

# FCC PART 15.247

## TEST REPORT

For

### SHENZHEN CYX TECHNOLOGY CO.,LTD

2F,6 Bldg.,Guangxi Industrial Z.,Longsheng,Longhua, Shenzhen, China

**FCC ID: 2AHTKA95X**

<b>Report Type:</b> Original Report	<b>Product Type:</b> OTT TV BOX
<b>Test Engineer:</b> Gavin Xu	<i>Gavin Xu</i>
<b>Report Number:</b> RDG160712001-00A	
<b>Report Date:</b> 2016-08-15	
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**Note:** This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

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FINAL

## GENERAL INFORMATION

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### Product Description for Equipment under Test (EUT)

The *SHENZHEN CYX TECHNOLOGY CO.,LTD* 's product, model number: *A95X (FCC ID: 2AHTKA95X)* (the "EUT") in this report was a *OTT TV BOX* , which was measured approximately: 9.5 cm (L) x 9.5 cm (W) x 1.7cm (H), rated input voltage: DC5V from adapter.

Adapter information:

MODEL: ANU-050200B

INPUT: 100-240V ~ 0.3A 50/60Hz

OUTPUT: DC 5.0V, 2000mA

*Note: The series product, model A95X, A1, A2, A3, A5, A6, A85, A95, A95C, A95H, A95K, D5, D6, D8, D9, D32, D35, D36, D37,D51, D52, D53, D55, D56, D57,Y1, Y2, Y3, Y5,Y6, Y7, Y8, Y9,Y21, Y22, Y23, Y25, Y26, Y27, Y28 are electrically identical, the difference between them just is the model name, we selected A95X for fully testing, the details was explained in the declaration letter.*

*All measurement and test data in this report was gathered from production sample serial number: 160712001 (Assigned by BACL, Dongguan). The EUT was received on 2016-07-13.*

### Objective

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

The tests were performed in order to determine the compliance of the EUT with FCC Part 15-Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

### Related Submittal(s)/Grant(s)

No related submittal grant.

### 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.

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## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in testing mode, which was provided by manufacturer. For 2.4GHz band, 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	/	/

For 802.11b, 802.11g, and 802.11n ht20 modes were tested with channel 1, 6 and 11. For 802.11n ht40 mode were tested with Channel 3, 6 and 9.

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.

### Equipment Modifications

No modification was made to the EUT tested.

### EUT Exercise Software

The worst condition (maximum power with 100% duty cycle) was setting by the software as following table:

Test Mode	Test Software Version	Realtek		
802.11b	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	1Mbps	1Mbps	1Mbps
	Power Level Setting	13	13	13
802.11g	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	6Mbps	6Mbps	6Mbps
	Power Level Setting	12	12	12
802.11n ht20	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	12	12	12
802.11n ht40	Test Frequency	2422MHz	2437MHz	2452MHz
	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	14	14	14

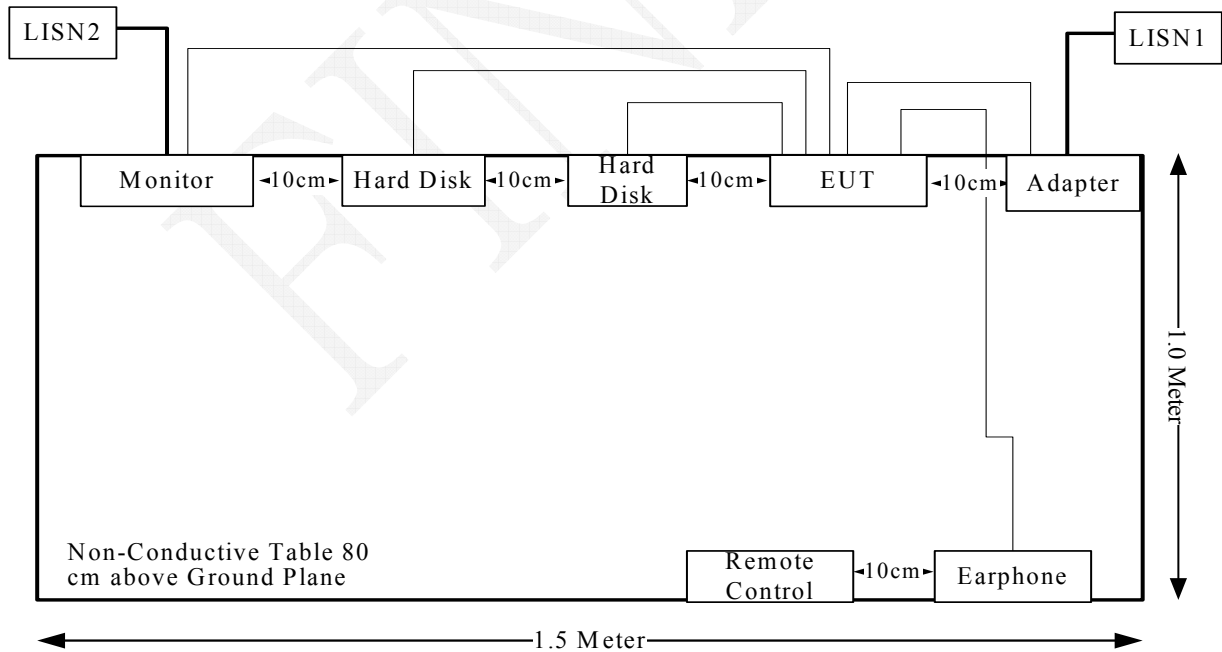
**Support Equipment List and Details**

Manufacturer	Description	Model	Serial Number
SAMSUNG	TF Card	N/A	N/A
SAMSUNG	Hard Disk	80G	0292
SAMSUNG	Hard Disk	80G	1235
Monitor	S22C330H	SAMSUNG	ZXDCHTHD101491K

**External I/O Cable**

Cable Description	Shielding Type	Ferrite Core	Length (m)	From	To
HDMI Cable	Yes	No	1.0	HDMI port of EUT	Monitor
USB Cable	No	No	1.0	USB port of EUT	Hard Disk
USB Cable	No	No	1.0	USB port of EUT	Hard Disk
RJ45 Cable	No	No	10	LAN port of EUT	Terminal

**Block Diagram of Test Setup**



**SUMMARY OF TEST RESULTS**

<b>FCC Rules</b>	<b>Description of Test</b>	<b>Result</b>
FCC §15.247 (i) & §1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliance
§15.247(b)(3)	Maximum conducted output power	Compliance
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance
§15.247(e)	Power Spectral Density	Compliance



**FCC §15.247 (i) ,§1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

**Applicable Standard**

According to §15.247(i) and §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>(B) Limits for General Population/Uncontrolled Exposure</b>				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	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<sup>2</sup>);

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		Conducted Output power		Evaluation Distance (cm)	Power Density (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
	(dBi)	(numeric)	(dBm)	(mW)			
2412-2462	0.00	1.00	18	63.10	20.00	0.0126	1.0

Note: The maximum tune-up power including tolerance is 18dBm, which declared by the manufacturer.

**Result:** The device meet FCC MPE at 20 cm distance

## **FCC §15.203 - ANTENNA REQUIREMENT**

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### **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 user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

### **Antenna Connector Construction**

The EUT has one internal antenna arrangement, and the antenna gain is 0.0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

**Result:** Compliance.

**FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS**

**Applicable Standard**

FCC§15.207

**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:

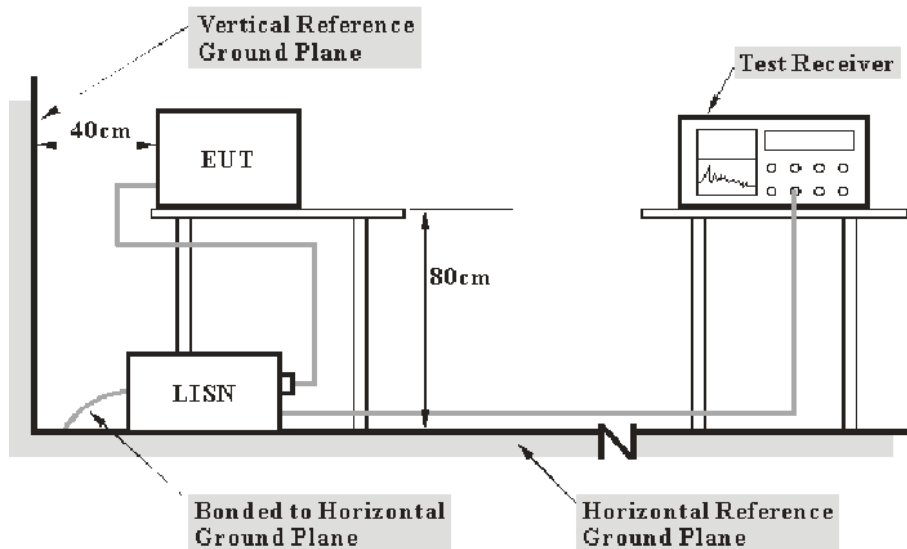
- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit.

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

### Test Procedure

During the conducted emission test, the adapter was connected to the first 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.

### 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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

### 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 Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

**2.0 dB at 0.162441 MHz in the Neutral conducted mode**

### Test Data

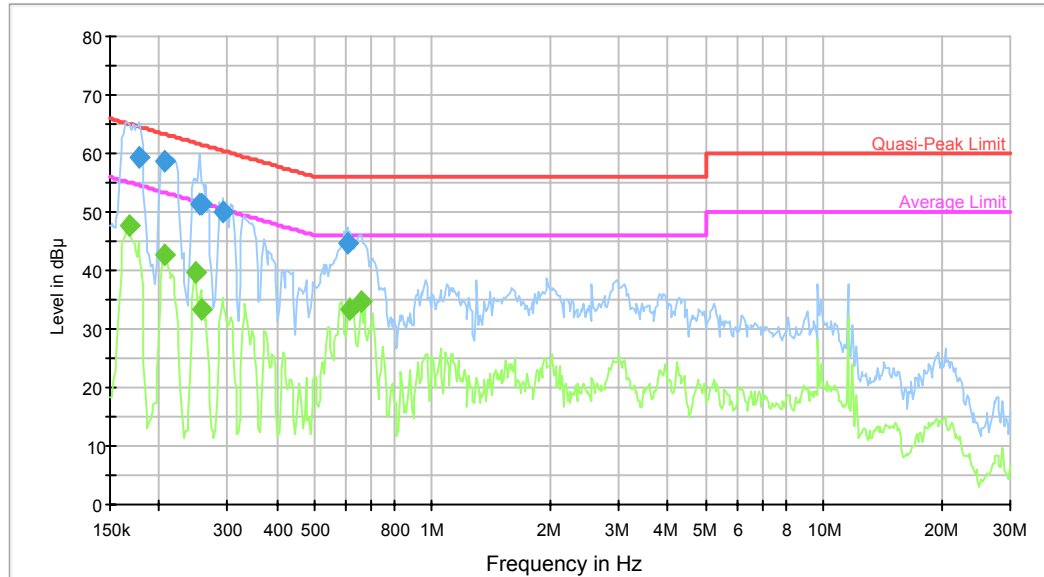
#### Environmental Conditions

<b>Temperature:</b>	27.5 °C
<b>Relative Humidity:</b>	61 %
<b>ATM Pressure:</b>	99.7 kPa

