FCC 47 CFR PART 15 SUBPART E

for

5-GHz Wireless N600 HD Media Streaming Box

Model: WAP5805

Brand: ZyXEL

Test Report Number:
C140606Z01-RP1
Issued Date: July 14, 2014

Issued for

ZyXEL Communications Corporation
No.6, Innovation Road II, Hsinchu Science Park No.2, Gongye E. 9th Road, Hsinchu Science Park

Issued by:

Compliance Certification Services (Shenzhen) Inc.
No.10-1 Mingkeda Logistics park, No.18, Huanguan South Rd.,
Guan Lan Town, Baoan District, Shenzhen, China
TEL: 86-755-28055000
FAX: 86-755-28055221

TESTING CERT #2861.01

CNAS L4818

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	July 14, 2014	Initial Issue	ALL	Sabrina Wang

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1. TEST CERTIFICATION

Product	5-GHz Wireless N600 HD Media Streaming Box
Model	WAP5805
Brand	ZyXEL
Tested	June 6~July 14, 2014
Applicant	**ZyXEL Communications Corporation** No.6, Innovation Road II, Hsinchu Science Park No.2, Gongye E. 9th Road, Hsinchu Science Park
Manufacturer	**ZyXEL Communications Corporation** No.6, Innovation Road II, Hsinchu Science Park No.2, Gongye E. 9th Road, Hsinchu Science Park

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

We hereby certify that:

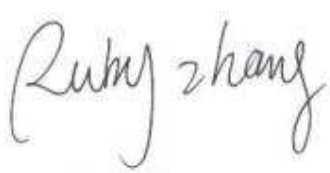
Compliance Certification Services Inc. tested the above equipment. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in **ANSI C63.4: 2009** and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.407、FCC 14-30.

The TEST RESULTS of this report relate only to the tested sample identified in this report.

Approved by:

Sunday Hu
Supervisor of EMC Dept.
Compliance Certification Service Inc.

Reviewed by:



Ruby Zhang
Supervisor of Report Dept.
Compliance Certification Service Inc.

2. EUT DESCRIPTION

Product	5-GHz Wireless N600 HD Media Streaming Box
Model Number	WAP5805
Brand	ZyXEL
Model Discrepancy	N/A
Serial Number	C140606Z01-RP1
Received Date	June 6, 2014
Power Supply	DC 12V supplied by the adapter
Adapter1 Manufacturer / Mode No.	Shenzhen Gongjin Electronics Co., Ltd / S12B22-120A100-04 I/P: AC100-240V ~ 50-60Hz, 0.5A Max O/P: DC12V, 1A DC Output Cable: Unshielded, 1.4m
Adapter2 Manufacturer / Mode No.	Shenzhen Gongjin Electronics Co., Ltd / S12A02-120A100-P4 I/P: AC100-240V ~ 50/60Hz, 0.5A Max O/P: DC12V, 1A DC Output Cable: Unshielded, 1.4m
Frequency Range	UNII Band I: 802.11n HT20 : 5180MHz ~ 5240MHz; IEEE 802.11n HT40 : 5190MHz ~ 5230MHz UNII Band IV 802.11n HT20 : 5745MHz ~ 5825MHz IEEE 802.11n HT40 : 5755MHz ~ 5795MHz
Transmit Power	UNII Band I: IEEE 802.11n HT 20 MHz mode: 24.63dBm (Combine with Antenna 1 and Antenna 2 and Antenna 3 and Antenna 4) IEEE 802.11n HT 40 MHz mode: 17.84dBm (Combine with Antenna 1 and Antenna 2 and Antenna 3 and Antenna 4) UNII Band IV IEEE 802.11n HT 20 MHz mode: 21.33dBm (Combine with Antenna 1 and Antenna 2 and Antenna 3 and Antenna 4) IEEE 802.11n HT 40 MHz mode: 21.10dBm (Combine with Antenna 1 and Antenna 2 and Antenna 3 and Antenna 4)
Modulation Technique	OFDM (QPSK, BPSK, 16-QAM, 64-QAM)
Transmit Data Rate	IEEE 802.11n HT 20 MHz mode: OFDM (6.50, 13.00, 19.50, 26.00, 39.00, 52.00, 58.50, 65.00, 78.00, 104.0, 117.0, 130.0, 156.0, 175.5, 195.0Mbps) IEEE 802.11n HT 40 MHz mode: OFDM (13.50, 27.00, 40.50, 54.00, 81.00, 108.0, 121.5, 135.0, 162.0, 216.0, 243.0, 270.0, 324.0, 364.5, 405.0Mbps)
Number of Channels	UNII Band I: 802.11n HT20 : 4 Channels IEEE 802.11n HT40 : 2 Channels UNII Band IV 802.11n HT20 : 5 Channels IEEE 802.11n HT40 : 2 Channels
Antenna Specification	Embedded Type Antenna with 2.8dBi gain (Max)
Channels Spacing	IEEE 802.11n HT20 : 20MHz IEEE 802.11n HT40: 40MHz,

Temperature Range	0℃ ~ 45℃
Hardware Version	V1.0
Software Version	V1.00(AAKB.1)C0

Note: *1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*

Operation Frequency:

UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII)	
CHANNEL	**MHz**
36	5180
38	5190
40	5200
44	5220
46	5230
48	5240
149	5745
151	5755
153	5765
157	5785
159	5795
161 165	5805 5825

Remark:

1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for FCC ID: **I88WAP5805** filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules and FCC 14-30.

3. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 Radiated testing was performed at an antenna to EUT distance 3 meters. The tests documented in this report were performed in accordance with ANSI C63.4: 2009 and FCC CFR 47 Part 15.207, 15.209 ,15.407 and FCC 14-30,.
Radio testing was performed according to KDB DA 02-2138、KDB 789033 D02、KDB 905462 D06；

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 C63.4, 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 C63.4.

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 is a 4x4 configuration spatial MIMO (4TX & 4RX) without beam forming function.

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.

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

UNII Band I:

IEEE 802.11n HT 20 MHz for 5180 ~ 5240MHz:
Channel Low (5180MHz), Channel Mid (5220MHz) and Channel High (5240MHz) with 13Mbps 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 27Mbps data rate were chosen for full testing.

UNII Band IV:

IEEE 802.11n HT 20 MHz for 5745 ~ 5825MHz:
Channel Low (5745MHz), Channel Mid (5785MHz) and Channel High (5825MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz for 5755 ~ 5795MHz:

Channel Low (5755MHz) and Channel High (5795MHz) with 27Mbps data rate were chosen for full testing.

4. SETUP OF EQUIPMENT UNDER TEST

4.1 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Equipment	Model No.	Serial No.	FCC ID	Brand	Data Cable	Power Cord
1	Notebook	B475	WB04861612	N/A	Lenovo	Unshielded 1.80m	Unshielded 1.80m

Note:

Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.2 CONFIGURATION OF SYSTEM UNDER TEST

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

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at **No.10-1 Mingkeda Logistics park, No.18, Huanguan South Rd., Guan Lan Town, Baoan District, Shenzhen, China**

The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 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 ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

USA	**A2LA**
China	**CNAS**

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

USA	**FCC**
Japan	**VCCI(C-3478, R-3135, T-652, G-624)**
Canada	**INDUSTRY CANADA**
Taiwan	**BSMI**

Copies of granted accreditation certificates are available for downloading from our web site, http://www.ccsrf.com

5.4 MEASUREMENT UNCERTAINTY

Parameter	Uncertainty
RF frequency	+/-1 * 10-5
RF power conducted	+/- 1,5 dB
RF power radiated	+/- 6 dB
Spurious emissions, conducted	+/- 3 dB
Spurious emissions, radiated	+/- 6 dB
Humidity	+/- 5 %
Temperature	+/- 1℃
Time	+/-10 %

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

6. FCC PART 15 REQUIREMENTS

6.1 26dB EMISSION BANDWIDTH

6.1.1LIMIT

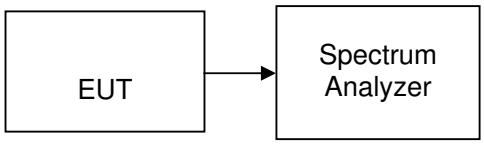
According to §15.303(c), for purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated 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.

6.1.2MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	E4446A	US44300399	03/01/2014	03/01/2015

Remark: *Each piece of equipment is scheduled for calibration once a year.*

6.1.3TEST CONFIGURATION



6.1.4TEST 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, Detector = Peak, and Sweep = auto.
4. Mark the peak frequency and –26dB (upper and lower) frequency.
5. Repeat until all the rest channels were investigated.

6.1.5TEST RESULTS

No non-compliance noted

Test Data

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

Channel	Frequency (MHz)	Bandwidth(B) (MHz)			
		Antenna 1	Antenna 2	Antenna 3	Antenna 4
Low	5180	26.405	27.719	26.002	25.450
Mid	5220	27.078	27.632	26.385	25.791
High	5240	27.088	25.911	26.638	25.134

Test mode: IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)			
		Antenna 1	Antenna 2	Antenna 3	Antenna 4
Low	5745	26.131	27.626	26.019	25.572
Mid	5785	26.181	27.480	26.907	25.270
High	5825	25.750	26.483	26.549	25.007

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

Channel	Frequency (MHz)	Bandwidth(B) (MHz)			
		Antenna 1	Antenna 2	Antenna 3	Antenna 4
Low	5190	43.972	44.039	43.859	43.708
High	5230	43.848	43.835	43.180	42.849

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

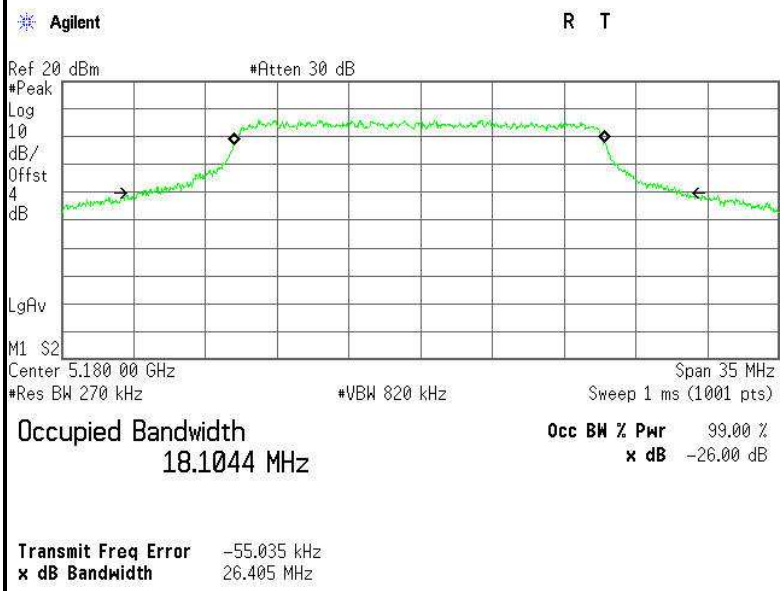
Channel	Frequency (MHz)	Bandwidth(B) (MHz)			
		Antenna 1	Antenna 2	Antenna 3	Antenna 4
Low	5755	44.099	44.000	43.817	42.904
High	5795	44.521	44.262	45.191	44.261

Test Plot

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

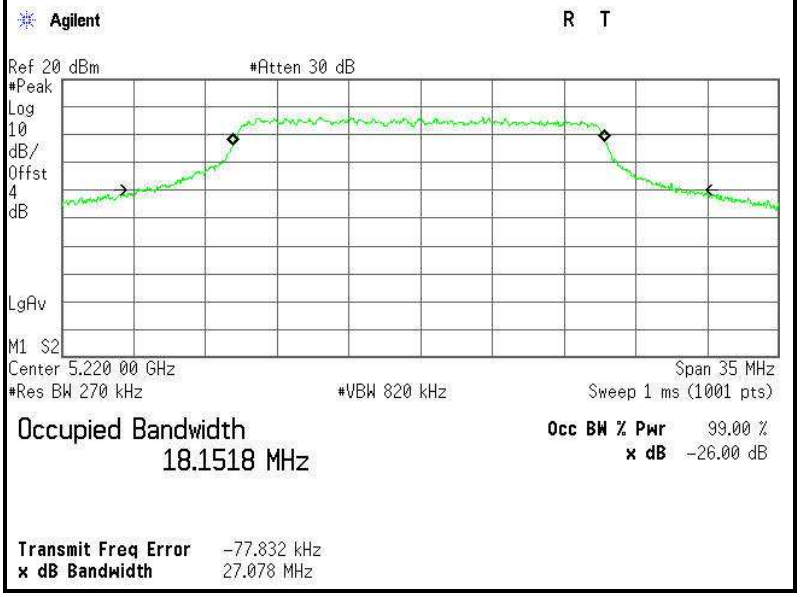
26dB Bandwidth (CH Low)

Antenna 1



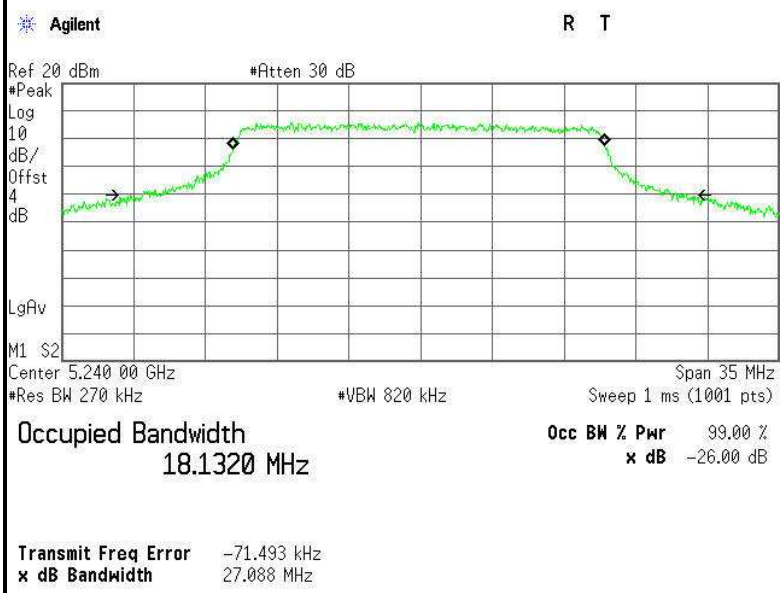
26dB Bandwidth (CH Mid)

Antenna 1



26dB Bandwidth (CH High)

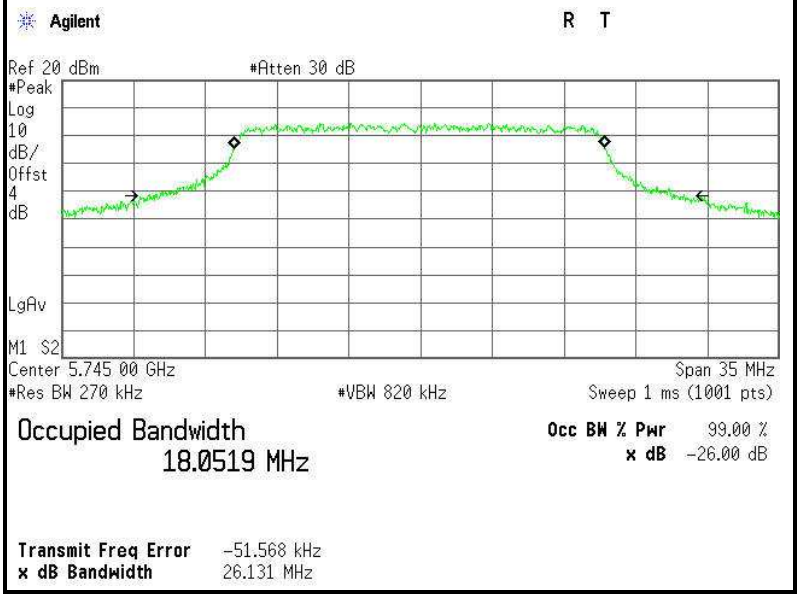
Antenna 1



IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

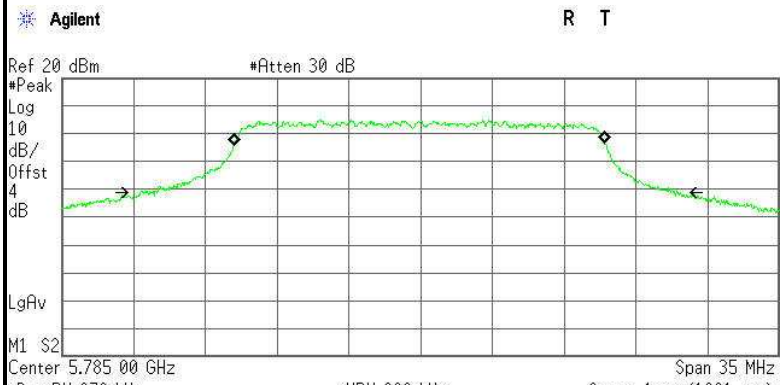
26dB Bandwidth (CH Low)

Antenna 1



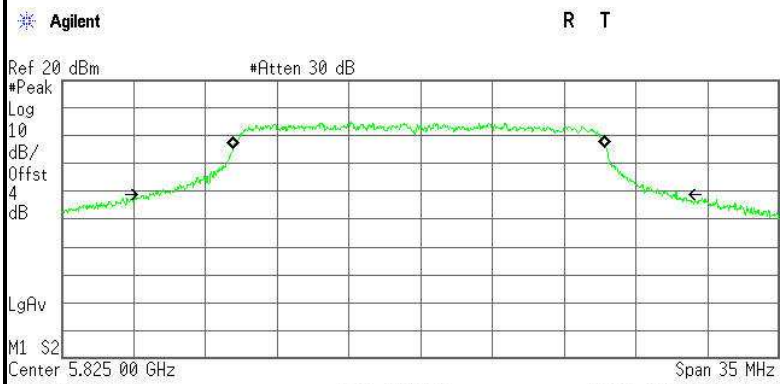
26dB Bandwidth (CH Mid)

