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FCC UNII REPORT

FCC Certification

Applicant Name:
HYUNDAI MOBIS CO., LTD.

Address:
203, Teheran-ro, Gangnam-gu, Seoul, Korea
(135-977)

Date of Issue:
January 18, 2017
Test Site/Location:
HCT CO., LTD., 74,Seoicheon-ro 578beon-gil,Majang-myeo,Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA
Report No.: HCT-R-1701-F023
HCT FRN: 0005866421

FCC ID : TQ8-AVC30J5AN
APPLICANT : HYUNDAI MOBIS CO., LTD.

Model(s): AVC30J5AN
EUT Type: Car Audio System
Modulation type OFDM
FCC Classification: Unlicensed National Information Infrastructure(UNII)
FCC Rule Part(s): Part 15.407

Band	Mode	Frequency Range (MHz)	Power (dBm)	Power (W)
UNII1	802.11a	5180 – 5240	12.61	0.0182
	802.11n_HT20	5180 – 5240	12.57	0.0181
	802.11n_HT40	5190 - 5230	7.44	0.0055
	802.11ac_VHT20	5180 – 5240	12.66	0.0184
	802.11ac_VHT40	5190 - 5230	8.11	0.0065
	802.11ac_VHT80	5210	8.08	0.0064
UNII2A	802.11a	5260 – 5320	12.63	0.0183
	802.11n_HT20	5260 – 5320	12.71	0.0187
	802.11n_HT40	5270 – 5310	8.81	0.0076
	802.11ac_VHT20	5260 – 5320	12.57	0.0181
	802.11ac_VHT40	5270 – 5310	9.33	0.0086
	802.11ac_VHT80	5290	8.69	0.0074
UNII2C	802.11a	5500 – 5720	13.22	0.0210
	802.11n_HT20	5500 – 5720	13.34	0.0216
	802.11n_HT40	5510 – 5710	7.93	0.0062
	802.11ac_VHT20	5500 – 5720	13.51	0.0225
	802.11ac_VHT40	5510 – 5710	9.41	0.0087
	802.11ac_VHT80	5530 – 5690	8.92	0.0078
UNII3	802.11a	5745 – 5825	13.23	0.0211
	802.11n_HT20	5745 – 5825	13.26	0.0212
	802.11n_HT40	5755 – 5795	8.69	0.0074
	802.11ac_VHT20	5745 – 5825	12.49	0.0178
	802.11ac_VHT40	5755 – 5795	8.76	0.0075
	802.11ac_VHT80	5775	8.60	0.0072

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
: Kyung Soo Kang
Test Engineer of RF Team

Approved by
: Jong Seok Lee
Manager of RF Team

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1701-F023	January 18, 2017	- First Approval Report

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1. GENERAL INFORMATION

Applicant:	HYUNDAI MOBIS CO., LTD.
Address:	203, Teheran-ro, Gangnam-gu, Seoul, Korea (135-977)
FCC ID:	TQ8-AVC30J5AN
EUT Type:	Car Audio System
Model (s):	AVC30J5AN
Date(s) of Tests:	December 02, 2016 ~ January 16, 2017
Place of Tests:	HCT Co., Ltd. 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea

2. EUT DESCRIPTION

Model	AVC30J5AN	
EUT Type	Car Audio System	
Power Supply	DC 12 V	
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)
Modulation Type	OFDM(802.11a, 802.11n, 802.11ac)	
Antenna Specification	Manufacturer: eSSys Co., Ltd Antenna type: PCB ANTENNA Peak Gain : -0.85 dBi (5180~5825 UNII BAND)	

3. TEST METHODOLOGY

The measurement procedure described in FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03 dated August 22, 2016 entitled “Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part15, Subpart E” and ANSI C63.10(Version : 2013) ‘the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices’ 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 6.2 of ANSI C63.10. (Version :2013) 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 below 1GHz. Above 1GHz with 1.5m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3.75 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 8 of ANSI C63.10. (Version: 2013)

Conducted Antenna Terminal

See Section from 8.1 to 8.4.(KDB 789033 D02 v01r03)

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

Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2006).

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 :2014) and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated July 07, 2015 (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, §15.407

“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. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4:2014.

All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80
Radiated Disturbance (1 GHz ~ 18 GHz)	6.07

8. SUMMARY OF TEST RESULTS

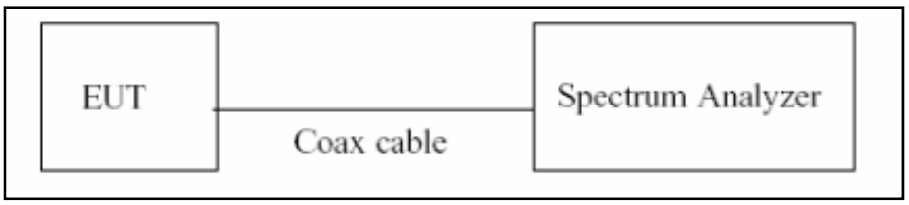
Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
26dB Bandwidth	§15.407 (for Power Measurement)	N/A	CONDUCTED	PASS
6 dB Bandwidth	§15.407(e)	>500 kHz (5725-5850 MHz)		PASS
Maximum Conducted Output Power	§15.407(a)(1)	< 250 mW (5150-5250 MHz) < 250 mW or 11+10 log log $_{10}$ (BW) dBm (5250-5350 MHz) < 250 mW or 11+10 log log $_{10}$ (BW) dBm (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)	<-27 dBm/MHz EIRP (UNII1, 2A, 2C) <-27 dBm/MHz EIRP(Worst) (UNII 3)	RADIATED	PASS
General Field Strength Limits(Restricted Bands and Radiated Emission Limits)	15.205, 15.407(b)(5), (6)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS

9. TEST RESULT

9.1 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 v01r03)

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	1.426	1.530	0.93186170	0.306
	9	0.959	1.062	0.90272059	0.444
	12	0.724	0.826	0.87627119	0.574
	18	0.491	0.594	0.82783019	0.821
	24	0.371	0.474	0.78346582	1.060
	36	0.256	0.358	0.71354074	1.466
	48	0.196	0.299	0.65674358	1.826
	54	0.180	0.283	0.63731401	1.956
Mode	**MCS INDEX**	**T_{on} (ms)**	**T_{total} (ms)**	**Duty Cycle**	**Duty Cycle Factor (dB)**
802.11n_HT20	0	1.336	1.439	0.92828702	0.323
	1	0.689	0.791	0.87198510	0.595
	2	0.471	0.573	0.82097139	0.857
	3	0.364	0.466	0.78066859	1.075
	4	0.256	0.358	0.71428731	1.461
	5	0.200	0.303	0.66187171	1.792
	6	0.184	0.287	0.64258668	1.921
	7	0.168	0.270	0.62096876	2.069
802.11n_HT40	0	0.664	0.765	0.86773541	0.616
	1	0.352	0.452	0.77777851	1.091
	2	0.248	0.349	0.70967770	1.489
	3	0.196	0.297	0.66088632	1.799
	4	0.144	0.245	0.58741259	2.311
	5	0.116	0.217	0.53421053	2.723
	6	0.108	0.209	0.51639344	2.870
	7	0.100	0.201	0.49715909	3.035

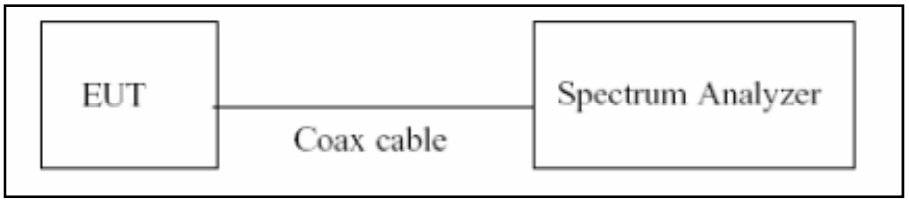
Mode	MCS INDEX	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ac_VHT20	MCS 0	1.344	1.445	0.93055786	0.313
	MCS 1	0.691	0.792	0.87222222	0.594
	MCS 2	0.477	0.578	0.82487320	0.836
	MCS 3	0.368	0.469	0.78464819	1.053
	MCS 4	0.261	0.362	0.72056323	1.423
	MCS 5	0.204	0.305	0.66875145	1.747
	MCS 6	0.188	0.290	0.64912323	1.877
	MCS 7	0.172	0.273	0.63023393	2.005
	MCS 8	0.152	0.253	0.60050365	2.215
802.11ac_ VHT40	MCS 0	0.667	0.768	0.86875000	0.611
	MCS 1	0.356	0.457	0.77755159	1.093
	MCS 2	0.252	0.353	0.71428571	1.461
	MCS 3	0.200	0.301	0.66471956	1.774
	MCS 4	0.148	0.249	0.59529386	2.253
	MCS 5	0.120	0.221	0.54416833	2.643
	MCS 6	0.112	0.213	0.52660493	2.785
	MCS 7	0.104	0.205	0.50666719	2.953
	MCS 8	0.096	0.197	0.48611151	3.133
	MCS 9	0.088	0.189	0.46487602	3.327
802.11ac_ VHT80	MCS 0	0.332	0.433	0.76724156	1.151
	MCS 1	0.189	0.290	0.65130109	1.862
	MCS 2	0.140	0.241	0.57932651	2.371
	MCS 3	0.116	0.217	0.53475803	2.718
	MCS 4	0.092	0.193	0.47600010	3.224
	MCS 5	0.080	0.181	0.44230686	3.543
	MCS 6	0.076	0.177	0.43013116	3.664
	MCS 7	0.072	0.173	0.41741185	3.794
	MCS 8	0.068	0.169	0.40274580	3.950
	MCS 9	0.064	0.165	0.38875954	4.103

9.2 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 v01r03, 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 (26dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.
The Spectrum Analyzer is set to(C.1 in KDB 789033 D02 v01r03)

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.

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.

▣ TEST PROCEDURE (for the band 5.725-5.85 GHz, 6 dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to(C.2 in KDB 789033 D02 v01r03)

1. RBW = 100 kHz
2. VBW ≥ 3*RBW
3. Detector = Peak
4. Trace mode = max hold
5. Allow the trace to stabilize
6. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points(upper and lower frequencies) that are attenuated by 6 dB relative to the maximum lever measured in the fundamental emission.

Note : We tested 6 dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer. X dB is set 6 dB.

▣ TEST RESULTS for 802.11a

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	21.55	N/A	Pass
5200	40	21.38	N/A	Pass
5240	48	21.30	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	21.31	N/A	Pass
5300	60	21.35	N/A	Pass
5320	64	21.35	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	21.51	N/A	Pass
5580	116	21.44	N/A	Pass
5720	144	21.52	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	21.74	N/A	Pass
5785	157	21.56	N/A	Pass
5825	165	21.56	N/A	Pass

▣ TEST Plot for 802.11a

802.11a UNII 1 BAND 26dB Bandwidth (CH36)	802.11a UNII 2A BAND 26dB Bandwidth (CH 60)
	
802.11a UNII 2C BAND 26dB Bandwidth (CH144)	**802.11a UNII 3 BAND 26dB Bandwidth (CH 149)**
	

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

▣ TEST RESULTS for 802.11n_HT20

Conducted 26 dB Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5180	36	21.61	N/A	Pass
5200	40	21.58	N/A	Pass
5240	48	21.46	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5260	52	21.65	N/A	Pass
5300	60	21.60	N/A	Pass
5320	64	21.62	N/A	Pass

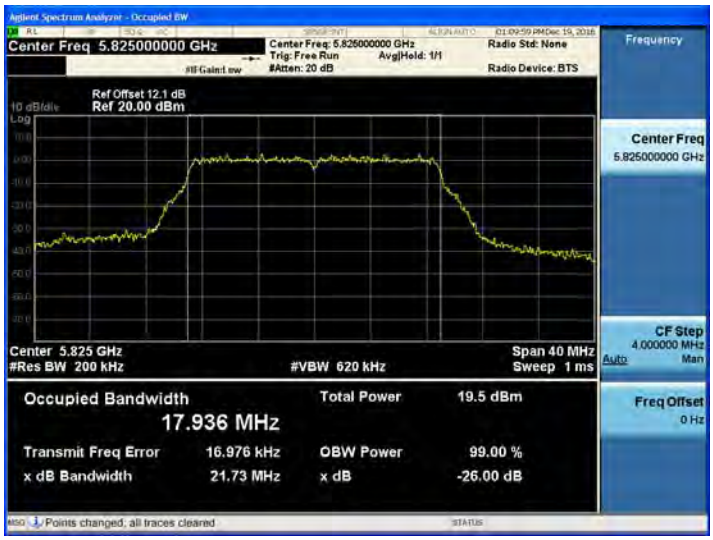
Conducted 26 dB Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5500	100	21.49	N/A	Pass
5580	116	21.63	N/A	Pass
5720	144	21.62	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	21.70	N/A	Pass
5785	157	21.67	N/A	Pass
5825	165	21.73	N/A	Pass

▣ TEST Plot for 802.11n_HT20

802.11n_HT20 UNII 1 BAND 26dB Bandwidth(CH 36)	802.11n_HT20 UNII 2A BAND 26dB Bandwidth(CH 52)
	
802.11n_HT20 UNII 2C BAND 26dB Bandwidth(CH 116)	**802.11n_HT20 UNII 3 BAND 26dB Bandwidth(CH 165)**
	

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

▣ TEST RESULTS for 802.11ac_VHT20

Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5180	36	21.67	N/A	Pass
5200	40	21.62	N/A	Pass
5240	48	21.44	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5260	52	21.89	N/A	Pass
5300	60	21.69	N/A	Pass
5320	64	21.57	N/A	Pass

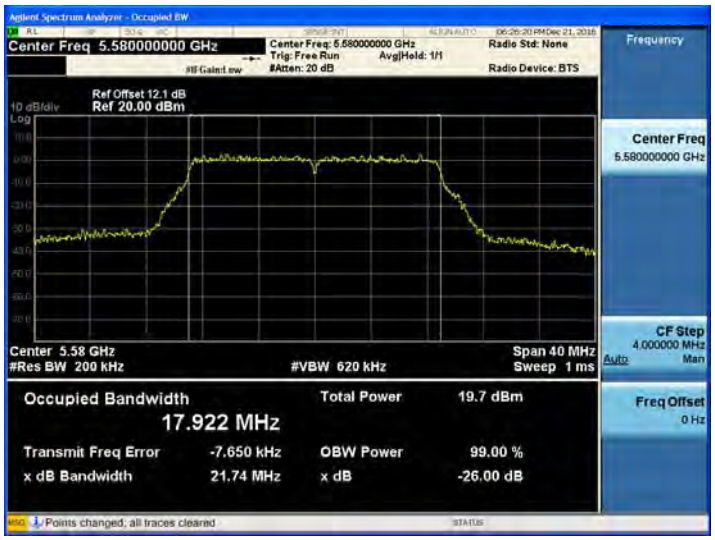
Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5500	100	21.55	N/A	Pass
5580	116	21.74	N/A	Pass
5720	144	21.63	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	21.87	N/A	Pass
5785	157	21.73	N/A	Pass
5825	165	21.56	N/A	Pass

▣ TEST Plot for 802.11ac_VHT20

802.11ac_VHT20 UNII 1 BAND 26dB Bandwidth(CH 36)	802.11ac_VHT20 UNII 2A BAND 26dB Bandwidth(CH 52)
	
802.11ac_VHT20 UNII 2C BAND 26dB Bandwidth(CH 116)	**802.11ac_VHT20 UNII 3 BAND 26dB Bandwidth(CH 149)**
	

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

▣ TEST RESULTS for 802.11n_HT40

Conducted 26 dB Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5190	38	39.99	N/A	Pass
5230	46	39.84	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5270	54	39.95	N/A	Pass
5310	62	40.00	N/A	Pass

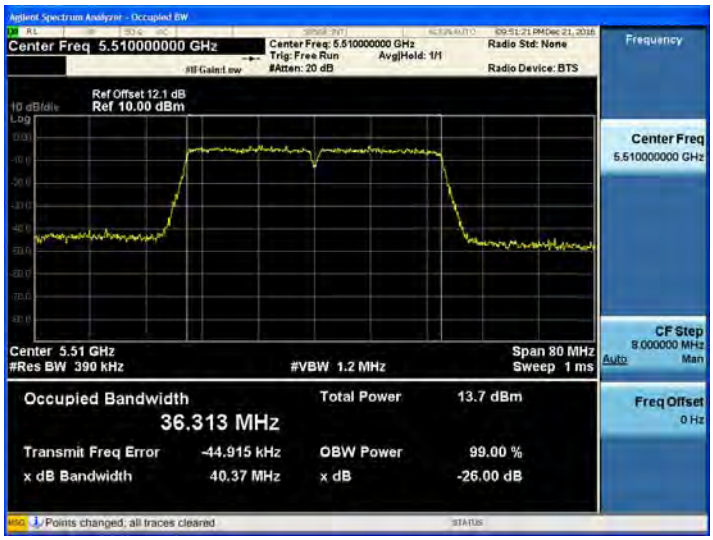
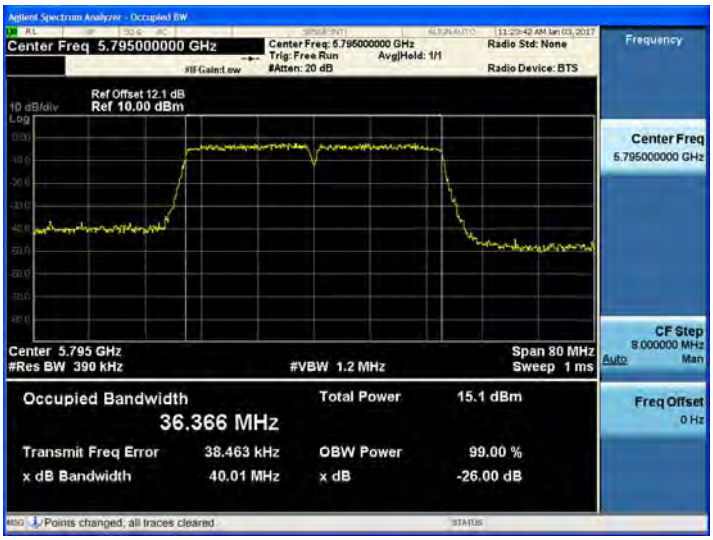
Conducted 26 dB Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5510	102	40.37	N/A	Pass
5550	110	40.36	N/A	Pass
5710	142	39.93	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	39.94	N/A	Pass
5795	159	40.01	N/A	Pass

▣ TEST Plot for 802.11n_HT40

802.11n_HT40 UNII 1 BAND 26dB Bandwidth(CH 38)	802.11n_HT40 UNII 2A BAND 26dB Bandwidth (CH 62)
	
802.11n_HT40 UNII 2C BAND 26dB Bandwidth(CH 102)	**802.11n_HT40 UNII 3 BAND 26dB Bandwidth (CH 159)**
	

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

▣ TEST RESULTS for 802.11ac_VHT40

Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5190	38	39.94	N/A	Pass
5230	46	39.90	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5270	54	40.06	N/A	Pass
5310	62	39.85	N/A	Pass

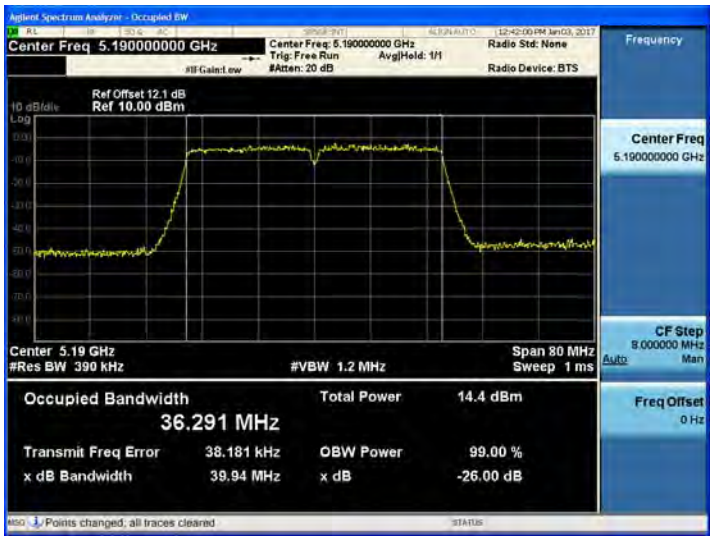
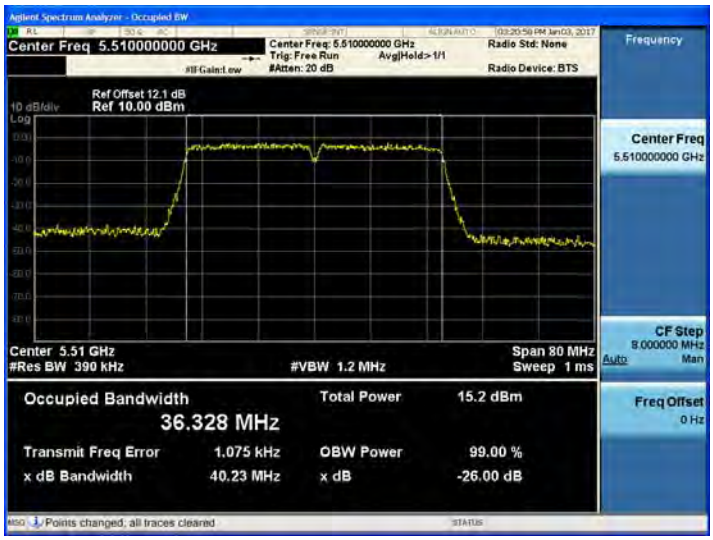
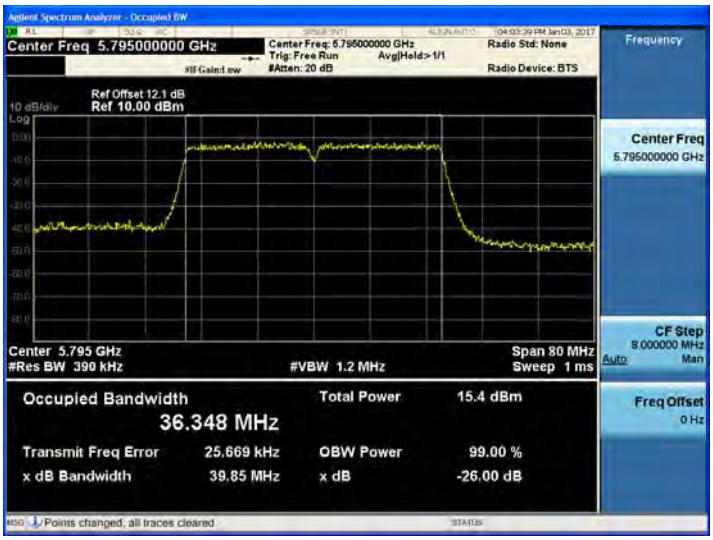
Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5510	102	40.23	N/A	Pass
5550	110	39.81	N/A	Pass
5710	142	40.22	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	39.79	N/A	Pass
5795	159	39.85	N/A	Pass

