

## FCC PART 15.407

## TEST REPORT

For

### SZ DJI TECHNOLOGY CO., LTD

14th floor, West Wing, Skyworth Semiconductor Design Building NO.18 Gaoxin South 4th Ave,  
Nanshan, Shenzhen, Guangdong, China

**FCC ID: SS3-M1P1607**

|                                                                                                                                                                                                                                                                                 |                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>Report Type:</b><br>Original Report                                                                                                                                                                                                                                          | <b>Product Type:</b><br>Mavic Pro |
| <b>Test Engineer:</b> Kira Liu <i>Kira Liu</i>                                                                                                                                                                                                                                  |                                   |
| <b>Report Number:</b> RDG160806002-00B                                                                                                                                                                                                                                          |                                   |
| <b>Report Date:</b> 2016-08-20                                                                                                                                                                                                                                                  |                                   |
| <b>Reviewed By:</b> Ivan Cao <i>Ivan Cao</i><br>Assistant Manager                                                                                                                                                                                                               |                                   |
| <b>Test Laboratory:</b> Bay Area Compliance Laboratories Corp. (Dongguan)<br>No.69 Pulongcun, Puxinhu Industrial Zone,<br>Tangxia, Dongguan, Guangdong, China<br>Tel: +86-769-86858888<br>Fax: +86-769-86858891<br><a href="http://www.baclcorp.com.cn">www.baclcorp.com.cn</a> |                                   |

**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).

## **TABLE OF CONTENTS**

|                                                                                              |           |
|----------------------------------------------------------------------------------------------|-----------|
| <b>GENERAL INFORMATION.....</b>                                                              | <b>4</b>  |
| PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) .....                                     | 4         |
| OBJECTIVE .....                                                                              | 4         |
| RELATED SUBMITTAL(S)/GRANT(S).....                                                           | 4         |
| TEST METHODOLOGY .....                                                                       | 5         |
| TEST FACILITY .....                                                                          | 5         |
| <b>SYSTEM TEST CONFIGURATION.....</b>                                                        | <b>6</b>  |
| DESCRIPTION OF TEST CONFIGURATION .....                                                      | 6         |
| EUT EXERCISE SOFTWARE .....                                                                  | 6         |
| EQUIPMENT MODIFICATIONS .....                                                                | 7         |
| SUPPORT EQUIPMENT LIST AND DETAILS .....                                                     | 7         |
| EXTERNAL CABLE.....                                                                          | 7         |
| BLOCK DIAGRAM OF TEST SETUP .....                                                            | 8         |
| <b>SUMMARY OF TEST RESULTS .....</b>                                                         | <b>10</b> |
| <b>FCC §15.407 (f) &amp; §1.1310 &amp; §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE) .....</b> | <b>11</b> |
| APPLICABLE STANDARD .....                                                                    | 11        |
| <b>FCC §15.203 – ANTENNA REQUIREMENT.....</b>                                                | <b>13</b> |
| APPLICABLE STANDARD .....                                                                    | 13        |
| ANTENNA CONNECTOR CONSTRUCTION .....                                                         | 13        |
| <b>§15.207 (a) – CONDUCTED EMISSIONS.....</b>                                                | <b>14</b> |
| APPLICABLE STANDARD .....                                                                    | 14        |
| MEASUREMENT UNCERTAINTY.....                                                                 | 14        |
| EUT SETUP .....                                                                              | 14        |
| EMI TEST RECEIVER SETUP.....                                                                 | 15        |
| CORRECTED AMPLITUDE & MARGIN CALCULATION .....                                               | 15        |
| TEST EQUIPMENT LIST AND DETAILS.....                                                         | 15        |
| TEST PROCEDURE .....                                                                         | 16        |
| TEST DATA .....                                                                              | 16        |
| <b>FCC §15.209, §15.205 &amp; §15.407(b) (1) (6) (7) –UNWANTED EMISSION.....</b>             | <b>25</b> |
| APPLICABLE STANDARD .....                                                                    | 25        |
| MEASUREMENT UNCERTAINTY.....                                                                 | 26        |
| EUT SETUP .....                                                                              | 26        |
| EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP .....                                            | 27        |
| TEST PROCEDURE .....                                                                         | 27        |
| CORRECTED AMPLITUDE & MARGIN CALCULATION .....                                               | 28        |
| TEST EQUIPMENT LIST AND DETAILS.....                                                         | 28        |
| TEST DATA .....                                                                              | 29        |
| <b>FCC §15.407(a) –EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH .....</b>                       | <b>36</b> |
| APPLICABLE STANDARD .....                                                                    | 36        |
| TEST EQUIPMENT LIST AND DETAILS.....                                                         | 36        |
| TEST PROCEDURE .....                                                                         | 36        |
| TEST DATA .....                                                                              | 36        |

|                                                            |           |
|------------------------------------------------------------|-----------|
| <b>FCC §15.407(a) –MAXIMUM CONDUCTED OUTPUT POWER.....</b> | <b>47</b> |
| APPLICABLE STANDARD .....                                  | 47        |
| TEST EQUIPMENT LIST AND DETAILS.....                       | 48        |
| TEST PROCEDURE .....                                       | 48        |
| TEST DATA .....                                            | 48        |
| <b>FCC §15.407(a) - POWER SPECTRAL DENSITY .....</b>       | <b>50</b> |
| APPLICABLE STANDARD .....                                  | 50        |
| TEST PROCEDURE .....                                       | 51        |
| TEST EQUIPMENT LIST AND DETAILS.....                       | 51        |
| TEST DATA .....                                            | 51        |

## GENERAL INFORMATION

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

The *SZ DJI TECHNOLOGY CO., LTD*'s product, model number: *M1P (FCC ID: SS3-M1P1607)* (the "EUT") in this report was a *Mavic Pro*, which was measured approximately: 303.3mm (L) x 249.5mm (W) x 75.2mm(H), DC11.4V from lithium battery, the battery can remove from the EUT and charged by adapter.

#### Adapter 1 information:

Manufacturer: AcTel Electronic (Dong guan) Co., Ltd./China

Model: F1C50

Input: AC 100-240V, 1.4A, 50-60Hz

Total Output Power: 50W Max;

Output: DC13.05V, 3.83A(Main); DC5.0V, 2.0A Total(USB)

#### Adapter 2 information:

Manufacturer: Shenzhen Huntkey Electronics Co., Ltd.

Model: F1C50

Input: AC 100-240V, 1.4A, 50-60Hz

Total Output Power: 50W Max;

Output: DC13.05V, 3.83A(Main); DC5.0V, 2.0A Total(USB)

#### Battery 1 information:

Manufacturer: Sunwoda Electronic Co., LTD.

Model: FB1-3830 mAh-11.4V

Max Charge Voltage: 13.05V

Nominal Voltage:11.4V

Rated Capacity: 3830mAh

#### Battery 2 information:

Manufacturer: Dongguan Amperex Technology Limited

Model: FB1-3830 mAh-11.4V

Max Charge Voltage: 13.05V

Nominal Voltage:11.4V

Rated Capacity: 3830mAh, 43.6Wh

*\* All measurement and test data in this report was gathered from production sample serial number: 160806002. (Assigned by BACL.Dongguan). The EUT was received on 2016-08-01.*

### Objective

This type approval report is prepared on behalf of *SZ DJI 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)

FCC Part 15C DTS submissions with FCC ID: SS3-M1P1607.

FCC Part 15B JBP submissions with FCC ID: SS3-M1P1607.

Part of system submissions with FCC ID: SS3-GL200A1606.

## **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 @5150-5250MHz band and 5725-5850MHz band. 802.11a and n ht20 support SISO and MIMO modes.

For 5150~5250 MHz band, 4 channels are provided to test:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 36      | 5180            | 44      | 5220            |
| 40      | 5200            | 48      | 5240            |

For 802.11a, 802.11n ht20, Channel 36, 40 and 48 were tested

For 5725~5850MHz band, 5 channels are provided to testing:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 149     | 5745            | 161     | 5805            |
| 153     | 5765            | 165     | 5825            |
| 157     | 5785            | /       | /               |

For 802.11a, 802.11n ht20, Channel 149, 157 and 165 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: ' DJI-RF Certification ' was used in testing, which was provided by manufacturer, and configured maximum power (100% dutycycle) as following table:

5150-5250

| Antenna 0&1  |                       |                      |         |         |
|--------------|-----------------------|----------------------|---------|---------|
| Test Mode    | Test Software Version | DJI-RF Certification |         |         |
| 802.11a      | Test Frequency        | 5180MHz              | 5200MHz | 5240MHz |
|              | Data Rate             | 6Mbps                | 6Mbps   | 6Mbps   |
|              | Power Level Setting   | 17                   | 21      | 17      |
| 802.11n ht20 | Test Frequency        | 5180MHz              | 5200MHz | 5240MHz |
|              | Data Rate             | MCS0                 | MCS0    | MCS0    |
|              | Power Level Setting   | 16                   | 21      | 16      |

5725-5850

| Antenna 0&1     |                       |                      |         |         |
|-----------------|-----------------------|----------------------|---------|---------|
| Test Mode       | Test Software Version | DJI-RF Certification |         |         |
| 802.11A         | Test Frequency        | 5745MHz              | 5785MHz | 5825MHz |
|                 | Data Rate             | 6Mbps                | 6Mbps   | 6Mbps   |
|                 | Power Level Setting   | 20                   | 20      | 20      |
| 802.11n<br>ht20 | Test Frequency        | 5745MHz              | 5785MHz | 5825MHz |
|                 | Data Rate             | MCS0                 | MCS0    | MCS0    |
|                 | Power Level Setting   | 20                   | 20      | 20      |

### Equipment Modifications

No modification was made to the EUT.

### Support Equipment List and Details

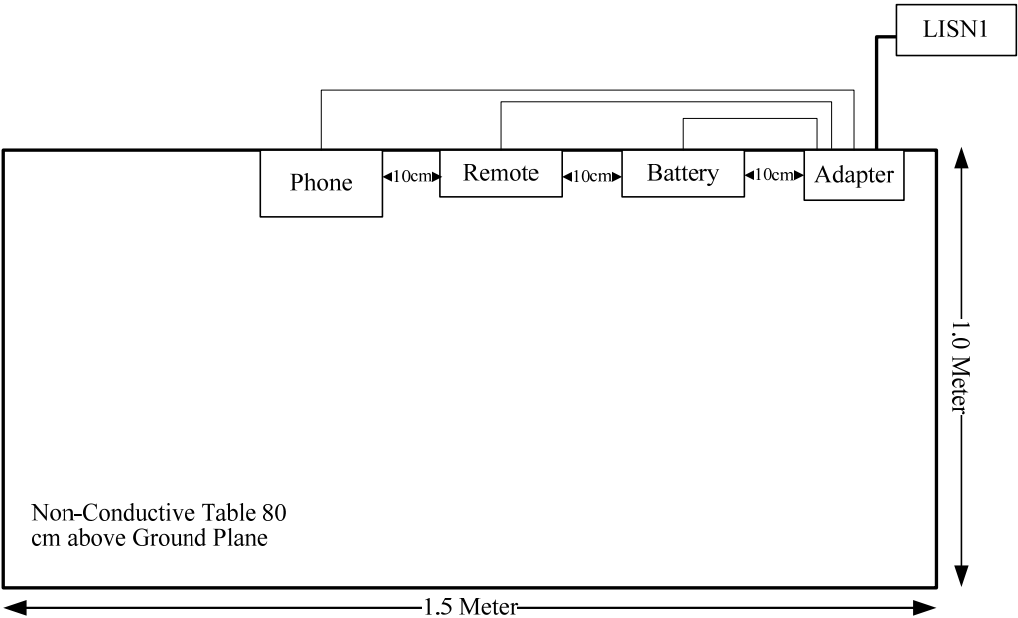
| Manufacturer | Description | Model  | Serial Number   |
|--------------|-------------|--------|-----------------|
| DJI          | Remote      | GL200A | /               |
| Apple        | iPhone      | A1524  | X3CY0TCP17CCCTY |

### External Cable

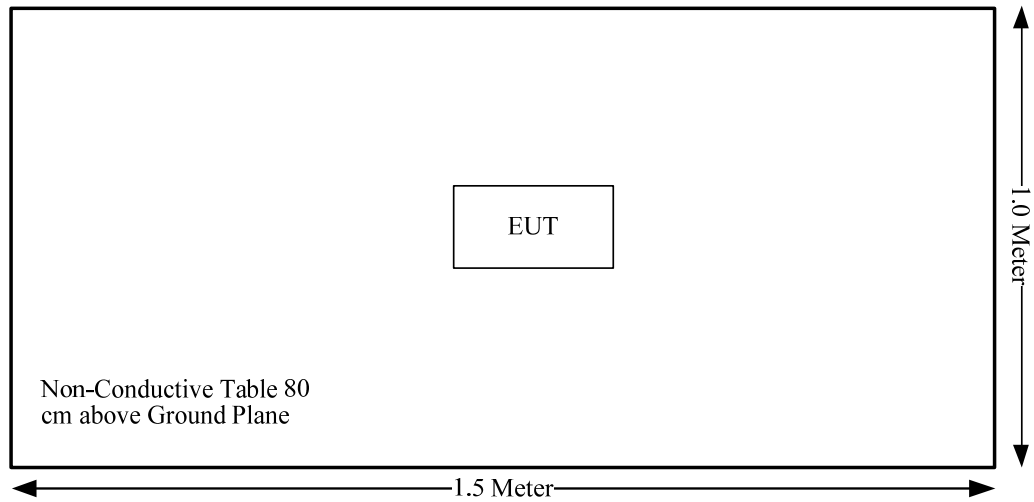
| Cable Description  | Shielding Type | Ferrite Core | Length (m) | From Port | To              |
|--------------------|----------------|--------------|------------|-----------|-----------------|
| Adapter 1 DC cable | yes            | No           | 1.98       | Adapter   | Battery& Remote |
| Adapter 2 DC cable | yes            | No           | 1.98       | Adapter   | Battery& Remote |
| USB Cable          | Yes            | No           | 1.0        | Adapter   | iPhone          |

Block Diagram of Test Setup

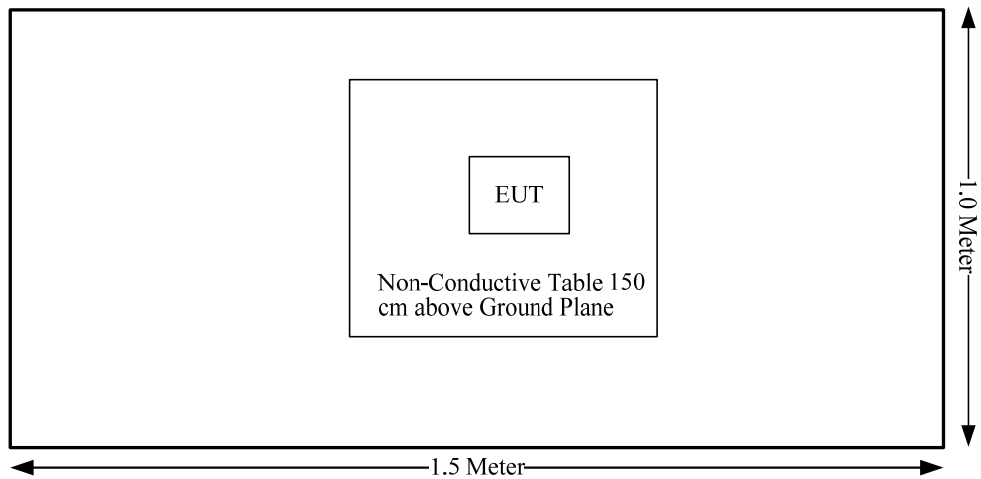
AC Line Conducted Test:



Radiation test below 1GHz:



Radiation test above 1GHz:



**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<br>&§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) (1)                              | 26 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 <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);

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);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

**Calculated Data:**

| Modes        | Frequency Range (MHz) | Antenna Gain |           | Maximum Power Including Tolerance |         | Evaluation Distance (cm) | Power Density (mW/cm <sup>2</sup> ) | MPE Limit (mW/cm <sup>2</sup> ) |
|--------------|-----------------------|--------------|-----------|-----------------------------------|---------|--------------------------|-------------------------------------|---------------------------------|
|              |                       | (dBi)        | (numeric) | (dBm)                             | (mW)    |                          |                                     |                                 |
| 1.4MHz       | 2403.5-2477.5         | 3.93         | 2.47      | 30                                | 1000.00 | 20.00                    | 0.4920                              | 1.0                             |
| 10MHz        | 2405.5-2477.5         | 3.93         | 2.47      | 30                                | 1000.00 | 20.00                    | 0.4920                              | 1.0                             |
| 20MHz        | 2410.5-2472.5         | 3.93         | 2.47      | 30                                | 1000.00 | 20.00                    | 0.4920                              | 1.0                             |
| 802.11b      | 2412-2462             | 3.93         | 2.47      | 25                                | 316.23  | 20.00                    | 0.1556                              | 1.0                             |
| 802.11g      | 2412-2462             | 3.93         | 2.47      | 25                                | 316.23  | 20.00                    | 0.1556                              | 1.0                             |
| 802.11n ht20 | 2412-2462             | 3.93         | 2.47      | 25                                | 316.23  | 20.00                    | 0.1556                              | 1.0                             |
| 802.11a      | 5180-5825             | 5.05         | 3.20      | 16                                | 39.81   | 20.00                    | 0.0253                              | 1.0                             |
| 802.11n ht20 | 5180-5825             | 5.05         | 3.20      | 16                                | 39.81   | 20.00                    | 0.0253                              | 1.0                             |

Note:

The Maximum Power Including Tolerance was declared by manufacturer.

All of the modes can't transmit simultaneously.

**Result: Compliance,** 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 has 2 internal antennas arrangement, and the antennas gain are [3.93dBi@2.4GHz](#), [5.05dBi@5GHz](#), fulfill the requirement of the item. Please refer to the internal photos.

**Result:** Compliance.

## §15.207 (a) – CONDUCTED EMISSIONS

### Applicable Standard

FCC §15.207(a)

### 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:

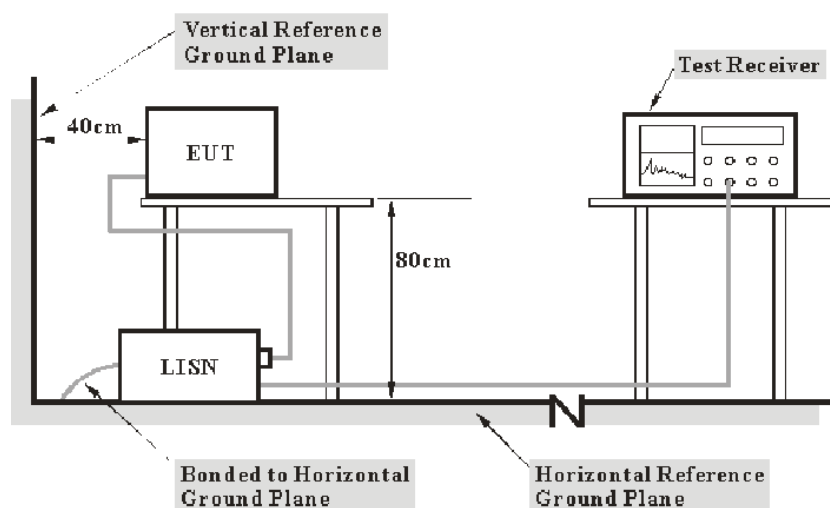
- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit.

