

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

## INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT AND INDUSTRY CANADA RSS 247

OF

**Applicant:** Microsoft Corporation  
One Microsoft Way, Redmond, WA 98052-6399 USA

**Product Name:** Portable Computing Device

**Brand Name:** Microsoft

**Model No.:** 1825

**Model Difference:** N/A

**FCC ID:** C3K1825

**IC:** 3048A-1825

**Report Number:** E2/2018/70119

**FCC Rule Part:** §15.247, Cat: DTS

**IC Rule Part:** RSS-247 issue 2 Feb 2017

**Issue Date:** Sep. 22, 2018

**Date of Test:** Jun. 26, 2018 ~ Sep. 10, 2018

**Date of EUT Received:** Jun. 26, 2018

**We hereby certify that:**

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

The test results of this report relate only to the tested sample identified in this report.

*Vito Pei*  
**Tested By:** \_\_\_\_\_  
**Vito Pei / Sr. Engineer**

*Jim Chang*  
**Approved By:** \_\_\_\_\_  
**Jim Chang / Manager**



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## Revision History

| Report Number | Revision | Description                  | Effected Page | Issue Date    | Revised By    |
|---------------|----------|------------------------------|---------------|---------------|---------------|
| E2/2018/70119 | Rev.00   | Initial creation of document | All           | Sep. 22, 2018 | Violetta Tang |

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# 1 GENERAL INFORMATION

## 1.1 Product description

General:

|                        |   |                                     |  |
|------------------------|---|-------------------------------------|--|
| Product Name:          | Portable Computing Device   |                                     |  |
| Brand Name:            | Microsoft   |                                     |  |
| Model No.:             | 1825  |                                     |  |
| Model Difference:      | N/A   |                                     |  |
| Product SW/HW version: | Windows 10 Pro / EV2.7  |                                     |  |
| Radio SW/HW version:   | 18.33.105.6 / EV2.7   |                                     |  |
| Test SW Version:       | 3.0.271.0   |                                     |  |
| Power Supply:          | 7.66Vdc from Rechargeable Li-ion Battery<br>or 15V from AC/DC Adapter |                                     |  |
|                        | Battery:  | Model No.: G16QA043H, Supplier: SMP |  |
|                        | Adapter:  | Model No.: 1735, Supplier: LITEON   |  |

WLAN 2.4GHz:

| Wi-Fi           | Frequency Range | Channels | Rated Power in dBm (Peak) | Rated Power in dBm (EIRP) | Type of Emission | Modulation Technology |
|-----------------|-----------------|----------|---------------------------|---------------------------|------------------|-----------------------|
| 802.11b         | 2412-2472       | 13       | 20.16                     | 22.29                     | 13M3G1D          | DSSS                  |
| 802.11g         |                 |          | 23.53                     | 22.29                     | 16M5D1D          | OFDM                  |
| 802.11n<br>HT20 |                 |          | 23.67                     | 22.29                     | 17M7D1D          |                       |
| 802.11n<br>HT40 | 2422-2462       | 9        | 24.00                     | 22.28                     | 36M3D1D          |                       |

\* **Note:** EIRP = Average Power + Gain

|                      |  |
|----------------------|--|
| Antenna Designation: | PIFA Antenna,<br>Main Antenna Gain: 1.23dBi / Aux Antenna Gain: 2.29dBi  |
| Modulation type:     | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM  |
| Transition Rate:     | 802.11 b: 1/2/5.5/11 Mbps<br>802.11 g: 6/9/12/18/24/36/48/54 Mbps<br>802.11 n_20MHz: 6.5 – 144.4Mbps<br>802.11 n_40MHz: 13.5 – 300.0Mbps |

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## 1.2 Test Methodology of Applied Standards

FCC Part 15, Subpart C §15.247

FCC KDB 558074 D01 v05 DTS Meas. Guidance

FCC KDB 662911 D01 Multiple Transmitter Output

Canada RSS-247 issue 2 Feb. 2017

Canada RSS-Gen issue 5 Apr. 2018

ANSI C63.10:2013

Note: All test items have been performed and record as per the above standards.

## 1.3 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory No.2, Keji 1st Rd.,  
Guishan District, Taoyuan City, Taiwan 333

(TAF code 0513)

FCC Registration Numbers are: 735305 / TW0002

Canada Registration Number: 4620A-5 .

## 1.4 Special Accessories

AC Adapter is used while the test is conducted and there is no other accessory attached. This is the worst case condition.

## 1.5 Equipment Modifications

There was no modification incorporated into the EUT.

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## 2 SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

The EUT is configured to operate in a continuous transmission mode. EUT placement and various angles were checked to find worst mode where the emission characteristics are maximized.

### 2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is placed on a table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz. The CISPR Quasi-Peak and Average detector mode is employed according to §15.207. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

#### 2.3.2 Radiated Emissions

The EUT is placed on as turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

### 2.4 Measurement Results Explanation Example

#### For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

#### Note:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor. Following shows an offset computation example with cable loss and attenuator.

#### Offset:

= RF cable loss (dB)+ attenuation factor(dB) =10.6 (dB) for SISO / 13.6 (dB) for MIMO

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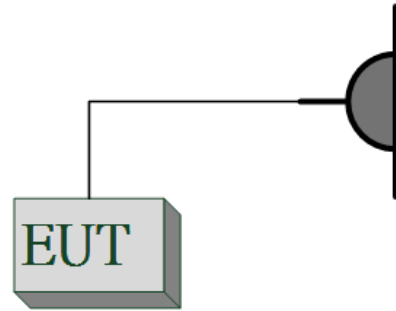
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## 2.5 Configuration of Tested System

**Fig. 2-1 Radiated & Conducted Emission Configuration**



**Fig.2-2 Conducted Emission (Antenna Port) Configuration**



**Table 2-1 Equipment Used in Tested System**

| Item | Equipment          | Mfr/Brand | Model/Type No. | Series No. | Data Cable | Power Cord |
|------|--------------------|-----------|----------------|------------|------------|------------|
| 1    | WLAN Test Software | N/A       | N/A            | N/A        | N/A        | N/A        |
| 2    | Notebook           | Lenovo    | L420           | S0011721   | Shielded   | Unshielded |

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### 3 SUMMARY OF TEST RESULTS

| FCC Rules      | IC Rules                         | Description Of Test                       | Result    |
|----------------|----------------------------------|---|-----------|
| §15.207(a)     | RSS-Gen §8.8                     | AC Power Line Conducted Emission          | Compliant |
| §15.247(b) (3) | RSS-247 §5.4(4)                  | Peak Output Power                         | Compliant |
| §15.247(a)(2)  | RSS-247 §5.2 (1)<br>RSS-Gen §6.7 | 6dB & 99% Emission Bandwidth              | Compliant |
| §15.247(d)     | RSS-247 §5.5                     | Conducted Band Edge and Spurious Emission | Compliant |
| §15.247(d)     | RSS-247 §5.5                     | Radiated Band Edge and Spurious Emission  | Compliant |
| §15.247(e)     | RSS-247 §5.2(2)                  | Power Spectral Density                    | Compliant |
| §15.203        | RSS- Gen §6.8                    | Antenna Requirement                       | Compliant |

### 4 DESCRIPTION OF TEST MODES

#### 4.1 Operated in 2400 ~ 2483.5MHz Band

13 channels are provided for 802.11b, 802.11g and 802.11n\_HT20

| CHANNEL | FREQUENCY | CHANNEL | FREQUENCY |
|---------|-----------|---------|-----------|
| 1       | 2412 MHz  | 8       | 2447 MHz  |
| 2       | 2417 MHz  | 9       | 2452 MHz  |
| 3       | 2422 MHz  | 10      | 2457 MHz  |
| 4       | 2427 MHz  | 11      | 2462 MHz  |
| 5       | 2432 MHz  | 12      | 2467 MHz  |
| 6       | 2437 MHz  | 13      | 2472 MHz  |
| 7       | 2442 MHz  |         |           |

9 channels are provided for 802.11n\_HT40

| CHANNEL | FREQUENCY | CHANNEL | FREQUENCY |
|---------|-----------|---------|-----------|
| 3       | 2422 MHz  | 8       | 2447 MHz  |
| 4       | 2427 MHz  | 9       | 2452 MHz  |
| 5       | 2432 MHz  | 10      | 2457 MHz  |
| 6       | 2437 MHz  | 11      | 2462 MHz  |
| 7       | 2442 MHz  |         |           |

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1. The EUT has been tested under operating condition.
2. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
3. Investigation has been done on all the possible configurations for searching the worst case.
4. For MIMO modes, the 2TX emission testing was considered as a worst case scenario and was performed at power levels, per transmit chain, greater than or equal to the maximum power in any 1TX mode.
5. Power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

### AC POWER LINE CONDUCTION EMISSION

| MODE             | AVAILABLE CHANNEL        | TESTED CHANNEL | MODULATION | PACKET TYPE |
|------------------|--------------------------|----------------|------------|-------------|
| 802.11n<br>20MHz | Operation in normal mode |                |            |             |

### RADIATED EMISSION TEST:

| RADIATED EMISSION TEST (BELOW 1 GHz) |                   |                |            |                  |              |
|--------------------------------------|-------------------|----------------|------------|------------------|--------------|
| MODE                                 | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION | DATA RATE (Mbps) | ANTENNA PORT |
| 802.11g                              | 1 to 13           | 1, 6, 11,12,13 | OFDM       | 6                | 2TX          |

| RADIATED EMISSION TEST (ABOVE 1 GHz) |                   |                |            |                  |              |
|--------------------------------------|-------------------|----------------|------------|------------------|--------------|
| MODE                                 | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION | DATA RATE (Mbps) | ANTENNA PORT |
| 802.11b                              | 1 to 13           | 1, 6, 11,12,13 | DSSS       | 1                | 2TX          |
| 802.11g                              | 1 to 13           | 1, 6, 11,12,13 | OFDM       | 6                | 2TX          |
| 802.11n HT20                         | 1 to 13           | 1, 6, 11,12,13 | OFDM       | MCS 8            | MIMO         |
| 802.11n HT40                         | 3 to 11           | 3, 6, 9,10,11  | OFDM       | MCS 8            | MIMO         |

**Note:**

The field strength of radiation emission was measured as EUT stand-up position (H, E1 mode) and lie down position (E2 mode) for 802.11b/g/n WLAN Transmitter for channel Low, Mid and High, the worst case E2 position was reported.

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**ANTENNA PORT CONDUCTED MEASUREMENT:**

| CONDUCTED TEST |                   |                |            |                  |              |
|----------------|-------------------|----------------|------------|------------------|--------------|
| MODE           | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION | DATA RATE (Mbps) | ANTENNA PORT |
| 802.11b        | 1 to 13           | 1, 6, 11,12,13 | DSSS       | 1                | 2TX          |
| 802.11g        | 1 to 13           | 1, 6, 11,12,13 | OFDM       | 6                | 2TX          |
| 802.11n HT20   | 1 to 13           | 1, 6, 11,12,13 | OFDM       | MCS 8            | MIMO         |
| 802.11n HT40   | 3 to 11           | 3, 6, 9,10,11  | OFDM       | MCS 8            | MIMO         |

**Directional gain (MIMO)**

The Tx transmission to construct MIMO operation is cyclic delay diversity, and the following deduction to obtain the array gain of MIMO operation is based on the approach given by KDB 662911 D01.

d) *Unequal antenna gains, with equal transmit powers.* For antenna gains given by  $G_1, G_2, \dots, G_N$  dBi

(i) If transmit signals are *correlated*, then

Directional gain =  $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$  dBi [Note the “20”s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

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## 5 MEASUREMENT UNCERTAINTY

| Test Items                               | Uncertainty                 |
|--|-----------------------------|
| AC Power Line Conducted Emission         | +/- 2.586 dB                |
| Peak Output Power                        | +/- 0.84 dB                 |
| 6dB Bandwidth                            | +/- 51.33 Hz                |
| 100 KHz Bandwidth Of Frequency Band Edge | +/- 0.84 dB                 |
| Peak Power Density                       | +/- 1.3 dB                  |
| Temperature                              | +/- 0.65 °C                 |
| Humidity                                 | +/- 4.6 %                   |
| DC / AC Power Source                     | DC= +/- 0.13%, AC= +/- 0.2% |

Radiated Spurious Emission:

|  |                            |
|--|----------------------------|
| Measurement uncertainty<br>(Polarization : <b>Vertical</b> ) | 9kHz-30MHz: +/-2.87dB      |
|  | 30MHz - 180MHz: +/- 3.37dB |
|  | 180MHz -417MHz: +/- 3.19dB |
|  | 0.417GHz-1GHz: +/- 3.19dB  |
|  | 1GHz - 18GHz: +/- 4.04dB   |
|  | 18GHz - 40GHz: +/- 4.04dB  |

|  |                            |
|--|----------------------------|
| Measurement uncertainty<br>(Polarization : <b>Horizontal</b> ) | 9kHz-30MHz: +/-2.87dB      |
|  | 30MHz - 167MHz: +/- 4.22dB |
|  | 167MHz -500MHz: +/- 3.44dB |
|  | 0.5GHz-1GHz: +/- 3.39dB    |
|  | 1GHz - 18GHz: +/- 4.08dB   |
|  | 18GHz - 40GHz: +/- 4.08dB  |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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## 6 CONDUCTED EMISSION TEST

### 6.1 Standard Applicable

Frequency range within 150kHz to 30MHz shall not exceed the Limit table as below.

| Frequency range<br>MHz | Limits<br>dB(uV) |          |
|------------------------|------------------|----------|
|                        | Quasi-peak       | Average  |
| 0.15 to 0.50           | 66 to 56         | 56 to 46 |
| 0.50 to 5              | 56               | 46       |
| 5 to 30                | 60               | 50       |

Note

- The lower limit shall apply at the transition frequencies
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

### 6.2 Measurement Equipment Used

| Conducted Emission Test Site |                      |                  |               |            |            |
|------------------------------|----------------------|------------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR                  | MODEL NUMBER     | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| LISN                         | TESEQ                | NNB 51           | 36076         | 2018/02/14 | 2019/02/13 |
| EMI Test Receiver            | R&S                  | ESCI             | 101300        | 2017/11/02 | 2018/11/01 |
| Coaxial Cable                | EMC Instruments Corp | EMC5D-BM-BM-3000 | 1401004       | 2018/05/25 | 2019/05/24 |

### 6.3 EUT Setup

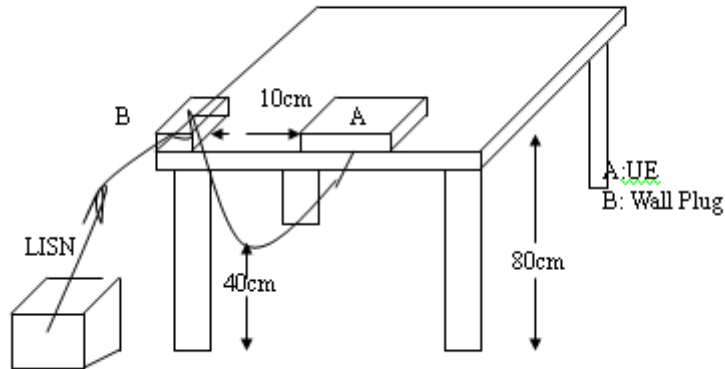
- The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI 63.10:2013.
- The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
- The LISN was connected with 120Vac/60Hz power source.

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## 6.4 Test SET-UP (Block Diagram of Configuration)



## 6.5 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all phases of power being supplied by given UE are completed

## 6.6 Measurement Result

Note: Refer to next page for measurement data and plots.

