FCC PART 15.407

TEST REPORT

For

SHENZHEN TENDA TECHNOLOGY CO., LTD.

6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052

FCC ID: V7TO6

Report Type:	**Product Type:**
Original Report	5GHz 433Mbps Outdoor Point To Point CPE

Test Engineer:	Lion Xiao
Report Number:	RDG160803001-00
Report Date:	2016-09-12
Reviewed By:	Jerry Zhang EMC Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *SHENZHEN TENDA TECHNOLOGY CO., LTD.*'s product, model number: *O6 (FCC ID: V7TO6)* (the "EUT") in this report was a *5GHz 433Mbps Outdoor Point To Point CPE,* which was measured approximately: 27.2 cm(L)× 9.5 cm(W)× 6.8cm(H), rated input voltage: 24V DC powered by adapter.

Adapter Information:
Model: BN060-P12024
Input: AC 100-240V, 50/60Hz, 0.3A
Output: DC 24V, 0.5A

All measurement and test data in this report was gathered from production sample serial number: 160803001(by Dongguan BACL). The EUT was received on 2016-08-03.

Objective

This type approval report is prepared on behalf of *SHENZHEN TENDA TECHNOLOGY CO., LTD.* in accordance with Part 2-Subpart J, Part 15-Subparts A, B and E of the Federal Communications Commission's rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Related Submittal(s)/Grant(s)

No related submittal

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 06, 2015.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

The system support 802.11a/n ht20/n ht40/ac vht20/ac vht40/ac vht80, the vh20/vht40 were reduced since the identical parameters with 802.11n ht20 and ht40.

For 5150~5250 MHz band, 7 channels are provided to test:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

For 802.11a, 802.11n ht20, Channel 36, 40 and 48 were tested, for 802.11n ht40, Channel 38, 46 were tested. For 802.11AC 80, channel 42 was tested.

For 5725~5850MHz band, 8 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	159	5795
151	5755	161	5805
153	5765	165	5825
155	5775	/	/
157	5785	/	/

For 802.11a, 802.11n ht20, Channel 149, 157 and 165 was tested, for 802.11n ht40, Channel 151, 159 was tested. For 802.11AC 80, channel 155 was tested.

The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the average power and PSD across all data rates bandwidths, and modulations.

EUT Exercise Software

The test software: ' M_Tool V2.0.0.3' was used in testing, which was provided by manufacturer, and configured maximum power (100% dutycycle) as following table:

5150 MHz ~ 5250 MHz

Test Mode	Test Software Version	M_Tool V2.0.0.3		
802.11a	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	(OFDM)6Mbps	(OFDM)6Mbps	(OFDM)6Mbps
	Power Level Setting	48	48	48
802.11n ht20	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	48	48	48
802.11n ht40	Test Frequency	5190MHz	/	5230MHz
	Data Rate	MCS0	/	MCS0
	Power Level Setting	48	/	48
802.11n AC80	Test Frequency	/	5210MHz	/
	Data Rate	/	MNSS0	/
	Power Level Setting	/	48	/

5725MHz ~ 5850 MHz

Test Mode	Test Software Version	M_Tool V2.0.0.3		
802.11A	Test Frequency	5745MHz	5785MHz	5825MHz
	Data Rate	(OFDM)6Mbps	(OFDM)6Mbps	(OFDM)6Mbps
	Power Level Setting	48	48	48
802.11n ht20	Test Frequency	5745MHz	5785MHz	5825MHz
	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	48	48	48
802.11n ht40	Test Frequency	5755MHz	/	5795MHz
	Data Rate	MCS0	/	MCS0
	Power Level Setting	48	/	48
802.11n AC80	Test Frequency	/	5775MHz	/
	Data Rate	/	MNSS0	/
	Power Level Setting	/	48	/

Equipment Modifications

No modification was made to the EUT.

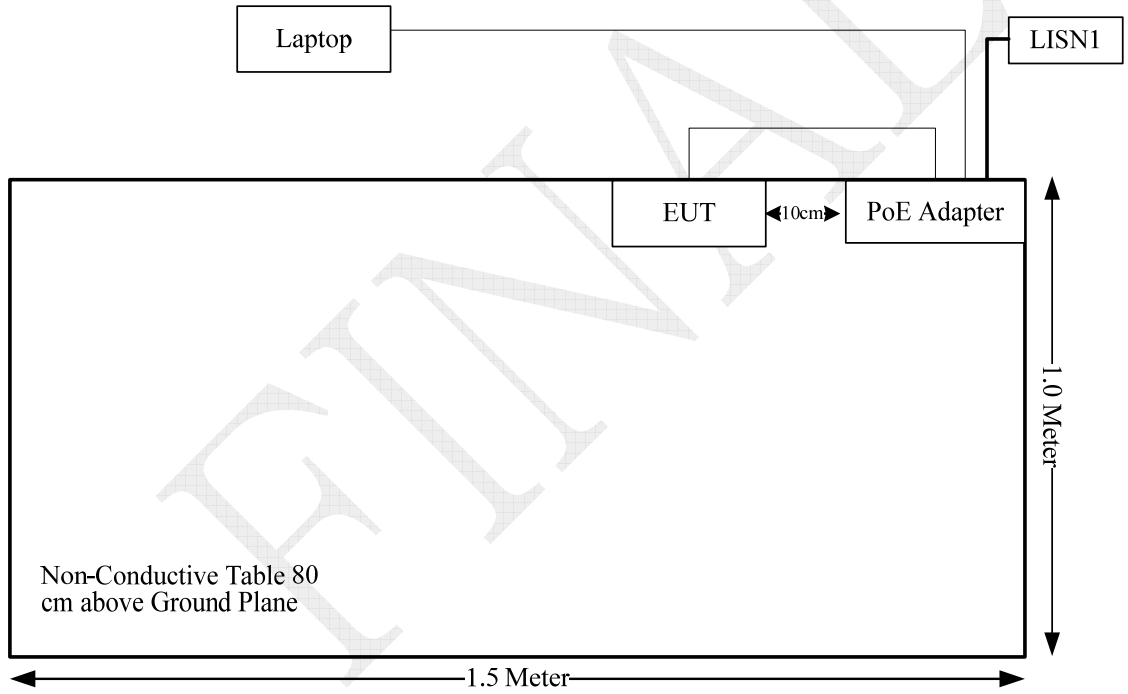
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017

External Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
RJ45 Cable	No	No	1.0	EUT	POE Adapter
RJ45 Cable	Yes	No	10	EUT	Laptop

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.407 (f) & §1.1310 & §2.1091	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.407(b)(6)& §15.207(a)	Conducted Emissions	Compliance
§15.205& §15.209 &§15.407(b) (1),(6),(7)	Undesirable Emission& Restricted Bands	Compliance
§15.407(b) (1),(2),(3),(4)	Out Of Band Emissions	Compliance
§15.407(a) (e)	26 dB Bandwidth and 6 dB Bandwidth	Compliance
§15.407(a)(1),	Conducted Transmitter Output Power	Compliance
§15.407 (a)(1),(5)	Power Spectral Density	Compliance

FCC §15.407 (f) & §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.407(f)and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f^2)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Frequency (MHz)	**Antenna Gain**		**Tune-up Power**		**Evaluation Distance (cm)**	**Power Density (mW/cm^2)**	**MPE Limit (mW/cm^2)**
	(dBi)	**(numeric)**	**(dBm)**	**(mW)**			
5150-5850	16.00	39.81	12	15.85	20.00	0.1256	1.0

Note: The maximum tune-up power including tolerance is 12dBm.

Result: The device meet FCC MPE at 20 cm distance

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall 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 manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
And according to FCC 47 CFR section 15.407 (a)(1),if transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT have an internal antenna and the gain is 16.0 dBi at 5GHz Band, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

FCC §15.407 (b) (6) §15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (6).

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner：

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

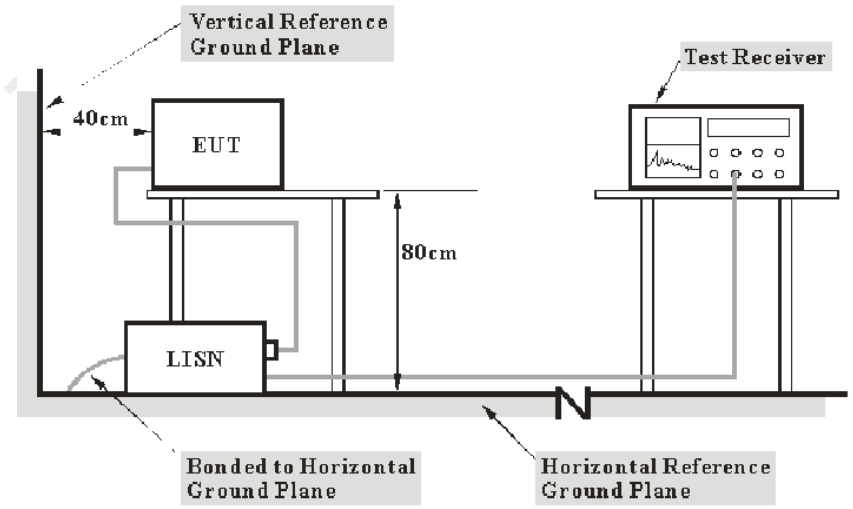
If U_{lab} is greater than U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.12 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cispr}

Measurement	U_{cispr}
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$
$C_f = A_C + VDF$

Herein,
V_C (cord. Reading): corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN
C_f: Correction Factor

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2015-12-10	2016-12-09
R&S	L.I.S.N	ESH2-Z5	892107/021	2016-07-16	2017-07-15
R&S	Two-line V-network	ENV 216	3560.6550.12	2015-11-26	2016-11-25
N/A	Coaxial Cable	1.8m	N/A	2016-05-06	2017-05-06
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

During the conducted emission test, the adapter was connected to thefirst LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207

Test Data

Environmental Conditions

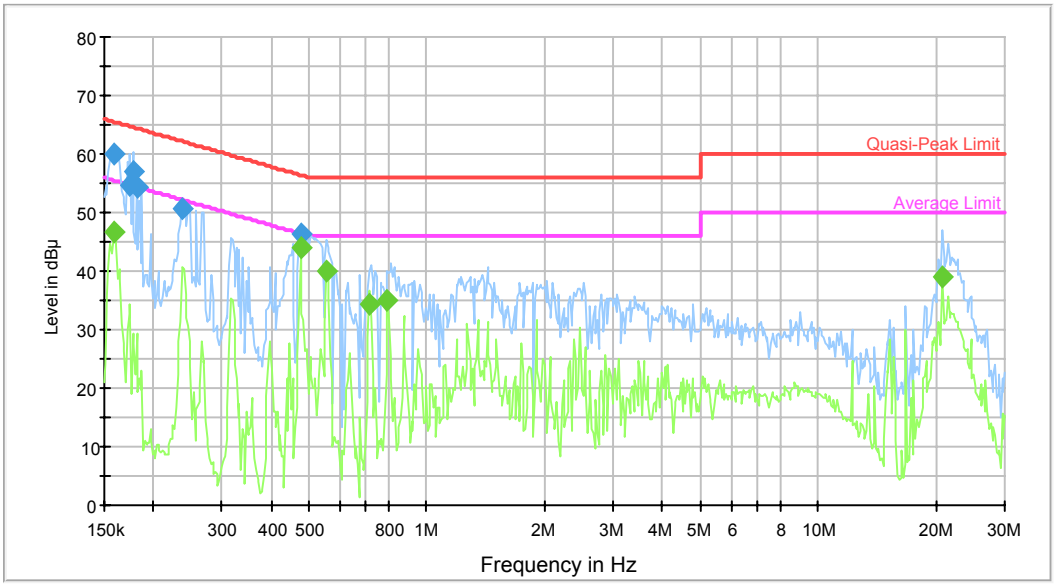
Temperature:	29 °C
Relative Humidity:	55 %
ATM Pressure:	100 kPa

The testing was performed by Lion Xiao on 2016-08-10.

Test Mode: Transmitting,

Test Result: Compliance, please refer to the below data and plots.

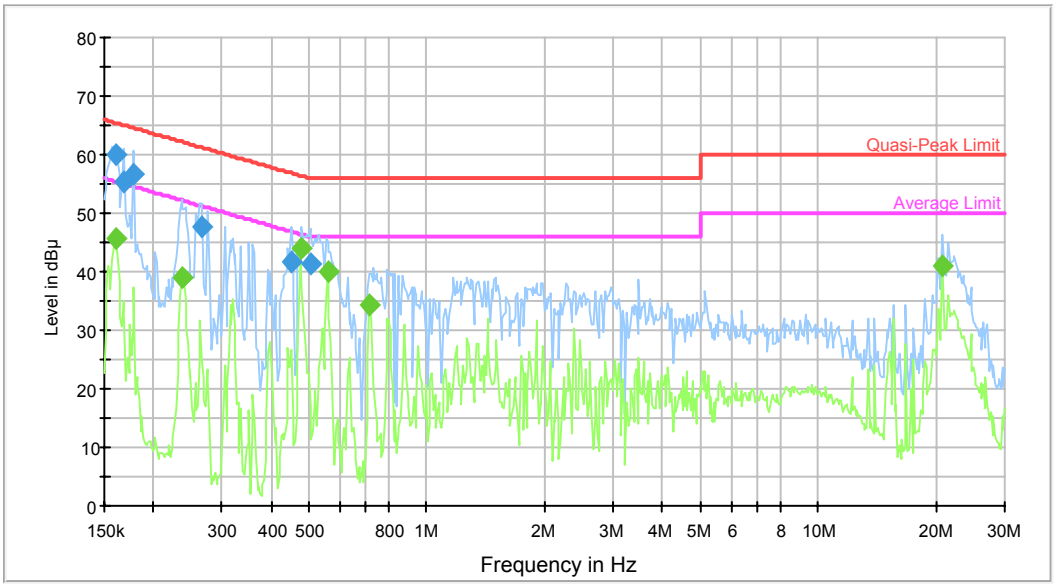
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.158604	60.2	9.000	L1	10.2	5.3	65.5	Compliance
0.174519	54.6	9.000	L1	10.1	10.1	64.7	Compliance
0.177322	57.0	9.000	L1	10.1	7.6	64.6	Compliance
0.181612	54.4	9.000	L1	10.2	10.0	64.4	Compliance
0.238124	50.8	9.000	L1	10.2	11.4	62.2	Compliance
0.476287	46.2	9.000	L1	10.1	10.2	56.4	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.158604	46.8	9.000	L1	10.2	8.7	55.5	Compliance
0.476287	44.1	9.000	L1	10.1	2.3	46.4	Compliance
0.554139	40.0	9.000	L1	10.1	6.0	46.0	Compliance
0.715082	34.4	9.000	L1	10.4	11.6	46.0	Compliance
0.793127	35.0	9.000	L1	10.4	11.0	46.0	Compliance
20.804674	38.9	9.000	L1	10.9	11.1	50.0	Compliance

AC120 V, 60 Hz, Neutral:



requency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.159873	60.1	9.000	N	10.1	5.4	65.5	Compliance
0.167702	55.4	9.000	N	10.1	9.7	65.1	Compliance
0.178741	56.7	9.000	N	10.1	7.8	64.5	Compliance
0.266226	47.6	9.000	N	10.2	13.6	61.2	Compliance
0.450448	41.7	9.000	N	10.1	15.2	56.9	Compliance
0.503608	41.4	9.000	N	10.1	14.6	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.159873	45.6	9.000	N	10.1	9.9	55.5	Compliance
0.238124	39.1	9.000	N	10.2	13.1	52.2	Compliance
0.476287	44.1	9.000	N	10.1	2.3	46.4	Compliance
0.558572	40.1	9.000	N	10.1	5.9	46.0	Compliance
0.715082	34.4	9.000	N	10.4	11.6	46.0	Compliance
20.804674	41.1	9.000	N	10.9	8.9	50.0	Compliance