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:

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

### 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 Procedure**

During the conducted emission test, the adapter was connected to the first 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 Data****Environmental Conditions**

|                           |         |
|---------------------------|---------|
| <b>Temperature:</b>       | 29 °C   |
| <b>Relative Humidity:</b> | 55 %    |
| <b>ATM Pressure:</b>      | 100 kPa |

*The testing was performed by Emily Wang on 2016-08-10.*

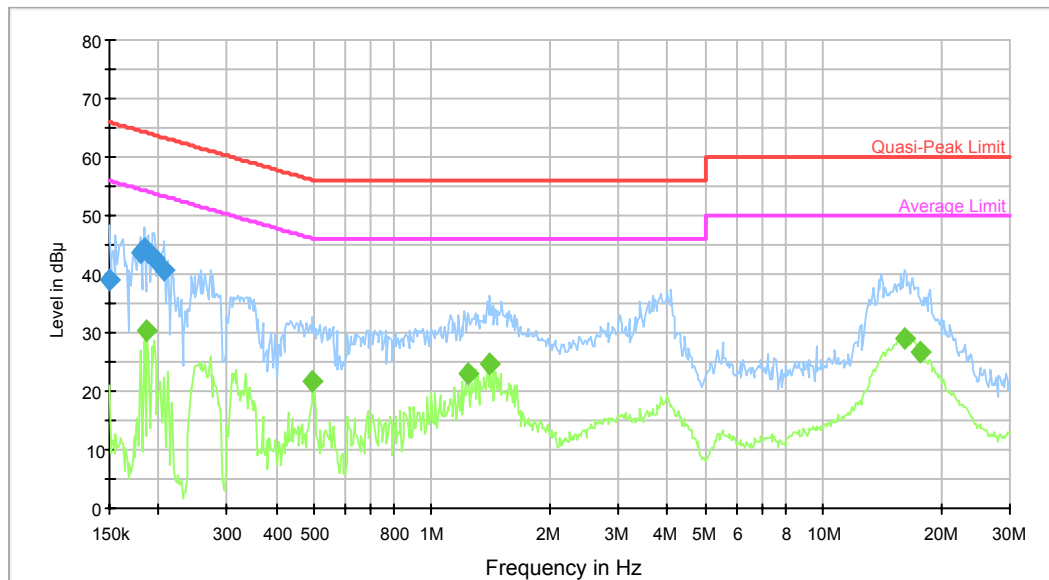
*Test Mode: Transmitting,*

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

Test Mode: Charging

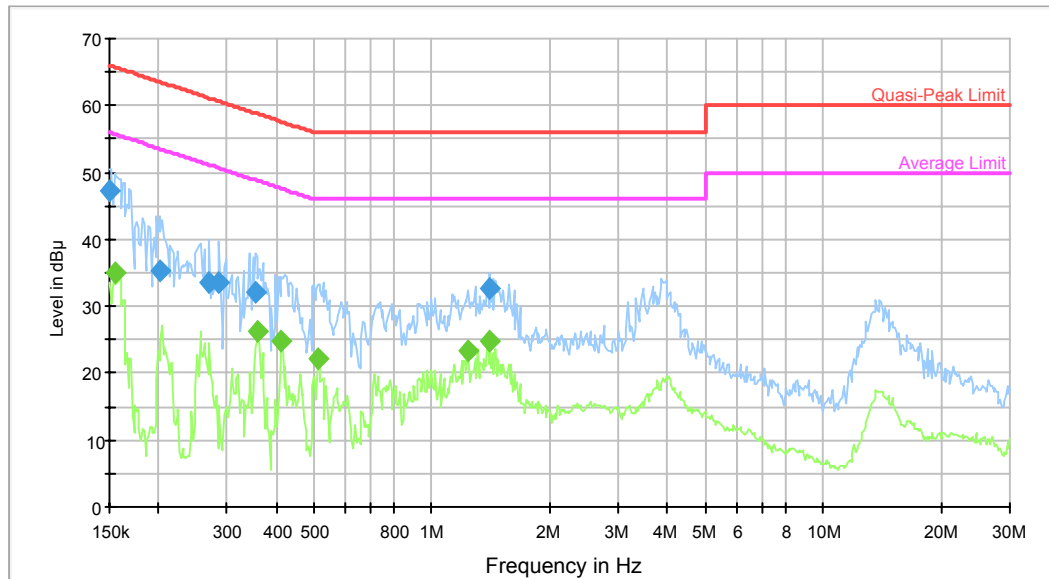
Adapter #1&Battery 1

AC120V, 60Hz, Line:



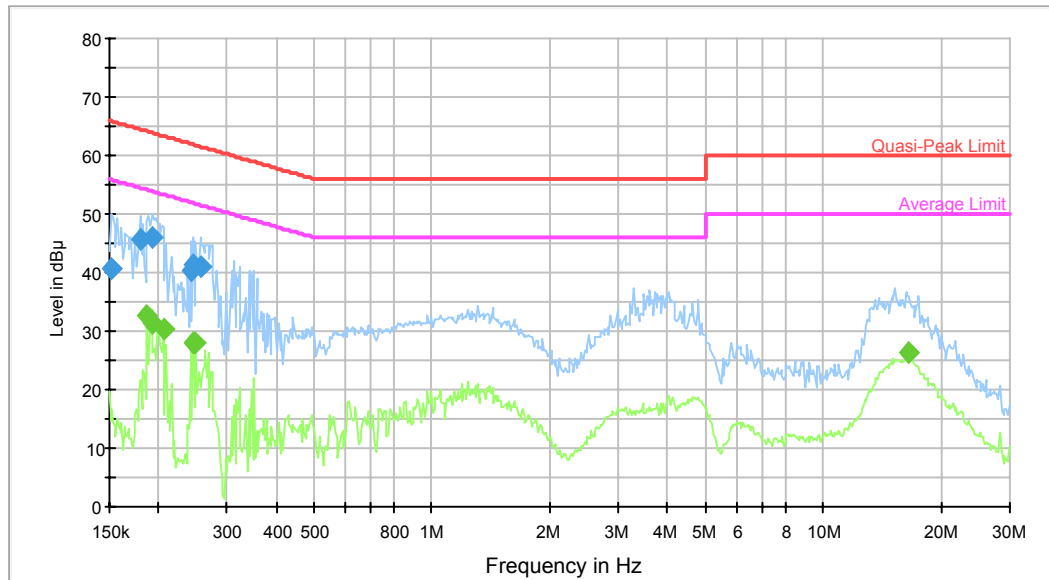
| Frequency (MHz) | QuasiPeak (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|------------|
| 0.150000        | 39.0             | 9.000           | L1   | 10.2       | 27.0        | 66.0         | Compliance |
| 0.180171        | 43.6             | 9.000           | L1   | 10.2       | 20.9        | 64.5         | Compliance |
| 0.184529        | 44.3             | 9.000           | L1   | 10.2       | 20.0        | 64.3         | Compliance |
| 0.188994        | 43.5             | 9.000           | L1   | 10.2       | 20.6        | 64.1         | Compliance |
| 0.195114        | 42.8             | 9.000           | L1   | 10.2       | 21.0        | 63.8         | Compliance |
| 0.207957        | 40.8             | 9.000           | L1   | 10.2       | 22.5        | 63.3         | Compliance |

| Frequency (MHz) | Average (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dB μ V) | Comment    |
|-----------------|----------------|-----------------|------|------------|-------------|----------------|------------|
| 0.187494        | 30.3           | 9.000           | L1   | 10.2       | 23.8        | 54.1           | Compliance |
| 0.495646        | 21.8           | 9.000           | L1   | 10.1       | 24.3        | 46.1           | Compliance |
| 1.239175        | 23.2           | 9.000           | L1   | 10.4       | 22.8        | 46.0           | Compliance |
| 1.407671        | 24.5           | 9.000           | L1   | 10.4       | 21.5        | 46.0           | Compliance |
| 16.122185       | 29.0           | 9.000           | L1   | 10.7       | 21.0        | 50.0           | Compliance |
| 17.739864       | 26.7           | 9.000           | L1   | 10.8       | 23.3        | 50.0           | Compliance |

**AC120V, 60Hz, Neutral:**

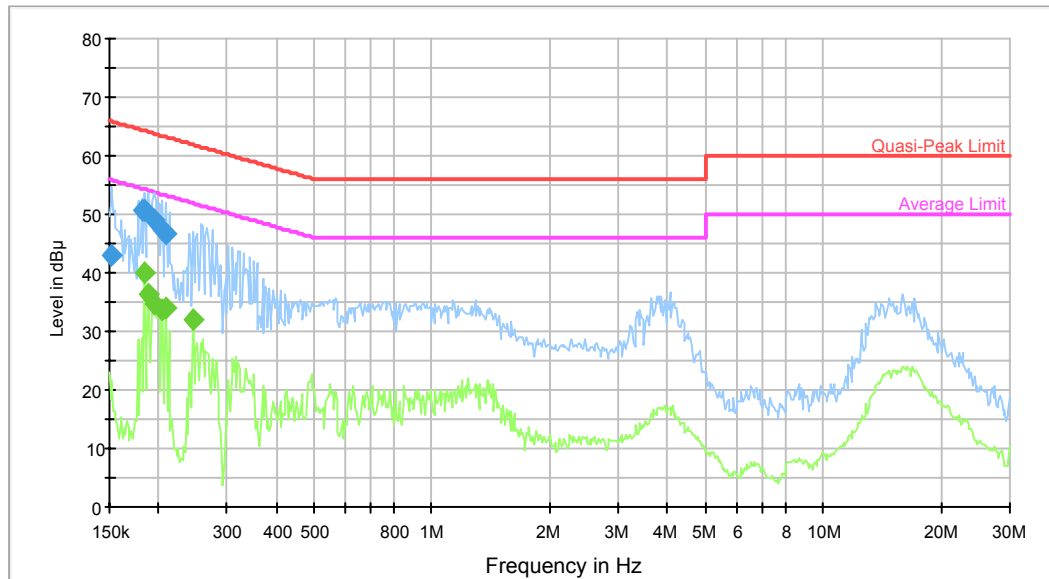
| Frequency (MHz) | QuasiPeak (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|------------|
| 0.150000        | 47.2             | 9.000           | N    | 10.2       | 18.8        | 66.0         | Compliance |
| 0.201433        | 35.2             | 9.000           | N    | 10.2       | 28.4        | 63.6         | Compliance |
| 0.270502        | 33.6             | 9.000           | N    | 10.2       | 27.5        | 61.1         | Compliance |
| 0.286019        | 33.4             | 9.000           | N    | 10.2       | 27.2        | 60.6         | Compliance |
| 0.354674        | 32.0             | 9.000           | N    | 10.3       | 26.9        | 58.9         | Compliance |
| 1.407671        | 32.6             | 9.000           | N    | 10.4       | 23.4        | 56.0         | Compliance |

| Frequency (MHz) | Average (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|----------------|-----------------|------|------------|-------------|--------------|------------|
| 0.154858        | 35.0           | 9.000           | N    | 10.2       | 20.7        | 55.7         | Compliance |
| 0.360371        | 26.3           | 9.000           | N    | 10.3       | 22.4        | 48.7         | Compliance |
| 0.412647        | 24.8           | 9.000           | N    | 10.2       | 22.8        | 47.6         | Compliance |
| 0.511698        | 22.1           | 9.000           | N    | 10.1       | 23.9        | 46.0         | Compliance |
| 1.239175        | 23.2           | 9.000           | N    | 10.4       | 22.8        | 46.0         | Compliance |
| 1.407671        | 24.7           | 9.000           | N    | 10.4       | 21.3        | 46.0         | Compliance |

**Adapter #1&Battery 2****AC120V, 60Hz, Line:**

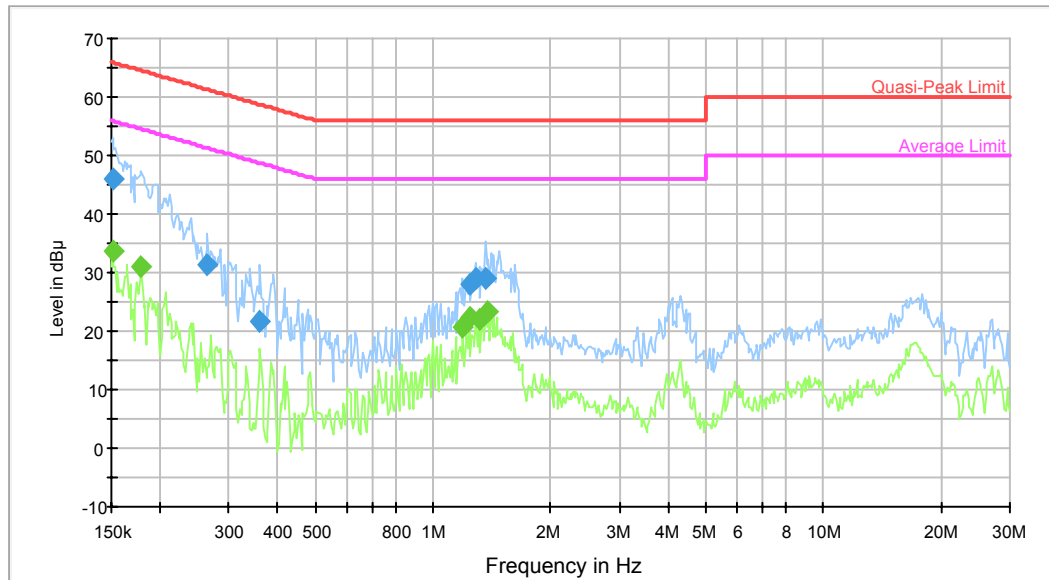
| Frequency (MHz) | QuasiPeak (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|------------|
| 0.152410        | 40.7             | 9.000           | L1   | 10.2       | 25.2        | 65.9         | Compliance |
| 0.180171        | 45.6             | 9.000           | L1   | 10.2       | 18.9        | 64.5         | Compliance |
| 0.193566        | 45.9             | 9.000           | L1   | 10.2       | 18.0        | 63.9         | Compliance |
| 0.241949        | 40.4             | 9.000           | L1   | 10.2       | 21.6        | 62.0         | Compliance |
| 0.245835        | 41.3             | 9.000           | L1   | 10.2       | 20.6        | 61.9         | Compliance |
| 0.255827        | 40.9             | 9.000           | L1   | 10.2       | 20.7        | 61.6         | Compliance |

| Frequency (MHz) | Average ((dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|-----------------|-----------------|------|------------|-------------|--------------|------------|
| 0.187494        | 32.7            | 9.000           | L1   | 10.2       | 21.4        | 54.1         | Compliance |
| 0.192030        | 31.3            | 9.000           | L1   | 10.2       | 22.6        | 53.9         | Compliance |
| 0.206306        | 30.4            | 9.000           | L1   | 10.2       | 23.0        | 53.4         | Compliance |
| 0.245835        | 28.1            | 9.000           | L1   | 10.2       | 23.8        | 51.9         | Compliance |
| 0.249785        | 27.9            | 9.000           | L1   | 10.2       | 23.9        | 51.8         | Compliance |
| 16.512221       | 26.2            | 9.000           | L1   | 10.7       | 23.8        | 50.0         | Compliance |

**AC120V, 60Hz, Neutral:**

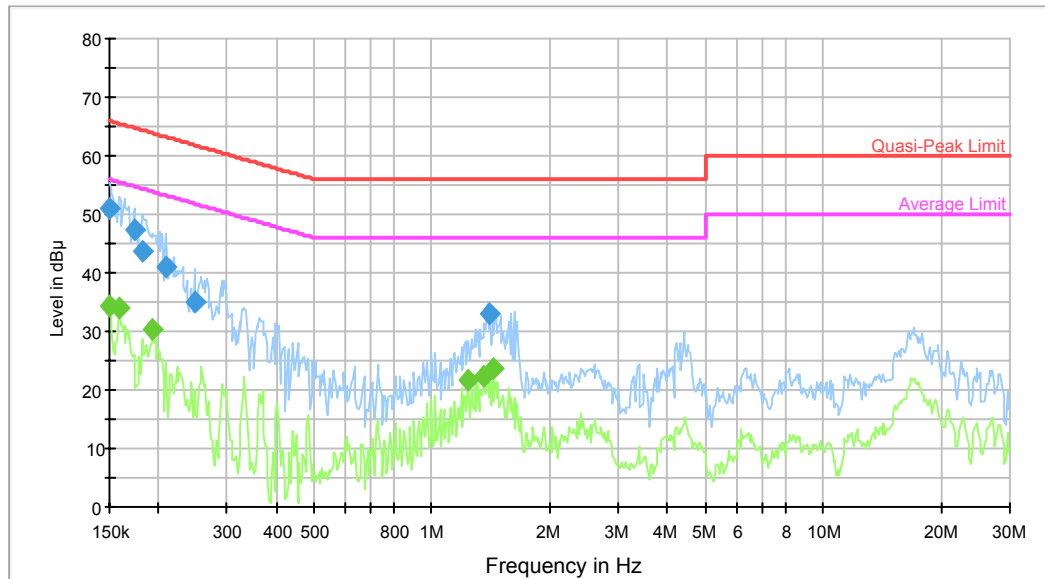
| Frequency (MHz) | QuasiPeak (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|------------|
| 0.152410        | 43.0             | 9.000           | N    | 10.2       | 22.9        | 65.9         | Compliance |
| 0.181612        | 50.6             | 9.000           | N    | 10.1       | 13.8        | 64.4         | Compliance |
| 0.184529        | 50.6             | 9.000           | N    | 10.1       | 13.7        | 64.3         | Compliance |
| 0.195114        | 49.0             | 9.000           | N    | 10.2       | 14.8        | 63.8         | Compliance |
| 0.204669        | 47.4             | 9.000           | N    | 10.2       | 16.0        | 63.4         | Compliance |
| 0.209621        | 46.6             | 9.000           | N    | 10.2       | 16.6        | 63.2         | Compliance |

| Frequency (MHz) | Average (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|----------------|-----------------|------|------------|-------------|--------------|------------|
| 0.184529        | 39.8           | 9.000           | N    | 10.1       | 14.5        | 54.3         | Compliance |
| 0.188994        | 36.2           | 9.000           | N    | 10.2       | 17.9        | 54.1         | Compliance |
| 0.195114        | 34.7           | 9.000           | N    | 10.2       | 19.1        | 53.8         | Compliance |
| 0.204669        | 33.5           | 9.000           | N    | 10.2       | 19.9        | 53.4         | Compliance |
| 0.209621        | 34.0           | 9.000           | N    | 10.2       | 19.2        | 53.2         | Compliance |
| 0.245835        | 31.9           | 9.000           | N    | 10.2       | 20.0        | 51.9         | Compliance |

**Adapter #2&Battery 1****AC120V, 60Hz, Line:**

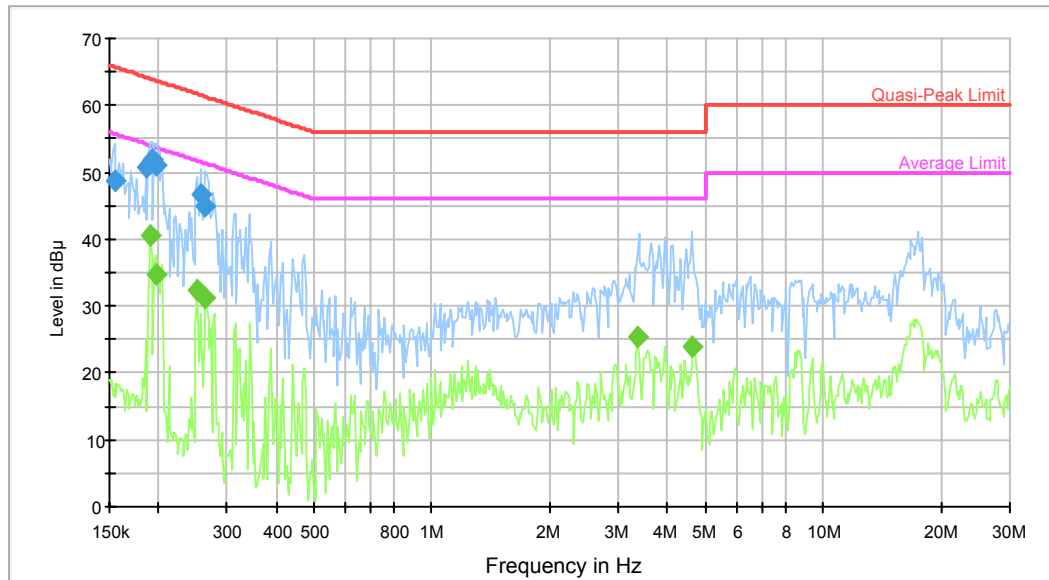
| Frequency (MHz) | QuasiPeak (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|------------|
| 0.151200        | 46.0             | 9.000           | L1   | 10.2       | 19.9        | 65.9         | Compliance |
| 0.264113        | 31.5             | 9.000           | L1   | 10.2       | 29.8        | 61.3         | Compliance |
| 0.360371        | 21.8             | 9.000           | L1   | 10.3       | 36.9        | 58.7         | Compliance |
| 1.239175        | 27.9             | 9.000           | L1   | 10.4       | 28.1        | 56.0         | Compliance |
| 1.289541        | 29.0             | 9.000           | L1   | 10.4       | 27.0        | 56.0         | Compliance |
| 1.363512        | 29.1             | 9.000           | L1   | 10.4       | 26.9        | 56.0         | Compliance |

| Frequency (MHz) | Average (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|----------------|-----------------|------|------------|-------------|--------------|------------|
| 0.151200        | 33.8           | 9.000           | L1   | 10.2       | 22.1        | 55.9         | Compliance |
| 0.178741        | 30.8           | 9.000           | L1   | 10.1       | 23.7        | 54.5         | Compliance |
| 1.190776        | 20.7           | 9.000           | L1   | 10.4       | 25.3        | 46.0         | Compliance |
| 1.239175        | 22.5           | 9.000           | L1   | 10.4       | 23.5        | 46.0         | Compliance |
| 1.310256        | 21.9           | 9.000           | L1   | 10.4       | 24.1        | 46.0         | Compliance |
| 1.385415        | 23.3           | 9.000           | L1   | 10.4       | 22.7        | 46.0         | Compliance |