▣ TEST Plot for 802.11ac_VHT40

802.11ac_VHT40 UNII 1 BAND 26dB Bandwidth(CH 38)	802.11ac_VHT40 UNII 2A BAND 26dB Bandwidth (CH 54)
	
802.11ac_VHT40 UNII 2C BAND 26dB Bandwidth(CH 102)	**802.11ac_VHT40 UNII 3 BAND 26dB Bandwidth (CH 159)**
	

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

▣ TEST RESULTS for 802.11ac_VHT80

Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5210	42	81.51	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5290	58	81.66	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5530	106	81.80	N/A	Pass
5690	138	81.50	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_VHT80

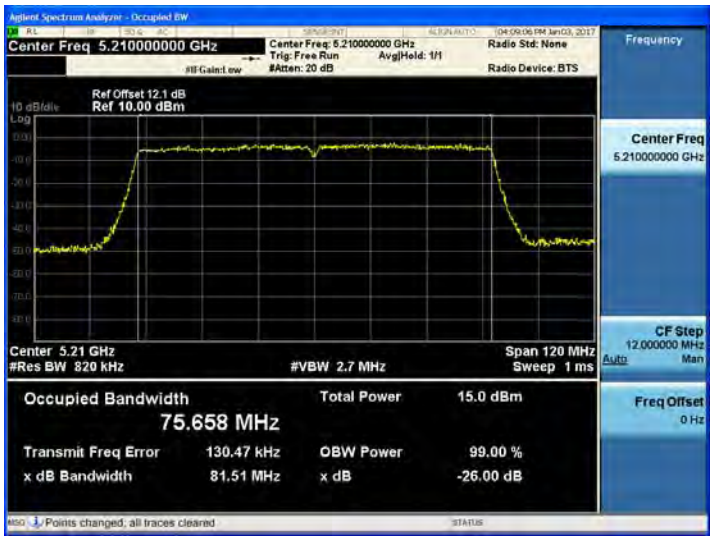
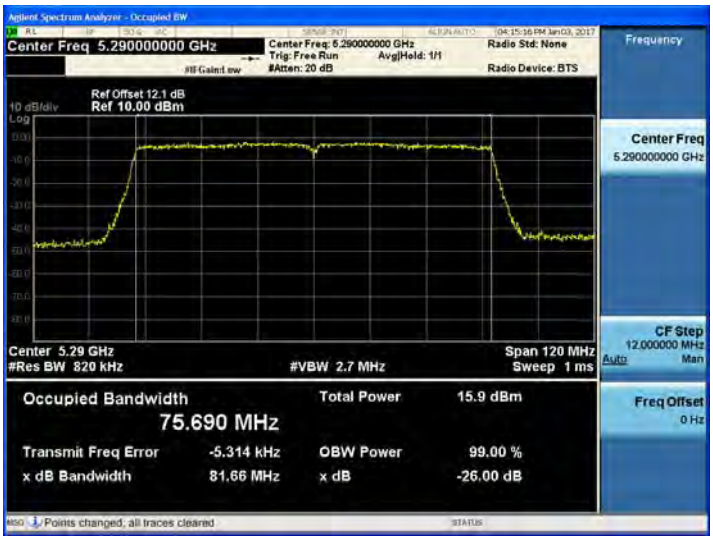
802.11ac_VHT80 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	81.58	N/A	Pass

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.

▣ TEST Plot for 802.11ac_VHT80

802.11ac_VHT80 UNII 1 BAND 26dB Bandwidth(CH 42)	802.11ac_VHT80 UNII 2A BAND 26dB Bandwidth(CH 58)
	
802.11ac_VHT80 UNII 2C BAND 26dB Bandwidth(CH 106)	**802.11ac_VHT80 UNII 3 BAND 26dB Bandwidth(CH 155)**
	

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

▣ TEST RESULTS for 802.11a/n_HT20/ac_VHT20

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	16.40	0.5	Pass
5785	157	16.41	0.5	Pass
5825	165	16.39	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.64	0.5	Pass
5785	157	17.63	0.5	Pass
5825	165	17.61	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.59	0.5	Pass
5785	157	17.62	0.5	Pass
5825	165	17.61	0.5	Pass

▣ TEST Plot for 802.11a/n_HT20/ac_VHT20

802.11a UNII 3 BAND 6dB Bandwidth (CH.157)

802.11n_HT20 UNII 3 BAND 6dB Bandwidth(CH.149)

802.11ac_VHT20 UNII 3 BAND 6dB Bandwidth(CH.157)

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

▣ TEST RESULTS for 802.11n_HT40/ac_VHT40

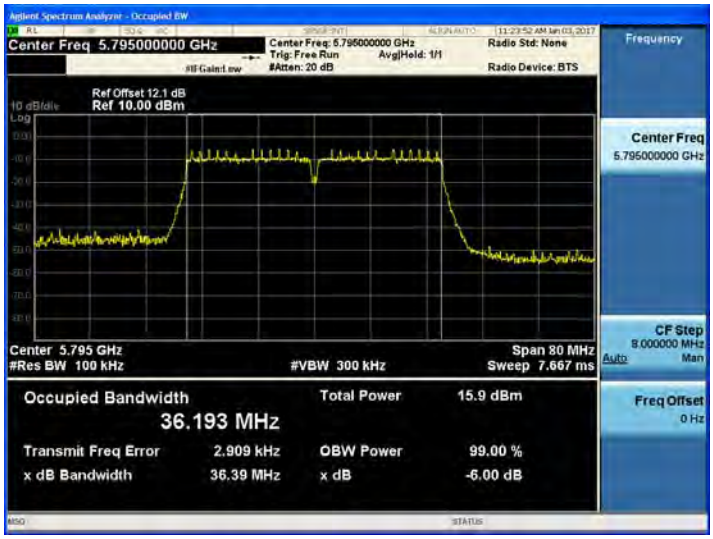
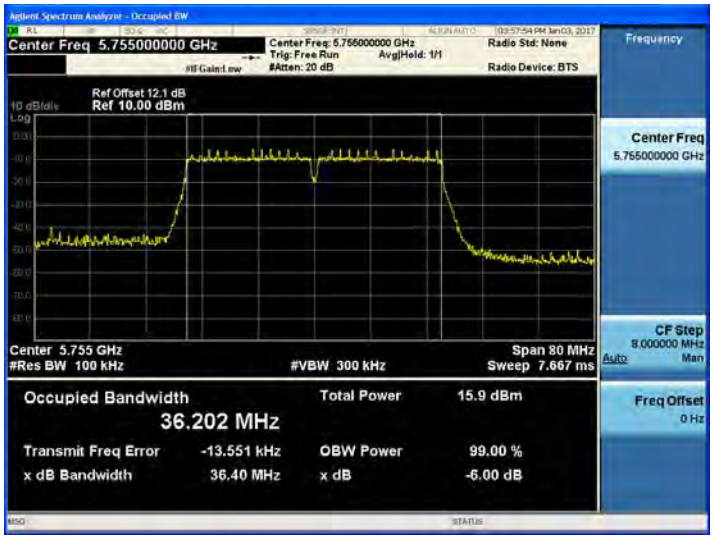
Conducted 6 dB Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	36.13	0.5	Pass
5795	159	36.39	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	36.40	0.5	Pass
5795	159	36.37	0.5	Pass

▣ TEST Plot for 802.11n_HT40/ac_VHT40

802.11n_HT40 UNII 3 BAND 6dB Bandwidth(CH.159)	802.11ac_VHT40 UNII 3 BAND 6dB Bandwidth(CH.151)
	

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

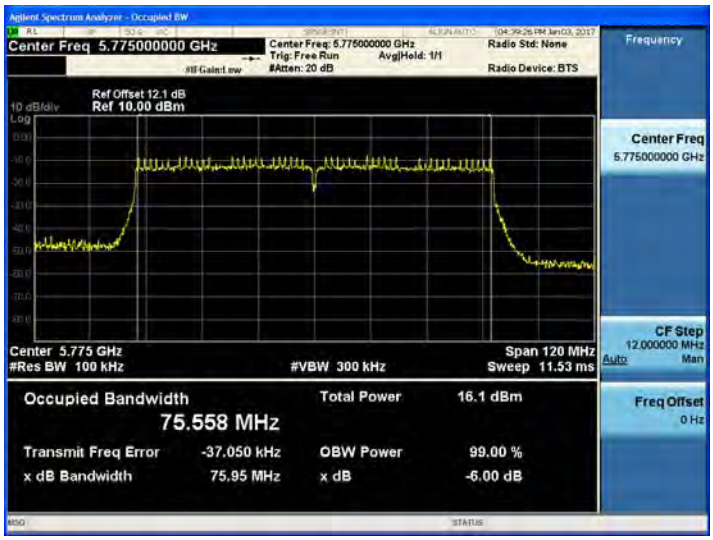
▣ TEST RESULTS for 802.11ac_VHT80

Conducted 6 dB Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	75.95	0.5	Pass

▣ TEST Plot for 802.11ac_VHT80

802.11ac_VHT80 UNII 3 BAND 6dB Bandwidth (CH.155)



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

▣ Straddle channels TEST RESULTS

Conducted Bandwidth Measurements for 802.11a/n_HT20/ac_VHT20 (UNII 2C Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11a	5720	144	15.60	N/A	Pass
802.11n			15.72	N/A	Pass
802.11ac			15.76	N/A	Pass

Conducted Bandwidth Measurements for 802.11a/n_HT20/ac_VHT20 (UNII 3 Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11a	5720	144	5.84	N/A	Pass
802.11n			5.88	N/A	Pass
802.11ac			5.76	N/A	Pass

▣ Straddle channels TEST Plot for 802.11a/n_HT20/ac_VHT20

802.11a CH.144 Bandwidth	802.11n_HT20 CH.144 Bandwidth
	

802.11ac_VHT20 CH.144 Bandwidth


▣ Straddle channels TEST RESULTS

Conducted Bandwidth Measurements for 802.11n_HT40/ac_VHT40 (UNII 2C Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11n	5710	142	35.00	N/A	Pass
802.11ac			34.60	N/A	Pass

Conducted Bandwidth Measurements for 802.11n_HT40/ac_VHT40 (UNII 3 Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11n	5710	142	5.00	N/A	Pass
802.11ac			4.68	N/A	Pass

▣ Straddle channels TEST Plot for 802.11n_HT40/ac_VHT40

802.11n_HT40 CH.142 Bandwidth	802.11ac_VHT40 CH.142 Bandwidth
	

▣ Straddle channels TEST RESULTS

Conducted Bandwidth Measurements for 802.11ac_VHT80 (UNII 2C Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11ac	5690	138	75.92	N/A	Pass

Conducted Bandwidth Measurements for 802.11ac_VHT80 (UNII 3 Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11ac	5690	138	6.04	N/A	Pass

▣ Straddle channels TEST Plot for 802.11ac_VHT80

802.11ac_VHT80 CH.138 Bandwidth

9.3 OUTPUT POWER MEASUREMENT

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

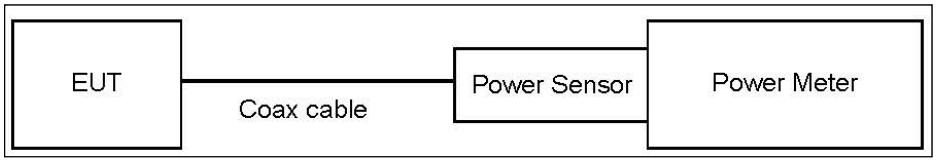
A transmitter antenna terminal of EUT is connected to the input of a Power meter or Spectrum Analyzer .Measurement is made while the EUT is operating in transmission mode at the appropriate frequencies.

▣ Limit

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

Note : According to KDB644545 D03 v01, the limit on maximum conducted output power in each U-NII band for straddle channel is computed based on the portion of the emission bandwidth contained within that band.

▣ TEST CONFIGURATION(20 MHz BW)



▣ TEST PROCEDURE(20 MHz BW)

▪ Average Power (Procedure E.3.a in KDB 789033 D02 v01r03).

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 :

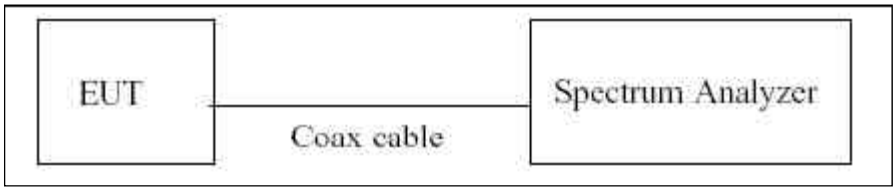
1. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1, 2A, 2C, 3	11.1

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

2. In case of UNII channels 138, 142 and 144, this device is satisfied with KDB644545 D03.

▣ 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 D02 v01r03.

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

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	11.1

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

4. In case of UNII channels 138, 142 and 144, this device is satisfied with KDB644545 D03.

802.11a (UNII 1)

▣ TEST RESULTS

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

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.					
5180	36	6	12.11	0.31	12.41	23.98
		9	11.95	0.44	12.40	23.98
		12	11.80	0.57	12.37	23.98
		18	11.49	0.82	12.31	23.98
		24	11.49	1.06	12.55	23.98
		36	11.14	1.47	12.61	23.98
		48	10.65	1.83	12.48	23.98
		54	10.50	1.96	12.46	23.98
5200	40	6	11.91	0.31	12.22	23.98
		9	11.57	0.44	12.01	23.98
		12	11.68	0.57	12.26	23.98
		18	11.38	0.82	12.20	23.98
		24	11.24	1.06	12.30	23.98
		36	10.97	1.47	12.44	23.98
		48	10.58	1.83	12.40	23.98
		54	10.39	1.96	12.34	23.98
5240	48	6	11.78	0.31	12.08	23.98
		9	11.58	0.44	12.02	23.98
		12	11.51	0.57	12.08	23.98
		18	11.31	0.82	12.13	23.98
		24	11.22	1.06	12.28	23.98
		36	10.94	1.47	12.41	23.98
		48	10.47	1.83	12.30	23.98
		54	10.36	1.96	12.32	23.98

802.11a (UNII 2A)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11a 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	12.03	0.31	12.33	23.98
		9	11.86	0.44	12.31	23.98
		12	11.81	0.57	12.38	23.98
		18	11.54	0.82	12.36	23.98
		24	11.56	1.06	12.62	23.98
		36	11.17	1.47	12.63	23.98
		48	10.72	1.83	12.55	23.98
		54	10.55	1.96	12.51	23.98
5300	60	6	11.89	0.31	12.20	23.98
		9	11.67	0.44	12.11	23.98
		12	11.63	0.57	12.21	23.98
		18	11.35	0.82	12.17	23.98
		24	11.34	1.06	12.40	23.98
		36	10.93	1.47	12.39	23.98
		48	10.66	1.83	12.49	23.98
		54	10.47	1.96	12.42	23.98
5320	64	6	11.80	0.31	12.11	23.98
		9	11.59	0.44	12.03	23.98
		12	11.64	0.57	12.22	23.98
		18	11.34	0.82	12.16	23.98
		24	11.13	1.06	12.19	23.98
		36	10.65	1.47	12.12	23.98
		48	10.39	1.83	12.21	23.98
		54	10.24	1.96	12.19	23.98

802.11a (UNII 2C)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11a 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	11.91	0.31	12.22	23.98
		9	11.67	0.44	12.12	23.98
		12	11.61	0.57	12.19	23.98
		18	11.21	0.82	12.03	23.98
		24	11.23	1.06	12.29	23.98
		36	10.80	1.47	12.27	23.98
		48	10.62	1.83	12.45	23.98
		54	10.35	1.96	12.31	23.98
5580	116	6	12.03	0.31	12.34	23.98
		9	11.87	0.44	12.32	23.98
		12	11.74	0.57	12.32	23.98
		18	11.50	0.82	12.32	23.98
		24	11.51	1.06	12.57	23.98
		36	11.07	1.47	12.53	23.98
		48	10.75	1.83	12.57	23.98
		54	10.53	1.96	12.49	23.98
5720	144	6	12.67	0.31	12.98	23.98
		9	12.53	0.44	12.97	23.98
		12	12.45	0.57	13.02	23.98
		18	12.13	0.82	12.95	23.98
		24	12.13	1.06	13.19	23.98
		36	11.76	1.47	13.22	23.98
		48	11.39	1.83	13.21	23.98
		54	11.19	1.96	13.15	23.98

802.11a (UNII 3)

▣ TEST RESULTS

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

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.					
5745	149	6	12.22	0.31	12.53	30
		9	11.98	0.44	12.43	30
		12	11.76	0.57	12.34	30
		18	11.55	0.82	12.38	30
		24	11.60	1.06	12.66	30
		36	11.12	1.47	12.58	30
		48	10.78	1.83	12.60	30
		54	10.79	1.96	12.74	30
5785	157	6	12.37	0.31	12.68	30
		9	12.28	0.44	12.72	30
		12	12.19	0.57	12.77	30
		18	11.72	0.82	12.54	30
		24	11.74	1.06	12.80	30
		36	11.17	1.47	12.64	30
		48	10.97	1.83	12.80	30
		54	10.82	1.96	12.78	30
5825	165	6	12.56	0.31	12.87	30
		9	12.49	0.44	12.94	30
		12	12.35	0.57	12.92	30
		18	12.19	0.82	13.01	30
		24	12.17	1.06	13.23	30
		36	11.50	1.47	12.97	30
		48	11.37	1.83	13.20	30
		54	11.18	1.96	13.14	30

802.11n_HT20 (UNII 1)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11n_HT20 Mode: 5180~5240)

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	0	11.77	0.32	12.09	23.98
		1	11.48	0.59	12.07	23.98
		2	11.19	0.86	12.05	23.98
		3	11.33	1.08	12.40	23.98
		4	10.92	1.46	12.39	23.98
		5	10.64	1.79	12.43	23.98
		6	10.65	1.92	12.57	23.98
		7	9.92	2.07	11.99	23.98
5200	40	0	11.80	0.32	12.13	23.98
		1	11.58	0.59	12.17	23.98
		2	11.28	0.86	12.13	23.98
		3	11.35	1.08	12.43	23.98
		4	10.83	1.46	12.29	23.98
		5	10.51	1.79	12.30	23.98
		6	10.40	1.92	12.32	23.98
		7	9.95	2.07	12.02	23.98
5240	48	0	11.80	0.32	12.13	23.98
		1	11.52	0.59	12.11	23.98
		2	11.38	0.86	12.24	23.98
		3	11.20	1.08	12.27	23.98
		4	10.95	1.46	12.41	23.98
		5	10.48	1.79	12.27	23.98
		6	10.33	1.92	12.26	23.98
		7	9.90	2.07	11.97	23.98

802.11n_HT20 (UNII 2A)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11n_HT20 Mode: 5260~5320)

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5260	52	0	12.00	0.32	12.32	23.98
		1	11.74	0.59	12.33	23.98
		2	11.47	0.86	12.33	23.98
		3	11.63	1.08	12.71	23.98
		4	10.99	1.46	12.46	23.98
		5	10.77	1.79	12.56	23.98
		6	10.59	1.92	12.51	23.98
		7	10.52	2.07	12.59	23.98
5300	60	0	11.83	0.32	12.16	23.98
		1	11.58	0.59	12.17	23.98
		2	11.36	0.86	12.22	23.98
		3	11.37	1.08	12.45	23.98
		4	10.97	1.46	12.43	23.98
		5	10.53	1.79	12.33	23.98
		6	10.47	1.92	12.40	23.98
		7	10.24	2.07	12.31	23.98
5320	64	0	11.86	0.32	12.18	23.98
		1	11.41	0.59	12.01	23.98
		2	11.03	0.86	11.89	23.98
		3	11.20	1.08	12.27	23.98
		4	10.78	1.46	12.24	23.98
		5	10.38	1.79	12.17	23.98
		6	10.28	1.92	12.20	23.98
		7	10.26	2.07	12.33	23.98

802.11n_HT20 (UNII 2C)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11n_HT20 Mode: 5500~5720)

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	0	11.72	0.32	12.04	23.98
		1	11.37	0.59	11.96	23.98
		2	11.21	0.86	12.07	23.98
		3	11.25	1.08	12.32	23.98
		4	10.82	1.46	12.28	23.98
		5	10.56	1.79	12.35	23.98
		6	10.53	1.92	12.45	23.98
		7	10.32	2.07	12.39	23.98
5580	116	0	12.05	0.32	12.37	23.98
		1	11.73	0.59	12.33	23.98
		2	11.51	0.86	12.37	23.98
		3	11.63	1.08	12.70	23.98
		4	11.07	1.46	12.53	23.98
		5	10.90	1.79	12.69	23.98
		6	10.73	1.92	12.65	23.98
		7	10.51	2.07	12.58	23.98
5720	144	0	12.71	0.32	13.03	23.98
		1	12.48	0.59	13.08	23.98
		2	12.26	0.86	13.11	23.98
		3	12.08	1.08	13.15	23.98
		4	11.70	1.46	13.16	23.98
		5	11.55	1.79	13.34	23.98
		6	11.31	1.92	13.23	23.98
		7	11.18	2.07	13.25	23.98

802.11n_HT20 (UNII 3)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11n_HT20 Mode: 5745~5825)