*The testing was performed by Gavin Xu on 2016-08-11.*

Test Mode: Transmitting

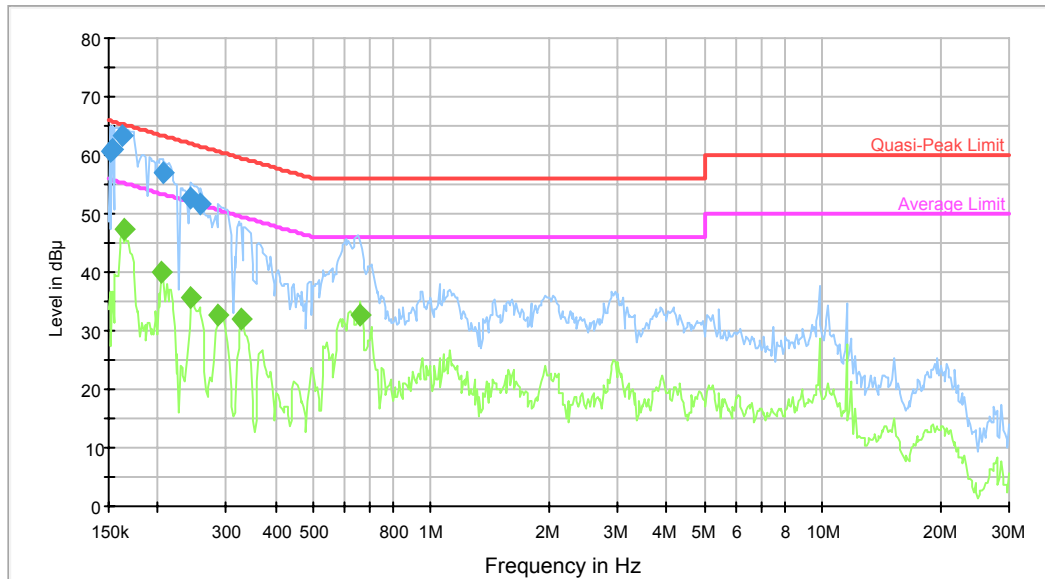
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.178741	59.3	9.000	L1	10.1	5.2	64.5	Compliance
0.206306	58.6	9.000	L1	10.2	4.8	63.4	Compliance
0.253797	51.4	9.000	L1	10.2	10.2	61.6	Compliance
0.257874	51.2	9.000	L1	10.2	10.3	61.5	Compliance
0.290613	50.2	9.000	L1	10.2	10.3	60.5	Compliance
0.604902	44.6	9.000	L1	10.3	11.4	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.167702	47.6	9.000	L1	10.1	7.5	55.1	Compliance
0.207957	42.7	9.000	L1	10.2	10.6	53.3	Compliance
0.249785	39.7	9.000	L1	10.2	12.1	51.8	Compliance
0.255827	33.3	9.000	L1	10.2	18.3	51.6	Compliance
0.614619	33.2	9.000	L1	10.3	12.8	46.0	Compliance
0.660314	34.7	9.000	L1	10.4	11.3	46.0	Compliance

**AC120 V, 60 Hz, Neutral:**



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.151200	60.8	9.000	N	10.2	5.1	65.9	Compliance
0.153629	61.1	9.000	N	10.2	4.7	65.8	Compliance
0.162441	63.3	9.000	N	10.1	2.0	65.3	Compliance
0.206306	57.1	9.000	N	10.2	6.3	63.4	Compliance
0.243884	52.6	9.000	N	10.2	9.4	62.0	Compliance
0.257874	51.7	9.000	N	10.2	9.8	61.5	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.165051	47.4	9.000	N	10.1	7.8	55.2	Compliance
0.204669	39.9	9.000	N	10.2	13.5	53.4	Compliance
0.243884	35.6	9.000	N	10.2	16.4	52.0	Compliance
0.286019	32.7	9.000	N	10.2	17.9	50.6	Compliance
0.327509	32.1	9.000	N	10.3	17.4	49.5	Compliance
0.660314	32.5	9.000	N	10.4	13.5	46.0	Compliance

## FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

### Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

### 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 2, 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 2, 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.

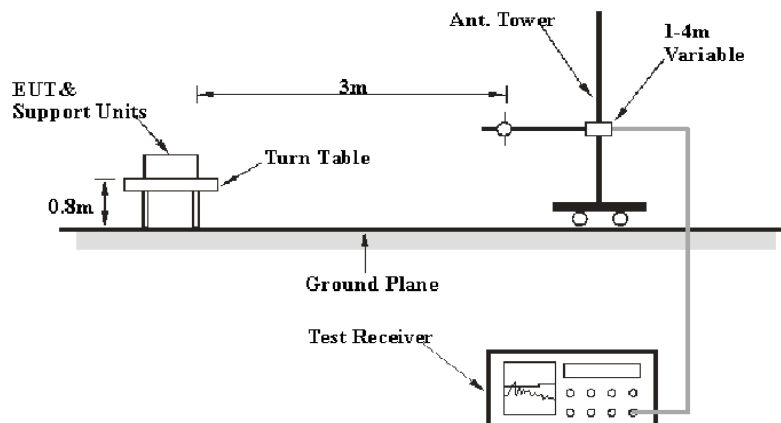
Based on CISPR 16-4-2-2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is: 30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical; 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical; 1G~6GHz: 4.45 dB, 6G~18GHz: 5.23 dB

Table 2 – 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

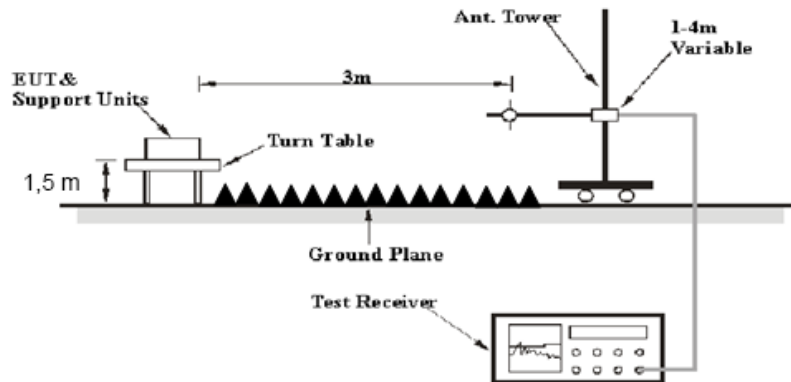
### EUT Setup

Below 1GHz:





**Above 1GHz:**



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 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.

**EMI Test Receiver & Spectrum Analyzer Setup**

The system was investigated from 30 MHz to 25 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**

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-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

## 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:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-08-03	2016-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2015-11-23	2016-11-22
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
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2015-09-06	2016-09-06
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
N/A	Coaxial Cable	0.1m	N/A	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

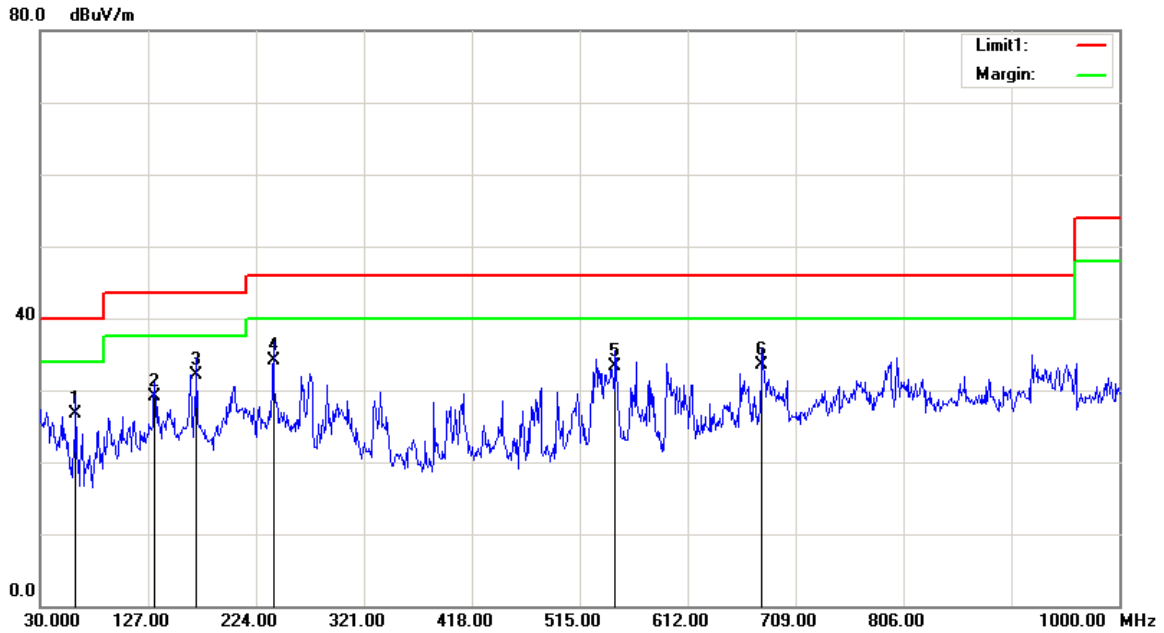
<b>Temperature:</b>	29.1°C
<b>Relative Humidity:</b>	50 %
<b>ATM Pressure:</b>	100.4 kPa

\* The testing was performed by Gavin Xu on 2016-07-28.

*Test Mode: Transmitting*

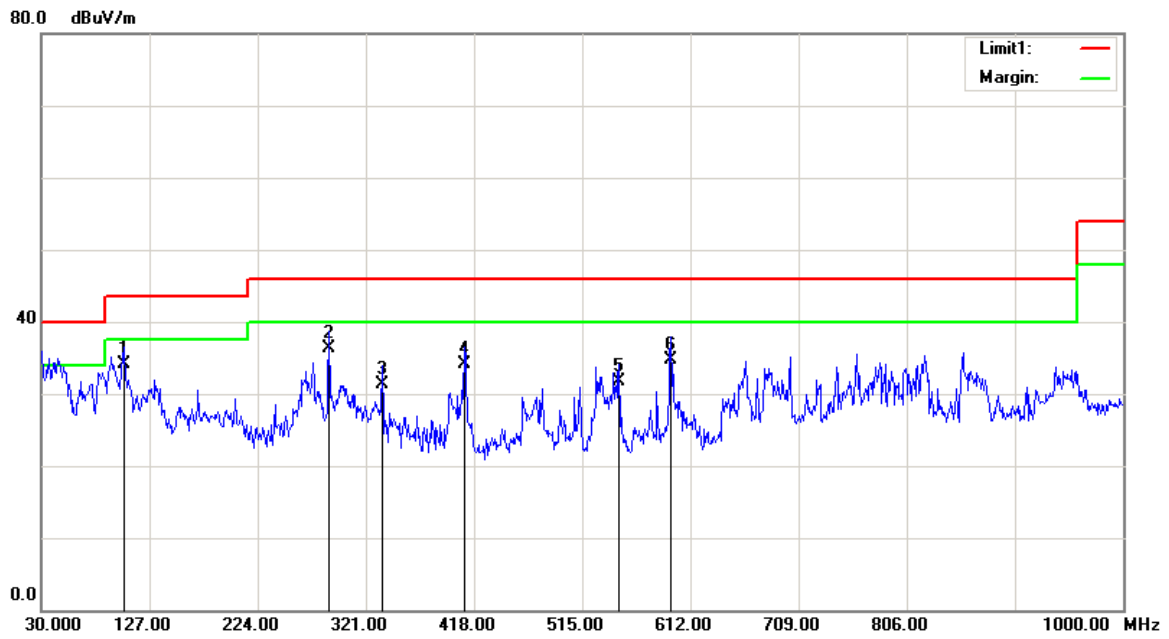
1) Below 1GHz(802.11b mode middle channel was the worst):

Horizontal



Frequency (MHz)	Receiver Reading (dBμV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
62.0100	39.58	QP	-12.88	26.70	40.00	13.30
132.8200	35.10	QP	-5.90	29.20	43.50	14.30
170.6500	40.06	QP	-7.96	32.10	43.50	11.40
239.5200	41.70	QP	-7.60	34.10	46.00	11.90
547.0100	34.51	QP	-1.21	33.30	46.00	12.70
678.9300	32.68	QP	0.82	33.50	46.00	12.50

**Vertical**



Frequency (MHz)	Receiver Reading (dBμV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
103.7200	42.70	QP	-8.60	34.10	43.50	9.40
288.0200	42.30	QP	-5.90	36.40	46.00	9.60
335.5500	36.46	QP	-5.16	31.30	46.00	14.70
409.2700	37.61	QP	-3.41	34.20	46.00	11.80
547.9800	33.01	QP	-1.21	31.80	46.00	14.20
594.5400	35.44	QP	-0.74	34.70	46.00	11.30

