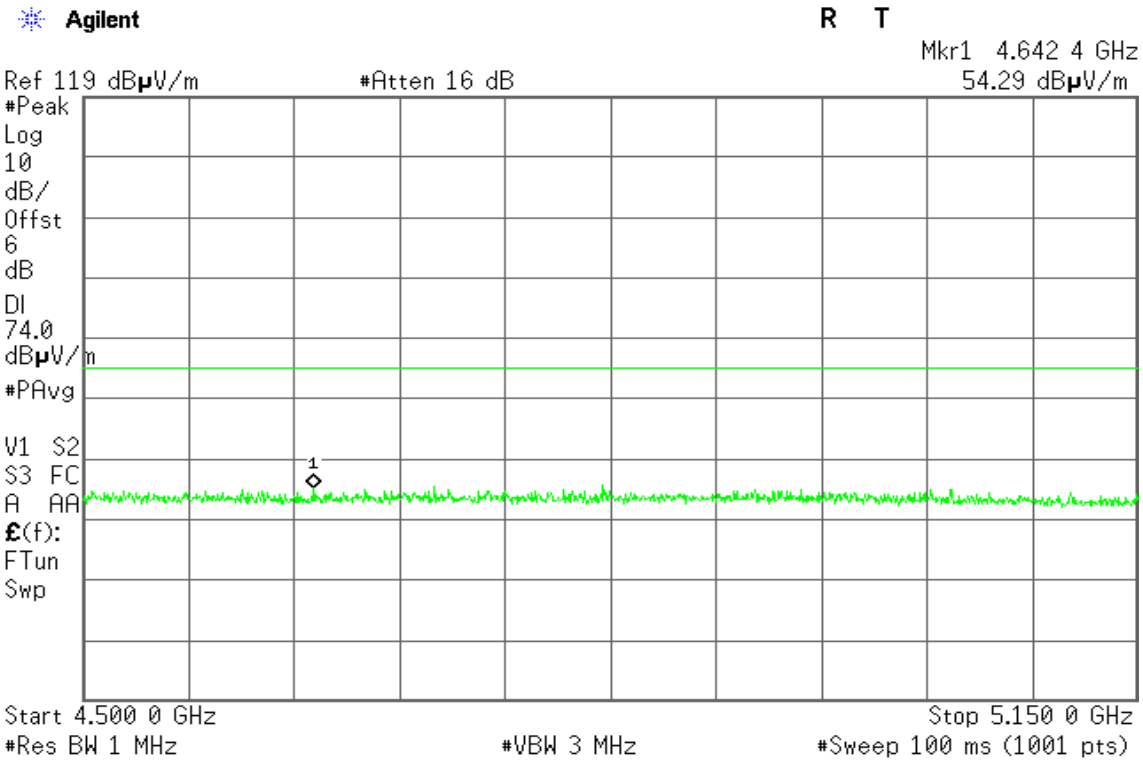
1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the 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 / VBW=300Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

TEST RESULTS

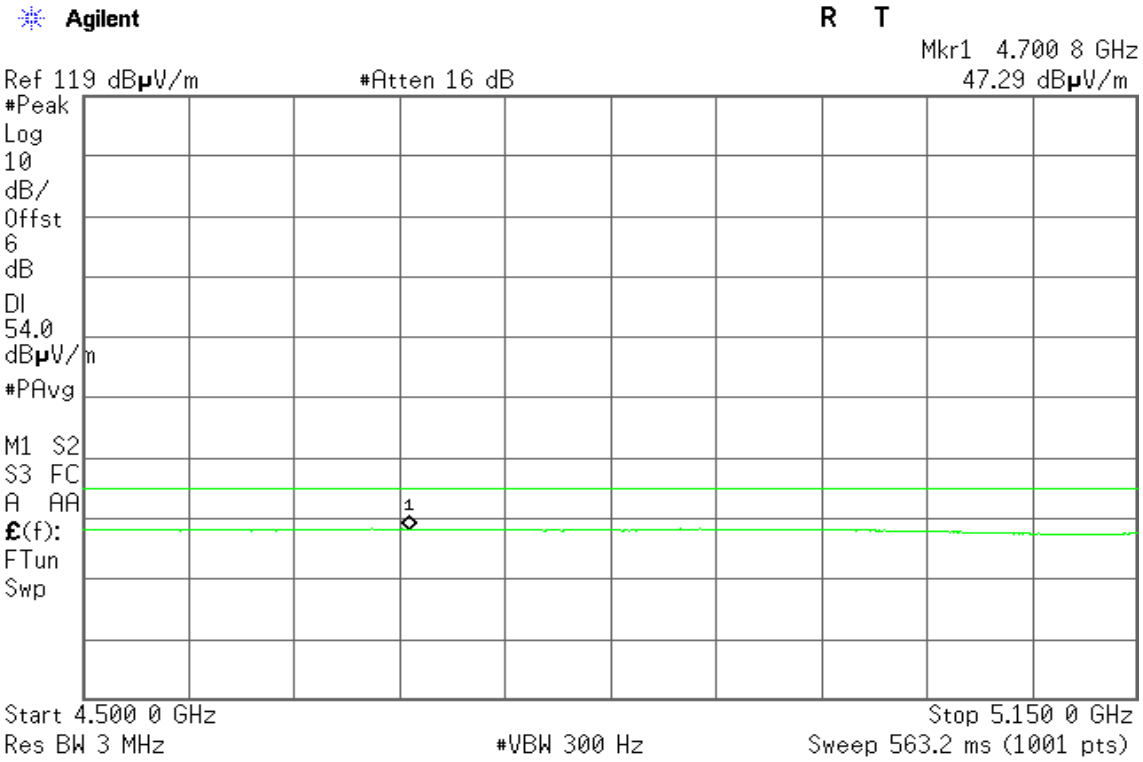
Refer to attach spectrum analyzer data chart.

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

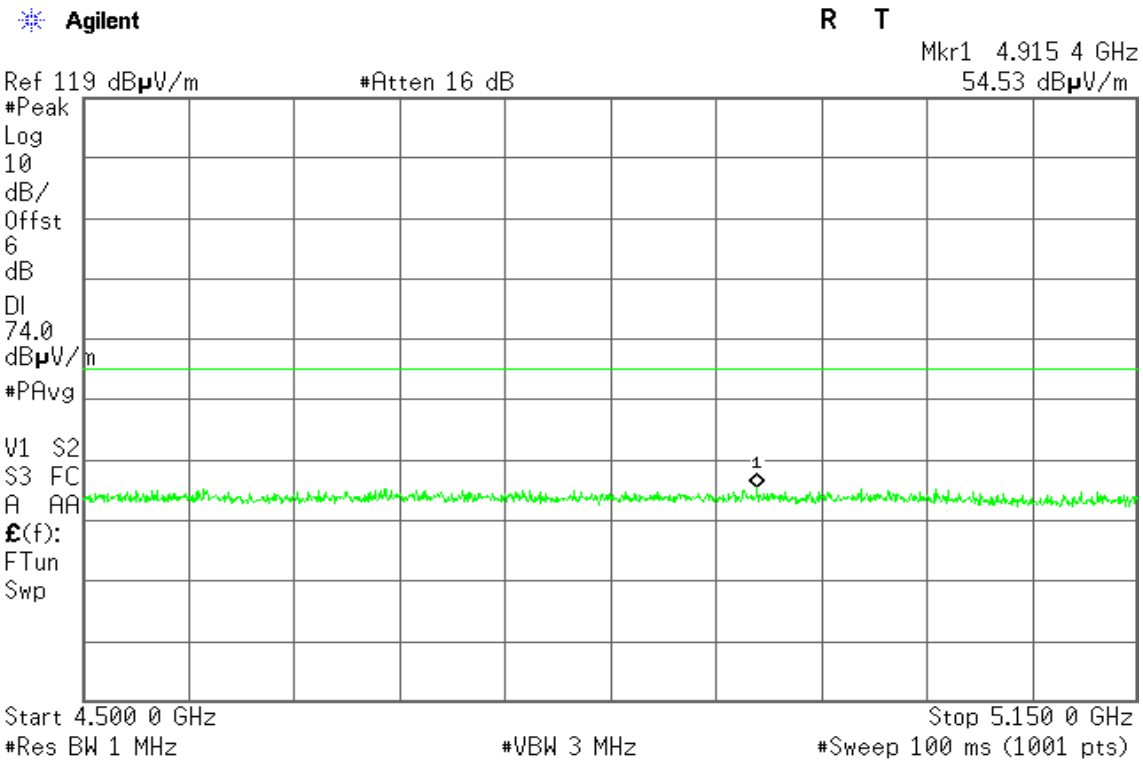
Detector mode: Peak **Polarity: Vertical**



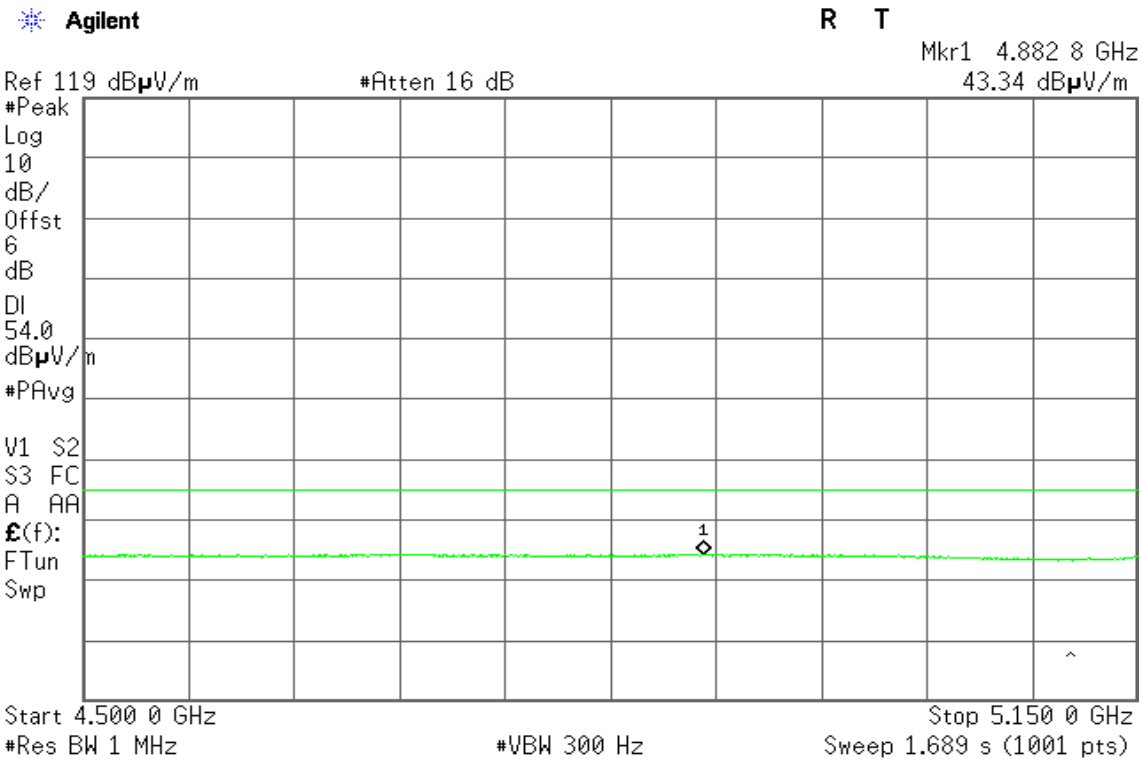
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

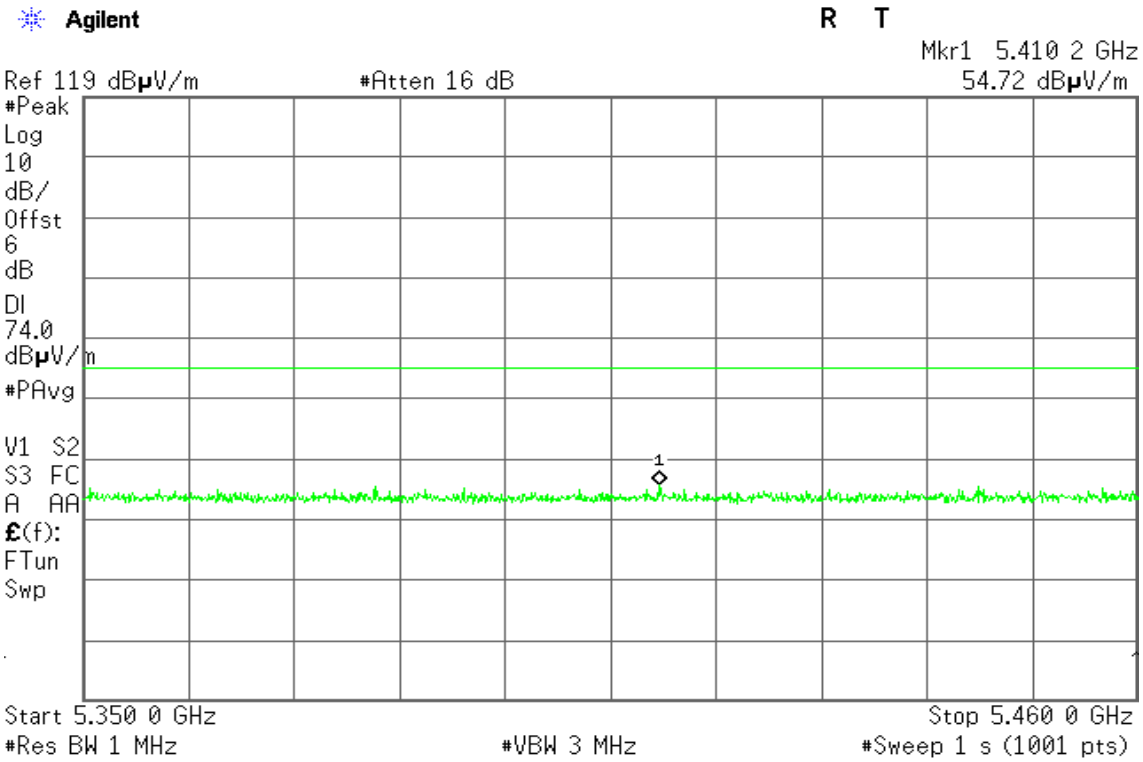


Detector mode: Average **Polarity: Horizontal**

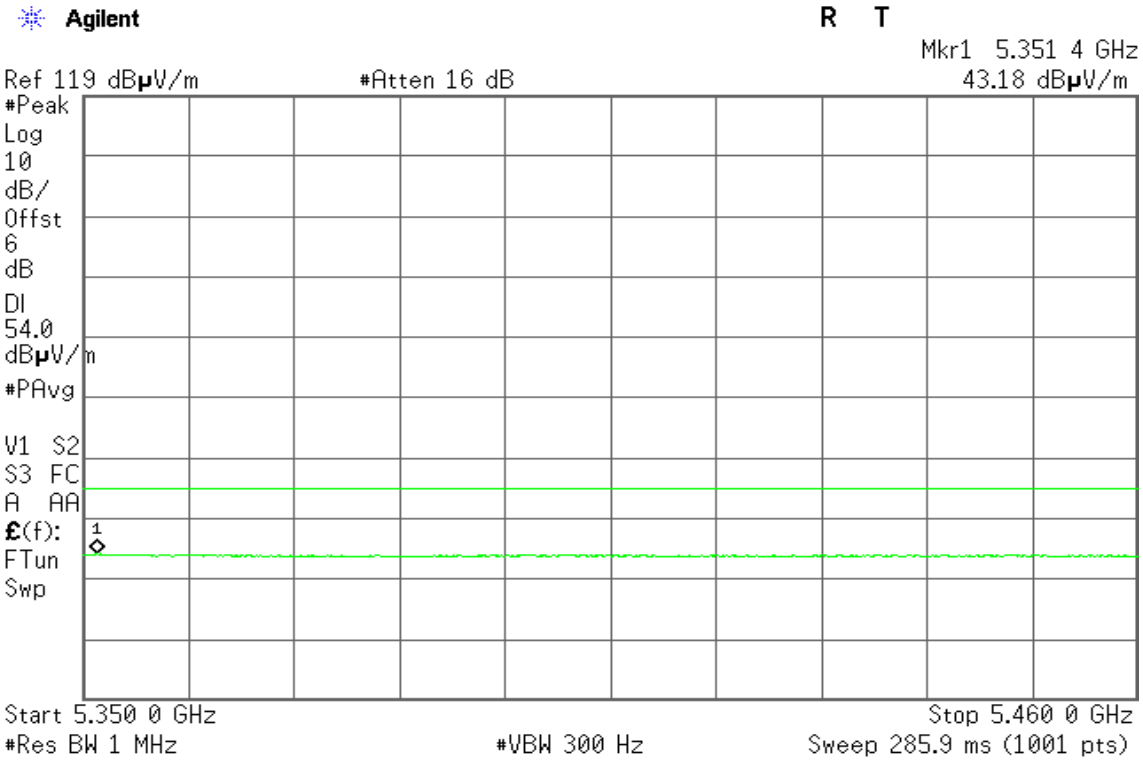


Band Edges (IEEE 802.11a mode / CH 5320 MHz)

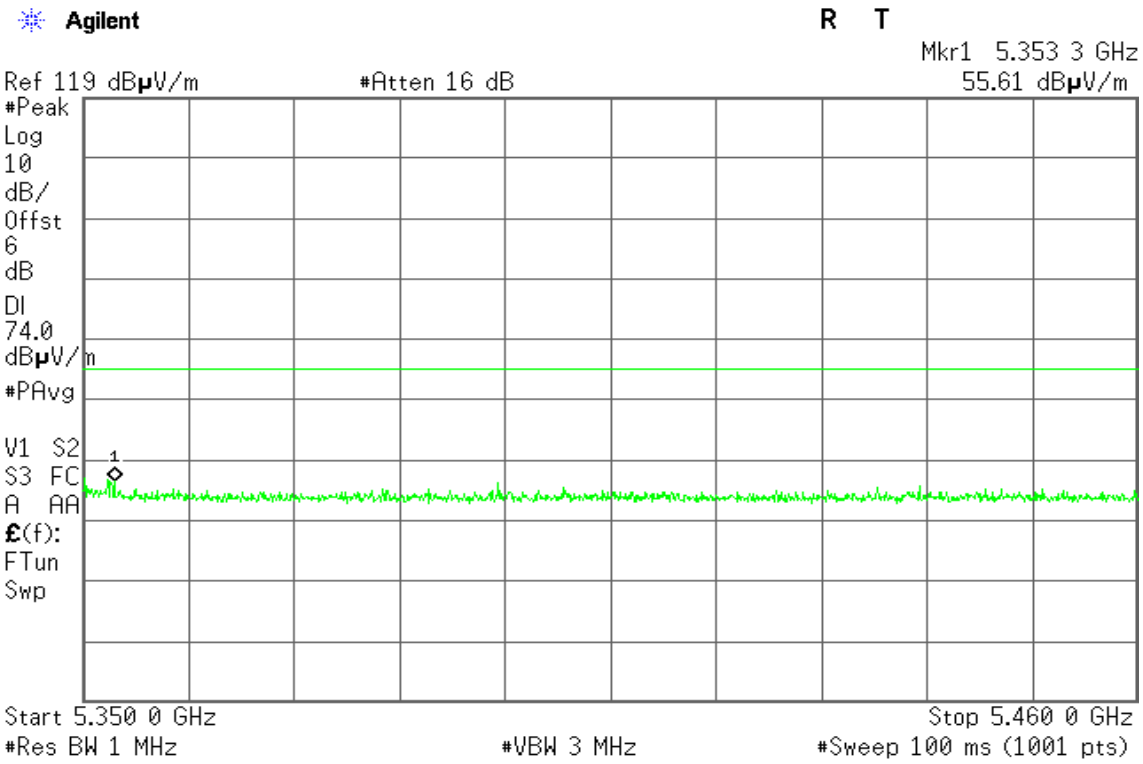
Detector mode: Peak **Polarity: Vertical**



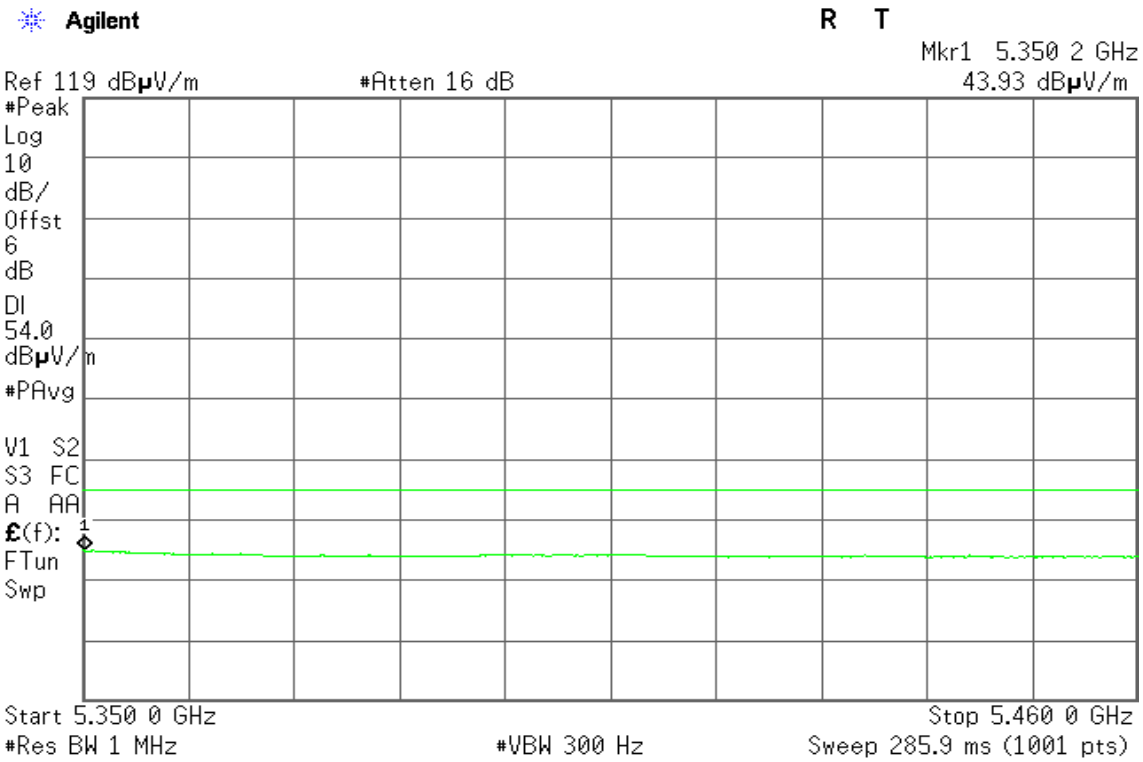
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

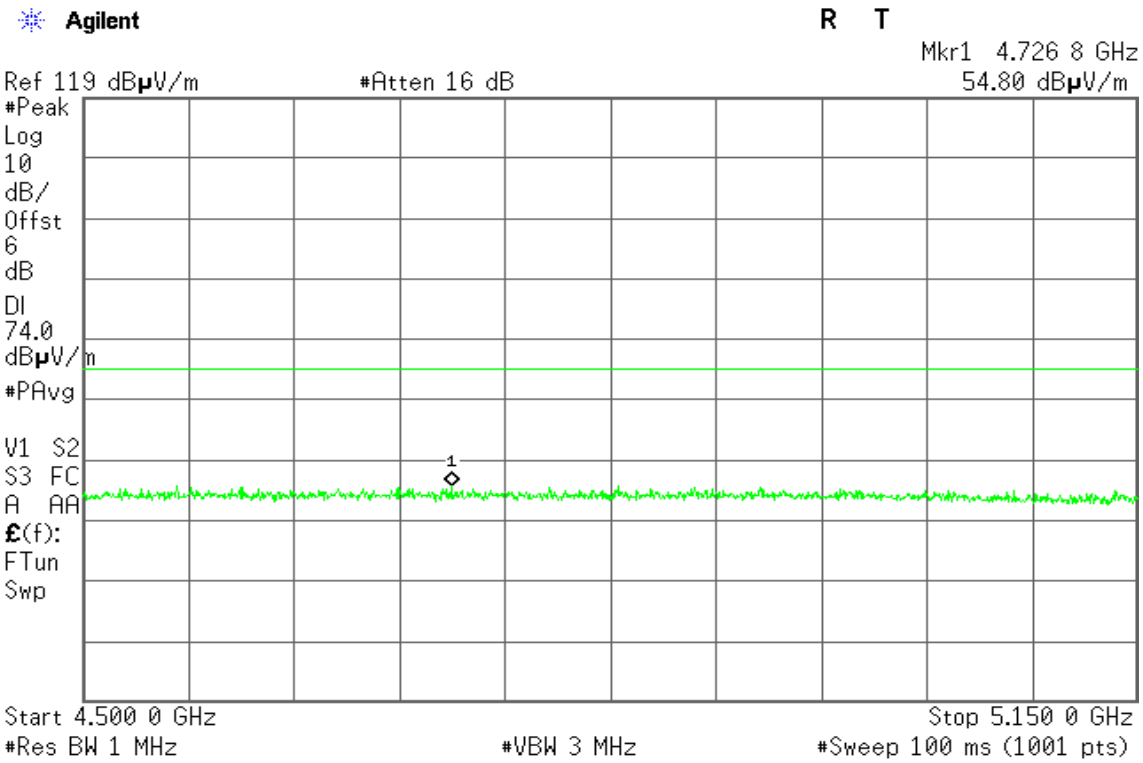


Detector mode: Average **Polarity: Horizontal**

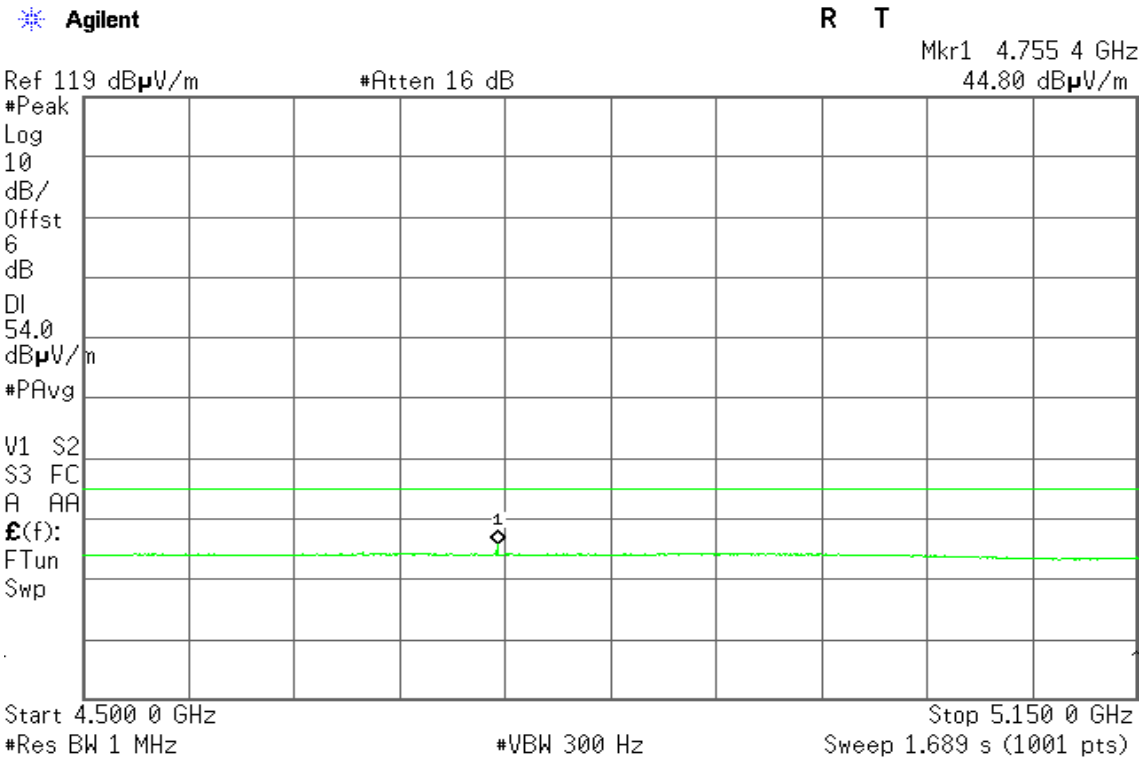


Band Edges (IEEE 802.11n HT 20 MHz Channel mode / CH 5180 MHz)

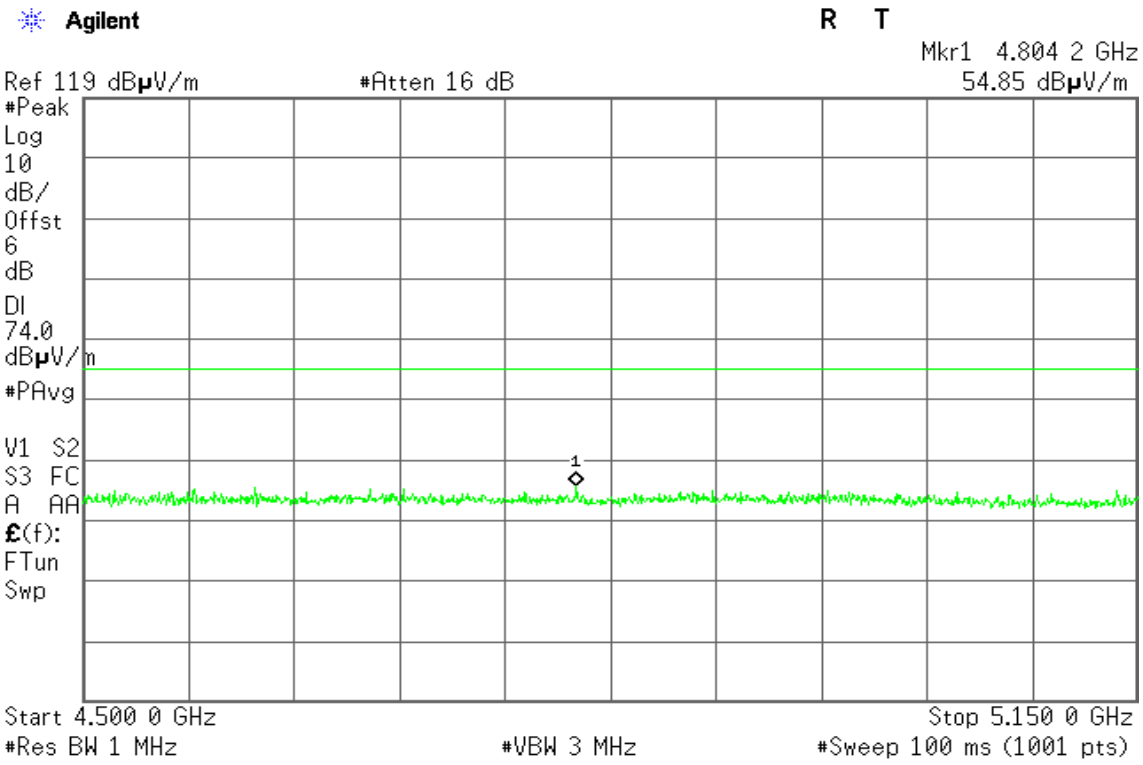
Detector mode: Peak **Polarity: Vertical**



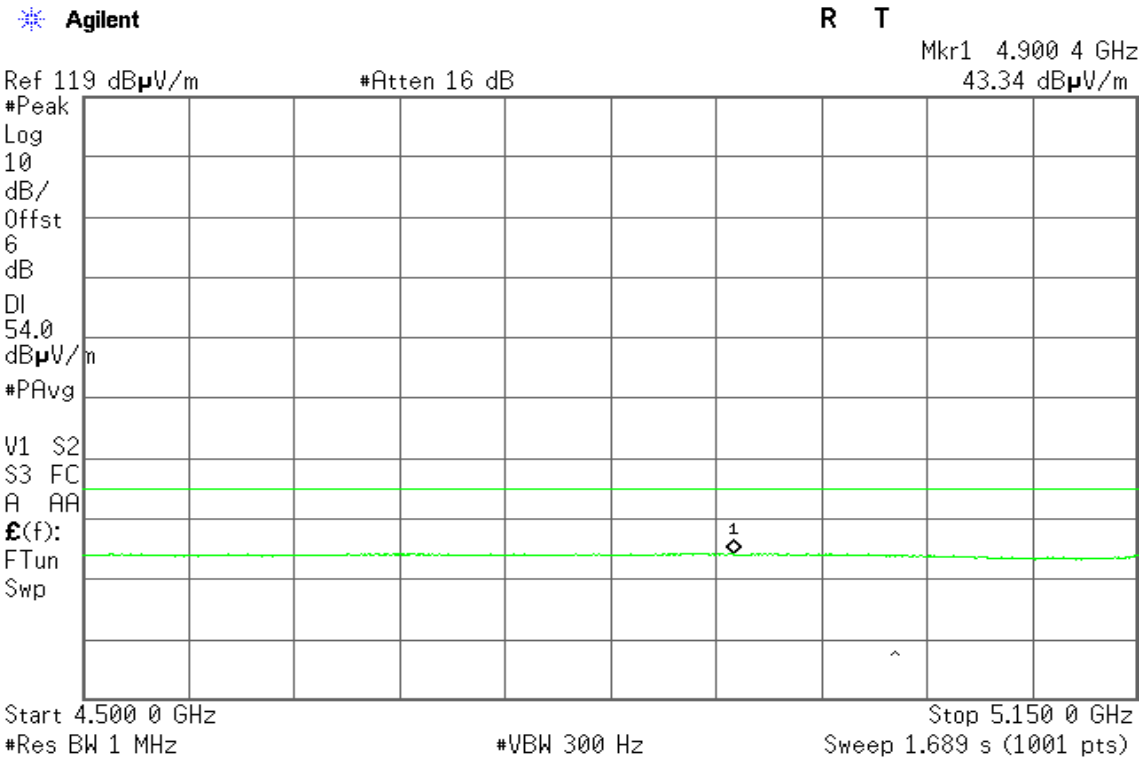
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