**AC120V, 60Hz, Neutral:**

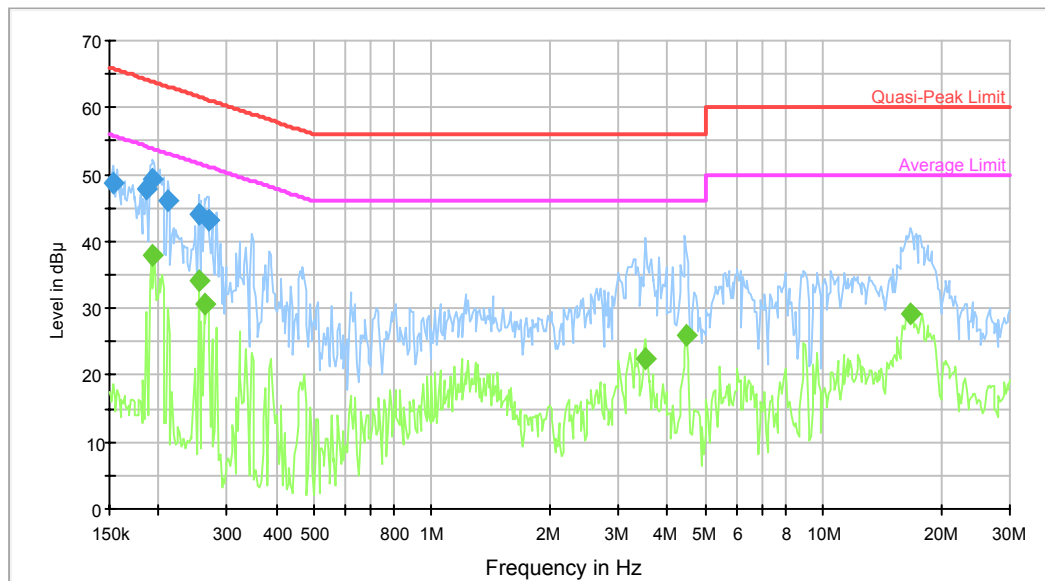
| Frequency (MHz) | QuasiPeak (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|------------|
| 0.150000        | 51.0             | 9.000           | N    | 10.2       | 15.0        | 66.0         | Compliance |
| 0.173134        | 47.2             | 9.000           | N    | 10.1       | 17.6        | 64.8         | Compliance |
| 0.181612        | 43.5             | 9.000           | N    | 10.1       | 20.9        | 64.4         | Compliance |
| 0.209621        | 40.9             | 9.000           | N    | 10.2       | 22.3        | 63.2         | Compliance |
| 0.247802        | 35.0             | 9.000           | N    | 10.2       | 26.8        | 61.8         | Compliance |
| 1.407671        | 32.9             | 9.000           | N    | 10.4       | 23.1        | 56.0         | Compliance |

| Frequency (MHz) | Average (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|----------------|-----------------|------|------------|-------------|--------------|------------|
| 0.150000        | 34.4           | 9.000           | N    | 10.2       | 21.6        | 56.0         | Compliance |
| 0.158604        | 34.0           | 9.000           | N    | 10.1       | 21.5        | 55.5         | Compliance |
| 0.193566        | 30.5           | 9.000           | N    | 10.2       | 23.4        | 53.9         | Compliance |
| 1.239175        | 21.8           | 9.000           | N    | 10.4       | 24.2        | 46.0         | Compliance |
| 1.363512        | 22.2           | 9.000           | N    | 10.4       | 23.8        | 46.0         | Compliance |
| 1.430284        | 23.6           | 9.000           | N    | 10.4       | 22.4        | 46.0         | Compliance |

**Adapter #2&Battery 2****AC120V, 60Hz, Line:**

| Frequency (MHz) | QuasiPeak (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|------------|
| 0.154858        | 48.6             | 9.000           | L1   | 10.2       | 17.1        | 65.7         | Compliance |
| 0.186006        | 50.8             | 9.000           | L1   | 10.2       | 13.4        | 64.2         | Compliance |
| 0.192030        | 52.0             | 9.000           | L1   | 10.2       | 12.0        | 64.0         | Compliance |
| 0.196675        | 51.0             | 9.000           | L1   | 10.2       | 12.7        | 63.7         | Compliance |
| 0.255827        | 46.8             | 9.000           | L1   | 10.2       | 14.8        | 61.6         | Compliance |
| 0.264113        | 44.9             | 9.000           | L1   | 10.2       | 16.4        | 61.3         | Compliance |

| Frequency (MHz) | Average (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|----------------|-----------------|------|------------|-------------|--------------|------------|
| 0.190505        | 40.6           | 9.000           | L1   | 10.2       | 13.4        | 54.0         | Compliance |
| 0.196675        | 34.7           | 9.000           | L1   | 10.2       | 19.0        | 53.7         | Compliance |
| 0.251783        | 32.5           | 9.000           | L1   | 10.2       | 19.2        | 51.7         | Compliance |
| 0.264113        | 31.3           | 9.000           | L1   | 10.2       | 20.0        | 51.3         | Compliance |
| 3.355051        | 25.3           | 9.000           | L1   | 10.6       | 20.7        | 46.0         | Compliance |
| 4.651370        | 23.9           | 9.000           | L1   | 10.7       | 22.1        | 46.0         | Compliance |

**AC120V, 60Hz, Neutral:**

| Frequency (MHz) | QuasiPeak (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|------------|
| 0.153629        | 48.6             | 9.000           | N    | 10.2       | 17.2        | 65.8         | Compliance |
| 0.186006        | 47.8             | 9.000           | N    | 10.2       | 16.4        | 64.2         | Compliance |
| 0.193566        | 49.4             | 9.000           | N    | 10.2       | 14.5        | 63.9         | Compliance |
| 0.211298        | 46.0             | 9.000           | N    | 10.2       | 17.2        | 63.2         | Compliance |
| 0.253797        | 43.9             | 9.000           | N    | 10.2       | 17.7        | 61.6         | Compliance |
| 0.268355        | 43.3             | 9.000           | N    | 10.2       | 17.9        | 61.2         | Compliance |

| Frequency (MHz) | Average (dBμV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment    |
|-----------------|----------------|-----------------|------|------------|-------------|--------------|------------|
| 0.192030        | 37.8           | 9.000           | N    | 10.2       | 16.1        | 53.9         | Compliance |
| 0.253797        | 34.2           | 9.000           | N    | 10.2       | 17.4        | 51.6         | Compliance |
| 0.262017        | 30.6           | 9.000           | N    | 10.2       | 20.8        | 51.4         | Compliance |
| 3.519348        | 22.6           | 9.000           | N    | 10.6       | 23.4        | 46.0         | Compliance |
| 4.469698        | 26.0           | 9.000           | N    | 10.7       | 20.0        | 46.0         | Compliance |
| 16.777473       | 29.0           | 9.000           | N    | 10.7       | 21.0        | 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  $U_{cisp}$  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  $U_{cisp}$  of Table 1, then:

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

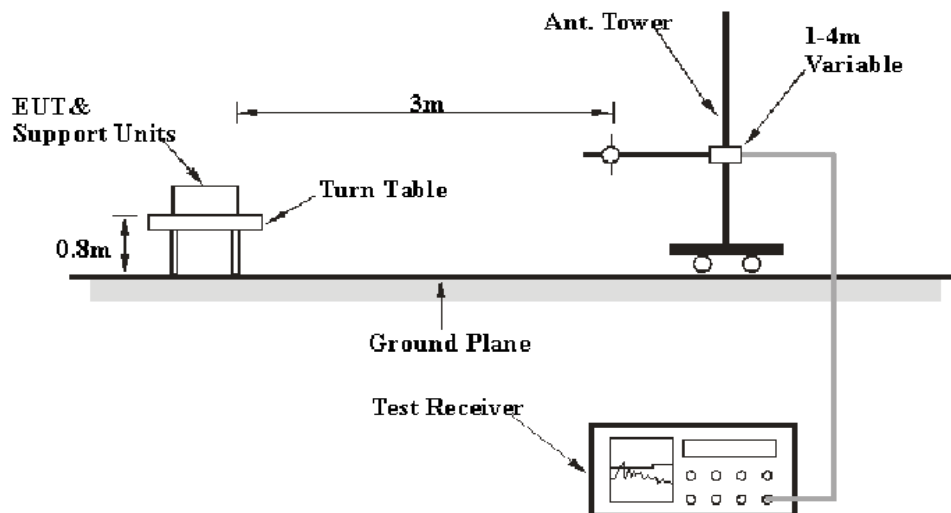
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is: 30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical; 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical; 1G~6GHz: 4.45 dB, 6G~18GHz: 5.23 dB.

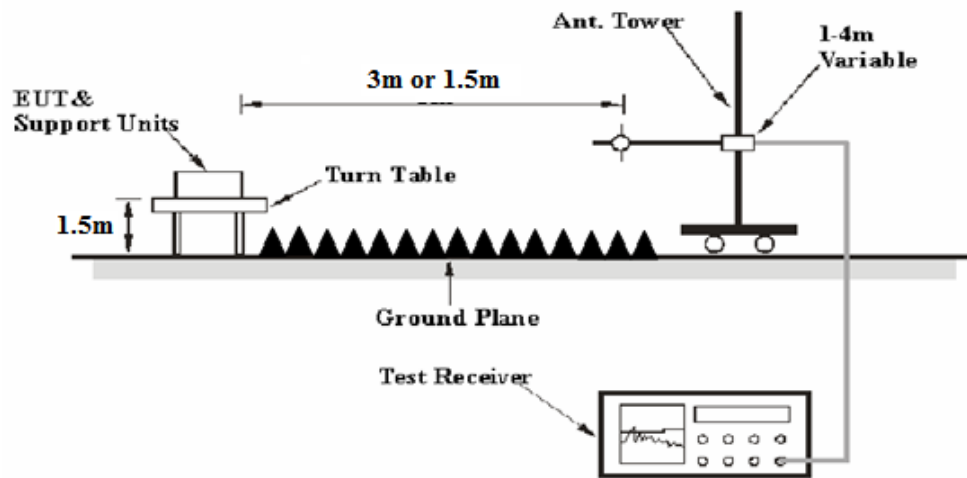
Table 1 – Values of  $U_{cisp}$

| Measurement                                                                                | $U_{cisp}$ |
|--------------------------------------------------------------------------------------------|------------|
| 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.

**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**

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:  $E [dB\mu V/m] = EIRP[dBm] + 95.2$ , 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 =  $20 \log (\text{specific distance } [3m] / \text{test distance } [1.5m])$  dB

Extrapolation result = Corrected Amplitude (dB $\mu$ V/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:

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

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:

$$\text{Margin} = \text{Limit} - \text{Extrapolation result}$$

### 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 Technologies | Horn Antenna      | ARH-4223-02             | 1007726-011304 | 2014-06-16       | 2017-06-15           |
| Ducommun Technologies | Horn Antenna      | ARH-2823-02             | 1007726-011302 | 2014-06-16       | 2017-06-15           |
| Quinstar              | Amplifier         | QLW-18405536-JO         | 15964001001    | 2015-09-06       | 2016-09-06           |

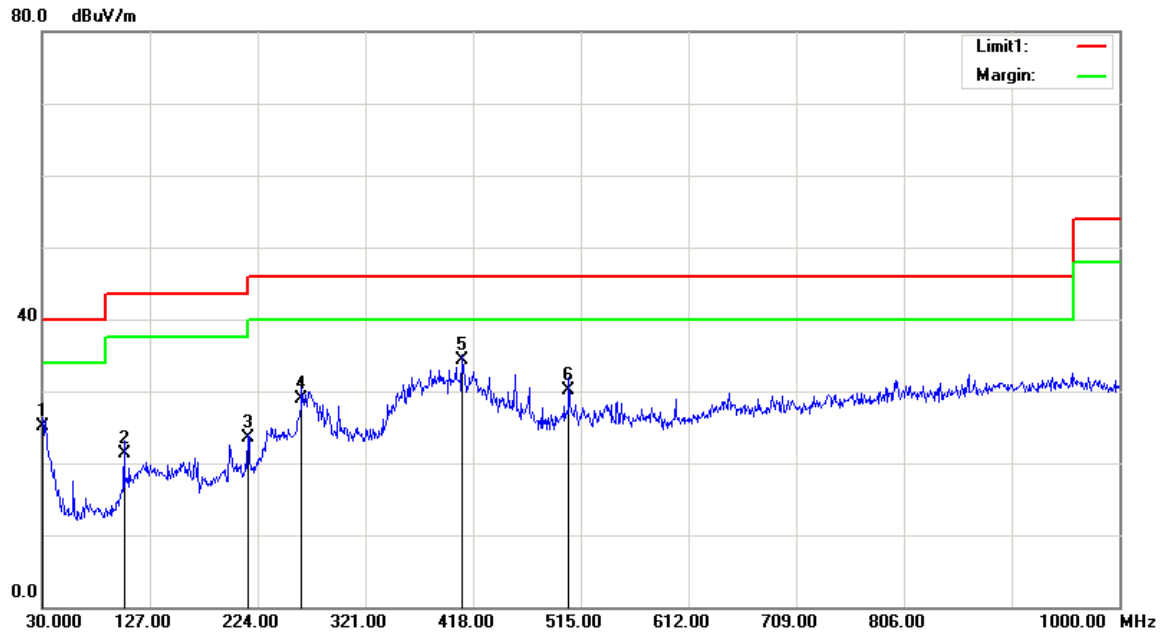
\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

**Test Data****Environmental Conditions**

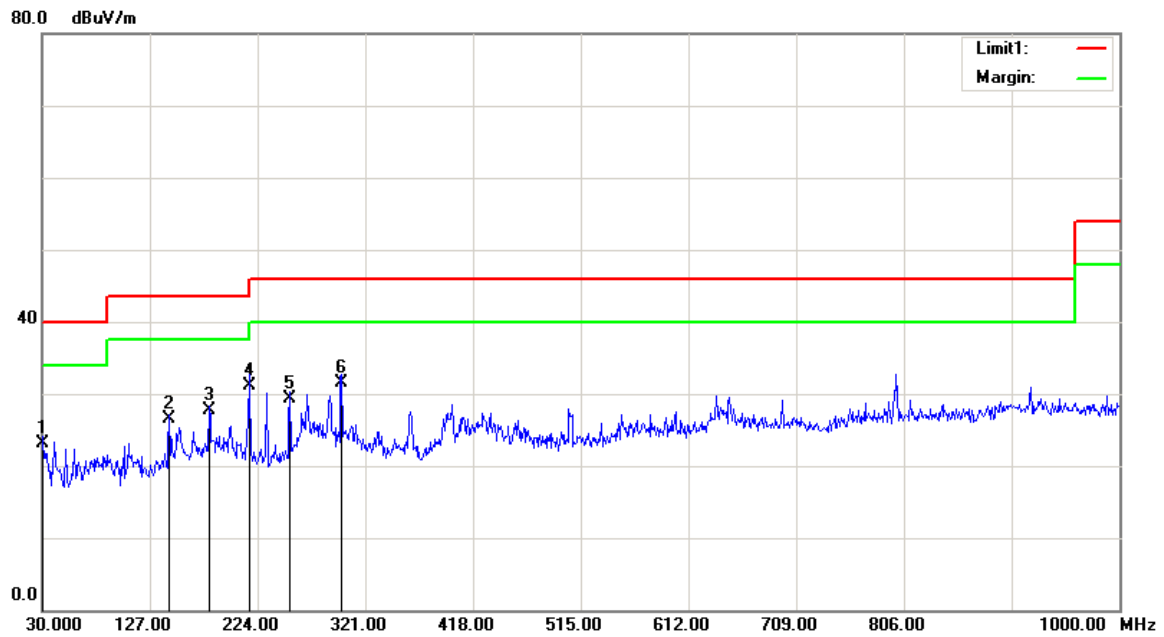
|                           |         |
|---------------------------|---------|
| <b>Temperature:</b>       | 26.8 °C |
| <b>Relative Humidity:</b> | 65 %    |
| <b>ATM Pressure:</b>      | 100 kPa |

*The testing was performed by Kira Liu on 2016-08-10.*

*Test Mode: Transmitting*

**1) 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         | 24.98                   | QP                   | 0.22                     | 25.20               | 40.00          | 14.80       |
| 103.7200        | 29.90                   | QP                   | -8.60                    | 21.30               | 43.50          | 22.20       |
| 215.2700        | 32.51                   | QP                   | -8.91                    | 23.60               | 43.50          | 19.90       |
| 263.7700        | 35.38                   | QP                   | -6.48                    | 28.90               | 46.00          | 17.10       |
| 408.3000        | 37.85                   | QP                   | -3.45                    | 34.40               | 46.00          | 11.60       |
| 504.3300        | 31.47                   | QP                   | -1.37                    | 30.10               | 46.00          | 15.90       |

**Vertical:**

| Frequency (MHz) | Receiver Reading (dBμV) | Detector (PK/QP/Ave) | Correction Factor (dB/m) | Cord. Amp. (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|-----------------|-------------------------|----------------------|--------------------------|---------------------|----------------|-------------|
| 30.0000         | 22.15                   | QP                   | 0.95                     | 23.10               | 40.00          | 16.90       |
| 144.4600        | 33.47                   | QP                   | -6.97                    | 26.50               | 43.50          | 17.00       |
| 180.3500        | 36.13                   | QP                   | -8.33                    | 27.80               | 43.50          | 15.70       |
| 216.2400        | 39.99                   | QP                   | -8.89                    | 31.10               | 46.00          | 14.90       |
| 253.1000        | 37.12                   | QP                   | -7.72                    | 29.40               | 46.00          | 16.60       |
| 299.6600        | 37.40                   | QP                   | -5.80                    | 31.60               | 46.00          | 14.40       |

**2)Above 1G**

5150MHz-5250MHz:

