74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea
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REPORT

FCC Certification

Applicant Name:
LG Electronics MobileComm U.S.A., Inc.

Address:
1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Date of Issue:
January 19, 2015

Test Site/Location:
HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea

Report No.: HCT-R-1501-F036

HCT FRN: 0005866421

FCC ID : ZNFH955P
APPLICANT : LG Electronics MobileComm U.S.A., Inc.

FCC Model(s): LG-H955p

Additional Model(s): H955P**,** LGH955P, LG-H955p, H955p, LGH955p,LG-H955AR, H955AR, LGH955AR, LG-H955ar, H955ar, LGH955ar

EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA/LTE Phone with Bluetooth, WLAN, NFC

Modulation type OFDM

FCC Classification: Unlicensed National Information Infrastructure(UNII)

FCC Rule Part(s): Part 15.407

Band	Mode	Channel Bandwidth (MHz)	Frequency Range (MHz)	Power (dBm)	Power (W)
UNII1	802.11a	20	5180 – 5240	13.85	0.0243
	802.11n	20	5180 – 5240	13.18	0.0208
	802.11n	40	5190 - 5230	11.67	0.0147
	802.11ac	20	5180 – 5240	11.90	0.0155
	802.11ac	40	5190 - 5230	11.81	0.0152
	802.11ac	80	5210	11.27	0.0134
UNII2A	802.11a	20	5260 – 5320	13.65	0.0232
	802.11n	20	5260 – 5320	12.75	0.0188
	802.11n	40	5270 – 5310	11.02	0.0126
	802.11ac	20	5260 – 5320	11.76	0.0150
	802.11ac	40	5270 – 5310	11.07	0.0128
	802.11ac	80	5290	11.16	0.0131
UNII2C	802.11a	20	5500 – 5720	14.28	0.0268
	802.11n	20	5500 – 5720	13.36	0.0217
	802.11n	40	5510 – 5710	11.86	0.0153
	802.11ac	20	5500 – 5720	12.50	0.0178
	802.11ac	40	5510 – 5710	11.20	0.0132
	802.11ac	80	5530 – 5690	11.82	0.0152
UNII3	802.11a	20	5745 – 5825	13.48	0.0223
	802.11n	20	5745 – 5825	12.48	0.0177
	802.11n	40	5755 – 5795	11.68	0.0147
	802.11ac	20	5745 – 5825	11.42	0.0139
	802.11ac	40	5755 – 5795	11.58	0.0144
	802.11ac	80	5775	11.36	0.0137

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

Report prepared by
: Jong Seok Lee
Test engineer of RF Team

Approved by
: Kyoung Houn Seo
Manager of RF Team

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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1501-F036	January 19, 2015	- First Approval Report

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1. GENERAL INFORMATION

Applicant: LG Electronics MobileComm U.S.A., Inc.

Address: 1000 Sylvan Avenue, Englewood Cliffs NJ 07632

FCC ID: ZNFH955P

EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA/LTE Phone with Bluetooth, WLAN, NFC

Model name(s): LG-H955p

Additional Model name(s): H955P**,** LGH955P, LG-H955p, H955p, LGH955p,LG-H955AR, H955AR, LGH955AR, LG-H955ar, H955ar, LGH955ar

Date(s) of Tests: December 18, 2014 ~ January 07, 2015

Place of Tests: HCT Co., Ltd.
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea.
(IC Recognition No. : 5944A-3)

2. EUT DESCRIPTION

FCC Model Name	LG-H955p	
Additional Name	H955P**,** LGH955P, LG-H955p, H955p, LGH955p,LG-H955AR, H955AR, LGH955AR, LG-H955ar, H955ar, LGH955ar	
EUT Type	Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA/LTE Phone with Bluetooth, WLAN, NFC	
Power Supply	DC 3.8 V	
Battery type	Li-ion Battery(Standard)	
Frequency Range	TX_20 MHz BW:	5180 MHz - 5240 MHz (UNII 1)/ 5260 MHz - 5320 MHz (UNII 2A)/ 5500 MHz - 5720 MHz (UNII 2C)/ 5745 MHz - 5825 MHz (UNII 3)
	40 MHz BW:	5190 MHz - 5230 MHz (UNII 1)/ 5270 MHz - 5310 MHz (UNII 2A)/ 5510 MHz - 5710 MHz (UNII 2C) / 5755 MHz - 5795 MHz (UNII 3)
	80 MHz BW:	5210 MHz(UNII 1)/ 5290 MHz(UNII 2A)/ 5530 MHz - 5690 MHz(UNII 2C)/ 5775 MHz (UNII 3)
	RX_20 MHz BW:	5180 MHz - 5240 MHz (UNII 1)/ 5260 MHz - 5320 MHz (UNII 2A)/ 5500 MHz - 5720 MHz (UNII 2C)/ 5745 MHz - 5825 MHz (UNII 3)
	40 MHz BW:	5190 MHz - 5230 MHz (UNII 1)/ 5270 MHz - 5310 MHz (UNII 2A)/ 5510 MHz - 5710 MHz (UNII 2C) / 5755 MHz - 5795 MHz (UNII 3)
	80 MHz BW:	5210 MHz(UNII 1)/ 5290 MHz(UNII 2A)/ 5530 MHz - 5690 MHz(UNII 2C)/ 5775 MHz (UNII 3)
Max. RF Output Power:	TX_20 MHz BW:	5180 MHz - 5240 MHz (802.11a) (13.85dBm) / 5260 MHz - 5320 MHz (802.11a) (13.65 dBm)/ 5500 MHz - 5720 MHz (802.11a) (14.28 dBm)/ 5745 MHz - 5825 MHz (802.11a) (13.48 dBm) 5180 MHz - 5240 MHz (802.11n) (13.18dBm) / 5260 MHz - 5320 MHz (802.11n) (12.75 dBm)/ 5500 MHz - 5720 MHz (802.11n) (13.36 dBm)/ 5745 MHz - 5825 MHz (802.11n) (12.48 dBm) 5180 MHz - 5240 MHz (802.11ac) (11.90dBm) / 5260 MHz - 5320 MHz (802.11ac) (11.76 dBm)/ 5500 MHz - 5720 MHz (802.11ac) (12.50 dBm)/ 5745 MHz - 5825 MHz (802.11ac) (11.42 dBm)
	40 MHz BW:	5190 MHz - 5230 MHz (802.11n) (11.67 dBm)/ 5270 MHz - 5310 MHz ((802.11n) (11.02 dBm))/ 5510 MHz - 5710 MHz (802.11n) (11.86 dBm) / 5755 MHz - 5795 MHz (802.11n) (11.68dBm) 5190 MHz - 5230 MHz (802.11ac) (11.81 dBm)/ 5270 MHz - 5310 MHz ((802.11ac) (11.07dBm))/ 5510 MHz - 5710 MHz (802.11ac) (11.20 dBm) / 5755 MHz - 5795 MHz (802.11ac) (11.58 dBm)
	80 MHz BW:	5210 MHz(UNII 1) (11.27dBm)/ 5290 MHz(UNII 2A) (11.16 dBm) / 5530 MHz - 5690 MHz(UNII 2C) (11.82 dBm) /5775 MHz (UNII 3) (11.36 dBm)
Modulation Type	OFDM(802.11a, 802.11n, 802.11ac)	
Antenna Specification	Manufacturer: AT&C Co.LTD. Antenna type:INTERNAL Antenna Peak Gain : -6.54 dBi (5180~5240 UNII1 BAND)/-4.8 dBi (5260~5320 UNII2A BAND) -2.18 dBi (5500~5620 UNII2C BAND)/-4.08 dBi (5745~5825 UNII3 BAND)	

3. TEST METHODOLOGY

The measurement procedure described in FCC KDB 789033 D02 General UNII Test Procedures New Rules v01 dated June 06, 2014 entitled " Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part15, Subpart E" and the American National Standard for Testing Unlicensed Wireless Devices(ANSI C63.4-2003) were used in the measurement. For 802.11ac, KDB644545 D03 v01 dated August 14, 2014

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 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 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4. (Version :2003) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4. (Version: 2003)

Conducted Antenna Terminal

See Section from 8.1 to 8.4.(KDB 789033)

3.4 DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Channel low, mid and high with highest data rate (worst case) is chosen for full testing.

4. 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 equipments, which is traceable to recognized national standards

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2003) and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated February 28, 2014 (Registration Number: 90661)

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, 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.”

6. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

* The antennas of this E.U.T are permanently attached.

*The E.U.T Complies with the requirement of §15.203,§15.407,

7. SUMMARY OF TEST RESULTS

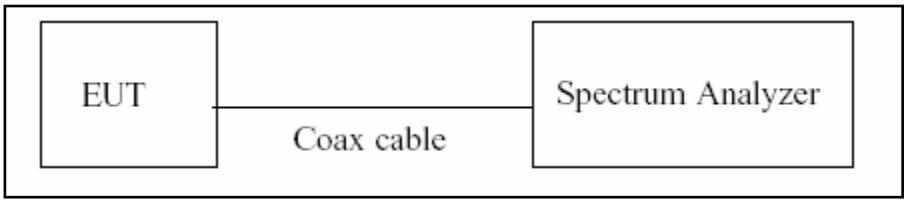
Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
TRANSMITTER MODE(TX)			CONDUCTED	
26dB Bandwidth	§15.407 (for Power Measurement)	N/A		PASS
6 dB Bandwidth	§15.407(e)	>500 kHz (5725-5850 MHz)		
Maximum Conducted Output Power	§15.407(a)(1)	< 250 mW (5150-5250 MHz) < 250 mW (5250-5350 MHz) < 250 mW (5470-5725 MHz) <1 W (5725-5850 MHz)		PASS
Peak Power Spectral Density	§15.407(a)(1), (5)	<11 dBm/ MHz (5150-5250 MHz) <11 dBm/ MHz (5250-5350 MHz) <11 dBm/ MHz (5470-5725 MHz) <30 dBm/500 kHz(5725-5850 MHz)		PASS
Frequency Stability	§15.407(g)	NA		PASS
AC Conducted Emissions 150 kHz-30 MHz	15.207	<FCC 15.207 limits		PASS
Undesirable Emissions	§15.407(b)(1), (2), (3)	<-27 dBm/ MHz EIRP (UNII1, 2A, 2C) <-17 dBm/MHz EIRP within 5715-5725 MHz and 5850-5860 MHz, <-27 dBm/MHz EIRP outside 5715-5850 MHz(UNII3)	RADIATED	PASS
General Field Strength Limits(Restricted Bands and Radiated Emission Limits)	15.205, 15.407(b)(1), (5), (6)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS

8. TEST RESULT

8.1 DUTY CYCLE

The zero-span mode on a spectrum analyzer or EMI receiver ,if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW ≥ EBW if possible; otherwise, set RBW to the largest available value. Set VBW ≥ RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/*T*, where *T* is defined in section B)1)a), and the number of sweep points across duration *T* exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if *T* ≤ 16.7 microseconds.)

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer. We tested according to the zero-span measurement method, (B.2 in KDB 789033 D02, issued 06/06/2014)
The largest availble value of RBW is 8 MHz and VBW is 50 MHz. The zero-span method of measuring duty cycle shall not be used if T ≤ 6.25 microseconds. (50/6.25 = 8)
The zero-span method was used becaure all measured T data are > 6.25 microseconds and both RBW and VBW are > 50/*T*.

1. RBW = 8 MHz (the largest availble value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on}/ T_{total} and Duty Cycle Factor = 10*log(1/Duty Cycle)

▣ Duty Cycle Factor

Mode	Data Rate (Mbps)	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11a	6	2.055	2.156	0.95315399	0.208
	9	1.379	1.491	0.92488263	0.339
	12	1.040	1.153	0.90199480	0.448
	18	0.697	0.808	0.86262376	0.642
	24	0.522	0.633	0.82464455	0.837
	36	0.357	0.466	0.76609442	1.157
	48	0.268	0.380	0.70526316	1.516
	54	0.241	0.350	0.68857143	1.621
802.11n_20 MHz BW	6.5	1.918	2.030	0.94482759	0.246
	13	0.970	1.085	0.89400922	0.487
	19.5	0.655	0.765	0.85620915	0.674
	26	0.500	0.610	0.81967213	0.864
	39	0.342	0.453	0.75496689	1.221
	52	0.264	0.375	0.70400000	1.524
	58.5	0.241	0.350	0.68857143	1.621
	65	0.220	0.329	0.66869301	1.748
802.11n_40 MHz BW	13.5	0.920	1.030	0.89320388	0.490
	27	0.475	0.600	0.79166667	1.015
	40.5	0.340	0.440	0.77272727	1.120
	54	0.258	0.365	0.70684932	1.507
	81	0.188	0.290	0.64827586	1.882
	108	0.153	0.253	0.60474308	2.184
	121.5	0.140	0.240	0.58333333	2.341
	135	0.127	0.228	0.55701754	2.541

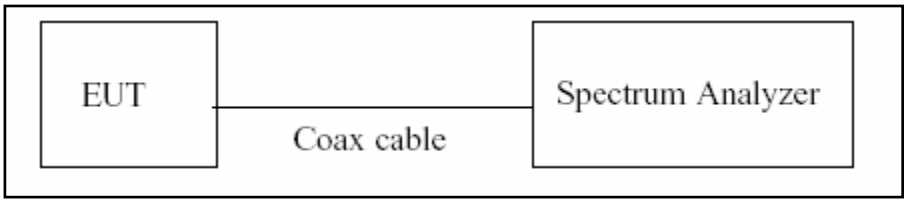
Mode	Data Rate	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ac_20 MHz BW	6.5	2.050	2.158	0.94995366	0.223
	13	0.975	1.083	0.90027701	0.456
	19.5	0.663	0.767	0.86440678	0.633
	26	0.507	0.617	0.82171799	0.853
	39	0.347	0.456	0.76096491	1.186
	52	0.272	0.380	0.71578947	1.452
	58.5	0.245	0.353	0.69405099	1.586
	65	0.223	0.333	0.66966967	1.741
	78	0.192	0.300	0.64000000	1.938
5.8 GHz Band 802.11ac_40 MHz BW	13.5	0.947	1.053	0.89933523	0.461
	27	0.489	0.590	0.82881356	0.815
	40.5	0.343	0.443	0.77426637	1.111
	54	0.268	0.368	0.72826087	1.377
	81	0.191	0.293	0.65187713	1.858
	108	0.157	0.256	0.61328125	2.123
	121.5	0.144	0.244	0.59016393	2.290
	135	0.132	0.232	0.56896552	2.449
	162	0.116	0.217	0.53456221	2.720
	180	0.112	0.213	0.52582160	2.792
5.8 GHz Band 802.11ac_80 MHz BW	29.3	0.450	0.560	0.80357143	0.950
	58.5	0.243	0.353	0.68838527	1.622
	87.8	0.173	0.280	0.61785714	2.091
	117	0.148	0.248	0.59677419	2.242
	175.5	0.113	0.213	0.53051643	2.753
	234	0.095	0.196	0.48469388	3.145
	263.3	0.087	0.189	0.46031746	3.369
	292.5	0.083	0.185	0.44864865	3.481
	351	0.076	0.176	0.43181818	3.647
	390	0.072	0.172	0.41860465	3.782

8.2 EMISSION BANDWIDTH AND MINIMUM EMISSION BANDWIDTH MEASUREMENT

The bandwidth at 26 dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum power control level, as defined in KDB 789033 D02(issued 06/06/2014), at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26 dB bandwidth.

The 26 dB bandwidth is used to determine the conducted power limits.

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer.
The Spectrum Analyzer is set to(C.1 in KDB 789033 D02, issued 06/06/2014)

1. RBW = approximately 1 % of the emission bandwidth
2. VBW > RBW
3. Detector = Peak
4. Trace mode = max hold
5. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

Note : We tested 26 dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer. X dB is set 26 dB.

▣ TEST RESULTS

20 MHz BW

Conducted 26 dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5180	36	21.750	N/A	Pass
5200	40	21.667	N/A	Pass
5240	48	21.580	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5260	52	21.566	N/A	Pass
5300	60	21.686	N/A	Pass
5320	64	21.583	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5500	100	21.537	N/A	Pass
5580	118	21.526	N/A	Pass
5720	144	21.685	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	21.571	N/A	Pass
5785	157	21.522	N/A	Pass
5825	165	21.596	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n 20M BW

802.11n(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5180	36	21.649	N/A	Pass
5200	40	21.737	N/A	Pass
5240	48	21.789	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n 20M BW

802.11n(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5260	52	21.789	N/A	Pass
5300	60	21.728	N/A	Pass
5320	64	21.801	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n 20M BW

802.11n(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5500	100	21.757	N/A	Pass
5580	118	21.571	N/A	Pass
5720	144	21.871	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n 20M BW

802.11n(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	21.750	N/A	Pass
5785	157	21.660	N/A	Pass
5825	165	21.623	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac 20M BW

802.11ac(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5180	36	21.781	N/A	Pass
5200	40	21.713	N/A	Pass
5240	48	21.654	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac 20M BW

802.11ac(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5260	52	21.697	N/A	Pass
5300	60	21.693	N/A	Pass
5320	64	21.668	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac 20M BW

802.11ac(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5500	100	21.287	N/A	Pass
5580	118	21.681	N/A	Pass
5720	144	21.890	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac 20M BW

802.11ac(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	21.626	N/A	Pass
5785	157	21.787	N/A	Pass
5825	165	21.636	N/A	Pass

Conducted 6 dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	16.400	0.5	Pass
5785	157	16.410	0.5	Pass
5825	165	16.390	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11n 20M BW

802.11n(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.630	0.5	Pass
5785	157	17.610	0.5	Pass
5825	165	17.660	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11ac 20M BW

802.11ac(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.630	0.5	Pass
5785	157	17.640	0.5	Pass
5825	165	17.630	0.5	Pass

40 MHz BW

Conducted 26 dB Bandwidth Measurements for 802.11n_40 M BW

802.11n(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5190	38	39.896	N/A	Pass
5230	46	40.236	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n_40 M BW

802.11n(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5270	54	39.728	N/A	Pass
5310	62	40.110	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n_40 M BW

802.11n(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5510	102	39.949	N/A	Pass
5550	110	40.073	N/A	Pass
5710	142	39.855	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n_40 M BW

802.11n(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	39.991	N/A	Pass
5795	159	39.940	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_40 M BW

802.11ac(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5190	38	39.993	N/A	Pass
5230	46	40.150	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_40 M BW

802.11ac(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5270	54	39.902	N/A	Pass
5310	62	40.023	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_40 M BW

802.11ac(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5510	102	39.974	N/A	Pass
5550	110	39.912	N/A	Pass
5710	142	40.260	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_40 M BW

802.11ac(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	40.174	N/A	Pass
5795	159	40.232	N/A	Pass

Conducted 6 dB Bandwidth Measurements for 802.11n 40M BW

802.11n(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	36.390	0.5	Pass
5795	159	36.400	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11ac 40M BW

802.11ac(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	36.370	0.5	Pass
5795	159	36.380	0.5	Pass

80 MHz BW

Conducted 26 dB Bandwidth Measurements for 802.11ac_80M BW

802.11ac(80M) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5210	42	81.464	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_80M BW

802.11ac(80M) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5290	58	81.390	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_80M BW

802.11ac(80M) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5530	106	81.898	N/A	Pass
5690	138	81.834	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_80M BW

802.11ac(80M) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	81.957	N/A	Pass

Conducted 6 dB Bandwidth Measurements for 802.11ac 80M BW

802.11ac(80MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	75.640	0.5	Pass

Note :

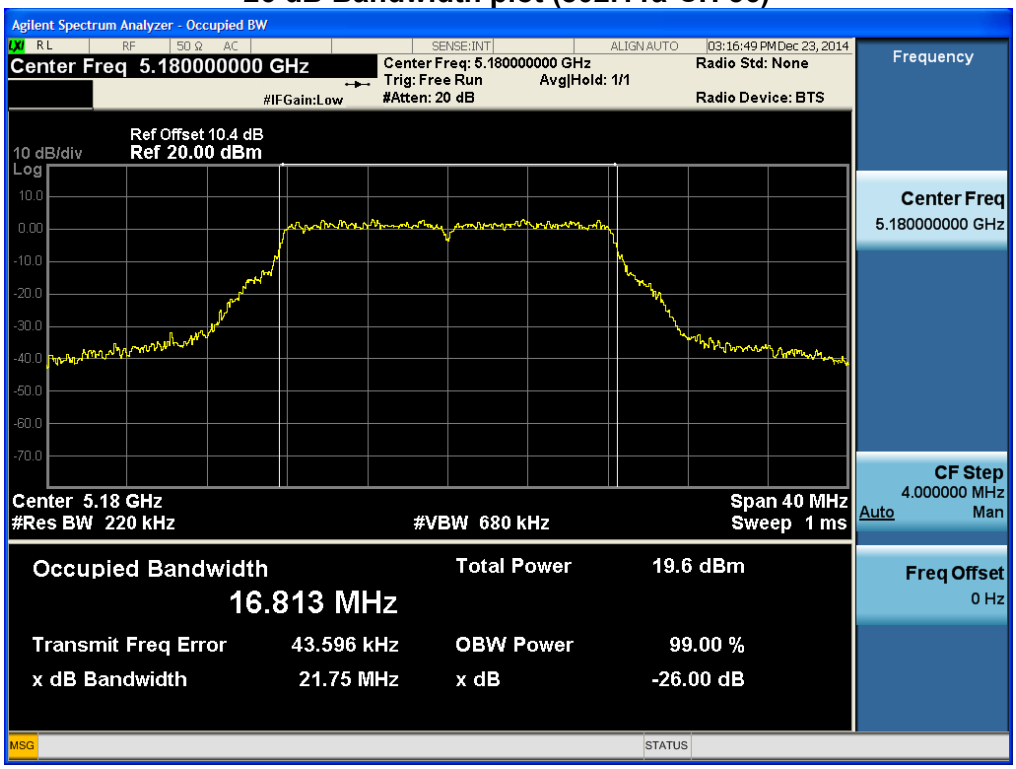
1. In order to simplify the report, attached plots were only the most wide channel.

2. DFS test channels should be defined. So, We performed the OBW test to prove that no part of the fundamental emissions of any channels belong to UNII1 and UNII3 band for DFS.

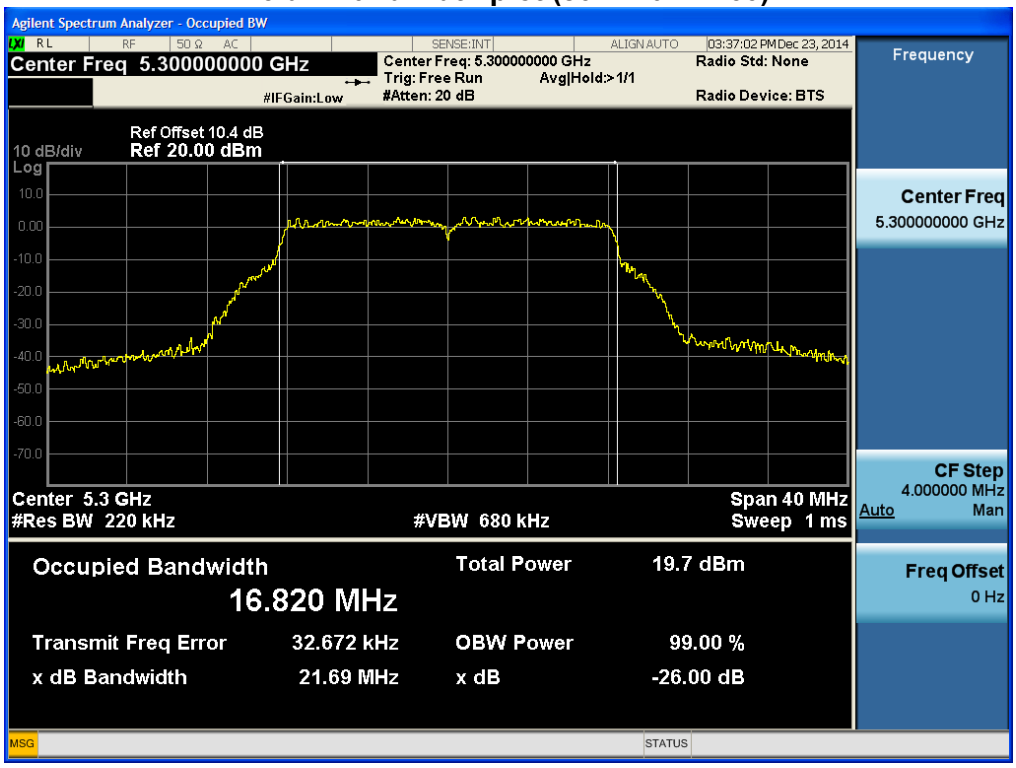
▣ RESULT PLOTS

20 MHz BW

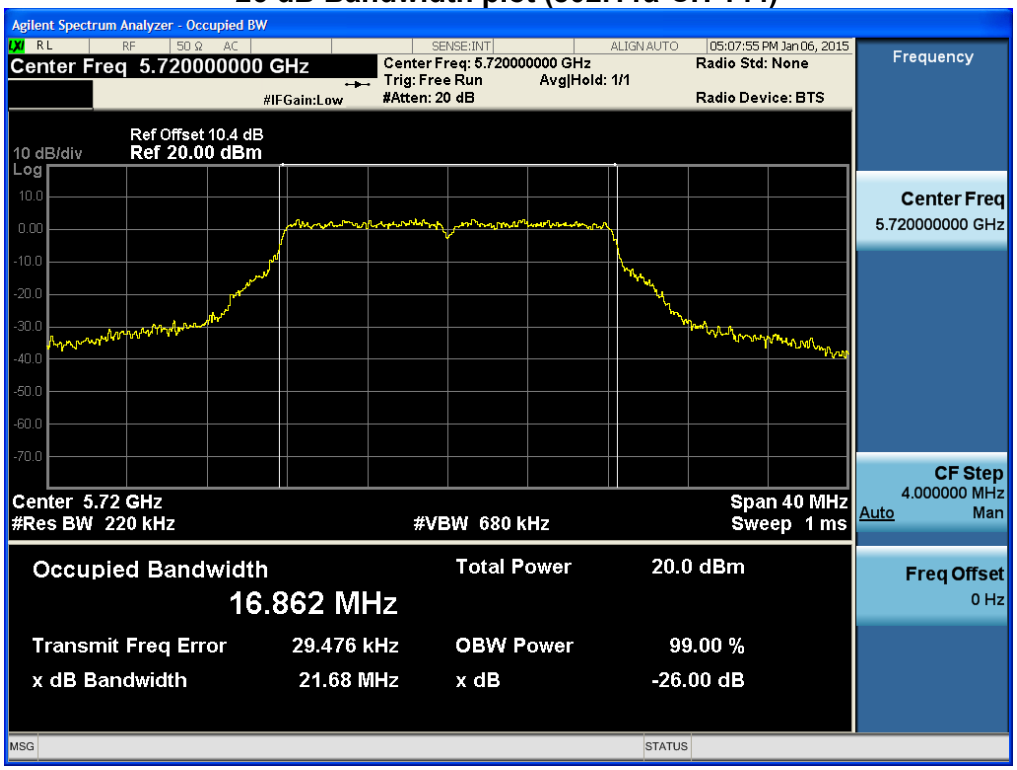
26 dB Bandwidth plot (802.11a-CH 36)



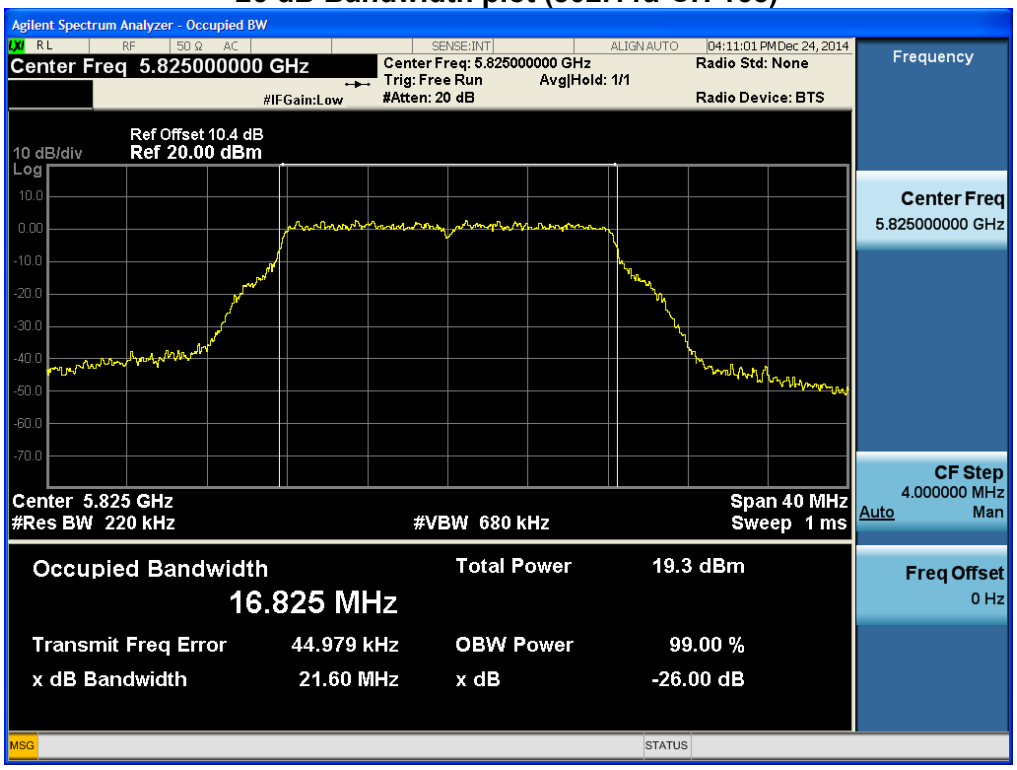
26 dB Bandwidth plot (802.11a-CH 60)



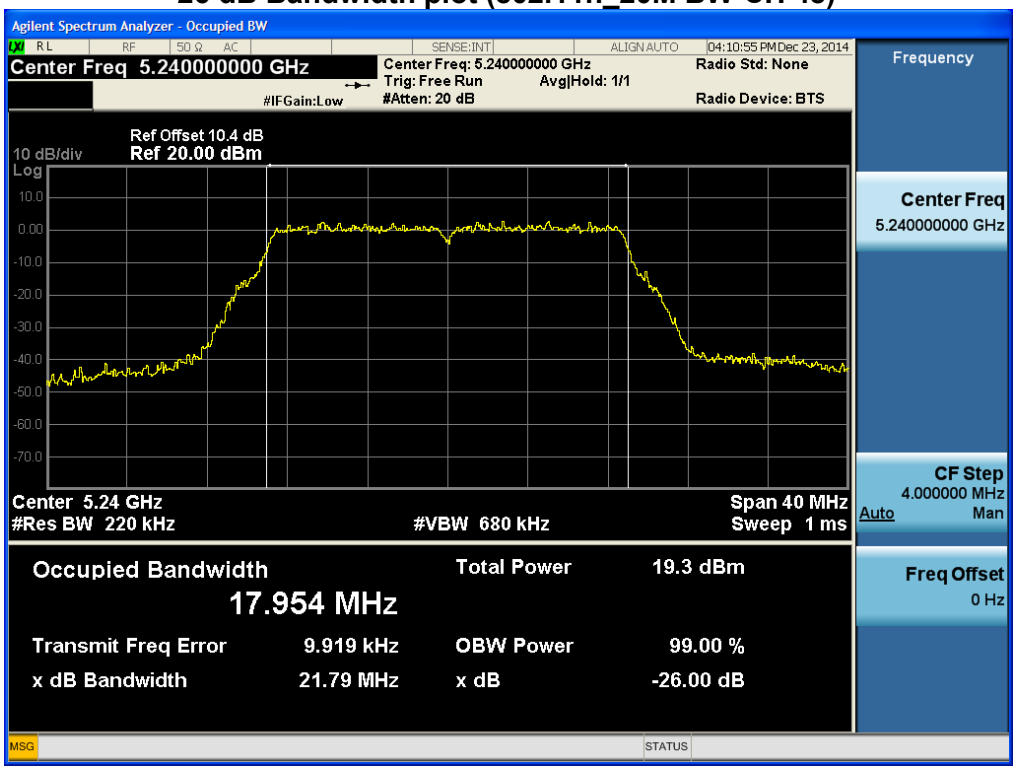
26 dB Bandwidth plot (802.11a-CH 144)



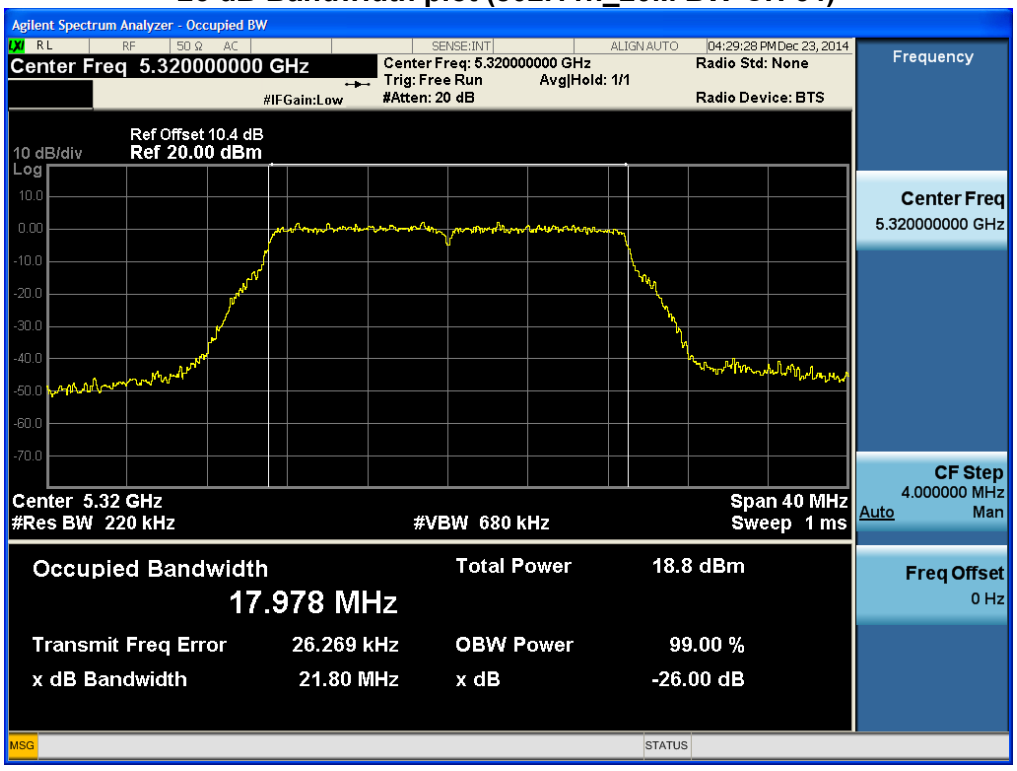
26 dB Bandwidth plot (802.11a-CH 165)



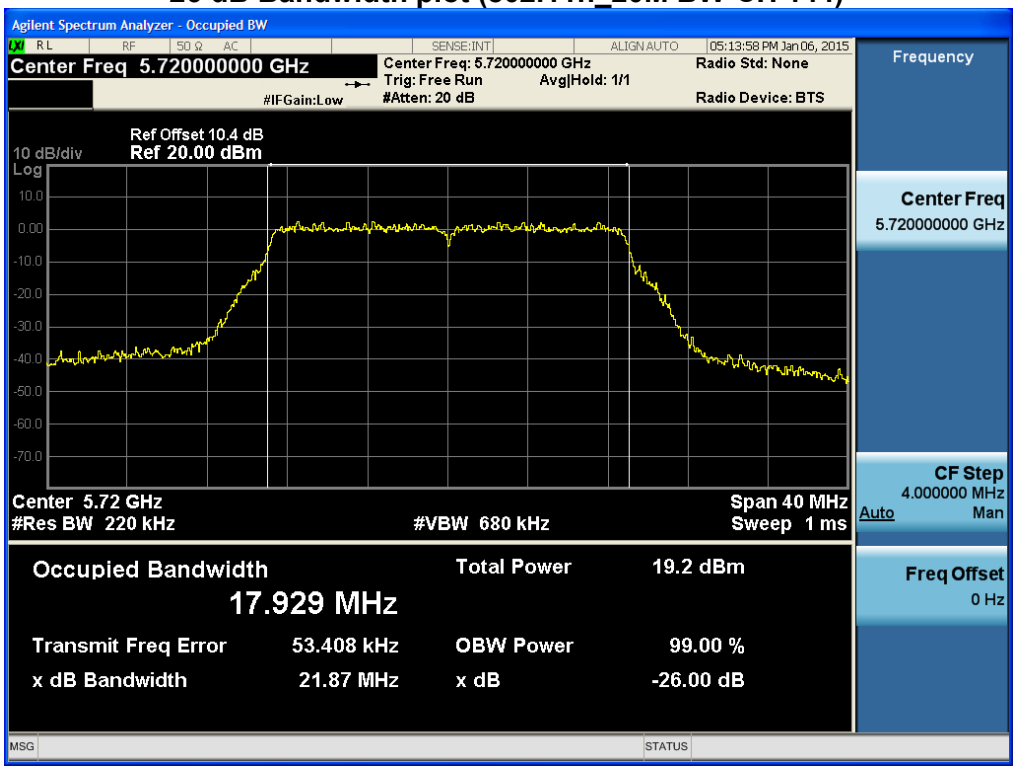
26 dB Bandwidth plot (802.11n_20M BW-CH 48)