Note2: The \* reveals the worst-case results that closet to the limit

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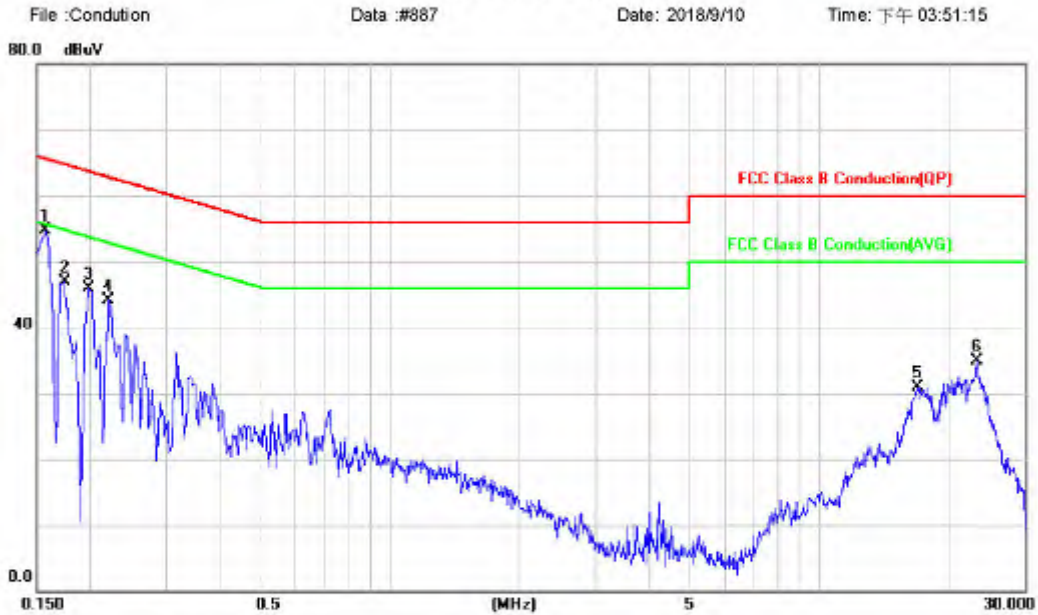


Site : Conduction Room  
Limit: FCC Class B Conduction(QP)  
Mode:  
Note:

Phase: N  
Power: AC 120V/60Hz

Temperature: 22 °C  
Humidity: 70 %

### Conducted Emission



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   | *   | 0.1580       | 54.71                    | 0.04                    | 54.75                    | 65.57         | -10.82     | peak     |         |
| 2   |     | 0.1740       | 46.95                    | 0.04                    | 46.99                    | 64.77         | -17.78     | peak     |         |
| 3   |     | 0.1980       | 45.83                    | 0.04                    | 45.87                    | 63.69         | -17.82     | peak     |         |
| 4   |     | 0.2220       | 43.99                    | 0.05                    | 44.04                    | 62.74         | -18.70     | peak     |         |
| 5   |     | 16.8460      | 30.37                    | 0.54                    | 30.91                    | 60.00         | -29.09     | peak     |         |
| 6   |     | 23.1940      | 34.20                    | 0.71                    | 34.91                    | 60.00         | -25.09     | peak     |         |

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## 7 DUTY CYCLE OF TEST SIGNAL

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

### Formula:

$$\text{Duty Cycle} = \text{Ton} / (\text{Ton} + \text{Toff})$$

### Measurement Procedure:

1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

### Duty Cycle:

|            | Duty Cycle (%) | Duty Factor (dB) | 1/T (kHz) | VBW setting (kHz) |
|------------|----------------|------------------|-----------|-------------------|
| 802.11b    | 99.30          | 0.03             | 0.08      | 1.00              |
| 802.11g    | 94.74          | 0.23             | 0.48      | 1.00              |
| 802.11n_20 | 89.57          | 0.48             | 1.01      | 2.00              |
| 802.11n_40 | 81.16          | 0.91             | 2.02      | 3.00              |

$$b = 99.3\%, g = 94.74\%, n_{ht\_20} = 89.57\%$$

$$\text{Duty Cycle Factor: } 10 * \log(1/0.993) = 0.03$$

$$\text{Duty Cycle Factor: } 10 * \log(1/0.9474) = 0.23$$

$$\text{Duty Cycle Factor: } 10 * \log(1/0.8957) = 0.48$$

$$\text{Duty Cycle Factor: } 10 * \log(1/0.8116) = 0.91$$

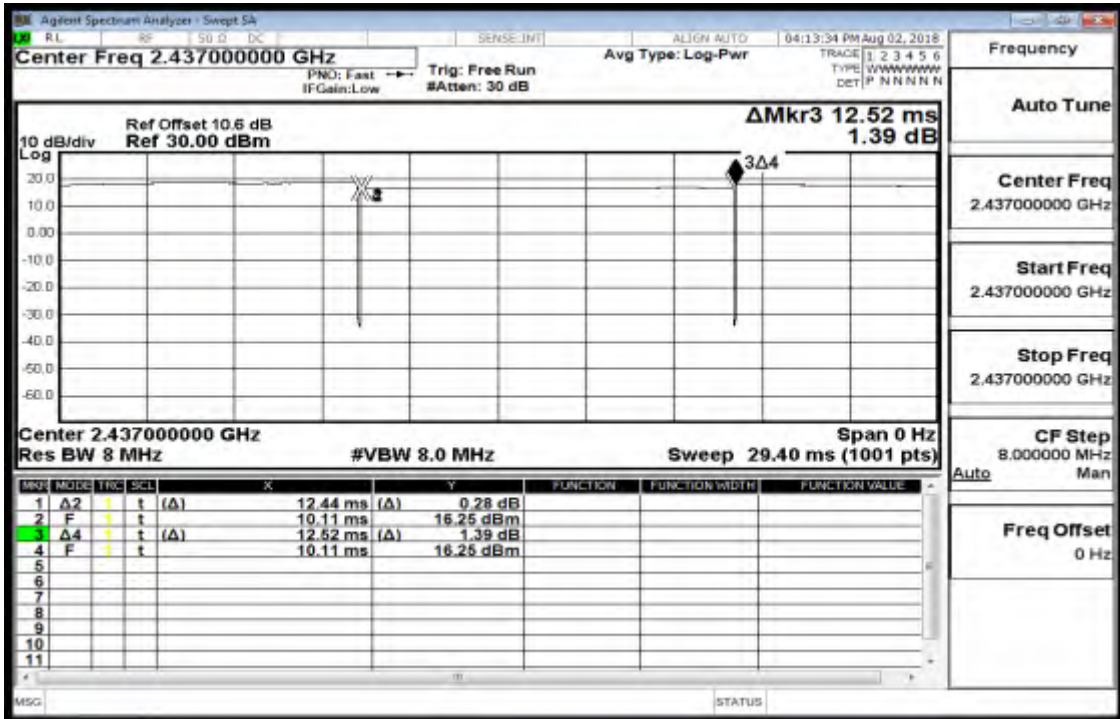
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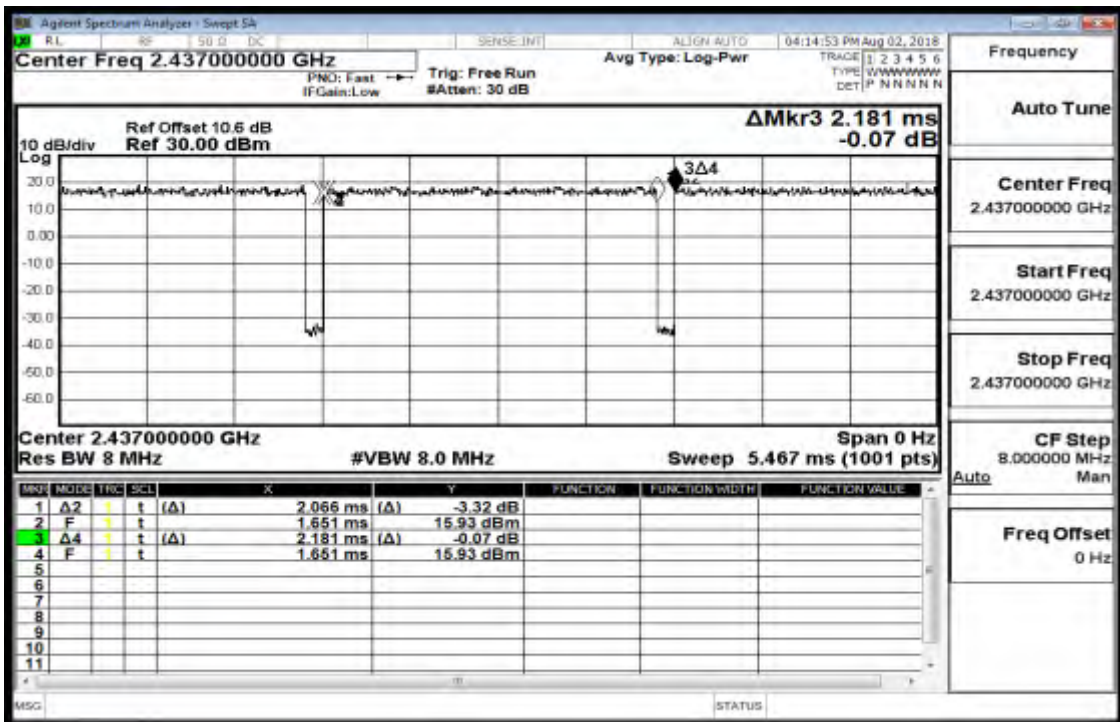
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### 7.1 DUTY CYCLE TEST SIGNAL Measurement Result 802.11 b



### 802.11 g

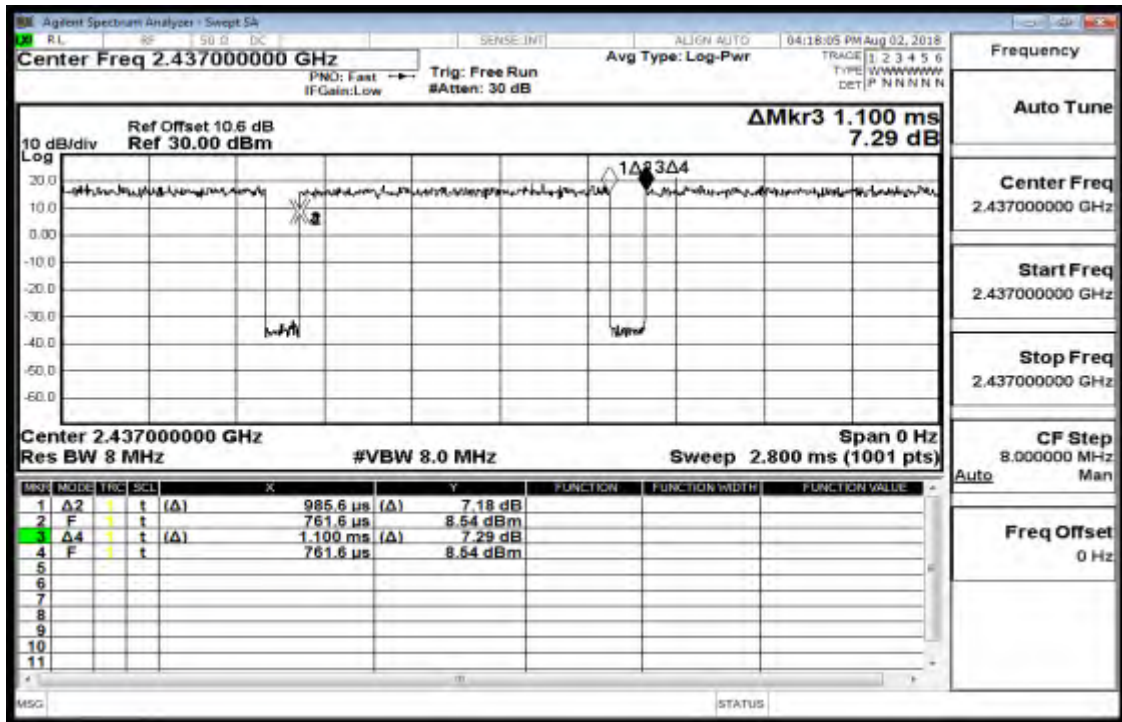


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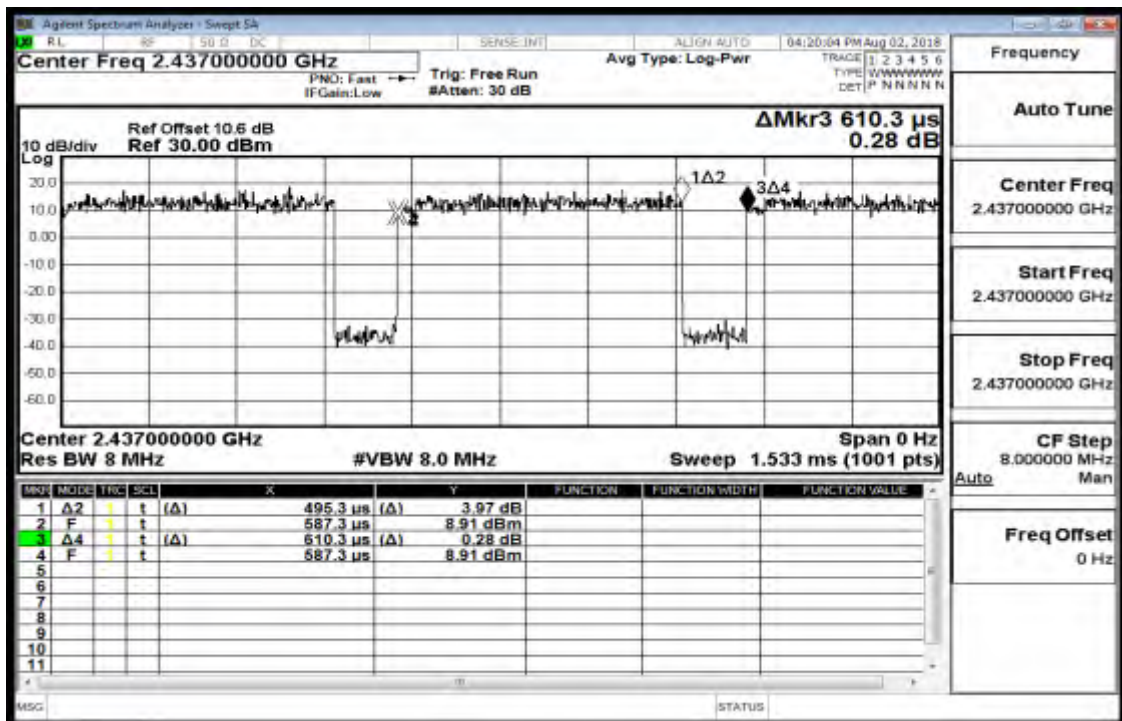
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802.11 n\_20 MHz



802.11 n\_40 MHz



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## 8 PEAK OUTPUT POWER MEASUREMENT

### 8.1 Standard Applicable

For systems using digital modulation in the 2400-2483.5 MHz bands, the limit for peak output power is 1Watt.

Per RSS-247 §5.4(4)

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W. Except as provided in Section 5.4(5), the e.i.r.p. shall not exceed 4 W.

If the transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the Antenna exceeds 6dBi.

In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of Antenna exceeds 6dBi.

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;

Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

| Frequency (MHz) | Effective Legacy Gain (dBi) | Conducted Power Limit (dBm) |
|-----------------|-----------------------------|-----------------------------|
| 2412~2462       | 4.80                        | 30                          |

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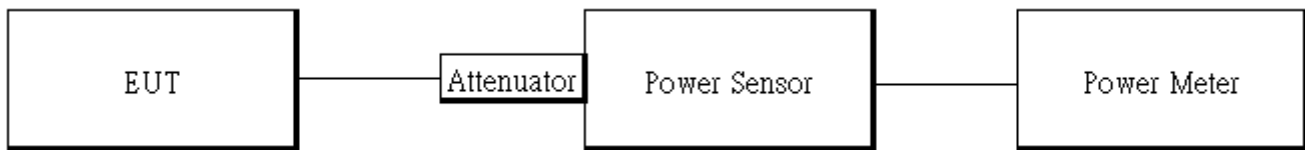
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## 8.2 Measurement Equipment Used

| Conducted Emission Test Site |           |              |               |            |            |
|------------------------------|-----------|--------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR       | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| Spectrum Analyzer            | Agilent   | N9010A       | MY51440113    | 2018/06/20 | 2019/06/19 |
| Power Meter                  | Anritsu   | ML2496A      | 1326001       | 2018/08/09 | 2019/08/02 |
| Power Sensor                 | Anritsu   | MA2411B      | 1315048       | 2018/08/09 | 2019/08/02 |
| Power Sensor                 | Anritsu   | MA2411B      | 1315049       | 2018/08/09 | 2019/08/02 |
| Attenuator                   | Marvelous | MVE2213-10   | RF30          | 2017/12/26 | 2018/12/25 |
| Attenuator                   | Marvelous | MVE2213-10   | RF31          | 2017/12/26 | 2018/12/25 |
| DC Block                     | PASTERNAK | PE8210       | RF29          | 2017/12/26 | 2018/12/25 |
| Notebook                     | Lenovo    | L420         | S0011721      | N/A        | N/A        |

## 8.3 Test Set-up

Power Meter:



## 8.4 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter.

### Power Meter:

It is used as the auxiliary test equipment to conduct the output power measurement.

4. Record the max. Reading as observed from Spectrum or Power Meter.

Note: The reported CH0 and CH1 power values in the 2Tx and MIMO tables were measured when performing additional measurements and all reported values are within compliance.

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### 8.5 Measurement Result

| 802.11b Chain0 |             |           |                         |                    |        |
|----------------|-------------|-----------|-------------------------|--------------------|--------|
| CH             | Freq. (MHz) | Data Rate | Peak Output Power (dBm) | Limit              | RESULT |
| 1              | 2412        | 1         | 16.71                   | 1 Watt = 30.00 dBm | PASS   |
| 6              | 2437        | 1         | 16.55                   | 1 Watt = 30.00 dBm | PASS   |
| 11             | 2462        | 1         | 16.92                   | 1 Watt = 30.00 dBm | PASS   |
| 12             | 2467        | 1         | 16.36                   | 1 Watt = 30.00 dBm | PASS   |
| 13             | 2472        | 1         | 16.37                   | 1 Watt = 30.00 dBm | PASS   |

| 802.11b Chain0 |             |           |  |                    |        |
|----------------|-------------|-----------|--|--------------------|--------|
| CH             | Freq. (MHz) | Data Rate | Max. Avg. Output include tune up tolerance Power (dBm) | Limit              | RESULT |
| 1              | 2412        | 1         | 14.35  | 1 Watt = 30.00 dBm | PASS   |
| 6              | 2437        | 1         | 14.23  | 1 Watt = 30.00 dBm | PASS   |
| 11             | 2462        | 1         | 14.45  | 1 Watt = 30.00 dBm | PASS   |
| 12             | 2467        | 1         | 13.83  | 1 Watt = 30.00 dBm | PASS   |
| 13             | 2472        | 1         | 13.85  | 1 Watt = 30.00 dBm | PASS   |

| 802.11b Chain1 |             |           |                         |                    |        |
|----------------|-------------|-----------|-------------------------|--------------------|--------|
| CH             | Freq. (MHz) | Data Rate | Peak Output Power (dBm) | Limit              | RESULT |
| 1              | 2412        | 1         | 16.66                   | 1 Watt = 30.00 dBm | PASS   |
| 6              | 2437        | 1         | <b>16.97</b>            | 1 Watt = 30.00 dBm | PASS   |
| 11             | 2462        | 1         | 16.80                   | 1 Watt = 30.00 dBm | PASS   |
| 12             | 2467        | 1         | 16.35                   | 1 Watt = 30.00 dBm | PASS   |
| 13             | 2472        | 1         | 16.30                   | 1 Watt = 30.00 dBm | PASS   |

| 802.11b Chain1 |             |           |  |                    |        |
|----------------|-------------|-----------|--|--------------------|--------|
| CH             | Freq. (MHz) | Data Rate | Max. Avg. Output include tune up tolerance Power (dBm) | Limit              | RESULT |
| 1              | 2412        | 1         | 14.22  | 1 Watt = 30.00 dBm | PASS   |
| 6              | 2437        | 1         | <b>14.46</b>   | 1 Watt = 30.00 dBm | PASS   |
| 11             | 2462        | 1         | 14.34  | 1 Watt = 30.00 dBm | PASS   |
| 12             | 2467        | 1         | 13.86  | 1 Watt = 30.00 dBm | PASS   |
| 13             | 2472        | 1         | 13.81  | 1 Watt = 30.00 dBm | PASS   |