FCC §15.209, §15.205 & §15.407(b) (1) (6) (7) –UNWANTED EMISSION

Applicable Standard

FCC §15.407; §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner：

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

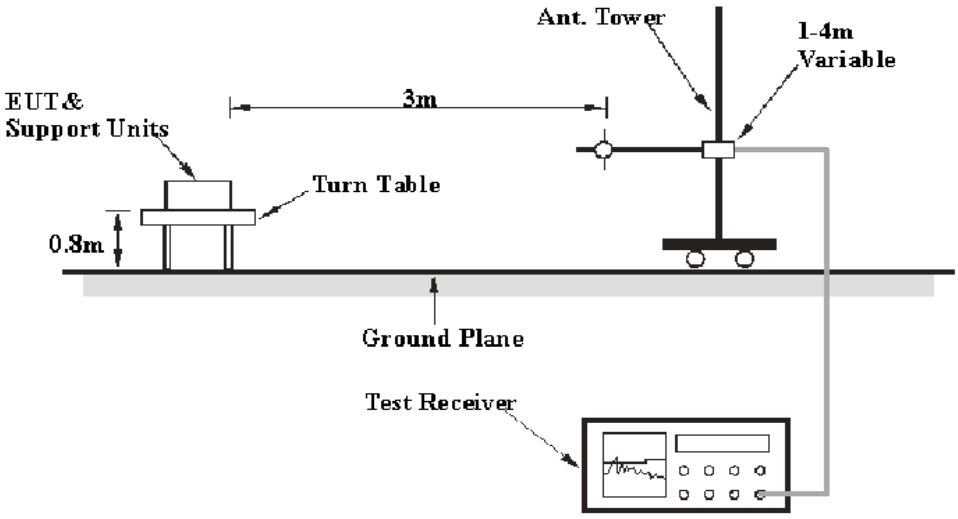
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is: 30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical; 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical; 1G~6GHz: 4.45 dB, 6G~18GHz: 5.23 dB

Table 1 – Values of U_{cispr}

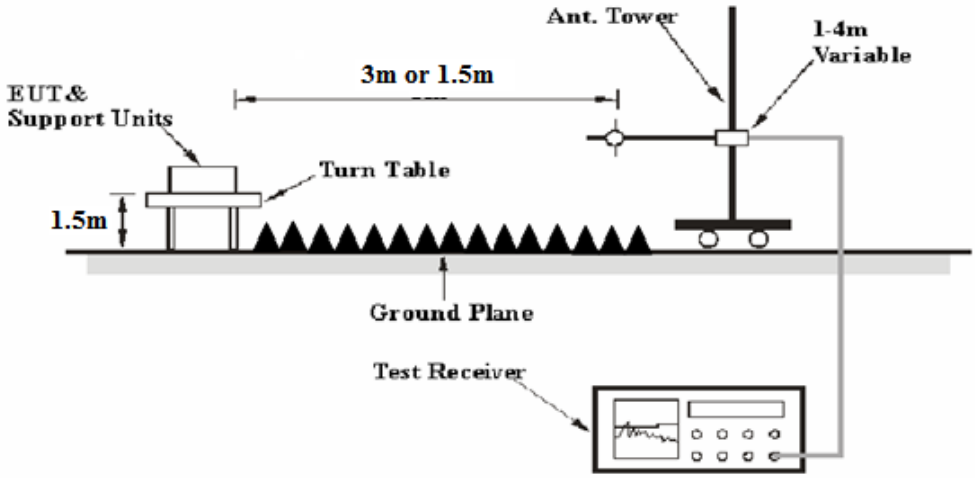
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1 GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters chamber, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

During the radiated emission test, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r02, emission shall be computed as: E [dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters.

According to C63.10, the above 1G test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 1.5m
Distance extrapolation factor =20 log (specific distance [3m]/test distance [1.5m]) dB
Extrapolation result = Corrected Amplitude (dBμV/m) - distance extrapolation factor (6dB)

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Loss + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit –Extrapolation result

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2016-08-03	2017-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-07-28	2017-07-27
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2015-11-23	2016-11-22
N/A	Coaxial Cable	14m	N/A	2016-05-06	2017-05-06
N/A	Coaxial Cable	8m	N/A	2016-05-06	2017-05-06
Sinoscite	Bandstop Filters	BSF5150-5850MN-0899-003	N/A	2016-05-06	2017-05-06
ETS-Lindgren	Horn Antenna	3115	9808-5557	2015-09-06	2018-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2016-02-19	2017-02-19
Agilent	Spectrum Analyzer	8564E	3943A01781	2016-05-08	2017-05-08
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Ducommun Technolagies	Horn Antenna	ARH-2823-02	1007726-01 1302	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2015-09-06	2016-09-06
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	36 %
ATM Pressure:	99.7 kPa

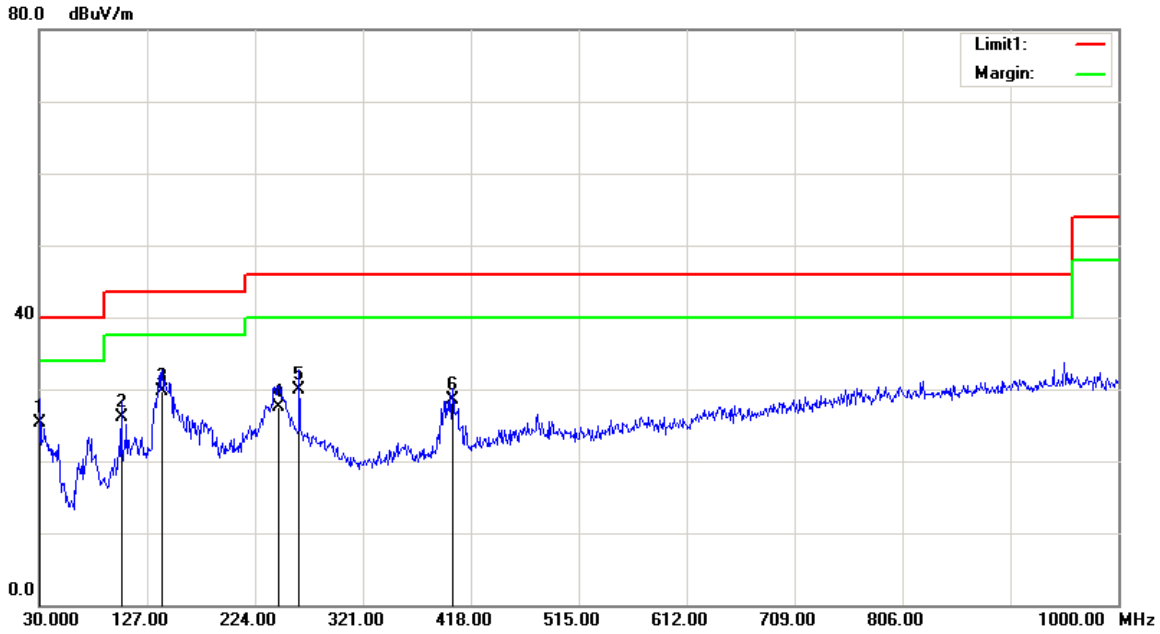
** The testing was performed by Lion Xiao on 2016-08-11.*

Test Mode: Transmitting

Test Result: compliance, please refer to the below lists and plots.

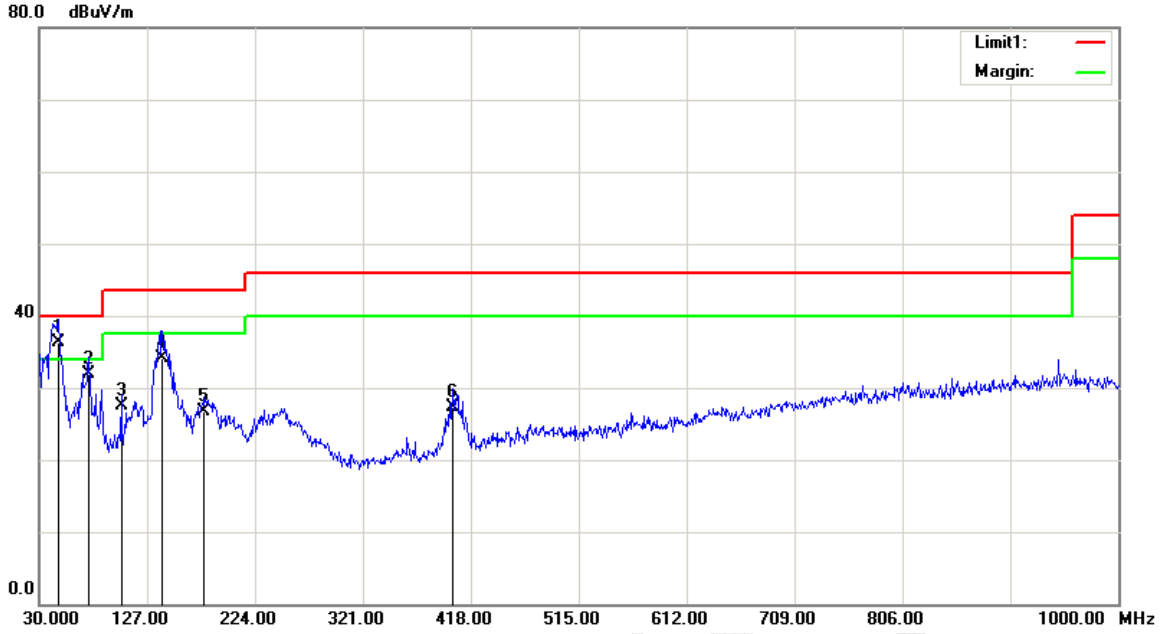
Below 1GHz

Horizontal:



Frequency (MHz)	Receiver Reading (dBµV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.9700	25.18	QP	0.22	25.40	40.00	14.60
103.7200	34.70	QP	-8.60	26.10	43.50	17.40
140.5800	36.49	QP	-6.69	29.80	43.50	13.70
245.3400	35.15	QP	-7.55	27.60	46.00	18.40
263.7700	36.38	QP	-6.48	29.90	46.00	16.10
401.5100	32.06	QP	-3.56	28.50	46.00	17.50

Vertical:



Frequency (MHz)	Receiver Reading (dBµV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
47.4600	47.48	QP	-11.08	36.40	40.00	3.60
74.6200	43.76	QP	-11.86	31.90	40.00	8.10
103.7200	36.10	QP	-8.60	27.50	43.50	16.00
140.5800	40.79	QP	-6.69	34.10	43.50	9.40
178.4100	34.96	QP	-8.26	26.70	43.50	16.80
401.5100	30.86	QP	-3.56	27.30	46.00	18.70

1G-40GHz(test at 1.5m distance from EUT to Antenna):

5150MHz-5250MHz: 802.11a mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5180 MHz										
5180	71.02	PK	H	31.46	5.40	0.00	107.88	101.88	N/A	N/A
5180	62.85	AV	H	31.46	5.40	0.00	99.71	93.71	N/A	N/A
5180	82.89	PK	V	31.46	5.40	0.00	119.75	113.75	N/A	N/A
5180	73.21	AV	V	31.46	5.40	0.00	110.07	104.07	N/A	N/A
5150	34.68	PK	V	31.40	5.26	0.00	71.34	65.34	74.00	8.66
5150	21.20	AV	V	31.40	5.26	0.00	57.86	51.86	54.00	2.14
10360	34.84	PK	V	36.97	8.36	25.52	54.65	48.65	74.00	25.35
10360	23.40	AV	V	36.97	8.36	25.52	43.21	37.21	54.00	16.79
15540	33.81	PK	V	37.43	14.94	24.98	61.20	55.20	74.00	18.80
15540	22.49	AV	V	37.43	14.94	24.98	49.88	43.88	54.00	10.12
8009.34	48.22	PK	V	35.21	6.74	27.09	63.08	57.08	74.00	16.92
8009.34	18.69	AV	V	35.21	6.74	27.09	33.55	27.55	54.00	26.45
4936	35.52	PK	V	30.93	5.35	27.43	44.37	38.37	74.00	35.63
4936	22.36	AV	V	30.93	5.35	27.43	31.21	25.21	54.00	28.79
	Middle Channel:5200 MHz									
5200	70.95	PK	H	31.50	5.49	0.00	107.94	101.94	N/A	N/A
5200	61.25	AV	H	31.50	5.49	0.00	98.24	92.24	N/A	N/A
5200	82.21	PK	V	31.50	5.49	0.00	119.20	113.20	N/A	N/A
5200	72.87	AV	V	31.50	5.49	0.00	109.86	103.86	N/A	N/A
10400	34.70	PK	V	36.98	8.32	25.50	54.50	48.50	74.00	25.50
10400	23.20	AV	V	36.98	8.32	25.50	43.00	37.00	54.00	17.00
15600	33.70	PK	V	37.32	14.69	24.69	61.02	55.02	74.00	18.98
15600	22.33	AV	V	37.32	14.69	24.69	49.65	43.65	54.00	10.35
8006.4	48.10	PK	V	35.21	6.74	27.10	62.95	56.95	74.00	17.05
8006.4	18.54	AV	V	35.21	6.74	27.10	33.39	27.39	54.00	26.61
4025	35.31	PK	V	29.90	4.72	27.18	42.75	36.75	74.00	37.25
4025	22.23	AV	V	29.90	4.72	27.18	29.67	23.67	54.00	30.33
	High Channel:5240 MHz									
5240	70.61	PK	H	31.58	5.28	0.00	107.47	101.47	N/A	N/A
5240	60.97	AV	H	31.58	5.28	0.00	97.83	91.83	N/A	N/A
5240	81.68	PK	V	31.58	5.28	0.00	118.54	112.54	N/A	N/A
5240	72.55	AV	V	31.58	5.28	0.00	109.41	103.41	N/A	N/A
5350	33.66	PK	V	31.80	5.61	0.00	71.07	65.07	74.00	8.93
5350	20.09	AV	V	31.80	5.61	0.00	57.50	51.50	54.00	2.50
10480	34.62	PK	V	37.00	8.23	26.01	53.84	47.84	74.00	26.16
10480	23.16	AV	V	37.00	8.23	26.01	42.38	36.38	54.00	17.62
15720	33.66	PK	V	37.10	14.20	24.92	60.04	54.04	74.00	19.96
15720	22.26	AV	V	37.10	14.20	24.92	48.64	42.64	54.00	11.36
8008.95	48.07	PK	V	35.21	6.74	27.09	62.93	56.93	74.00	17.07
8008.95	18.41	AV	V	35.21	6.74	27.09	33.27	27.27	54.00	26.73
4632	35.23	PK	V	30.14	5.14	27.34	43.17	37.17	74.00	36.83
4632	22.10	AV	V	30.14	5.14	27.34	30.04	24.04	54.00	29.96