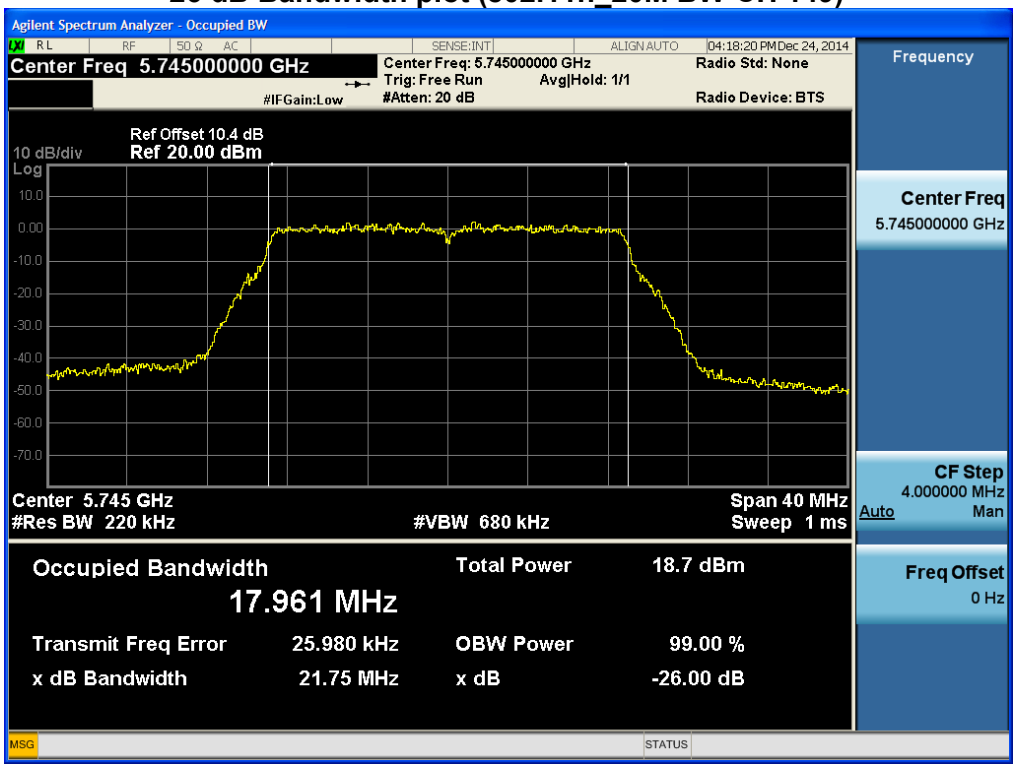
26 dB Bandwidth plot (802.11n_20M BW-CH 64)



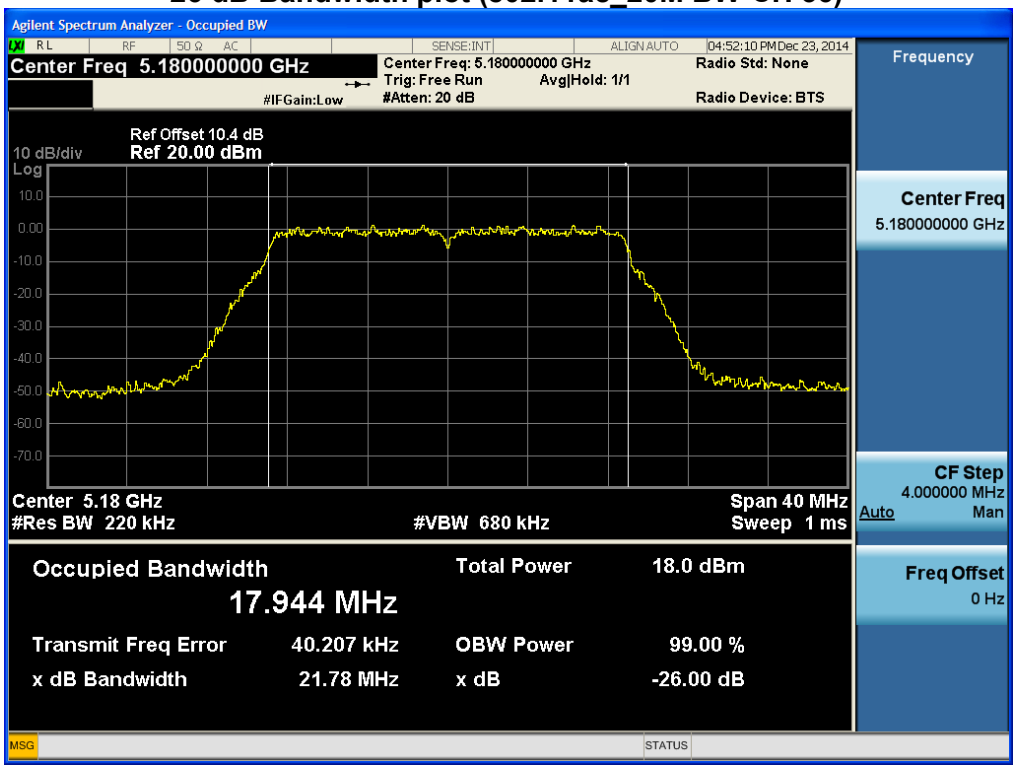
26 dB Bandwidth plot (802.11n_20M BW-CH 144)



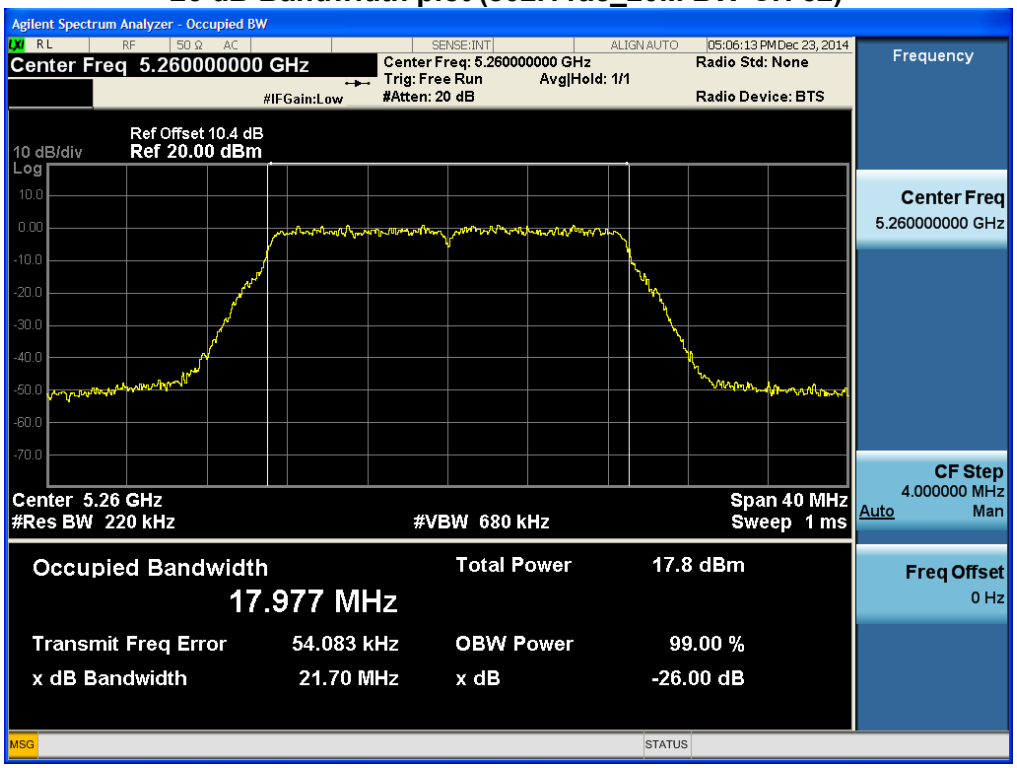
26 dB Bandwidth plot (802.11n_20M BW-CH 149)



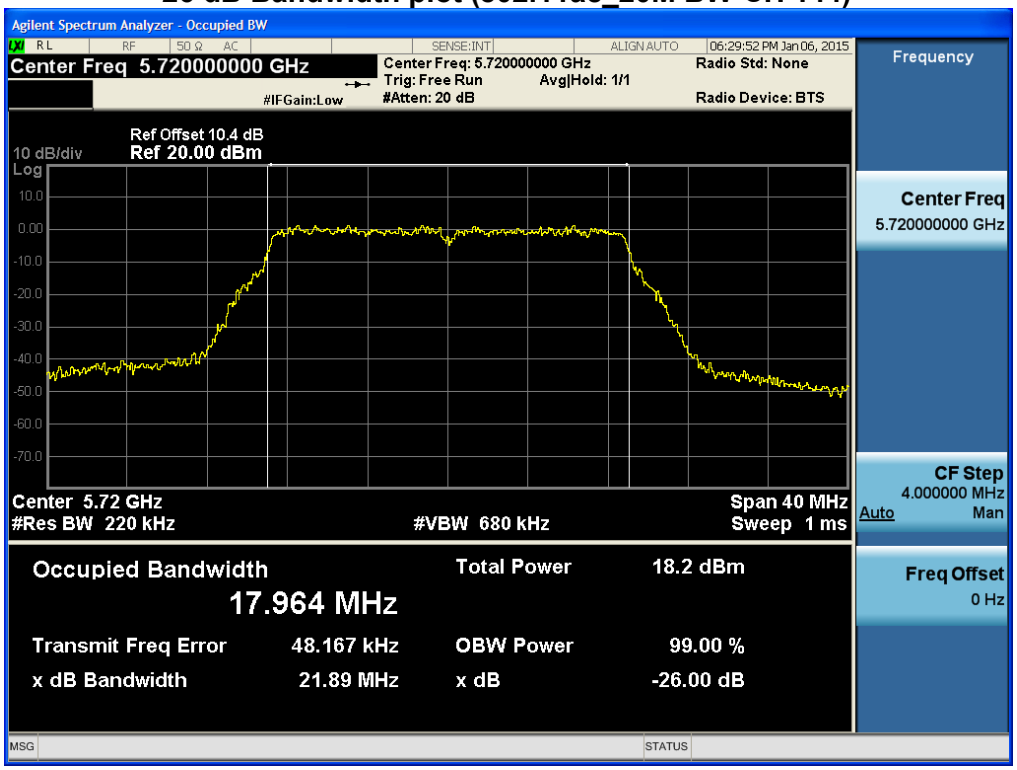
26 dB Bandwidth plot (802.11ac_20M BW-CH 36)



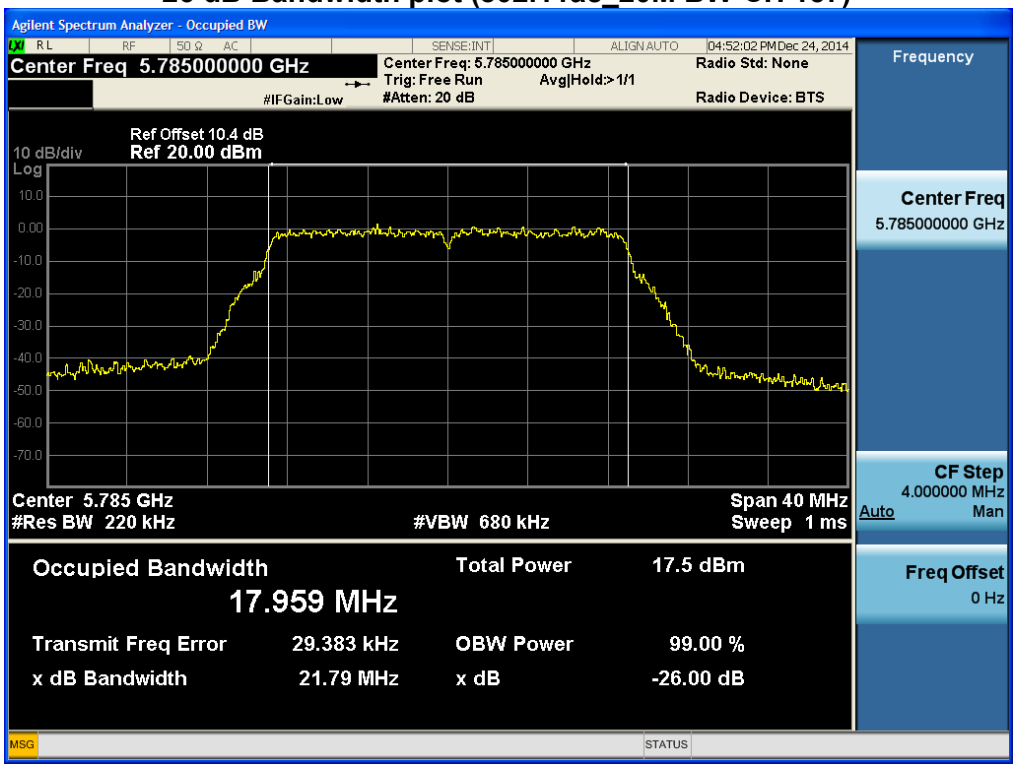
26 dB Bandwidth plot (802.11ac_20M BW-CH 52)



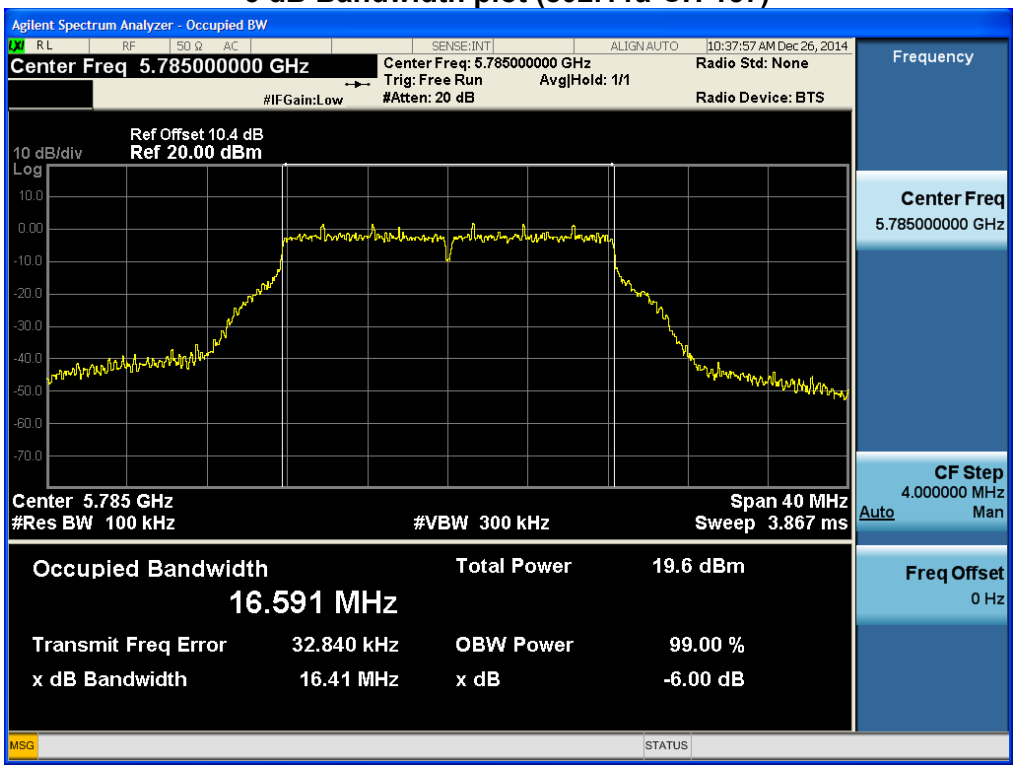
26 dB Bandwidth plot (802.11ac_20M BW-CH 144)



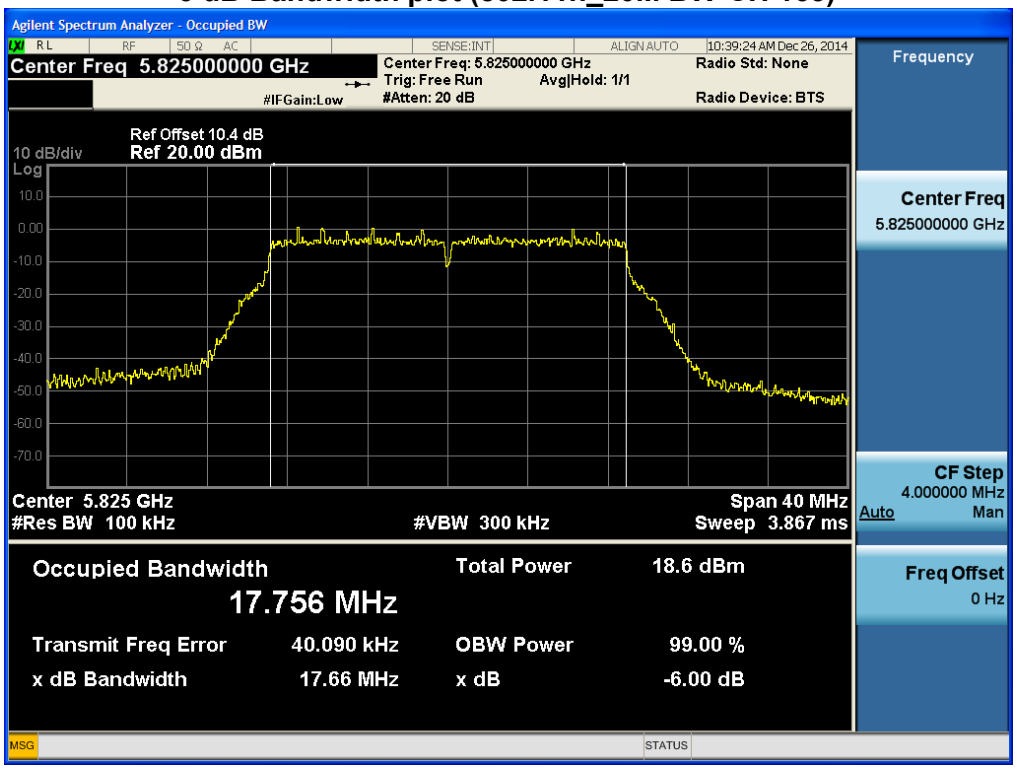
26 dB Bandwidth plot (802.11ac_20M BW-CH 157)



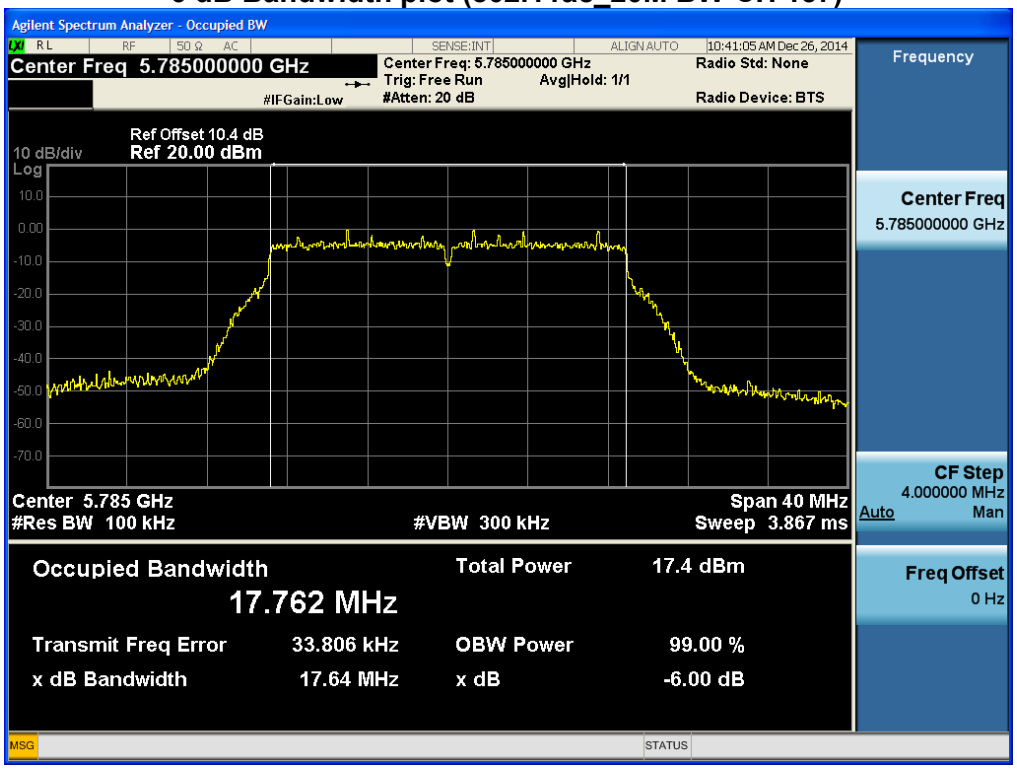
6 dB Bandwidth plot (802.11a-CH 157)



6 dB Bandwidth plot (802.11n_20M BW-CH 165)

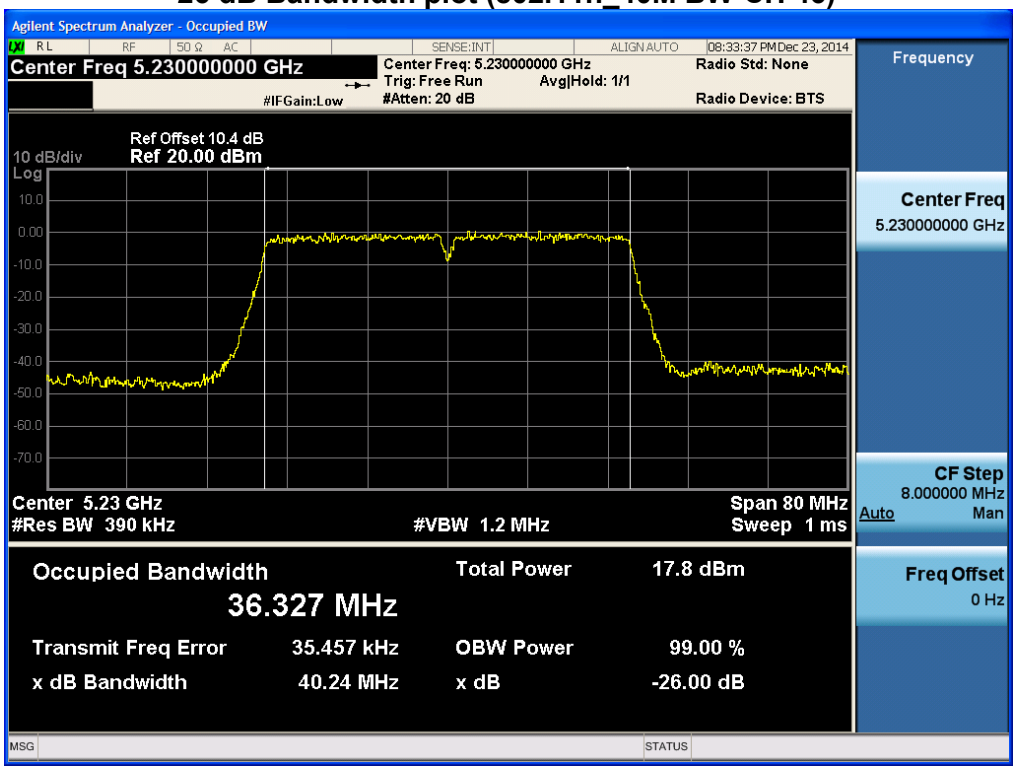


6 dB Bandwidth plot (802.11ac_20M BW-CH 157)

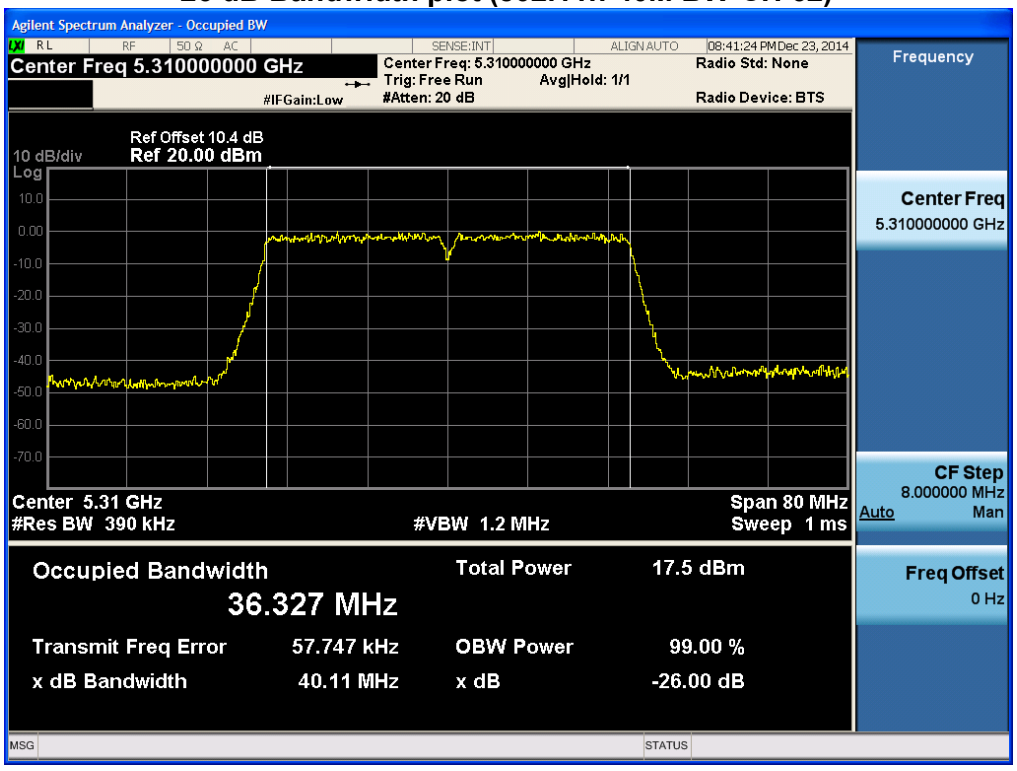


40 MHz BW

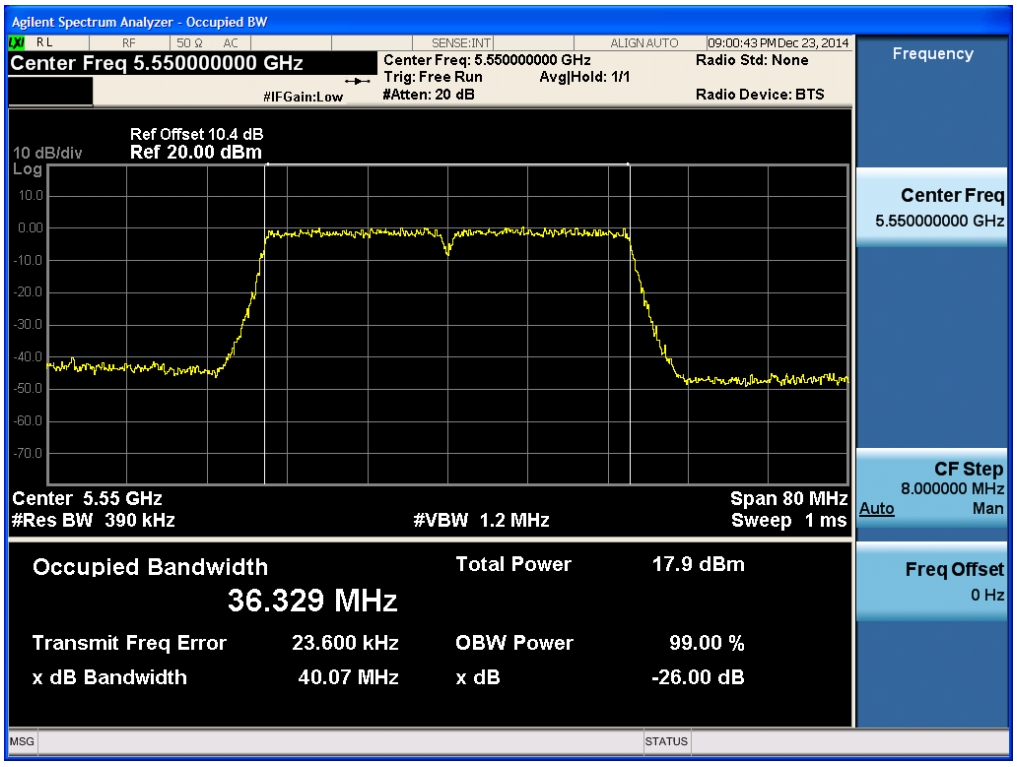
26 dB Bandwidth plot (802.11n_40M BW-CH 46)



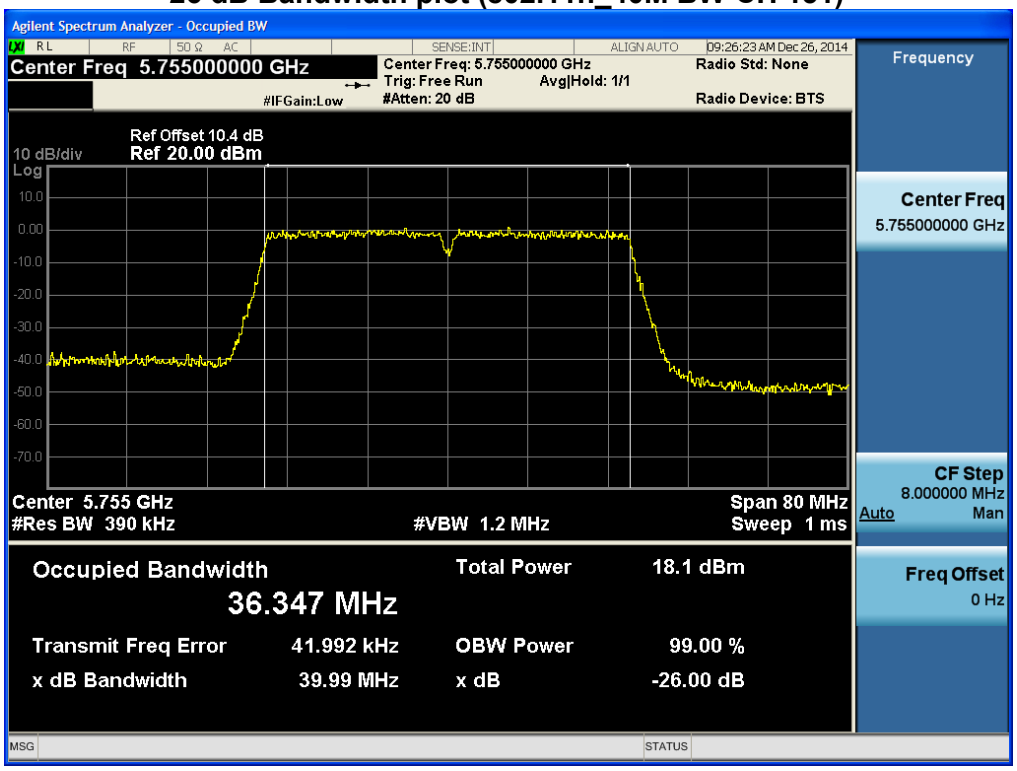
26 dB Bandwidth plot (802.11n-40M BW-CH 62)



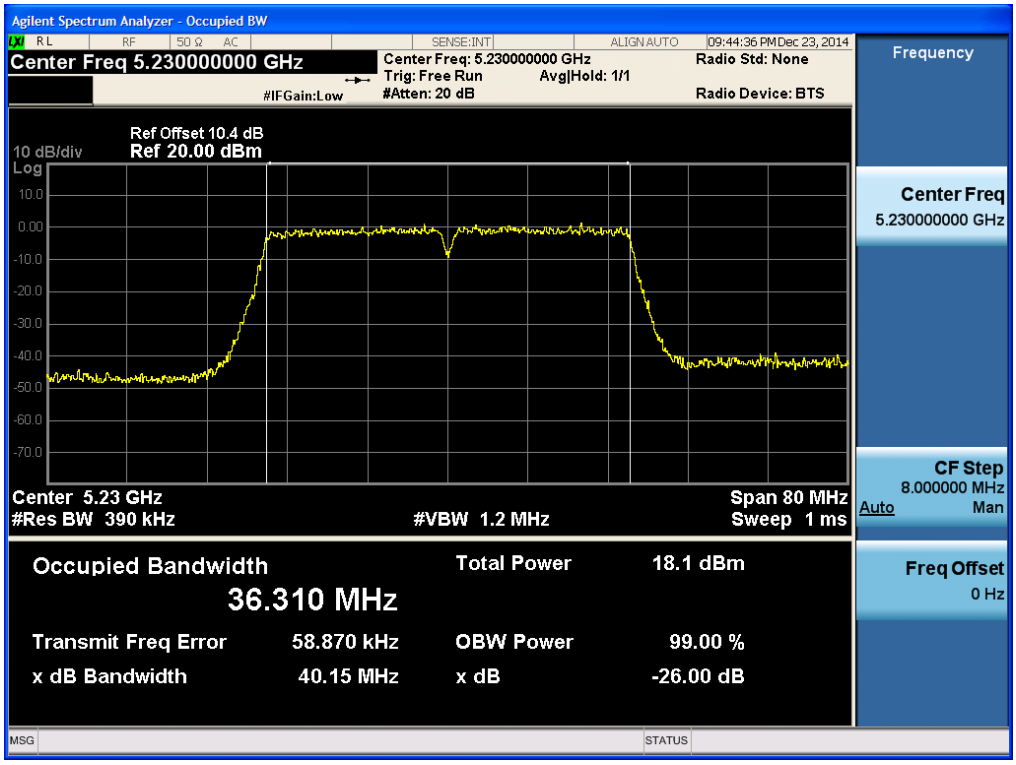
26 dB Bandwidth plot (802.11n_40M BW-CH 110)



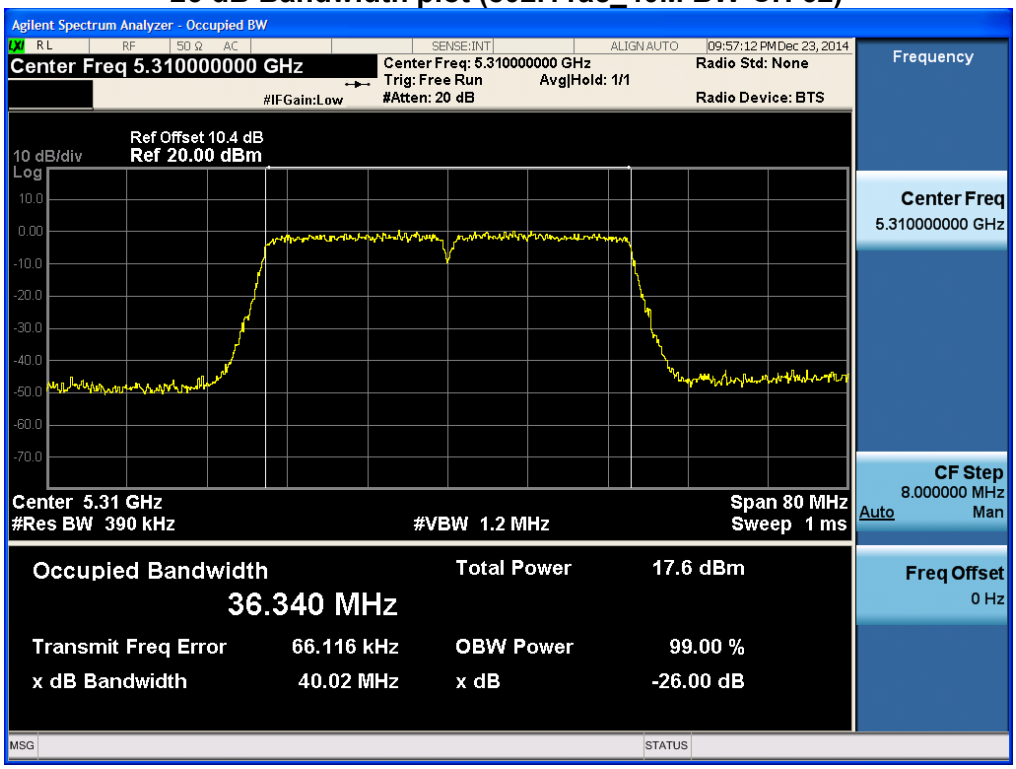
26 dB Bandwidth plot (802.11n_40M BW-CH 151)