802.11a mode:

| Frequency<br>(MHz)      | Receiver               |                | Rx Antenna     |       | Cable<br>loss<br>(dB) | Amplifier<br>Gain<br>(dB) | Corrected<br>Amplitude<br>(dBμV/m) | Extrapolation<br>result<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) |
|-------------------------|------------------------|----------------|----------------|-------|-----------------------|---------------------------|------------------------------------|-------------------------------------|-------------------|----------------|
| Reading<br>(dBμV)       | Detector<br>(PK/QP/AV) | Polar<br>(H/V) | Factor<br>(dB) |       |                       |                           |                                    |                                     |                   |                |
| Low Channel:5180 MHz    |                        |                |                |       |                       |                           |                                    |                                     |                   |                |
| 5180                    | 67.83                  | PK             | H              | 31.46 | 5.40                  | 0.00                      | 104.69                             | 98.69                               | N/A               | N/A            |
| 5180                    | 57.91                  | AV             | H              | 31.46 | 5.40                  | 0.00                      | 94.77                              | 88.77                               | N/A               | N/A            |
| 5180                    | 77.40                  | PK             | V              | 31.46 | 5.40                  | 0.00                      | 114.26                             | 108.26                              | N/A               | N/A            |
| 5180                    | 66.86                  | AV             | V              | 31.46 | 5.40                  | 0.00                      | 103.72                             | 97.72                               | N/A               | N/A            |
| 5150                    | 40.11                  | PK             | V              | 31.40 | 5.26                  | 0.00                      | 76.77                              | 70.77                               | 74.00             | 3.23           |
| 5150                    | 19.93                  | AV             | V              | 31.40 | 5.26                  | 0.00                      | 56.59                              | 50.59                               | 54.00             | 3.41           |
| 10360                   | 39.87                  | PK             | V              | 36.97 | 8.36                  | 25.52                     | 59.68                              | 53.68                               | 74.00             | 20.32          |
| 10360                   | 30.15                  | AV             | V              | 36.97 | 8.36                  | 25.52                     | 49.96                              | 43.96                               | 54.00             | 10.04          |
| 15540                   | 33.35                  | PK             | V              | 37.43 | 14.94                 | 24.98                     | 60.74                              | 54.74                               | 74.00             | 19.26          |
| 15540                   | 20.95                  | AV             | V              | 37.43 | 14.94                 | 24.98                     | 48.34                              | 42.34                               | 54.00             | 11.66          |
| 6140                    | 33.15                  | PK             | V              | 32.23 | 5.95                  | 26.86                     | 44.47                              | 38.47                               | 74.00             | 35.53          |
| 6140                    | 21.06                  | AV             | V              | 32.23 | 5.95                  | 26.86                     | 32.38                              | 26.38                               | 54.00             | 27.62          |
| 4190                    | 35.84                  | PK             | V              | 29.86 | 5.00                  | 27.08                     | 43.62                              | 37.62                               | 74.00             | 36.38          |
| 4190                    | 23.51                  | AV             | V              | 29.86 | 5.00                  | 27.08                     | 31.29                              | 25.29                               | 54.00             | 28.71          |
| Middle Channel:5200 MHz |                        |                |                |       |                       |                           |                                    |                                     |                   |                |
| 5200                    | 69.67                  | PK             | H              | 31.50 | 5.49                  | 0.00                      | 106.66                             | 100.66                              | N/A               | N/A            |
| 5200                    | 59.96                  | AV             | H              | 31.50 | 5.49                  | 0.00                      | 96.95                              | 90.95                               | N/A               | N/A            |
| 5200                    | 79.46                  | PK             | V              | 31.50 | 5.49                  | 0.00                      | 116.45                             | 110.45                              | N/A               | N/A            |
| 5200                    | 68.26                  | AV             | V              | 31.50 | 5.49                  | 0.00                      | 105.25                             | 99.25                               | N/A               | N/A            |
| 10400                   | 44.46                  | PK             | V              | 36.98 | 8.32                  | 25.50                     | 64.26                              | 58.26                               | 74.00             | 15.74          |
| 10400                   | 34.15                  | AV             | V              | 36.98 | 8.32                  | 25.50                     | 53.95                              | 47.95                               | 54.00             | 6.05           |
| 15600                   | 34.55                  | PK             | V              | 37.32 | 14.69                 | 24.69                     | 61.87                              | 55.87                               | 74.00             | 18.13          |
| 15600                   | 22.05                  | AV             | V              | 37.32 | 14.69                 | 24.69                     | 49.37                              | 43.37                               | 54.00             | 10.63          |
| 6040                    | 33.97                  | PK             | V              | 32.21 | 5.89                  | 27.02                     | 45.05                              | 39.05                               | 74.00             | 34.95          |
| 6040                    | 21.59                  | AV             | V              | 32.21 | 5.89                  | 27.02                     | 32.67                              | 26.67                               | 54.00             | 27.33          |
| 4400                    | 34.75                  | PK             | V              | 29.82 | 4.94                  | 26.89                     | 42.62                              | 36.62                               | 74.00             | 37.38          |
| 4400                    | 22.27                  | AV             | V              | 29.82 | 4.94                  | 26.89                     | 30.14                              | 24.14                               | 54.00             | 29.86          |
| High Channel:5240 MHz   |                        |                |                |       |                       |                           |                                    |                                     |                   |                |
| 5240                    | 66.89                  | PK             | H              | 31.58 | 5.28                  | 0.00                      | 103.75                             | 97.75                               | N/A               | N/A            |
| 5240                    | 57.20                  | AV             | H              | 31.58 | 5.28                  | 0.00                      | 94.06                              | 88.06                               | N/A               | N/A            |
| 5240                    | 76.56                  | PK             | V              | 31.58 | 5.28                  | 0.00                      | 113.42                             | 107.42                              | N/A               | N/A            |
| 5240                    | 66.31                  | AV             | V              | 31.58 | 5.28                  | 0.00                      | 103.17                             | 97.17                               | N/A               | N/A            |
| 5350                    | 26.87                  | PK             | V              | 31.80 | 5.61                  | 0.00                      | 64.28                              | 58.28                               | 74.00             | 15.72          |
| 5350                    | 14.77                  | AV             | V              | 31.80 | 5.61                  | 0.00                      | 52.18                              | 46.18                               | 54.00             | 7.82           |
| 10480                   | 40.12                  | PK             | V              | 37.00 | 8.23                  | 26.01                     | 59.34                              | 53.34                               | 74.00             | 20.66          |
| 10480                   | 31.41                  | AV             | V              | 37.00 | 8.23                  | 26.01                     | 50.63                              | 44.63                               | 54.00             | 9.37           |
| 15720                   | 33.58                  | PK             | V              | 37.10 | 14.20                 | 24.92                     | 59.96                              | 53.96                               | 74.00             | 20.04          |
| 15720                   | 21.18                  | AV             | V              | 37.10 | 14.20                 | 24.92                     | 47.56                              | 41.56                               | 54.00             | 12.44          |
| 6090                    | 33.38                  | PK             | V              | 32.22 | 5.92                  | 26.94                     | 44.58                              | 38.58                               | 74.00             | 35.42          |
| 6090                    | 21.33                  | AV             | V              | 32.22 | 5.92                  | 26.94                     | 32.53                              | 26.53                               | 54.00             | 27.47          |
| 4120                    | 34.12                  | PK             | V              | 29.88 | 4.98                  | 27.12                     | 41.86                              | 35.86                               | 74.00             | 38.14          |
| 4120                    | 23.73                  | AV             | V              | 29.88 | 4.98                  | 27.12                     | 31.47                              | 25.47                               | 54.00             | 28.53          |

802.11n ht20 mode:

| Frequency<br>(MHz)      | Receiver          |                        | Rx Antenna     |                | Cable<br>loss<br>(dB) | Amplifier<br>Gain<br>(dB) | Corrected<br>Amplitude<br>(dBμV/m) | Extrapolation<br>result<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) |
|-------------------------|-------------------|------------------------|----------------|----------------|-----------------------|---------------------------|------------------------------------|-------------------------------------|-------------------|----------------|
|                         | Reading<br>(dBμV) | Detector<br>(PK/QP/AV) | Polar<br>(H/V) | Factor<br>(dB) |                       |                           |                                    |                                     |                   |                |
| Low Channel:5180 MHz    |                   |                        |                |                |                       |                           |                                    |                                     |                   |                |
| 5180                    | 66.89             | PK                     | H              | 31.46          | 5.40                  | 0.00                      | 103.75                             | 97.75                               | N/A               | N/A            |
| 5180                    | 56.71             | AV                     | H              | 31.46          | 5.40                  | 0.00                      | 93.57                              | 87.57                               | N/A               | N/A            |
| 5180                    | 76.40             | PK                     | V              | 31.46          | 5.40                  | 0.00                      | 113.26                             | 107.26                              | N/A               | N/A            |
| 5180                    | 65.41             | AV                     | V              | 31.46          | 5.40                  | 0.00                      | 102.27                             | 96.27                               | N/A               | N/A            |
| 5150                    | 36.61             | PK                     | V              | 31.40          | 5.26                  | 0.00                      | 73.27                              | 67.27                               | 74.00             | 6.73           |
| 5150                    | 19.03             | AV                     | V              | 31.40          | 5.26                  | 0.00                      | 55.69                              | 49.69                               | 54.00             | 4.31           |
| 10360                   | 39.74             | PK                     | V              | 36.97          | 8.36                  | 25.52                     | 59.55                              | 53.55                               | 74.00             | 20.45          |
| 10360                   | 29.98             | AV                     | V              | 36.97          | 8.36                  | 25.52                     | 49.79                              | 43.79                               | 54.00             | 10.21          |
| 15540                   | 33.18             | PK                     | V              | 37.43          | 14.94                 | 24.98                     | 60.57                              | 54.57                               | 74.00             | 19.43          |
| 15540                   | 20.77             | AV                     | V              | 37.43          | 14.94                 | 24.98                     | 48.16                              | 42.16                               | 54.00             | 11.84          |
| 6153                    | 33.04             | PK                     | V              | 32.23          | 5.95                  | 26.84                     | 44.38                              | 38.38                               | 74.00             | 35.62          |
| 6153                    | 20.88             | AV                     | V              | 32.23          | 5.95                  | 26.84                     | 32.22                              | 26.22                               | 54.00             | 27.78          |
| 4205                    | 35.68             | PK                     | V              | 29.86          | 5.00                  | 27.07                     | 43.47                              | 37.47                               | 74.00             | 36.53          |
| 4205                    | 23.37             | AV                     | V              | 29.86          | 5.00                  | 27.07                     | 31.16                              | 25.16                               | 54.00             | 28.84          |
| Middle Channel:5200 MHz |                   |                        |                |                |                       |                           |                                    |                                     |                   |                |
| 5200                    | 69.74             | PK                     | H              | 31.50          | 5.49                  | 0.00                      | 106.73                             | 100.73                              | N/A               | N/A            |
| 5200                    | 60.21             | AV                     | H              | 31.50          | 5.49                  | 0.00                      | 97.20                              | 91.20                               | N/A               | N/A            |
| 5200                    | 79.68             | PK                     | V              | 31.50          | 5.49                  | 0.00                      | 116.67                             | 110.67                              | N/A               | N/A            |
| 5200                    | 68.33             | AV                     | V              | 31.50          | 5.49                  | 0.00                      | 105.32                             | 99.32                               | N/A               | N/A            |
| 10400                   | 43.77             | PK                     | V              | 36.98          | 8.32                  | 25.50                     | 63.57                              | 57.57                               | 74.00             | 16.43          |
| 10400                   | 34.68             | AV                     | V              | 36.98          | 8.32                  | 25.50                     | 54.48                              | 48.48                               | 54.00             | 5.52           |
| 15600                   | 35.75             | PK                     | V              | 37.32          | 14.69                 | 24.69                     | 63.07                              | 57.07                               | 74.00             | 16.93          |
| 15600                   | 23.09             | AV                     | V              | 37.32          | 14.69                 | 24.69                     | 50.41                              | 44.41                               | 54.00             | 9.59           |
| 6584                    | 35.21             | PK                     | V              | 32.52          | 6.18                  | 26.57                     | 47.34                              | 41.34                               | 74.00             | 32.66          |
| 6584                    | 22.87             | AV                     | V              | 32.52          | 6.18                  | 26.57                     | 35.00                              | 29.00                               | 54.00             | 25.00          |
| 4256                    | 35.86             | PK                     | V              | 29.85          | 5.10                  | 27.02                     | 43.79                              | 37.79                               | 74.00             | 36.21          |
| 4256                    | 23.59             | AV                     | V              | 29.85          | 5.10                  | 27.02                     | 31.52                              | 25.52                               | 54.00             | 28.48          |
| High Channel:5240 MHz   |                   |                        |                |                |                       |                           |                                    |                                     |                   |                |
| 5240                    | 65.96             | PK                     | H              | 31.58          | 5.28                  | 0.00                      | 102.82                             | 96.82                               | N/A               | N/A            |
| 5240                    | 55.52             | AV                     | H              | 31.58          | 5.28                  | 0.00                      | 92.38                              | 86.38                               | N/A               | N/A            |
| 5240                    | 75.56             | PK                     | V              | 31.58          | 5.28                  | 0.00                      | 112.42                             | 106.42                              | N/A               | N/A            |
| 5240                    | 65.28             | AV                     | V              | 31.58          | 5.28                  | 0.00                      | 102.14                             | 96.14                               | N/A               | N/A            |
| 5350                    | 26.82             | PK                     | V              | 31.80          | 5.61                  | 0.00                      | 64.23                              | 58.23                               | 74.00             | 15.77          |
| 5350                    | 14.85             | AV                     | V              | 31.80          | 5.61                  | 0.00                      | 52.26                              | 46.26                               | 54.00             | 7.74           |
| 10480                   | 39.58             | PK                     | V              | 37.00          | 8.23                  | 26.01                     | 58.80                              | 52.80                               | 74.00             | 21.20          |
| 10480                   | 29.89             | AV                     | V              | 37.00          | 8.23                  | 26.01                     | 49.11                              | 43.11                               | 54.00             | 10.89          |
| 15720                   | 33.06             | PK                     | V              | 37.10          | 14.20                 | 24.92                     | 59.44                              | 53.44                               | 74.00             | 20.56          |
| 15720                   | 20.59             | AV                     | V              | 37.10          | 14.20                 | 24.92                     | 46.97                              | 40.97                               | 54.00             | 13.03          |
| 6320                    | 32.82             | PK                     | V              | 32.26          | 6.04                  | 26.56                     | 44.56                              | 38.56                               | 74.00             | 35.44          |
| 6320                    | 20.73             | AV                     | V              | 32.26          | 6.04                  | 26.56                     | 32.47                              | 26.47                               | 54.00             | 27.53          |
| 4125                    | 34.59             | PK                     | V              | 29.88          | 4.99                  | 27.12                     | 42.34                              | 36.34                               | 74.00             | 37.66          |
| 4125                    | 23.26             | AV                     | V              | 29.88          | 4.99                  | 27.12                     | 31.01                              | 25.01                               | 54.00             | 28.99          |

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                    | 67.84          | PK                  | H           | 32.15       | 5.53            | 0.00                | 105.52                       | 99.52                         | N/A            | N/A         |
| 5745                    | 56.74          | AV                  | H           | 32.15       | 5.53            | 0.00                | 94.42                        | 88.42                         | N/A            | N/A         |
| 5745                    | 75.32          | PK                  | V           | 32.15       | 5.53            | 0.00                | 113.00                       | 107.00                        | N/A            | N/A         |
| 5745                    | 64.90          | AV                  | V           | 32.15       | 5.53            | 0.00                | 102.58                       | 96.58                         | N/A            | N/A         |
| 5725                    | 45.02          | PK                  | V           | 32.15       | 5.60            | 0.00                | 82.77                        | 76.77                         | 122.20         | 45.43       |
| 5720                    | 45.08          | PK                  | V           | 32.14       | 5.61            | 0.00                | 82.83                        | 76.83                         | 110.80         | 33.97       |
| 5700                    | 31.48          | PK                  | V           | 32.14       | 5.68            | 0.00                | 69.30                        | 63.30                         | 105.20         | 41.90       |
| 5650                    | 31.03          | PK                  | V           | 32.13       | 5.28            | 0.00                | 68.44                        | 62.44                         | 68.20          | 5.76        |
| 11490                   | 44.68          | PK                  | V           | 37.89       | 8.94            | 26.14               | 65.37                        | 59.37                         | 74.00          | 14.63       |
| 11490                   | 33.62          | AV                  | V           | 37.89       | 8.94            | 26.14               | 54.31                        | 48.31                         | 54.00          | 5.69        |
| 17235                   | 33.08          | PK                  | V           | 40.91       | 13.69           | 25.63               | 62.05                        | 56.05                         | 74.00          | 17.95       |
| 17235                   | 20.65          | AV                  | V           | 40.91       | 13.69           | 25.63               | 49.62                        | 43.62                         | 54.00          | 10.38       |
| 4523                    | 35.26          | PK                  | V           | 29.86       | 5.01            | 27.16               | 42.97                        | 36.97                         | 74.00          | 37.03       |
| 4523                    | 23.61          | AV                  | V           | 29.86       | 5.01            | 27.16               | 31.32                        | 25.32                         | 54.00          | 28.68       |
| 6150                    | 34.20          | PK                  | V           | 32.23       | 5.95            | 26.84               | 45.54                        | 39.54                         | 74.00          | 34.46       |
| 6150                    | 21.63          | AV                  | V           | 32.23       | 5.95            | 26.84               | 32.97                        | 26.97                         | 54.00          | 27.03       |
| Middle Channel:5785 MHz |                |                     |             |             |                 |                     |                              |                               |                |             |
| 5785                    | 68.39          | PK                  | H           | 32.16       | 5.47            | 0.00                | 106.02                       | 100.02                        | N/A            | N/A         |
| 5785                    | 58.02          | AV                  | H           | 32.16       | 5.47            | 0.00                | 95.65                        | 89.65                         | N/A            | N/A         |
| 5785                    | 75.69          | PK                  | V           | 32.16       | 5.47            | 0.00                | 113.32                       | 107.32                        | N/A            | N/A         |
| 5785                    | 65.32          | AV                  | V           | 32.16       | 5.47            | 0.00                | 102.95                       | 96.95                         | N/A            | N/A         |
| 11570                   | 46.54          | PK                  | V           | 37.90       | 8.92            | 26.07               | 67.29                        | 61.29                         | 74.00          | 12.71       |
| 11570                   | 33.43          | AV                  | V           | 37.90       | 8.92            | 26.07               | 54.18                        | 48.18                         | 54.00          | 5.82        |
| 17355                   | 34.13          | PK                  | V           | 41.63       | 12.99           | 25.63               | 63.12                        | 57.12                         | 74.00          | 16.88       |
| 17355                   | 21.77          | AV                  | V           | 41.63       | 12.99           | 25.63               | 50.76                        | 44.76                         | 54.00          | 9.24        |
| 4260                    | 35.24          | PK                  | V           | 29.85       | 5.08            | 27.02               | 43.15                        | 37.15                         | 74.00          | 36.85       |
| 4260                    | 22.44          | AV                  | V           | 29.85       | 5.08            | 27.02               | 30.35                        | 24.35                         | 54.00          | 29.65       |
| 6550                    | 34.61          | PK                  | V           | 32.43       | 6.16            | 26.54               | 46.66                        | 40.66                         | 74.00          | 33.34       |
| 6550                    | 22.14          | AV                  | V           | 32.43       | 6.16            | 26.54               | 34.19                        | 28.19                         | 54.00          | 25.81       |
| High Channel:5825 MHz   |                |                     |             |             |                 |                     |                              |                               |                |             |
| 5825                    | 68.86          | PK                  | H           | 32.17       | 5.75            | 0.00                | 106.78                       | 100.78                        | N/A            | N/A         |
| 5825                    | 58.99          | AV                  | H           | 32.17       | 5.75            | 0.00                | 96.91                        | 90.91                         | N/A            | N/A         |
| 5825                    | 75.69          | PK                  | V           | 32.17       | 5.75            | 0.00                | 113.61                       | 107.61                        | N/A            | N/A         |
| 5825                    | 65.33          | AV                  | V           | 32.17       | 5.75            | 0.00                | 103.25                       | 97.25                         | N/A            | N/A         |
| 5850                    | 43.25          | PK                  | V           | 32.17       | 6.05            | 0.00                | 81.47                        | 75.47                         | 122.20         | 46.73       |
| 5855                    | 40.17          | PK                  | V           | 32.17       | 6.03            | 0.00                | 78.37                        | 72.37                         | 110.80         | 38.43       |
| 5875                    | 31.17          | PK                  | V           | 32.18       | 5.97            | 0.00                | 69.32                        | 63.32                         | 105.20         | 41.88       |
| 5925                    | 31.28          | PK                  | V           | 32.19       | 5.96            | 0.00                | 69.43                        | 63.43                         | 68.20          | 4.77        |
| 11650                   | 46.57          | PK                  | V           | 37.90       | 8.90            | 25.75               | 67.62                        | 61.62                         | 74.00          | 12.38       |
| 11650                   | 33.45          | AV                  | V           | 37.90       | 8.90            | 25.75               | 54.50                        | 48.50                         | 54.00          | 5.50        |
| 17475                   | 34.21          | PK                  | V           | 42.35       | 12.30           | 25.39               | 63.47                        | 57.47                         | 74.00          | 16.53       |
| 17475                   | 21.86          | AV                  | V           | 42.35       | 12.30           | 25.39               | 51.12                        | 45.12                         | 54.00          | 8.88        |
| 4231                    | 35.26          | PK                  | V           | 29.85       | 5.07            | 27.04               | 43.14                        | 37.14                         | 74.00          | 36.86       |
| 4231                    | 22.51          | AV                  | V           | 29.85       | 5.07            | 27.04               | 30.39                        | 24.39                         | 54.00          | 29.61       |
| 6210                    | 34.67          | PK                  | V           | 32.24       | 5.98            | 26.74               | 46.15                        | 40.15                         | 74.00          | 33.85       |
| 6210                    | 22.18          | AV                  | V           | 32.24       | 5.98            | 26.74               | 33.66                        | 27.66                         | 54.00          | 26.34       |