802.11n ht20 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5180 MHz										
5180	72.93	PK	H	31.46	5.40	0.00	109.79	103.79	N/A	N/A
5180	62.07	AV	H	31.46	5.40	0.00	98.93	92.93	N/A	N/A
5180	83.77	PK	V	31.46	5.40	0.00	120.63	114.63	N/A	N/A
5180	73.92	AV	V	31.46	5.40	0.00	110.78	104.78	N/A	N/A
5150	34.80	PK	V	31.40	5.26	0.00	71.46	65.46	74.00	8.54
5150	21.42	AV	V	31.40	5.26	0.00	58.08	52.08	54.00	1.92
10360	35.34	PK	V	36.97	8.36	25.52	55.15	49.15	74.00	24.85
10360	23.68	AV	V	36.97	8.36	25.52	43.49	37.49	54.00	16.51
15540	33.29	PK	V	37.43	14.94	24.98	60.68	54.68	74.00	19.32
15540	21.02	AV	V	37.43	14.94	24.98	48.41	42.41	54.00	11.59
8009.5	47.90	PK	V	35.22	6.74	27.09	62.77	56.77	74.00	17.23
8009.5	18.36	AV	V	35.22	6.74	27.09	33.23	27.23	54.00	26.77
4936	36.51	PK	V	30.93	5.35	27.43	45.36	39.36	74.00	34.64
4936	24.02	AV	V	30.93	5.35	27.43	32.87	26.87	54.00	27.13
Middle Channel:5200 MHz										
5200	71.53	PK	H	31.50	5.49	0.00	108.52	102.52	N/A	N/A
5200	62.03	AV	H	31.50	5.49	0.00	99.02	93.02	N/A	N/A
5200	82.80	PK	V	31.50	5.49	0.00	119.79	113.79	N/A	N/A
5200	72.61	AV	V	31.50	5.49	0.00	109.60	103.60	N/A	N/A
10400	34.54	PK	V	36.98	8.32	25.50	54.34	48.34	74.00	19.66
10400	23.11	AV	V	36.98	8.32	25.50	42.91	36.91	54.00	11.09
15600	33.51	PK	V	37.32	14.69	24.69	60.83	54.83	74.00	13.17
15600	22.16	AV	V	37.32	14.69	24.69	49.48	43.48	54.00	4.52
8009.5	47.90	PK	V	35.22	6.74	27.09	62.77	56.77	74.00	11.23
8009.5	18.36	AV	V	35.22	6.74	27.09	33.23	27.23	54.00	20.77
4120	35.21	PK	V	29.88	4.98	27.12	42.95	36.95	74.00	31.05
4120	22.10	AV	V	29.88	4.98	27.12	29.84	23.84	54.00	24.16
High Channel:5240 MHz										
5240	72.10	PK	H	31.58	5.28	0.00	108.96	102.96	N/A	N/A
5240	61.96	AV	H	31.58	5.28	0.00	98.82	92.82	N/A	N/A
5240	82.24	PK	V	31.58	5.28	0.00	119.10	113.10	N/A	N/A
5240	72.22	AV	V	31.58	5.28	0.00	109.08	103.08	N/A	N/A
5350	32.03	PK	V	31.80	5.61	0.00	69.44	63.44	74.00	10.56
5350	20.42	AV	V	31.80	5.61	0.00	57.83	51.83	54.00	2.17
10480	34.67	PK	V	37.00	8.23	26.01	53.89	47.89	74.00	26.11
10480	23.24	AV	V	37.00	8.23	26.01	42.46	36.46	54.00	17.54
15720	33.70	PK	V	37.10	14.20	24.92	60.08	54.08	74.00	19.92
15720	22.35	AV	V	37.10	14.20	24.92	48.73	42.73	54.00	11.27
8006.89	48.03	PK	V	35.21	6.74	27.10	62.88	56.88	74.00	17.12
8006.89	18.52	AV	V	35.21	6.74	27.10	33.37	27.37	54.00	26.63
4120	35.38	PK	V	29.88	4.98	27.12	43.12	37.12	74.00	36.88
4120	22.25	AV	V	29.88	4.98	27.12	29.99	23.99	54.00	30.01

802.11n ht40 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5190 MHz										
5190	69.85	PK	H	31.48	5.44	0.00	106.77	100.77	N/A	N/A
5190	58.62	AV	H	31.48	5.44	0.00	95.54	89.54	N/A	N/A
5190	80.54	PK	V	31.48	5.44	0.00	117.46	111.46	N/A	N/A
5190	69.64	AV	V	31.48	5.44	0.00	106.56	100.56	N/A	N/A
5150	34.95	PK	V	31.40	5.26	0.00	71.61	65.61	74.00	8.39
5150	21.52	AV	V	31.40	5.26	0.00	58.18	52.18	54.00	1.82
10380	34.37	PK	V	36.98	8.34	25.51	54.18	48.18	74.00	25.82
10380	22.91	AV	V	36.98	8.34	25.51	42.72	36.72	54.00	17.28
15570	33.45	PK	V	37.37	14.81	24.83	60.80	54.80	74.00	19.20
15570	21.99	AV	V	37.37	14.81	24.83	49.34	43.34	54.00	10.66
8005.39	47.85	PK	V	35.21	6.74	27.10	62.70	56.70	74.00	17.30
8005.39	18.16	AV	V	35.21	6.74	27.10	33.01	27.01	54.00	26.99
4096	35.02	PK	V	29.88	4.89	27.14	42.65	36.65	74.00	37.35
4096	21.85	AV	V	29.88	4.89	27.14	29.48	23.48	54.00	30.52
High Channel:5230 MHz										
5230	68.87	PK	H	31.56	5.33	0.00	105.76	99.76	N/A	N/A
5230	57.11	AV	H	31.56	5.33	0.00	94.00	88.00	N/A	N/A
5230	80.35	PK	V	31.56	5.33	0.00	117.24	111.24	N/A	N/A
5230	69.34	AV	V	31.56	5.33	0.00	106.23	100.23	N/A	N/A
5350	30.45	PK	V	31.80	5.61	0.00	67.86	61.86	74.00	12.14
5350	19.83	AV	V	31.80	5.61	0.00	57.24	51.24	54.00	2.76
10460	34.38	PK	V	36.99	8.25	25.88	53.74	47.74	74.00	26.26
10460	22.85	AV	V	36.99	8.25	25.88	42.21	36.21	54.00	17.79
15690	33.37	PK	V	37.16	14.32	24.87	59.98	53.98	74.00	20.02
15690	21.89	AV	V	37.16	14.32	24.87	48.50	42.50	54.00	11.50
8009.6	47.77	PK	V	35.22	6.74	27.09	62.64	56.64	74.00	17.36
8009.6	18.11	AV	V	35.22	6.74	27.09	32.98	26.98	54.00	27.02
4360	34.97	PK	V	29.83	5.01	26.93	42.88	36.88	74.00	37.12
4360	21.81	AV	V	29.83	5.01	26.93	29.72	23.72	54.00	30.28

802.11n ac80 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Middle Channel:5210 MHz										
5210	68.30	PK	H	31.52	5.44	0.00	105.26	99.26	N/A	N/A
5210	59.27	AV	H	31.52	5.44	0.00	96.23	90.23	N/A	N/A
5210	80.36	PK	V	31.52	5.44	0.00	117.32	111.32	N/A	N/A
5210	70.42	AV	V	31.52	5.44	0.00	107.38	101.38	N/A	N/A
5150	34.81	PK	V	31.40	5.26	0.00	71.47	65.47	74.00	8.53
5150	21.93	AV	V	31.40	5.26	0.00	58.59	52.59	54.00	1.41
5350	32.54	PK	V	31.80	5.61	0.00	69.95	63.95	74.00	10.05
5350	20.95	AV	V	31.80	5.61	0.00	58.36	52.36	54.00	1.64
10420	34.39	PK	V	36.98	8.30	25.63	54.04	48.04	74.00	25.96
10420	22.80	AV	V	36.98	8.30	25.63	42.45	36.45	54.00	17.55
15630	33.35	PK	V	37.27	14.57	24.75	60.44	54.44	74.00	19.56
15630	21.85	AV	V	37.27	14.57	24.75	48.94	42.94	54.00	11.06
8009.54	47.71	PK	V	35.22	6.74	27.09	62.58	56.58	74.00	17.42
8009.54	18.14	AV	V	35.22	6.74	27.09	33.01	27.01	54.00	26.99

5725MHz-5850MHz:
802.11a mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5745 MHz										
5745	67.14	PK	H	32.15	5.53	0.00	104.82	98.82	N/A	N/A
5745	57.21	AV	H	32.15	5.53	0.00	94.89	88.89	N/A	N/A
5745	80.66	PK	V	32.15	5.53	0.00	118.34	112.34	N/A	N/A
5745	71.33	AV	V	32.15	5.53	0.00	109.01	103.01	N/A	N/A
5725	35.06	PK	V	32.15	5.60	0.00	72.81	66.81	122.20	55.39
5720	32.58	PK	V	32.14	5.61	0.00	70.33	64.33	110.80	46.47
5700	34.20	PK	V	32.14	5.68	0.00	72.02	66.02	105.20	39.18
5650	34.08	PK	V	32.13	5.28	0.00	71.49	65.49	68.20	2.71
11490	32.36	PK	V	37.89	8.94	26.14	53.05	47.05	74.00	26.95
11490	20.07	AV	V	37.89	8.94	26.14	40.76	34.76	54.00	19.24
17235	33.15	PK	V	40.91	13.69	25.63	62.12	56.12	74.00	17.88
17235	20.56	AV	V	40.91	13.69	25.63	49.53	43.53	54.00	10.47
8009.35	47.04	PK	V	35.21	6.74	27.09	61.90	55.90	74.00	18.10
8009.35	18.27	AV	V	35.21	6.74	27.09	33.13	27.13	54.00	26.87
4505	36.22	PK	V	29.81	5.13	27.12	44.04	38.04	74.00	35.96
4505	21.84	AV	V	29.81	5.13	27.12	29.66	23.66	54.00	30.34
Middle Channel:5785 MHz										
5785	66.85	PK	H	32.16	5.47	0.00	104.48	98.48	N/A	N/A
5785	56.37	AV	H	32.16	5.47	0.00	94.00	88.00	N/A	N/A
5785	80.90	PK	V	32.16	5.47	0.00	118.53	112.53	N/A	N/A
5785	71.88	AV	V	32.16	5.47	0.00	109.51	103.51	N/A	N/A
11570	32.49	PK	V	37.90	8.92	26.07	53.24	47.24	74.00	26.76
11570	20.19	AV	V	37.90	8.92	26.07	40.94	34.94	54.00	19.06
17355	33.17	PK	V	41.63	12.99	25.63	62.16	56.16	74.00	17.84
17355	20.64	AV	V	41.63	12.99	25.63	49.63	43.63	54.00	10.37
8006.5	47.02	PK	V	35.21	6.74	27.10	61.87	55.87	74.00	18.13
8006.5	18.29	AV	V	35.21	6.74	27.10	33.14	27.14	54.00	26.86
4632	36.31	PK	V	30.14	5.14	27.34	44.25	38.25	74.00	35.75
4632	21.93	AV	V	30.14	5.14	27.34	29.87	23.87	54.00	30.13
High Channel:5825 MHz										
5825	66.57	PK	H	32.17	5.75	0.00	104.49	98.49	N/A	N/A
5825	56.10	AV	H	32.17	5.75	0.00	94.02	88.02	N/A	N/A
5825	80.76	PK	V	32.17	5.75	0.00	118.68	112.68	N/A	N/A
5825	71.56	AV	V	32.17	5.75	0.00	109.48	103.48	N/A	N/A
5850	34.72	PK	V	32.17	6.05	0.00	72.94	66.94	122.20	55.26
5855	33.40	PK	V	32.17	6.03	0.00	71.60	65.60	110.80	45.20
5875	35.17	PK	V	32.18	5.97	0.00	73.32	67.32	105.20	37.88
5925	33.78	PK	V	32.19	5.96	0.00	71.93	65.93	68.20	2.27
11650	32.39	PK	V	37.90	8.90	25.75	53.44	47.44	74.00	26.56
11650	20.12	AV	V	37.90	8.90	25.75	41.17	35.17	54.00	18.83
17475	33.11	PK	V	42.35	12.30	25.39	62.37	56.37	74.00	17.63
17475	20.63	AV	V	42.35	12.30	25.39	49.89	43.89	54.00	10.11
8006.8	47.01	PK	V	35.21	6.74	27.10	61.86	55.86	74.00	18.14
8006.8	18.32	AV	V	35.21	6.74	27.10	33.17	27.17	54.00	26.83
6187	36.28	PK	V	32.24	5.97	26.78	47.71	41.71	74.00	32.29
6187	21.92	AV	V	32.24	5.97	26.78	33.35	27.35	54.00	26.65

802.11n ht20 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5745 MHz										
5745	68.18	PK	H	32.15	5.53	0.00	105.86	99.86	N/A	N/A
5745	57.52	AV	H	32.15	5.53	0.00	95.20	89.20	N/A	N/A
5745	81.89	PK	V	32.15	5.53	0.00	119.57	113.57	N/A	N/A
5745	71.62	AV	V	32.15	5.53	0.00	109.30	103.30	N/A	N/A
5725	36.21	PK	V	32.15	5.60	0.00	73.96	67.96	122.20	54.24
5720	34.19	PK	V	32.14	5.61	0.00	71.94	65.94	110.80	44.86
5700	32.69	PK	V	32.14	5.68	0.00	70.51	64.51	105.20	40.69
5650	34.76	PK	V	32.13	5.28	0.00	72.17	66.17	68.20	2.03
11490	32.79	PK	V	37.89	8.94	26.14	53.48	47.48	74.00	26.52
11490	20.50	AV	V	37.89	8.94	26.14	41.19	35.19	54.00	18.81
17235	33.48	PK	V	40.91	13.69	25.63	62.45	56.45	74.00	17.55
17235	20.87	AV	V	40.91	13.69	25.63	49.84	43.84	54.00	10.16
8006.85	47.36	PK	V	35.21	6.74	27.10	62.21	56.21	74.00	17.79
8006.85	18.58	AV	V	35.21	6.74	27.10	33.43	27.43	54.00	26.57
4065	36.58	PK	V	29.89	4.69	27.16	44.00	38.00	74.00	36.00
4065	22.14	AV	V	29.89	4.69	27.16	29.56	23.56	54.00	30.44
Middle Channel:5785 MHz										
5785	67.65	PK	H	32.16	5.47	0.00	105.28	99.28	N/A	N/A
5785	56.41	AV	H	32.16	5.47	0.00	94.04	88.04	N/A	N/A
5785	81.63	PK	V	32.16	5.47	0.00	119.26	113.26	N/A	N/A
5785	71.67	AV	V	32.16	5.47	0.00	109.30	103.30	N/A	N/A
11570	32.71	PK	V	37.90	8.92	26.07	53.46	47.46	74.00	26.54
11570	20.37	AV	V	37.90	8.92	26.07	41.12	35.12	54.00	18.88
17355	33.36	PK	V	41.63	12.99	25.63	62.35	56.35	74.00	17.65
17355	20.81	AV	V	41.63	12.99	25.63	49.80	43.80	54.00	10.20
8009.52	47.29	PK	V	35.22	6.74	27.09	62.16	56.16	74.00	17.84
8009.52	18.48	AV	V	35.22	6.74	27.09	33.35	27.35	54.00	26.65
4562	36.46	PK	V	29.96	5.00	27.25	44.17	38.17	74.00	35.83
4562	22.06	AV	V	29.96	5.00	27.25	29.77	23.77	54.00	30.23
High Channel:5825 MHz										
5825	67.16	PK	H	32.17	5.75	0.00	105.08	99.08	N/A	N/A
5825	57.03	AV	H	32.17	5.75	0.00	94.95	88.95	N/A	N/A
5825	81.26	PK	V	32.17	5.75	0.00	119.18	113.18	N/A	N/A
5825	71.02	AV	V	32.17	5.75	0.00	108.94	102.94	N/A	N/A
5850	33.73	PK	V	32.17	6.05	0.00	71.95	65.95	122.20	56.25
5855	32.77	PK	V	32.17	6.03	0.00	70.97	64.97	110.80	45.83
5875	31.70	PK	V	32.18	5.97	0.00	69.85	63.85	105.20	41.35
5925	32.77	PK	V	32.19	5.96	0.00	70.92	64.92	68.20	3.28
11650	32.56	PK	V	37.90	8.90	25.75	53.61	47.61	74.00	26.39
11650	20.28	AV	V	37.90	8.90	25.75	41.33	35.33	54.00	18.67
17475	33.29	PK	V	42.35	12.30	25.39	62.55	56.55	74.00	17.45
17475	20.72	AV	V	42.35	12.30	25.39	49.98	43.98	54.00	10.02
8006.2	47.14	PK	V	35.21	6.74	27.10	61.99	55.99	74.00	18.01
8006.2	18.42	AV	V	35.21	6.74	27.10	33.27	27.27	54.00	26.73
4065	36.39	PK	V	29.89	4.69	27.16	43.81	37.81	74.00	36.19
4065	22.00	AV	V	29.89	4.69	27.16	29.42	23.42	54.00	30.58

