

FCC UNII REPORT

FCC Certification

Applicant Name:

LG Electronics Inc.

Date of Issue:

January 19, 2016

Test Site/Location:

HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

Address:

222, LG-ro, Jinwi-myeon, Pyeongtaek-si,

451-713 Gyeonggi-do, South Korea

Report No.: HCT-R-1601-F038-1

HCT FRN: 0005866421

IC Recognition No.: 5944A-5

FCC ID : BEJTL3HNB
APPLICANT : LG Electronics Inc.
FCC Model(s): TL3HNB

EUT Type: Car Telematics Device

Modulation type OFDM

FCC Classification: Unlicensed National Information Infrastructure(UNII)

FCC Rule Part(s): Part 15.407

Band	Mode	Channel Bandwidth (MHz)	Frequency Range (MHz)	Power (dBm)	Power (W)
UNII1	802.11a	20	5180 – 5240	10.26	0.0106
	802.11n	20	5180 – 5240	8.11	0.0065
	802.11n	40	5190 - 5230	7.20	0.0052
	802.11ac	20	5180 – 5240	6.30	0.0043
	802.11ac	40	5190 - 5230	4.69	0.0029
	802.11ac	80	5210	4.05	0.0025
UNII2A	802.11a	20	5260 – 5320	10.30	0.0107
	802.11n	20	5260 – 5320	8.18	0.0066
	802.11n	40	5270 – 5310	7.19	0.0052
	802.11ac	20	5260 – 5320	6.28	0.0042
	802.11ac	40	5270 – 5310	5.46	0.0035
	802.11ac	80	5290	4.23	0.0026
UNII2C	802.11a	20	5500 – 5720	10.13	0.0103
	802.11n	20	5500 – 5720	8.01	0.0063
	802.11n	40	5510 – 5710	7.08	0.0051
	802.11ac	20	5500 – 5720	7.11	0.0051
	802.11ac	40	5510 – 5710	4.68	0.0029
	802.11ac	80	5530 – 5690	4.28	0.0027
UNII3	802.11a	20	5745 – 5825	8.75	0.0075
	802.11n	20	5745 – 5825	6.84	0.0048
	802.11n	40	5755 – 5795	6.13	0.0041
	802.11ac	20	5745 – 5825	4.89	0.0031
	802.11ac	40	5755 – 5795	3.75	0.0024
	802.11ac	80	5775	2.99	0.0020

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
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Test Engineer of RF Team



Approved by
: Sang Jun Lee
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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1601-F038	January 14, 2016	- First Approval Report
HCT-R-1601-F038-1	January 19, 2016	- Revised Section 6.

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1. GENERAL INFORMATION

Applicant: LG Electronics, Inc
Address: 222, LG-ro, Jinwi-myeon, Pyeongtaek-si, 451-713 Gyeonggi-do, South Korea
FCC ID: BEJTL3HNB
EUT Type: Car Telematics Device
Model name(s): TL3HNB
Date(s) of Tests: October 28, 2015 ~ January 6, 2016
Place of Tests: HCT Co., Ltd.
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea
(IC Recognition No. : 5944A-5)

2. EUT DESCRIPTION

FCC Model Name	TL3HNB	
EUT Type	Car Telematics Device	
Power Supply	DC 12.0 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: Laird TECHNOLOGIES Antenna type: EXTERNAL ANTENNA Peak Gain : 7.89 dBi (5180~5240 UNII1 BAND) / 7.51 dBi (5260~5325 UNII2A BAND) 7.64 dBi (5500~5720 UNII2C BAND) / 7.77 dBi (5745~5825 UNII3 BAND)	

3. TEST METHODOLOGY

The measurement procedure described in FCC KDB 789033 D02 General UNII Test Procedures New Rules v01 dated June 06, 2014 entitled “ Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part15, Subpart E” and the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) were used in the measurement.

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 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)

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.

All equipments(spectrum, antenna, accessory, etc.) 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 antenna of this E.U.T meets the unique antenna connector.

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

7. SUMMARY OF TEST RESULTS

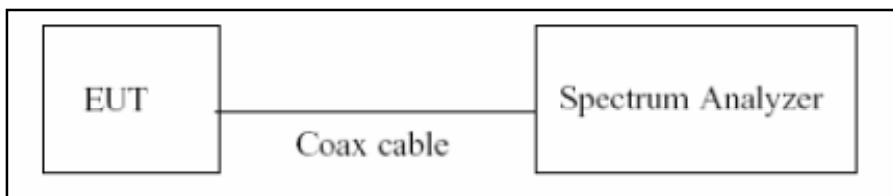
Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
26dB Bandwidth	§15.407 (for Power Measurement)	N/A	CONDUCTED	PASS
6 dB Bandwidth	§15.407(e)	>500 kHz (5725-5850 MHz)		PASS
Maximum Conducted Output Power	§15.407(a)(1)	< 250 mW (5150-5250 MHz) < 250 mW or 11+10 log log ₁₀ (BW) 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) <-17 dBm/MHz EIRP within 5715-5725 MHz and 5850-5860 MHz (UNII3) <-27 dBm/MHz EIRP outside 5715-5860 MHz (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

8. TEST RESULT

8.1 DUTY CYCLE

The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set $RBW \geq EBW$ if possible; otherwise, set RBW to the largest available value. Set $VBW \geq RBW$. 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 $T \leq 16.7$ microseconds.)

■ TEST CONFIGURATION



■ TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer. We tested according to the zero-span measurement method, (B.2 in KDB 789033 D02, issued 06/06/2014)

The largest available value of RBW is 8 MHz and VBW is 50 MHz. The zero-span method of measuring duty cycle shall not be used if $T \leq 6.25$ microseconds. ($50/6.25 = 8$)

The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are $> 50/T$.

1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz ($\geq$ 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 = $10 \cdot \log(1/\text{Duty Cycle})$

Duty Cycle Factor

Mode	Data Rate (Mbps)	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11a	6	2.064	2.155	0.95777262	0.187
	9	1.386	1.477	0.93838863	0.276
	12	1.040	1.130	0.92035398	0.360
	18	0.704	0.790	0.89113924	0.501
	24	0.532	0.618	0.86084142	0.651
	36	0.364	0.456	0.79824561	0.979
	48	0.276	0.362	0.76243094	1.178
	54	0.248	0.336	0.73809524	1.319
802.11n_20 MHz BW	MCS 0	1.921	2.011	0.95524615	0.199
	MCS 1	0.979	1.062	0.92184557	0.353
	MCS 2	0.669	0.753	0.88844622	0.514
	MCS 3	0.507	0.591	0.85786802	0.666
	MCS 4	0.351	0.438	0.80136986	0.962
	MCS 5	0.272	0.358	0.75977654	1.193
	MCS 6	0.248	0.334	0.74251497	1.293
	MCS 7	0.228	0.314	0.72611465	1.390
802.11n_40 MHz BW	MCS 0	0.948	1.032	0.91860465	0.369
	MCS 1	0.492	0.576	0.85416667	0.685
	MCS 2	0.340	0.426	0.79812207	0.979
	MCS 3	0.263	0.349	0.75358166	1.229
	MCS 4	0.188	0.274	0.68613139	1.636
	MCS 5	0.151	0.237	0.63713080	1.958
	MCS 6	0.140	0.225	0.62222222	2.061
	MCS 7	0.128	0.214	0.59813084	2.232

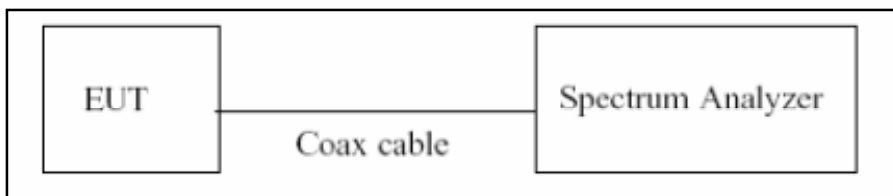
Mode	Data Rate	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ac_20 MHz BW	6.5	1.935	2.020	0.95792079	0.187
	13	0.990	1.075	0.92093023	0.358
	19.5	0.675	0.760	0.88815789	0.515
	26	0.516	0.603	0.85572139	0.677
	39	0.357	0.444	0.80405405	0.947
	52	0.280	0.366	0.76502732	1.163
	58.5	0.252	0.344	0.73255814	1.352
	65	0.232	0.318	0.72955975	1.369
	78	0.200	0.288	0.69444444	1.584
5.8 GHz Band 802.11ac_40 MHz BW	MCS 0	0.950	1.040	0.91346154	0.393
	MCS 1	0.500	0.590	0.84745763	0.719
	MCS 2	0.343	0.429	0.79953380	0.972
	MCS 3	0.268	0.354	0.75706215	1.209
	MCS 4	0.193	0.279	0.69175627	1.600
	MCS 5	0.157	0.243	0.64609053	1.897
	MCS 6	0.144	0.230	0.62608696	2.034
	MCS 7	0.132	0.218	0.60550459	2.179
	MCS 8	0.116	0.202	0.57425743	2.409
	MCS 9	0.112	0.198	0.56565657	2.474
5.8 GHz Band 802.11ac_80 MHz BW	MCS 0	0.464	0.550	0.84363636	0.738
	MCS 1	0.253	0.348	0.72701149	1.385
	MCS 2	0.184	0.269	0.68401487	1.649
	MCS 3	0.148	0.234	0.63247863	1.990
	MCS 4	0.112	0.202	0.55445545	2.561
	MCS 5	0.096	0.187	0.51336898	2.896
	MCS 6	0.088	0.179	0.49162011	3.084
	MCS 7	0.084	0.170	0.49411765	3.062
	MCS 8	0.076	0.162	0.46913580	3.287
	MCS 9	0.072	0.158	0.45569620	3.413

8.2 EMISSION BANDWIDTH AND MINIMUM EMISSION BANDWIDTH MEASUREMENT

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

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

■ TEST CONFIGURATION



■ TEST PROCEDURE (26dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.

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

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

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

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

■ 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, issued 06/06/2014)

1. RBW = 100 kHz
2. VBW $\geq$ 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 level 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_20 MHz BW

Conducted 26 dB Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5180	36	18.418	N/A	Pass
5200	40	18.732	N/A	Pass
5240	48	19.051	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	18.875	N/A	Pass
5300	60	18.930	N/A	Pass
5320	64	19.202	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11a

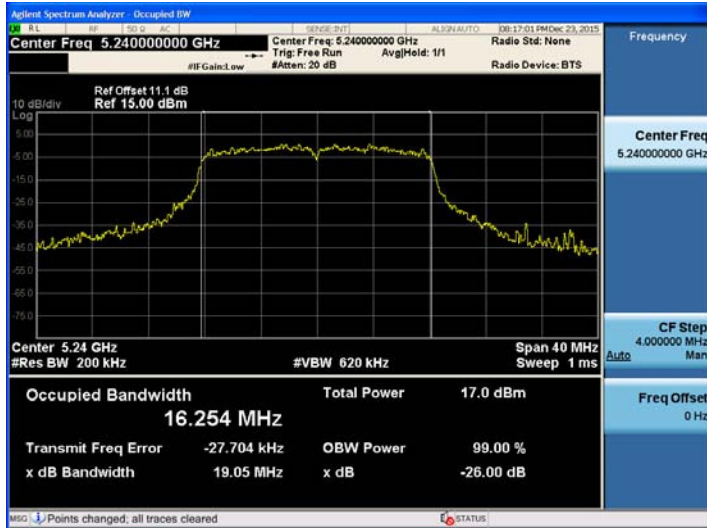
802.11a Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5500	100	18.639	N/A	Pass
5580	116	18.277	N/A	Pass
5720	144	18.737	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11a

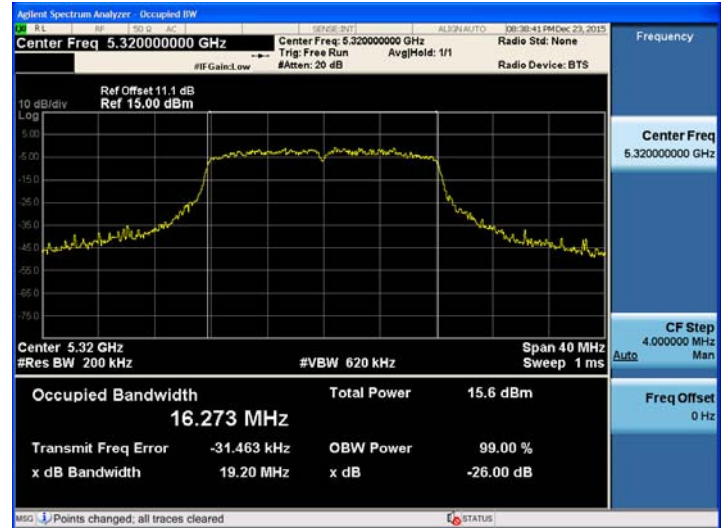
802.11a Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	18.597	N/A	Pass
5785	157	19.135	N/A	Pass
5825	165	18.877	N/A	Pass

■ TEST Plot for 802.11a_20MHz BW

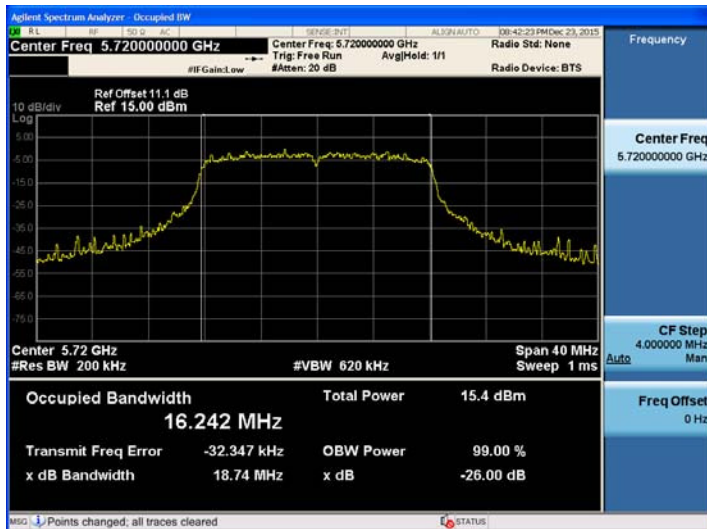
802.11a UNII 1 BAND 26dB Bandwidth (CH48)



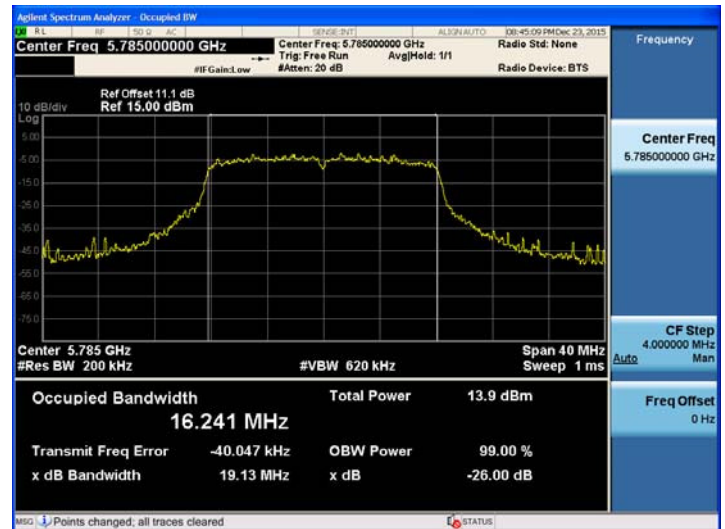
802.11a UNII 2A BAND 26dB Bandwidth (CH 64)



802.11a UNII 2C BAND 26dB Bandwidth (CH144)



802.11a UNII 3 BAND 26dB Bandwidth (CH157)



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

TEST RESULTS for 802.11n_20MHz BW

Conducted 26 dB Bandwidth Measurements for 802.11n 20M BW

802.11n(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5180	36	20.206	N/A	Pass
5200	40	19.702	N/A	Pass
5240	48	19.792	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n 20M BW

802.11n(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5260	52	19.632	N/A	Pass
5300	60	19.579	N/A	Pass
5320	64	19.806	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n 20M BW

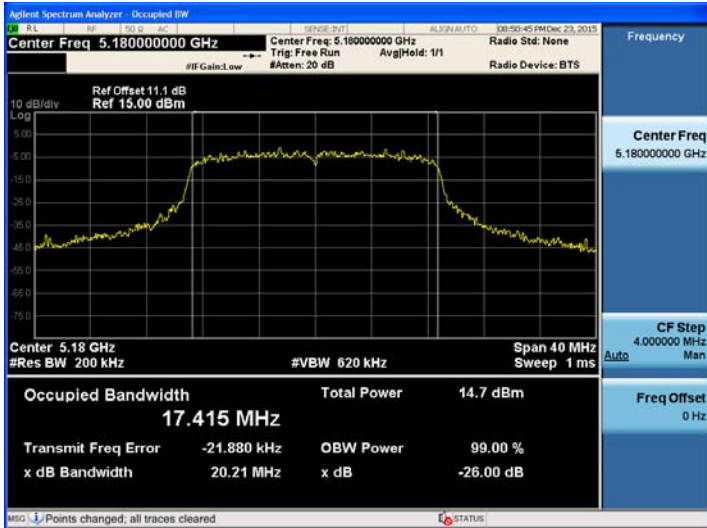
802.11n(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5500	100	19.792	N/A	Pass
5580	116	20.013	N/A	Pass
5720	144	19.639	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n 20M BW

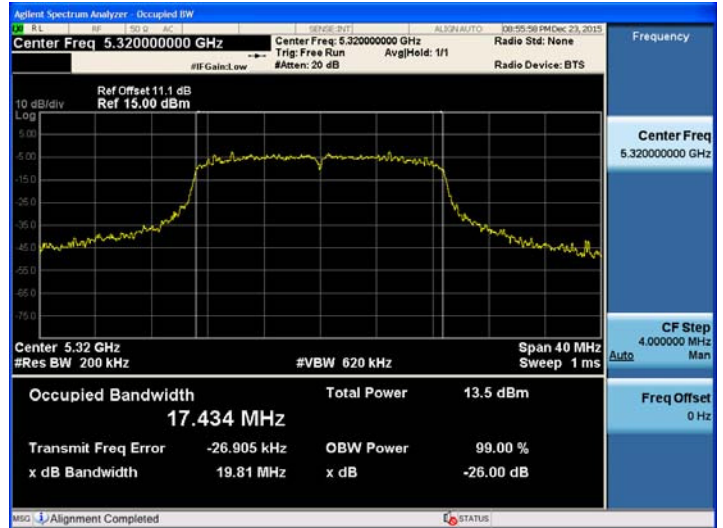
802.11n(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	19.632	N/A	Pass
5785	157	19.567	N/A	Pass
5825	165	19.734	N/A	Pass

■ TEST Plot for 802.11n _20MHz BW

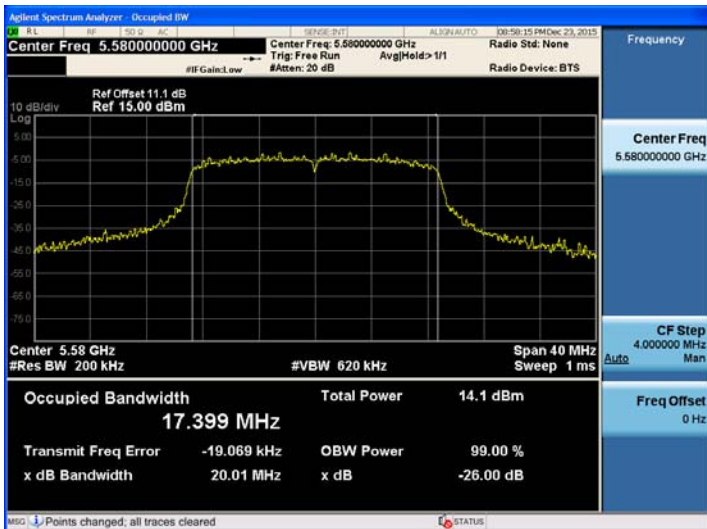
802.11n_20 MHz BW UNII 1 BAND 26dB Bandwidth(CH 36)



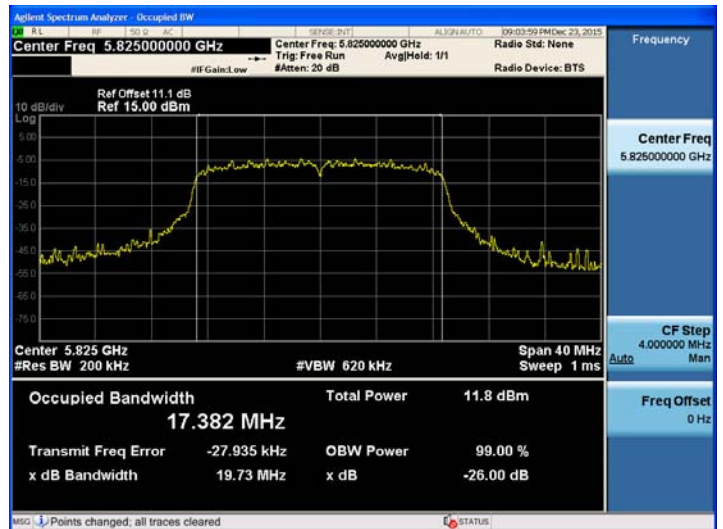
802.11n_20 MHz BW UNII 2A BAND 26dB Bandwidth(CH 64)



802.11n_20 MHz BW UNII 2C BAND 26dB Bandwidth(CH 116)



802.11n_20 MHz BW 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 802.11n_40MHz BW

Conducted 26 dB Bandwidth Measurements for 802.11n_40 M BW

802.11n(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5190	38	40.168	N/A	Pass
5230	46	41.101	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n_40 M BW

802.11n(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5270	54	41.344	N/A	Pass
5310	62	41.515	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n_40 M BW

802.11n(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5510	102	40.309	N/A	Pass
5550	110	40.725	N/A	Pass
5710	142	40.854	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11n_40 M BW

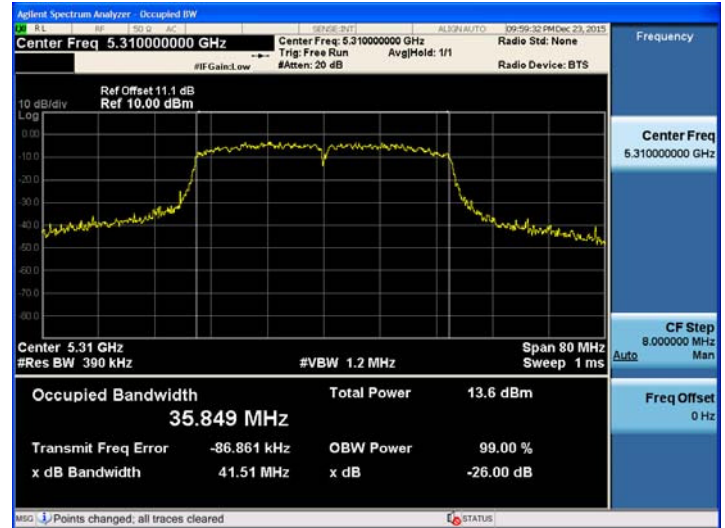
802.11n(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	40.245	N/A	Pass
5795	159	40.177	N/A	Pass

■ TEST Plot for 802.11n_40MHz BW

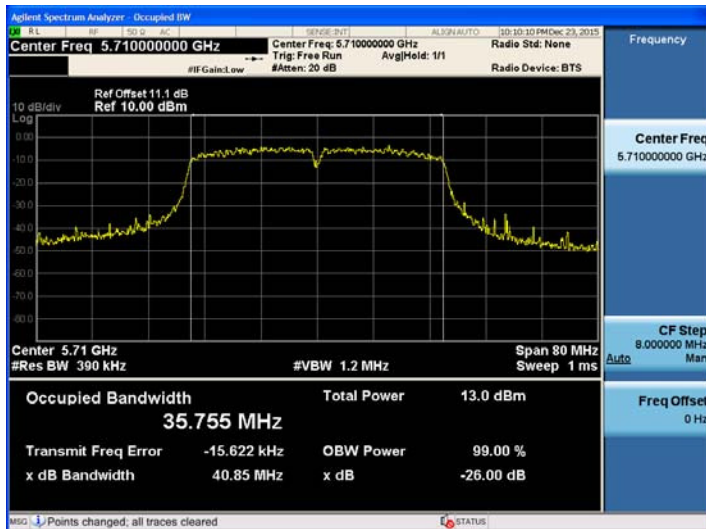
802.11n_40 MHz BW UNII 1 BAND 26dB Bandwidth(CH 46)



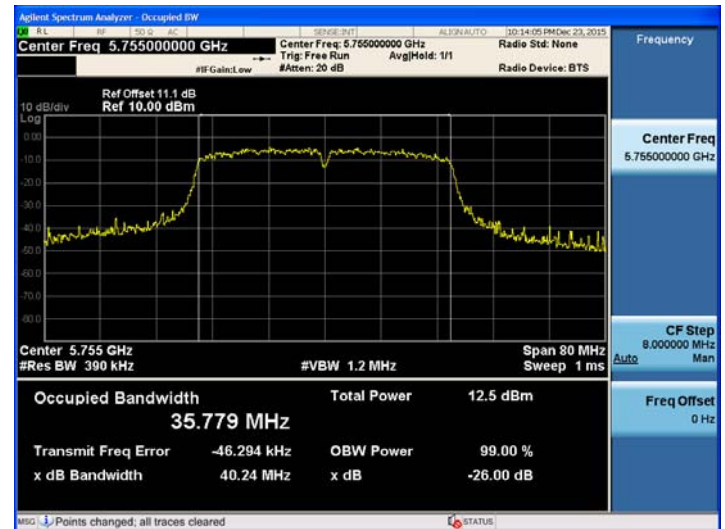
802.11n_40 MHz BW UNII 2A BAND 26dB Bandwidth (CH 62)



802.11n_40 MHz BW UNII 2C BAND 26dB Bandwidth(CH 142)



802.11n_40 MHz BW UNII 3 BAND 26dB Bandwidth (CH 151)



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

TEST RESULTS for 802.11ac _20MHz BW

Conducted 26 dB Bandwidth Measurements for 802.11ac 20M BW

802.11ac(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5180	36	20.160	N/A	Pass
5200	40	19.585	N/A	Pass
5240	48	19.689	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac 20M BW

802.11ac(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5260	52	19.838	N/A	Pass
5300	60	19.773	N/A	Pass
5320	64	19.860	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac 20M BW

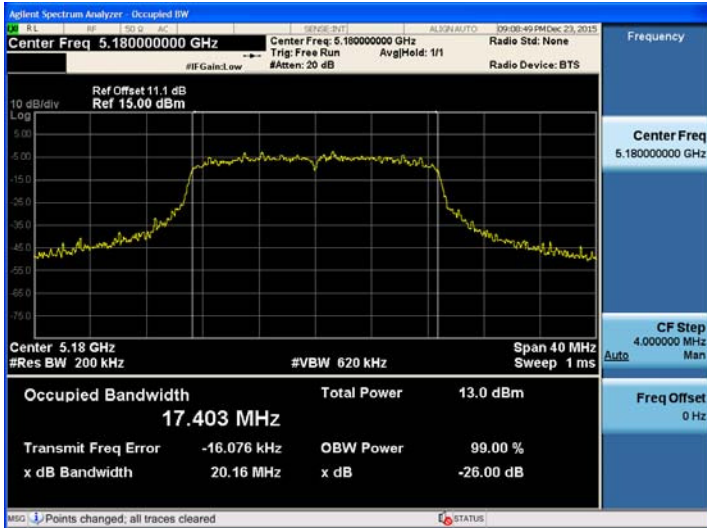
802.11ac(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5500	100	19.971	N/A	Pass
5580	116	19.955	N/A	Pass
5720	144	19.823	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac 20M BW

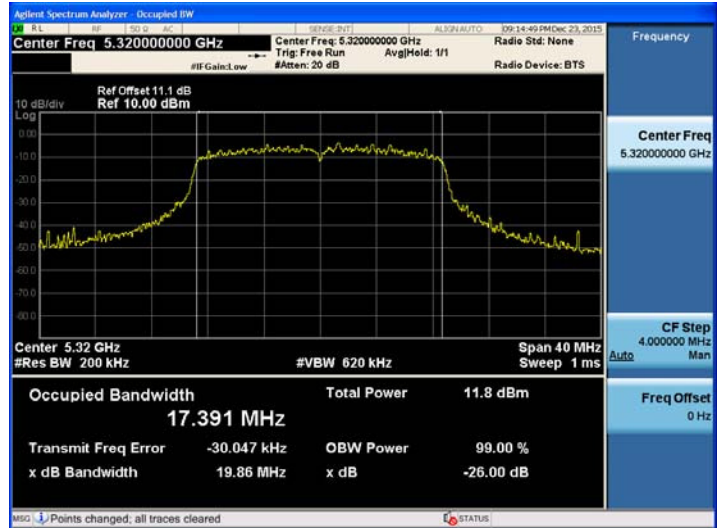
802.11ac(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	19.553	N/A	Pass
5785	157	19.611	N/A	Pass
5825	165	20.013	N/A	Pass