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	0	12.09	0.32	12.41	30
		1	11.78	0.59	12.37	30
		2	11.46	0.86	12.32	30
		3	11.61	1.08	12.68	30
		4	11.31	1.46	12.77	30
		5	10.82	1.79	12.61	30
		6	10.72	1.92	12.64	30
		7	10.69	2.07	12.76	30
5785	157	0	12.12	0.32	12.45	30
		1	11.86	0.59	12.46	30
		2	11.65	0.86	12.50	30
		3	11.83	1.08	12.90	30
		4	11.42	1.46	12.88	30
		5	11.24	1.79	13.03	30
		6	10.81	1.92	12.73	30
		7	10.75	2.07	12.82	30
5825	165	0	12.68	0.32	13.00	30
		1	12.14	0.59	12.74	30
		2	11.98	0.86	12.84	30
		3	12.08	1.08	13.15	30
		4	11.67	1.46	13.13	30
		5	11.41	1.79	13.20	30
		6	11.25	1.92	13.17	30
		7	11.19	2.07	13.26	30

802.11ac_VHT20 (UNII 1)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT20 Mode: 5180~5240)

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	0	11.86	0.31	12.17	23.98
		1	11.63	0.59	12.23	23.98
		2	11.38	0.84	12.22	23.98
		3	11.47	1.05	12.52	23.98
		4	11.23	1.42	12.66	23.98
		5	10.70	1.75	12.44	23.98
		6	10.56	1.88	12.44	23.98
		7	10.12	2.00	12.13	23.98
		8	10.01	2.21	12.23	23.98
5200	40	0	10.52	0.31	10.84	23.98
		1	10.18	0.59	10.78	23.98
		2	9.93	0.84	10.77	23.98
		3	10.07	1.05	11.12	23.98
		4	9.79	1.42	11.21	23.98
		5	9.26	1.75	11.00	23.98
		6	9.33	1.88	11.20	23.98
		7	8.76	2.00	10.77	23.98
		8	8.59	2.21	10.81	23.98
5240	48	0	10.96	0.31	11.28	23.98
		1	10.74	0.59	11.34	23.98
		2	10.38	0.84	11.21	23.98
		3	10.37	1.05	11.42	23.98
		4	10.05	1.42	11.47	23.98
		5	9.69	1.75	11.44	23.98
		6	9.71	1.88	11.59	23.98
		7	9.14	2.00	11.14	23.98
		8	8.95	2.21	11.17	23.98

802.11ac_VHT20 (UNII 2A)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT20 Mode: 5260~5320)

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5260	52	0	11.30	0.31	11.61	23.98
		1	11.14	0.59	11.73	23.98
		2	10.84	0.84	11.67	23.98
		3	10.73	1.05	11.78	23.98
		4	10.50	1.42	11.92	23.98
		5	10.03	1.75	11.78	23.98
		6	9.90	1.88	11.78	23.98
		7	9.84	2.00	11.84	23.98
		8	8.88	2.21	11.10	23.98
5300	60	0	12.10	0.31	12.41	23.98
		1	11.51	0.59	12.11	23.98
		2	11.37	0.84	12.20	23.98
		3	11.48	1.05	12.53	23.98
		4	11.07	1.42	12.49	23.98
		5	10.65	1.75	12.40	23.98
		6	10.55	1.88	12.42	23.98
		7	10.28	2.00	12.28	23.98
		8	9.42	2.21	11.64	23.98
5320	64	0	11.84	0.31	12.15	23.98
		1	11.79	0.59	12.39	23.98
		2	11.39	0.84	12.22	23.98
		3	11.52	1.05	12.57	23.98
		4	10.96	1.42	12.39	23.98
		5	10.64	1.75	12.39	23.98
		6	10.59	1.88	12.47	23.98
		7	10.33	2.00	12.33	23.98
		8	9.44	2.21	11.65	23.98

802.11ac_VHT20 (UNII 2C)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT20 Mode: 5500~5720)

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	0	12.42	0.31	12.73	23.98
		1	11.97	0.59	12.56	23.98
		2	11.89	0.84	12.73	23.98
		3	11.88	1.05	12.94	23.98
		4	11.46	1.42	12.88	23.98
		5	11.17	1.75	12.92	23.98
		6	11.02	1.88	12.89	23.98
		7	11.01	2.00	13.01	23.98
		8	10.25	2.21	12.47	23.98
5580	116	0	12.68	0.31	12.99	23.98
		1	12.35	0.59	12.95	23.98
		2	12.13	0.84	12.97	23.98
		3	12.08	1.05	13.14	23.98
		4	11.69	1.42	13.11	23.98
		5	11.33	1.75	13.07	23.98
		6	11.28	1.88	13.16	23.98
		7	11.16	2.00	13.16	23.98
		8	10.59	2.21	12.81	23.98
5720	144	0	12.97	0.31	13.29	23.98
		1	12.70	0.59	13.29	23.98
		2	12.39	0.84	13.23	23.98
		3	12.46	1.05	13.51	23.98
		4	10.68	1.42	12.10	23.98
		5	10.32	1.75	12.07	23.98
		6	10.32	1.88	12.19	23.98
		7	10.15	2.00	12.16	23.98
		8	9.51	2.21	11.73	23.98

802.11ac_VHT20 (UNII 3)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT20 Mode: 5745~5825)

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	0	11.00	0.31	11.31	30
		1	10.68	0.59	11.28	30
		2	10.40	0.84	11.24	30
		3	10.46	1.05	11.52	30
		4	10.11	1.42	11.53	30
		5	9.78	1.75	11.53	30
		6	9.81	1.88	11.68	30
		7	9.44	2.00	11.45	30
		8	8.80	2.21	11.01	30
5785	157	0	11.29	0.31	11.60	30
		1	11.04	0.59	11.64	30
		2	10.53	0.84	11.36	30
		3	10.88	1.05	11.93	30
		4	10.35	1.42	11.78	30
		5	10.05	1.75	11.79	30
		6	10.04	1.88	11.91	30
		7	9.75	2.00	11.76	30
		8	8.99	2.21	11.21	30
5825	165	0	11.71	0.31	12.02	30
		1	11.30	0.59	11.89	30
		2	11.12	0.84	11.96	30
		3	11.16	1.05	12.21	30
		4	10.90	1.42	12.32	30
		5	10.75	1.75	12.49	30
		6	10.31	1.88	12.19	30
		7	10.24	2.00	12.24	30
		8	9.52	2.21	11.74	30

802.11n_HT40 (UNII 1)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11n_HT40 Mode: 5190~5230)

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5190	38	0	6.45	0.62	7.07	23.98
		1	6.05	1.09	7.14	23.98
		2	5.44	1.49	6.93	23.98
		3	5.33	1.80	7.13	23.98
		4	4.90	2.31	7.21	23.98
		5	4.38	2.72	7.11	23.98
		6	4.25	2.87	7.12	23.98
		7	4.11	3.04	7.14	23.98
5230	46	0	6.56	0.62	7.18	23.98
		1	5.98	1.09	7.07	23.98
		2	5.67	1.49	7.16	23.98
		3	5.64	1.80	7.44	23.98
		4	4.84	2.31	7.15	23.98
		5	4.60	2.72	7.32	23.98
		6	4.42	2.87	7.29	23.98
		7	4.25	3.04	7.29	23.98

802.11n_HT40 (UNII 2A)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11n_HT40 Mode: 5270~5310)

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5270	54	0	8.11	0.62	8.73	23.98
		1	7.44	1.09	8.54	23.98
		2	7.10	1.49	8.59	23.98
		3	6.85	1.80	8.64	23.98
		4	6.41	2.31	8.72	23.98
		5	5.98	2.72	8.70	23.98
		6	5.85	2.87	8.72	23.98
		7	5.31	3.04	8.34	23.98
5310	62	0	7.94	0.62	8.55	23.98
		1	7.63	1.09	8.72	23.98
		2	6.92	1.49	8.41	23.98
		3	6.96	1.80	8.76	23.98
		4	6.42	2.31	8.73	23.98
		5	6.07	2.72	8.79	23.98
		6	5.68	2.87	8.55	23.98
		7	5.77	3.04	8.81	23.98

802.11n_HT40 (UNII 2C)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11n_HT40 Mode: 5510~5710)

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	0	6.41	0.62	7.03	23.98
		1	5.91	1.09	7.00	23.98
		2	5.70	1.49	7.19	23.98
		3	5.52	1.80	7.31	23.98
		4	4.85	2.31	7.16	23.98
		5	4.55	2.72	7.28	23.98
		6	4.36	2.87	7.23	23.98
		7	4.25	3.04	7.28	23.98
5550	110	0	6.49	0.62	7.11	23.98
		1	6.08	1.09	7.17	23.98
		2	5.61	1.49	7.10	23.98
		3	5.35	1.80	7.15	23.98
		4	4.86	2.31	7.17	23.98
		5	4.41	2.72	7.13	23.98
		6	4.36	2.87	7.23	23.98
		7	4.09	3.04	7.13	23.98
5710	142	0	7.07	0.62	7.69	23.98
		1	6.56	1.09	7.65	23.98
		2	6.33	1.49	7.81	23.98
		3	6.08	1.80	7.88	23.98
		4	5.62	2.31	7.93	23.98
		5	5.07	2.72	7.80	23.98
		6	4.99	2.87	7.86	23.98
		7	4.86	3.04	7.90	23.98

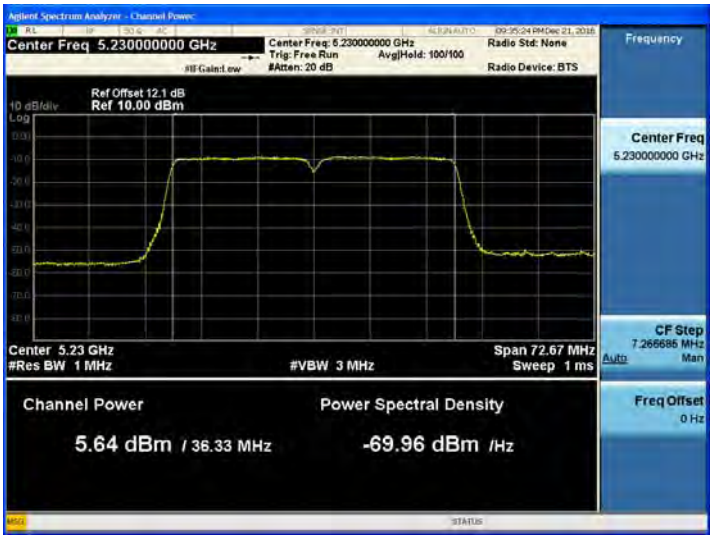
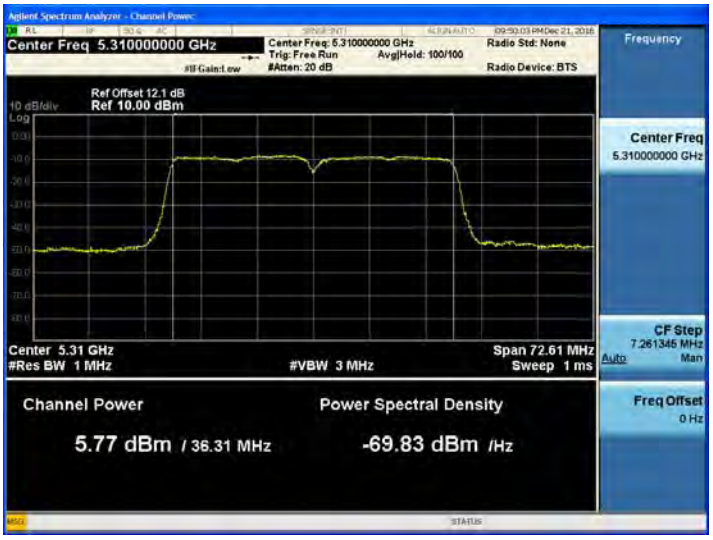
802.11n_HT40 (UNII 3)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11n_HT40 Mode: 5755~5795)

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	0	7.94	0.62	8.56	30
		1	7.39	1.09	8.49	30
		2	6.84	1.49	8.33	30
		3	6.74	1.80	8.54	30
		4	6.33	2.31	8.65	30
		5	5.85	2.72	8.57	30
		6	5.66	2.87	8.53	30
		7	5.48	3.04	8.51	30
5795	159	0	8.02	0.62	8.63	30
		1	7.29	1.09	8.39	30
		2	6.97	1.49	8.46	30
		3	6.80	1.80	8.60	30
		4	6.36	2.31	8.67	30
		5	5.97	2.72	8.69	30
		6	5.80	2.87	8.67	30
		7	5.64	3.04	8.67	30

▣ TEST Plot _802.11n_HT40

802.11n_HT40 UNII 1 BAND Average Power (5190 MHz ~5230 MHz) CH 46 MCS3	802.11n_HT40 UNII 2A BAND Average Power (5270 MHz ~5310 MHz) CH 62 MCS7
	
802.11n_HT40 UNII 2C BAND Average Power (5510 MHz ~5710 MHz) CH 142 MCS4	**802.11n_HT40 UNII 3 BAND Average Power (5755 MHz ~5795 MHz) CH 159 MCS5**
	

802.11ac_VHT40 (UNII 1)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT40 Mode: 5190~5230)

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5190	38	0	7.24	0.61	7.85	23.98
		1	6.54	1.09	7.63	23.98
		2	6.03	1.46	7.49	23.98
		3	6.10	1.77	7.87	23.98
		4	5.64	2.25	7.90	23.98
		5	5.17	2.64	7.81	23.98
		6	4.81	2.79	7.59	23.98
		7	4.70	2.95	7.65	23.98
		8	4.51	3.13	7.64	23.98
		9	4.42	3.33	7.75	23.98
5230	46	0	7.26	0.61	7.87	23.98
		1	6.67	1.09	7.76	23.98
		2	6.36	1.46	7.82	23.98
		3	6.28	1.77	8.05	23.98
		4	5.67	2.25	7.92	23.98
		5	5.24	2.64	7.88	23.98
		6	5.15	2.79	7.94	23.98
		7	5.04	2.95	7.99	23.98
		8	4.97	3.13	8.11	23.98
		9	4.67	3.33	8.00	23.98

802.11ac_VHT40 (UNII 2A)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT40 Mode: 5270~5310)

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5270	54	0	8.19	0.61	8.80	23.98
		1	7.86	1.09	8.96	23.98
		2	7.35	1.46	8.81	23.98
		3	7.54	1.77	9.32	23.98
		4	7.07	2.25	9.32	23.98
		5	6.69	2.64	9.33	23.98
		6	6.19	2.79	8.98	23.98
		7	6.06	2.95	9.01	23.98
		8	5.89	3.13	9.02	23.98
		9	5.78	3.33	9.11	23.98
5310	62	0	8.48	0.61	9.10	23.98
		1	7.77	1.09	8.87	23.98
		2	7.73	1.46	9.19	23.98
		3	7.19	1.77	8.96	23.98
		4	6.81	2.25	9.06	23.98
		5	6.42	2.64	9.07	23.98
		6	6.14	2.79	8.92	23.98
		7	6.02	2.95	8.97	23.98
		8	5.86	3.13	8.99	23.98
		9	5.76	3.33	9.09	23.98

802.11ac_VHT40 (UNII 2C)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT40 Mode: 5510~5710)

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	0	8.04	0.61	8.65	23.98
		1	7.43	1.09	8.53	23.98
		2	7.04	1.46	8.50	23.98
		3	6.82	1.77	8.59	23.98
		4	6.28	2.25	8.54	23.98
		5	5.90	2.64	8.54	23.98
		6	5.77	2.79	8.55	23.98
		7	5.60	2.95	8.55	23.98
		8	5.54	3.13	8.67	23.98
		9	5.32	3.33	8.64	23.98
5550	110	0	8.12	0.61	8.73	23.98
		1	7.68	1.09	8.77	23.98
		2	7.34	1.46	8.80	23.98
		3	7.16	1.77	8.93	23.98
		4	6.54	2.25	8.79	23.98
		5	6.20	2.64	8.84	23.98
		6	6.05	2.79	8.84	23.98
		7	5.92	2.95	8.87	23.98
		8	5.78	3.13	8.91	23.98
		9	5.55	3.33	8.88	23.98
5710	142	0	8.63	0.61	9.24	23.98
		1	8.07	1.09	9.17	23.98
		2	7.87	1.46	9.33	23.98
		3	7.62	1.77	9.39	23.98
		4	7.14	2.25	9.39	23.98
		5	6.77	2.64	9.41	23.98
		6	6.56	2.79	9.34	23.98
		7	6.32	2.95	9.27	23.98
		8	6.27	3.13	9.40	23.98
		9	6.03	3.33	9.36	23.98

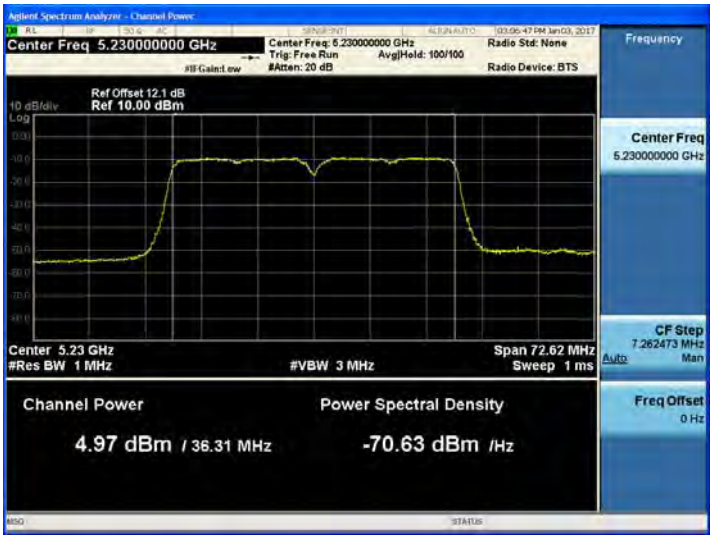
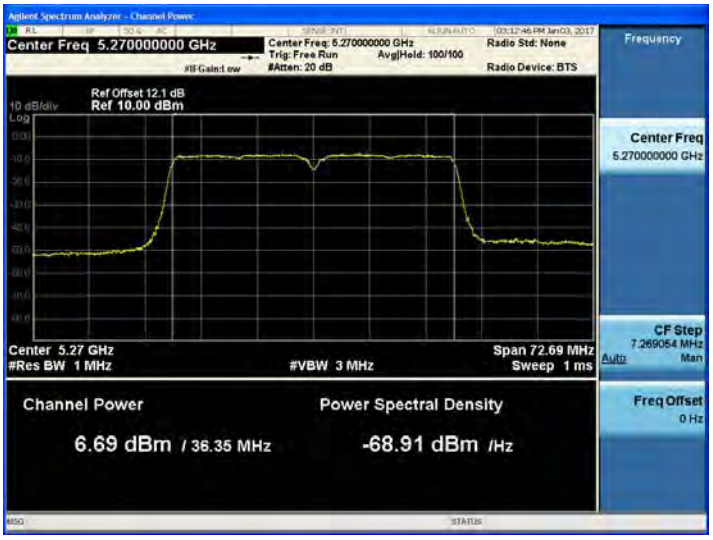
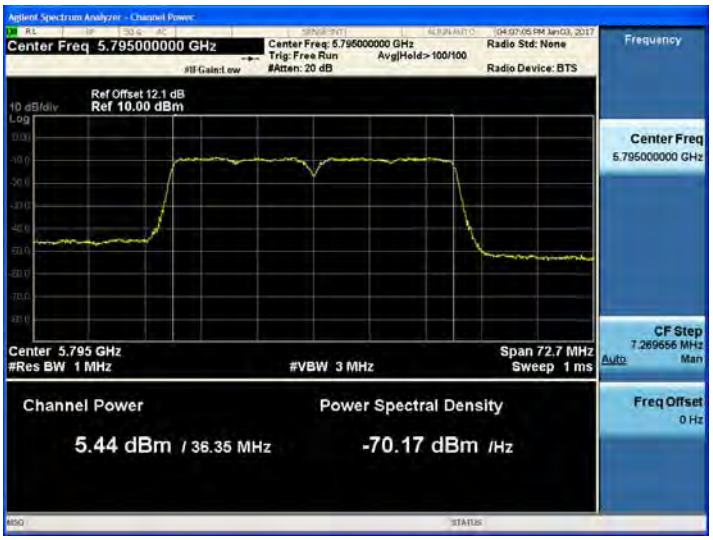
802.11ac_VHT40 (UNII 3)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT40 Mode: 5755~5795)

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	0	8.07	0.61	8.68	30
		1	7.35	1.09	8.44	30
		2	7.18	1.46	8.65	30
		3	6.81	1.77	8.59	30
		4	6.21	2.25	8.46	30
		5	5.91	2.64	8.55	30
		6	5.79	2.79	8.58	30
		7	5.69	2.95	8.64	30
		8	5.52	3.13	8.65	30
		9	5.39	3.33	8.72	30
5795	159	0	8.03	0.61	8.64	30
		1	7.25	1.09	8.35	30
		2	6.90	1.46	8.36	30
		3	6.98	1.77	8.76	30
		4	6.48	2.25	8.74	30
		5	5.91	2.64	8.55	30
		6	5.79	2.79	8.58	30
		7	5.57	2.95	8.52	30
		8	5.54	3.13	8.68	30
		9	5.44	3.33	8.76	30

▣ TEST Plot _802.11ac_VHT40

802.11ac_VHT40 UNII 1 BAND Average Power (5190 MHz ~5230 MHz) CH 46 MCS8	802.11ac_VHT40 UNII 2A BAND Average Power (5270 MHz ~5310 MHz) CH 54 MCS5
	
802.11ac_VHT40 UNII 2C BAND Average Power (5510 MHz ~5710 MHz) CH 142 MCS5	**802.11ac_VHT40 UNII 3 BAND Average Power (5755 MHz ~5795 MHz) CH 159 MCS9**
	

802.11ac_VHT80 (UNII 1)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT80 Mode: 5210)

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5210	42	0	6.63	1.15	7.78	22.09
		1	5.84	1.86	7.70	22.09
		2	5.38	2.37	7.75	22.09
		3	5.32	2.72	8.04	22.09
		4	4.86	3.22	8.08	22.09
		5	4.51	3.54	8.05	22.09
		6	4.35	3.66	8.02	22.09
		7	4.21	3.79	8.00	22.09
		8	3.48	3.95	7.43	22.09
		9	3.88	4.10	7.99	22.09

802.11ac_VHT80 (UNII 2A)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT80 Mode: 5290)