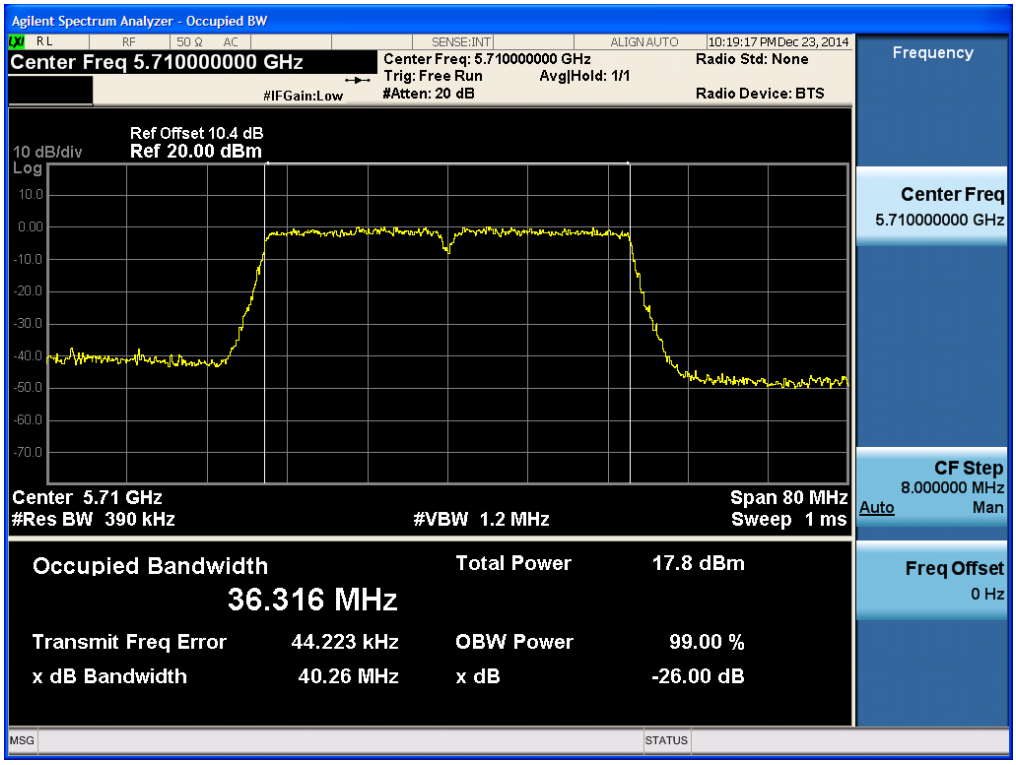
26 dB Bandwidth plot (802.11ac_40M BW -CH 46)



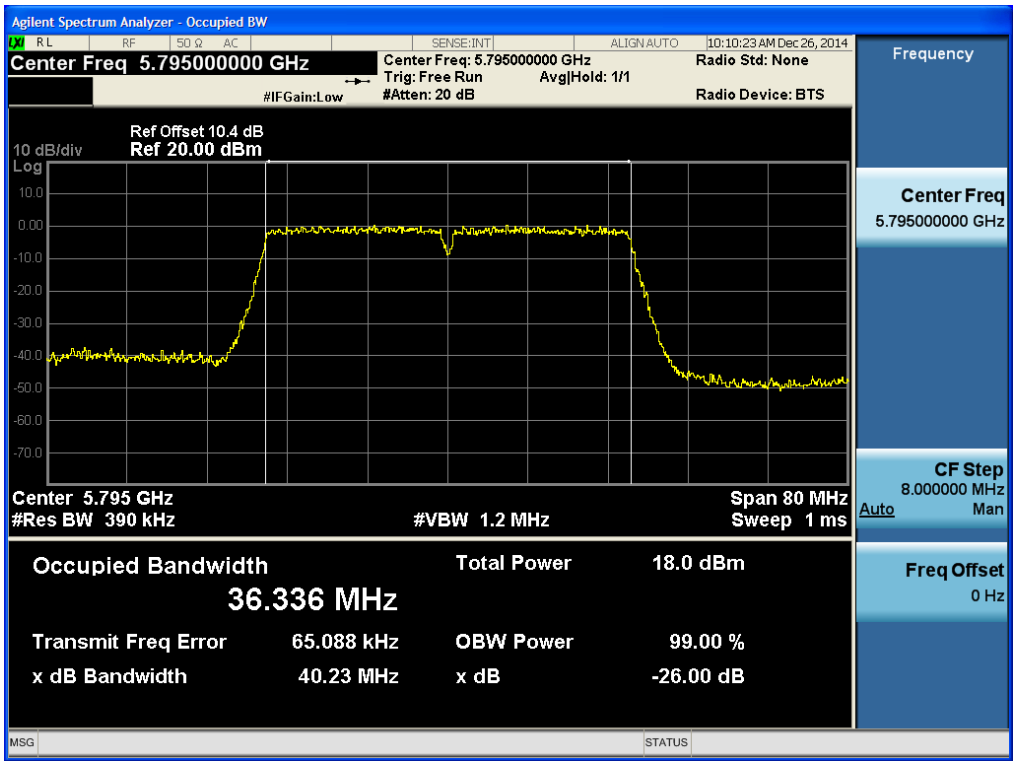
26 dB Bandwidth plot (802.11ac_40M BW-CH 62)



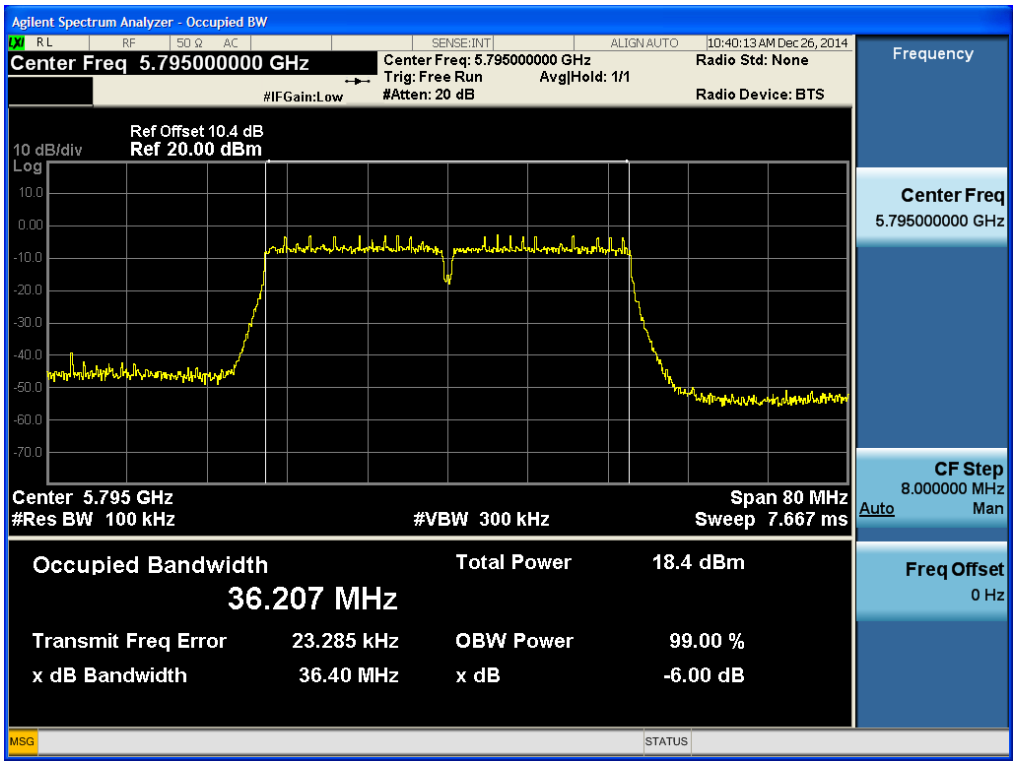
26 dB Bandwidth plot (802.11ac_40M BW -CH 142)



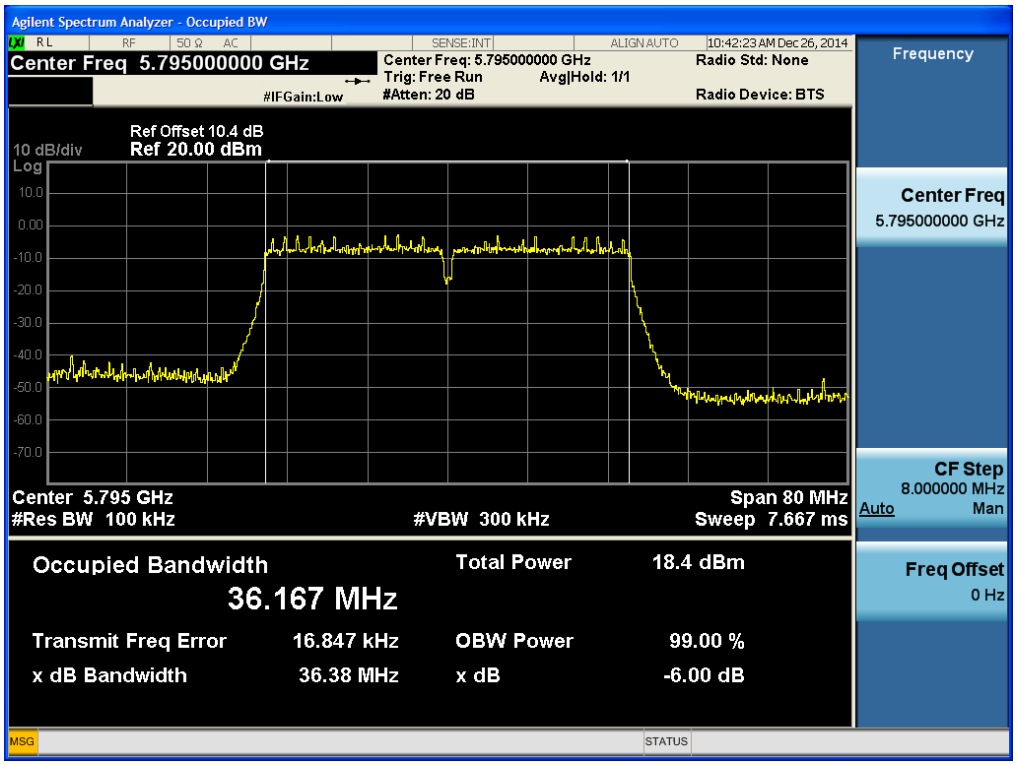
26 dB Bandwidth plot (802.11ac_40M BW -CH 159)



6 dB Bandwidth plot (802.11n_40M BW-CH 159)

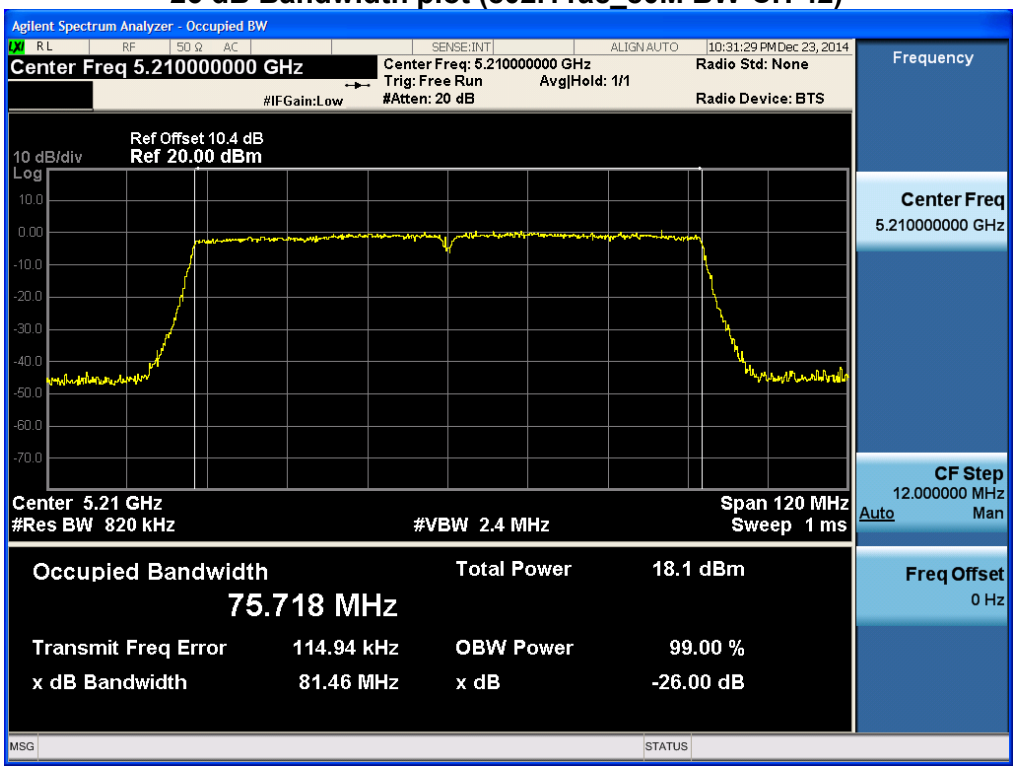


6 dB Bandwidth plot (802.11ac_40M BW -CH 159)

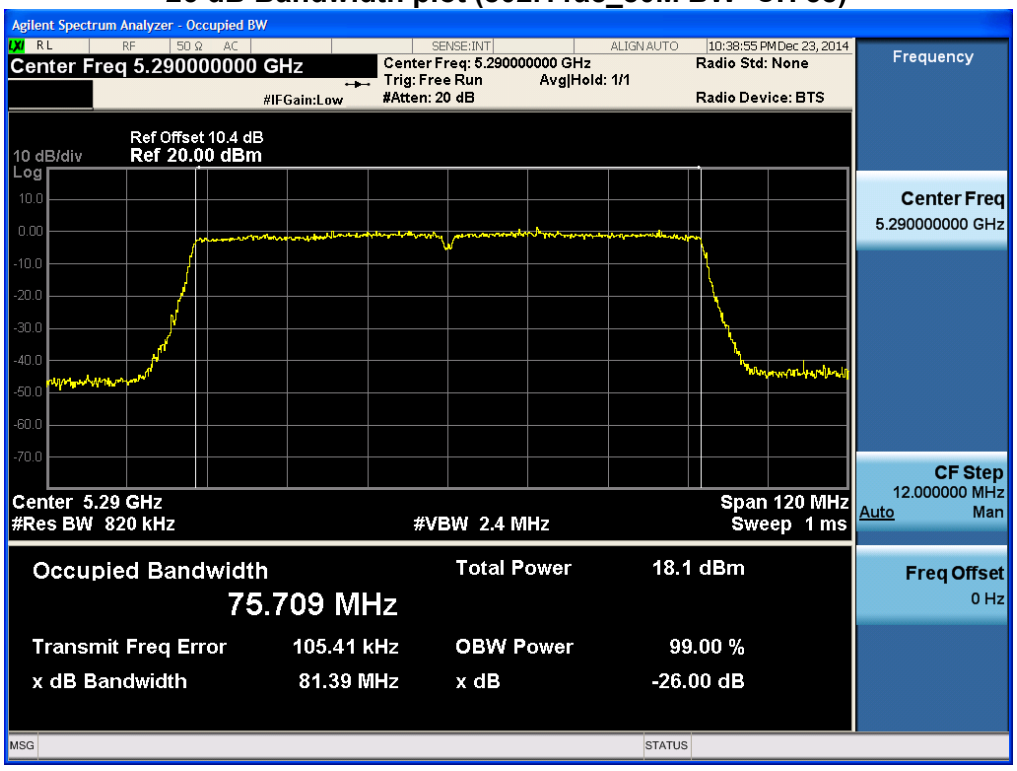


80 MHz BW

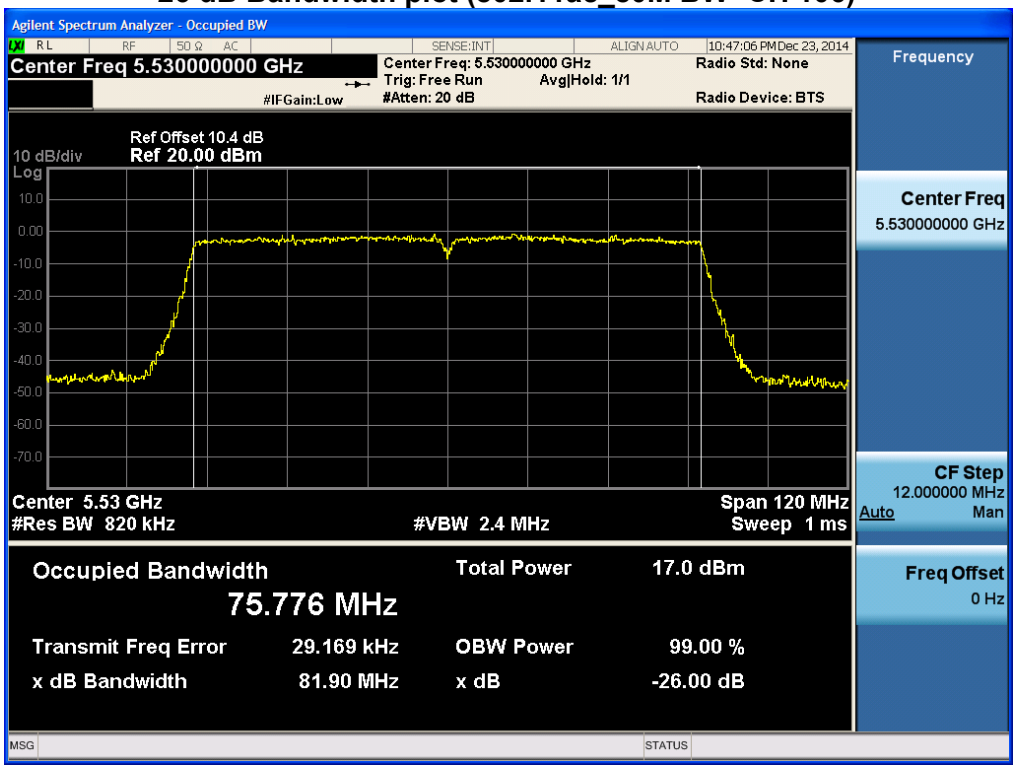
26 dB Bandwidth plot (802.11ac_80M BW-CH 42)



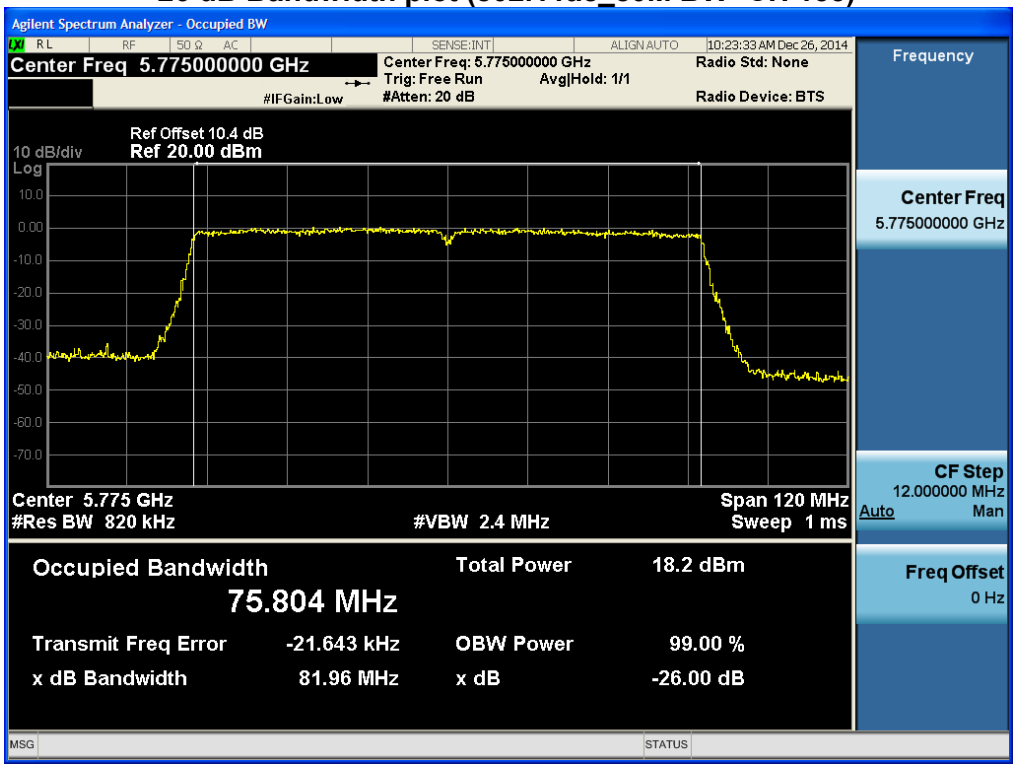
26 dB Bandwidth plot (802.11ac_80M BW -CH 58)



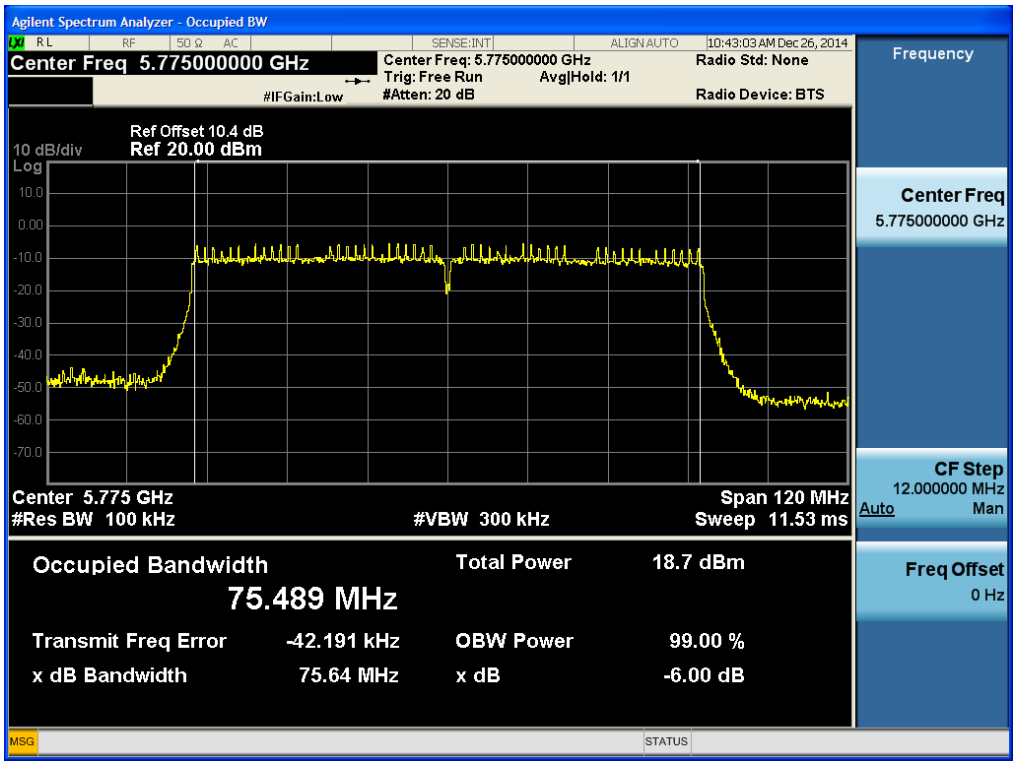
26 dB Bandwidth plot (802.11ac_80M BW -CH 106)



26 dB Bandwidth plot (802.11ac_80M BW -CH 155)



6 dB Bandwidth plot (802.11ac_80M BW -CH 155)



8.3 OUTPUT POWER MEASUREMENT

Test Requirements and limit, §15.407(a)(1)

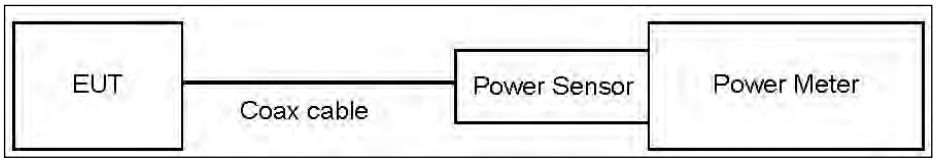
A transmitter antenna terminal of EUT is connected to the input of a Power meter or Spectrum Analyzer .Measurement is made while the EUT is operating in transmission mode at the appropriate frequencies.

▣ Limit

1. Maximum Conducted Output Power :

Band	Mode	Limit (dBm)
UNII 1, 2A, 2C	802.11a,n	23.98
UNII 3	802.11a,n	30.00

▣ TEST CONFIGURATION(20 MHz BW)



▣ TEST PROCEDURE(20 MHz BW)

▪ Average Power (Procedure E.3.a in KDB 789033, issued 06/06/2014).

1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

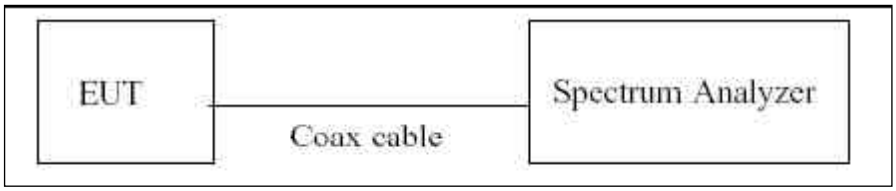
Note :

1. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1, 2A, 2C, 3	10.4

(Actual value of loss for the attenuator and cable combination)

▣ TEST CONFIGURATION(40 MHz BW & 80 MHz BW)



▣ TEST PROCEDURE(40 MHz BW & 80 MHz BW)

▪ Average Power

The transmitter output is connected to the Spectrum Analyzer. We use the spectrum analyzer's integrated band power measurement function. We tested according to Method SA-2 in KDB 789033(issued 06/06/2014).

The Spectrum Analyzer is set to

1. Measure the duty cycle.
2. Set span to encompass the 26 dB EBW of the signal.
3. RBW = 1 MHz.
4. VBW ≥ 3 MHz.
5. Number of points in sweep ≥ 2*span/RBW.
6. Sweep time = auto.
7. Detector = RMS.
8. Do not use sweep triggering. Allow the sweep to "free run".
9. Trace average at least 100 traces in power averaging(RMS) mode
10. Integrated bandwidth = OBW
11. Add 10log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

▣ Sample Calculation (Conducted)

Output Power = Reading Value + ATT loss + Cable loss(1 ea) + Duty Cycle Factor

▣ Sample Calculation (EIRP)

Output Power = Reading Value + ATT loss + Cable loss(1 ea) + Duty Cycle Factor + Ant gain

Note :

1. Spectrum reading values are not plot data. The power results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Spectrum offset = Attenuator loss + Cable loss
3. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1, 2A, 2C, 3	10.4

(Actual value of loss for the attenuator and cable combination)

▣ TEST RESULTS

20MHz BW

Conducted Output Power Measurements (802.11a_20M BW Mode: 5180~5240)

802.11a(20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	6	12.97	0.208	13.18	23.98
		9	12.66	0.339	13.00	23.98
		12	12.57	0.448	13.02	23.98
		18	12.38	0.642	13.02	23.98
		24	12.42	0.837	13.26	23.98
		36	12.16	1.157	13.32	23.98
		48	11.91	1.516	13.42	23.98
		54	11.75	1.621	13.37	23.98
5200	40	6	13.24	0.208	13.45	23.98
		9	12.86	0.339	13.20	23.98
		12	12.84	0.448	13.29	23.98
		18	12.63	0.642	13.27	23.98
		24	12.66	0.837	13.50	23.98
		36	12.33	1.157	13.49	23.98
		48	12.17	1.516	13.69	23.98
		54	11.89	1.621	13.51	23.98
5240	48	6	13.41	0.208	13.62	23.98
		9	13.11	0.339	13.45	23.98
		12	12.91	0.448	13.36	23.98
		18	12.67	0.642	13.32	23.98
		24	12.95	0.837	13.79	23.98
		36	12.47	1.157	13.63	23.98
		48	12.33	1.516	13.85	23.98
		54	12.14	1.621	13.76	23.98

Conducted Output Power Measurements (802.11a_20M Mode: 5260~5320)

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5260	52	6	13.15	0.208	13.36	23.98
		9	12.83	0.339	13.17	23.98
		12	12.76	0.448	13.21	23.98
		18	12.59	0.642	13.23	23.98
		24	12.67	0.837	13.50	23.98
		36	12.23	1.157	13.39	23.98
		48	12.04	1.516	13.56	23.98
		54	11.87	1.621	13.49	23.98
5300	60	6	13.21	0.208	13.42	23.98
		9	12.88	0.339	13.22	23.98
		12	12.75	0.448	13.20	23.98
		18	12.56	0.642	13.20	23.98
		24	12.69	0.837	13.53	23.98
		36	12.37	1.157	13.53	23.98
		48	12.14	1.516	13.65	23.98
		54	11.98	1.621	13.60	23.98
5320	64	6	13.20	0.208	13.41	23.98
		9	12.92	0.339	13.26	23.98
		12	12.76	0.448	13.21	23.98
		18	12.63	0.642	13.28	23.98
		24	12.67	0.837	13.51	23.98
		36	12.32	1.157	13.47	23.98
		48	12.13	1.516	13.65	23.98
		54	11.93	1.621	13.55	23.98

Conducted Output Power Measurements (802.11a_20M Mode: 5500~5720)

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	6	13.56	0.208	13.77	23.98
		9	13.22	0.339	13.56	23.98
		12	13.10	0.448	13.54	23.98
		18	12.93	0.642	13.58	23.98
		24	12.95	0.837	13.78	23.98
		36	12.72	1.157	13.88	23.98
		48	12.49	1.516	14.01	23.98
		54	12.32	1.621	13.94	23.98
5600	120	6	13.87	0.208	14.08	23.98
		9	13.57	0.339	13.91	23.98
		12	13.48	0.448	13.93	23.98
		18	13.31	0.642	13.95	23.98
		24	13.32	0.837	14.16	23.98
		36	12.93	1.157	14.09	23.98
		48	12.77	1.516	14.28	23.98
		54	12.57	1.621	14.19	23.98
5720	144	6	13.49	0.208	13.69	23.98
		9	13.34	0.339	13.67	23.98
		12	13.17	0.448	13.62	23.98
		18	12.98	0.642	13.63	23.98
		24	13.09	0.837	13.92	23.98
		36	12.66	1.157	13.82	23.98
		48	12.55	1.516	14.06	23.98
		54	12.31	1.621	13.93	23.98

Conducted Output Power Measurements (802.11a_20M BW Mode: 5745~5825)

802.11a (20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	6	13.00	0.208	13.21	30
		9	12.68	0.339	13.02	30
		12	12.62	0.448	13.07	30
		18	12.26	0.642	12.90	30
		24	12.36	0.837	13.20	30
		36	12.10	1.157	13.25	30
		48	11.91	1.516	13.43	30
		54	11.66	1.621	13.28	30
5785	157	6	13.05	0.208	13.26	30
		9	12.79	0.339	13.13	30
		12	12.73	0.448	13.18	30
		18	12.31	0.642	12.95	30
		24	12.35	0.837	13.19	30
		36	12.06	1.157	13.22	30
		48	11.96	1.516	13.48	30
		54	11.64	1.621	13.26	30
5825	165	6	12.96	0.208	13.17	30
		9	12.46	0.339	12.80	30
		12	12.45	0.448	12.90	30
		18	12.32	0.642	12.96	30
		24	12.36	0.837	13.19	30
		36	11.86	1.157	13.02	30
		48	11.87	1.516	13.39	30
		54	11.57	1.621	13.19	30

Conducted Output Power Measurements (802.11n_20M BW Mode: 5180~5240)

802.11n(20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	6.5	11.91	0.246	12.16	23.98
		13	11.77	0.487	12.25	23.98
		19.5	11.58	0.674	12.25	23.98
		26	11.80	0.864	12.66	23.98
		39	11.45	1.221	12.67	23.98
		52	11.19	1.524	12.71	23.98
		58.5	11.07	1.621	12.69	23.98
		65	11.12	1.748	12.87	23.98
5200	40	6.5	12.19	0.246	12.43	23.98
		13	11.96	0.487	12.45	23.98
		19.5	11.78	0.674	12.45	23.98
		26	12.03	0.864	12.89	23.98
		39	11.70	1.221	12.92	23.98
		52	11.30	1.524	12.82	23.98
		58.5	11.08	1.621	12.70	23.98
		65	11.08	1.748	12.82	23.98
5240	48	6.5	12.48	0.246	12.73	23.98
		13	12.09	0.487	12.58	23.98
		19.5	11.96	0.674	12.64	23.98
		26	12.17	0.864	13.03	23.98
		39	11.79	1.221	13.01	23.98
		52	11.66	1.524	13.18	23.98
		58.5	11.51	1.621	13.13	23.98
		65	11.38	1.748	13.13	23.98

Conducted Output Power Measurements (802.11n_20M BW Mode: 5260~5320)

802.11n(20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5260	52	6.5	12.02	0.246	12.27	23.98
		13	11.84	0.487	12.32	23.98
		19.5	11.68	0.674	12.35	23.98
		26	11.80	0.864	12.66	23.98
		39	11.48	1.221	12.70	23.98
		52	11.23	1.524	12.75	23.98
		58.5	11.12	1.621	12.74	23.98
		65	10.91	1.748	12.66	23.98
5300	60	6.5	11.91	0.246	12.15	23.98
		13	11.69	0.487	12.17	23.98
		19.5	11.46	0.674	12.13	23.98
		26	11.62	0.864	12.49	23.98
		39	11.41	1.221	12.63	23.98
		52	11.08	1.524	12.60	23.98
		58.5	11.07	1.621	12.69	23.98
		65	10.88	1.748	12.63	23.98
5320	64	6.5	11.90	0.246	12.15	23.98
		13	11.69	0.487	12.18	23.98
		19.5	11.50	0.674	12.18	23.98
		26	11.69	0.864	12.56	23.98
		39	11.43	1.221	12.66	23.98
		52	11.18	1.524	12.70	23.98
		58.5	11.07	1.621	12.69	23.98
		65	10.95	1.748	12.70	23.98

Conducted Output Power Measurements (802.11n_20M BW Mode: 5500~5700)

802.11n(20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	6.5	12.33	0.246	12.58	23.98
		13	12.15	0.487	12.64	23.98
		19.5	12.03	0.674	12.71	23.98
		26	12.04	0.864	12.90	23.98
		39	11.87	1.221	13.09	23.98
		52	11.44	1.524	12.96	23.98
		58.5	11.32	1.621	12.94	23.98
		65	11.30	1.748	13.05	23.98
5600	120	6.5	12.67	0.246	12.92	23.98
		13	12.42	0.487	12.91	23.98
		19.5	12.25	0.674	12.93	23.98
		26	12.40	0.864	13.26	23.98
		39	12.07	1.221	13.29	23.98
		52	11.69	1.524	13.22	23.98
		58.5	11.71	1.621	13.33	23.98
		65	11.62	1.748	13.36	23.98
5720	144	6.5	12.39	0.246	12.64	23.98
		13	12.16	0.487	12.65	23.98
		19.5	12.00	0.674	12.68	23.98
		26	12.16	0.864	13.02	23.98
		39	11.75	1.221	12.97	23.98
		52	11.64	1.524	13.16	23.98
		58.5	11.40	1.621	13.02	23.98
		65	11.37	1.748	13.12	23.98