802.11n ht20 mode:

| Frequency<br>(MHz)      | Receiver          |                        | Rx Antenna     |                | Cable<br>loss<br>(dB) | Amplifier<br>Gain<br>(dB) | Corrected<br>Amplitude<br>(dBμV/m) | Extrapolation<br>result<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) |
|-------------------------|-------------------|------------------------|----------------|----------------|-----------------------|---------------------------|------------------------------------|-------------------------------------|-------------------|----------------|
|                         | Reading<br>(dBμV) | Detector<br>(PK/QP/AV) | Polar<br>(H/V) | Factor<br>(dB) |                       |                           |                                    |                                     |                   |                |
| Low Channel:5745 MHz    |                   |                        |                |                |                       |                           |                                    |                                     |                   |                |
| 5745                    | 69.25             | PK                     | H              | 32.15          | 5.53                  | 0.00                      | 106.93                             | 100.93                              | N/A               | N/A            |
| 5745                    | 58.42             | AV                     | H              | 32.15          | 5.53                  | 0.00                      | 96.10                              | 90.10                               | N/A               | N/A            |
| 5745                    | 76.16             | PK                     | V              | 32.15          | 5.53                  | 0.00                      | 113.84                             | 107.84                              | N/A               | N/A            |
| 5745                    | 65.26             | AV                     | V              | 32.15          | 5.53                  | 0.00                      | 102.94                             | 96.94                               | N/A               | N/A            |
| 5725                    | 45.12             | PK                     | V              | 32.15          | 5.60                  | 0.00                      | 82.87                              | 76.87                               | 122.20            | 45.33          |
| 5720                    | 37.25             | PK                     | V              | 32.14          | 5.61                  | 0.00                      | 75.00                              | 69.00                               | 110.80            | 41.80          |
| 5700                    | 34.12             | PK                     | V              | 32.14          | 5.68                  | 0.00                      | 71.94                              | 65.94                               | 105.20            | 39.26          |
| 5650                    | 31.58             | PK                     | V              | 32.13          | 5.28                  | 0.00                      | 68.99                              | 62.99                               | 68.20             | 5.21           |
| 11490                   | 47.71             | PK                     | V              | 37.89          | 8.94                  | 26.14                     | 68.40                              | 62.40                               | 74.00             | 11.60          |
| 11490                   | 34.59             | AV                     | V              | 37.89          | 8.94                  | 26.14                     | 55.28                              | 49.28                               | 54.00             | 4.72           |
| 17235                   | 33.70             | PK                     | V              | 40.91          | 13.69                 | 25.63                     | 62.67                              | 56.67                               | 74.00             | 17.33          |
| 17235                   | 21.68             | AV                     | V              | 40.91          | 13.69                 | 25.63                     | 50.65                              | 44.65                               | 54.00             | 9.35           |
| 4867                    | 35.98             | PK                     | V              | 30.75          | 5.09                  | 27.42                     | 44.40                              | 38.40                               | 74.00             | 35.60          |
| 4867                    | 23.61             | AV                     | V              | 30.75          | 5.09                  | 27.42                     | 32.03                              | 26.03                               | 54.00             | 27.97          |
| 6187                    | 35.68             | PK                     | V              | 32.24          | 5.97                  | 26.78                     | 47.11                              | 41.11                               | 74.00             | 32.89          |
| 6187                    | 23.21             | AV                     | V              | 32.24          | 5.97                  | 26.78                     | 34.64                              | 28.64                               | 54.00             | 25.36          |
| Middle Channel:5785 MHz |                   |                        |                |                |                       |                           |                                    |                                     |                   |                |
| 5785                    | 69.19             | PK                     | H              | 32.16          | 5.47                  | 0.00                      | 106.82                             | 100.82                              | N/A               | N/A            |
| 5785                    | 58.67             | AV                     | H              | 32.16          | 5.47                  | 0.00                      | 96.30                              | 90.30                               | N/A               | N/A            |
| 5785                    | 75.91             | PK                     | V              | 32.16          | 5.47                  | 0.00                      | 113.54                             | 107.54                              | N/A               | N/A            |
| 5785                    | 65.32             | AV                     | V              | 32.16          | 5.47                  | 0.00                      | 102.95                             | 96.95                               | N/A               | N/A            |
| 11570                   | 47.60             | PK                     | V              | 37.90          | 8.92                  | 26.07                     | 68.35                              | 62.35                               | 74.00             | 11.65          |
| 11570                   | 34.79             | AV                     | V              | 37.90          | 8.92                  | 26.07                     | 55.54                              | 49.54                               | 54.00             | 4.46           |
| 17355                   | 33.77             | PK                     | V              | 41.63          | 12.99                 | 25.63                     | 62.76                              | 56.76                               | 74.00             | 17.24          |
| 17355                   | 21.66             | AV                     | V              | 41.63          | 12.99                 | 25.63                     | 50.65                              | 44.65                               | 54.00             | 9.35           |
| 4520                    | 35.85             | PK                     | V              | 29.85          | 5.03                  | 27.15                     | 43.58                              | 37.58                               | 74.00             | 36.42          |
| 4520                    | 23.74             | AV                     | V              | 29.85          | 5.03                  | 27.15                     | 31.47                              | 25.47                               | 54.00             | 28.53          |
| 6240                    | 35.53             | PK                     | V              | 32.25          | 6.00                  | 26.69                     | 47.09                              | 41.09                               | 74.00             | 32.91          |
| 6240                    | 23.37             | AV                     | V              | 32.25          | 6.00                  | 26.69                     | 34.93                              | 28.93                               | 54.00             | 25.07          |
| High Channel:5825 MHz   |                   |                        |                |                |                       |                           |                                    |                                     |                   |                |
| 5825                    | 68.96             | PK                     | H              | 32.17          | 5.75                  | 0.00                      | 106.88                             | 100.88                              | N/A               | N/A            |
| 5825                    | 58.77             | AV                     | H              | 32.17          | 5.75                  | 0.00                      | 96.69                              | 90.69                               | N/A               | N/A            |
| 5825                    | 75.55             | PK                     | V              | 32.17          | 5.75                  | 0.00                      | 113.47                             | 107.47                              | N/A               | N/A            |
| 5825                    | 65.11             | AV                     | V              | 32.17          | 5.75                  | 0.00                      | 103.03                             | 97.03                               | N/A               | N/A            |
| 5850                    | 47.35             | PK                     | V              | 32.17          | 6.05                  | 0.00                      | 85.57                              | 79.57                               | 122.20            | 42.63          |
| 5855                    | 42.93             | PK                     | V              | 32.17          | 6.03                  | 0.00                      | 81.13                              | 75.13                               | 110.80            | 35.67          |
| 5875                    | 30.72             | PK                     | V              | 32.18          | 5.97                  | 0.00                      | 68.87                              | 62.87                               | 105.20            | 42.33          |
| 5925                    | 30.03             | PK                     | V              | 32.19          | 5.96                  | 0.00                      | 68.18                              | 62.18                               | 68.20             | 6.02           |
| 11650                   | 47.83             | PK                     | V              | 37.90          | 8.90                  | 25.75                     | 68.88                              | 62.88                               | 74.00             | 11.12          |
| 11650                   | 34.71             | AV                     | V              | 37.90          | 8.90                  | 25.75                     | 55.76                              | 49.76                               | 54.00             | 4.24           |
| 17475                   | 33.82             | PK                     | V              | 42.35          | 12.30                 | 25.39                     | 63.08                              | 57.08                               | 74.00             | 16.92          |
| 17475                   | 21.83             | AV                     | V              | 42.35          | 12.30                 | 25.39                     | 51.09                              | 45.09                               | 54.00             | 8.91           |
| 4320                    | 36.12             | PK                     | V              | 29.84          | 4.93                  | 26.96                     | 43.93                              | 37.93                               | 74.00             | 36.07          |
| 4320                    | 23.76             | AV                     | V              | 29.84          | 4.93                  | 26.96                     | 31.57                              | 25.57                               | 54.00             | 28.43          |
| 6530                    | 35.87             | PK                     | V              | 32.38          | 6.15                  | 26.53                     | 47.87                              | 41.87                               | 74.00             | 32.13          |
| 6530                    | 23.38             | AV                     | V              | 32.38          | 6.15                  | 26.53                     | 35.38                              | 29.38                               | 54.00             | 24.62          |

## FCC §15.407(a) –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           |
| R&S          | Test Receiver     | ESPI        | 100120        | 2015-12-10       | 2016-12-09           |
| 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:       | 28.2~30.2 °C  |
| Relative Humidity: | 51~52 %       |
| ATM Pressure:      | 99.2~99.7 kPa |

*The testing was performed by Kira Liu from 2016-08-09 to 2016-08-19.*

**Test Result:** Pass.

Please refer to the following tables and plots.

Test mode: Transmitting (Test was performed at chain 0)

5150-5250MHz:

| Mode      | Channel | Frequency MHz | 26 dB Emission Bandwidth (MHz) | Result |
|-----------|---------|---------------|--------------------------------|--------|
| 802.11a   | Low     | 5180          | 21.36                          | PASS   |
|           | Middle  | 5200          | 21.44                          | PASS   |
|           | High    | 5240          | 21.36                          | PASS   |
| 802.11n20 | Low     | 5180          | 22.16                          | PASS   |
|           | Middle  | 5200          | 22.24                          | PASS   |
|           | High    | 5240          | 22.16                          | PASS   |

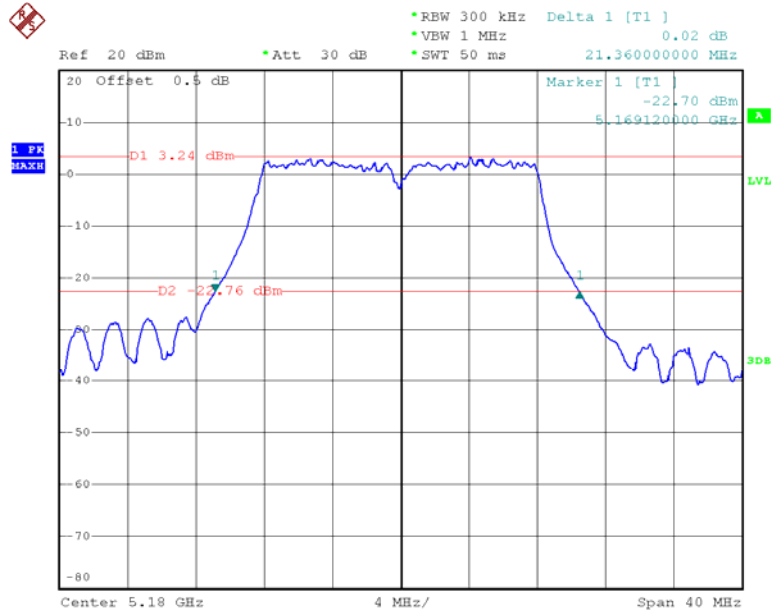
The 26dBc bandwidth is in the range 5150-5250MHz, please refer to the below plots.

5725MHz-5850MHz:

| Mode      | Channel | Frequency MHz | 6dB Emission Bandwidth | Limits | Result |
|-----------|---------|---------------|------------------------|--------|--------|
|           |         |               | (MHz)                  | (MHz)  |        |
| 802.11a   | Low     | 5745          | 15.28                  | 0.5    | PASS   |
|           | Middle  | 5785          | 15.36                  | 0.5    | PASS   |
|           | High    | 5825          | 15.36                  | 0.5    | PASS   |
| 802.11n20 | Low     | 5745          | 16.08                  | 0.5    | PASS   |
|           | Middle  | 5785          | 16.08                  | 0.5    | PASS   |
|           | High    | 5825          | 16.08                  | 0.5    | PASS   |