802.11n ht40 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5755 MHz										
5755	63.17	PK	H	32.15	5.50	0.00	100.82	94.82	N/A	N/A
5755	52.46	AV	H	32.15	5.50	0.00	90.11	84.11	N/A	N/A
5755	79.66	PK	V	32.15	5.50	0.00	117.31	111.31	N/A	N/A
5755	68.50	AV	V	32.15	5.50	0.00	106.15	100.15	N/A	N/A
5725	38.48	PK	V	32.15	5.60	0.00	76.23	70.23	122.20	51.97
5720	37.47	PK	V	32.14	5.61	0.00	75.22	69.22	110.80	41.58
5700	34.86	PK	V	32.14	5.68	0.00	72.68	66.68	105.20	38.52
5650	33.84	PK	V	32.13	5.28	0.00	71.25	65.25	68.20	2.95
11510	32.78	PK	V	37.90	8.95	26.12	53.51	47.51	74.00	26.49
11510	20.48	AV	V	37.90	8.95	26.12	41.21	35.21	54.00	18.79
17265	33.41	PK	V	41.09	13.51	25.63	62.38	56.38	74.00	17.62
17265	20.90	AV	V	41.09	13.51	25.63	49.87	43.87	54.00	10.13
8008.45	48.25	PK	V	35.21	6.74	27.09	63.11	57.11	74.00	16.89
8008.45	18.48	AV	V	35.21	6.74	27.09	33.34	27.34	54.00	26.66
4562	36.58	PK	V	29.96	5.00	27.25	44.29	38.29	74.00	35.71
4562	23.71	AV	V	29.96	5.00	27.25	31.42	25.42	54.00	28.58
High Channel:5795 MHz										
5795	63.80	PK	H	32.16	5.46	0.00	101.42	95.42	N/A	N/A
5795	53.25	AV	H	32.16	5.46	0.00	90.87	84.87	N/A	N/A
5795	79.22	PK	V	32.16	5.46	0.00	116.84	110.84	N/A	N/A
5795	69.54	AV	V	32.16	5.46	0.00	107.16	101.16	N/A	N/A
5850	33.80	PK	V	32.17	6.05	0.00	72.02	66.02	122.20	56.18
5855	34.71	PK	V	32.17	6.03	0.00	72.91	66.91	110.80	43.89
5875	31.24	PK	V	32.18	5.97	0.00	69.39	63.39	105.20	41.81
5925	33.60	PK	V	32.19	5.96	0.00	71.75	65.75	68.20	2.45
11590	32.60	PK	V	37.90	8.92	26.06	53.36	47.36	74.00	26.64
11590	20.32	AV	V	37.90	8.92	26.06	41.08	35.08	54.00	18.92
17385	33.30	PK	V	41.81	12.82	25.63	62.30	56.30	74.00	17.70
17385	20.69	AV	V	41.81	12.82	25.63	49.69	43.69	54.00	10.31
8009.25	48.16	PK	V	35.21	6.74	27.09	63.02	57.02	74.00	16.98
8009.25	18.38	AV	V	35.21	6.74	27.09	33.24	27.24	54.00	26.76
6187	34.65	PK	V	32.24	5.97	26.78	46.08	40.08	74.00	33.92
6187	21.89	AV	V	32.24	5.97	26.78	33.32	27.32	54.00	26.68

802.11n ac80 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Middle Channel:5775 MHz										
5775	63.04	PK	H	32.16	5.48	0.00	100.68	94.68	N/A	N/A
5775	52.60	AV	H	32.16	5.48	0.00	90.24	84.24	N/A	N/A
5775	77.74	PK	V	32.16	5.48	0.00	115.38	109.38	N/A	N/A
5775	67.12	AV	V	32.16	5.48	0.00	104.76	98.76	N/A	N/A
5725	38.85	PK	V	32.15	5.60	0.00	76.60	70.60	122.20	51.60
5720	38.40	PK	V	32.14	5.61	0.00	76.15	70.15	110.80	40.65
5700	33.44	PK	V	32.14	5.68	0.00	71.26	65.26	105.20	39.94
5650	33.97	PK	V	32.13	5.28	0.00	71.38	65.38	68.20	2.82
5850	33.28	PK	V	32.17	6.05	0.00	71.50	65.50	122.20	56.70
5855	32.45	PK	V	32.17	6.03	0.00	70.65	64.65	110.80	46.15
5875	31.72	PK	V	32.18	5.97	0.00	69.87	63.87	105.20	41.33
5925	33.32	PK	V	32.19	5.96	0.00	71.47	65.47	68.20	2.73
11550	32.42	PK	V	37.90	8.93	26.09	53.16	47.16	74.00	26.84
11550	20.14	AV	V	37.90	8.93	26.09	40.88	34.88	54.00	19.12
17325	33.14	PK	V	41.45	13.17	25.63	62.13	56.13	74.00	17.87
17325	20.54	AV	V	41.45	13.17	25.63	49.53	43.53	54.00	10.47
8008.83	47.98	PK	V	35.21	6.74	27.09	62.84	56.84	74.00	17.16
8008.83	18.22	AV	V	35.21	6.74	27.09	33.08	27.08	54.00	26.92

FCC §15.407(a) (e) –EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH

Applicable Standard

15.407(a) (e)

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r02

Test Data

Environmental Conditions

Temperature:	30.5 ~ 30.7 °C
Relative Humidity:	50 ~ 52 %
ATM Pressure:	99.7 ~ 100 kPa

The testing was performed by Lion Xiao from 2016-08-13 to 2016-08-15

Test Result: Pass.

Please refer to the following tables and plots.

Test mode: Transmitting

5150MHz-5250MHz:

Mode	Channel	Frequency MHz	26 dB Emission Bandwidth (MHz)	Result
802.11a	Low	5180	21.64	PASS
	Middle	5200	21.72	PASS
	High	5240	21.80	PASS
802.11n20	Low	5180	21.96	PASS
	Middle	5200	21.88	PASS
	High	5240	21.88	PASS
802.11n40	Low	5190	40.08	PASS
	High	5230	40.08	PASS
802.11ac80	Middle	5210	82.73	PASS

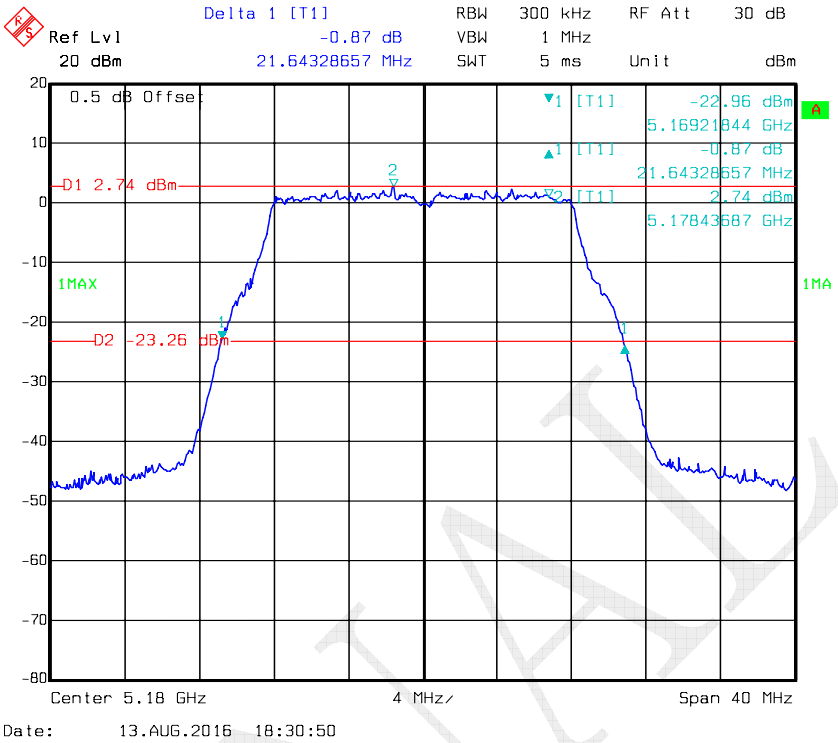
The 26dBc bandwidth in the range 5150-5250MHz, please refer to the below plots.

5725MHz-5850MHz:

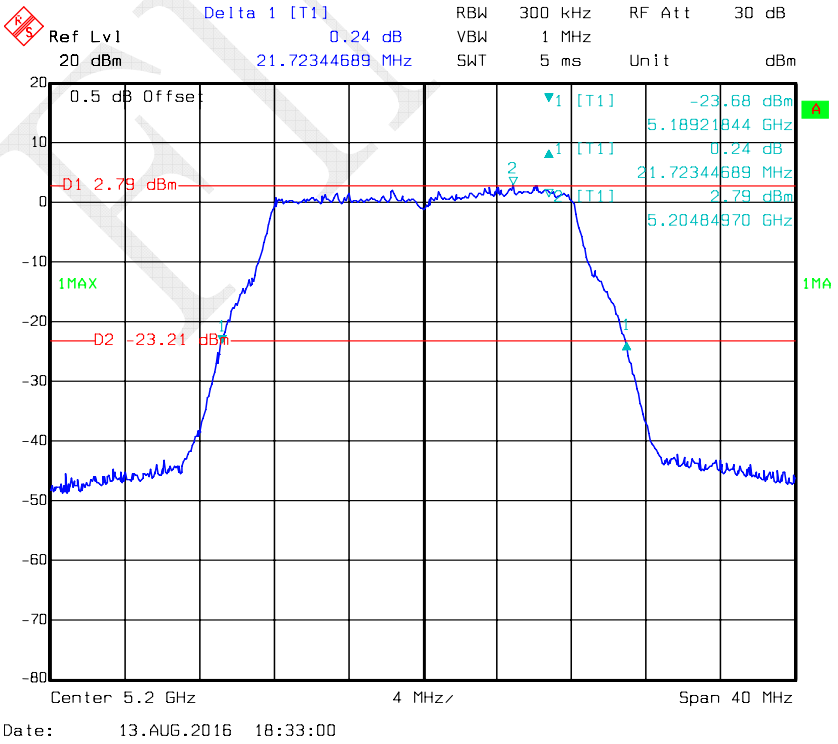
Mode	Channel	Frequency MHz	6dB Emission Bandwidth (MHz)	Limits (MHz)	Result
802.11a	Low	5745	16.43	0.5	PASS
	Middle	5785	16.43	0.5	PASS
	High	5825	16.51	0.5	PASS
802.11n20	Low	5745	17.72	0.5	PASS
	Middle	5785	17.72	0.5	PASS
	High	5825	17.72	0.5	PASS
802.11n40	Low	5755	36.39	0.5	PASS
	High	5795	36.55	0.5	PASS
802.11ac80	Middle	5775	76.63	0.5	PASS