Antenna 1



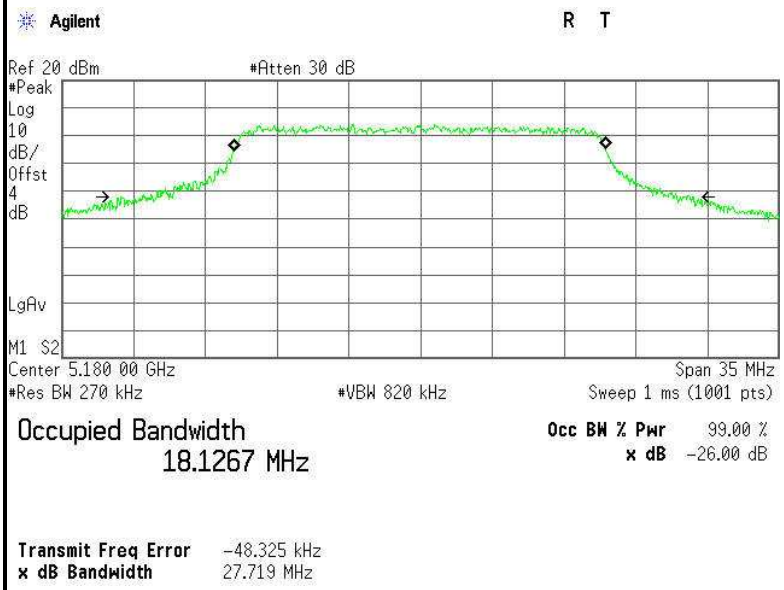
26dB Bandwidth (CH High)

Antenna 1



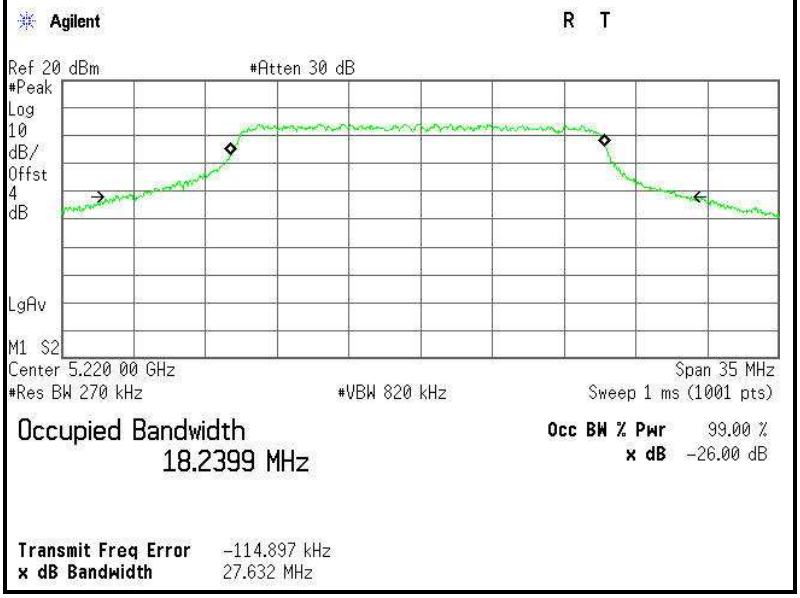
IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz
26dB Bandwidth (CH Low)

Antenna 2



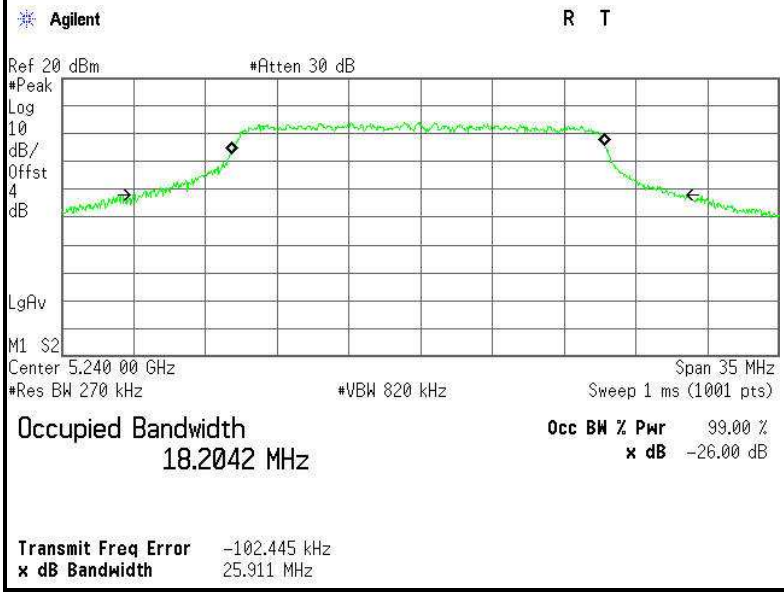
26dB Bandwidth (CH Mid)

Antenna 2



26dB Bandwidth (CH High)

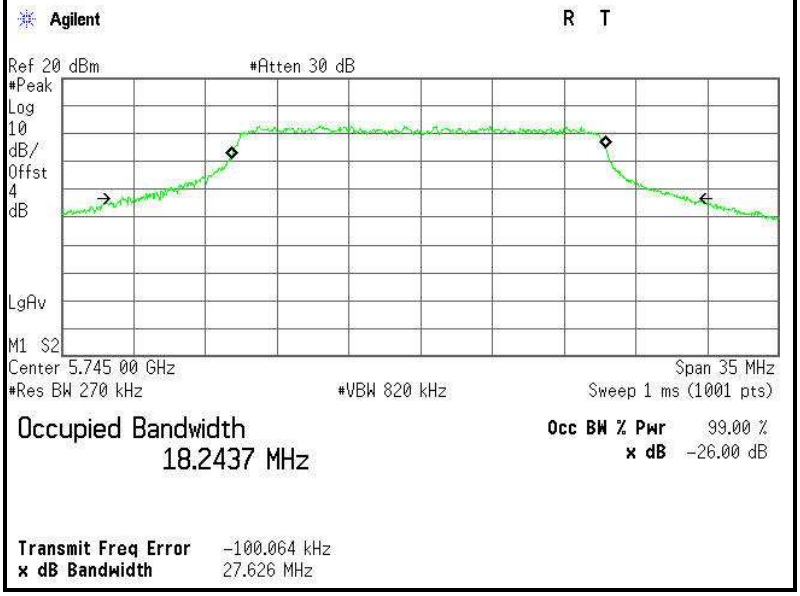
Antenna 2



IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

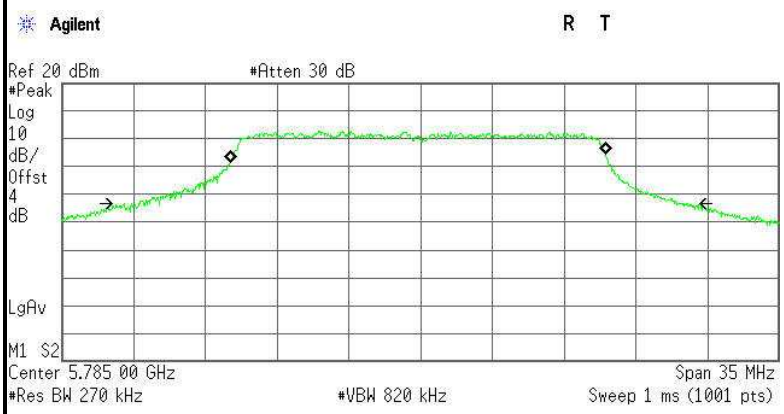
26dB Bandwidth (CH Low)

Antenna 2



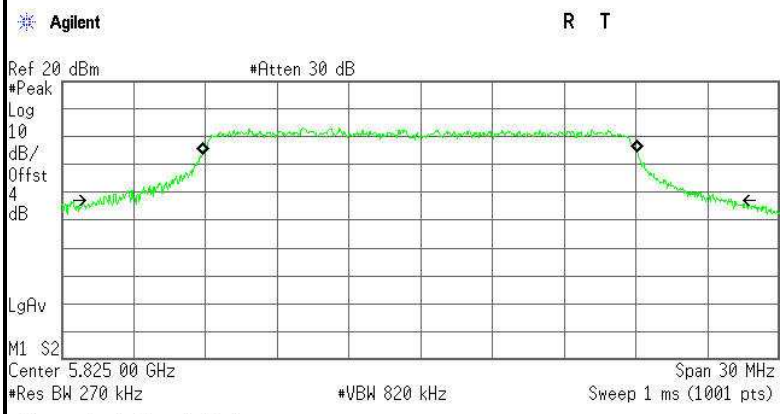
26dB Bandwidth (CH Mid)

Antenna 2



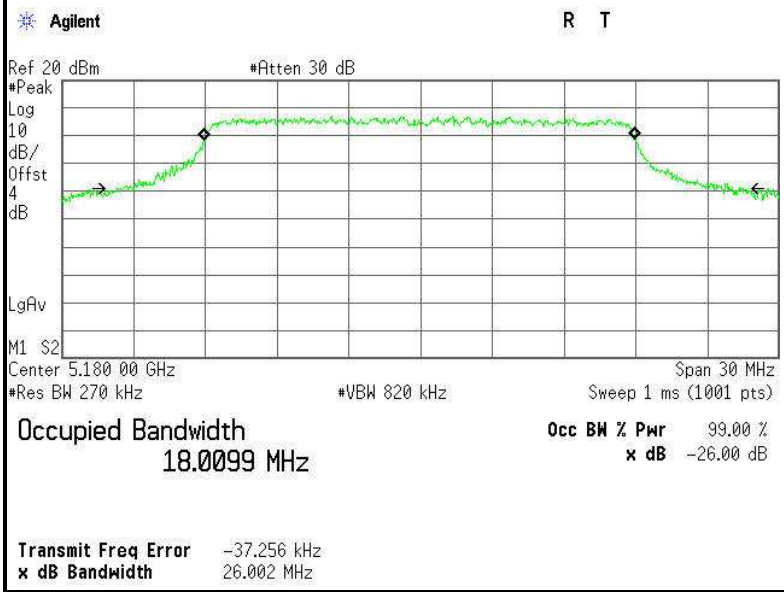
26dB Bandwidth (CH High)

Antenna 2



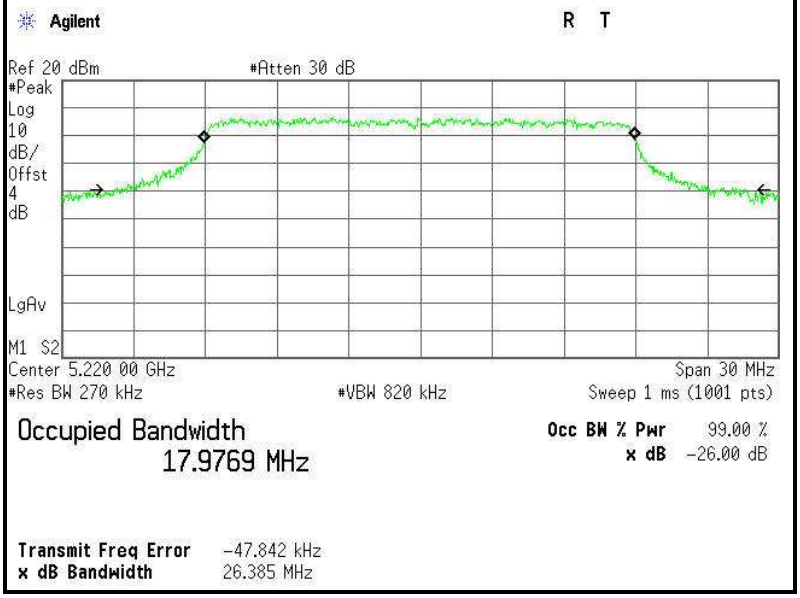
IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz
26dB Bandwidth (CH Low)

Antenna 3



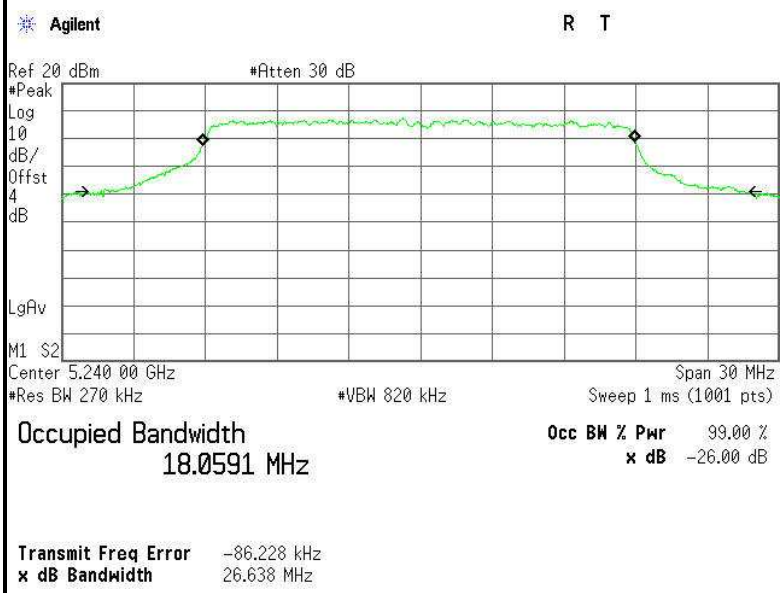
26dB Bandwidth (CH Mid)

Antenna 3



26dB Bandwidth (CH High)

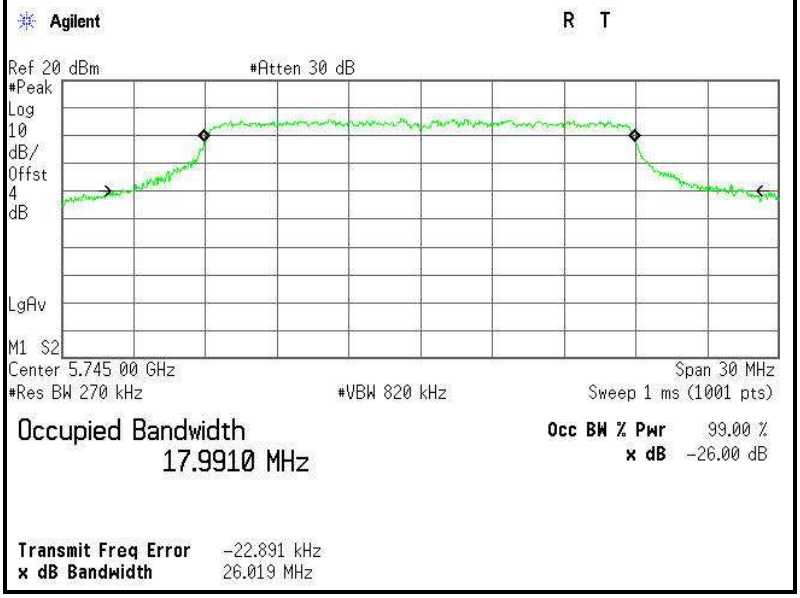
Antenna 3



IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

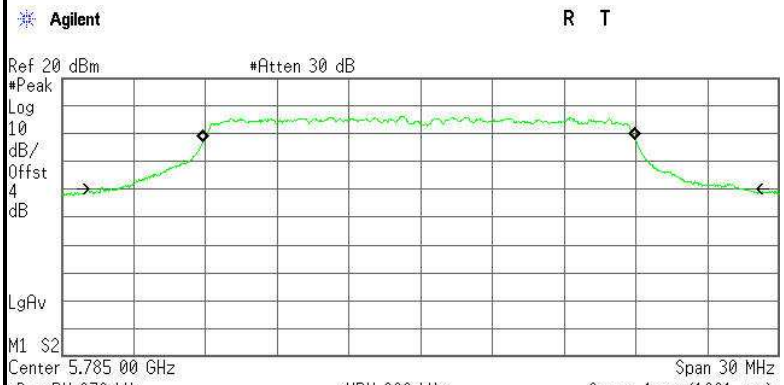
26dB Bandwidth (CH Low)

Antenna 3



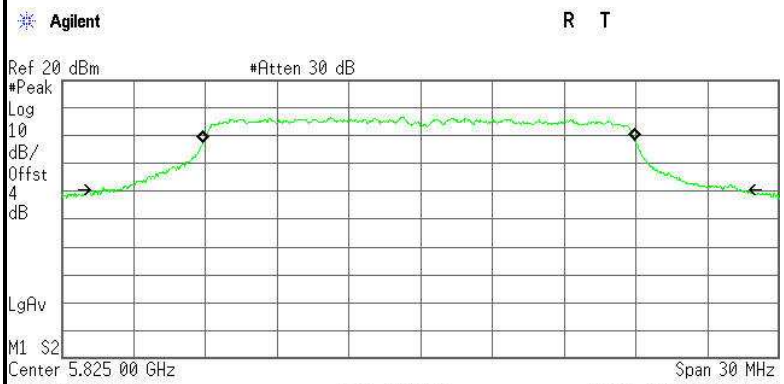
26dB Bandwidth (CH Mid)