■ TEST Plot for 802.11ac _20MHz BW

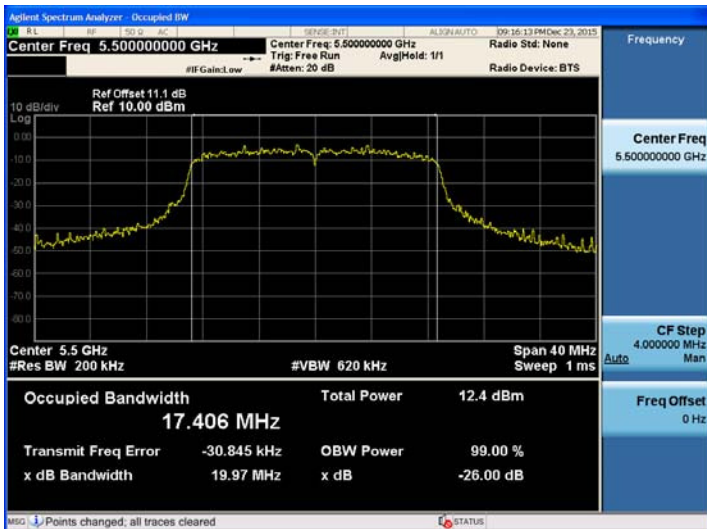
802.11ac_20 MHz BW UNII 1 BAND 26dB Bandwidth(CH 36)



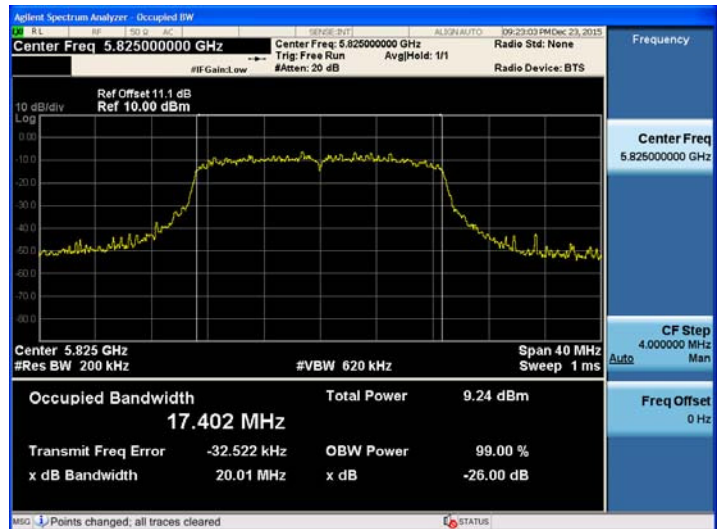
802.11ac_20 MHz BW UNII 2A BAND 26dB Bandwidth(CH 64)



802.11ac_20 MHz BW UNII 2C BAND 26dB Bandwidth(CH 100)



802.11ac_20 MHz BW 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_40MHz BW

Conducted 26 dB Bandwidth Measurements for 802.11ac_40 M BW

802.11ac(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5190	38	40.840	N/A	Pass
5230	46	40.099	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_40 M BW

802.11ac(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5270	54	40.813	N/A	Pass
5310	62	40.616	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_40 M BW

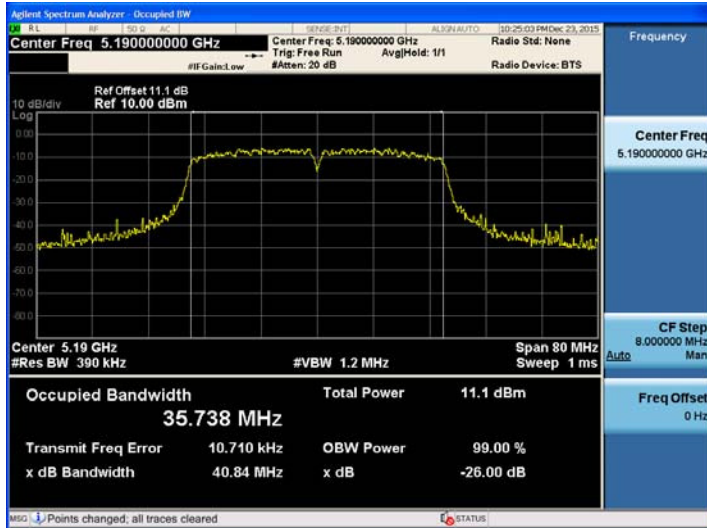
802.11ac(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5510	102	40.931	N/A	Pass
5550	110	40.146	N/A	Pass
5710	142	39.783	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_40 M BW

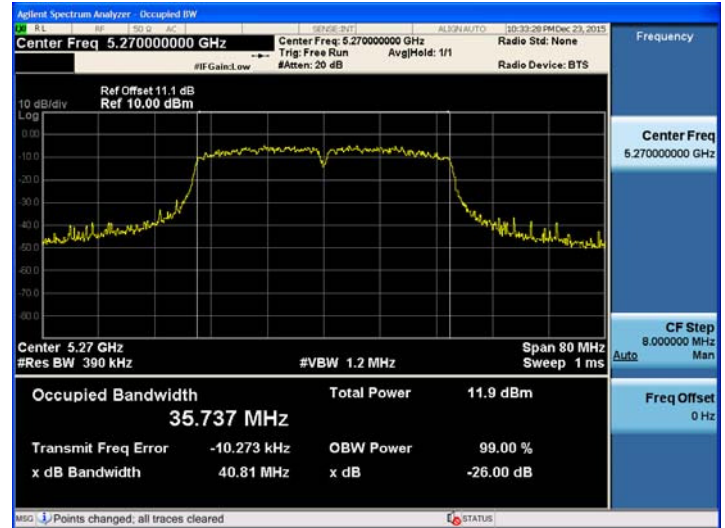
802.11ac(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	40.100	N/A	Pass
5795	159	39.925	N/A	Pass

■ TEST Plot for 802.11ac_40MHz BW

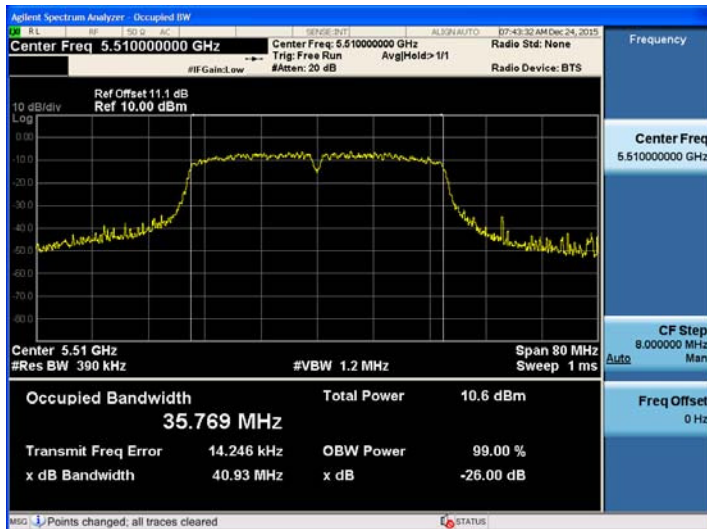
802.11ac_40 MHz BW UNII 1 BAND 26dB Bandwidth(CH 38)



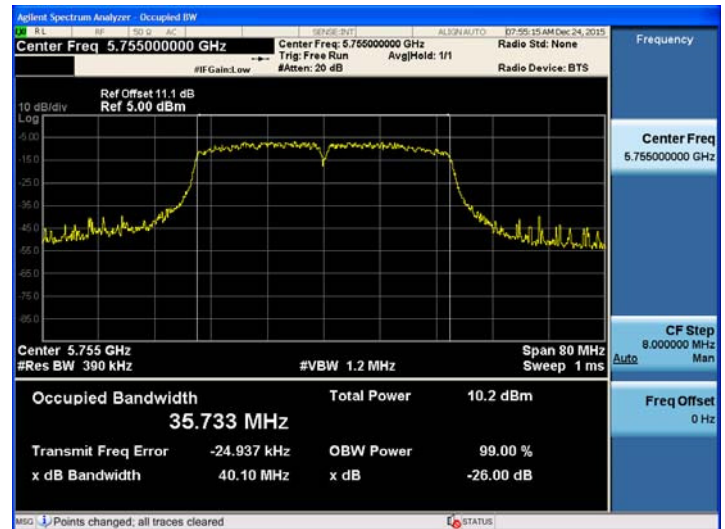
802.11ac_40 MHz BW UNII 2A BAND 26dB Bandwidth (CH 54)



802.11ac_40 MHz BW UNII 2C BAND 26dB Bandwidth(CH 102)



802.11ac_40 MHz BW UNII 3 BAND 26dB Bandwidth (CH 151)



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

■ TEST RESULTS for 802.11ac_80MHz BW

Conducted 26 dB Bandwidth Measurements for 802.11ac_80M BW

802.11ac(80M) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5210	42	82.367	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_80M BW

802.11ac(80M) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5290	58	82.358	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_80M BW

802.11ac(80M) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5530	106	82.606	N/A	Pass
5690	138	80.323	N/A	Pass

Conducted 26 dB Bandwidth Measurements for 802.11ac_80M BW

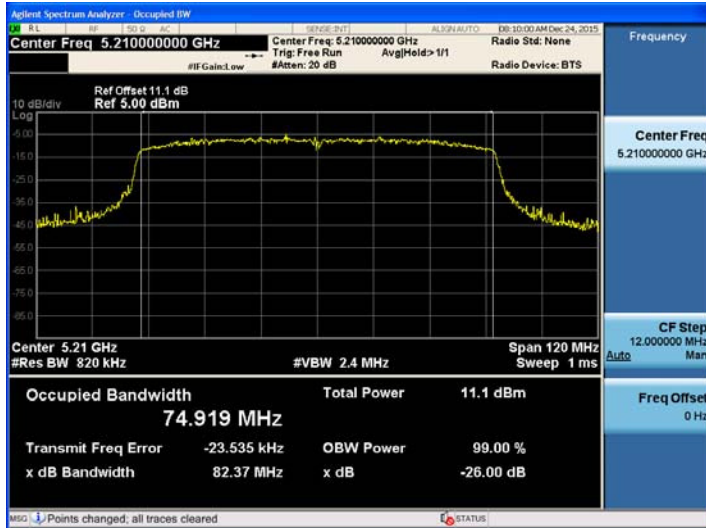
802.11ac(80M) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	81.783	N/A	Pass

Note :

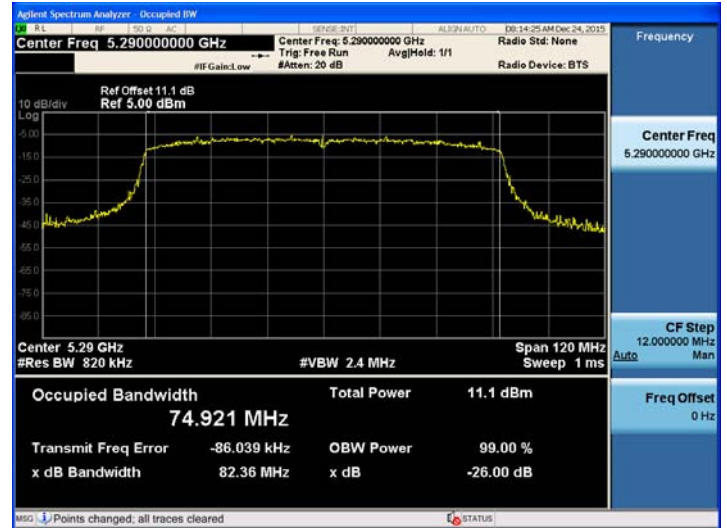
1. In order to simplify the report, attached plots were only the most wide channel.
2. DFS test channels should be defined. So, We performed the OBW test to prove that no part of the fundamental emissions of any channels belong to UNII1 and UNII3 band for DFS.

TEST Plot for 802.11ac_80MHz BW

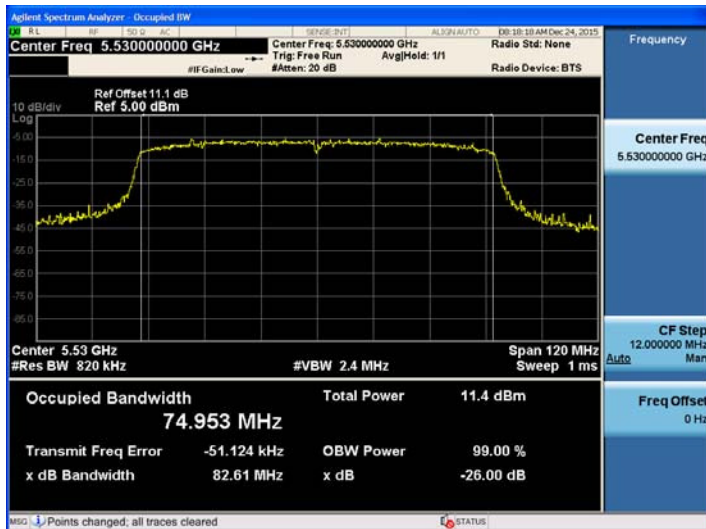
802.11ac_80 MHz BW UNII 1 BAND 26dB Bandwidth(CH 42)



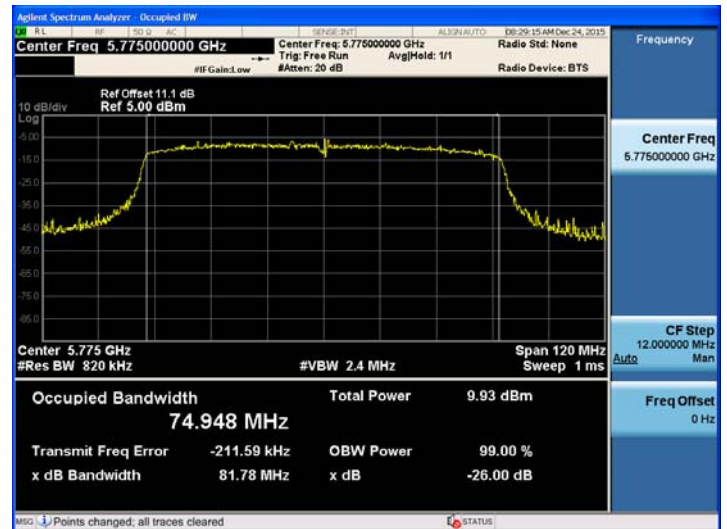
802.11ac_80 MHz BW UNII 2A BAND 26dB Bandwidth(CH 58)



802.11ac_80 MHz BW UNII 2C BAND 26dB Bandwidth(CH 106)



802.11ac_80 MHz BW UNII 3 BAND 26dB Bandwidth(CH 155)



Note :

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

Conducted 6 dB Bandwidth

■ TEST RESULTS for 802.11a/n/ac_20MHz BW

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	15.130	0.5	Pass
5785	157	15.159	0.5	Pass
5825	165	15.295	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11n_20MHz BW

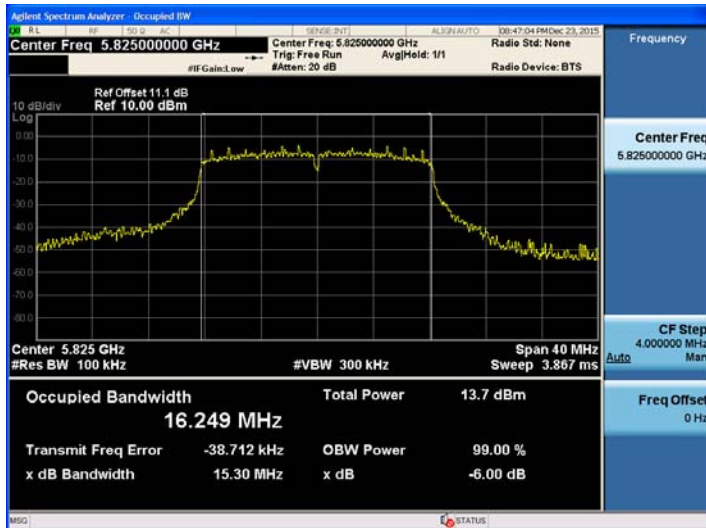
802.11n(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	15.028	0.5	Pass
5785	157	15.115	0.5	Pass
5825	165	15.011	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11ac_20MHz BW

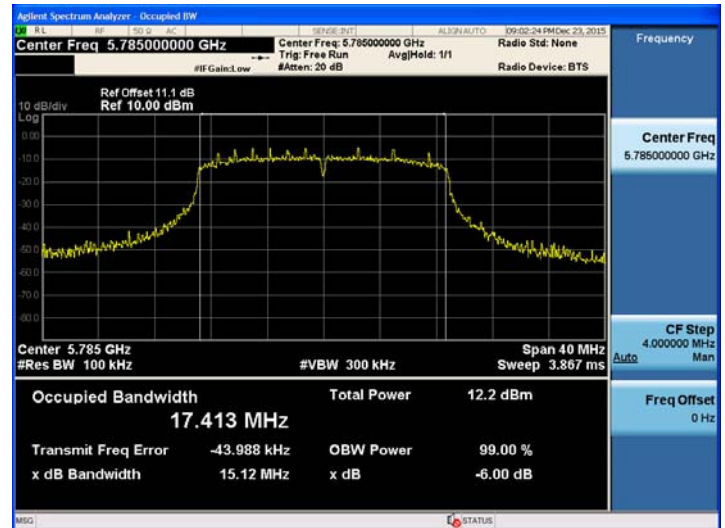
802.11ac(20MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	15.135	0.5	Pass
5785	157	15.415	0.5	Pass
5825	165	15.168	0.5	Pass

TEST PlotS for 802.11a/n/ac _20MHz BW

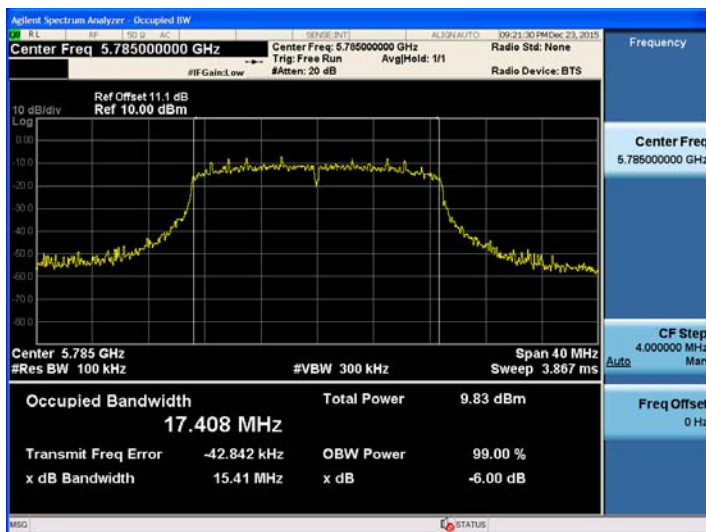
802.11a UNII 3 BAND 6dB Bandwidth (CH.165)



802.11n_20 MHz BW UNII 3 BAND 6dB Bandwidth(CH.157)



802.11ac_20 MHz BW 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/ac _40MHz BW

Conducted 6 dB Bandwidth Measurements for 802.11n_40MHz BW

802.11n(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	33.933	0.5	Pass
5795	159	35.099	0.5	Pass

Conducted 6 dB Bandwidth Measurements for 802.11ac_40MHz BW

802.11ac(40MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.138	0.5	Pass
5795	159	35.071	0.5	Pass

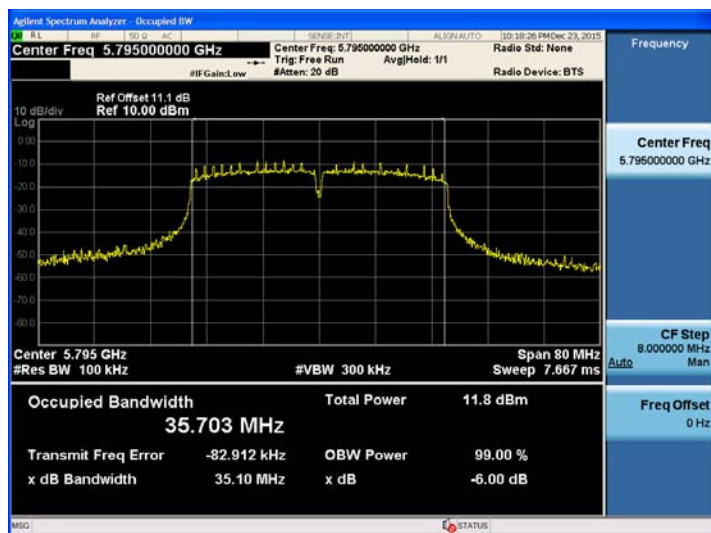
TEST RESULTS for 802.11ac _80MHz BW

Conducted 6 dB Bandwidth Measurements for 802.11ac_80MHz BW

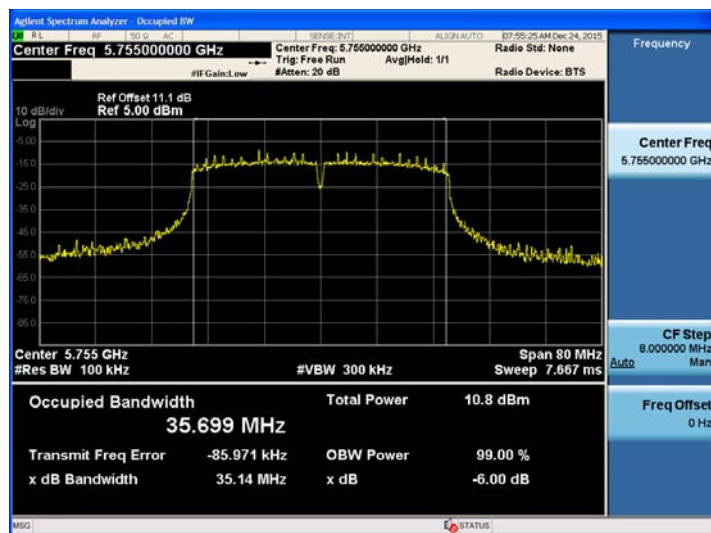
802.11ac(80MHz) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	72.700	0.5	Pass

TEST Plots for 802.11n/ac _40MHz BW_802.11ac _80MHz BW

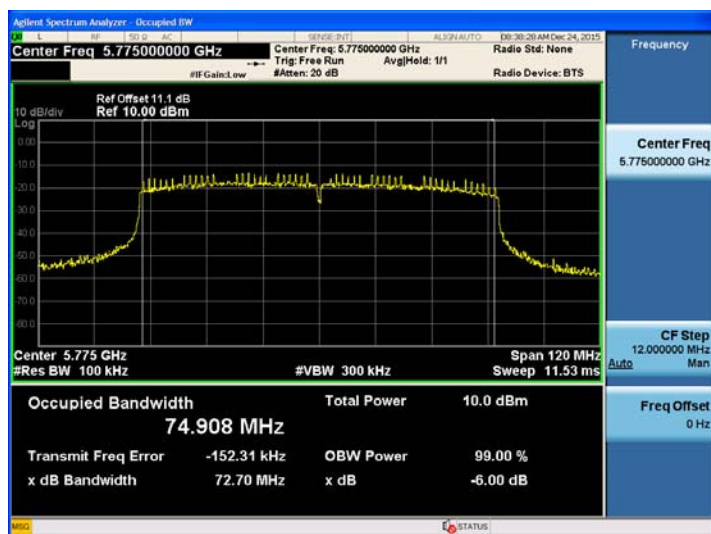
802.11n_40 MHz UNII 3 BAND 6dB Bandwidth (CH.159)



802.11ac_40 MHz BW UNII 3 BAND 6dB Bandwidth(CH.151)



802.11ac_80 MHz BW 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/ac_20MHz BW (UNII 2C Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11a	5720	144	14.28	N/A	Pass
802.11n			14.88	N/A	Pass
802.11ac			14.92	N/A	Pass

Conducted Bandwidth Measurements for 802.11a/n/ac_20MHz BW (UNII 3 Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11a	5720	144	4.24	N/A	Pass
802.11n			4.76	N/A	Pass
802.11ac			4.76	N/A	Pass

■ Straddle channels TEST Plots for 802.11a/n/ac_20MHz BW

802.11a CH.144 Bandwidth



802.11n_20MHz BW CH.144 Bandwidth



802.11ac CH.144 Bandwidth



Straddle channels TEST RESULTS

Conducted Bandwidth Measurements for 802.11n/ac_40MHz BW (UNII 2C Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11n	5710	142	35.12	N/A	Pass
802.11ac			35.12	N/A	Pass

Conducted Bandwidth Measurements for 802.11n/ac_40MHz BW (UNII 3 Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11n	5710	142	5.12	N/A	Pass
802.11ac			5.04	N/A	Pass

Straddle channels TEST Plots for 802.11n/ac_40MHz BW

802.11n_40MHz BW CH.142 Bandwidth



802.11ac_40MHz BW CH.142 Bandwidth



Straddle channels TEST RESULTS

Conducted Bandwidth Measurements for 802.11ac_80MHz BW (UNII 2C Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11ac	5690	138	75.84	N/A	Pass

Conducted Bandwidth Measurements for 802.11ac_80MHz BW (UNII 3 Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11ac	5690	138	6.08	N/A	Pass

Straddle channels TEST Plot for 802.11ac_80MHz BW



8.3 OUTPUT POWER MEASUREMENT

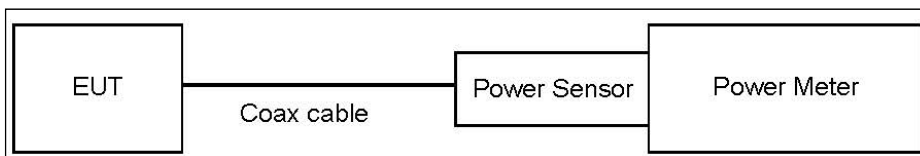
Test Requirements and limit, §15.407(a)(1)

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

■ Limit

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

■ TEST CONFIGURATION(20 MHz BW)



■ TEST PROCEDURE(20 MHz BW)

- Average Power (Procedure E.3.a in KDB 789033, issued 06/06/2014).
 1. Measure the duty cycle.
 2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
 3. Add $10 \log (1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Note :

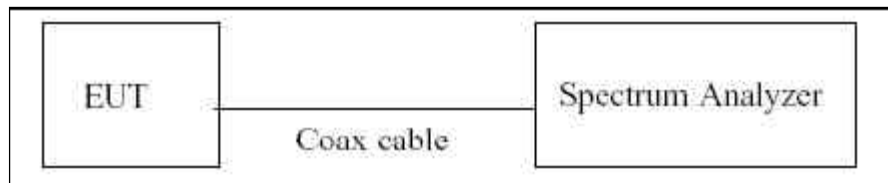
1. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1, 2A, 2C, 3	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(issued 06/06/2014).

The Spectrum Analyzer is set to

1. Measure the duty cycle.
2. Set span to encompass the 26 dB EBW of the signal.
3. RBW = 1 MHz.
4. VBW $\geq$ 3 MHz.
5. Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$.
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 $10\log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

■ Sample Calculation (Conducted)

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

■ Sample Calculation (EIRP)

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

Note: 1. Spectrum reading values are not plot data. The power results in plot is already including the actual values of loss for the attenuator and cable combination.