5150MHz-5250MHz: **26dB Bandwidth**

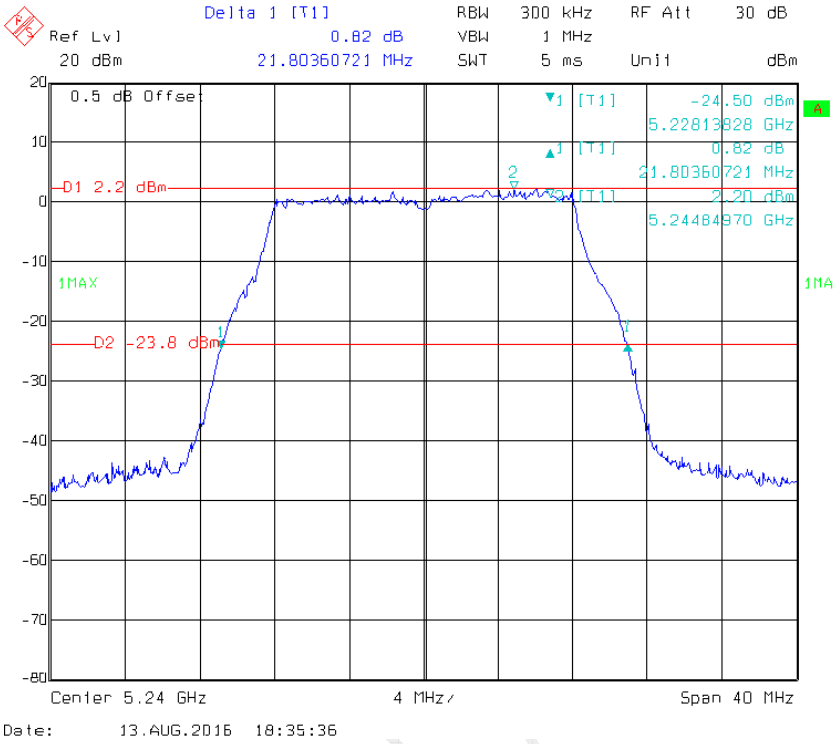
802.11a Low Channel



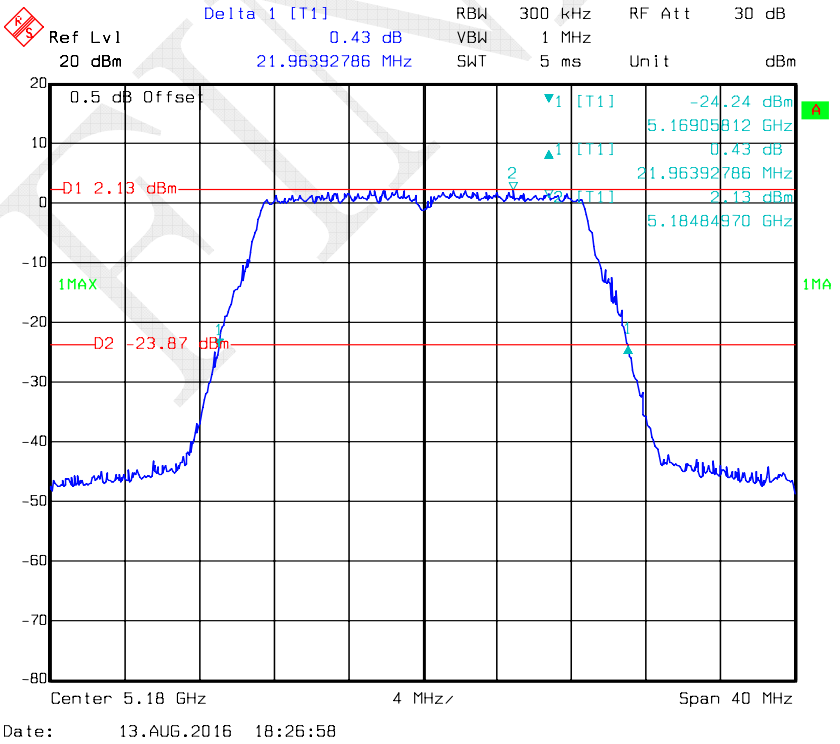
802.11a Middle Channel



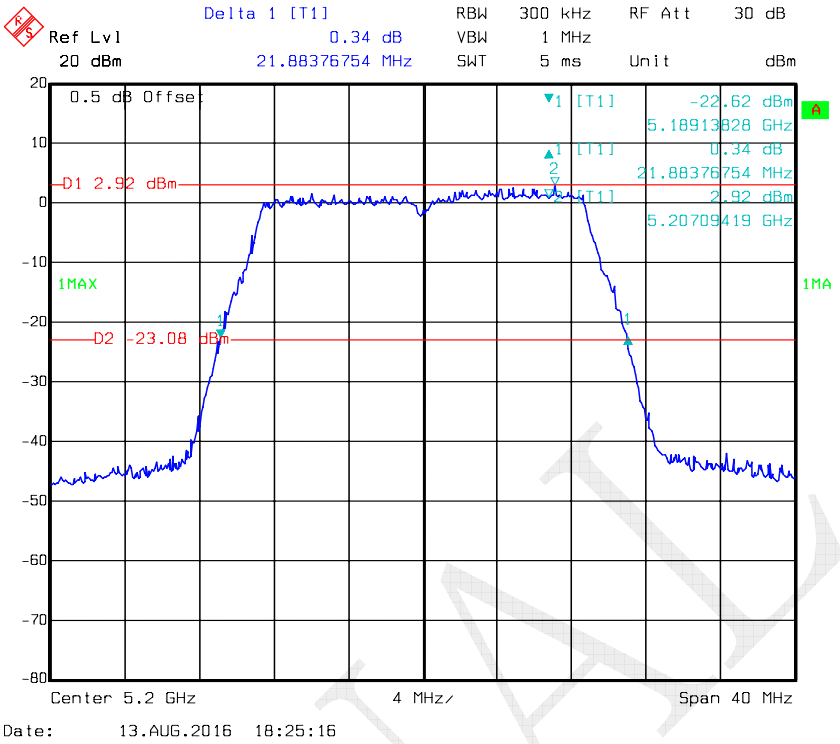
802.11a High Channel



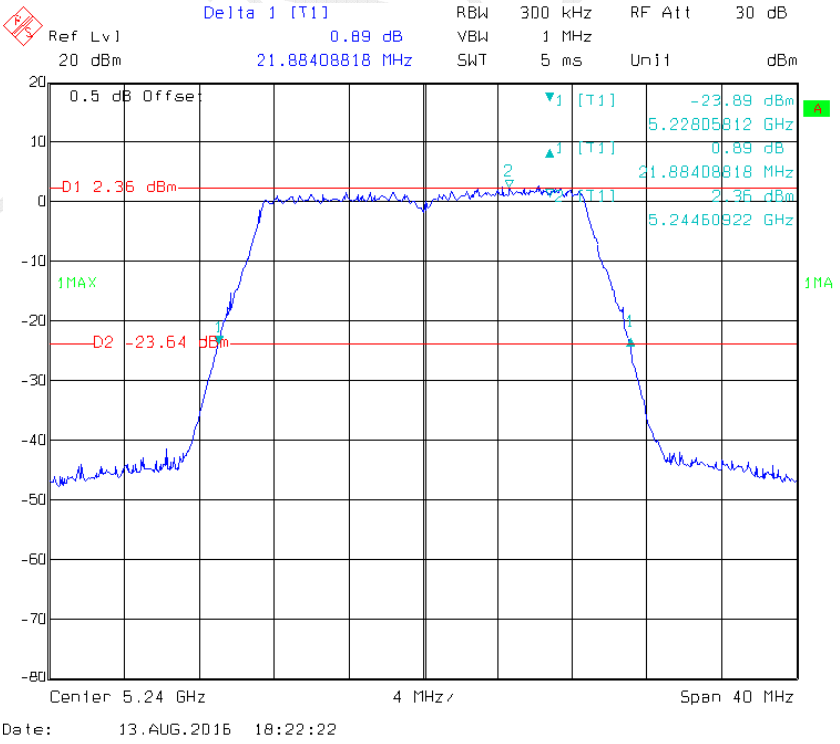
802.11n ht20 Low Channel



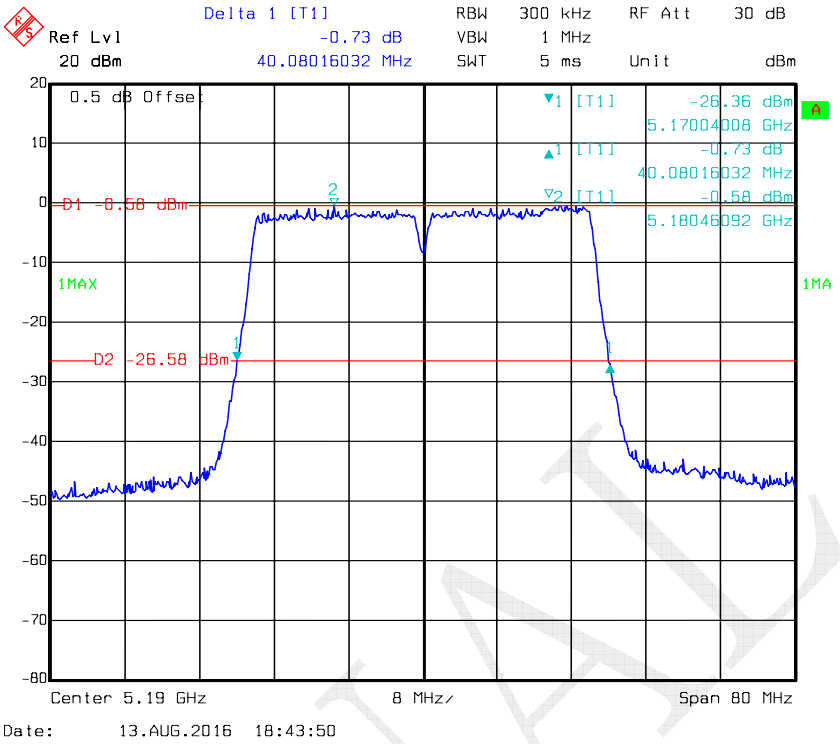
802.11n ht20 Middle Channel – Chain0



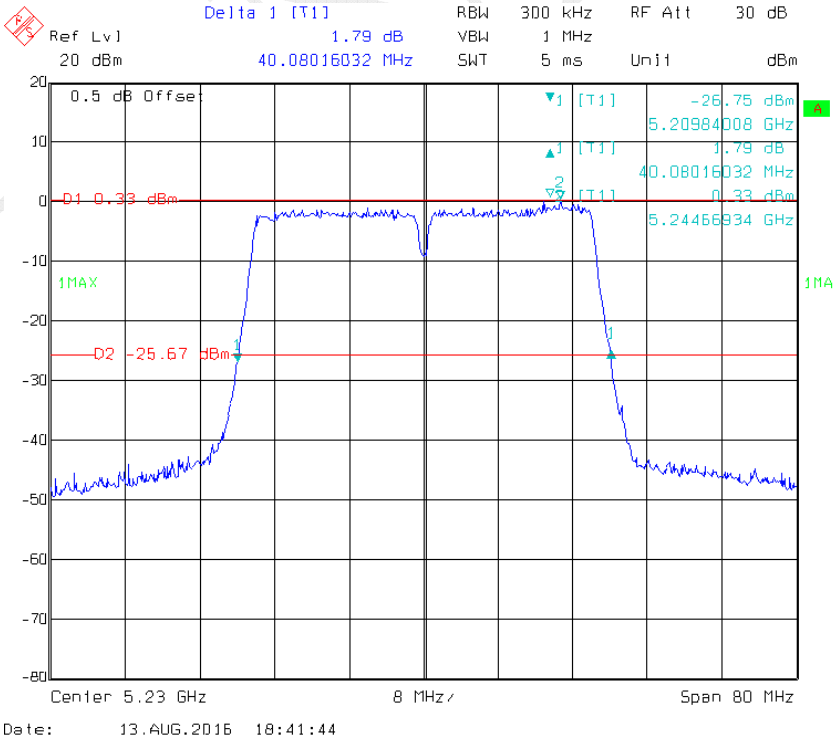
802.11n ht20 High Channel



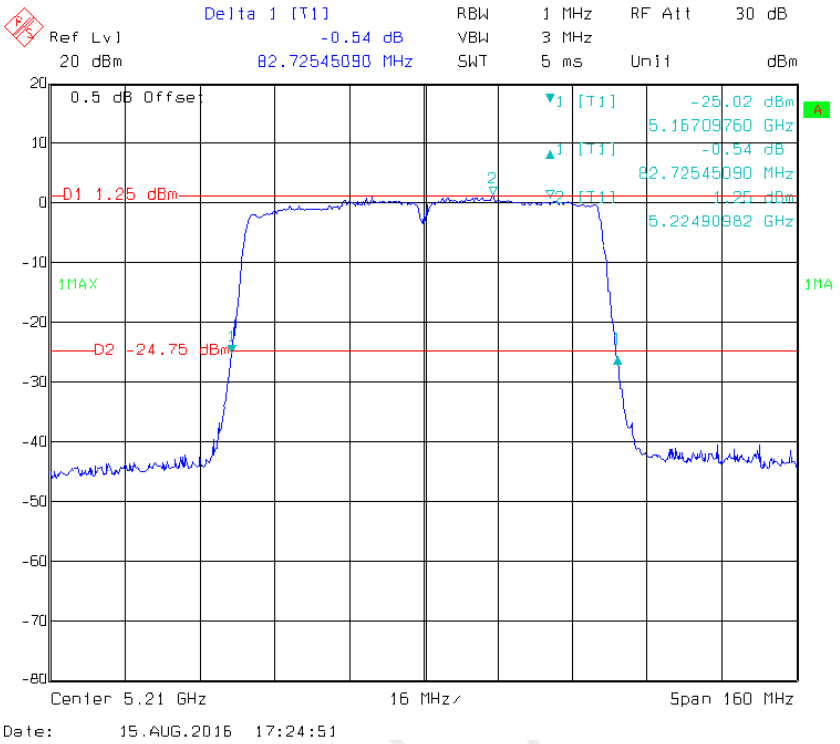
802.11n ht40 Low Channel



802.11n ht40 High Channel

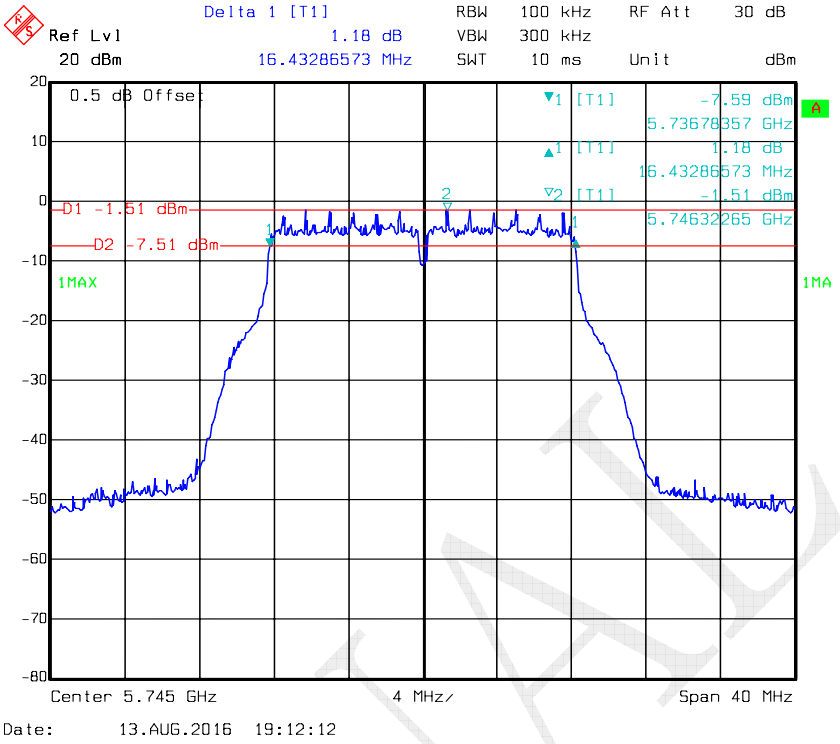


802.11ac80 Middle Channel

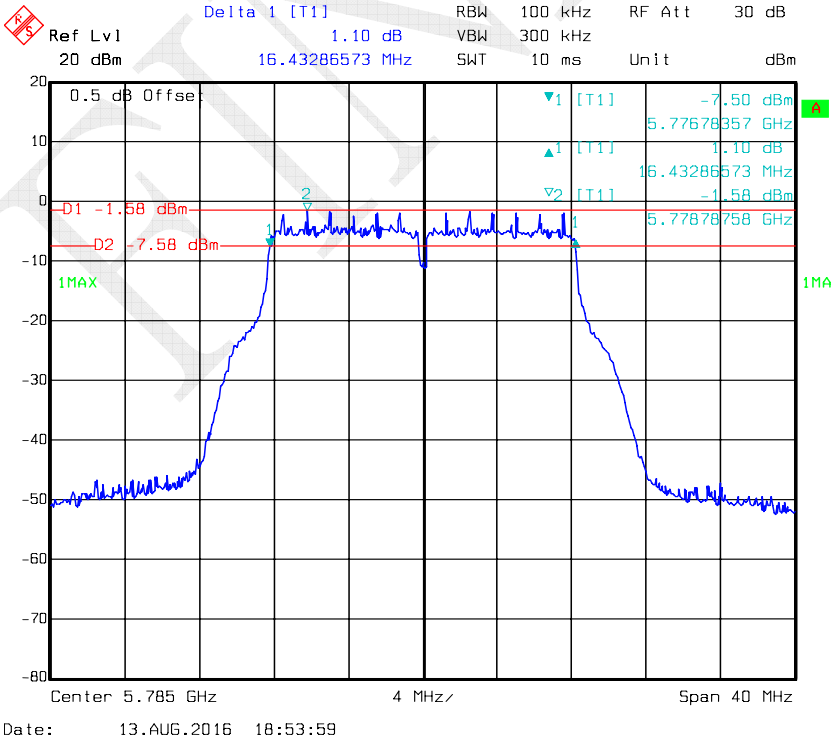


5725MHz-5850MHz: 6 dB Bandwidth

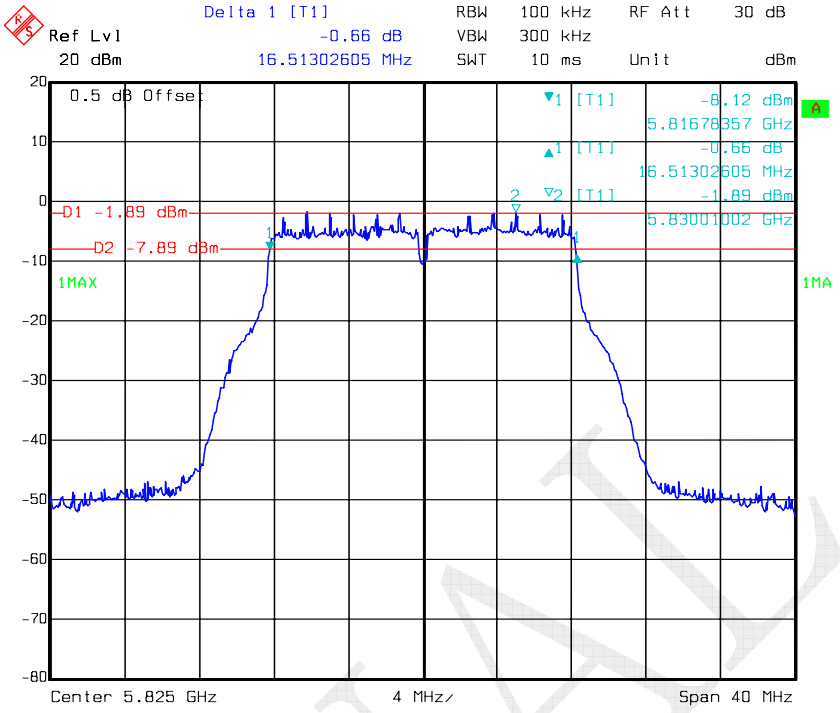
802.11a Low Channel



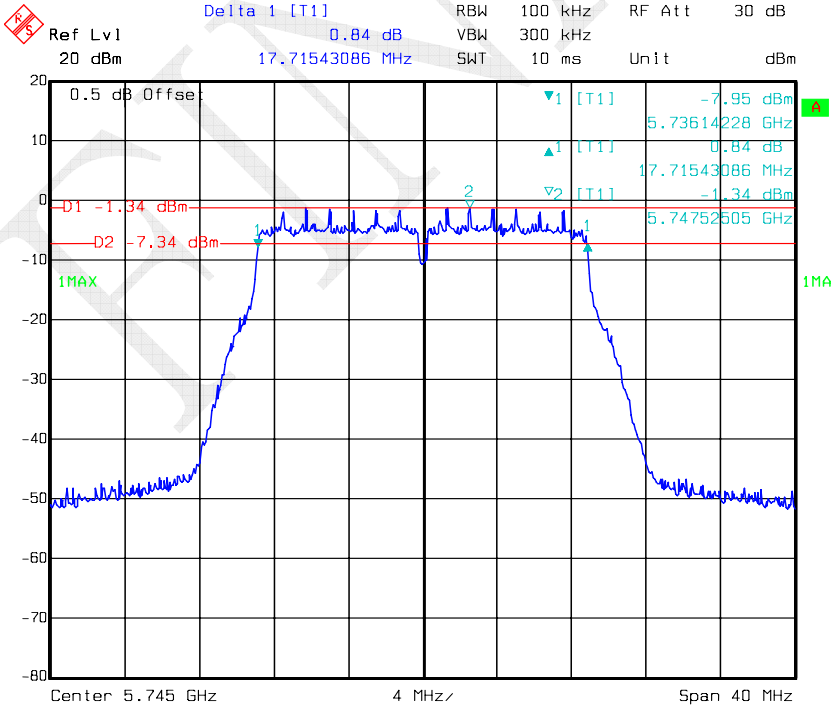
802.11a Middle Channel



802.11a High Channel



802.11n ht20 Low Channel



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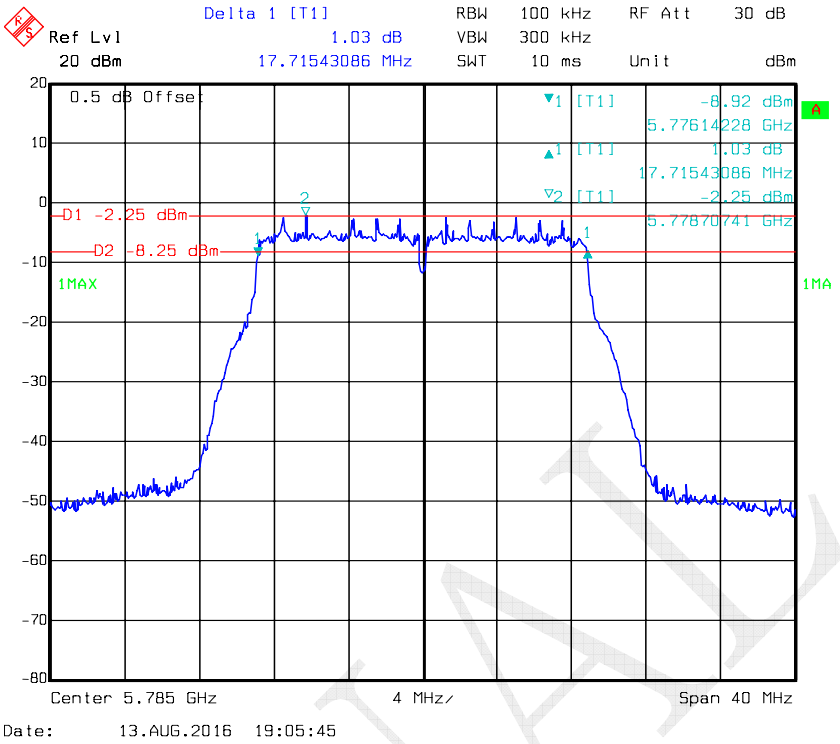
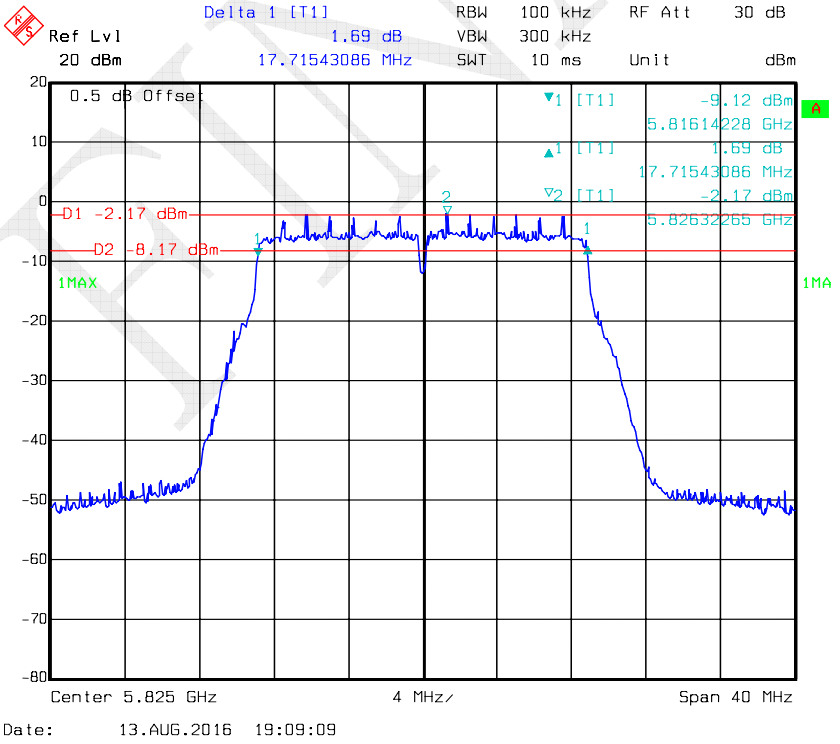
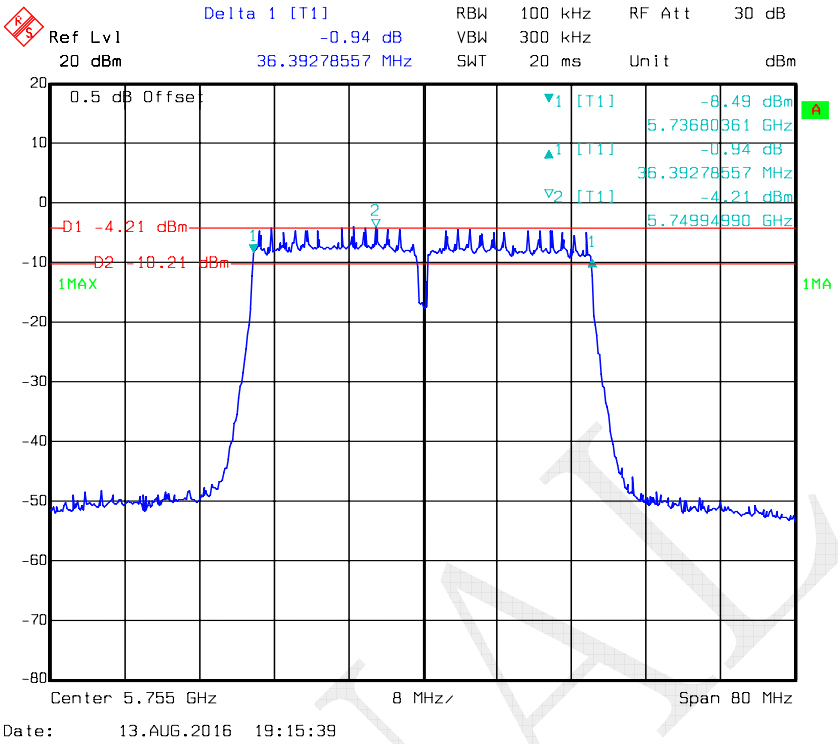


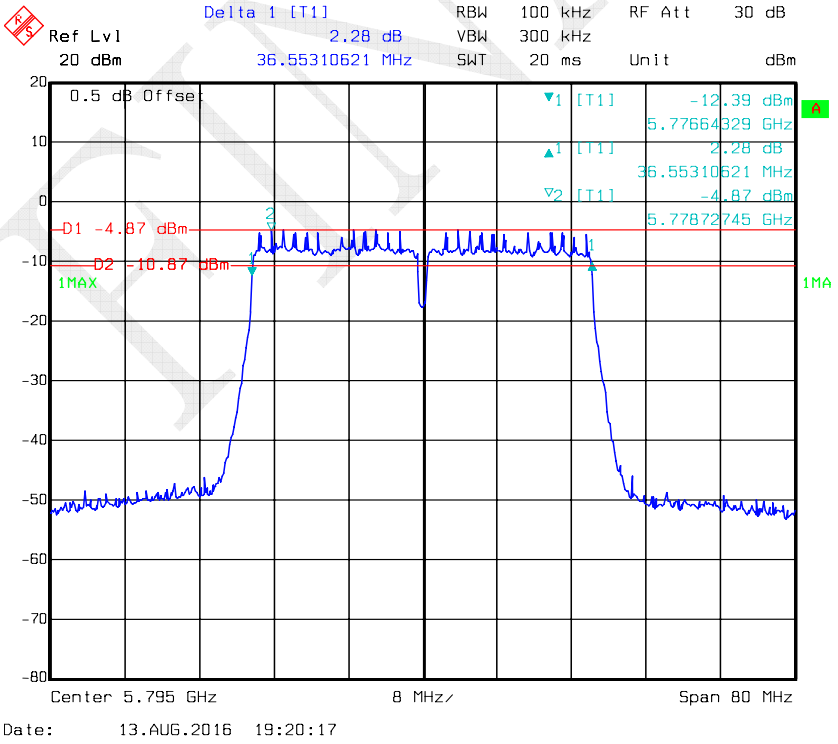
802.11n ht20 High Channel



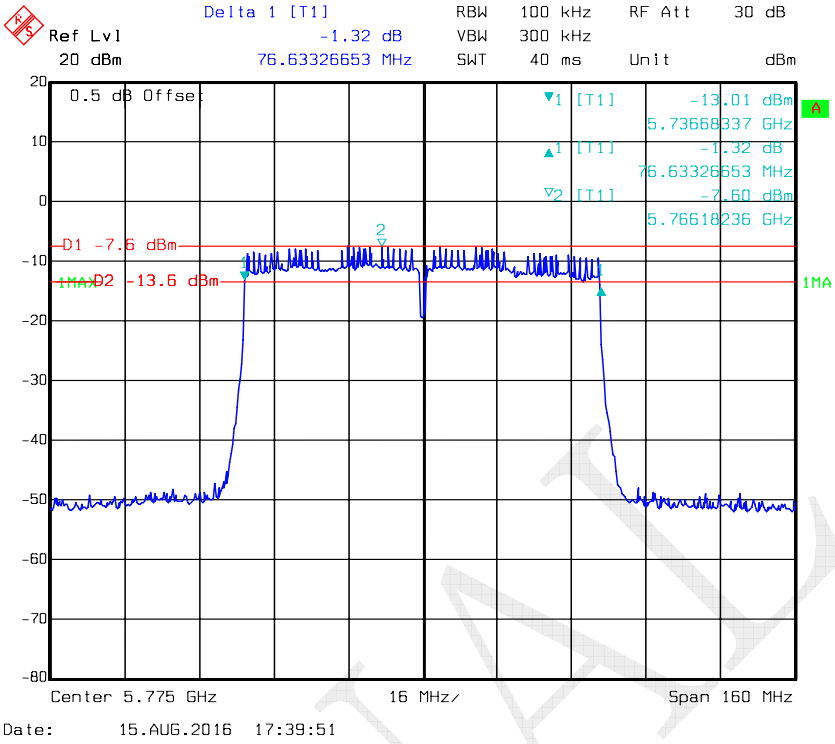
802.11n ht40 Low Channel



802.11n ht40 High Channel



802.11n ac80 Middle Channel



FCC §15.407(a) –MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

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

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

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

(4) The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Wideband Power Sensor	N1921A	MY54210016	2015-11-03	2016-11-03
Agilent	Wideband Power Sensor	N1921A	MY54170013	2015-11-03	2016-11-03
Agilent	P-Series Power Meter	N1912A	MY5000448	2015-11-03	2016-11-03
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r02

Test Data

Environmental Conditions

Temperature:	30.7 °C
Relative Humidity:	52 %
ATM Pressure:	99.7 kPa

The testing was performed by Lion Xiao on 2016-08-15.

Test Mode: Transmitting

5150-5250 MHz band

Mode	Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limits (dBm)	Result
802.11a	Low	5180	11.50	14	PASS
	Middle	5200	11.61	14	PASS
	High	5240	11.55	14	PASS
802.11n20	Low	5180	11.52	14	PASS
	Middle	5200	11.59	14	PASS