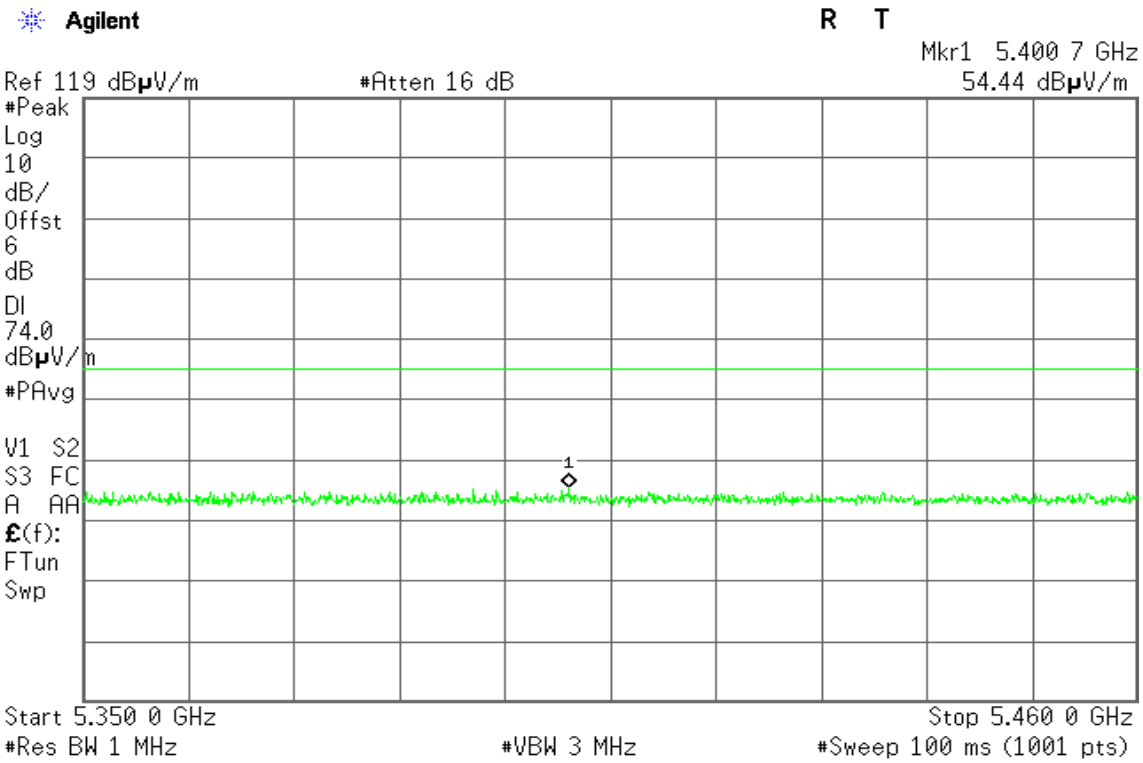


Detector mode: Average **Polarity: Horizontal**

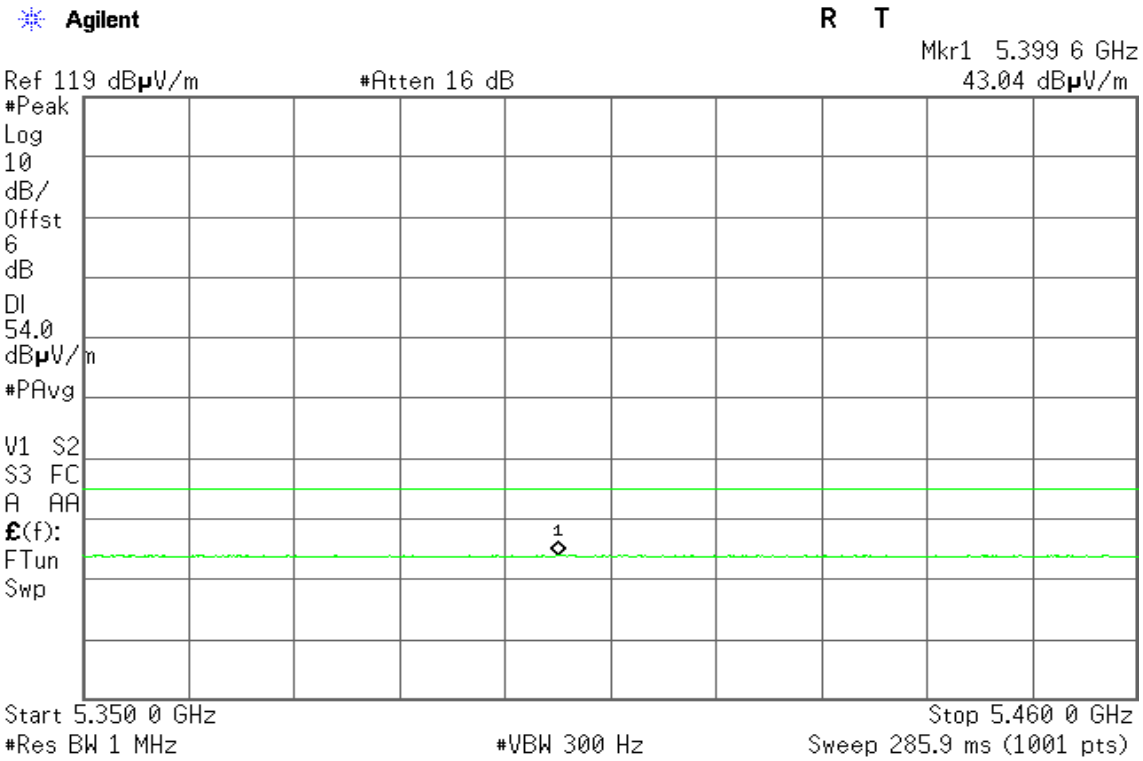


Band Edges (IEEE 802.11n HT 20 MHz Channel mode / CH 5320 MHz)

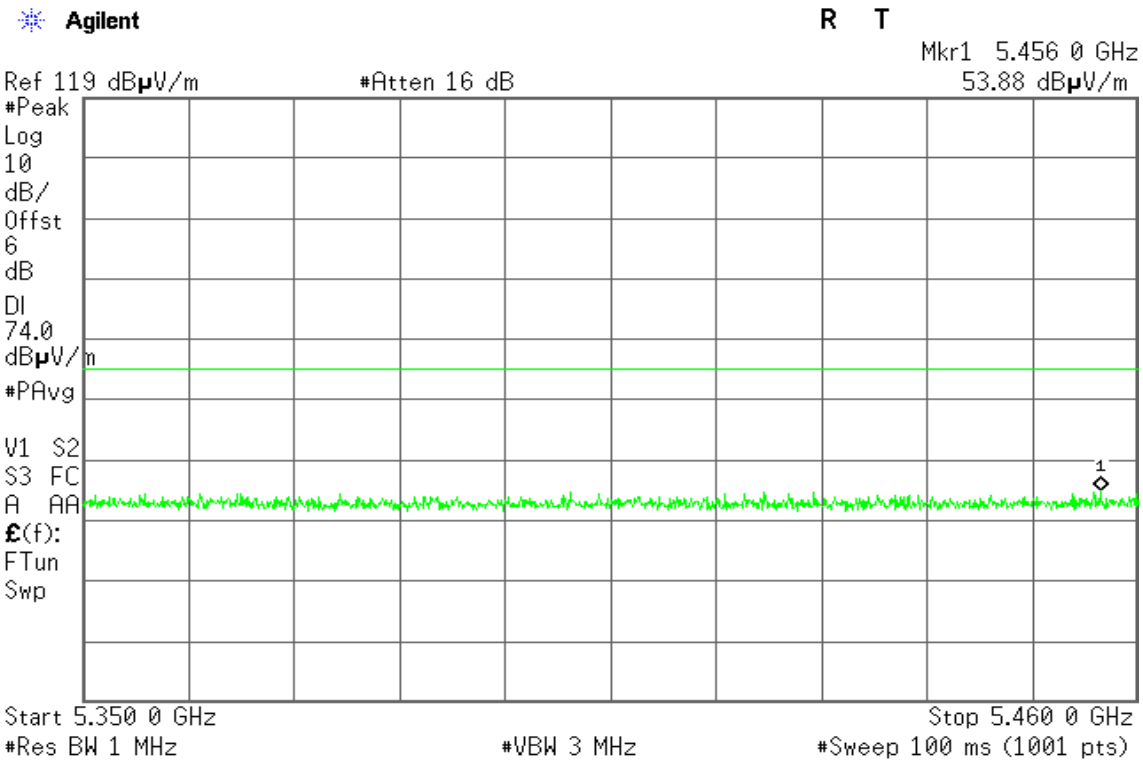
Detector mode: Peak **Polarity: Vertical**



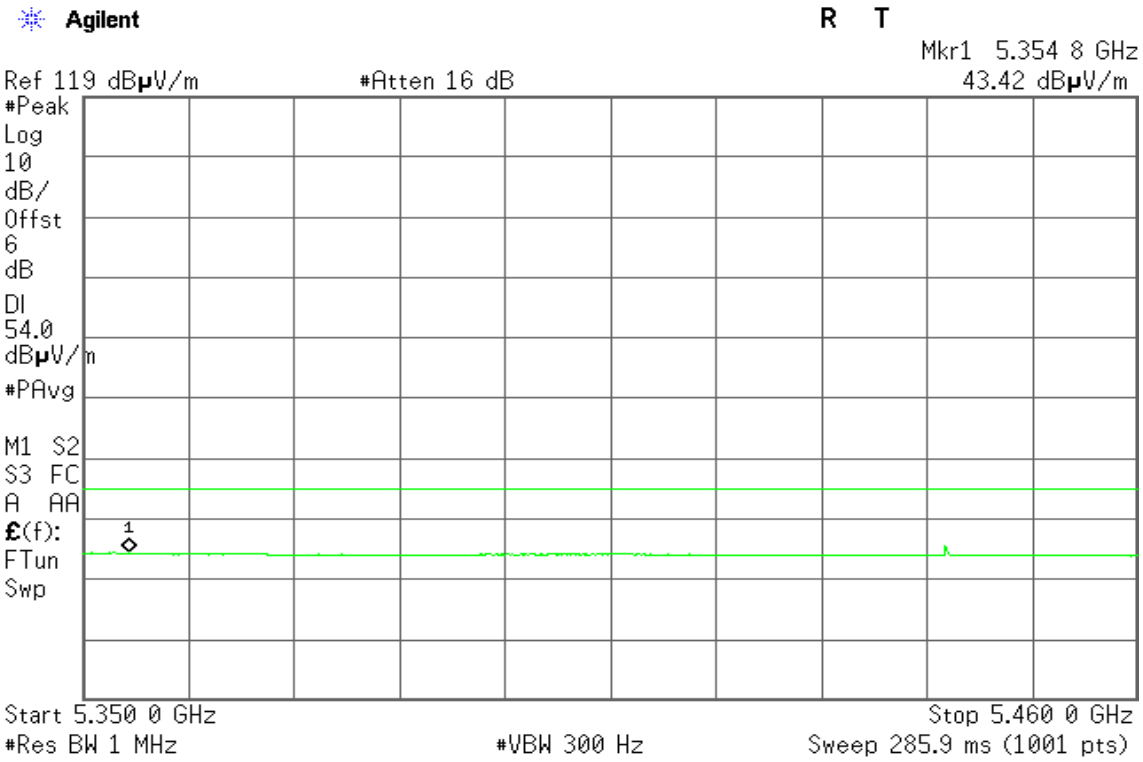
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

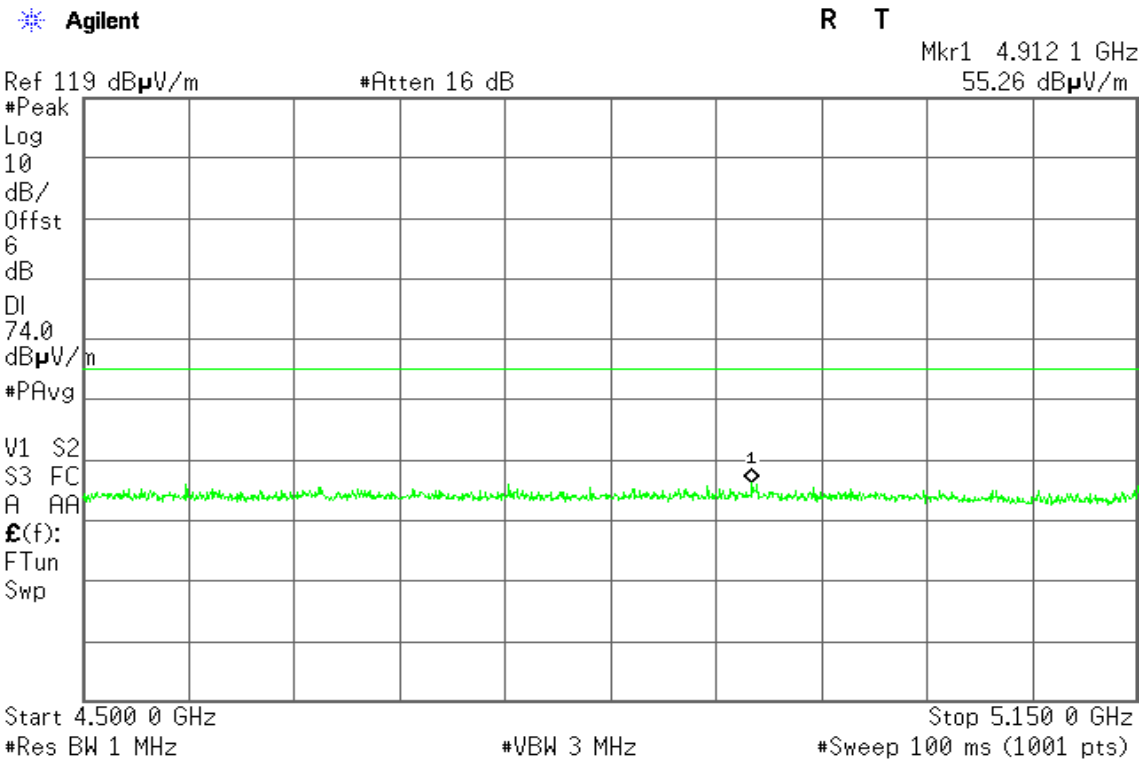


Detector mode: Average **Polarity: Horizontal**

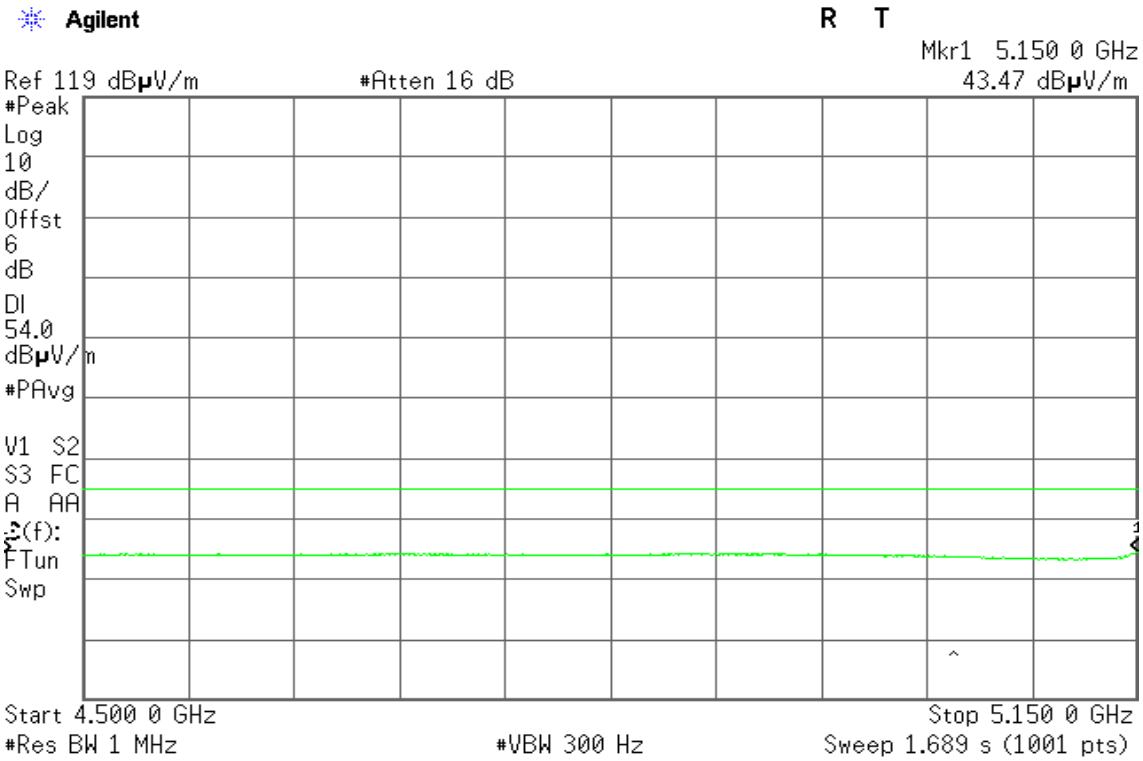


Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5190 MHz)

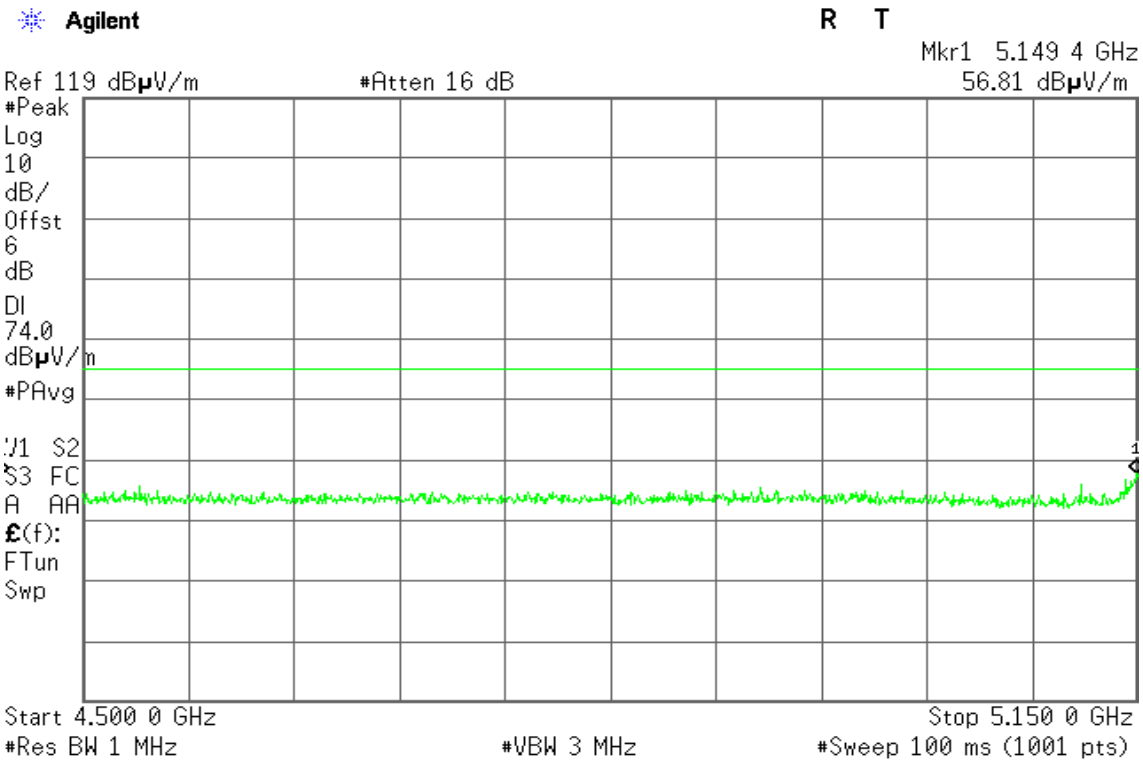
Detector mode: Peak **Polarity: Vertical**



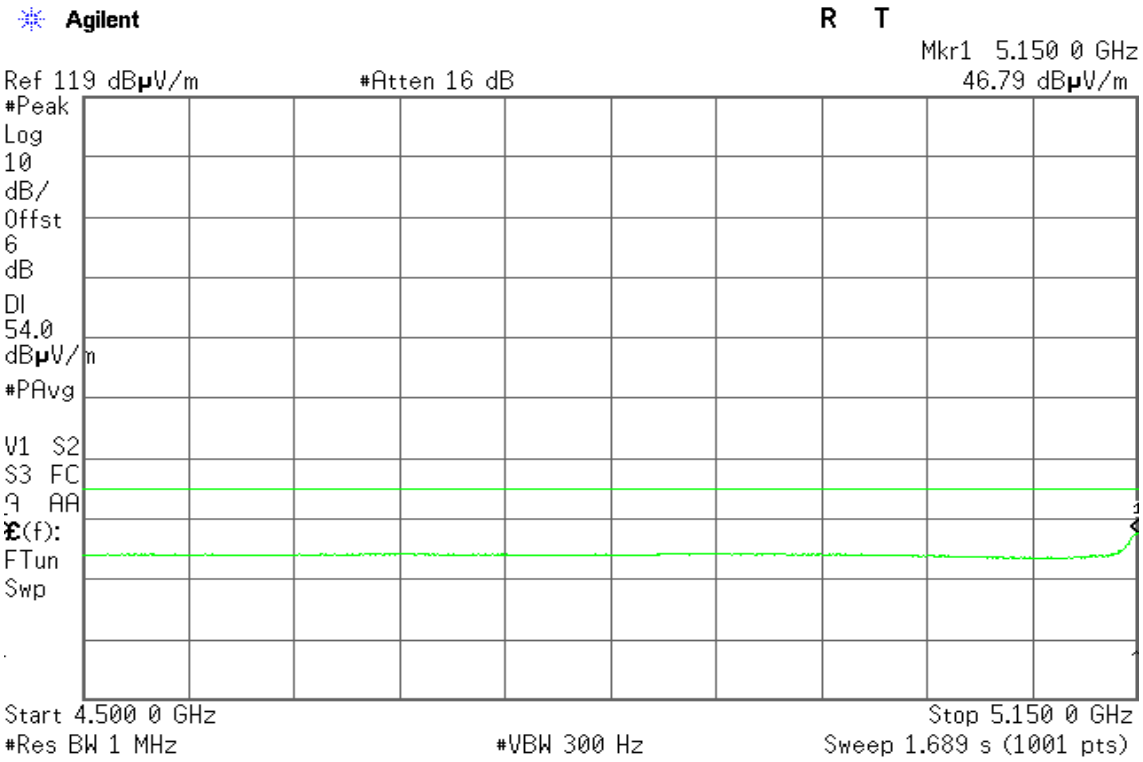
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

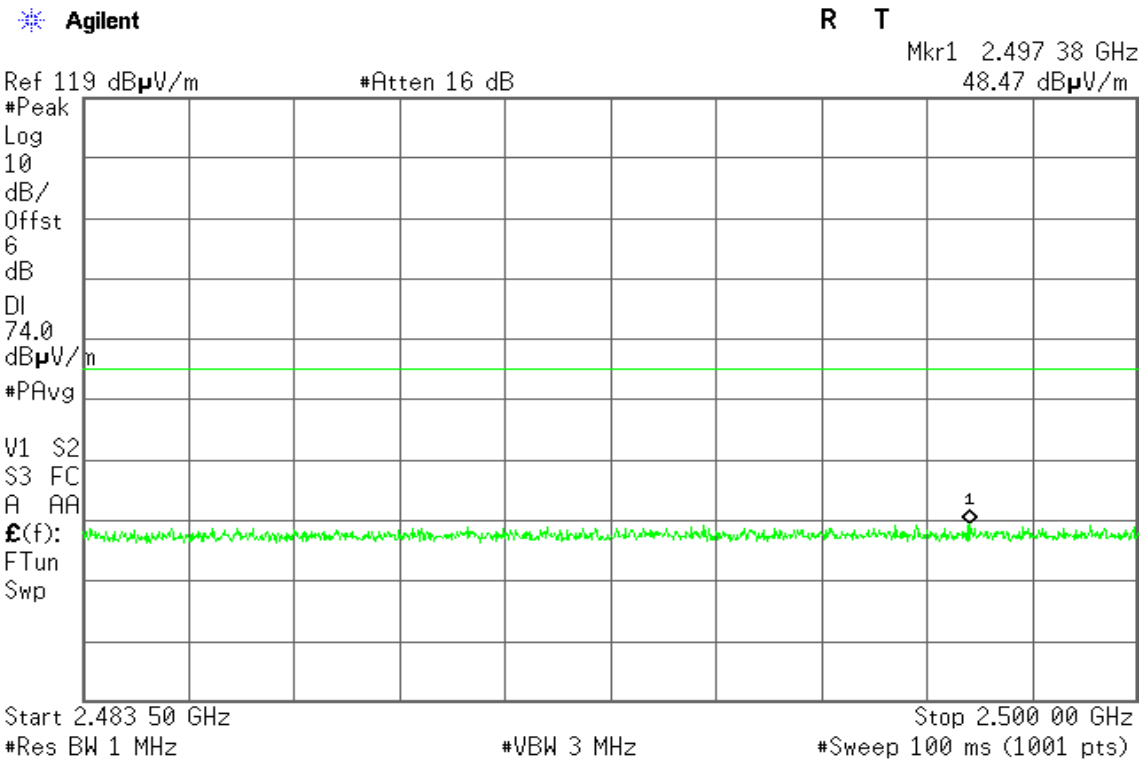


Detector mode: Average **Polarity: Horizontal**

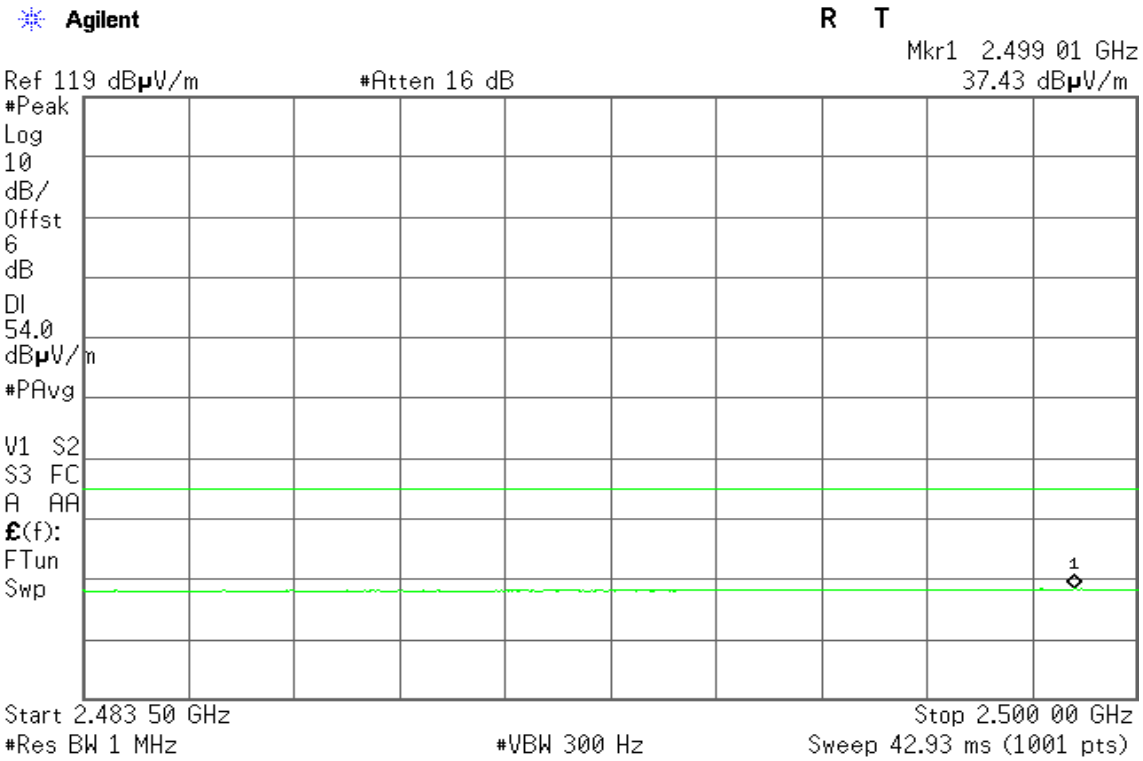


Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5310 MHz)

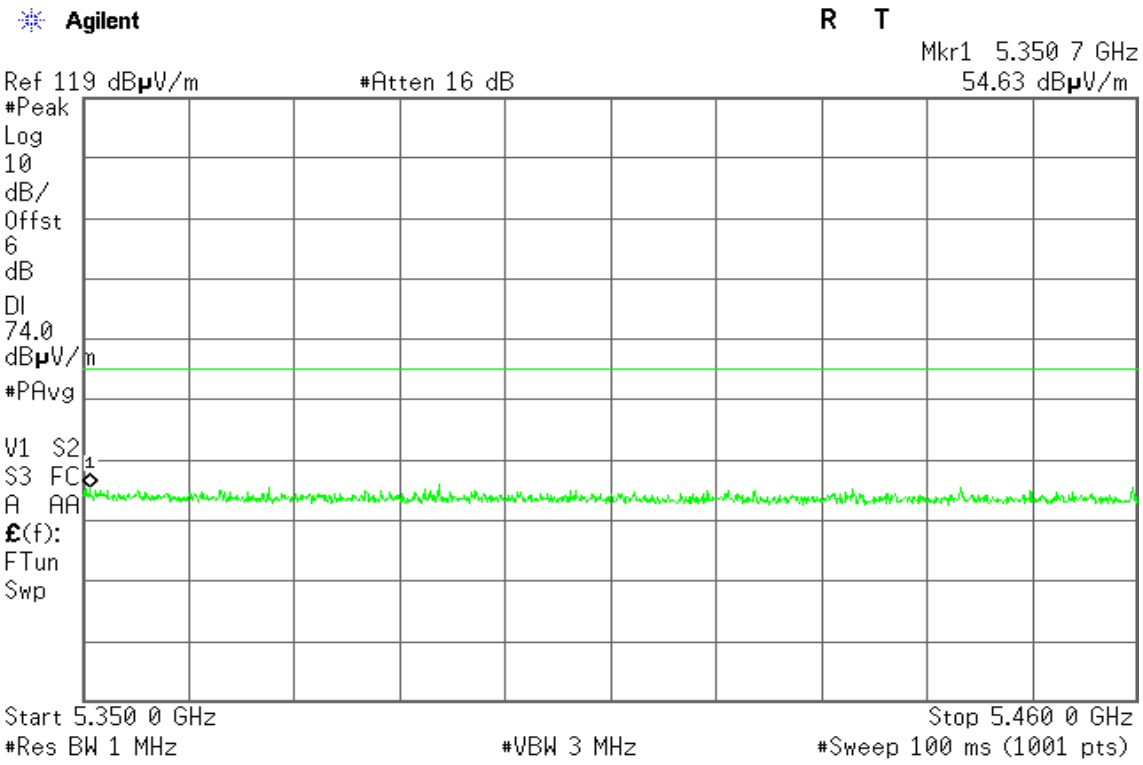
Detector mode: Peak **Polarity: Vertical**



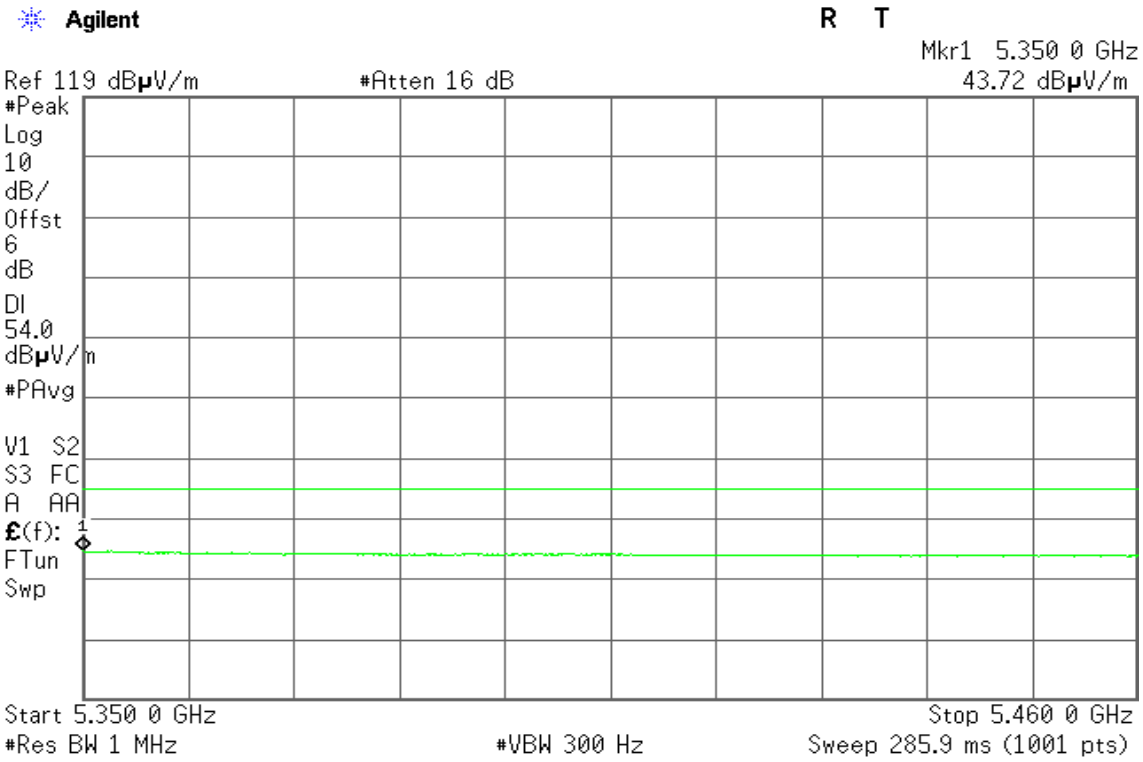
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

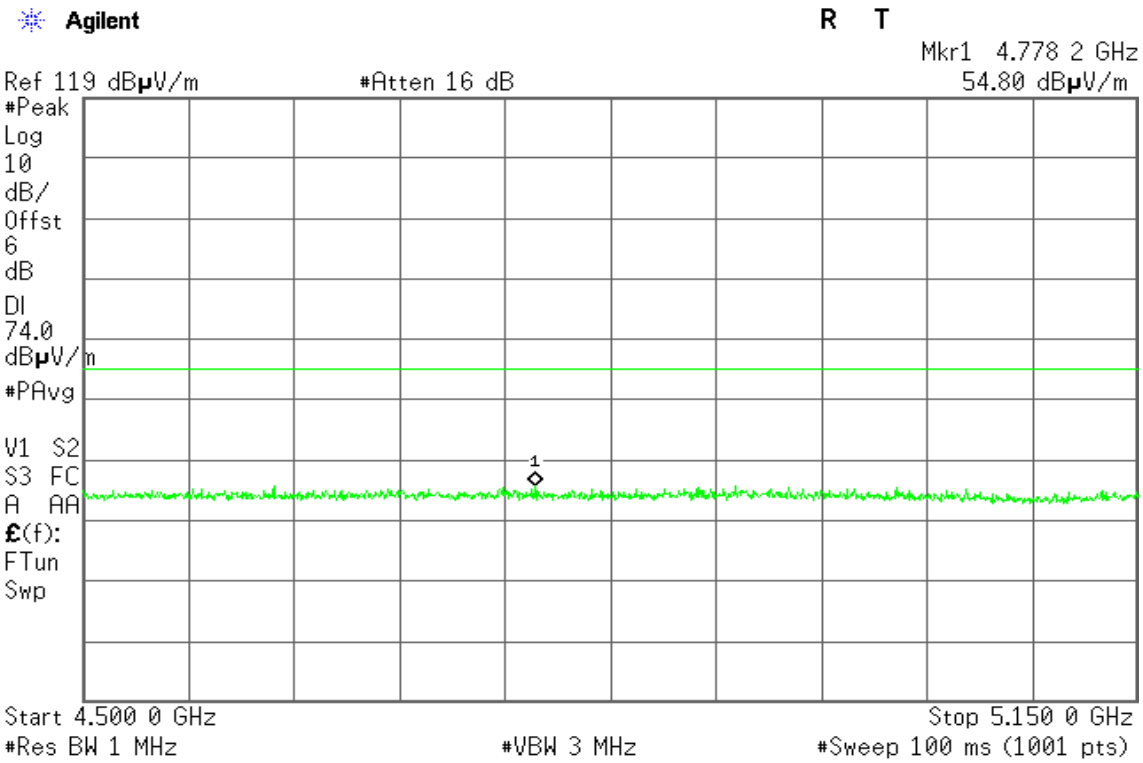


Detector mode: Average **Polarity: Horizontal**

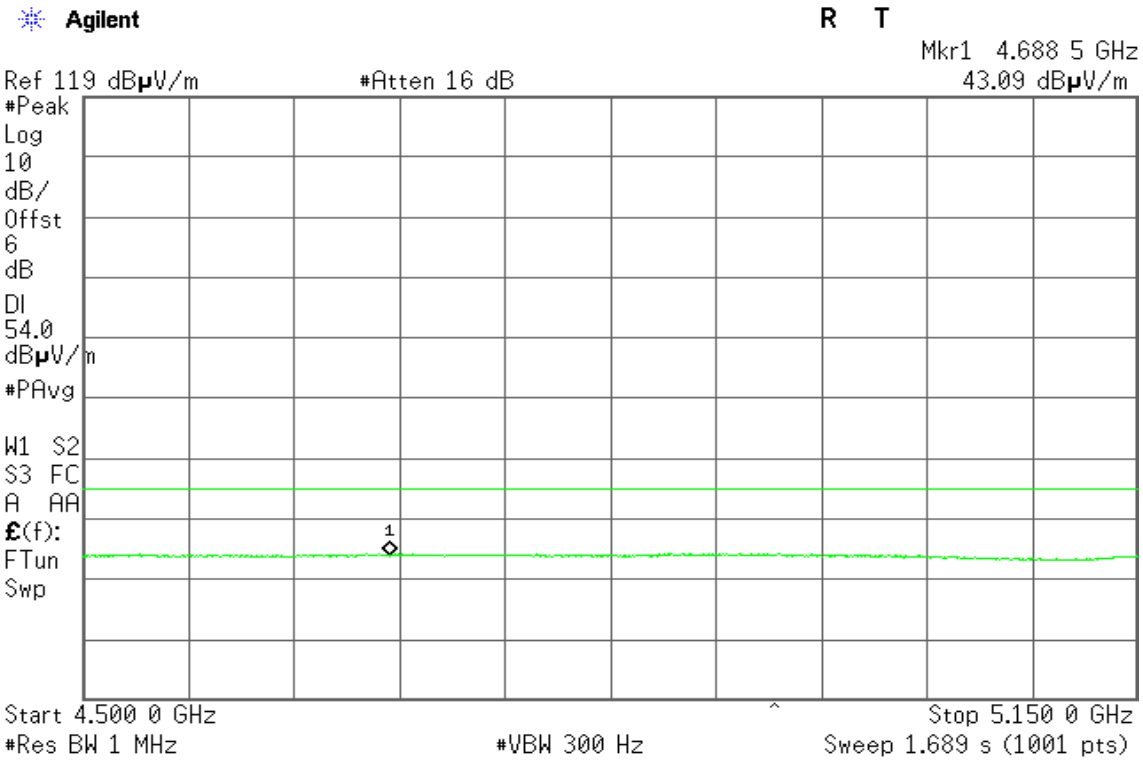


Band Edges (IEEE 802.11n HT 80 MHz mode / CH 5210 MHz)