2. Spectrum offset = Attenuator loss + Cable loss

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

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

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

802.11a_20MHz BW (UNII 1)

■ TEST RESULTS

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

802.11a(20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	6	9.45	0.19	9.64	23.98
		9	9.34	0.28	9.62	23.98
		12	9.25	0.36	9.61	23.98
		18	9.22	0.50	9.72	23.98
		24	9.34	0.65	9.99	23.98
		36	9.02	0.98	10.00	23.98
		48	8.82	1.18	10.00	23.98
		54	8.66	1.32	9.98	23.98
5200	40	6	9.46	0.19	9.65	23.98
		9	9.36	0.28	9.64	23.98
		12	9.26	0.36	9.62	23.98
		18	9.24	0.50	9.74	23.98
		24	9.37	0.65	10.02	23.98
		36	9.04	0.98	10.02	23.98
		48	8.83	1.18	10.01	23.98
		54	8.67	1.32	9.99	23.98
5240	48	6	9.68	0.19	9.87	23.98
		9	9.60	0.28	9.88	23.98
		12	9.51	0.36	9.87	23.98
		18	9.50	0.50	10.00	23.98
		24	9.61	0.65	10.26	23.98
		36	9.28	0.98	10.26	23.98
		48	9.06	1.18	10.24	23.98
		54	8.91	1.32	10.23	23.98

802.11a _20MHz BW (UNII 2A)

■ TEST RESULTS

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

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5260	52	6	9.72	0.19	9.91	23.98
		9	9.63	0.28	9.91	23.98
		12	9.53	0.36	9.89	23.98
		18	9.52	0.50	10.02	23.98
		24	9.64	0.65	10.29	23.98
		36	9.31	0.98	10.29	23.98
		48	9.12	1.18	10.30	23.98
		54	8.94	1.32	10.26	23.98
5300	60	6	9.09	0.19	9.28	23.98
		9	8.98	0.28	9.26	23.98
		12	8.91	0.36	9.27	23.98
		18	8.89	0.50	9.39	23.98
		24	8.98	0.65	9.63	23.98
		36	8.67	0.98	9.65	23.98
		48	8.47	1.18	9.65	23.98
		54	8.31	1.32	9.63	23.98
5320	64	6	9.15	0.19	9.34	23.98
		9	9.04	0.28	9.32	23.98
		12	8.97	0.36	9.33	23.98
		18	8.92	0.50	9.42	23.98
		24	9.04	0.65	9.69	23.98
		36	8.72	0.98	9.70	23.98
		48	8.51	1.18	9.69	23.98
		54	8.38	1.32	9.70	23.98

802.11a _20MHz BW (UNII 2C)

■ TEST RESULTS

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

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	6	9.42	0.19	9.61	23.98
		9	9.33	0.28	9.61	23.98
		12	9.21	0.36	9.57	23.98
		18	9.20	0.50	9.70	23.98
		24	9.24	0.65	9.89	23.98
		36	8.94	0.98	9.92	23.98
		48	8.75	1.18	9.93	23.98
		54	8.59	1.32	9.91	23.98
5580	116	6	9.57	0.19	9.76	23.98
		9	9.47	0.28	9.75	23.98
		12	9.38	0.36	9.74	23.98
		18	9.36	0.50	9.86	23.98
		24	9.47	0.65	10.12	23.98
		36	9.15	0.98	10.13	23.98
		48	8.93	1.18	10.11	23.98
		54	8.77	1.32	10.09	23.98
5720	144	6	8.23	0.19	8.42	23.98
		9	8.15	0.28	8.43	23.98
		12	8.03	0.36	8.39	23.98
		18	8.03	0.50	8.53	23.98
		24	8.14	0.65	8.79	23.98
		36	7.81	0.98	8.79	23.98
		48	7.61	1.18	8.79	23.98
		54	7.45	1.32	8.77	23.98

802.11a _20MHz BW (UNII 3)

■ TEST RESULTS

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

802.11a (20MHz) Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	6	8.22	0.19	8.41	30
		9	8.12	0.28	8.40	30
		12	8.03	0.36	8.39	30
		18	8.01	0.50	8.51	30
		24	8.09	0.65	8.74	30
		36	7.77	0.98	8.75	30
		48	7.57	1.18	8.75	30
		54	7.40	1.32	8.72	30
5785	157	6	7.39	0.19	7.58	30
		9	7.30	0.28	7.58	30
		12	7.20	0.36	7.56	30
		18	7.19	0.50	7.69	30
		24	7.29	0.65	7.94	30
		36	6.97	0.98	7.95	30
		48	6.76	1.18	7.94	30
		54	6.61	1.32	7.93	30
5825	165	6	7.39	0.19	7.58	30
		9	7.27	0.28	7.55	30
		12	7.15	0.36	7.51	30
		18	7.29	0.50	7.79	30
		24	7.28	0.65	7.93	30
		36	6.95	0.98	7.93	30
		48	6.75	1.18	7.93	30
		54	6.58	1.32	7.90	30

802.11n_20MHz BW (UNII 1)

■ TEST RESULTS

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

802.11n(20MHz) 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	7.20	0.20	7.40	23.98
		1	6.92	0.35	7.27	23.98
		2	6.95	0.51	7.46	23.98
		3	7.24	0.67	7.91	23.98
		4	6.97	0.96	7.93	23.98
		5	6.73	1.19	7.92	23.98
		6	6.65	1.29	7.94	23.98
		7	6.53	1.39	7.92	23.98
5200	40	0	7.23	0.20	7.43	23.98
		1	6.94	0.35	7.29	23.98
		2	6.97	0.51	7.48	23.98
		3	7.28	0.67	7.95	23.98
		4	7.00	0.96	7.96	23.98
		5	6.76	1.19	7.95	23.98
		6	6.68	1.29	7.97	23.98
		7	6.55	1.39	7.94	23.98
5240	48	0	7.35	0.20	7.55	23.98
		1	7.08	0.35	7.43	23.98
		2	7.12	0.51	7.63	23.98
		3	7.44	0.67	8.11	23.98
		4	7.14	0.96	8.10	23.98
		5	6.89	1.19	8.08	23.98
		6	6.81	1.29	8.10	23.98
		7	6.68	1.39	8.07	23.98

802.11n _20MHz BW (UNII 2A)

■ TEST RESULTS

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

802.11n(20MHz) 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	7.35	0.20	7.55	23.98
		1	7.12	0.35	7.47	23.98
		2	7.17	0.51	7.68	23.98
		3	7.50	0.67	8.17	23.98
		4	7.21	0.96	8.17	23.98
		5	6.98	1.19	8.17	23.98
		6	6.89	1.29	8.18	23.98
		7	6.75	1.39	8.14	23.98
5300	60	0	6.98	0.20	7.18	23.98
		1	6.70	0.35	7.05	23.98
		2	6.73	0.51	7.24	23.98
		3	7.04	0.67	7.71	23.98
		4	6.78	0.96	7.74	23.98
		5	6.53	1.19	7.72	23.98
		6	6.44	1.29	7.73	23.98
		7	6.32	1.39	7.71	23.98
5320	64	0	7.02	0.20	7.22	23.98
		1	6.74	0.35	7.09	23.98
		2	6.77	0.51	7.28	23.98
		3	7.07	0.67	7.74	23.98
		4	6.80	0.96	7.76	23.98
		5	6.57	1.19	7.76	23.98
		6	6.49	1.29	7.78	23.98
		7	6.36	1.39	7.75	23.98

802.11n _20MHz BW (UNII 2C)

■ TEST RESULTS

Conducted Output Power Measurements (802.11n_20M BW Mode: 5500~5720)

802.11n(20MHz) 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	7.18	0.20	7.38	23.98
		1	6.89	0.35	7.24	23.98
		2	6.92	0.51	7.43	23.98
		3	7.24	0.67	7.91	23.98
		4	6.97	0.96	7.93	23.98
		5	6.73	1.19	7.92	23.98
		6	6.65	1.29	7.94	23.98
		7	6.52	1.39	7.91	23.98
5580	116	0	7.25	0.20	7.45	23.98
		1	6.96	0.35	7.31	23.98
		2	7.00	0.51	7.51	23.98
		3	7.31	0.67	7.98	23.98
		4	7.05	0.96	8.01	23.98
		5	6.80	1.19	7.99	23.98
		6	6.72	1.29	8.01	23.98
		7	6.59	1.39	7.98	23.98
5720	144	0	6.14	0.20	6.34	23.98
		1	5.86	0.35	6.21	23.98
		2	5.88	0.51	6.39	23.98
		3	6.19	0.67	6.86	23.98
		4	5.94	0.96	6.90	23.98
		5	5.70	1.19	6.89	23.98
		6	5.61	1.29	6.90	23.98
		7	5.48	1.39	6.87	23.98

802.11n_20MHz BW (UNII 3)

■ TEST RESULTS

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

802.11n(20MHz) 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	6.07	0.20	6.27	30
		1	5.78	0.35	6.13	30
		2	5.82	0.51	6.33	30
		3	6.15	0.67	6.82	30
		4	5.88	0.96	6.84	30
		5	5.64	1.19	6.83	30
		6	5.55	1.29	6.84	30
		7	5.44	1.39	6.83	30
5785	157	0	5.33	0.20	5.53	30
		1	5.04	0.35	5.39	30
		2	5.08	0.51	5.59	30
		3	5.42	0.67	6.09	30
		4	5.16	0.96	6.12	30
		5	4.90	1.19	6.09	30
		6	4.84	1.29	6.13	30
		7	4.69	1.39	6.08	30
5825	165	0	5.29	0.20	5.49	30
		1	4.99	0.35	5.34	30
		2	5.03	0.51	5.54	30
		3	5.39	0.67	6.06	30
		4	5.12	0.96	6.08	30
		5	4.88	1.19	6.07	30
		6	4.79	1.29	6.08	30
		7	4.66	1.39	6.05	30

802.11ac_20MHz BW (UNII 1)

■ TEST RESULTS

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

802.11ac(20MHz) 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	5.43	0.19	5.62	23.98
		1	5.16	0.36	5.52	23.98
		2	5.17	0.52	5.69	23.98
		3	5.51	0.68	6.19	23.98
		4	5.25	0.95	6.20	23.98
		5	5.02	1.16	6.18	23.98
		6	4.91	1.35	6.26	23.98
		7	4.79	1.37	6.16	23.98
5200	40	0	4.61	1.58	6.19	23.98
		1	5.47	0.19	5.66	23.98
		2	5.19	0.36	5.55	23.98
		3	5.20	0.52	5.72	23.98
		4	5.54	0.68	6.22	23.98
		5	5.28	0.95	6.23	23.98
		6	5.04	1.16	6.20	23.98
		7	4.95	1.35	6.30	23.98
5240	48	0	4.82	1.37	6.19	23.98
		1	4.65	1.58	6.23	23.98
		2	5.41	0.19	5.60	23.98
		3	5.12	0.36	5.48	23.98
		4	5.14	0.52	5.66	23.98
		5	5.47	0.68	6.15	23.98
		6	5.21	0.95	6.16	23.98
		7	4.98	1.16	6.14	23.98

802.11ac_20MHz BW (UNII 2A)

■ TEST RESULTS

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

802.11ac(20MHz) 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	5.44	0.19	5.63	23.98
		1	5.17	0.36	5.53	23.98
		2	5.19	0.52	5.71	23.98
		3	5.51	0.68	6.19	23.98
		4	5.24	0.95	6.19	23.98
		5	5.02	1.16	6.18	23.98
		6	4.93	1.35	6.28	23.98
		7	4.79	1.37	6.16	23.98
5300	60	0	4.62	1.58	6.20	23.98
		1	5.08	0.19	5.27	23.98
		2	4.79	0.36	5.15	23.98
		3	4.81	0.52	5.33	23.98
		4	5.15	0.68	5.83	23.98
		5	4.88	0.95	5.83	23.98
		6	4.65	1.16	5.81	23.98
		7	4.56	1.35	5.91	23.98
5320	64	0	4.43	1.37	5.80	23.98
		1	4.25	1.58	5.83	23.98
		2	5.12	0.19	5.31	23.98
		3	4.84	0.36	5.20	23.98
		4	4.85	0.52	5.37	23.98
		5	5.19	0.68	5.87	23.98
		6	4.92	0.95	5.87	23.98
		7	4.70	1.16	5.86	23.98

802.11ac _20MHz BW (UNII 2C)

■ TEST RESULTS

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

802.11ac(20MHz) 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	6.28	0.19	6.47	23.98
		1	6.00	0.36	6.36	23.98
		2	6.01	0.52	6.53	23.98
		3	6.35	0.68	7.03	23.98
		4	6.07	0.95	7.02	23.98
		5	5.86	1.16	7.02	23.98
		6	5.76	1.35	7.11	23.98
		7	5.64	1.37	7.01	23.98
5580	116	0	5.44	1.58	7.02	23.98
		1	5.32	0.19	5.51	23.98
		2	5.04	0.36	5.40	23.98
		3	5.06	0.52	5.58	23.98
		4	5.39	0.68	6.07	23.98
		5	5.14	0.95	6.09	23.98
		6	4.91	1.16	6.07	23.98
		7	4.82	1.35	6.17	23.98
5720	144	0	4.70	1.37	6.07	23.98
		1	4.49	1.58	6.07	23.98
		2	4.06	0.19	4.25	23.98
		3	3.79	0.36	4.15	23.98
		4	3.80	0.52	4.32	23.98
		5	4.17	0.68	4.85	23.98
		6	3.89	0.95	4.84	23.98
		7	3.67	1.16	4.83	23.98

802.11ac_20MHz BW (UNII 3)

■ TEST RESULTS

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

802.11ac(20MHz) 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	4.03	0.19	4.22	30
		1	3.75	0.36	4.11	30
		2	3.77	0.52	4.29	30
		3	4.11	0.68	4.79	30
		4	3.85	0.95	4.80	30
		5	3.63	1.16	4.79	30
		6	3.54	1.35	4.89	30
		7	3.39	1.37	4.76	30
5785	157	0	3.21	1.58	4.79	30
		1	3.02	0.19	3.21	30
		2	2.72	0.36	3.08	30
		3	2.75	0.52	3.27	30
		4	3.08	0.68	3.76	30
		5	2.82	0.95	3.77	30
		6	2.57	1.16	3.73	30
		7	2.49	1.35	3.84	30
5825	165	0	2.37	1.37	3.74	30
		1	2.18	1.58	3.76	30
		2	2.95	0.19	3.14	30
		3	2.67	0.36	3.03	30
		4	2.69	0.52	3.21	30
		5	3.06	0.68	3.74	30
		6	2.79	0.95	3.74	30
		7	2.56	1.16	3.72	30

802.11n_40MHz BW (UNII 1)

■ TEST RESULTS

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

802.11n(40MHz) 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	6.77	0.37	7.14	23.98
		1	6.51	0.68	7.20	23.98
		2	6.20	0.98	7.18	23.98
		3	5.86	1.23	7.09	23.98
		4	5.57	1.64	7.20	23.98
		5	5.21	1.96	7.17	23.98
		6	5.12	2.06	7.19	23.98
		7	4.96	2.23	7.20	23.98
5230	46	0	6.56	0.37	6.93	23.98
		1	6.28	0.68	6.96	23.98
		2	5.97	0.98	6.95	23.98
		3	5.65	1.23	6.88	23.98
		4	5.35	1.64	6.98	23.98
		5	4.96	1.96	6.91	23.98
		6	4.85	2.06	6.91	23.98
		7	4.68	2.23	6.91	23.98

802.11n_40MHz BW (UNII 2A)

■ TEST RESULTS

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

802.11n(40MHz) 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	6.49	0.37	6.86	23.98
		1	6.19	0.68	6.87	23.98
		2	5.89	0.98	6.87	23.98
		3	5.63	1.23	6.85	23.98
		4	5.24	1.64	6.88	23.98
		5	4.91	1.96	6.87	23.98
		6	4.83	2.06	6.89	23.98
		7	4.66	2.23	6.89	23.98
5310	62	0	6.72	0.37	7.09	23.98
		1	6.46	0.68	7.14	23.98
		2	6.12	0.98	7.10	23.98
		3	5.85	1.23	7.08	23.98
		4	5.50	1.64	7.13	23.98
		5	5.23	1.96	7.19	23.98
		6	5.06	2.06	7.12	23.98
		7	4.90	2.23	7.13	23.98

802.11n_40MHz BW (UNII 2C)

■ TEST RESULTS

Conducted Output Power Measurements (802.11n_40M BW Mode: 5510~5710)

802.11n(40MHz) 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	6.22	0.37	6.59	23.98
		1	5.92	0.68	6.61	23.98
		2	5.62	0.98	6.60	23.98
		3	5.37	1.23	6.60	23.98
		4	4.97	1.64	6.61	23.98
		5	4.65	1.96	6.61	23.98
		6	4.55	2.06	6.61	23.98
		7	4.40	2.23	6.63	23.98
5550	110	0	6.67	0.37	7.04	23.98
		1	6.37	0.68	7.06	23.98
		2	6.10	0.98	7.08	23.98
		3	5.82	1.23	7.04	23.98
		4	5.39	1.64	7.02	23.98
		5	5.09	1.96	7.05	23.98
		6	5.00	2.06	7.06	23.98
		7	4.84	2.23	7.07	23.98
5710	142	0	5.99	0.37	6.36	23.98
		1	5.70	0.68	6.39	23.98
		2	5.42	0.98	6.40	23.98
		3	5.18	1.23	6.41	23.98
		4	4.75	1.64	6.39	23.98
		5	4.45	1.96	6.41	23.98
		6	4.32	2.06	6.38	23.98
		7	4.14	2.23	6.37	23.98

802.11n_40MHz BW (UNII 3)

■ TEST RESULTS

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

802.11n(40MHz) 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	5.69	0.37	6.05	30
		1	5.45	0.68	6.13	30
		2	5.09	0.98	6.07	30
		3	4.84	1.23	6.06	30
		4	4.42	1.64	6.06	30
		5	4.15	1.96	6.11	30
		6	4.04	2.06	6.10	30
		7	3.85	2.23	6.08	30
5795	159	0	4.57	0.37	4.94	30
		1	4.30	0.68	4.98	30
		2	3.98	0.98	4.96	30
		3	3.71	1.23	4.94	30
		4	3.35	1.64	4.98	30
		5	3.06	1.96	5.02	30
		6	2.92	2.06	4.98	30
		7	2.73	2.23	4.97	30

■ TEST Plots for 802.11n_40MHz BW

**802.11n_40 MHz BW UNII 1 BAND Average Power
(5190 MHz ~5230 MHz) CH 38 MCS4**



**802.11n_40 MHz BW UNII 2A BAND Average Power
(5270 MHz ~5310 MHz) CH 62 MCS5**



**802.11n_40 MHz BW UNII 2C BAND Average Power
(5510 MHz ~5710 MHz) CH 110 MCS2**



**802.11n_40 MHz BW UNII 3 BAND Average Power
(5755 MHz ~5795 MHz) CH 151 MCS1**



802.11ac_40MHz BW (UNII 1)

■ TEST RESULTS

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

802.11ac(40MHz) 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	4.30	0.39	4.69	23.98
		1	3.96	0.72	4.67	23.98
		2	3.66	0.97	4.63	23.98
		3	3.42	1.21	4.62	23.98
		4	3.04	1.60	4.64	23.98
		5	2.73	1.90	4.63	23.98
		6	2.62	2.03	4.65	23.98
		7	2.44	2.18	4.61	23.98
5230	46	0	2.26	2.41	4.67	23.98
		1	2.18	2.47	4.65	23.98
		2	4.21	0.39	4.60	23.98
		3	3.86	0.72	4.58	23.98
		4	3.56	0.97	4.53	23.98
		5	3.42	1.21	4.63	23.98
		6	2.91	1.60	4.51	23.98
		7	2.57	1.90	4.47	23.98

802.11ac_40MHz BW (UNII 2A)

■ TEST RESULTS

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

802.11ac(40MHz) 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	4.97	0.39	5.36	23.98
		1	4.74	0.72	5.46	23.98
		2	4.43	0.97	5.41	23.98
		3	4.14	1.21	5.35	23.98
		4	3.79	1.60	5.39	23.98
		5	3.47	1.90	5.36	23.98
		6	3.36	2.03	5.39	23.98
		7	3.17	2.18	5.35	23.98
5310	62	0	2.93	2.41	5.34	23.98
		1	2.94	2.47	5.42	23.98
		2	4.25	0.39	4.64	23.98
		3	3.88	0.72	4.60	23.98
		4	3.60	0.97	4.58	23.98
		5	3.36	1.21	4.57	23.98
		6	2.99	1.60	4.59	23.98
		7	2.66	1.90	4.55	23.98

802.11ac_40MHz BW (UNII 2C)

■ TEST RESULTS

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

802.11ac(40MHz) 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	3.82	0.39	4.21	23.98
		1	3.45	0.72	4.17	23.98
		2	3.15	0.97	4.12	23.98
		3	2.90	1.21	4.11	23.98
		4	2.54	1.60	4.14	23.98
		5	2.24	1.90	4.14	23.98
		6	2.10	2.03	4.13	23.98
		7	1.95	2.18	4.13	23.98
5550	110	0	1.72	2.41	4.12	23.98
		1	1.62	2.47	4.09	23.98
		2	4.29	0.39	4.68	23.98
		3	3.91	0.72	4.63	23.98
		4	3.66	0.97	4.64	23.98
		5	3.39	1.21	4.59	23.98
		6	3.02	1.60	4.62	23.98
		7	2.70	1.90	4.60	23.98
5710	142	0	2.63	2.03	4.66	23.98
		1	2.40	2.18	4.58	23.98
		2	2.18	2.41	4.59	23.98
		3	2.15	2.47	4.63	23.98
		4	3.50	0.39	3.89	23.98
		5	3.28	0.72	4.00	23.98
		6	2.92	0.97	3.89	23.98
		7	2.65	1.21	3.86	23.98

802.11ac_40MHz BW (UNII 3)

■ TEST RESULTS

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

802.11ac(40MHz) 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	3.35	0.39	3.75	30
		1	2.93	0.72	3.65	30
		2	2.73	0.97	3.70	30
		3	2.50	1.21	3.71	30
		4	2.12	1.60	3.72	30
		5	1.83	1.90	3.73	30
		6	1.71	2.03	3.75	30
		7	1.47	2.18	3.64	30
5795	159	0	1.32	2.41	3.73	30
		1	1.21	2.47	3.69	30
		2	2.18	0.39	2.58	30
		3	1.90	0.72	2.62	30
		4	1.49	0.97	2.46	30
		5	1.29	1.21	2.50	30
		6	1.01	1.60	2.61	30
		7	0.71	1.90	2.60	30

■ TEST Plots for 802.11ac_40MHz BW

**802.11ac_40 MHz BW UNII 1 BAND Average Power
(5190 MHz ~5230 MHz) CH 38 MCS0**



**802.11ac_40 MHz BW UNII 2A BAND Average Power
(5270 MHz ~5310 MHz) CH 54 MCS1**



**802.11ac_40 MHz BW UNII 2C BAND Average Power
(5510 MHz ~5710 MHz) CH 110 MCS0**



**802.11ac_40 MHz BW UNII 3 BAND Average Power
(5755 MHz ~5795 MHz) CH 151 MCS0**



802.11ac_80MHz BW (UNII 1)

■ TEST RESULTS

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

802.11ac(80MHz) 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	2.94	0.74	3.68	23.98
		1	2.51	1.38	3.90	23.98
		2	2.13	1.65	3.77	23.98
		3	1.99	1.99	3.98	23.98
		4	1.44	2.56	4.01	23.98
		5	1.13	2.90	4.02	23.98
		6	0.97	3.08	4.05	23.98
		7	0.91	3.06	3.97	23.98
		8	0.70	3.29	3.99	23.98
		9	0.57	3.41	3.98	23.98

802.11ac_80MHz BW (UNII 2A)

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

802.11ac (80MHz) 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	3.07	0.74	3.81	23.98
		1	2.62	1.38	4.00	23.98
		2	2.23	1.65	3.88	23.98
		3	2.10	1.99	4.09	23.98
		4	1.57	2.56	4.13	23.98
		5	1.28	2.90	4.18	23.98
		6	1.15	3.08	4.23	23.98
		7	1.06	3.06	4.12	23.98
		8	0.78	3.29	4.06	23.98
		9	0.68	3.41	4.09	23.98

802.11ac_80MHz BW (UNII 2C)

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

802.11ac(80MHz) 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	3.16	0.74	3.89	23.98
		1	2.73	1.38	4.11	23.98
		2	2.26	1.65	3.91	23.98
		3	2.19	1.99	4.18	23.98
		4	1.70	2.56	4.26	23.98
		5	1.36	2.90	4.26	23.98
		6	1.20	3.08	4.28	23.98
		7	1.17	3.06	4.23	23.98
		8	0.88	3.29	4.16	23.98
		9	0.75	3.41	4.17	23.98
5690	138	0	2.96	0.74	3.70	23.98
		1	2.48	1.38	3.86	23.98
		2	2.07	1.65	3.72	23.98
		3	1.97	1.99	3.96	23.98
		4	1.49	2.56	4.05	23.98
		5	1.12	2.90	4.02	23.98
		6	0.96	3.08	4.05	23.98
		7	0.92	3.06	3.98	23.98
		8	0.67	3.29	3.95	23.98
		9	0.53	3.41	3.95	23.98

802.11ac_80MHz BW (UNII 3)

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

802.11ac(80MHz) 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	1.82	0.74	2.56	30
		1	1.44	1.38	2.82	30
		2	0.93	1.65	2.58	30
		3	0.88	1.99	2.87	30
		4	0.35	2.56	2.91	30
		5	0.01	2.90	2.91	30
		6	-0.10	3.08	2.99	30
		7	-0.17	3.06	2.89	30
		8	-0.40	3.29	2.88	30
		9	-0.58	3.41	2.83	30

TEST Plots for 802.11ac_80MHz BW

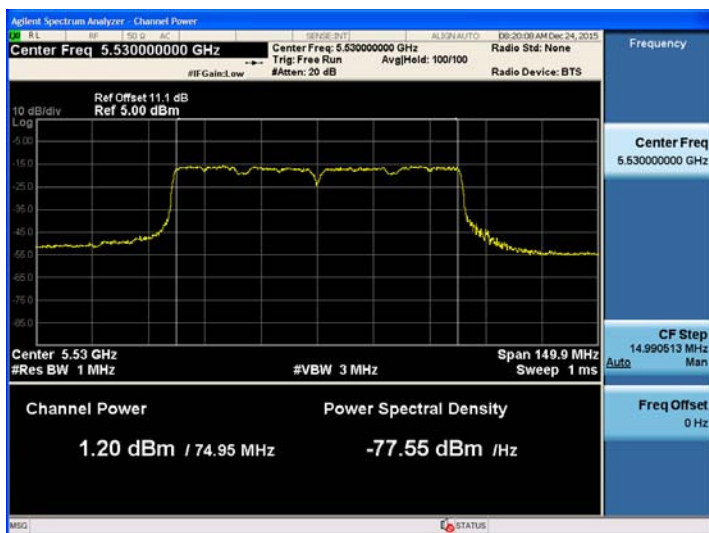
802.11ac_80 MHz BW UNII 1 BAND Average Power (5210 MHz) CH 42 MCS6



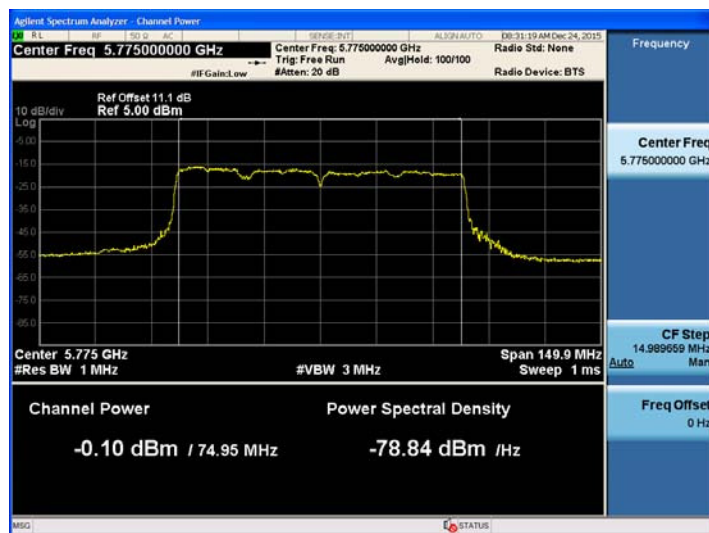
802.11ac_80 MHz BW UNII 2A BAND Average Power (5290 MHz) CH 58 MCS6



802.11ac_80 MHz BW UNII 2C BAND Average Power (5530 MHz ~5690 MHz) CH 106 MCS6



802.11ac_80 MHz BW UNII 3 BAND Average Power (5775 MHz) CH 155 MCS6



Straddle channels TEST RESULTS

Conducted Output Power Measurements (802.11a/n/ac _20M 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	7.91	0.65	8.56	23.98
802.11n			5.76	1.29	7.05	23.98
802.11ac			3.65	1.35	5.00	23.98

Conducted Output Power Measurements (802.11a/n/ac _20M 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	0.45	0.65	1.10	30.00
802.11n			-1.31	1.29	-0.02	30.00
802.11ac			-3.42	1.35	-2.07	30.00

☐ Straddle channels TEST Plots for 802.11a/n/ac _20MHz BW

802.11a UNII 2C Band Average Power CH.144



802.11a UNII 3 Band Average Power CH.144



802.11n_20MHz BW UNII 2C Band Average Power CH.144



802.11n_20MHz BW UNII 3 Band Average Power CH.144



802.11ac UNII 2C Band Average Power CH.144



802.11ac UNII 3 Band Average Power CH.144



■ Straddle channels TEST RESULTS

Conducted Output Power Measurements (802.11n/ac _40M 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	5.83	1.96	7.79	23.98
802.11ac			3.43	0.72	4.15	23.98

Conducted Output Power Measurements (802.11n/ac_40M 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	-6.84	1.96	-4.88	30.00
802.11ac			-9.33	0.72	-8.61	30.00

☐ Straddle channels TEST Plots for 802.11n/ac _40MHz BW

802.11n_40MHz BW UNII 2C Band Average Power CH.142



802.11n_40MHz BW UNII 3 Band Average Power CH.142



802.11ac_40MHz BW UNII 2C Band Average Power CH.142



802.11ac_40MHzBW UNII 3 Band Average Power CH.142



Straddle channels TEST RESULTS

Conducted Output Power Measurements (802.11ac_80M Mode: UNII 2C Band 5687MHz)

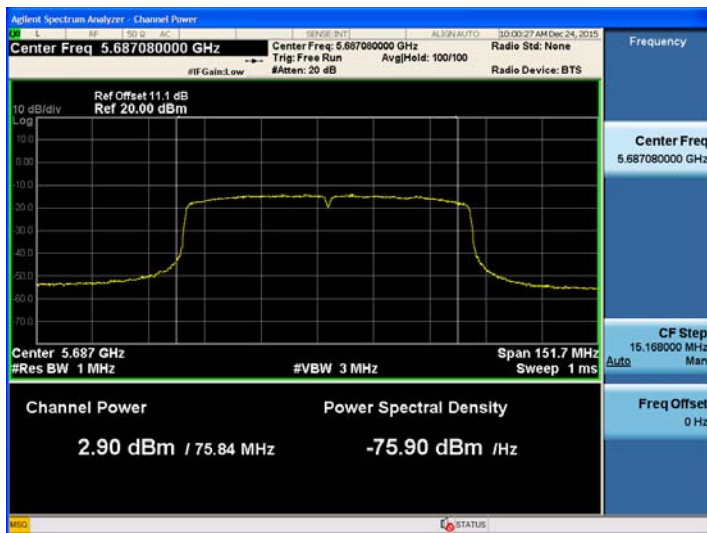
Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11ac	5687	142	2.90	2.56	5.46	23.98