	High	5240	11.63	14	PASS
802.11n40	Low	5190	11.54	14	PASS
	High	5230	11.57	14	PASS
802.11ac80	Middle	5210	11.31	14	PASS

Note: The device may be an outdoor AP or a client device, the strict limit was use, the maximum antenna gain is 16dBi. The antenna gain at any elevation angle out of maximum 30 degrees from the horizon is less than 9dBi, so The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

5725-5850 MHz band

Mode	Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limits (dBm)	Result
802.11a	Low	5745	11.49	20	PASS
	Middle	5785	11.54	20	PASS
	High	5825	11.51	20	PASS
802.11n20	Low	5745	11.59	20	PASS
	Middle	5785	11.51	20	PASS
	High	5825	11.64	20	PASS
802.11n40	Low	5755	11.65	20	PASS
	High	5795	11.70	20	PASS
802.11ac80	Middle	5775	11.43	20	PASS

Note: the maximum antenna gain is 16dBi.

FCC §15.407(a) - POWER SPECTRAL DENSITY

Applicable Standard

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

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

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

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r02

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	30.5 ~ 30.7 °C
Relative Humidity:	50 ~ 52 %
ATM Pressure:	99.7 ~ 100 kPa

The testing was performed by Lion Xiao on 2016-08-13 to 2016-08-15.

Test Mode: Transmitting

Test Result:Compliance.Please refer to the following table and plot.

5150MHz-5250MHz:

Mode	Channel	Frequency MHz	PSD (dBm/MHz)	Limit (dBm/MHz)
802.11a	Low	5180	0.56	1
	Middle	5200	0.64	1
	High	5240	0.61	1
802.11n20	Low	5180	0.43	1
	Middle	5200	0.48	1
	High	5240	0.51	1
802.11n40	Low	5190	-2.21	1
	High	5230	-2.19	1
802.11ac80	Middle	5210	-5.72	1

Note: The device may be an outdoor AP or a client device, the strict limit was use, the maximum antenna gain is 16dBi.

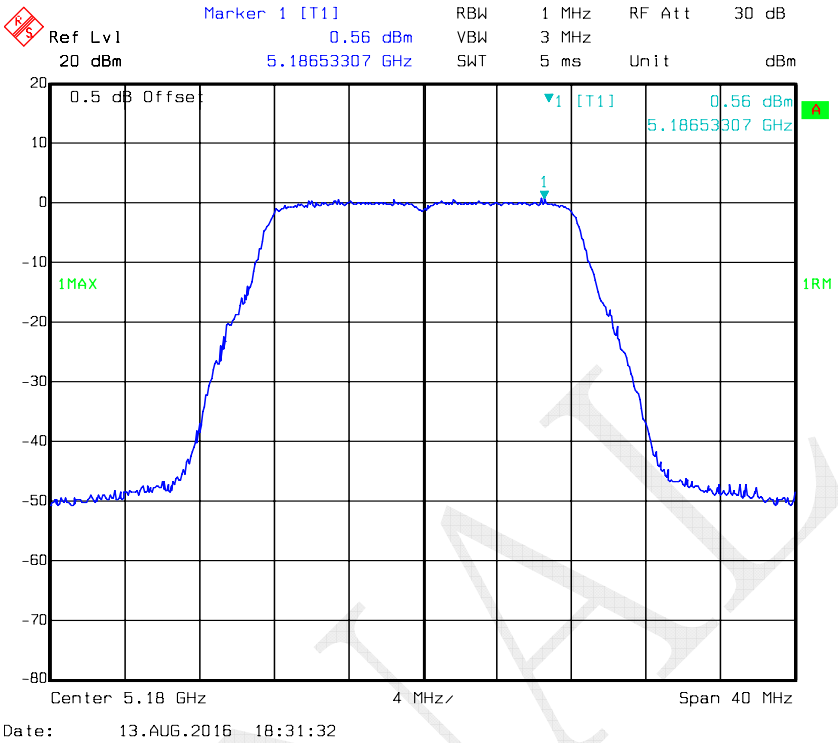
5725MHz-5850MHz:

Mode	Channel	Frequency MHz	Power Spectral Density (dBm/500kHz)	Limits (dBm/500kHz)
802.11a	Low	5745	-0.63	20
	Middle	5785	-0.60	20
	High	5825	-0.62	20
802.11n20	Low	5745	-0.55	20
	Middle	5785	-0.60	20
	High	5825	-0.59	20
802.11n40	Low	5755	-3.76	20
	High	5795	-3.73	20
802.11 ac80	Middle	5775	-6.63	20

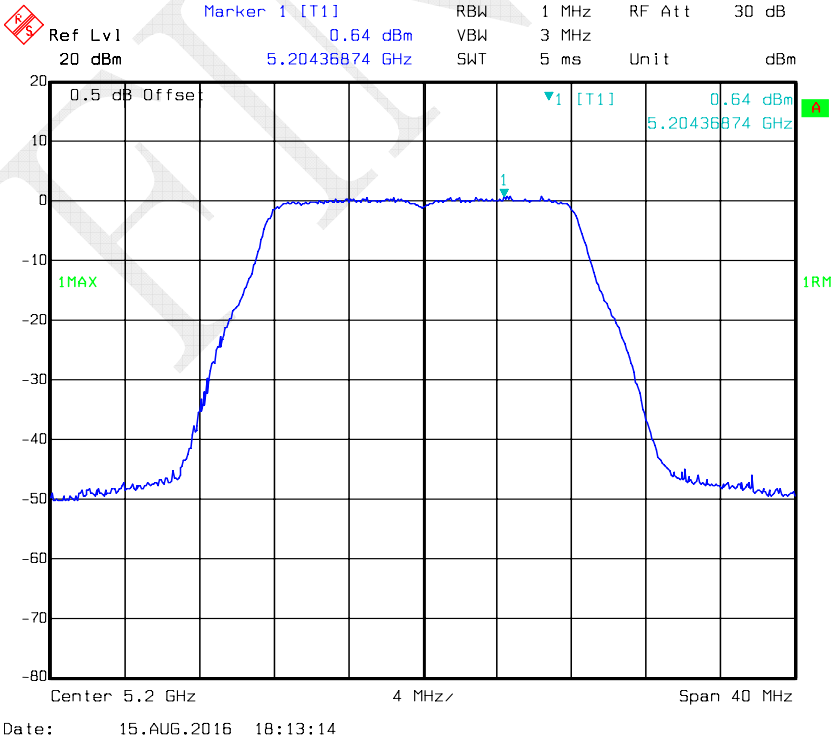
Note: the maximum antenna gain is 16dBi.