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| 802.11b_2TX |             |           |                         |       |                               |                              |                    |        |
|-------------|-------------|-----------|-------------------------|-------|-------------------------------|------------------------------|--------------------|--------|
| CH          | Freq. (MHz) | Data Rate | Peak Output Power (dBm) |       | Total Peak Output Power (dBm) | Total Peak Output Power (mW) | Limit              | RESULT |
|             |             |           | CH 0                    | CH 1  |                               |                              |                    |        |
| 1           | 2412        | 1         | 16.69                   | 16.60 | 19.66                         | 92.37                        | 1 Watt = 30.00 dBm | PASS   |
| 6           | 2437        | 1         | 17.25                   | 17.04 | <b>20.16</b>                  | 103.67                       | 1 Watt = 30.00 dBm | PASS   |
| 11          | 2462        | 1         | 17.18                   | 16.79 | 20.00                         | 99.99                        | 1 Watt = 30.00 dBm | PASS   |
| 12          | 2467        | 1         | 16.41                   | 15.87 | 19.16                         | 82.39                        | 1 Watt = 30.00 dBm | PASS   |
| 13          | 2472        | 1         | 16.23                   | 15.79 | 19.03                         | 79.91                        | 1 Watt = 30.00 dBm | PASS   |

| 802.11b_2TX |             |           |                         |       |  |   |                    |        |
|-------------|-------------|-----------|-------------------------|-------|--|---|--------------------|--------|
| CH          | Freq. (MHz) | Data Rate | Avg. Output Power (dBm) |       | Max. Avg. Output include tune up tolerance Power (dBm) | Max. Avg. Output include tune up tolerance Power (mW) | Limit              | RESULT |
|             |             |           | CH 0                    | CH 1  |  |   |                    |        |
| 1           | 2412        | 1         | 14.34                   | 14.16 | 17.29  | 53.55   | 1 Watt = 30.00 dBm | PASS   |
| 6           | 2437        | 1         | 14.50                   | 14.40 | <b>17.49</b>   | 56.06   | 1 Watt = 30.00 dBm | PASS   |
| 11          | 2462        | 1         | 14.35                   | 14.26 | 17.34  | 54.22   | 1 Watt = 30.00 dBm | PASS   |
| 12          | 2467        | 1         | 13.95                   | 13.88 | 16.95  | 49.56   | 1 Watt = 30.00 dBm | PASS   |
| 13          | 2472        | 1         | 13.90                   | 13.61 | 16.79  | 47.80   | 1 Watt = 30.00 dBm | PASS   |

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| 802.11g Chain0 |             |           |  |          |           |        |
|----------------|-------------|-----------|--|----------|-----------|--------|
| CH             | Freq. (MHz) | Data Rate | Peak Output Power (dBm)                                | Limit    |           | RESULT |
| 1              | 2412        | 6         | 20.45  | 1 Watt = | 30.00 dBm | PASS   |
| 6              | 2437        | 6         | 20.32  | 1 Watt = | 30.00 dBm | PASS   |
| 11             | 2462        | 6         | 20.37  | 1 Watt = | 30.00 dBm | PASS   |
| 12             | 2467        | 6         | 18.93  | 1 Watt = | 30.00 dBm | PASS   |
| 13             | 2472        | 6         | 9.99   | 1 Watt = | 30.00 dBm | PASS   |
| 802.11g Chain0 |             |           |  |          |           |        |
| CH             | Freq. (MHz) | Data Rate | Max. Avg. Output include tune up tolerance Power (dBm) | Limit    |           | RESULT |
| 1              | 2412        | 6         | 14.47  | 1 Watt = | 30.00 dBm | PASS   |
| 6              | 2437        | 6         | 14.31  | 1 Watt = | 30.00 dBm | PASS   |
| 11             | 2462        | 6         | <b>14.49</b>   | 1 Watt = | 30.00 dBm | PASS   |
| 12             | 2467        | 6         | 12.45  | 1 Watt = | 30.00 dBm | PASS   |
| 13             | 2472        | 6         | 3.41   | 1 Watt = | 30.00 dBm | PASS   |

| 802.11g Chain1 |             |           |  |          |           |        |
|----------------|-------------|-----------|--|----------|-----------|--------|
| CH             | Freq. (MHz) | Data Rate | Peak Output Power (dBm)                                | Limit    |           | RESULT |
| 1              | 2412        | 6         | 20.69  | 1 Watt = | 30.00 dBm | PASS   |
| 6              | 2437        | 6         | 20.51  | 1 Watt = | 30.00 dBm | PASS   |
| 11             | 2462        | 6         | <b>20.70</b>   | 1 Watt = | 30.00 dBm | PASS   |
| 12             | 2467        | 6         | 18.75  | 1 Watt = | 30.00 dBm | PASS   |
| 13             | 2472        | 6         | 9.95   | 1 Watt = | 30.00 dBm | PASS   |
| 802.11g Chain1 |             |           |  |          |           |        |
| CH             | Freq. (MHz) | Data Rate | Max. Avg. Output include tune up tolerance Power (dBm) | Limit    |           | RESULT |
| 1              | 2412        | 6         | 14.38  | 1 Watt = | 30.00 dBm | PASS   |
| 6              | 2437        | 6         | 14.27  | 1 Watt = | 30.00 dBm | PASS   |
| 11             | 2462        | 6         | <b>14.49</b>   | 1 Watt = | 30.00 dBm | PASS   |
| 12             | 2467        | 6         | 12.35  | 1 Watt = | 30.00 dBm | PASS   |
| 13             | 2472        | 6         | 3.45   | 1 Watt = | 30.00 dBm | PASS   |

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| 802.11g_2TX |             |           |                         |       |                               |                              |                    |        |
|-------------|-------------|-----------|-------------------------|-------|-------------------------------|------------------------------|--------------------|--------|
| CH          | Freq. (MHz) | Data Rate | Peak Output Power (dBm) |       | Total Peak Output Power (dBm) | Total Peak Output Power (mW) | Limit              | RESULT |
|             |             |           | CH 0                    | CH 1  |                               |                              |                    |        |
| 1           | 2412        | 6         | 20.45                   | 20.52 | 23.50                         | 223.64                       | 1 Watt = 30.00 dBm | PASS   |
| 6           | 2437        | 6         | 20.36                   | 20.55 | 23.47                         | 222.14                       | 1 Watt = 30.00 dBm | PASS   |
| 11          | 2462        | 6         | 20.37                   | 20.66 | <b>23.53</b>                  | 225.31                       | 1 Watt = 30.00 dBm | PASS   |
| 12          | 2467        | 6         | 18.94                   | 18.43 | 21.70                         | 148.01                       | 1 Watt = 30.00 dBm | PASS   |
| 13          | 2472        | 6         | 9.94                    | 10.08 | 13.02                         | 20.05                        | 1 Watt = 30.00 dBm | PASS   |

| 802.11g_2TX |             |           |                         |       |  |   |                    |        |
|-------------|-------------|-----------|-------------------------|-------|--|---|--------------------|--------|
| CH          | Freq. (MHz) | Data Rate | Avg. Output Power (dBm) |       | Max. Avg. Output include tune up tolerance Power (dBm) | Max. Avg. Output include tune up tolerance Power (mW) | Limit              | RESULT |
|             |             |           | CH 0                    | CH 1  |  |   |                    |        |
| 1           | 2412        | 6         | 14.27                   | 14.20 | 17.48  | 56.00   | 1 Watt = 30.00 dBm | PASS   |
| 6           | 2437        | 6         | 14.01                   | 13.98 | 17.24  | 52.99   | 1 Watt = 30.00 dBm | PASS   |
| 11          | 2462        | 6         | 14.25                   | 14.24 | <b>17.49</b>   | 56.13   | 1 Watt = 30.00 dBm | PASS   |
| 12          | 2467        | 6         | 12.43                   | 11.54 | 15.25  | 33.53   | 1 Watt = 30.00 dBm | PASS   |
| 13          | 2472        | 6         | 3.07                    | 3.54  | 6.56   | 4.53  | 1 Watt = 30.00 dBm | PASS   |

| 802.11n_HT20M Chain0 |             |           |                         |                    |        |  |
|----------------------|-------------|-----------|-------------------------|--------------------|--------|--|
| CH                   | Freq. (MHz) | Data Rate | Peak Output Power (dBm) | Limit              | RESULT |  |
| 1                    | 2412        | MCS0      | 20.35                   | 1 Watt = 30.00 dBm | PASS   |  |
| 6                    | 2437        | MCS0      | 20.41                   | 1 Watt = 30.00 dBm | PASS   |  |
| 11                   | 2462        | MCS0      | 20.52                   | 1 Watt = 30.00 dBm | PASS   |  |
| 12                   | 2467        | MCS0      | 19.03                   | 1 Watt = 30.00 dBm | PASS   |  |
| 13                   | 2472        | MCS0      | 10.07                   | 1 Watt = 30.00 dBm | PASS   |  |

| 802.11n_HT20M Chain0 |             |           |  |                    |        |  |
|----------------------|-------------|-----------|--|--------------------|--------|--|
| CH                   | Freq. (MHz) | Data Rate | Max. Avg. Output include tune up tolerance Power (dBm) | Limit              | RESULT |  |
| 1                    | 2412        | MCS0      | <b>14.49</b>   | 1 Watt = 30.00 dBm | PASS   |  |
| 6                    | 2437        | MCS0      | 14.40  | 1 Watt = 30.00 dBm | PASS   |  |
| 11                   | 2462        | MCS0      | <b>14.49</b>   | 1 Watt = 30.00 dBm | PASS   |  |
| 12                   | 2467        | MCS0      | 12.29  | 1 Watt = 30.00 dBm | PASS   |  |
| 13                   | 2472        | MCS0      | 3.45   | 1 Watt = 30.00 dBm | PASS   |  |

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| 802.11n_HT20M Chain1 |             |           |  |          |           |        |
|----------------------|-------------|-----------|--|----------|-----------|--------|
| CH                   | Freq. (MHz) | Data Rate | Peak Output Power (dBm)                                | Limit    |           | RESULT |
| 1                    | 2412        | MCS0      | <b>20.80</b>   | 1 Watt = | 30.00 dBm | PASS   |
| 6                    | 2437        | MCS0      | 20.56  | 1 Watt = | 30.00 dBm | PASS   |
| 11                   | 2462        | MCS0      | 20.62  | 1 Watt = | 30.00 dBm | PASS   |
| 12                   | 2467        | MCS0      | 18.81  | 1 Watt = | 30.00 dBm | PASS   |
| 13                   | 2472        | MCS0      | 9.98   | 1 Watt = | 30.00 dBm | PASS   |
| 802.11n_HT20M Chain1 |             |           |  |          |           |        |
| CH                   | Freq. (MHz) | Data Rate | Max. Avg. Output include tune up tolerance Power (dBm) | Limit    |           | RESULT |
| 1                    | 2412        | MCS0      | 14.48  | 1 Watt = | 30.00 dBm | PASS   |
| 6                    | 2437        | MCS0      | 14.30  | 1 Watt = | 30.00 dBm | PASS   |
| 11                   | 2462        | MCS0      | <b>14.49</b>   | 1 Watt = | 30.00 dBm | PASS   |
| 12                   | 2467        | MCS0      | 12.21  | 1 Watt = | 30.00 dBm | PASS   |
| 13                   | 2472        | MCS0      | 3.31   | 1 Watt = | 30.00 dBm | PASS   |

| 802.11n_HT20M MIMO |             |           |                         |       |                               |                              |                    |        |
|--------------------|-------------|-----------|-------------------------|-------|-------------------------------|------------------------------|--------------------|--------|
| CH                 | Freq. (MHz) | Data Rate | Peak Output Power (dBm) |       | Total Peak Output Power (dBm) | Total Peak Output Power (mW) | Limit              | RESULT |
|                    |             |           | CH 0                    | CH 1  |                               |                              |                    |        |
| 1                  | 2412        | MCS8      | 20.35                   | 20.64 | 23.51                         | 224.27                       | 1 Watt = 30.00 dBm | PASS   |
| 6                  | 2437        | MCS8      | 20.21                   | 20.45 | 23.34                         | 215.87                       | 1 Watt = 30.00 dBm | PASS   |
| 11                 | 2462        | MCS8      | 20.46                   | 20.86 | 23.67                         | 233.07                       | 1 Watt = 30.00 dBm | PASS   |
| 12                 | 2467        | MCS8      | 18.82                   | 18.74 | 21.79                         | 151.02                       | 1 Watt = 30.00 dBm | PASS   |
| 13                 | 2472        | MCS8      | 9.91                    | 10.27 | 13.10                         | 20.44                        | 1 Watt = 30.00 dBm | PASS   |

| 802.11n_HT20M MIMO |             |           |                         |       |  |   |                    |        |
|--------------------|-------------|-----------|-------------------------|-------|--|---|--------------------|--------|
| CH                 | Freq. (MHz) | Data Rate | Avg. Output Power (dBm) |       | Max. Avg. Output include tune up tolerance Power (dBm) | Max. Avg. Output include tune up tolerance Power (mW) | Limit              | RESULT |
|                    |             |           | CH 0                    | CH 1  |  |   |                    |        |
| 1                  | 2412        | MCS8      | 14.04                   | 13.97 | <b>17.49</b>   | 56.14   | 1 Watt = 30.00 dBm | PASS   |
| 6                  | 2437        | MCS8      | 13.88                   | 13.85 | 17.35  | 54.35   | 1 Watt = 30.00 dBm | PASS   |
| 11                 | 2462        | MCS8      | 13.97                   | 14.04 | <b>17.49</b>   | 56.14   | 1 Watt = 30.00 dBm | PASS   |
| 12                 | 2467        | MCS8      | 12.09                   | 11.23 | 15.17  | 32.87   | 1 Watt = 30.00 dBm | PASS   |
| 13                 | 2472        | MCS8      | 3.01                    | 3.26  | 6.62   | 4.60  | 1 Watt = 30.00 dBm | PASS   |

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| 802.11n_HT40M Chain0 |             |           |  |          |           |        |
|----------------------|-------------|-----------|--|----------|-----------|--------|
| CH                   | Freq. (MHz) | Data Rate | Peak Output Power (dBm)                                | Limit    |           | RESULT |
| 3                    | 2422        | MCS0      | 20.24  | 1 Watt = | 30.00 dBm | PASS   |
| 6                    | 2437        | MCS0      | 20.53  | 1 Watt = | 30.00 dBm | PASS   |
| 9                    | 2452        | MCS0      | 15.61  | 1 Watt = | 30.00 dBm | PASS   |
| 10                   | 2457        | MCS0      | 19.00  | 1 Watt = | 30.00 dBm | PASS   |
| 11                   | 2462        | MCS0      | 9.32   | 1 Watt = | 30.00 dBm | PASS   |
| 802.11n_HT40M Chain0 |             |           |  |          |           |        |
| CH                   | Freq. (MHz) | Data Rate | Max. Avg. Output include tune up tolerance Power (dBm) | Limit    |           | RESULT |
| 3                    | 2422        | MCS0      | 12.98  | 1 Watt = | 30.00 dBm | PASS   |
| 6                    | 2437        | MCS0      | <b>14.49</b>   | 1 Watt = | 30.00 dBm | PASS   |
| 9                    | 2452        | MCS0      | 8.26   | 1 Watt = | 30.00 dBm | PASS   |
| 10                   | 2457        | MCS0      | 11.45  | 1 Watt = | 30.00 dBm | PASS   |
| 11                   | 2462        | MCS0      | 1.82   | 1 Watt = | 30.00 dBm | PASS   |
| 802.11n_HT40M Chain1 |             |           |  |          |           |        |
| CH                   | Freq. (MHz) | Data Rate | Peak Output Power (dBm)                                | Limit    |           | RESULT |
| 3                    | 2422        | MCS0      | 20.07  | 1 Watt = | 30.00 dBm | PASS   |
| 6                    | 2437        | MCS0      | <b>21.13</b>   | 1 Watt = | 30.00 dBm | PASS   |
| 9                    | 2452        | MCS0      | 15.41  | 1 Watt = | 30.00 dBm | PASS   |
| 10                   | 2457        | MCS0      | 18.72  | 1 Watt = | 30.00 dBm | PASS   |
| 11                   | 2462        | MCS0      | 9.06   | 1 Watt = | 30.00 dBm | PASS   |
| 802.11n_HT40M Chain1 |             |           |  |          |           |        |
| CH                   | Freq. (MHz) | Data Rate | Max. Avg. Output include tune up tolerance Power (dBm) | Limit    |           | RESULT |
| 3                    | 2422        | MCS0      | 12.95  | 1 Watt = | 30.00 dBm | PASS   |
| 6                    | 2437        | MCS0      | <b>14.45</b>   | 1 Watt = | 30.00 dBm | PASS   |
| 9                    | 2452        | MCS0      | 8.18   | 1 Watt = | 30.00 dBm | PASS   |
| 10                   | 2457        | MCS0      | 11.49  | 1 Watt = | 30.00 dBm | PASS   |
| 11                   | 2462        | MCS0      | 1.94   | 1 Watt = | 30.00 dBm | PASS   |