Conducted Output Power Measurements (802.11ac_80M Mode: UNII 3 Band 5687MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11ac	5687	142	-13.83	2.56	-11.27	30.00

Straddle channels TEST Plots for 802.11ac_80MHz BW

802.11ac_80MHz BW UNII 2C Band Average Power CH.142



802.11ac_80MHzBW UNII 3 Band Average Power CH.142



8.4 POWER SPECTRAL DENSITY

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

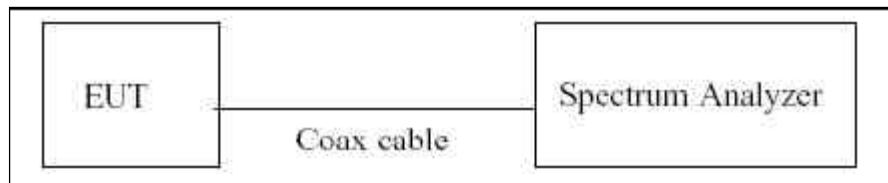
■ Limit(CDD)

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

■ TEST CONFIGURATION



■ TEST PROCEDURE

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

The spectrum analyzer is set to :

1. Set span to encompass the entire emission bandwidth(EBW) of the signal.
2. RBW = 1 MHz(510 kHz for UNII 3)
3. VBW $\geq$ 3 MHz
4. Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$.
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_20MHz BW

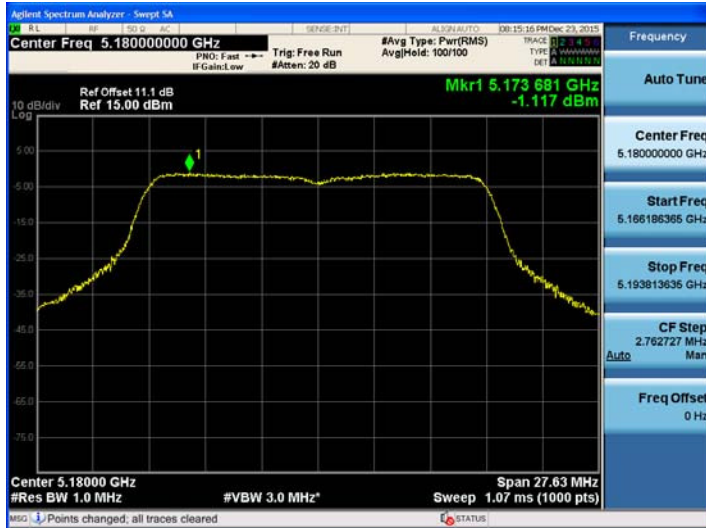
TEST RESULTS

Conducted Power Density Measurements

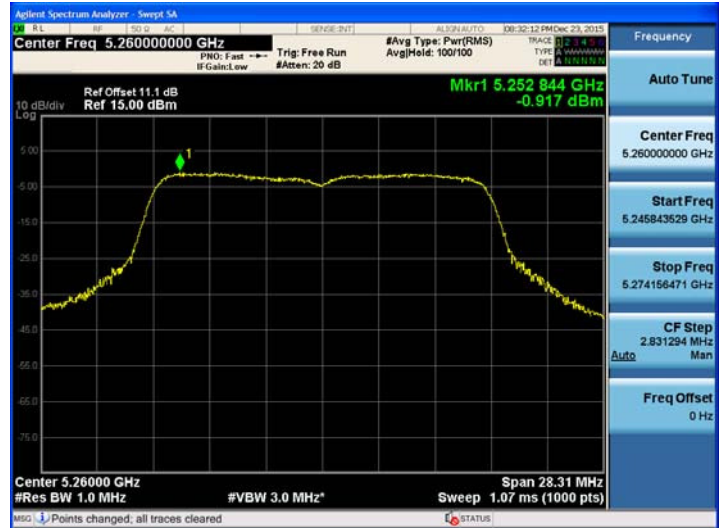
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5180	36	802.11a	-1.117	0.979	-0.138	11	Pass
5200	40		-0.978	0.651	-0.327		Pass
5240	48		-0.972	0.651	-0.321		Pass
5260	52		-0.917	1.178	0.261	11	Pass
5300	60		-1.875	0.979	-0.896		Pass
5320	64		-2.496	1.319	-1.177		Pass
5500	100		-2.473	1.178	-1.295	11	Pass
5580	116		-1.449	0.979	-0.470		Pass
5720	144		-2.323	0.651	-1.672		Pass
5745	149		-5.599	0.979	-4.620	30	Pass
5785	157		-6.613	0.979	-5.634		Pass
5825	165		-7.127	0.651	-6.476		Pass

■ TEST Plot for 802.11a 20MHz BW

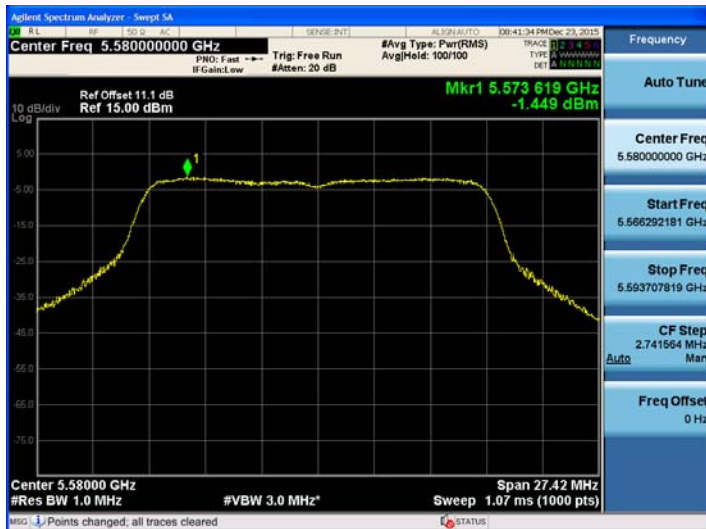
802.11a_20MHz BW UNII 1 BAND PSD CH 36



802.11a_20MHz BW UNII 2A BAND PSD CH 52



802.11a_20MHz BW UNII 2C BAND PSD CH 116



802.1a_20MHz BW UNII 3 BAND PSD CH 149



802.11n_20MHz BW

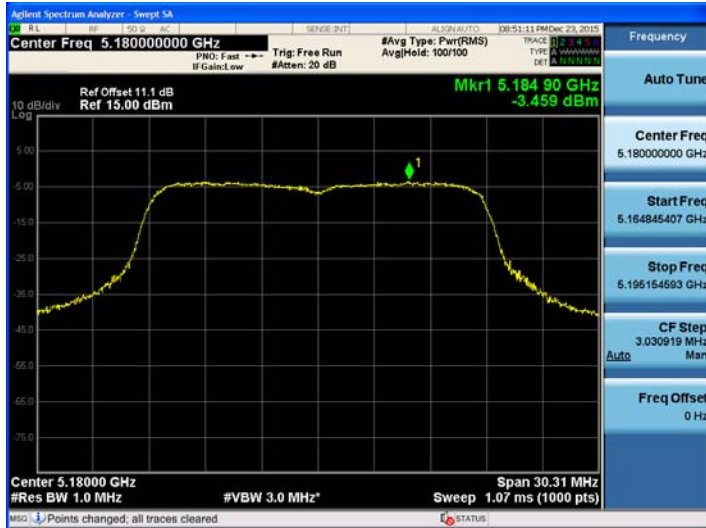
TEST RESULTS

Conducted Power Density Measurements

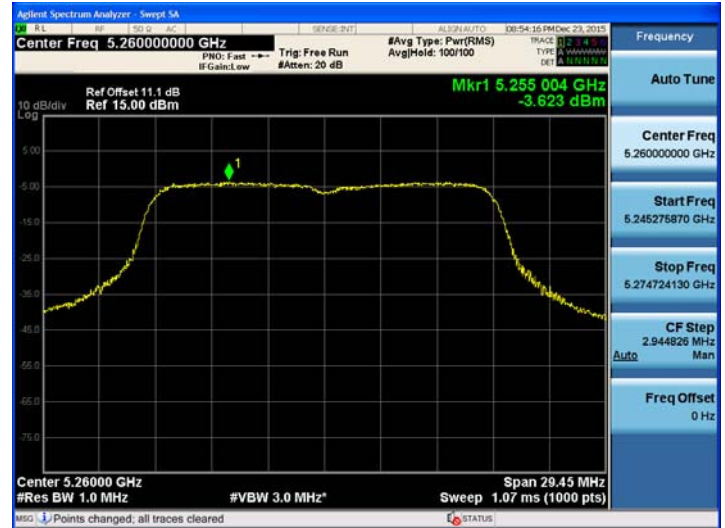
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5180	36	802.11n 20M BW	-3.459	1.293	-2.166	11	Pass
5200	40		-3.771	1.293	-2.478		Pass
5240	48		-3.112	0.666	-2.446		Pass
5260	52		-3.623	1.293	-2.330	11	Pass
5300	60		-4.058	0.962	-3.096		Pass
5320	64		-4.669	1.293	-3.376		Pass
5500	100		-5.016	1.293	-3.723	11	Pass
5580	116		-4.264	1.293	-2.971		Pass
5720	144		-5.157	1.293	-3.864		Pass
5745	149		-7.773	1.293	-6.480	30	Pass
5785	157		-8.875	1.293	-7.582		Pass
5825	165		-9.147	1.293	-7.854		Pass

■ TEST Plot for 802.11n 20MHz BW

802.11n_20MHz BW UNII 1 BAND PSD CH 36



802.11n_20MHz BW UNII 2A BAND PSD CH 52



802.11n_20MHz BW UNII 2C BAND PSD CH 116



802.11n_20MHz BW UNII 3 BAND PSD CH 149



802.11ac_20MHz BW

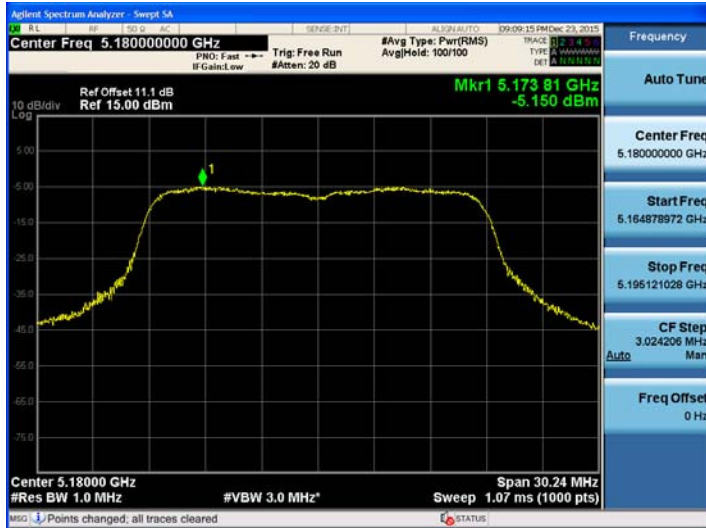
TEST RESULTS

Conducted Power Density Measurements

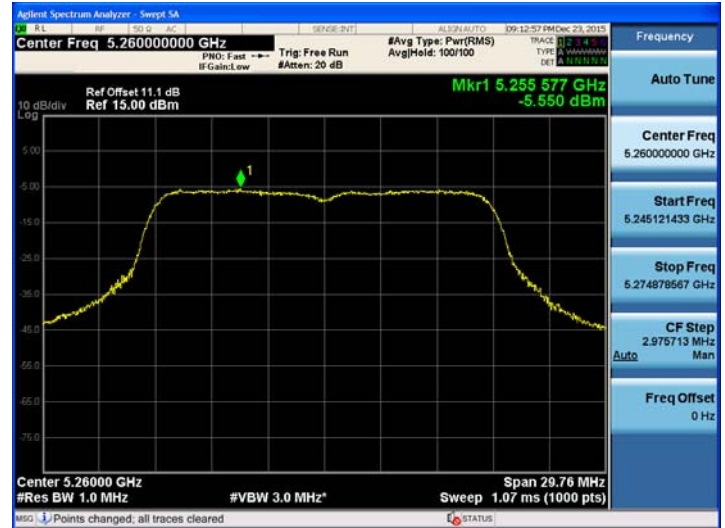
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5180	36	802.11ac 20M BW	-5.150	1.352	-3.798	11	Pass
5200	40		-5.184	1.352	-3.832		Pass
5240	48		-5.744	1.352	-4.392		Pass
5260	52		-5.550	1.352	-4.198	11	Pass
5300	60		-6.263	1.352	-4.911		Pass
5320	64		-6.622	1.352	-5.270		Pass
5500	100		-5.921	1.352	-4.569	11	Pass
5580	116		-6.095	1.352	-4.743		Pass
5720	144		-7.279	1.352	-5.927		Pass
5745	149		-9.712	1.352	-8.360	30	Pass
5785	157		-11.495	1.352	-10.143		Pass
5825	165		-11.599	1.352	-10.247		Pass

■ TEST Plot for 802.11ac 20MHz BW

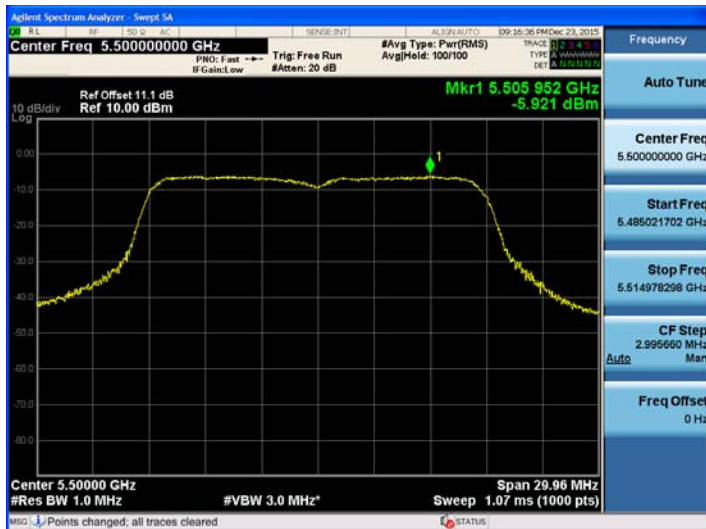
802.11ac_20MHz BW UNII 1 BAND PSD CH 36



802.11ac_20MHz BW UNII 2A BAND PSD CH 52



802.11ac_20MHz BW UNII 2C BAND PSD CH 100



802.11ac_20MHz BW UNII 3 BAND PSD CH 149



802.11n_40MHz BW

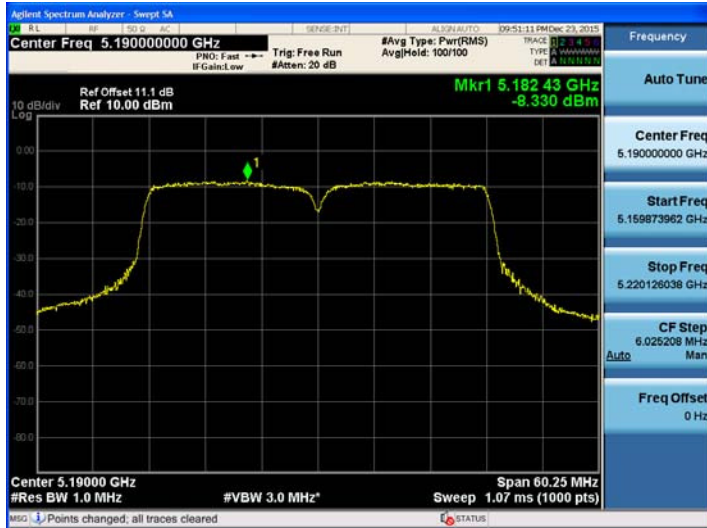
TEST RESULTS

Conducted Power Density Measurements

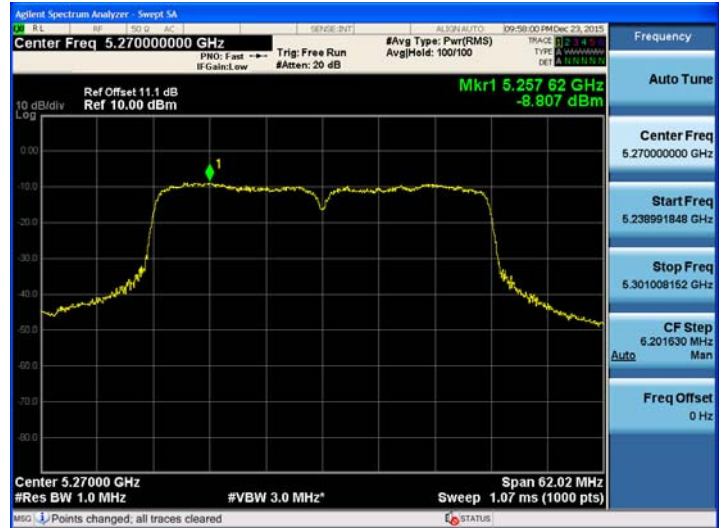
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5190	38	802.11n 40MHz BW	-8.330	1.636	-6.694	11	Pass
5230	46		-8.344	1.636	-6.708		Pass
5270	54		-8.807	2.232	-6.575	11	Pass
5310	62		-8.551	1.958	-6.593		Pass
5510	102		-9.320	2.232	-7.088	11	Pass
5550	110		-7.471	0.979	-6.492		Pass
5710	142		-9.290	1.958	-7.332		Pass
5755	151		-10.604	0.685	-9.919	30	Pass
5795	159		-12.977	1.958	-11.019		Pass

■ TEST Plot for 802.11n 40MHz BW

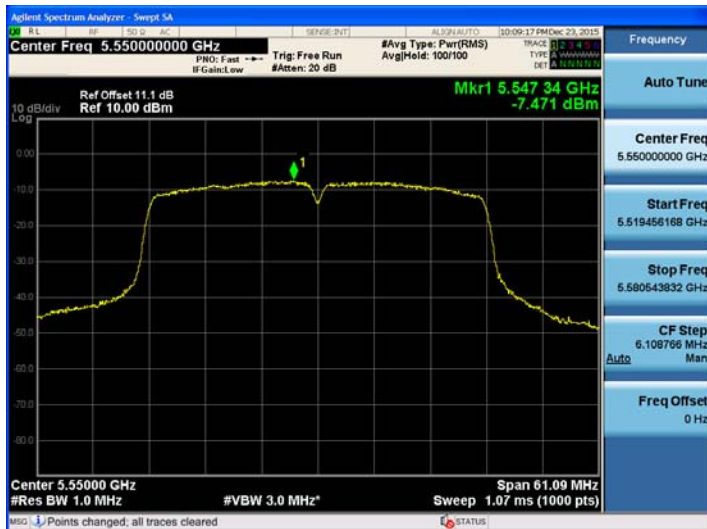
802.11n_40MHz BW UNII 1 BAND PSD CH 38



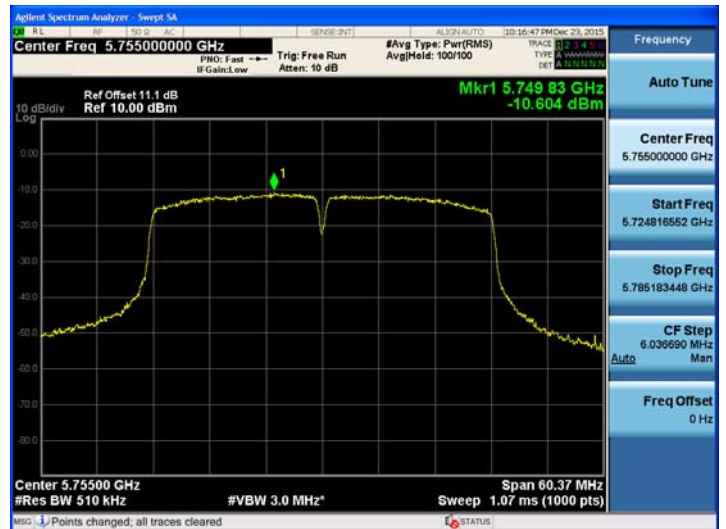
802.11n_40MHz BW UNII 2A BAND PSD CH 54



802.11n_40MHz BW UNII 2C BAND PSD CH 110



802.11n_40MHz BW UNII 3 BAND PSD CH 151



802.11ac_40MHz BW

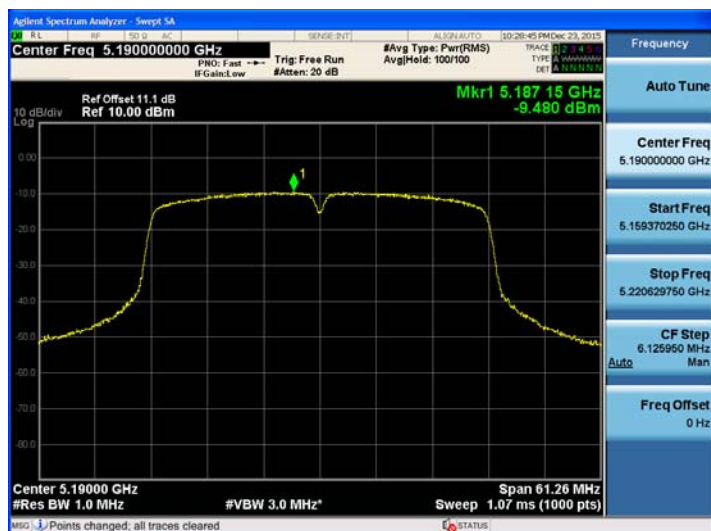
TEST RESULTS

Conducted Power Density Measurements

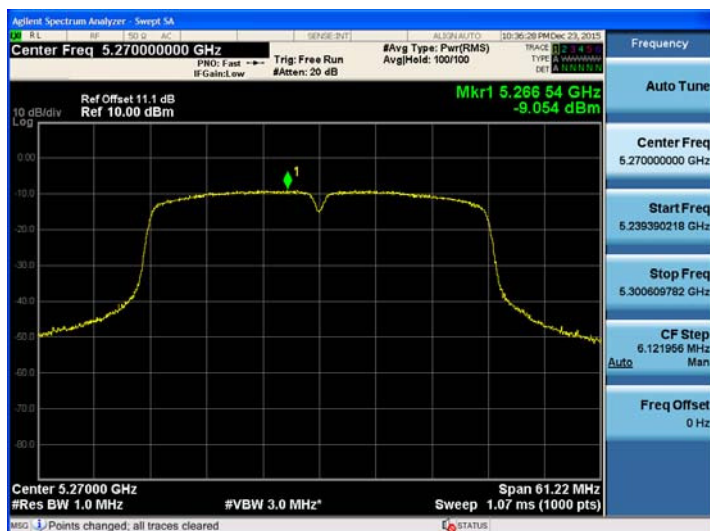
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5190	38	802.11ac 40MHz BW	-9.480	0.393	-9.087	11	Pass
5230	46		-10.801	1.209	-9.592		Pass
5270	54		-9.054	0.719	-8.335	11	Pass
5310	62		-9.546	0.393	-9.153		Pass
5510	102		-10.137	0.393	-9.744	11	Pass
5550	110		-9.650	0.393	-9.257		Pass
5710	142		-10.689	0.719	-9.970		Pass
5755	151		-13.518	0.393	-13.125	30	Pass
5795	159		-14.653	0.719	-13.934		Pass

■ TEST Plot for 802.11ac 40MHz BW

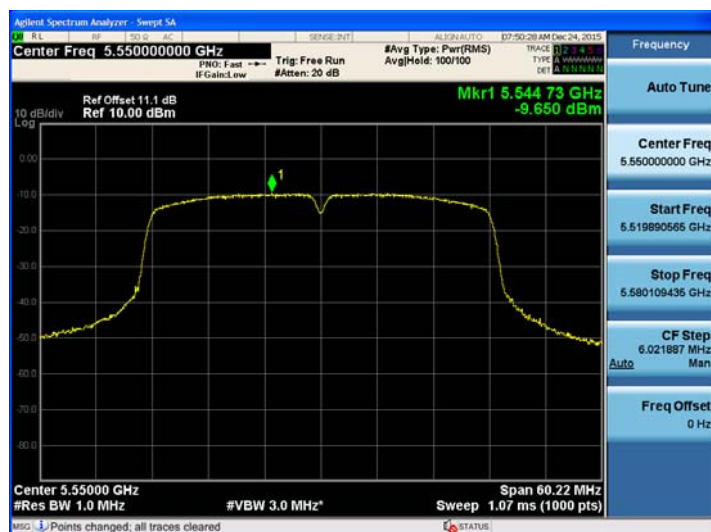
802.11ac_40MHz BW UNII 1 BAND PSD CH 38



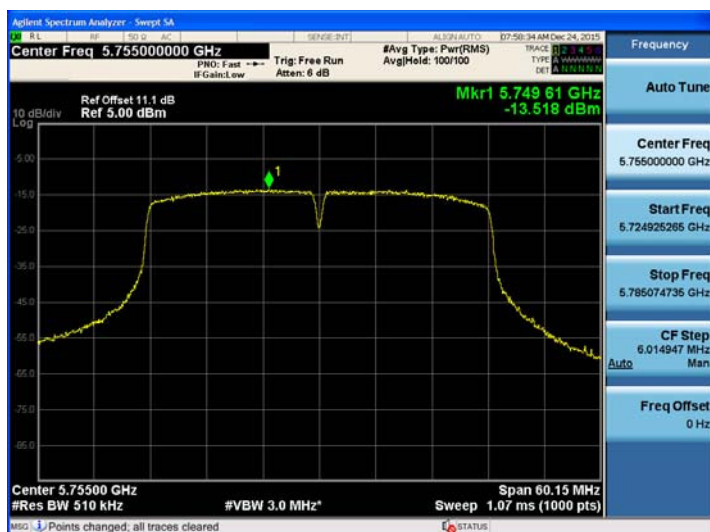
802.11ac_40MHz BW UNII 2A BAND PSD CH 54



802.11ac_40MHz BW UNII 2C BAND PSD CH 110



802.11ac_40MHz BW UNII 3 BAND PSD CH 151



802.11ac_80MHz BW

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 80MHz BW	-16.040	3.084	-12.956	4	Pass
5290	58		-15.828	3.084	-12.744	11	Pass
5530	106		-15.538	3.084	-12.454		Pass
5690	138		-15.483	2.561	-12.922		Pass
5775	155		-18.855	3.084	-15.771		Pass

■ TEST Plot for 802.11ac 80MHz BW

802.11ac_80MHz BW UNII 1 BAND PSD CH 42



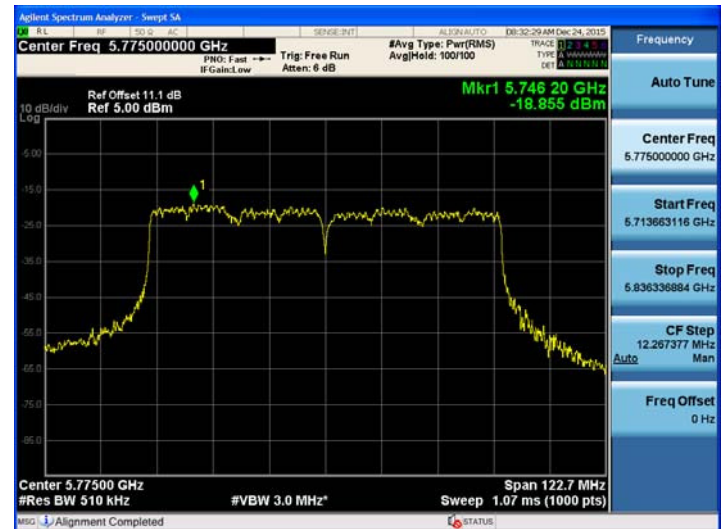
802.11ac_80MHz BW UNII 2A BAND PSD CH 58



802.11ac_80MHz BW UNII 2C BAND PSD CH 106



802.11ac_80MHz BW UNII 3 BAND PSD CH 155



■ Straddle channels TEST RESULTS for 802.11a/n/ac_20MHz BW

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

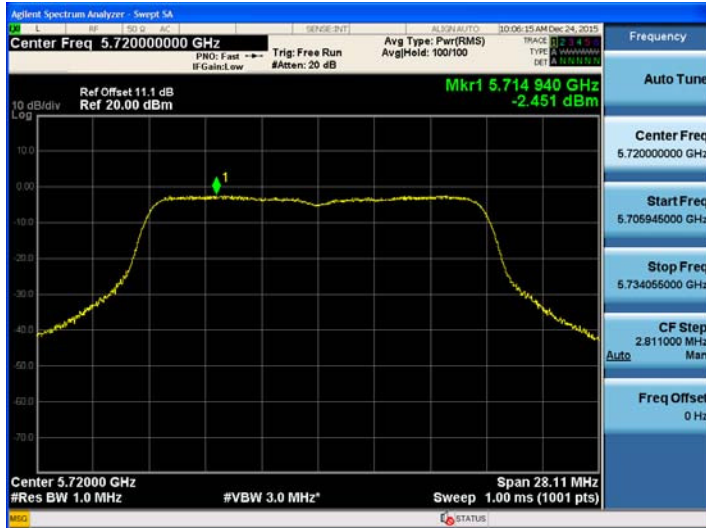
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5720	144	802.11a	-2.451	0.651	-1.800	11	Pass
		802.11n	-5.210	1.293	-3.917		Pass
		802.11ac	-7.260	1.352	-5.908		Pass