5150MHz-5250MHz:

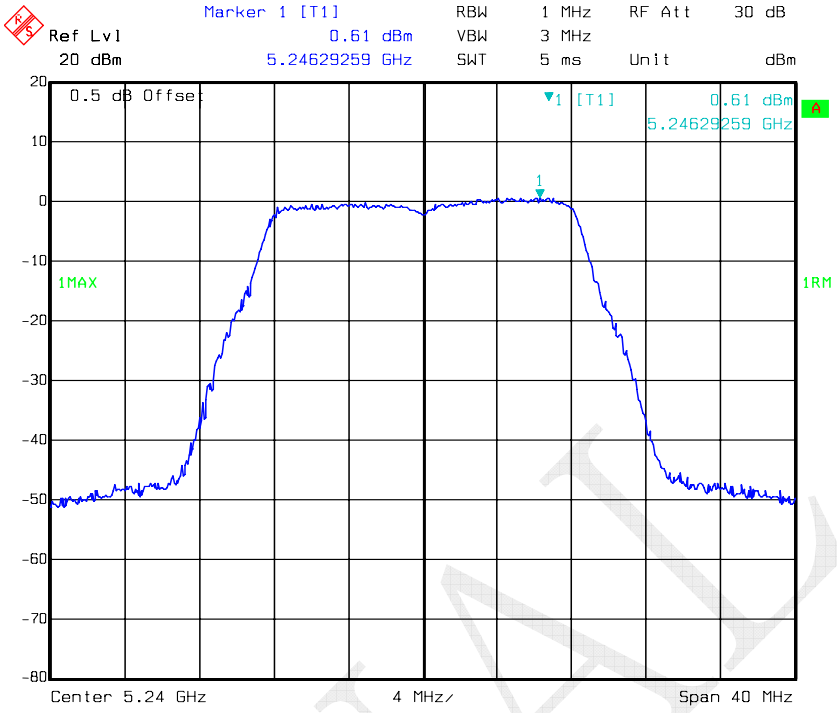
802.11a Low Channel



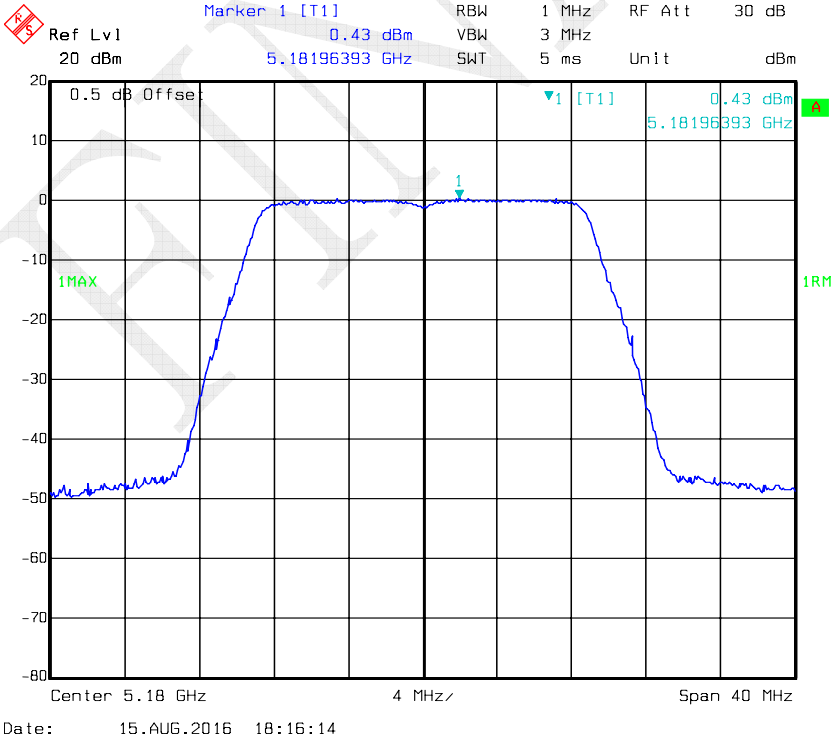
802.11a Middle Channel



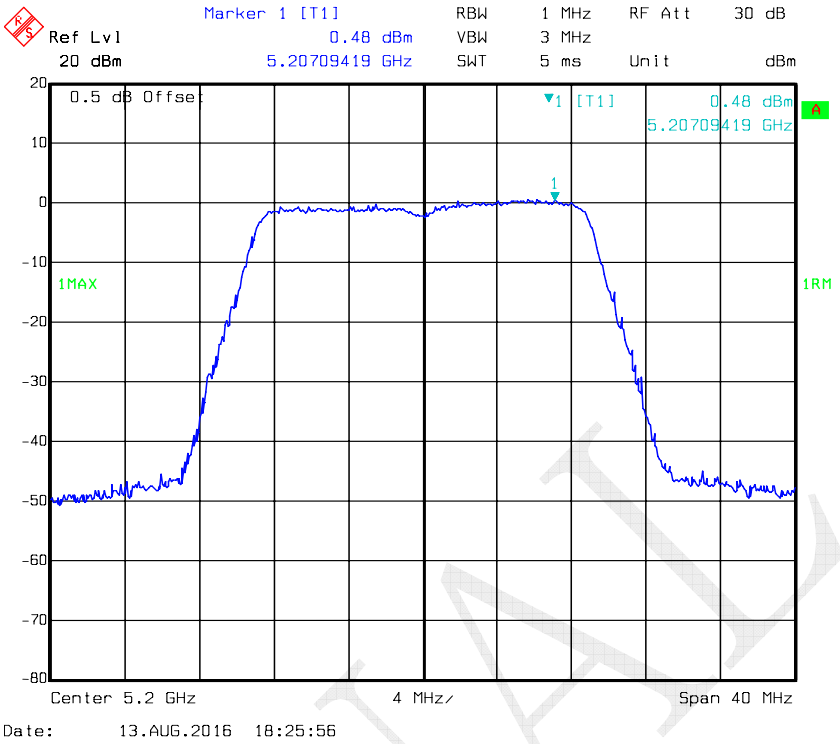
802.11a High Channel



802.11n ht20 Low Channel



802.11n ht20 Middle Channel



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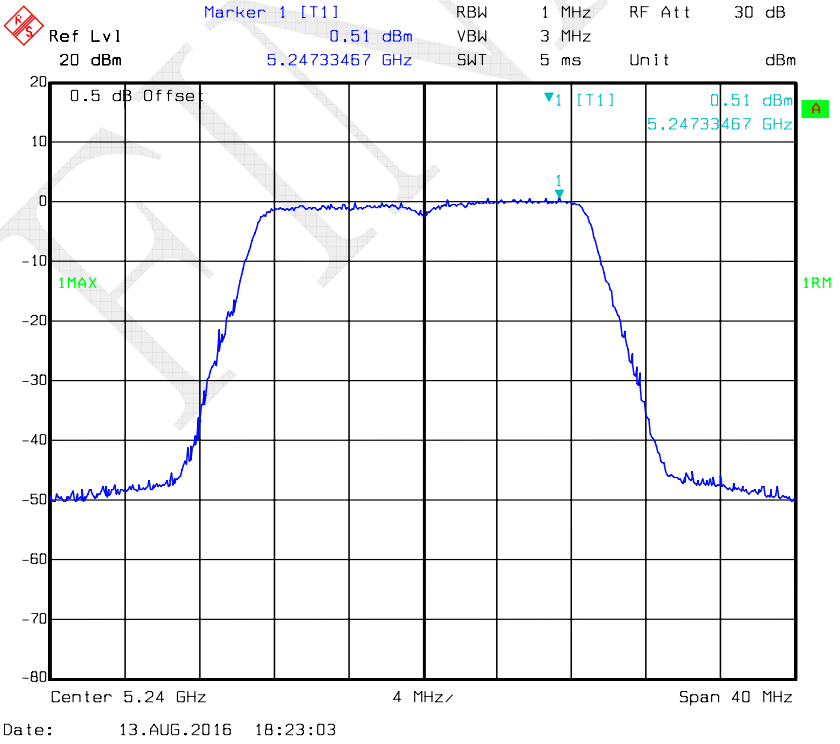

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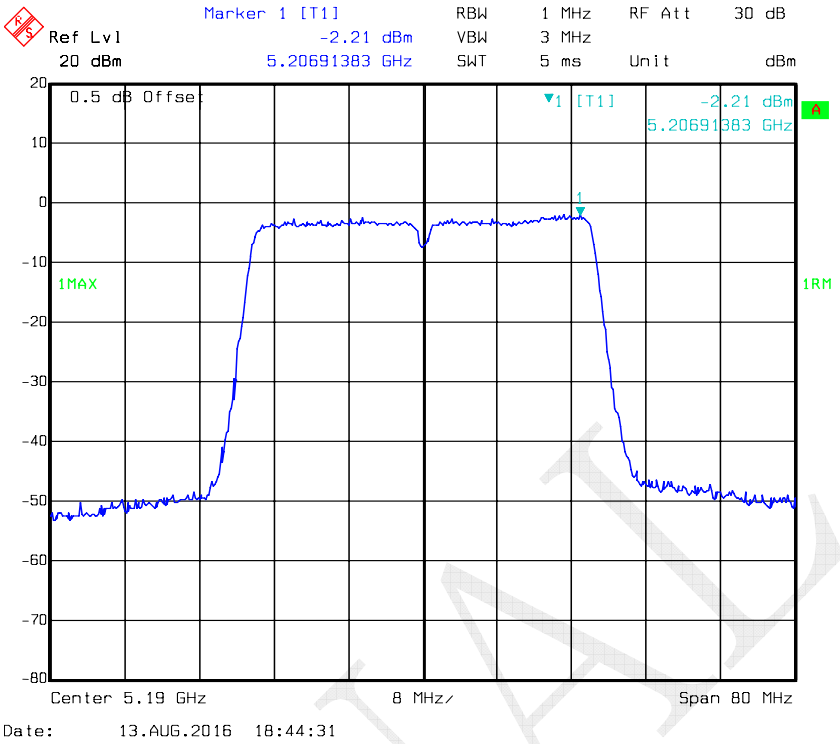

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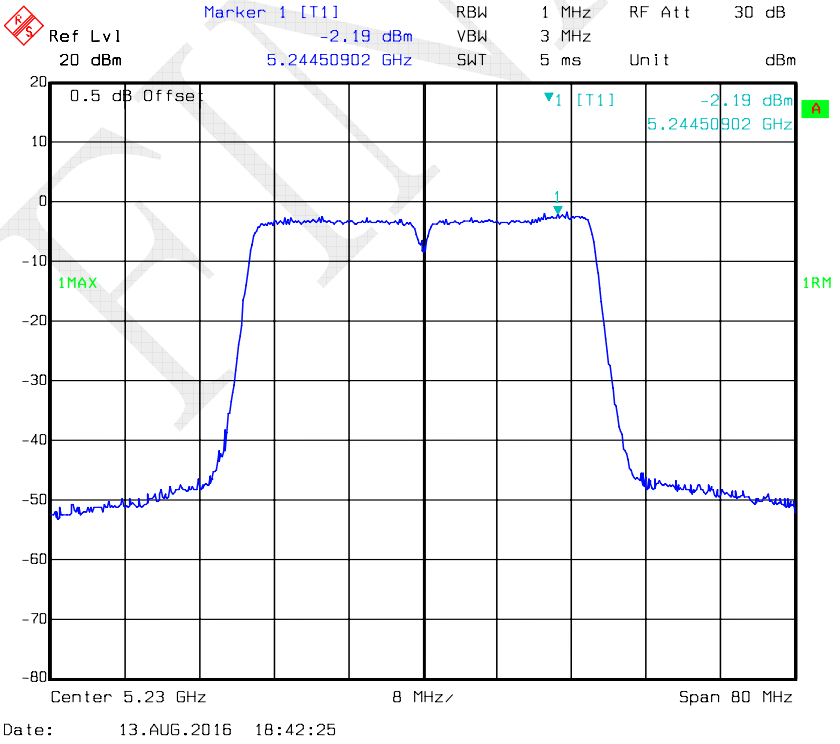
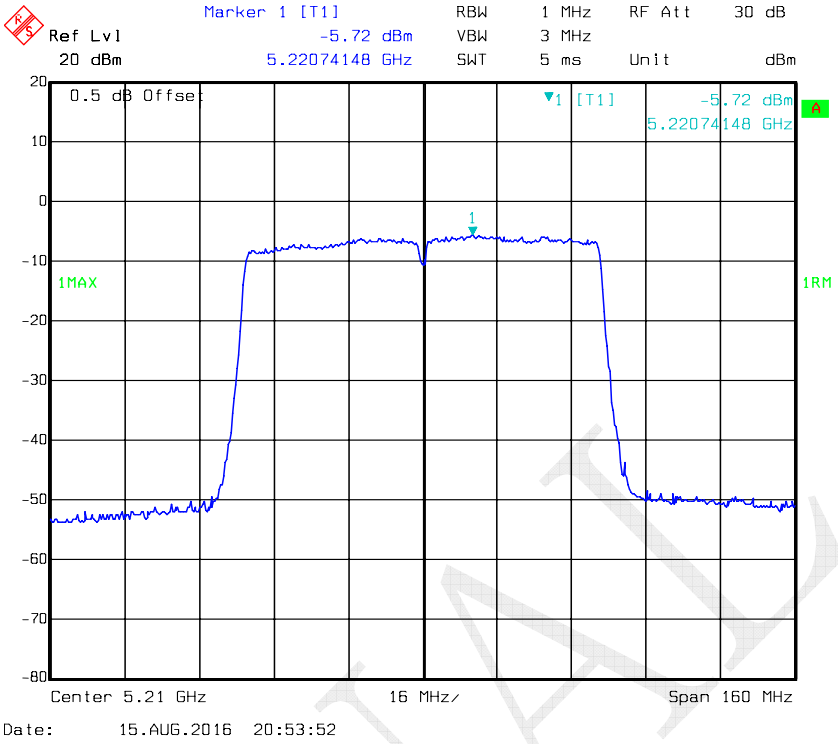
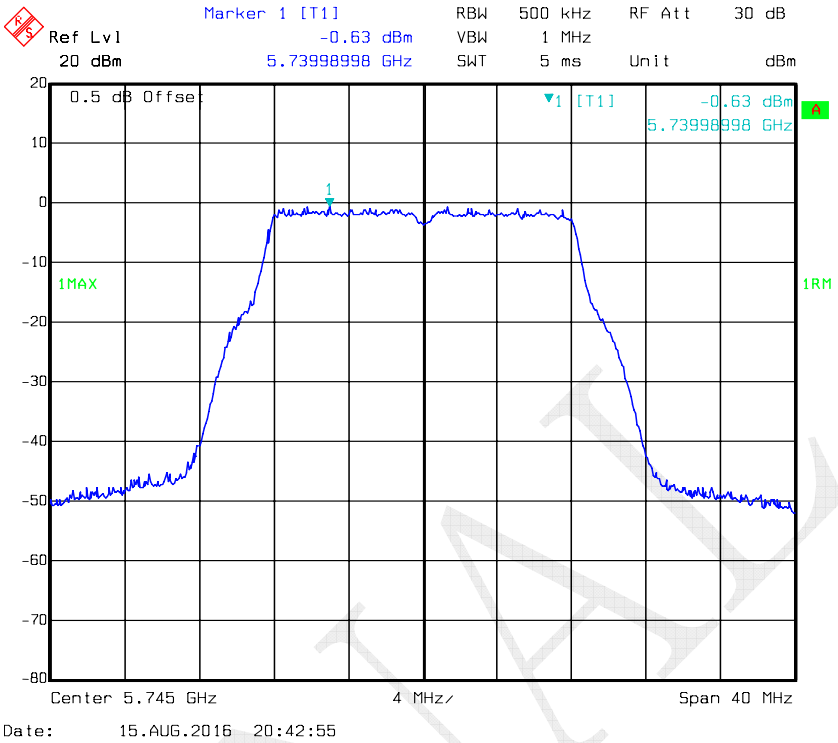