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| 802.11n_HT40M MIMO |             |           |                         |       |  |   |                    |        |
|--------------------|-------------|-----------|-------------------------|-------|--|---|--------------------|--------|
| CH                 | Freq. (MHz) | Data Rate | Peak Output Power (dBm) |       | Total Peak Output Power (dBm)                          | Total Peak Output Power (mW)                          | Limit              | RESULT |
|                    |             |           | CH 0                    | CH 1  |  |   |                    |        |
| 3                  | 2422        | MCS8      | 19.86                   | 19.61 | 22.75  | 188.24  | 1 Watt = 30.00 dBm | PASS   |
| 6                  | 2437        | MCS8      | 20.87                   | 21.10 | 24.00  | 251.00  | 1 Watt = 30.00 dBm | PASS   |
| 9                  | 2452        | MCS8      | 15.66                   | 15.29 | 18.49  | 70.62   | 1 Watt = 30.00 dBm | PASS   |
| 10                 | 2457        | MCS8      | 18.35                   | 18.20 | 21.29  | 134.46  | 1 Watt = 30.00 dBm | PASS   |
| 11                 | 2462        | MCS8      | 8.82                    | 8.49  | 11.67  | 14.68   | 1 Watt = 30.00 dBm | PASS   |
| 802.11n_HT40M MIMO |             |           |                         |       |  |   |                    |        |
| CH                 | Freq. (MHz) | Data Rate | Avg. Output Power (dBm) |       | Max. Avg. Output include tune up tolerance Power (dBm) | Max. Avg. Output include tune up tolerance Power (mW) | Limit              | RESULT |
|                    |             |           | CH 0                    | CH 1  |  |   |                    |        |
| 3                  | 2422        | MCS8      | 12.57                   | 11.51 | 15.99  | 39.74   | 1 Watt = 30.00 dBm | PASS   |
| 6                  | 2437        | MCS8      | 13.64                   | 13.48 | 17.48  | 55.99   | 1 Watt = 30.00 dBm | PASS   |
| 9                  | 2452        | MCS8      | 8.01                    | 6.95  | 11.43  | 13.91   | 1 Watt = 30.00 dBm | PASS   |
| 10                 | 2457        | MCS8      | 10.81                   | 9.76  | 14.24  | 26.53   | 1 Watt = 30.00 dBm | PASS   |
| 11                 | 2462        | MCS8      | 1.12                    | 0.19  | 4.60   | 2.88  | 1 Watt = 30.00 dBm | PASS   |

**\* Note: The duty cycle factor is compensated to obtain the maximum value of measurement in average.**

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**EIRP**
**802.11b\_2TX**

| CH | Freq. (MHz) | Data Rate | Avg. Output Power (dBm) |       | Avg. Output Power (dBm) | Total Peak Output Power (mW) | Antenna Gain (dBi) | EIRP (dBm)   | Limit      | RESULT |
|----|-------------|-----------|-------------------------|-------|-------------------------|------------------------------|--------------------|--------------|------------|--------|
|    |             |           | CH 0                    | CH 1  |                         |                              |                    |              |            |        |
| 1  | 2412        | 1         | 14.34                   | 14.16 | 17.29                   | 53.55                        | 4.80               | 22.09        | 4W= 36 dBm | PASS   |
| 6  | 2437        | 1         | 14.50                   | 14.40 | <b>17.49</b>            | <b>56.06</b>                 | 4.80               | <b>22.29</b> | 4W= 36 dBm | PASS   |
| 11 | 2462        | 1         | 14.35                   | 14.26 | 17.34                   | 54.22                        | 4.80               | 22.14        | 4W= 36 dBm | PASS   |
| 12 | 2467        | 1         | 13.95                   | 13.88 | 16.95                   | <b>49.56</b>                 | 4.80               | <b>21.75</b> | 4W= 36 dBm | PASS   |
| 13 | 2472        | 1         | 13.90                   | 13.61 | 16.79                   | 47.80                        | 4.80               | 21.60        | 4W= 36 dBm | PASS   |

**802.11g\_2TX**

| CH | Freq. (MHz) | Data Rate | Avg. Output Power (dBm) |       | Avg. Output Power (dBm) | Total Peak Output Power (mW) | Antenna Gain (dBi) | EIRP (dBm)   | Limit      | RESULT |
|----|-------------|-----------|-------------------------|-------|-------------------------|------------------------------|--------------------|--------------|------------|--------|
|    |             |           | CH 0                    | CH 1  |                         |                              |                    |              |            |        |
| 1  | 2412        | 6         | 14.27                   | 14.20 | 17.48                   | 56.00                        | 4.80               | 22.28        | 4W= 36 dBm | PASS   |
| 6  | 2437        | 6         | 14.01                   | 13.98 | 17.24                   | 52.99                        | 4.80               | 22.04        | 4W= 36 dBm | PASS   |
| 11 | 2462        | 6         | 14.25                   | 14.24 | <b>17.49</b>            | <b>56.13</b>                 | 4.80               | <b>22.29</b> | 4W= 36 dBm | PASS   |
| 12 | 2467        | 6         | 12.43                   | 11.54 | 15.25                   | <b>33.53</b>                 | 4.80               | <b>20.06</b> | 4W= 36 dBm | PASS   |
| 13 | 2472        | 6         | 3.07                    | 3.54  | 6.56                    | 4.53                         | 4.80               | 11.36        | 4W= 36 dBm | PASS   |

**802.11n\_HT20M MIMO**

| CH | Freq. (MHz) | Data Rate | Avg. Output Power (dBm) |       | Avg. Output Power (dBm) | Total Peak Output Power (mW) | Antenna Gain (dBi) | EIRP (dBm)   | Limit      | RESULT |
|----|-------------|-----------|-------------------------|-------|-------------------------|------------------------------|--------------------|--------------|------------|--------|
|    |             |           | CH 0                    | CH 1  |                         |                              |                    |              |            |        |
| 1  | 2412        | MCS8      | 14.04                   | 13.97 | <b>17.49</b>            | <b>56.14</b>                 | 4.80               | <b>22.29</b> | 4W= 36 dBm | PASS   |
| 6  | 2437        | MCS8      | 13.88                   | 13.85 | 17.35                   | 54.35                        | 4.80               | 22.15        | 4W= 36 dBm | PASS   |
| 11 | 2462        | MCS8      | 13.97                   | 14.04 | <b>17.49</b>            | <b>56.14</b>                 | 4.80               | <b>22.29</b> | 4W= 36 dBm | PASS   |
| 12 | 2467        | MCS8      | 12.09                   | 11.23 | 15.17                   | <b>32.87</b>                 | 4.80               | <b>19.97</b> | 4W= 36 dBm | PASS   |
| 13 | 2472        | MCS8      | 3.01                    | 3.26  | 6.62                    | 4.60                         | 4.80               | 11.43        | 4W= 36 dBm | PASS   |

**802.11n\_HT40M MIMO**

| CH | Freq. (MHz) | Data Rate | Avg. Output Power (dBm) |       | Avg. Output Power (dBm) | Total Peak Output Power (mW) | Antenna Gain (dBi) | EIRP (dBm)   | Limit      | RESULT |
|----|-------------|-----------|-------------------------|-------|-------------------------|------------------------------|--------------------|--------------|------------|--------|
|    |             |           | CH 0                    | CH 1  |                         |                              |                    |              |            |        |
| 3  | 2422        | MCS8      | 12.57                   | 11.51 | 15.99                   | 39.74                        | 4.80               | 20.79        | 4W= 36 dBm | PASS   |
| 6  | 2437        | MCS8      | 13.64                   | 13.48 | <b>17.48</b>            | <b>55.99</b>                 | 4.80               | <b>22.28</b> | 4W= 36 dBm | PASS   |
| 9  | 2452        | MCS8      | 8.01                    | 6.95  | 11.43                   | 13.91                        | 4.80               | 16.23        | 4W= 36 dBm | PASS   |
| 10 | 2457        | MCS8      | 10.81                   | 9.76  | 14.24                   | <b>26.53</b>                 | 4.80               | <b>19.04</b> | 4W= 36 dBm | PASS   |
| 11 | 2462        | MCS8      | 1.12                    | 0.19  | 4.60                    | 2.88                         | 4.80               | 9.40         | 4W= 36 dBm | PASS   |

\* **Note:** EIRP = Average Power + Gain

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### 8.6 Some channels have reduced power and were tested at the reduced power

| 802.11 | Channel list | Power value (dBm) |
|--------|--------------|-------------------|
| b      | Channel 12   | 16.95             |
|        | Channel 13   | 16.97             |
| g      | Channel 12   | 15.25             |
|        | Channel 13   | 6.56              |
| n_HT20 | Channel 12   | 15.17             |
|        | Channel 13   | 6.62              |
| n_HT40 | Channel 3    | 15.99             |
|        | Channel 9    | 11.43             |
|        | Channel 10   | 14.24             |
|        | Channel 11   | 4.60              |

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## 9 6DB & 99% BANDWIDTH MEASUREMENT

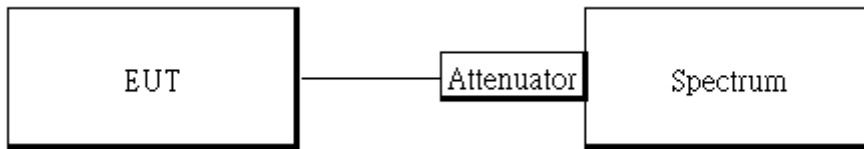
### 9.1 Standard Applicable

The minimum 6 dB bandwidth shall be at least 500 kHz.

### 9.2 Measurement Equipment Used

| Conducted Emission Test Site |           |              |               |            |            |
|------------------------------|-----------|--------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR       | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| Spectrum Analyzer            | Agilent   | N9010A       | MY51440113    | 2018/06/20 | 2019/06/19 |
| Attenuator                   | Marvelous | MVE2213-10   | RF30          | 2017/12/26 | 2018/12/25 |
| DC Block                     | PASTERNAK | PE8210       | RF29          | 2017/12/26 | 2018/12/25 |
| Notebook                     | Lenovo    | L420         | S0011721      | N/A        | N/A        |

### 9.3 Test Set-up



### 9.4 Measurement Procedure

- Place the EUT on the table and set it in transmitting mode.
- The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
- Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- For 6dB Bandwidth:  
Set the spectrum analyzer as RBW = 100 kHz, VBW = 3\*RBW, Span = 30M/50MHz, Detector=peak, Sweep=auto.
- Mark the peak frequency and -6dB (upper and lower) frequency.
- For 99% Bandwidth:  
Set the spectrum analyzer as RBW=1%, VBW = 3\*RBW, Span = 30M/50MHz, Detector=Peak, Sweep=auto.
- Turn on the 99% bandwidth function, max reading.
- Repeat above procedures until all frequency of interest measured was complete.

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## 9.5 Measurement Result

### 6dB Bandwidth

#### 802.11b Chain0

| Freq. (MHz) | 6dB BW (kHz)   | Limit (kHz) | Result |
|-------------|----------------|-------------|--------|
| 2412        | 8076.00        | > 500       | PASS   |
| 2437        | 7582.00        | > 500       | PASS   |
| 2462        | 8560.00        | > 500       | PASS   |
| 2467        | <b>8576.00</b> | > 500       | PASS   |
| 2472        | 8091.00        | > 500       | PASS   |

#### 802.11b Chain1

| Freq. (MHz) | 6dB BW (kHz)   | Limit (kHz) | Result |
|-------------|----------------|-------------|--------|
| 2412        | 8066.00        | > 500       | PASS   |
| 2437        | 7585.00        | > 500       | PASS   |
| 2462        | 8556.00        | > 500       | PASS   |
| 2467        | <b>8569.00</b> | > 500       | PASS   |
| 2472        | 8556.00        | > 500       | PASS   |

#### 802.11g Chain0

| Freq. (MHz) | 6dB BW (kHz)    | Limit (kHz) | Result |
|-------------|-----------------|-------------|--------|
| 2412        | <b>16270.00</b> | > 500       | PASS   |
| 2437        | 15930.00        | > 500       | PASS   |
| 2462        | 15970.00        | > 500       | PASS   |
| 2467        | 15750.00        | > 500       | PASS   |
| 2472        | <b>15930.00</b> | > 500       | PASS   |

#### 802.11g Chain1

| Freq. (MHz) | 6dB BW (kHz)    | Limit (kHz) | Result |
|-------------|-----------------|-------------|--------|
| 2412        | <b>16300.00</b> | > 500       | PASS   |
| 2437        | 16070.00        | > 500       | PASS   |
| 2462        | 15730.00        | > 500       | PASS   |
| 2467        | 15750.00        | > 500       | PASS   |
| 2472        | <b>15760.00</b> | > 500       | PASS   |

#### 802.11\_n\_HT20 Chain0

| Freq. (MHz) | 6dB BW (kHz)    | Limit (kHz) | Result |
|-------------|-----------------|-------------|--------|
| 2412        | <b>16800.00</b> | > 500       | PASS   |
| 2437        | 16670.00        | > 500       | PASS   |
| 2462        | 16550.00        | > 500       | PASS   |
| 2467        | 16110.00        | > 500       | PASS   |
| 2472        | <b>16380.00</b> | > 500       | PASS   |

#### 802.11\_n\_HT20 Chain1

| Freq. (MHz) | 6dB BW (kHz)    | Limit (kHz) | Result |
|-------------|-----------------|-------------|--------|
| 2412        | 16580.00        | > 500       | PASS   |
| 2437        | <b>16650.00</b> | > 500       | PASS   |
| 2462        | 16110.00        | > 500       | PASS   |
| 2467        | <b>16380.00</b> | > 500       | PASS   |
| 2472        | 16360.00        | > 500       | PASS   |

#### 802.11\_n\_HT40 Chain0

| Freq. (MHz) | 6dB BW (kHz)    | Limit (kHz) | Result |
|-------------|-----------------|-------------|--------|
| 2422        | 35480.00        | > 500       | PASS   |
| 2437        | 35480.00        | > 500       | PASS   |
| 2452        | 35470.00        | > 500       | PASS   |
| 2457        | <b>35490.00</b> | > 500       | PASS   |
| 2462        | 35460.00        | > 500       | PASS   |

#### 802.11\_n\_HT40 Chain1

| Freq. (MHz) | 6dB BW (kHz)    | Limit (kHz) | Result |
|-------------|-----------------|-------------|--------|
| 2422        | <b>35490.00</b> | > 500       | PASS   |
| 2437        | 35170.00        | > 500       | PASS   |
| 2452        | 35350.00        | > 500       | PASS   |
| 2457        | <b>35360.00</b> | > 500       | PASS   |
| 2462        | 35130.00        | > 500       | PASS   |

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**99% Bandwidth**

| 802.11b Chain0 |               | 802.11b Chain1 |               |
|----------------|---------------|----------------|---------------|
| Freq. (MHz)    | 99% BW (MHz)  | Freq. (MHz)    | 99% BW (MHz)  |
| 2412           | 13.076        | 2412           | 13.071        |
| 2437           | 12.848        | 2437           | 12.850        |
| 2462           | 13.265        | 2462           | 13.266        |
| 2467           | <b>13.325</b> | 2467           | <b>13.325</b> |
| 2472           | 13.298        | 2472           | 13.299        |

| 802.11g Chain0 |               | 802.11g Chain1 |               |
|----------------|---------------|----------------|---------------|
| Freq. (MHz)    | 99% BW (MHz)  | Freq. (MHz)    | 99% BW (MHz)  |
| 2412           | <b>16.514</b> | 2412           | <b>16.506</b> |
| 2437           | 16.502        | 2437           | 16.500        |
| 2462           | 16.484        | 2462           | 16.485        |
| 2467           | <b>16.481</b> | 2467           | <b>16.483</b> |
| 2472           | 16.480        | 2472           | 16.432        |

| 802.11n_HT20M Chain0 |               | 802.11n_HT20M Chain1 |               |
|----------------------|---------------|----------------------|---------------|
| Freq. (MHz)          | 99% BW (MHz)  | Freq. (MHz)          | 99% BW (MHz)  |
| 2412                 | <b>17.649</b> | 2412                 | <b>17.650</b> |
| 2437                 | 17.613        | 2437                 | 17.608        |
| 2462                 | 17.631        | 2462                 | 17.623        |
| 2467                 | <b>17.627</b> | 2467                 | <b>17.607</b> |
| 2472                 | 17.587        | 2472                 | 17.596        |

| 802.11n_HT40M Chain0 |               | 802.11n_HT40M Chain1 |               |
|----------------------|---------------|----------------------|---------------|
| Freq. (MHz)          | 99% BW (MHz)  | Freq. (MHz)          | 99% BW (MHz)  |
| 2422                 | <b>36.314</b> | 2422                 | <b>36.320</b> |
| 2437                 | 36.188        | 2437                 | 36.155        |
| 2452                 | 36.122        | 2452                 | 36.121        |
| 2457                 | 36.138        | 2457                 | 36.126        |
| 2462                 | <b>36.142</b> | 2462                 | <b>36.152</b> |

*\*Refer to next page for plots*

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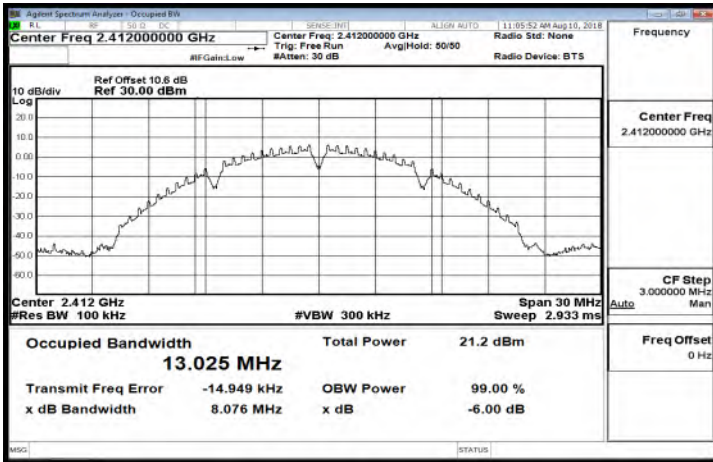
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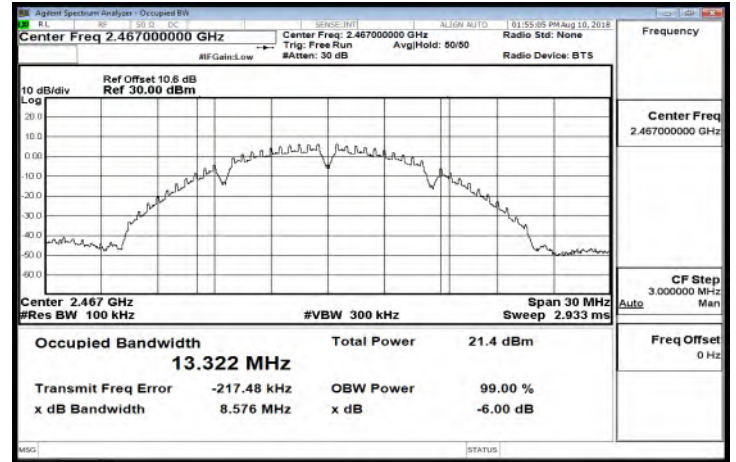