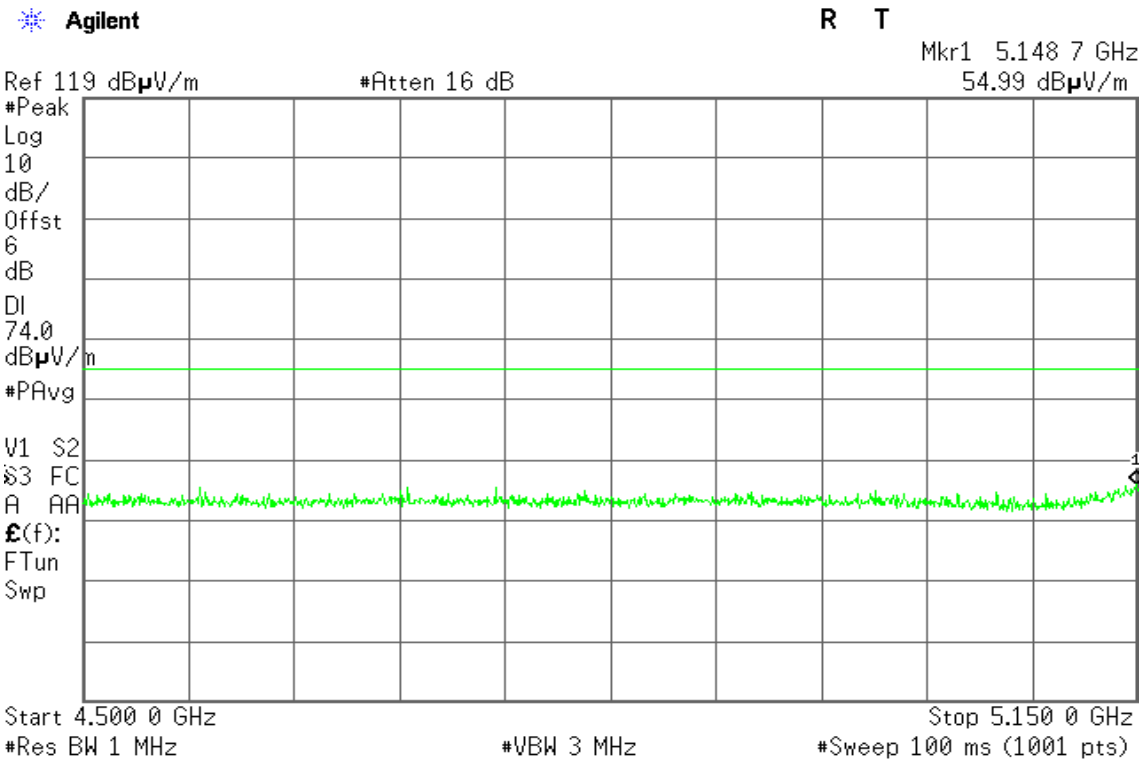
Detector mode: Peak **Polarity: Vertical**



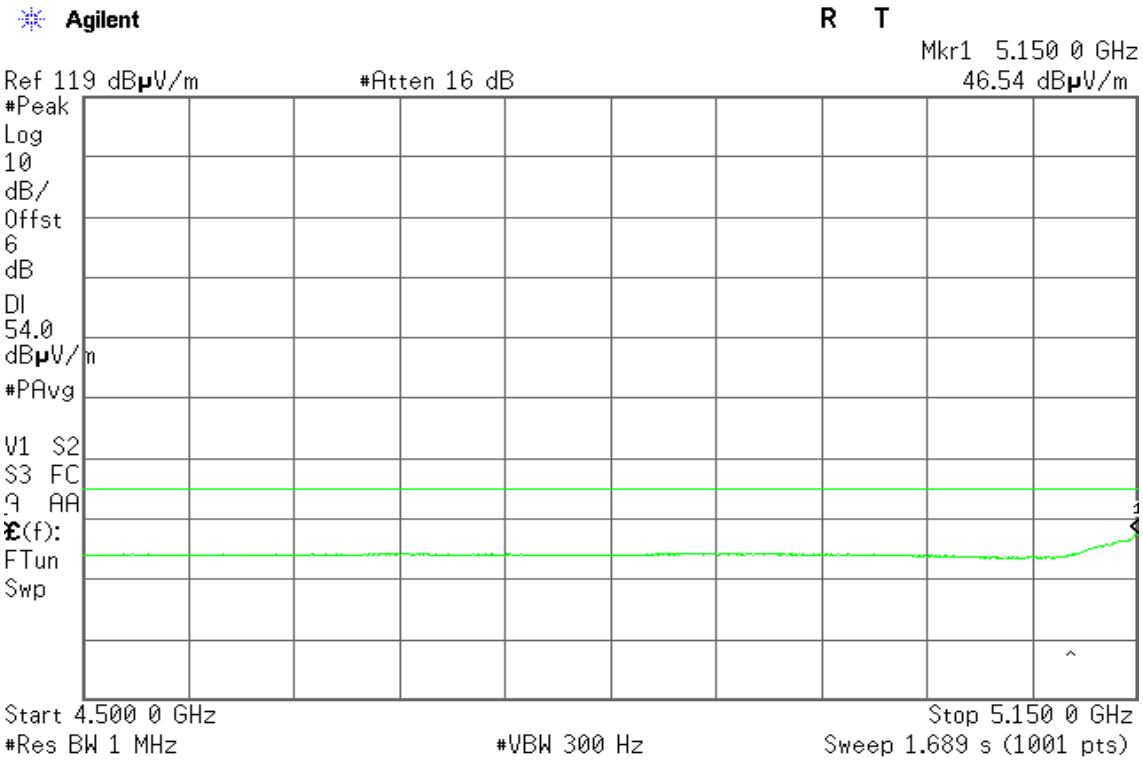
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

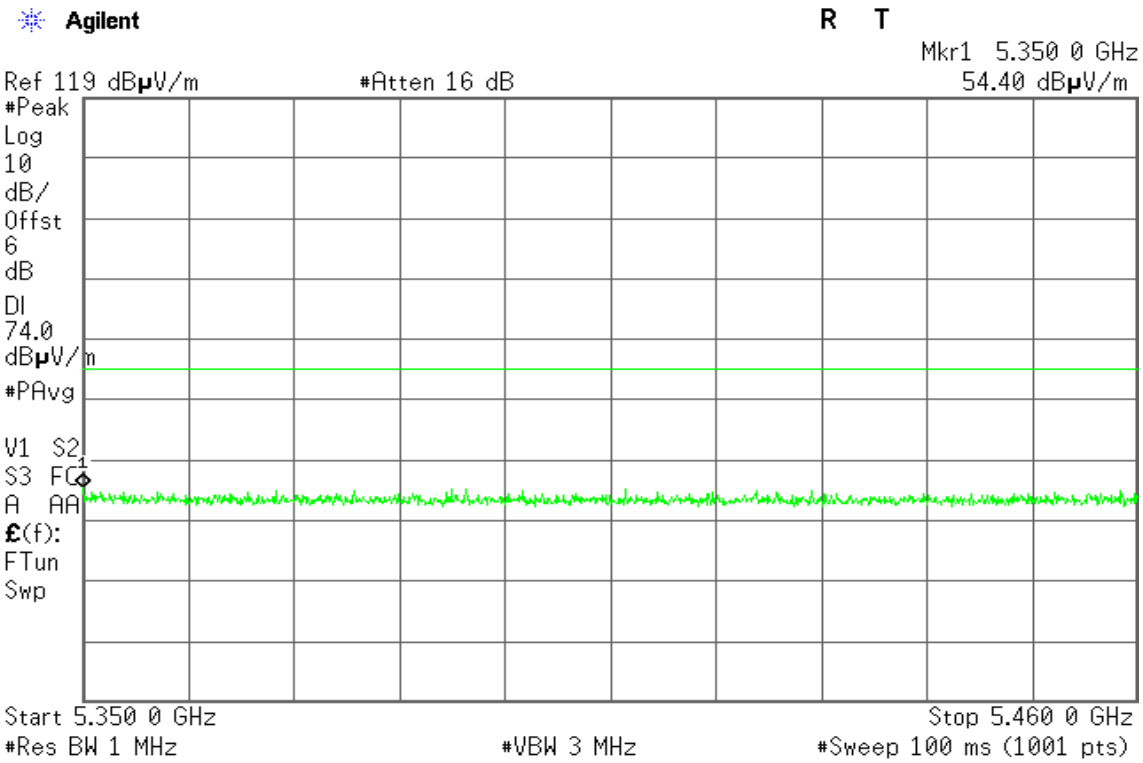


Detector mode: Average **Polarity: Horizontal**

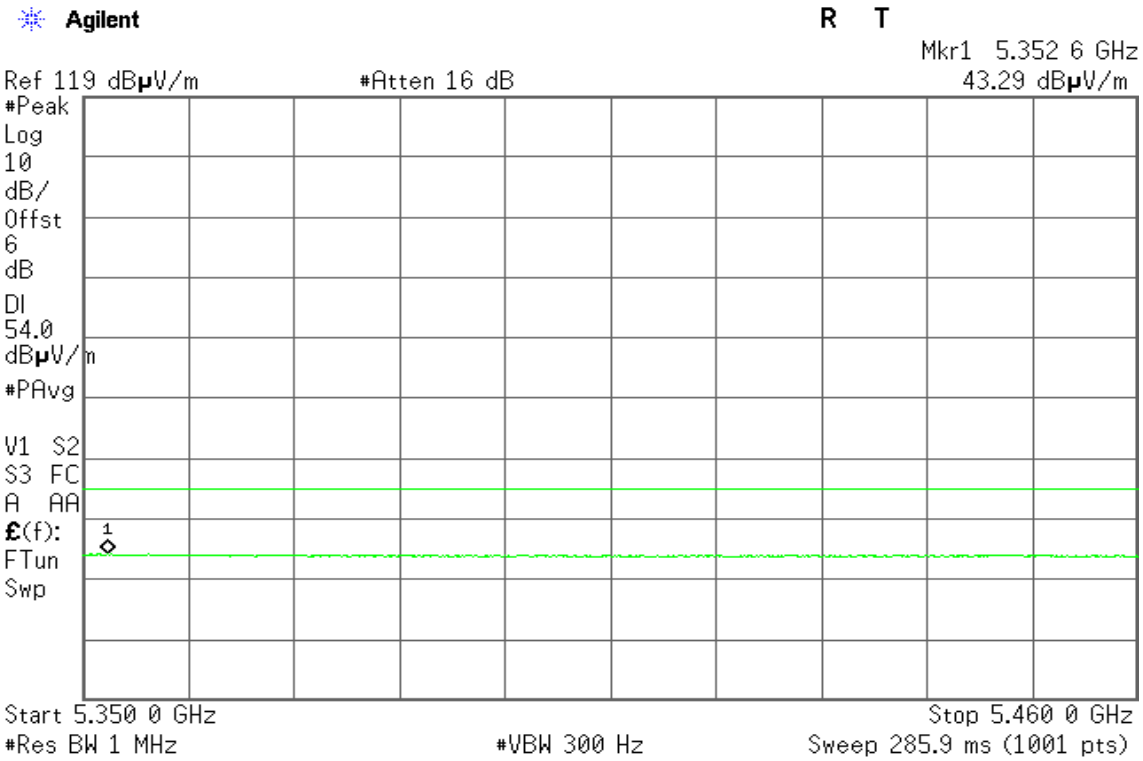


Band Edges (IEEE 802.11n HT 80 MHz mode / CH 5290 MHz)

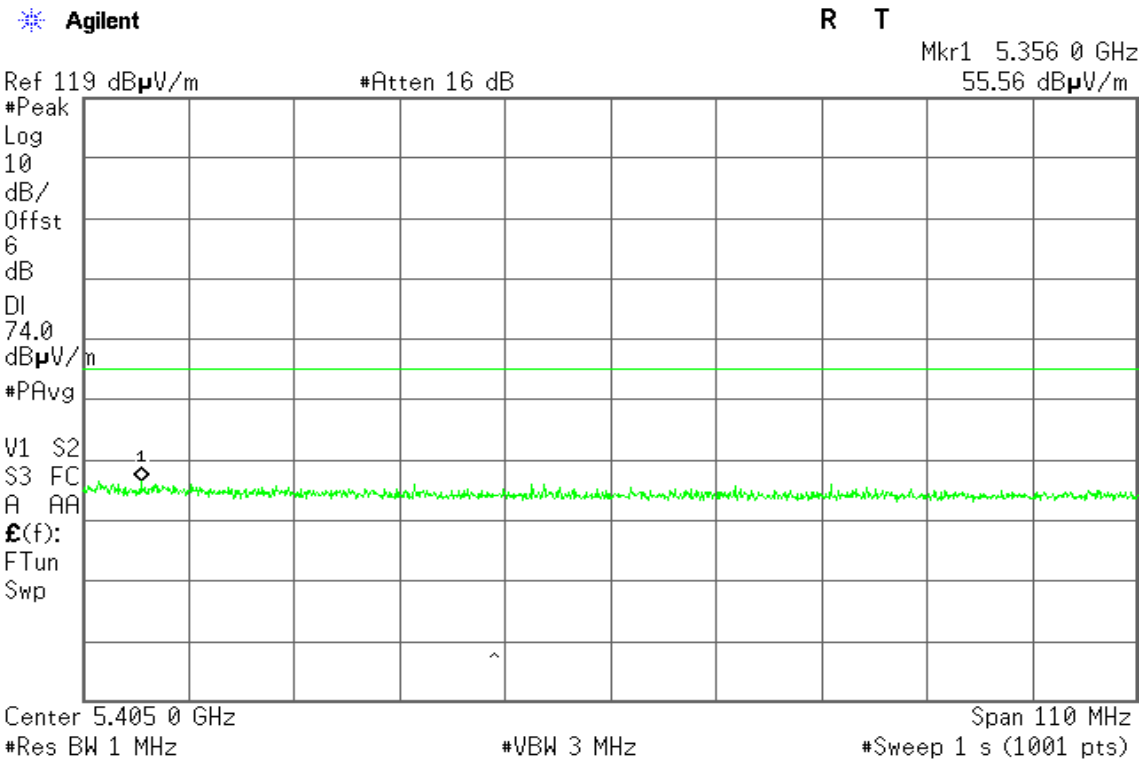
Detector mode: Peak **Polarity: Vertical**



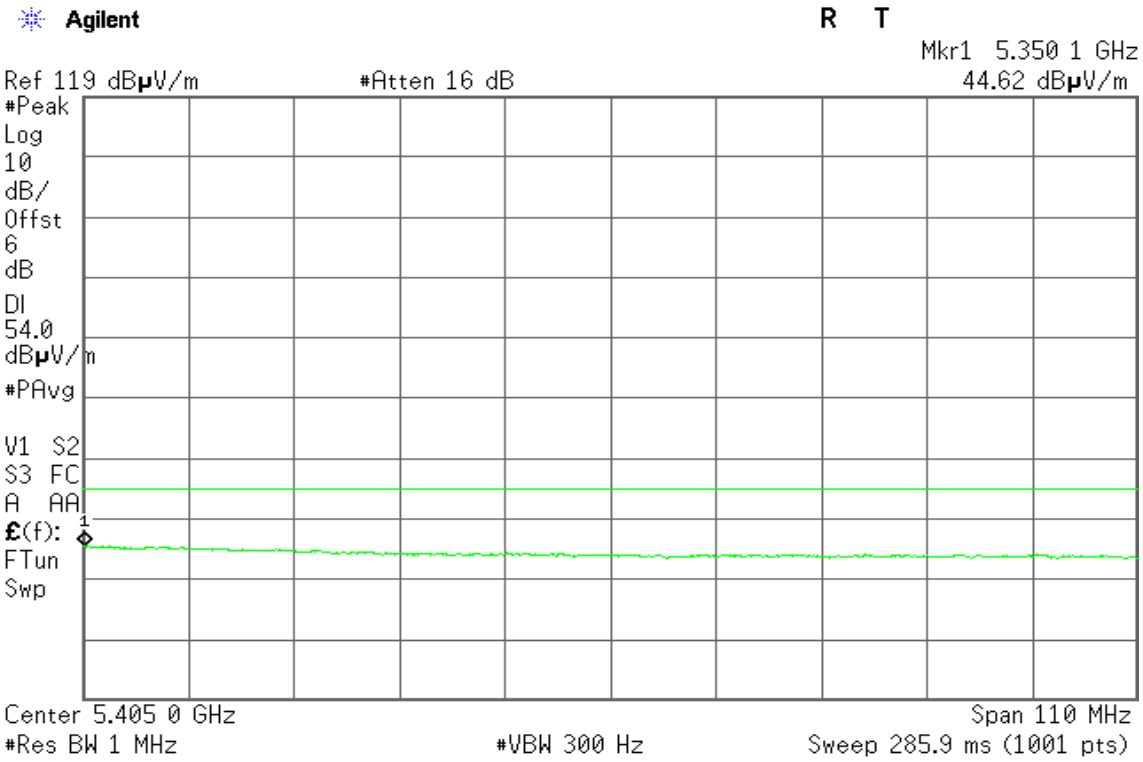
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



8.4 PEAK POWER SPECTRAL DENSITY

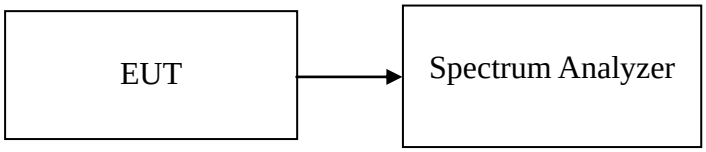
LIMIT

According to §15.407(a)

(1) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4dBm 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.

Test Configuration



TEST PROCEDURE

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

TEST RESULTS

No non-compliance noted

Test Data

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	5180	-1.38	4.00	PASS
Mid	5220	-0.26	4.00	PASS
High	5240	0.41	4.00	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)	Result
Low	5180	1.61	-2.03	3.17	4.00	PASS
Mid	5220	2.62	-0.90	4.22	4.00	PASS
High	5240	1.42	-1.52	3.20	4.00	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)	Result
Low	5190	-5.00	-4.20	-1.57	4.00	PASS
High	5230	-4.05	-4.39	-1.21	4.00	PASS

Test mode: IEEE 802.11n HT 80 MHz mode / 5210MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Mid	5210	-2.66	-6.08	-1.03	4.00	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)	Result
Low	5260	0.79	11.00	PASS
Mid	5280	1.22	11.00	PASS
High	5320	2.27	11.00	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)	Result
Low	5260	1.87	-0.70	3.78	11.00	PASS
Mid	5280	-0.23	-1.15	2.34	11.00	PASS
High	5320	1.37	-1.65	3.13	11.00	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5270	-2.99	-2.84	0.10	11.00	PASS
High	5310	-3.21	-2.99	-0.09	11.00	PASS

Test mode: IEEE 802.11n HT 80 MHz mode / 5290MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Mid	5290	-4.30	-5.90	-2.02	11.00	PASS

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

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	5500	0.05	11.00	PASS
Mid	5580	1.56	11.00	PASS
High	5700	1.96	11.00	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5500	0.00	0.55	3.29	11.00	PASS
Mid	5580	1.98	2.04	5.02	11.00	PASS
High	5700	0.53	-1.40	2.68	11.00	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5510	-3.86	-3.15	-0.48	11.00	PASS
Mid	5550	-1.92	-2.65	0.74	11.00	PASS
High	5670	-0.49	-1.78	1.92	11.00	PASS

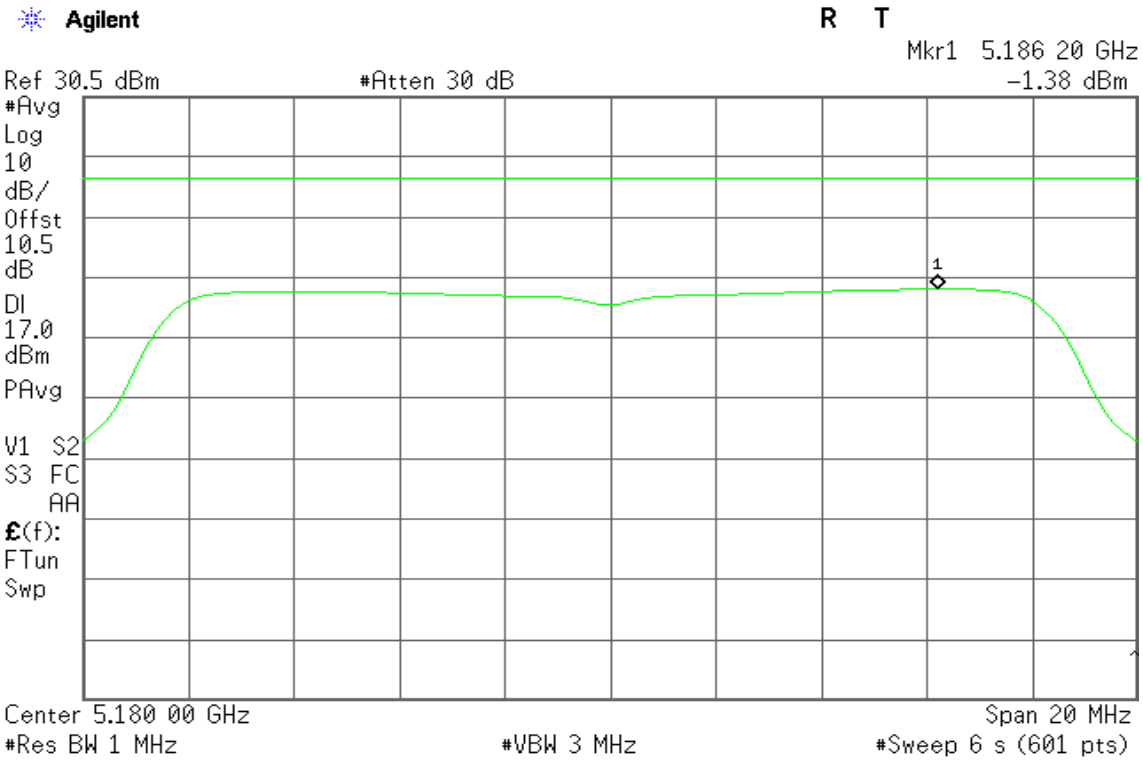
Test mode: IEEE 802.11n HT 80 MHz mode / 5530 ~ 5690MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5530	-6.21	-4.36	-2.18	11.00	PASS
High	5690	-5.89	-4.23	-1.97	11.00	PASS

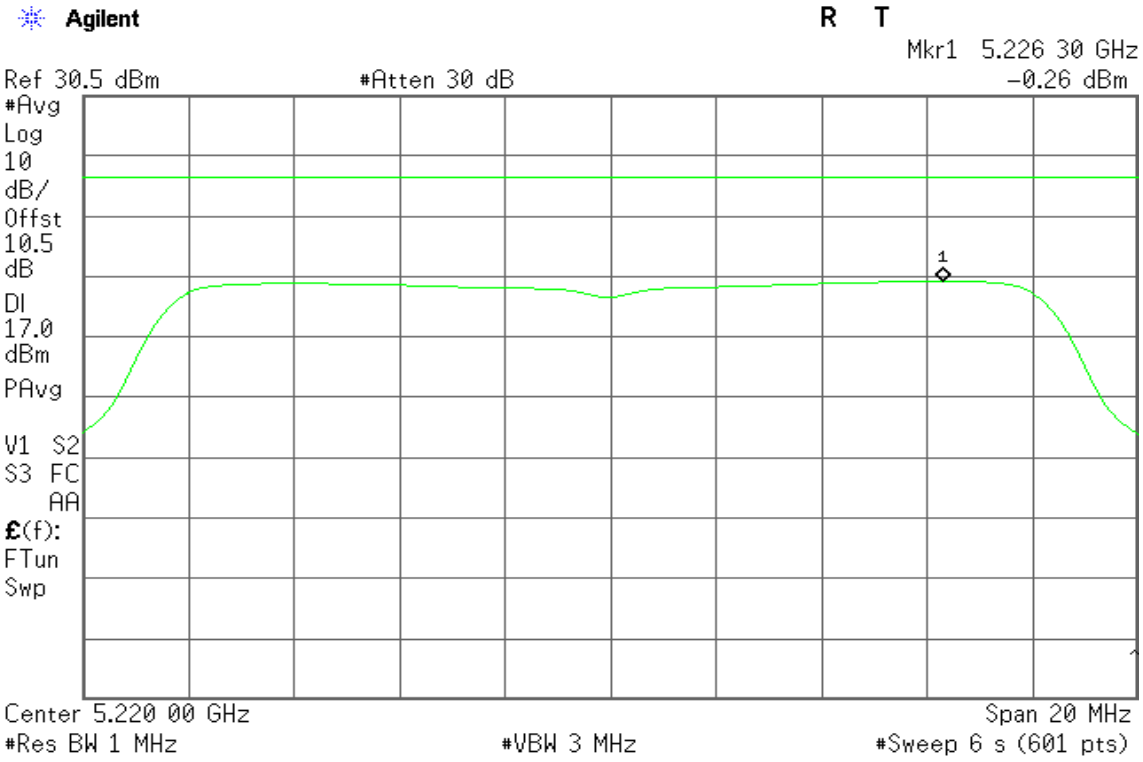
Remark: *Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10)*

Test Plot
IEEE 802.11a mode / 5180 ~ 5240MHz

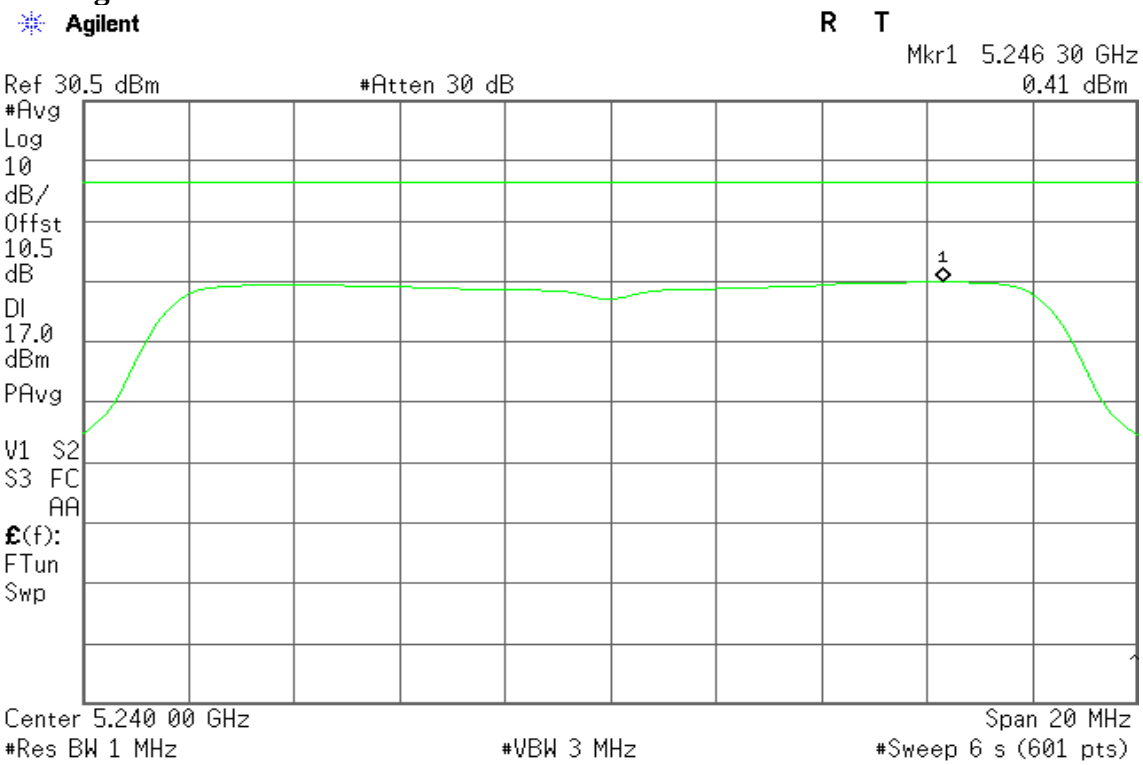
CH Low



CH Mid

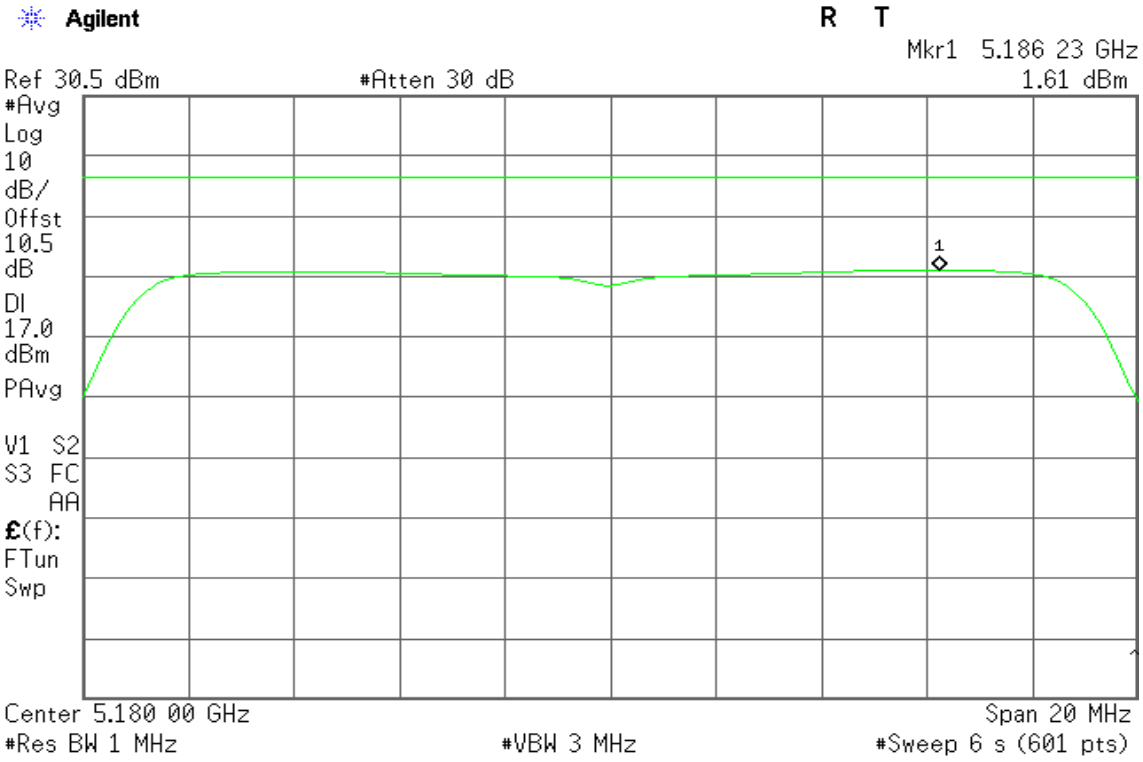


CH High

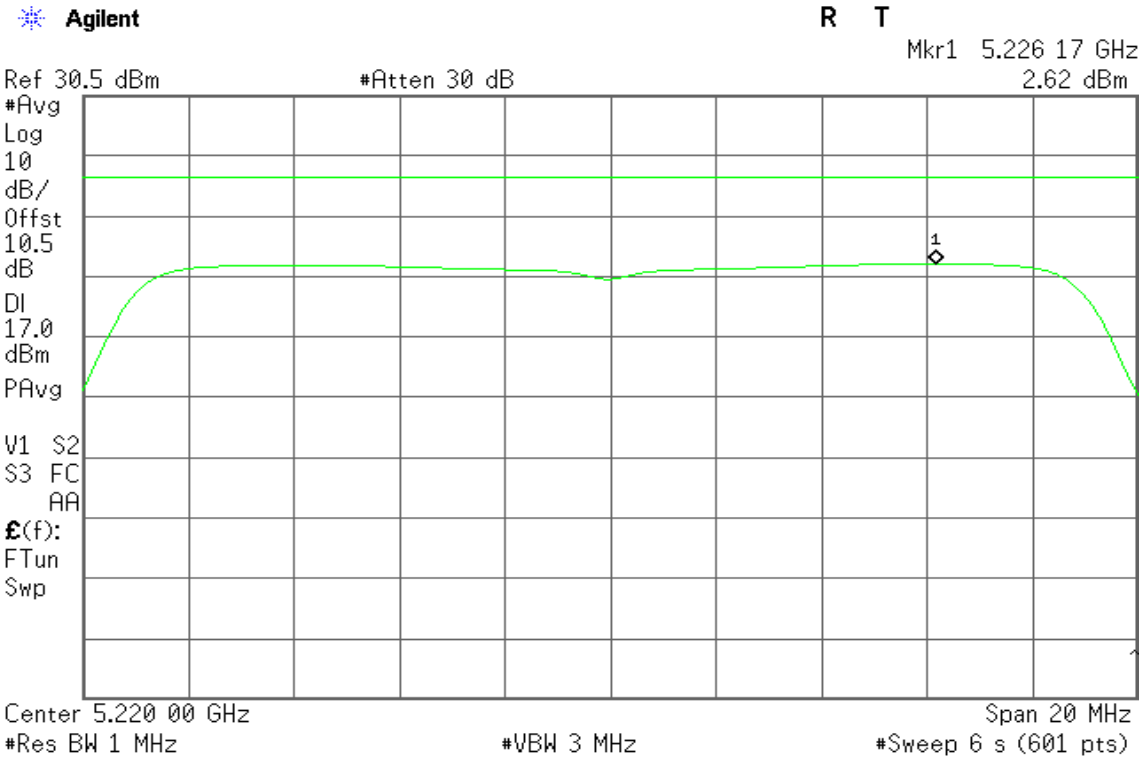

Agilent
R T
Mkr1 5.246 30 GHz
0.41 dBm
Ref 30.5 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
17.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
1
Center 5.240 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