Antenna 3



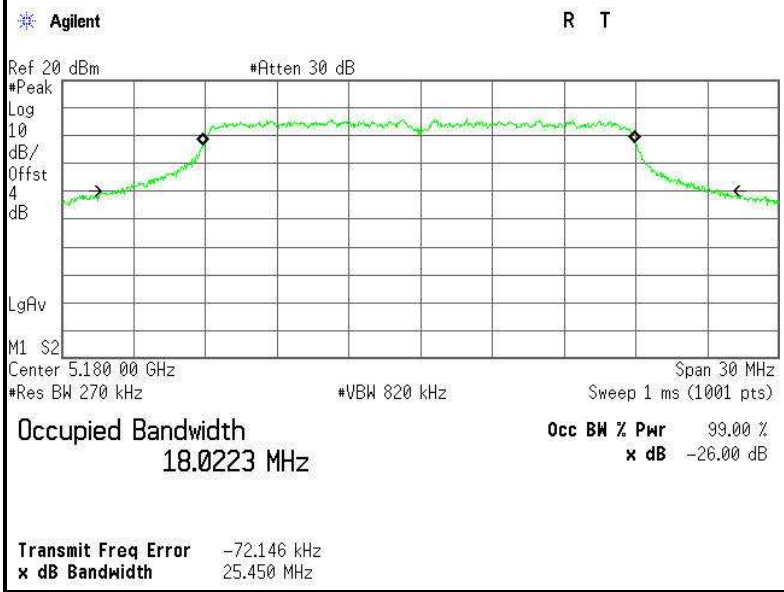
26dB Bandwidth (CH High)

Antenna 3



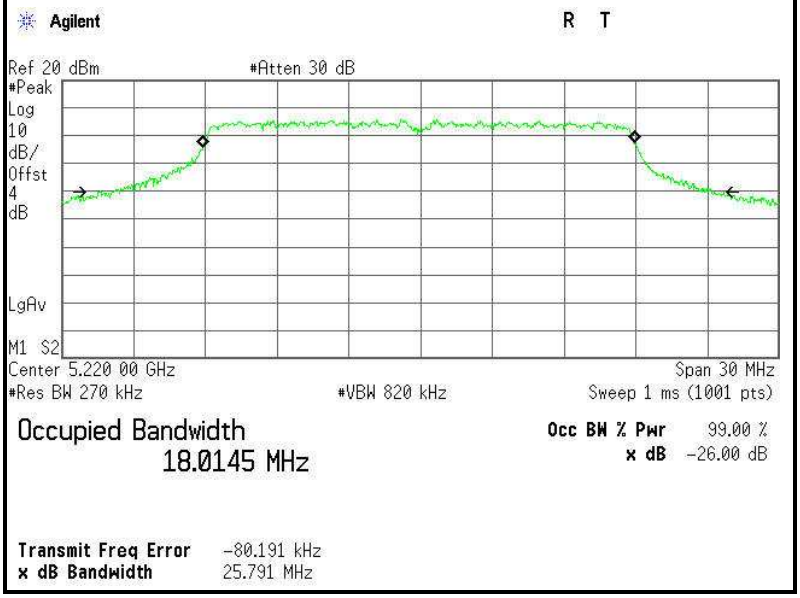
IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz
26dB Bandwidth (CH Low)

Antenna 4



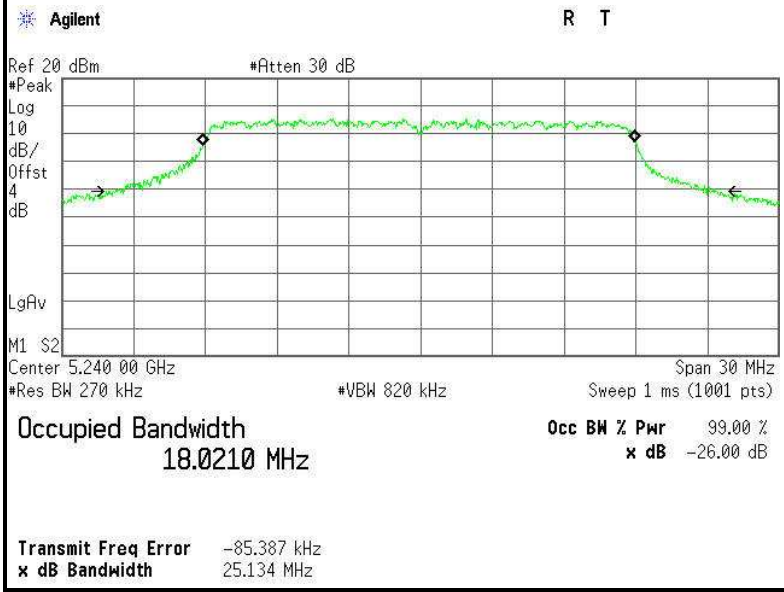
26dB Bandwidth (CH Mid)

Antenna 4



26dB Bandwidth (CH High)

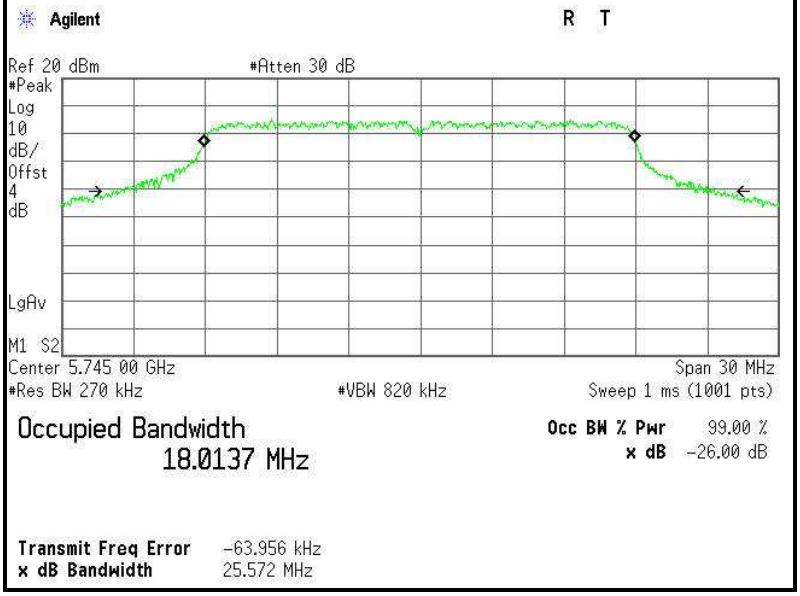
Antenna 4



IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

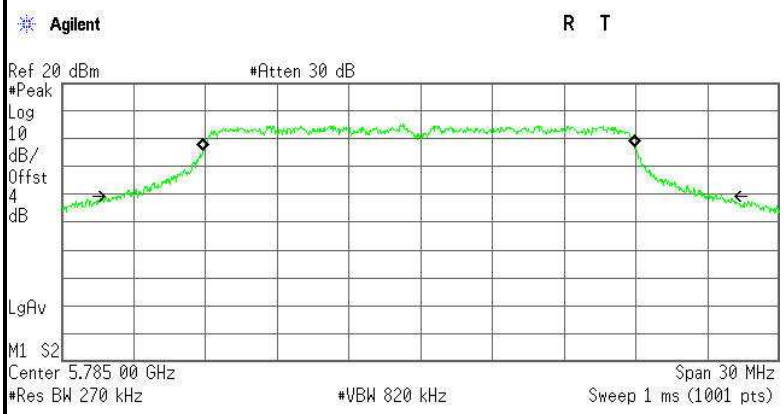
26dB Bandwidth (CH Low)

Antenna 4



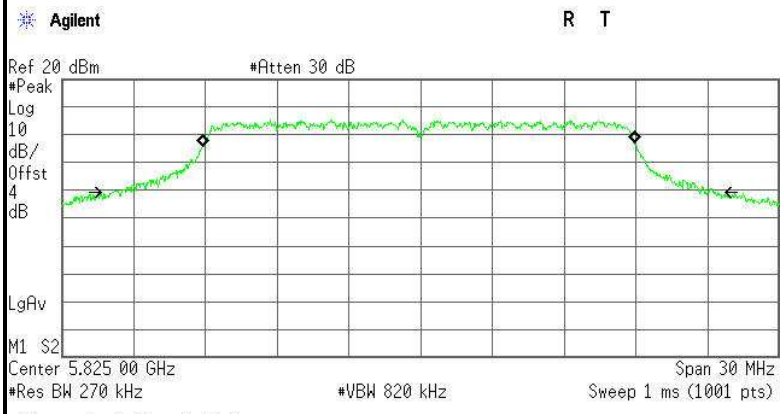
26dB Bandwidth (CH Mid)

Antenna 4



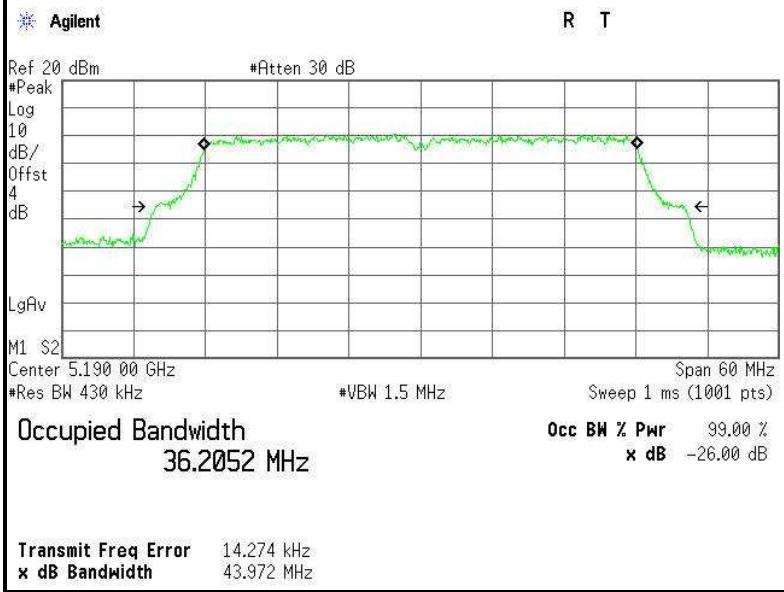
26dB Bandwidth (CH High)

Antenna 4



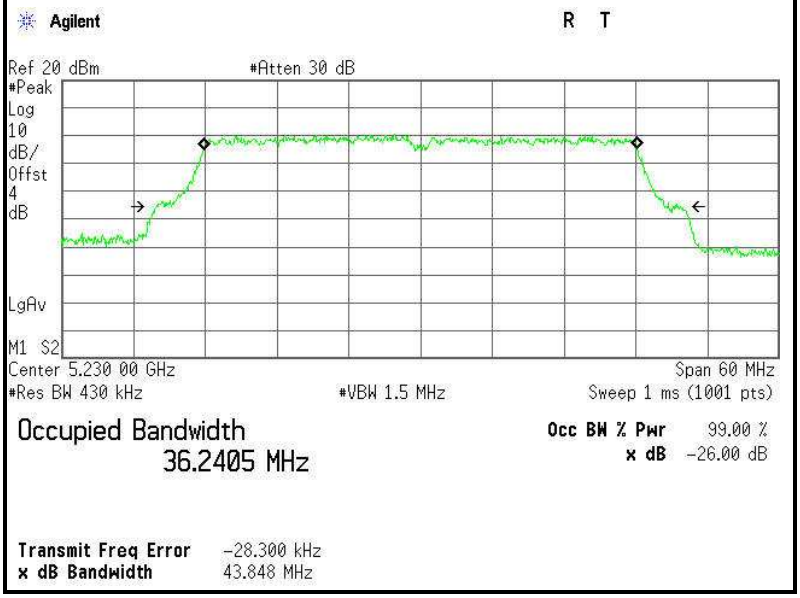
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz
26dB Bandwidth (CH Low)

Antenna 1



26dB Bandwidth (CH High)

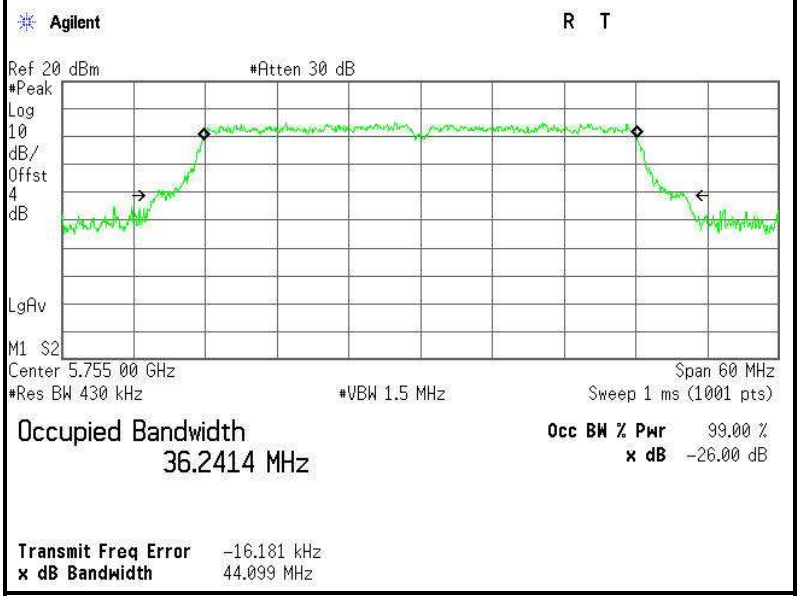
Antenna 1



IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

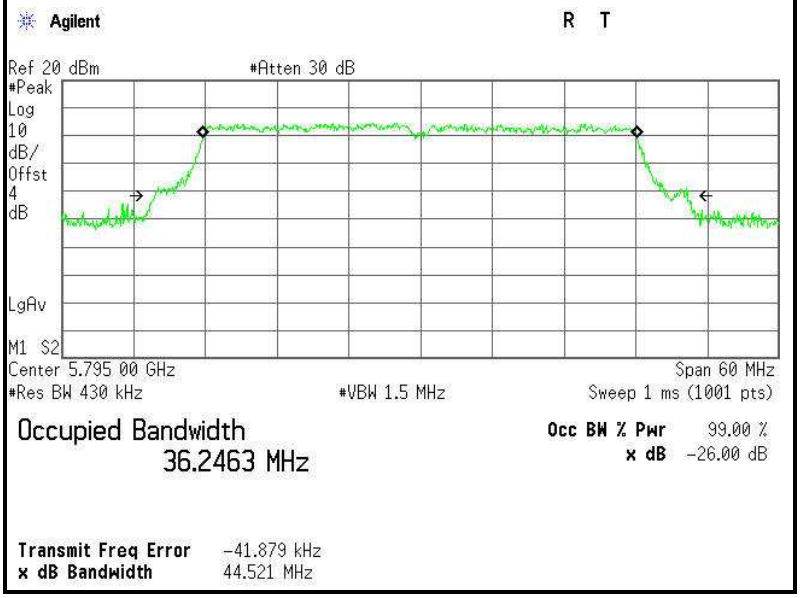
26dB Bandwidth (CH Low)

Antenna 1



26dB Bandwidth (CH High)

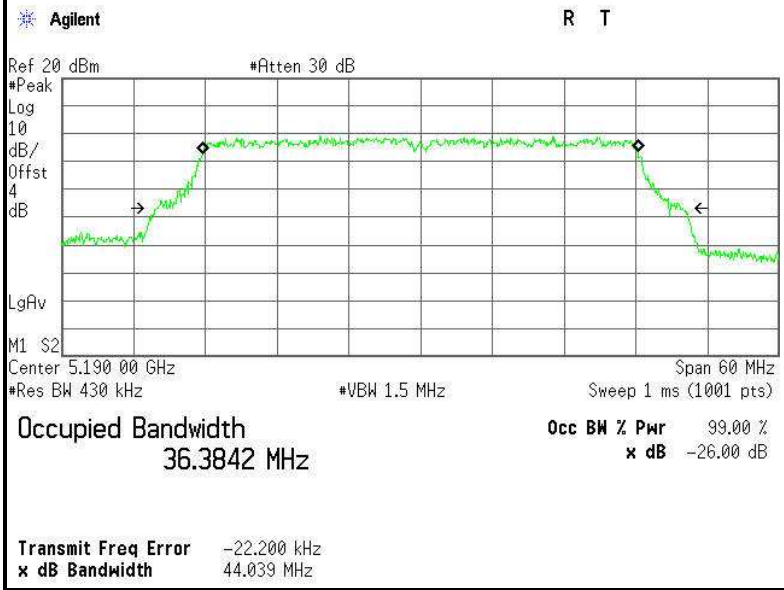
Antenna 1



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

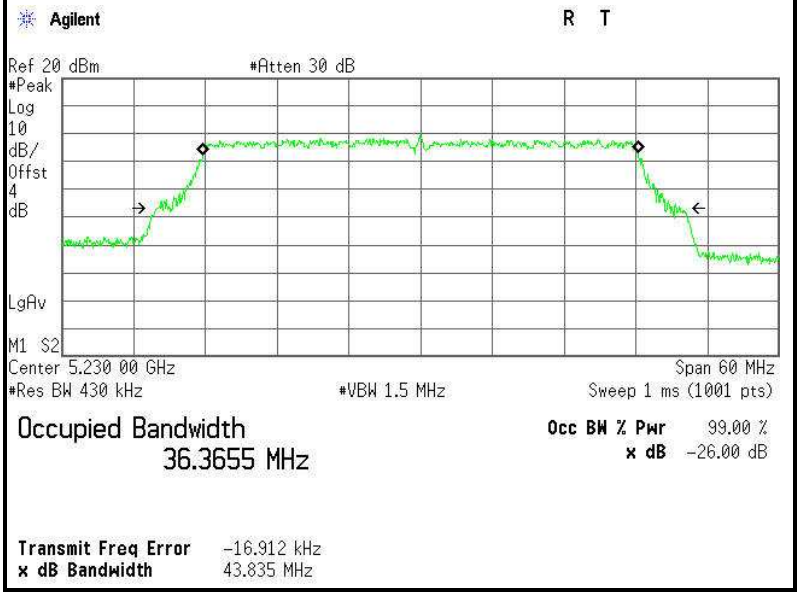
26dB Bandwidth (CH Low)