802.11b (CH0)

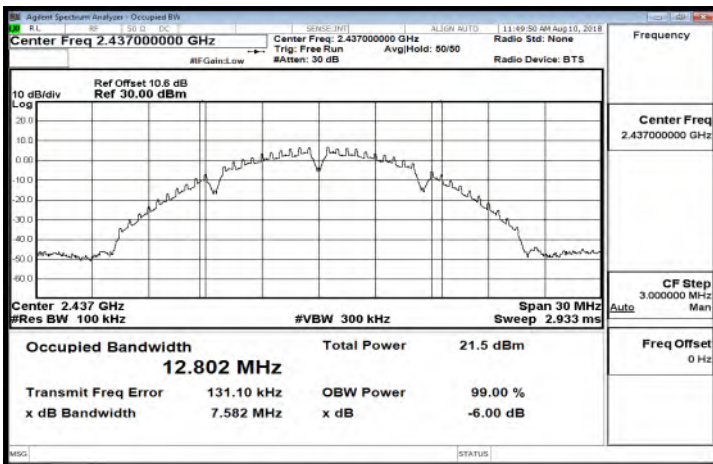
6dB Band Width Test Data CH-Low



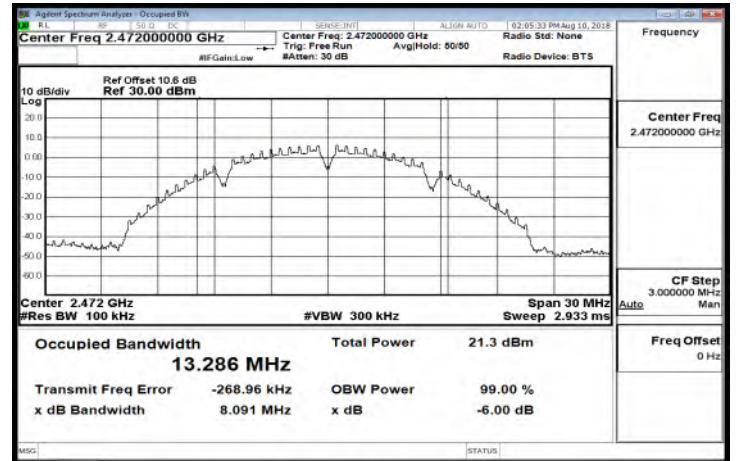
6dB Band Width Test Data CH-High 2467MHz



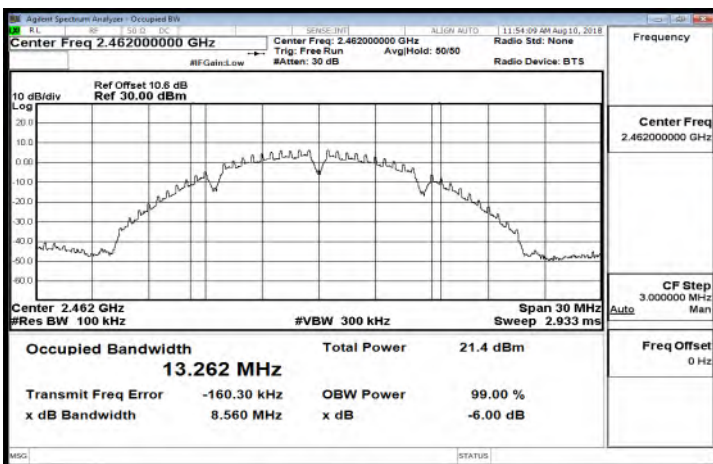
6dB Band Width Test Data CH-Mid



6dB Band Width Test Data CH-High 2472MHz



6dB Band Width Test Data CH-High



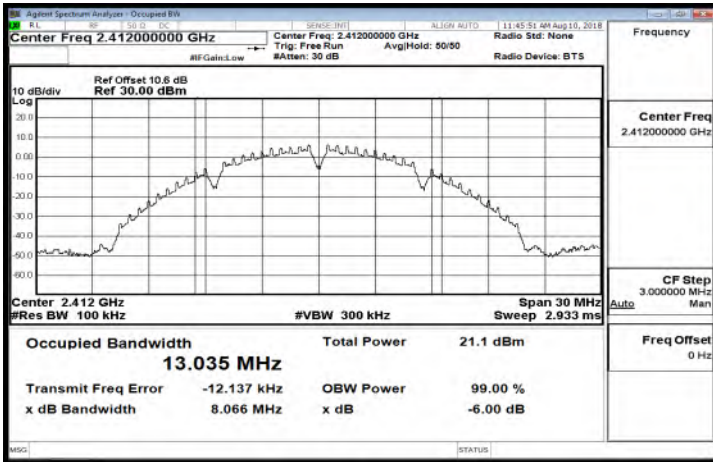
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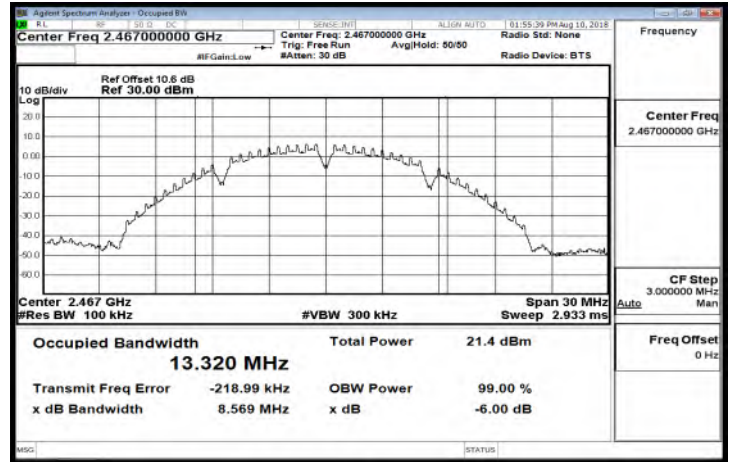
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802.11b (CH1)

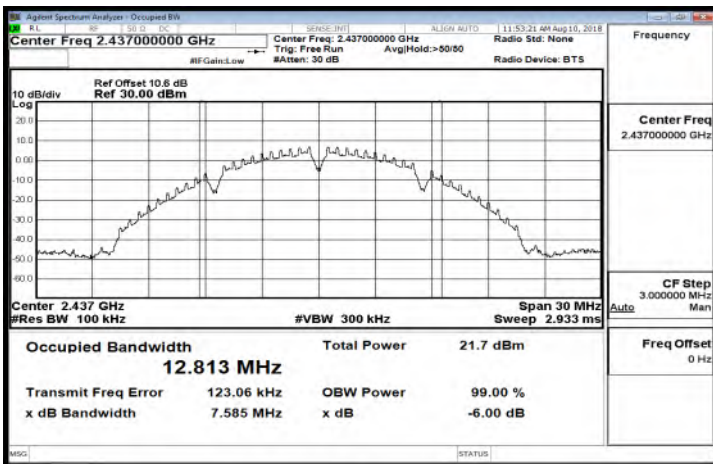
6dB Band Width Test Data CH-Low



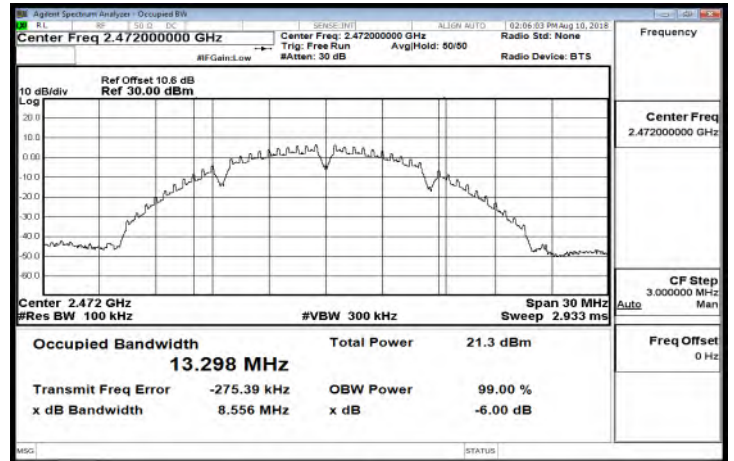
6dB Band Width Test Data CH-High 2467MHz



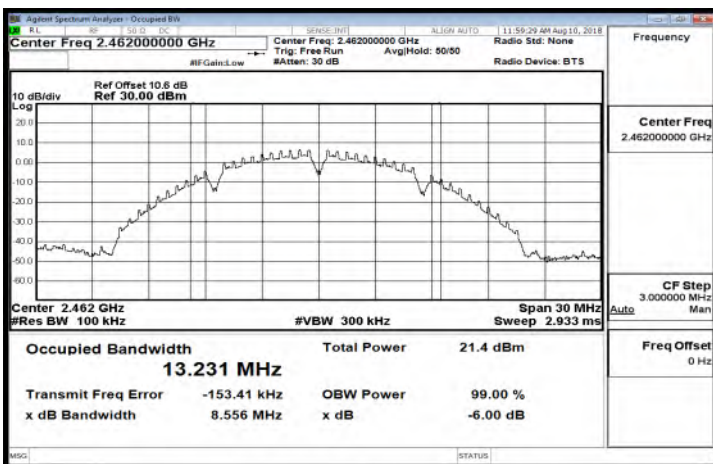
6dB Band Width Test Data CH-Mid



6dB Band Width Test Data CH-High 2472MHz



6dB Band Width Test Data CH-High



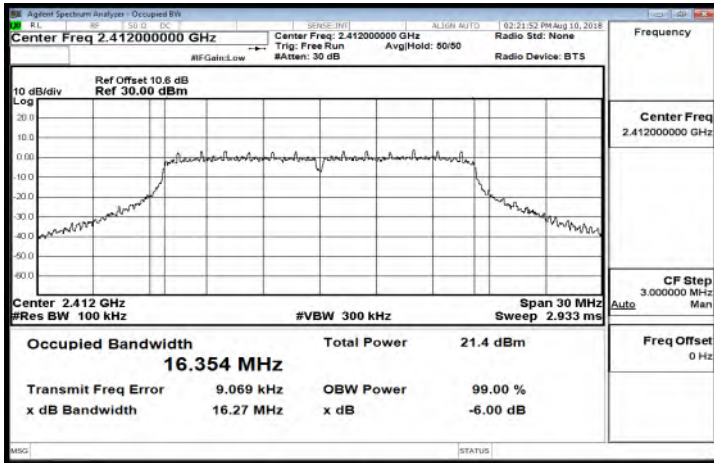
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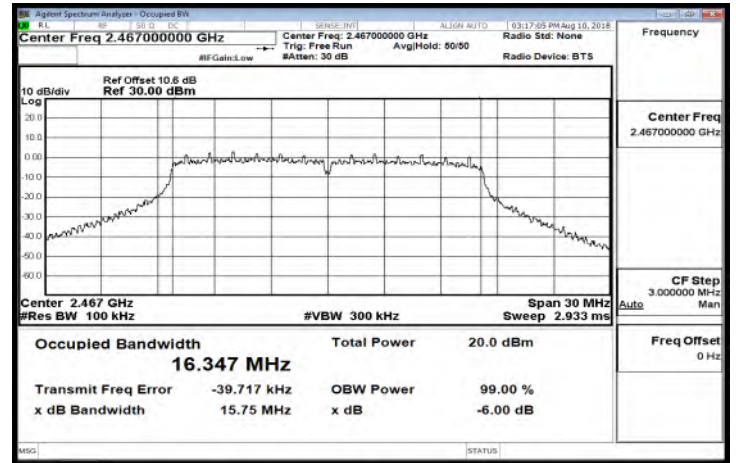
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802.11g (CH0)

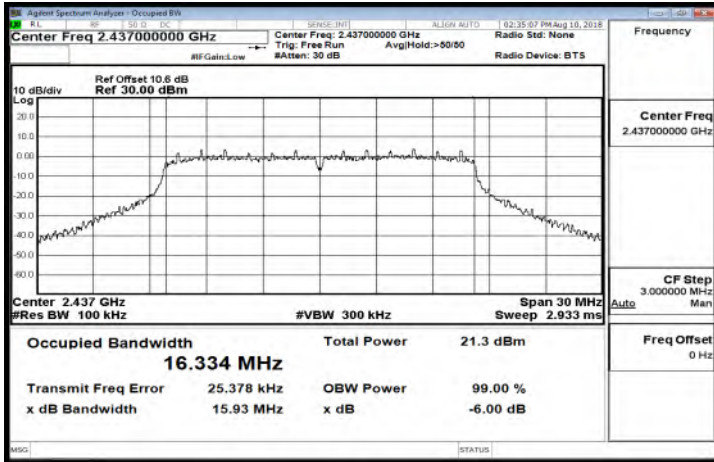
6dB Band Width Test Data CH-Low



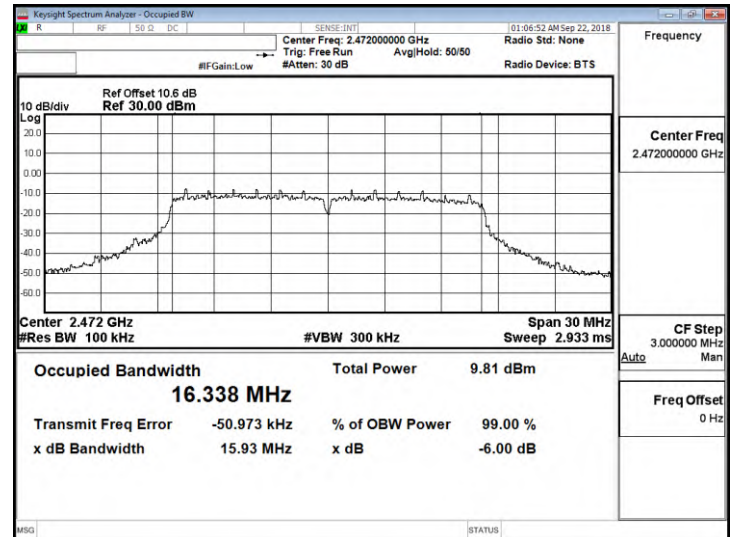
6dB Band Width Test Data CH-High 2467MHz



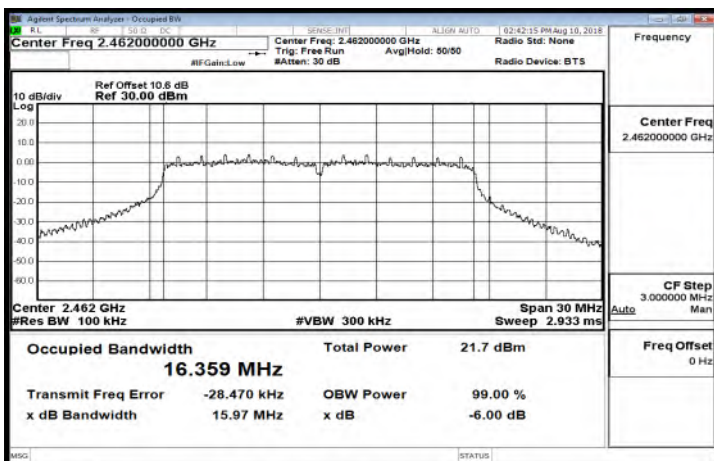
6dB Band Width Test Data CH-Mid



6dB Band Width Test Data CH-High 2472MHz



6dB Band Width Test Data CH-High



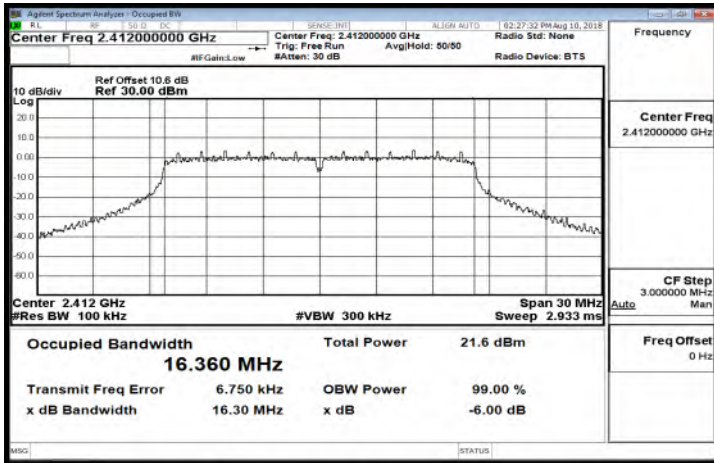
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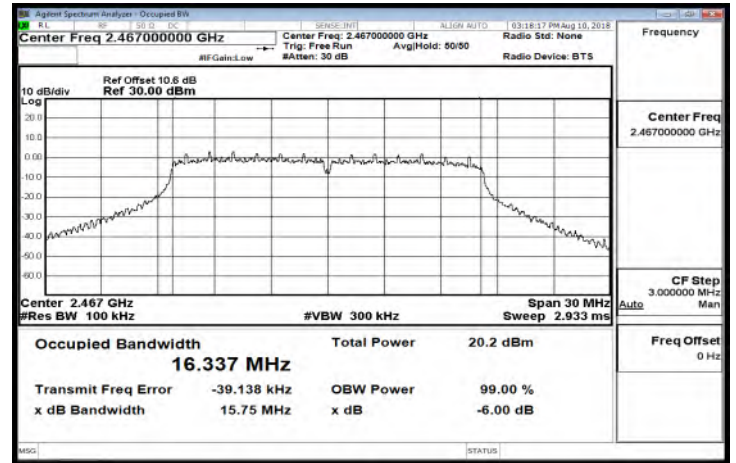
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802.11g (CH1)