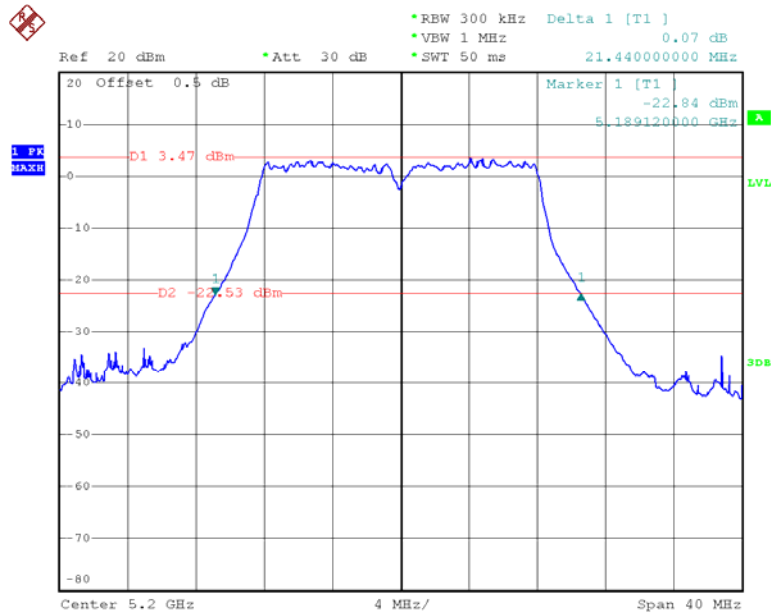
5150MHz-5250MHz: 26dB Bandwidth

802.11a Low Channel



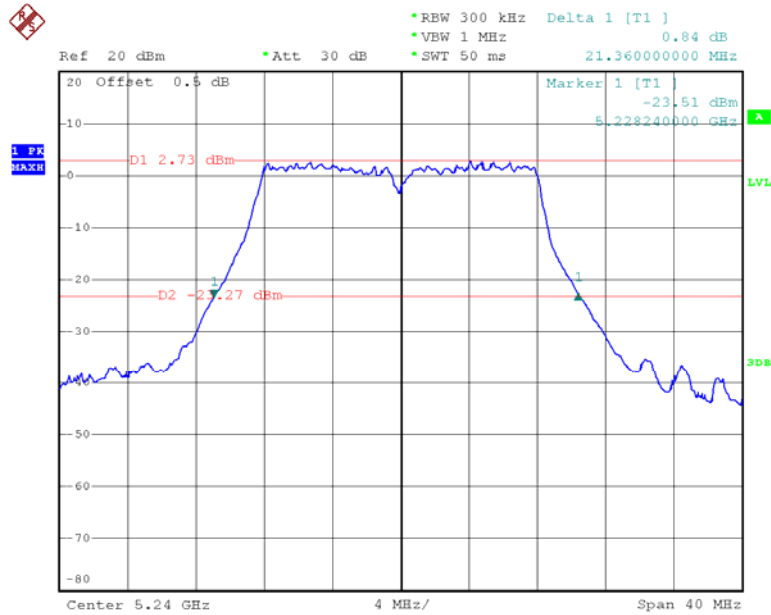
Date: 8.AUG.2016 16:13:31

802.11a Middle Channel



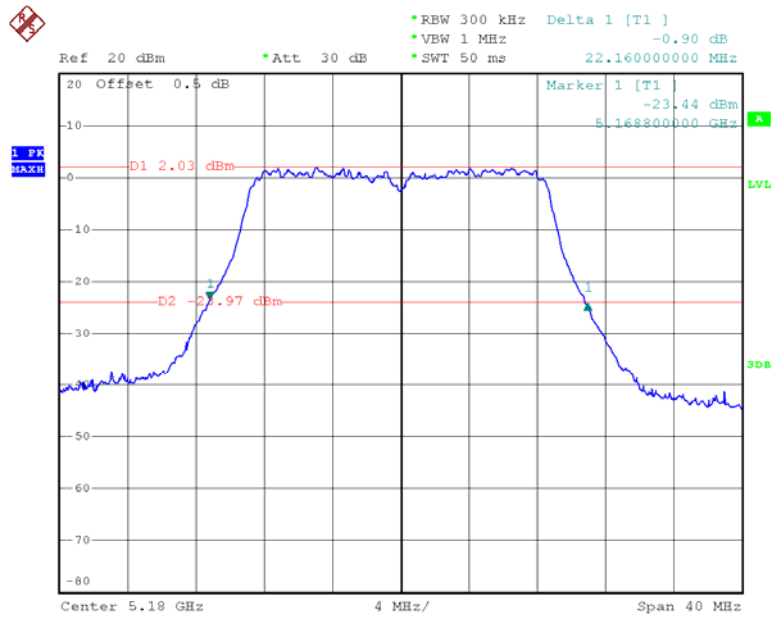
Date: 8.AUG.2016 16:23:58

### 802.11a High Channel



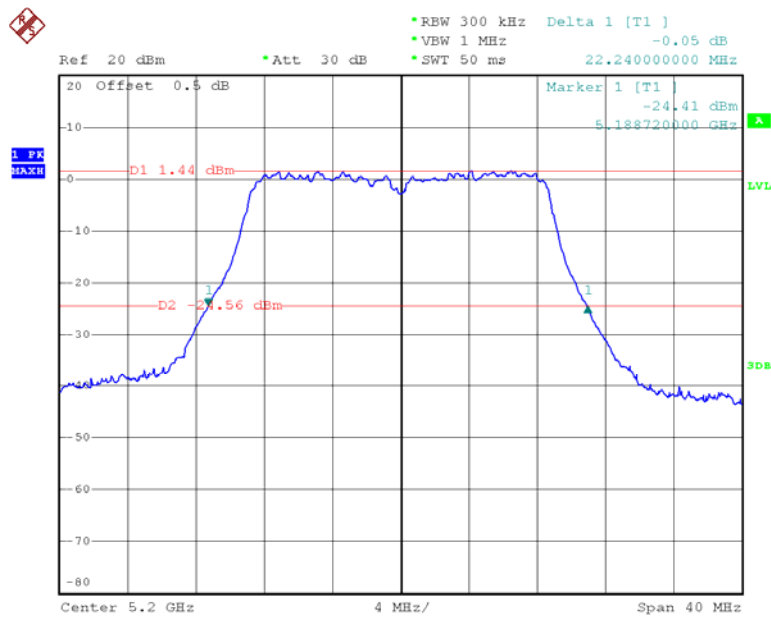
Date: 8.AUG.2016 16:21:22

### 802.11n ht20 Low Channel



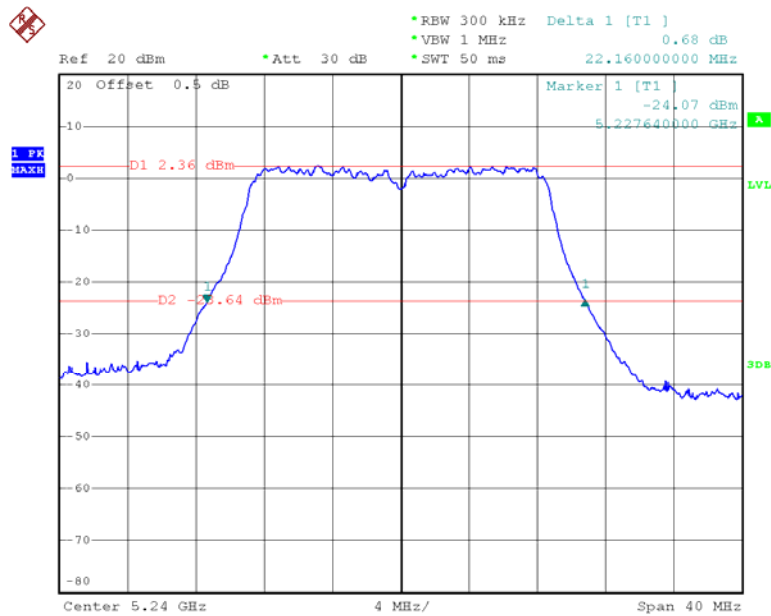
Date: 8.AUG.2016 16:35:13

### 802.11n ht20 Middle Channel



Date: 8.AUG.2016 16:32:44

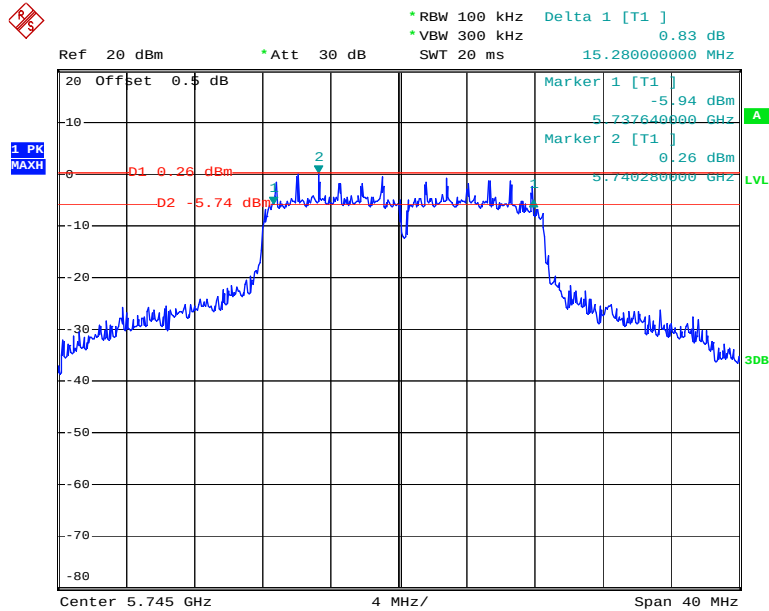
### 802.11n ht20 High Channel



Date: 8.AUG.2016 16:29:47

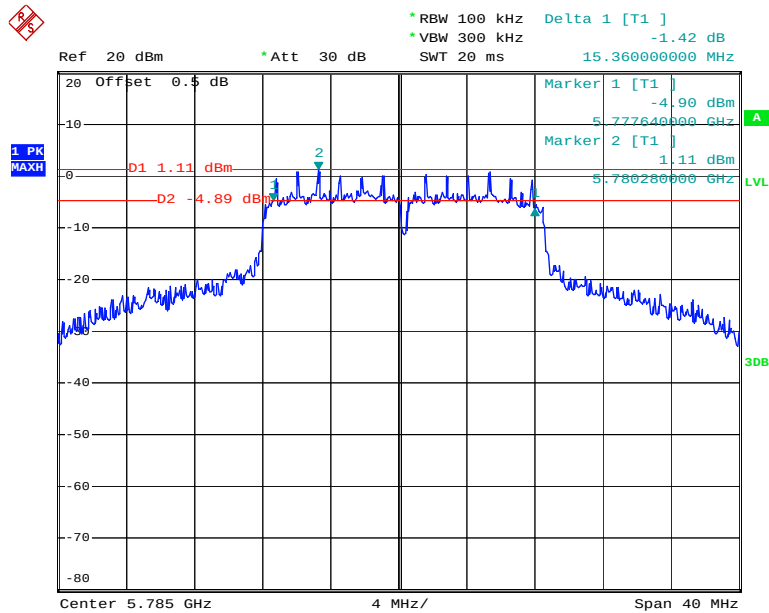
5725MHz-5850MHz: 6dB Emission Bandwidth

802.11a Low Channel



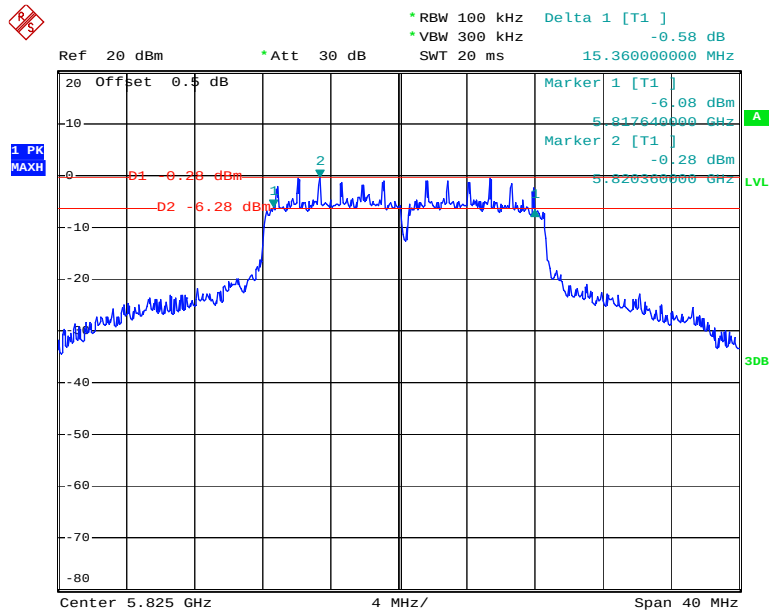
Date: 16.AUG.2016 09:30:04

802.11a Middle Channel



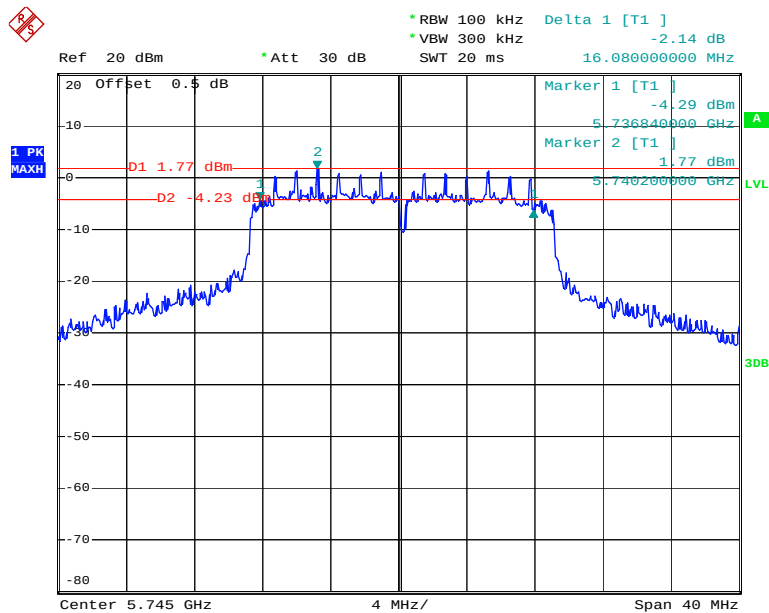
Date: 16.AUG.2016 10:48:14

### 802.11a High Channel



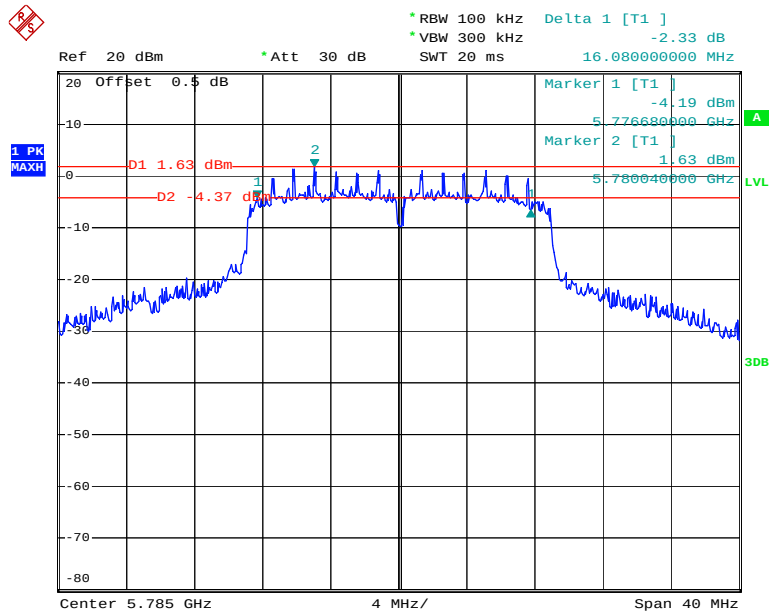
Date: 16.AUG.2016 10:52:18

### 802.11n ht20 Low Channel



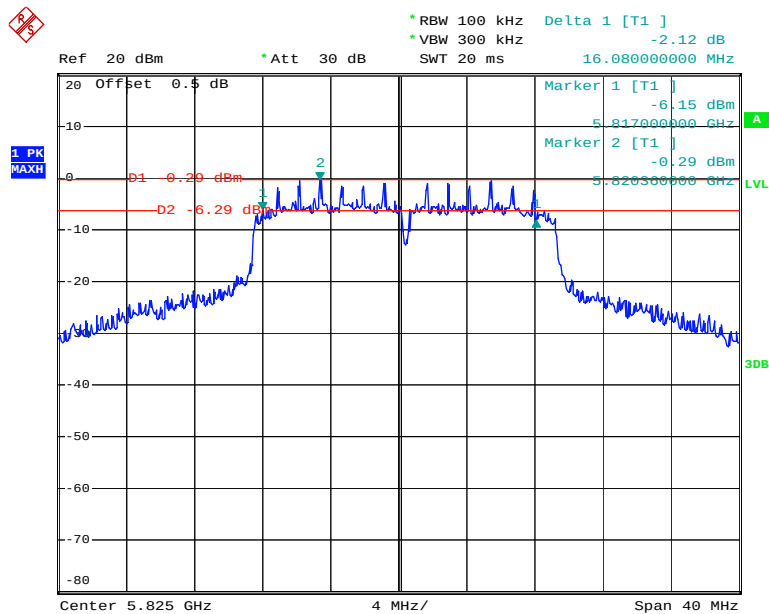
Date: 16.AUG.2016 14:05:46

### 802.11n ht20 Middle Channel – Chain0



Date: 16.AUG.2016 14:03:39

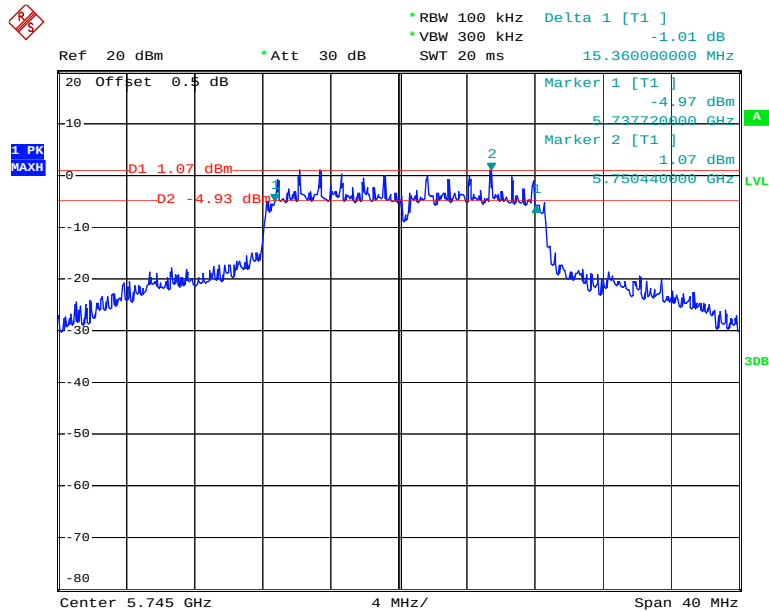
### 802.11n ht20 High Channel



Date: 16.AUG.2016 11:05:25

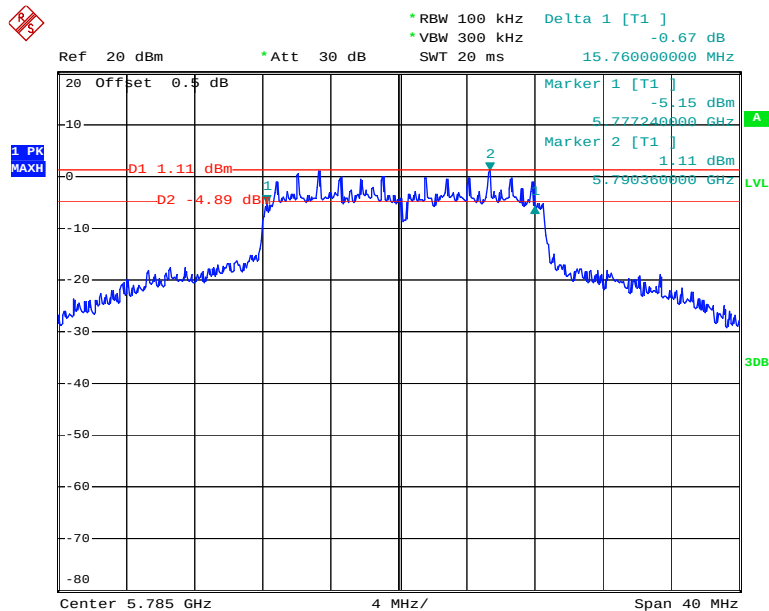
Chain 1:

## 802.11a Low Channel



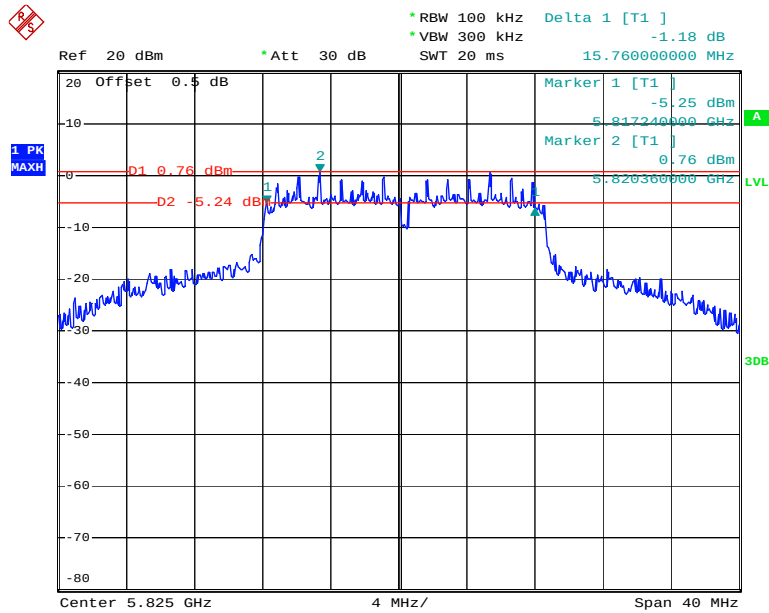
Date: 16.AUG.2016 11:10:51

## 802.11a Middle Channel



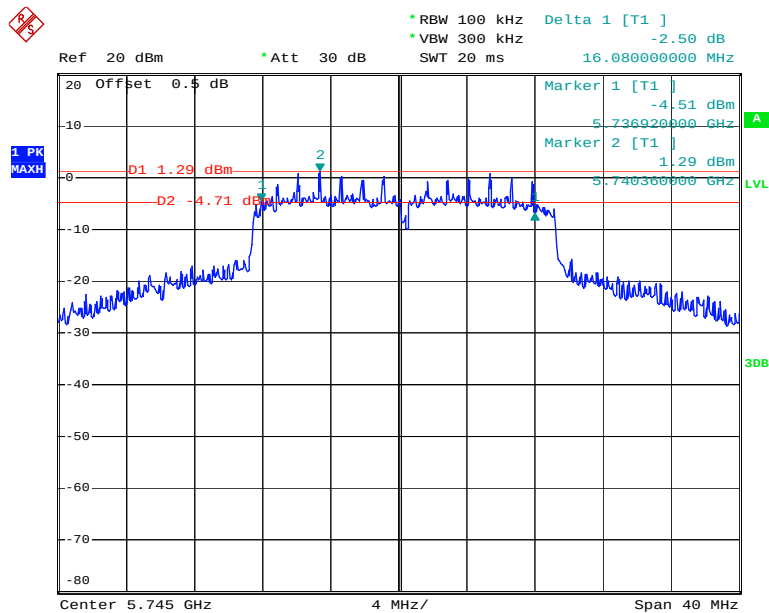
Date: 16.AUG.2016 14:09:58

### 802.11a High Channel



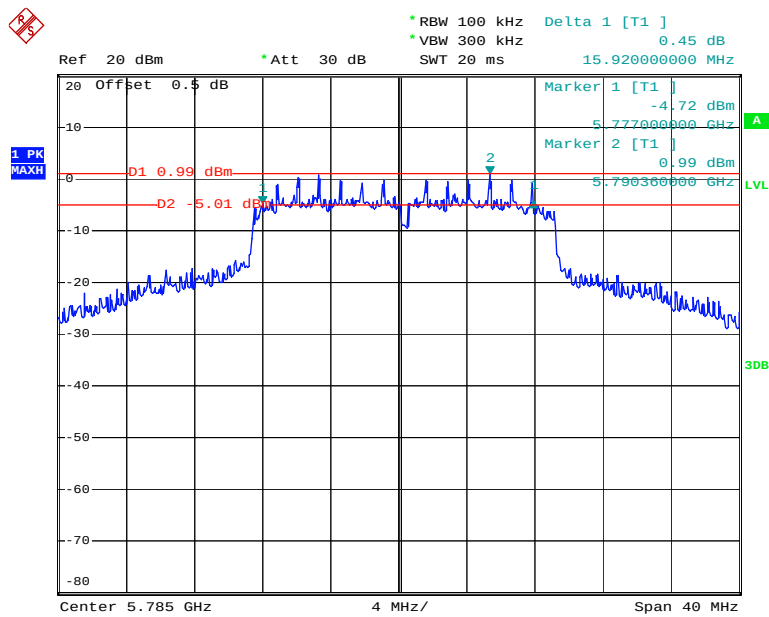
Date: 16.AUG.2016 14:11:32

### 802.11n ht20 Low Channel



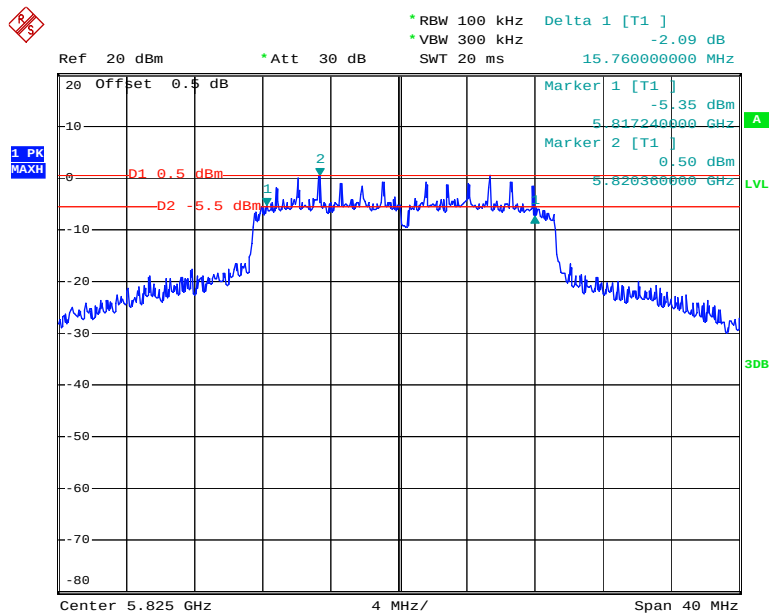
Date: 16.AUG.2016 13:47:23

### 802.11n ht20 Middle Channel – Chain0



Date: 16.AUG.2016 13:48:17

### 802.11n ht20 High Channel



Date: 16.AUG.2016 13:49:06

---

**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  $11 + 10 \log B$  dBm, 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:       | 30.4 °C |
| Relative Humidity: | 48 %    |
| ATM Pressure:      | 100 kPa |

*The testing was performed by Kira Liu on 2016-08-01.*

*Test Mode: Transmitting*

| UNII Band    | Mode      | Channel | Frequency (MHz) | Maximum Conducted Output Power (dBm) |         | Total (dBm) | Limits (dBm) | Result |
|--------------|-----------|---------|-----------------|--------------------------------------|---------|-------------|--------------|--------|
|              |           |         |                 | Chain 0                              | Chain 1 |             |              |        |
| 5150-5250MHz | 802.11a   | Low     | 5180            | 11.26                                | 10.41   | 13.87       | 30           | PASS   |
|              |           | Middle  | 5200            | 13.07                                | 12.46   | 15.79       | 30           | PASS   |
|              |           | High    | 5240            | 11                                   | 9.99    | 13.53       | 30           | PASS   |
|              | 802.11n20 | Low     | 5180            | 10.23                                | 9.86    | 13.06       | 30           | PASS   |
|              |           | Middle  | 5200            | 12.96                                | 12.01   | 15.52       | 30           | PASS   |
|              |           | High    | 5240            | 10.3                                 | 9.2     | 12.8        | 30           | PASS   |
| 5725-5850MHz | 802.11a   | Low     | 5745            | 9.31                                 | 11.02   | 13.26       | 30           | PASS   |
|              |           | Middle  | 5785            | 10.73                                | 10.84   | 13.8        | 30           | PASS   |
|              |           | High    | 5825            | 9.49                                 | 10.31   | 12.93       | 30           | PASS   |
|              | 802.11n20 | Low     | 5745            | 11.32                                | 11.13   | 14.24       | 30           | PASS   |
|              |           | Middle  | 5785            | 10.41                                | 10.94   | 13.69       | 30           | PASS   |
|              |           | High    | 5825            | 9.62                                 | 10.26   | 12.96       | 30           | PASS   |

**Note:** the device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices:

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ ;

So:

Directional gain =  $G_{ANT} + \text{Array Gain} = 5.05\text{dBi} < 6\text{dBi}$

---

**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  $11 + 10 \log B$  dBm, 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           |
| R&S          | Test Receiver     | ESPI        | 100120        | 2015-12-10       | 2016-12-09           |
| 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

|                           |                   |
|---------------------------|-------------------|
| <b>Temperature:</b>       | 30.1 ~ 31.2 °C    |
| <b>Relative Humidity:</b> | 48 ~ 56 %         |
| <b>ATM Pressure:</b>      | 100.1 ~ 100.2 kPa |

The testing was performed by Kira Liu from 2016-08-01 to 2016-08-16.