2) 1-25GHz:

802.11b Mode

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2412 MHz									
2412	59.56	PK	H	25.67	3.68	0.00	88.91	N/A	N/A
2412	56.79	AV	H	25.67	3.68	0.00	86.14	N/A	N/A
2412	61.37	PK	V	25.67	3.68	0.00	90.72	N/A	N/A
2412	58.28	AV	V	25.67	3.68	0.00	87.63	N/A	N/A
2390	27.16	PK	H	25.61	3.63	0.00	56.40	74.00	17.60
2390	15.19	AV	H	25.61	3.63	0.00	44.43	54.00	9.57
4824	32.41	PK	H	30.64	5.03	27.41	40.67	74.00	33.33
4824	20.42	AV	H	30.64	5.03	27.41	28.68	54.00	25.32
7236	32.16	PK	H	34.17	6.65	25.90	47.08	74.00	26.92
7236	20.39	AV	H	34.17	6.65	25.90	35.31	54.00	18.69
9648	31.89	PK	H	36.76	8.55	27.46	49.74	74.00	24.26
9648	19.47	AV	H	36.76	8.55	27.46	37.32	54.00	16.68
3220	34.52	PK	H	27.90	6.17	27.35	41.24	74.00	32.76
3220	23.01	AV	H	27.90	6.17	27.35	29.73	54.00	24.27
Middle Channel: 2437 MHz									
2437	59.52	PK	H	25.74	3.75	0.00	89.01	N/A	N/A
2437	56.74	AV	H	25.74	3.75	0.00	86.23	N/A	N/A
2437	61.24	PK	V	25.74	3.75	0.00	90.73	N/A	N/A
2437	58.21	AV	V	25.74	3.75	0.00	87.70	N/A	N/A
4874	32.37	PK	H	30.77	5.14	27.42	40.86	74.00	33.14
4874	21.16	AV	H	30.77	5.14	27.42	29.65	54.00	24.35
7311	32.41	PK	H	34.35	6.74	25.88	47.62	74.00	26.38
7311	21.03	AV	H	34.35	6.74	25.88	36.24	54.00	17.76
9748	31.33	PK	H	36.80	8.61	27.24	49.50	74.00	24.50
9748	19.52	AV	H	36.80	8.61	27.24	37.69	54.00	16.31
3250	34.13	PK	H	28.00	6.31	27.33	41.11	74.00	32.89
3250	19.44	AV	H	28.00	6.31	27.33	26.42	54.00	27.58
4060	33.21	PK	H	29.89	4.66	27.16	40.60	74.00	33.40
4060	21.09	AV	H	29.89	4.66	27.16	28.48	54.00	25.52
High Channel: 2462 MHz									
2462	59.31	PK	H	25.80	3.75	0.00	88.86	N/A	N/A
2462	56.53	AV	H	25.80	3.75	0.00	86.08	N/A	N/A
2462	61.08	PK	V	25.80	3.75	0.00	90.63	N/A	N/A
2462	58.02	AV	V	25.80	3.75	0.00	87.57	N/A	N/A
2483.5	27.58	PK	H	25.86	3.67	0.00	57.11	74.00	16.89
2483.5	16.14	AV	H	25.86	3.67	0.00	45.67	54.00	8.33
4924	32.37	PK	H	30.90	5.34	27.43	41.18	74.00	32.82
4924	21.16	AV	H	30.90	5.34	27.43	29.97	54.00	24.03
7386	32.42	PK	H	34.53	6.83	25.86	47.92	74.00	26.08
7386	20.87	AV	H	34.53	6.83	25.86	36.37	54.00	17.63
9848	31.19	PK	H	36.84	8.66	26.94	49.75	74.00	24.25
9848	19.62	AV	H	36.84	8.66	26.94	38.18	54.00	15.82
3280	33.18	PK	H	28.10	5.61	27.30	39.59	74.00	34.41
3280	20.03	AV	H	28.10	5.61	27.30	26.44	54.00	27.56

802.11g Mode

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2412 MHz									
2412	62.33	PK	H	25.67	3.68	0.00	91.68	N/A	N/A
2412	58.03	AV	H	25.67	3.68	0.00	87.38	N/A	N/A
2412	64.39	PK	V	25.67	3.68	0.00	93.74	N/A	N/A
2412	60.13	AV	V	25.67	3.68	0.00	89.48	N/A	N/A
2390	30.26	PK	H	25.61	3.63	0.00	59.50	74.00	14.50
2390	18.06	AV	H	25.61	3.63	0.00	47.30	54.00	6.70
4824	36.18	PK	H	30.64	5.03	27.41	44.44	74.00	29.56
4824	23.21	AV	H	30.64	5.03	27.41	31.47	54.00	22.53
7236	36.29	PK	H	34.17	6.65	25.90	51.21	74.00	22.79
7236	23.57	AV	H	34.17	6.65	25.90	38.49	54.00	15.51
9648	33.62	PK	H	36.76	8.55	27.46	51.47	74.00	22.53
9648	21.13	AV	H	36.76	8.55	27.46	38.98	54.00	15.02
3220	36.79	PK	H	27.90	6.17	27.35	43.51	74.00	30.49
3220	25.41	AV	H	27.90	6.17	27.35	32.13	54.00	21.87
Middle Channel: 2437 MHz									
2437	62.05	PK	H	25.74	3.75	0.00	91.54	N/A	N/A
2437	57.72	AV	H	25.74	3.75	0.00	87.21	N/A	N/A
2437	64.05	PK	V	25.74	3.75	0.00	93.54	N/A	N/A
2437	60.81	AV	V	25.74	3.75	0.00	90.30	N/A	N/A
4874	36.14	PK	H	30.77	5.14	27.42	44.63	74.00	29.37
4874	23.25	AV	H	30.77	5.14	27.42	31.74	54.00	22.26
7311	36.31	PK	H	34.35	6.74	25.88	51.52	74.00	22.48
7311	23.52	AV	H	34.35	6.74	25.88	38.73	54.00	15.27
9748	33.38	PK	H	36.80	8.61	27.24	51.55	74.00	22.45
9748	22.16	AV	H	36.80	8.61	27.24	40.33	54.00	13.67
3250	35.68	PK	H	28.00	6.31	27.33	42.66	74.00	31.34
3250	24.39	AV	H	28.00	6.31	27.33	31.37	54.00	22.63
4060	34.26	PK	H	29.89	4.66	27.16	41.65	74.00	32.35
4060	22.51	AV	H	29.89	4.66	27.16	29.90	54.00	24.10
High Channel: 2462 MHz									
2462	62.18	PK	H	25.80	3.75	0.00	91.73	N/A	N/A
2462	57.85	AV	H	25.80	3.75	0.00	87.40	N/A	N/A
2462	64.21	PK	V	25.80	3.75	0.00	93.76	N/A	N/A
2462	59.97	AV	V	25.80	3.75	0.00	89.52	N/A	N/A
2483.5	26.63	PK	H	25.86	3.67	0.00	56.16	74.00	17.84
2483.5	15.21	AV	H	25.86	3.67	0.00	44.74	54.00	9.26
4924	36.63	PK	H	30.90	5.34	27.43	45.44	74.00	28.56
4924	23.31	AV	H	30.90	5.34	27.43	32.12	54.00	21.88
7386	36.51	PK	H	34.53	6.83	25.86	52.01	74.00	21.99
7386	23.66	AV	H	34.53	6.83	25.86	39.16	54.00	14.84
9848	33.41	PK	H	36.84	8.66	26.94	51.97	74.00	22.03
9848	23.11	AV	H	36.84	8.66	26.94	41.67	54.00	12.33
3280	35.31	PK	H	28.10	5.61	27.30	41.72	74.00	32.28
3280	24.16	AV	H	28.10	5.61	27.30	30.57	54.00	23.43

802.11 n ht20 Mode

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2412 MHz									
2412	62.05	PK	H	25.67	3.68	0.00	91.40	N/A	N/A
2412	55.75	AV	H	25.67	3.68	0.00	85.10	N/A	N/A
2412	64.03	PK	V	25.67	3.68	0.00	93.38	N/A	N/A
2412	57.76	AV	V	25.67	3.68	0.00	87.11	N/A	N/A
2390	26.96	PK	H	25.61	3.63	0.00	56.20	74.00	17.80
2390	16.03	AV	H	25.61	3.63	0.00	45.27	54.00	8.73
4824	33.82	PK	H	30.64	5.03	27.41	42.08	74.00	31.92
4824	21.62	AV	H	30.64	5.03	27.41	29.88	54.00	24.12
7236	33.75	PK	H	34.17	6.65	25.90	48.67	74.00	25.33
7236	21.41	AV	H	34.17	6.65	25.90	36.33	54.00	17.67
9648	30.26	PK	H	36.76	8.55	27.46	48.11	74.00	25.89
9648	19.02	AV	H	36.76	8.55	27.46	36.87	54.00	17.13
3220	33.68	PK	H	27.90	6.17	27.35	40.40	74.00	33.60
3220	25.13	AV	H	27.90	6.17	27.35	31.85	54.00	22.15
Middle Channel: 2437 MHz									
2437	62.01	PK	H	25.74	3.75	0.00	91.50	N/A	N/A
2437	55.72	AV	H	25.74	3.75	0.00	85.21	N/A	N/A
2437	63.98	PK	V	25.74	3.75	0.00	93.47	N/A	N/A
2437	57.73	AV	V	25.74	3.75	0.00	87.22	N/A	N/A
4874	33.79	PK	H	30.77	5.14	27.42	42.28	74.00	31.72
4874	21.58	AV	H	30.77	5.14	27.42	30.07	54.00	23.93
7311	33.81	PK	H	34.35	6.74	25.88	49.02	74.00	24.98
7311	21.36	AV	H	34.35	6.74	25.88	36.57	54.00	17.43
9748	30.21	PK	H	36.80	8.61	27.24	48.38	74.00	25.62
9748	19.05	AV	H	36.80	8.61	27.24	37.22	54.00	16.78
3250	33.61	PK	H	28.00	6.31	27.33	40.59	74.00	33.41
3250	25.14	AV	H	28.00	6.31	27.33	32.12	54.00	21.88
4060	32.18	PK	H	29.89	4.66	27.16	39.57	74.00	34.43
4060	21.44	AV	H	29.89	4.66	27.16	28.83	54.00	25.17
High Channel: 2462 MHz									
2462	62.29	PK	H	25.80	3.75	0.00	91.84	N/A	N/A
2462	55.98	AV	H	25.80	3.75	0.00	85.53	N/A	N/A
2462	64.37	PK	V	25.80	3.75	0.00	93.92	N/A	N/A
2462	57.05	AV	V	25.80	3.75	0.00	86.60	N/A	N/A
2483.5	26.97	PK	H	25.86	3.67	0.00	56.50	74.00	17.50
2483.5	16.05	AV	H	25.86	3.67	0.00	45.58	54.00	8.42
4924	34.52	PK	H	30.90	5.34	27.43	43.33	74.00	30.67
4924	22.62	AV	H	30.90	5.34	27.43	31.43	54.00	22.57
7386	33.77	PK	H	34.53	6.83	25.86	49.27	74.00	24.73
7386	22.13	AV	H	34.53	6.83	25.86	37.63	54.00	16.37
9848	31.06	PK	H	36.84	8.66	26.94	49.62	74.00	24.38
9848	20.11	AV	H	36.84	8.66	26.94	38.67	54.00	15.33
3280	32.79	PK	H	28.10	5.61	27.30	39.20	74.00	34.80
3280	23.13	AV	H	28.10	5.61	27.30	29.54	54.00	24.46