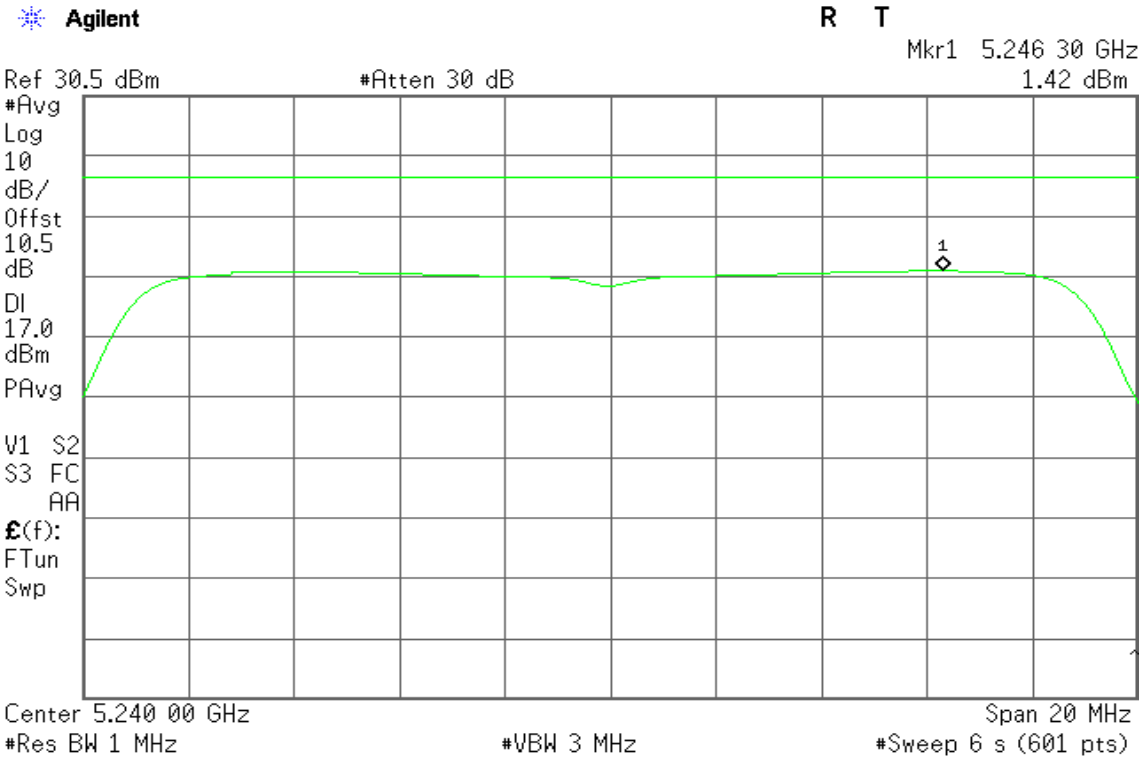
CH Low



CH Mid

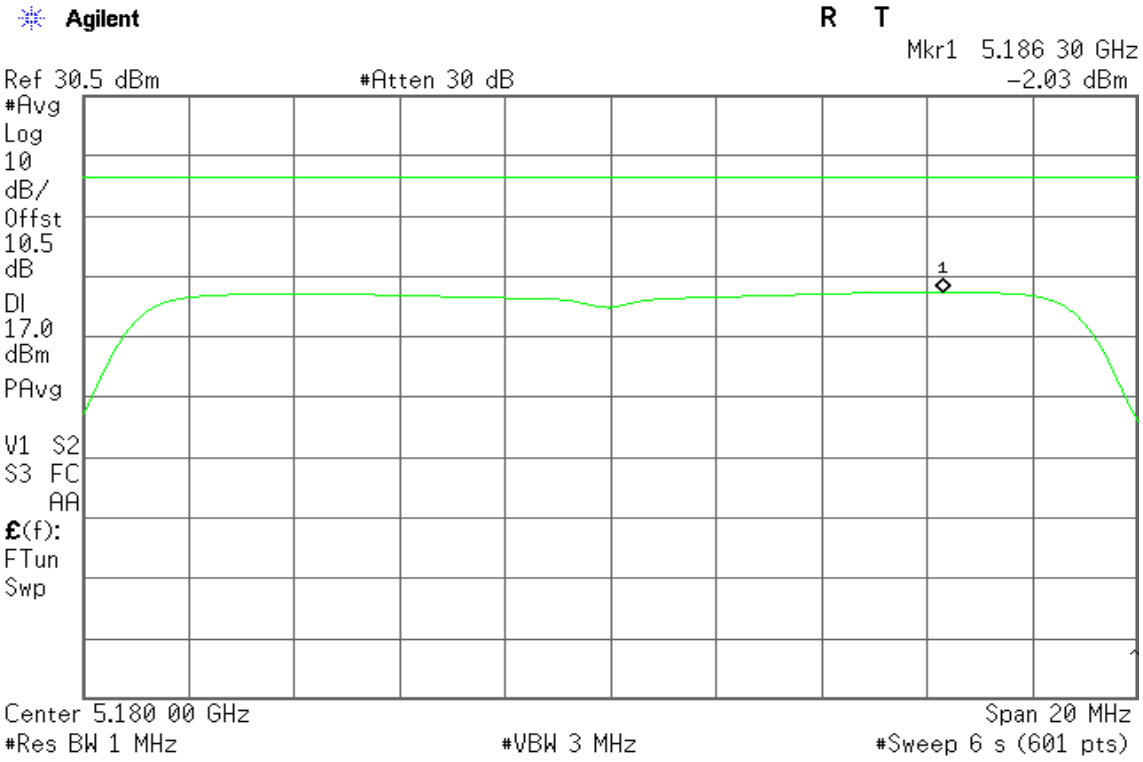


CH High

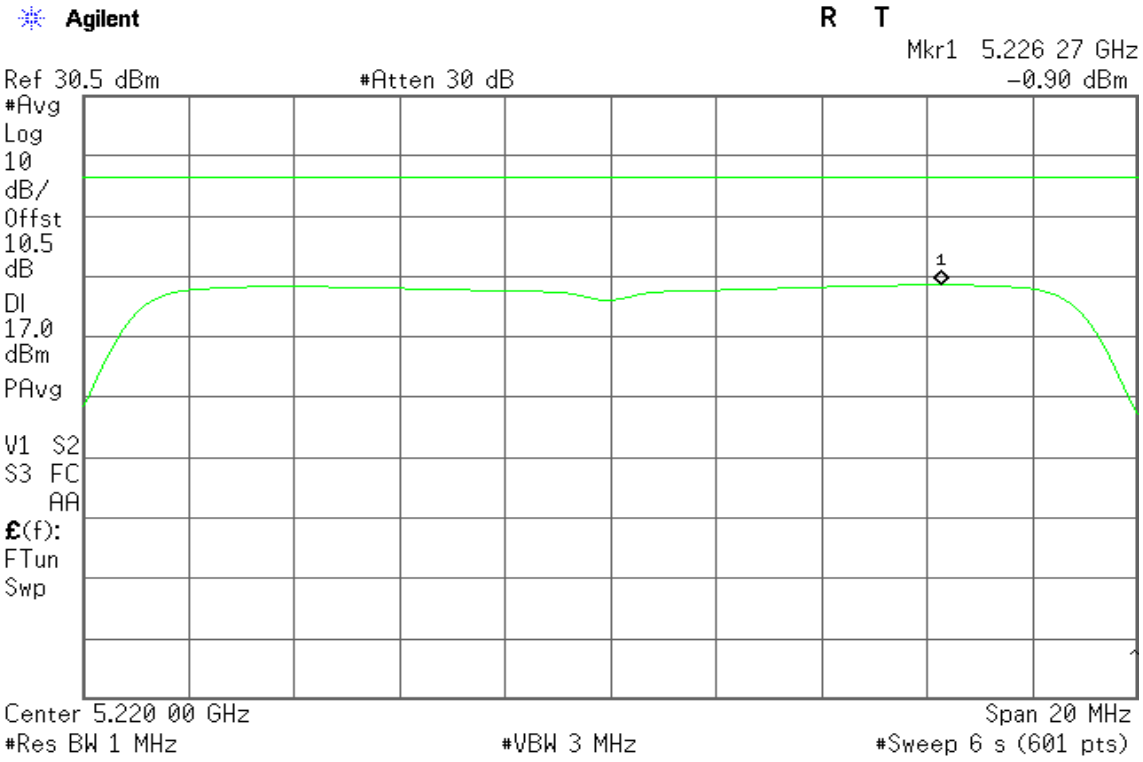

Agilent
R T
Mkr1 5.246 30 GHz
1.42 dBm
Ref 30.5 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
17.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
1
Center 5.240 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

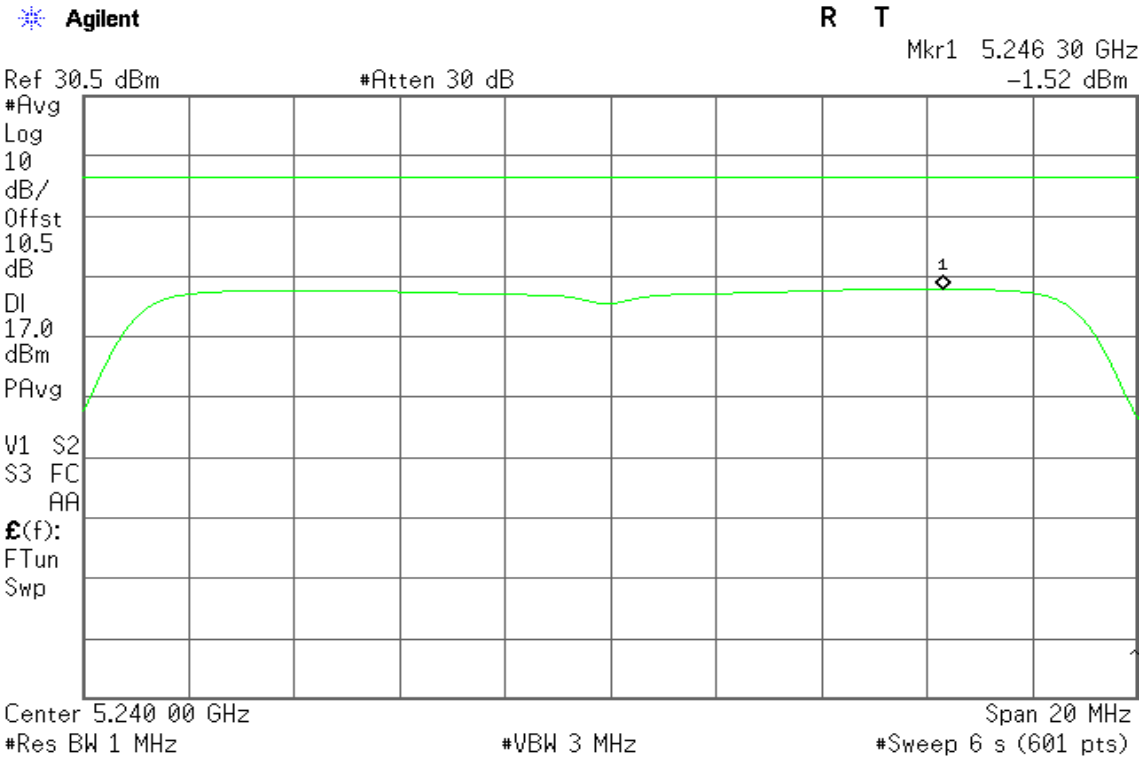
CH Low



CH Mid

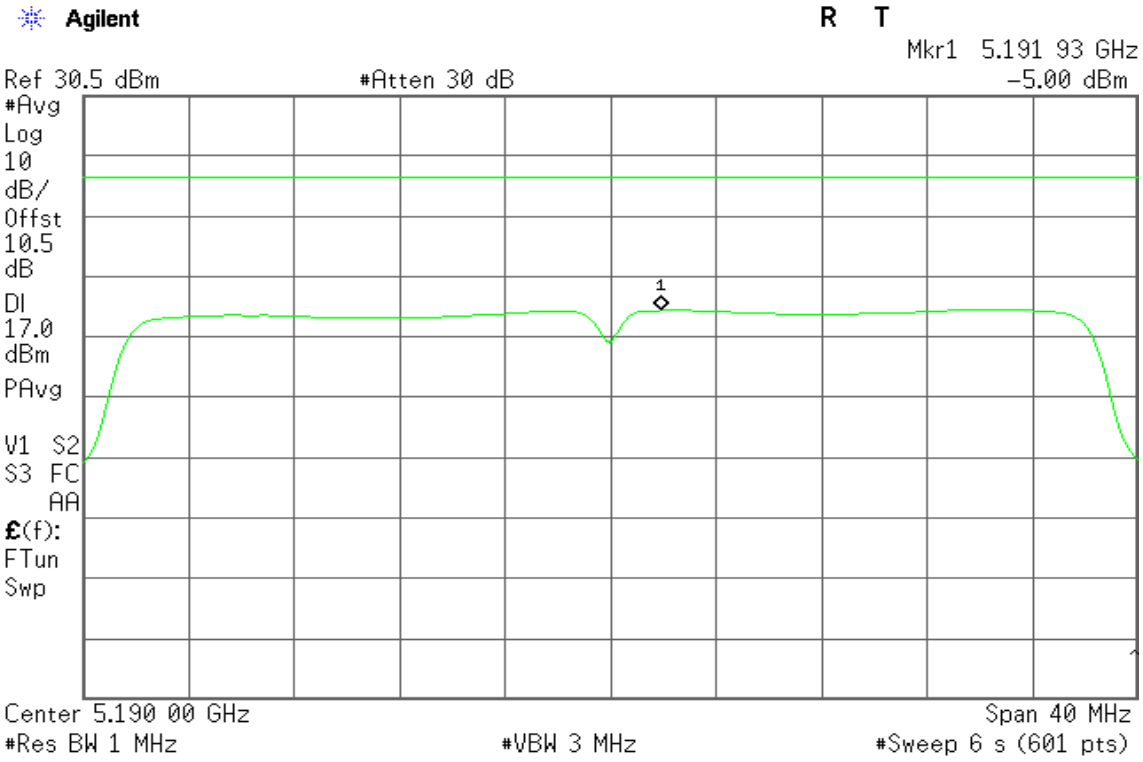


CH High

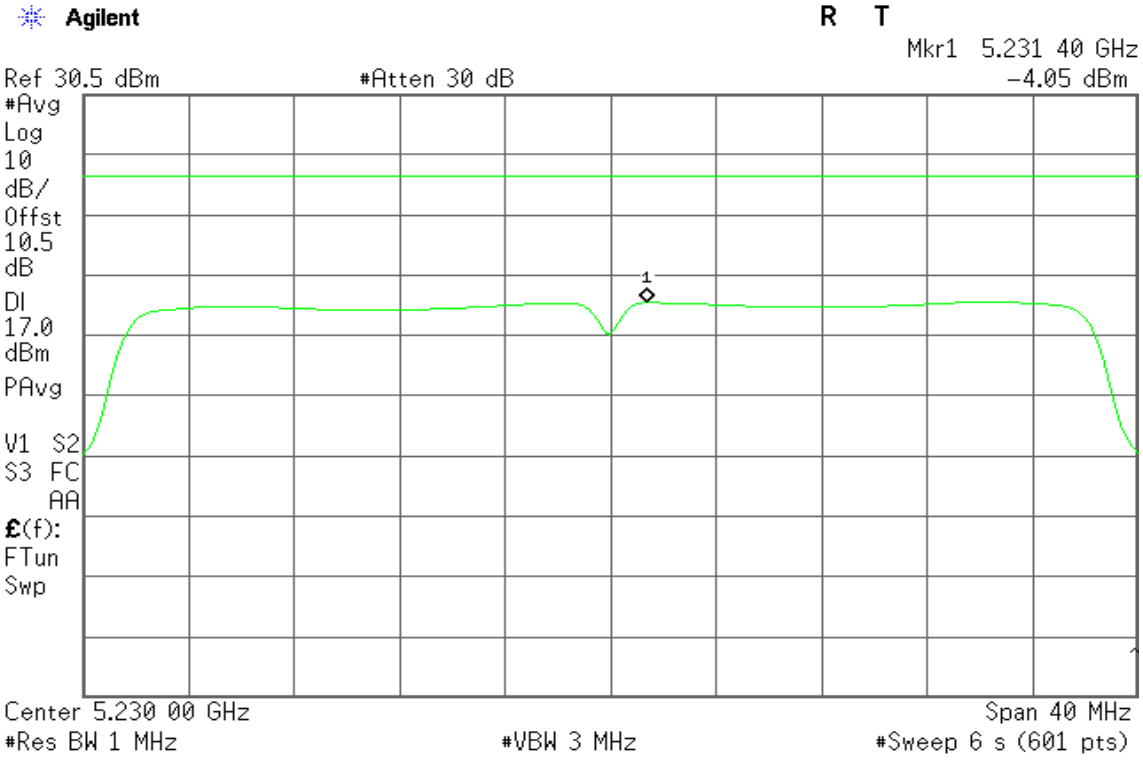

Agilent
R T
Mkr1 5.246 30 GHz
-1.52 dBm
Ref 30.5 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
17.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
1
Center 5.240 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

CH Low

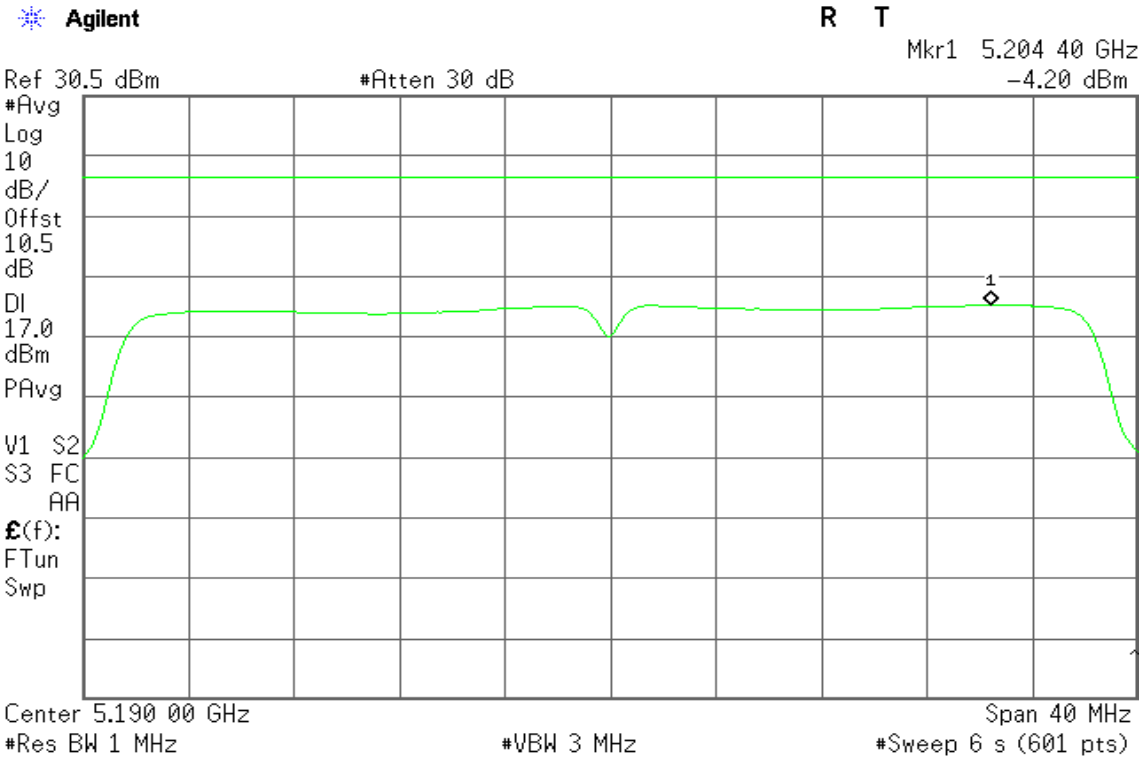


CH High

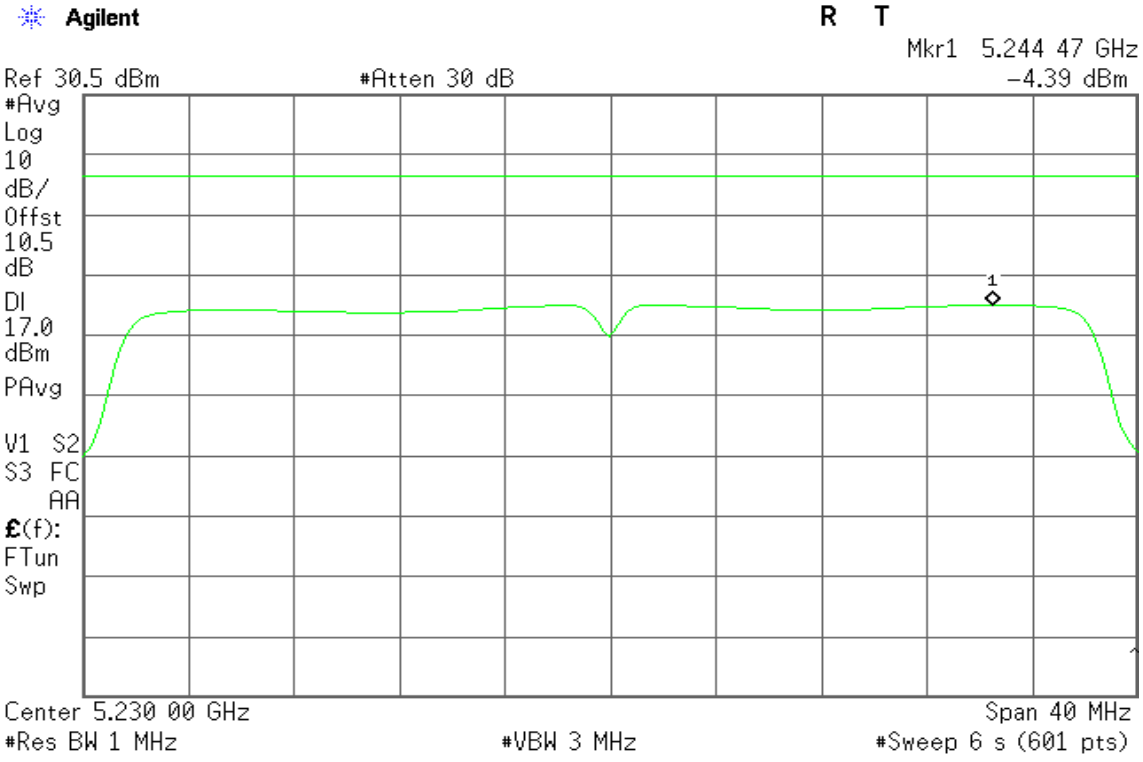


IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

CH Low

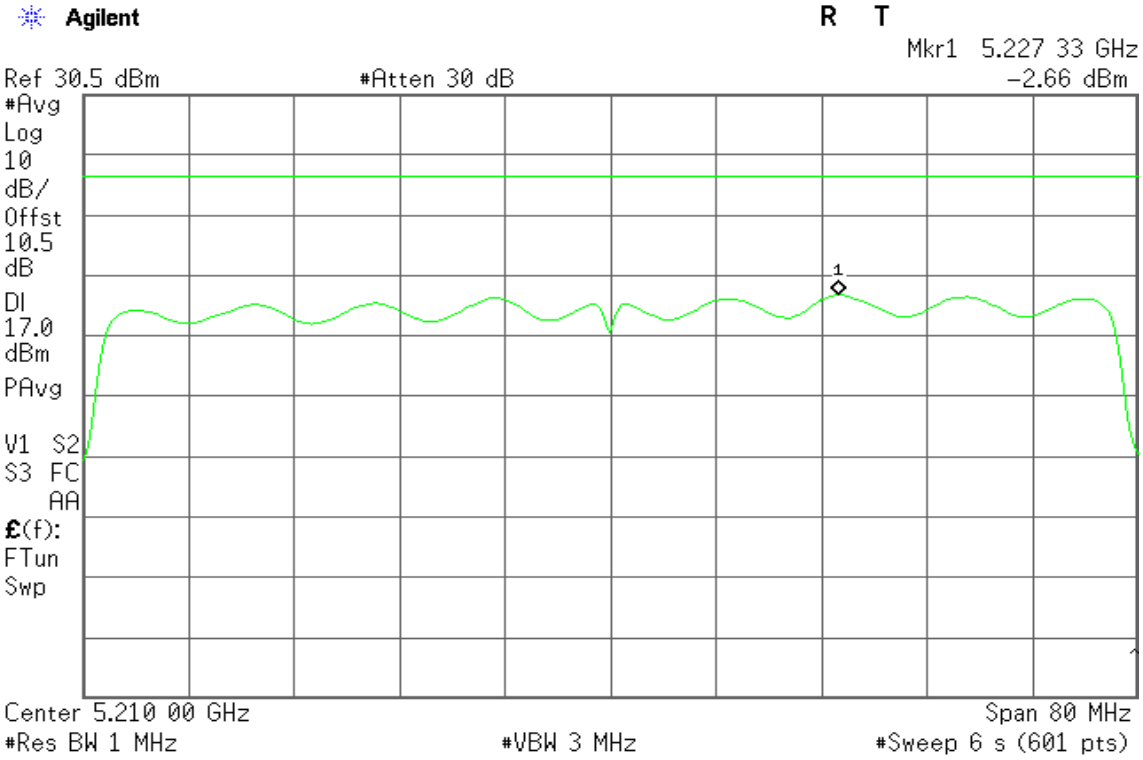


CH High



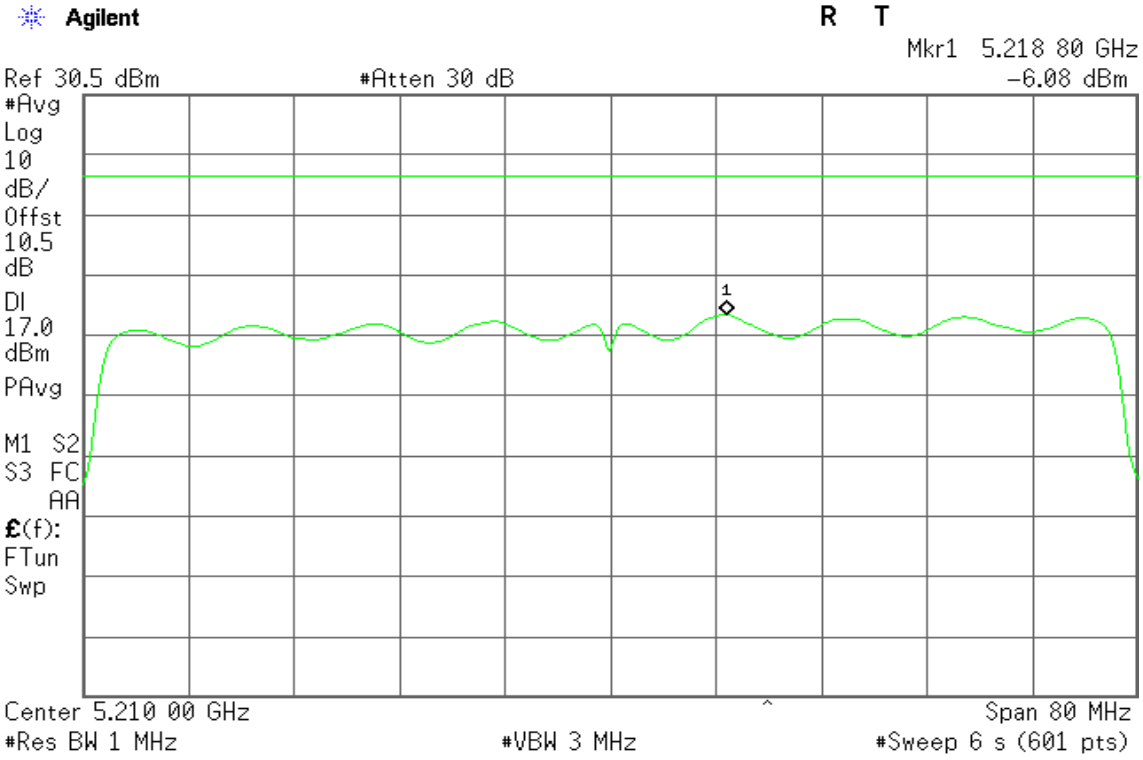
IEEE 802.11n HT 80 MHz mode / 5210MHz / Chain 0

CH Mid



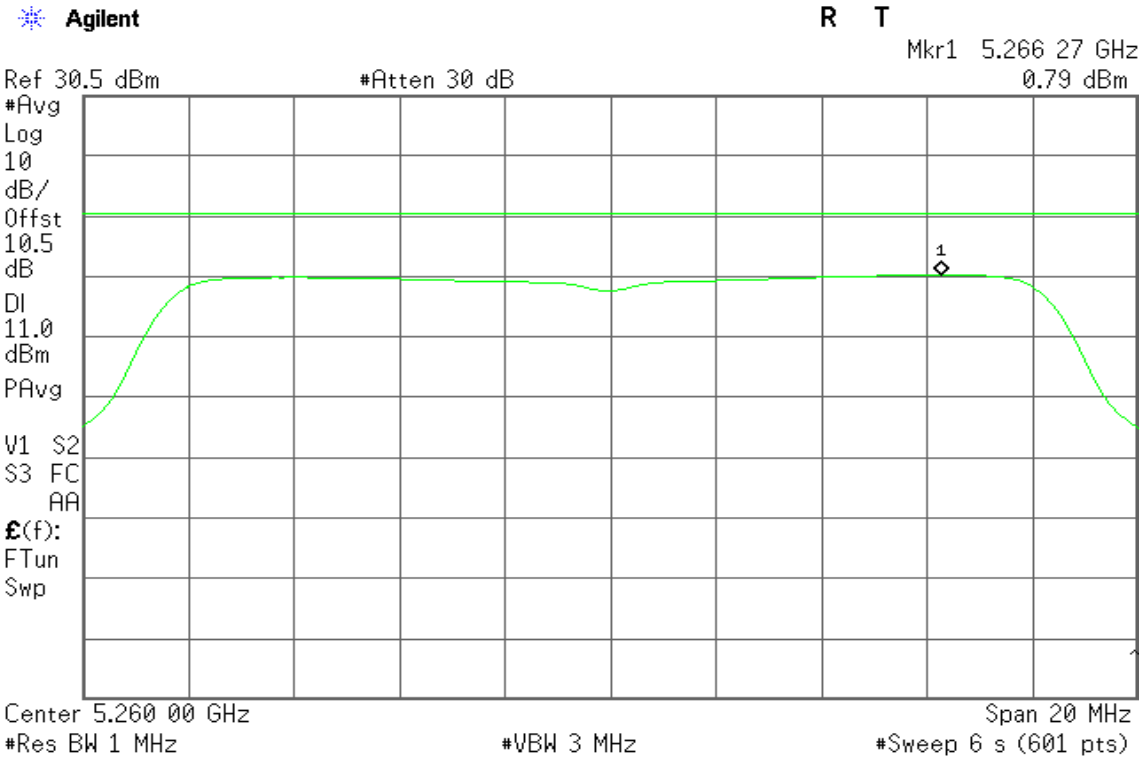
IEEE 802.11n HT 80 MHz mode / 5210MHz / Chain 1