802.11 ac80 Middle Channel

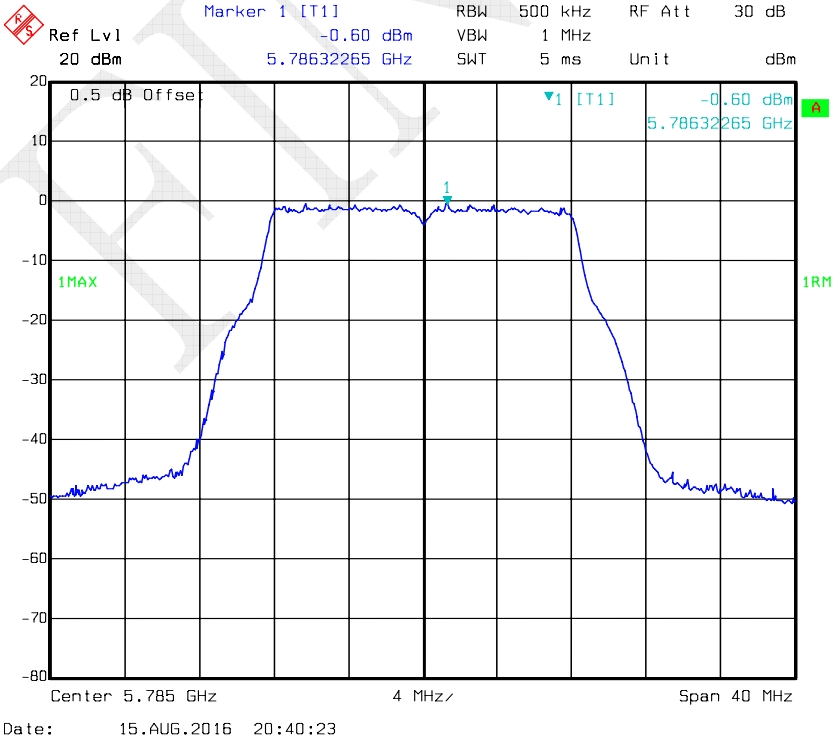


5725MHz-5850MHz:

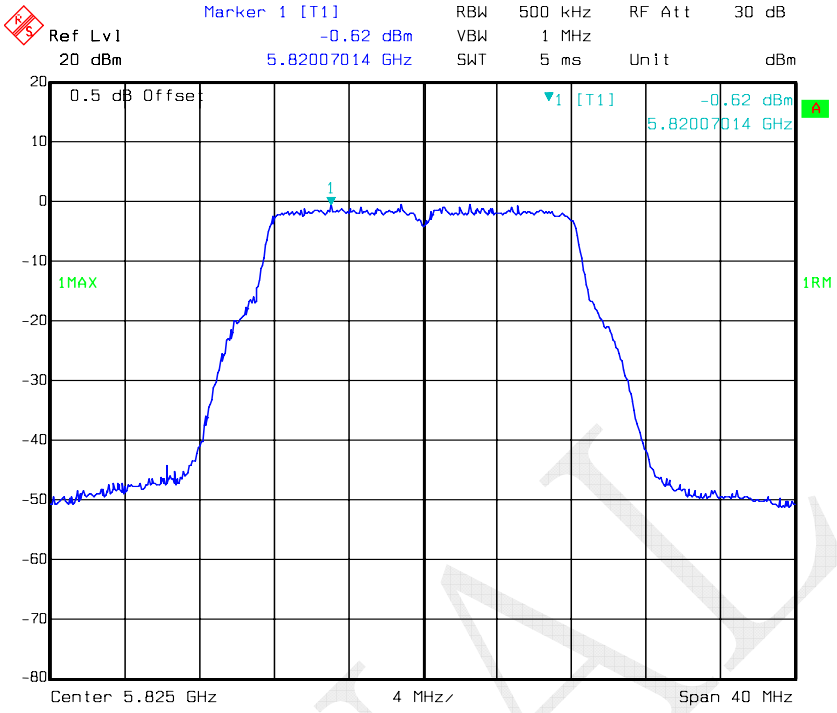
802.11a Low Channel



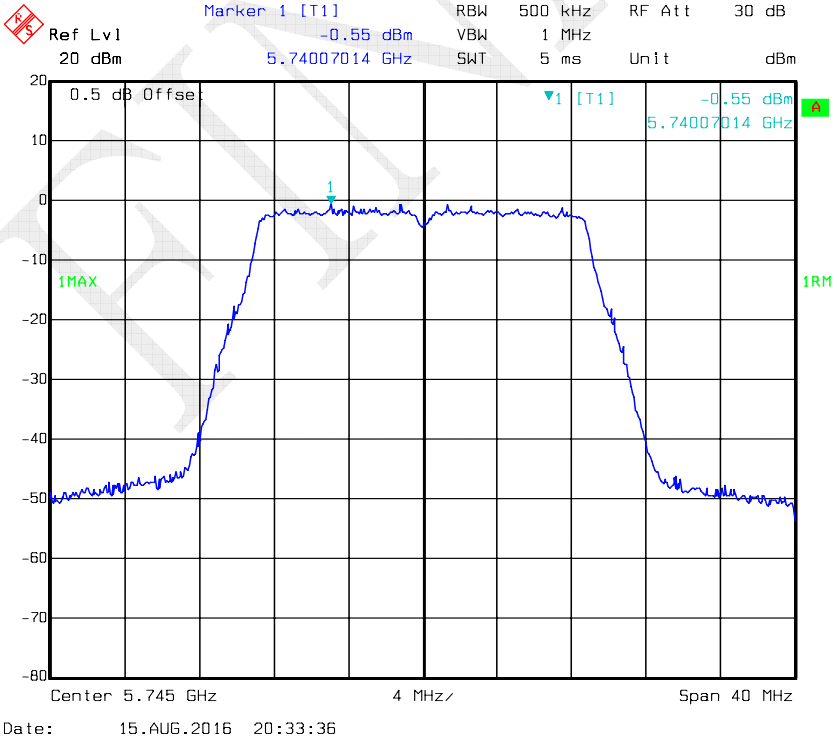
802.11a Middle Channel



802.11a High Channel



802.11n ht20 Low Channel



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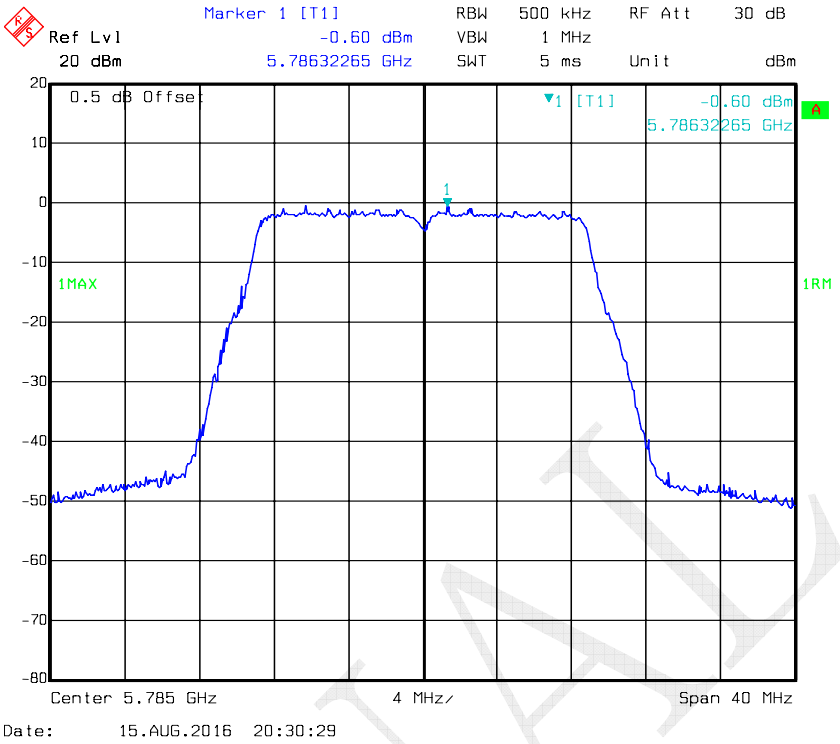

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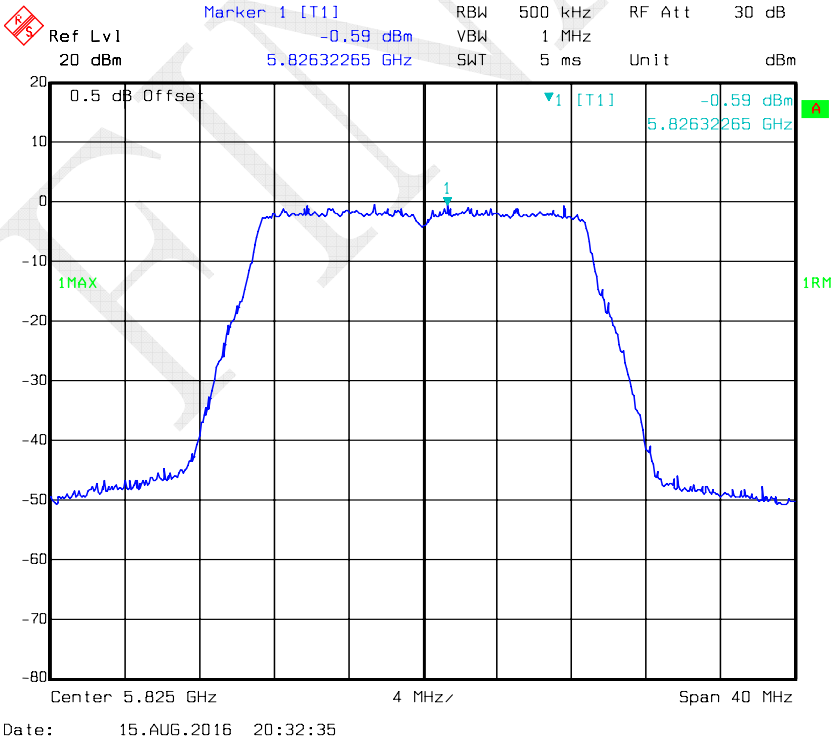
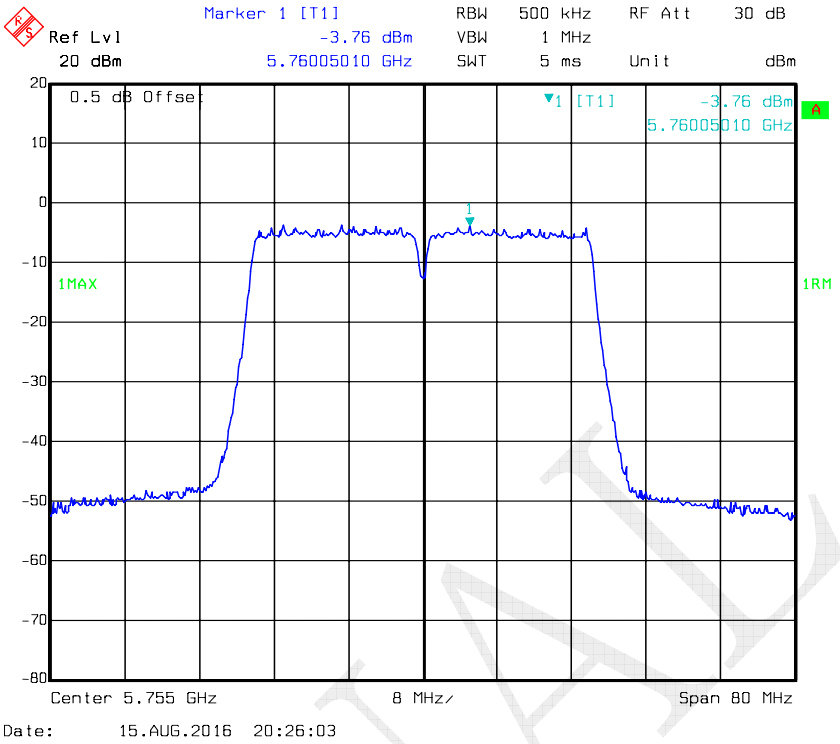
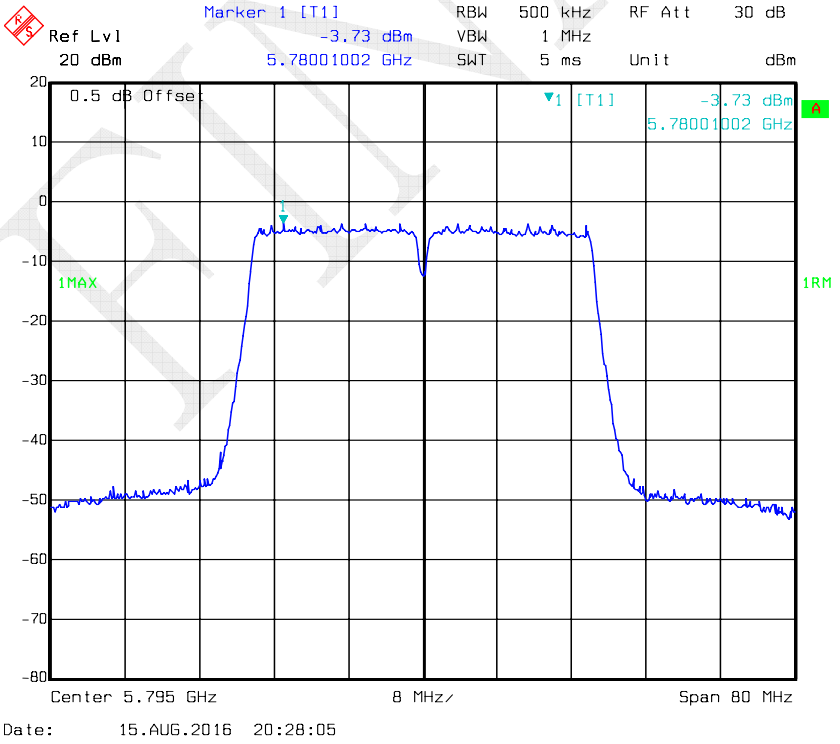


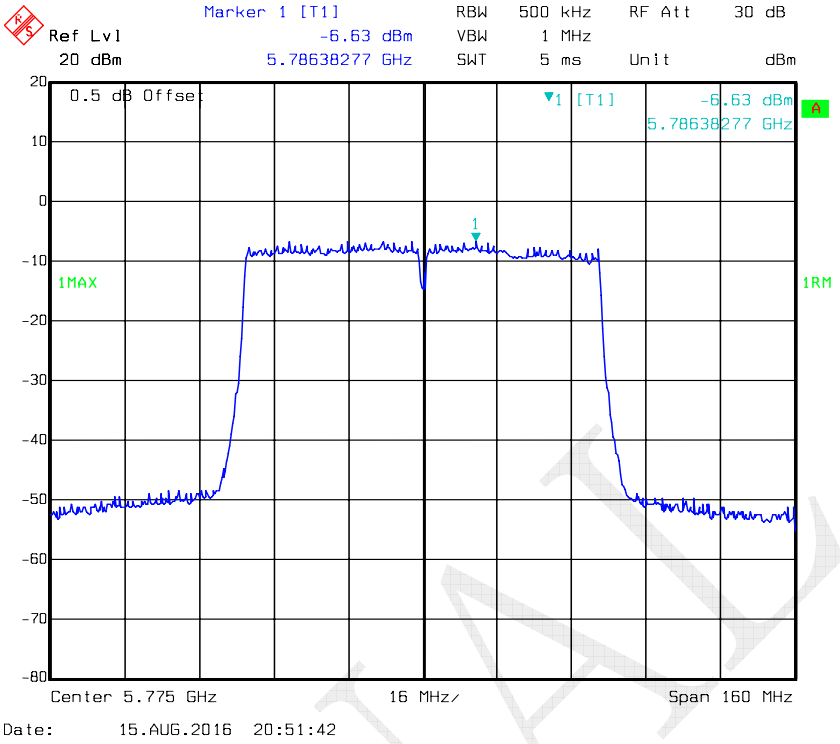
802.11n ht40 Low Channel



802.11n ht40 High Channel



802.11 ac80 Middle Channel



******* END OF REPORT *******