Test Mode: Transmitting

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

| UNII Band       | Mode      | Channel | Frequency MHz | PSD (dBm/MHz) |         | Total (dBm/MHz) | Limit (dBm/MHz) |
|-----------------|-----------|---------|---------------|---------------|---------|-----------------|-----------------|
|                 |           |         |               | Chain 0       | Chain 1 |                 |                 |
| 5150MHz-5250MHz | 802.11a   | Low     | 5180          | 0.34          | -0.04   | 3.16            | 14.95           |
|                 |           | Middle  | 5200          | 1.99          | 1.67    | 4.84            | 14.95           |
|                 |           | High    | 5240          | 0.12          | -0.86   | 2.67            | 14.95           |
|                 | 802.11n20 | Low     | 5180          | -0.4          | -1.11   | 2.27            | 14.95           |
|                 |           | Middle  | 5200          | 2.38          | 1.17    | 4.83            | 14.95           |
|                 |           | High    | 5240          | -0.61         | -1.5    | 1.98            | 14.95           |

Note: the device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:  
 Array Gain =  $10 \log(\text{NANT/NSS})$  dB.

So:

$$\text{Directional gain} = \text{GANT} + \text{Array Gain} = 5.05 + 10 \cdot \log(2) = 8.05 \text{ dBi}$$

The Power density Limits was reduce 2.05dB

| UNII Band       | Mode      | Channel | Frequency MHz | PSD (dBm/300kHz) |         | Total (dBm/500kHz) | Limit (dBm/500kHz) |
|-----------------|-----------|---------|---------------|------------------|---------|--------------------|--------------------|
|                 |           |         |               | Chain 0          | Chain 1 |                    |                    |
| 5725MHz-5850MHz | 802.11a   | Low     | 5745          | -4.87            | -2.28   | 1.84               | 27.95              |
|                 |           | Middle  | 5785          | -3.1             | -3.06   | 2.15               | 27.95              |
|                 |           | High    | 5825          | -4.06            | -3.25   | 1.59               | 27.95              |
|                 | 802.11n20 | Low     | 5745          | -1.67            | -2.58   | 3.13               | 27.95              |
|                 |           | Middle  | 5785          | -3.08            | -2.68   | 2.35               | 27.95              |
|                 |           | High    | 5825          | -3.94            | -3.03   | -0.45              | 27.95              |

Note: the device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:  
 Array Gain =  $10 \log(\text{NANT/NSS})$  dB.

So:

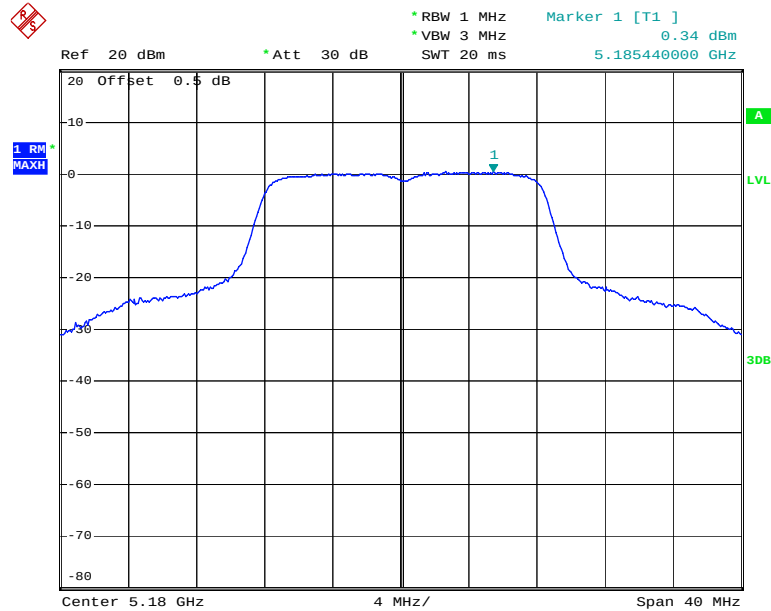
$$\text{Directional gain} = \text{GANT} + \text{Array Gain} = 5.05 + 10 \cdot \log(2) = 8.05 \text{ dBi}$$

The Power density Limits was reduce 2.05dB

The measurement bandwidth of Maximum PSD is specified in 500 kHz, add  $10 \log(500\text{kHz}/\text{RBW})$  to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

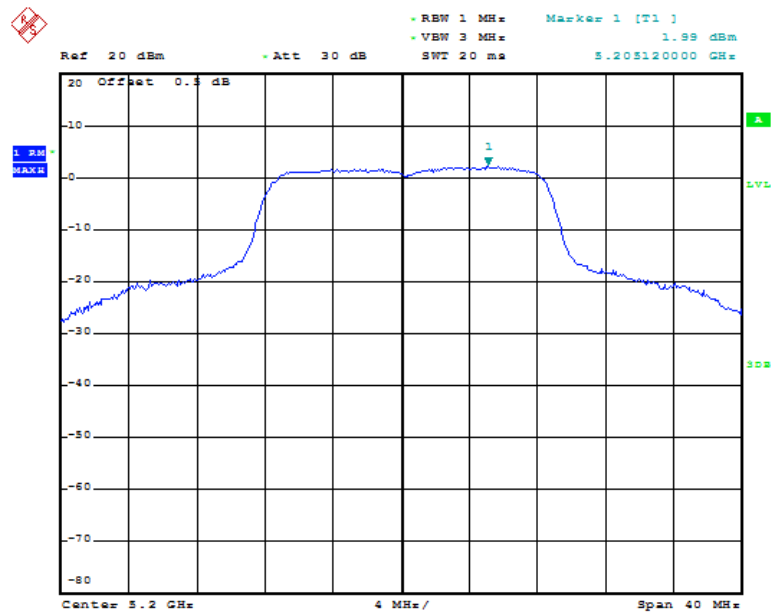
5150MHz-5250MHz:  
Chain 0:

### 802.11a Low Channel



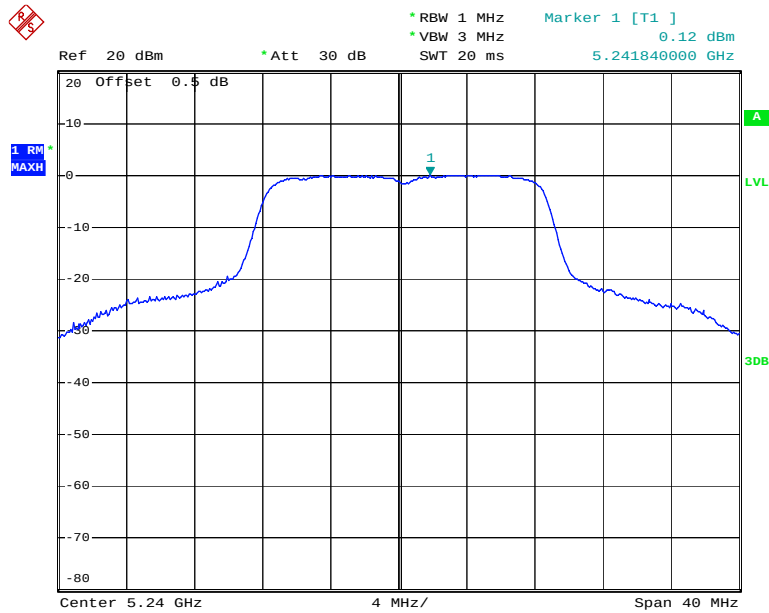
Date: 1.AUG.2016 17:47:31

### 802.11a Middle Channel



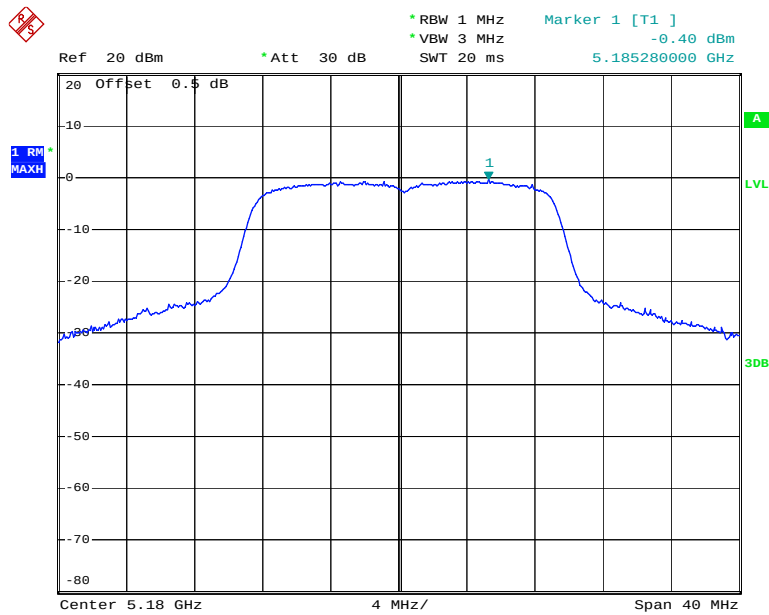
Date: 1.AUG.2016 17:49:34

### 802.11a High Channel



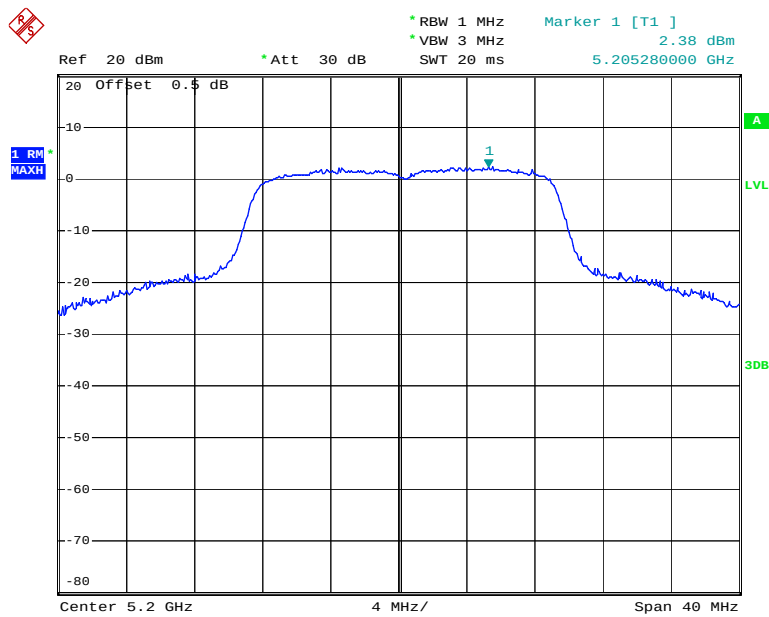
Date: 1.AUG.2016 17:50:59

### 802.11n ht20 Low Channel



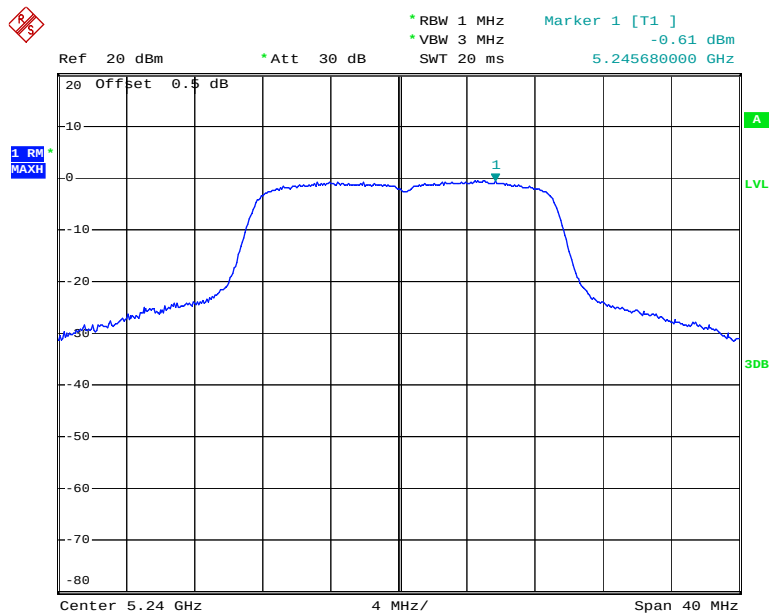
Date: 1.AUG.2016 17:52:54

### 802.11n ht20 Middle Channel



Date: 1.AUG.2016 17:54:42

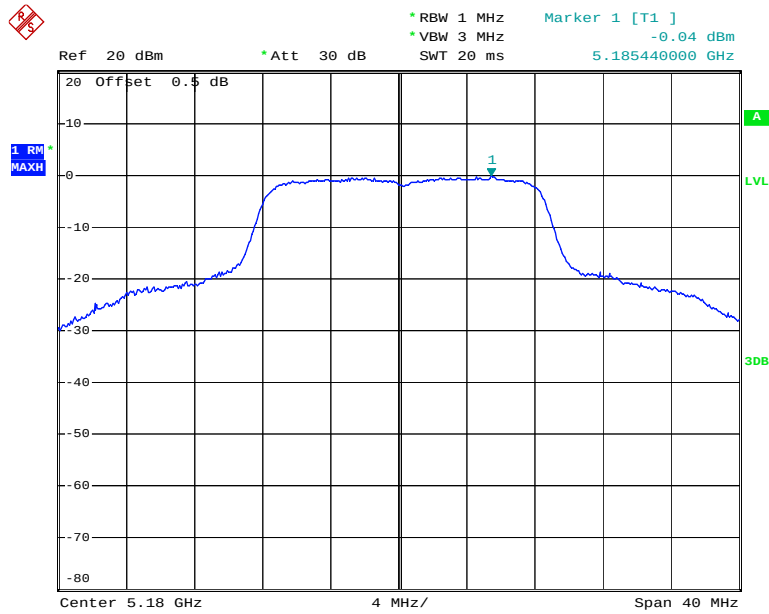
### 802.11n ht20 High Channel



Date: 1.AUG.2016 17:56:05

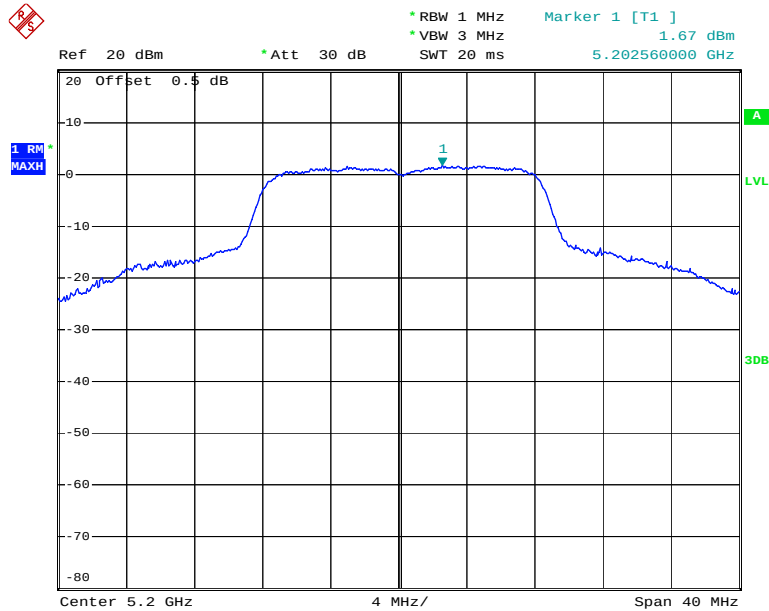
Chain 1:

### 802.11a Low Channel



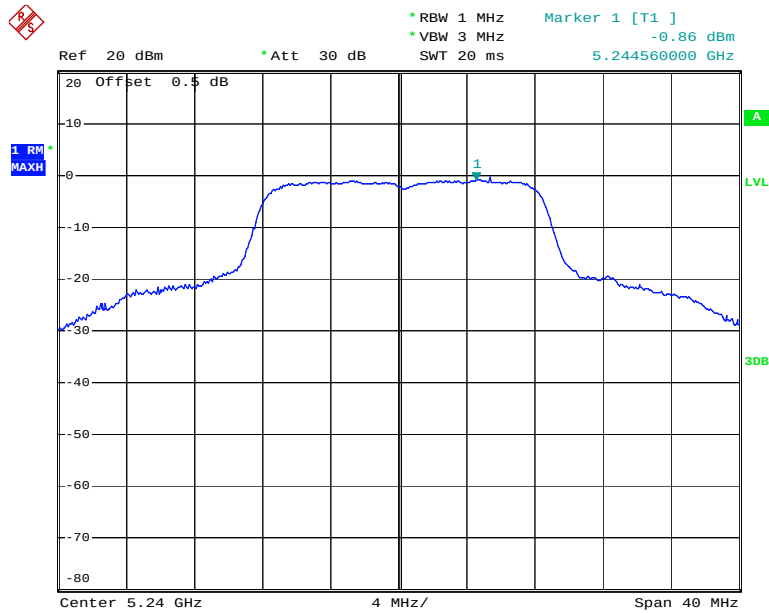
Date: 1.AUG.2016 18:51:08

### 802.11a Middle Channel



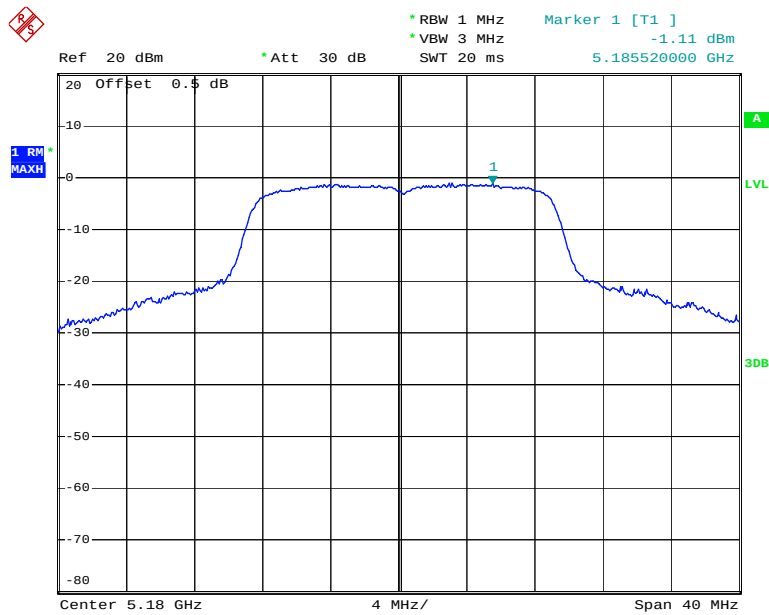
Date: 1.AUG.2016 18:45:44

### 802.11a High Channel



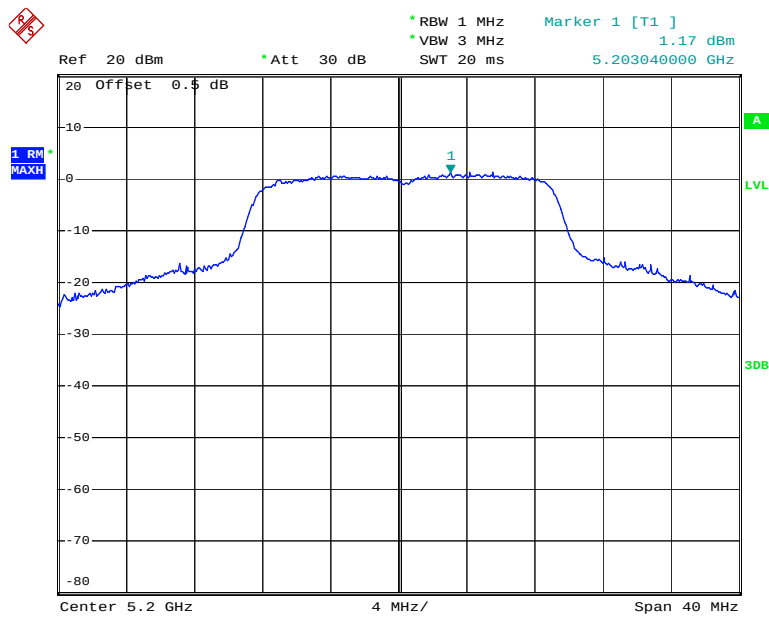
Date: 1.AUG.2016 18:47:11

### 802.11n ht20 Low Channel



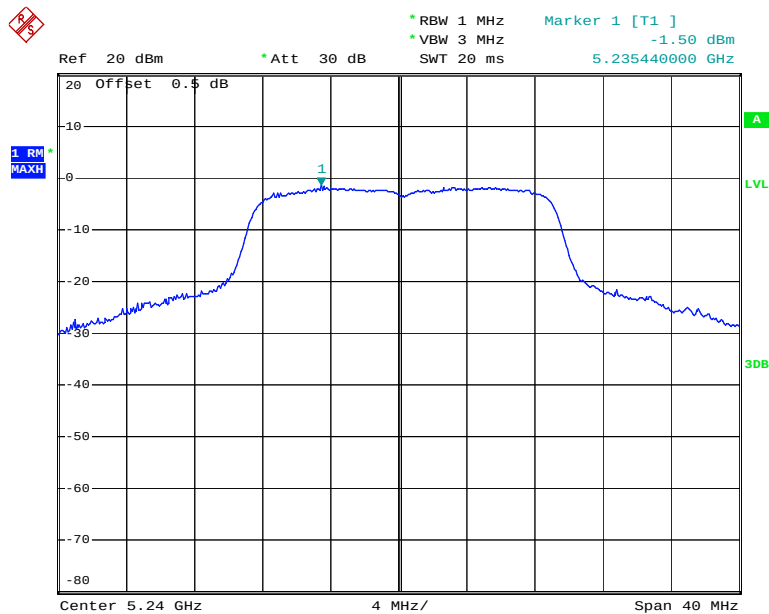
Date: 1.AUG.2016 18:52:55

### 802.11n ht20 Middle Channel



Date: 1.AUG.2016 18:54:33

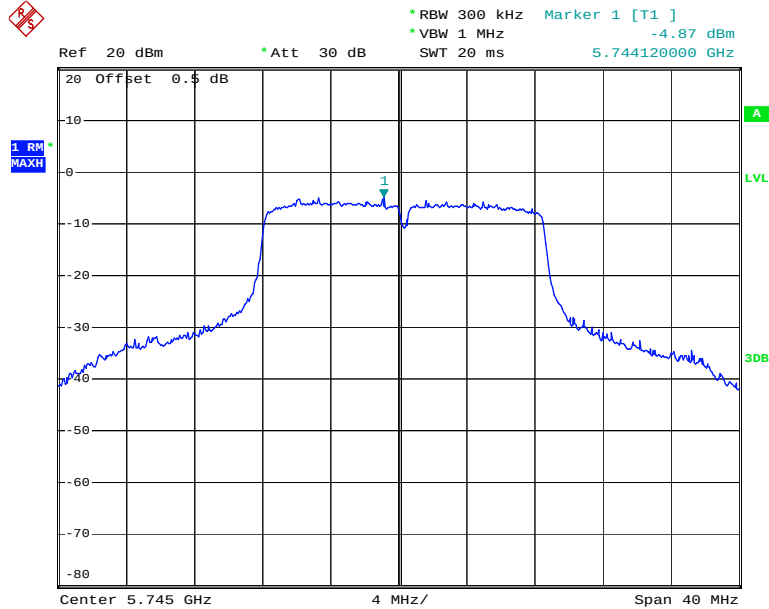
### 802.11n ht20 High Channel



Date: 1.AUG.2016 18:55:51

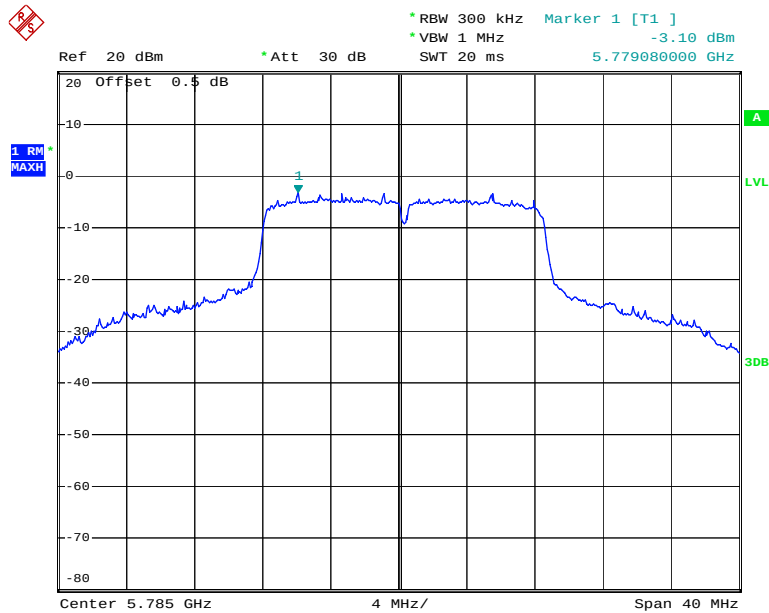
5725MHz-5850MHz:  
Chain 0:

### 802.11a Low Channel



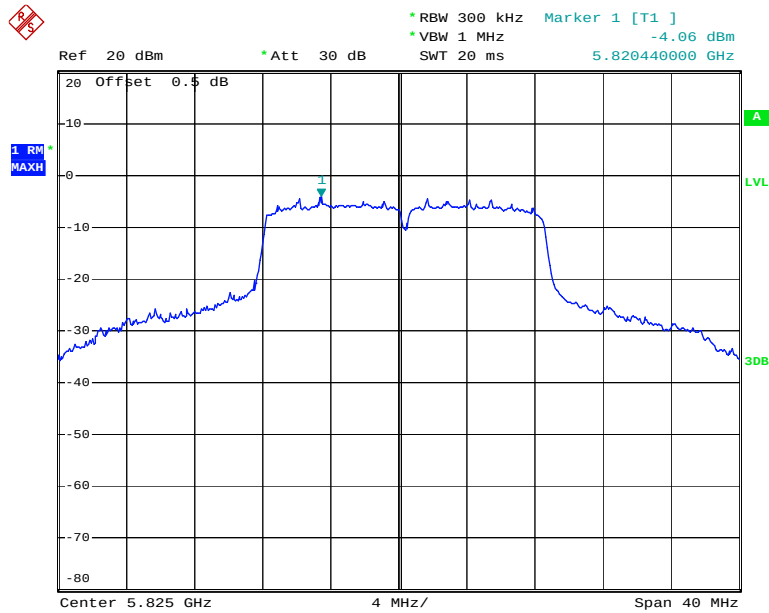
Date: 16.AUG.2016 09:36:04

### 802.11a Middle Channel



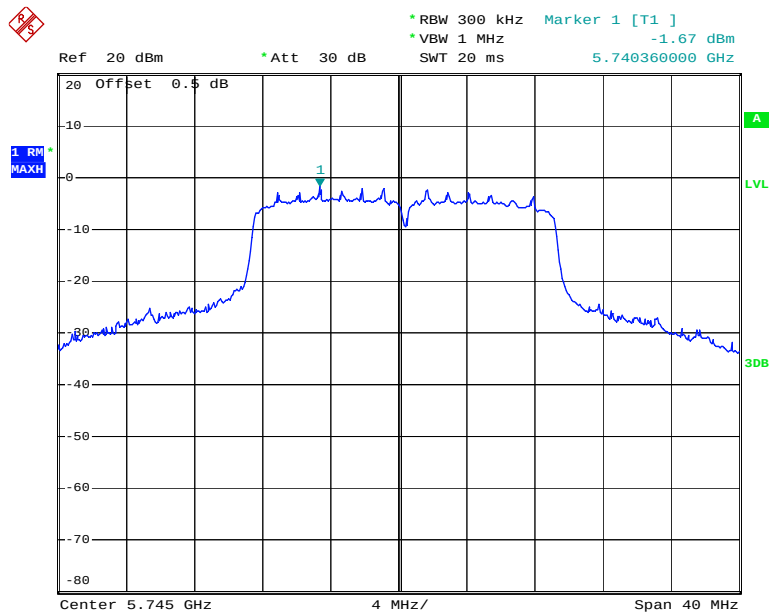
Date: 16.AUG.2016 10:50:20

### 802.11a High Channel



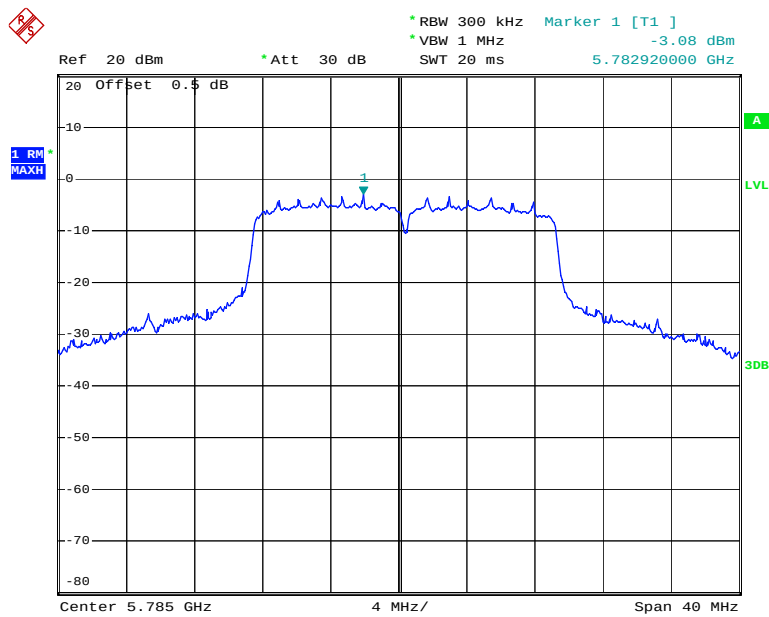
Date: 16.AUG.2016 10:54:36

### 802.11n ht20 Low Channel



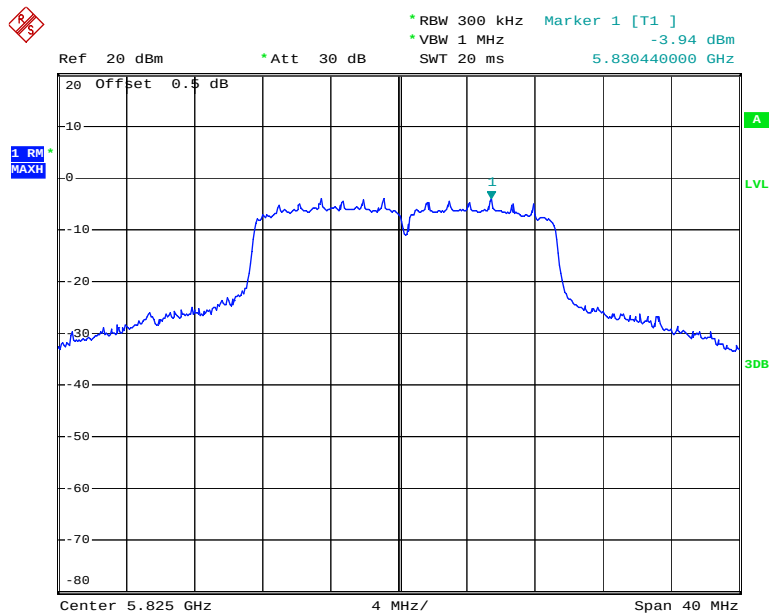
Date: 16.AUG.2016 10:59:26

### 802.11n ht20 Middle Channel



Date: 16.AUG.2016 11:03:23

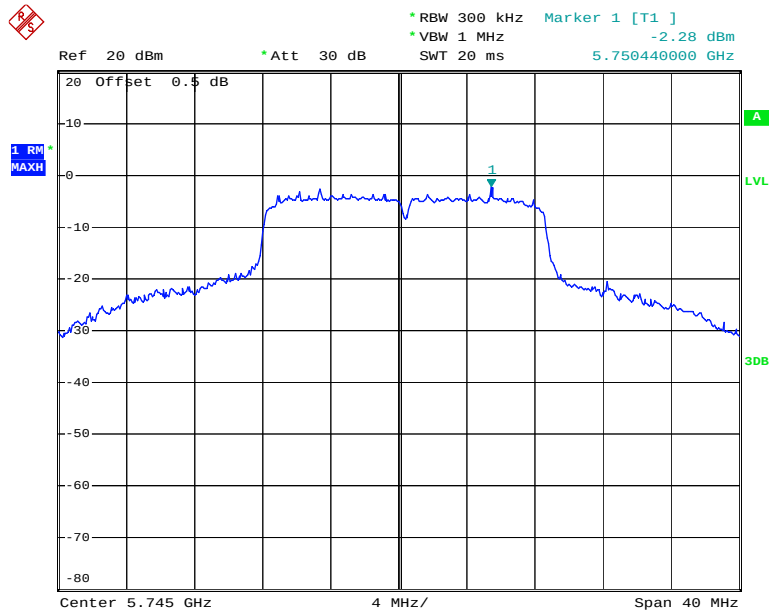
### 802.11n ht20 High Channel



Date: 16.AUG.2016 11:07:47

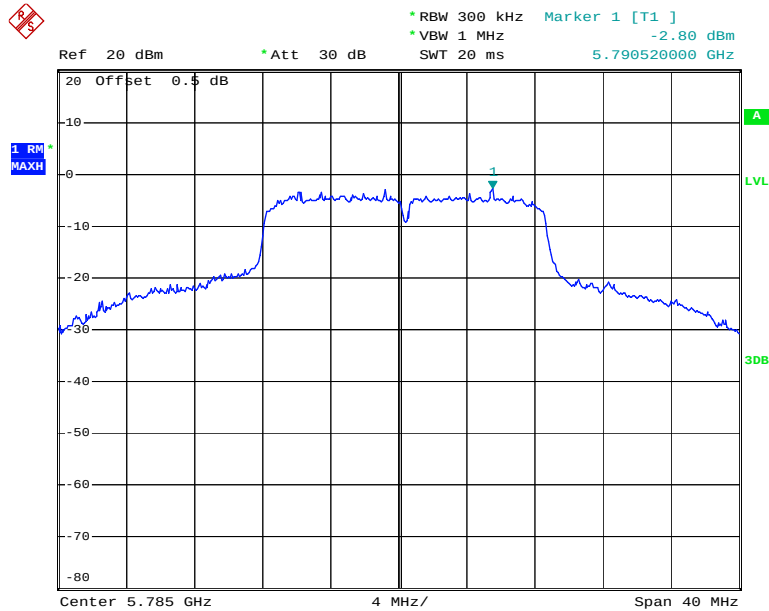
Chain 1:

### 802.11a Low Channel



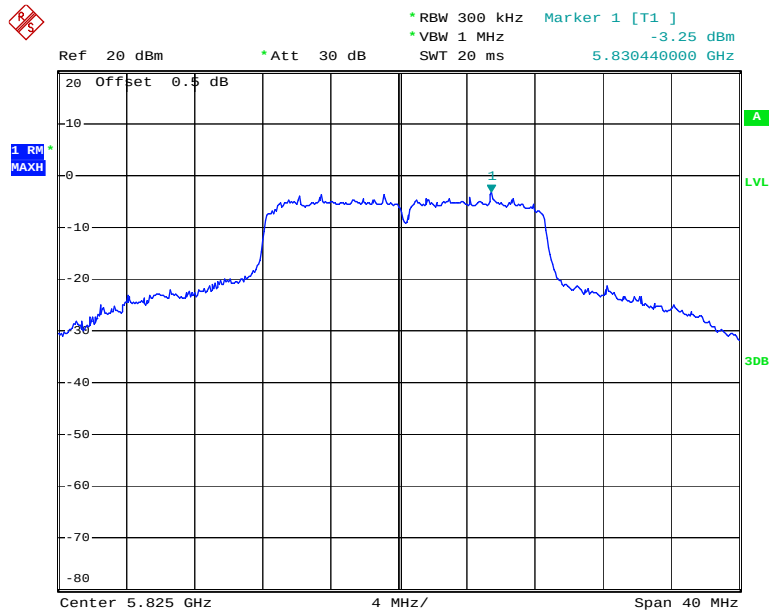
Date: 16.AUG.2016 11:13:18

### 802.11a Middle Channel



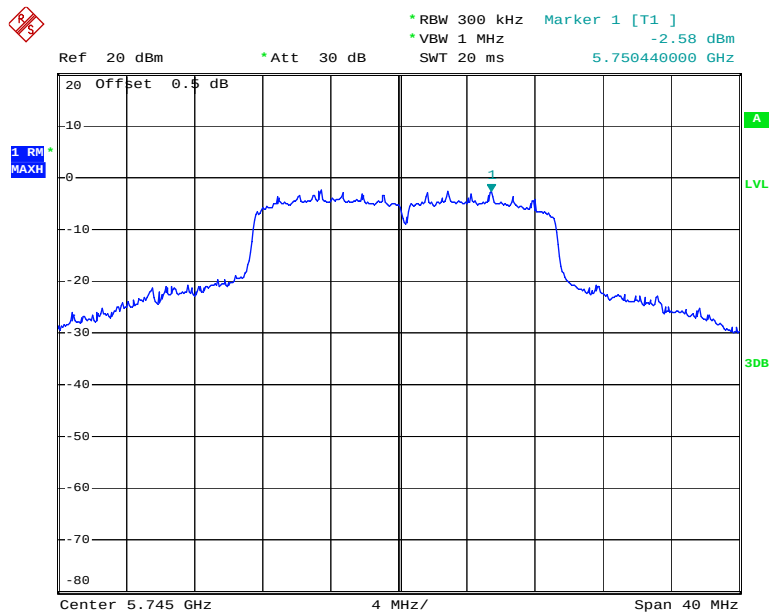
Date: 16.AUG.2016 11:26:32

### 802.11a High Channel



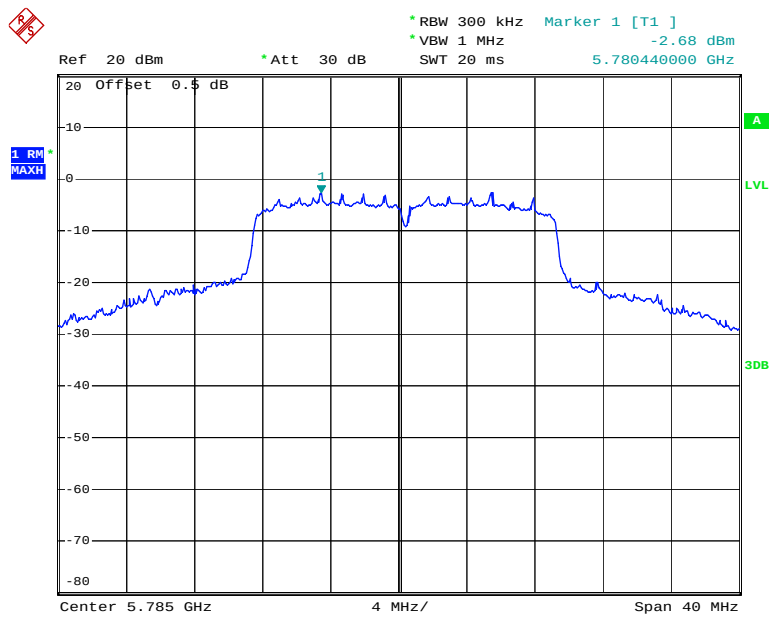
Date: 16.AUG.2016 11:31:23

### 802.11n ht20 Low Channel



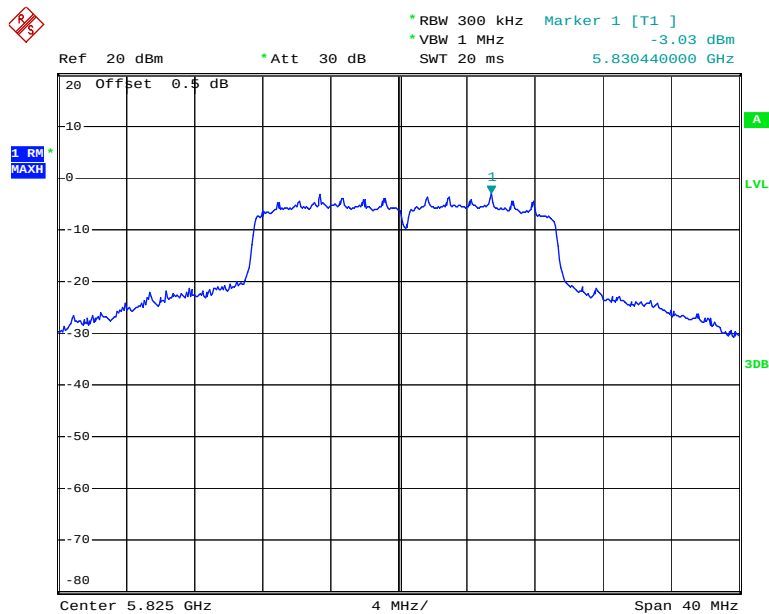
Date: 16.AUG.2016 11:34:00

### 802.11n ht20 Middle Channel



Date: 16.AUG.2016 11:36:48

### 802.11n ht20 High Channel



Date: 16.AUG.2016 11:39:56

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