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5290	58	0	7.51	1.15	8.66	23.98
		1	6.83	1.86	8.69	23.98
		2	6.25	2.37	8.62	23.98
		3	5.77	2.72	8.49	23.98
		4	5.27	3.22	8.49	23.98
		5	4.90	3.54	8.44	23.98
		6	4.71	3.66	8.38	23.98
		7	4.64	3.79	8.43	23.98
		8	4.46	3.95	8.41	23.98
		9	4.33	4.10	8.43	23.98

802.11ac_VHT80 (UNII 2C)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT80 Mode: 5530 ~ 5690 MHz)

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5530	106	0	6.86	1.15	8.01	23.98
		1	5.96	1.86	7.82	23.98
		2	5.50	2.37	7.87	23.98
		3	5.53	2.72	8.25	23.98
		4	4.91	3.22	8.14	23.98
		5	4.67	3.54	8.21	23.98
		6	4.42	3.66	8.09	23.98
		7	4.25	3.79	8.05	23.98
		8	4.14	3.95	8.09	23.98
		9	4.04	4.10	8.15	23.98
5690	138	0	7.44	1.15	8.59	23.98
		1	6.61	1.86	8.47	23.98
		2	6.10	2.37	8.47	23.98
		3	6.19	2.72	8.90	23.98
		4	5.70	3.22	8.92	23.98
		5	5.21	3.54	8.76	23.98
		6	5.08	3.66	8.74	23.98
		7	4.89	3.79	8.68	23.98
		8	4.75	3.95	8.70	23.98
		9	4.60	4.10	8.71	23.98

802.11ac_VHT80 (UNII 3)

▣ TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT80 Mode: 5775 MHz)

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5775	155	0	7.06	1.15	8.21	30
		1	6.39	1.86	8.26	30
		2	5.88	2.37	8.25	30
		3	5.83	2.72	8.55	30
		4	5.38	3.22	8.60	30
		5	5.00	3.54	8.54	30
		6	4.91	3.66	8.57	30
		7	4.76	3.79	8.55	30
		8	4.59	3.95	8.54	30
		9	4.45	4.10	8.56	30

▣ TEST Plot for 802.11ac_VHT80

802.11ac_VHT80 UNII 1 BAND Average Power (5210 MHz) CH 42 MCS4	802.11ac_VHT80 UNII 2A BAND Average Power (5290 MHz) CH 58 MCS1
	
802.11ac_VHT80 UNII 2C BAND Average Power (5530 ~ 5690 MHz) CH 138 MCS4	**802.11ac_VHT80 UNII 3 BAND Average Power (5775 MHz) CH 155 MCS4**
	

▣Straddle channels TEST RESULTS

Conducted Output Power Measurements (802.11a/n_HT20/ac_VHT20 Mode: UNII 2C Band 5720MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11a	5720	144	10.87	1.466	12.34	22.60
802.11n			10.59	1.792	12.38	22.60
802.11ac			10.01	1.053	11.06	22.63

Conducted Output Power Measurements (802.11a/n_HT20/ac_VHT20 Mode: UNII 3 Band 5720MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11a	5720	144	4.88	1.466	6.35	24.35
802.11n			4.91	1.792	6.70	24.35
802.11ac			4.48	1.053	5.53	24.28

▣Straddle channels TEST Plot for 802.11a/n_HT20

802.11a UNII 2C Band Average Power CH.144	802.11a UNII 3 Band Average Power CH.144
	
802.11n_HT20 UNII 2C Band Average Power CH.144	**802.11n_HT20 UNII 3 Band Average Power CH.144**
	

▣Straddle channels TEST Plot for 802.11ac_VHT20

802.11ac_VHT20 UNII 2C Band Average Power CH.144	802.11ac_VHT20 UNII 3 Band Average Power CH.144
	

▣Straddle channels TEST RESULTS

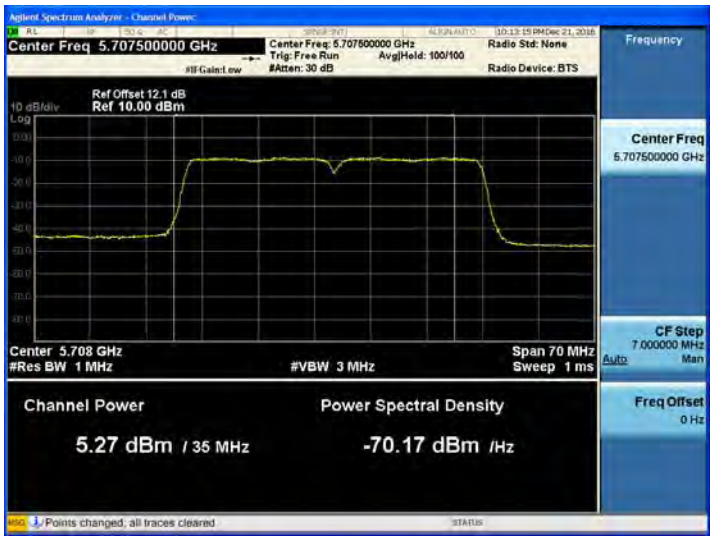
Conducted Output Power Measurements (802.11n_HT40/ac_VHT40 Mode: UNII 2C Band 5710MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11n	5710	142	5.27	2.311	7.58	23.40
802.11ac			6.35	2.643	8.99	23.43

Conducted Output Power Measurements (802.11n_HT40/ac_VHT40 Mode: UNII 3 Band 5710MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11n	5710	142	-4.88	2.311	-2.57	20.97
802.11ac			-3.76	2.643	-1.12	20.76

▣Straddle channels TEST Plot for 802.11n_HT40/ac_VHT40

802.11n_HT40 UNII 2C Band Average Power CH.142	802.11n_HT40 UNII 3 Band Average Power CH.142
	
802.11ac_VHT40 UNII 2C Band Average Power CH.142	**802.11ac_VHT40 UNII 3 Band Average Power CH.142**
	

▣Straddle channels TEST RESULTS

Conducted Output Power Measurements (802.11ac_VHT80 Mode: UNII 2C Band 5690MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11ac	5690	138	5.46	3.224	8.68	23.65

Conducted Output Power Measurements (802.11ac_VHT80 Mode: UNII 3 Band 5690MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11ac	5690	138	-8.61	3.224	-5.39	18.67

▣Straddle channels TEST Plot for 802.11ac_VHT80

802.11ac_VHT80 UNII 2C Band Average Power CH.138	802.11ac_VHT80 UNII 3 Band Average Power CH.138
	

9.4 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.

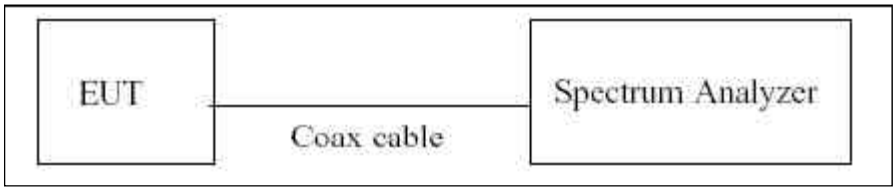
▣ **Limit**

Power Spectral Density

Band	Mode	Limit
UNII 1	802.11a,n,ac	11 dBm/MHz
UNII 2A	802.11a,n,ac	11 dBm/MHz
UNII 2C	802.11a,n,ac	11 dBm/MHz
UNII 3	802.11a,n,ac	30 dBm/500 kHz

Note : Note : According to KDB644545 D03 v01, emission for straddle channels in each band shall comply with the PSD limits applicable to that band under the appropriate rule section.

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

We tested according to Method in KDB 789033 D02 v01r03.

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	11.1

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

▣ 802.11a

▣ 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	0.041	1.466	1.507	11	Pass
5200	40		0.189	1.466	1.655		Pass
5240	48		0.246	1.466	1.712		Pass
5260	52		0.980	1.466	2.446	11	Pass
5300	60		0.221	1.826	2.047		Pass
5320	64		0.431	0.574	1.005		Pass
5500	100		-0.095	1.826	1.731	11	Pass
5580	116		0.245	1.826	2.071		
5720	144		1.020	1.466	2.486		Pass
5745	149		-2.874	1.956	-0.918	30	Pass
5785	157		-2.251	1.826	-0.425		Pass
5825	165		-1.936	1.060	-0.876		Pass

Note : Please refer to the straddle channels test results for the measurements of ch.144

▣ TEST Plot for 802.11a

802.11a UNII 1 BAND PSD CH 48	802.11a UNII 2A BAND PSD CH 52
	
802.11a UNII 2C BAND PSD CH 144	**802.11a UNII 3 BAND PSD CH 157**
	

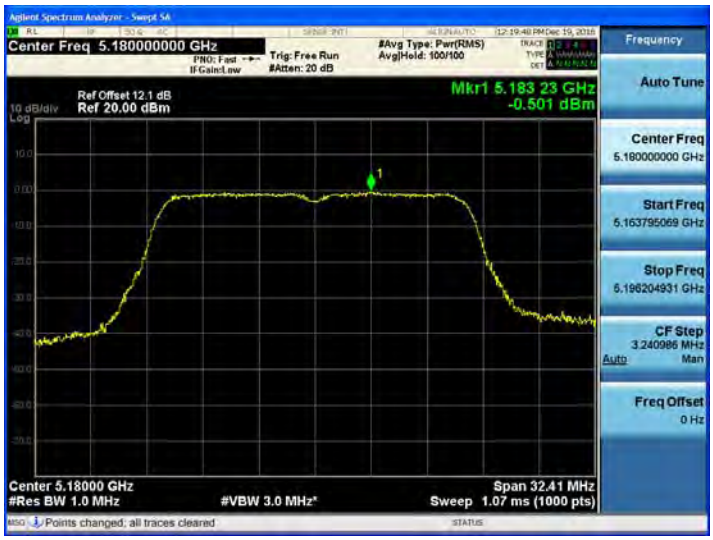
▣802.11n_HT20

▣ 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	802.11n _HT20	-0.501	1.921	1.420	11	Pass
5200	40		0.099	1.075	1.174		Pass
5240	48		-0.263	1.461	1.198		Pass
5260	52		0.263	1.075	1.338	11	Pass
5300	60		0.333	1.075	1.408		Pass
5320	64		-0.831	2.069	1.238		Pass
5500	100		-0.222	1.921	1.699	11	Pass
5580	116		0.135	1.075	1.210		
5720	144		0.751	1.792	2.543		Pass
5745	149		-2.680	1.461	-1.219	30	Pass
5785	157		-2.453	1.792	-0.661		Pass
5825	165		-2.525	2.069	-0.456		Pass

▣ TEST Plot for 802.11n_HT20

802.11n_HT20 UNII 1 BAND PSD CH 36	802.11n_HT20 UNII 2A BAND PSD CH 60
	
802.11n_HT20 UNII 2C BAND PSD CH 144	**802.11n_HT20 UNII 3 BAND PSD CH 165**
	

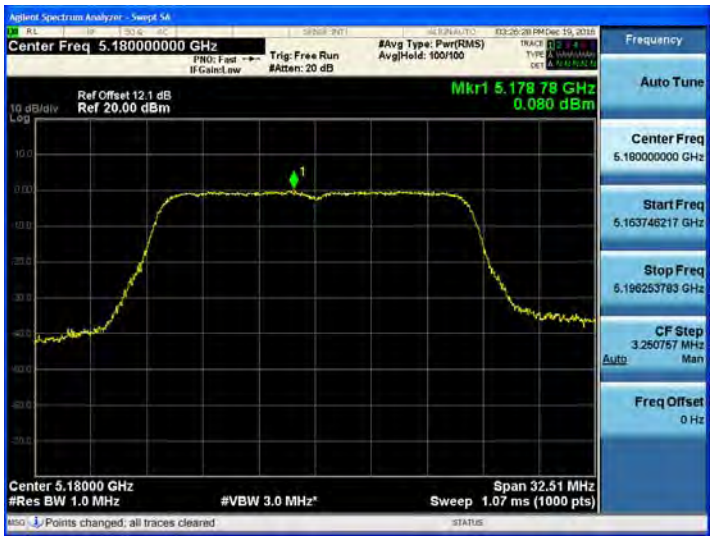
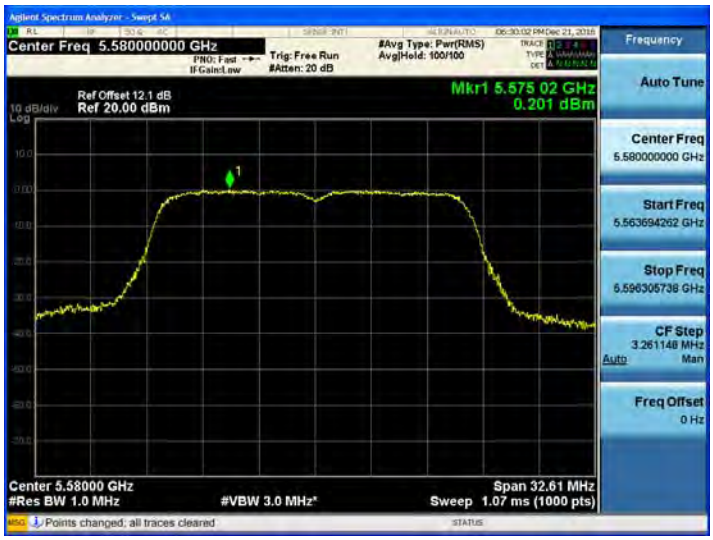
▣802.11ac_VHT20

▣ 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	802.11ac _VHT20	0.080	1.423	1.503	11	Pass
5200	40		-1.130	1.423	0.293		Pass
5240	48		-1.297	1.877	0.580		Pass
5260	52		-0.601	1.423	0.822	11	Pass
5300	60		-0.069	1.053	0.984		Pass
5320	64		0.312	1.053	1.365		Pass
5500	100		0.100	2.005	2.105	11	Pass
5580	116		0.201	2.005	2.206		
5720	144		0.043	1.053	1.096		Pass
5745	149		-4.090	1.877	-2.213	30	Pass
5785	157		-3.289	1.053	-2.236		Pass
5825	165		-3.213	1.747	-1.466		Pass

▣ TEST Plot for 802.11ac_VHT20

802.11ac_VHT20 UNII 1 BAND PSD CH 36	802.11ac_VHT20 UNII 2A BAND PSD CH 64
	
802.11ac_VHT20 UNII 2C BAND PSD CH 116	**802.11ac_VHT20 UNII 3 BAND PSD CH 165**
	

▣ 802.11n_HT40

▣ 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
5190	38	802.11n _HT40	-9.069	2.311	-6.758	11	Pass
5230	46		-8.580	1.799	-6.781		Pass
5270	54		-6.496	0.616	-5.880	11	Pass
5310	62		-8.257	3.035	-5.222		Pass
5510	102		-8.368	1.799	-6.569	11	Pass
5500	110		-9.201	2.870	-6.331		
5710	142		-8.238	2.311	-5.927		Pass
5755	151		-10.746	2.311	-8.435	30	Pass
5795	159		-10.639	2.723	-7.916		Pass

▣ TEST Plot for 802.11n_HT40

802.11n_HT40 UNII 1 BAND PSD CH 38	802.11n_HT40 UNII 2A BAND PSD CH 62
	
802.11n_HT40 UNII 2C BAND PSD CH 142	**802.11n_HT40 UNII 3 BAND PSD CH 159**
	

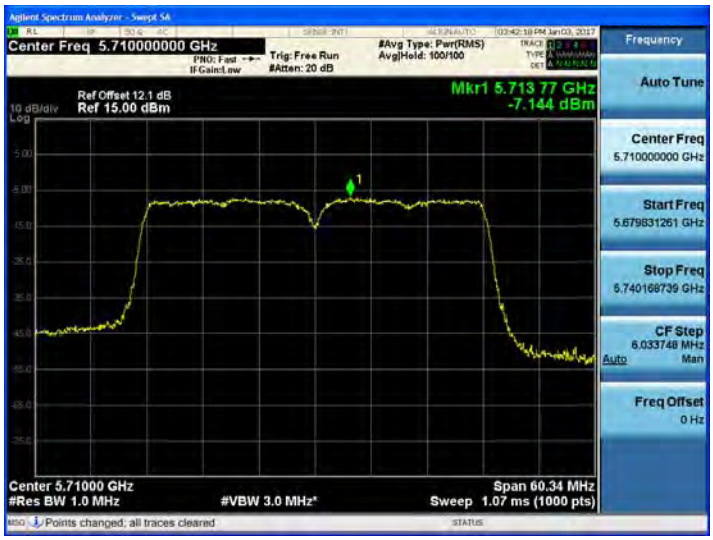
▣ 802.11ac_VHT40

▣ 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
5190	38	802.11ac _VHT40	-8.398	2.253	-6.145	11	Pass
5230	46		-9.096	3.133	-5.963		Pass
5270	54		-7.507	2.643	-4.864	11	Pass
5310	62		-6.806	1.461	-5.345		Pass
5510	102		-8.134	3.133	-5.001	11	Pass
5500	110		-7.003	1.774	-5.229		Pass
5710	142		-7.144	2.643	-4.501		Pass
5755	151		-10.835	3.327	-7.508	30	Pass
5795	159		-10.915	3.327	-7.588		Pass

▣ TEST Plot for 802.11ac_VHT40

802.11ac_VHT40 UNII 1 BAND PSD CH 46	802.11ac_VHT40 UNII 2A BAND PSD CH 54
	
802.11ac_VHT40 UNII 2C BAND PSD CH 142	**802.11ac_VHT40 UNII 3 BAND PSD CH 151**
	

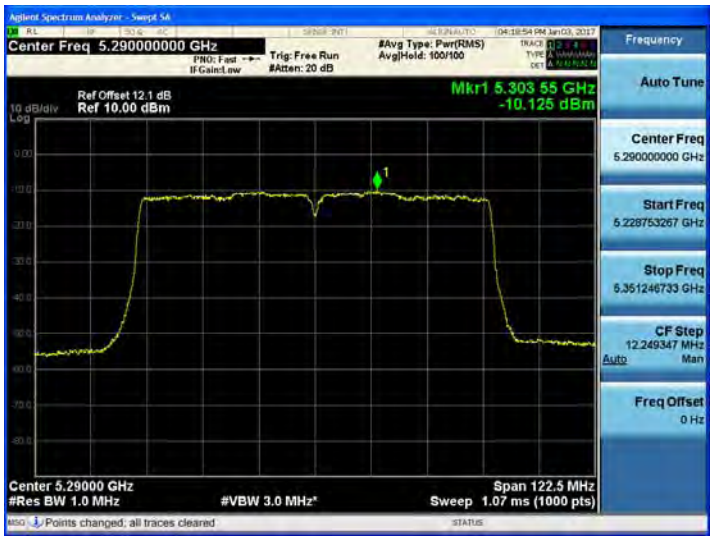
▣ 802.11ac_VHT80

▣ 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
5210	42	802.11ac _VHT80	-11.940	3.224	-8.716	11	Pass
5290	58		-10.125	1.862	-8.263		Pass
5530	106		-10.625	2.718	-7.907		
5690	138		-11.219	3.224	-7.995		Pass
5775	155		-13.665	3.224	-10.441	30	Pass

▣ TEST Plot for 802.11ac_VHT80

802.11ac_VHT80 UNII 1 BAND PSD CH 42	802.11ac_VHT80 UNII 2A BAND PSD CH 58
	
802.11ac_VHT80 UNII 2C BAND PSD CH 106	**802.11ac_VHT80 UNII 3 BAND PSD CH 155**
	

▣Straddle channels TEST RESULTS for 802.11a/n_HT20/ac_VHT20

Conducted Power Density Measurements (UNII 2C Band 5720MHz)

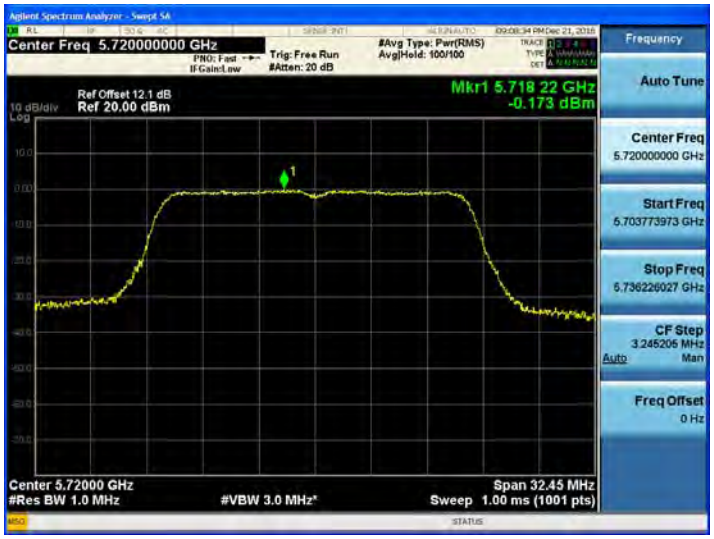
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5720	144	802.11a	1.653	1.466	3.119	11	Pass
		802.11n	0.261	1.792	2.053	11	Pass
		802.11ac	-0.173	1.053	0.880	11	Pass

Conducted Power Density Measurements (UNII 3 Band 5720MHz)

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
5720	144	802.11a	-1.942	1.466	-0.476	30	Pass
		802.11n	-2.295	1.792	-0.503	30	Pass
		802.11ac	-3.559	1.053	-2.506	30	Pass