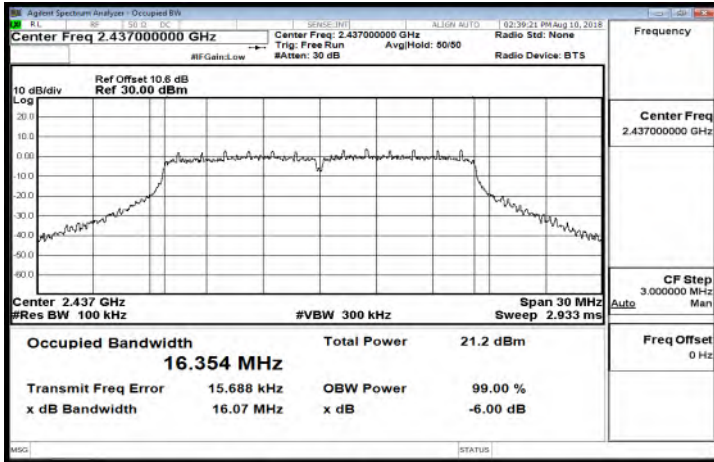
6dB Band Width Test Data CH-Low



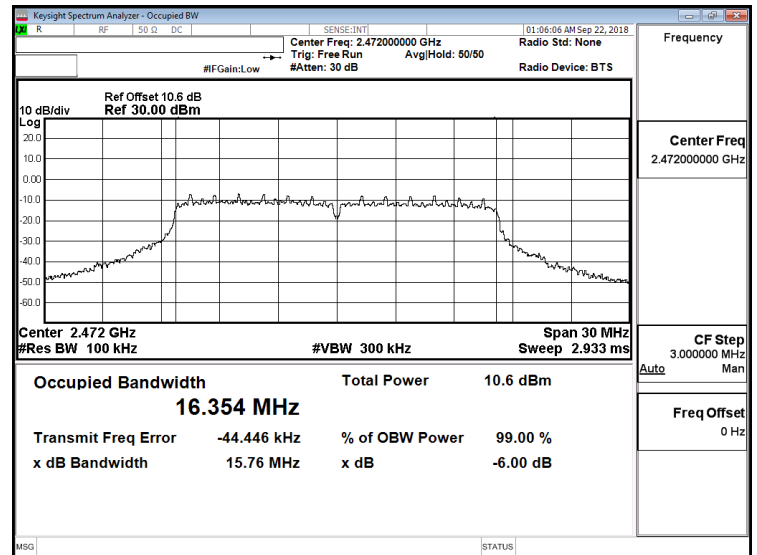
6dB Band Width Test Data CH-High 2467MHz



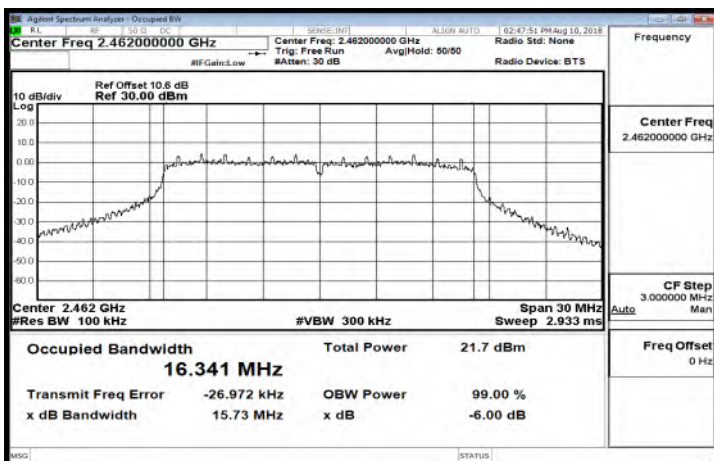
6dB Band Width Test Data CH-Mid



6dB Band Width Test Data CH-High 2472MHz



6dB Band Width Test Data CH-High



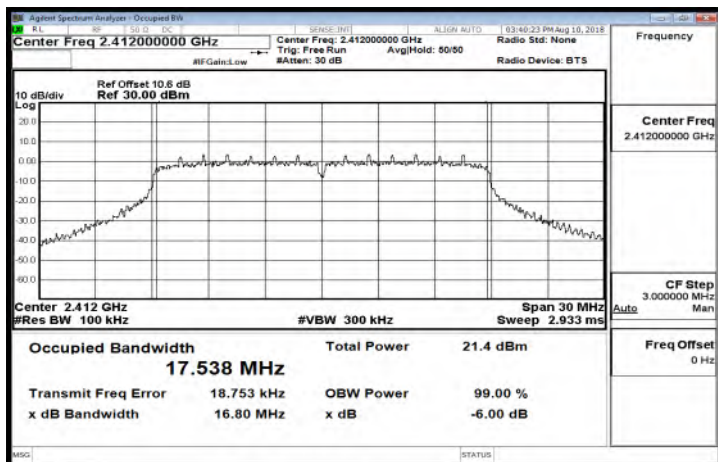
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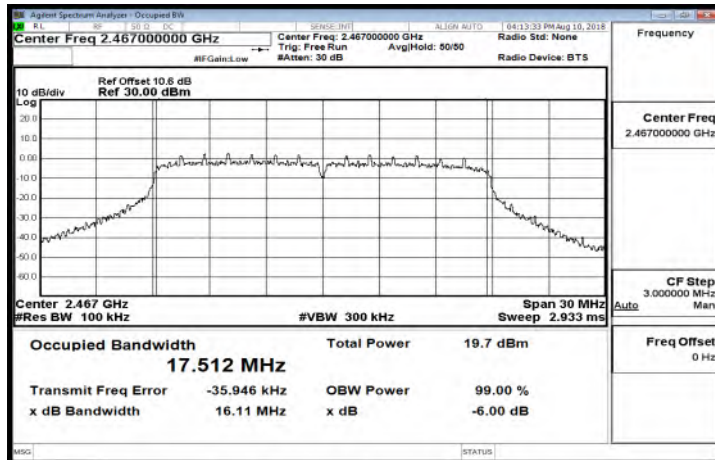
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802.11n\_20M (CH0)

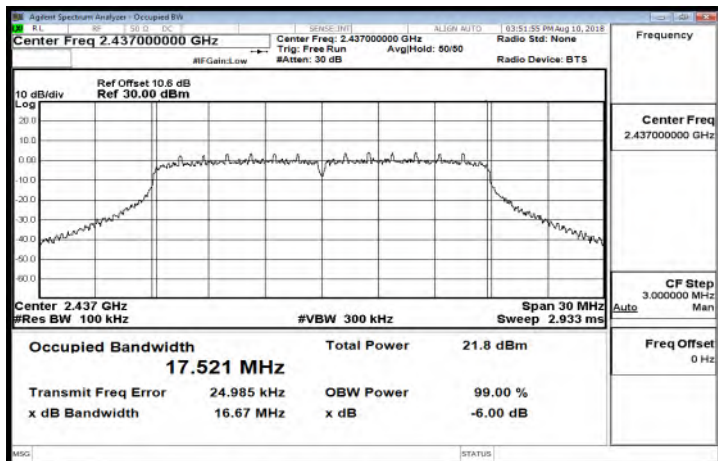
6dB Band Width Test Data CH-Low



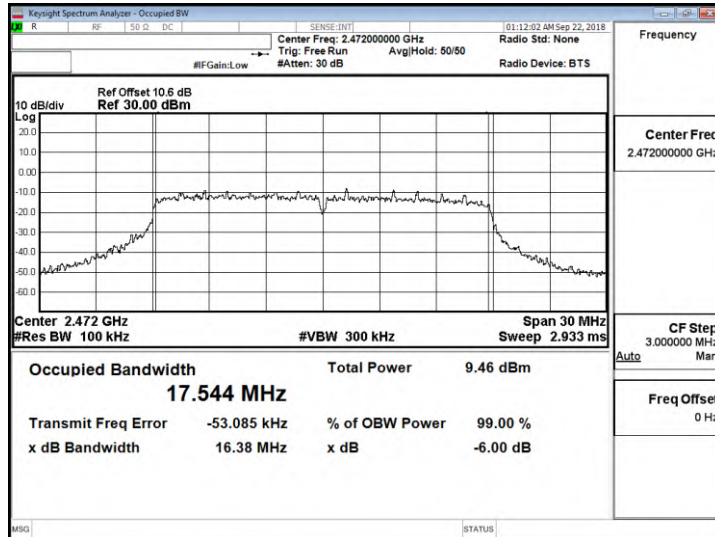
6dB Band Width Test Data CH-High 2467MHz



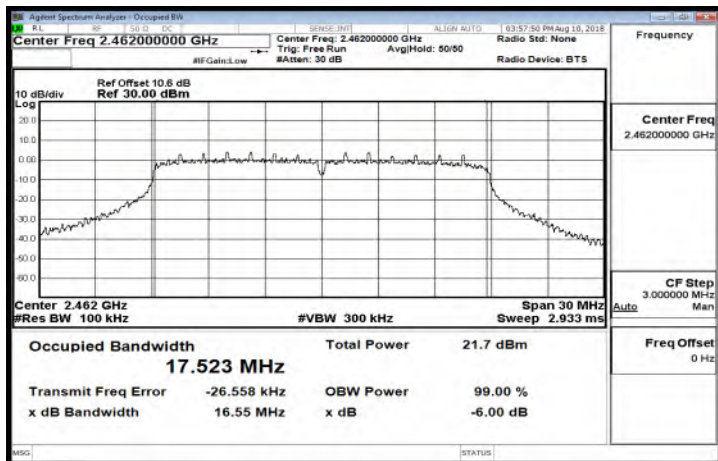
6dB Band Width Test Data CH-Mid



6dB Band Width Test Data CH-High 2472MHz



6dB Band Width Test Data CH-High



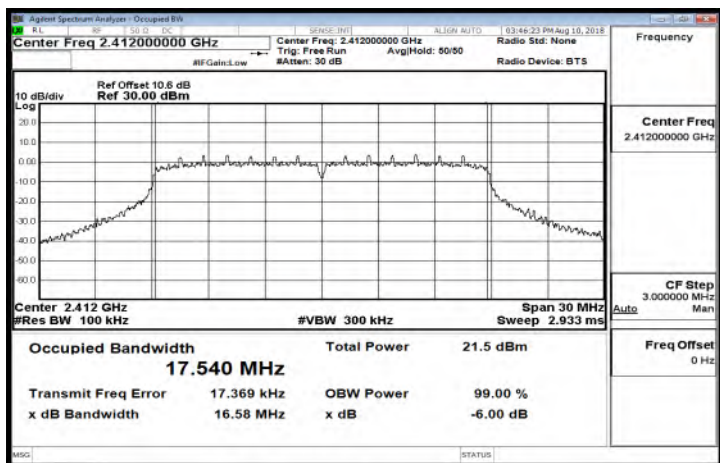
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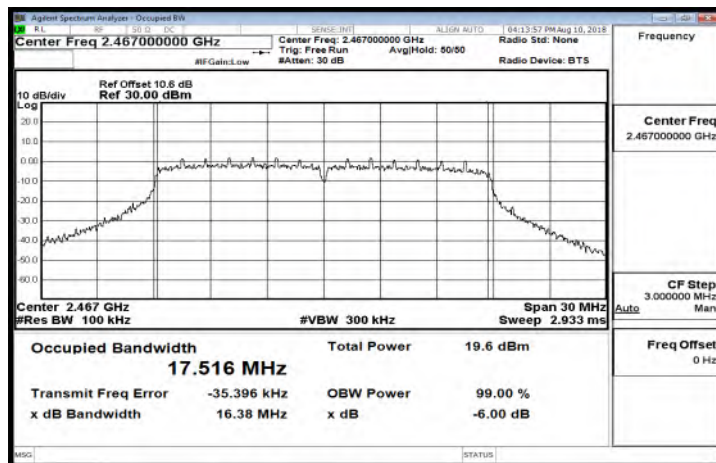
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802.11n\_20M (CH1)

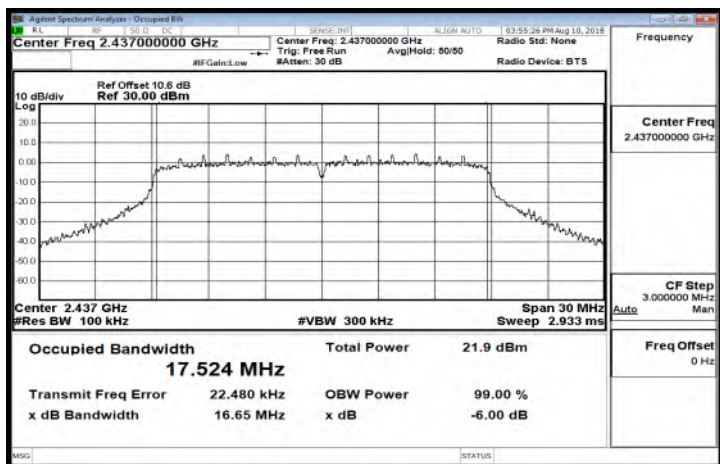
6dB Band Width Test Data CH-Low



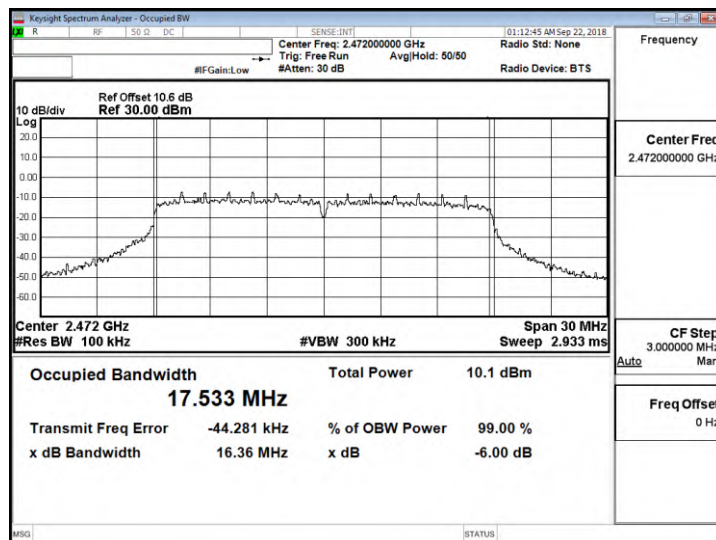
6dB Band Width Test Data CH-High 2467MHz



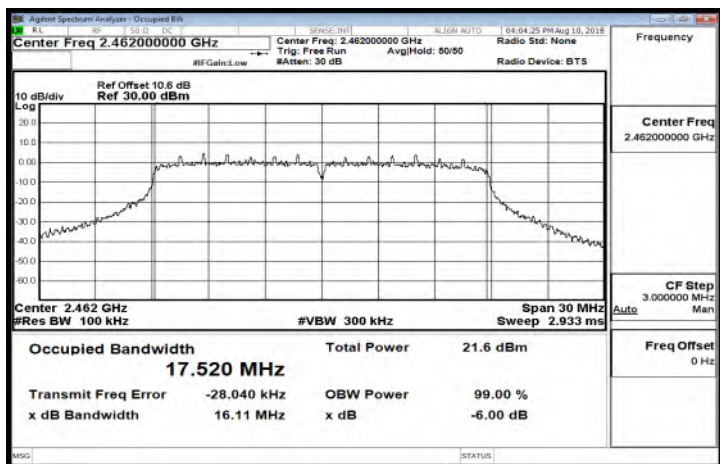
6dB Band Width Test Data CH-Mid



6dB Band Width Test Data CH-High 2472MHz



6dB Band Width Test Data CH-High



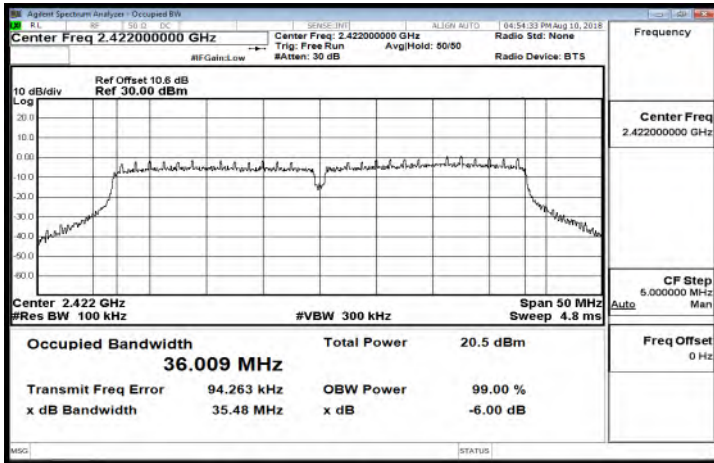
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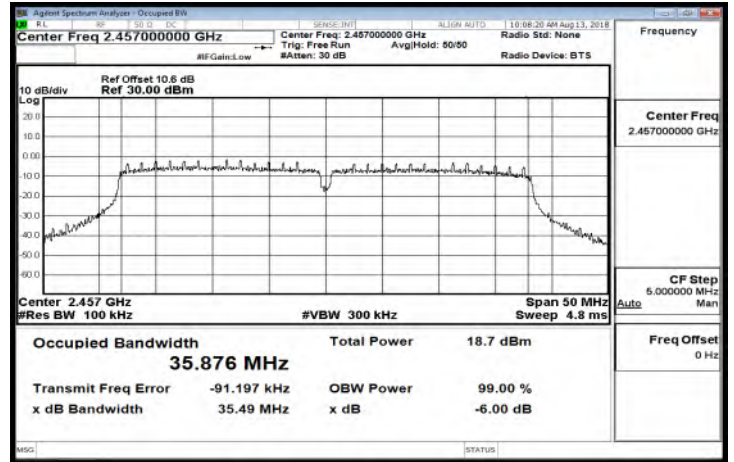
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802.11n\_40M (CH0)