Antenna 2



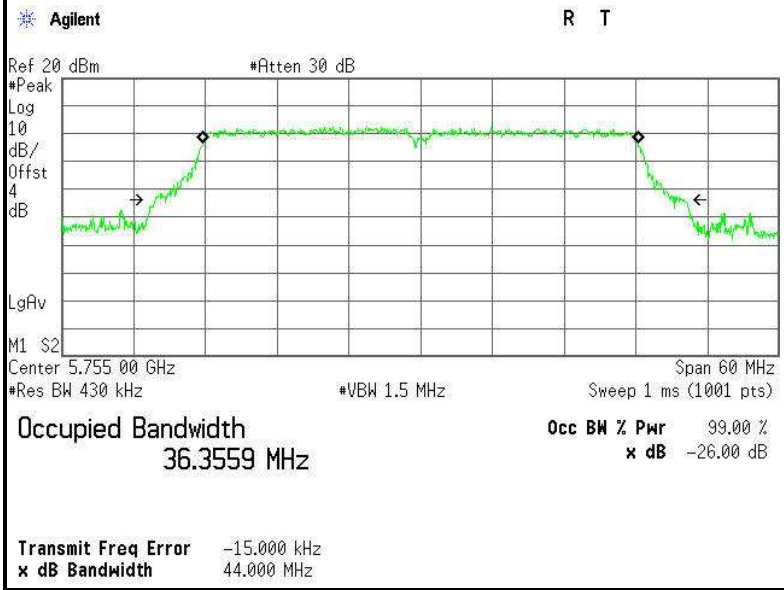
26dB Bandwidth (CH High)

Antenna 2



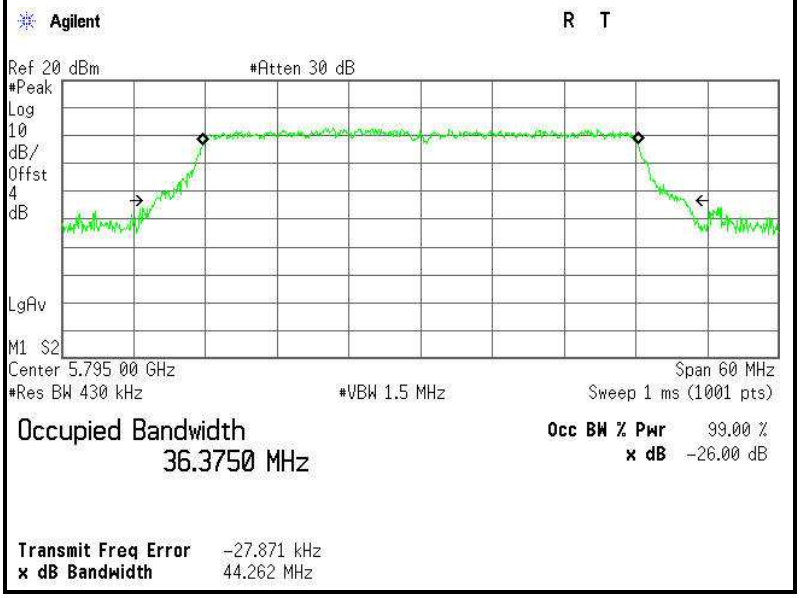
IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz
26dB Bandwidth (CH Low)

Antenna 2



26dB Bandwidth (CH High)

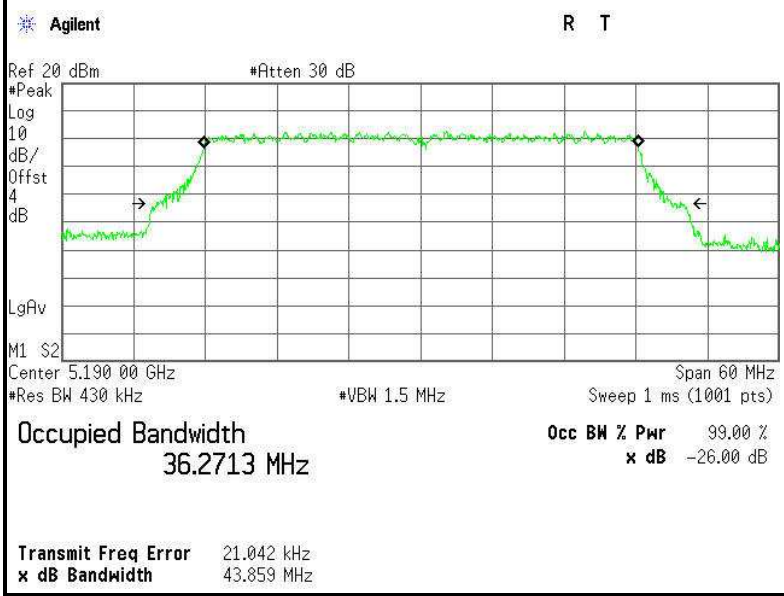
Antenna 2



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

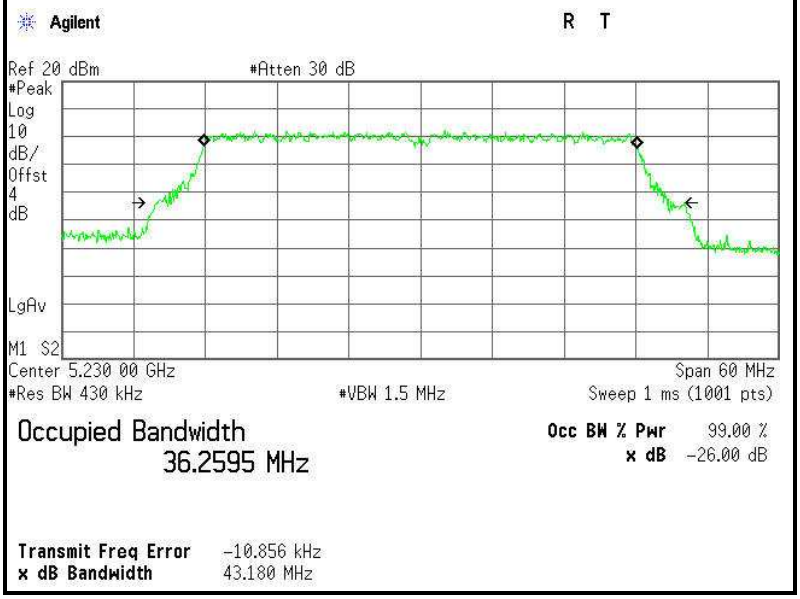
26dB Bandwidth (CH Low)

Antenna 3



26dB Bandwidth (CH High)

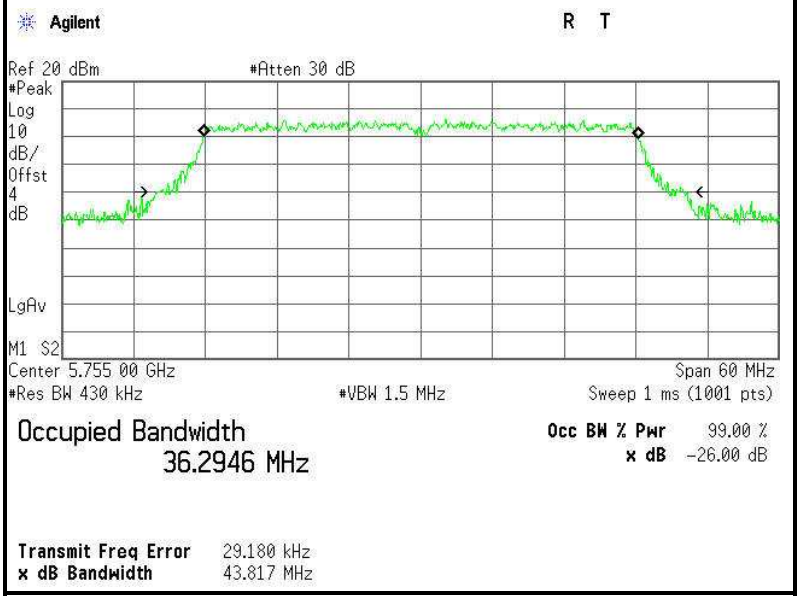
Antenna 3



IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

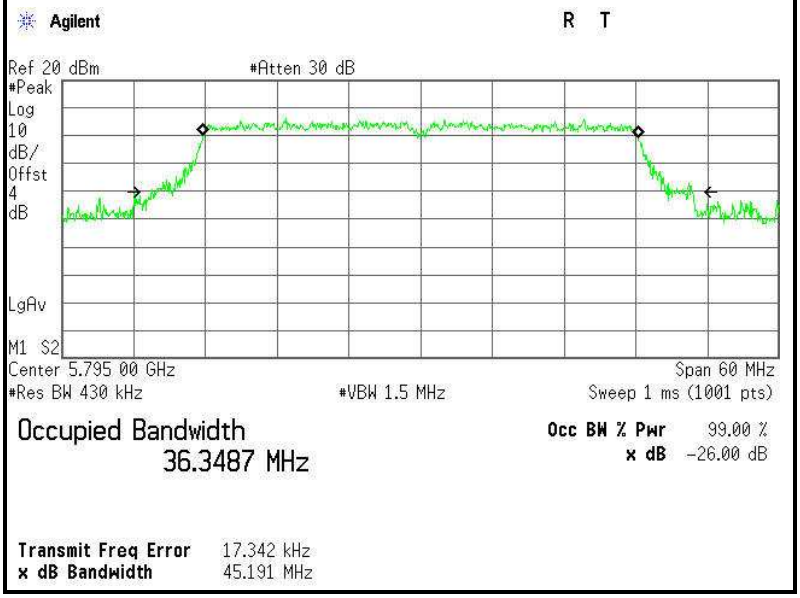
26dB Bandwidth (CH Low)

Antenna 3



26dB Bandwidth (CH High)

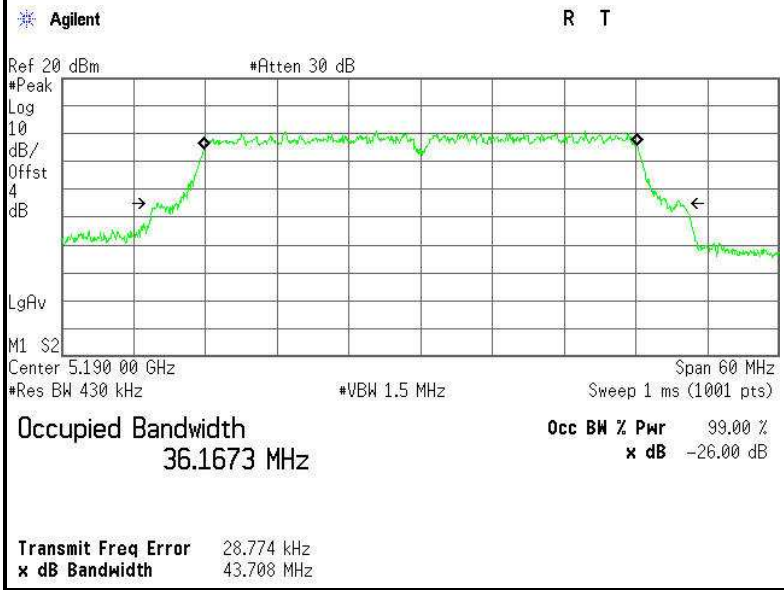
Antenna 3



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

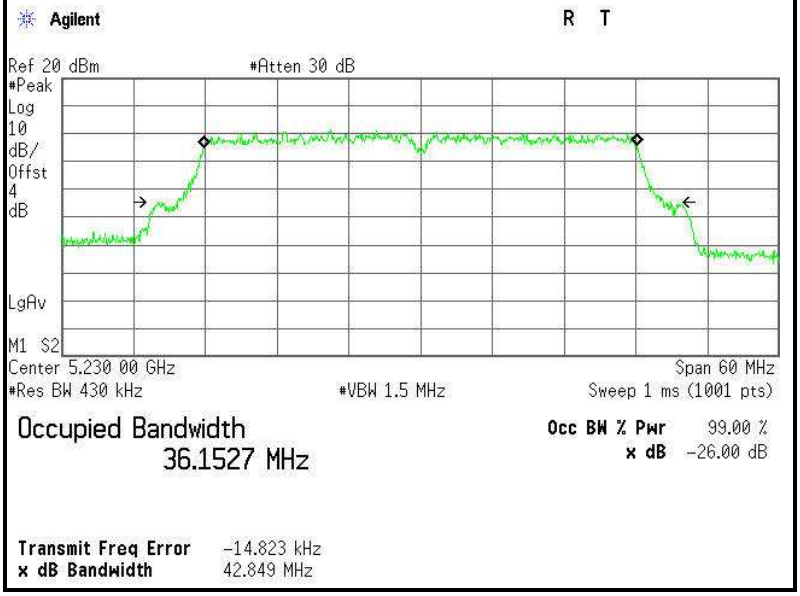
26dB Bandwidth (CH Low)

Antenna 4

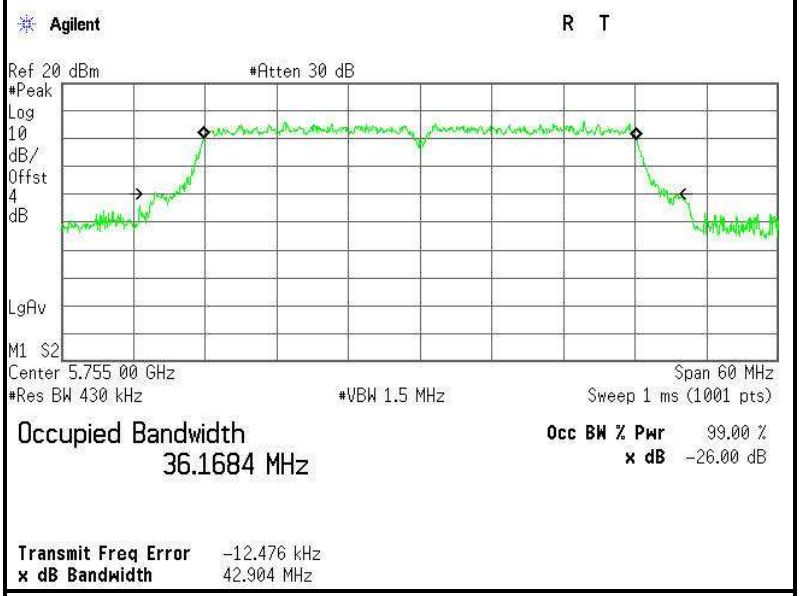


26dB Bandwidth (CH High)

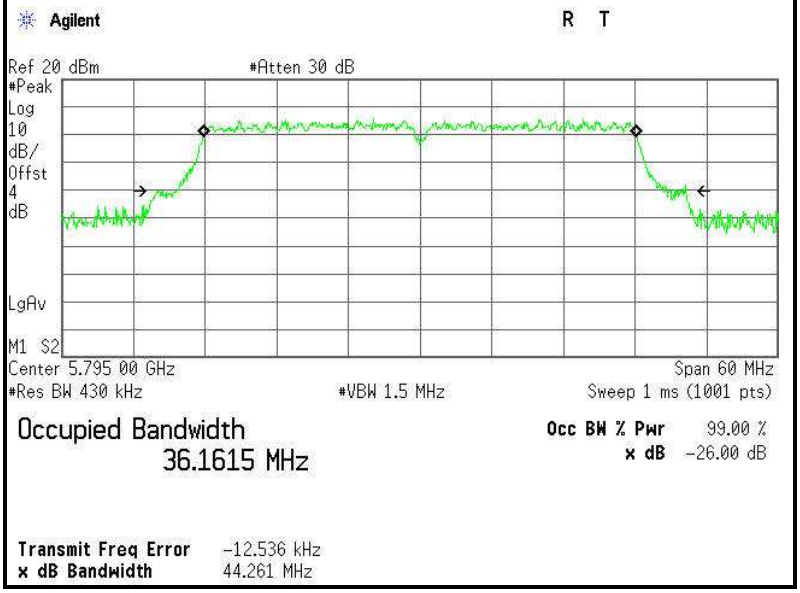
Antenna 4



IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz
26dB Bandwidth (CH Low)
Antenna 4



26dB Bandwidth (CH High)
Antenna 4



6.2 PEAK POWER

6.2.1 LIMIT

According to 15.407(a)& FCC R&O FCC 14 - 30,

(1) (i) For an outdoor access point operating in the band 5.15 – 5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(2) (ii) For an indoor access point operating in the band 5.15 – 5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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.

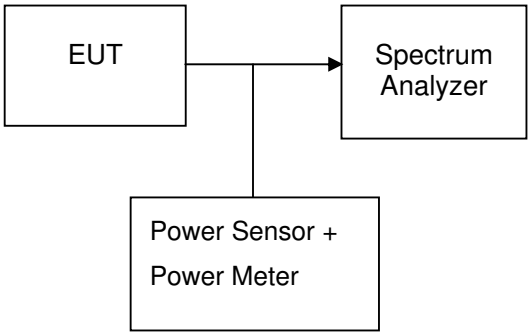
6.2.2MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/01/2014	03/01/2015
Power Meter	Anritsu	ML2495A	1204003	03/01/2014	03/01/2015
Power Sensor	Anritsu	MA2411B	1126150	03/01/2014	03/01/2015

Remark: *Each piece of equipment is scheduled for calibration once a year.*

6.2.3TEST CONFIGURATIONS

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



6.2.4TEST 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.