Conducted Power Density Measurements (UNII 3 Band 5720MHz)

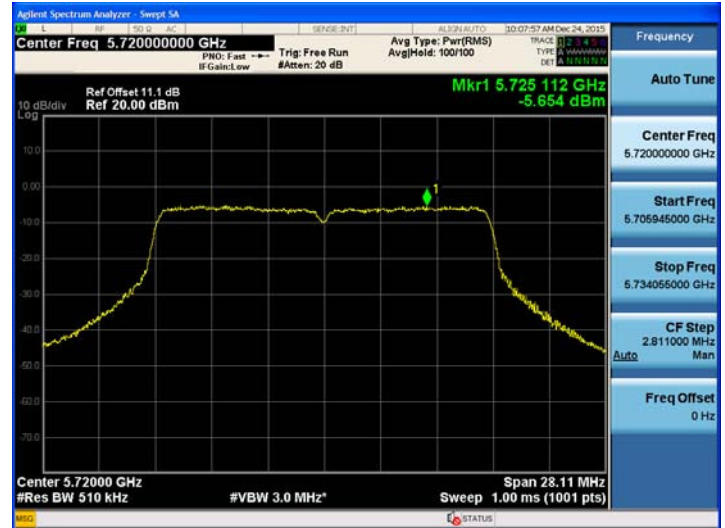
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5720	144	802.11a	-5.654	0.651	-5.003	30	Pass
		802.11n	-8.258	1.293	-6.965		Pass
		802.11ac	-10.384	1.352	-9.032		Pass

☐ Straddle channels TEST Plots for 802.11a/n/ac_20MHz BW

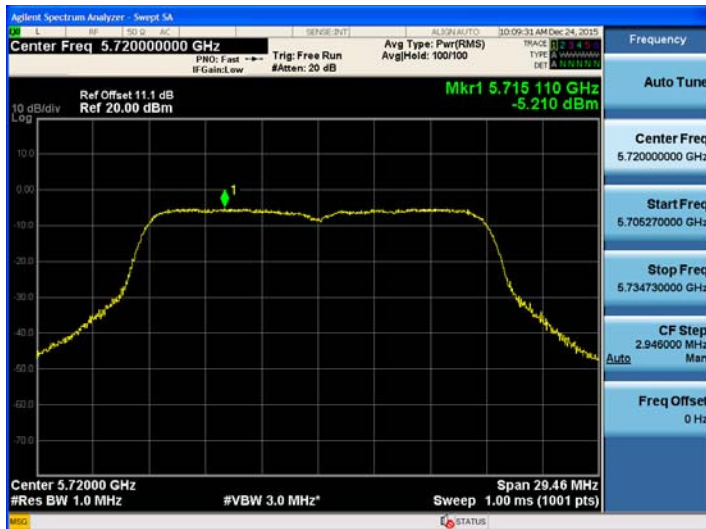
802.11a UNII 2C Band PSD CH.144



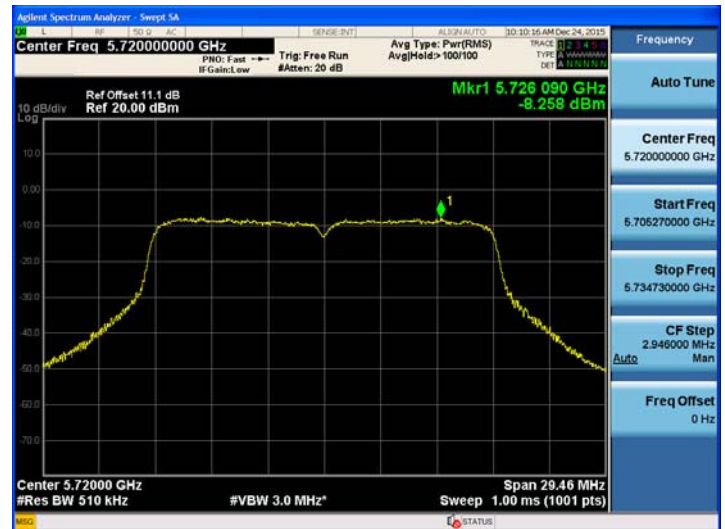
802.11a UNII 3 Band PSD CH.144



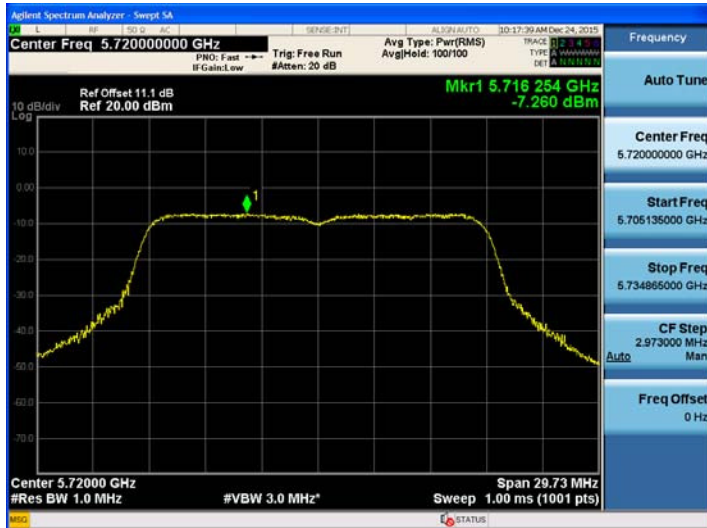
802.11n_20MHz BW UNII 2C Band PSD CH.144



802.11n_20MHz BW UNII 3 Band PSD CH.144



802.11ac_20MHz BW UNII 2C Band PSD CH.144



802.11ac_20MHz BW UNII 3 Band PSD CH.144



Straddle channels TEST RESULTS for 802.11n/ac_40MHz BW

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

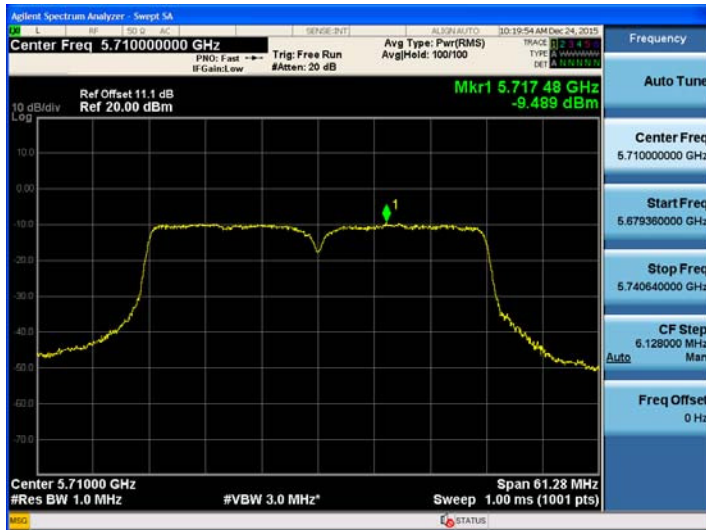
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5710	142	802.11n	-9.489	1.958	-7.531	11	Pass
		802.11ac	-10.232	0.719	-9.513	11	Pass

Conducted Power Density Measurements (UNII 3 Band 5710MHz)

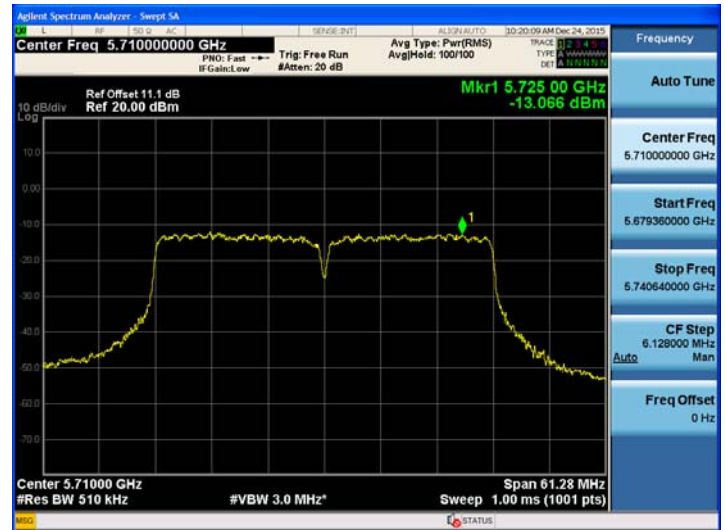
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5710	142	802.11n	-13.066	1.958	-11.108	30	Pass
		802.11ac	-15.742	0.719	-15.023	30	Pass

▣ Straddle channels TEST Plots for 802.11n/ac _40MHz BW

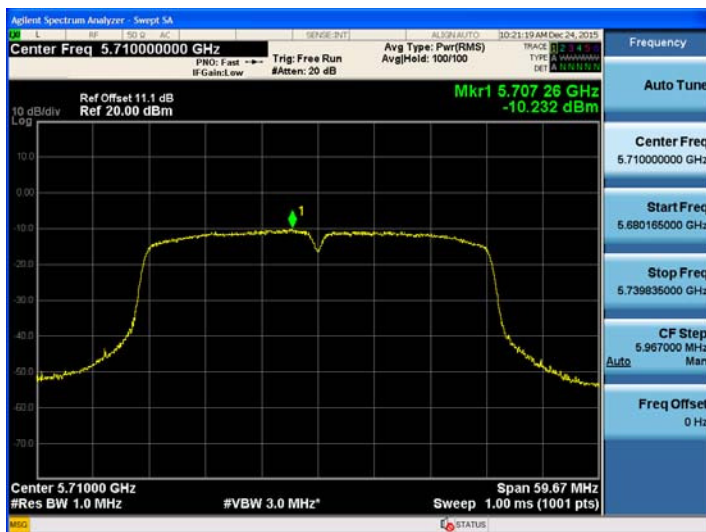
802.11n_40MHz BW UNII 2C Band PSD CH.142



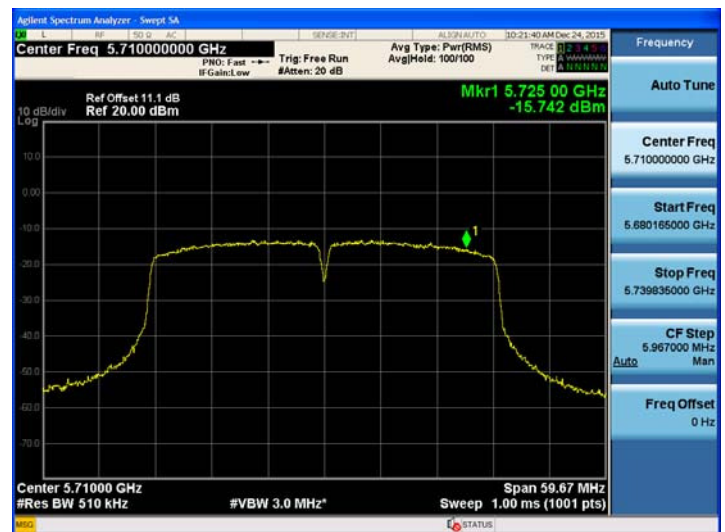
802.11n_40MHz BW UNII 3 Band PSD CH.142



802.11ac_40MHz BW UNII 2C Band PSD CH.142



802.11ac_40MHz BW UNII 3 Band PSD CH.142



Straddle channels TEST RESULTS for 802.11ac_80MHz BW

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

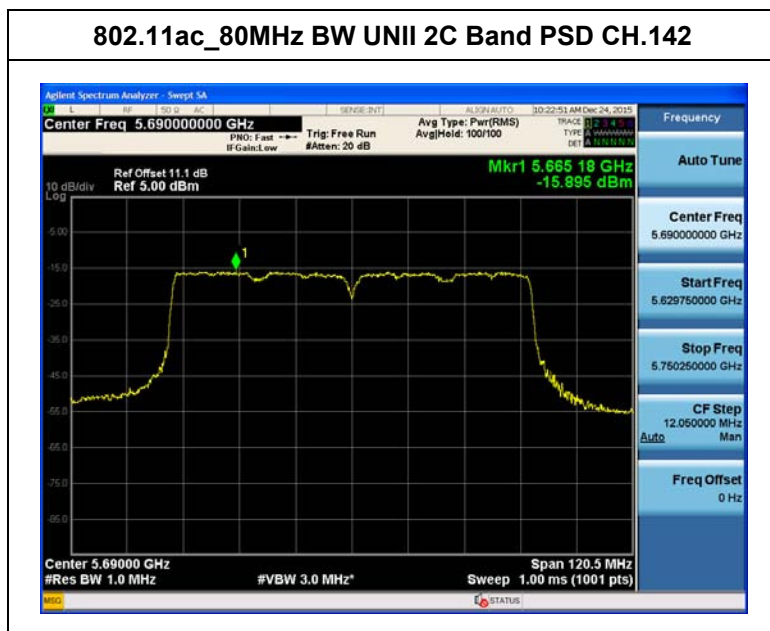
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5690	142	802.11n	-9.489	2.561	-6.928	11	Pass

Conducted Power Density Measurements (UNII 3 Band 5690 MHz)

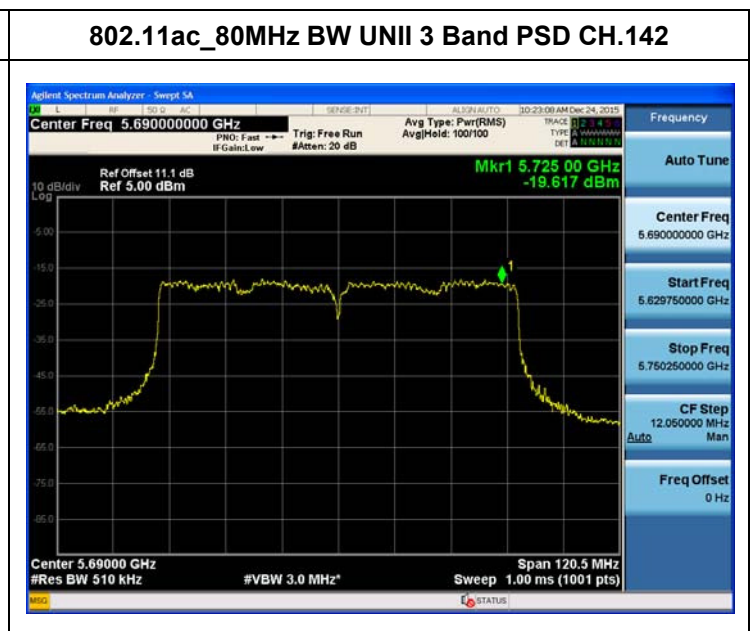
Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power Density(dBm) + Duty Cycle Factor	Limit (dBm)	Pass/Fail
5690	142	802.11n	-13.066	2.561	-10.505	30	Pass

Straddle channels TEST Plots for 802.11ac_80MHz BW

802.11ac_80MHz BW UNII 2C Band PSD CH.142



802.11ac_80MHz BW UNII 3 Band PSD CH.142



8.5 FREQUENCY STABILITY.

The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between -30 °C and 50 °C. The temperature was incremented by 10 °C 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:	12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5179964.00	-36.00
100%		-30	5179935.98	-64.02
100%		-20	5179945.31	-54.69
100%		-10	5179951.41	-48.59
100%		0	5179955.44	-44.56
100%		+10	5179958.79	-41.21
100%		+30	5179971.39	-28.61
100%		+40	5179975.06	-24.94
100%		+50	5179979.00	-21.00
Batt. Endpoint	10.2	+20	5179966.45	-33.55

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: 12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5259963.00	-37.00
100%		-30	5259931.94	-68.06
100%		-20	5259944.52	-55.48
100%		-10	5259950.88	-49.12
100%		0	5259959.85	-40.15
100%		+10	5259962.41	-37.59
100%		+30	5259974.79	-25.21
100%		+40	5259974.94	-25.06
100%		+50	5259975.92	-24.08
Batt. Endpoint	10.2	+20	5259964.83	-35.17

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:	12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5499961.00	-39.00
100%		-30	5499936.00	-64.00
100%		-20	5499948.94	-51.06
100%		-10	5499952.44	-47.56
100%		0	5499960.85	-39.15
100%		+10	5499965.48	-34.52
100%		+30	5499971.39	-28.61
100%		+40	5499970.74	-29.26
100%		+50	5499978.22	-21.78
Batt. Endpoint	10.2	+20	5499981.89	-18.11

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 3
 OPERATING FREQUENCY: 5,745,000,000 Hz
 CHANNEL: 149
 REFERENCE VOLTAGE: 12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5744959.00	-41.00
100%		-30	5744937.95	-62.05
100%		-20	5744948.38	-51.62
100%		-10	5744951.94	-48.06
100%		0	5744959.74	-40.26
100%		+10	5744961.74	-38.26
100%		+30	5744968.98	-31.02
100%		+40	5744974.84	-25.16
100%		+50	5744981.91	-18.09
Batt. Endpoint	10.2	+20	5744968.32	-31.68

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: 12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5189963.00	-37.00
100%		-30	5189925.98	-74.02
100%		-20	5189938.46	-61.54
100%		-10	5189945.99	-54.01
100%		0	5189954.98	-45.02
100%		+10	5189959.05	-40.95
100%		+30	5189964.74	-35.26
100%		+40	5189968.31	-31.69
100%		+50	5189970.01	-29.99
Batt. Endpoint	10.2	+20	5189976.89	-23.11

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 2A
 OPERATING FREQUENCY: 5,270,000,000 Hz
 CHANNEL: 54
 REFERENCE VOLTAGE: 12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5269963.00	-37.00
100%		-30	5269938.75	-61.25
100%		-20	5269948.74	-51.26
100%		-10	5269951.49	-48.51
100%		0	5269956.31	-43.69
100%		+10	5269960.94	-39.06
100%		+30	5269963.49	-36.51
100%		+40	5269968.67	-31.33
100%		+50	5269973.42	-26.58
Batt. Endpoint	10.2	+20	5189964.38	-35.62

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:	12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5509962.00	-38.00
100%		-30	5509930.55	-69.45
100%		-20	5509941.57	-58.43
100%		-10	5509948.85	-51.15
100%		0	5509951.55	-48.45
100%		+10	5509958.69	-41.31
100%		+30	5509965.42	-34.58
100%		+40	5509968.92	-31.08
100%		+50	5509974.39	-25.61
Batt. Endpoint	10.2	+20	5269980.51	-19.49

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: 12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5754960.09	-39.91
100%		-30	5754932.21	-67.79
100%		-20	5754938.88	-61.12
100%		-10	5754945.51	-54.49
100%		0	5754956.19	-43.81
100%		+10	5754959.90	-40.1
100%		+30	5754968.84	-31.16
100%		+40	5754971.49	-28.51
100%		+50	5754975.33	-24.67
Batt. Endpoint	10.2	+20	5754974.18	-25.82

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: 12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5209963.64	-36.36
100%		-30	5209935.54	-64.46
100%		-20	5209948.84	-51.16
100%		-10	5209954.38	-45.62
100%		0	5209958.00	-42.00
100%		+10	5209960.44	-39.56
100%		+30	5209968.79	-31.21
100%		+40	5209971.41	-28.59
100%		+50	5209975.35	-24.65
Batt. Endpoint	10.2	+20	5209978.09	-21.91

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: 12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5289963.14	-36.86
100%		-30	5289928.88	-71.12
100%		-20	5289940.35	-59.65
100%		-10	5289955.41	-44.59
100%		0	5289960.98	-39.02
100%		+10	5289961.94	-38.06
100%		+30	5289968.74	-31.26
100%		+40	5289973.85	-26.15
100%		+50	5289978.00	-22.00
Batt. Endpoint	10.2	+20	5209957.35	-42.65

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: 12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5529961.65	-38.35
100%		-30	5529935.31	-64.69
100%		-20	5529940.49	-59.51
100%		-10	5529949.88	-50.12
100%		0	5529954.88	-45.12
100%		+10	5529959.81	-40.19
100%		+30	5529969.85	-30.15
100%		+40	5529974.36	-25.64
100%		+50	5529978.87	-21.13
Batt. Endpoint	10.2	+20	5289968.06	-31.94

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: 12.0 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	12.0	+20(Ref)	5774960.48	-39.52
100%		-30	5774935.44	-64.56
100%		-20	5774941.71	-58.29
100%		-10	5774948.93	-51.07
100%		0	5774957.87	-42.13
100%		+10	5774959.02	-40.98
100%		+30	5774965.42	-34.58
100%		+40	5774970.53	-29.47
100%		+50	5774974.84	-25.16
Batt. Endpoint	10.2	+20	5774967.14	-32.86

Note:

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

8.6 RADIATED MEASUREMENT

8.6.1 RADIATED SPURIOUS EMISSIONS.

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

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

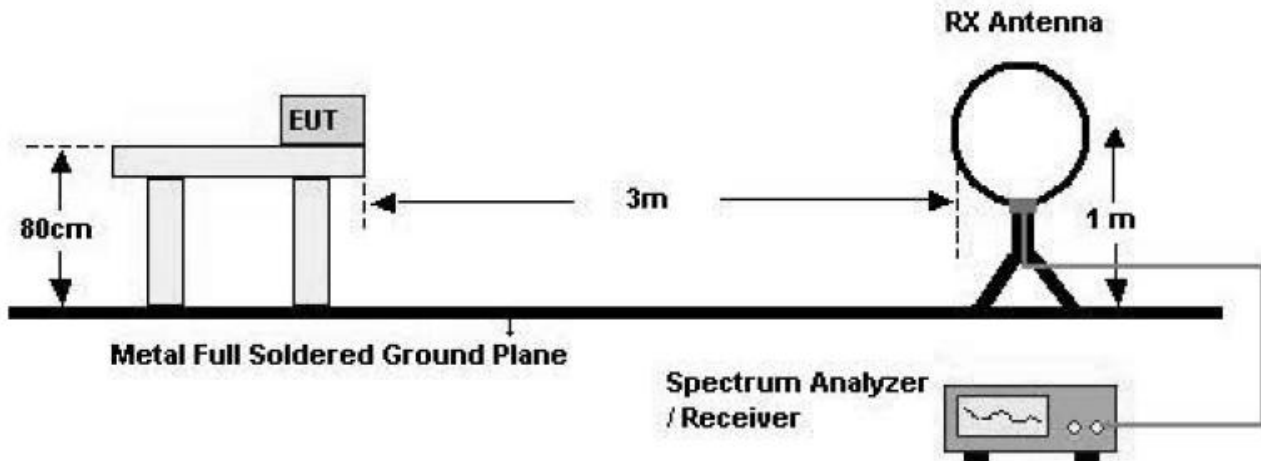
■ §15.407, KDB 789033 D02

All harmonics that do not lie in a restricted band are subject to a peak limit of -27 dBm/MHz. At a distance of 3 meters the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2 dB to the EIRP limit of -27 dBm/MHz to obtain the limit for out of band spurious emissions of 68.2 dBμV/m.

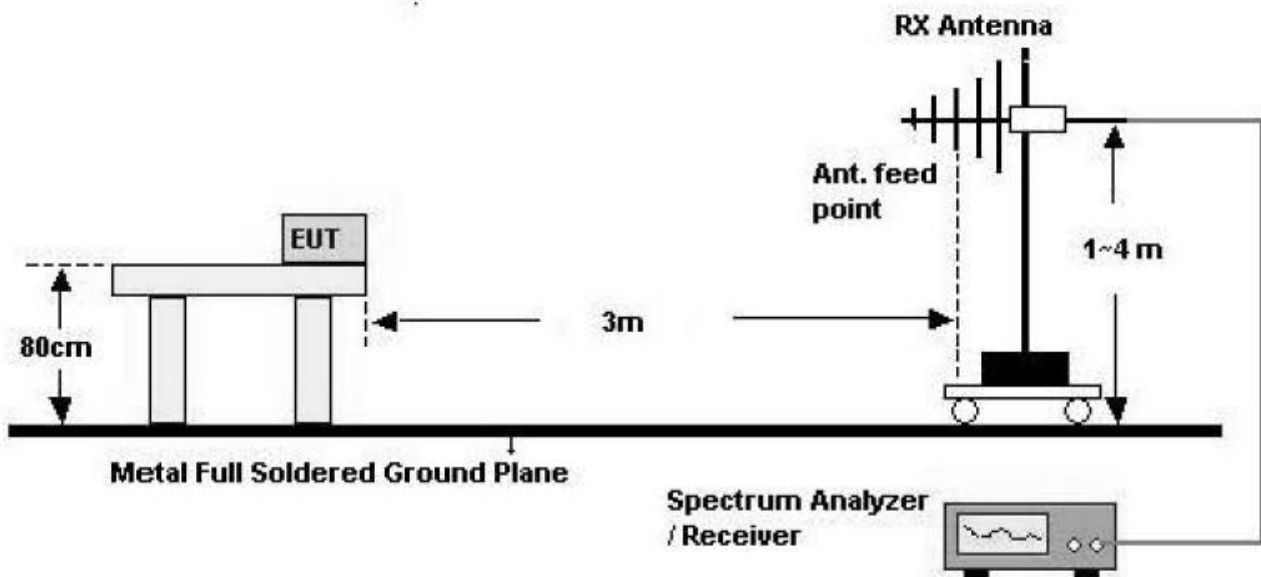
Especially, for transmitter operating in the 5725 Mhz – 5850 MHz : all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequency 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

Test Configuration

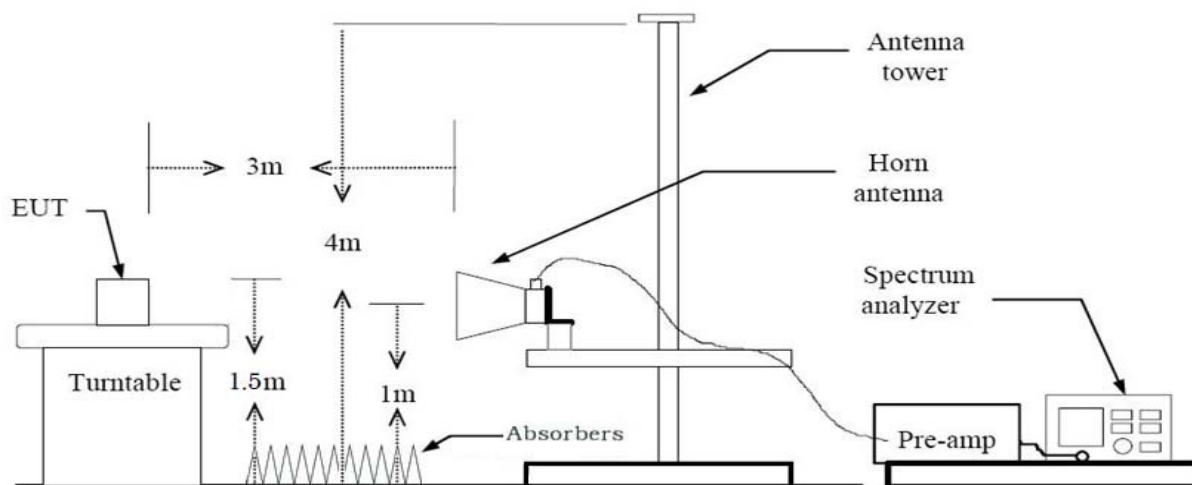
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE USED

ANSI C63.10:2013

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

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

. Spectrum setting:

- Peak.

1. RBW = 1 MHz

2. VBW $\geq$ 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 $\geq$ 98 percent, set $VBW \leq RBW/100$ (i.e., 10 kHz) but not less than 10 Hz.