Conducted Output Power Measurements (802.11n_20M BW Mode: 5745~5825)

802.11n(20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	6.5	11.83	0.246	12.08	30
		13	11.48	0.487	11.97	30
		19.5	11.26	0.674	11.93	30
		26	11.51	0.864	12.38	30
		39	11.11	1.221	12.33	30
		52	10.90	1.524	12.42	30
		58.5	10.86	1.621	12.48	30
		65	10.67	1.748	12.42	30
5785	157	6.5	11.58	0.246	11.82	30
		13	11.43	0.487	11.91	30
		19.5	11.25	0.674	11.92	30
		26	11.27	0.864	12.14	30
		39	11.06	1.221	12.28	30
		52	10.81	1.524	12.33	30
		58.5	10.71	1.621	12.33	30
		65	10.64	1.748	12.39	30
5825	165	6.5	11.54	0.246	11.78	30
		13	11.30	0.487	11.79	30
		19.5	11.11	0.674	11.79	30
		26	11.29	0.864	12.16	30
		39	11.05	1.221	12.27	30
		52	10.77	1.524	12.30	30
		58.5	10.76	1.621	12.38	30
		65	10.51	1.748	12.26	30

Conducted Output Power Measurements (802.11ac_20M BW Mode: 5180~5240)

802.11ac(20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	6.5	11.20	0.223	11.42	23.98
		13	10.87	0.456	11.32	23.98
		19.5	10.64	0.633	11.27	23.98
		26	10.85	0.853	11.70	23.98
		39	10.57	1.186	11.76	23.98
		52	10.38	1.452	11.83	23.98
		58.5	10.23	1.586	11.81	23.98
		65	10.05	1.741	11.79	23.98
		78	9.72	1.938	11.66	23.98
5200	40	6.5	11.09	0.223	11.32	23.98
		13	10.89	0.456	11.35	23.98
		19.5	10.61	0.633	11.25	23.98
		26	10.89	0.853	11.74	23.98
		39	10.50	1.186	11.69	23.98
		52	10.27	1.452	11.72	23.98
		58.5	10.11	1.586	11.69	23.98
		65	9.95	1.741	11.69	23.98
		78	9.77	1.938	11.71	23.98
5240	48	6.5	11.21	0.223	11.43	23.98
		13	10.97	0.456	11.43	23.98
		19.5	10.78	0.633	11.41	23.98
		26	11.04	0.853	11.89	23.98
		39	10.71	1.186	11.90	23.98
		52	10.44	1.452	11.89	23.98
		58.5	10.28	1.586	11.87	23.98
		65	10.24	1.741	11.98	23.98
		78	9.94	1.938	11.88	23.98

Conducted Output Power Measurements (802.11ac_20M BW Mode: 5260~5320)

802.11ac(20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5260	52	6.5	10.81	0.223	11.04	23.98
		13	10.63	0.456	11.08	23.98
		19.5	10.65	0.633	11.28	23.98
		26	10.66	0.853	11.51	23.98
		39	10.42	1.186	11.60	23.98
		52	10.15	1.452	11.60	23.98
		58.5	10.00	1.586	11.58	23.98
		65	9.84	1.741	11.58	23.98
		78	9.63	1.938	11.57	23.98
5300	60	6.5	11.06	0.223	11.28	23.98
		13	10.84	0.456	11.30	23.98
		19.5	10.53	0.633	11.16	23.98
		26	10.77	0.853	11.63	23.98
		39	10.42	1.186	11.61	23.98
		52	10.14	1.452	11.60	23.98
		58.5	10.04	1.586	11.63	23.98
		65	9.86	1.741	11.60	23.98
		78	9.82	1.938	11.76	23.98
5320	64	6.5	10.84	0.223	11.06	23.98
		13	10.75	0.456	11.21	23.98
		19.5	10.55	0.633	11.18	23.98
		26	10.73	0.853	11.58	23.98
		39	10.53	1.186	11.71	23.98
		52	10.26	1.452	11.72	23.98
		58.5	10.12	1.586	11.70	23.98
		65	9.85	1.741	11.59	23.98
		78	9.84	1.938	11.78	23.98

Conducted Output Power Measurements (802.11ac_20M BW Mode: 5500~5720)

802.11ac(20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	6.5	11.38	0.223	11.60	23.98
		13	11.22	0.456	11.68	23.98
		19.5	10.96	0.633	11.59	23.98
		26	11.14	0.853	12.00	23.98
		39	10.85	1.186	12.03	23.98
		52	10.50	1.452	11.95	23.98
		58.5	10.40	1.586	11.99	23.98
		65	10.32	1.741	12.06	23.98
		78	10.11	1.938	12.05	23.98
5580	116	6.5	11.81	0.223	12.04	23.98
		13	11.51	0.456	11.97	23.98
		19.5	11.31	0.633	11.94	23.98
		26	11.57	0.853	12.42	23.98
		39	11.16	1.186	12.35	23.98
		52	10.84	1.452	12.29	23.98
		58.5	10.75	1.586	12.34	23.98
		65	10.76	1.741	12.50	23.98
		78	10.41	1.938	12.34	23.98
5720	144	6.5	11.36	0.223	11.58	23.98
		13	11.20	0.456	11.66	23.98
		19.5	10.99	0.633	11.62	23.98
		26	11.21	0.853	12.07	23.98
		39	10.88	1.186	12.07	23.98
		52	10.47	1.452	11.92	23.98
		58.5	10.32	1.586	11.91	23.98
		65	10.28	1.741	12.02	23.98
		78	10.16	1.938	12.10	23.98

Conducted Output Power Measurements (802.11ac_20M BW Mode: 5745~5825)

802.11ac(20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	6.5	10.78	0.223	11.01	30
		13	10.36	0.456	10.81	30
		19.5	10.27	0.633	10.90	30
		26	10.35	0.853	11.20	30
		39	10.06	1.186	11.24	30
		52	9.91	1.452	11.36	30
		58.5	9.84	1.586	11.42	30
		65	9.50	1.741	11.24	30
		78	9.30	1.938	11.23	30
5785	157	6.5	10.53	0.223	10.76	30
		13	10.34	0.456	10.79	30
		19.5	10.02	0.633	10.65	30
		26	10.38	0.853	11.23	30
		39	9.97	1.186	11.15	30
		52	9.67	1.452	11.12	30
		58.5	9.62	1.586	11.20	30
		65	9.35	1.741	11.09	30
		78	9.13	1.938	11.07	30
5825	165	6.5	10.29	0.223	10.51	30
		13	10.23	0.456	10.69	30
		19.5	9.99	0.633	10.62	30
		26	10.17	0.853	11.02	30
		39	9.91	1.186	11.10	30
		52	9.52	1.452	10.97	30
		58.5	9.53	1.586	11.11	30
		65	9.37	1.741	11.11	30
		78	9.16	1.938	11.09	30

40MHz BW

Conducted Output Power Measurements (802.11n_40M BW Mode: 5190~5230)

802.11n(40MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5190	38	13.5	10.64	0.490	11.13	23.98
		27	10.41	1.015	11.43	23.98
		40.5	9.97	1.120	11.09	23.98
		54	9.58	1.507	11.09	23.98
		81	9.20	1.882	11.08	23.98
		108	8.88	2.184	11.06	23.98
		121.5	8.97	2.341	11.31	23.98
		135	8.78	2.541	11.32	23.98
5230	46	13.5	10.70	0.490	11.19	23.98
		27	10.35	1.015	11.36	23.98
		40.5	10.29	1.120	11.41	23.98
		54	10.16	1.507	11.67	23.98
		81	9.79	1.882	11.67	23.98
		108	9.38	2.184	11.56	23.98
		121.5	9.06	2.341	11.40	23.98
		135	8.82	2.541	11.36	23.98

Conducted Output Power Measurements (802.11n_40M BW Mode: 5270~5310)

802.11n(40MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5270	54	13.5	10.25	0.490	10.74	23.98
		27	9.77	1.015	10.78	23.98
		40.5	9.51	1.120	10.63	23.98
		54	9.41	1.507	10.92	23.98
		81	8.96	1.882	10.84	23.98
		108	8.55	2.184	10.73	23.98
		121.5	8.43	2.341	10.77	23.98
		135	8.27	2.541	10.81	23.98
5310	62	13.5	10.38	0.490	10.87	23.98
		27	9.95	1.015	10.97	23.98
		40.5	9.66	1.120	10.78	23.98
		54	9.52	1.507	11.02	23.98
		81	9.14	1.882	11.02	23.98
		108	8.71	2.184	10.89	23.98
		121.5	8.56	2.341	10.90	23.98
		135	8.36	2.541	10.90	23.98

Conducted Output Power Measurements (802.11n_40M BW Mode: 5510~5670)

802.11n(40MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	13.5	7.70	0.490	8.19	23.98
		27	7.31	1.015	8.32	23.98
		40.5	7.02	1.120	8.14	23.98
		54	6.97	1.507	8.48	23.98
		81	6.55	1.882	8.43	23.98
		108	6.07	2.184	8.26	23.98
		121.5	5.93	2.341	8.27	23.98
		135	5.76	2.541	8.30	23.98
5550	110	13.5	10.88	0.490	11.37	23.98
		27	10.45	1.015	11.47	23.98
		40.5	9.82	1.120	10.93	23.98
		54	9.77	1.507	11.28	23.98
		81	9.29	1.882	11.17	23.98
		108	8.92	2.184	11.11	23.98
		121.5	8.72	2.341	11.06	23.98
		135	8.62	2.541	11.16	23.98
5710	142	13.5	11.18	0.490	11.67	23.98
		27	10.67	1.015	11.69	23.98
		40.5	10.53	1.120	11.65	23.98
		54	10.35	1.507	11.86	23.98
		81	9.88	1.882	11.76	23.98
		108	9.42	2.184	11.61	23.98
		121.5	9.31	2.341	11.65	23.98
		135	9.13	2.541	11.67	23.98

Conducted Output Power Measurements (802.11n_40M BW Mode: 5755~5795)

802.11n(40MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	13.5	10.97	0.490	11.46	30
		27	10.49	1.015	11.51	30
		40.5	10.06	1.120	11.18	30
		54	10.17	1.507	11.68	30
		81	9.61	1.882	11.49	30
		108	9.32	2.184	11.51	30
		121.5	9.04	2.341	11.38	30
		135	8.90	2.541	11.45	30
5795	159	13.5	10.68	0.490	11.17	30
		27	10.48	1.015	11.50	30
		40.5	10.14	1.120	11.26	30
		54	9.90	1.507	11.41	30
		81	9.39	1.882	11.28	30
		108	9.12	2.184	11.31	30
		121.5	9.01	2.341	11.35	30
		135	8.79	2.541	11.33	30

Conducted Output Power Measurements (802.11ac_40M BW Mode: 5190~5230)

802.11ac(40MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5190	38	13.5	10.72	0.461	11.18	30
		27	10.50	0.815	11.32	30
		40.5	10.13	1.111	11.24	30
		54	10.13	1.377	11.51	30
		81	9.47	1.858	11.33	30
		108	9.23	2.123	11.36	30
		121.5	9.00	2.290	11.29	30
		135	8.95	2.449	11.40	30
		162	8.77	2.720	11.49	30
		180	8.59	2.792	11.38	30
5230	46	13.5	10.90	0.461	11.36	30
		27	10.83	0.815	11.64	30
		40.5	10.27	1.111	11.38	30
		54	10.43	1.377	11.81	30
		81	9.62	1.858	11.48	30
		108	9.45	2.123	11.57	30
		121.5	9.18	2.290	11.47	30
		135	9.03	2.449	11.47	30
		162	8.78	2.720	11.50	30
		180	8.58	2.792	11.37	30

Conducted Output Power Measurements (802.11ac_40M BW Mode: 5270~5310)

802.11ac(40MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5270	54	13.5	10.32	0.461	10.78	30
		27	10.08	0.815	10.89	30
		40.5	9.57	1.111	10.68	30
		54	9.57	1.377	10.95	30
		81	9.12	1.858	10.98	30
		108	8.76	2.123	10.88	30
		121.5	8.67	2.290	10.96	30
		135	8.44	2.449	10.89	30
		162	8.08	2.720	10.80	30
		180	8.09	2.792	10.88	30
5310	62	13.5	10.34	0.461	10.81	30
		27	9.95	0.815	10.77	30
		40.5	9.74	1.111	10.85	30
		54	9.69	1.377	11.07	30
		81	9.20	1.858	11.06	30
		108	8.74	2.123	10.86	30
		121.5	8.59	2.290	10.88	30
		135	8.45	2.449	10.90	30
		162	8.17	2.720	10.89	30
		180	8.13	2.792	10.92	30

Conducted Output Power Measurements (802.11ac_40M BW Mode: 5510~5710)

802.11ac(40MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	13.5	7.80	0.461	8.26	30
		27	7.34	0.815	8.15	30
		40.5	7.09	1.111	8.20	30
		54	6.98	1.377	8.35	30
		81	6.53	1.858	8.39	30
		108	6.15	2.123	8.27	30
		121.5	6.02	2.290	8.31	30
		135	5.83	2.449	8.28	30
		162	5.58	2.720	8.30	30
		180	5.54	2.792	8.33	30
5550	110	13.5	10.58	0.461	11.04	30
		27	10.05	0.815	10.87	30
		40.5	9.83	1.111	10.94	30
		54	9.75	1.377	11.13	30
		81	9.26	1.858	11.12	30
		108	8.87	2.123	10.99	30
		121.5	8.69	2.290	10.98	30
		135	8.50	2.449	10.95	30
		162	8.26	2.720	10.98	30
		180	8.33	2.792	11.12	30
5710	142	13.5	10.65	0.461	11.11	30
		27	10.27	0.815	11.09	30
		40.5	9.98	1.111	11.10	30
		54	9.83	1.377	11.20	30
		81	9.33	1.858	11.19	30
		108	9.15	2.123	11.27	30
		121.5	8.97	2.290	11.26	30
		135	8.71	2.449	11.16	30
		162	8.49	2.720	11.21	30
		180	8.40	2.792	11.19	30

Conducted Output Power Measurements (802.11ac_40M BW Mode: 5755~5795)

802.11ac(40MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	13.5	10.92	0.461	11.39	30
		27	10.57	0.815	11.38	30
		40.5	10.11	1.111	11.22	30
		54	10.13	1.377	11.51	30
		81	9.70	1.858	11.56	30
		108	9.41	2.123	11.53	30
		121.5	9.29	2.290	11.58	30
		135	9.07	2.449	11.52	30
		162	8.60	2.720	11.32	30
		180	8.71	2.792	11.50	30
5795	159	13.5	10.90	0.461	11.37	30
		27	10.43	0.815	11.24	30
		40.5	10.16	1.111	11.27	30
		54	10.08	1.377	11.45	30
		81	9.46	1.858	11.31	30
		108	9.28	2.123	11.40	30
		121.5	8.99	2.290	11.28	30
		135	9.01	2.449	11.46	30
		162	8.67	2.720	11.39	30
		180	8.67	2.792	11.46	30

80MHz BW

Conducted Output Power Measurements (802.11ac_80M BW Mode: 5210)

802.11ac(80MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5210	42	29.3	10.08	0.950	11.03	23.98
		58.5	9.45	1.622	11.07	23.98
		87.8	8.88	2.091	10.98	23.98
		117	8.91	2.242	11.15	23.98
		175.5	8.33	2.753	11.08	23.98
		234	8.13	3.145	11.27	23.98
		263.3	7.83	3.369	11.20	23.98
		292.5	7.73	3.481	11.21	23.98
		351	7.48	3.647	11.13	23.98
		390	7.27	3.782	11.05	23.98

Conducted Output Power Measurements (802.11ac_80M BW Mode: 5290)

802.11ac (80MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5290	58	29.3	10.02	0.950	10.97	23.98
		58.5	9.41	1.622	11.03	23.98
		87.8	8.76	2.091	10.85	23.98
		117	8.91	2.242	11.15	23.98
		175.5	8.32	2.753	11.07	23.98
		234	7.97	3.145	11.12	23.98
		263.3	7.78	3.369	11.15	23.98
		292.5	7.66	3.481	11.14	23.98
		351	7.52	3.647	11.16	23.98
		390	7.24	3.782	11.03	23.98

Conducted Output Power Measurements (802.11ac_80M BW Mode: 5530~5690)

802.11ac(80MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5530	106	29.3	8.91	0.950	9.86	23.98
		58.5	8.18	1.622	9.81	23.98
		87.8	7.62	2.091	9.71	23.98
		117	7.70	2.242	9.94	23.98
		175.5	7.16	2.753	9.91	23.98
		234	6.75	3.145	9.90	23.98
		263.3	6.73	3.369	10.10	23.98
		292.5	6.47	3.481	9.96	23.98
		351	6.25	3.647	9.90	23.98
		390	6.16	3.782	9.94	23.98
5690	138	29.3	10.71	0.950	11.66	23.98
		58.5	10.00	1.622	11.62	23.98
		87.8	9.33	2.091	11.42	23.98
		117	9.38	2.242	11.62	23.98
		175.5	8.94	2.753	11.69	23.98
		234	8.50	3.145	11.65	23.98
		263.3	8.41	3.369	11.78	23.98
		292.5	8.34	3.481	11.82	23.98
		351	8.09	3.647	11.73	23.98
		390	7.95	3.782	11.73	23.98

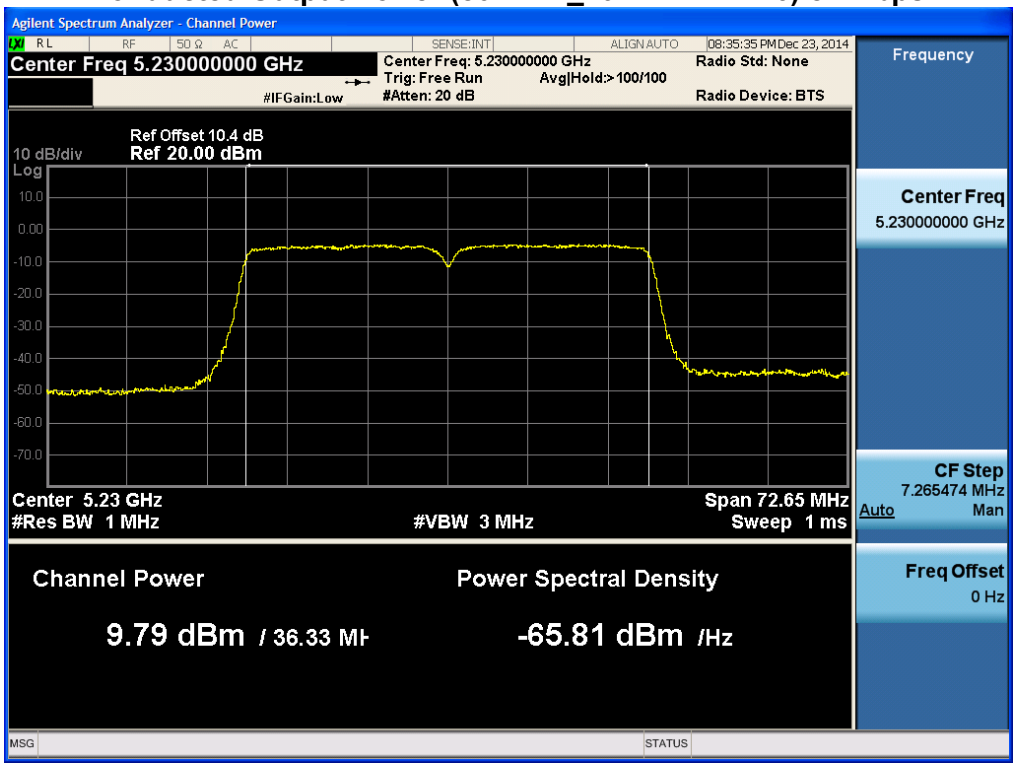
Conducted Output Power Measurements (802.11ac_80M BW Mode: 5775)

802.11ac(80MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5775	155	29.3	10.19	0.950	11.14	30
		58.5	9.41	1.622	11.03	30
		87.8	9.10	2.091	11.19	30
		117	9.03	2.242	11.27	30
		175.5	8.50	2.753	11.25	30
		234	8.21	3.145	11.36	30
		263.3	7.93	3.369	11.30	30
		292.5	7.84	3.481	11.32	30
		351	7.61	3.647	11.26	30
		930	7.53	3.782	11.32	30

40 MHz BW

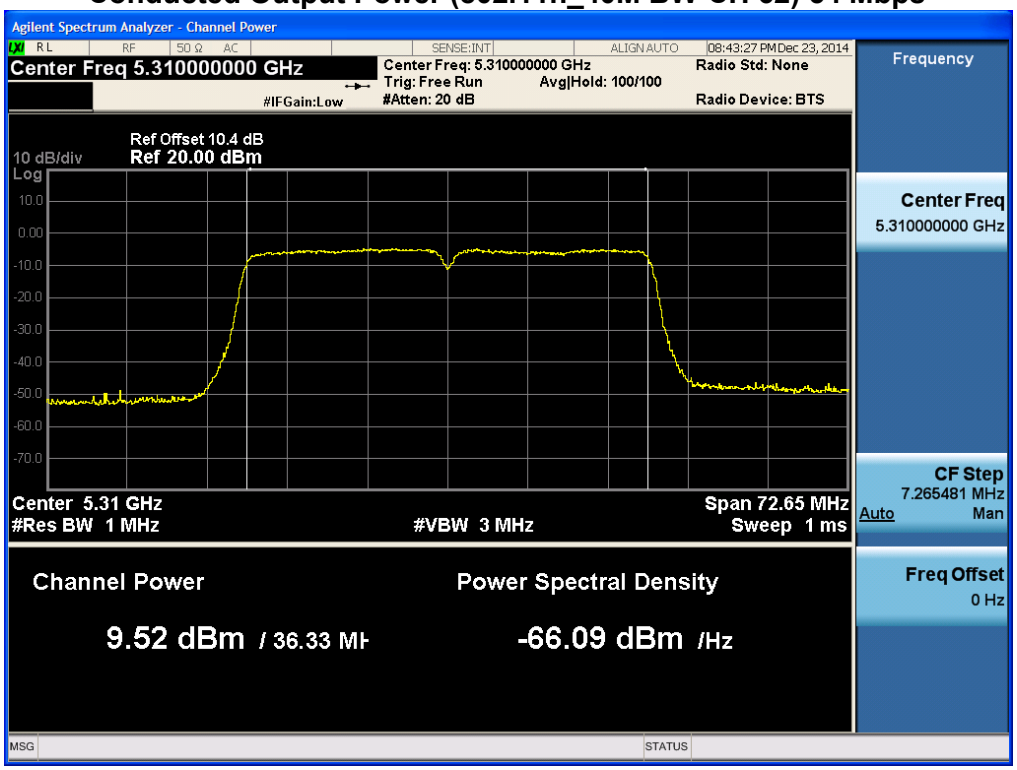
▣ RESULT PLOTS (5190 MHz ~5230 MHz)

Conducted Output Power (802.11n_40M BW-CH 46) 81 Mbps



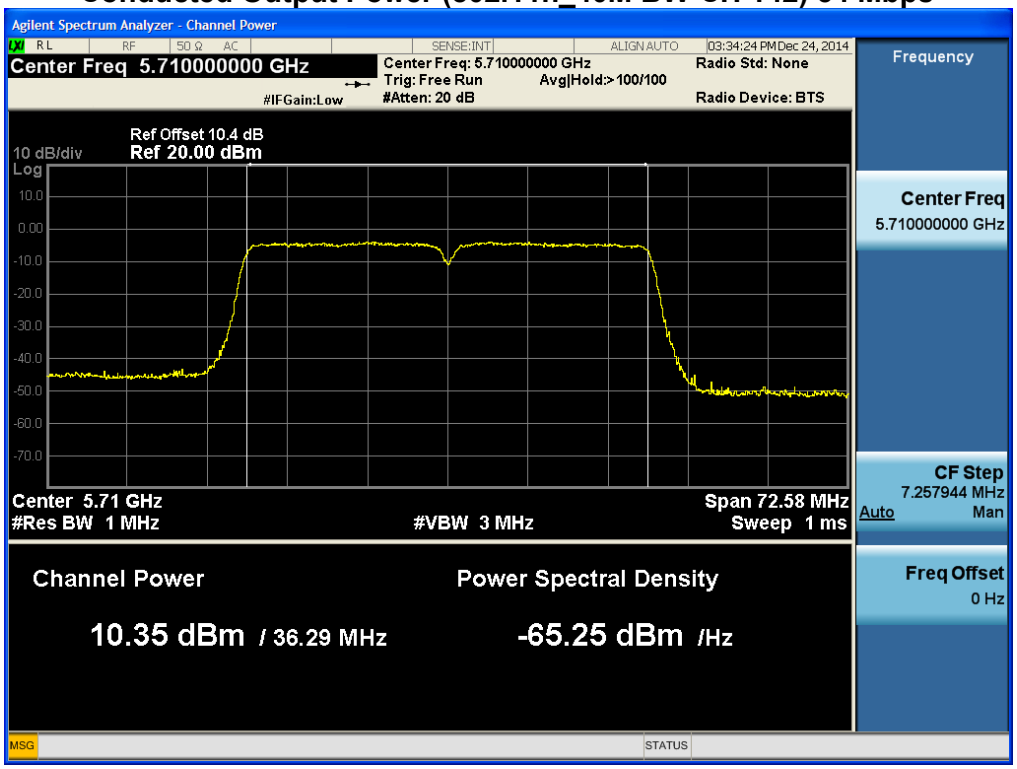
▣ RESULT PLOTS (5270 MHz ~5310 MHz)

Conducted Output Power (802.11n_40M BW-CH 62) 54 Mbps



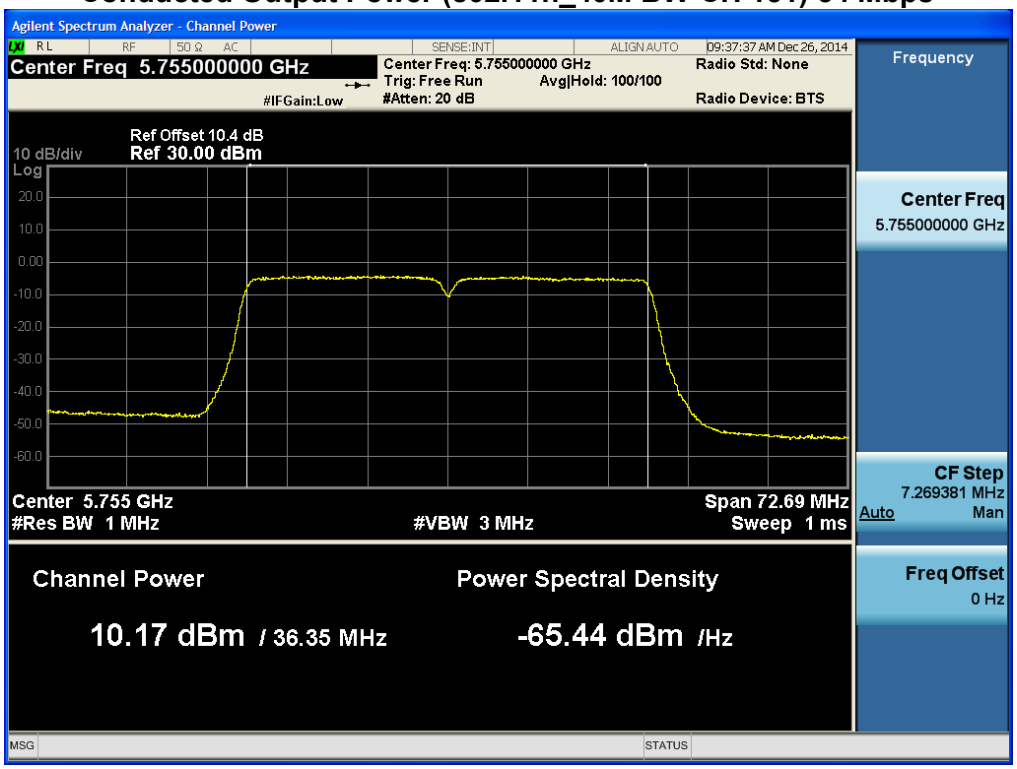
▣ RESULT PLOTS (5510 MHz ~5670 MHz)

Conducted Output Power (802.11n_40M BW-CH 142) 54 Mbps



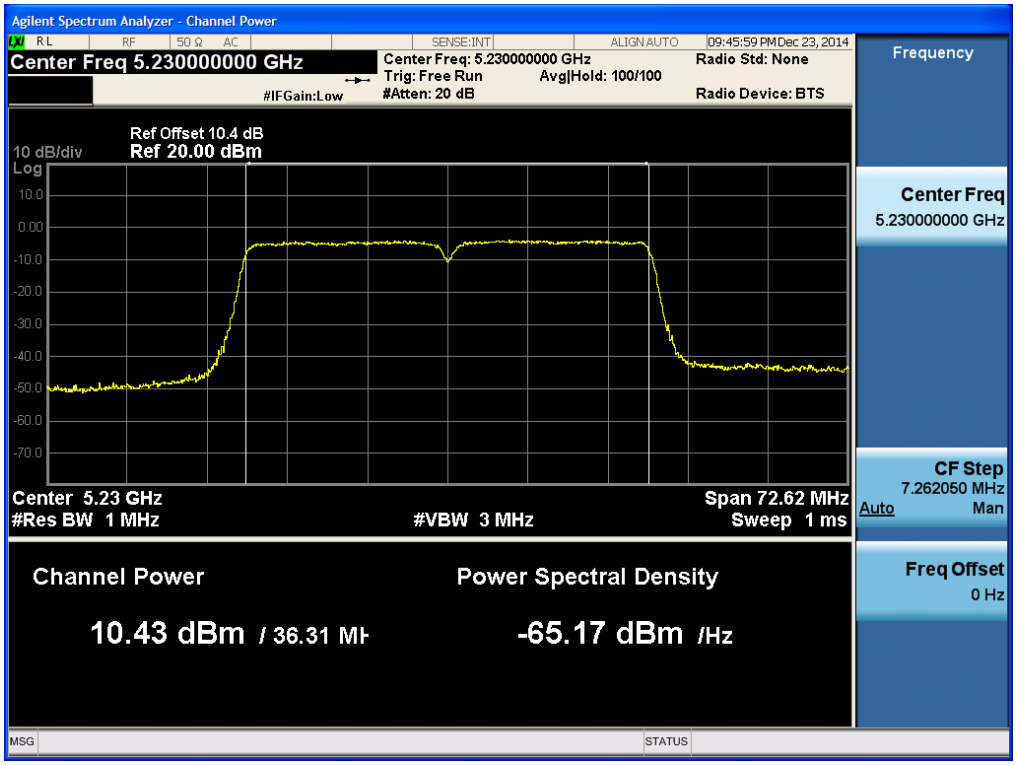
▣ RESULT PLOTS (5755 MHz ~5795 MHz)

Conducted Output Power (802.11n_40M BW-CH 151) 54 Mbps



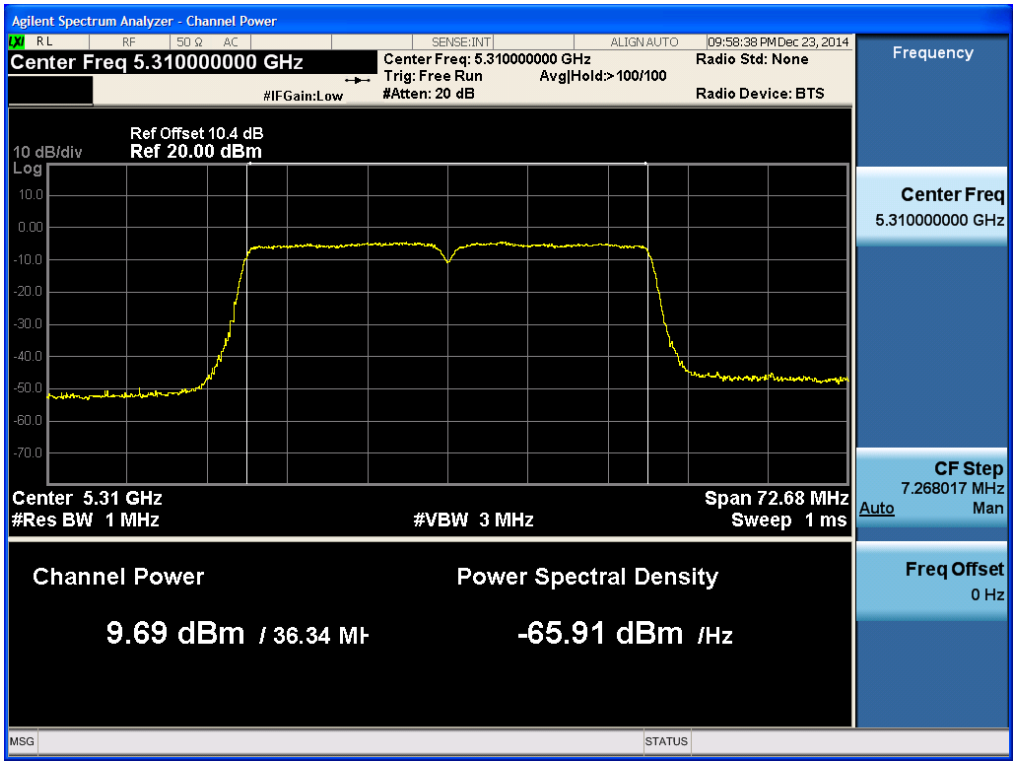
▣ RESULT PLOTS (5190 ~ 5230 MHz)

Conducted Output Power (802.11ac_40M -CH 46) 54 Mbps



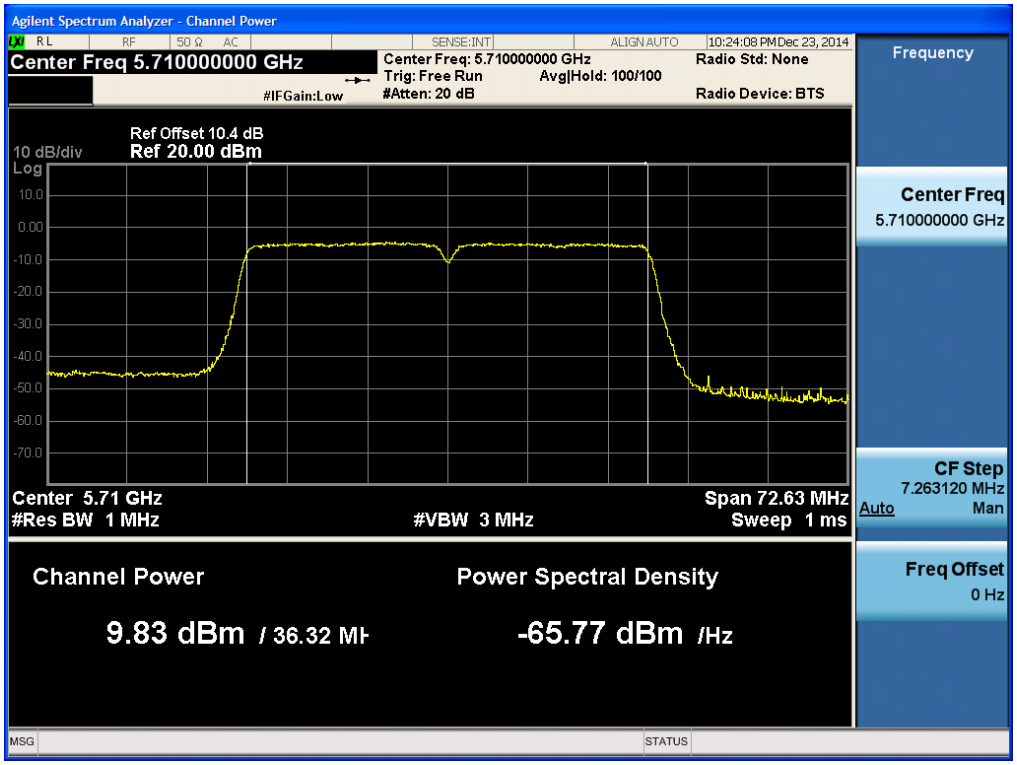
▣ RESULT PLOTS (5270 ~ 5310 MHz)