▣Straddle channels TEST Plot for 802.11a/n_HT20/ac_VHT20

802.11a UNII 2C Band PSD CH.144	802.11a UNII 3 Band PSD CH.144
	
802.11n_HT20 UNII 2C Band PSD CH.144	**802.11n_HT20 UNII 3 Band PSD CH.144**
	

802.11ac_VHT20 UNII 2C Band PSD CH.144	802.11ac_VHT20 UNII 3 Band PSD CH.144
	

▣Straddle channels TEST RESULTS for 802.11n_HT40/ac_VHT40

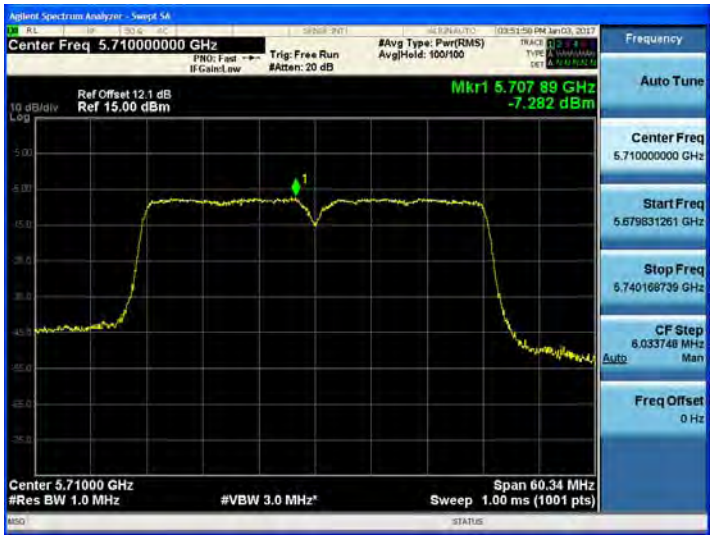
Conducted Power Density Measurements (UNII 2C Band 5710MHz)

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
5710	142	802.11n	-8.378	2.311	-6.067	11	Pass
		802.11ac	-7.282	2.643	-4.639	11	Pass

Conducted Power Density Measurements (UNII 3 Band 5710MHz)

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
5710	142	802.11n	-11.294	2.311	-8.983	30	Pass
		802.11ac	-9.796	2.643	-7.153	30	Pass

▣Straddle channels TEST Plot for 802.11n_HT40/ac_VHT40

802.11n_HT40 UNII 2C Band PSD CH.142	802.11n_HT40 UNII 3 Band PSD CH.142
	
802.11ac_VHT40 UNII 2C Band PSD CH.142	**802.11ac_VHT40 UNII 3 Band PSD CH.142**
	

▣Straddle channels TEST RESULTS

Conducted Power Density Measurements (UNII 2C Band 5690MHz)

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
5690	138	802.11ac	-11.327	3.224	-8.103	11	Pass

Conducted Power Density Measurements (UNII 3 Band 5690MHz)

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
5690	138	802.11ac	-15.443	3.224	-12.219	30	Pass

▣Straddle channels TEST Plot for 802.11ac_VHT80

802.11ac_VHT80 UNII 2C Band PSD CH.138	802.11ac_VHT80 UNII 3 Band PSD CH.138
	

9.5 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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12.00	+20(Ref)	5179998.15	-1.85
100%		-30	5179997.07	-2.93
100%		-20	5179997.23	-2.77
100%		-10	5179997.49	-2.51
100%		0	5179997.76	-2.24
100%		+10	5179997.97	-2.03
100%		+30	5179998.42	-1.58
100%		+40	5179998.61	-1.39
100%		+50	5179998.89	-1.11
115%	13.80	+20	5179997.52	-2.48
Batt. Endpoint	10.20	+20	5179997.31	-2.69

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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12.00	+20(Ref)	5259995.48	-4.52
100%		-30	5259994.51	-5.49
100%		-20	5259994.72	-5.28
100%		-10	5259994.89	-5.11
100%		0	5259995.05	-4.95
100%		+10	5259995.27	-4.73
100%		+30	5259995.61	-4.39
100%		+40	5259995.78	-4.22
100%		+50	5259995.93	-4.07
115%	13.80	+20	5259995.18	-4.82
Batt. Endpoint	10.20	+20	5259994.89	-5.11

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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12.00	+20(Ref)	5499991.85	-8.15
100%		-30	5499991.07	-8.93
100%		-20	5499991.23	-8.77
100%		-10	5499991.37	-8.63
100%		0	5499991.49	-8.51
100%		+10	5499991.66	-8.34
100%		+30	5499992.12	-7.88
100%		+40	5499992.31	-7.69
100%		+50	5499992.49	-7.51
115%	13.80	+20	5499991.77	-8.23
Batt. Endpoint	10.20	+20	5499991.59	-8.41

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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12.00	+20(Ref)	5744993.53	-6.47
100%		-30	5744992.17	-7.83
100%		-20	5744992.46	-7.54
100%		-10	5744992.90	-7.10
100%		0	5744993.22	-6.78
100%		+10	5744993.35	-6.65
100%		+30	5744993.65	-6.35
100%		+40	5744993.82	-6.18
100%		+50	5744993.98	-6.02
115%	13.80	+20	5744993.67	-6.33
Batt. Endpoint	10.20	+20	5744993.43	-6.57

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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12	+20(Ref)	5190007.41	7.41
100%		-30	5190009.03	9.03
100%		-20	5190008.57	8.57
100%		-10	5190008.31	8.31
100%		0	5190007.91	7.91
100%		+10	5190007.65	7.65
100%		+30	5190007.18	7.18
100%		+40	5190006.94	6.94
100%		+50	5190006.55	6.55
115%	13.8	+20	5190008.25	8.25
Batt. Endpoint	10.2	+20	5190008.57	8.57

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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12	+20(Ref)	5269998.20	-1.80
100%		-30	5269999.62	-0.38
100%		-20	5269999.33	-0.67
100%		-10	5269999.11	-0.89
100%		0	5269998.89	-1.11
100%		+10	5269998.55	-1.45
100%		+30	5269997.79	-2.21
100%		+40	5269997.42	-2.58
100%		+50	5269997.09	-2.91
115%	13.8	+20	5269997.67	-2.33
Batt. Endpoint	10.2	+20	5269997.86	-2.14

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: 102

REFERENCE VOLTAGE: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12	+20(Ref)	5510005.40	5.40
100%		-30	5510007.02	7.02
100%		-20	5510006.55	6.55
100%		-10	5510006.22	6.22
100%		0	5510005.97	5.97
100%		+10	5510005.68	5.68
100%		+30	5510005.11	5.11
100%		+40	5510004.78	4.78
100%		+50	5510004.40	4.40
115%	13.8	+20	5510005.88	5.88
Batt. Endpoint	10.2	+20	5510006.28	6.28

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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12	+20(Ref)	5755002.34	2.34
100%		-30	5755004.55	4.55
100%		-20	5755004.24	4.24
100%		-10	5755003.98	3.98
100%		0	5755003.76	3.76
100%		+10	5755003.58	3.58
100%		+30	5755002.11	2.11
100%		+40	5755001.84	1.84
100%		+50	5755001.59	1.59
115%	13.8	+20	5755002.54	2.54
Batt. Endpoint	10.2	+20	5755002.88	2.88

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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12	+20(Ref)	5210002.76	2.76
100%		-30	5210003.91	3.91
100%		-20	5210003.67	3.67
100%		-10	5210003.48	3.48
100%		0	5210003.21	3.21
100%		+10	5210002.97	2.97
100%		+30	5210002.47	2.47
100%		+40	5210002.19	2.19
100%		+50	5210001.78	1.78
115%	13.8	+20	5210002.49	2.49
Batt. Endpoint	10.2	+20	5210002.93	2.93

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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12	+20(Ref)	5289993.44	-6.56
100%		-30	5289994.80	-5.20
100%		-20	5289994.29	-5.71
100%		-10	5289994.02	-5.98
100%		0	5289993.73	-6.27
100%		+10	5289993.56	-6.44
100%		+30	5289993.19	-6.81
100%		+40	5289992.79	-7.21
100%		+50	5289992.32	-7.68
115%	13.8	+20	5289993.56	-6.44
Batt. Endpoint	10.2	+20	5289993.13	-6.87

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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12	+20(Ref)	5530008.41	8.41
100%		-30	5530009.88	9.88
100%		-20	5530009.57	9.57
100%		-10	5530009.31	9.31
100%		0	5530008.97	8.97
100%		+10	5530008.65	8.65
100%		+30	5530008.10	8.1
100%		+40	5530007.78	7.78
100%		+50	5530007.38	7.38
115%	13.8	+20	5530008.68	8.68
Batt. Endpoint	10.2	+20	5530009.01	9.01

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: 12 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	12	+20(Ref)	5775010.57	10.57
100%		-30	5775012.21	12.21
100%		-20	5775011.74	11.74
100%		-10	5775011.34	11.34
100%		0	5775011.05	11.05
100%		+10	5775010.71	10.71
100%		+30	5775010.18	10.18
100%		+40	5775009.77	9.77
100%		+50	5775009.53	9.53
115%	13.8	+20	5775010.67	10.67
Batt. Endpoint	10.2	+20	5775010.88	10.88

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.

9.6 RADIATED MEASUREMENT

9.6.1 RADIATED SPURIOUS EMISSIONS.

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

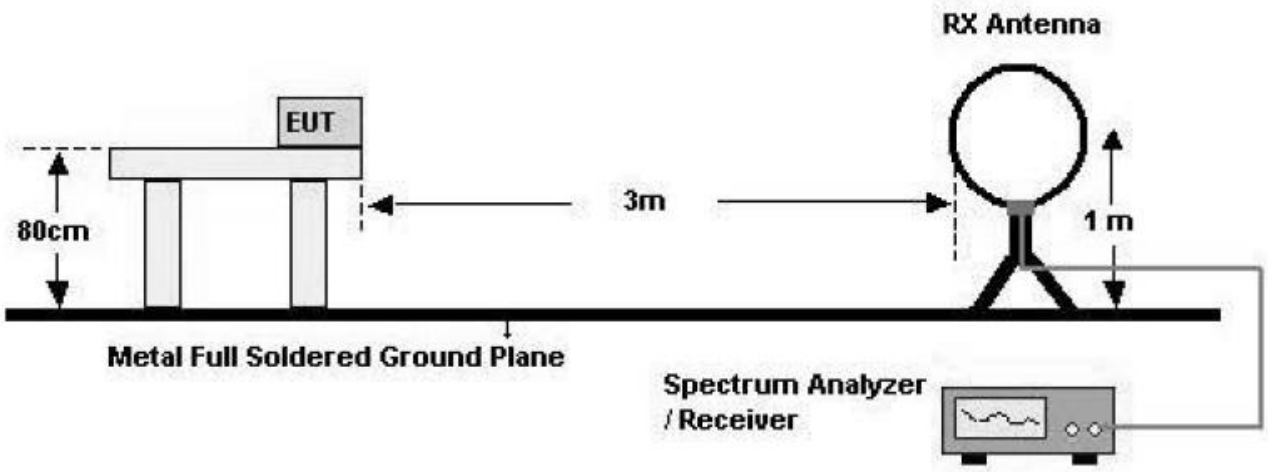
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

▣ §15.407, KDB 789033 D02

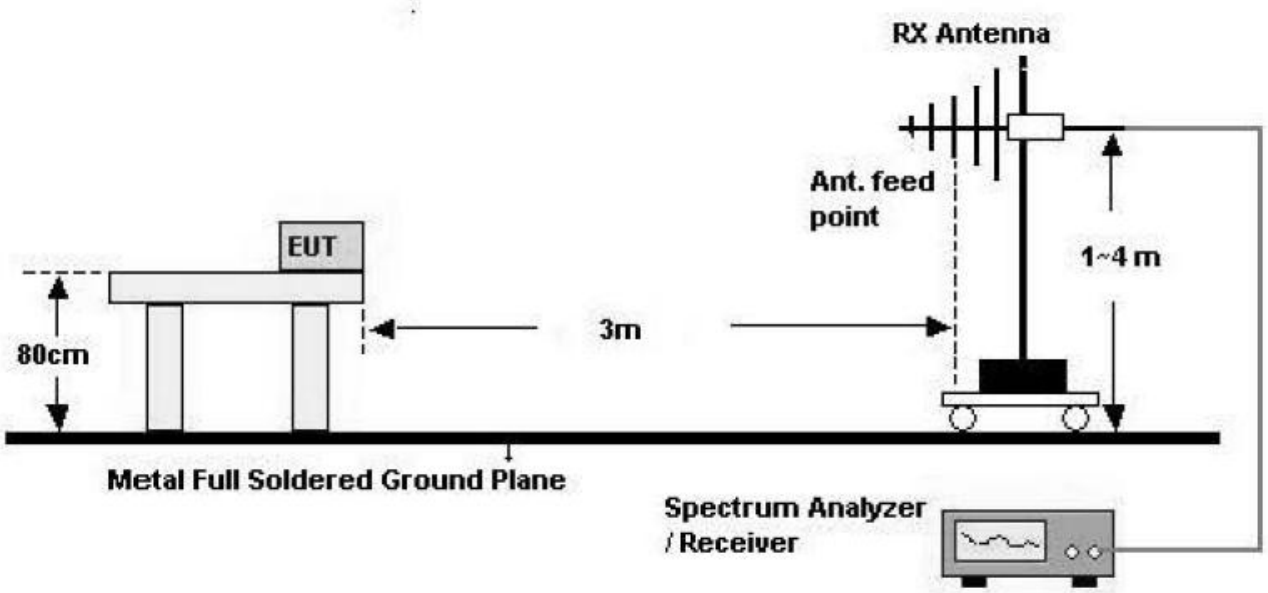
All harmonics that do not lie in a restricted band are subject to a peak limit of -27 dBm/MHz. At a distance of 3 meters the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2 dB to the EIRP limit of -27 dBm/MHz to obtain the limit for out of band spurious emissions 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

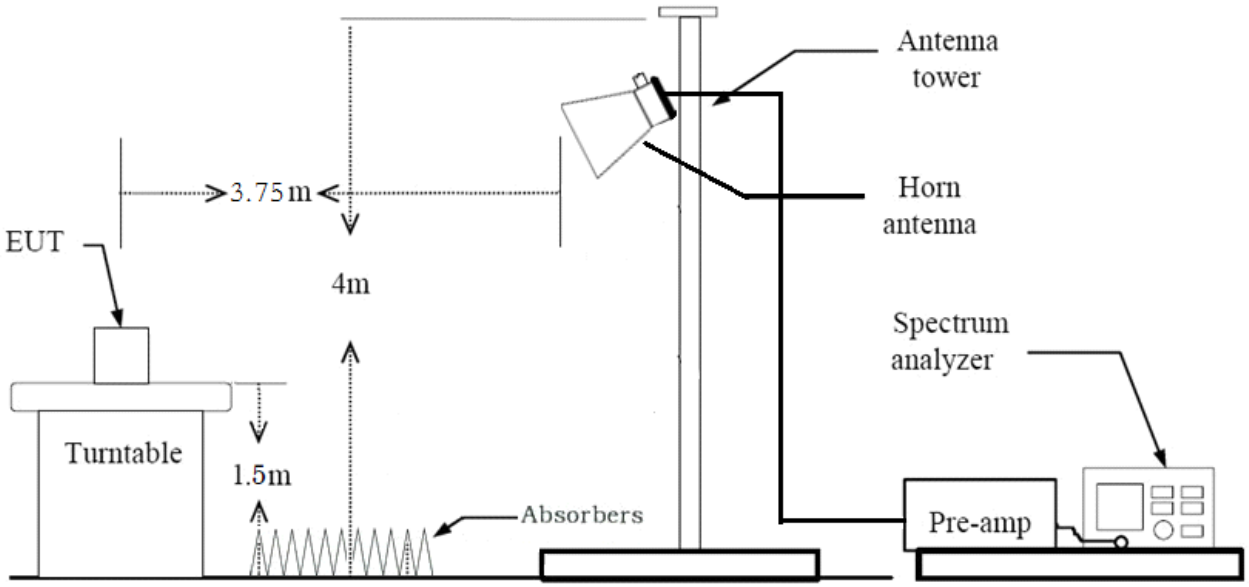
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE USED

ANSI C63.10:2013

Method G)5) in KDB 789033 D02 v01r03 (Peak)

Method G)6)d) in KDB 789033 D02 v01r03 (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 Method VB for 802.11a/n_HT20, n_HT40, ac_VHT20, 40, 80 mode to perform the average filed strength measurements.
2. The actual setting value of VBW for 802.11a/n_HT20, n_HT40, ac_VHT20, 40, 80
3. According to SVSWR requirement in ANSI 63.4-2014, We performed the radiated test at 3.75 m distance from center of turn table. So, we applied the distance factor(reference distance : 3 m).
4. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

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**	**1.426**	**1.530**	**93.19**	**701**	**1000**
n_HT20	**MCS 0**	**1.336**	**1.439**	**92.83**	**749**	**1000**
ac_VHT20	**MCS 0**	**1.344**	**1.445**	**93.06**	**744**	**1000**
n_HT40	**MCS 0**	**0.664**	**0.765**	**86.77**	**1506**	**3000**
ac_VHT40	**MCS 0**	**0.667**	**0.768**	**86.88**	**1499**	**3000**
ac_VHT80	**MCS 0**	**0.332**	**0.433**	**76.72**	**3010**	**10000**

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.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	53.27	-2.75	V	50.52	68.20	17.68	PK
15540	55.30	-1.23	V	54.07	73.98	19.91	PK
15540	40.61	-1.23	V	39.38	53.98	14.60	AV
10360	54.28	-2.75	H	51.53	68.20	16.67	PK
15540	55.66	-1.23	H	54.43	73.98	19.55	PK
15540	40.96	-1.23	H	39.73	53.98	14.25	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

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.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	53.46	-2.60	V	50.86	68.20	17.34	PK
15600	55.05	-2.26	V	52.79	73.98	21.19	PK
15600	41.49	-2.26	V	39.23	53.98	14.75	AV
10400	54.19	-2.60	H	51.59	68.20	16.61	PK
15600	55.37	-2.26	H	53.11	73.98	20.87	PK
15600	41.60	-2.26	H	39.34	53.98	14.64	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

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.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	53.32	-3.54	V	49.78	68.20	18.42	PK
15720	55.48	-2.64	V	52.84	73.98	21.14	PK
15720	42.16	-2.64	V	39.52	53.98	14.46	AV
10480	54.26	-3.54	H	50.72	68.20	17.48	PK
15720	55.93	-2.64	H	53.29	73.98	20.69	PK
15720	42.32	-2.64	H	39.68	53.98	14.30	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	54.07	-2.75	V	51.32	68.20	16.88	PK
15540	54.33	-1.23	V	53.10	73.98	20.88	PK
15540	41.13	-1.23	V	39.90	53.98	14.08	AV
10360	54.22	-2.75	H	51.47	68.20	16.73	PK
15540	54.83	-1.23	H	53.60	73.98	20.38	PK
15540	41.30	-1.23	H	40.07	53.98	13.91	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_HT20. Worst case is MCS0 in 802.11n_HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11 n_ HT20
Transfer MCS Index:	0
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	53.87	-2.60	V	51.27	68.20	16.93	PK
15600	55.32	-2.26	V	53.06	73.98	20.92	PK
15600	41.54	-2.26	V	39.28	53.98	14.70	AV
10400	54.31	-2.60	H	51.71	68.20	16.49	PK
15600	55.71	-2.26	H	53.45	73.98	20.53	PK
15600	41.77	-2.26	H	39.51	53.98	14.47	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11 n_ HT20
Transfer MCS Index:	0
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	53.52	-3.54	V	49.98	68.20	18.22	PK
15720	55.18	-2.64	V	52.54	73.98	21.44	PK
15720	42.09	-2.64	V	39.45	53.98	14.53	AV
10480	54.24	-3.54	H	50.70	68.20	17.50	PK
15720	55.74	-2.64	H	53.10	73.98	20.88	PK
15720	42.26	-2.64	H	39.62	53.98	14.36	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	53.91	-2.75	V	51.16	68.20	17.04	PK
15540	54.52	-1.23	V	53.29	73.98	20.69	PK
15540	41.15	-1.23	V	39.92	53.98	14.06	AV
10360	54.25	-2.75	H	51.50	68.20	16.70	PK
15540	54.76	-1.23	H	53.53	73.98	20.45	PK
15540	41.28	-1.23	H	40.05	53.98	13.93	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11 ac_ VHT20
Transfer MCS Index:	0
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	53.92	-2.60	V	51.32	68.20	16.88	PK
15600	55.23	-2.26	V	52.97	73.98	21.01	PK
15600	41.41	-2.26	V	39.15	53.98	14.83	AV
10400	54.50	-2.60	H	51.90	68.20	16.30	PK
15600	55.80	-2.26	H	53.54	73.98	20.44	PK
15600	41.76	-2.26	H	39.50	53.98	14.48	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11 ac_ VHT20
Transfer MCS Index:	0
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	53.61	-3.54	V	50.07	68.20	18.13	PK
15720	55.37	-2.64	V	52.73	73.98	21.25	PK
15720	42.05	-2.64	V	39.41	53.98	14.57	AV
10480	54.08	-3.54	H	50.54	68.20	17.66	PK
15720	55.94	-2.64	H	53.30	73.98	20.68	PK
15720	42.31	-2.64	H	39.67	53.98	14.31	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11n_HT40
Transfer MCS Index:	0
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10380	52.33	-2.74	V	49.59	68.20	18.61	PK
15570	51.85	-1.95	V	49.90	73.98	24.08	PK
15570	38.84	-1.95	V	36.89	53.98	17.09	AV
10380	52.87	-2.74	H	50.13	68.20	18.07	PK
15570	52.40	-1.95	H	50.45	73.98	23.53	PK
15570	39.22	-1.95	H	37.27	53.98	16.71	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT40. Worst case is MCS0 in 802.11n_ HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11n_ HT40
Transfer MCS Index:	0
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10460	53.99	-3.07	V	50.92	68.20	17.28	PK
15690	52.43	-0.73	V	51.70	73.98	22.28	PK
15690	39.95	-0.73	V	39.22	53.98	14.76	AV
10460	54.57	-3.07	H	51.50	68.20	16.70	PK
15690	53.24	-0.73	H	52.51	73.98	21.47	PK
15690	40.17	-0.73	H	39.44	53.98	14.54	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT40. Worst case is MCS0 in 802.11n_ HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10380	52.20	-2.74	V	49.46	68.20	18.74	PK
15570	51.96	-1.95	V	50.01	73.98	23.97	PK
15570	38.71	-1.95	V	36.76	53.98	17.22	AV
10380	52.98	-2.74	H	50.24	68.20	17.96	PK
15570	52.34	-1.95	H	50.39	73.98	23.59	PK
15570	39.17	-1.95	H	37.22	53.98	16.76	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT40. Worst case is MCS0 in 802.11ac_ VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11ac_ VHT40
Transfer MCS Index:	0
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10460	53.82	-3.07	V	50.75	68.20	17.45	PK
15690	52.57	-0.73	V	51.84	73.98	22.14	PK
15690	39.90	-0.73	V	39.17	53.98	14.81	AV
10460	54.66	-3.07	H	51.59	68.20	16.61	PK
15690	53.73	-0.73	H	53.00	73.98	20.98	PK
15690	40.25	-0.73	H	39.52	53.98	14.46	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT40. Worst case is MCS0 in 802.11ac_ VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 1
Operation Mode:	802.11ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10420	53.01	-2.88	V	50.13	68.20	18.07	PK
15630	52.34	-1.88	V	50.46	73.98	23.52	PK
15630	40.60	-1.88	V	38.72	53.98	15.26	AV
10420	53.39	-2.88	H	50.51	68.20	17.69	PK
15630	52.67	-1.88	H	50.79	73.98	23.19	PK
15630	40.93	-1.88	H	39.05	53.98	14.93	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT80. Worst case is MCS0 in 802.11ac_ VHT80.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