6.2.5TEST RESULTS

No non-compliance noted

6.2.6TEST DATA

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

Channel	Frequency (MHz)	Output Power (dBm)					Output Power (W)	Limit (dBm)	Result
		Antenna 1	Antenna 2	Antenna 3	Antenna 4	Total			
Low	5180	19.01	16.92	19.63	18.25	24.59	0.28749	30.00	PASS
Mid	5220	18.74	16.72	19.14	18.09	24.29	0.26826		PASS
High	5240	18.84	16.20	19.33	19.37	24.63	0.29045		PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	Output Power (dBm)					Output Power (W)	Limit (dBm)	Result
		Antenna 1	Antenna 2	Antenna 3	Antenna 4	Total			
Low	5745	15.87	14.90	15.00	15.39	21.33	0.13576	30.00	PASS
Mid	5785	15.75	14.71	14.71	15.26	21.15	0.13032		PASS
High	5825	15.52	14.61	14.82	15.29	21.10	0.12870		PASS

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

Channel	Frequency (MHz)	Output Power (dBm)					Output Power (W)	Limit (dBm)	Result
		Antenna 1	Antenna 2	Antenna 3	Antenna 4	Total			
Low	5190	12.51	10.05	12.76	11.47	17.84	0.06085	30.00	PASS
High	5230	12.33	10.18	12.89	11.38	17.83	0.06072		PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Channel	Frequency (MHz)	Output Power (dBm)					Output Power (W)	Limit (dBm)	Result
		Antenna 1	Antenna 2	Antenna 3	Antenna 4	Total			
Low	5755	15.69	14.71	14.43	15.38	21.10	0.12890	30.00	PASS
High	5795	15.35	14.27	14.24	14.74	20.69	0.11734		PASS

6.3 BAND EDGES MEASUREMENT

6.3.1 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.

6.3.2 MEASUREMENT EQUIPMENT USED

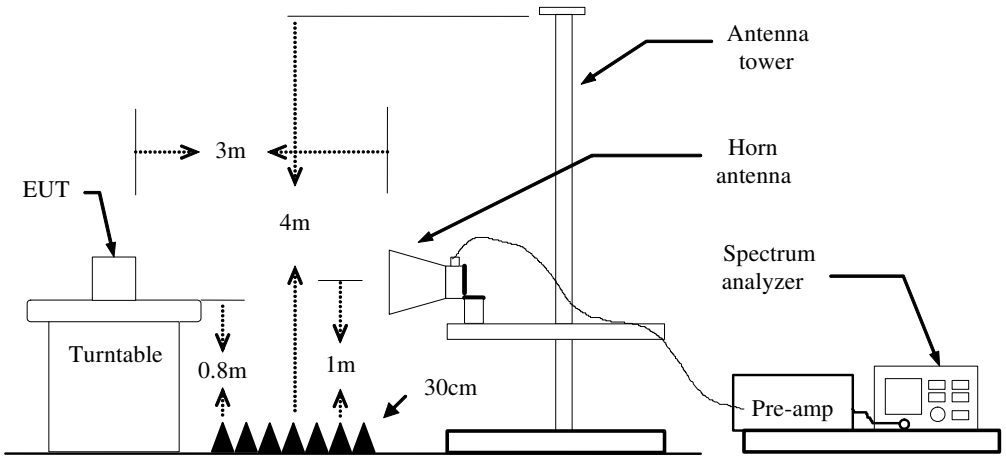
Radiated Emission Test Site 966（2）					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	03/01/2014	03/01/2015
Spectrum Analyzer	Agilent	N9010A	MY52221469	10/25/2013	10/24/2014
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	03/09/2014	03/08/2015
Amplifier	MITEQ	AM-1604-3000	1123808	03/18/2014	03/18/2015
High Noise Amplifier	Agilent	8449B	3008A01838	03/18/2014	03/18/2015
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	07/10/2014	07/09/2015
Bilog Antenna	SCHAFFNER	CBL6143	5082	03/01/2014	03/01/2015
Horn Antenna	SCHWARZBECK	BBHA9120	D286	03/01/2014	03/01/2015
Loop Antenna	COM-POWER	AL-130	121044	09/27/2013	09/26/2014
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/28/2014	02/28/2015
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The FCC Site Registration number is 101879.

3. N.C.R = No Calibration Required.

6.3.3TEST CONFIGURATION



6.3.4TEST 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=1 / VBW=3MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz / VBW=11Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

6.3.5TEST RESULT

Test mode: IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Antenna 1:

1. Operating Frequency: 5745-5825MHz
2. CH Low: 5745MHz, CH High: 5825MHz
3. 26dB bandwidth: CH Low: 26.131MHz, CH High: 25.750MHz
4. Frequency Range: 5731.9345MHz, 5837.875MHz

Antenna 2:

1. Operating Frequency: 5745-5825MHz
2. CH Low: 5745MHz, CH High: 5825MHz
3. 26dB bandwidth: CH Low: 27.626MHz, CH High: 26.483MHz
4. Frequency Range: 5731.187MHz, 5838.2415MHz

Antenna 3:

1. Operating Frequency: 5745-5825MHz
2. CH Low: 5745MHz, CH High: 5825MHz
3. 26dB bandwidth: CH Low: 26.019MHz, CH High: 26.549MHz
4. Frequency Range: 5731.9905MHz, 5838.2745MHz

Antenna 4:

1. Operating Frequency: 5745-5825MHz
2. CH Low: 5745MHz, CH High: 5825MHz
3. 26dB bandwidth: CH Low: 25.572MHz, CH High: 25.007MHz
4. Frequency Range: 5732.214MHz, 5837.5035MHz

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Antenna 1:

1. Operating Frequency: 5755-5795MHz
2. CH Low: 5755MHz, CH High: 5795MHz
3. 26dB bandwidth: CH Low: 44.099MHz, CH High: 44.521MHz
4. Frequency Range: 5732.9505MHz, 5837.2605MHz

Antenna 2:

1. Operating Frequency: 5755-5795MHz
2. CH Low: 5755MHz, CH High: 5795MHz
3. 26dB bandwidth: CH Low: 44.000MHz, CH High: 44.262MHz
4. Frequency Range: 5735.000MHz, 5837.131MHz

Antenna 3:

1. Operating Frequency: 5755-5795MHz
2. CH Low: 5755MHz, CH High: 5795MHz
3. 26dB bandwidth: CH Low: 43.817MHz, CH High: 45.191MHz
4. Frequency Range: 5733.0915MHz, 5837.5955MHz

Antenna 4:

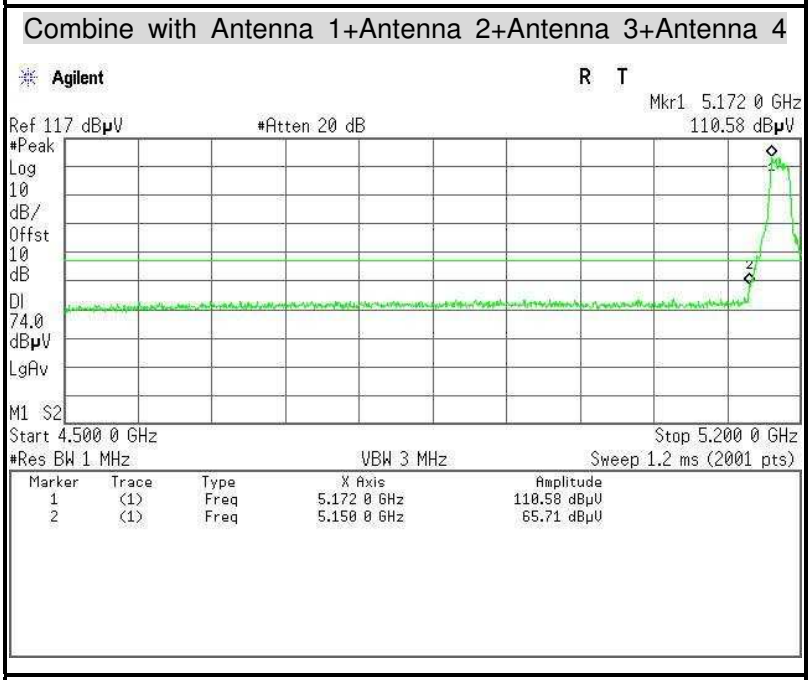
1. Operating Frequency: 5755-5795MHz
2. CH Low: 5755MHz, CH High: 5795MHz
3. 26dB bandwidth: CH Low: 42.904MHz, CH High: 44.261MHz
4. Frequency Range: 5733.548MHz, 5837.1305MHz

Because the mentioned conditions, the test is not applicable.

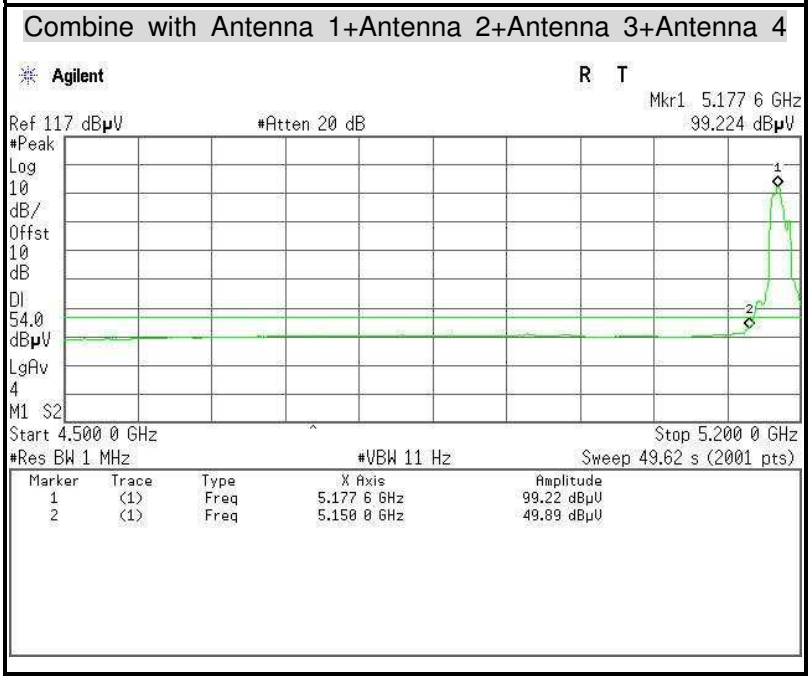
Test Plot

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

Detector mode: Peak **Polarity: Vertical**



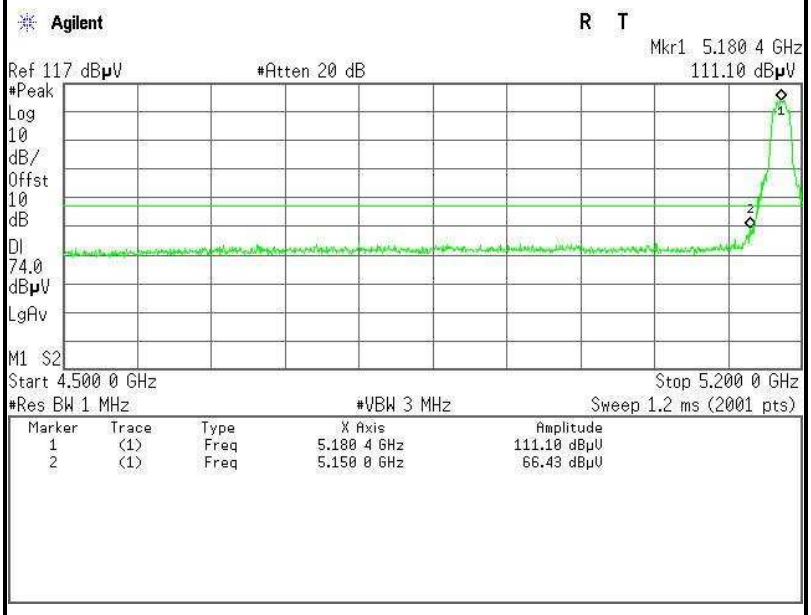
Detector mode: Average **Polarity: Vertical**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	59.11	-6.60	65.71	74.00	-8.29	Peak	Vertical
2	5150.0000	43.29	-6.60	49.89	54.00	-4.11	Average	Vertical

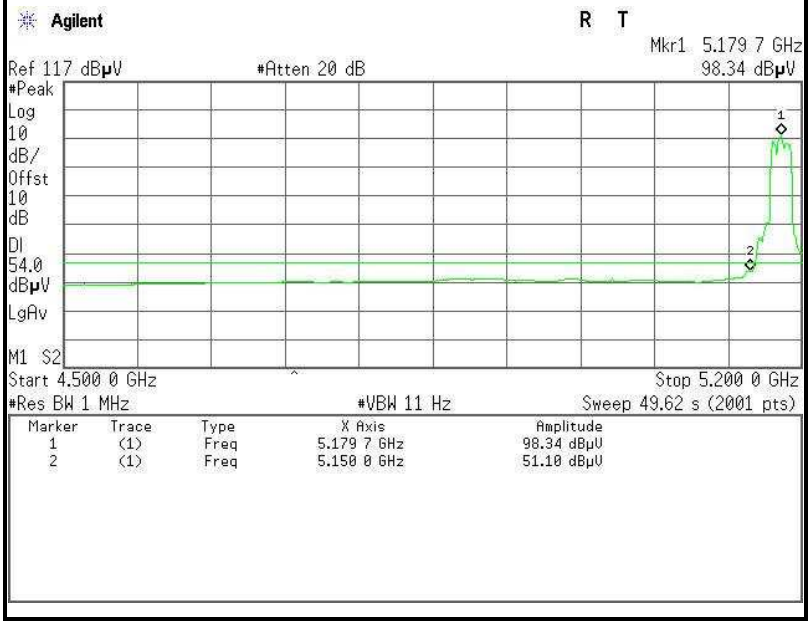
Detector mode: Peak **Polarity: Horizontal**

Combine with Antenna 1+Antenna 2+Antenna 3+Antenna 4



Detector mode: Average **Polarity: Horizontal**

Combine with Antenna 1+Antenna 2+Antenna 3+Antenna 4



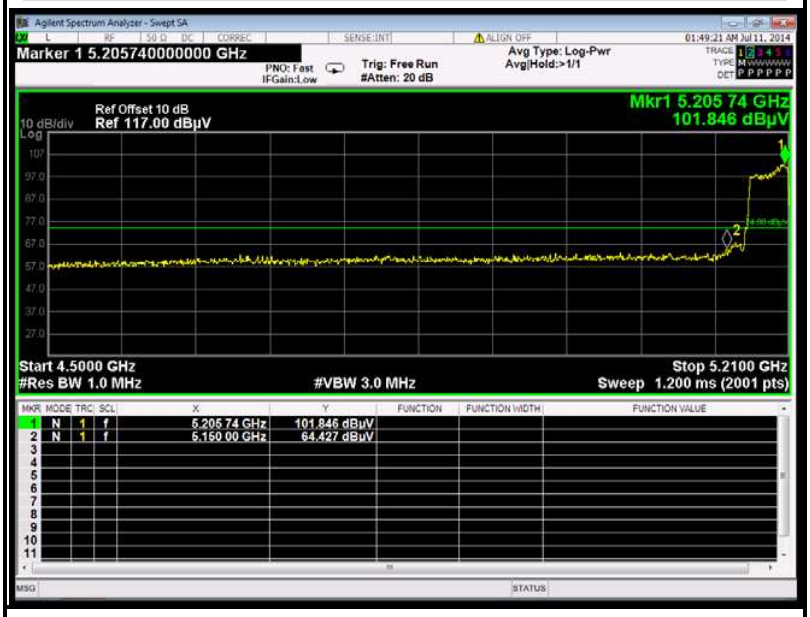
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	59.83	-6.60	66.43	74.00	-7.57	Peak	Horizontal
2	5150.0000	44.50	-6.60	51.10	54.00	-2.90	Average	Horizontal

IEEE 802.11n HT 40 MHz mode / 5190 MHz

Band Edges (CH Low)

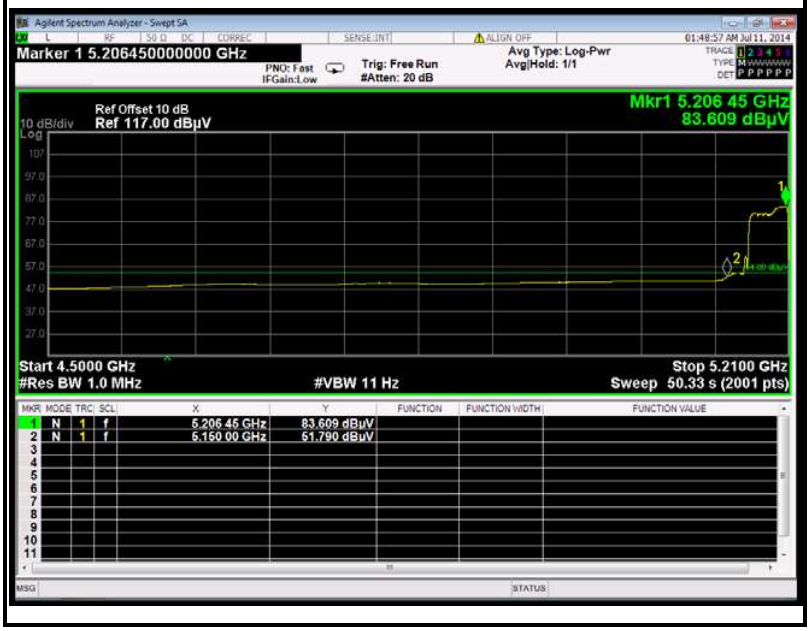
Detector mode: Peak **Polarity: Vertical**