CH Mid

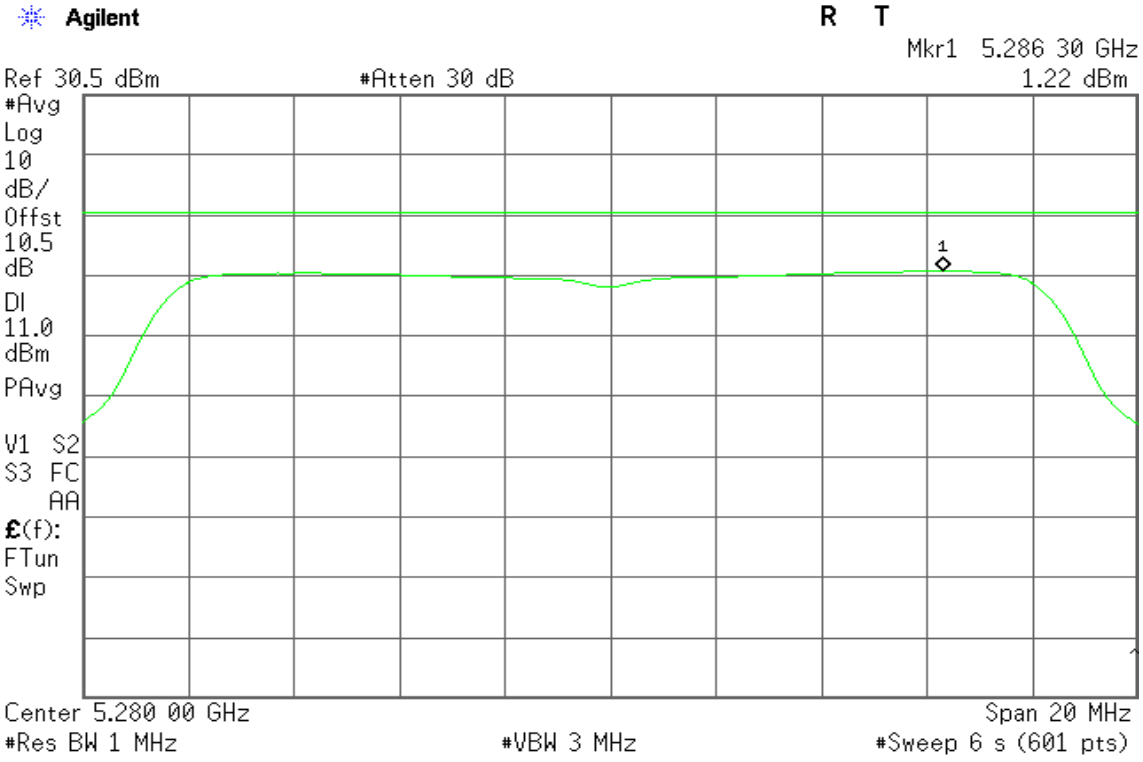


IEEE 802.11a mode / 5260 ~ 5320MHz

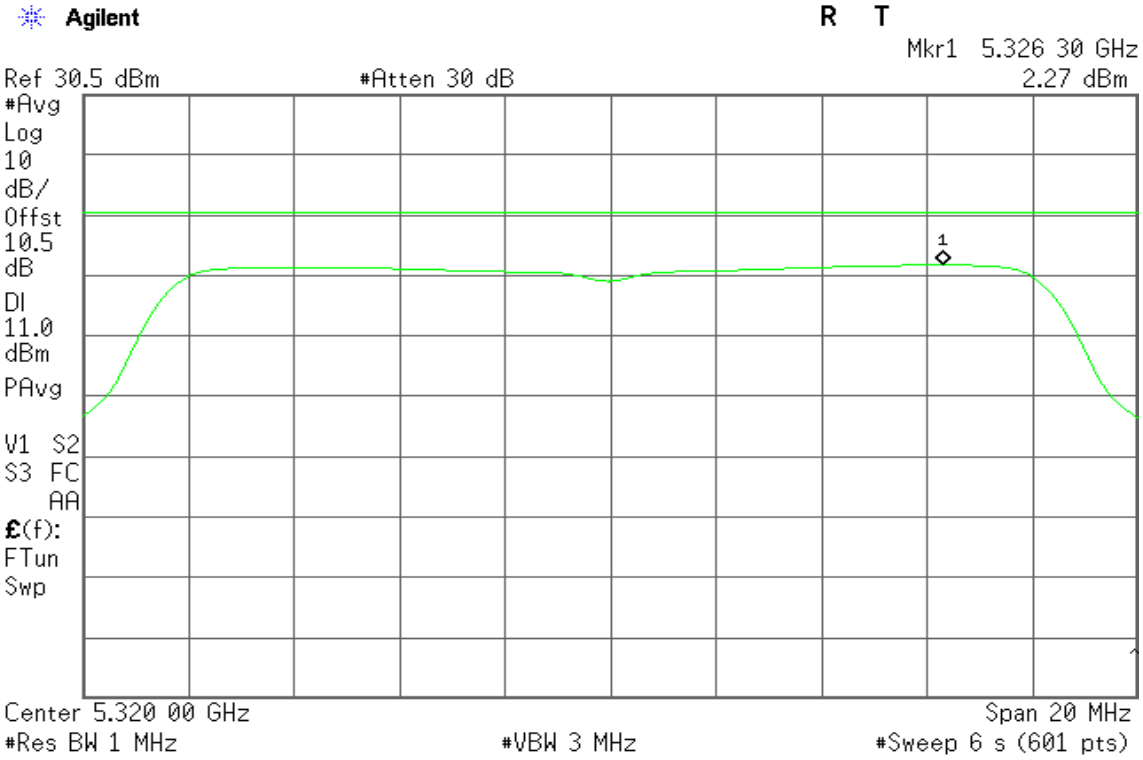
CH Low



CH Mid

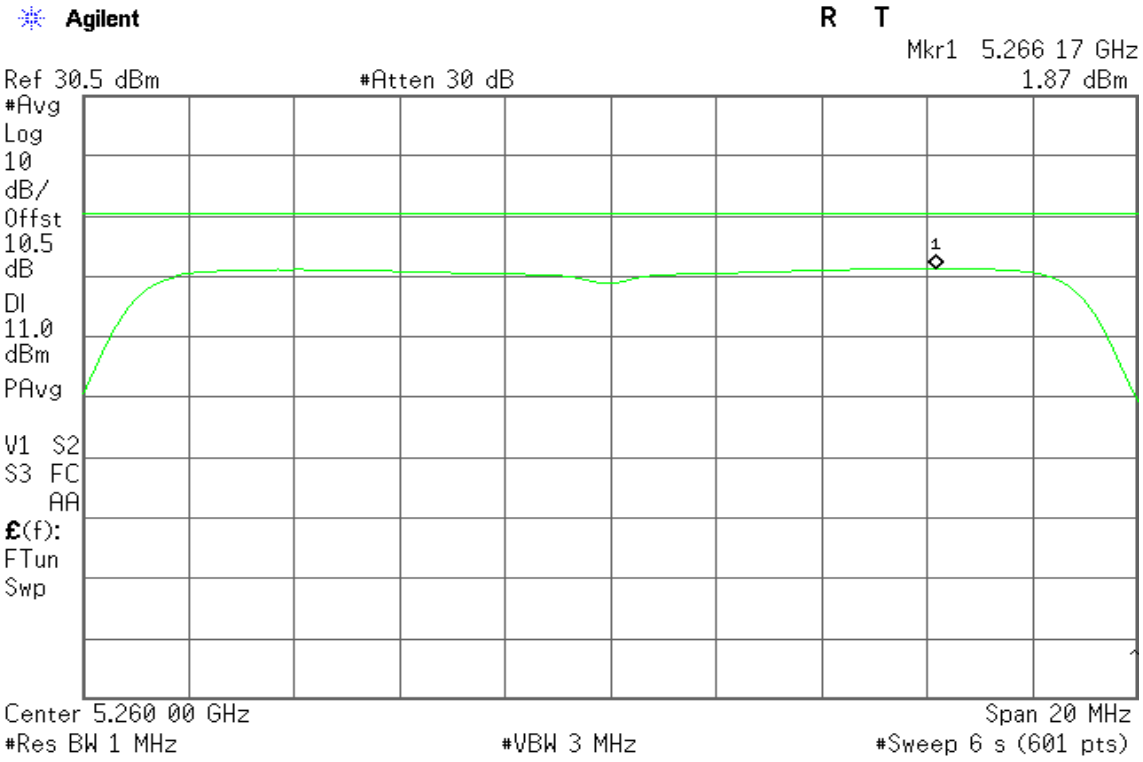


CH High

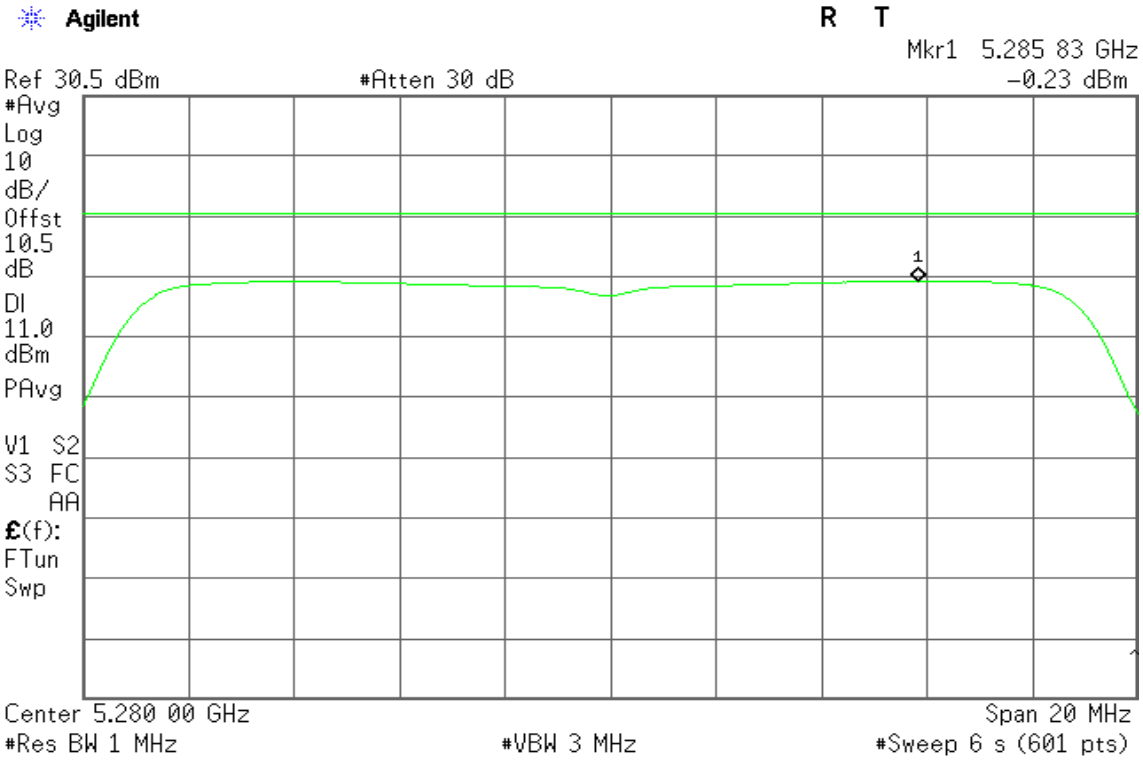

Agilent
R T
Mkr1 5.326 30 GHz
2.27 dBm
Ref 30.5 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
11.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
1
Center 5.320 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

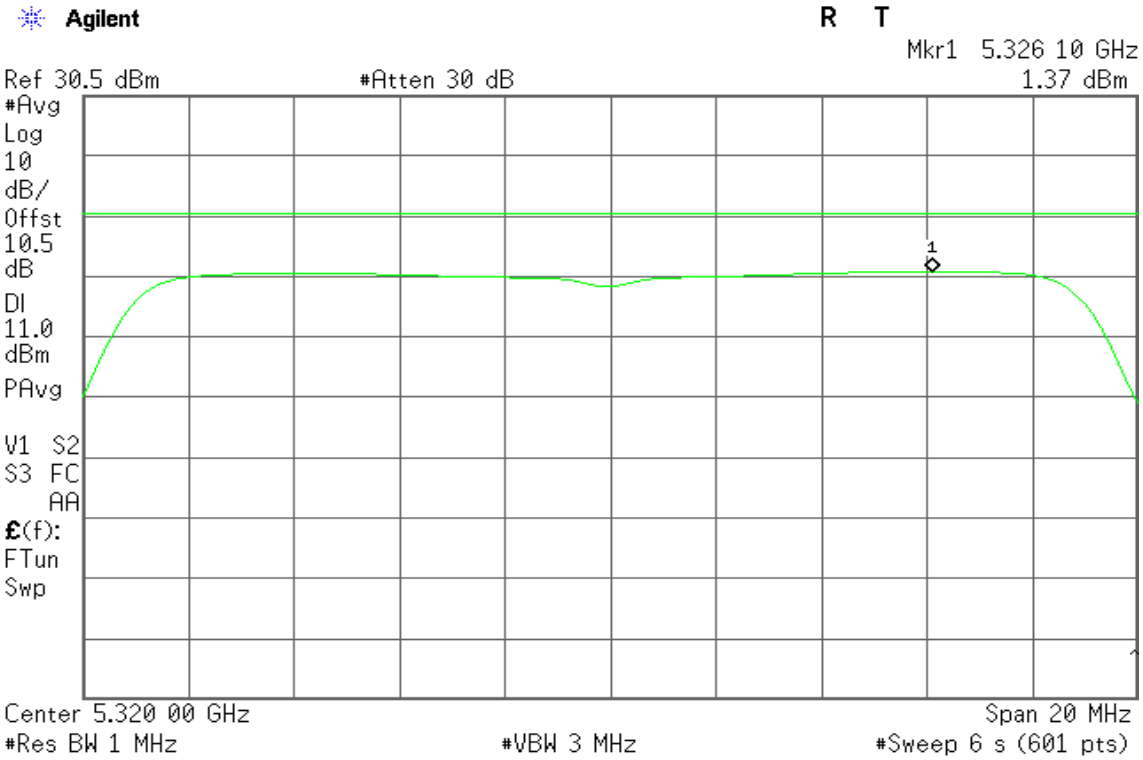
CH Low



CH Mid

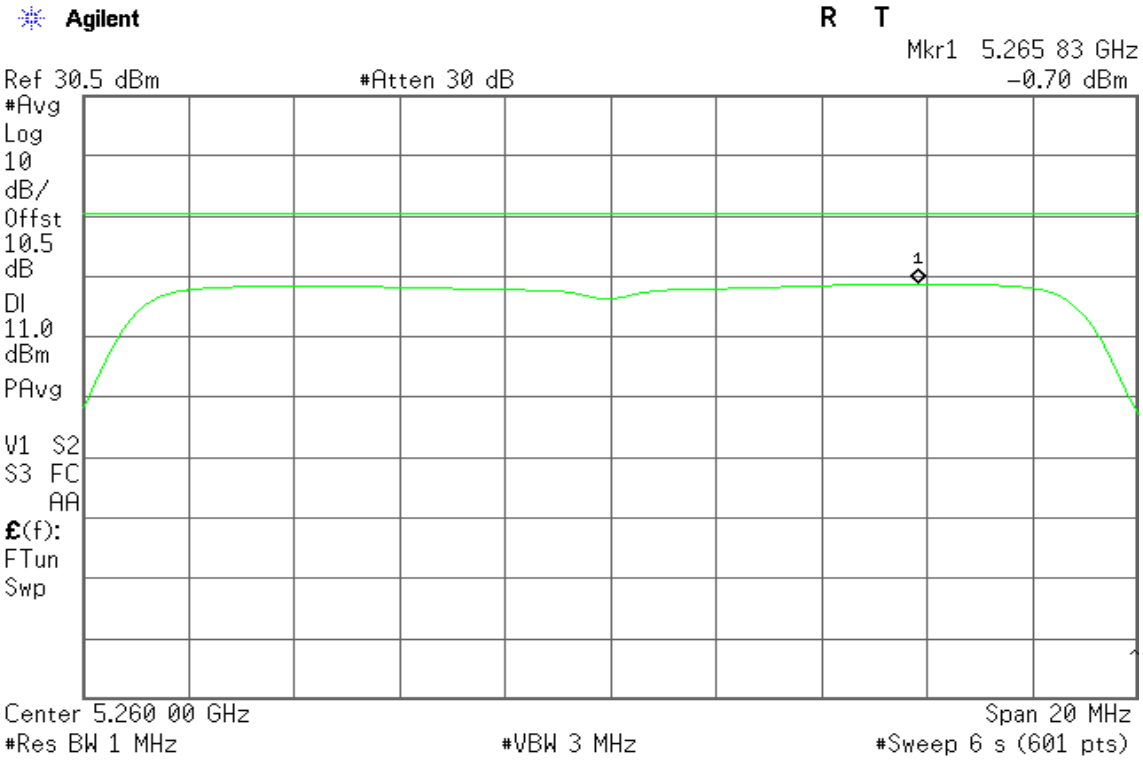


CH High

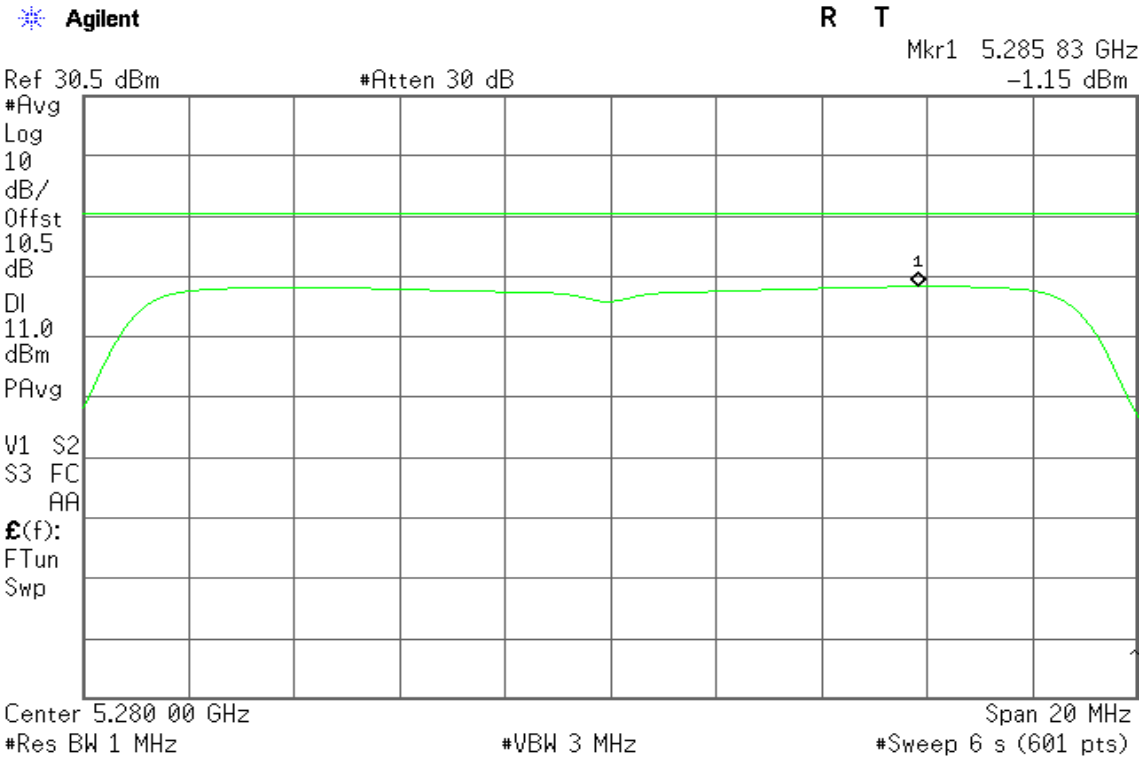

Agilent
R T
Mkr1 5.326 10 GHz
1.37 dBm
Ref 30.5 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
11.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
Center 5.320 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

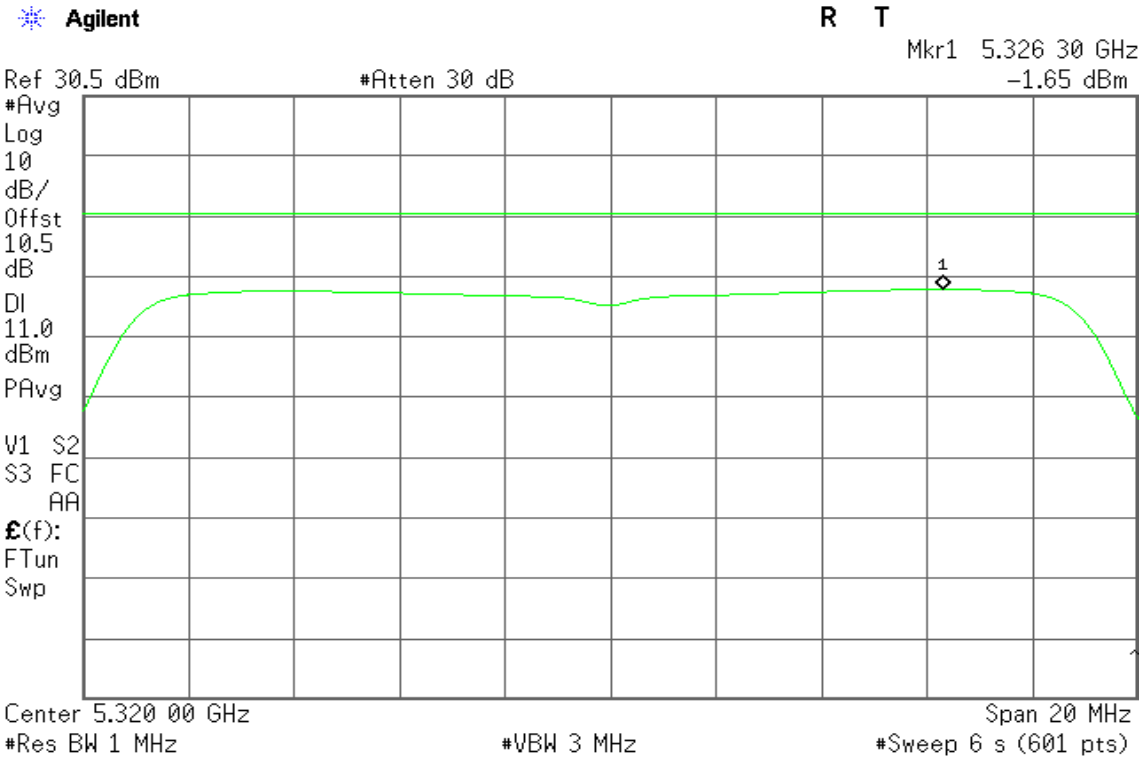
CH Low



CH Mid

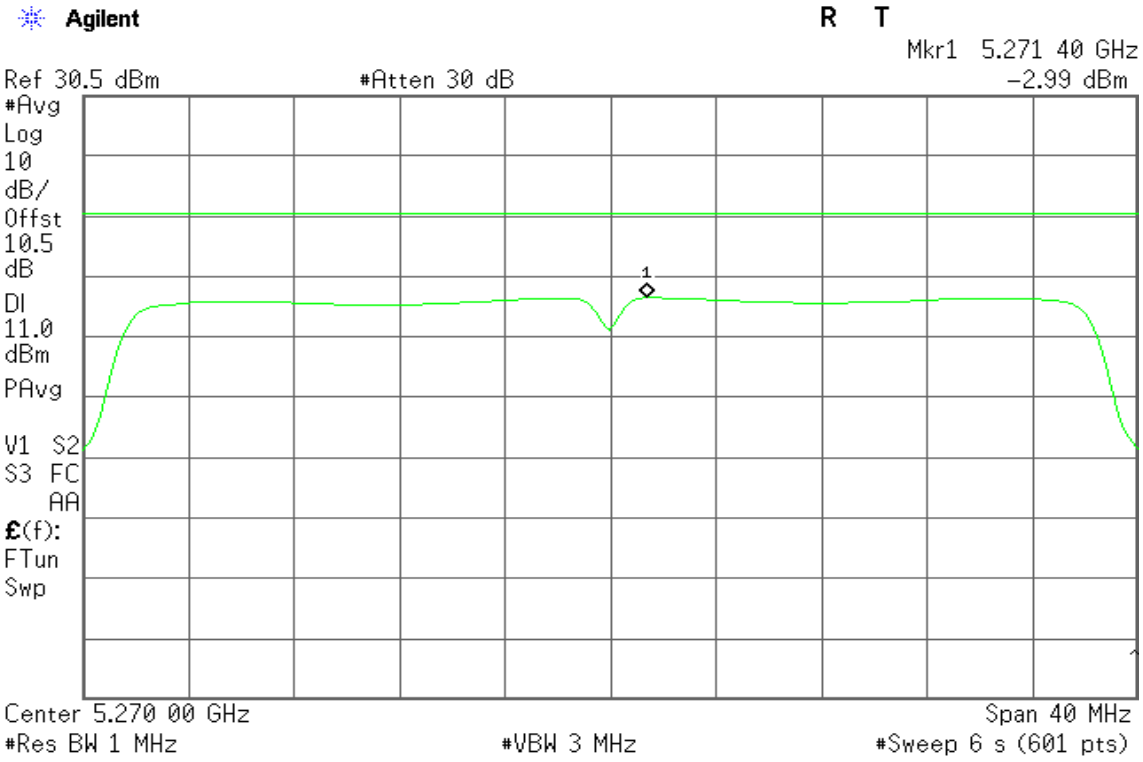


CH High

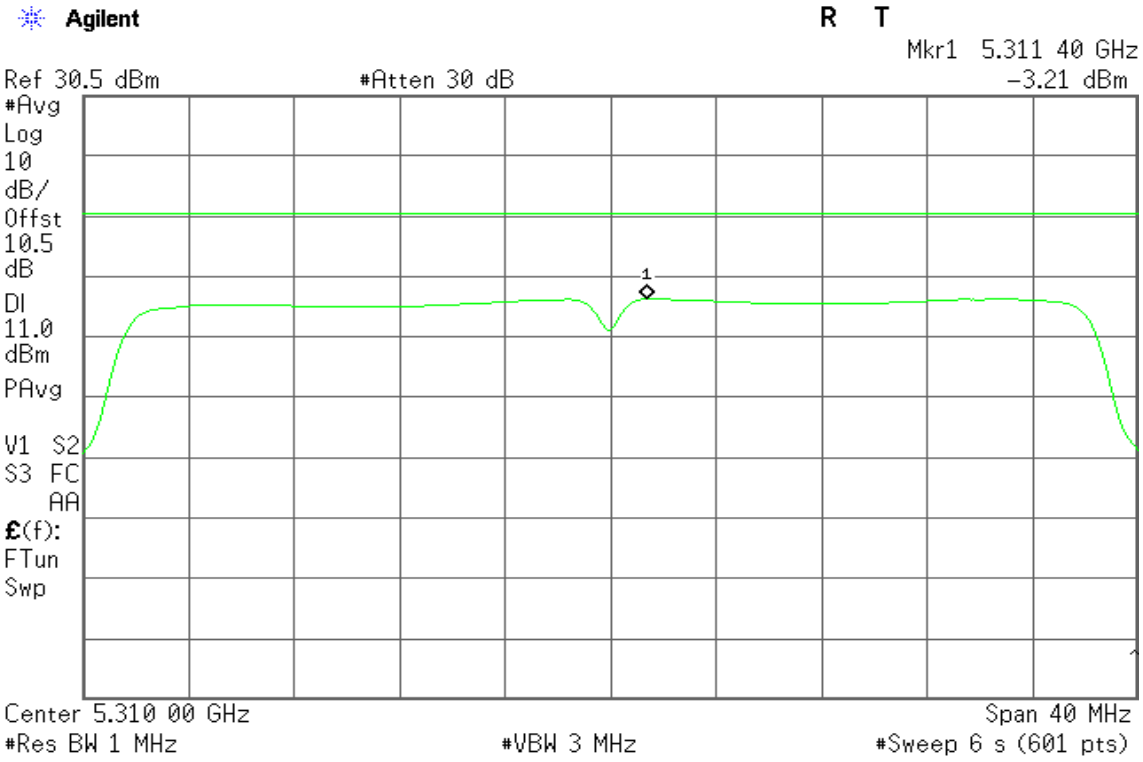

Agilent
R T
Mkr1 5.326 30 GHz
-1.65 dBm
Ref 30.5 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
11.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
1
Center 5.320 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

CH Low

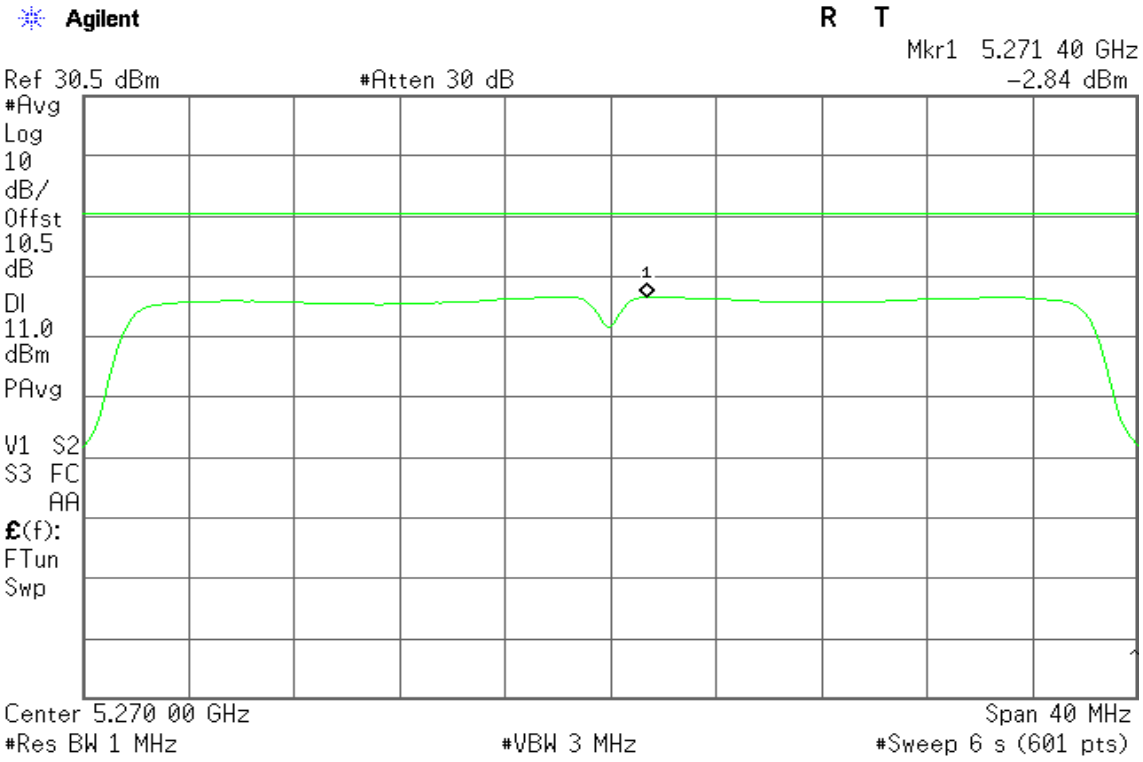


CH High

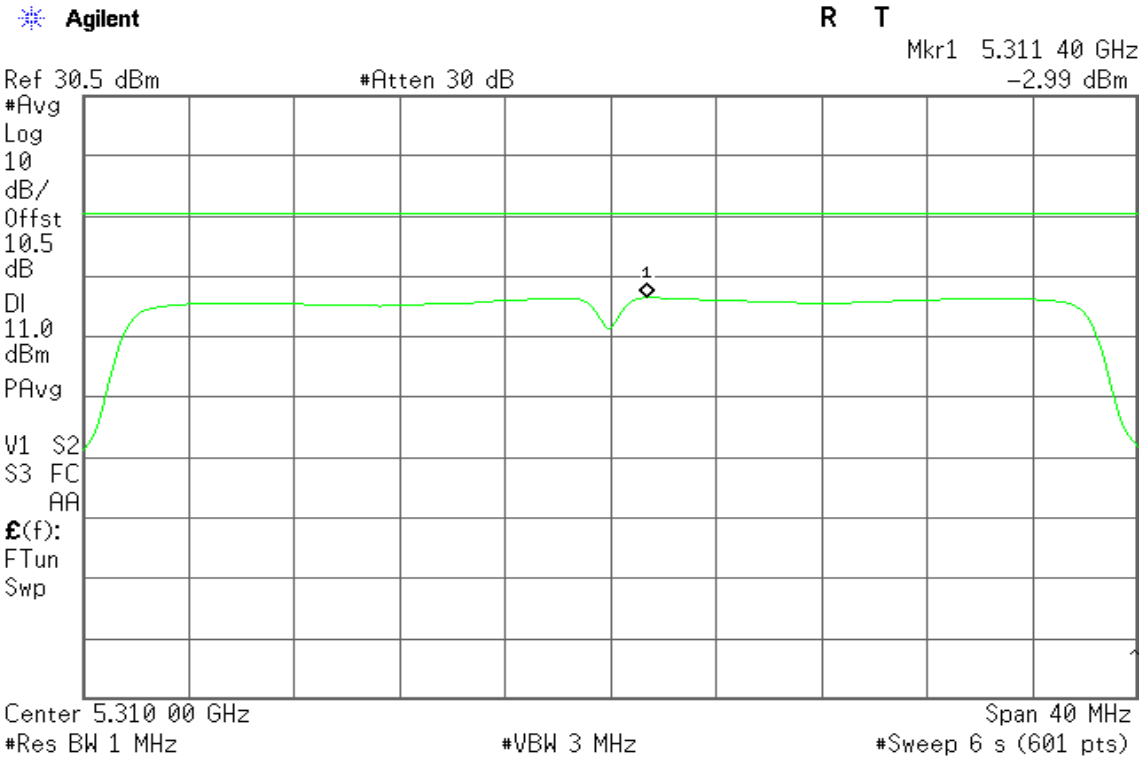


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

CH Low

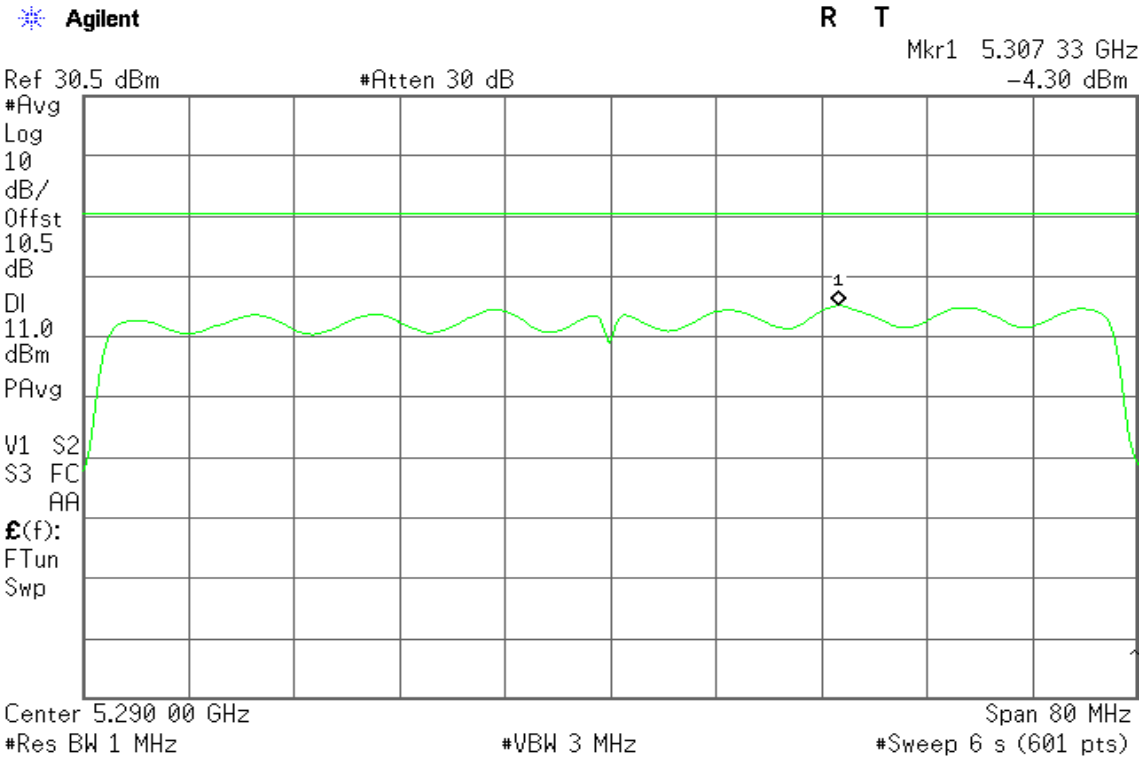


CH High



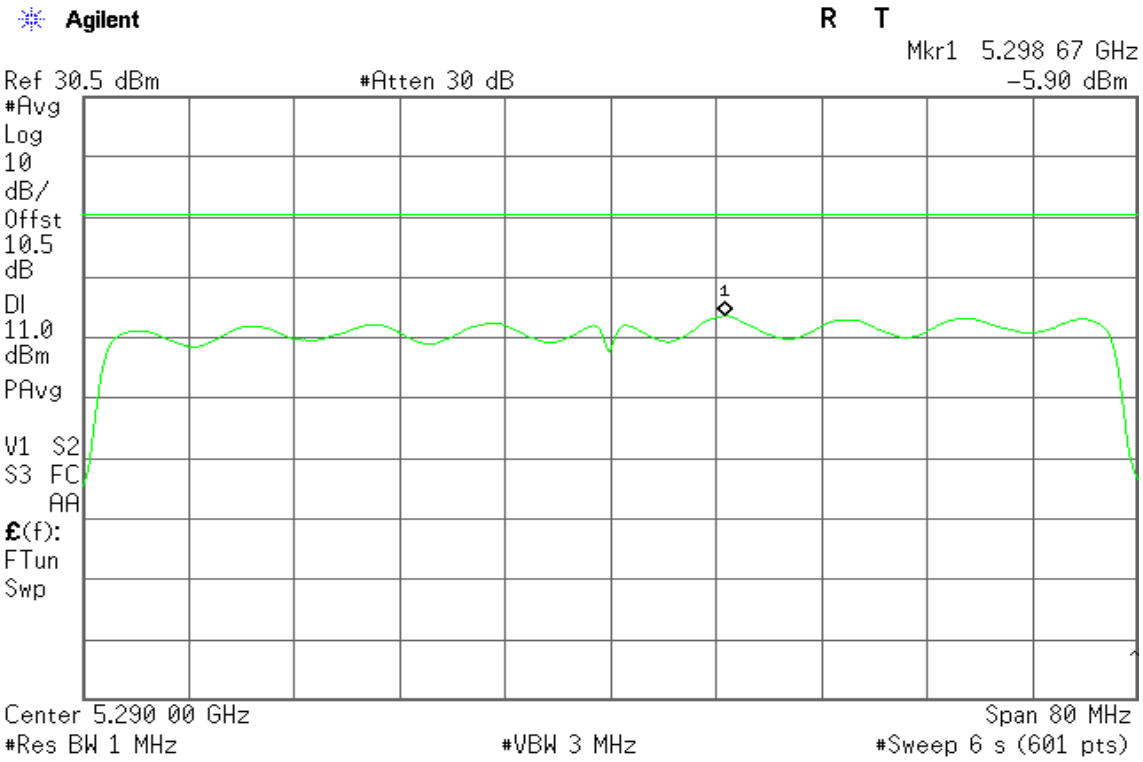
IEEE 802.11n HT 80 MHz mode / 5290MHz / Chain 0