802.11 n ht40 Mode

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2422 MHz									
2422	62.18	PK	H	25.70	3.71	0.00	91.59	N/A	N/A
2422	55.76	AV	H	25.70	3.71	0.00	85.17	N/A	N/A
2422	64.31	PK	V	25.70	3.71	0.00	93.72	N/A	N/A
2422	59.01	AV	V	25.70	3.71	0.00	88.42	N/A	N/A
2390	27.79	PK	H	25.61	3.63	0.00	57.03	74.00	16.97
2390	15.46	AV	H	25.61	3.63	0.00	44.70	54.00	9.30
4844	33.56	PK	H	30.69	4.99	27.42	41.82	74.00	32.18
4844	20.64	AV	H	30.69	4.99	27.42	28.90	54.00	25.10
7266	33.79	PK	H	34.24	6.68	25.89	48.82	74.00	25.18
7266	21.24	AV	H	34.24	6.68	25.89	36.27	54.00	17.73
9688	30.91	PK	H	36.78	8.58	27.37	48.90	74.00	25.10
9688	18.42	AV	H	36.78	8.58	27.37	36.41	54.00	17.59
3250	34.65	PK	H	28.00	6.31	27.33	41.63	74.00	32.37
3250	24.41	AV	H	28.00	6.31	27.33	31.39	54.00	22.61
Middle Channel: 2437 MHz									
2437	62.43	PK	H	25.74	3.75	0.00	91.92	N/A	N/A
2437	55.91	AV	H	25.74	3.75	0.00	85.40	N/A	N/A
2437	64.49	PK	V	25.74	3.75	0.00	93.98	N/A	N/A
2437	59.16	AV	V	25.74	3.75	0.00	88.65	N/A	N/A
4874	34.13	PK	H	30.77	5.14	27.42	42.62	74.00	31.38
4874	22.52	AV	H	30.77	5.14	27.42	31.01	54.00	22.99
7311	33.82	PK	H	34.35	6.74	25.88	49.03	74.00	24.97
7311	22.26	AV	H	34.35	6.74	25.88	37.47	54.00	16.53
9748	32.53	PK	H	36.80	8.61	27.24	50.70	74.00	23.30
9748	19.67	AV	H	36.80	8.61	27.24	37.84	54.00	16.16
3250	34.52	PK	H	28.00	6.31	27.33	41.50	74.00	32.50
3250	23.16	AV	H	28.00	6.31	27.33	30.14	54.00	23.86
4060	34.38	PK	H	29.89	4.66	27.16	41.77	74.00	32.23
4060	23.95	AV	H	29.89	4.66	27.16	31.34	54.00	22.66
High Channel: 2452 MHz									
2452	62.28	PK	H	25.78	3.78	0.00	91.84	N/A	N/A
2452	55.76	AV	H	25.78	3.78	0.00	85.32	N/A	N/A
2452	64.35	PK	V	25.78	3.78	0.00	93.91	N/A	N/A
2452	57.05	AV	V	25.78	3.78	0.00	86.61	N/A	N/A
2483.5	27.13	PK	H	25.86	3.67	0.00	56.66	74.00	17.34
2483.5	15.44	AV	H	25.86	3.67	0.00	44.97	54.00	9.03
4904	32.76	PK	H	30.85	5.31	27.43	41.49	74.00	32.51
4904	22.34	AV	H	30.85	5.31	27.43	31.07	54.00	22.93
7356	32.61	PK	H	34.45	6.79	25.87	47.98	74.00	26.02
7356	19.78	AV	H	34.45	6.79	25.87	35.15	54.00	18.85
9808	33.68	PK	H	36.82	8.64	27.09	52.05	74.00	21.95
9808	23.05	AV	H	36.82	8.64	27.09	41.42	54.00	12.58
3280	33.41	PK	H	28.10	5.61	27.30	39.82	74.00	34.18
3280	22.85	AV	H	28.10	5.61	27.30	29.26	54.00	24.74



## FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

### Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

### Test Procedure

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq 3 \times$  RBW
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) 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.



### 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 °C
Relative Humidity:	50 %
ATM Pressure:	100 kPa

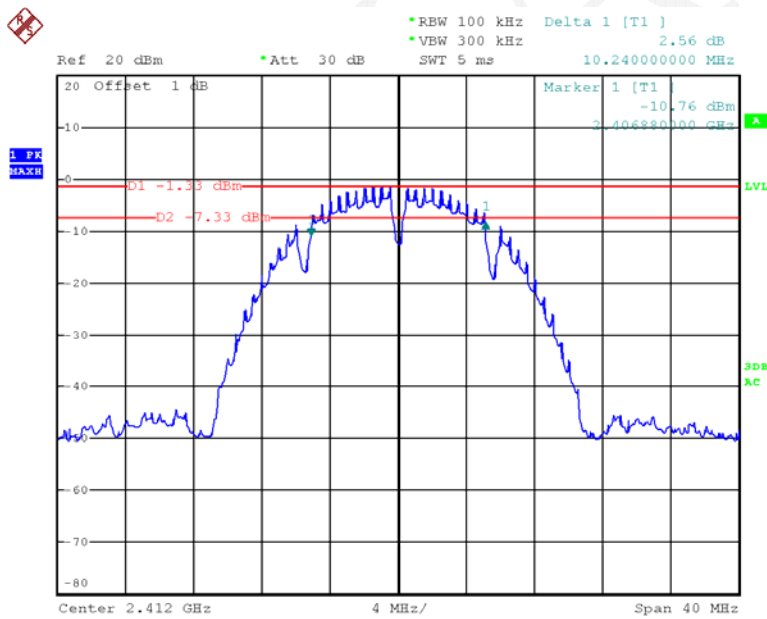
\* The testing was performed by Gavin Xu on 2016-08-12.

Test Mode: Transmitting

Test Result: Compliant. Please refer to the following table and plots.

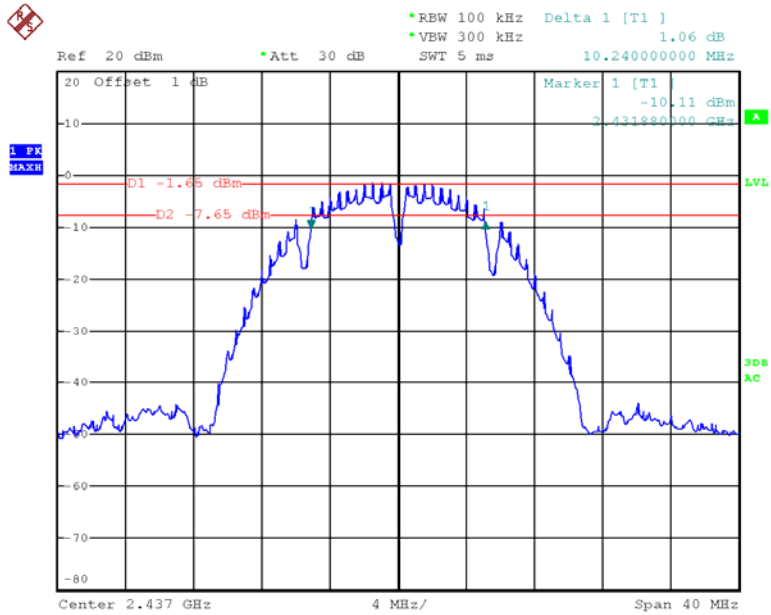
Test mode	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)
802.11b	Low	2412	10.24	≥0.5
	Middle	2437	10.24	≥0.5
	High	2462	10.24	≥0.5
802.11g	Low	2412	16.64	≥0.5
	Middle	2437	16.56	≥0.5
	High	2462	16.64	≥0.5
802.11n20	Low	2412	17.76	≥0.5
	Middle	2437	17.84	≥0.5
	High	2462	17.76	≥0.5
802.11n40	Low	2422	35.52	≥0.5
	Middle	2437	35.68	≥0.5
	High	2452	35.52	≥0.5