Combine with Antenna 1+Antenna 2+Antenna 3+Antenna 4



Detector mode: Average **Polarity: Vertical**

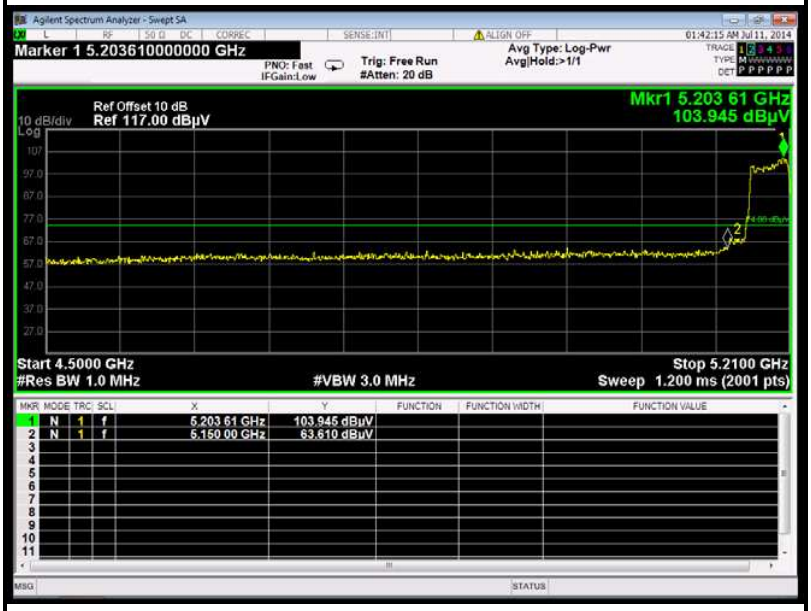
Combine with Antenna 1+Antenna 2+Antenna 3+Antenna 4



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	57.83	-6.60	64.43	74.00	-9.57	Peak	Vertical
2	5150.0000	45.19	-6.60	51.79	54.00	-2.21	Average	Vertical

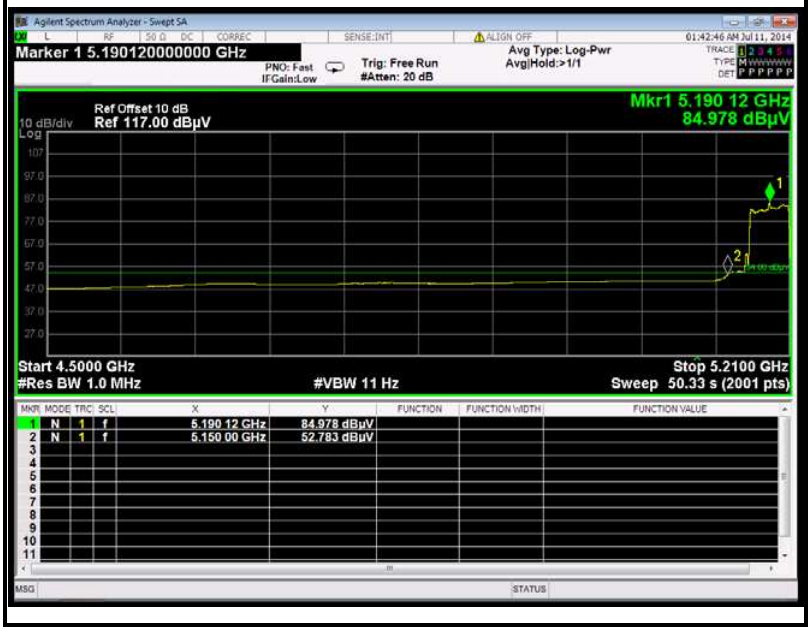
Detector mode: Peak **Polarity: Horizontal**

Combine with Antenna 1+Antenna 2+Antenna 3+Antenna 4



Detector mode: Average **Polarity: Horizontal**

Combine with Antenna 1+Antenna 2+Antenna 3+Antenna 4



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	57.01	-6.60	63.61	74.00	-10.39	Peak	Horizontal
2	5150.0000	46.18	-6.60	52.78	54.00	-1.22	Average	Horizontal

6.4 PEAK POWER SPECTAL DENSITY

6.4.1LIMIT

According to §15.407(a) & FCC R&O FCC 14-30

(1) (i) For an outdoor access point operating in the band 5.15 – 5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(2) (ii) For an indoor access point operating in the band 5.15 – 5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

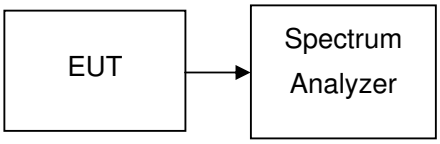
If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

6.4.2MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	E4446A	US44300399	03/01/2014	03/01/2015

Remark: *Each piece of equipment is scheduled for calibration once a year.*

6.4.3TEST CONFIGURATION



6.4.4TEST 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. For devices operating in the bands 5.15-5.25 GHz,Set the spectrum analyzer as RBW = 1MHz, VBW = 3MHz, Span = 30MHz, Sweep=1.2ms
3. For devices operating in the bands 5.725-5.85 GHz,Set the spectrum analyzer as RBW = 500kHz, VBW = 1.5MHz, Span = 30MHz, Sweep=1.2ms
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are completed

6.4.5TEST RESULTS

Test Data

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

Channel	Frequency (MHz)	PPSD (dBm)				Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 1	Antenna 2	Antenna 3	Antenna 4				
Low	5180	2.714	0.325	3.905	-0.028	8.060	17	-8.940	PASS
Mid	5220	2.356	2.238	1.072	0.965	7.726		-9.274	PASS
High	5240	1.650	0.924	2.977	1.983	7.968		-9.032	PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	PPSD (dBm)				factor	Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 1	Antenna 2	Antenna 3	Antenna 4					
Low	5745	-3.394	-3.938	-1.926	-2.939	0.27	3.304	30	-26.696	PASS
Mid	5785	-1.091	-4.007	-0.551	-2.906	0.27	4.365		-25.635	PASS
High	5825	-2.141	-1.997	-2.189	-2.907	0.27	3.995		-26.005	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)				Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 1	Antenna 2	Antenna 3	Antenna 4				
Low	5190	-7.194	-6.564	-5.525	-6.645	-0.418	17	-17.418	PASS
High	5230	-7.598	-8.589	-5.609	-6.133	-0.805		-17.805	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Channel	Frequency (MHz)	PPSD (dBm)				factor	Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 1	Antenna 2	Antenna 3	Antenna 4					
Low	5755	-5.257	-7.840	-4.137	-4.137	0.27	1.182	30	-28.818	PASS
High	5795	-7.421	-7.413	-4.573	-4.573	0.27	0.523		-29.477	PASS

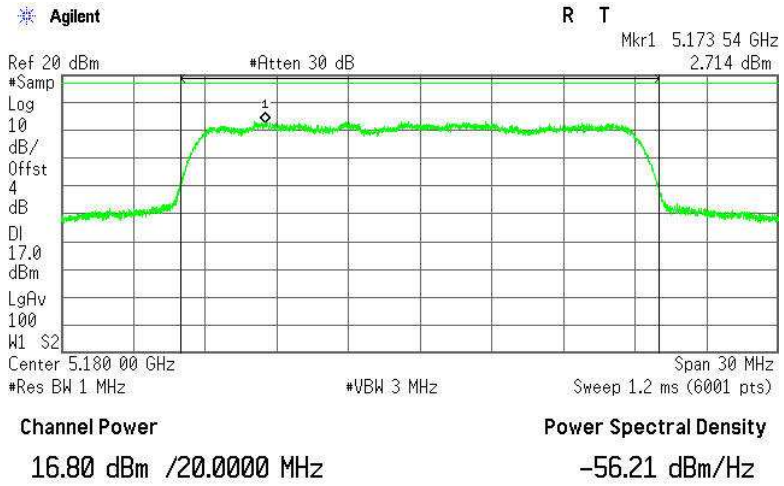
Remark: factor =10*log10(500/RBW)

Test Plot

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

PPSD (CH Low)

Antenna 1



Channel Power

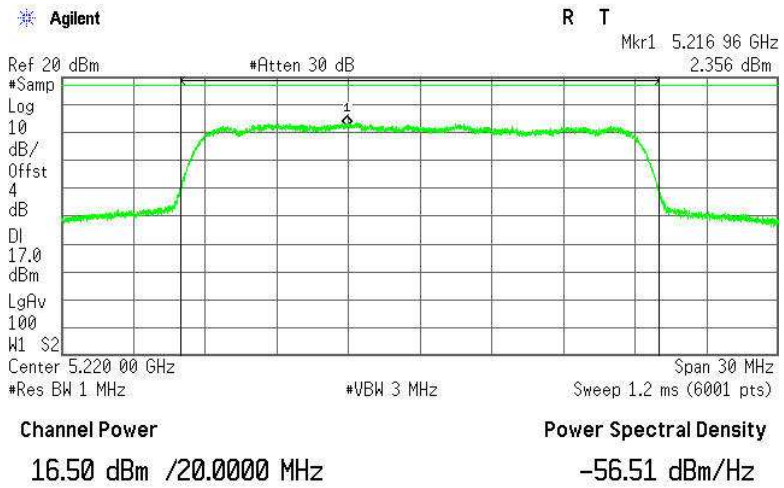
16.80 dBm /20.0000 MHz

Power Spectral Density

-56.21 dBm/Hz

PPSD (CH Mid)

Antenna 1



Channel Power

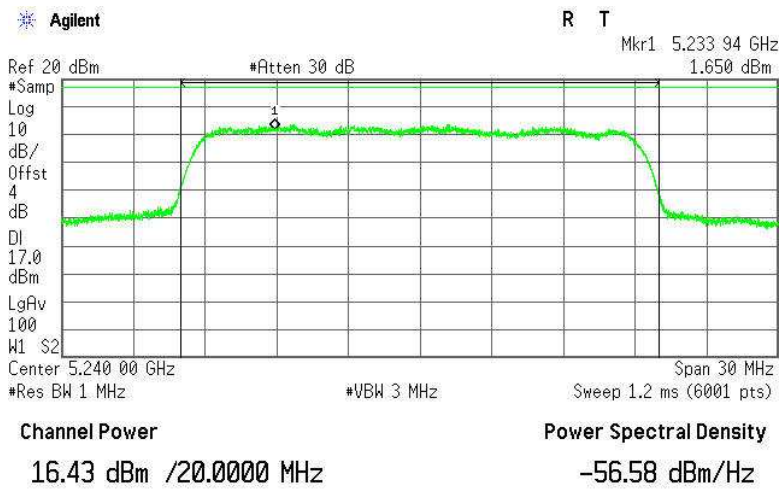
16.50 dBm /20.0000 MHz

Power Spectral Density

-56.51 dBm/Hz

PPSD (CH High)

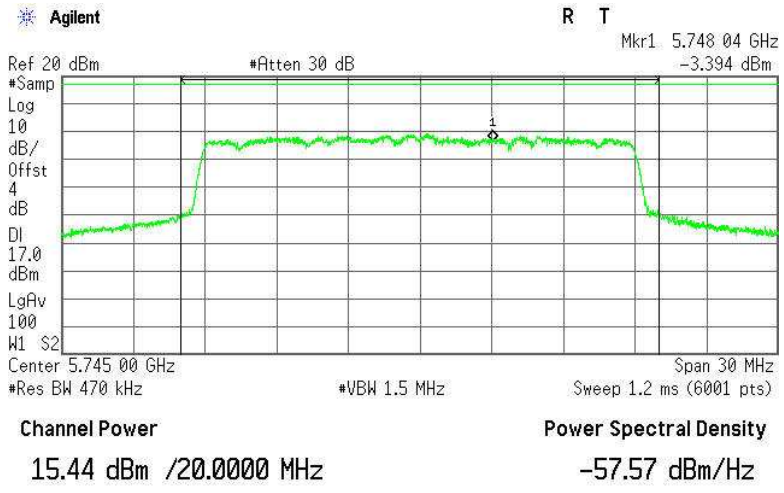
Antenna 1



IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

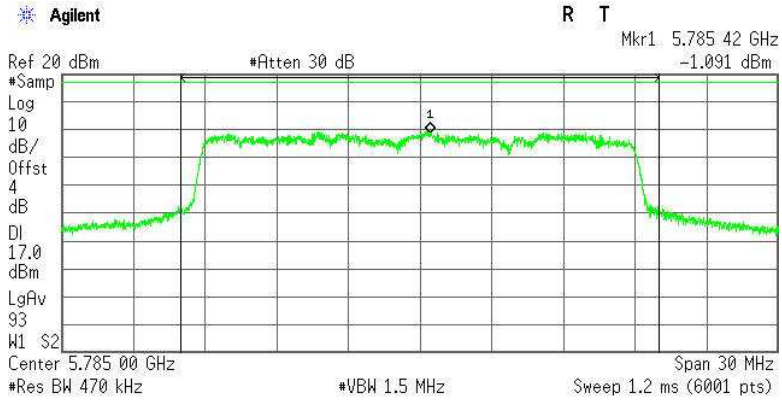
PPSD (CH Low)

Antenna 1



PPSD (CH Mid)

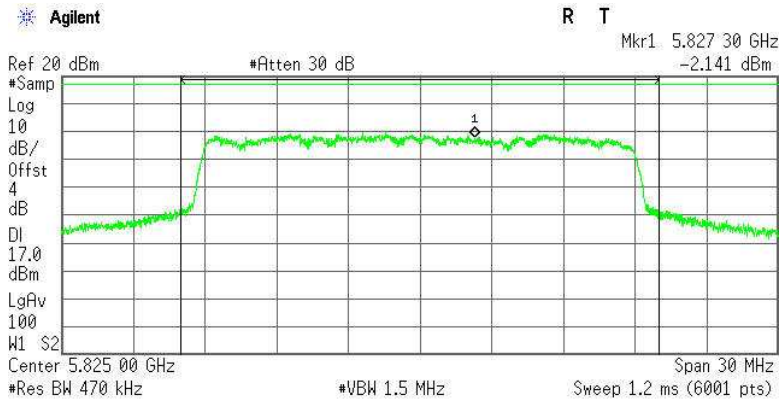
Antenna 1



Channel Power	Power Spectral Density
15.55 dBm /20.0000 MHz	-57.46 dBm/Hz

PPSD (CH High)

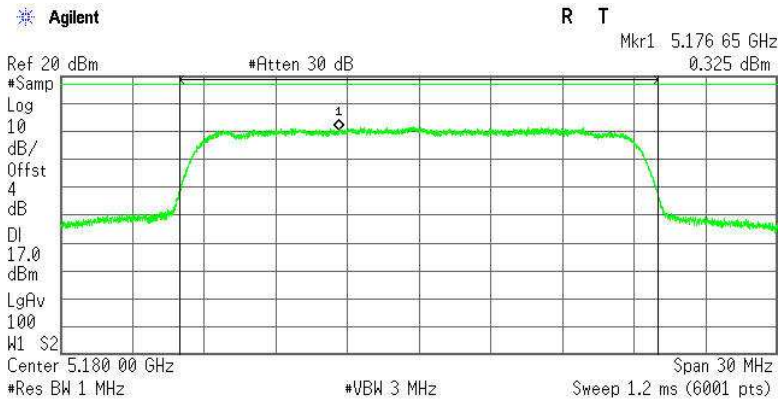
Antenna 1



Channel Power	Power Spectral Density
15.62 dBm /20.0000 MHz	-57.39 dBm/Hz

IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz
PPSD (CH Low)

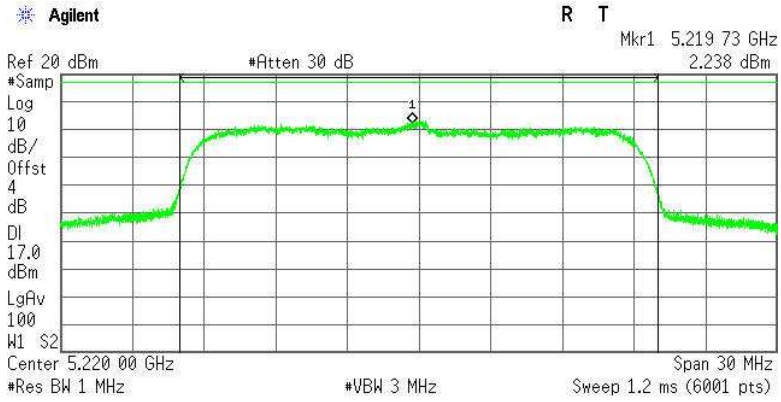
Antenna 2



Channel Power	Power Spectral Density
14.81 dBm /20.0000 MHz	-58.20 dBm/Hz

PPSD (CH Mid)

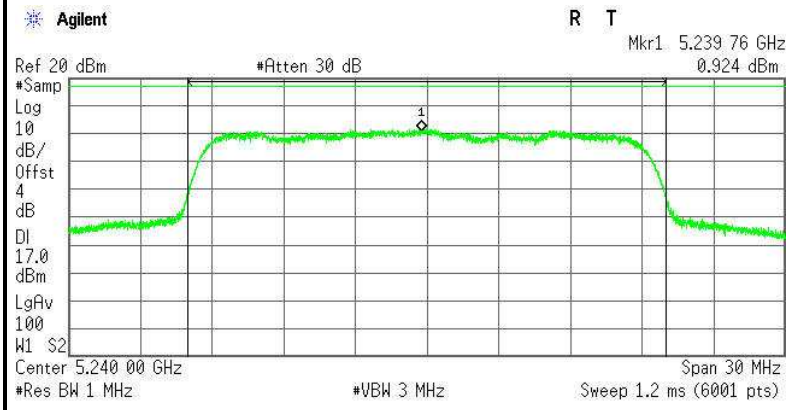
Antenna 2



Channel Power	Power Spectral Density
14.58 dBm /20.0000 MHz	-58.43 dBm/Hz

PPSD (CH High)