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

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	54.41	-2.97	V	51.44	68.20	16.76	PK
15780	55.73	-1.86	V	53.87	73.98	20.11	PK
15780	42.08	-1.86	V	40.22	53.98	13.76	AV
10520	53.26	-2.97	H	50.29	68.20	17.91	PK
15780	55.31	-1.86	H	53.45	73.98	20.53	PK
15780	41.81	-1.86	H	39.95	53.98	14.03	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

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.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	54.29	-3.22	V	51.07	73.98	22.91	PK
10600	40.39	-3.22	V	37.17	53.98	16.81	AV
15900	55.86	-2.44	V	53.42	73.98	20.56	PK
15900	42.26	-2.44	V	39.82	53.98	14.16	AV
10600	53.98	-3.22	H	50.76	73.98	23.22	PK
10600	40.30	-3.22	H	37.08	53.98	16.90	AV
15900	54.93	-2.44	H	52.49	73.98	21.49	PK
15900	42.04	-2.44	H	39.60	53.98	14.38	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

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.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	55.44	-3.27	V	52.17	73.98	21.81	PK
10640	40.84	-3.27	V	37.57	53.98	16.41	AV
15960	56.08	-2.89	V	53.19	73.98	20.79	PK
15960	41.76	-2.89	V	38.87	53.98	15.11	AV
10640	54.32	-3.27	H	51.05	73.98	22.93	PK
10640	40.59	-3.27	H	37.32	53.98	16.66	AV
15960	54.95	-2.89	H	52.06	73.98	21.92	PK
15960	41.50	-2.89	H	38.61	53.98	15.37	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	54.91	-2.97	V	51.94	68.20	16.26	PK
15780	55.64	-1.86	V	53.78	73.98	20.20	PK
15780	42.45	-1.86	V	40.59	53.98	13.39	AV
10520	54.16	-2.97	H	51.19	68.20	17.01	PK
15780	56.19	-1.86	H	54.33	73.98	19.65	PK
15780	42.35	-1.86	H	40.49	53.98	13.49	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11 n_ HT20
Transfer MCS Index:	0
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	53.91	-3.22	V	50.69	73.98	23.29	PK
10600	40.73	-3.22	V	37.51	53.98	16.47	AV
15900	55.58	-2.44	V	53.14	73.98	20.84	PK
15900	42.25	-2.44	V	39.81	53.98	14.17	AV
10600	53.90	-3.22	H	50.68	73.98	23.30	PK
10600	40.49	-3.22	H	37.27	53.98	16.71	AV
15900	54.89	-2.44	H	52.45	73.98	21.53	PK
15900	41.94	-2.44	H	39.50	53.98	14.48	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11 n_ HT20
Transfer MCS Index:	0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	54.41	-3.27	V	51.14	73.98	22.84	PK
10640	40.86	-3.27	V	37.59	53.98	16.39	AV
15960	54.50	-2.89	V	51.61	73.98	22.37	PK
15960	41.09	-2.89	V	38.20	53.98	15.78	AV
10640	54.03	-3.27	H	50.76	73.98	23.22	PK
10640	40.47	-3.27	H	37.20	53.98	16.78	AV
15960	54.24	-2.89	H	51.35	73.98	22.63	PK
15960	41.02	-2.89	H	38.13	53.98	15.85	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5260MHz
Channel No.	52 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	54.43	-2.97	V	51.46	68.20	16.74	PK
15780	55.71	-1.86	V	53.85	73.98	20.13	PK
15780	42.29	-1.86	V	40.43	53.98	13.55	AV
10520	54.48	-2.97	H	51.51	68.20	16.69	PK
15780	55.54	-1.86	H	53.68	73.98	20.30	PK
15780	41.96	-1.86	H	40.10	53.98	13.88	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11 ac_ VHT20
Transfer MCS Index:	0
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	54.01	-3.22	V	50.79	73.98	23.19	PK
10600	40.68	-3.22	V	37.46	53.98	16.52	AV
15900	55.88	-2.44	V	53.44	73.98	20.54	PK
15900	42.18	-2.44	V	39.74	53.98	14.24	AV
10600	53.83	-3.22	H	50.61	73.98	23.37	PK
10600	40.43	-3.22	H	37.21	53.98	16.77	AV
15900	54.94	-2.44	H	52.50	73.98	21.48	PK
15900	41.86	-2.44	H	39.42	53.98	14.56	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11 ac_ VHT20
Transfer MCS Index:	0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	54.51	-3.27	V	51.24	73.98	22.74	PK
10640	40.81	-3.27	V	37.54	53.98	16.44	AV
15960	54.80	-2.89	V	51.91	73.98	22.07	PK
15960	41.02	-2.89	V	38.13	53.98	15.85	AV
10640	53.96	-3.27	H	50.69	73.98	23.29	PK
10640	40.41	-3.27	H	37.14	53.98	16.84	AV
15960	54.29	-2.89	H	51.40	73.98	22.58	PK
15960	40.94	-2.89	H	38.05	53.98	15.93	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11n_HT40
Transfer MCS Index:	0
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10540	53.76	-2.73	V	51.03	68.20	17.17	PK
15810	51.54	-2.52	V	49.02	73.98	24.96	PK
15810	39.21	-2.52	V	36.69	53.98	17.29	AV
10540	53.24	-2.73	H	50.51	68.20	17.69	PK
15810	51.13	-2.52	H	48.61	73.98	25.37	PK
15810	38.79	-2.52	H	36.27	53.98	17.71	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT40. Worst case is MCS0 in 802.11n_ HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11n_ HT40
Transfer MCS Index:	0
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10620	53.75	-3.38	V	50.37	73.98	23.61	PK
10620	40.48	-3.38	V	37.10	53.98	16.88	AV
15930	52.46	-2.78	V	49.68	73.98	24.30	PK
15930	39.31	-2.78	V	36.53	53.98	17.45	AV
10620	53.22	-3.38	H	49.84	73.98	24.14	PK
10620	40.26	-3.38	H	36.88	53.98	17.10	AV
15930	51.76	-2.78	H	48.98	73.98	25.00	PK
15930	39.00	-2.78	H	36.22	53.98	17.76	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT40. Worst case is MCS0 in 802.11n_ HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10540	53.67	-2.73	V	50.94	68.20	17.26	PK
15810	51.62	-2.52	V	49.10	73.98	24.88	PK
15810	39.16	-2.52	V	36.64	53.98	17.34	AV
10540	53.32	-2.73	H	50.59	68.20	17.61	PK
15810	51.09	-2.52	H	48.57	73.98	25.41	PK
15810	38.87	-2.52	H	36.35	53.98	17.63	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT40. Worst case is MCS0 in 802.11ac_ VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11ac_ VHT40
Transfer MCS Index:	0
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10620	53.83	-3.38	V	50.45	73.98	23.53	PK
10620	40.50	-3.38	V	37.12	53.98	16.86	AV
15930	52.55	-2.78	V	49.77	73.98	24.21	PK
15930	39.62	-2.78	V	36.84	53.98	17.14	AV
10620	53.04	-3.38	H	49.66	73.98	24.32	PK
10620	40.36	-3.38	H	36.98	53.98	17.00	AV
15930	51.97	-2.78	H	49.19	73.98	24.79	PK
15930	38.90	-2.78	H	36.12	53.98	17.86	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT40. Worst case is MCS0 in 802.11ac_ VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2A
Operation Mode:	802.11ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10580	53.85	-3.21	V	50.64	68.20	17.56	PK
15870	52.48	-2.62	V	49.86	73.98	24.12	PK
15870	41.10	-2.62	V	38.48	53.98	15.50	AV
10580	53.50	-3.21	H	50.29	68.20	17.91	PK
15870	52.12	-2.62	H	49.50	73.98	24.48	PK
15870	40.71	-2.62	H	38.09	53.98	15.89	AV

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_VHT80. Worst case is MCS0 in 802.11ac_VHT80
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

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.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	53.80	-1.60	V	52.20	73.98	21.78	PK
11000	40.50	-1.60	V	38.90	53.98	15.08	AV
16500	56.58	-0.86	V	55.72	68.20	12.48	PK
11000	53.60	-1.60	H	52.00	73.98	21.98	PK
11000	40.31	-1.60	H	38.71	53.98	15.27	AV
16500	56.27	-0.86	H	55.41	68.20	12.79	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11160	54.24	-2.03	V	52.21	73.98	21.77	PK
11160	40.37	-2.03	V	38.34	53.98	15.64	AV
16740	56.41	0.18	V	56.59	68.20	11.61	PK
11160	54.09	-2.03	H	52.06	73.98	21.92	PK
11160	40.18	-2.03	H	38.15	53.98	15.83	AV
16740	55.92	0.18	H	56.10	68.20	12.10	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11440	54.46	-1.92	V	52.54	73.98	21.44	PK
11440	40.96	-1.92	V	39.04	53.98	14.94	AV
17160	55.93	2.19	V	58.12	68.20	10.08	PK
11440	54.19	-1.92	H	52.27	73.98	21.71	PK
11440	40.73	-1.92	H	38.81	53.98	15.17	AV
17160	55.38	2.19	H	57.57	68.20	10.63	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	53.95	-1.60	V	52.35	73.98	21.63	PK
11000	40.36	-1.60	V	38.76	53.98	15.22	AV
16500	54.81	-0.86	V	53.95	68.20	14.25	PK
11000	53.73	-1.60	H	52.13	73.98	21.85	PK
11000	40.04	-1.60	H	38.44	53.98	15.54	AV
16500	54.52	-0.86	H	53.66	68.20	14.54	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11 n_ HT20
Transfer MCS Index:	0
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11160	53.37	-2.03	V	51.34	73.98	22.64	PK
11160	39.67	-2.03	V	37.64	53.98	16.34	AV
16740	55.21	0.18	V	55.39	68.20	12.81	PK
11160	53.79	-2.03	H	51.76	73.98	22.22	PK
11160	39.39	-2.03	H	37.36	53.98	16.62	AV
16740	54.93	0.18	H	55.11	68.20	13.09	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11 n_ HT20
Transfer MCS Index:	0
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11440	53.92	-1.92	V	52.00	73.98	21.98	PK
11440	40.28	-1.92	V	38.36	53.98	15.62	AV
17160	54.44	2.19	V	56.63	68.20	11.57	PK
11440	53.82	-1.92	H	51.90	73.98	22.08	PK
11440	39.93	-1.92	H	38.01	53.98	15.97	AV
17160	54.09	2.19	H	56.28	68.20	11.92	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5500MHz
Channel No.	100 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	54.05	-1.60	V	52.45	73.98	21.53	PK
11000	40.31	-1.60	V	38.71	53.98	15.27	AV
16500	55.11	-0.86	V	54.25	68.20	13.95	PK
11000	53.66	-1.60	H	52.06	73.98	21.92	PK
11000	39.98	-1.60	H	38.38	53.98	15.60	AV
16500	54.57	-0.86	H	53.71	68.20	14.49	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_VHT20. Worst case is MCS0 in 802.11ac_VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11160	53.47	-2.03	V	51.44	73.98	22.54	PK
11160	39.62	-2.03	V	37.59	53.98	16.39	AV
16740	55.51	0.18	V	55.69	68.20	12.51	PK
11160	53.72	-2.03	H	51.69	73.98	22.29	PK
11160	39.33	-2.03	H	37.30	53.98	16.68	AV
16740	54.98	0.18	H	55.16	68.20	13.04	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11 ac_ VHT20
Transfer MCS Index:	0
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11440	54.02	-1.92	V	52.10	73.98	21.88	PK
11440	40.23	-1.92	V	38.31	53.98	15.67	AV
17160	54.74	2.19	V	56.93	68.20	11.27	PK
11440	53.75	-1.92	H	51.83	73.98	22.15	PK
11440	39.87	-1.92	H	37.95	53.98	16.03	AV
17160	54.14	2.19	H	56.33	68.20	11.87	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11n_HT40
Transfer MCS Index:	0
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11020	53.39	-1.98	V	51.41	73.98	22.57	PK
11020	40.38	-1.98	V	38.40	53.98	15.58	AV
16530	52.14	-1.57	V	50.57	68.20	17.63	PK
11020	52.97	-1.98	H	50.99	73.98	22.99	PK
11020	40.17	-1.98	H	38.19	53.98	15.79	AV
16530	51.39	-1.57	H	49.82	68.20	18.38	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT40. Worst case is MCS0 in 802.11n_ HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11n_ HT40
Transfer MCS Index:	0
Operating Frequency	5550 MHz
Channel No.	110 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11100	53.15	-2.32	V	50.83	73.98	23.15	PK
11100	40.08	-2.32	V	37.76	53.98	16.22	AV
16650	52.39	-1.17	V	51.22	68.20	16.98	PK
11100	52.69	-2.32	H	50.37	73.98	23.61	PK
11100	39.78	-2.32	H	37.46	53.98	16.52	AV
16650	52.13	-1.17	H	50.96	68.20	17.24	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT40. Worst case is MCS0 in 802.11n_ HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11n_ HT40
Transfer MCS Index:	0
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11420	52.91	-2.23	V	50.68	73.98	23.30	PK
11420	40.31	-2.23	V	38.08	53.98	15.90	AV
17130	51.84	1.75	V	53.59	68.20	14.61	PK
11420	52.34	-2.23	H	50.11	73.98	23.87	PK
11420	39.85	-2.23	H	37.62	53.98	16.36	AV
17130	51.21	1.75	H	52.96	68.20	15.24	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT40. Worst case is MCS0 in 802.11n_ HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11020	53.75	-1.98	V	51.77	73.98	22.21	PK
11020	40.45	-1.98	V	38.47	53.98	15.51	AV
16530	52.04	-1.57	V	50.47	68.20	17.73	PK
11020	53.03	-1.98	H	51.05	73.98	22.93	PK
11020	40.27	-1.98	H	38.29	53.98	15.69	AV
16530	51.42	-1.57	H	49.85	68.20	18.35	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT40. Worst case is MCS0 in 802.11ac_ VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11ac_ VHT40
Transfer MCS Index:	0
Operating Frequency	5550 MHz
Channel No.	110 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11100	53.32	-2.32	V	51.00	73.98	22.98	PK
11100	40.11	-2.32	V	37.79	53.98	16.19	AV
16650	52.69	-1.17	V	51.52	68.20	16.68	PK
11100	52.87	-2.32	H	50.55	73.98	23.43	PK
11100	39.87	-2.32	H	37.55	53.98	16.43	AV
16650	51.90	-1.17	H	50.73	68.20	17.47	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT40. Worst case is MCS0 in 802.11ac_ VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11ac_ VHT40
Transfer MCS Index:	0
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11420	52.70	-2.23	V	50.47	73.98	23.51	PK
11420	40.13	-2.23	V	37.90	53.98	16.08	AV
17130	51.97	1.75	V	53.72	68.20	14.48	PK
11420	52.43	-2.23	H	50.20	73.98	23.78	PK
11420	39.94	-2.23	H	37.71	53.98	16.27	AV
17130	51.12	1.75	H	52.87	68.20	15.33	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT40. Worst case is MCS0 in 802.11ac_ VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11060	52.88	-2.21	V	50.67	73.98	23.31	PK
11060	41.24	-2.21	V	39.03	53.98	14.95	AV
16590	52.58	-0.60	V	51.98	68.20	16.22	PK
11060	51.97	-2.21	H	49.76	73.98	24.22	PK
11060	40.90	-2.21	H	38.69	53.98	15.29	AV
16590	51.27	-0.60	H	50.67	68.20	17.53	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT80. Worst case is MCS0 in 802.11ac_ VHT80.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 2C
Operation Mode:	802.11ac_ VHT80
Transfer MCS Index:	0
Operating Frequency	5690 MHz
Channel No.	138 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11380	53.18	-2.08	V	51.10	73.98	22.88	PK
11380	41.56	-2.08	V	39.48	53.98	14.50	AV
17070	50.98	1.67	V	52.65	68.20	15.55	PK
11380	52.43	-2.08	H	50.35	73.98	23.63	PK
11380	41.33	-2.08	H	39.25	53.98	14.73	AV
17070	50.61	1.67	H	52.28	68.20	15.92	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT80. Worst case is MCS0 in 802.11ac_ VHT80.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

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.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	55.19	-2.50	V	52.69	73.98	21.29	PK
11490	41.61	-2.50	V	39.11	53.98	14.87	AV
17235	56.85	3.09	V	59.94	68.20	8.26	PK
11490	54.75	-2.50	H	52.25	73.98	21.73	PK
11490	41.39	-2.50	H	38.89	53.98	15.09	AV
17235	56.22	3.09	H	59.31	68.20	8.89	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

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.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	54.93	-2.87	V	52.06	73.98	21.92	PK
11570	41.08	-2.87	V	38.21	53.98	15.77	AV
17355	55.58	3.45	V	59.03	68.20	9.17	PK
11570	54.22	-2.87	H	51.35	73.98	22.63	PK
11570	40.71	-2.87	H	37.84	53.98	16.14	AV
17355	54.76	3.45	H	58.21	68.20	9.99	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

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.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	53.93	-2.84	V	51.09	73.98	22.89	PK
11650	40.68	-2.84	V	37.84	53.98	16.14	AV
17475	55.47	5.68	V	61.15	68.20	7.05	PK
11650	53.52	-2.84	H	50.68	73.98	23.30	PK
11650	40.41	-2.84	H	37.57	53.98	16.41	AV
17475	53.38	5.68	H	59.06	68.20	9.14	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 3
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	55.18	-2.50	V	52.68	73.98	21.30	PK
11490	41.65	-2.50	V	39.15	53.98	14.83	AV
17235	56.16	3.09	V	59.25	68.20	8.95	PK
11490	54.56	-2.50	H	52.06	73.98	21.92	PK
11490	41.31	-2.50	H	38.81	53.98	15.17	AV
17235	55.91	3.09	H	59.00	68.20	9.20	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 3
Operation Mode:	802.11 n_ HT20
Transfer MCS Index:	0
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	53.90	-2.87	V	51.03	73.98	22.95	PK
11570	40.55	-2.87	V	37.68	53.98	16.30	AV
17355	55.28	3.45	V	58.73	68.20	9.47	PK
11570	54.33	-2.87	H	51.46	73.98	22.52	PK
11570	40.27	-2.87	H	37.40	53.98	16.58	AV
17355	54.61	3.45	H	58.06	68.20	10.14	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 3
Operation Mode:	802.11 n_ HT20
Transfer MCS Index:	0
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	53.93	-2.84	V	51.09	73.98	22.89	PK
11650	40.52	-2.84	V	37.68	53.98	16.30	AV
17475	53.70	5.68	V	59.38	68.20	8.82	PK
11650	54.16	-2.84	H	51.32	73.98	22.66	PK
11650	40.50	-2.84	H	37.66	53.98	16.32	AV
17475	53.06	5.68	H	58.74	68.20	9.46	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT20. Worst case is MCS0 in 802.11n_ HT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 3
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	54.62	-2.50	V	52.12	73.98	21.86	PK
11490	40.75	-2.50	V	38.25	53.98	15.73	AV
17235	56.18	3.09	V	59.27	68.20	8.93	PK
11490	54.15	-2.50	H	51.65	73.98	22.33	PK
11490	40.42	-2.50	H	37.92	53.98	16.06	AV
17235	55.50	3.09	H	58.59	68.20	9.61	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 3
Operation Mode:	802.11 ac_ VHT20
Transfer MCS Index:	0
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	54.00	-2.87	V	51.13	73.98	22.85	PK
11570	40.50	-2.87	V	37.63	53.98	16.35	AV
17355	54.98	3.45	V	58.43	68.20	9.77	PK
11570	54.26	-2.87	H	51.39	73.98	22.59	PK
11570	40.21	-2.87	H	37.34	53.98	16.64	AV
17355	54.34	3.45	H	57.79	68.20	10.41	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 3
Operation Mode:	802.11 ac_ VHT20
Transfer MCS Index:	0
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	54.03	-2.84	V	51.19	73.98	22.79	PK
11650	40.47	-2.84	V	37.63	53.98	16.35	AV
17475	54.13	5.68	V	59.81	68.20	8.39	PK
11650	54.09	-2.84	H	51.25	73.98	22.73	PK
11650	40.44	-2.84	H	37.60	53.98	16.38	AV
17475	53.66	5.68	H	59.34	68.20	8.86	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT20. Worst case is MCS0 in 802.11ac_ VHT20.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII3
Operation Mode:	802.11n_ HT40
Transfer MCS Index:	0
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11510	53.42	-2.55	V	50.87	73.98	23.11	PK
11510	40.52	-2.55	V	37.97	53.98	16.01	AV
17265	51.52	3.10	V	54.62	68.20	13.58	PK
11510	53.12	-2.55	H	50.57	73.98	23.41	PK
11510	40.31	-2.55	H	37.76	53.98	16.22	AV
17265	50.98	3.10	H	54.08	68.20	14.12	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT40. Worst case is MCS0 in 802.11n_ HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 3
Operation Mode:	802.11n_ HT40
Transfer MCS Index:	0
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11590	53.18	-3.29	V	49.89	73.98	24.09	PK
11590	40.38	-3.29	V	37.09	53.98	16.89	AV
17385	52.15	4.19	V	56.34	68.20	11.86	PK
11590	52.61	-3.29	H	49.32	73.98	24.66	PK
11590	40.28	-3.29	H	36.99	53.98	16.99	AV
17385	51.63	4.19	H	55.82	68.20	12.38	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ HT40. Worst case is MCS0 in 802.11n_ HT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 3
Operation Mode:	802.11ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11510	53.04	-2.55	V	50.49	73.98	23.49	PK
11510	40.55	-2.55	V	38.00	53.98	15.98	AV
17265	51.67	3.10	V	54.77	68.20	13.43	PK
11510	53.21	-2.55	H	50.66	73.98	23.32	PK
11510	40.14	-2.55	H	37.59	53.98	16.39	AV
17265	50.42	3.10	H	53.52	68.20	14.68	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT40. Worst case is MCS0 in 802.11ac_ VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 3
Operation Mode:	802.11ac_ VHT40
Transfer MCS Index:	0
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11590	53.39	-3.29	V	50.10	73.98	23.88	PK
11590	40.45	-3.29	V	37.16	53.98	16.82	AV
17385	52.32	4.19	V	56.51	68.20	11.69	PK
11590	52.62	-3.29	H	49.33	73.98	24.65	PK
11590	40.31	-3.29	H	37.02	53.98	16.96	AV
17385	52.06	4.19	H	56.25	68.20	11.95	PK