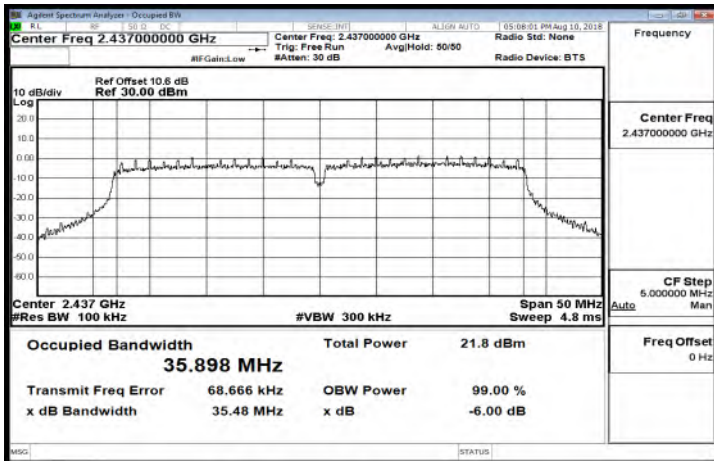
6dB Band Width Test Data CH-Low



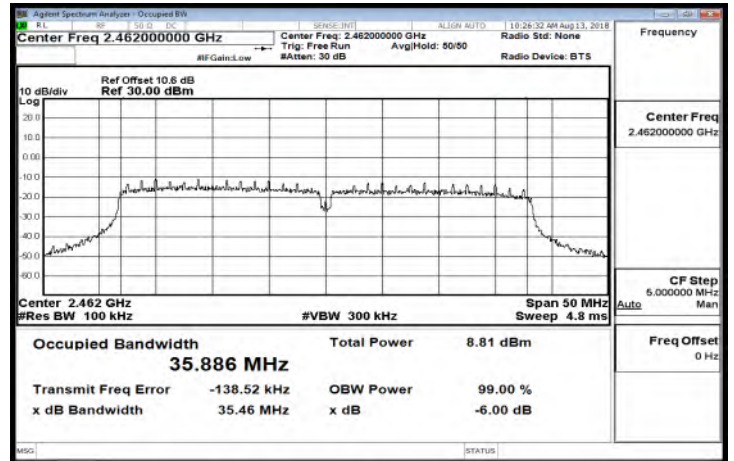
6dB Band Width Test Data CH-High 2457MHz



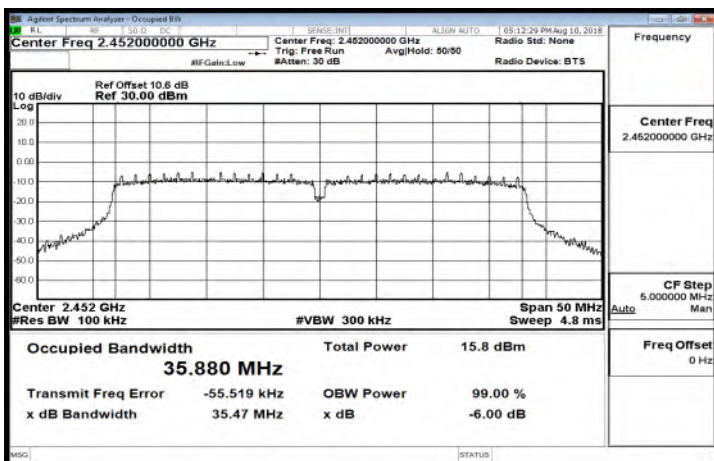
6dB Band Width Test Data CH-Mid



6dB Band Width Test Data CH-High 2462MHz



6dB Band Width Test Data CH-High



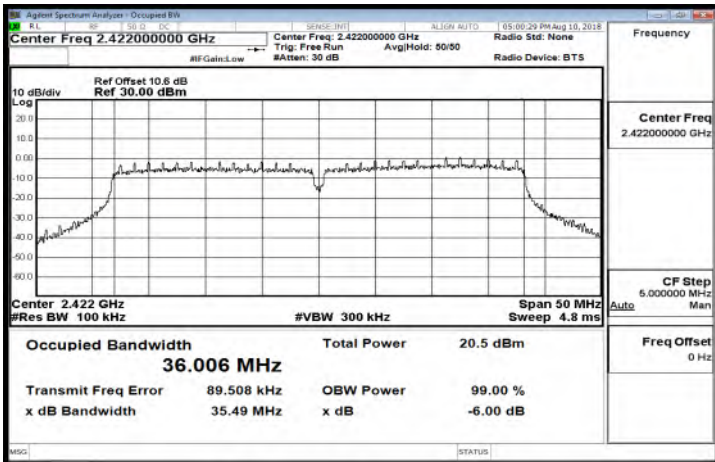
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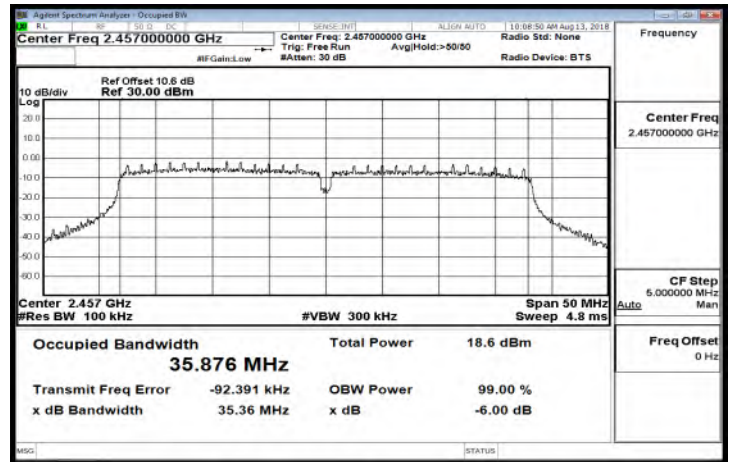
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802.11n\_40M (CH1)

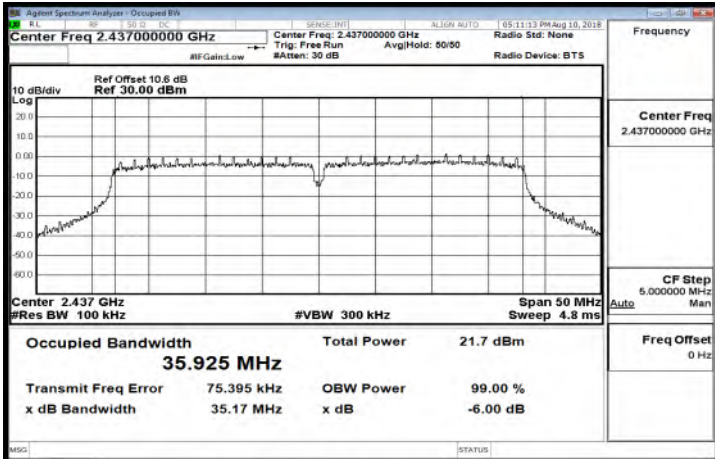
6dB Band Width Test Data CH-Low



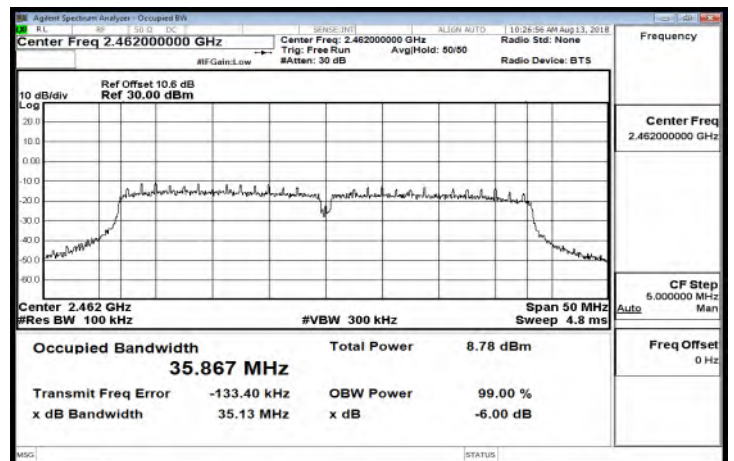
6dB Band Width Test Data CH-High 2457MHz



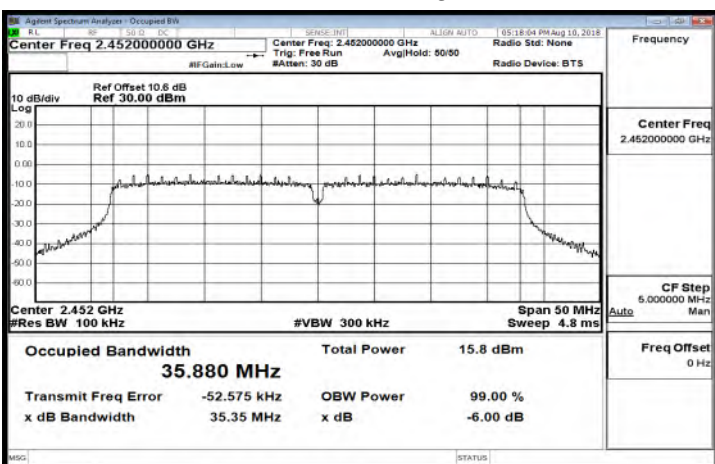
6dB Band Width Test Data CH-Mid



6dB Band Width Test Data CH-High 2462MHz



6dB Band Width Test Data CH-High



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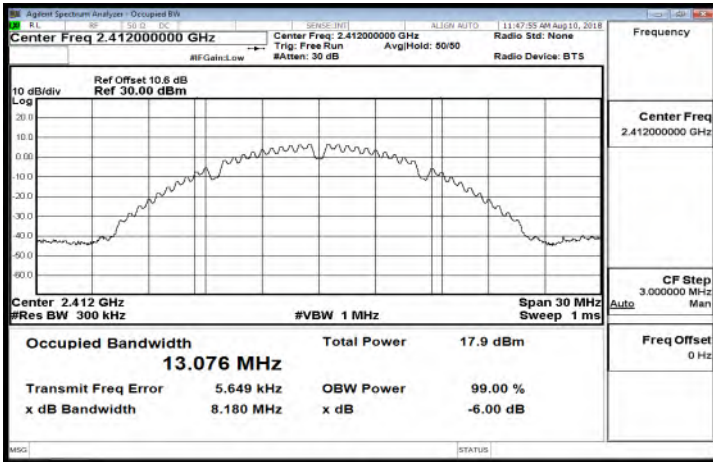
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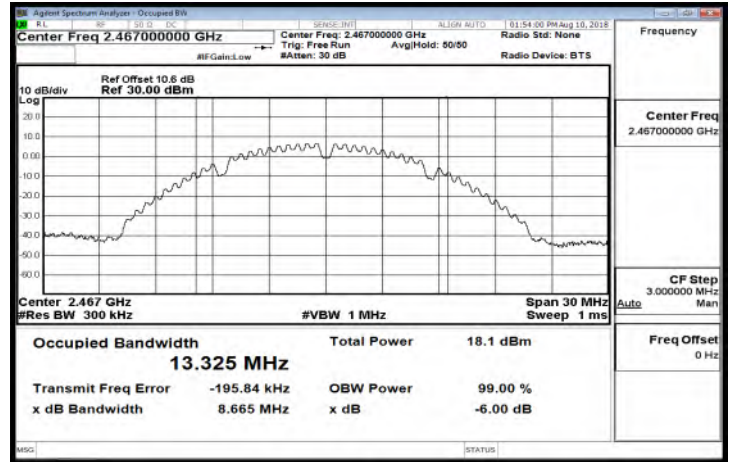


802.11b (CH0)

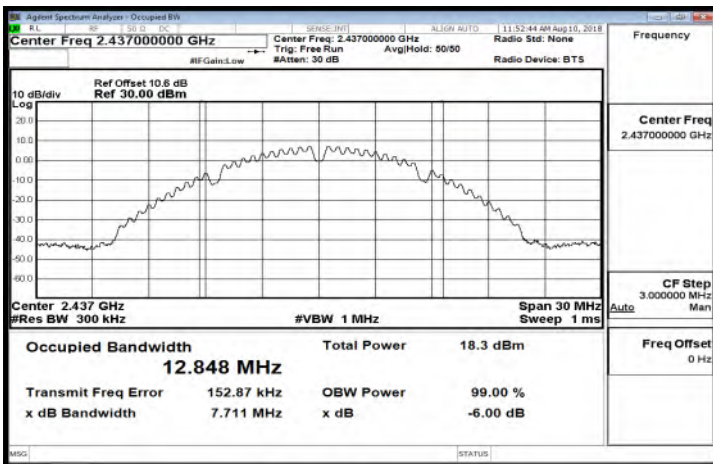
99% Band Width Test Data CH-Low



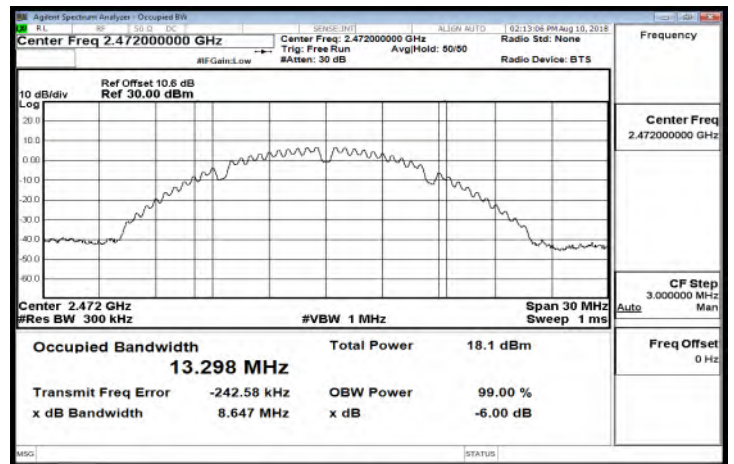
99% Band Width Test Data CH-High 2467MHz



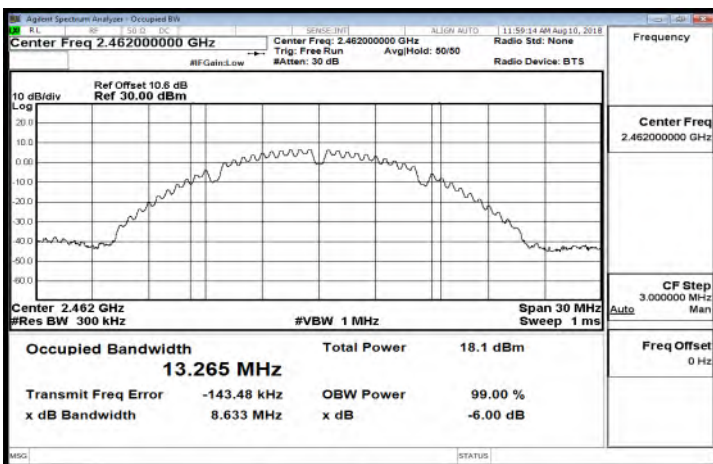
99% Band Width Test Data CH-Mid



99% Band Width Test Data CH-High 2472MHz



99% Band Width Test Data CH-High



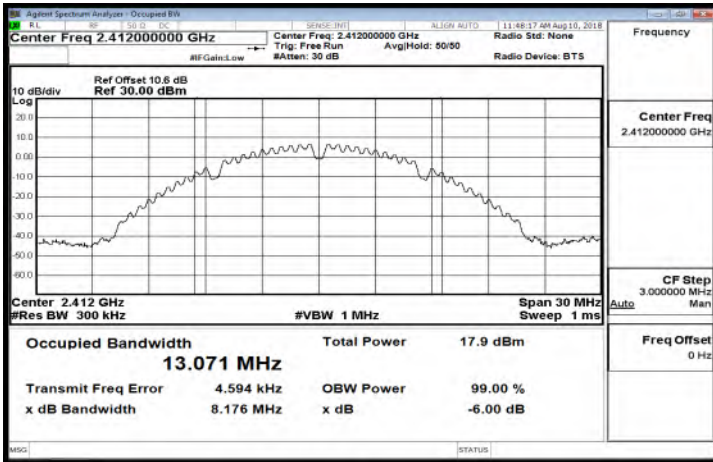
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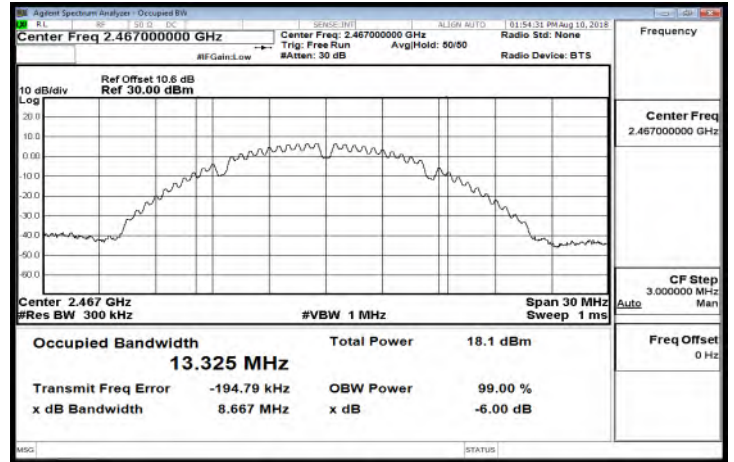
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802.11b (CH1)

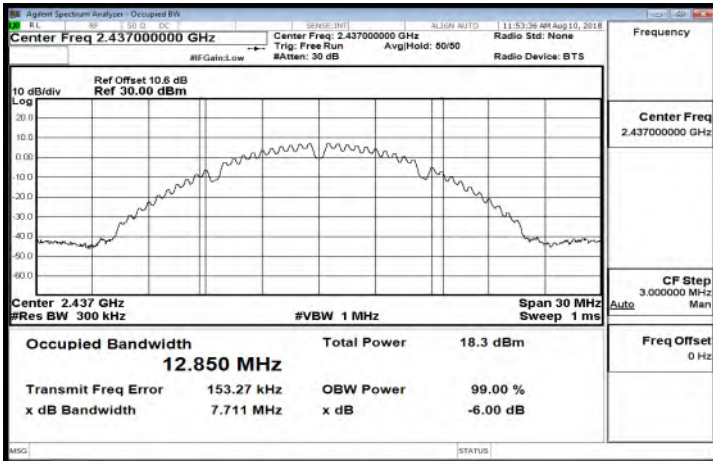
99% Band Width Test Data CH-Low



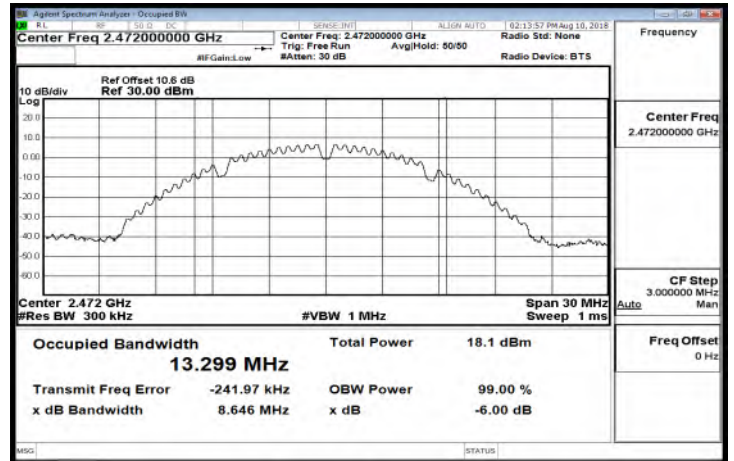
99% Band Width Test Data CH-High 2467MHz