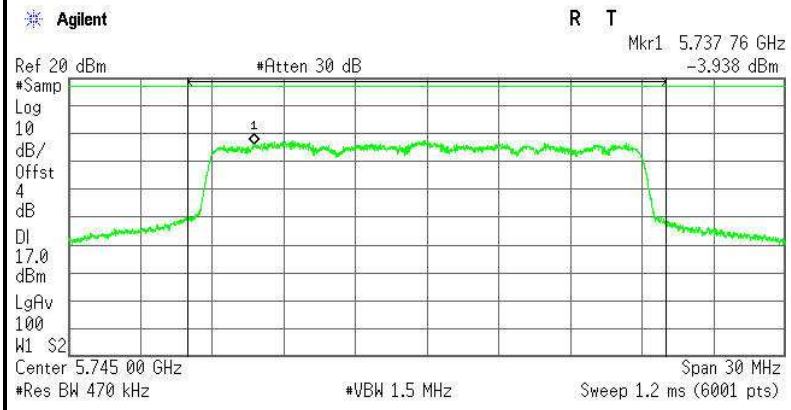
Antenna 2



IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

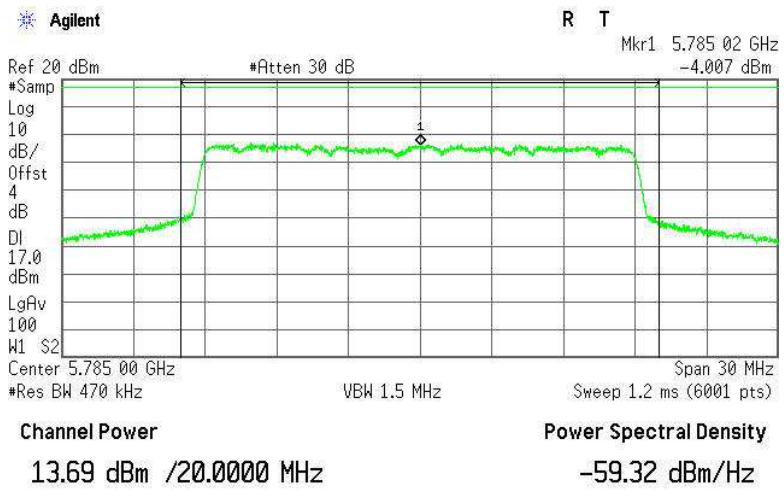
PPSD (CH Low)

Antenna 2



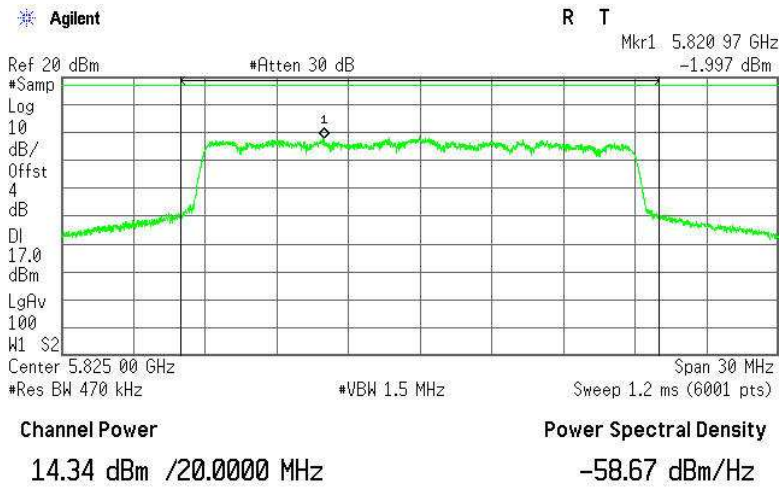
PPSD (CH Mid)

Antenna 2



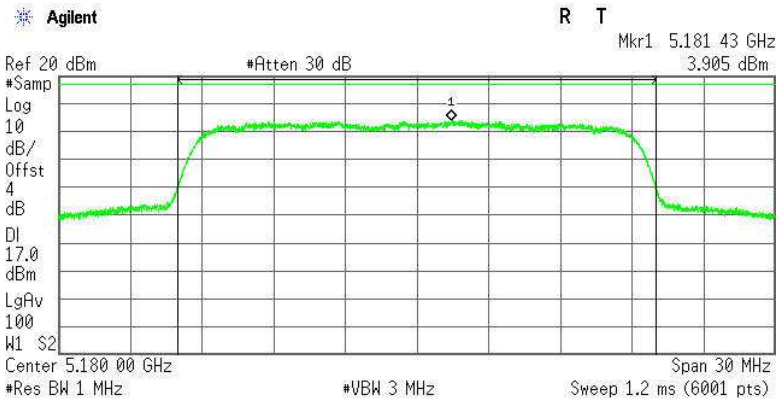
PPSD (CH High)

Antenna 2



IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz
PPSD (CH Low)

Antenna 3



Channel Power

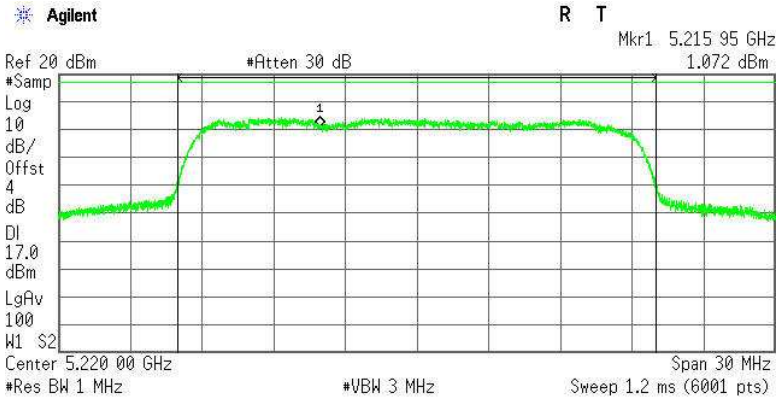
17.00 dBm /20.0000 MHz

Power Spectral Density

-56.01 dBm/Hz

PPSD (CH Mid)

Antenna 3



Channel Power

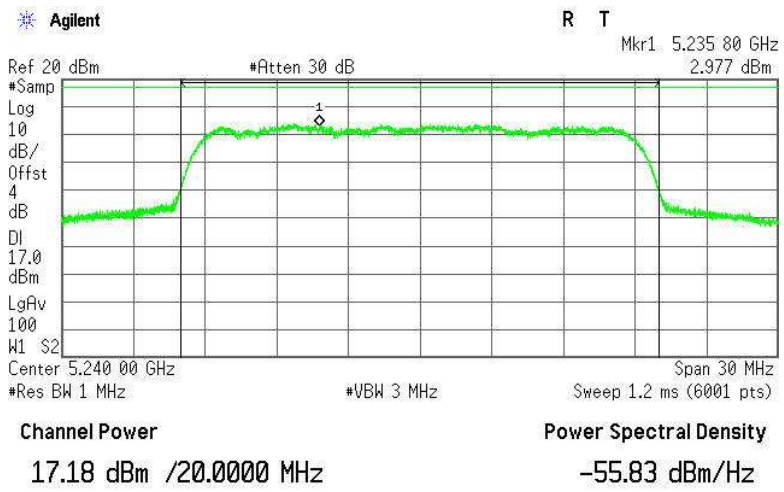
17.20 dBm /20.0000 MHz

Power Spectral Density

-55.81 dBm/Hz

PPSD (CH High)

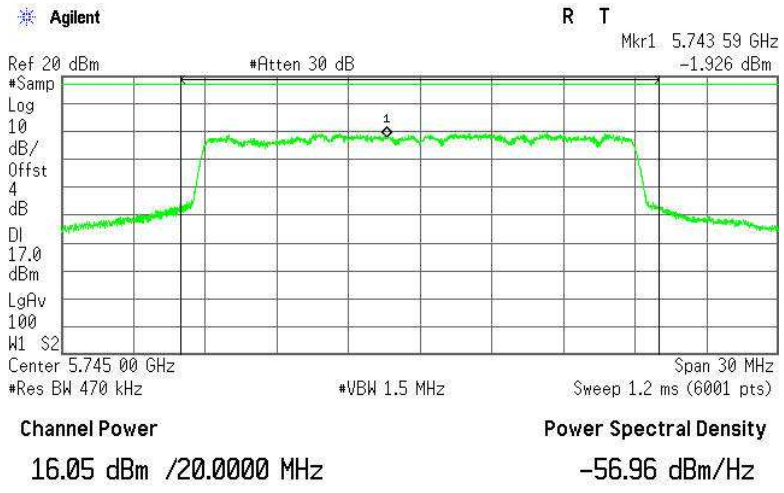
Antenna 3



IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

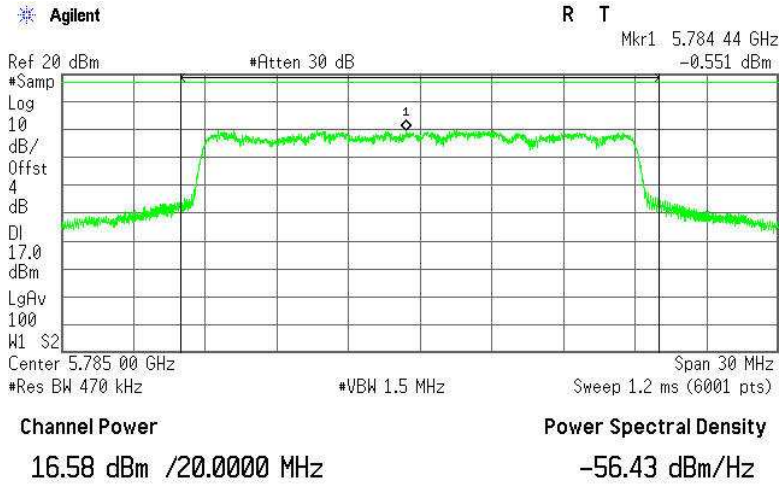
PPSD (CH Low)

Antenna 3



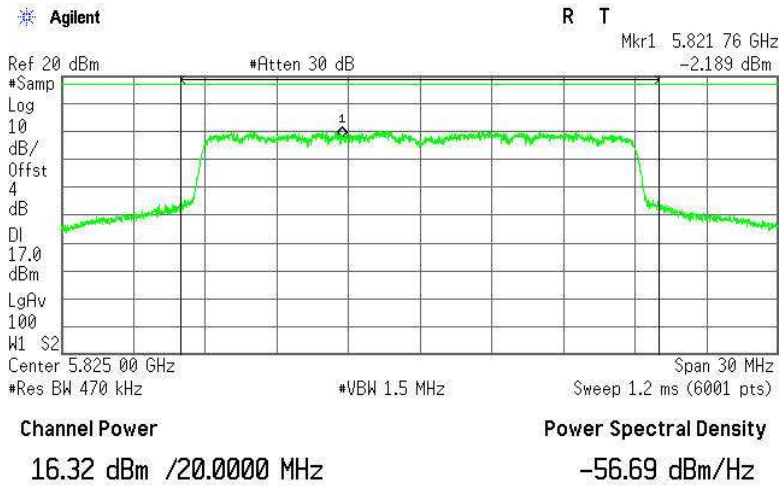
PPSD (CH Mid)

Antenna 3



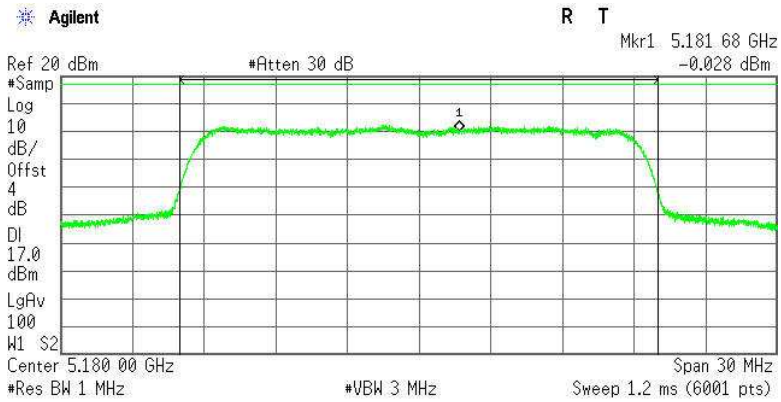
PPSD (CH High)

Antenna 3



IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz
PPSD (CH Low)

Antenna 4



Channel Power

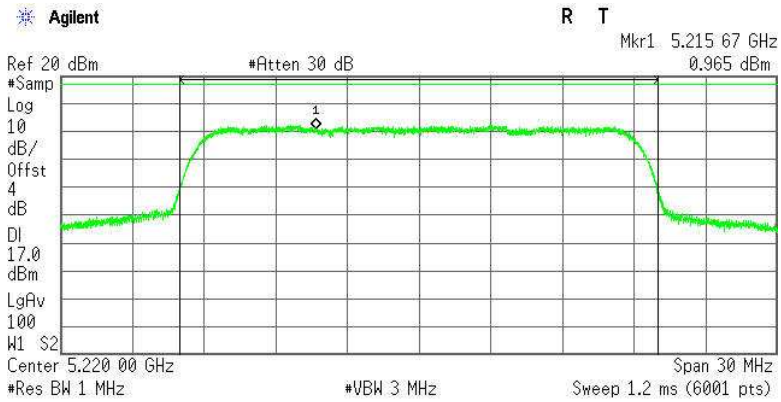
15.76 dBm /20.0000 MHz

Power Spectral Density

-57.03 dBm/Hz

PPSD (CH Mid)

Antenna 4



Channel Power

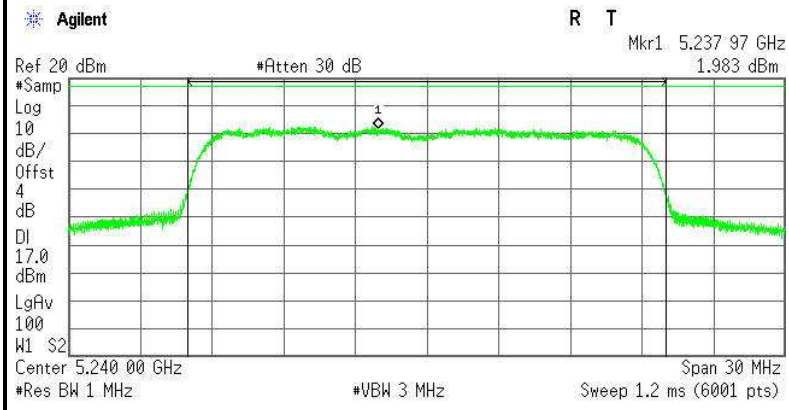
15.91 dBm /20.0000 MHz

Power Spectral Density

-57.10 dBm/Hz

PPSD (CH High)

Antenna 4



Channel Power

15.61 dBm /20.0000 MHz

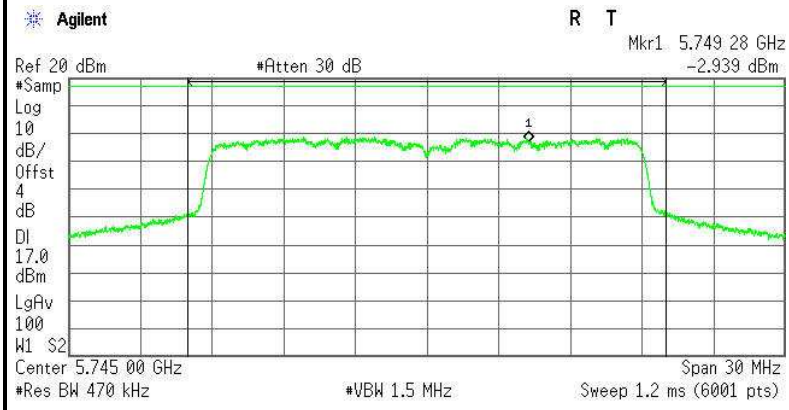
Power Spectral Density

-57.40 dBm/Hz

IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

PPSD (CH Low)

Antenna 4



Channel Power

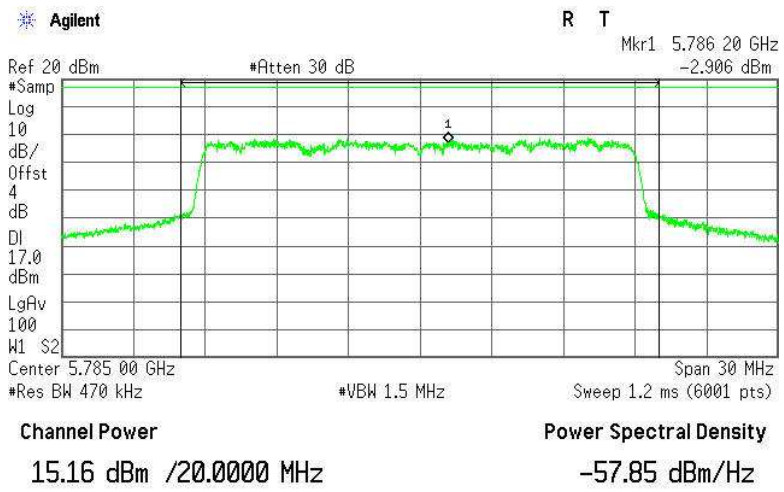
15.17 dBm /20.0000 MHz

Power Spectral Density

-57.84 dBm/Hz

PPSD (CH Mid)