Conducted Output Power (802.11ac_40M -CH 62) 54 Mbps



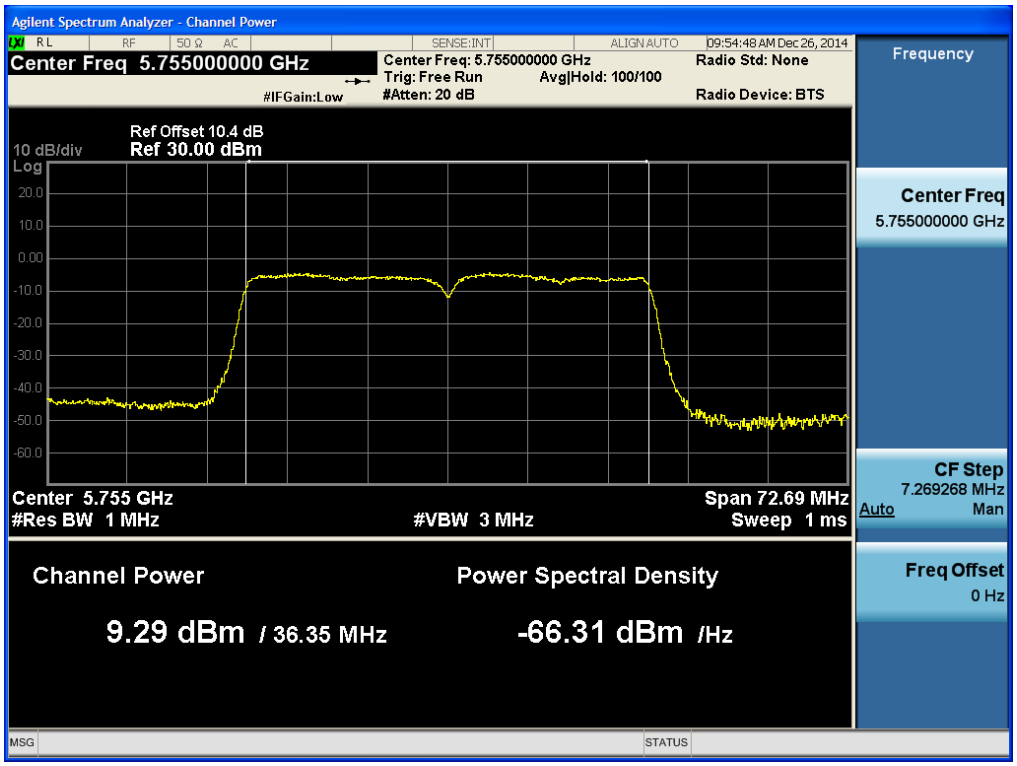
▣ RESULT PLOTS (5510 ~ 5710 MHz)

Conducted Output Power (802.11ac_40M -CH 142) 54 Mbps



▣ RESULT PLOTS (5755 ~ 5795 MHz)

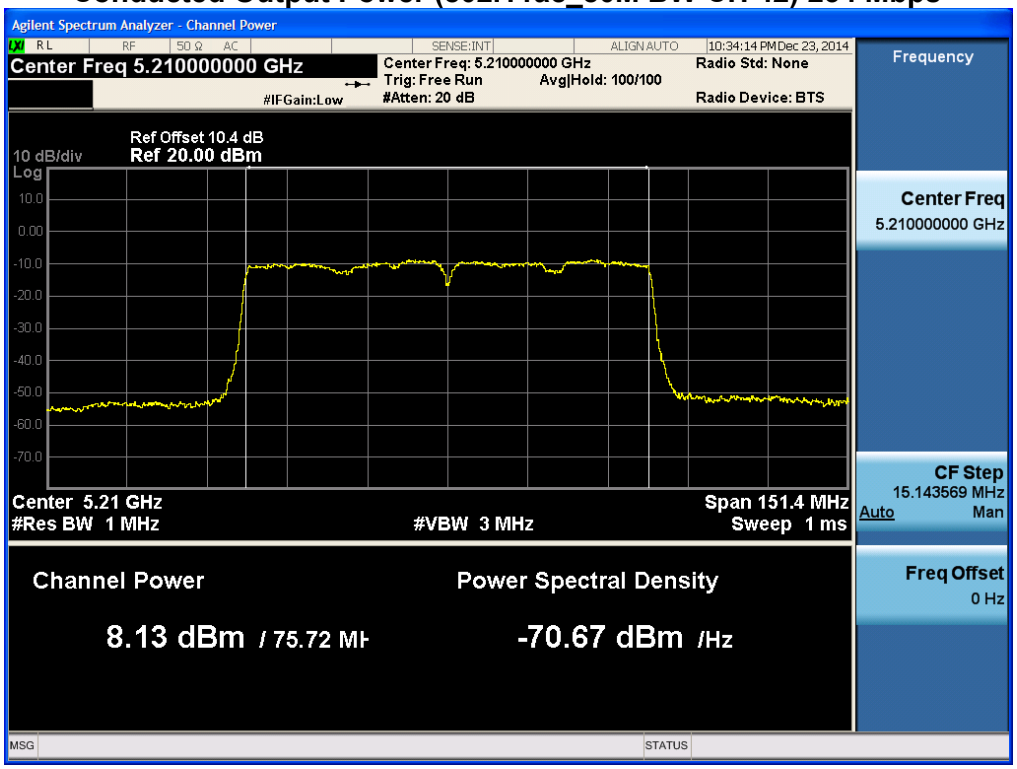
Conducted Output Power (802.11ac_40M -CH 151) 121.5 Mbps



80 MHz BW

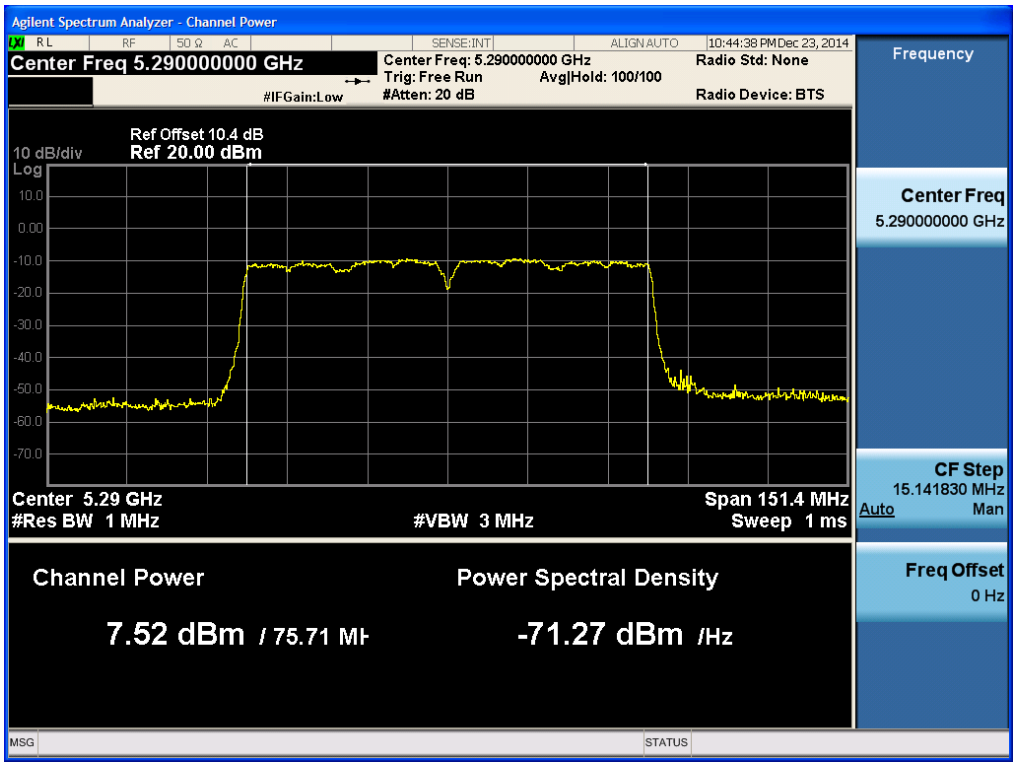
▣ RESULT PLOTS (5210 MHz)

Conducted Output Power (802.11ac_80M BW-CH 42) 234 Mbps



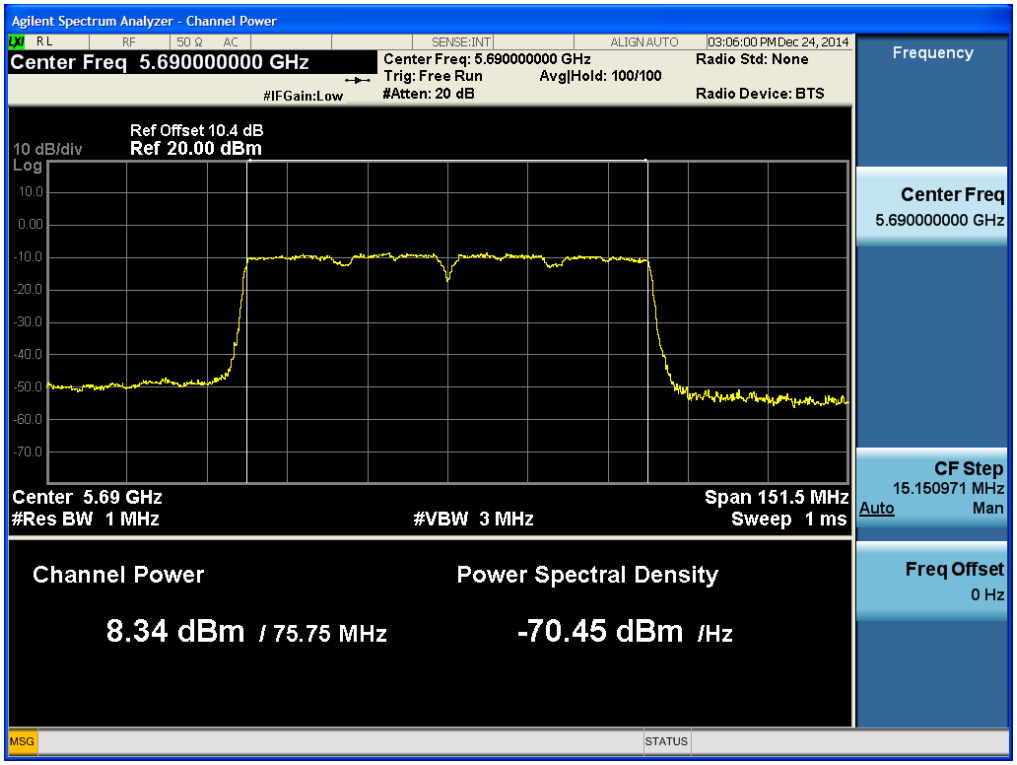
▣ RESULT PLOTS (5290 MHz)

Conducted Output Power (802.11ac_80M BW -CH 58) 351 Mbps



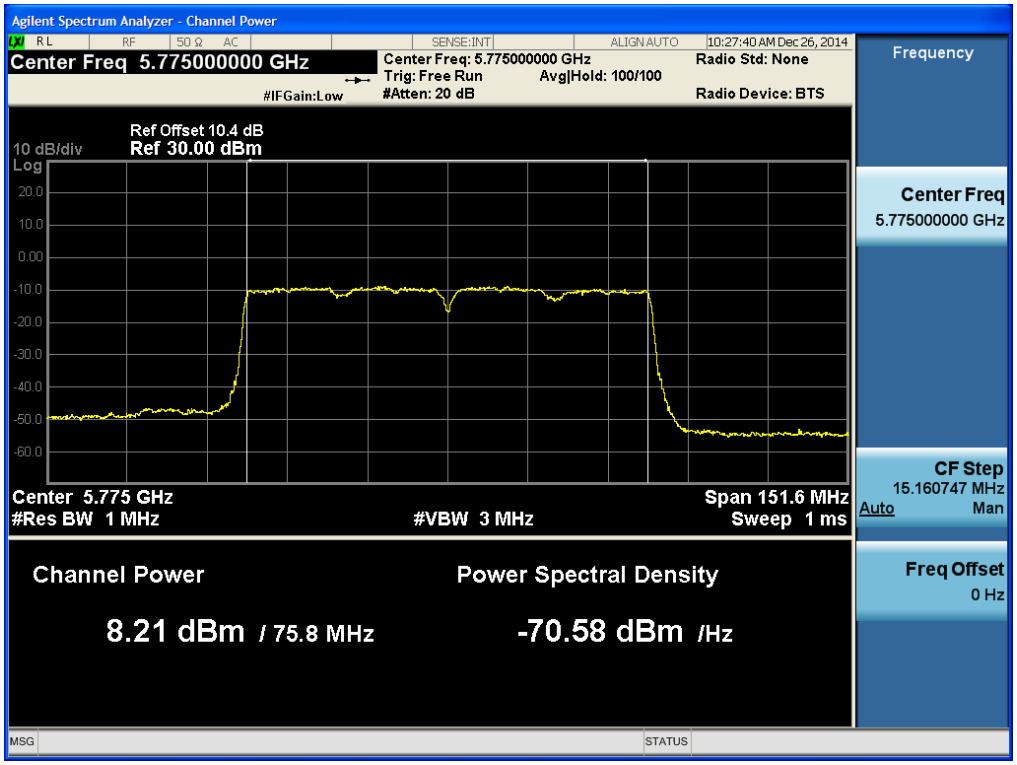
▣ RESULT PLOTS (5530 MHz ~ 5690 MHz)

Conducted Output Power (802.11ac_80M BW-CH 138) 292.5 Mbps



▣ RESULT PLOTS (5775 MHz)

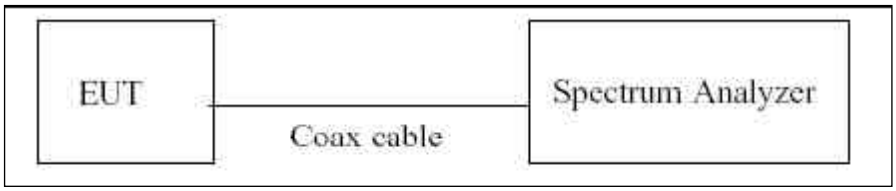
Conducted Output Power (802.11ac_80M BW-CH 155) 234Mbps



8.4 POWER SPECTRAL DENSITY

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies. The maximum permissible peak power spectral density is 11 dBm/ MHz for UNII 1,2A, 2C and 30 dBm/500 kHz for UNII 3.

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

We tested according to Method in KDB 789033(issued 06/06/2014).

The spectrum analyzer is set to :

1. Set span to encompass the entire emission bandwidth(EBW) of the signal.
2. RBW = 1 MHz(510 kHz for UNII 3)
3. VBW ≥ 3 MHz
4. Number of points in sweep ≥ 2*span/RBW.
5. Sweep time = auto.
6. Detector = RMS(i.e., power averaging), if available. Otherwise, use sample detector mode.
7. Do not use sweep triggering. Allow the sweep to “free run”.
8. Trace average at least 100 traces in power averaging(RMS) mode
9. Use the peak search function on the spectrum analyzer to find the peak of the spectrum.
10. If Method SA-2 was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum.

▣ Sample Calculation

PSD = Reading Value + ATT loss + Cable loss(1 ea) + Duty Cycle Factor

Output Power = -5 dBm + 10 dB + 0.8 dB + 0.21 dB = 16.01 dBm

Note :

1. Spectrum reading values are not plot data. The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Spectrum offset = Attenuator loss + Cable loss
3. We apply to the offset in the 5.2 GHz, 5.3 GHz and 5.6 GHz range that was rounded off to the closest tenth dB. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1, 2A , 2C, 3	10.4

(Actual value of loss for the attenuator and cable combination)

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5180	36	802.11a	1.349	1.51649	2.865	11	Pass
5200	40		1.294	1.51649	2.810	11	Pass
5240	48		1.651	1.51649	3.167	11	Pass
5260	52		1.437	1.51649	2.953	11	Pass
5300	60		1.464	1.51649	2.980	11	Pass
5320	64		1.388	1.51649	2.904	11	Pass
5500	100		1.891	1.51649	3.407	11	Pass
5600	120		1.986	1.51649	3.502	11	Pass
5720	144		1.621	1.51649	3.137	11	Pass
5745	149		7.293	1.51649	8.809	30	Pass
5785	157		7.348	1.51600	8.864	30	Pass
5825	165		7.306	1.51649	8.822	30	Pass
5180	36	802.11n 20M BW	-0.059	1.74773	1.689	11	Pass
5200	40		0.524	1.22072	1.745	11	Pass
5240	48		0.644	1.52427	2.168	11	Pass
5260	52		-0.053	1.52427	1.471	11	Pass
5300	60		0.208	1.62051	1.829	11	Pass
5320	64		-0.062	1.52427	1.462	11	Pass
5500	100		0.419	1.22072	1.640	11	Pass
5600	120		0.591	1.74773	2.339	11	Pass
5720	144		0.267	1.52427	1.791	11	Pass
5745	149		7.459	1.62100	9.080	30	Pass
5785	157		7.071	1.74800	8.819	30	Pass
5825	165		7.729	1.62100	9.350	30	Pass

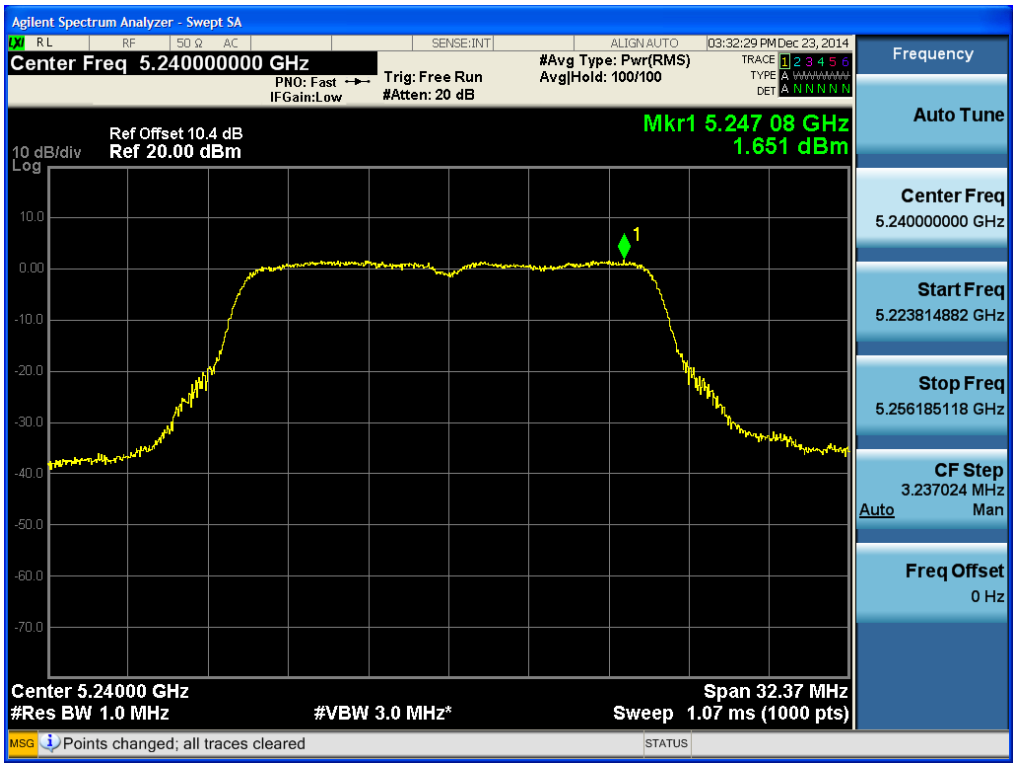
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5180	36	802.11ac 20M BW	-0.919	1.45215	0.533	11	Pass
5200	40		-0.398	0.85277	0.455	11	Pass
5240	48		-1.054	1.74139	0.687	11	Pass
5260	52		-0.758	1.18635	0.428	11	Pass
5300	60		-1.371	1.9382	0.567	11	Pass
5320	64		-1.354	1.9382	0.584	11	Pass
5500	100		-0.673	1.74139	1.068	11	Pass
5600	120		-0.522	1.74139	1.219	11	Pass
5720	144		-0.978	1.9382	0.960	11	Pass
5745	149		6.365	1.58609	7.951	30	Pass
5785	157		5.892	0.85300	6.745	30	Pass
5825	165		5.786	1.58609	7.372	30	Pass
5190	38	802.11n 40M BW	-3.960	1.01458	-2.945	11	Pass
5230	46		-4.183	1.88240	-2.301	11	Pass
5270	54		-4.511	1.50673	-3.004	11	Pass
5310	62		-4.560	1.50673	-3.053	11	Pass
5510	102		-5.583	1.50673	-4.076	11	Pass
5590	118		-4.197	1.01458	-3.182	11	Pass
5710	142		-3.692	1.50673	-2.185	11	Pass
5755	151		3.749	1.50700	5.256	30	Pass
5795	159		3.711	1.01500	4.726	30	Pass
5190	38	802.11ac 40M BW	-4.148	1.37713	-2.771	11	Pass
5230	46		-3.652	1.37713	-2.275	11	Pass
5270	54		-4.847	1.85834	-2.989	11	Pass
5310	62		-4.445	1.37713	-3.068	11	Pass
5510	102		-7.402	1.85834	-5.544	11	Pass
5550	110		-4.222	1.37713	-2.845	11	Pass
5710	142		-4.645	2.12340	-2.522	11	Pass
5755	151		3.299	2.29000	5.589	30	Pass
5795	159		3.426	2.44900	5.875	30	Pass

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5210	42	802.11ac 80M BW	-8.560	3.14532	-5.415	11	Pass
5290	58		-8.708	3.64699	-5.061	11	Pass
5530	106		-9.974	3.36943	-6.605	11	Pass
5690	138		-8.528	3.48094	-5.047	11	Pass
5775	155		0.501	3.14500	3.646	30	Pass

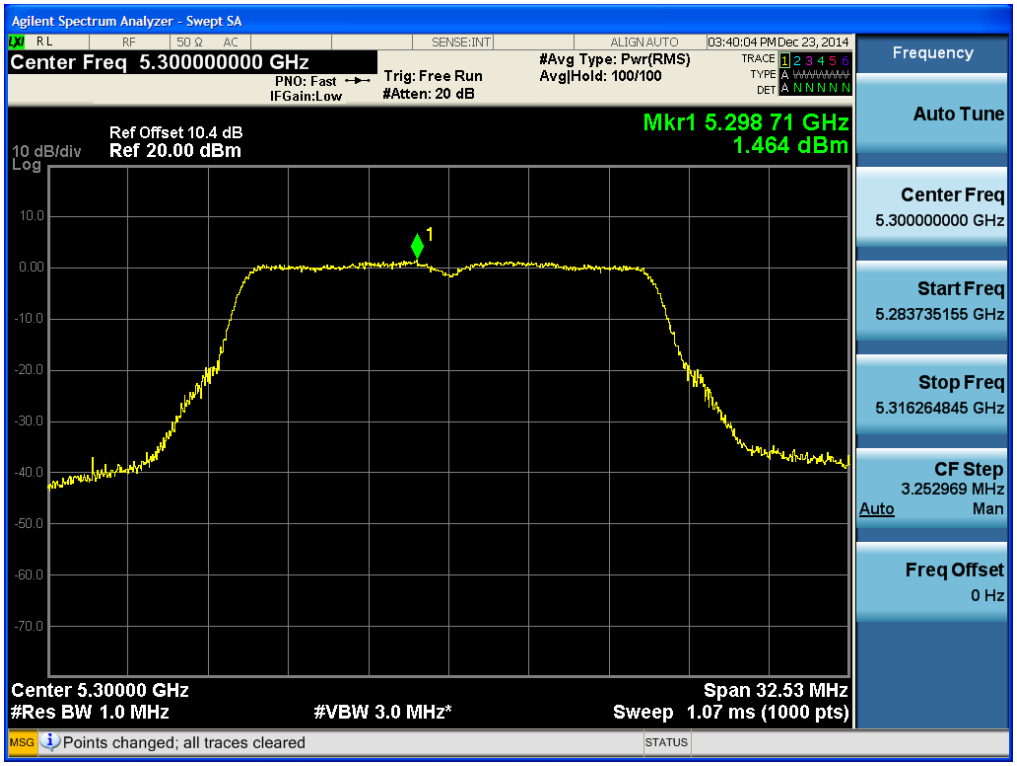
▣ RESULT PLOTS

20 MHz BW

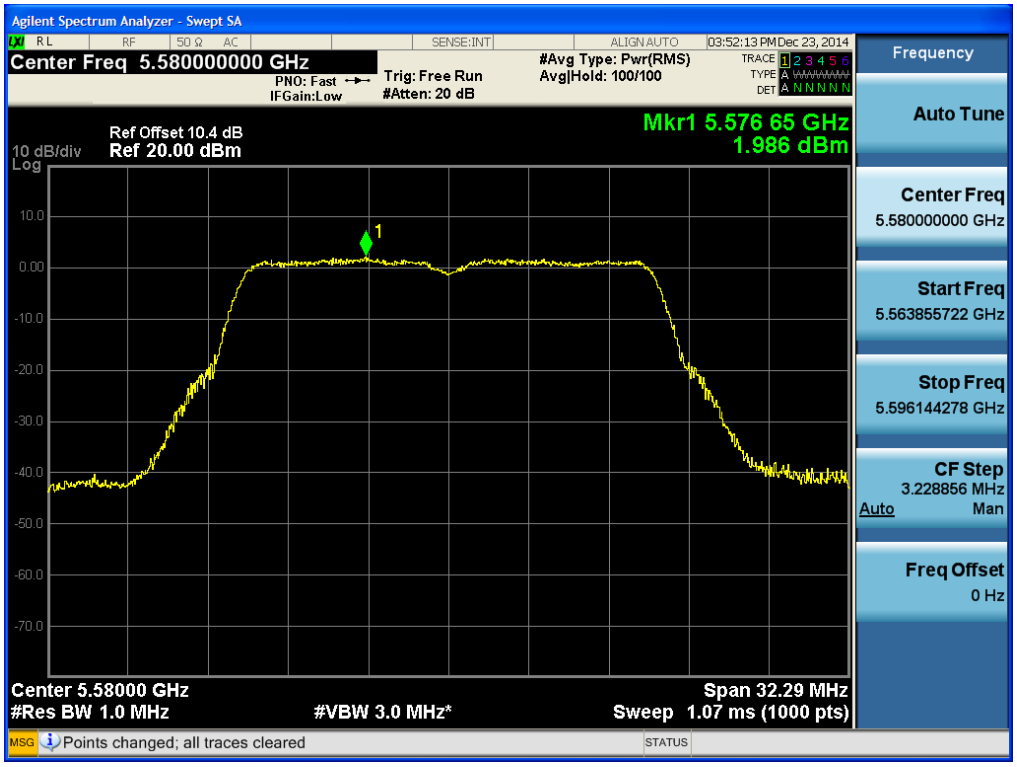
Power Spectral Density (802.11a-CH 48)



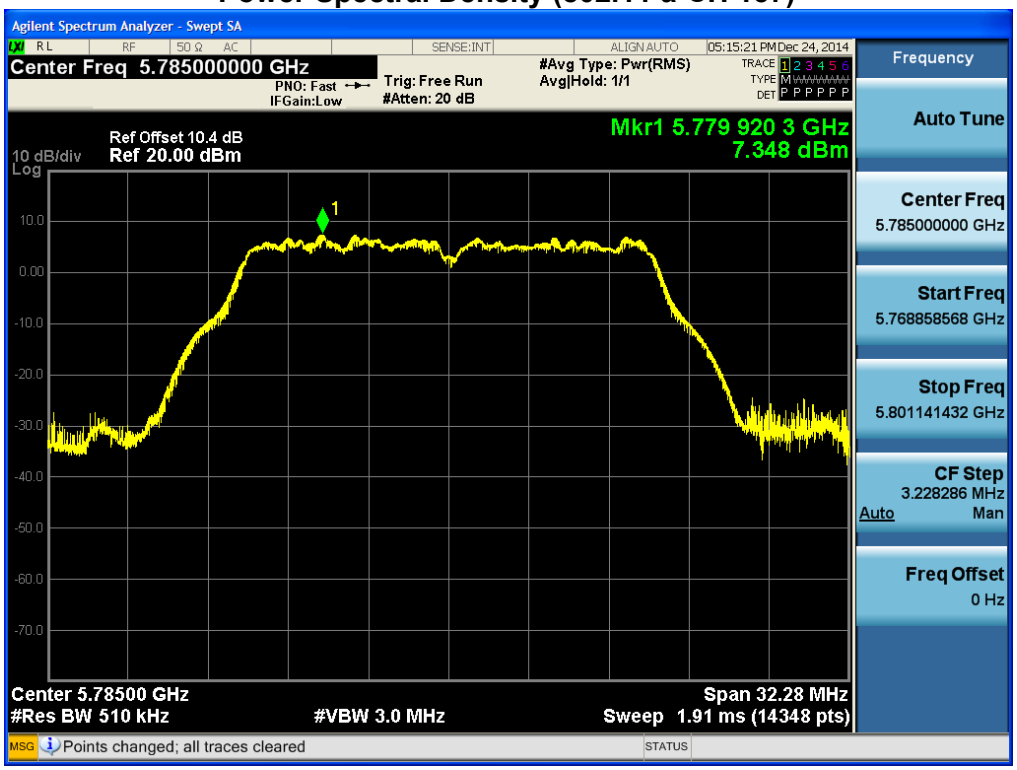
Power Spectral Density (802.11a-CH 60)



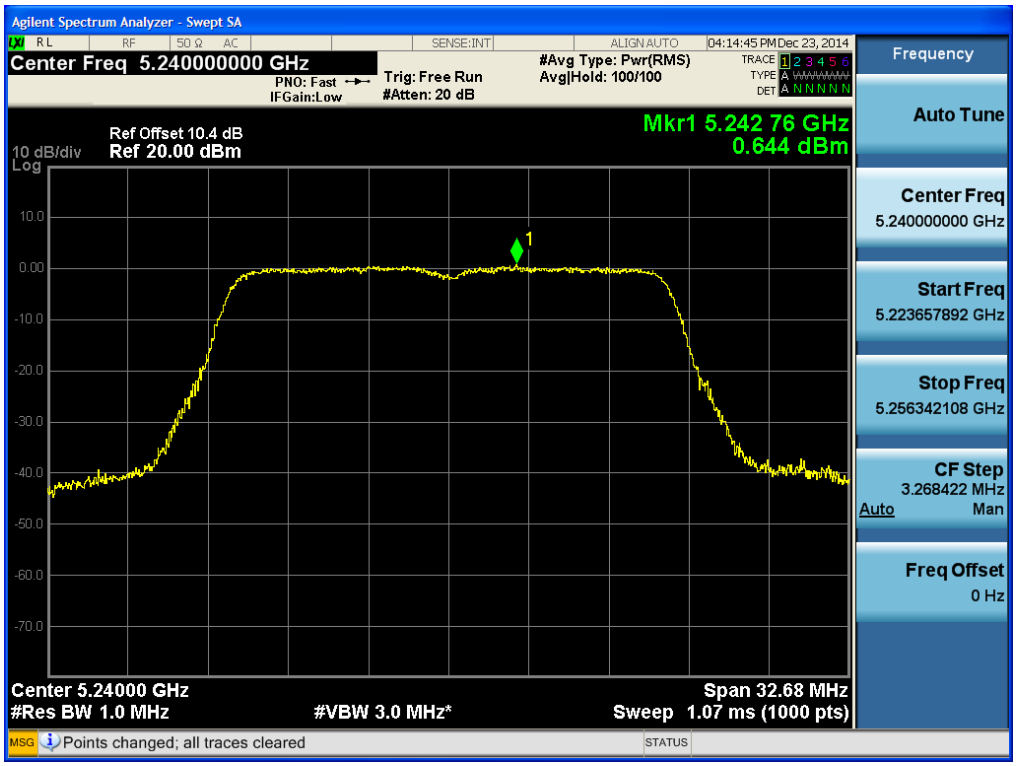
Power Spectral Density (802.11a-CH 120)



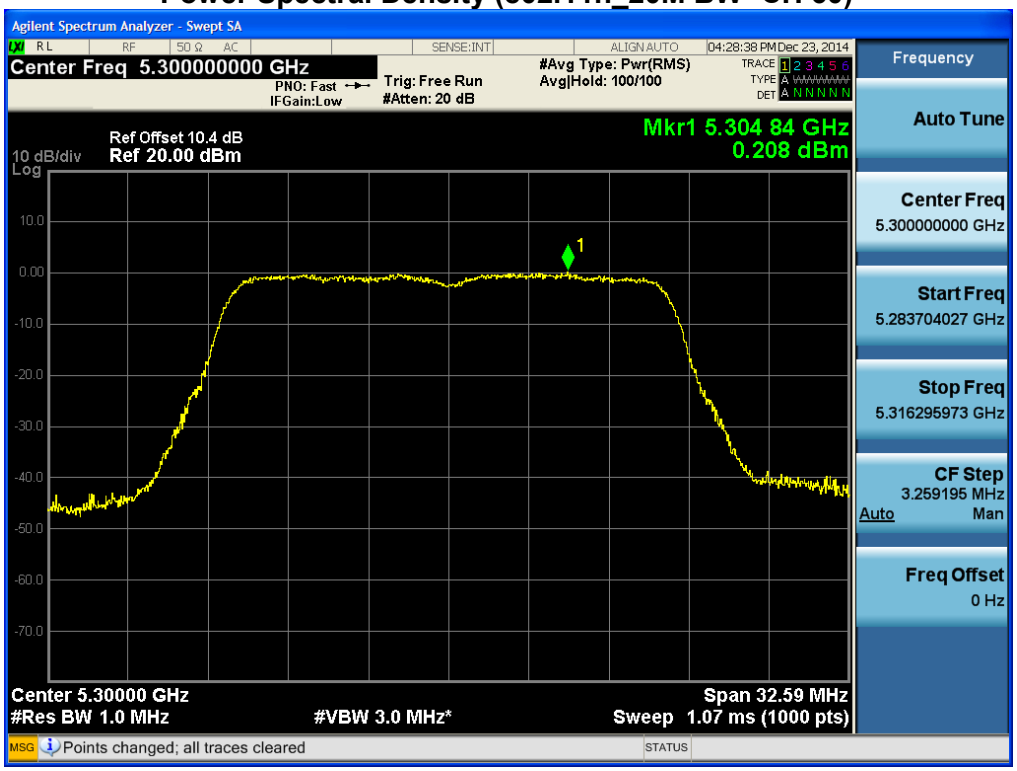
Power Spectral Density (802.11 a-CH 157)



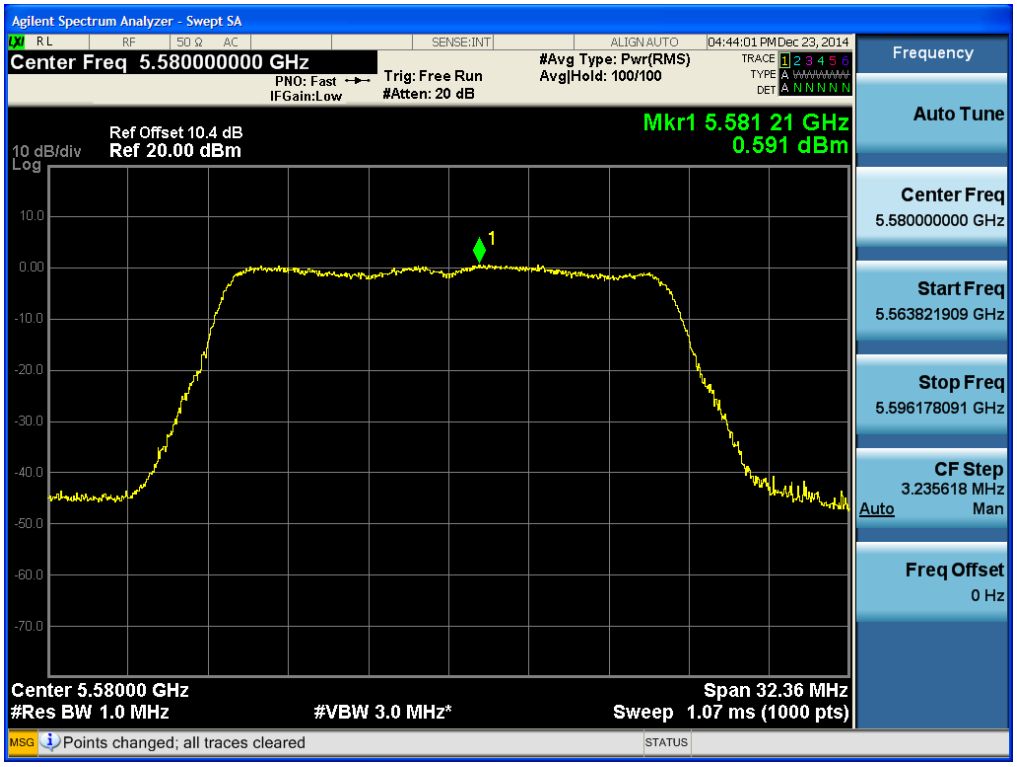
Power Spectral Density (802.11n_20M BW-CH 48)