802.11b Low Channel



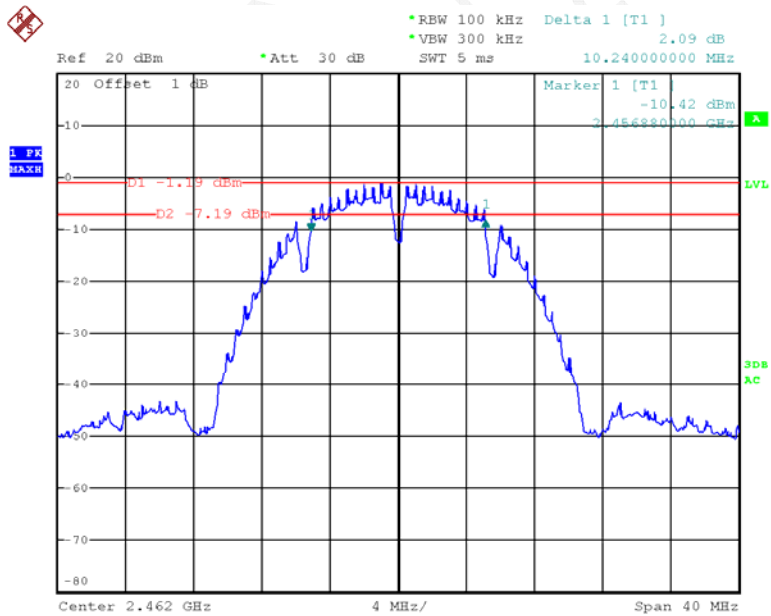
Date: 12.AUG.2016 16:16:17

### 802.11b Middle Channel



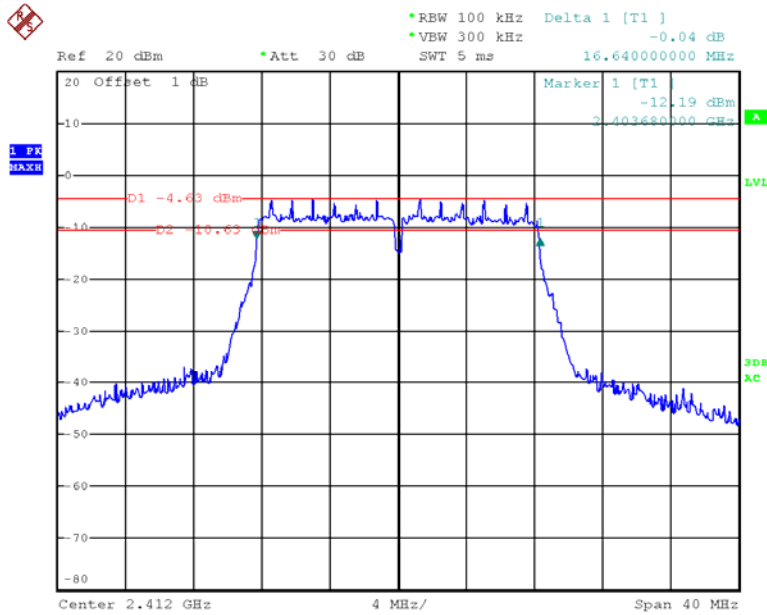
Date: 12.AUG.2016 16:27:25

### 802.11b High Channel



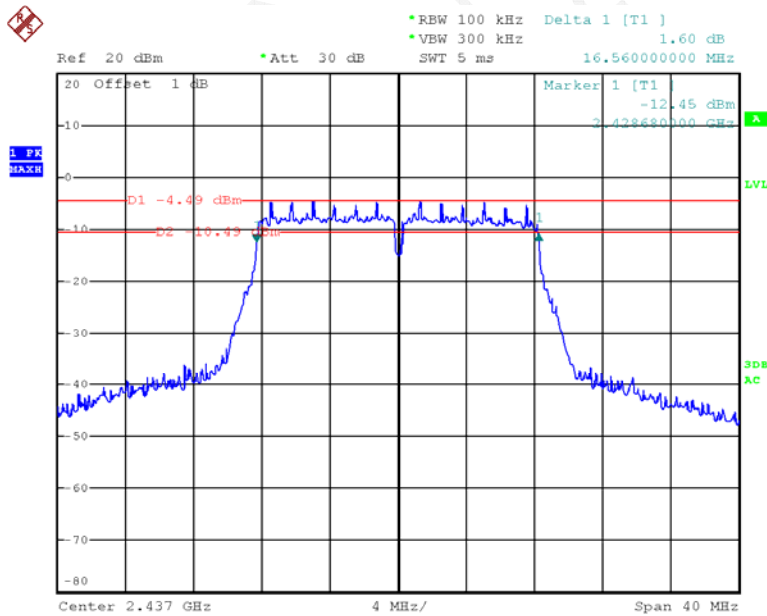
Date: 12.AUG.2016 16:34:58

### 802.11g Low Channel



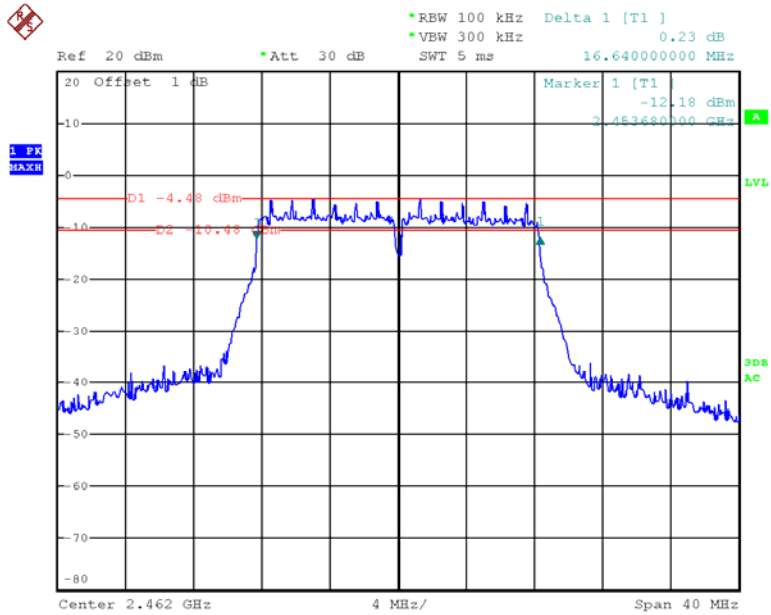
Date: 12.AUG.2016 16:42:25

### 802.11g Middle Channel



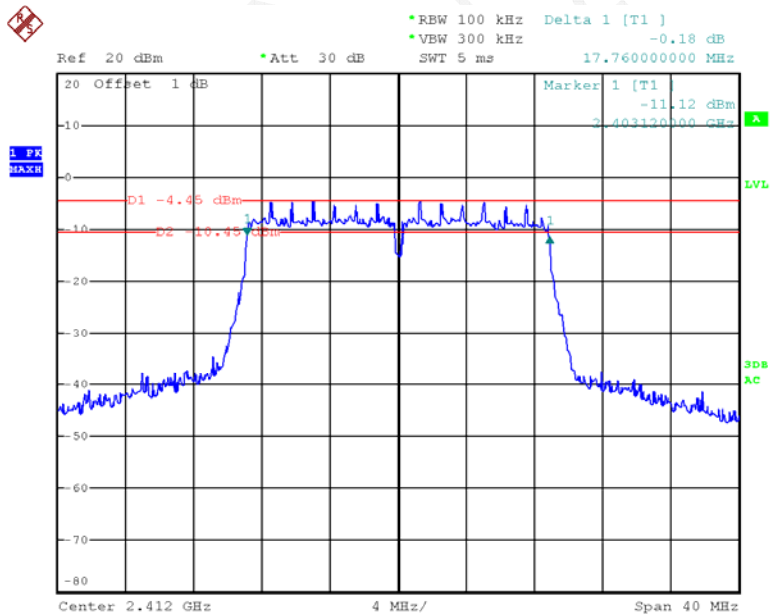
Date: 12.AUG.2016 16:48:21

### 802.11g High Channel



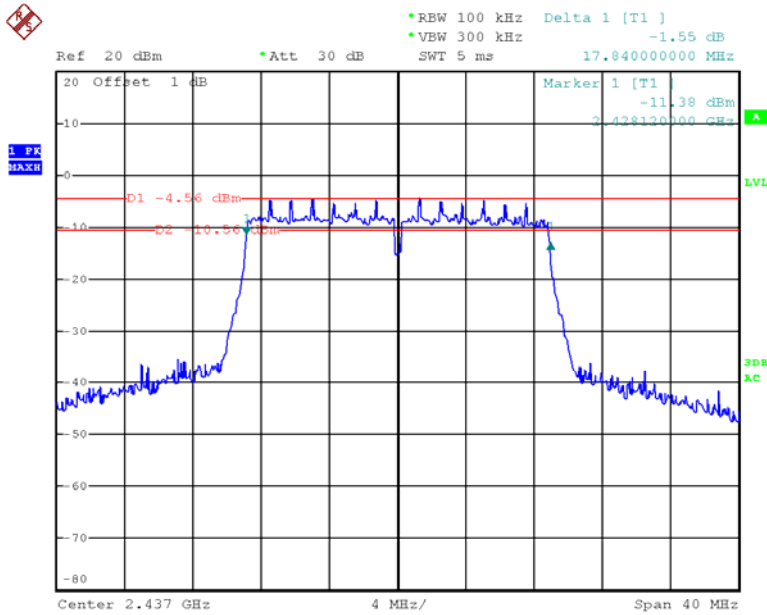
Date: 12.AUG.2016 16:51:46

### 802.11n ht20 Low Channel



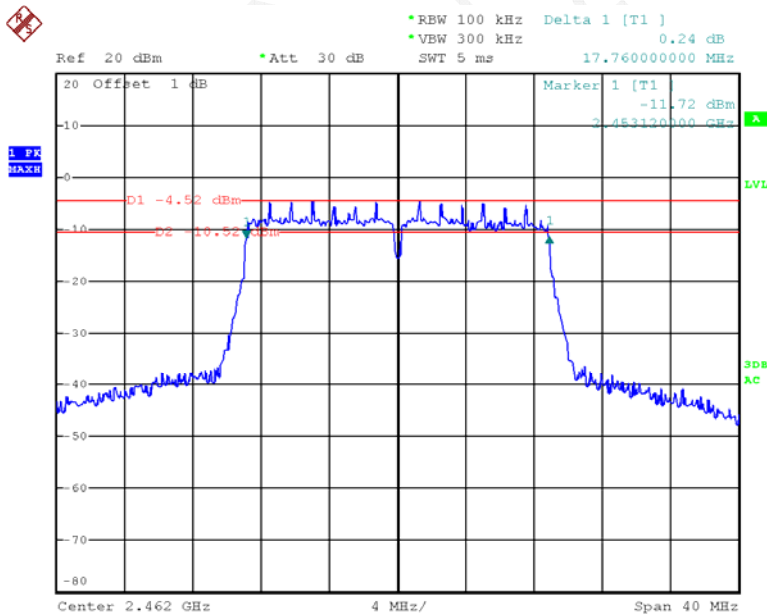
Date: 12.AUG.2016 16:59:55

### 802.11n ht20 Middle Channel



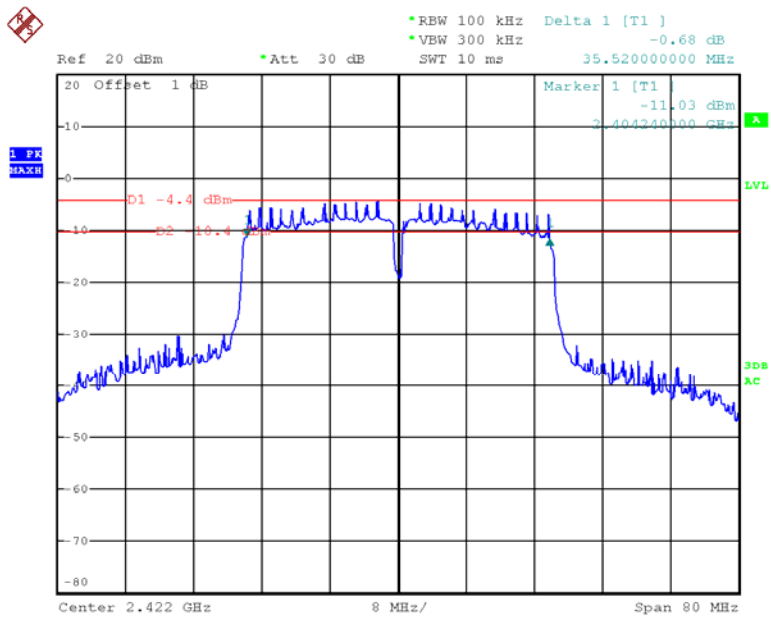
Date: 12.AUG.2016 17:05:17

### 802.11n ht20 High Channel



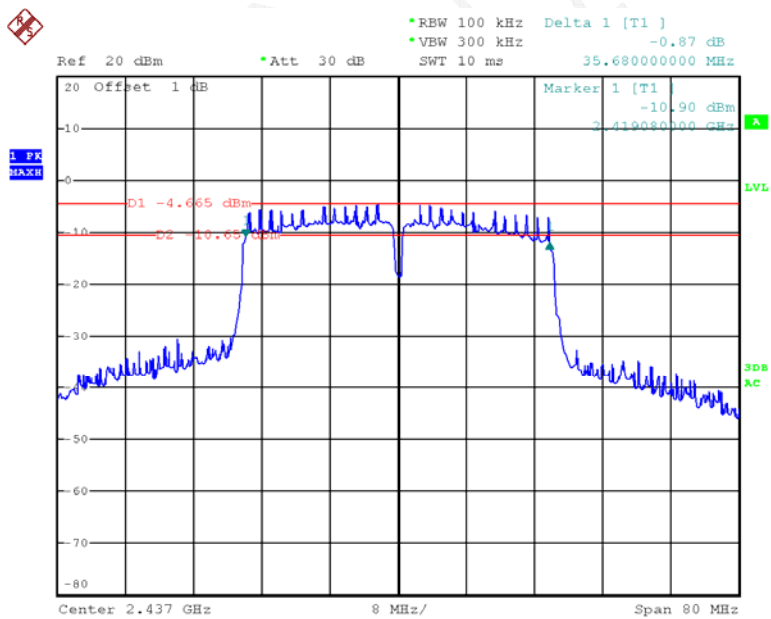
Date: 12.AUG.2016 17:08:39

### 802.11n ht40 Low Channel



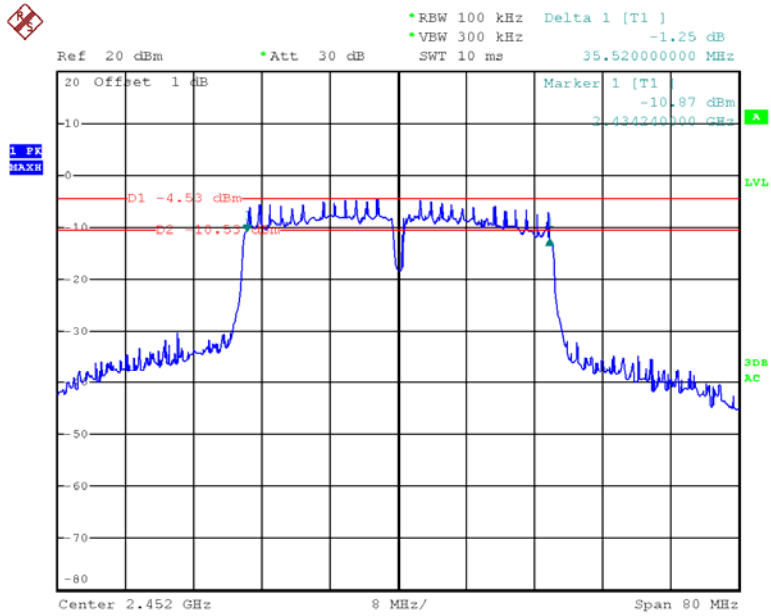
Date: 12.AUG.2016 17:16:23

### 802.11n ht40 Middle Channel



Date: 12.AUG.2016 17:21:09

### 802.11n ht40 High Channel



Date: 12.AUG.2016 17:27:57



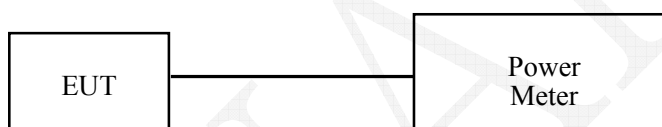
## FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

### Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

### Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to test equipment.
3. Add a correction factor to the display.