*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT40. Worst case is MCS0 in 802.11ac_ VHT40.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Band :	UNII 3
Operation Mode:	802.11ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5775 MHz
Channel No.	155 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL-Amp G.+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11550	53.21	-2.71	V	50.50	73.98	23.48	PK
11550	41.46	-2.71	V	38.75	53.98	15.23	AV
17325	52.41	3.44	V	55.85	68.20	12.35	PK
11550	52.52	-2.71	H	49.81	73.98	24.17	PK
11550	41.27	-2.71	H	38.56	53.98	15.42	AV
17325	52.10	3.44	H	55.54	68.20	12.66	PK

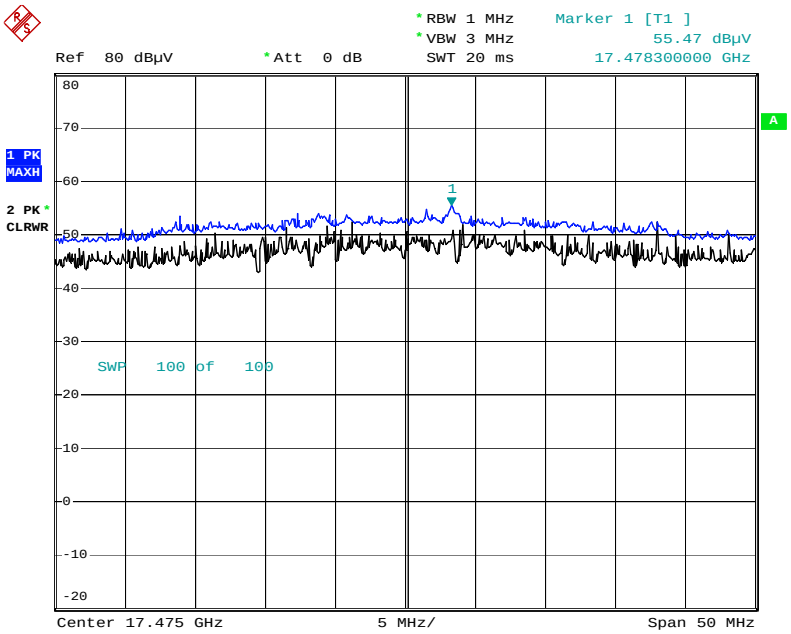
*AN. : Antenna Factor / CL : Cable Loss / Amp.G. : Amplifier Gain / D.F. : Distance Factor

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_ VHT80. Worst case is MCS0 in 802.11ac_ VHT80.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

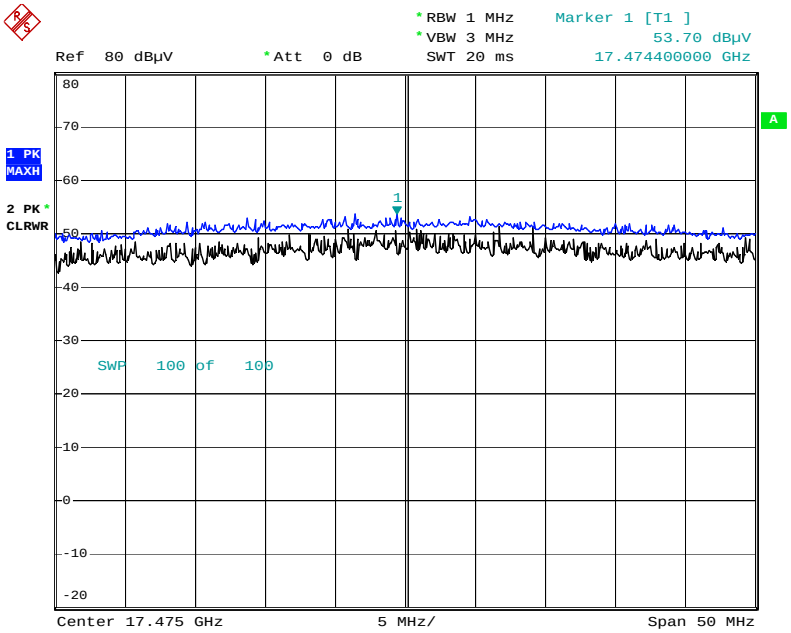
▣ RESULT PLOTS

Radiated Spurious Emissions plot –Peak Reading (802.11a, Ch.165 3rd Harmonic, X-V)



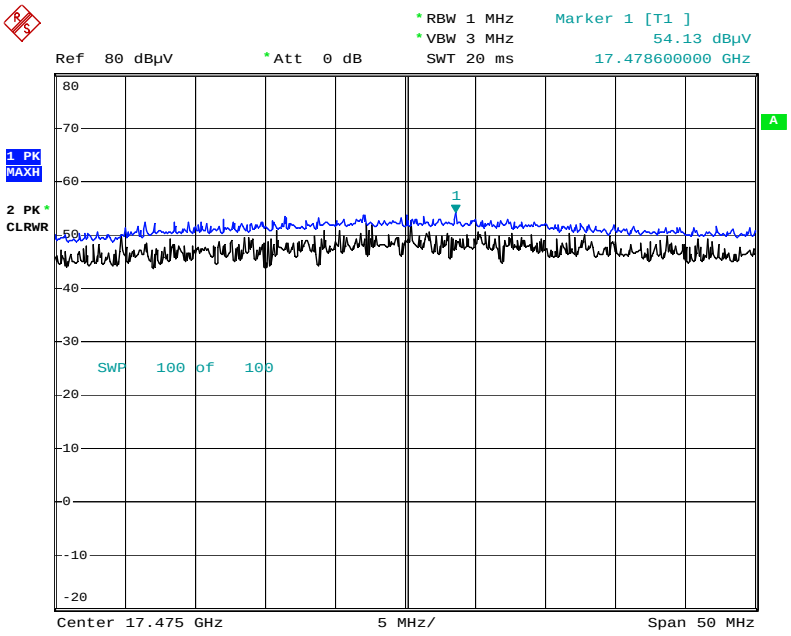
Date: 22.DEC.2016 11:11:49

Radiated Spurious Emissions plot – Peak Reading(802.11n_HT20, Ch.165 3rd Harmonic, X-V)



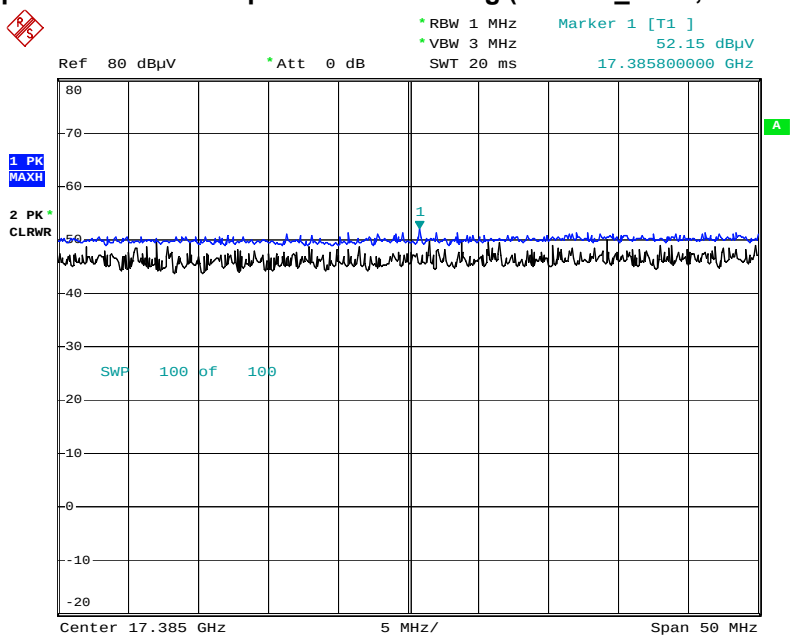
Date: 22.DEC.2016 11:35:08

Radiated Spurious Emissions plot –Peak Reading (802.11ac_VHT20, Ch.165 3rd Harmonic, X-V)



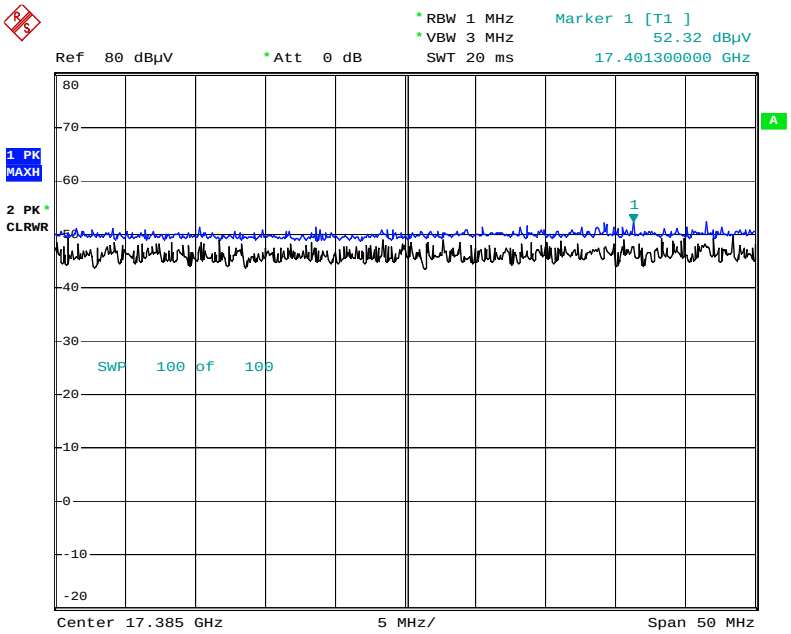
Date: 22.DEC.2016 13:25:44

Radiated Spurious Emissions plot – Peak Reading (802.11n_HT40, Ch.159 3rd Harmonic, X-V)



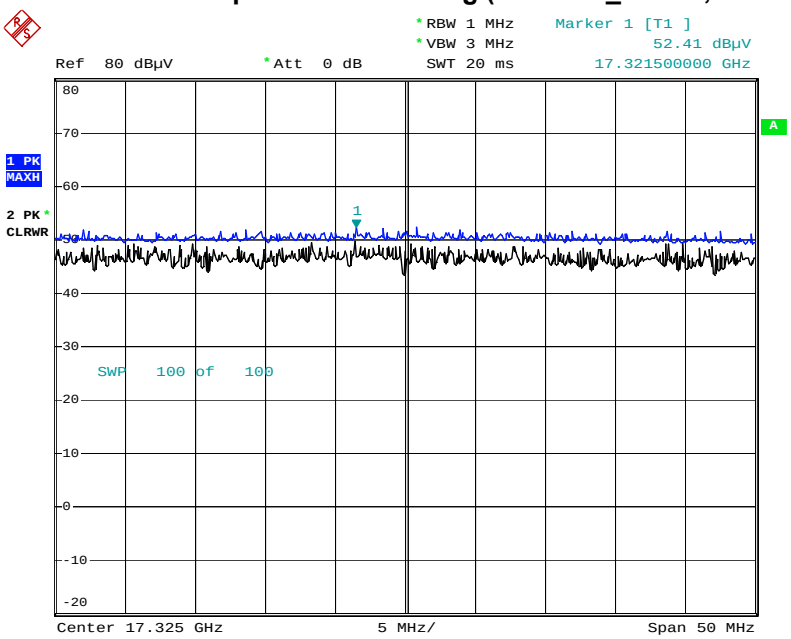
Date: 5.JAN.2017 09:54:54

Radiated Spurious Emissions plot –Peak Reading (802.11ac_VHT40, Ch.159 3rd Harmonic, X-V)



Date: 5.JAN.2017 09:55:54

Radiated Spurious Emissions plot –Peak Reading (802.11ac_VHT80, Ch.155 3rd Harmonic, X-V)



Date: 5.JAN.2017 09:56:32

Note : Only the worst case plots for Radiated Spurious Emissions.

9.6.2 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. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	50.28	2.81	H	53.09	73.98	20.89	PK
5150	37.03	2.81	H	39.84	53.98	14.14	AV
5150	50.81	2.81	V	53.62	73.98	20.36	PK
5150	37.44	2.81	V	40.25	53.98	13.73	AV

Band :	UNII 1
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	49.32	2.81	H	52.13	73.98	21.85	PK
5150	36.87	2.81	H	39.68	53.98	14.30	AV
5150	49.70	2.81	V	52.51	73.98	21.47	PK
5150	37.06	2.81	V	39.87	53.98	14.11	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	48.93	2.81	H	51.74	73.98	22.24	PK
5150	36.92	2.81	H	39.73	53.98	14.25	AV
5150	49.31	2.81	V	52.12	73.98	21.86	PK
5150	37.31	2.81	V	40.12	53.98	13.86	AV

Band :	UNII 1
Operation Mode:	802.11 n_HT40
Transfer MCS Index:	0
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	50.46	2.81	H	53.27	73.98	20.71	PK
5150	38.11	2.81	H	40.92	53.98	13.06	AV
5150	51.08	2.81	V	53.89	73.98	20.09	PK
5150	38.73	2.81	V	41.54	53.98	12.44	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	50.75	2.81	H	53.56	73.98	20.42	PK
5150	37.66	2.81	H	40.47	53.98	13.51	AV
5150	51.71	2.81	V	54.52	73.98	19.46	PK
5150	38.18	2.81	V	40.99	53.98	12.99	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	49.28	2.81	H	52.09	73.98	21.89	PK
5150	37.63	2.81	H	40.44	53.98	13.54	AV
5150	49.73	2.81	V	52.54	73.98	21.44	PK
5150	38.25	2.81	V	41.06	53.98	12.92	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. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	51.19	3.86	H	55.05	73.98	18.93	PK
5350	37.11	3.86	H	40.97	53.98	13.01	AV
5350	51.71	3.86	V	55.57	73.98	18.41	PK
5350	37.57	3.86	V	41.43	53.98	12.55	AV

Band :	UNII 2A
Operation Mode:	802.11 n_ HT20
Transfer MCS Index:	0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	49.89	3.86	H	53.75	73.98	20.23	PK
5350	36.94	3.86	H	40.8	53.98	13.18	AV
5350	50.59	3.86	V	54.45	73.98	19.53	PK
5350	37.37	3.86	V	41.23	53.98	12.75	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	50.22	3.86	H	54.08	73.98	19.90	PK
5350	36.89	3.86	H	40.75	53.98	13.23	AV
5350	50.83	3.86	V	54.69	73.98	19.29	PK
5350	37.23	3.86	V	41.09	53.98	12.89	AV

Band :	UNII 2A
Operation Mode:	802.11 n_HT40
Transfer MCS Index:	0
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	52.87	3.86	H	56.73	73.98	17.25	PK
5350	39.76	3.86	H	43.62	53.98	10.36	AV
5350	54.13	3.86	V	57.99	73.98	15.99	PK
5350	40.45	3.86	V	44.31	53.98	9.67	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	54.50	3.86	H	58.36	73.98	15.62	PK
5350	39.81	3.86	H	43.67	53.98	10.31	AV
5350	56.07	3.86	V	59.93	73.98	14.05	PK
5350	40.47	3.86	V	44.33	53.98	9.65	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	50.13	3.86	H	53.99	73.98	19.99	PK
5350	39.24	3.86	H	43.1	53.98	10.88	AV
5350	50.90	3.86	V	54.76	73.98	19.22	PK
5350	39.99	3.86	V	43.85	53.98	10.13	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. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	50.85	5.10	H	55.95	73.98	18.03	PK
5460	37.28	5.10	H	42.38	53.98	11.60	AV
*5470	52.38	5.18	H	57.56	68.20	10.64	PK
5460	49.62	5.10	V	54.72	73.98	19.26	PK
5460	36.45	5.10	V	41.55	53.98	12.43	AV
*5470	51.24	5.18	V	56.42	68.20	11.78	PK

Band :	UNII 2C
Operation Mode:	802.11 n_ HT20
Transfer MCS Index:	0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	49.97	5.10	H	55.07	73.98	18.91	PK
5460	36.64	5.10	H	41.74	53.98	12.24	AV
*5470	52.29	5.18	H	57.47	68.20	10.73	PK
5460	49.23	5.10	V	54.33	73.98	19.65	PK
5460	36.38	5.10	V	41.48	53.98	12.50	AV
*5470	51.15	5.18	V	56.33	68.20	11.87	PK

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	49.90	5.10	H	55.00	73.98	18.98	PK
5460	36.56	5.10	H	41.66	53.98	12.32	AV
*5470	52.66	5.18	H	57.84	68.20	10.36	PK
5460	48.75	5.10	V	53.85	73.98	20.13	PK
5460	36.27	5.10	V	41.37	53.98	12.61	AV
*5470	51.59	5.18	V	56.77	68.20	11.43	PK

Band :	UNII 2C
Operation Mode:	802.11 n_HT40
Transfer MCS Index:	0
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	52.92	5.10	H	58.02	73.98	15.96	PK
5460	37.29	5.10	H	42.39	53.98	11.59	AV
*5470	57.35	5.18	H	62.53	68.20	5.67	PK
5460	51.39	5.10	V	56.49	73.98	17.49	PK
5460	36.93	5.10	V	42.03	53.98	11.95	AV
*5470	55.84	5.18	V	61.02	68.20	7.18	PK

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	53.04	5.10	H	58.14	73.98	15.84	PK
5460	37.34	5.10	H	42.44	53.98	11.54	AV
*5470	58.15	5.18	H	63.33	68.20	4.87	PK
5460	50.76	5.10	V	55.86	73.98	18.12	PK
5460	36.85	5.10	V	41.95	53.98	12.03	AV
*5470	56.39	5.18	V	61.57	68.20	6.63	PK

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5530 MHz
Channel No.	106 Ch

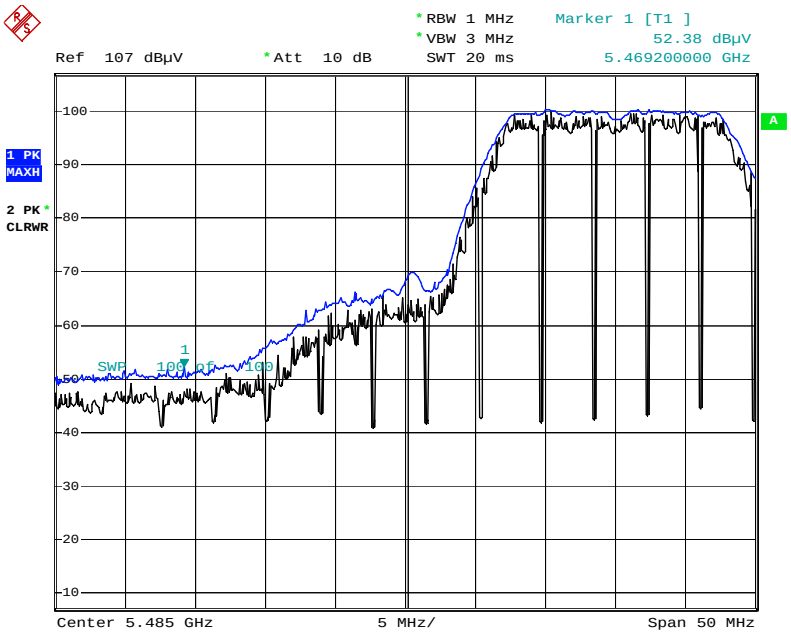
Frequency [MHz]	Reading [dBuV]	AN.+CL+AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	51.62	5.10	H	56.72	73.98	17.26	PK
5460	39.70	5.10	H	44.8	53.98	9.18	AV
*5470	51.98	5.18	H	57.16	68.20	11.04	PK
5460	50.34	5.10	V	55.44	73.98	18.54	PK
5460	39.11	5.10	V	44.21	53.98	9.77	AV
*5470	51.37	5.18	V	56.55	68.20	11.65	PK

Notes:

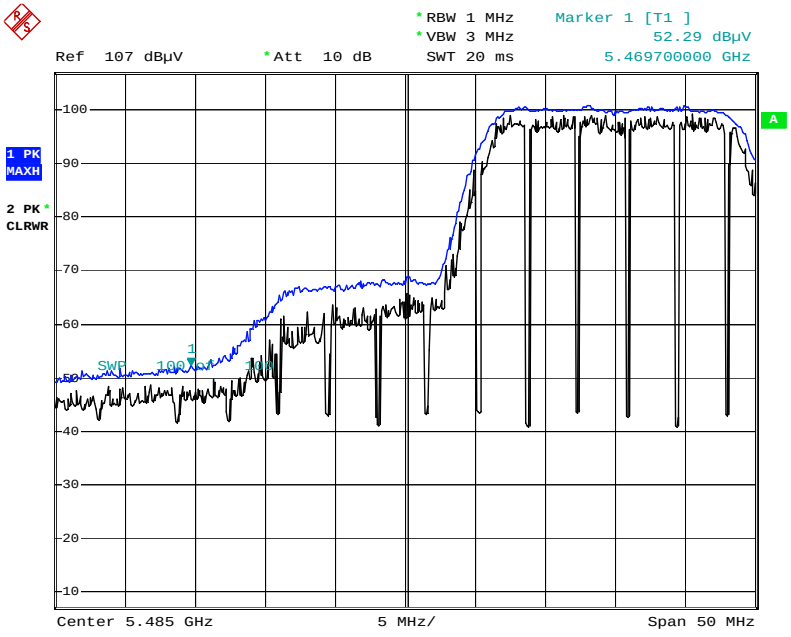
1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT + D.F.
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. '*' is radiated band edge test frequency.(not restricted band emissions)
5. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor
6. The worst limit for UNII 3 according to 15.407(4)(i) is -27 dBm(68.2 dBuV/m).
   The band edge results at 5850 MHz comply to the worst limit.