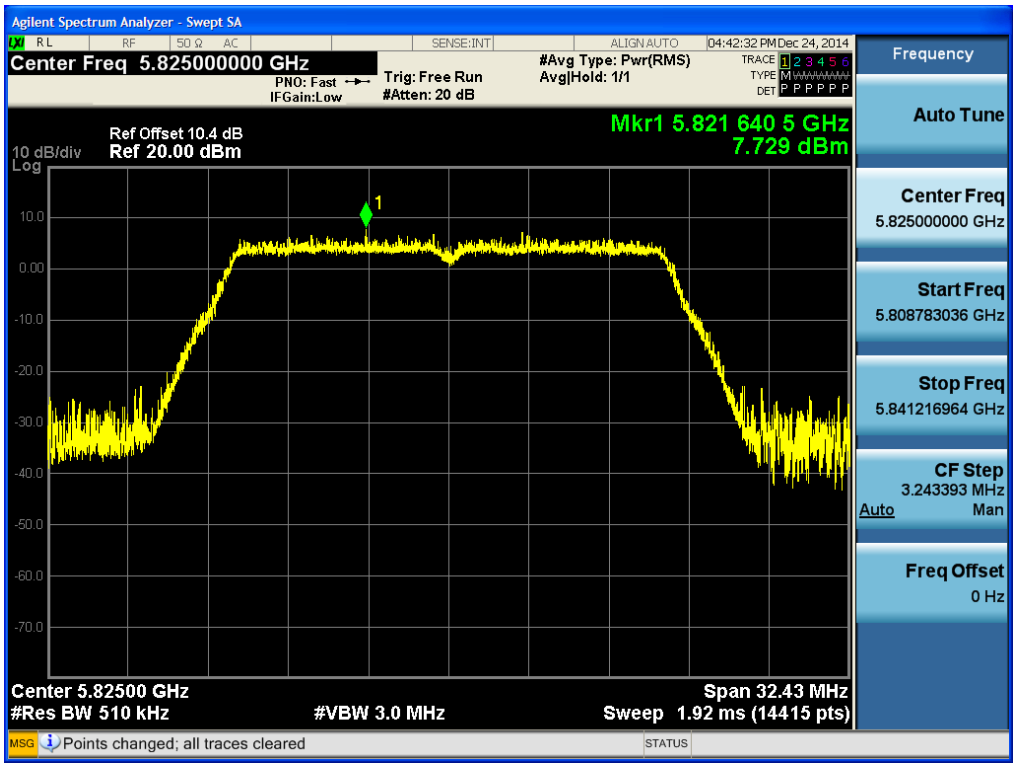
Power Spectral Density (802.11n_20M BW -CH 60)



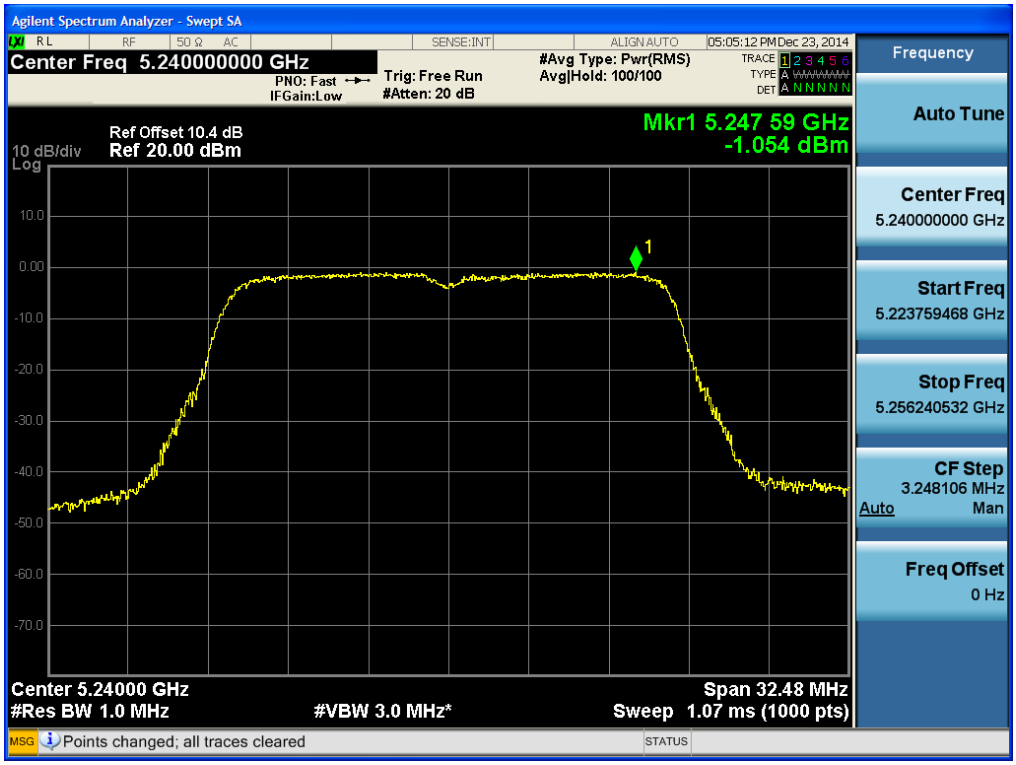
Power Spectral Density (802.11n_20M BW-CH 120)



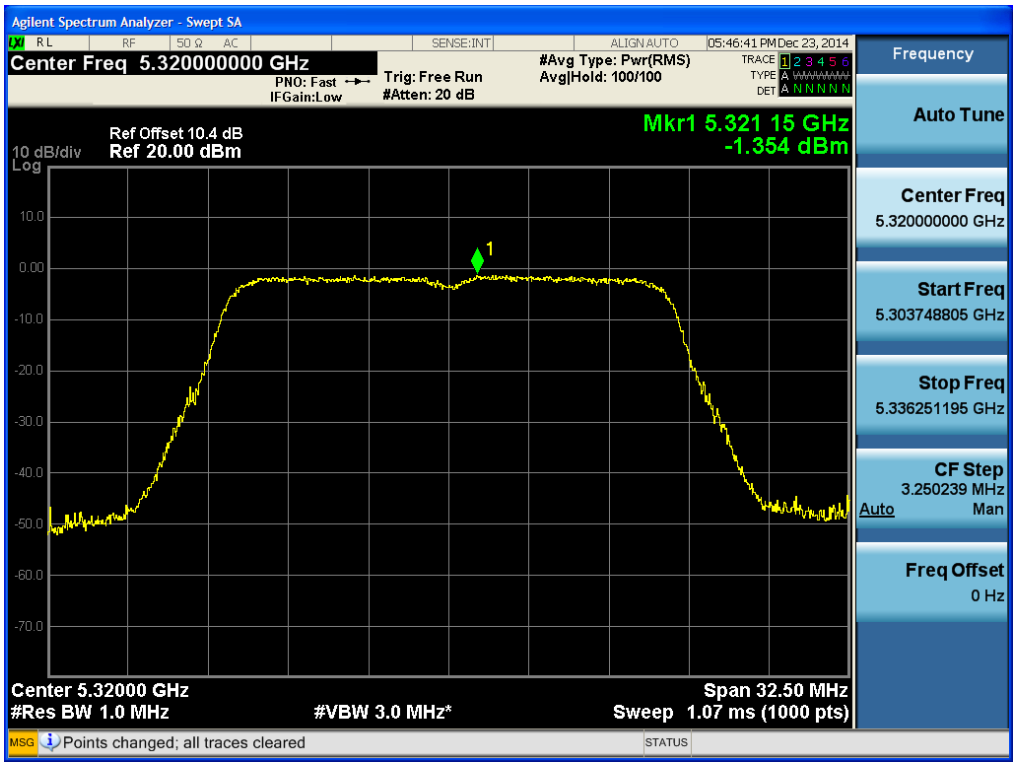
Power Spectral Density (802.11 n_20M BW -CH 165)



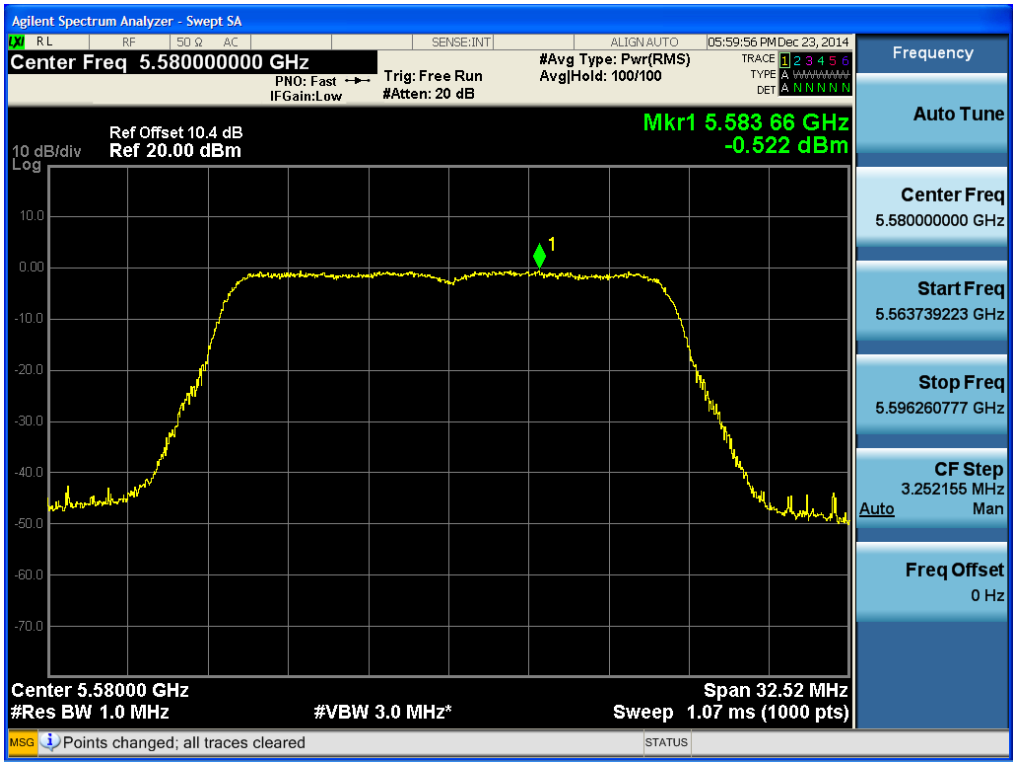
Power Spectral Density (802.11ac_20M BW-CH 48)



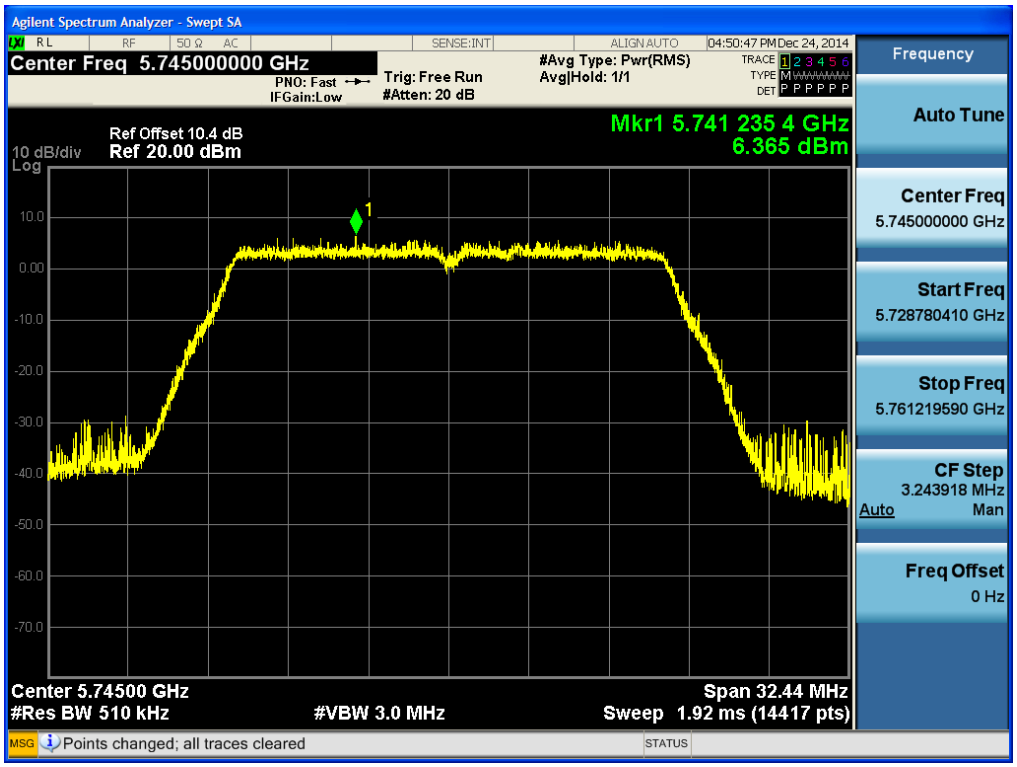
Power Spectral Density (802.11 ac_20M BW -CH 64)



Power Spectral Density (802.11ac_20M BW-CH 120)

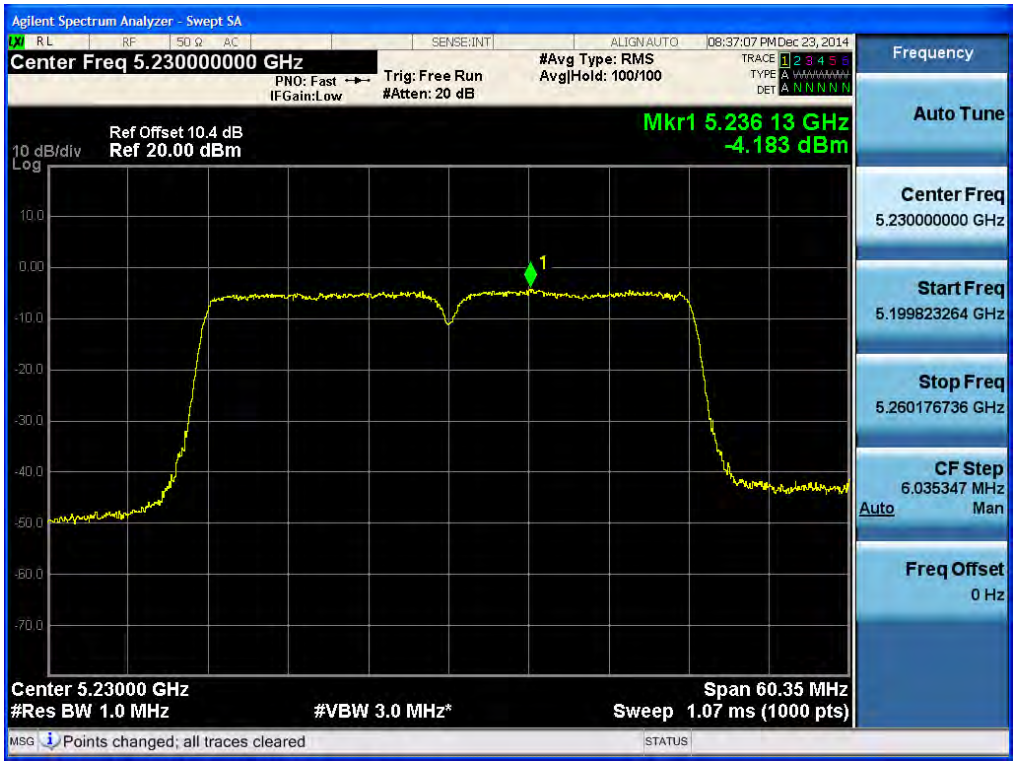


Power Spectral Density (802.11 ac_20M BW -CH 149)

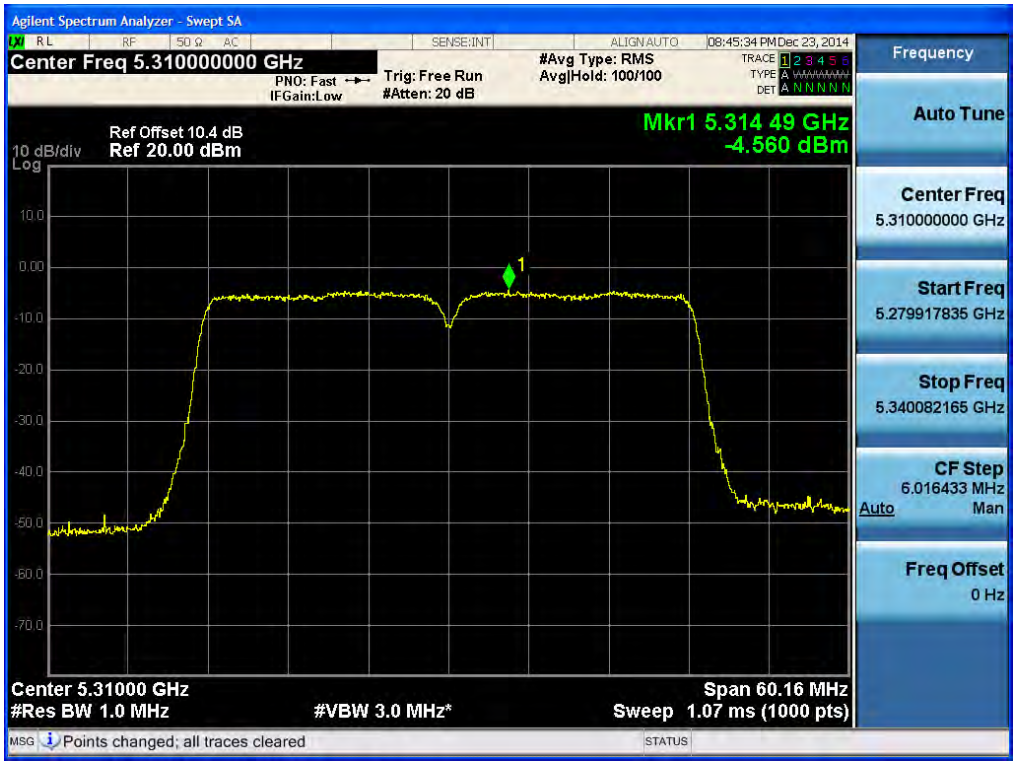


40 MHz BW

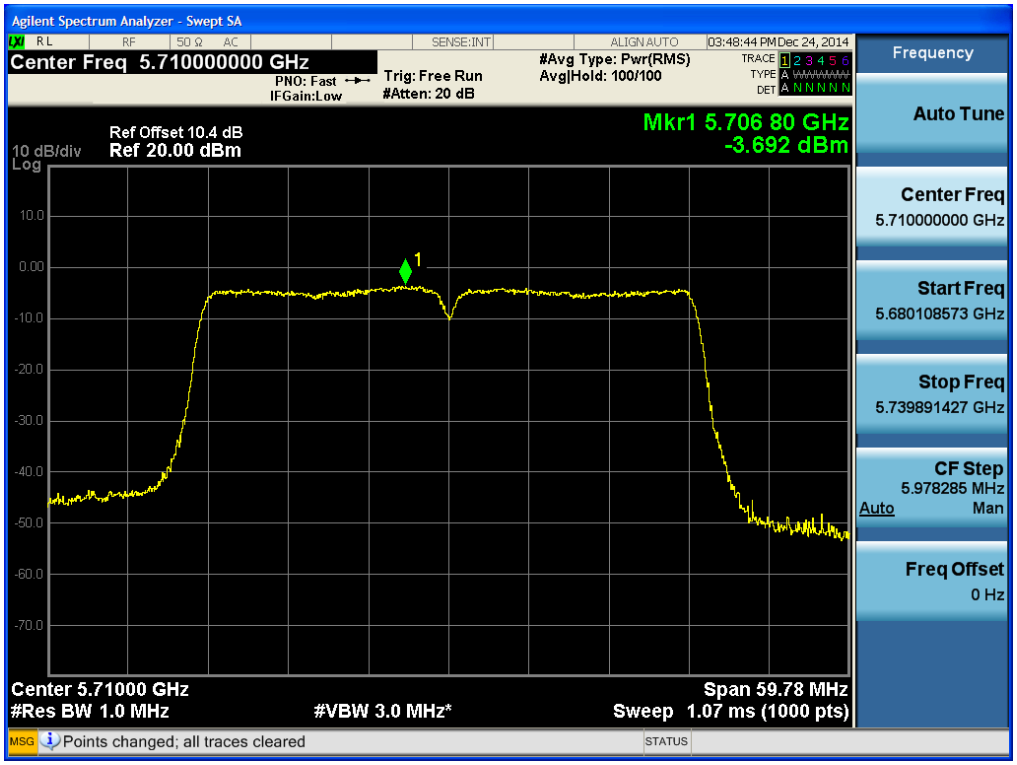
Power Spectral Density (802.11n_40M BW-CH 46)



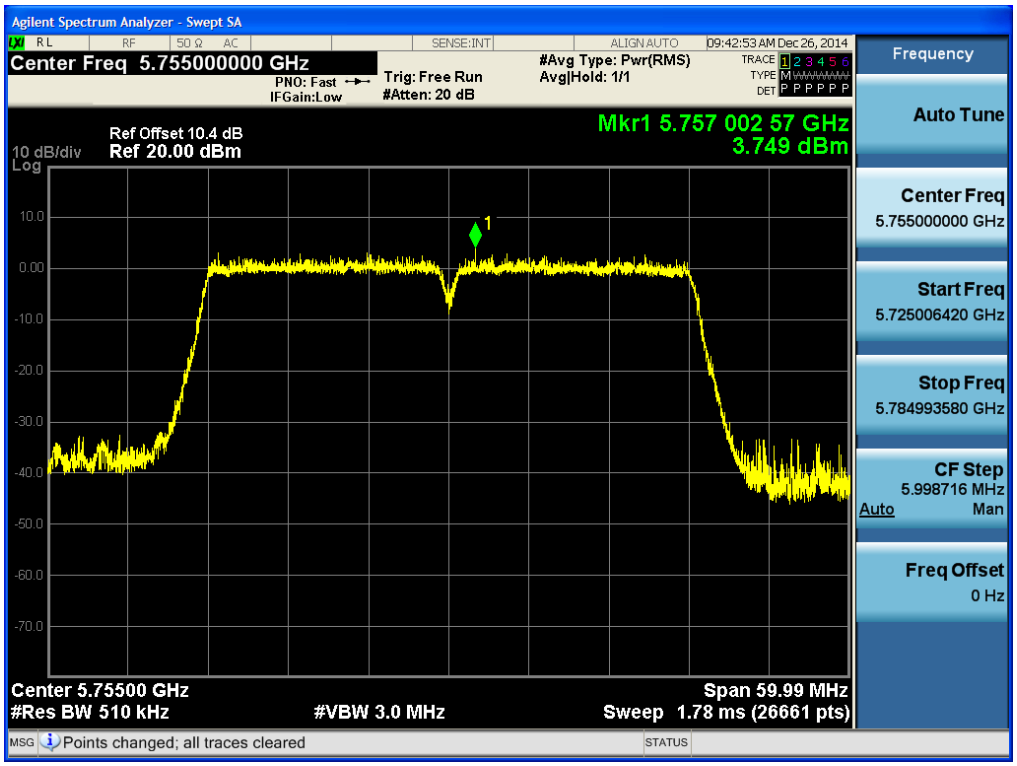
Power Spectral Density (802.11n_40M BW- CH 62)



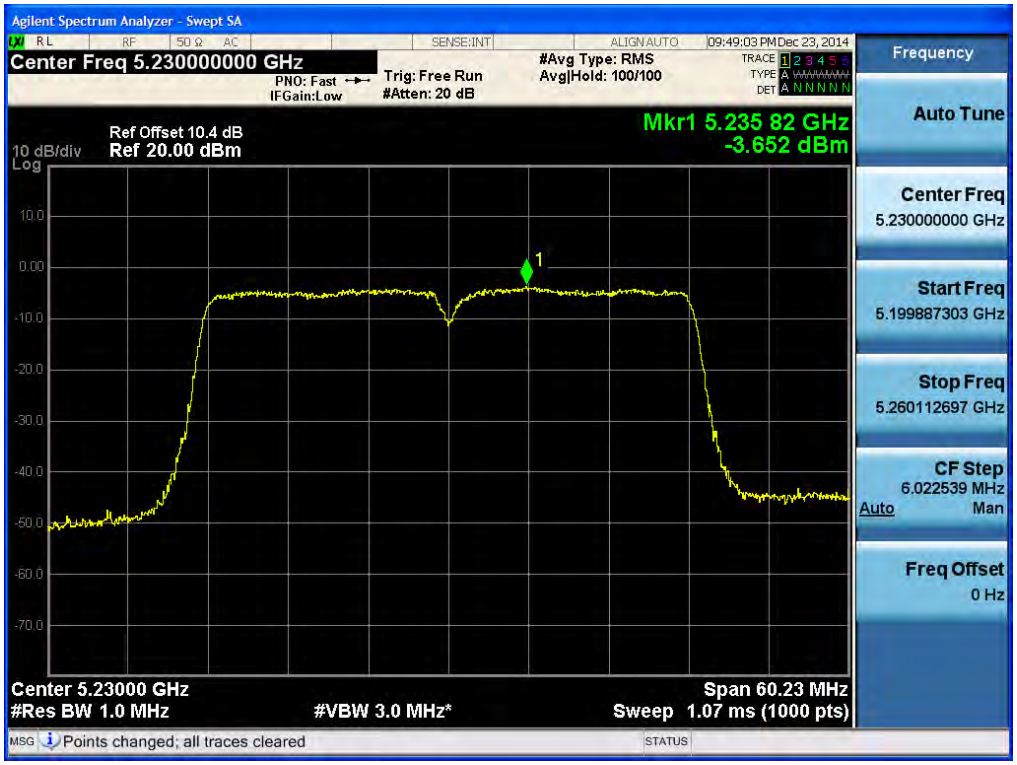
Power Spectral Density (802.11n_40M BW-CH 142)



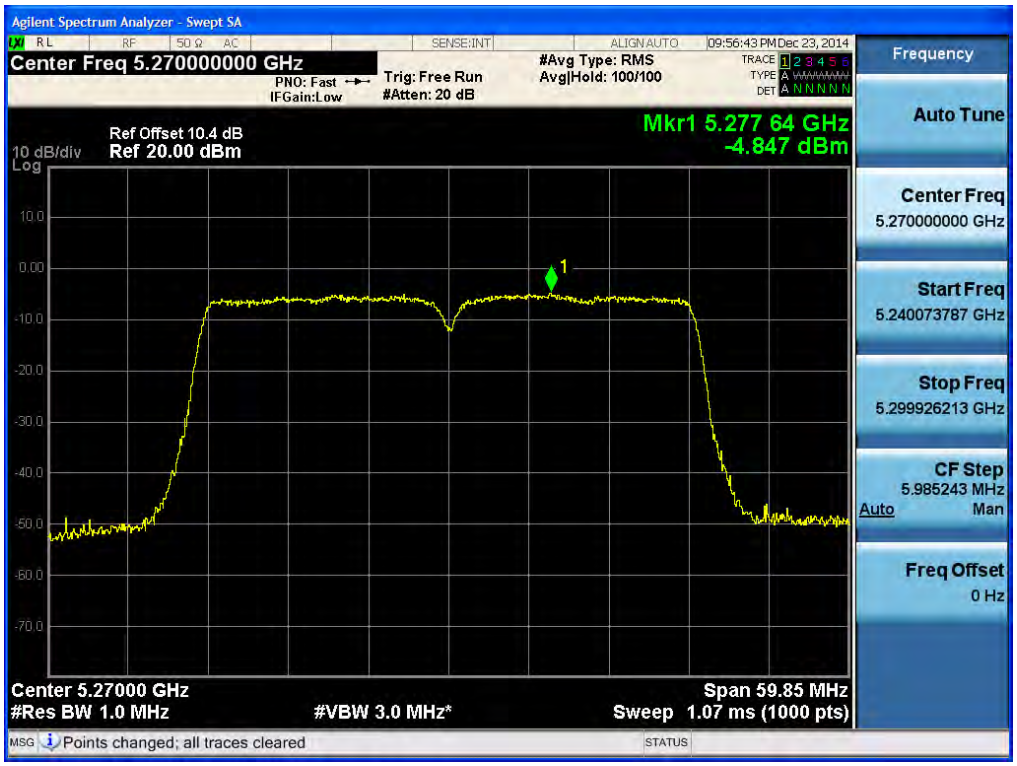
Power Spectral Density (802.11n_40M BW- CH 151)



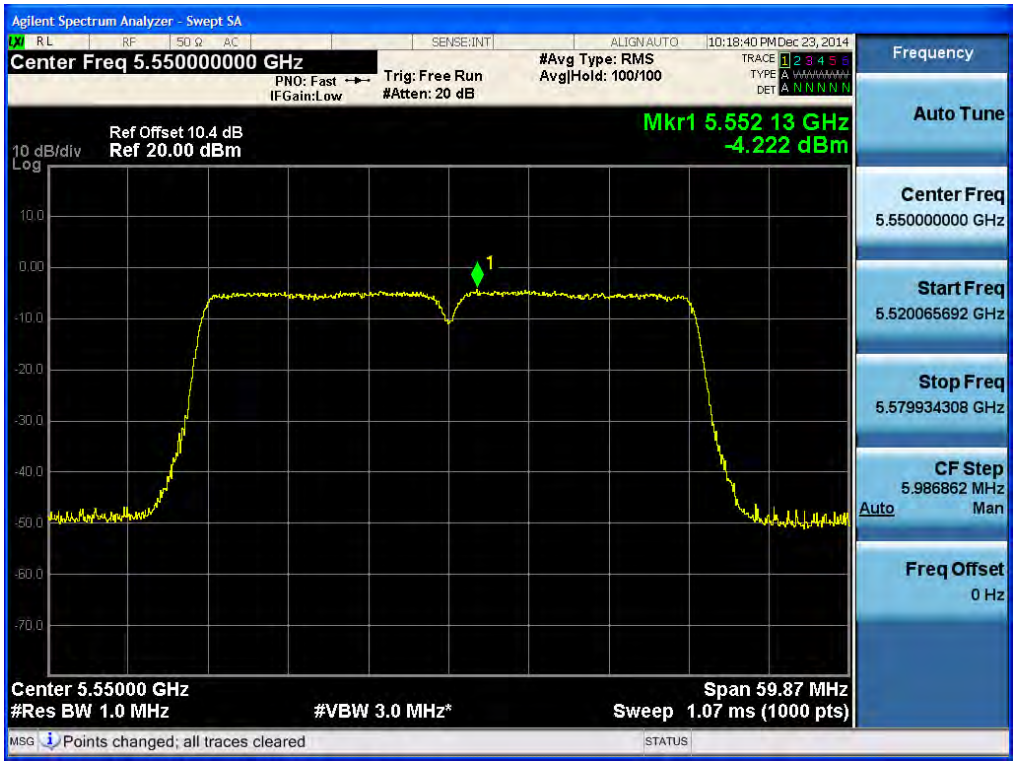
Power Spectral Density (802.11ac_40M BW-CH 46)



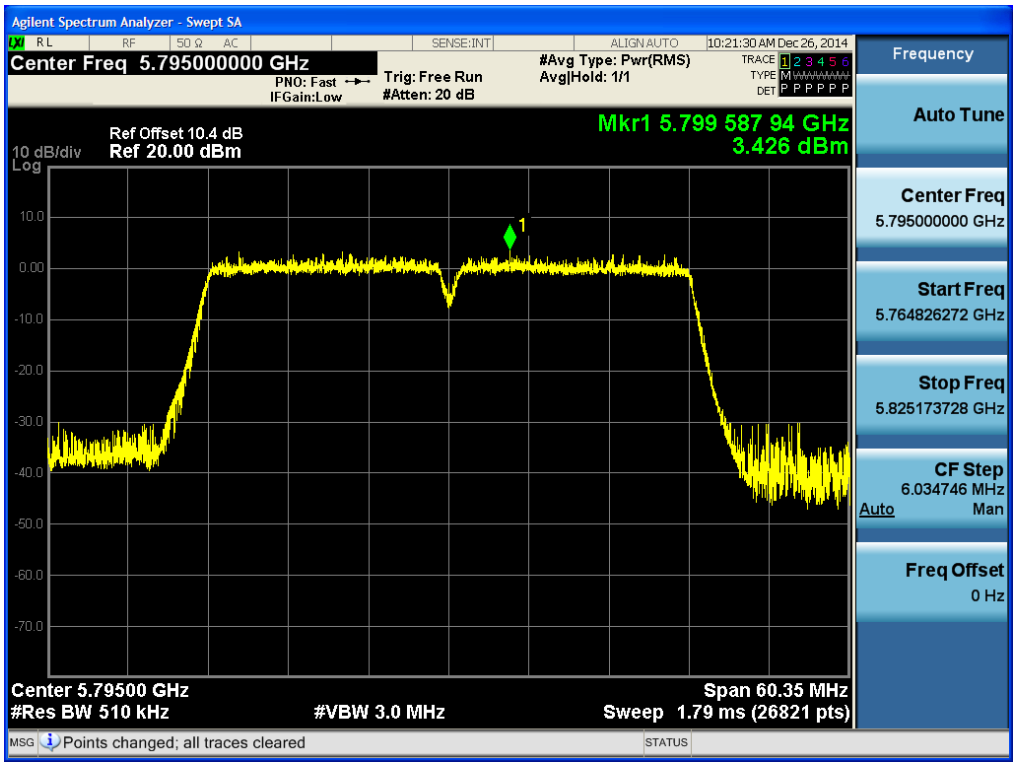
Power Spectral Density (802.11ac_40M BW- CH 54)



Power Spectral Density (802.11ac_40M BW-CH 110)

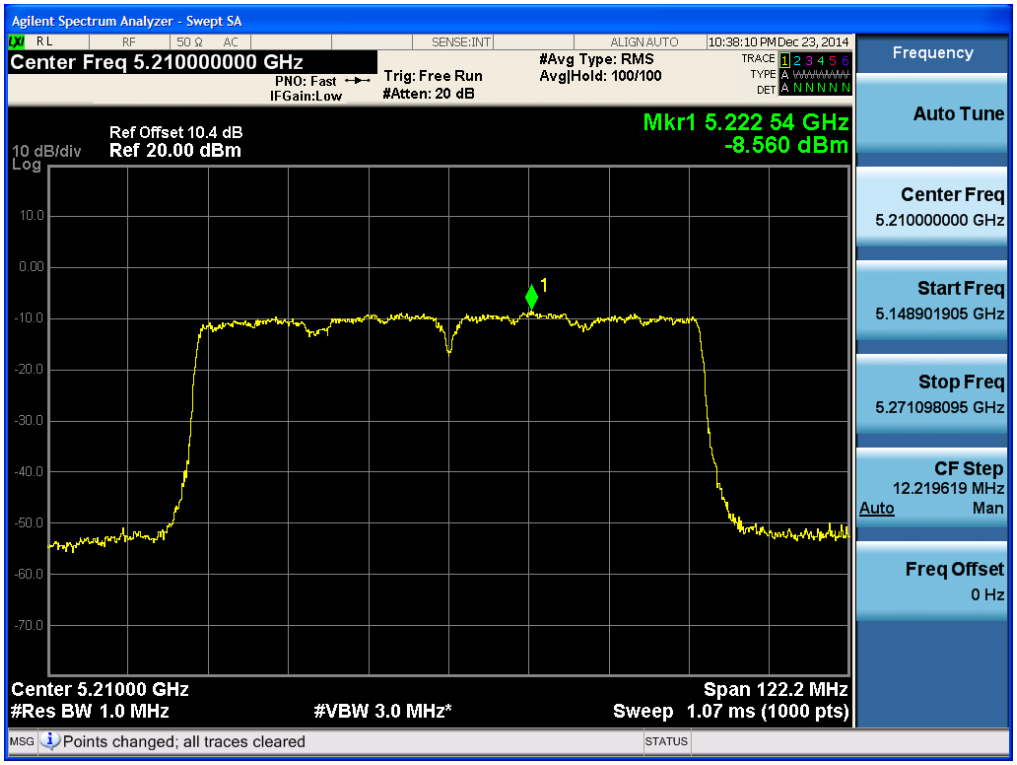


Power Spectral Density (802.11ac_40M BW- CH 159)