CH Mid



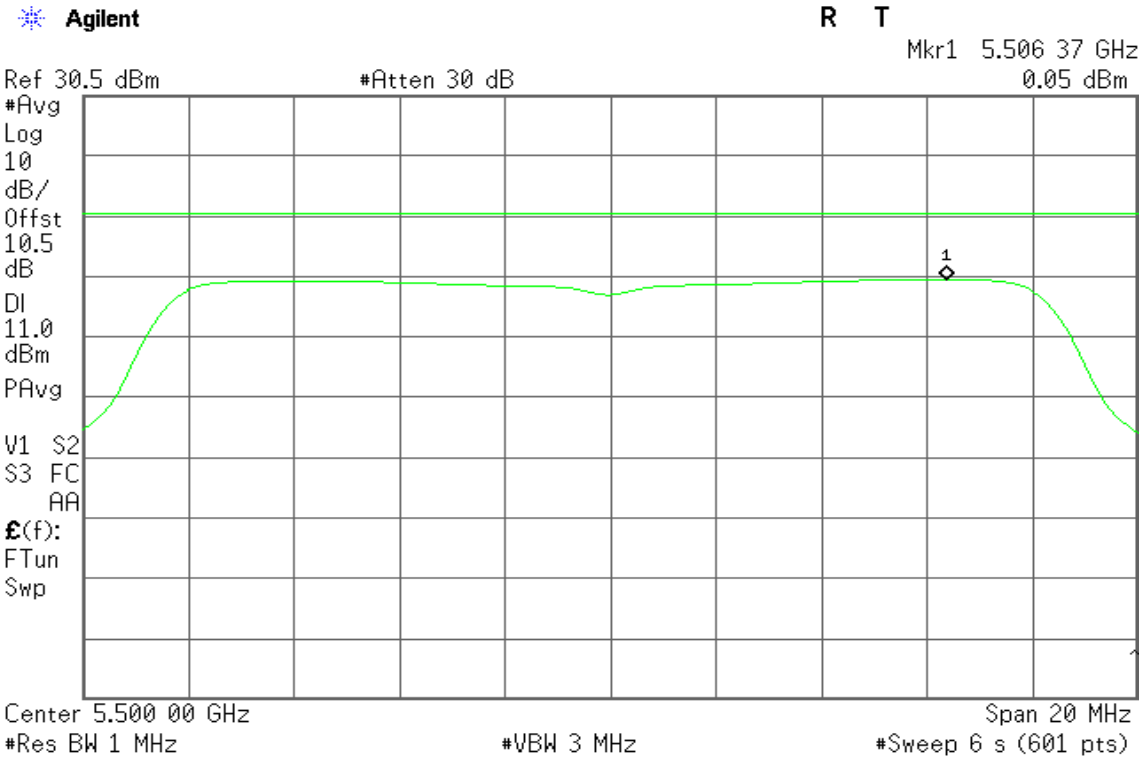
IEEE 802.11n HT 80 MHz mode / 5290MHz / Chain 1

CH Mid

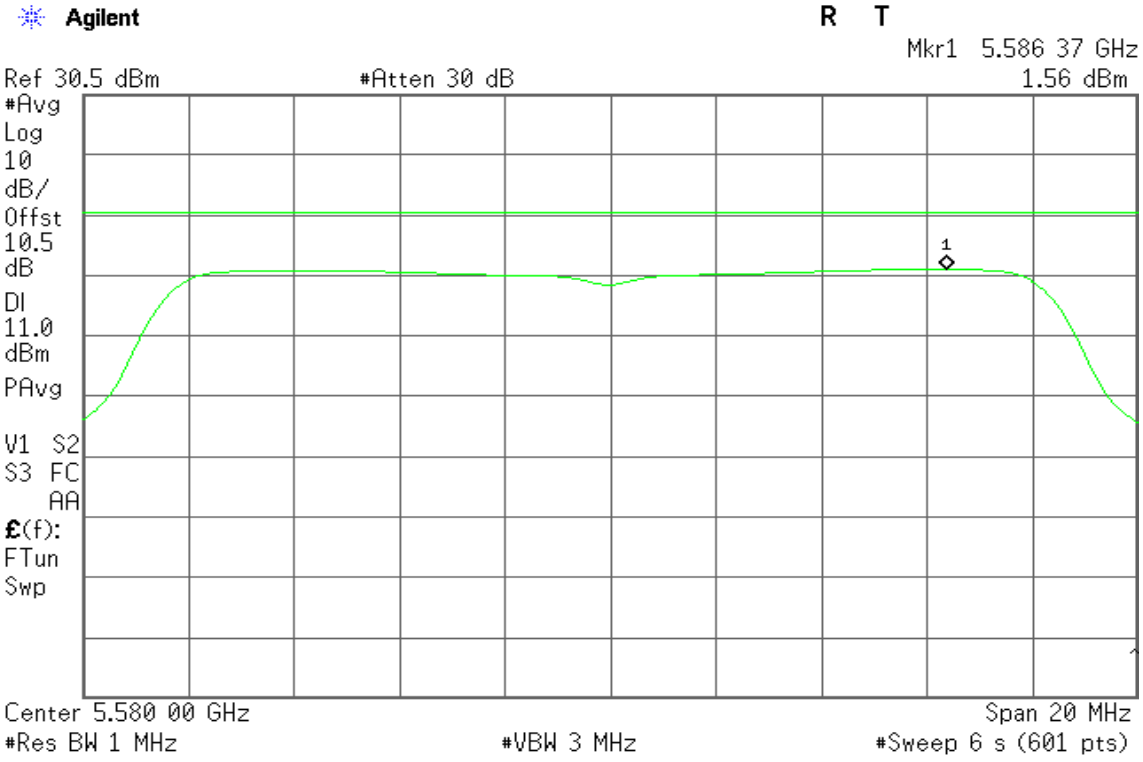


Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

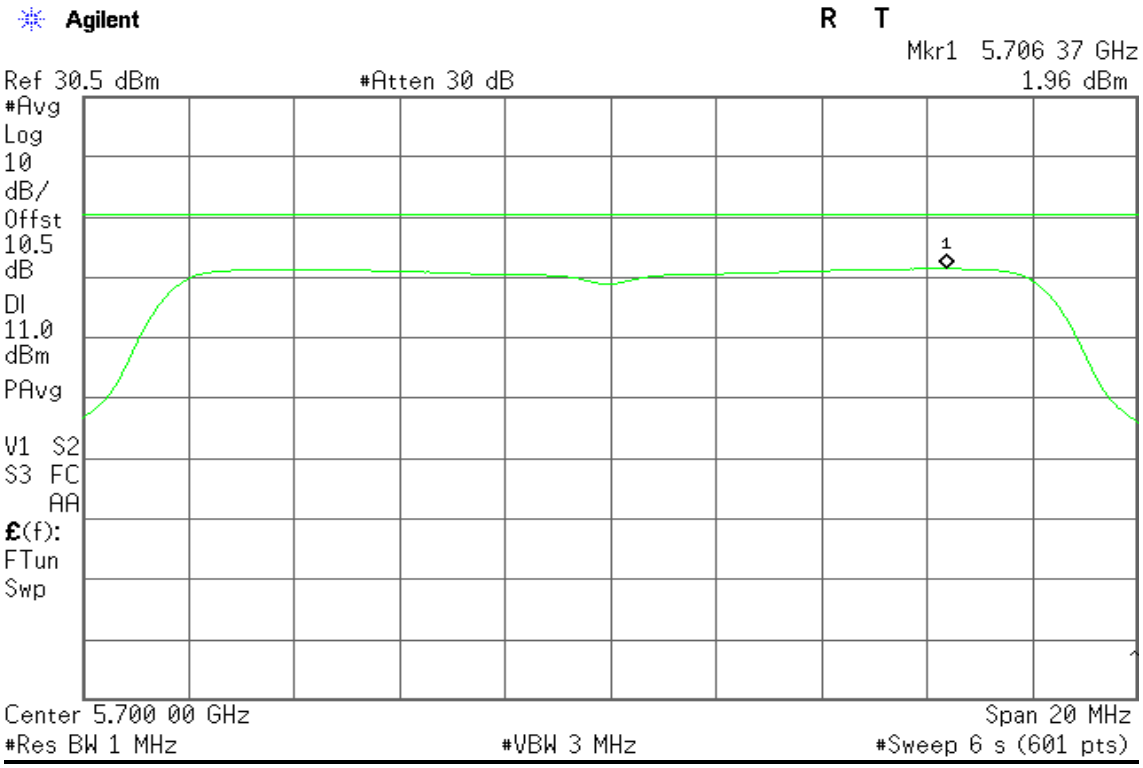
CH Low



CH Mid

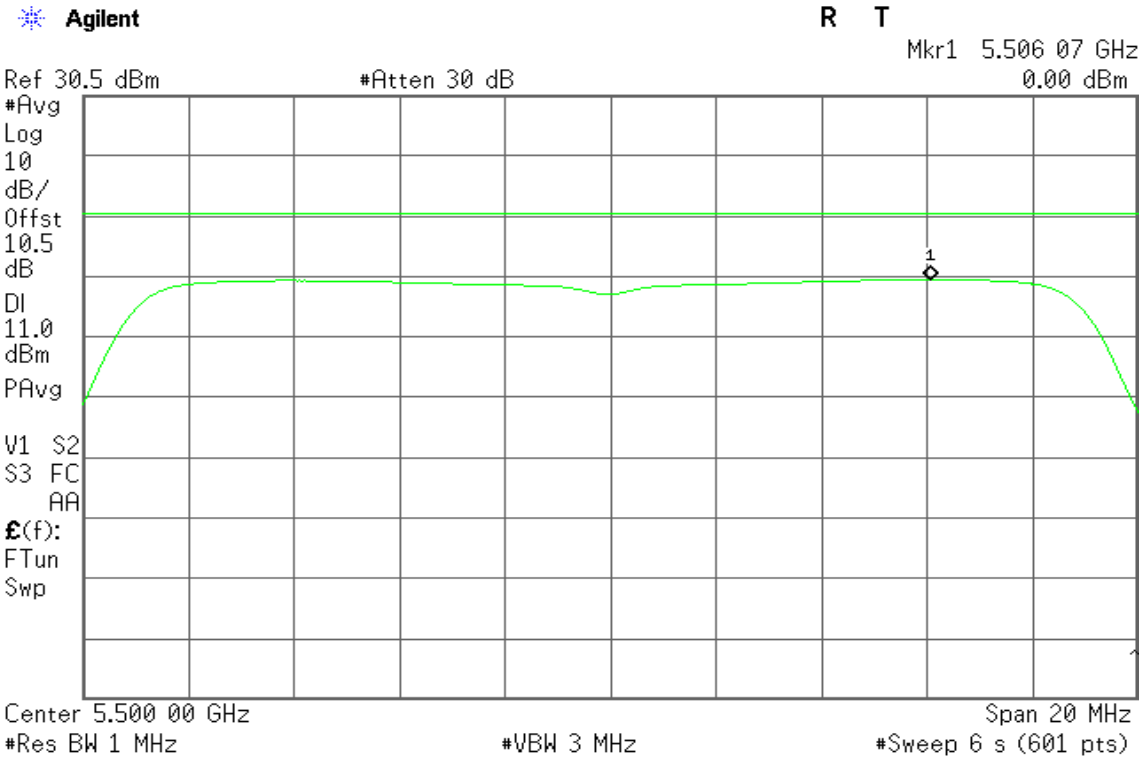


CH High

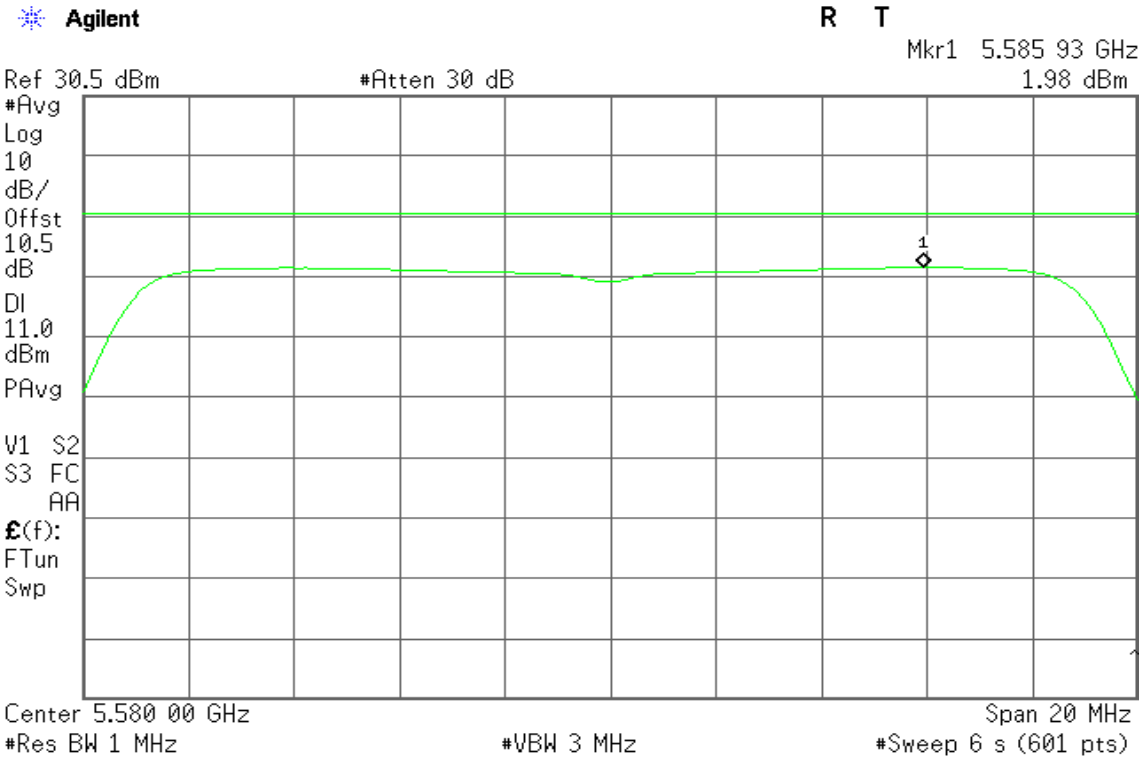

Agilent
R T
Mkr1 5.706 37 GHz
1.96 dBm
Ref 30.5 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
11.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
1
Center 5.700 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

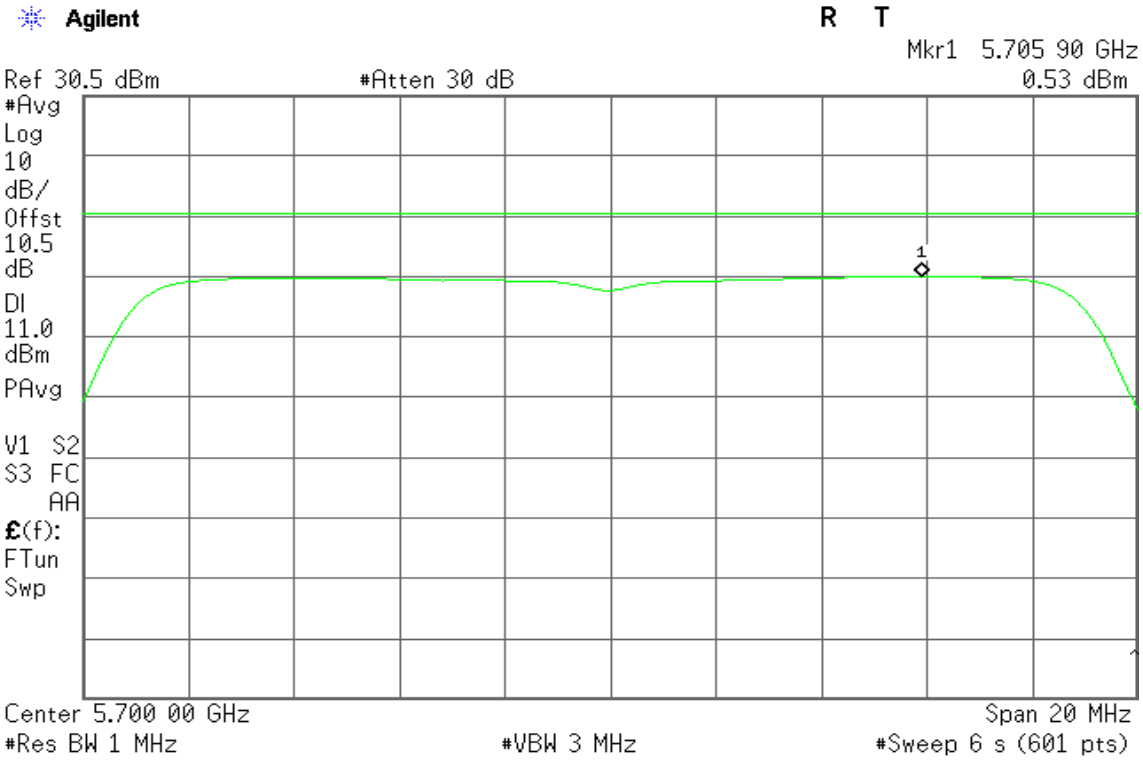
CH Low



CH Mid

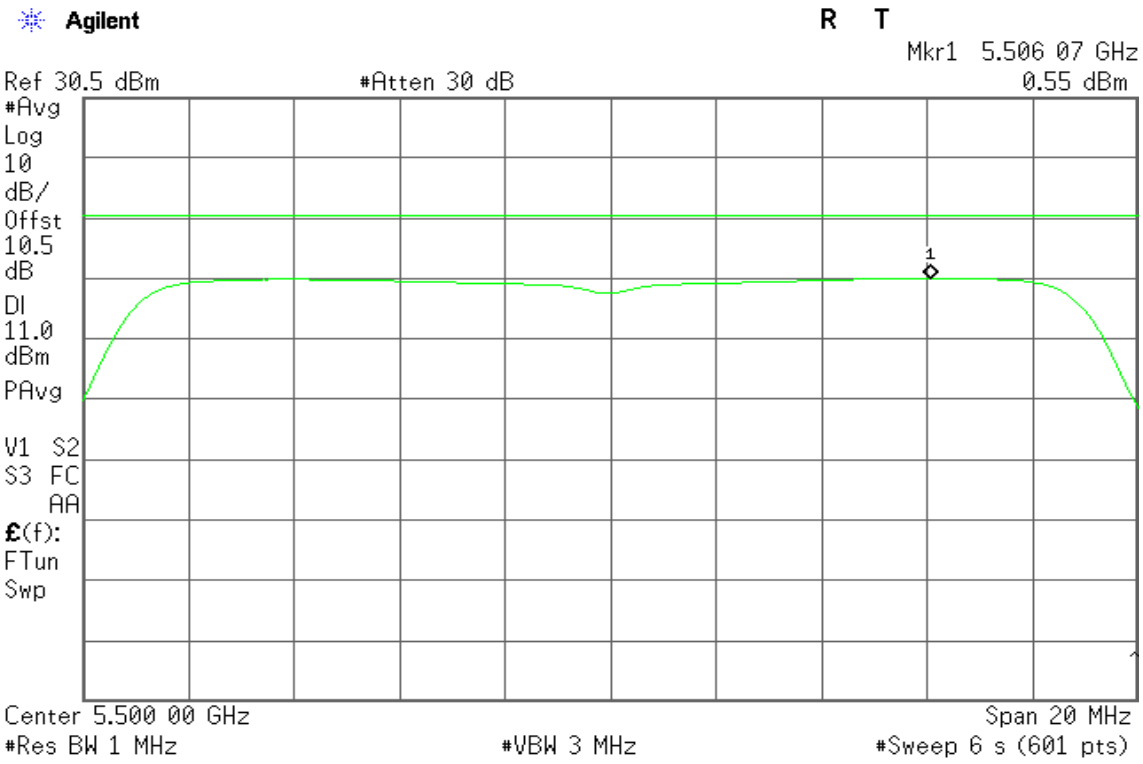


CH High

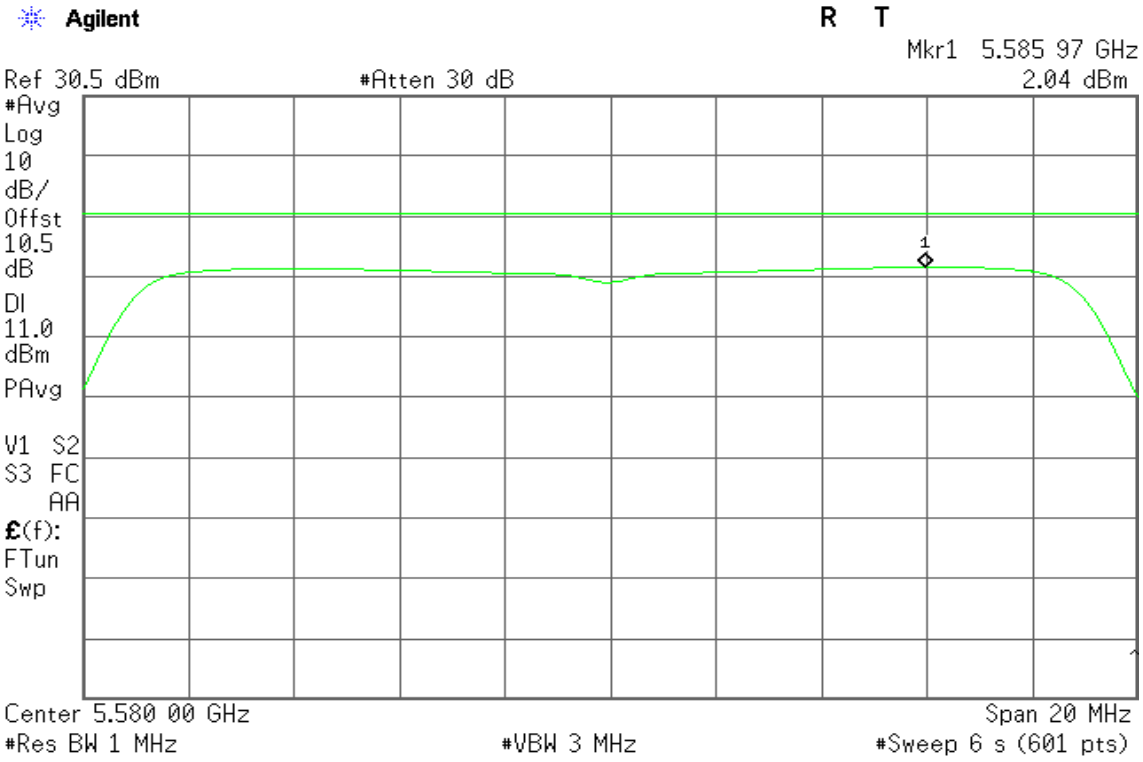

Agilent
R T
Mkr1 5.705 90 GHz
0.53 dBm
Ref 30.5 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
11.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
Center 5.700 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

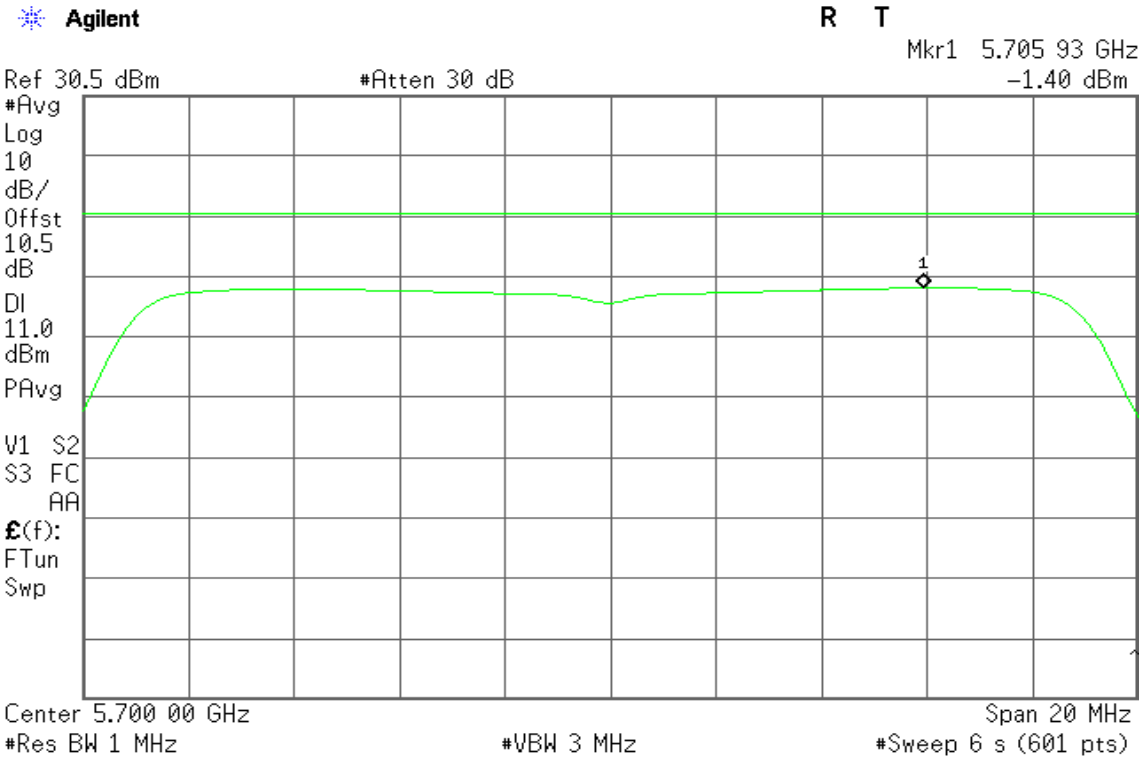
CH Low



CH Mid

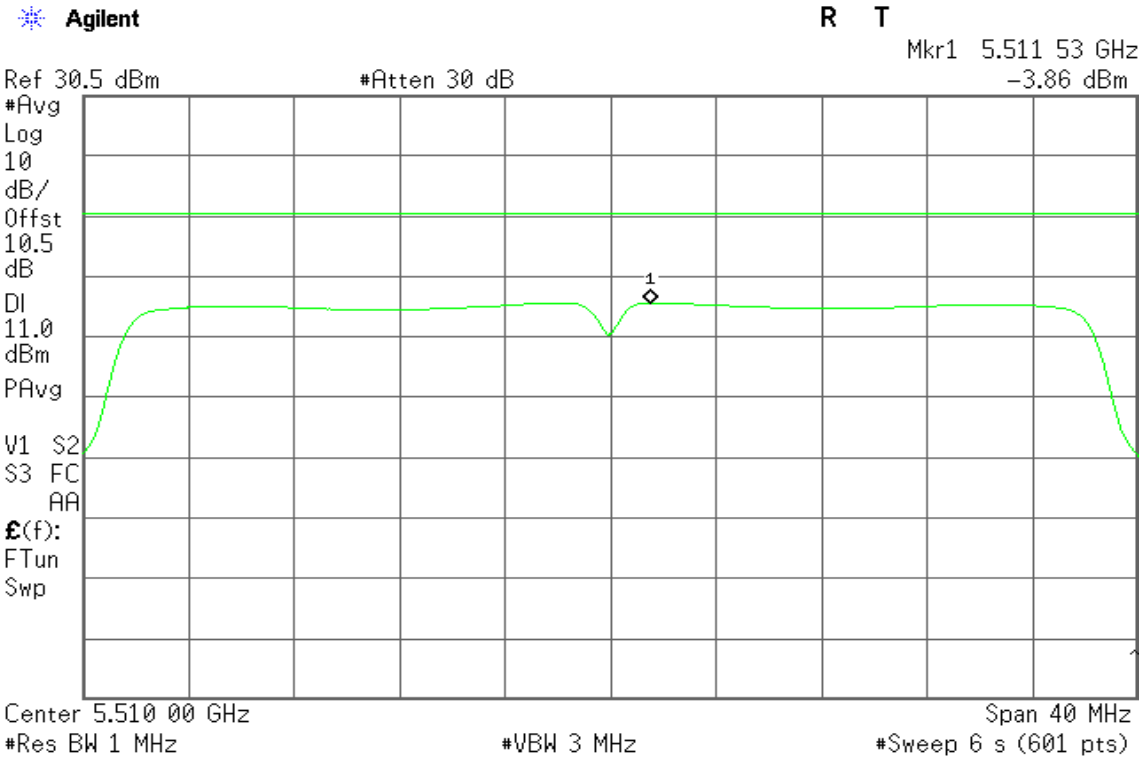


CH High

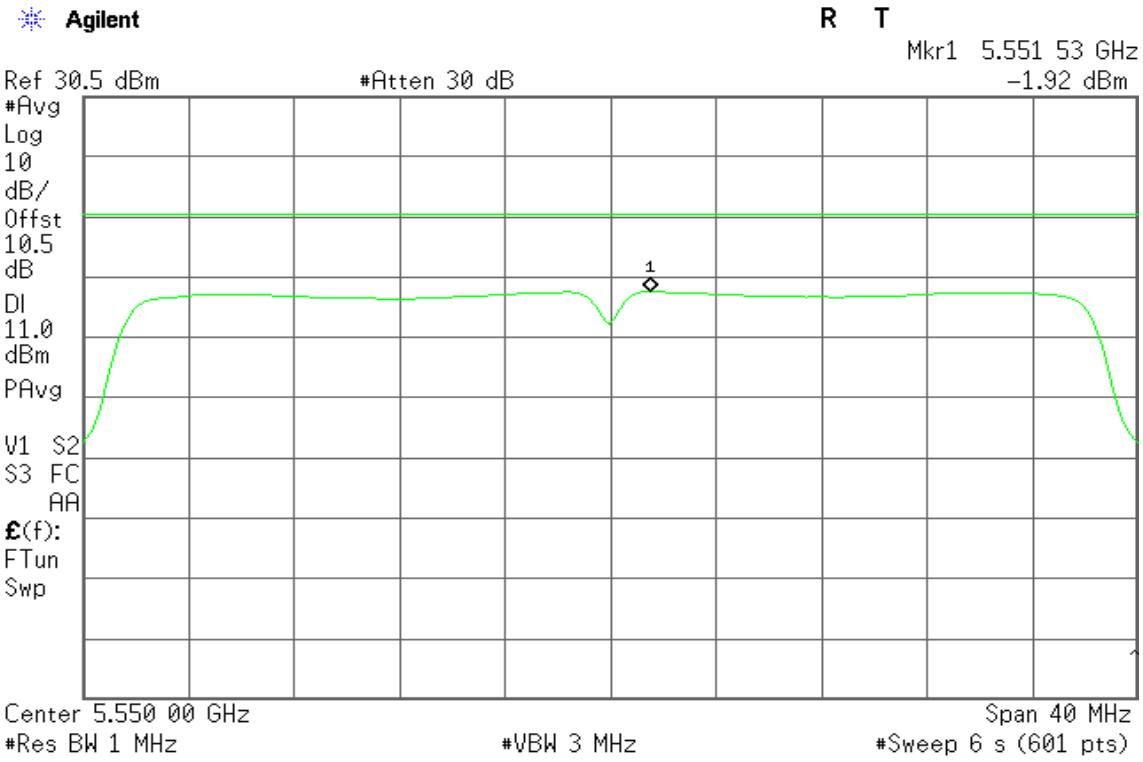

Agilent
R T
Mkr1 5.705 93 GHz
Ref 30.5 dBm
#Atten 30 dB
-1.40 dBm
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
11.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
1
Center 5.700 00 GHz
Span 20 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