### 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 Data

#### Environmental Conditions

Temperature:	30.5 °C
Relative Humidity:	50 %
ATM Pressure:	100 kPa

\* The testing was performed by Gavin Xu on 2016-08-12.

*Test Mode: Transmitting*

*Test Result: Compliant. Please refer to the following table.*

Test mode	Channel	Frequency	Max Peak Conducted Output Power	Limit
		(MHz)	(dBm)	(dBm)
802.11b	Low	2412	11.56	30
	Middle	2437	11.57	30
	High	2462	11.62	30
802.11g	Low	2412	14.02	30
	Middle	2437	14.07	30
	High	2462	14.04	30
802.11n20	Low	2412	14	30
	Middle	2437	14.11	30
	High	2462	14.1	30
802.11n40	Low	2422	17.15	30
	Middle	2437	17.26	30
	High	2452	17.25	30

## FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

### Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

### 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

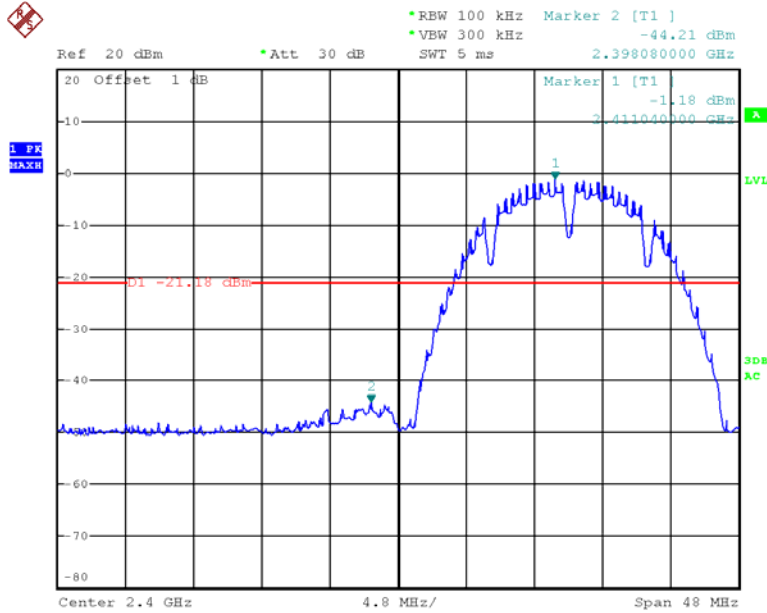
Temperature:	30.5 °C
Relative Humidity:	50 %
ATM Pressure:	100 kPa

\* The testing was performed by Gavin Xu on 2016-08-12.

Test mode: Transmitting

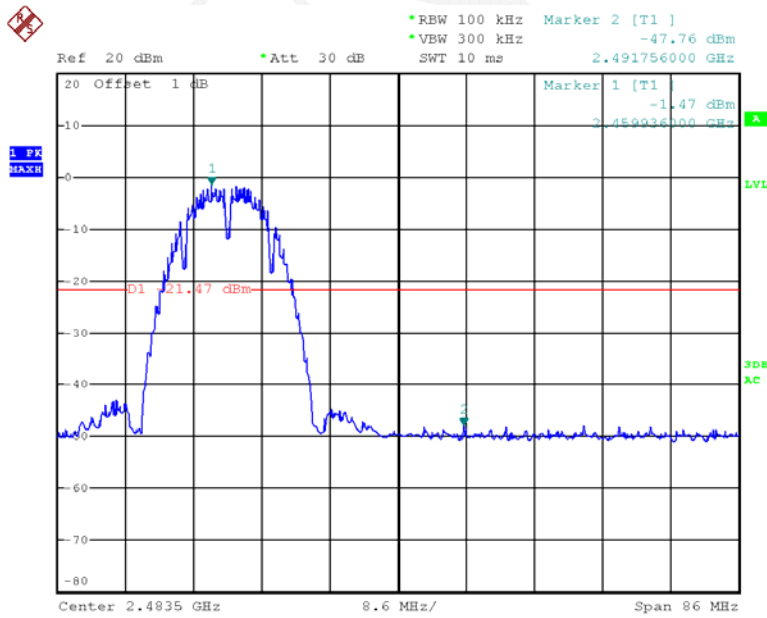
Test Result: Compliant. Please refer to following plots.