2.2. If the EUT duty cycle is $<$ 98 percent, set $VBW \geq 1/T$, 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 minimum 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/ac_20, n/ac_40, ac_80 mode to perform the average filed strength measurements.
2. The actual setting value of VBW for 802.11a/n/ac_20, n/ac_40, ac_80

Mode	Worst Data rate (Mbps)	T _{on} (ms)	T _{total} (ms)	Duty Cycle (%)	VBW(1/T) (Hz)	The actual setting value of VBW (Hz)
a	6	2.064	2.155	95.78	484	1000
n_20	MCS 0	1.921	2.011	95.52	521	1000
ac_20	MCS 0	1.935	2.020	95.79	517	1000
n_40	MCS 0	0.948	1.032	91.86	1055	3000
ac_40	MCS 0	0.950	1.040	91.35	1053	3000
ac_80	MCS 0	0.464	0.550	84.36	2155	3000

TEST RESULTS

9 kHz – 30MHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB μ V	dB /m	dB	(H/V)	dB μ V/m	dB μ V/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 = $40 \log (\text{specific distance} / \text{test distance})$ (dB)
4. Limit line = specific Limits (dB μ V) + 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
MHz	$\text{dB}_{\mu\text{V}}$	dB/m	dB	(H/V)	$\text{dB}_{\mu\text{V/m}}$	$\text{dB}_{\mu\text{V/m}}$	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_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	60.23	-2.21	V	58.02	68.20	10.18	PK
15540	59.65	-1.95	V	57.70	73.98	16.28	PK
15540	47.25	-1.95	V	45.30	53.98	8.68	AV
10360	60.12	-2.21	H	57.91	68.20	10.29	PK
15540	59.16	-1.95	H	57.21	73.98	16.77	PK
15540	47.11	-1.95	H	45.16	53.98	8.82	AV

Notes:

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

Band :	UNII 1
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	61.14	-2.16	V	58.98	68.20	9.22	PK
15600	58.96	-2.51	V	56.45	73.98	17.53	PK
15600	47.21	-2.51	V	44.70	53.98	9.28	AV
10400	61.05	-2.16	H	58.89	68.20	9.31	PK
15600	58.87	-2.51	H	56.36	73.98	17.62	PK
15600	47.11	-2.51	H	44.60	53.98	9.38	AV

Notes:

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

Band :	UNII 1
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	61.16	-2.59	V	58.57	68.20	9.63	PK
15720	58.88	-1.62	V	57.26	73.98	16.72	PK
15720	47.15	-1.62	V	45.53	53.98	8.45	AV
10480	61.05	-2.59	H	58.46	68.20	9.74	PK
15720	58.68	-1.62	H	57.06	73.98	16.92	PK
15720	47.11	-1.62	H	45.49	53.98	8.49	AV

Notes:

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

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	59.93	-2.21	V	57.72	68.20	10.48	PK
15540	59.58	-1.95	V	57.63	73.98	16.35	PK
15540	47.11	-1.95	V	45.16	53.98	8.82	AV
10360	58.98	-2.21	H	56.77	68.20	11.43	PK
15540	59.36	-1.95	H	57.41	73.98	16.57	PK
15540	47.05	-1.95	H	45.10	53.98	8.88	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	59.21	-2.16	V	57.05	68.20	11.15	PK
15600	59.45	-2.51	V	56.94	73.98	17.04	PK
15600	47.15	-2.51	V	44.64	53.98	9.34	AV
10400	59.18	-2.16	H	57.02	68.20	11.18	PK
15600	59.28	-2.51	H	56.77	73.98	17.21	PK
15600	47.25	-2.51	H	44.74	53.98	9.24	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	59.26	-2.59	V	56.67	68.20	11.53	PK
15720	59.63	-1.62	V	58.01	73.98	15.97	PK
15720	47.31	-1.62	V	45.69	53.98	8.29	AV
10480	59.21	-2.59	H	56.62	68.20	11.58	PK
15720	59.42	-1.62	H	57.80	73.98	16.18	PK
15720	47.21	-1.62	H	45.59	53.98	8.39	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	59.31	-2.21	V	57.10	68.20	11.10	PK
15540	59.21	-1.95	V	57.26	73.98	16.72	PK
15540	47.20	-1.95	V	45.25	53.98	8.73	AV
10360	59.22	-2.21	H	57.01	68.20	11.19	PK
15540	59.10	-1.95	H	57.15	73.98	16.83	PK
15540	47.11	-1.95	H	45.16	53.98	8.82	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	59.22	-2.16	V	57.06	68.20	11.14	PK
15600	59.32	-2.51	V	56.81	73.98	17.17	PK
15600	47.18	-2.51	V	44.67	53.98	9.31	AV
10400	59.10	-2.16	H	56.94	68.20	11.26	PK
15600	59.26	-2.51	H	56.75	73.98	17.23	PK
15600	47.09	-2.51	H	44.58	53.98	9.40	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	59.59	-2.59	V	57.00	68.20	11.20	PK
15720	59.18	-1.62	V	57.56	73.98	16.42	PK
15720	47.29	-1.62	V	45.67	53.98	8.31	AV
10480	59.48	-2.59	H	56.89	68.20	11.31	PK
15720	59.11	-1.62	H	57.49	73.98	16.49	PK
15720	47.22	-1.62	H	45.60	53.98	8.38	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10380	60.33	-2.51	V	57.82	68.20	10.38	PK
15570	58.96	-2.14	V	56.82	73.98	17.16	PK
15570	47.17	-2.14	V	45.03	53.98	8.95	AV
10380	59.78	-2.51	H	57.27	68.20	10.93	PK
15570	58.88	-2.14	H	56.74	73.98	17.24	PK
15570	47.05	-2.14	H	44.91	53.98	9.07	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is MCS 0 in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10460	59.68	-2.28	V	57.40	68.20	10.80	PK
15690	59.64	-1.92	V	57.72	73.98	16.26	PK
15690	47.19	-1.92	V	45.27	53.98	8.71	AV
10460	59.48	-2.28	H	57.20	68.20	11.00	PK
15690	59.58	-1.92	H	57.66	73.98	16.32	PK
15690	47.05	-1.92	H	45.13	53.98	8.85	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is MCS 0 in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11ac_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10380	59.20	-2.51	V	56.69	68.20	11.51	PK
15570	58.56	-2.14	V	56.42	73.98	17.56	PK
15570	47.31	-2.14	V	45.17	53.98	8.81	AV
10380	58.78	-2.51	H	56.27	68.20	11.93	PK
15570	58.37	-2.14	H	56.23	73.98	17.75	PK
15570	47.23	-2.14	H	45.09	53.98	8.89	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11ac_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10460	59.45	-2.28	V	57.17	68.20	11.03	PK
15690	58.75	-1.92	V	56.83	73.98	17.15	PK
15690	47.26	-1.92	V	45.34	53.98	8.64	AV
10460	59.31	-2.28	H	57.03	68.20	11.17	PK
15690	58.30	-1.92	H	56.38	73.98	17.60	PK
15690	47.19	-1.92	H	45.27	53.98	8.71	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11ac_80 MHz BW
Transfer MCS Index:	0
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10420	58.84	-2.53	V	56.31	68.20	11.89	PK
15630	59.05	-2.73	V	56.32	73.98	17.66	PK
15630	47.49	-2.73	V	44.76	53.98	9.22	AV
10420	58.66	-2.53	H	56.13	68.20	12.07	PK
15630	58.98	-2.73	H	56.25	73.98	17.73	PK
15630	47.46	-2.73	H	44.73	53.98	9.25	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	59.06	-2.51	V	56.55	68.20	11.65	PK
15780	59.18	-2.14	V	57.04	73.98	16.94	PK
15780	46.82	-2.14	V	44.68	53.98	9.30	AV
10520	58.96	-2.51	H	56.45	68.20	11.75	PK
15780	58.89	-2.14	H	56.75	73.98	17.23	PK
15780	46.55	-2.14	H	44.41	53.98	9.57	AV

Notes:

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

Band :	UNII 2A
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	62.96	-2.45	V	60.51	73.98	13.47	PK
10600	51.68	-2.45	V	49.23	53.98	4.75	AV
15900	59.47	-1.99	V	57.48	73.98	16.50	PK
15900	47.13	-1.99	V	45.14	53.98	8.84	AV
10600	62.87	-2.45	H	60.42	73.98	13.56	PK
10600	51.45	-2.45	H	49.00	53.98	4.98	AV
15900	59.21	-1.99	H	57.22	73.98	16.76	PK
15900	47.05	-1.99	H	45.06	53.98	8.92	AV

Notes:

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

Band :	UNII 2A
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	62.54	-2.17	V	60.37	73.98	13.61	PK
10640	50.60	-2.17	V	48.43	53.98	5.55	AV
15960	59.79	-1.69	V	58.10	73.98	15.88	PK
15960	47.03	-1.69	V	45.34	53.98	8.64	AV
10640	61.89	-2.17	H	59.72	73.98	14.26	PK
10640	49.86	-2.17	H	47.69	53.98	6.29	AV
15960	59.75	-1.69	H	58.06	73.98	15.92	PK
15960	47.01	-1.69	H	45.32	53.98	8.66	AV

Notes:

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

Band :	UNII 2A
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	59.01	-2.51	V	56.50	68.20	11.70	PK
15780	59.49	-2.14	V	57.35	73.98	16.63	PK
15780	47.12	-2.14	V	44.98	53.98	9.00	AV
10520	58.96	-2.51	H	56.45	68.20	11.75	PK
15780	59.21	-2.14	H	57.07	73.98	16.91	PK
15780	47.05	-2.14	H	44.91	53.98	9.07	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	59.64	-2.45	V	57.19	73.98	16.79	PK
10600	48.39	-2.45	V	45.94	53.98	8.04	AV
15900	59.70	-1.99	V	57.71	73.98	16.27	PK
15900	47.59	-1.99	V	45.60	53.98	8.38	AV
10600	59.56	-2.45	H	57.11	73.98	16.87	PK
10600	48.21	-2.45	H	45.76	53.98	8.22	AV
15900	59.50	-1.99	H	57.51	73.98	16.47	PK
15900	47.39	-1.99	H	45.40	53.98	8.58	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	59.44	-2.17	V	57.27	73.98	16.71	PK
10640	47.65	-2.17	V	45.48	53.98	8.50	AV
15960	59.68	-1.69	V	57.99	73.98	15.99	PK
15960	47.29	-1.69	V	45.60	53.98	8.38	AV
10640	59.31	-2.17	H	57.14	73.98	16.84	PK
10640	47.54	-2.17	H	45.37	53.98	8.61	AV
15960	59.55	-1.69	H	57.86	73.98	16.12	PK
15960	47.21	-1.69	H	45.52	53.98	8.46	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	58.69	-2.51	V	56.18	68.20	12.02	PK
15780	58.75	-2.14	V	56.61	73.98	17.37	PK
15780	47.20	-2.14	V	45.06	53.98	8.92	AV
10520	58.48	-2.51	H	55.97	68.20	12.23	PK
15780	58.65	-2.14	H	56.51	73.98	17.47	PK
15780	47.05	-2.14	H	44.91	53.98	9.07	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	58.45	-2.45	V	56.00	73.98	17.98	PK
10600	47.53	-2.45	V	45.08	53.98	8.90	AV
15900	58.68	-1.99	V	56.69	73.98	17.29	PK
15900	47.16	-1.99	V	45.17	53.98	8.81	AV
10600	58.36	-2.45	H	55.91	73.98	18.07	PK
10600	47.31	-2.45	H	44.86	53.98	9.12	AV
15900	58.42	-1.99	H	56.43	73.98	17.55	PK
15900	47.12	-1.99	H	45.13	53.98	8.85	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	58.62	-2.17	V	56.45	73.98	17.53	PK
10640	47.44	-2.17	V	45.27	53.98	8.71	AV
15960	58.98	-1.69	V	57.29	73.98	16.69	PK
15960	47.22	-1.69	V	45.53	53.98	8.45	AV
10640	58.58	-2.17	H	56.41	73.98	17.57	PK
10640	47.27	-2.17	H	45.10	53.98	8.88	AV
15960	58.43	-1.69	H	56.74	73.98	17.24	PK
15960	47.08	-1.69	H	45.39	53.98	8.59	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11n_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10540	59.09	-2.53	V	56.56	68.20	11.64	PK
15810	58.12	-2.09	V	56.03	73.98	17.95	PK
15810	47.16	-2.09	V	45.07	53.98	8.91	AV
10540	59.02	-2.53	H	56.49	68.20	11.71	PK
15810	58.05	-2.09	H	55.96	73.98	18.02	PK
15810	47.11	-2.09	H	45.02	53.98	8.96	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is MCS 0 in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11n_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10620	59.12	-2.19	V	56.93	73.98	17.05	PK
10620	47.85	-2.19	V	45.66	53.98	8.32	AV
15930	58.33	-1.80	V	56.53	73.98	17.45	PK
15930	47.05	-1.80	V	45.25	53.98	8.73	AV
10620	59.05	-2.19	H	56.86	73.98	17.12	PK
10620	47.79	-2.19	H	45.60	53.98	8.38	AV
15930	58.22	-1.80	H	56.42	73.98	17.56	PK
15930	47.10	-1.80	H	45.30	53.98	8.68	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is MCS 0 in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11ac_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10540	59.11	-2.53	V	56.58	68.20	11.62	PK
15810	58.60	-2.09	V	56.51	73.98	17.47	PK
15810	47.21	-2.09	V	45.12	53.98	8.86	AV
10540	58.67	-2.53	H	56.14	68.20	12.06	PK
15810	58.18	-2.09	H	56.09	73.98	17.89	PK
15810	47.16	-2.09	H	45.07	53.98	8.91	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11ac_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10620	58.67	-2.19	V	56.48	73.98	17.50	PK
10620	47.69	-2.19	V	45.50	53.98	8.48	AV
15930	58.62	-1.80	V	56.82	73.98	17.16	PK
15930	47.58	-1.80	V	45.78	53.98	8.20	AV
10620	58.60	-2.19	H	56.41	73.98	17.57	PK
10620	47.54	-2.19	H	45.35	53.98	8.63	AV
15930	58.48	-1.80	H	56.68	73.98	17.30	PK
15930	47.39	-1.80	H	45.59	53.98	8.39	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2A
Operation Mode:	802.11ac_80 MHz BW
Transfer MCS Index:	0
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10580	59.12	-2.58	V	56.54	68.20	11.66	PK
15870	59.05	-2.85	V	56.20	73.98	17.78	PK
15870	47.16	-2.85	V	44.31	53.98	9.67	AV
10580	59.05	-2.58	H	56.47	68.20	11.73	PK
15870	59.11	-2.85	H	56.26	73.98	17.72	PK
15870	46.89	-2.85	H	44.04	53.98	9.94	AV
10580	59.12	-2.58	V	56.54	68.20	11.66	PK
15870	59.05	-2.85	V	56.20	73.98	17.78	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	59.31	-2.13	V	57.18	73.98	16.80	PK
11000	47.72	-2.13	V	45.59	53.98	8.39	AV
16500	58.08	0.36	V	58.44	68.20	9.76	PK
11000	59.20	-2.13	H	57.07	73.98	16.91	PK
11000	47.55	-2.13	H	45.42	53.98	8.56	AV
16500	58.10	0.36	H	58.46	68.20	9.74	PK

Notes:

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

Band :	UNII 2C
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11160	58.25	-1.75	V	56.50	73.98	17.48	PK
11160	46.62	-1.75	V	44.87	53.98	9.11	AV
16740	57.66	1.34	V	59.00	68.20	9.20	PK
11160	58.12	-1.75	H	56.37	73.98	17.61	PK
11160	46.58	-1.75	H	44.83	53.98	9.15	AV
16740	57.58	1.34	H	58.92	68.20	9.28	PK

Notes:

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

Band :	UNII 2C
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11440	59.33	-2.57	V	56.76	73.98	17.22	PK
11440	48.59	-2.57	V	46.02	53.98	7.96	AV
17160	58.53	2.74	V	61.27	68.20	6.93	PK
11440	59.10	-2.57	H	56.53	73.98	17.45	PK
11440	48.53	-2.57	H	45.96	53.98	8.02	AV
17160	58.38	2.74	H	61.12	68.20	7.08	PK

Notes:

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

Band :	UNII 2C
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	59.08	-2.13	V	56.95	73.98	17.03	PK
11000	46.95	-2.13	V	44.82	53.98	9.16	AV
16500	58.87	0.36	V	59.23	68.20	8.97	PK
11000	59.05	-2.13	H	56.92	73.98	17.06	PK
11000	46.82	-2.13	H	44.69	53.98	9.29	AV
16500	58.62	0.36	H	58.98	68.20	9.22	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11160	58.68	-1.75	V	56.93	73.98	17.05	PK
11160	47.05	-1.75	V	45.30	53.98	8.68	AV
16740	58.91	1.34	V	60.25	68.20	7.95	PK
11160	58.39	-1.75	H	56.64	73.98	17.34	PK
11160	47.01	-1.75	H	45.26	53.98	8.72	AV
16740	58.45	1.34	H	59.79	68.20	8.41	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11440	59.66	-2.57	V	57.09	73.98	16.89	PK
11440	48.43	-2.57	V	45.86	53.98	8.12	AV
17160	58.72	2.74	V	61.46	68.20	6.74	PK
11440	59.37	-2.57	H	56.80	73.98	17.18	PK
11440	48.40	-2.57	H	45.83	53.98	8.15	AV
17160	58.57	2.74	H	61.31	68.20	6.89	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	58.90	-2.13	V	56.77	73.98	17.21	PK
11000	47.12	-2.13	V	44.99	53.98	8.99	AV
16500	59.60	0.36	V	59.96	68.20	8.24	PK
11000	58.78	-2.13	H	56.65	73.98	17.33	PK
11000	47.10	-2.13	H	44.97	53.98	9.01	AV
16500	59.26	0.36	H	59.62	68.20	8.58	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11160	59.16	-1.75	V	57.41	73.98	16.57	PK
11160	47.08	-1.75	V	45.33	53.98	8.65	AV
16740	58.88	1.34	V	60.22	68.20	7.98	PK
11160	59.11	-1.75	H	57.36	73.98	16.62	PK
11160	46.89	-1.75	H	45.14	53.98	8.84	AV
16740	58.76	1.34	H	60.10	68.20	8.10	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5700 MHz
Channel No.	140 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11400	59.90	-2.57	V	57.33	73.98	16.65	PK
11400	48.32	-2.57	V	45.75	53.98	8.23	AV
17100	58.95	2.74	V	61.69	68.20	6.51	PK
11400	59.46	-2.57	H	56.89	73.98	17.09	PK
11400	48.26	-2.57	H	45.69	53.98	8.29	AV
17100	58.75	2.74	H	61.49	68.20	6.71	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11n_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11020	59.26	-2.07	V	57.19	73.98	16.79	PK
11020	46.96	-2.07	V	44.89	53.98	9.09	AV
16530	58.96	0.77	V	59.73	68.20	8.47	PK
11020	58.69	-2.07	H	56.62	73.98	17.36	PK
11020	46.86	-2.07	H	44.79	53.98	9.19	AV
16530	58.71	0.77	H	59.48	68.20	8.72	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is MCS 0 in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11n_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11180	58.79	-2.26	V	56.53	73.98	17.45	PK
11180	47.61	-2.26	V	45.35	53.98	8.63	AV
16770	59.45	1.90	V	61.35	68.20	6.85	PK
11180	58.55	-2.26	H	56.29	73.98	17.69	PK
11180	47.44	-2.26	H	45.18	53.98	8.80	AV
16770	58.76	1.90	H	60.66	68.20	7.54	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is MCS 0 in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11n_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5670 MHz
Channel No.	134 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11340	58.66	-1.94	V	56.72	73.98	17.26	PK
11340	48.12	-1.94	V	46.18	53.98	7.80	AV
17010	59.59	2.66	V	62.25	68.20	5.95	PK
11340	58.48	-1.94	H	56.54	73.98	17.44	PK
11340	47.69	-1.94	H	45.75	53.98	8.23	AV
17010	59.18	2.66	H	61.84	68.20	6.36	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is MCS 0 in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11ac_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11020	58.32	-2.07	V	56.25	73.98	17.73	PK
11020	47.02	-2.07	V	44.95	53.98	9.03	AV
16530	59.12	0.77	V	59.89	68.20	8.31	PK
11020	58.22	-2.07	H	56.15	73.98	17.83	PK
11020	46.88	-2.07	H	44.81	53.98	9.17	AV
16530	59.05	0.77	H	59.82	68.20	8.38	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11ac_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11180	58.55	-2.26	V	56.29	73.98	17.69	PK
11180	46.86	-2.26	V	44.60	53.98	9.38	AV
16770	58.79	1.90	V	60.69	68.20	7.51	PK
11180	58.43	-2.26	H	56.17	73.98	17.81	PK
11180	46.58	-2.26	H	44.32	53.98	9.66	AV
16770	58.69	1.90	H	60.59	68.20	7.61	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11ac_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11420	58.46	-1.94	V	56.52	73.98	17.46	PK
11420	46.58	-1.94	V	44.64	53.98	9.34	AV
17130	58.39	2.66	V	61.05	68.20	7.15	PK
11420	58.27	-1.94	H	56.33	73.98	17.65	PK
11420	46.45	-1.94	H	44.51	53.98	9.47	AV
17130	58.31	2.66	H	60.97	68.20	7.23	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11ac_80 MHz BW
Transfer MCS Index:	0
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11060	58.42	-1.75	V	56.67	73.98	17.31	PK
11060	46.89	-1.75	V	45.14	53.98	8.84	AV
16590	58.82	1.29	V	60.11	68.20	8.09	PK
11060	58.12	-1.75	H	56.37	73.98	17.61	PK
11060	46.80	-1.75	H	45.05	53.98	8.93	AV
16590	58.44	1.29	H	59.73	68.20	8.47	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2C
Operation Mode:	802.11ac_80 MHz BW
Transfer MCS Index:	0
Operating Frequency	5690 MHz
Channel No.	138 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11380	58.21	-1.73	V	56.48	73.98	17.50	PK
11380	46.59	-1.73	V	44.86	53.98	9.12	AV
17070	59.05	3.20	V	62.25	68.20	5.95	PK
11380	58.12	-1.73	H	56.39	73.98	17.59	PK
11380	46.51	-1.73	H	44.78	53.98	9.20	AV
17070	58.64	3.20	H	61.84	68.20	6.36	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5745MHz
Channel No.	149 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	63.83	-1.70	V	62.13	73.98	11.85	PK
11490	51.69	-1.70	V	49.99	53.98	3.99	AV
17235	58.60	2.52	V	61.12	68.20	7.08	PK
11490	62.18	-1.70	H	60.48	73.98	13.50	PK
11490	50.89	-1.70	H	49.19	53.98	4.79	AV
17235	58.21	2.52	H	60.73	68.20	7.47	PK

Notes:

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

Band :	UNII 3
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	61.41	-2.08	V	59.33	73.98	14.65	PK
11570	50.72	-2.08	V	48.64	53.98	5.34	AV
17355	58.32	2.67	V	60.99	68.20	7.21	PK
11570	60.89	-2.08	H	58.81	73.98	15.17	PK
11570	50.46	-2.08	H	48.38	53.98	5.60	AV
17355	58.16	2.67	H	60.83	68.20	7.37	PK

Notes:

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

Band :	UNII 3
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	63.79	-2.36	V	61.43	73.98	12.55	PK
11650	51.82	-2.36	V	49.46	53.98	4.52	AV
17475	60.68	3.81	V	64.49	68.20	3.71	PK
11650	63.56	-2.36	H	61.20	73.98	12.78	PK
11650	51.73	-2.36	H	49.37	53.98	4.61	AV
17475	60.12	3.81	H	63.93	68.20	4.27	PK

Notes:

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

Band :	UNII 3
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	62.58	-1.70	V	60.88	73.98	13.10	PK
11490	50.51	-1.70	V	48.81	53.98	5.17	AV
17235	59.68	2.52	V	62.20	68.20	6.00	PK
11490	62.42	-1.70	H	60.72	73.98	13.26	PK
11490	50.26	-1.70	H	48.56	53.98	5.42	AV
17235	59.55	2.52	H	62.07	68.20	6.13	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	59.09	-2.08	V	57.01	73.98	16.97	PK
11570	46.69	-2.08	V	44.61	53.98	9.37	AV
17355	58.52	2.67	V	61.19	68.20	7.01	PK
11570	58.94	-2.08	H	56.86	73.98	17.12	PK
11570	46.51	-2.08	H	44.43	53.98	9.55	AV
17355	58.42	2.67	H	61.09	68.20	7.11	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	61.76	-2.36	V	59.40	73.98	14.58	PK
11650	49.21	-2.36	V	46.85	53.98	7.13	AV
17475	60.13	3.81	V	63.94	68.20	4.26	PK
11650	61.55	-2.36	H	59.19	73.98	14.79	PK
11650	49.15	-2.36	H	46.79	53.98	7.19	AV
17475	60.05	3.81	H	63.86	68.20	4.34	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is MCS 0 in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	61.36	-1.70	V	59.66	73.98	14.32	PK
11490	48.96	-1.70	V	47.26	53.98	6.72	AV
17235	59.66	2.52	V	62.18	68.20	6.02	PK
11490	61.05	-1.70	H	59.35	73.98	14.63	PK
11490	48.78	-1.70	H	47.08	53.98	6.90	AV
17235	59.47	2.52	H	61.99	68.20	6.21	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	58.96	-2.08	V	56.88	73.98	17.10	PK
11570	47.12	-2.08	V	45.04	53.98	8.94	AV
17355	58.48	2.67	V	61.15	68.20	7.05	PK
11570	58.78	-2.08	H	56.70	73.98	17.28	PK
11570	47.05	-2.08	H	44.97	53.98	9.01	AV
17355	58.46	2.67	H	61.13	68.20	7.07	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 ac_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	60.21	-2.36	V	57.85	73.98	16.13	PK
11650	48.14	-2.36	V	45.78	53.98	8.20	AV
17475	60.26	3.81	V	64.07	68.20	4.13	PK
11650	59.95	-2.36	H	57.59	73.98	16.39	PK
11650	48.00	-2.36	H	45.64	53.98	8.34	AV
17475	60.02	3.81	H	63.83	68.20	4.37	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is MCS 0 in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII3
Operation Mode:	802.11n_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11510	59.69	-1.79	V	57.90	73.98	16.08	PK
11510	48.31	-1.79	V	46.52	53.98	7.46	AV
17265	59.54	3.16	V	62.70	68.20	5.50	PK
11510	59.48	-1.79	H	57.69	73.98	16.29	PK
11510	48.16	-1.79	H	46.37	53.98	7.61	AV
17265	58.93	3.16	H	62.09	68.20	6.11	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is MCS 0 in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11n_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11590	61.16	-2.20	V	58.96	73.98	15.02	PK
11590	49.93	-2.20	V	47.73	53.98	6.25	AV
17385	59.64	3.26	V	62.90	68.20	5.30	PK
11590	61.05	-2.20	H	58.85	73.98	15.13	PK
11590	49.85	-2.20	H	47.65	53.98	6.33	AV
17385	59.48	3.26	H	62.74	68.20	5.46	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is MCS 0 in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII3
Operation Mode:	802.11ac_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11510	59.55	-1.79	V	57.76	73.98	16.22	PK
11510	47.90	-1.79	V	46.11	53.98	7.87	AV
17265	58.49	3.16	V	61.65	68.20	6.55	PK
11510	59.26	-1.79	H	57.47	73.98	16.51	PK
11510	47.82	-1.79	H	46.03	53.98	7.95	AV
17265	58.44	3.16	H	61.60	68.20	6.60	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11ac_40 MHz BW
Transfer MCS Index:	0
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11590	59.81	-2.20	V	57.61	73.98	16.37	PK
11590	47.90	-2.20	V	45.70	53.98	8.28	AV
17385	59.38	3.26	V	62.64	68.20	5.56	PK
11590	59.36	-2.20	H	57.16	73.98	16.82	PK
11590	47.63	-2.20	H	45.43	53.98	8.55	AV
17385	59.21	3.26	H	62.47	68.20	5.73	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11ac_80 MHz BW
Transfer MCS Index:	0
Operating Frequency	5775 MHz
Channel No.	155 Ch

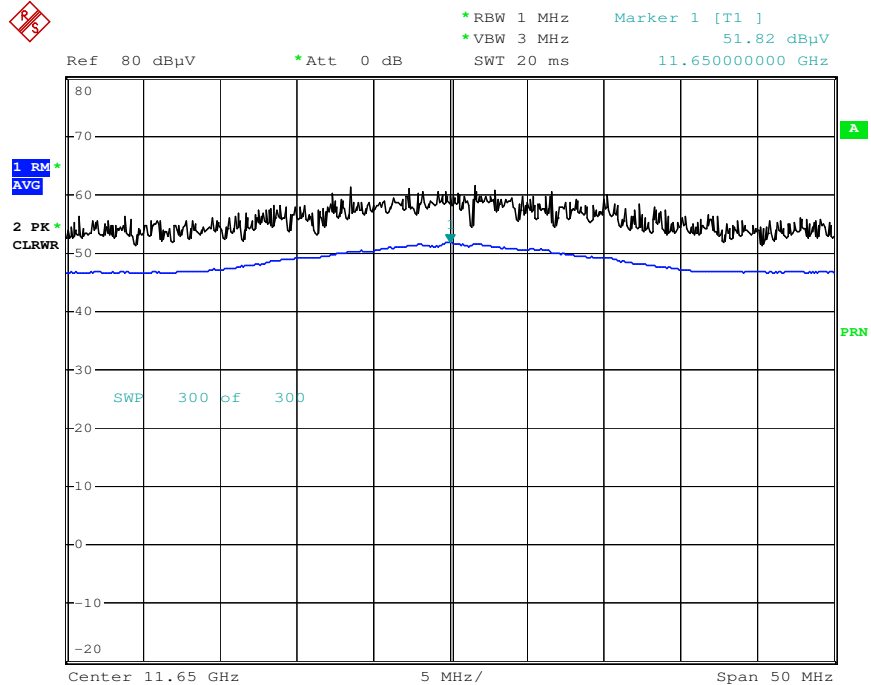
Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11550	59.77	-1.78	V	57.99	73.98	15.99	PK
11550	47.28	-1.78	V	45.50	53.98	8.48	AV
17325	59.14	2.95	V	62.09	68.20	6.11	PK
11550	59.62	-1.78	H	57.84	73.98	16.14	PK
11550	47.05	-1.78	H	45.27	53.98	8.71	AV
17325	59.11	2.95	H	62.06	68.20	6.14	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is MCS 0 in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