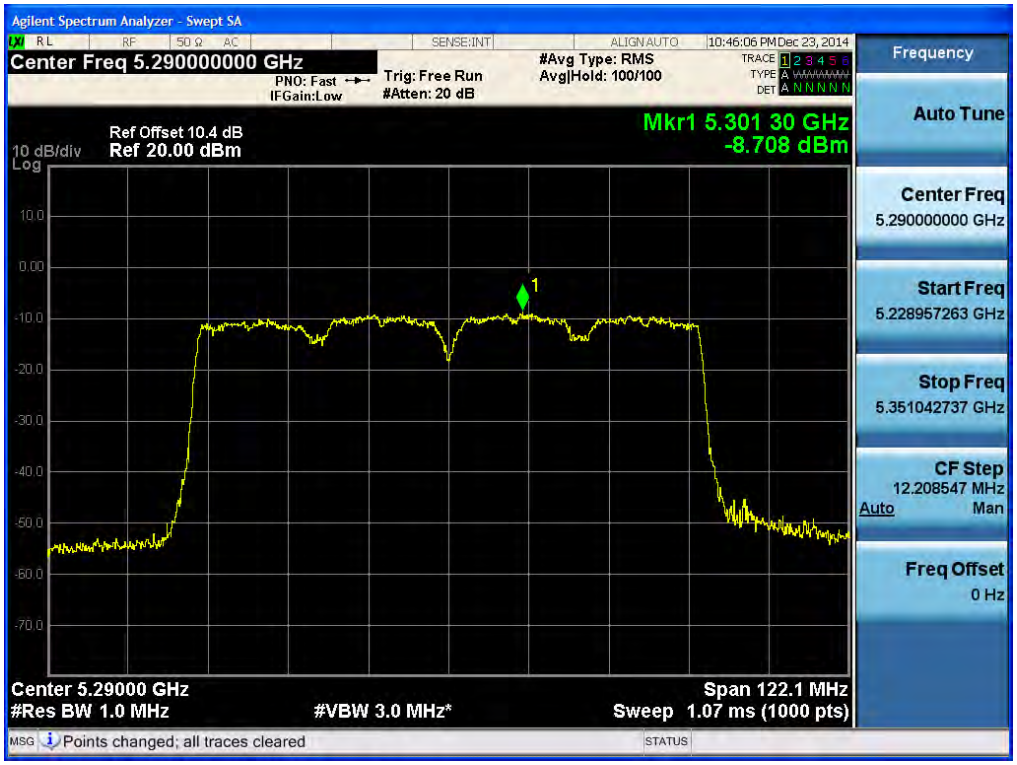


80 MHz BW

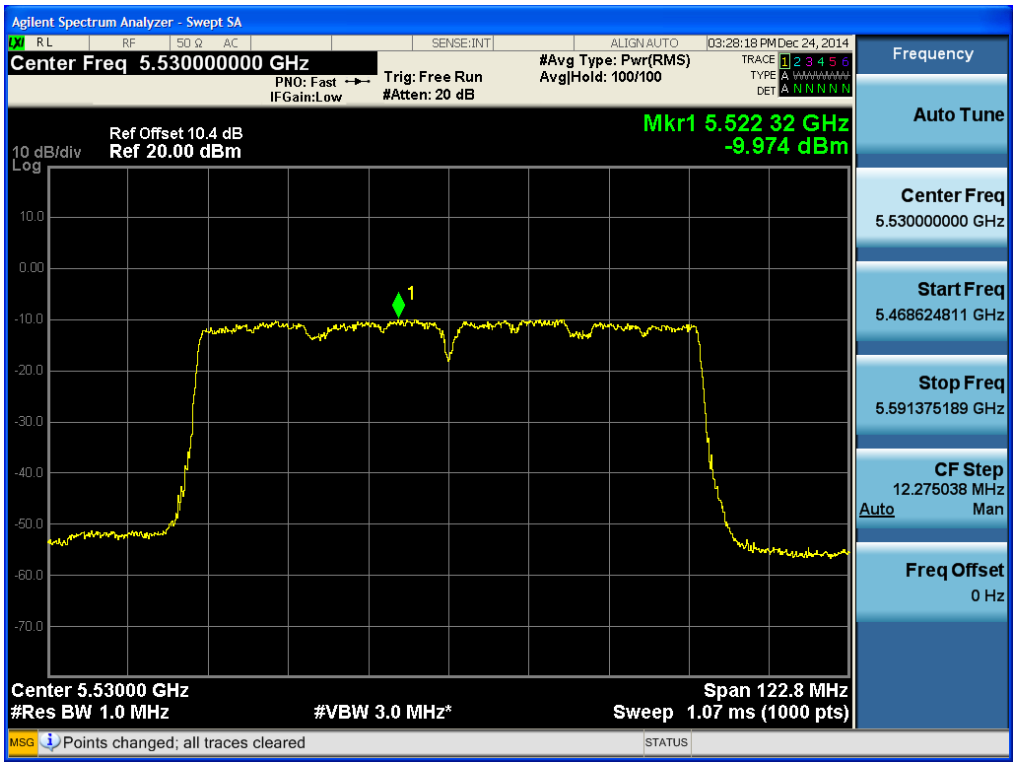
Power Spectral Density (802.11ac_80M BW -CH 42)



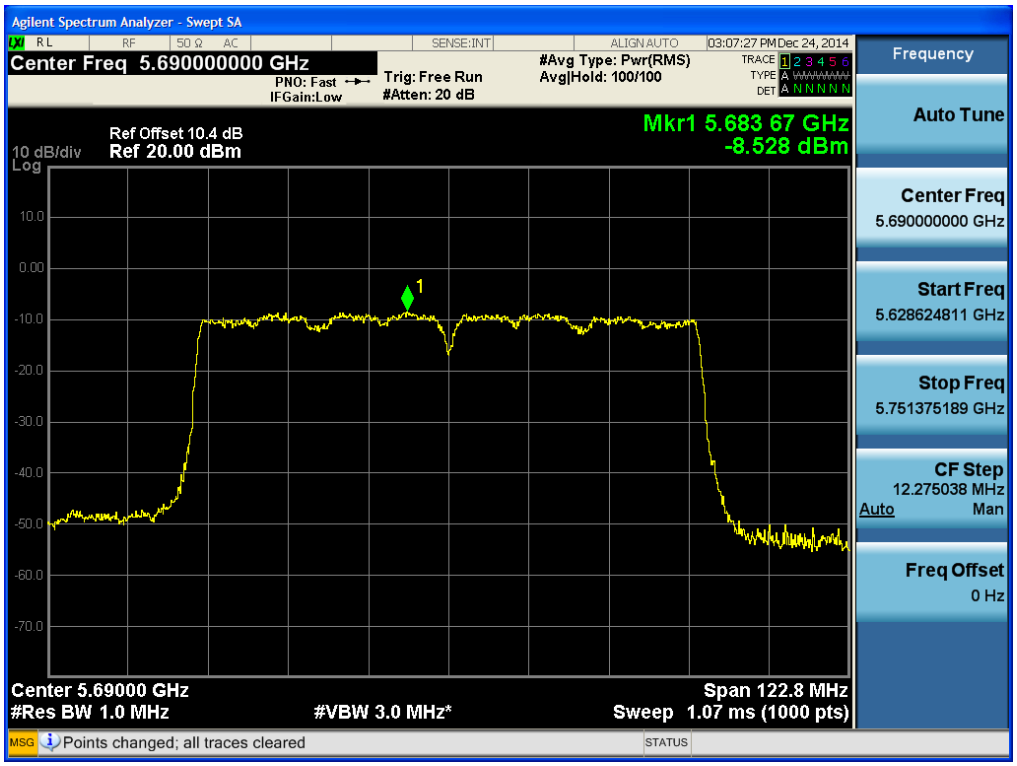
Power Spectral Density (802.11ac_80M BW-CH 58)



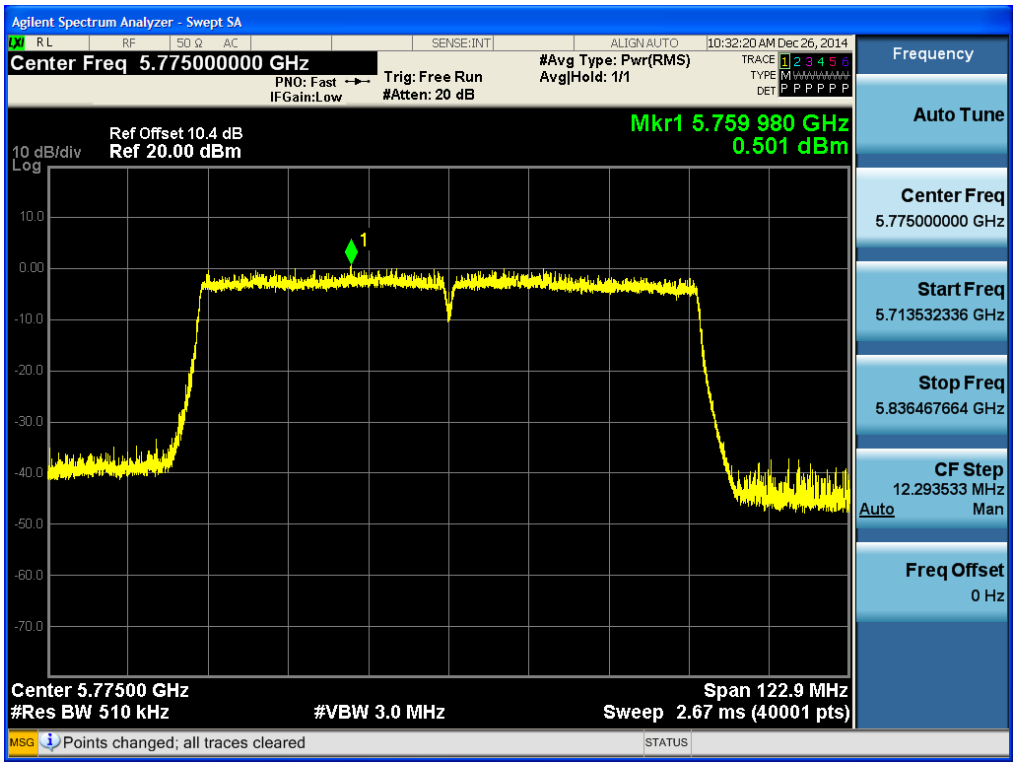
Power Spectral Density (802.11ac_80M BW-CH 106)



Power Spectral Density (802.11ac_80M BW-CH 138)



Power Spectral Density (802.11ac_80M BW-CH 155)



8.5 FREQUENCY STABILITY.

The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between -30 ℃ and 50 ℃. The temperature was incremented by 10 ℃ intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

20 MHz BW

OPERATING BAND: UNII Band 1
OPERATING FREQUENCY: 5,180,000,000 Hz
CHANNEL: 36
REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5180023.40	23.40
100%		-30	5180014.10	14.10
100%		-20	5180016.40	16.40
100%		-10	5180018.00	18.00
100%		0	5180019.80	19.80
100%		+10	5180021.60	21.60
100%		+30	5180025.60	25.60
100%		+40	5180027.40	27.40
100%		+50	5180029.70	29.70
115%	4.35	+20	5180025.60	25.60
Batt. Endpoint	3.00	+20	5180021.40	21.40

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 2A

OPERATING FREQUENCY: 5,260,000,000 Hz

CHANNEL: 52

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5260024.80	24.80
100%		-30	5260014.10	14.10
100%		-20	5260016.30	16.3
100%		-10	5260018.70	18.70
100%		0	5260020.60	20.6
100%		+10	5260022.90	22.9
100%		+30	5260027.10	27.1
100%		+40	5260029.40	29.4
100%		+50	5260031.80	31.80
115%	4.35	+20	5260026.90	26.9
Batt. Endpoint	3.00	+20	5260022.50	22.5

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 2C

OPERATING FREQUENCY: 5,500,000,000 Hz

CHANNEL: 100

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5500026.20	26.20
100%		-30	5500015.20	15.20
100%		-20	5500017.40	17.4
100%		-10	5500019.30	19.3
100%		0	5500021.80	21.8
100%		+10	5500024.10	24.1
100%		+30	5500028.10	28.1
100%		+40	5500030.30	30.3
100%		+50	5500032.60	32.60
115%	4.35	+20	5500028.50	28.5
Batt. Endpoint	3.00	+20	5500024.50	24.5

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 3

OPERATING FREQUENCY: 5,745,000,000 Hz

CHANNEL: 149

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5745026.90	26.90
100%		-30	5745016.90	16.90
100%		-20	5745018.50	18.5
100%		-10	5745020.80	20.8
100%		0	5745022.80	22.8
100%		+10	5745024.70	24.7
100%		+30	5745029.10	29.1
100%		+40	5745031.60	31.6
100%		+50	5745033.70	33.70
115%	4.35	+20	5745029.00	29
Batt. Endpoint	3.00	+20	5745024.50	24.5

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

40 MHz BW

OPERATING BAND: UNII Band 1

OPERATING FREQUENCY: 5,190,000,000 Hz

CHANNEL: 38

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5190024.50	24.50
100%		-30	5190014.50	14.50
100%		-20	5190016.80	16.80
100%		-10	5190018.30	18.30
100%		0	5190020.60	20.60
100%		+10	5190022.40	22.40
100%		+30	5190026.70	26.70
100%		+40	5190028.80	28.80
100%		+50	5190030.40	30.40
115%	4.35	+20	5190026.60	26.60
Batt. Endpoint	3.00	+20	5190022.80	22.80

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 2A

OPERATING FREQUENCY: 5,270,000,000 Hz

CHANNEL: 54

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5270024.10	24.10
100%		-30	5270014.90	14.90
100%		-20	5270016.70	16.7
100%		-10	5270018.20	18.2
100%		0	5270020.40	20.4
100%		+10	5270022.30	22.3
100%		+30	5270026.10	26.1
100%		+40	5270027.90	27.9
100%		+50	5270029.80	29.80
115%	4.35	+20	5270026.00	26
Batt. Endpoint	3.00	+20	5270022.00	22

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 2C

OPERATING FREQUENCY: 5,510,000,000 Hz

CHANNEL: 100

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5510025.30	25.30
100%		-30	5510016.30	16.30
100%		-20	5510018.40	18.4
100%		-10	5510020.10	20.1
100%		0	5510021.80	21.8
100%		+10	5510023.60	23.6
100%		+30	5510027.40	27.4
100%		+40	5510029.80	29.8
100%		+50	5510032.00	32.00
115%	4.35	+20	5510027.50	27.5
Batt. Endpoint	3.00	+20	5510023.00	23

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 3

OPERATING FREQUENCY: 5,755,000,000 Hz

CHANNEL: 151

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5755026.10	26.10
100%		-30	5755016.40	16.40
100%		-20	5755018.60	18.6
100%		-10	5755020.10	20.1
100%		0	5755022.80	22.8
100%		+10	5755024.50	24.5
100%		+30	5755028.30	28.3
100%		+40	5755030.40	30.4
100%		+50	5755032.90	32.90
115%	4.35	+20	5755028.40	28.4
Batt. Endpoint	3.00	+20	5755024.70	24.7

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

80 MHz BW

OPERATING BAND: UNII Band 1

OPERATING FREQUENCY: 5,210,000,000 Hz

CHANNEL: 42

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5210043.40	43.40
100%		-30	5210033.00	33.00
100%		-20	5210035.10	35.10
100%		-10	5210037.40	37.40
100%		0	5210039.90	39.90
100%		+10	5210041.80	41.80
100%		+30	5210045.60	45.60
100%		+40	5210047.90	47.90
100%		+50	5210050.30	50.30
115%	4.35	+20	5210045.70	45.70
Batt. Endpoint	3.00	+20	5210041.60	41.60

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 2A

OPERATING FREQUENCY: 5,290,000,000 Hz

CHANNEL: 58

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5290023.70	23.70
100%		-30	5290014.80	14.80
100%		-20	5290016.40	16.4
100%		-10	5290018.60	18.6
100%		0	5290020.30	20.3
100%		+10	5290021.90	21.9
100%		+30	5290025.40	25.4
100%		+40	5290027.30	27.3
100%		+50	5290029.10	29.10
115%	4.35	+20	5290025.50	25.5
Batt. Endpoint	3.00	+20	5290021.50	21.5

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 2C

OPERATING FREQUENCY: 5,530,000,000 Hz

CHANNEL: 106

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5530025.20	25.20
100%		-30	5530016.70	16.70
100%		-20	5530018.50	18.5
100%		-10	5530020.40	20.4
100%		0	5530021.90	21.9
100%		+10	5530023.60	23.6
100%		+30	5530027.40	27.4
100%		+40	5530029.30	29.3
100%		+50	5530031.20	31.20
115%	4.35	+20	5530027.00	27
Batt. Endpoint	3.00	+20	5530023.50	23.5

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 3

OPERATING FREQUENCY: 5,775,000,000 Hz

CHANNEL: 155

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5775025.90	25.90
100%		-30	5775015.60	15.60
100%		-20	5775017.50	17.5
100%		-10	5775019.80	19.8
100%		0	5775021.70	21.7
100%		+10	5775023.90	23.9
100%		+30	5775027.50	27.5
100%		+40	5775029.70	29.7
100%		+50	5775031.20	31.20
115%	4.35	+20	5775027.40	27.4
Batt. Endpoint	3.00	+20	5775023.50	23.5

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

8.6 RADIATED MEASUREMENT

8.6.1 RADIATED SPURIOUS EMISSIONS.

Test Requirements and limit, §15.205, §15.209, §15.407

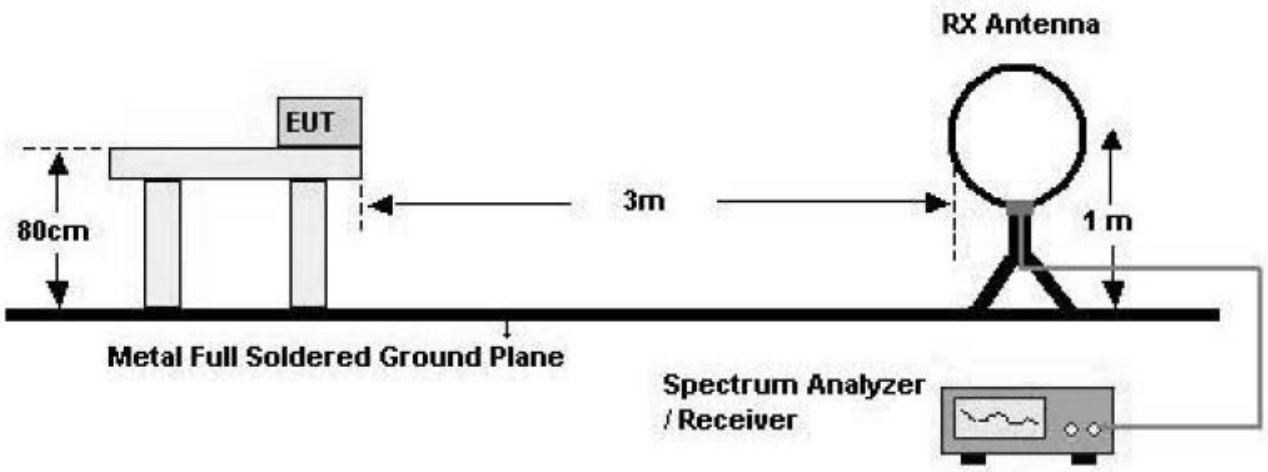
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

▣ §15.407, KDB 789033 D02

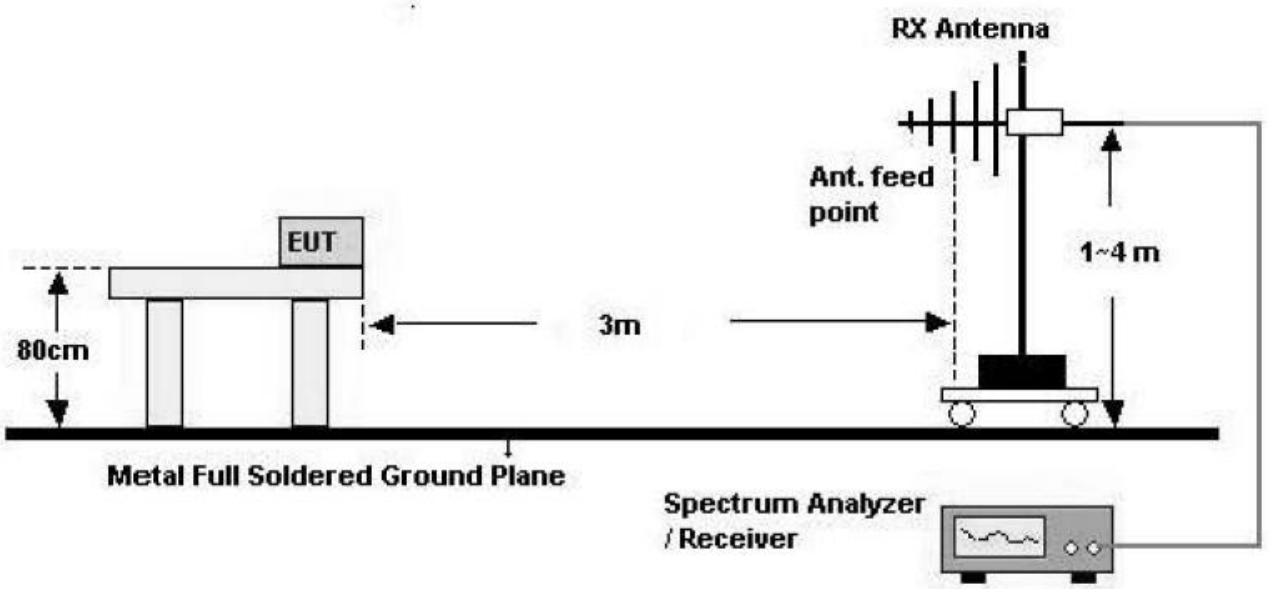
All harmonics that do not lie in a restricted band are subject to a peak limit of -27 dBm/MHz. At a distance of 3 meters the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2 dB to the EIRP limit of -27 dBm/MHz to obtain the limit for out of band spurious emissions of 68.2 dBμV/m. Espectally, for transmitter operating in the 5725 Mhz – 5850 MHz : all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequency 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

Test Configuration

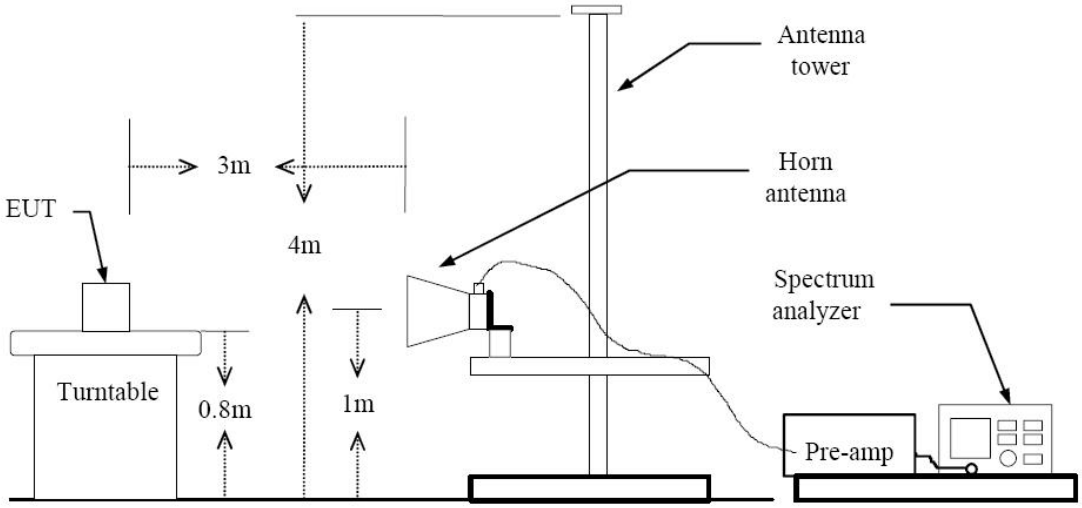
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE USED

ANSI C63.4(2003)

Method H)5) in KDB 789033, issued 06/06/2014 (Peak)

Method H)6)d) in KDB 789033, issued 06/06/2014 (Average)

. Spectrum setting:

- Peak.

1. RBW = 1 MHz
2. VBW ≥ 3 MHz
3. Detector = Peak
4. Sweep Time = auto
5. Trace mode = max hold
6. Allow sweeps to continue until the trace stabilizes.
7. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle.

- Average (Method VB :Averaging using reduced video bandwidth)

1. RBW = 1 MHz
2. VBW
   2.1. If the EUT is configured to transmit with duty cycle ≥ 98 percent, set VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
   2.2. If the EUT duty cycle is < 98 percent, set VBW ≥ 1/T, where T is the minimum transmission duration.

3. The analyzer is set to linear detector mode.
4. Detector = Peak.
5. Sweep time = auto.
6. Trace mode = max hold.
7. Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimym number of traces by a factor of 1/x, where x is the duty cycle.

Note :

1. We used the case 2 for 802.11a/g/n/ac_20/n/ac_40_80 mode to perform the average filed strength measurements.
2. The actual setting value of VBW for 802.11a/g/n/ac_20/n/ac_40_80

Mode	Worst Data rate (Mbps)	T_{on} (ms)	T_{total} (ms)	Duty Cycle (%)	VBW(1/T) (Hz)	The actual setting value of VBW (Hz)
a	**6**	**2.055**	**2.156**	**95.32**	**487**	**3000**
n_20	**6.5**	**1.918**	**2.030**	**94.48**	**521**	**3000**
n_40	**13.5**	**0.920**	**1.030**	**89.32**	**1087**	**3000**
ac_20	**6.5**	**2.050**	**2.158**	**95.00**	**488**	**3000**
ac_40	**13.5**	**0.947**	**1.053**	**89.93**	**1056**	**3000**
ac_80	**29.3**	**0.450**	**0.560**	**80.36**	**2222**	**3000**

TEST RESULTS

9 kHz – 30MHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dB㎶	dB /m	dB	(H/V)	dB㎶/m	dB㎶/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 9 kHz to the 30MHz.
2. The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
4. Limit line = specific Limits (dBuV) + Distance extrapolation factor
5. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

TEST RESULTS

Below 1 GHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dB㎶	dB /m	dB	(H/V)	dB㎶/m	dB㎶/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 30 MHz to the 1 GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Above 1 GHz