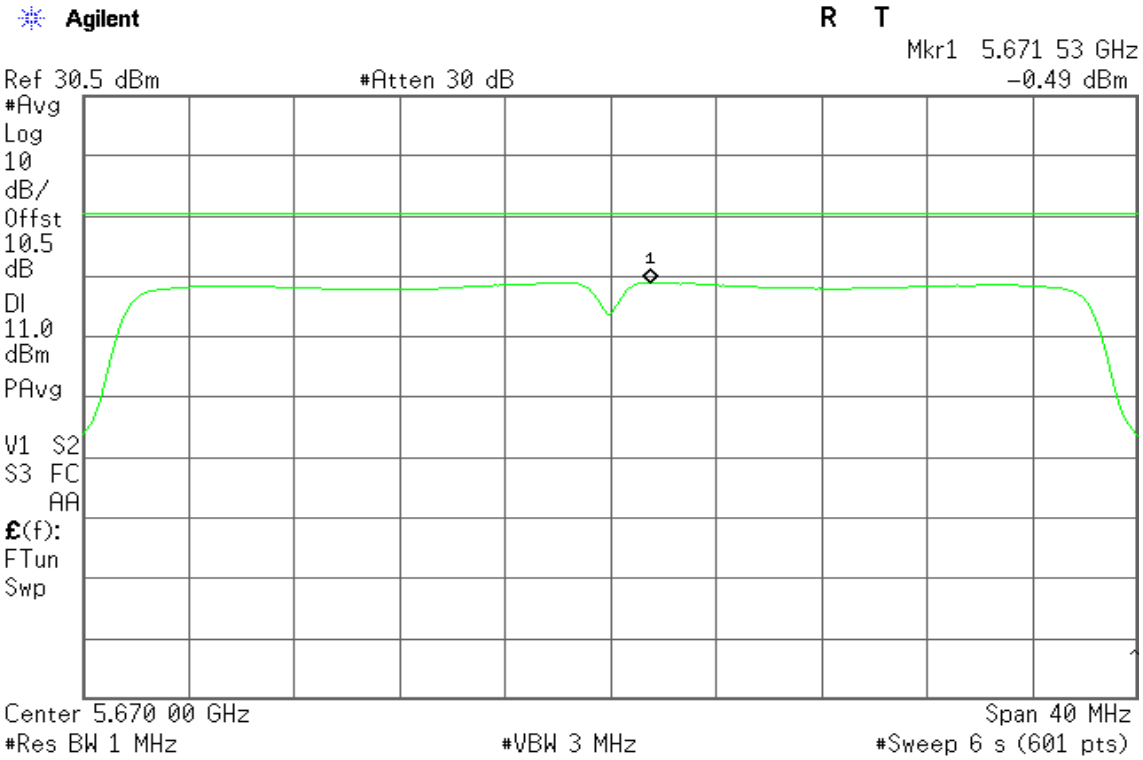
CH Low



CH Mid

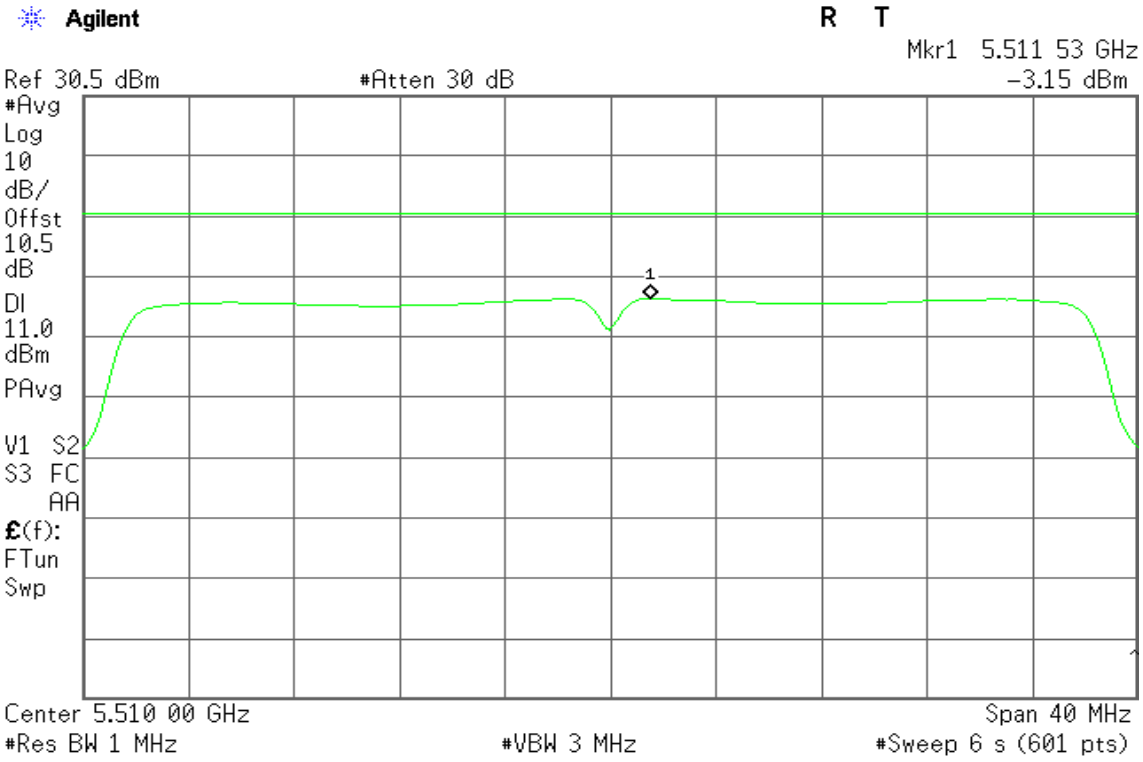


CH High

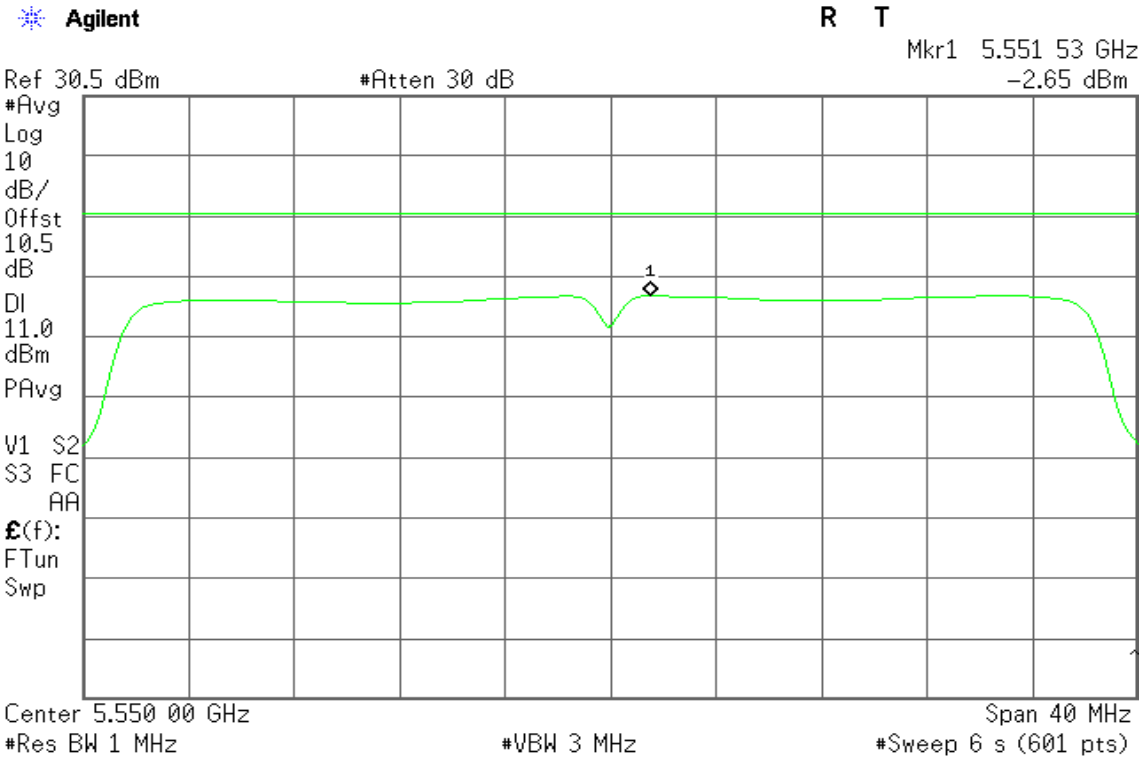

Agilent
R T
Mkr1 5.671 53 GHz
Ref 30.5 dBm
#Atten 30 dB
-0.49 dBm
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
11.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
1
Center 5.670 00 GHz
Span 40 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

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

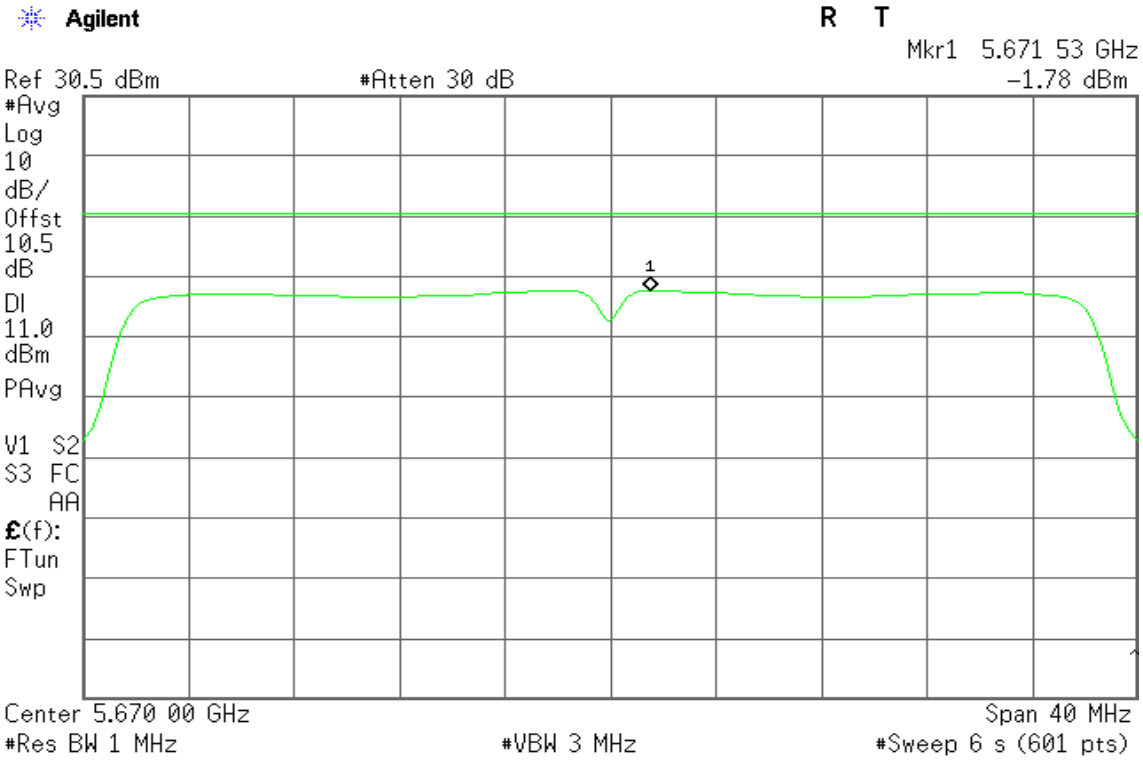
CH Low



CH Mid

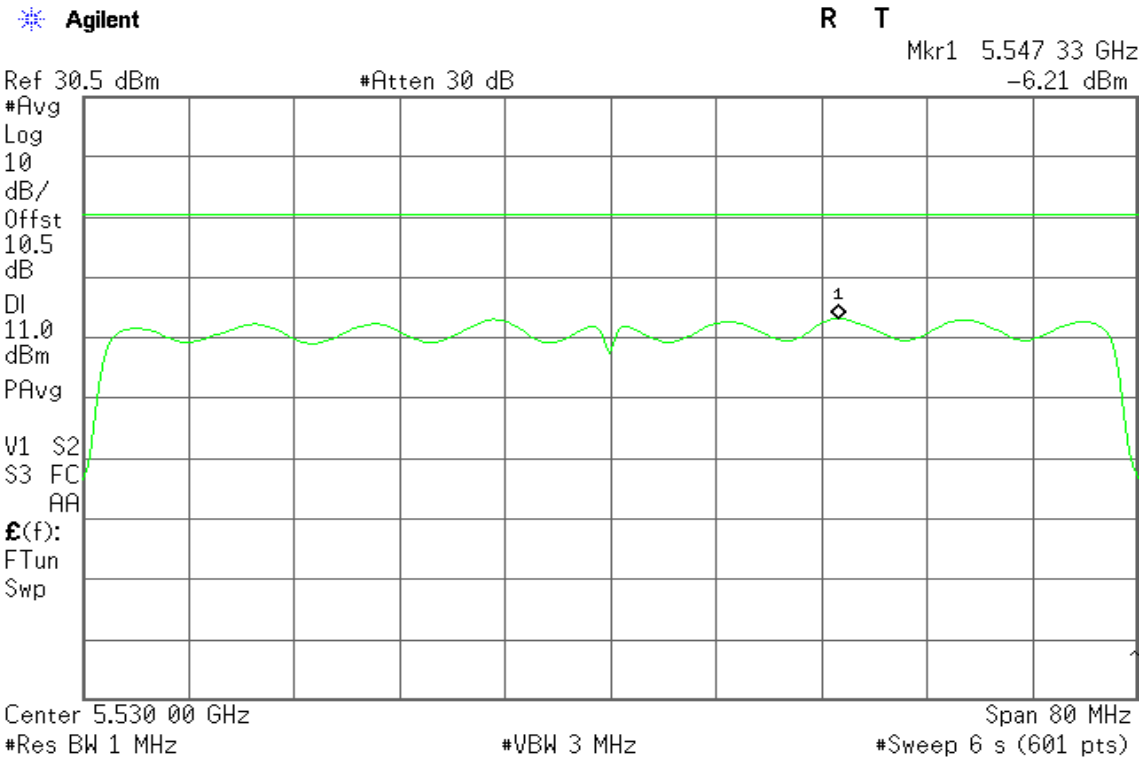


CH High

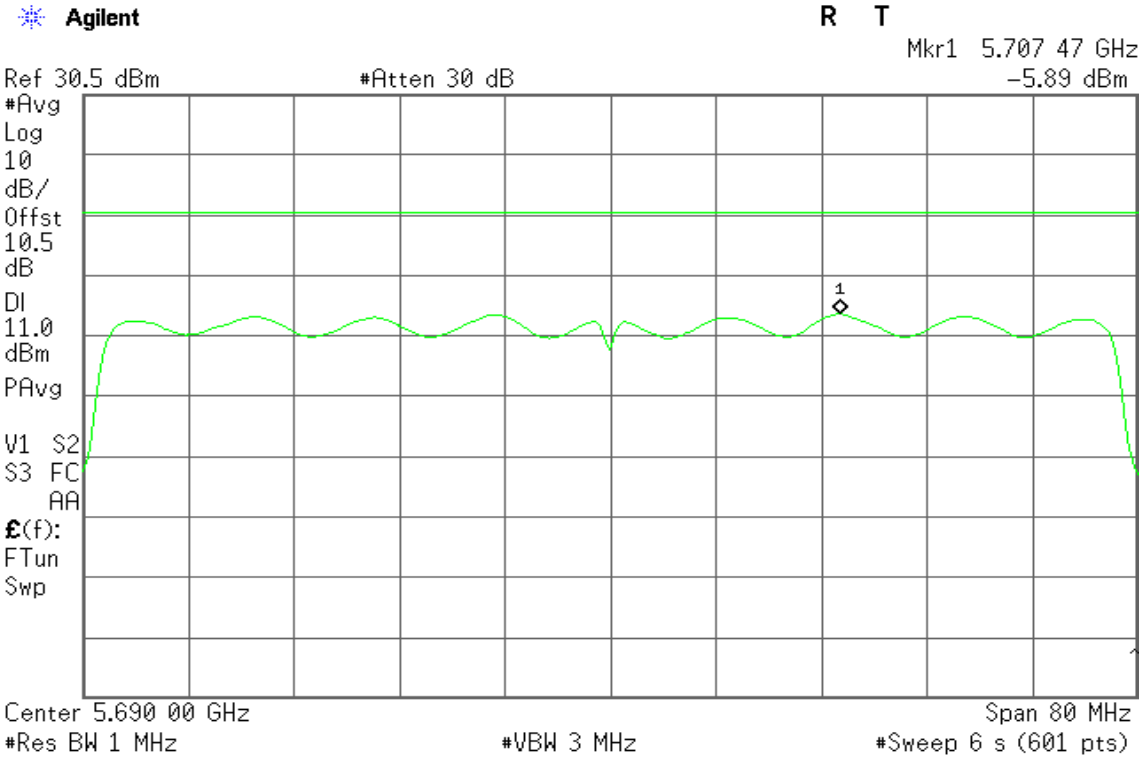

Agilent
R T
Mkr1 5.671 53 GHz
Ref 30.5 dBm
#Atten 30 dB
-1.78 dBm
#Avg
Log
10
dB/
Offst
10.5
dB
Dl
11.0
dBm
PAvg
V1 S2
S3 FC
AA
£(f):
FTun
Swp
1
Center 5.670 00 GHz
Span 40 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 6 s (601 pts)

IEEE 802.11n HT 80 MHz mode / 5530 ~ 5690MHz / Chain 0

CH Low

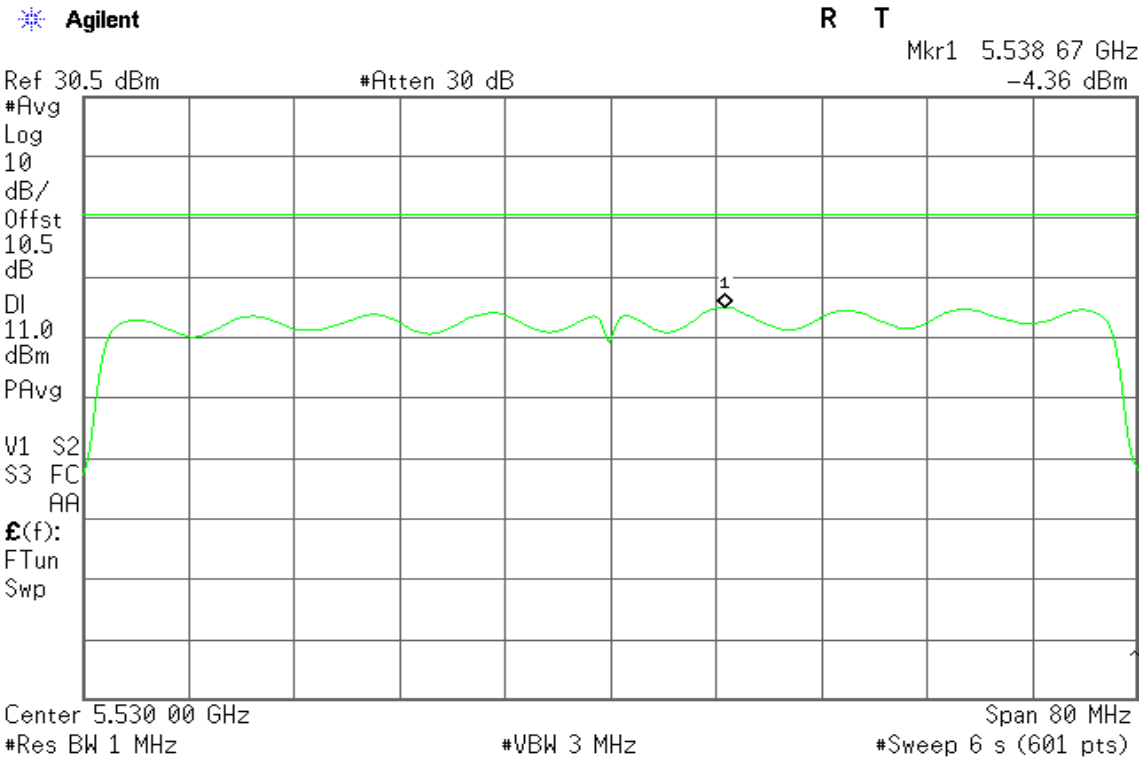


CH High

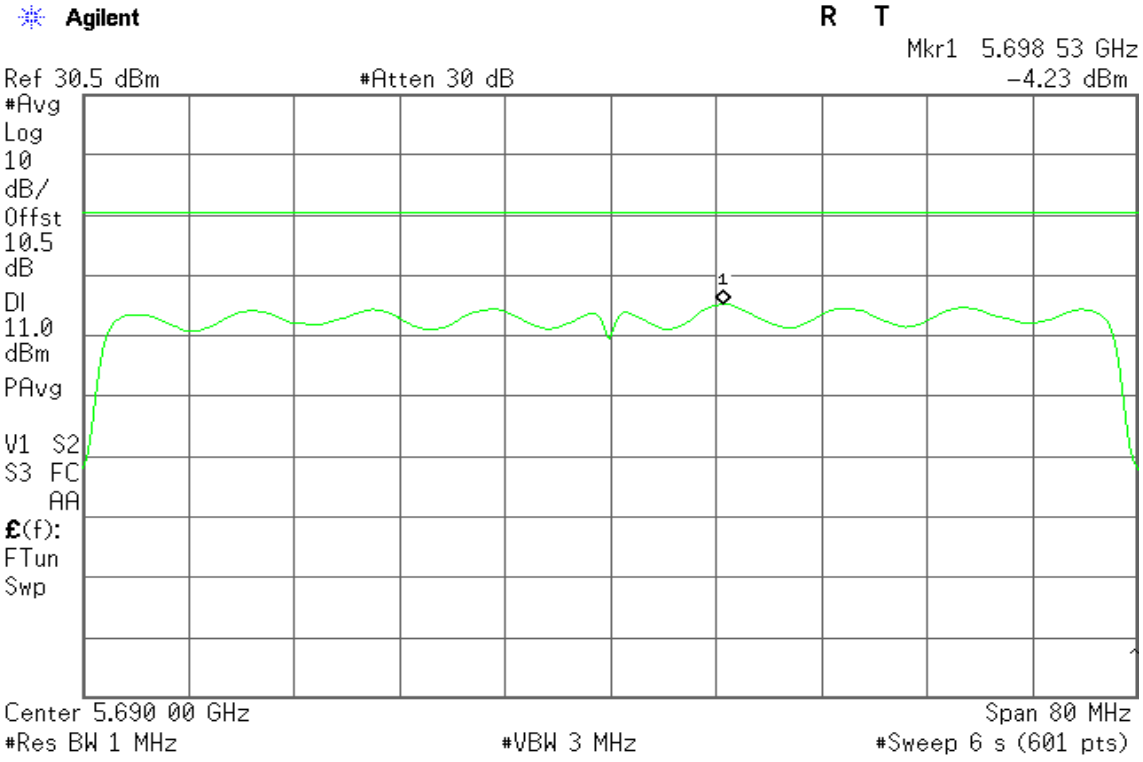


IEEE 802.11n HT 80 MHz mode / 5530 ~ 5690MHz / Chain 1

CH Low



CH High



8.5 RADIATED UNDESIRABLE EMISSION

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

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

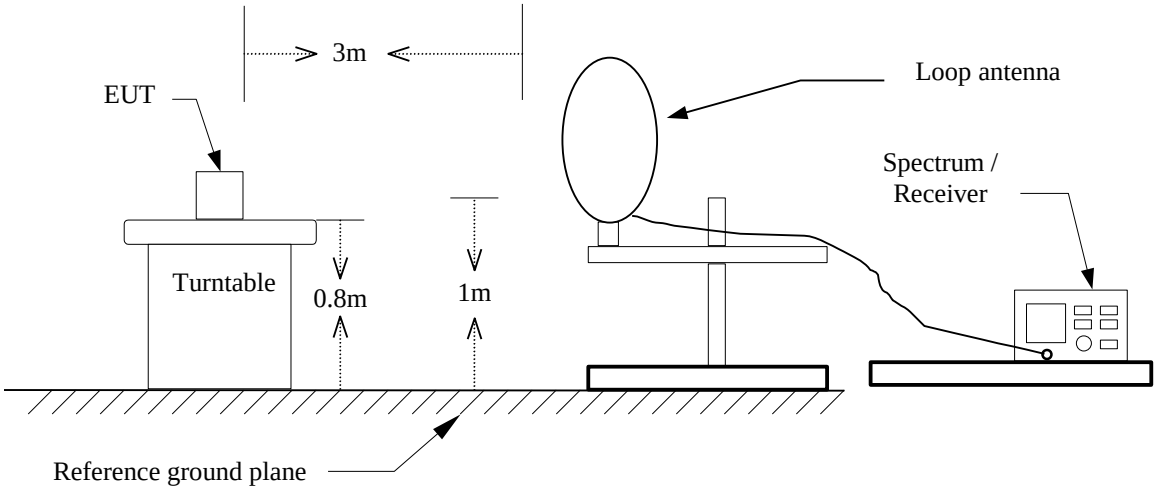
Remark: *Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

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

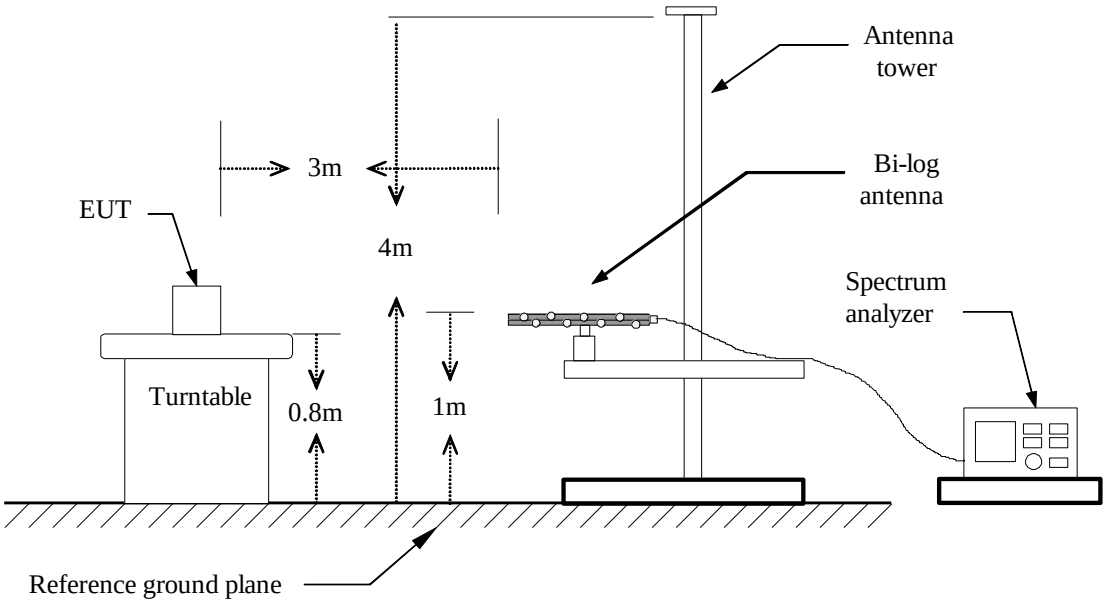
Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

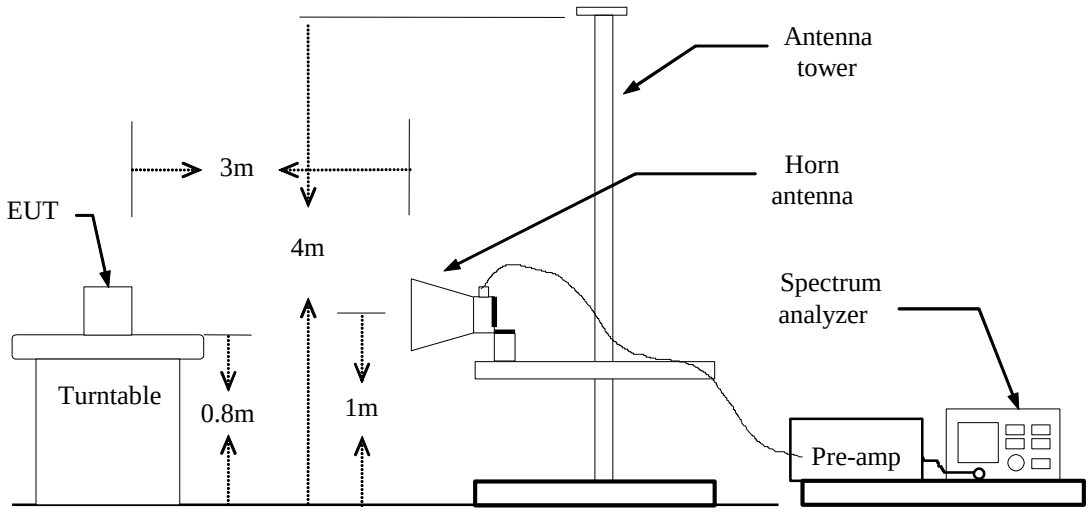
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1 GHz


Antenna
tower
3m
Horn
antenna
EUT
4m
Spectrum
analyzer
Turntable
0.8m
1m
Pre-amp

TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m 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 / VBW=300Hz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.

Below 1 GHz

Operation Mode: Normal Link **Test Date:** April 24, 2014

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)
30.9700	45.54	-10.58	34.96	40.00	-5.04	Peak	V
103.7200	51.76	-20.26	31.50	43.50	-12.00	Peak	V
216.2400	54.58	-18.72	35.86	46.00	-10.14	Peak	V
366.5900	43.62	-14.80	28.82	46.00	-17.18	Peak	V
499.4800	47.93	-11.84	36.09	46.00	-9.91	Peak	V
747.8000	42.88	-7.92	34.96	46.00	-11.04	Peak	V
57.1600	56.82	-23.64	33.18	40.00	-6.82	Peak	H
335.5500	51.36	-15.54	35.82	46.00	-10.18	Peak	H
531.4900	45.36	-11.31	34.05	46.00	-11.95	Peak	H
739.0700	47.10	-8.08	39.02	46.00	-6.98	Peak	H
804.0600	46.23	-7.33	38.90	46.00	-7.10	Peak	H
891.3600	44.61	-6.27	38.34	46.00	-7.66	Peak	H

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).*

Above 1 GHz

Operation Mode:	Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Low	**Test Date:**	April 22, 2014
Temperature:	27℃	**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)
2106.000	51.61	-4.77	46.84	74.00	-27.16	peak	V
N/A							
2393.000	50.86	-3.80	47.06	74.00	-26.94	peak	H
11810.000	35.99	15.32	51.31	74.00	-22.69	peak	H
N/A							

Remark:

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

Operation Mode:	Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Mid	**Test Date:**	April 22, 2014
Temperature:	27℃	**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)
2708.000	51.10	-2.82	48.28	74.00	-25.72	peak	V
N/A							
2218.000	50.37	-4.55	45.82	74.00	-28.18	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).*

Operation Mode:	Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH High	**Test Date:**	April 22, 2014
Temperature:	27℃	**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)
2099.000	49.92	-4.78	45.14	74.00	-28.86	peak	V
N/A							
2477.000	50.01	-3.56	46.45	74.00	-27.55	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).*

Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH Low	**Test Date:**	April 22, 2014
Temperature:	27℃	**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)
2540.000	51.60	-3.17	48.43	74.00	-25.57	peak	V
N/A							
2421.000	51.07	-3.67	47.40	74.00	-26.60	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).*

Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH Mid	**Test Date:**	April 22, 2014
Temperature:	27℃	**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)
1931.000	50.66	-5.41	45.25	74.00	-28.75	peak	V
N/A							
2141.000	51.14	-4.70	46.44	74.00	-27.56	peak	H
N/A							

Remark:

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

Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH High **Test Date:** April 22, 2014

Temperature: 27℃ **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)
2463.000	51.10	-3.54	47.56	74.00	-26.44	peak	V
N/A							
2519.000	50.21	-3.21	47.00	74.00	-27.00	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).*

Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH Low	**Test Date:**	April 22, 2014
Temperature:	27℃	**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)
2505.000	50.62	-3.24	47.38	74.00	-26.62	peak	V
N/A							
2099.000	50.81	-4.78	46.03	74.00	-27.97	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).*

Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH High **Test Date:** April 22, 2014

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)
2330.000	49.80	-4.22	45.58	74.00	-28.42	peak	V
N/A							
2225.000	50.89	-4.54	46.35	74.00	-27.65	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).*

Operation Mode: Tx / IEEE 802.11n HT 80 MHz mode / 5210MHz / CH Mid **Test Date:** April 22, 2014

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)
2085.000	51.54	-4.81	46.73	74.00	-27.27	peak	V
N/A							
2512.000	51.01	-3.23	47.78	74.00	-26.22	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).*

Operation Mode:	Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Low	**Test Date:**	April 22, 2014
Temperature:	27℃	**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)
2428.000	50.34	-3.64	46.70	74.00	-27.30	peak	V
N/A							
2463.000	50.63	-3.54	47.09	74.00	-26.91	peak	H
N/A							
							H

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).*

Operation Mode:	Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Mid	**Test Date:**	April 22, 2014
Temperature:	27℃	**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)
2491.000	50.03	-3.41	46.62	74.00	-27.38	peak	V
N/A							
2358.000	50.88	-4.12	46.76	74.00	-27.24	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.*
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).*

Operation Mode:	Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH High	**Test Date:**	April 22, 2014
Temperature:	27℃	**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	51.08	-4.23	46.85	74.00	-27.15	peak	V
N/A							
2057.000	51.17	-4.87	46.30	74.00	-27.70	peak	H
N/A							

Remark:

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

Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH Low	**Test Date:**	April 23, 2014
Temperature:	27℃	**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)
2687.000	50.56	-2.86	47.70	74.00	-26.30	peak	V
N/A							
2876.000	50.57	-2.47	48.10	74.00	-25.90	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).*

Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH Mid	**Test Date:**	April 23, 2014
Temperature:	27℃	**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)
2736.000	50.61	-2.76	47.85	74.00	-26.15	peak	V
N/A							
3233.000	52.04	-1.46	50.58	74.00	-23.42	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).*

Operation Mode: Tx / IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / CH High **Test Date:** April 23, 2014

Temperature: 27℃ **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	50.83	-3.15	47.68	74.00	-26.32	peak	V
N/A							
2638.000	51.19	-2.96	48.23	74.00	-25.77	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).*

Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH Low	**Test Date:**	April 23, 2014
Temperature:	27℃	**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	50.14	-3.12	47.02	74.00	-26.98	peak	V
N/A							
2554.000	50.17	-3.14	47.03	74.00	-26.97	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).*

Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH High **Test Date:** April 23, 2014

Temperature: 27℃ **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)
2785.000	50.45	-2.66	47.79	74.00	-26.21	peak	V
N/A							
2288.000	50.74	-4.46	46.28	74.00	-27.72	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).*

Operation Mode: Tx / IEEE 802.11n HT 80 MHz mode / 5290 MHz **Test Date:** April 22, 2014

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	51.28	-3.15	48.13	74.00	-25.87	peak	V
N/A							
2757.000	50.95	-2.72	48.23	74.00	-25.77	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).*

Operation Mode:	Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH Low	**Test Date:**	April 23, 2014
Temperature:	27℃	**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)
2554.000	50.27	-3.14	47.13	74.00	-26.87	peak	V
N/A							
2561.000	50.55	-3.12	47.43	74.00	-26.57	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).*

Operation Mode:	Tx / IEEE 802.11a mode / 5500 ~ 5700MHz /CH Mid	**Test Date:**	April 23, 2014
Temperature:	27℃	**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	50.50	-3.12	47.38	74.00	-26.62	peak	V
N/A							
2512.000	50.23	-3.23	47.00	74.00	-27.00	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).*

Operation Mode:	Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH High	**Test Date:**	April 23, 2014
Temperature:	27℃	**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)
2554.000	50.04	-3.14	46.90	74.00	-27.10	peak	V
N/A							
2540.000	50.38	-3.17	47.21	74.00	-26.79	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).*

Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Low	**Test Date:**	April 23, 2014
Temperature:	27℃	**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)
2666.000	50.39	-2.90	47.49	74.00	-26.51	peak	V
N/A							
2890.000	51.31	-2.44	48.87	74.00	-25.13	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 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).*

Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Mid	**Test Date:**	April 23, 2014
Temperature:	27℃	**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)
2337.000	50.60	-4.23	46.37	74.00	-27.63	peak	V
N/A							
2456.000	49.79	-3.54	46.25	74.00	-27.75	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).*

Operation Mode:	Tx / IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH High	**Test Date:**	April 23, 2014
Temperature:	27℃	**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)
2288.000	51.69	-4.46	47.23	74.00	-26.77	peak	V
N/A							
3198.000	51.85	-1.57	50.28	74.00	-23.72	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).*

Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Low	**Test Date:**	April 23, 2014
Temperature:	27℃	**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)
2785.000	50.45	-2.66	47.79	74.00	-26.21	peak	V
N/A							
2288.000	50.74	-4.46	46.28	74.00	-27.72	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).*

Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Mid	**Test Date:**	April 23, 2014
Temperature:	27℃	**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)
2393.000	50.80	-3.80	47.00	74.00	-27.00	peak	V
N/A							
2533.000	49.85	-3.18	46.67	74.00	-27.33	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).*

Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH High	**Test Date:**	April 23, 2014
Temperature:	27℃	**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	50.18	-3.20	46.98	74.00	-27.02	peak	V
N/A							
2288.000	51.20	-4.46	46.74	74.00	-27.26	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).*

Operation Mode:	Tx / IEEE 802.11n HT 80 MHz mode / 5530 ~ 5690MHz / CH Low	**Test Date:**	April 23, 2014
Temperature:	27℃	**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)
2680.000	50.16	-2.88	47.28	74.00	-26.72	peak	V
N/A							
2505.000	50.89	-3.24	47.65	74.00	-26.35	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).*

Operation Mode:	Tx / IEEE 802.11n HT 80 MHz mode / 5530 ~ 5690MHz / CH High	**Test Date:**	April 23, 2014
Temperature:	27℃	**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	51.50	-3.18	48.32	74.00	-25.68	peak	V
N/A							
2561.000	50.06	-3.12	46.94	74.00	-27.06	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).*

8.6 POWERLINE CONDUCTED EMISSIONS

LIMIT

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

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

** Decreases with the logarithm of the frequency.*

Test Configuration

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

TEST PROCEDURE

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

TEST RESULTS

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

Test Data

Operation Mode:	Normal Link	**Test Date:**	May 9, 2014
Temperature:	26℃	**Tested by:**	Sehni Hu
Humidity:	60% RH		