### 802.11b: Band Edge, Left Side



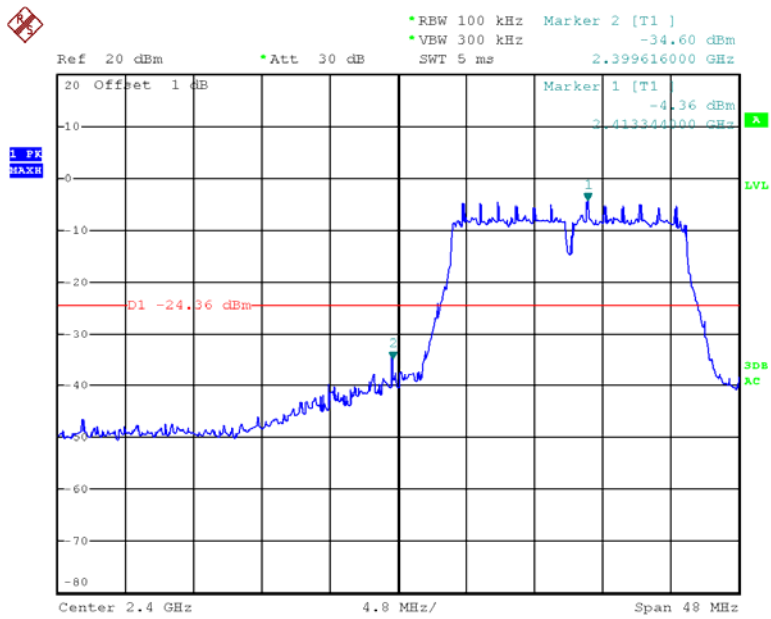
Date: 12.AUG.2016 16:22:41

### 802.11b: Band Edge, Right Side



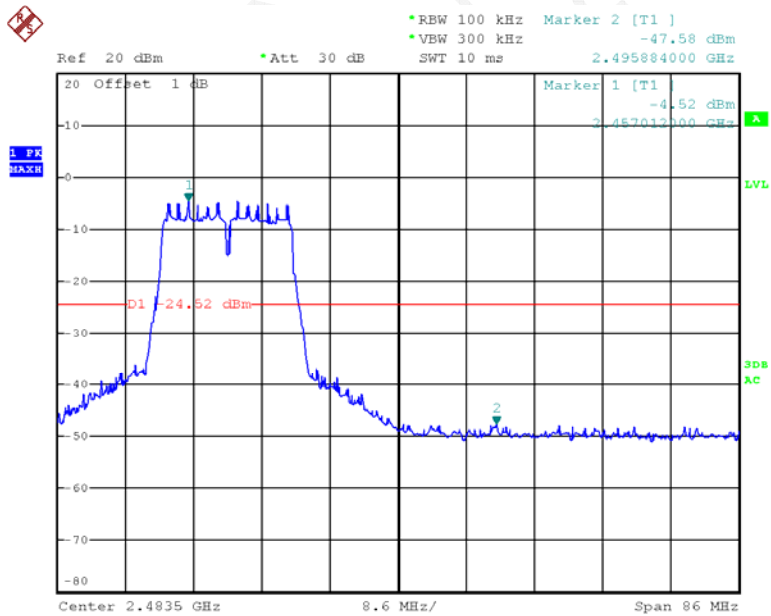
Date: 12.AUG.2016 16:36:08

### 802.11g: Band Edge, Left Side



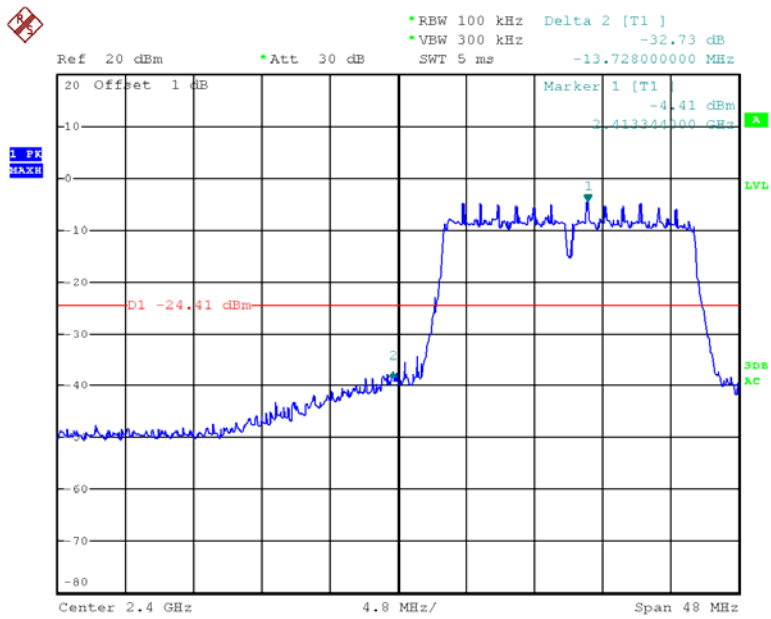
Date: 12.AUG.2016 16:43:42

### 802.11g: Band Edge, Right Side



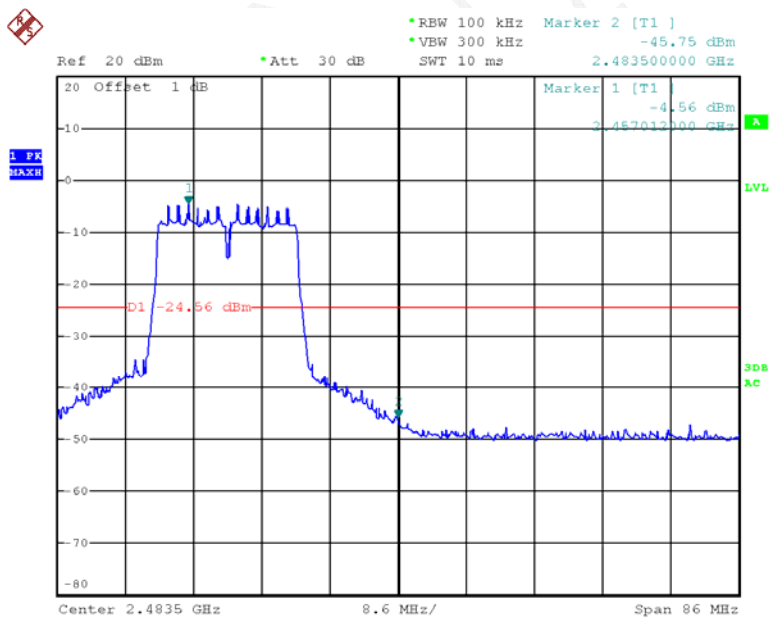
Date: 12.AUG.2016 16:52:52

### 802.11n ht20 Band Edge, Left Side



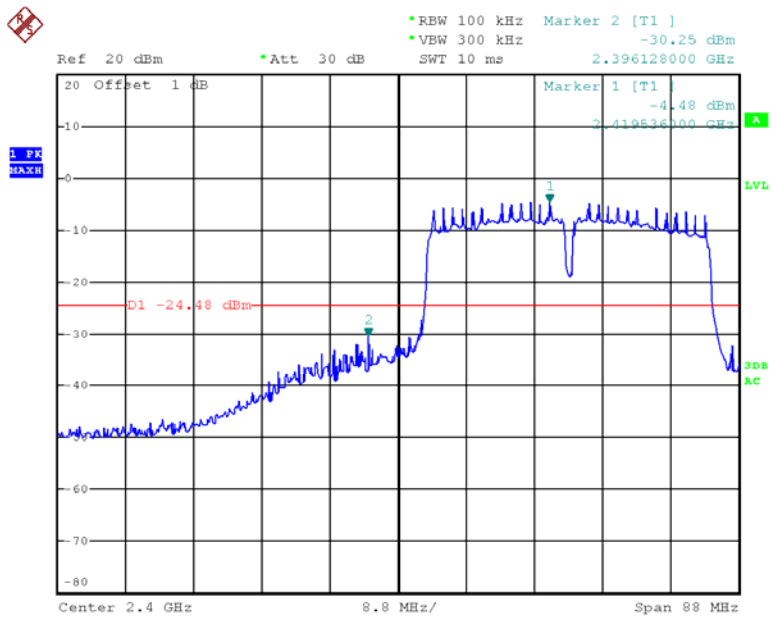
Date: 12.AUG.2016 17:00:43

### 802.11n ht20 Band Edge, Right Side



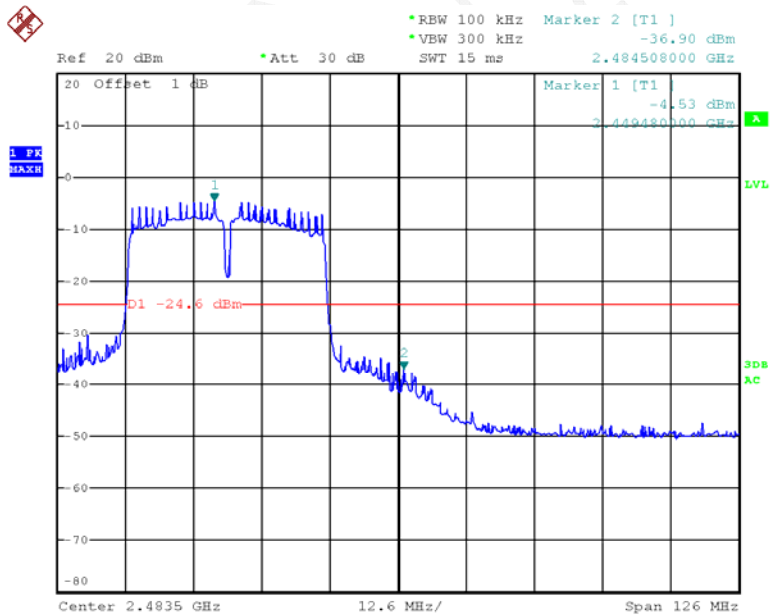
Date: 12.AUG.2016 17:10:00

### 802.11n ht40 Band Edge, Left Side



Date: 12.AUG.2016 17:17:16

### 802.11n ht40 Band Edge, Right Side



Date: 12.AUG.2016 17:29:09

## FCC §15.247(e) - POWER SPECTRAL DENSITY

### Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

### Test Procedure

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- d) Set the VBW  $\geq 3 \times \text{RBW}$ .
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.
- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

### 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 °C
Relative Humidity:	50 %
ATM Pressure:	100 kPa

\* The testing was performed by Gavin Xu on 2016-08-12.

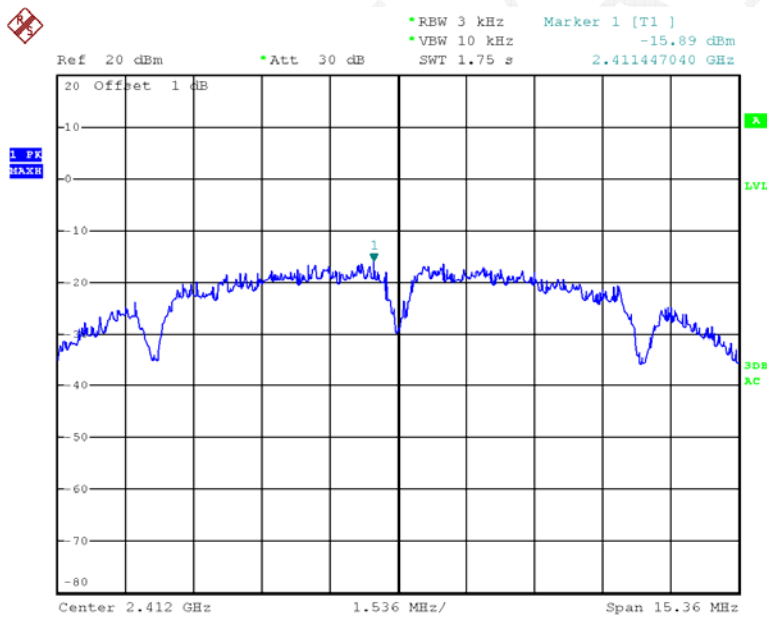


Test Mode: Transmitting

Test Result: Compliant. Please refer to the following table and plots

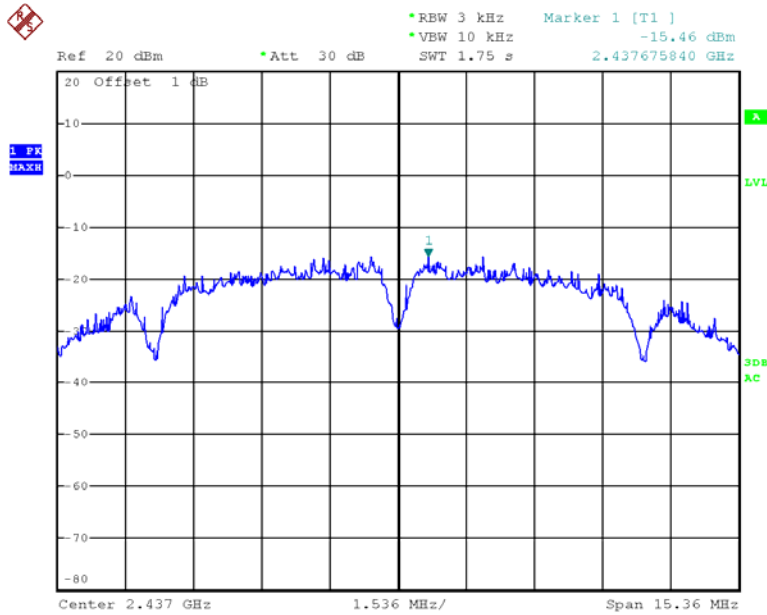
Test mode	Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
802.11b	Low	2412	-15.89	≤8
	Middle	2437	-15.46	≤8
	High	2462	-15.58	≤8
802.11g	Low	2412	-18.39	≤8
	Middle	2437	-18.7	≤8
	High	2462	-18.32	≤8
802.11n20	Low	2412	-19.3	≤8
	Middle	2437	-19.19	≤8
	High	2462	-19.14	≤8
802.11n40	Low	2422	-19.3	≤8
	Middle	2437	-19.54	≤8
	High	2452	-19.33	≤8