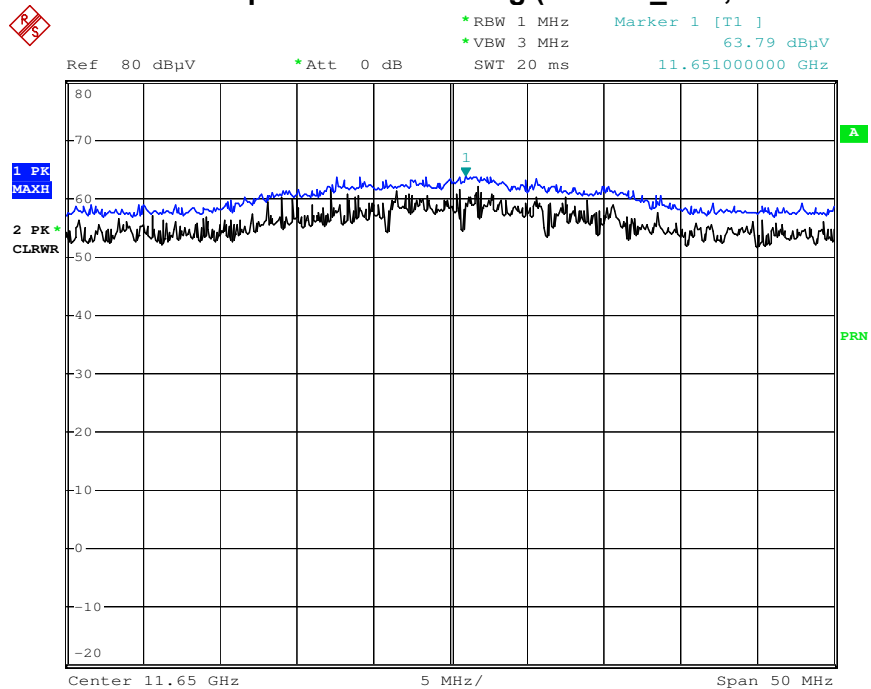
RESULT PLOTS

Radiated Spurious Emissions plot – Average Reading (802.11a_20M, Ch.165 2nd Harmonic)



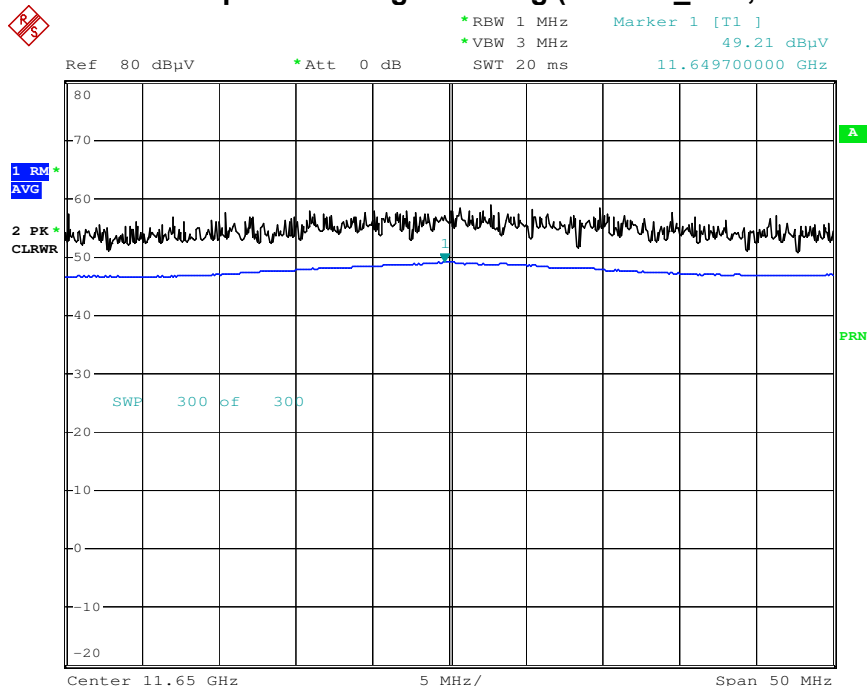
Date: 23.DEC.2015 07:54:17

Radiated Spurious Emissions plot – Peak Reading (802.11a_20M, Ch.165 2nd Harmonic)



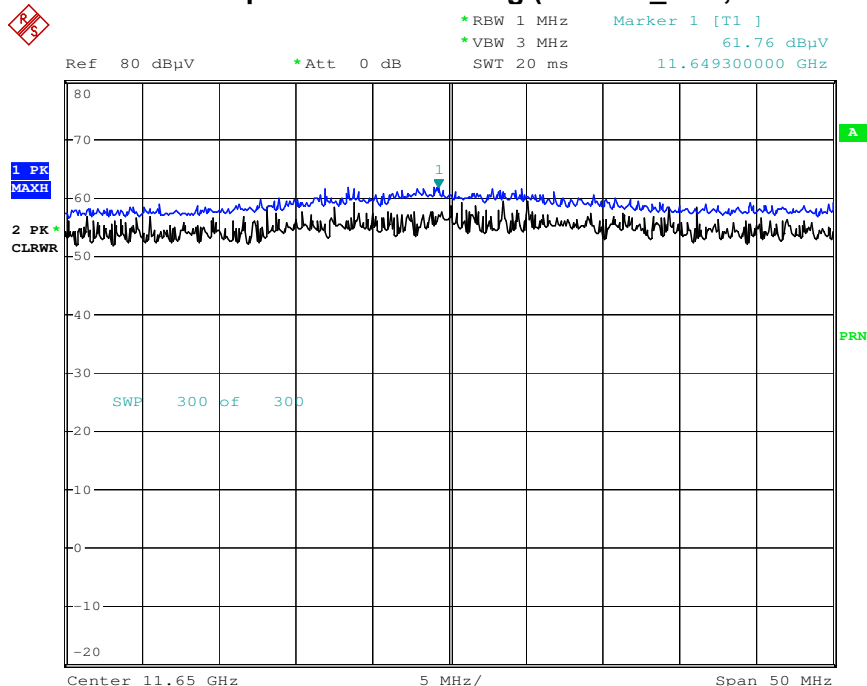
Date: 23.DEC.2015 07:53:43

Radiated Spurious Emissions plot – Average Reading (802.11n_20M, Ch.165 2nd Harmonic)



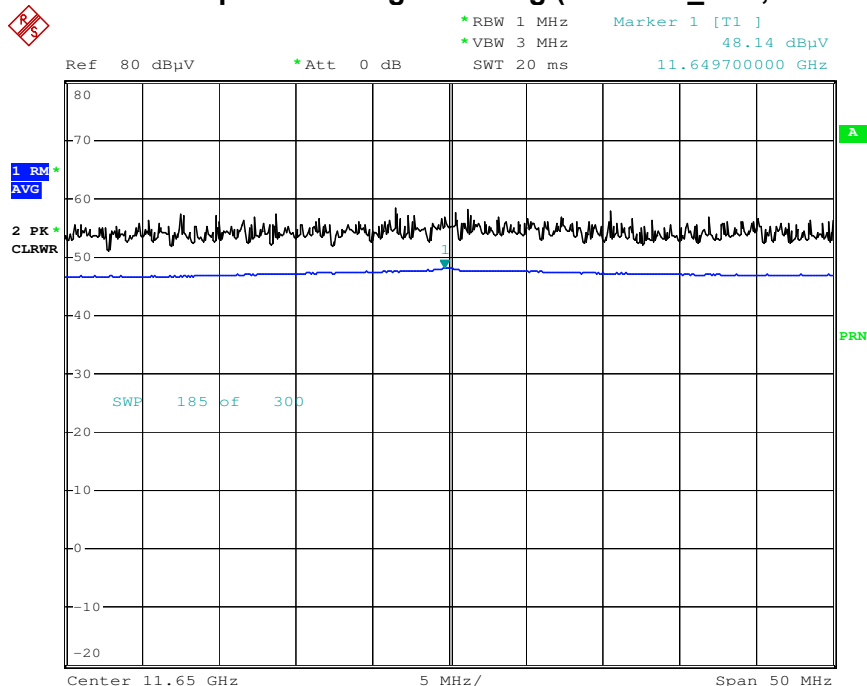
Date: 23.DEC.2015 08:21:43

Radiated Spurious Emissions plot – Peak Reading (802.11n_20M, Ch.165 2nd Harmonic)



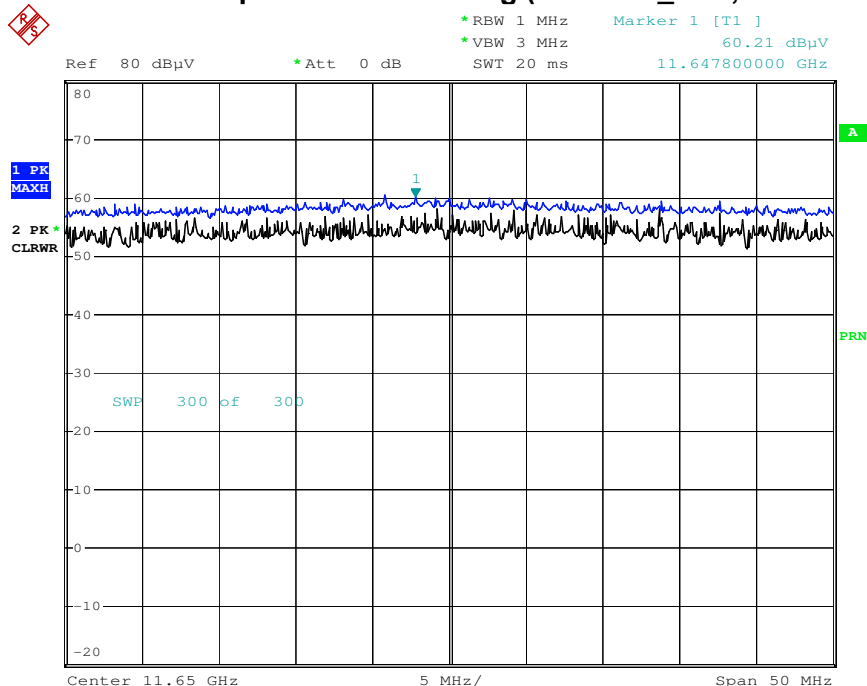
Date: 23.DEC.2015 08:22:45

Radiated Spurious Emissions plot – Average Reading (802.11ac_20M, Ch.165 2nd Harmonic)



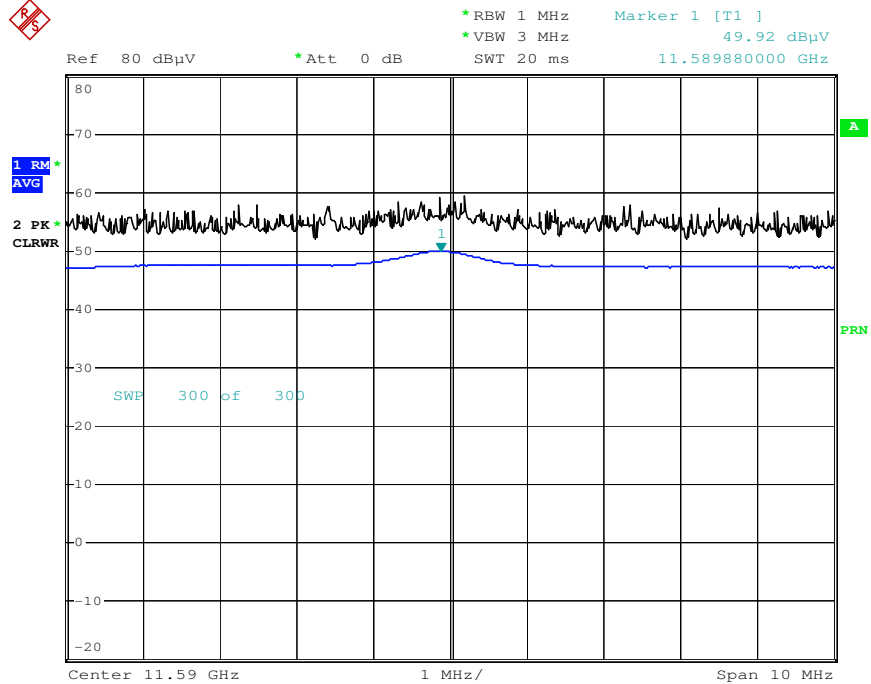
Date: 23.DEC.2015 08:26:59

Radiated Spurious Emissions plot – Peak Reading (802.11ac_20M, Ch.165 2nd Harmonic)



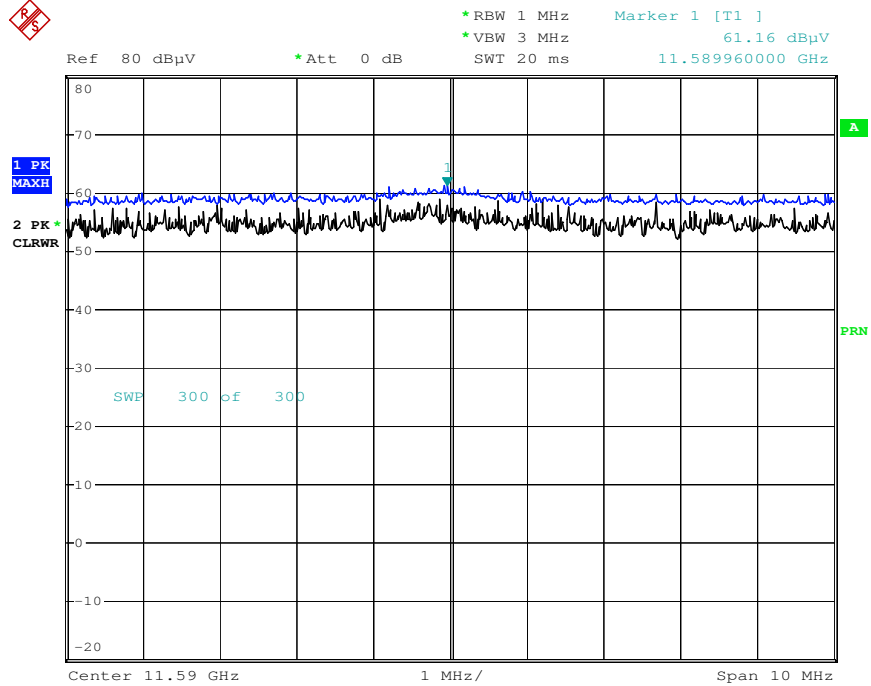
Date: 23.DEC.2015 08:26:40

Radiated Spurious Emissions plot – Average Reading (802.11n_40M, Ch.159 2nd Harmonic)



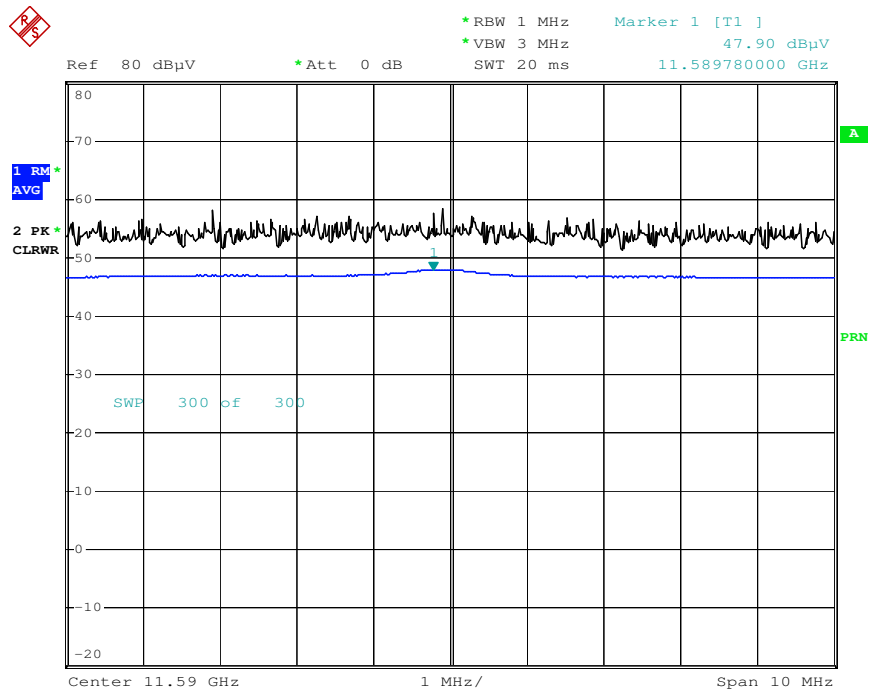
Date: 28.OCT.2015 08:44:46

Radiated Spurious Emissions plot – Peak Reading (802.11n_40M, Ch.159 2nd Harmonic)



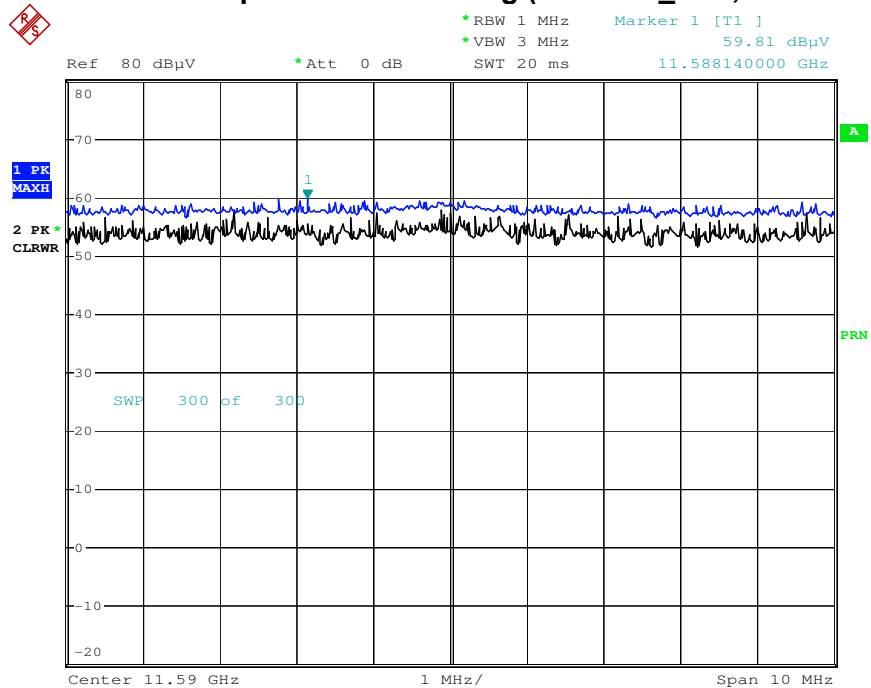
Date: 28.OCT.2015 08:44:04

Radiated Spurious Emissions plot – Average Reading (802.11ac_40M, Ch.159 2nd Harmonic)



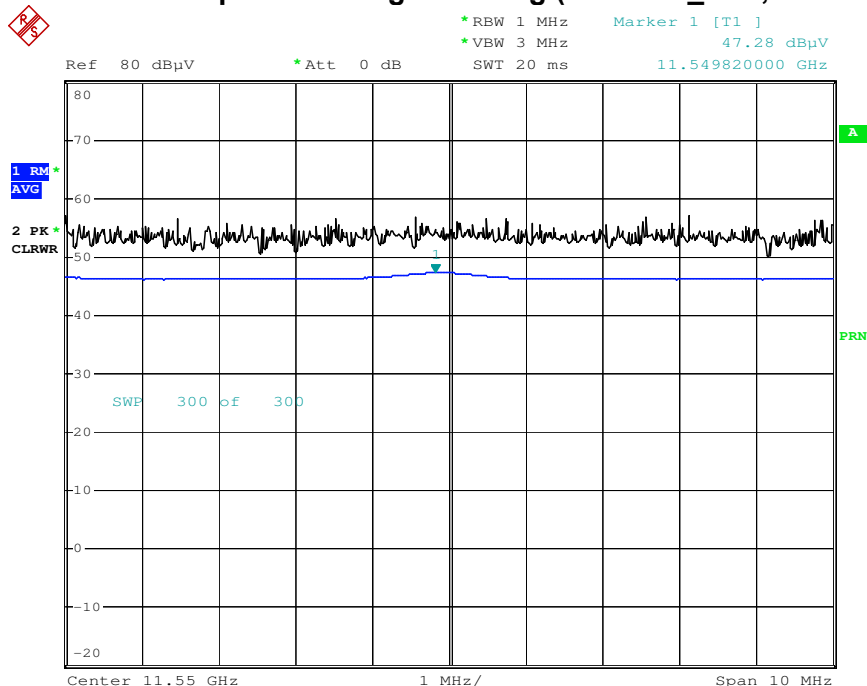
Date: 29.OCT.2015 06:26:28

Radiated Spurious Emissions plot – Peak Reading (802.11ac_40M, Ch.159 2nd Harmonic)



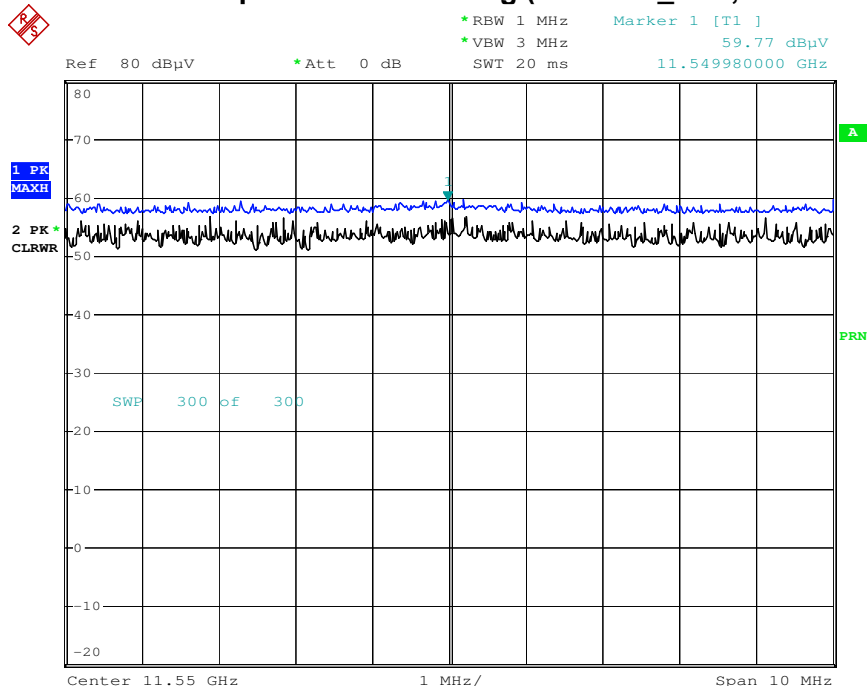
Date: 29.OCT.2015 06:25:39

Radiated Spurious Emissions plot – Average Reading (802.11ac_80M, Ch.155 2nd Harmonic)



Date: 29.OCT.2015 06:42:49

Radiated Spurious Emissions plot – Peak Reading (802.11ac_80M, Ch.155 2nd Harmonic)



Date: 29.OCT.2015 06:41:38

8.6.2 RADIATED RESTRICTED BAND EDGE MEASUREMENTS

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

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

Band :	UNII 1
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	53.75	3.13	H	56.88	73.98	17.10	PK
5150	41.79	3.13	H	44.92	53.98	9.06	AV
5150	54.37	3.13	V	57.5	73.98	16.48	PK
5150	42.55	3.13	V	45.68	53.98	8.30	AV

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer MCS Index:	0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	53.19	3.13	H	56.32	73.98	17.66	PK
5150	42.36	3.13	H	45.49	53.98	8.49	AV
5150	53.88	3.13	V	57.01	73.98	16.97	PK
5150	42.47	3.13	V	45.6	53.98	8.38	AV

Band : UNII 1
 Operation Mode: 802.11 ac_20 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5180 MHz
 Channel No. 36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	54.29	3.13	H	57.42	73.98	16.56	PK
5150	44.95	3.13	H	48.08	53.98	5.90	AV
5150	55.87	3.13	V	59.00	73.98	14.98	PK
5150	45.30	3.13	V	48.43	53.98	5.55	AV

Band : UNII 1
 Operation Mode: 802.11 n_40 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5190 MHz
 Channel No. 38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	54.55	3.13	H	57.68	73.98	16.30	PK
5150	42.67	3.13	H	45.80	53.98	8.18	AV
5150	55.43	3.13	V	58.56	73.98	15.42	PK
5150	42.79	3.13	V	45.92	53.98	8.06	AV

Band : UNII 1
 Operation Mode: 802.11 ac_40 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5190 MHz
 Channel No. 38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	53.75	3.13	H	56.88	73.98	17.10	PK
5150	42.68	3.13	H	45.81	53.98	8.17	AV
5150	54.45	3.13	V	57.58	73.98	16.40	PK
5150	42.82	3.13	V	45.95	53.98	8.03	AV

Band : UNII 1
 Operation Mode: 802.11 ac_80 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5210 MHz
 Channel No. 42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	53.12	3.13	H	56.25	73.98	17.73	PK
5150	42.56	3.13	H	45.69	53.98	8.29	AV
5150	54.65	3.13	V	57.78	73.98	16.20	PK
5150	42.85	3.13	V	45.98	53.98	8.00	AV

Band : UNII 2A
 Operation Mode: 802.11 a_20 MHz BW
 Transfer Rate: 6 Mbps
 Operating Frequency 5320 MHz
 Channel No. 64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	52.48	3.24	H	55.72	73.98	18.26	PK
5350	41.15	3.24	H	44.39	53.98	9.59	AV
5350	53.32	3.24	V	56.56	73.98	17.42	PK
5350	41.81	3.24	V	45.05	53.98	8.93	AV

Band : UNII 2A
 Operation Mode: 802.11 n_20 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5320 MHz
 Channel No. 64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	53.68	3.24	H	56.92	73.98	17.06	PK
5350	41.57	3.24	H	44.81	53.98	9.17	AV
5350	53.86	3.24	V	57.10	73.98	16.88	PK
5350	41.82	3.24	V	45.06	53.98	8.92	AV

Band : UNII 2A
 Operation Mode: 802.11 ac_20 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5320 MHz
 Channel No. 64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	53.47	3.24	H	56.71	73.98	17.27	PK
5350	41.56	3.24	H	44.80	53.98	9.18	AV
5350	53.55	3.24	V	56.79	73.98	17.19	PK
5350	41.81	3.24	V	45.05	53.98	8.93	AV

Band : UNII 2A
 Operation Mode: 802.11 n_40 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5310 MHz
 Channel No. 62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	53.12	3.24	H	56.36	73.98	17.62	PK
5350	42.19	3.24	H	45.43	53.98	8.55	AV
5350	53.42	3.24	V	56.66	73.98	17.32	PK
5350	42.31	3.24	V	45.55	53.98	8.43	AV

Band : UNII 2A
 Operation Mode: 802.11 ac_40 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5310 MHz
 Channel No. 62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	53.08	3.24	H	56.32	73.98	17.66	PK
5350	42.16	3.24	H	45.40	53.98	8.58	AV
5350	53.18	3.24	V	56.42	73.98	17.56	PK
5350	42.26	3.24	V	45.50	53.98	8.48	AV

Band : UNII 2A
 Operation Mode: 802.11 ac_80 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5290 MHz
 Channel No. 58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	54.75	3.24	H	57.99	73.98	15.99	PK
5350	41.88	3.24	H	45.12	53.98	8.86	AV
5350	54.92	3.24	V	58.16	73.98	15.82	PK
5350	41.90	3.24	V	45.14	53.98	8.84	AV

Band :	UNII 2C
Operation Mode:	802.11 a_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	53.74	3.59	H	57.33	73.98	16.65	PK
5460	41.98	3.59	H	45.57	53.98	8.41	AV
5470	53.99	3.56	H	57.55	68.20	10.65	PK
5460	53.06	3.59	V	56.65	73.98	17.33	PK
5460	41.87	3.59	V	45.46	53.98	8.52	AV
5470	53.76	3.56	V	57.32	68.20	10.88	PK

Band :	UNII 2C
Operation Mode:	802.11 n_20MHz BW
Transfer MCS Index:	0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	53.68	3.59	H	57.27	73.98	16.71	PK
5460	41.84	3.59	H	45.43	53.98	8.55	AV
5470	53.72	3.56	H	57.28	68.20	10.92	PK
5470	53.42	3.59	V	57.01	73.98	16.97	PK
5460	41.76	3.59	V	45.35	53.98	8.63	AV
5460	53.66	3.56	V	57.22	68.20	10.98	PK

Band : UNII 2C
 Operation Mode: 802.11 ac_20MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5500 MHz
 Channel No. 100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	53.72	3.59	H	57.31	73.98	16.67	PK
5460	41.79	3.59	H	45.38	53.98	8.60	AV
5470	53.69	3.56	H	57.25	68.20	10.95	PK
5460	53.44	3.59	V	57.03	73.98	16.95	PK
5460	41.56	3.59	V	45.15	53.98	8.83	AV
5470	53.29	3.56	V	56.85	68.20	11.35	PK

Band : UNII 2C
 Operation Mode: 802.11 n_40 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5510 MHz
 Channel No. 102 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	54.04	3.59	H	57.63	73.98	16.35	PK
5460	42.09	3.59	H	45.68	53.98	8.30	AV
5470	53.52	3.56	H	57.08	68.20	11.12	PK
5460	53.86	3.59	V	57.45	73.98	16.53	PK
5460	42.05	3.59	V	45.64	53.98	8.34	AV
5470	53.45	3.56	V	57.01	68.20	11.19	PK

Band : UNII 2C
 Operation Mode: 802.11 ac_40 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5510 MHz
 Channel No. 102 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	54.00	3.59	H	57.59	73.98	16.39	PK
5460	42.05	3.59	H	45.64	53.98	8.34	AV
5470	53.28	3.56	H	56.84	68.20	11.36	PK
5460	53.89	3.59	V	57.48	73.98	16.50	PK
5460	42.10	3.59	V	45.69	53.98	8.29	AV
5470	53.19	3.56	V	56.75	68.20	11.45	PK