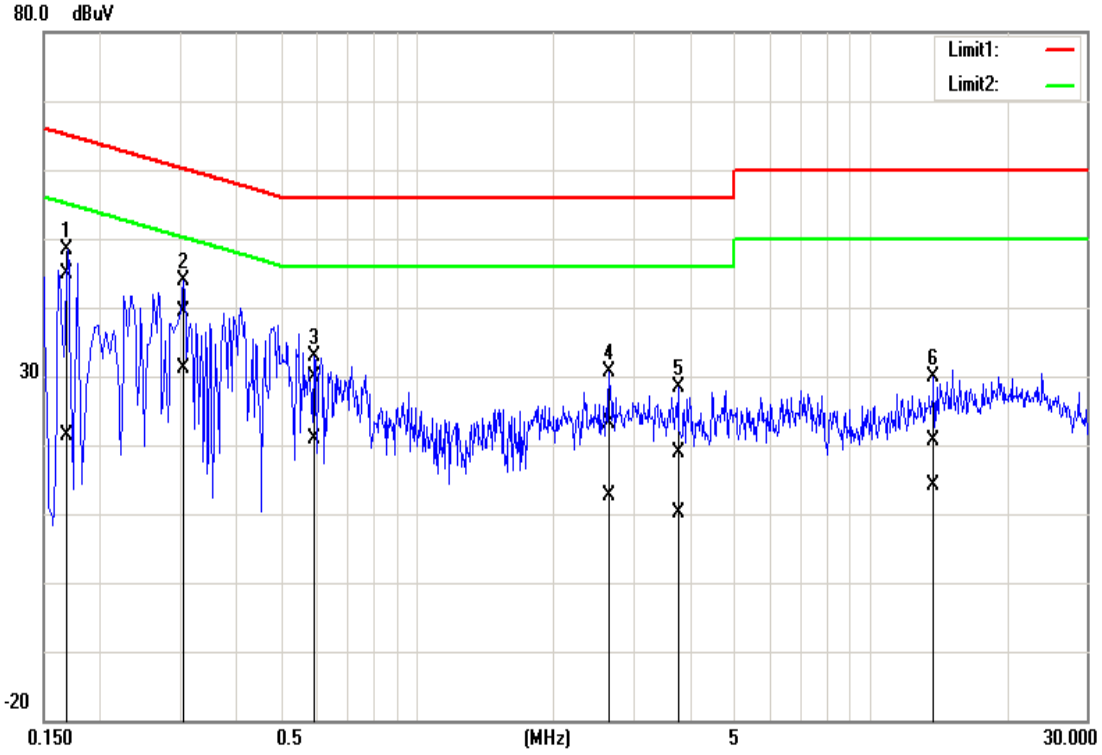
Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. factor (dB)	QP Result (dBuV)	AV Result (dBuV)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
0.1700	44.71	21.12	0.19	44.90	21.31	64.96	54.96	-20.06	-33.65	L1
0.3060	39.17	30.91	0.20	39.37	31.11	60.08	50.08	-20.71	-18.97	L1
0.5940	29.67	20.62	0.20	29.87	20.82	56.00	46.00	-26.13	-25.18	L1
2.6540	22.87	12.44	0.16	23.03	12.60	56.00	46.00	-32.97	-33.40	L1
3.7660	18.75	10.06	0.19	18.94	10.25	56.00	46.00	-37.06	-35.75	L1
13.7780	19.99	13.35	0.68	20.67	14.03	60.00	50.00	-39.33	-35.97	L1
0.1580	44.13	38.40	0.19	44.32	38.59	65.57	55.57	-21.25	-16.98	L2
0.1980	42.19	35.85	0.19	42.38	36.04	63.69	53.69	-21.31	-17.65	L2
0.2860	43.67	33.09	0.19	43.86	33.28	60.64	50.64	-16.78	-17.36	L2
0.3780	37.96	27.12	0.19	38.15	27.31	58.32	48.32	-20.17	-21.01	L2
0.4940	34.21	23.06	0.19	34.40	23.25	56.10	46.10	-21.70	-22.85	L2
13.9060	23.00	15.79	0.53	23.53	16.32	60.00	50.00	-36.47	-33.68	L2

Remark:

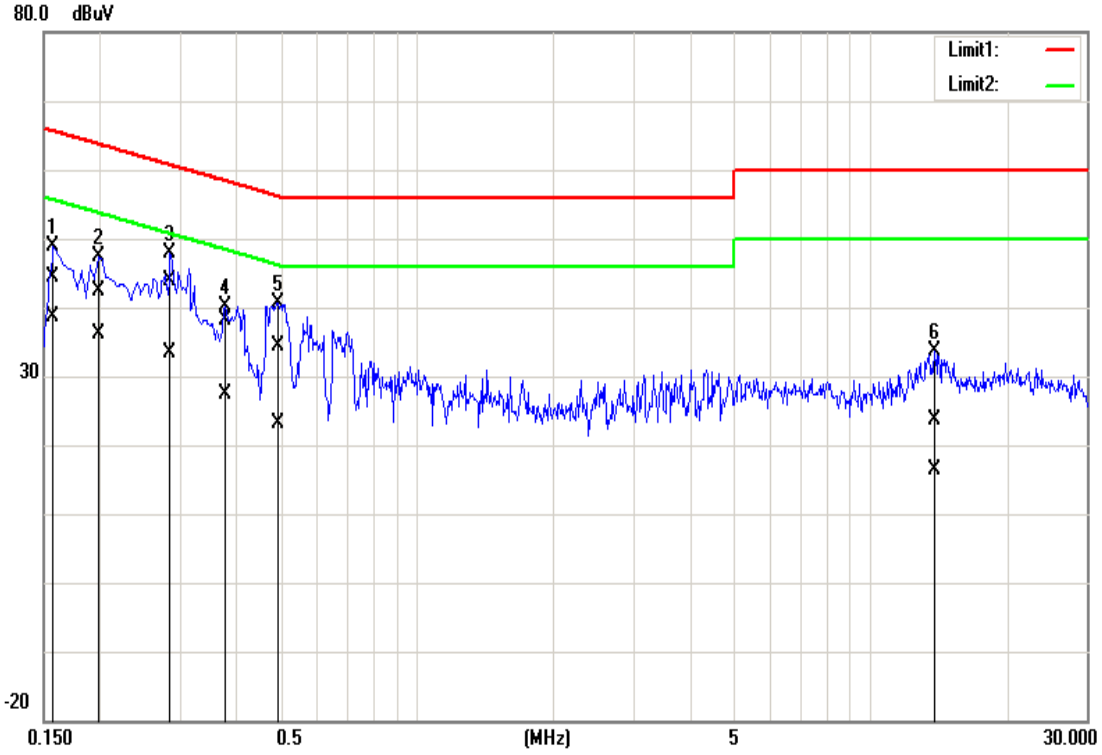
1. *Measuring frequencies from 0.15 MHz to 30MHz.*
2. *The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.*
3. *The IF bandwidth of SPA between 0.15MHz to 30MHz was 10kHz; the IF bandwidth of Test Receiver between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

Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)

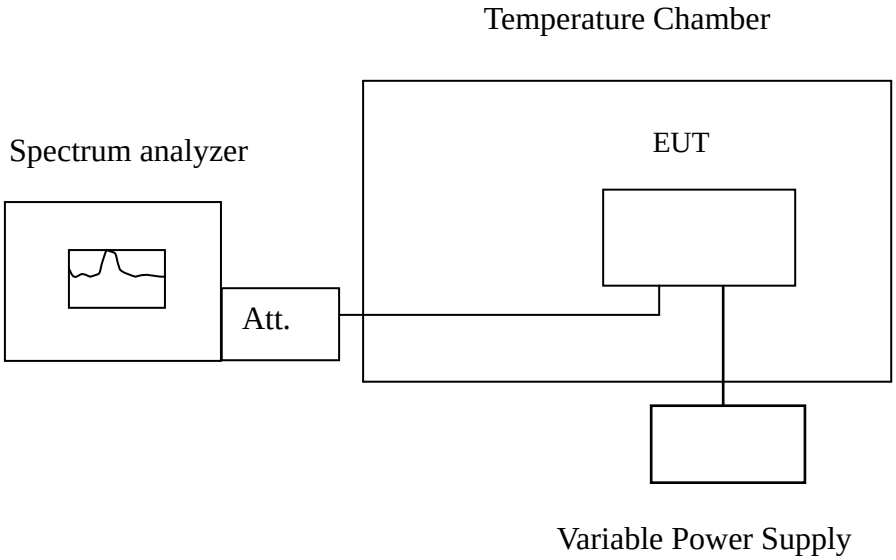


8.7 FREQUENCY STABILITY

LIMIT

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

Test Configuration



Remark: *Measurement setup for testing on Antenna connector*

TEST PROCEDURE

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

TEST RESULTS

No non-compliance noted.

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	5	5179.986883	5150~5250	Pass
40	5	5179.994047	5150~5250	Pass
30	5	5180.012448	5150~5250	Pass
20	5	5180.019043	5150~5250	Pass
10	5	5179.978674	5150~5250	Pass
0	5	5180.015378	5150~5250	Pass
-10	5	5179.992905	5150~5250	Pass
-20	5	5180.003061	5150~5250	Pass

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5179.973997	5150~5250	Pass
	5	5179.973718	5150~5250	Pass
	5.5	5179.974721	5150~5250	Pass

CH Mid

Operating Frequency: 5220 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5220.017710	5150~5250	Pass
40	5	5219.982900	5150~5250	Pass
30	5	5220.004057	5150~5250	Pass
20	5	5219.986903	5150~5250	Pass
10	5	5219.970309	5150~5250	Pass
0	5	5220.010800	5150~5250	Pass
-10	5	5220.014209	5150~5250	Pass
-20	5	5220.013279	5150~5250	Pass

Operating Frequency: 5220 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5219.981708	5150~5250	Pass
	5	5219.977839	5150~5250	Pass
	5.5	5220.017359	5150~5250	Pass

CH High

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5239.983262	5150~5250	Pass
40	5	5240.010843	5150~5250	Pass
30	5	5240.000699	5150~5250	Pass
20	5	5239.981852	5150~5250	Pass
10	5	5239.971636	5150~5250	Pass
0	5	5240.018952	5150~5250	Pass
-10	5	5240.002689	5150~5250	Pass
-20	5	5239.987047	5150~5250	Pass

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5239.980304	5150~5250	Pass
	5	5239.980927	5150~5250	Pass
	5.5	5239.996555	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	5	5180.010174	5150~5250	Pass
40	5	5179.989727	5150~5250	Pass
30	5	5179.979139	5150~5250	Pass
20	5	5180.012138	5150~5250	Pass
10	5	5180.006398	5150~5250	Pass
0	5	5180.002415	5150~5250	Pass
-10	5	5180.000237	5150~5250	Pass
-20	5	5179.990879	5150~5250	Pass

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	4.5	5180.006165	5150~5250	Pass
	5	5179.98545	5150~5250	Pass
	5.5	5179.996664	5150~5250	Pass

CH Mid

Operating Frequency: 5220 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5219.974133	5150~5250	Pass
40	5	5219.982572	5150~5250	Pass
30	5	5220.003198	5150~5250	Pass
20	5	5220.017034	5150~5250	Pass
10	5	5219.989325	5150~5250	Pass
0	5	5219.986264	5150~5250	Pass
-10	5	5220.005138	5150~5250	Pass
-20	5	5220.014691	5150~5250	Pass

Operating Frequency: 5220 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5219.976007	5150~5250	Pass
	5	5219.974745	5150~5250	Pass
	5.5	5219.973658	5150~5250	Pass

CH High

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5239.987509	5150~5250	Pass
40	5	5239.993440	5150~5250	Pass
30	5	5239.970984	5150~5250	Pass
20	5	5239.996142	5150~5250	Pass
10	5	5240.015699	5150~5250	Pass
0	5	5240.020756	5150~5250	Pass
-10	5	5239.982037	5150~5250	Pass
-20	5	5239.979727	5150~5250	Pass

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5240.017954	5150~5250	Pass
	5	5239.995195	5150~5250	Pass
	5.5	5240.02057	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	5	5180.020975	5150~5250	Pass
40	5	5180.008456	5150~5250	Pass
30	5	5179.973640	5150~5250	Pass
20	5	5180.006781	5150~5250	Pass
10	5	5179.981005	5150~5250	Pass
0	5	5179.998715	5150~5250	Pass
-10	5	5180.014811	5150~5250	Pass
-20	5	5180.017580	5150~5250	Pass

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	4.5	5179.996559	5150~5250	Pass
	5	5179.999894	5150~5250	Pass
	5.5	5180.012854	5150~5250	Pass

CH Mid

Operating Frequency: 5220 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5219.983535	5150~5250	Pass
40	5	5220.006508	5150~5250	Pass
30	5	5220.005458	5150~5250	Pass
20	5	5219.981987	5150~5250	Pass
10	5	5219.977313	5150~5250	Pass
0	5	5219.995339	5150~5250	Pass
-10	5	5220.015002	5150~5250	Pass
-20	5	5219.998084	5150~5250	Pass

Operating Frequency: 5220 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5220.003837	5150~5250	Pass
	5	5220.018479	5150~5250	Pass
	5.5	5219.972647	5150~5250	Pass

CH High

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5239.985789	5150~5250	Pass
40	5	5239.987412	5150~5250	Pass
30	5	5240.020610	5150~5250	Pass
20	5	5240.016009	5150~5250	Pass
10	5	5239.972434	5150~5250	Pass
0	5	5239.992764	5150~5250	Pass
-10	5	5240.008279	5150~5250	Pass
-20	5	5240.016169	5150~5250	Pass

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5239.992067	5150~5250	Pass
	5	5240.008956	5150~5250	Pass
	5.5	5239.970688	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	5	5190.015524	5150~5250	Pass
40	5	5189.990406	5150~5250	Pass
30	5	5189.991709	5150~5250	Pass
20	5	5189.978308	5150~5250	Pass
10	5	5190.007430	5150~5250	Pass
0	5	5190.012920	5150~5250	Pass
-10	5	5189.986397	5150~5250	Pass
-20	5	5189.972787	5150~5250	Pass

Operating Frequency: 5190 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	4.5	5190.019561	5150~5250	Pass
	5	5189.981715	5150~5250	Pass
	5.5	5190.014441	5150~5250	Pass

CH High

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5229.979336	5150~5250	Pass
40	5	5230.000979	5150~5250	Pass
30	5	5229.979209	5150~5250	Pass
20	5	5230.014820	5150~5250	Pass
10	5	5229.986334	5150~5250	Pass
0	5	5229.997468	5150~5250	Pass
-10	5	5229.983901	5150~5250	Pass
-20	5	5229.978789	5150~5250	Pass

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5229.99699	5150~5250	Pass
	5	5230.012403	5150~5250	Pass
	5.5	5229.986062	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	5	5189.981258	5150~5250	Pass
40	5	5190.011526	5150~5250	Pass
30	5	5189.986380	5150~5250	Pass
20	5	5189.995676	5150~5250	Pass
10	5	5189.994355	5150~5250	Pass
0	5	5189.986035	5150~5250	Pass
-10	5	5189.997045	5150~5250	Pass
-20	5	5190.006074	5150~5250	Pass

Operating Frequency: 5190 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	4.5	5189.985093	5150~5250	Pass
	5	5189.983118	5150~5250	Pass
	5.5	5189.971142	5150~5250	Pass

CH High

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5230.010991	5150~5250	Pass
40	5	5230.020862	5150~5250	Pass
30	5	5229.995760	5150~5250	Pass
20	5	5229.980173	5150~5250	Pass
10	5	5229.998184	5150~5250	Pass
0	5	5229.970654	5150~5250	Pass
-10	5	5229.994002	5150~5250	Pass
-20	5	5229.999171	5150~5250	Pass

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5229.991643	5150~5250	Pass
	5	5230.005782	5150~5250	Pass
	5.5	5229.975092	5150~5250	Pass

IEEE 802.11n HT 80 MHz mode / 5210 MHz / Chain 0

Operating Frequency: 5210 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5210.015327	5150~5250	Pass
40	5	5210.002952	5150~5250	Pass
30	5	5209.998853	5150~5250	Pass
20	5	5210.004294	5150~5250	Pass
10	5	5210.013697	5150~5250	Pass
0	5	5210.006503	5150~5250	Pass
-10	5	5210.018806	5150~5250	Pass
-20	5	5209.983014	5150~5250	Pass

Operating Frequency: 5210 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5209.977783	5150~5250	Pass
	5	5210.008324	5150~5250	Pass
	5.5	5209.975866	5150~5250	Pass

IEEE 802.11n HT 80 MHz mode / 5210 MHz / Chain 1

Operating Frequency: 5210 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5209.970624	5150~5250	Pass
40	5	5210.009669	5150~5250	Pass
30	5	5210.019477	5150~5250	Pass
20	5	5209.990364	5150~5250	Pass
10	5	5209.983264	5150~5250	Pass
0	5	5210.013873	5150~5250	Pass
-10	5	5210.006616	5150~5250	Pass
-20	5	5209.994040	5150~5250	Pass

Operating Frequency: 5210 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5210.012552	5150~5250	Pass
	5	5209.989315	5150~5250	Pass
	5.5	5210.014234	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	5	5260.005526	5250~5350	Pass
40	5	5259.998467	5250~5350	Pass
30	5	5260.014301	5250~5350	Pass
20	5	5259.992168	5250~5350	Pass
10	5	5260.012065	5250~5350	Pass
0	5	5259.981553	5250~5350	Pass
-10	5	5260.002729	5250~5350	Pass
-20	5	5260.000493	5250~5350	Pass

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5260.003064	5250~5350	Pass
	5	5259.979595	5250~5350	Pass
	5.5	5259.989289	5250~5350	Pass

CH Mid

Operating Frequency: 5280 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5280.013991	5250~5350	Pass
40	5	5279.985059	5250~5350	Pass
30	5	5279.981511	5250~5350	Pass
20	5	5279.970702	5250~5350	Pass
10	5	5279.994130	5250~5350	Pass
0	5	5279.983694	5250~5350	Pass
-10	5	5279.986926	5250~5350	Pass
-20	5	5280.020481	5250~5350	Pass

Operating Frequency: 5280 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5280.003234	5250~5350	Pass
	5	5280.017385	5250~5350	Pass
	5.5	5280.012647	5250~5350	Pass

CH High

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5319.971061	5250~5350	Pass
40	5	5320.002361	5250~5350	Pass
30	5	5319.980731	5250~5350	Pass
20	5	5319.999588	5250~5350	Pass
10	5	5320.014925	5250~5350	Pass
0	5	5320.000869	5250~5350	Pass
-10	5	5320.015671	5250~5350	Pass
-20	5	5319.999756	5250~5350	Pass

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5319.994486	5250~5350	Pass
	5	5319.980361	5250~5350	Pass
	5.5	5319.991744	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	5	5260.007453	5250~5350	Pass
40	5	5259.993367	5250~5350	Pass
30	5	5259.983695	5250~5350	Pass
20	5	5259.996093	5250~5350	Pass
10	5	5259.970910	5250~5350	Pass
0	5	5260.008036	5250~5350	Pass
-10	5	5260.016749	5250~5350	Pass
-20	5	5260.018673	5250~5350	Pass

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5260.017522	5250~5350	Pass
	5	5260.019197	5250~5350	Pass
	5.5	5259.996783	5250~5350	Pass

CH Mid

Operating Frequency: 5280 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5280.009973	5250~5350	Pass
40	5	5279.985994	5250~5350	Pass
30	5	5279.976039	5250~5350	Pass
20	5	5279.990574	5250~5350	Pass
10	5	5279.984765	5250~5350	Pass
0	5	5279.985361	5250~5350	Pass
-10	5	5280.000684	5250~5350	Pass
-20	5	5280.014119	5250~5350	Pass

Operating Frequency: 5280 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5279.9854	5250~5350	Pass
	5	5280.000459	5250~5350	Pass
	5.5	5280.015292	5250~5350	Pass

CH High

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5320.016820	5250~5350	Pass
40	5	5320.008506	5250~5350	Pass
30	5	5319.996822	5250~5350	Pass
20	5	5319.996697	5250~5350	Pass
10	5	5319.998067	5250~5350	Pass
0	5	5320.003554	5250~5350	Pass
-10	5	5320.019753	5250~5350	Pass
-20	5	5320.012451	5250~5350	Pass

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5319.979397	5250~5350	Pass
	5	5319.995735	5250~5350	Pass
	5.5	5319.983169	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	5	5259.982429	5250~5350	Pass
40	5	5259.980747	5250~5350	Pass
30	5	5259.977952	5250~5350	Pass
20	5	5260.018124	5250~5350	Pass
10	5	5260.005686	5250~5350	Pass
0	5	5259.993241	5250~5350	Pass
-10	5	5259.984435	5250~5350	Pass
-20	5	5259.988523	5250~5350	Pass

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	4.5	5259.983383	5250~5350	Pass
	5	5259.973022	5250~5350	Pass
	5.5	5259.985186	5250~5350	Pass

CH Mid

Operating Frequency: 5280 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5280.013225	5250~5350	Pass
40	5	5279.977976	5250~5350	Pass
30	5	5279.989849	5250~5350	Pass
20	5	5280.012923	5250~5350	Pass
10	5	5279.993423	5250~5350	Pass
0	5	5279.981694	5250~5350	Pass
-10	5	5279.983774	5250~5350	Pass
-20	5	5280.019315	5250~5350	Pass

Operating Frequency: 5280 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5280.011266	5250~5350	Pass
	5	5280.008947	5250~5350	Pass
	5.5	5279.992082	5250~5350	Pass

CH High

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5320.014987	5250~5350	Pass
40	5	5320.006524	5250~5350	Pass
30	5	5319.980705	5250~5350	Pass
20	5	5319.996911	5250~5350	Pass
10	5	5319.995015	5250~5350	Pass
0	5	5319.983094	5250~5350	Pass
-10	5	5319.991726	5250~5350	Pass
-20	5	5319.995699	5250~5350	Pass

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5320.004455	5250~5350	Pass
	5	5320.004581	5250~5350	Pass
	5.5	5319.993207	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	5	5269.985467	5250~5350	Pass
40	5	5269.988302	5250~5350	Pass
30	5	5269.989677	5250~5350	Pass
20	5	5269.972694	5250~5350	Pass
10	5	5269.977055	5250~5350	Pass
0	5	5270.019875	5250~5350	Pass
-10	5	5270.007589	5250~5350	Pass
-20	5	5270.009038	5250~5350	Pass

Operating Frequency: 5270 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	4.5	5269.998594	5250~5350	Pass
	5	5269.972756	5250~5350	Pass
	5.5	5270.010479	5250~5350	Pass

CH High

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5310.015755	5250~5350	Pass
40	5	5309.990014	5250~5350	Pass
30	5	5310.006986	5250~5350	Pass
20	5	5309.973328	5250~5350	Pass
10	5	5309.977246	5250~5350	Pass
0	5	5309.981308	5250~5350	Pass
-10	5	5309.995023	5250~5350	Pass
-20	5	5309.971530	5250~5350	Pass

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5309.978768	5250~5350	Pass
	5	5309.984134	5250~5350	Pass
	5.5	5309.995151	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	5	5270.004530	5250~5350	Pass
40	5	5269.989353	5250~5350	Pass
30	5	5270.003052	5250~5350	Pass
20	5	5269.971627	5250~5350	Pass
10	5	5270.007768	5250~5350	Pass
0	5	5269.995445	5250~5350	Pass
-10	5	5269.989164	5250~5350	Pass
-20	5	5269.997365	5250~5350	Pass

Operating Frequency: 5270 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	4.5	5269.99833	5250~5350	Pass
	5	5270.00561	5250~5350	Pass
	5.5	5269.995808	5250~5350	Pass

CH High

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5309.986521	5250~5350	Pass
40	5	5309.994769	5250~5350	Pass
30	5	5310.020412	5250~5350	Pass
20	5	5309.981279	5250~5350	Pass
10	5	5310.011313	5250~5350	Pass
0	5	5310.002720	5250~5350	Pass
-10	5	5310.014208	5250~5350	Pass
-20	5	5309.993630	5250~5350	Pass

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5310.010623	5250~5350	Pass
	5	5309.979126	5250~5350	Pass
	5.5	5309.974175	5250~5350	Pass

IEEE 802.11n HT 80 MHz mode / 5290 MHz / Chain 0

Operating Frequency: 5290 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5290.018349	5250~5350	Pass
40	5	5289.988555	5250~5350	Pass
30	5	5290.005043	5250~5350	Pass
20	5	5289.983113	5250~5350	Pass
10	5	5290.006804	5250~5350	Pass
0	5	5289.971945	5250~5350	Pass
-10	5	5289.974939	5250~5350	Pass
-20	5	5290.001845	5250~5350	Pass

Operating Frequency: 5290 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5290.004589	5250~5350	Pass
	5	5289.997303	5250~5350	Pass
	5.5	5290.012782	5250~5350	Pass

IEEE 802.11n HT 80 MHz mode / 5290 MHz / Chain 1

Operating Frequency: 5290 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5290.006020	5250~5350	Pass
40	5	5289.982421	5250~5350	Pass
30	5	5290.011136	5250~5350	Pass
20	5	5290.017419	5250~5350	Pass
10	5	5290.015929	5250~5350	Pass
0	5	5290.007840	5250~5350	Pass
-10	5	5289.990835	5250~5350	Pass
-20	5	5290.006813	5250~5350	Pass

Operating Frequency: 5290 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5289.97454	5250~5350	Pass
	5	5290.007288	5250~5350	Pass
	5.5	5289.974497	5250~5350	Pass

IEEE 802.11a mode / 5500 ~ 5700 MHz:

CH Low

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5499.980667	5470~5725	Pass
40	5	5499.975289	5470~5725	Pass
30	5	5499.972711	5470~5725	Pass
20	5	5500.014515	5470~5725	Pass
10	5	5500.018600	5470~5725	Pass
0	5	5500.015935	5470~5725	Pass
-10	5	5499.992462	5470~5725	Pass
-20	5	5499.999386	5470~5725	Pass

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5499.998235	5470~5725	Pass
	5	5499.982398	5470~5725	Pass
	5.5	5500.006141	5470~5725	Pass

CH Mid

Operating Frequency: 5580 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5579.999575	5470~5725	Pass
40	5	5580.005224	5470~5725	Pass
30	5	5580.015442	5470~5725	Pass
20	5	5580.018626	5470~5725	Pass
10	5	5579.983273	5470~5725	Pass
0	5	5579.970105	5470~5725	Pass
-10	5	5580.011056	5470~5725	Pass
-20	5	5579.975228	5470~5725	Pass

Operating Frequency: 5580 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5579.996691	5470~5725	Pass
	5	5579.973378	5470~5725	Pass
	5.5	5580.020543	5470~5725	Pass

CH High

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5700.008282	5470~5725	Pass
40	5	5699.974137	5470~5725	Pass
30	5	5699.973576	5470~5725	Pass
20	5	5700.004549	5470~5725	Pass
10	5	5699.970339	5470~5725	Pass
0	5	5700.019132	5470~5725	Pass
-10	5	5699.996468	5470~5725	Pass
-20	5	5699.999127	5470~5725	Pass

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5699.986175	5470~5725	Pass
	5	5700.006574	5470~5725	Pass
	5.5	5699.979869	5470~5725	Pass

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

CH Low

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5499.997081	5470~5725	Pass
40	5	5499.981014	5470~5725	Pass
30	5	5500.018383	5470~5725	Pass
20	5	5499.990418	5470~5725	Pass
10	5	5499.976795	5470~5725	Pass
0	5	5500.005130	5470~5725	Pass
-10	5	5500.004032	5470~5725	Pass
-20	5	5500.003075	5470~5725	Pass

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5500.007238	5470~5725	Pass
	5	5499.979115	5470~5725	Pass
	5.5	5500.004514	5470~5725	Pass

CH Mid

Operating Frequency: 5580 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5579.982657	5470~5725	Pass
40	5	5579.995072	5470~5725	Pass
30	5	5580.017438	5470~5725	Pass
20	5	5579.987032	5470~5725	Pass
10	5	5580.018918	5470~5725	Pass
0	5	5579.990671	5470~5725	Pass
-10	5	5579.980835	5470~5725	Pass
-20	5	5579.985026	5470~5725	Pass

Operating Frequency: 5580 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5580.014226	5470~5725	Pass
	5	5579.990954	5470~5725	Pass
	5.5	5579.996472	5470~5725	Pass

CH High

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5699.994750	5470~5725	Pass
40	5	5700.001200	5470~5725	Pass
30	5	5700.005218	5470~5725	Pass
20	5	5699.984863	5470~5725	Pass
10	5	5699.988576	5470~5725	Pass
0	5	5699.975492	5470~5725	Pass
-10	5	5700.005793	5470~5725	Pass
-20	5	5699.974457	5470~5725	Pass

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5700.012303	5470~5725	Pass
	5	5700.011482	5470~5725	Pass
	5.5	5699.990501	5470~5725	Pass

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

CH Low

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5500.003516	5470~5725	Pass
40	5	5499.998895	5470~5725	Pass
30	5	5499.980979	5470~5725	Pass
20	5	5499.989308	5470~5725	Pass
10	5	5499.986441	5470~5725	Pass
0	5	5499.979458	5470~5725	Pass
-10	5	5499.995541	5470~5725	Pass
-20	5	5499.990711	5470~5725	Pass

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5499.985242	5470~5725	Pass
	5	5499.984444	5470~5725	Pass
	5.5	5499.976934	5470~5725	Pass

CH Mid

Operating Frequency: 5580 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5579.995250	5470~5725	Pass
40	5	5579.986002	5470~5725	Pass
30	5	5579.998939	5470~5725	Pass
20	5	5580.019402	5470~5725	Pass
10	5	5580.015565	5470~5725	Pass
0	5	5580.008782	5470~5725	Pass
-10	5	5579.981756	5470~5725	Pass
-20	5	5579.987669	5470~5725	Pass

Operating Frequency: 5580 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5579.970162	5470~5725	Pass
	5	5580.018097	5470~5725	Pass
	5.5	5579.996461	5470~5725	Pass

CH High

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5700.007423	5470~5725	Pass
40	5	5699.977874	5470~5725	Pass
30	5	5699.971481	5470~5725	Pass
20	5	5699.978826	5470~5725	Pass
10	5	5700.019424	5470~5725	Pass
0	5	5700.001248	5470~5725	Pass
-10	5	5700.013691	5470~5725	Pass
-20	5	5699.970175	5470~5725	Pass

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5700.000319	5470~5725	Pass
	5	5699.975614	5470~5725	Pass
	5.5	5699.988717	5470~5725	Pass

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

CH Low

Operating Frequency: 5510 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5509.994731	5470~5725	Pass
40	5	5510.014468	5470~5725	Pass
30	5	5509.983758	5470~5725	Pass
20	5	5509.996356	5470~5725	Pass
10	5	5509.994675	5470~5725	Pass
0	5	5509.997106	5470~5725	Pass
-10	5	5509.999894	5470~5725	Pass
-20	5	5510.017027	5470~5725	Pass

Operating Frequency: 5510 MHz				
Environment Temperature (oC)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5510.020025	5470~5725	Pass
	5	5510.013429	5470~5725	Pass
	5.5	5509.985724	5470~5725	Pass

CH Mid

Operating Frequency: 5550 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5550.013486	5470~5725	Pass
40	5	5549.972952	5470~5725	Pass
30	5	5549.971014	5470~5725	Pass
20	5	5550.016784	5470~5725	Pass
10	5	5550.020477	5470~5725	Pass
0	5	5549.977919	5470~5725	Pass
-10	5	5550.001526	5470~5725	Pass
-20	5	5549.991141	5470~5725	Pass

Operating Frequency: 5550 MHz				
Environment Temperature (oC)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5550.003582	5470~5725	Pass
	5	5549.979237	5470~5725	Pass
	5.5	5549.972788	5470~5725	Pass

CH High

Operating Frequency: 5670 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5670.002986	5470~5725	Pass
40	5	5670.006463	5470~5725	Pass
30	5	5670.013563	5470~5725	Pass
20	5	5670.000738	5470~5725	Pass
10	5	5670.019302	5470~5725	Pass
0	5	5669.970514	5470~5725	Pass
-10	5	5670.008088	5470~5725	Pass
-20	5	5670.001705	5470~5725	Pass

Operating Frequency: 5670 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5669.997057	5470~5725	Pass
	5	5669.997075	5470~5725	Pass
	5.5	5669.972421	5470~5725	Pass

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

CH Low

Operating Frequency: 5510 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5510.008875	5470~5725	Pass
40	5	5509.990500	5470~5725	Pass
30	5	5509.990735	5470~5725	Pass
20	5	5510.008030	5470~5725	Pass
10	5	5510.019381	5470~5725	Pass
0	5	5509.981781	5470~5725	Pass
-10	5	5510.019459	5470~5725	Pass
-20	5	5510.003644	5470~5725	Pass

Operating Frequency: 5510 MHz				
Environment Temperature (oC)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5509.984552	5470~5725	Pass
	5	5510.003485	5470~5725	Pass
	5.5	5509.997816	5470~5725	Pass

CH Mid

Operating Frequency: 5550 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5549.998281	5470~5725	Pass
40	5	5549.992189	5470~5725	Pass
30	5	5549.981625	5470~5725	Pass
20	5	5550.013216	5470~5725	Pass
10	5	5550.009768	5470~5725	Pass
0	5	5550.018588	5470~5725	Pass
-10	5	5549.999021	5470~5725	Pass
-20	5	5550.003162	5470~5725	Pass

Operating Frequency: 5550 MHz				
Environment Temperature (oC)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5550.009453	5470~5725	Pass
	5	5550.008379	5470~5725	Pass
	5.5	5549.983981	5470~5725	Pass

CH High

Operating Frequency: 5670 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5670.019709	5470~5725	Pass
40	5	5670.014062	5470~5725	Pass
30	5	5669.992544	5470~5725	Pass
20	5	5669.988853	5470~5725	Pass
10	5	5670.019661	5470~5725	Pass
0	5	5669.986049	5470~5725	Pass
-10	5	5669.993538	5470~5725	Pass
-20	5	5670.010266	5470~5725	Pass

Operating Frequency: 5670 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5670.017814	5470~5725	Pass
	5	5669.993126	5470~5725	Pass
	5.5	5670.000949	5470~5725	Pass

IEEE 802.11n HT 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	5	5529.981456	5470~5725	Pass
40	5	5529.975943	5470~5725	Pass
30	5	5530.013362	5470~5725	Pass
20	5	5529.982375	5470~5725	Pass
10	5	5529.991394	5470~5725	Pass
0	5	5529.973492	5470~5725	Pass
-10	5	5529.986163	5470~5725	Pass
-20	5	5529.976973	5470~5725	Pass

Operating Frequency: 5530 MHz				
Environment Temperature (oC)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5529.995368	5470~5725	Pass
	5	5529.992845	5470~5725	Pass
	5.5	5530.017393	5470~5725	Pass

CH High

Operating Frequency: 5690 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5689.990343	5470~5725	Pass
40	5	5689.984876	5470~5725	Pass
30	5	5689.975739	5470~5725	Pass
20	5	5690.009705	5470~5725	Pass
10	5	5690.002393	5470~5725	Pass
0	5	5690.016524	5470~5725	Pass
-10	5	5689.977513	5470~5725	Pass
-20	5	5689.973256	5470~5725	Pass

Operating Frequency: 5690 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5689.992708	5470~5725	Pass
	5	5689.999061	5470~5725	Pass
	5.5	5690.004374	5470~5725	Pass

IEEE 802.11n HT 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	5	5530.010483	5470~5725	Pass
40	5	5530.019791	5470~5725	Pass
30	5	5530.001518	5470~5725	Pass
20	5	5530.009295	5470~5725	Pass
10	5	5530.014702	5470~5725	Pass
0	5	5530.009123	5470~5725	Pass
-10	5	5529.988432	5470~5725	Pass
-20	5	5530.012906	5470~5725	Pass

Operating Frequency: 5530 MHz				
Environment Temperature (oC)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5529.996646	5470~5725	Pass
	5	5529.979802	5470~5725	Pass
	5.5	5529.985594	5470~5725	Pass

CH High

Operating Frequency: 5690 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	5	5689.990875	5470~5725	Pass
40	5	5689.993439	5470~5725	Pass
30	5	5689.986585	5470~5725	Pass
20	5	5689.981156	5470~5725	Pass
10	5	5689.996747	5470~5725	Pass
0	5	5690.016640	5470~5725	Pass
-10	5	5689.974921	5470~5725	Pass
-20	5	5689.996986	5470~5725	Pass

Operating Frequency: 5690 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	4.5	5690.004155	5470~5725	Pass
	5	5690.005262	5470~5725	Pass
	5.5	5689.99751	5470~5725	Pass