Power Spectral Density, 802.11b Low Channel



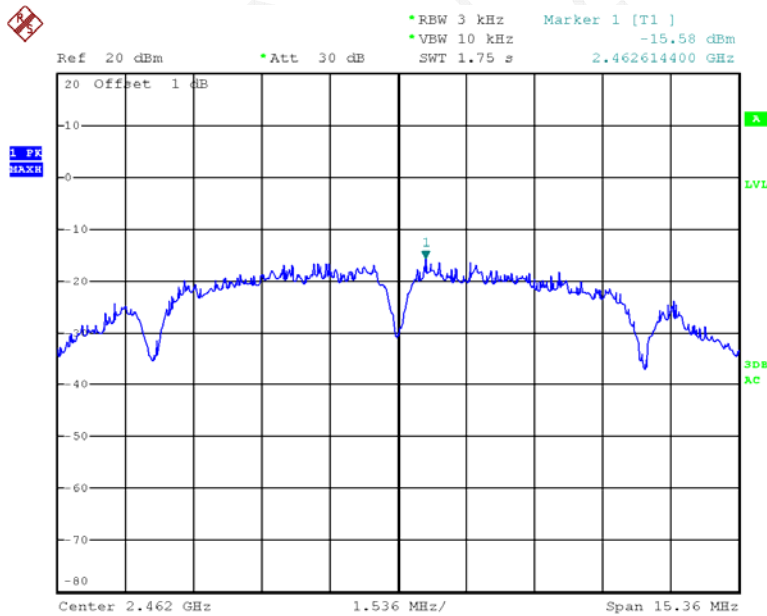
Date: 12.AUG.2016 16:25:06

### Power Spectral Density, 802.11b Middle Channel



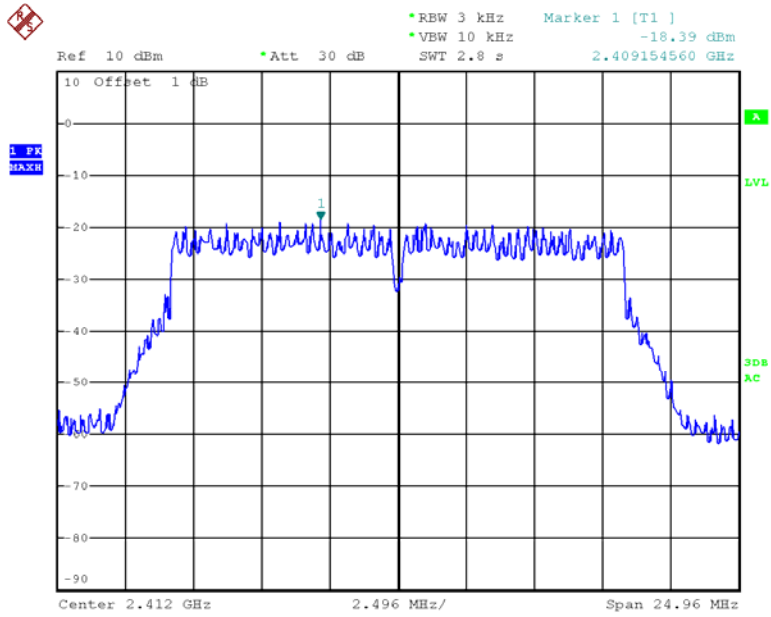
Date: 12.AUG.2016 16:32:17

### Power Spectral Density, 802.11b High Channel



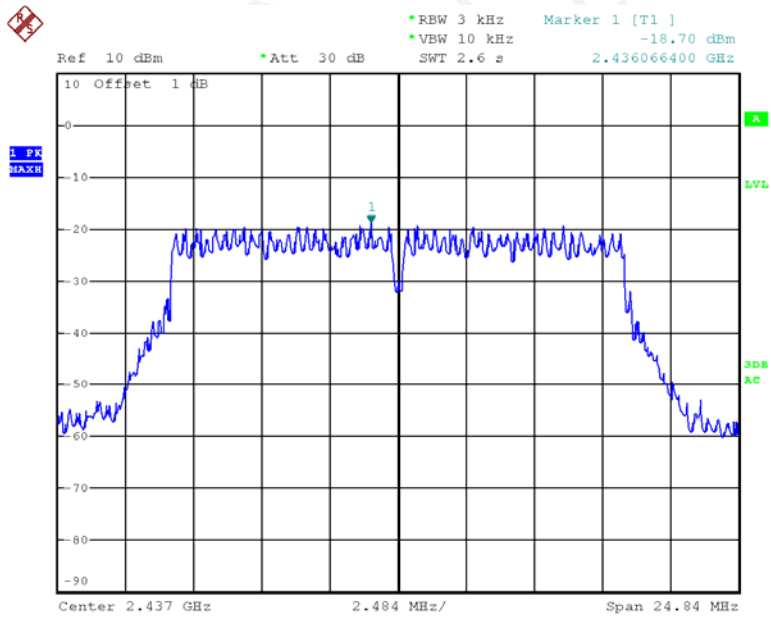
Date: 12.AUG.2016 16:36:59

### Power Spectral Density, 802.11g Low Channel



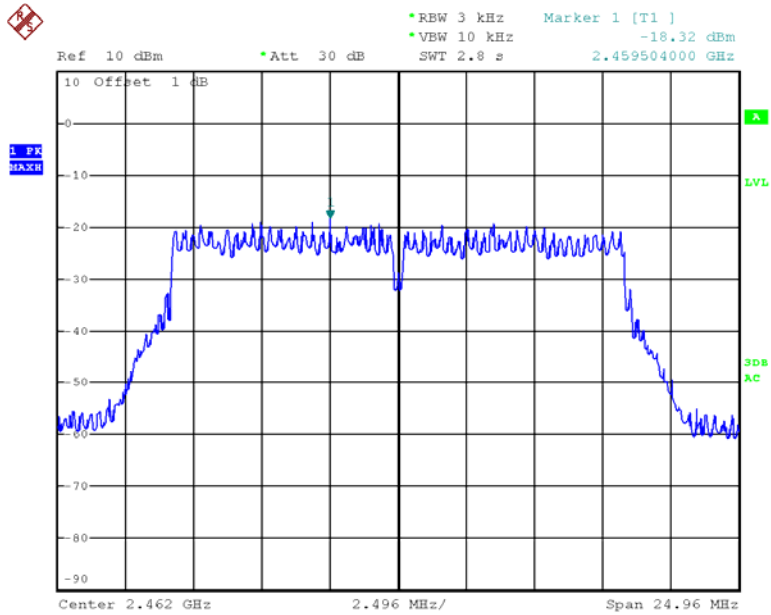
Date: 12.AUG.2016 16:45:05

### Power Spectral Density, 802.11g Middle Channel



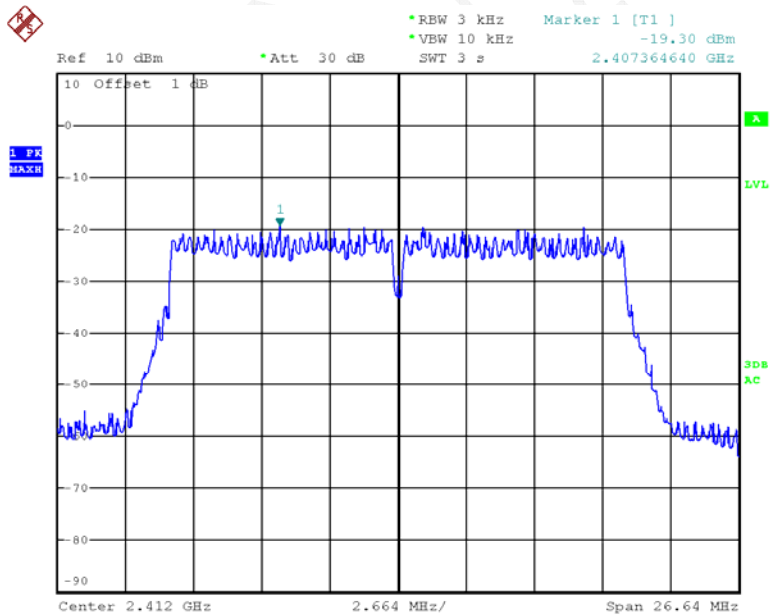
Date: 12.AUG.2016 16:49:19

### Power Spectral Density, 802.11g High Channel



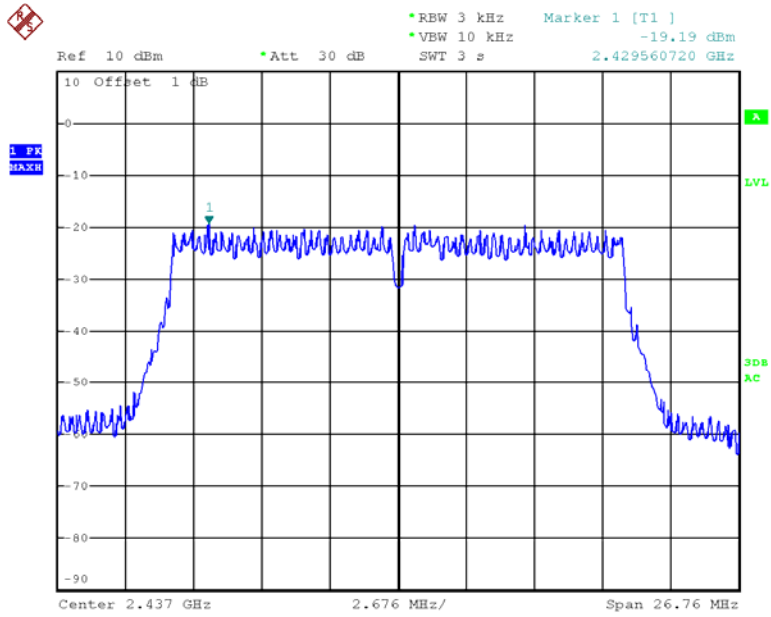
Date: 12.AUG.2016 16:54:09

### Power Spectral Density, 802.11n ht20 Low Channel



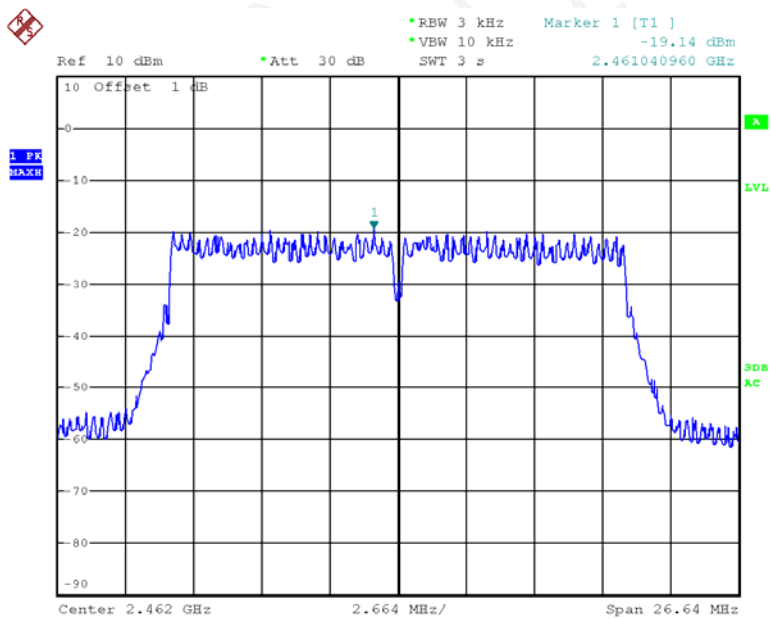
Date: 12.AUG.2016 17:02:45

### Power Spectral Density, 802.11n ht20 Middle Channel



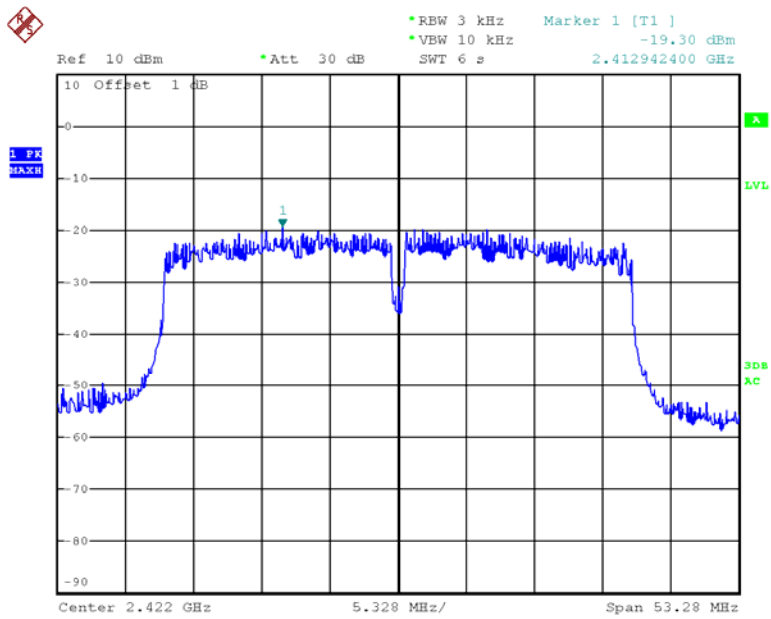
Date: 12.AUG.2016 17:06:21

### Power Spectral Density, 802.11n ht20 High Channel



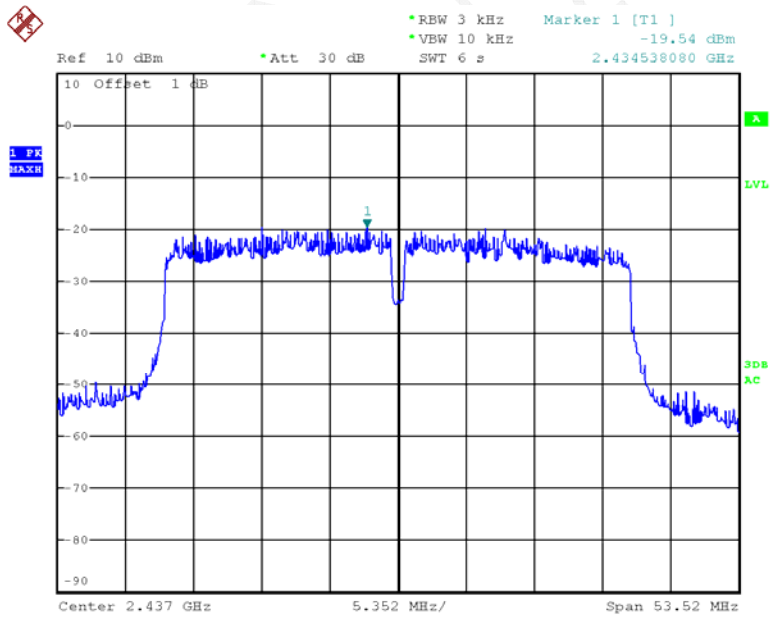
Date: 12.AUG.2016 17:11:31

### Power Spectral Density, 802.11n ht40 Low Channel



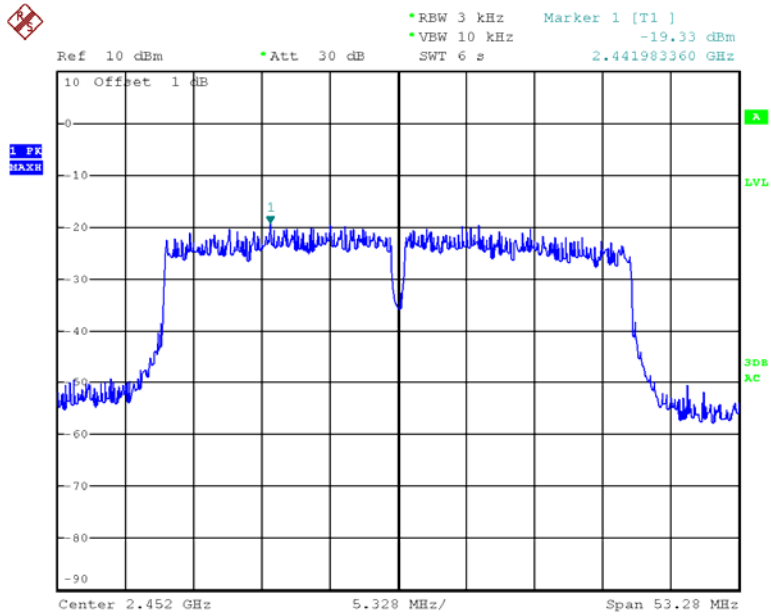
Date: 12.AUG.2016 17:25:00

### Power Spectral Density, 802.11n ht40 Middle Channel



Date: 12.AUG.2016 17:23:04

### Power Spectral Density, 802.11n ht40 High Channel



Date: 12.AUG.2016 17:30:41

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