▣ RESULT PLOTS

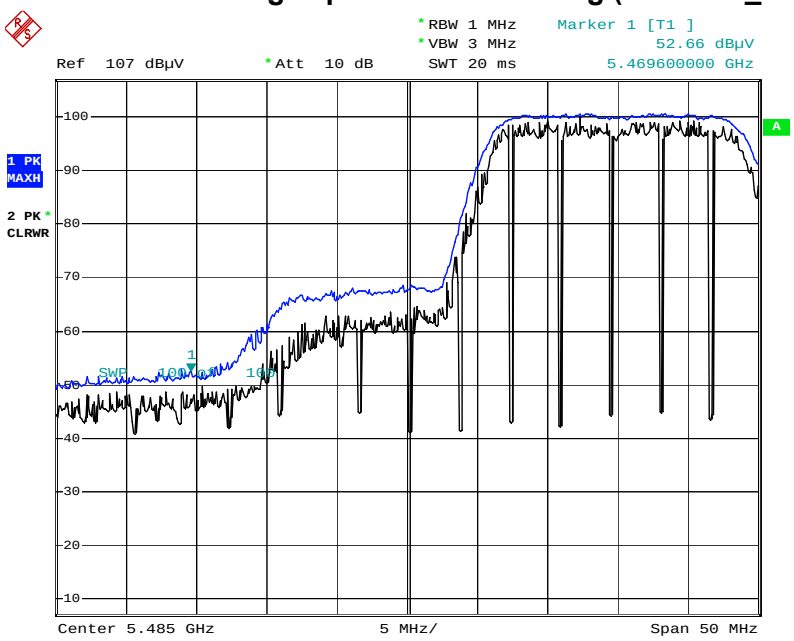
Radiated Restricted Band Edges plot – Peak Reading (802.11a, Ch.100, X-H)



Radiated Restricted Band Edges plot – Peak Reading (802.11n_HT20, Ch.100, X-H)

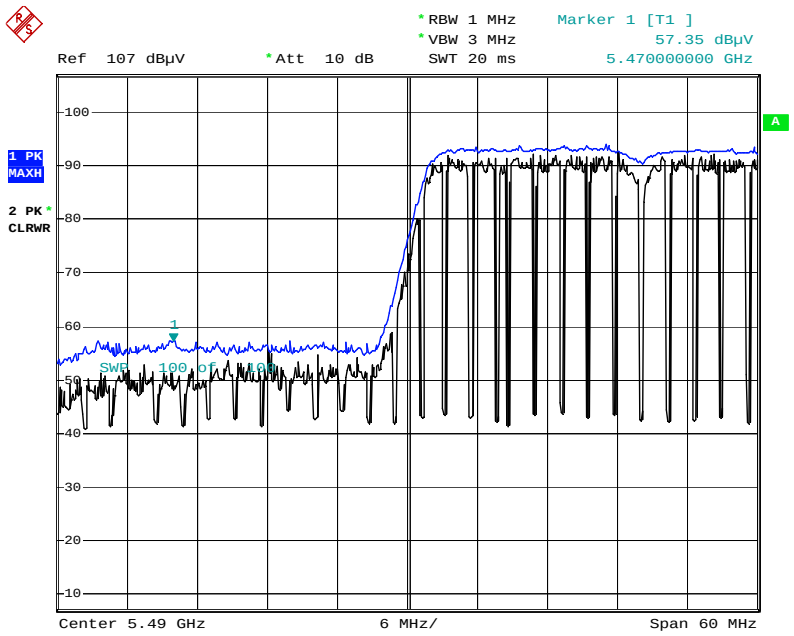


Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT20, Ch.100, X-H)



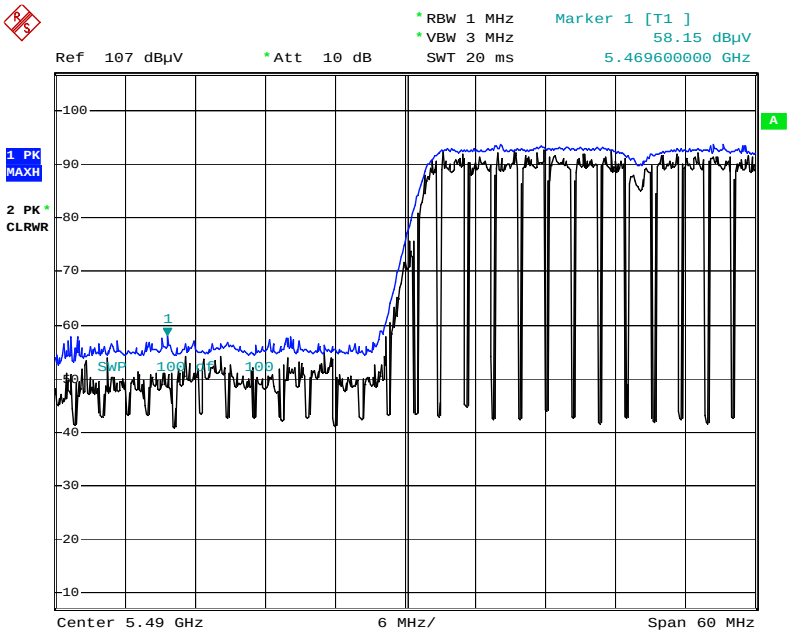
Date: 4.JAN.2017 11:31:14

Radiated Restricted Band Edges plot – Peak Reading (802.11n_HT40, Ch.102, X-H)



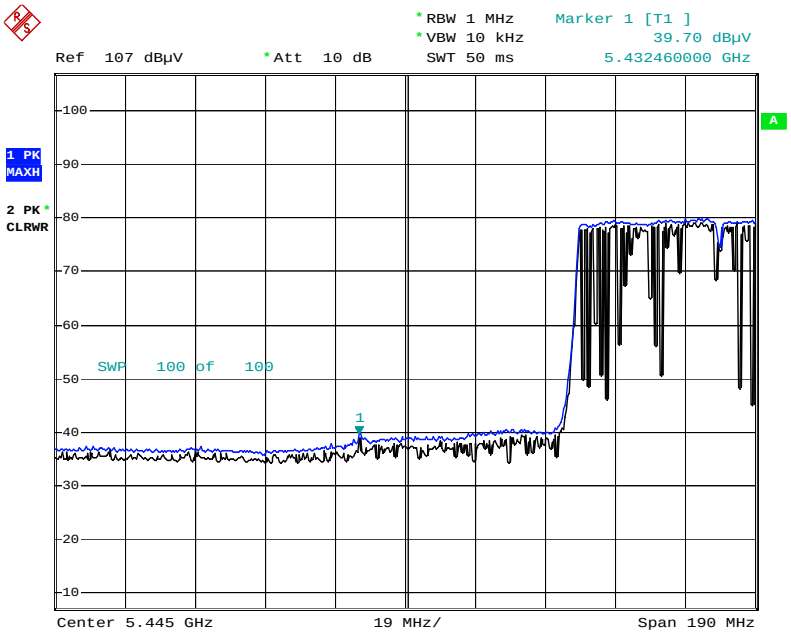
Date: 4.JAN.2017 11:35:15

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT40, Ch.102, X-H)



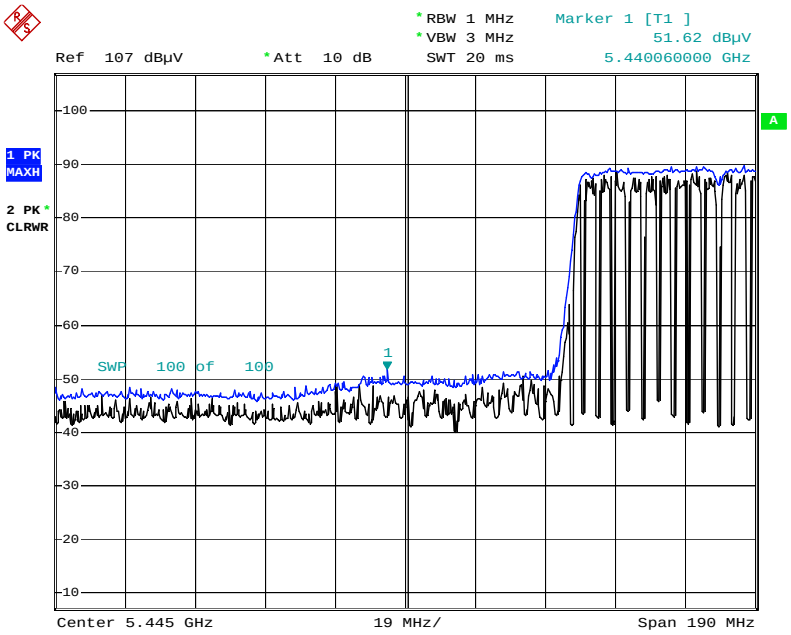
Date: 4.JAN.2017 11:37:08

Radiated Restricted Band Edges plot – Average Reading (802.11ac_VHT80, Ch.106, X-H)



Date: 4.JAN.2017 11:44:08

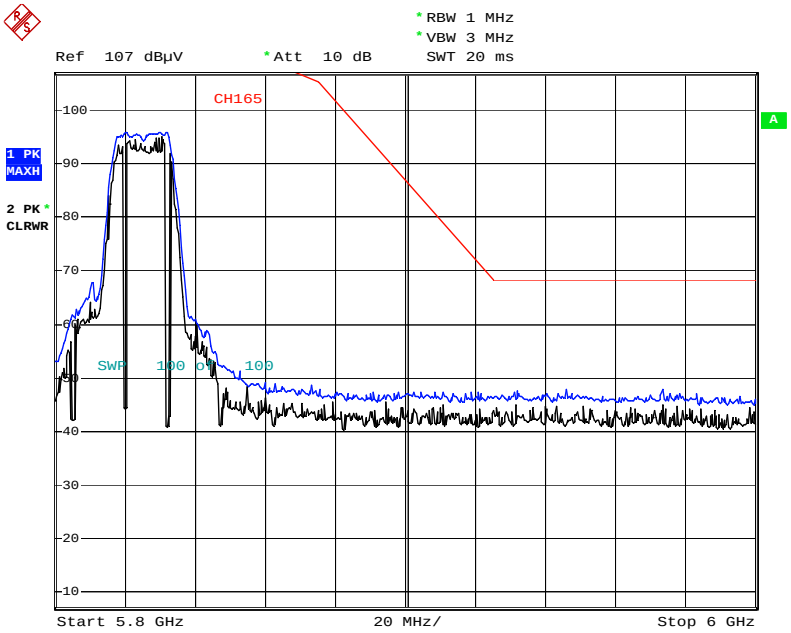
Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT80, Ch.106, X-H)



Date: 4.JAN.2017 11:45:06

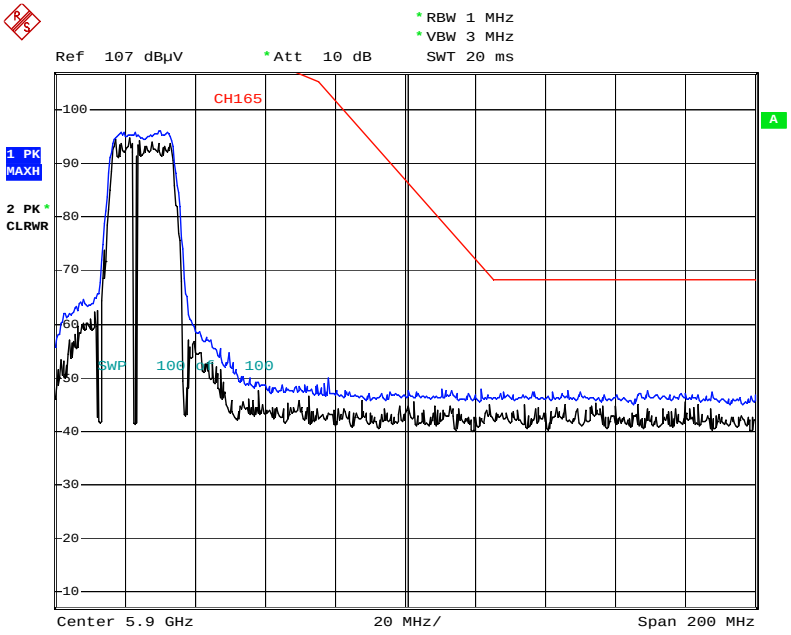
▣ RESULT PLOTS (UNII 3)

Radiated Restricted Band Edges plot – Peak Reading (802.11a)



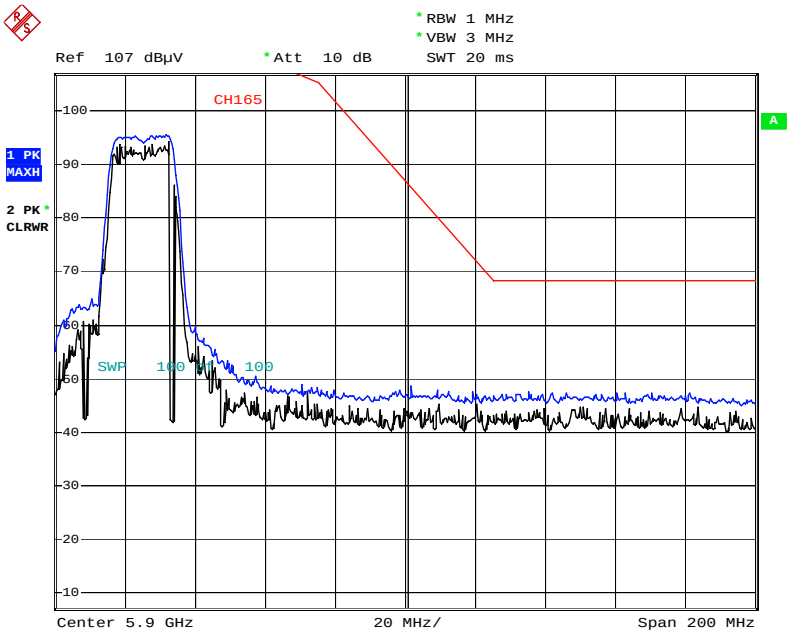
Date: 4.JAN.2017 10:17:28

Radiated Restricted Band Edges plot – Peak Reading (802.11n_HT20)



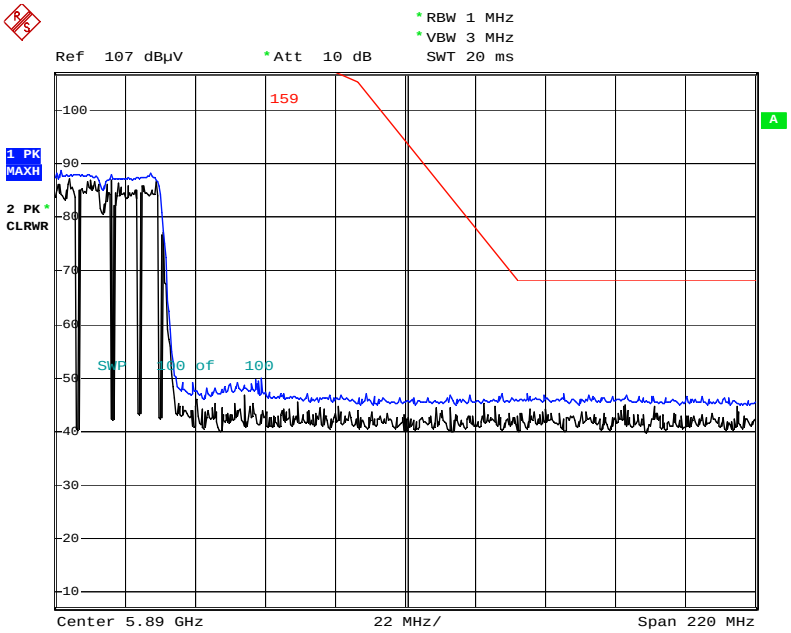
Date: 4.JAN.2017 10:19:55

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT20)



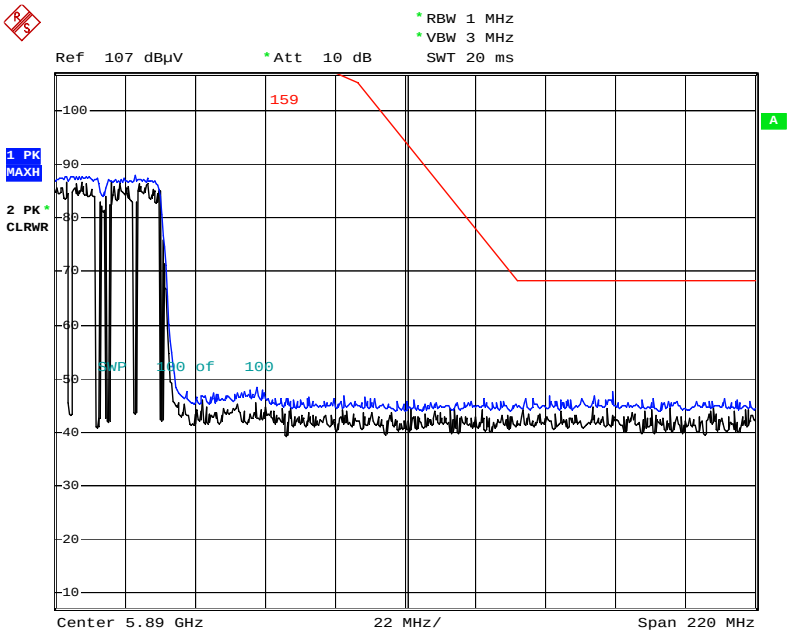
Date: 4.JAN.2017 10:22:33

Radiated Restricted Band Edges plot – Peak Reading (802.11n_HT40)



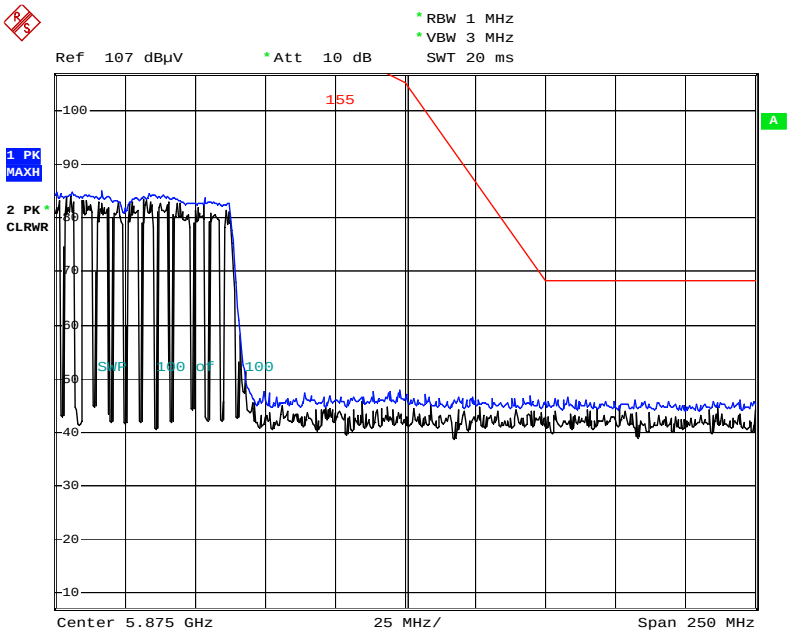
Date: 4.JAN.2017 10:24:43

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT40)



Date: 4.JAN.2017 10:26:25

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_VHT80)



Date: 4.JAN.2017 10:25:38

9.7 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.

Sample Calculation

Quasi-peak(Final Result) = Reading Value + Correction Factor

Note : We don’t perform powerline conducted emission test. Because this EUT is used with vehicle.

10. LIST OF TEST EQUIPMENT

10.1 LIST OF TEST EQUIPMENT(Conducted Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Rohde & Schwarz	ENV216 / LISN	12/23/2016	Annual	100073
Rohde & Schwarz	ESCI / Test Receiver	12/23/2016	Annual	100584
Agilent	N9020A / Signal Analyzer	06/24/2016	Annual	MY51110085
Agilent	N1911A / Power Meter	03/11/2016	Annual	MY45100523
Agilent	N1921A / Power Sensor	03/11/2016	Annual	MY52260025
Agilent	87300B / Directional Coupler	11/23/2016	Annual	3116A03621
Hewlett Packard	11667B / Power Splitter	06/14/2016	Annual	05001
Hewlett Packard	E3632A / DC Power Supply	03/09/2016	Annual	KR75303962
Agilent	8493C / Attenuator(10 dB)	07/15/2016	Annual	07560

10.2 LIST OF TEST EQUIPMENT(Radiated Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Audix	AM4000 / Antenna Position Tower	N/A	N/A	N/A
Audix	Turn Table	N/A	N/A	N/A
Audix	EM1000 / Controller	N/A	N/A	060520
Rohde & Schwarz	Loop Antenna	02/23/2016	Biennial	1513-175
Schwarzbeck	VULB 9168 / Hybrid Antenna	04/15/2015	Biennial	255
Schwarzbeck	BBHA 9120D / Horn Antenna	05/07/2015	Biennial	937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	09/03/2015	Biennial	BBHA9170541
Rohde & Schwarz	FSP / Spectrum Analyzer	09/10/2016	Annual	100688
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	09/23/2016	Annual	101068-SZ
Wainwright Instruments	WHK3.0/18G-10EF / High Pass Filter	06/24/2016	Annual	8
Wainwright Instruments	WHFX7.0/18G-8SS / High Pass Filter	05/13/2016	Annual	29
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	07/06/2016	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	01/26/2016	Annual	2
Agilent	8493C-10 / Attenuator(10 dB)	08/11/2016	Annual	76649
CERNEX	CBLU1183540 / Power Amplifier	07/15/2016	Annual	22964
CERNEX	CBL06185030 / Power Amplifier	07/15/2016	Annual	22965
CERNEX	CBL18265035 / Power Amplifier	07/11/2016	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	07/11/2016	Annual	25956