Band : UNII 2C
 Operation Mode: 802.11 ac_80 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5530 MHz
 Channel No. 106 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	53.65	3.59	H	57.24	73.98	16.74	PK
5460	41.98	3.59	H	45.57	53.98	8.41	AV
5470	53.81	3.56	H	57.37	68.20	10.83	PK
5460	53.48	3.59	V	57.07	73.98	16.91	PK
5460	41.86	3.59	V	45.45	53.98	8.53	AV
5470	53.69	3.56	V	57.25	68.20	10.95	PK

Band : UNII 3
 Operation Mode: 802.11 a_20 MHz BW
 Transfer Rate: 6 Mbps
 Operating Frequency 5825 MHz
 Channel No. 165 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	53.45	4.40	H	57.85	78.20	20.35	PK
*5850	53.16	4.40	V	57.56	78.20	20.64	PK
*5860	53.72	4.42	H	58.14	68.20	10.06	PK
*5860	53.46	4.42	V	57.88	68.20	10.32	PK

Band : UNII 3
 Operation Mode: 802.11 n_20MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5825 MHz
 Channel No. 165 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	53.47	4.40	H	57.87	78.20	20.33	PK
*5850	53.44	4.40	V	57.84	78.20	20.36	PK
*5860	53.26	4.42	H	57.68	68.20	10.52	PK
*5860	53.21	4.42	V	57.63	68.20	10.57	PK

Band : UNII 3
 Operation Mode: 802.11 ac_20MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5825 MHz
 Channel No. 165 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	53.75	4.40	H	58.15	78.20	20.05	PK
*5850	53.66	4.40	V	58.06	78.20	20.14	AV
*5860	53.26	4.42	H	57.68	68.20	10.52	PK
*5860	53.18	4.42	V	57.60	68.20	10.60	AV

Band : UNII 3
 Operation Mode: 802.11 n_40 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5795 MHz
 Channel No. 159 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	53.68	4.40	H	58.08	78.20	20.12	PK
*5850	53.45	4.40	V	57.85	78.20	20.35	PK
*5860	53.62	4.42	H	58.04	68.20	10.16	PK
*5860	53.27	4.42	V	57.69	68.20	10.51	PK

Band : UNII 3
 Operation Mode: 802.11 ac_40 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5795 MHz
 Channel No. 159 Ch

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	53.48	4.40	H	57.88	78.20	20.32	PK
*5850	53.33	4.40	V	57.73	78.20	20.47	AV
*5860	53.55	4.42	H	57.97	68.20	10.23	PK
*5860	53.42	4.42	V	57.84	68.20	10.36	AV

Band : UNII 3
 Operation Mode: 802.11 ac_80 MHz BW
 Transfer MCS Index: 0
 Operating Frequency 5755 MHz
 Channel No. 155 Ch

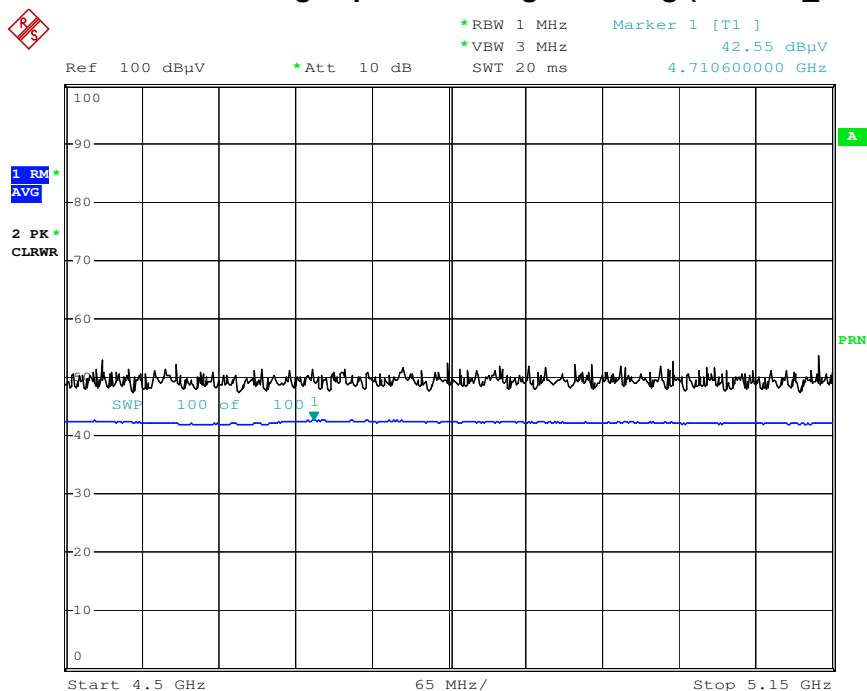
Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
*5850	53.84	4.40	H	58.24	78.20	19.96	PK
*5850	53.71	4.40	V	58.11	78.20	20.09	PK
*5860	53.46	4.42	H	57.88	68.20	10.32	PK
*5860	53.26	4.42	V	57.68	68.20	10.52	PK

Notes:

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

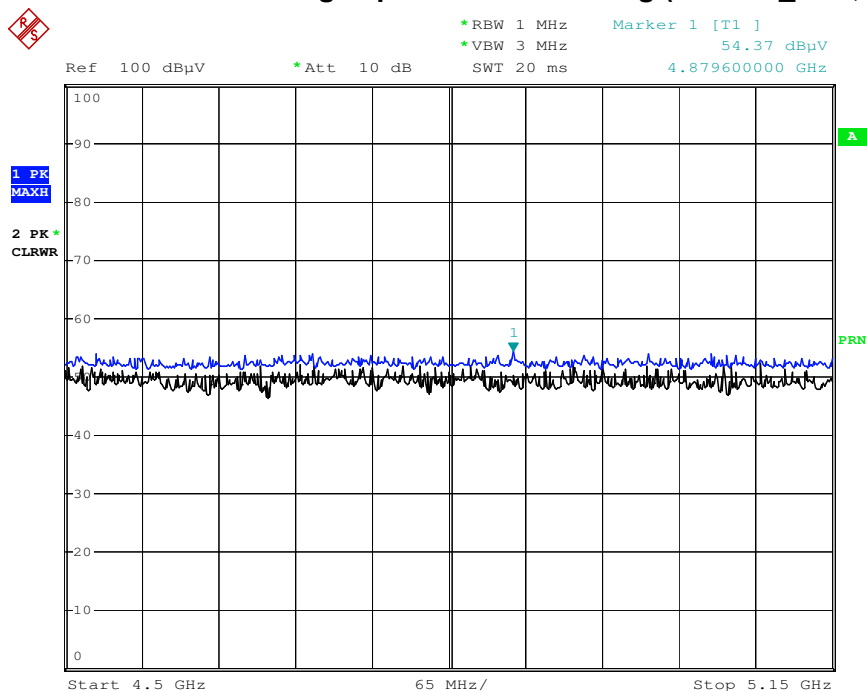
■ **RESULT PLOTS**

Radiated Restricted Band Edges plot – Average Reading (802.11a_20M, Ch.36)



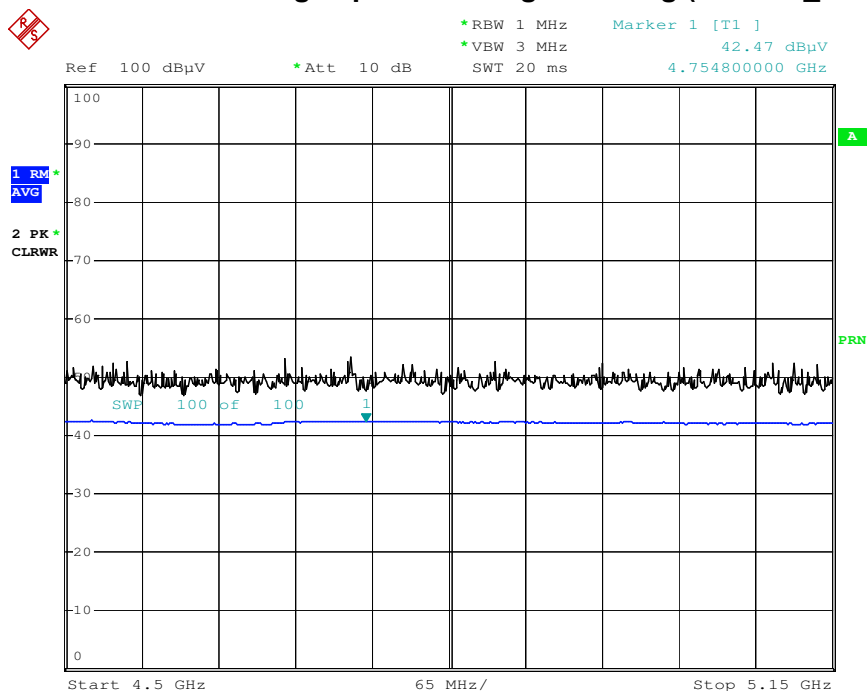
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Radiated Restricted Band Edges plot – Peak Reading (802.11a_20M, Ch.36)



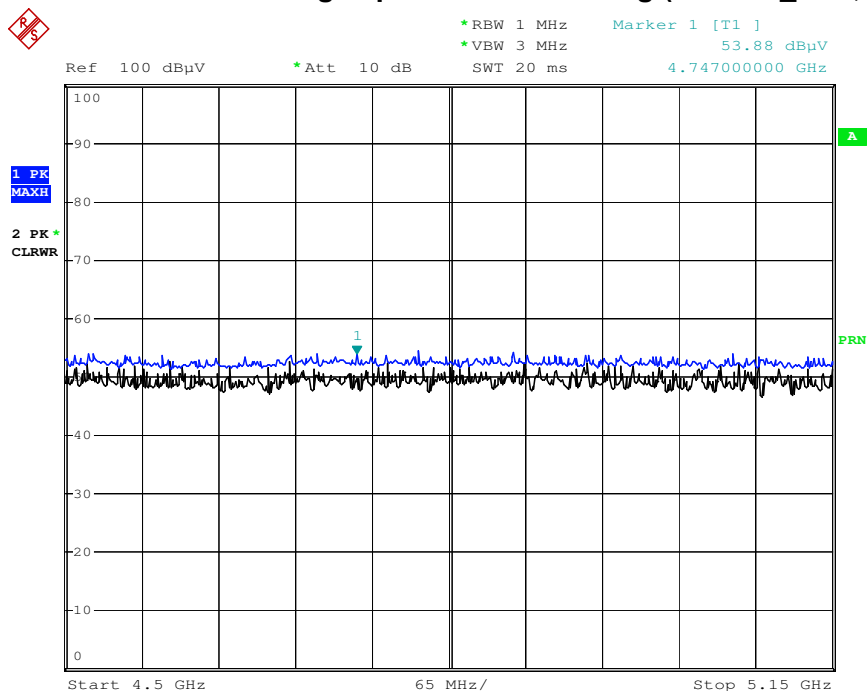
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Radiated Restricted Band Edges plot – Average Reading (802.11n_20M, Ch.36)



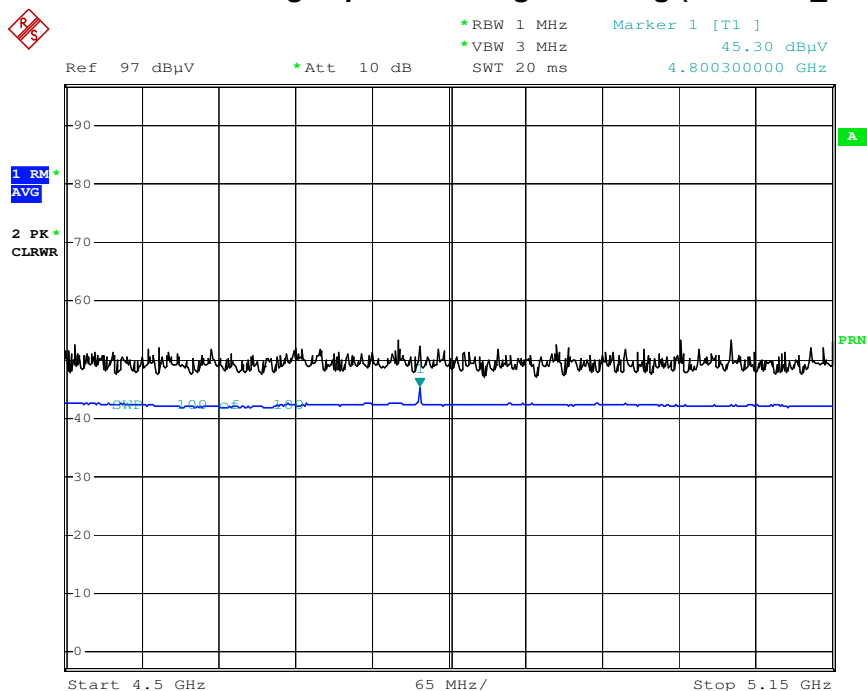
Date: 6.JAN.2016 08:10:05

Radiated Restricted Band Edges plot – Peak Reading (802.11n_20M, Ch.36)



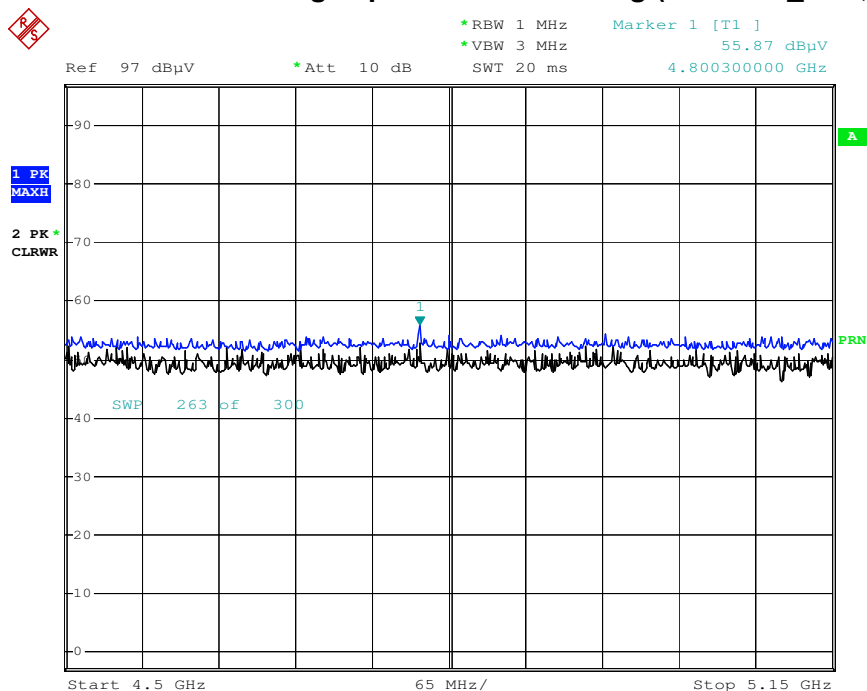
Date: 6.JAN.2016 08:10:39

Radiated Restricted Band Edges plot – Average Reading (802.11ac_20M, Ch.36)



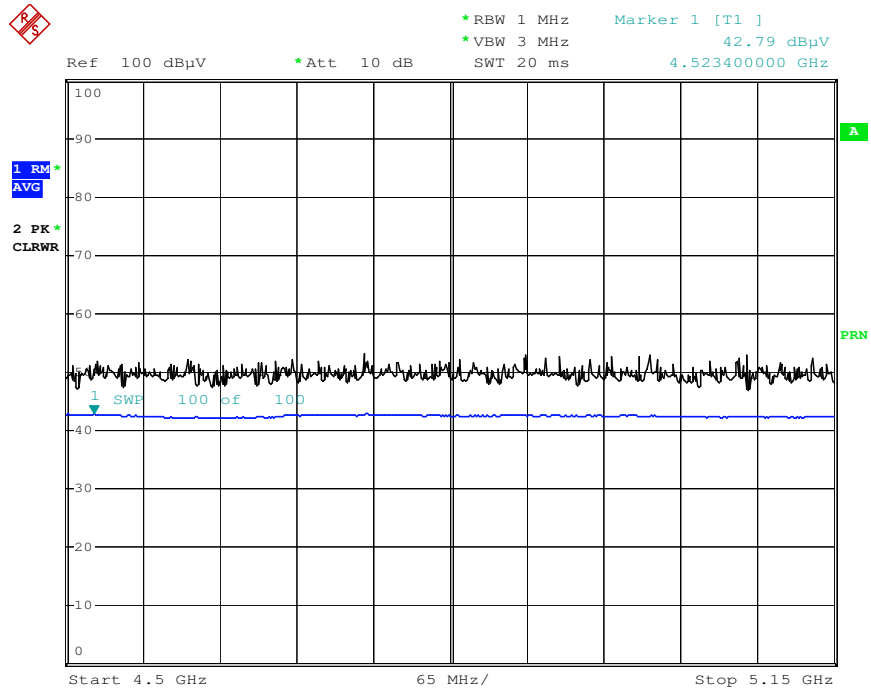
Date: 23.DEC.2015 08:45:25

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_20M, Ch.36)



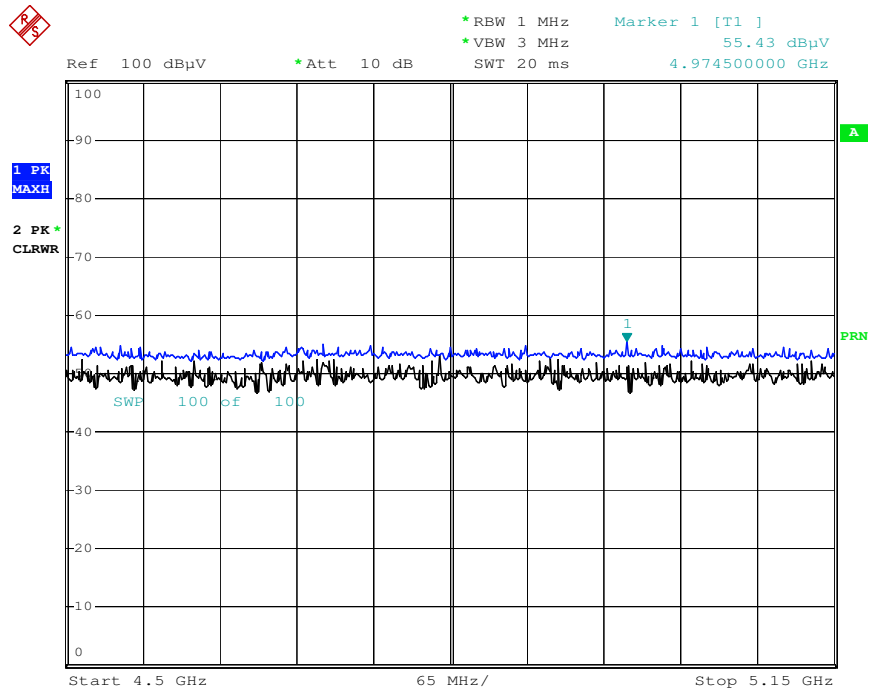
Date: 23.DEC.2015 08:43:28

Radiated Restricted Band Edges plot – Average Reading (802.11n_40M, Ch.38)



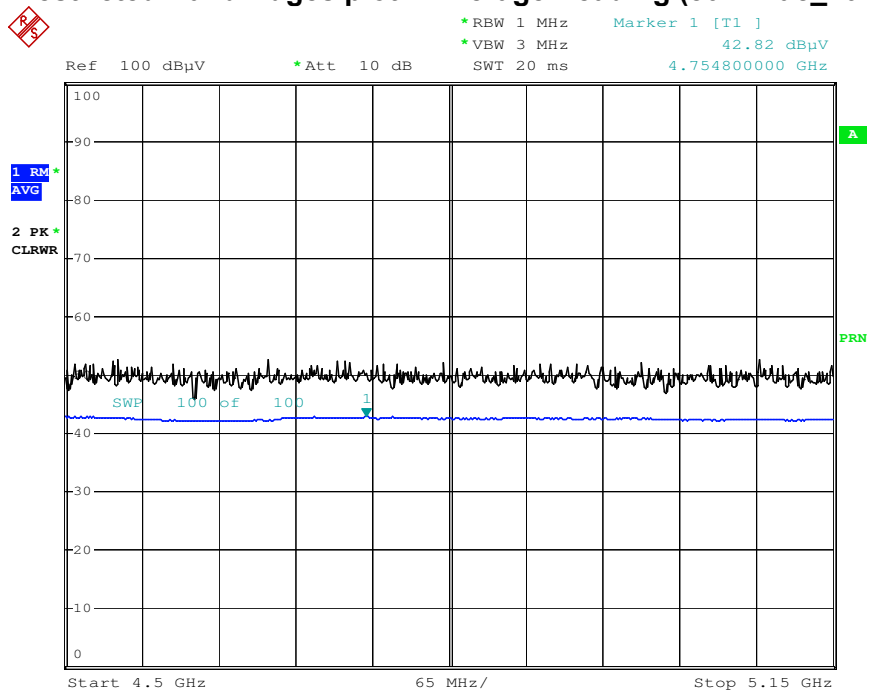
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Radiated Restricted Band Edges plot – Peak Reading (802.11n_40M, Ch.38)



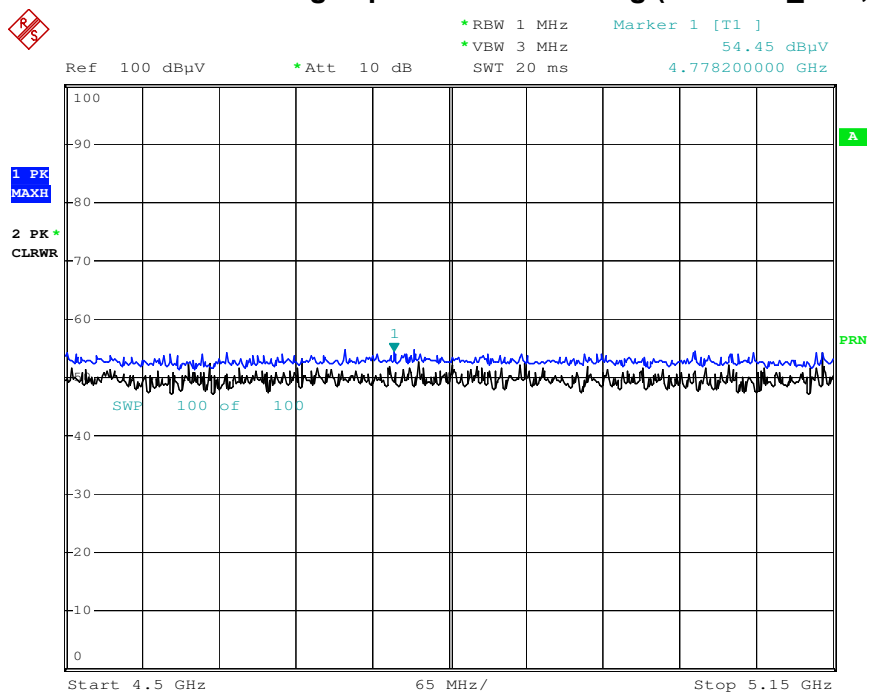
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Radiated Restricted Band Edges plot – Average Reading (802.11ac_40M, Ch.38)



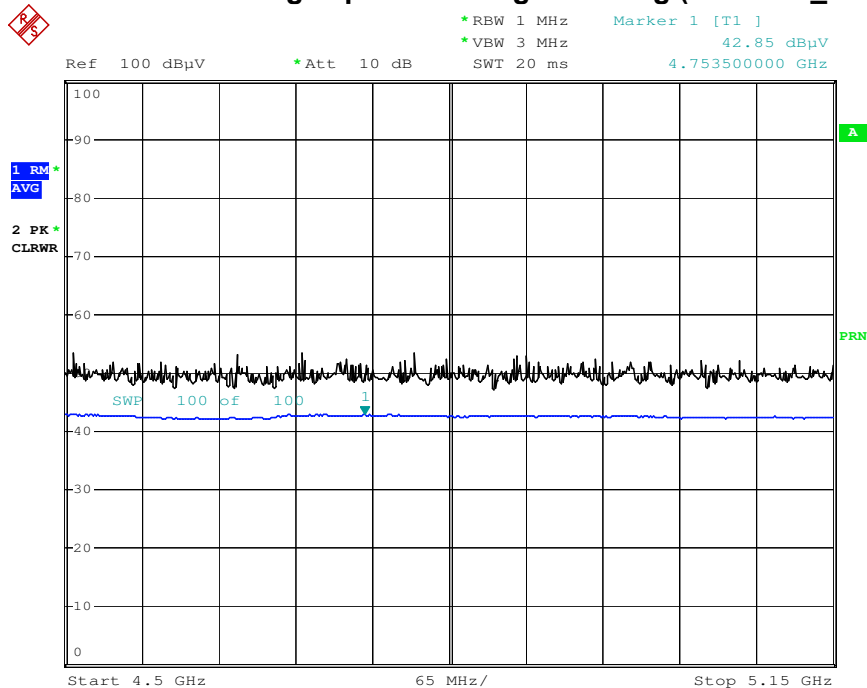
Date: 23.DEC.2015 03:23:31

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_40M, Ch.38)



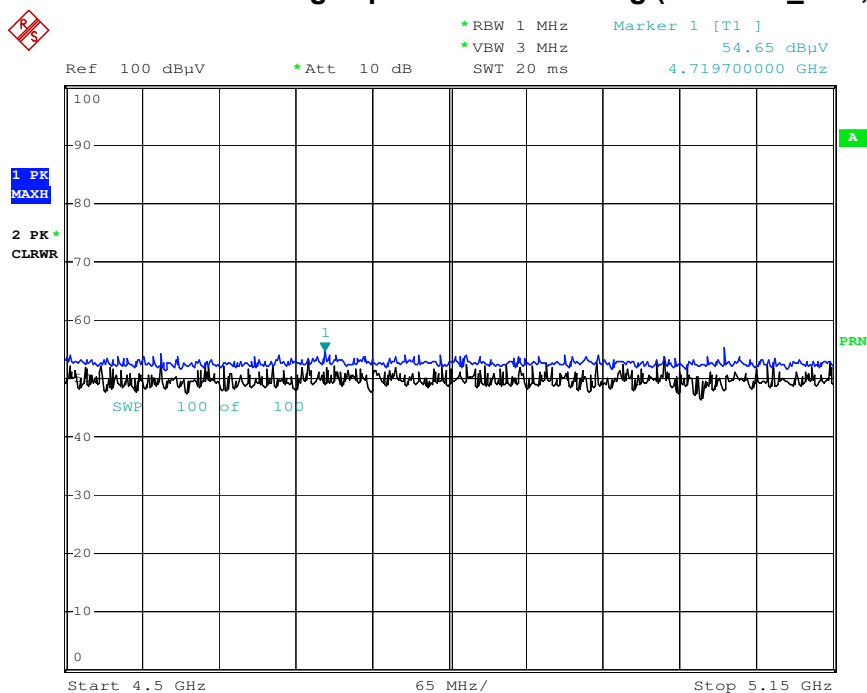
Date: 23.DEC.2015 03:22:57

Radiated Restricted Band Edges plot – Average Reading (802.11ac_80M, Ch.42)



Date: 23.DEC.2015 03:27:36

Radiated Restricted Band Edges plot – Peak Reading (802.11ac_80M, Ch.42)



Date: 23.DEC.2015 03:28:08

8.7 POWERLINE CONDUCTED EMISSIONS

Test Requirements and limit, §15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

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

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

Test Configuration

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

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference groundplane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.

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.

9. LIST OF TEST EQUIPMENT

9.1 LIST OF TEST EQUIPMENT(Conducted Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Rohde & Schwarz	ENV216/ LISN	01/13/2015	Annual	100073
Agilent	E4440A/ Spectrum Analyzer	03/18/2015	Annual	US45303008
Agilent	N9020A / SIGNAL ANALYZER	06/30/2015	Annual	MY51110085
Agilent	N9020A / SIGNAL ANALYZER	07/02/2015	Annual	MY50510304
Agilent	N1911A/Power Meter	07/09/2015	Annual	MY45100523
Agilent	N1921A /POWER SENSOR	07/09/2015	Annual	MY45241059
*Agilent	*87300B/Directional Coupler	11/30/2015	Annual	3116A03621
Hewlett Packard	11667B / Power Splitter	06/15/2015	Annual	5001
Hewlett Packard	E3632A / DC POWER SUPPLY	03/11/2015	Annual	KR75303962
Agilent	8493C / Attenuator(10 dB)	07/21/2015	Annual	07560
*The Agilent '87300B/Directional Coupler' was used after calibration date.(11/30/2015)				

9.2 LIST OF TEST EQUIPMENT(Radiated Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Schwarzbeck	VULB 9160/ TRILOG Antenna	10/10/2014	Biennial	3368
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Schwarzbeck	BBHA 9120D/ Horn Antenna	05/07/2015	Biennial	937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	04/30/2015	Biennial	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	01/22/2015	Annual	839117/011
Wainwright Instrument	WHF3.0/18G-10EF / High Pass Filter	06/29/2015	Annual	8
Wainwright Instrument	WHKX8-6090-7000-18000-40SS / High Pass Filter	08/03/2015	Annual	5
Wainwright Instrument	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	01/29/2015	Annual	2
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	06/15/2015	Annual	1
Rohde & Schwarz	LOOP ANTENNA	09/03/2014	Biennial	1513-175
CERNEX	CBL26405040 / POWER AMP	07/21/2015	Annual	19660
CERNEX	CBL18265035 / POWER AMP	07/27/2015	Annual	22966
CERNEX	CBL06185030 / POWER AMP	07/21/2015	Annual	22965