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	63.19	-6.51	V	56.68	68.20	11.52	PK
15540	64.72	-6.42	V	58.30	73.98	15.68	PK
15540	52.43	-6.42	V	46.01	53.98	7.97	AV
10360	63.56	-6.51	H	57.05	68.20	11.15	PK
15540	65.01	-6.42	H	58.59	73.98	15.39	PK
15540	52.44	-6.42	H	46.02	53.98	7.96	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	63.77	-6.49	V	57.28	68.20	10.92	PK
15600	64.40	-7.15	V	57.25	73.98	16.73	PK
15600	52.10	-7.15	V	44.95	53.98	9.03	AV
10400	63.81	-6.49	H	57.32	68.20	10.88	PK
15600	64.52	-7.15	H	57.37	73.98	16.61	PK
15600	52.14	-7.15	H	44.99	53.98	8.99	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	63.88	-6.96	V	56.92	68.20	11.28	PK
15720	64.62	-6.62	V	58.00	73.98	15.98	PK
15720	52.74	-6.62	V	46.12	53.98	7.86	AV
10480	64.08	-6.96	H	57.12	68.20	11.08	PK
15720	64.93	-6.96	H	57.97	73.98	16.01	PK
15720	52.75	-6.62	H	46.13	53.98	7.85	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	63.22	-6.51	V	56.71	68.20	11.49	PK
15540	64.77	-6.42	V	58.35	73.98	15.63	PK
15540	52.41	-6.42	V	45.99	53.98	7.99	AV
10360	63.42	-6.51	H	56.91	68.20	11.29	PK
15540	64.98	-6.42	H	58.56	73.98	15.42	PK
15540	52.41	-6.42	H	45.99	53.98	7.99	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	63.49	-6.49	V	57.00	68.20	11.20	PK
15600	64.41	-7.15	V	57.26	73.98	16.72	PK
15600	52.13	-7.15	V	44.98	53.98	9.00	AV
10400	63.55	-6.49	H	57.06	68.20	11.14	PK
15600	64.75	-7.15	H	57.60	73.98	16.38	PK
15600	52.15	-7.15	H	45.00	53.98	8.98	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	63.62	-6.96	V	56.66	68.20	11.54	PK
15720	64.64	-6.62	V	58.02	73.98	15.96	PK
15720	52.73	-6.62	V	46.11	53.98	7.87	AV
10480	64.00	-6.96	H	57.04	68.20	11.16	PK
15720	64.96	-6.96	H	58.00	73.98	15.98	PK
15720	52.75	-6.62	H	46.13	53.98	7.85	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	63.63	-6.51	V	57.12	68.20	11.08	PK
15540	64.56	-6.42	V	58.14	73.98	15.84	PK
15540	52.41	-6.42	V	45.99	53.98	7.99	AV
10360	63.74	-6.51	H	57.23	68.20	10.97	PK
15540	64.93	-6.42	H	58.51	73.98	15.47	PK
15540	52.42	-6.42	H	46.00	53.98	7.98	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	63.41	-6.49	V	56.92	68.20	11.28	PK
15600	64.47	-7.15	V	57.32	73.98	16.66	PK
15600	52.11	-7.15	V	44.96	53.98	9.02	AV
10400	63.58	-6.49	H	57.09	68.20	11.11	PK
15600	64.80	-7.15	H	57.65	73.98	16.33	PK
15600	52.14	-7.15	H	44.99	53.98	8.99	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	63.82	-6.96	V	56.86	68.20	11.34	PK
15720	64.57	-6.62	V	57.95	73.98	16.03	PK
15720	52.75	-6.62	V	46.13	53.98	7.85	AV
10480	64.02	-6.96	H	57.06	68.20	11.14	PK
15720	65.33	-6.96	H	58.37	73.98	15.61	PK
15720	52.77	-6.62	H	46.15	53.98	7.83	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10380	64.12	-5.38	V	58.74	68.20	9.46	PK
15570	64.37	-6.41	V	57.96	73.98	16.02	PK
15570	52.17	-6.41	V	45.76	53.98	8.22	AV
10380	64.25	-5.38	H	58.87	68.20	9.33	PK
15570	64.68	-6.41	H	58.27	73.98	15.71	PK
15570	52.19	-6.41	H	45.78	53.98	8.20	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10460	63.93	-6.88	V	57.05	68.20	11.15	PK
15690	65.09	-6.64	V	58.45	73.98	15.53	PK
15690	52.62	-6.64	V	45.98	53.98	8.00	AV
10460	64.30	-6.88	H	57.42	68.20	10.78	PK
15690	65.33	-6.64	H	58.69	73.98	15.29	PK
15690	52.63	-6.64	H	45.99	53.98	7.99	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10380	63.25	-5.38	V	57.87	68.20	10.33	PK
15570	64.64	-6.41	V	58.23	73.98	15.75	PK
15570	52.16	-6.41	V	45.75	53.98	8.23	AV
10380	63.49	-5.38	H	58.11	68.20	10.09	PK
15570	64.75	-6.41	H	58.34	73.98	15.64	PK
15570	52.19	-6.41	H	45.78	53.98	8.20	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10460	63.74	-6.88	V	56.86	68.20	11.34	PK
15690	64.23	-6.64	V	57.59	73.98	16.39	PK
15690	52.61	-6.64	V	45.97	53.98	8.01	AV
10460	64.02	-6.88	H	57.14	68.20	11.06	PK
15690	64.69	-6.64	H	58.05	73.98	15.93	PK
15690	52.63	-6.64	H	45.99	53.98	7.99	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 1
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10420	63.48	-6.32	V	57.16	68.20	11.04	PK
15630	64.85	-7.14	V	57.71	73.98	16.27	PK
15630	52.70	-7.14	V	45.56	53.98	8.42	AV
10420	63.78	-6.32	H	57.46	68.20	10.74	PK
15630	65.06	-7.14	H	57.92	73.98	16.06	PK
15630	52.72	-7.14	H	45.58	53.98	8.40	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is 29.3 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	64.12	-6.52	V	57.60	68.20	10.60	PK
15780	64.65	-6.67	V	57.98	73.98	16.00	PK
15780	52.52	-6.67	V	45.85	53.98	8.13	AV
10520	64.32	-6.52	H	57.80	68.20	10.40	PK
15780	64.87	-6.67	H	58.20	73.98	15.78	PK
15780	52.53	-6.67	H	45.86	53.98	8.12	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	63.72	-6.72	V	57.00	73.98	16.98	PK
10600	51.49	-6.72	V	44.77	53.98	9.21	AV
15900	64.20	-7.00	V	57.20	73.98	16.78	PK
15900	52.28	-7.00	V	45.28	53.98	8.70	AV
10600	64.03	-6.72	H	57.31	73.98	16.67	PK
10600	51.51	-6.72	H	44.79	53.98	9.19	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	63.63	-6.43	V	57.20	73.98	16.78	PK
10640	51.51	-6.43	V	45.08	53.98	8.90	AV
15960	64.93	-6.93	V	58.00	73.98	15.98	PK
15960	52.32	-6.93	V	45.39	53.98	8.59	AV
10640	63.83	-6.43	H	57.40	73.98	16.58	PK
10640	51.53	-6.43	H	45.10	53.98	8.88	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 2A
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	64.13	-6.52	V	57.61	68.20	10.59	PK
15780	64.22	-6.67	V	57.55	73.98	16.43	PK
15780	52.60	-6.67	V	45.93	53.98	8.05	AV
10520	64.47	-6.52	H	57.95	68.20	10.25	PK
15780	64.80	-6.67	H	58.13	73.98	15.85	PK
15780	52.61	-6.67	H	45.94	53.98	8.04	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	63.85	-6.72	V	57.13	73.98	16.85	PK
10600	51.49	-6.72	V	44.77	53.98	9.21	AV
15900	63.92	-7.00	V	56.92	73.98	17.06	PK
15900	52.29	-7.00	V	45.29	53.98	8.69	AV
10600	64.44	-6.72	H	57.72	73.98	16.26	PK
10600	51.50	-6.72	H	44.78	53.98	9.20	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	63.75	-6.43	V	57.32	73.98	16.66	PK
10640	51.51	-6.43	V	45.08	53.98	8.90	AV
15960	64.15	-6.93	V	57.22	73.98	16.76	PK
15960	52.33	-6.93	V	45.40	53.98	8.58	AV
10640	64.11	-6.43	H	57.68	73.98	16.30	PK
10640	51.53	-6.43	H	45.10	53.98	8.88	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5260MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	63.91	-6.52	V	57.39	68.20	10.81	PK
15780	64.20	-6.67	V	57.53	73.98	16.45	PK
15780	52.59	-6.67	V	45.92	53.98	8.06	AV
10520	64.34	-6.52	H	57.82	68.20	10.38	PK
15780	64.49	-6.67	H	57.82	73.98	16.16	PK
15780	52.60	-6.67	H	45.93	53.98	8.05	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	63.87	-6.72	V	57.15	73.98	16.83	PK
10600	51.50	-6.72	V	44.78	53.98	9.20	AV
15900	63.97	-7.00	V	56.97	73.98	17.01	PK
15900	52.27	-7.00	V	45.27	53.98	8.71	AV
10600	63.87	-6.72	H	57.15	73.98	16.83	PK
10600	51.52	-6.72	H	44.80	53.98	9.18	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	63.80	-6.43	V	57.37	73.98	16.61	PK
10640	51.52	-6.43	V	45.09	53.98	8.89	AV
15960	64.49	-6.93	V	57.56	73.98	16.42	PK
15960	52.51	-6.93	V	45.58	53.98	8.40	AV
10640	64.35	-6.43	H	57.92	73.98	16.06	PK
10640	51.53	-6.43	H	45.10	53.98	8.88	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10540	63.38	-5.77	V	57.61	68.20	10.59	PK
15810	64.08	-7.47	V	56.61	73.98	17.37	PK
15810	52.00	-7.47	V	44.53	53.98	9.45	AV
10540	63.60	-5.77	H	57.83	68.20	10.37	PK
15810	64.27	-7.47	H	56.80	73.98	17.18	PK
15810	52.01	-7.47	H	44.54	53.98	9.44	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10620	63.92	-6.36	V	57.56	73.98	16.42	PK
10620	51.50	-6.36	V	45.14	53.98	8.84	AV
15930	64.33	-6.77	V	57.56	73.98	16.42	PK
15930	52.00	-6.77	V	45.23	53.98	8.75	AV
10620	64.07	-6.36	H	57.71	73.98	16.27	PK
10620	51.52	-6.36	H	45.16	53.98	8.82	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10540	63.63	-5.77	V	57.86	68.20	10.34	PK
15810	63.80	-7.47	V	56.33	73.98	17.65	PK
15810	52.01	-7.47	V	44.54	53.98	9.44	AV
10540	63.78	-5.77	H	58.01	68.20	10.19	PK
15810	64.20	-7.47	H	56.73	73.98	17.25	PK
15810	52.02	-7.47	H	44.55	53.98	9.43	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10620	64.02	-6.36	V	57.66	73.98	16.32	PK
10620	51.52	-6.36	V	45.16	53.98	8.82	AV
15930	64.40	-6.77	V	57.63	73.98	16.35	PK
15930	52.00	-6.77	V	45.23	53.98	8.75	AV
10620	64.15	-6.36	H	57.79	73.98	16.19	PK
10620	51.54	-6.36	H	45.18	53.98	8.80	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 2A
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10580	63.43	-5.70	V	57.73	68.20	10.47	PK
15870	64.10	-7.27	V	56.83	73.98	17.15	PK
15870	52.71	-7.27	V	45.44	53.98	8.54	AV
10580	63.92	-5.70	H	58.22	68.20	9.98	PK
15870	64.83	-7.27	H	57.56	73.98	16.42	PK
15870	52.73	-7.27	H	45.46	53.98	8.52	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is 29.3 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	63.48	-5.06	V	58.42	73.98	15.56	PK
11000	51.38	-5.06	V	46.32	53.98	7.66	AV
16500	64.94	-4.35	V	60.59	68.20	7.61	PK
11000	63.66	-5.06	H	58.60	73.98	15.38	PK
11000	51.39	-5.06	H	46.33	53.98	7.65	AV
16500	64.16	-4.35	H	59.81	68.20	8.39	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5600 MHz
Channel No.	120 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11200	64.04	-6.05	V	57.99	73.98	15.99	PK
11200	51.47	-6.05	V	45.42	53.98	8.56	AV
16800	63.94	-2.56	V	61.38	68.20	6.82	PK
11200	64.28	-6.05	H	58.23	73.98	15.75	PK
11200	51.48	-6.05	H	45.43	53.98	8.55	AV
16800	64.41	-2.56	H	61.85	68.20	6.35	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5700 MHz
Channel No.	140 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11400	63.56	-6.08	V	57.48	73.98	16.50	PK
11400	51.42	-6.08	V	45.34	53.98	8.64	AV
17100	63.96	-0.85	V	63.11	68.20	5.09	PK
11400	63.89	-6.08	H	57.81	73.98	16.17	PK
11400	51.43	-6.08	H	45.35	53.98	8.63	AV
17100	64.13	-0.85	H	63.28	68.20	4.92	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 2C
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	63.14	-5.06	V	58.08	73.98	15.90	PK
11000	51.38	-5.06	V	46.32	53.98	7.66	AV
16500	63.62	-4.35	V	59.27	68.20	8.93	PK
11000	63.60	-5.06	H	58.54	73.98	15.44	PK
11000	51.39	-5.06	H	46.33	53.98	7.65	AV
16500	63.81	-4.35	H	59.46	68.20	8.74	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5600 MHz
Channel No.	120 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11200	64.36	-6.05	V	58.31	73.98	15.67	PK
11200	51.48	-6.05	V	45.43	53.98	8.55	AV
16800	64.30	-2.56	V	61.74	68.20	6.46	PK
11200	64.45	-6.05	H	58.40	73.98	15.58	PK
11200	51.49	-6.05	H	45.44	53.98	8.54	AV
16800	64.55	-2.56	H	61.99	68.20	6.21	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5700 MHz
Channel No.	140 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11400	63.44	-6.08	V	57.36	73.98	16.62	PK
11400	51.41	-6.08	V	45.33	53.98	8.65	AV
17100	63.86	-0.85	V	63.01	68.20	5.19	PK
11400	63.70	-6.08	H	57.62	73.98	16.36	PK
11400	51.41	-6.08	H	45.33	53.98	8.65	AV
17100	64.00	-0.85	H	63.15	68.20	5.05	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5500MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	63.06	-5.06	V	58.00	73.98	15.98	PK
11000	51.36	-5.06	V	46.30	53.98	7.68	AV
16500	63.92	-4.35	V	59.57	68.20	8.63	PK
11000	63.54	-5.06	H	58.48	73.98	15.50	PK
11000	51.38	-5.06	H	46.32	53.98	7.66	AV
16500	64.15	-4.35	H	59.80	68.20	8.40	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5600 MHz
Channel No.	120 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11200	63.63	-6.05	V	57.58	73.98	16.40	PK
11200	51.47	-6.05	V	45.42	53.98	8.56	AV
16800	64.56	-2.56	V	62.00	68.20	6.20	PK
11200	63.87	-6.05	H	57.82	73.98	16.16	PK
11200	51.47	-6.05	H	45.42	53.98	8.56	AV
16800	64.70	-2.56	H	62.14	68.20	6.06	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5700 MHz
Channel No.	140 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11400	63.58	-6.08	V	57.50	73.98	16.48	PK
11400	51.40	-6.08	V	45.32	53.98	8.66	AV
17100	63.55	-0.85	V	62.70	68.20	5.50	PK
11400	63.68	-6.08	H	57.60	73.98	16.38	PK
11400	51.41	-6.08	H	45.33	53.98	8.65	AV
17100	63.64	-0.85	H	62.79	68.20	5.41	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11020	62.39	-5.86	V	56.53	73.98	17.45	PK
11020	50.95	-5.86	V	45.09	53.98	8.89	AV
16530	63.92	-3.75	V	60.17	68.20	8.03	PK
11020	62.75	-5.86	H	56.89	73.98	17.09	PK
11020	50.97	-5.86	H	45.11	53.98	8.87	AV
16530	64.15	-3.75	H	60.40	68.20	7.80	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11180	63.30	-6.14	V	57.16	73.98	16.82	PK
11180	51.27	-6.14	V	45.13	53.98	8.85	AV
16770	64.52	-3.11	V	61.41	68.20	6.79	PK
11180	63.51	-6.14	H	57.37	73.98	16.61	PK
11180	51.28	-6.14	H	45.14	53.98	8.84	AV
16770	64.78	-3.11	H	61.67	68.20	6.53	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5670 MHz
Channel No.	134 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11340	63.84	-5.10	V	58.74	73.98	15.24	PK
11340	51.17	-5.10	V	46.07	53.98	7.91	AV
17010	62.72	-1.27	V	61.45	68.20	6.75	PK
11340	64.26	-5.10	H	59.16	73.98	14.82	PK
11340	51.19	-5.10	H	46.09	53.98	7.89	AV
17010	63.05	-1.27	H	61.78	68.20	6.42	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11020	62.79	-5.86	V	56.93	73.98	17.05	PK
11020	50.92	-5.86	V	45.06	53.98	8.92	AV
16530	63.40	-3.75	V	59.65	68.20	8.55	PK
11020	63.15	-5.86	H	57.29	73.98	16.69	PK
11020	50.93	-5.86	H	45.07	53.98	8.91	AV
16530	63.88	-3.75	H	60.13	68.20	8.07	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11180	63.21	-6.14	V	57.07	73.98	16.91	PK
11180	51.29	-6.14	V	45.15	53.98	8.83	AV
16770	64.57	-3.11	V	61.46	68.20	6.74	PK
11180	63.49	-6.14	H	57.35	73.98	16.63	PK
11180	51.30	-6.14	H	45.16	53.98	8.82	AV
16770	64.66	-3.11	H	61.55	68.20	6.65	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 2C
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11420	63.64	-6.07	V	57.57	73.98	16.41	PK
11420	51.19	-6.07	V	45.12	53.98	8.86	AV
17130	63.27	-0.81	V	62.46	68.20	5.74	PK
11420	64.25	-6.07	H	58.18	73.98	15.80	PK
11420	51.20	-6.07	H	45.13	53.98	8.85	AV
17130	63.51	-0.81	H	62.70	68.20	5.50	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 2C
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11060	63.19	-6.21	V	56.98	73.98	17.00	PK
11060	50.90	-6.21	V	44.69	53.98	9.29	AV
16590	62.91	-3.20	V	59.71	68.20	8.49	PK
11060	63.36	-6.21	H	57.15	73.98	16.83	PK
11060	50.91	-6.21	H	44.70	53.98	9.28	AV
16590	63.49	-3.20	H	60.29	68.20	7.91	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is 29.3 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5690 MHz
Channel No.	138 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11380	63.39	-5.59	V	57.80	73.98	16.18	PK
11380	50.86	-5.59	V	45.27	53.98	8.71	AV
17070	63.46	-1.32	V	62.14	68.20	6.06	PK
11380	63.87	-5.59	H	58.28	73.98	15.70	PK
11380	50.87	-5.59	H	45.28	53.98	8.70	AV
17070	63.66	-1.32	H	62.34	68.20	5.86	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is 29.3 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5745MHz
Channel No.	149 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	64.02	-6.10	V	57.92	73.98	16.06	PK
11490	51.67	-6.10	V	45.57	53.98	8.41	AV
17295	63.32	-1.35	V	61.97	68.2	6.23	PK
11490	64.56	-6.10	H	58.46	73.98	15.52	PK
11490	51.69	-6.10	H	45.59	53.98	8.39	AV
17295	63.66	-1.35	H	62.31	68.2	5.89	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	63.69	-5.57	V	58.12	73.98	15.86	PK
11570	51.50	-5.57	V	45.93	53.98	8.05	AV
17355	62.91	-0.39	V	62.52	68.2	5.68	PK
11570	63.88	-5.57	H	58.31	73.98	15.67	PK
11570	51.51	-5.57	H	45.94	53.98	8.04	AV
17355	63.08	-0.39	H	62.69	68.2	5.51	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	64.03	-6.63	V	57.40	73.98	16.58	PK
11650	51.62	-6.63	V	44.99	53.98	8.99	AV
17475	62.63	0.29	V	62.92	68.2	5.28	PK
11650	64.28	-6.63	H	57.65	73.98	16.33	PK
11650	51.64	-6.63	H	45.01	53.98	8.97	AV
17475	62.98	0.29	H	63.27	68.2	4.93	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 3
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	63.96	-6.10	V	57.86	73.98	16.12	PK
11490	51.66	-6.10	V	45.56	53.98	8.42	AV
17235	63.17	-1.35	V	61.82	68.2	6.38	PK
11490	64.27	-6.10	H	58.17	73.98	15.81	PK
11490	51.67	-6.10	H	45.57	53.98	8.41	AV
17235	63.23	-1.35	H	61.88	68.2	6.32	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	63.91	-5.57	V	58.34	73.98	15.64	PK
11570	51.49	-5.57	V	45.92	53.98	8.06	AV
17355	62.96	-0.39	V	62.57	68.2	5.63	PK
11570	64.25	-5.57	H	58.68	73.98	15.30	PK
11570	51.50	-5.57	H	45.93	53.98	8.05	AV
17355	63.24	-0.39	H	62.85	68.2	5.35	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	64.24	-6.63	V	57.61	73.98	16.37	PK
11650	51.61	-6.63	V	44.98	53.98	9.00	AV
17475	62.96	0.29	V	63.25	68.2	4.95	PK
11650	64.30	-6.63	H	57.67	73.98	16.31	PK
11650	51.62	-6.63	H	44.99	53.98	8.99	AV
17475	63	0.29	H	63.29	68.2	4.91	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	63.84	-6.10	V	57.74	73.98	16.24	PK
11490	51.65	-6.10	V	45.55	53.98	8.43	AV
17235	63.16	-1.35	V	61.81	68.2	6.39	PK
11490	64.37	-6.10	H	58.27	73.98	15.71	PK
11490	51.66	-6.10	H	45.56	53.98	8.42	AV
17235	63.51	-1.35	H	62.16	68.2	6.04	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	64.02	-5.57	V	58.45	73.98	15.53	PK
11570	51.50	-5.57	V	45.93	53.98	8.05	AV
17355	63.19	-0.39	V	62.8	68.2	5.40	PK
11570	64.13	-5.57	H	58.56	73.98	15.42	PK
11570	51.51	-5.57	H	45.94	53.98	8.04	AV
17355	63.5	-0.39	H	63.11	68.2	5.09	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	63.93	-6.63	V	57.30	73.98	16.68	PK
11650	51.60	-6.63	V	44.97	53.98	9.01	AV
17475	62.94	0.29	V	63.23	68.2	4.97	PK
11650	64.02	-6.63	H	57.39	73.98	16.59	PK
11650	51.62	-6.63	H	44.99	53.98	8.99	AV
17475	63.11	0.29	H	63.4	68.2	4.80	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII3
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11510	63.67	-6.26	V	57.41	73.98	16.57	PK
11510	51.57	-6.26	V	45.31	53.98	8.67	AV
17265	63.36	-1.10	V	62.26	68.2	5.94	PK
11510	63.84	-6.26	H	57.58	73.98	16.40	PK
11510	51.59	-6.26	H	45.33	53.98	8.65	AV
17265	63.48	-1.10	H	62.38	68.2	5.82	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11590	63.97	-5.92	V	58.05	73.98	15.93	PK
11590	51.44	-5.92	V	45.52	53.98	8.46	AV
17385	62.99	-0.24	V	62.75	68.2	5.45	PK
11590	64.23	-5.92	H	58.31	73.98	15.67	PK
11590	51.46	-5.92	H	45.54	53.98	8.44	AV
17385	63.46	-0.24	V	63.22	68.2	4.98	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11510	63.71	-6.26	V	57.45	73.98	16.53	PK
11510	51.57	-6.26	V	45.31	53.98	8.67	AV
17265	63.35	-1.10	V	62.25	68.2	5.95	PK
11510	63.81	-6.26	H	57.55	73.98	16.43	PK
11510	51.58	-6.26	H	45.32	53.98	8.66	AV
17265	63.67	-1.10	H	62.57	68.2	5.63	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11590	64.08	-5.92	V	58.16	73.98	15.82	PK
11590	51.43	-5.92	V	45.51	53.98	8.47	AV
17385	62.92	-0.24	V	62.68	68.2	5.52	PK
11590	64.31	-5.92	H	58.39	73.98	15.59	PK
11590	51.45	-5.92	H	45.53	53.98	8.45	AV
17385	64.01	-0.24	H	63.77	68.2	4.43	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 3
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5775 MHz
Channel No.	155 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11550	62.83	-5.97	V	56.86	73.98	17.12	PK
11550	51.43	-5.97	V	45.46	53.98	8.52	AV
17325	63.38	-1.06	V	62.32	68.2	5.88	PK
11550	63.49	-5.97	H	57.52	73.98	16.46	PK
11550	51.45	-5.97	H	45.48	53.98	8.50	AV
17325	63.89	-1.06	H	62.83	68.2	5.37	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is 29.3 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

8.6.2 RADIATED RESTRICTED BAND EDGE MEASUREMENTS

Test Requirements and limit, §15.247(d) §15.205, §15.209

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a) (See section 15.205(c)).

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	54.72	8.79	H	63.51	73.98	10.47	PK
5150	38.75	8.79	H	47.54	53.98	6.44	AV
5150	54.09	8.79	V	62.88	73.98	11.10	PK
5150	38.13	8.79	V	46.92	53.98	7.06	AV

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	53.68	8.79	H	62.47	73.98	11.51	PK
5150	38.78	8.79	H	47.57	53.98	6.41	AV
5150	53.04	8.79	V	61.83	73.98	12.15	PK
5150	38.15	8.79	V	46.94	53.98	7.04	AV

Band :	UNII 1
Operation Mode:	802.11 ac_20Mz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	52.55	8.79	H	61.34	73.98	12.64	PK
5150	37.78	8.79	H	46.57	53.98	7.41	AV
5150	51.93	8.79	V	60.72	73.98	13.26	PK
5150	37.14	8.79	V	45.93	53.98	8.05	AV

Band :	UNII 1
Operation Mode:	802.11 n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	58.38	8.79	H	67.17	73.98	6.81	PK
5150	42.06	8.79	H	50.85	53.98	3.13	AV
5150	57.38	8.79	V	66.17	73.98	7.81	PK
5150	41.60	8.79	V	50.39	53.98	3.59	AV

Band :	UNII 1
Operation Mode:	802.11 ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	59.59	8.79	H	68.38	73.98	5.60	PK
5150	41.80	8.79	H	50.59	53.98	3.39	AV
5150	58.22	8.79	V	67.01	73.98	6.97	PK
5150	41.43	8.79	V	50.22	53.98	3.76	AV

Band :	UNII 1
Operation Mode:	802.11 ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	53.96	8.79	H	62.75	73.98	11.23	PK
5150	40.65	8.79	H	49.44	53.98	4.54	AV
5150	53.51	8.79	V	62.3	73.98	11.68	PK
5150	40.19	8.79	V	48.98	53.98	5.00	AV

Band :	UNII 2A
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	51.99	9.28	H	61.27	73.98	12.71	PK
5350	38.21	9.28	H	47.49	53.98	6.49	AV
5350	51.01	9.28	V	60.29	73.98	13.69	PK
5350	37.52	9.28	V	46.8	53.98	7.18	AV

Band :	UNII 2A
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	50.83	9.28	H	60.11	73.98	13.87	PK
5350	37.47	9.28	H	46.75	53.98	7.23	AV
5350	49.97	9.28	V	59.25	73.98	14.73	PK
5350	36.81	9.28	V	46.09	53.98	7.89	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_20Mz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	50.98	9.28	H	60.26	73.98	13.72	PK
5350	37.10	9.28	H	46.38	53.98	7.60	AV
5350	50.00	9.28	V	59.28	73.98	14.70	PK
5350	36.56	9.28	V	45.84	53.98	8.14	AV

Band :	UNII 2A
Operation Mode:	802.11 n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	54.40	9.28	H	63.68	73.98	10.30	PK
5350	40.13	9.28	H	49.41	53.98	4.57	AV
5350	53.46	9.28	V	62.74	73.98	11.24	PK
5350	39.58	9.28	V	48.86	53.98	5.12	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	54.64	9.28	H	63.92	73.98	10.06	PK
5350	40.45	9.28	H	49.73	53.98	4.25	AV
5350	53.95	9.28	V	63.23	73.98	10.75	PK
5350	39.89	9.28	V	49.17	53.98	4.81	AV

Band :	UNII 1
Operation Mode:	802.11 ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	51.93	9.28	H	61.21	73.98	12.77	PK
5350	38.82	9.28	H	48.1	53.98	5.88	AV
5350	51.48	9.28	V	60.76	73.98	13.22	PK
5350	38.24	9.28	V	47.52	53.98	6.46	AV

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	50.35	10.08	H	60.43	73.98	13.55	PK
5460	36.82	10.08	H	46.9	53.98	7.08	AV
*5470	52.29	9.95	H	62.24	68.20	5.96	PK
5460	49.49	10.08	V	59.57	73.98	14.41	PK
5460	36.24	10.08	V	46.32	53.98	7.66	AV
*5470	51.51	9.95	V	61.46	68.20	6.74	PK

Band :	UNII 2C
Operation Mode:	802.11 n_20MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	49.98	10.08	H	60.06	73.98	13.92	PK
5460	36.57	10.08	H	46.65	53.98	7.33	AV
*5470	52.57	9.95	H	62.52	68.20	5.68	PK
5460	48.88	10.08	V	58.96	73.98	15.02	PK
5460	35.99	10.08	V	46.07	53.98	7.91	AV
*5470	51.44	9.95	V	61.39	68.20	6.81	PK

Band :	UNII 2C
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	49.80	10.08	H	59.88	73.98	14.10	PK
5460	36.43	10.08	H	46.51	53.98	7.47	AV
*5470	50.40	9.95	H	60.35	68.20	7.85	PK
5460	49.02	10.08	V	59.1	73.98	14.88	PK
5460	35.92	10.08	V	46	53.98	7.98	AV
*5470	49.48	9.95	V	59.43	68.20	8.77	PK

Band :	UNII 2C
Operation Mode:	802.11 n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	50.51	10.08	H	60.59	73.98	13.39	PK
5460	36.90	10.08	H	46.98	53.98	7.00	AV
*5470	53.49	9.95	H	63.44	68.20	4.76	PK
5460	49.82	10.08	V	59.9	73.98	14.08	PK
5460	36.37	10.08	V	46.45	53.98	7.53	AV
*5470	52.62	9.95	V	62.57	68.20	5.63	PK

Band :	UNII 2C
Operation Mode:	802.11 ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	50.82	10.08	H	60.90	73.98	13.08	PK
5460	36.86	10.08	H	46.94	53.98	7.04	AV
*5470	55.23	9.95	H	65.18	68.20	3.02	PK
5460	50.04	10.08	V	60.12	73.98	13.86	PK
5460	36.25	10.08	V	46.33	53.98	7.65	AV
*5470	54.65	9.95	V	64.6	68.20	3.60	PK

Band :	UNII 2C
Operation Mode:	802.11 ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	53.57	10.08	H	63.65	73.98	10.33	PK
5460	40.02	10.08	H	50.1	53.98	3.88	AV
*5470	54.14	9.95	H	64.09	68.20	4.11	PK
5460	52.39	10.08	V	62.47	73.98	11.51	PK
5460	39.63	10.08	V	49.71	53.98	4.27	AV
*5470	53.29	9.95	V	63.24	68.20	4.96	PK

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	49.59	11.37	H	60.96	78.20	17.24	PK
*5850	49.05	11.37	V	60.42	78.20	17.78	PK
*5860	49.81	11.37	H	61.18	68.20	7.02	PK
*5860	49.23	11.37	V	60.60	68.20	7.60	PK

Band :	UNII 3
Operation Mode:	802.11 n_20MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	48.45	11.37	H	59.82	78.20	18.38	PK
*5850	47.83	11.37	V	59.20	78.20	19.00	PK
*5860	48.18	11.37	H	59.55	68.20	8.65	PK
*5860	47.61	11.37	V	58.98	68.20	9.22	PK

Band :	UNII 3
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	48.80	11.37	H	60.17	78.20	18.03	PK
*5850	48.38	11.37	V	59.75	78.20	18.45	AV
*5860	48.48	11.37	H	59.85	68.20	8.35	PK
*5860	47.76	11.37	V	59.13	68.20	9.07	AV

Band :	UNII 3
Operation Mode:	802.11 n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	49.56	11.37	H	60.93	78.20	17.27	PK
*5850	49.12	11.37	V	60.49	78.20	17.71	PK
*5860	48.05	11.37	H	59.42	68.20	8.78	PK
*5860	47.90	11.37	V	59.27	68.20	8.93	PK

Band :	UNII 3
Operation Mode:	802.11 ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	49.58	11.37	H	60.95	78.20	17.25	PK
*5850	49.31	11.37	V	60.68	78.20	17.52	AV
*5860	48.04	11.37	H	59.41	68.20	8.79	PK
*5860	47.96	11.37	V	59.33	68.20	8.87	AV

Band :	UNII 3
Operation Mode:	802.11 ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5755 MHz
Channel No.	155 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	49.02	11.37	H	60.39	78.20	17.81	PK
*5850	48.67	11.37	V	60.04	78.20	18.16	PK
*5860	48.47	11.37	H	59.84	68.20	8.36	PK
*5860	48.11	11.37	V	59.48	68.20	8.72	PK

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. '*' is radiated band edge test frequency.(not restricted band emissions)

8.7 POWERLINE CONDUCTED EMISSIONS

Test Requirements and limit, §15.207

For an intentional radiator which 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 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

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

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference groundplane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.
5. We are performed the AC Power Line Conducted Emission test for 48 Mbps, Ch.116 and 802.11a mode in UNII 2C. Because 802.11a mode in UNII 2C is worst case.

▣ RESULT PLOTS

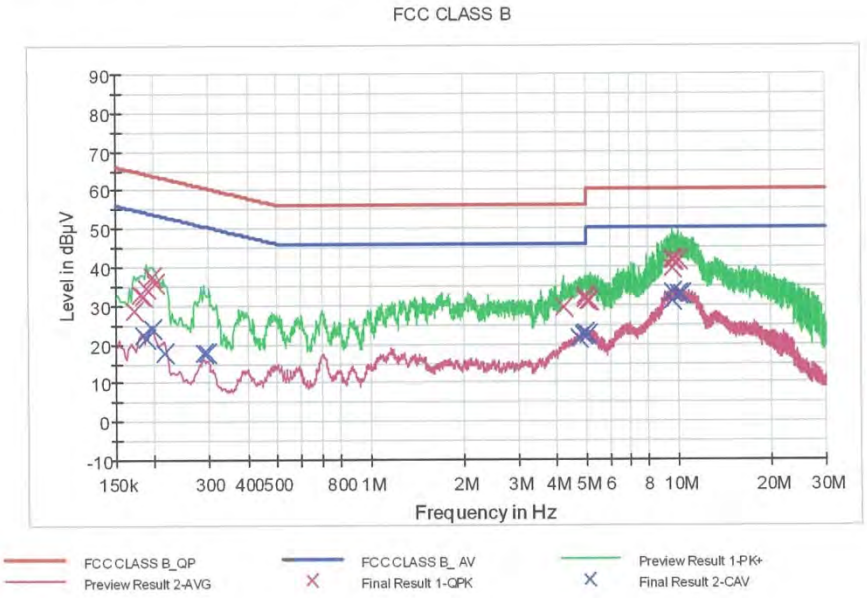
Conducted Emissions (Line 1)

EMI Auto Test(2) 1 / 2

HCT TEST Report

Common Information

EUT:	LG-H955P
Manufacturer:	LG
Test Site:	SHIELD ROOM
Operating Conditions:	WLAN MODE(5G)
Operator Name:	JS LEE



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.172000	28.8	9.000	Off	L1	9.6	36.1	64.9
0.180000	32.8	9.000	Off	L1	9.6	31.7	64.5
0.184000	32.4	9.000	Off	L1	9.6	31.9	64.3
0.188000	34.7	9.000	Off	L1	9.6	29.4	64.1
0.196000	37.4	9.000	Off	L1	9.6	26.4	63.8
0.202000	35.8	9.000	Off	L1	9.6	27.7	63.5
4.244000	29.4	9.000	Off	L1	9.9	26.6	56.0
4.940000	31.5	9.000	Off	L1	9.9	24.5	56.0
4.974000	32.4	9.000	Off	L1	9.9	23.6	56.0
4.994000	32.0	9.000	Off	L1	9.9	24.0	56.0
5.096000	31.3	9.000	Off	L1	9.9	28.7	60.0
5.140000	31.1	9.000	Off	L1	9.9	28.9	60.0
9.568000	41.8	9.000	Off	L1	10.1	18.2	60.0
9.590000	39.5	9.000	Off	L1	10.1	20.5	60.0
9.604000	41.9	9.000	Off	L1	10.1	18.1	60.0
9.614000	42.1	9.000	Off	L1	10.1	17.9	60.0

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EMI Auto Test(2) 2 / 2

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
9.688000	41.7	9.000	Off	L1	10.1	18.3	60.0
10.058000	41.5	9.000	Off	L1	10.1	18.5	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.184000	22.5	9.000	Off	L1	9.6	31.8	54.3
0.188000	21.5	9.000	Off	L1	9.6	32.6	54.1
0.196000	24.0	9.000	Off	L1	9.6	29.8	53.8
0.216000	17.6	9.000	Off	L1	9.6	35.4	53.0
0.290000	17.7	9.000	Off	L1	9.7	32.8	50.5
0.296000	17.7	9.000	Off	L1	9.7	32.7	50.4
4.764000	21.5	9.000	Off	L1	9.9	24.5	46.0
4.882000	22.2	9.000	Off	L1	9.9	23.8	46.0
4.888000	22.2	9.000	Off	L1	9.9	23.8	46.0
4.954000	22.6	9.000	Off	L1	9.9	23.4	46.0
4.974000	22.7	9.000	Off	L1	9.9	23.3	46.0
5.096000	22.3	9.000	Off	L1	9.9	27.7	50.0
9.590000	31.4	9.000	Off	L1	10.1	18.6	50.0
9.604000	31.2	9.000	Off	L1	10.1	18.8	50.0
9.614000	33.1	9.000	Off	L1	10.1	16.9	50.0
10.058000	32.7	9.000	Off	L1	10.1	17.3	50.0
10.190000	32.7	9.000	Off	L1	10.1	17.3	50.0
10.244000	32.6	9.000	Off	L1	10.1	17.4	50.0

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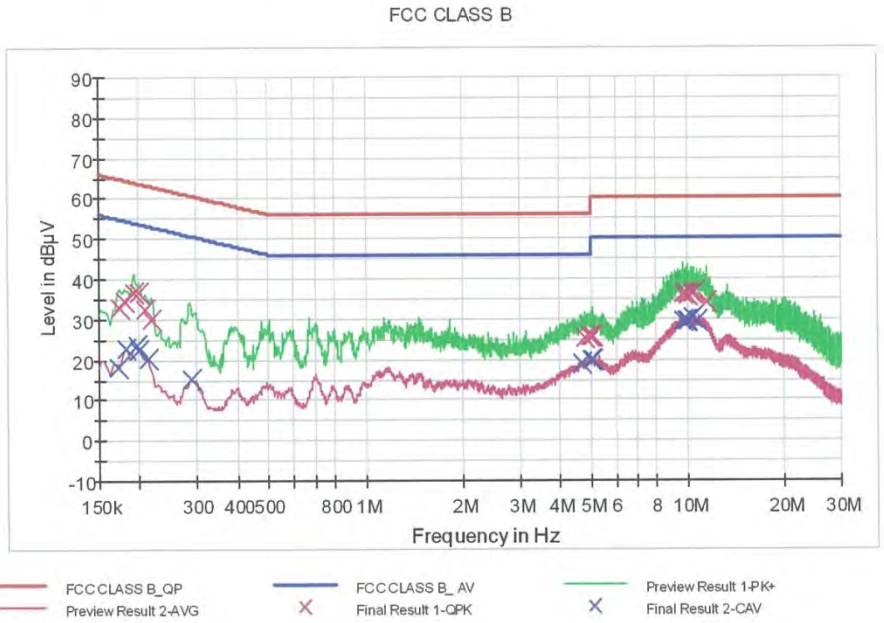
Conducted Emissions (Line 2)

EMI Auto Test(2) 1 / 2

HCT TEST Report

Common Information

EUT:	LG-H955P
Manufacturer:	LG
Test Site:	SHIELD ROOM
Operating Conditions:	WLAN MODE(5G)
Operator Name:	JS LEE



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	32.7	9.000	Off	N	9.7	32.1	64.8
0.180000	34.6	9.000	Off	N	9.7	29.9	64.5
0.192000	36.8	9.000	Off	N	9.7	27.1	63.9
0.198000	36.5	9.000	Off	N	9.7	27.2	63.7
0.208000	32.4	9.000	Off	N	9.7	30.9	63.3
0.218000	30.1	9.000	Off	N	9.7	32.8	62.9
4.784000	25.2	9.000	Off	N	9.9	30.8	56.0
4.970000	25.7	9.000	Off	N	9.9	30.3	56.0
5.028000	25.7	9.000	Off	N	9.9	34.3	60.0
5.054000	25.6	9.000	Off	N	9.9	34.4	60.0
5.090000	25.6	9.000	Off	N	9.9	34.4	60.0
5.096000	25.8	9.000	Off	N	9.9	34.2	60.0
9.642000	36.0	9.000	Off	N	10.0	24.0	60.0
9.920000	36.0	9.000	Off	N	10.0	24.0	60.0
10.022000	35.6	9.000	Off	N	10.0	24.4	60.0
10.336000	36.3	9.000	Off	N	10.0	23.7	60.0

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EMI Auto Test(2) 2 / 2

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
10.496000	36.5	9.000	Off	N	10.0	23.5	60.0
11.452000	34.1	9.000	Off	N	10.1	25.9	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.172000	18.0	9.000	Off	N	9.7	36.9	54.9
0.182000	22.8	9.000	Off	N	9.7	31.6	54.4
0.196000	23.7	9.000	Off	N	9.7	30.1	53.8
0.200000	22.4	9.000	Off	N	9.7	31.2	53.6
0.214000	20.4	9.000	Off	N	9.7	32.6	53.0
0.288000	15.3	9.000	Off	N	9.7	35.3	50.6
4.680000	18.8	9.000	Off	N	9.9	27.2	46.0
5.020000	19.9	9.000	Off	N	9.9	30.1	50.0
5.028000	19.8	9.000	Off	N	9.9	30.2	50.0
5.054000	19.8	9.000	Off	N	9.9	30.2	50.0
5.076000	19.8	9.000	Off	N	9.9	30.2	50.0
5.090000	20.0	9.000	Off	N	9.9	30.0	50.0
9.622000	29.4	9.000	Off	N	10.0	20.6	50.0
9.642000	29.3	9.000	Off	N	10.0	20.7	50.0
9.920000	29.6	9.000	Off	N	10.0	20.4	50.0
10.022000	29.6	9.000	Off	N	10.0	20.4	50.0
10.360000	30.2	9.000	Off	N	10.0	19.8	50.0
10.724000	29.5	9.000	Off	N	10.1	20.5	50.0

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9. LIST OF TEST EQUIPMENT

9.1 LIST OF TEST EQUIPMENT(Conducted Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Rohde & Schwarz	ENV216/ LISN	01/29/2014	Annual	100073
Agilent	E4440A/ Spectrum Analyzer	04/09/2014	Annual	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	05/23/2014	Annual	MY51110063
Agilent	N1911A/Power Meter	01/24/2014	Annual	MY45100523
Agilent	N1921A /POWER SENSOR	07/09/2014	Annual	MY45241059
Agilent	87300B/Directional Coupler	12/08/2014	Annual	3116A03621
Hewlett Packard	11667B / Power Splitter	01/27/2014	Annual	10545
ITECH	IT6720 / DC POWER SUPPLY	11/04/2014	Annual	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	04/11/2014	Annual	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	05/07/2014	Annual	100422
Agilent	8493C / Attenuator(10 dB)	07/21/2014	Annual	76649

9.2 LIST OF TEST EQUIPMENT(Radiated Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Schwarzbeck	VULB 9160/ TRILOG Antenna	10/10/2014	Biennial	3368
Rohde & Schwarz	ESCI / EMI TEST RECEIVER	01/24/2014	Annual	100584
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	09/04/2014	Annual	10094
CERNEX	CBL18265035 / POWER AMP	07/23/2014	Annual	22966
CERNEX	CBL26405040 / POWER AMP	04/04/2014	Annual	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	07/05/2013	Biennial	1151
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	07/05/2013	Biennial	BBHA9170541
Rohde & Schwarz	FSP / Spectrum Analyzer	01/24/2014	Annual	839117/011
Wainwright Instrument	WHF3.0/18G-10EF / High Pass Filter	02/03/2014	Annual	F6
Wainwright Instrument	WHNX6.0/26.5G-6SS / High Pass Filter	04/09/2014	Annual	1
Wainwright Instrument	WHNX7.0/18G-8SS / High Pass Filter	04/04/2014	Annual	29
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	06/17/2014	Annual	1
TESCOM	TC-3000C / BLUETOOTH TESTER	04/11/2014	Annual	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	05/07/2014	Annual	100422
Rohde & Schwarz	LOOP ANTENNA	09/03/2014	Biennial	1513-175
CERNEX	CBL06185030 / POWER AMP	07/21/2014	Annual	22965
CERNEX	CBLU1183540 / POWER AMP	07/21/2014	Annual	22964