Antenna 4

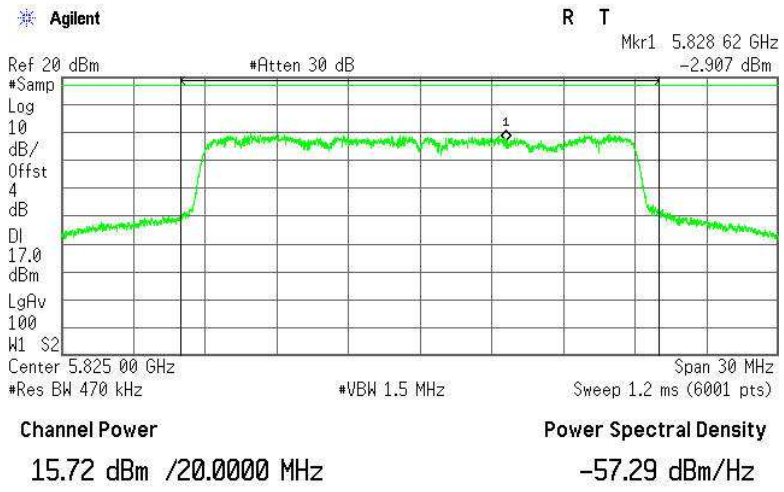


Channel Power: 15.16 dBm /20.0000 MHz

Power Spectral Density: -57.85 dBm/Hz

PPSD (CH High)

Antenna 4



Channel Power: 15.72 dBm /20.0000 MHz

Power Spectral Density: -57.29 dBm/Hz

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

Antenna 1

Channel Power 7.03 dBm /40.0000 MHz

Power Spectral Density -68.99 dBm/Hz

PPSD (CH High)

Antenna 1

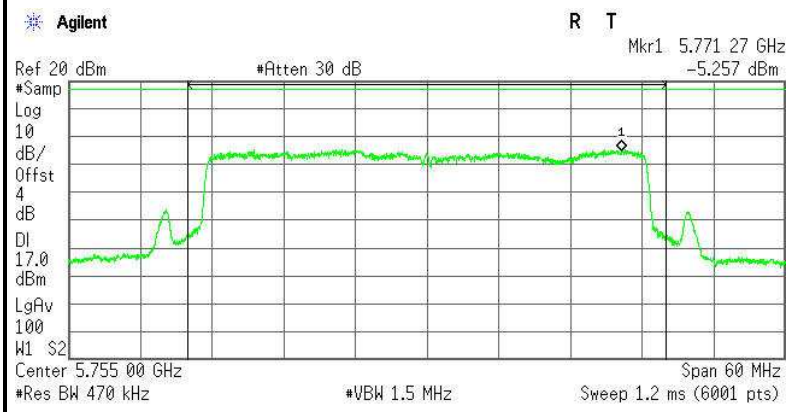
Channel Power 11.45 dBm /40.0000 MHz

Power Spectral Density -64.57 dBm/Hz

IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

PPSD (CH Low)

Antenna 1



Channel Power

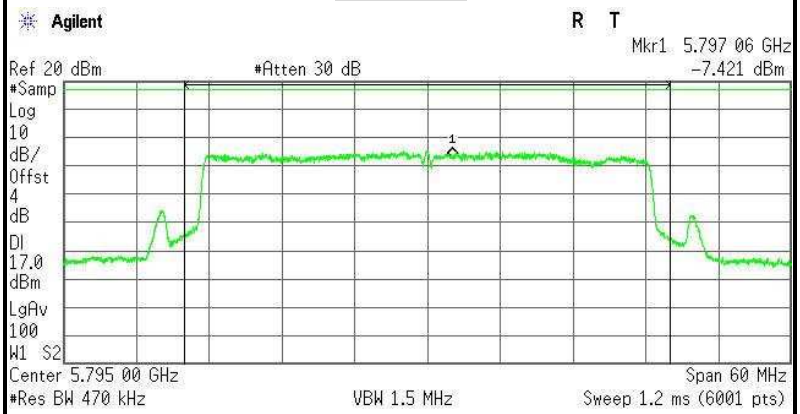
15.22 dBm /40.0000 MHz

Power Spectral Density

-60.80 dBm/Hz

PPSD (CH High)

Antenna 1



Channel Power

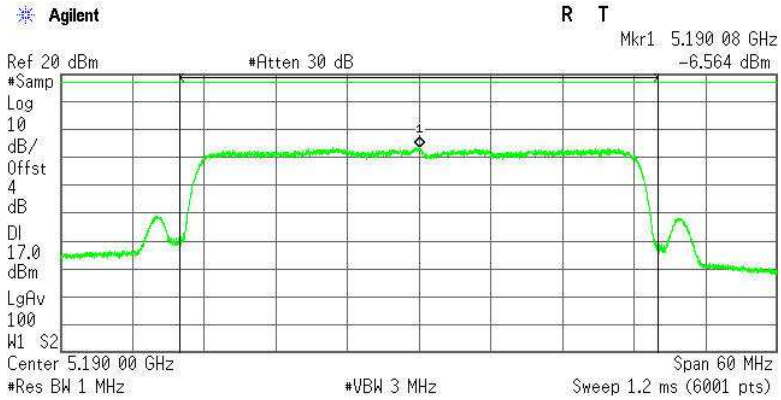
15.07 dBm /40.0000 MHz

Power Spectral Density

-60.95 dBm/Hz

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

Antenna 2



Channel Power

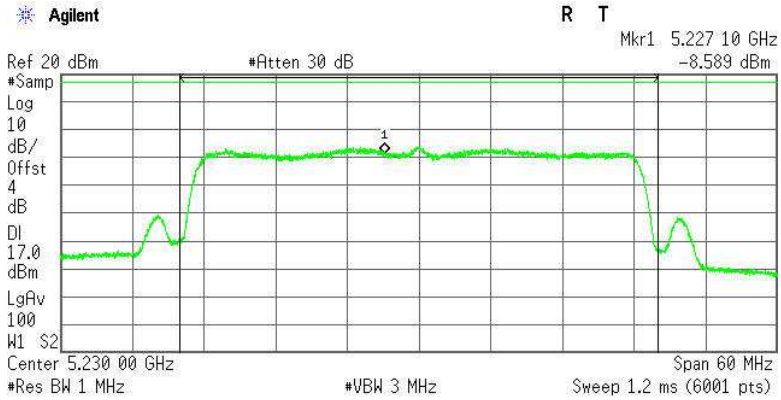
10.25 dBm /40.0000 MHz

Power Spectral Density

-65.77 dBm/Hz

PPSD (CH High)

Antenna 2



Channel Power

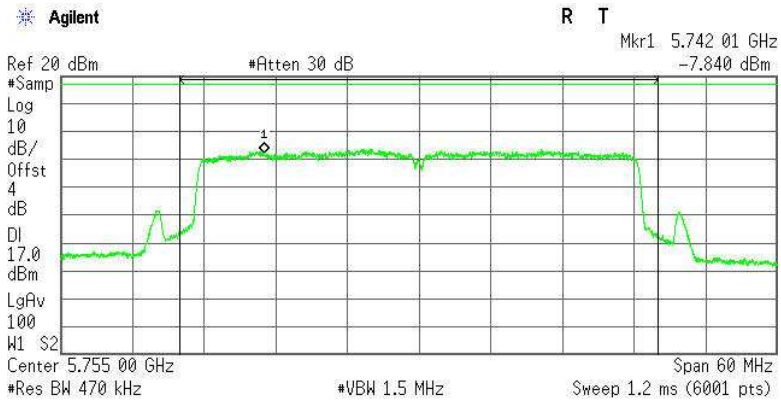
10.12 dBm /40.0000 MHz

Power Spectral Density

-65.90 dBm/Hz

IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz
PPSD (CH Low)

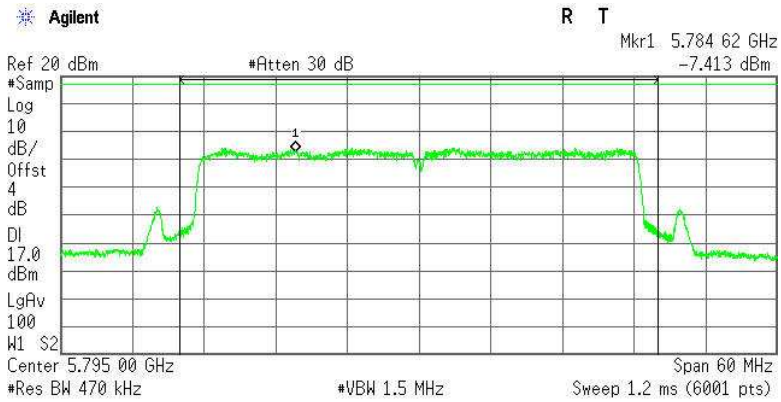
Antenna 2



Channel Power	Power Spectral Density
13.21 dBm /40.0000 MHz	-62.81 dBm/Hz

PPSD (CH High)

Antenna 2

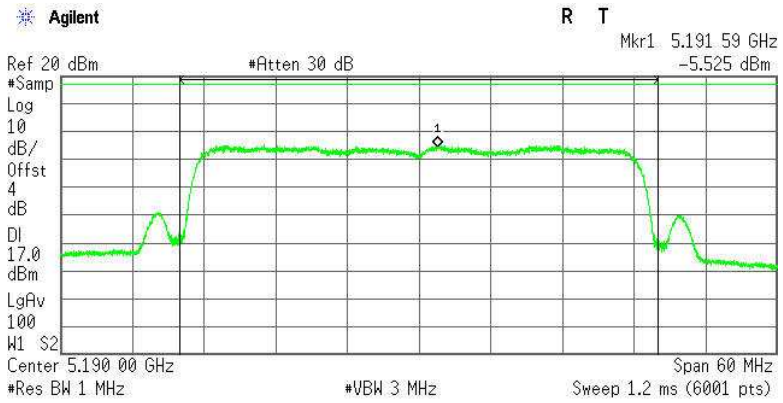


Channel Power	Power Spectral Density
13.97 dBm /40.0000 MHz	-62.05 dBm/Hz

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

PPSD (CH Low)

Antenna 3



Channel Power

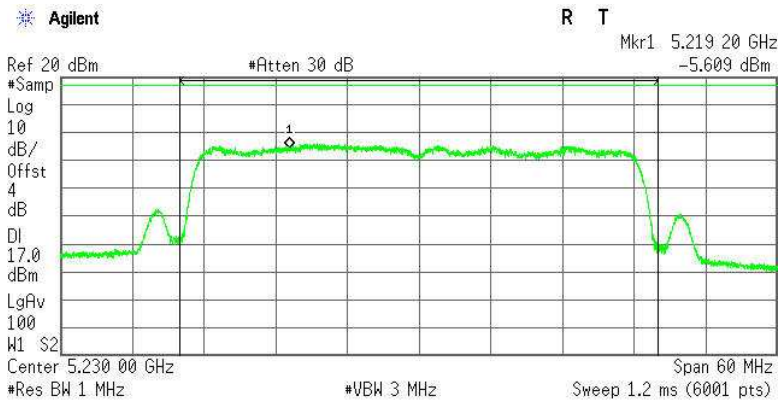
12.10 dBm /40.0000 MHz

Power Spectral Density

-63.92 dBm/Hz

PPSD (CH High)

Antenna 3



Channel Power

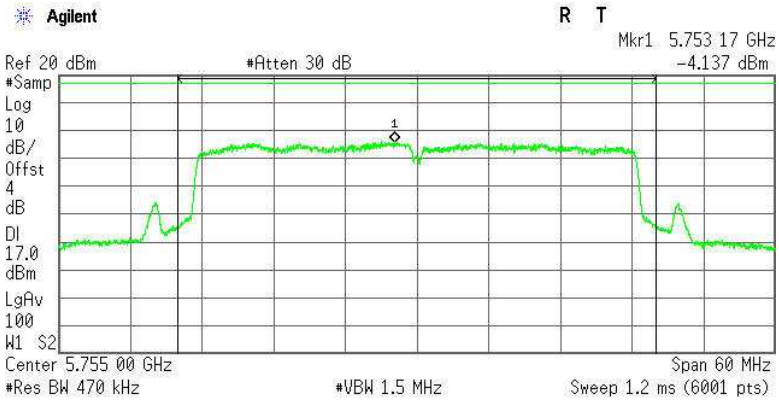
12.27 dBm /40.0000 MHz

Power Spectral Density

-63.75 dBm/Hz

IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz
PPSD (CH Low)

Antenna 3



Channel Power	Power Spectral Density
15.75 dBm /40.0000 MHz	-60.27 dBm/Hz

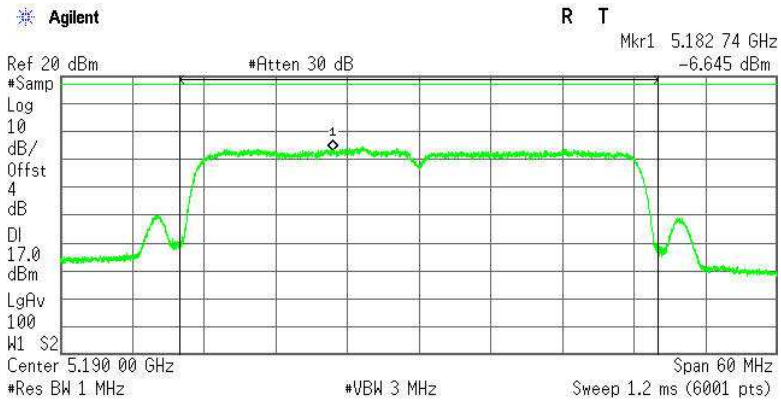
PPSD (CH High)

Antenna 3

Channel Power	Power Spectral Density
15.81 dBm /40.0000 MHz	-60.21 dBm/Hz

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

Antenna 4



Channel Power

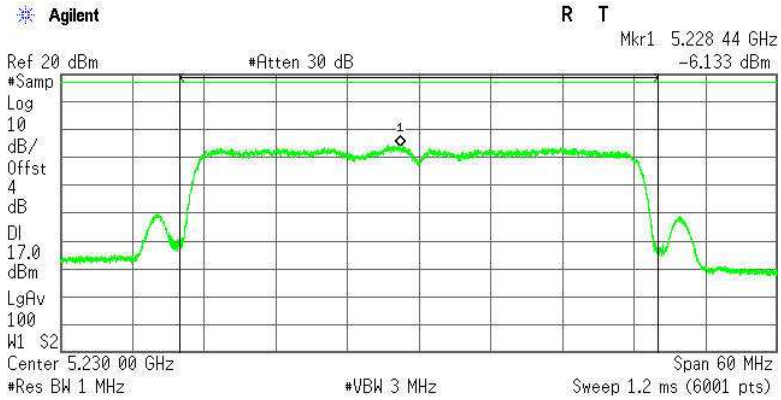
10.79 dBm /40.0000 MHz

Power Spectral Density

-65.23 dBm/Hz

PPSD (CH High)

Antenna 4



Channel Power

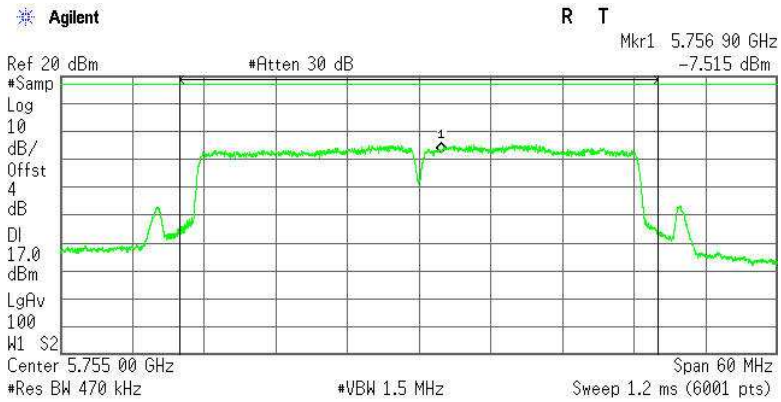
10.06 dBm /40.0000 MHz

Power Spectral Density

-65.96 dBm/Hz

IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz
PPSD (CH Low)

Antenna 4



Channel Power

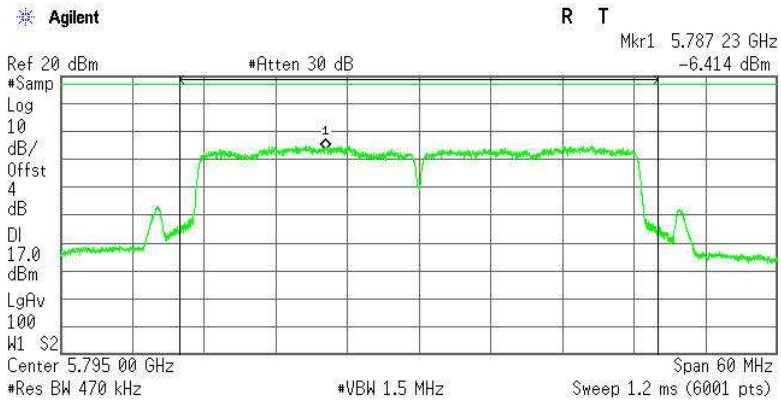
15.07 dBm /40.0000 MHz

Power Spectral Density

-60.95 dBm/Hz

PPSD (CH High)

Antenna 4



Channel Power

15.21 dBm /40.0000 MHz

Power Spectral Density

-60.81 dBm/Hz

6.5 RADIATED UNDESIABLE EMISSION

6.5.1 LIMIT

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