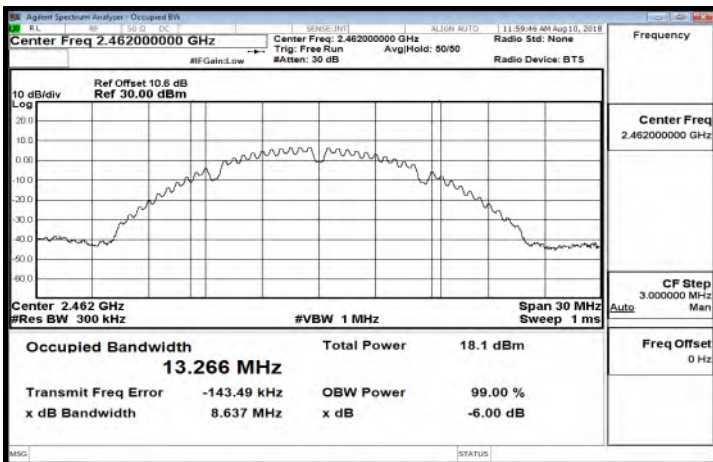
99% Band Width Test Data CH-Mid



99% Band Width Test Data CH-High 2472MHz



99% Band Width Test Data CH-High



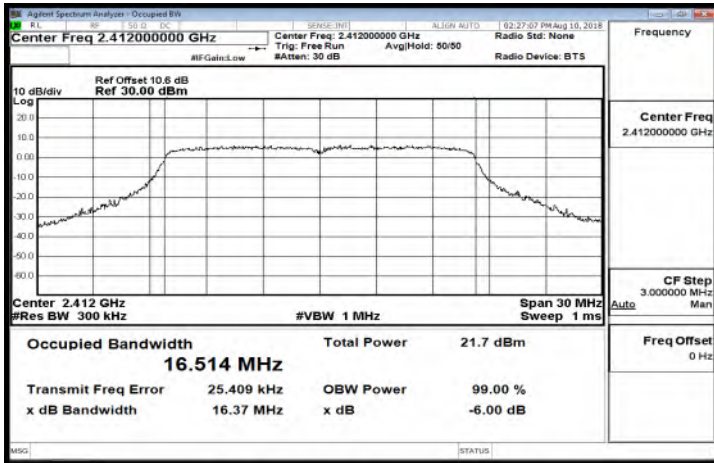
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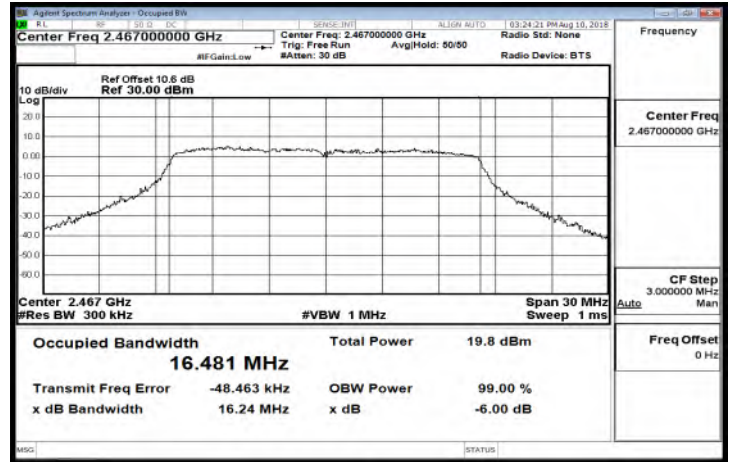
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802.11g (CH0)

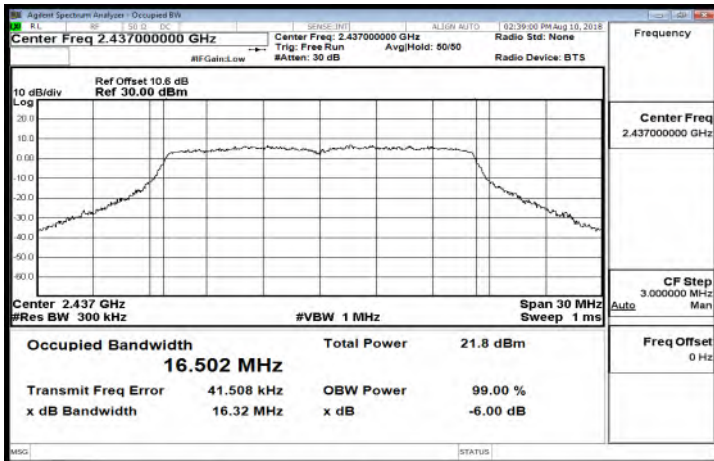
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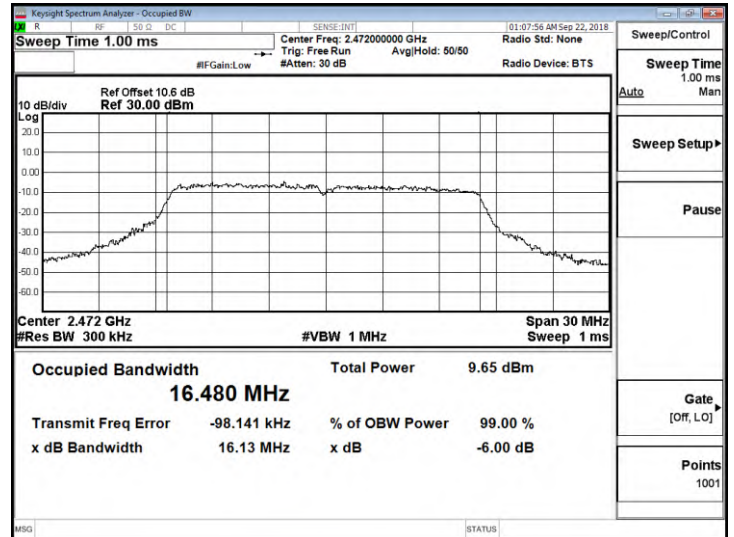
99% Band Width Test Data CH-High 2467MHz



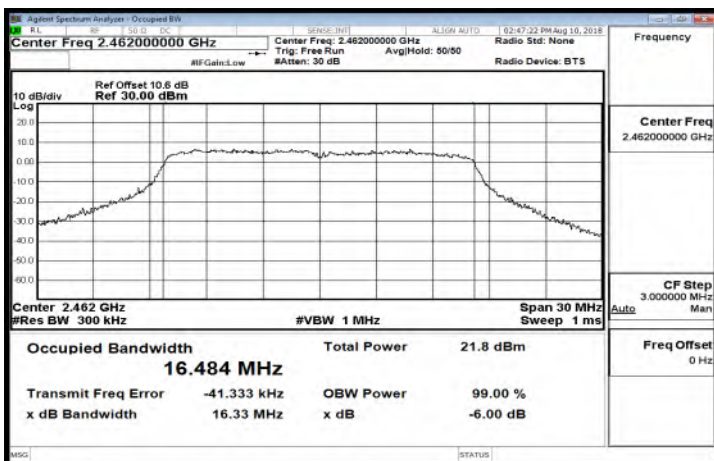
99% Band Width Test Data CH-Mid



99% Band Width Test Data CH-High 2472MHz



99% Band Width Test Data CH-High



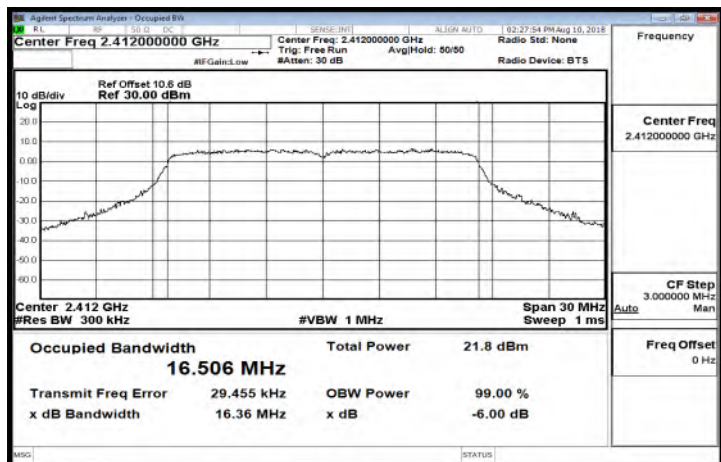
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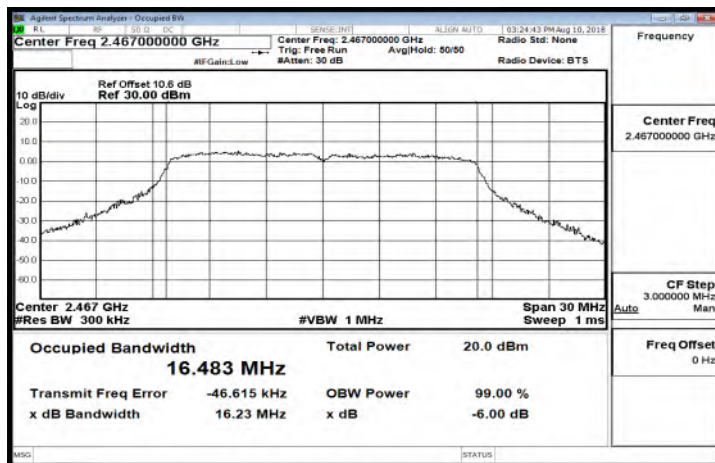
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802.11g (CH1)

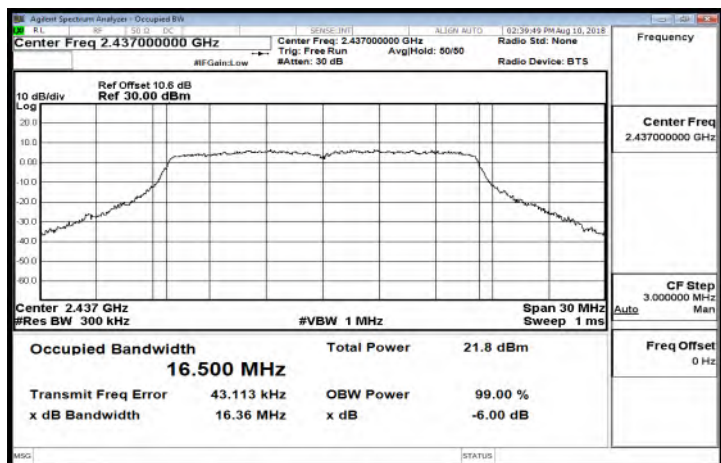
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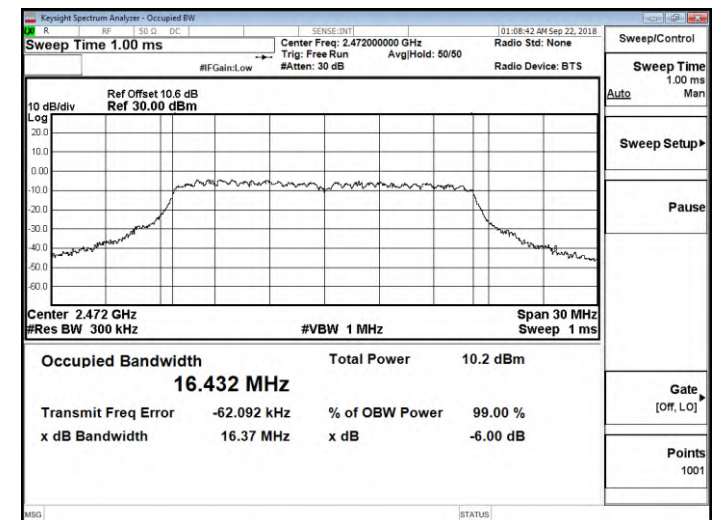
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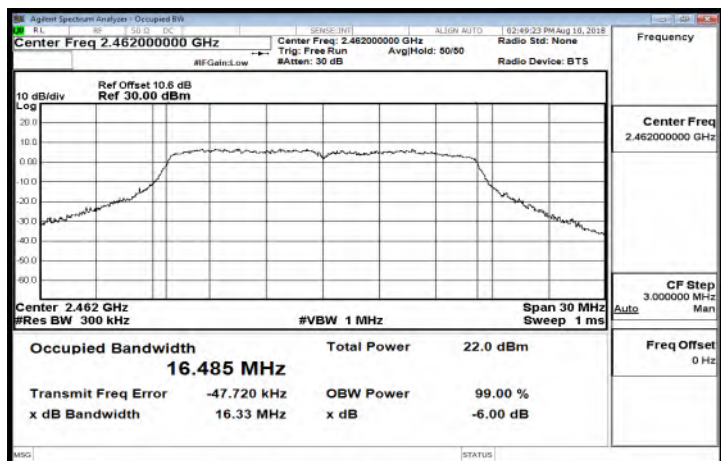
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99% Band Width Test Data CH-High 2472MHz



99% Band Width Test Data CH-High



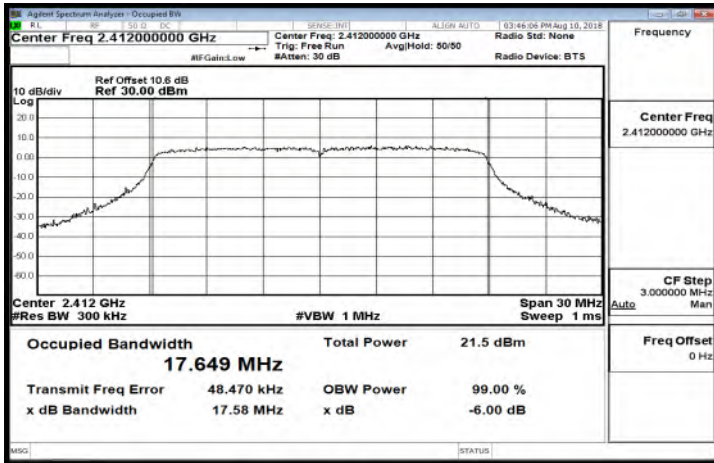
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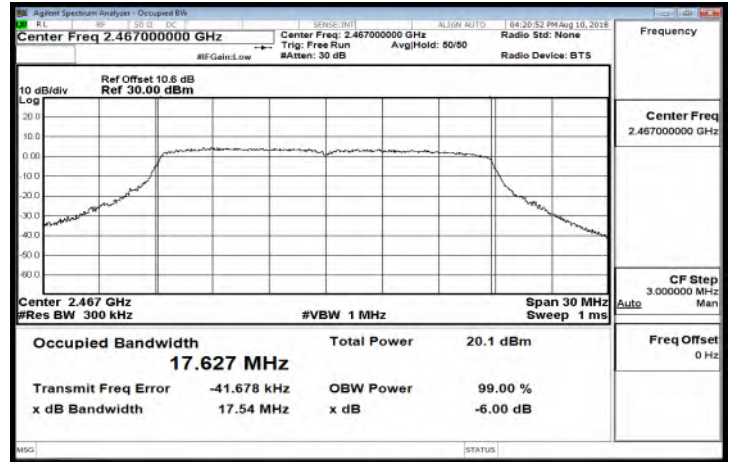
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802.11n\_20M (CH0)

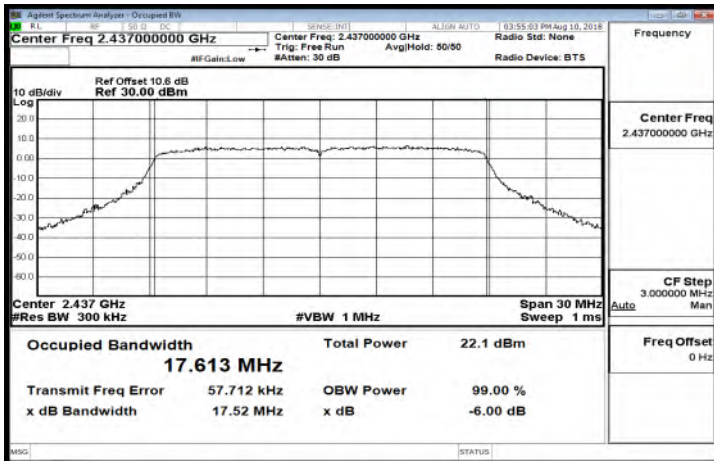
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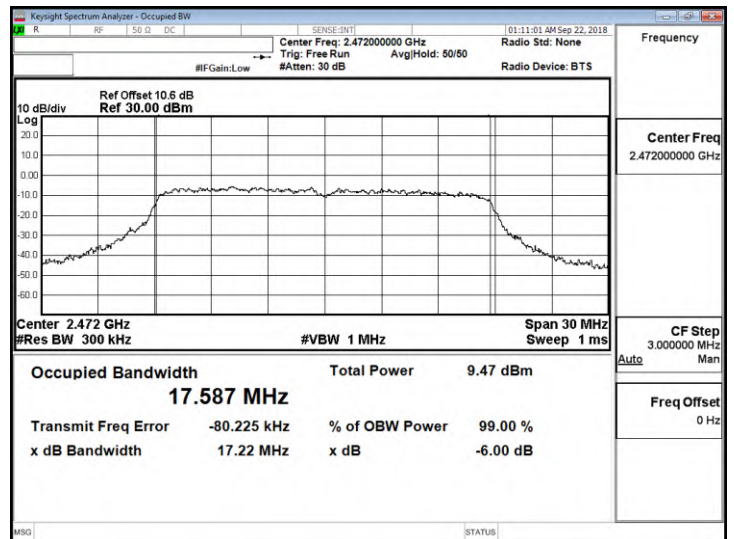
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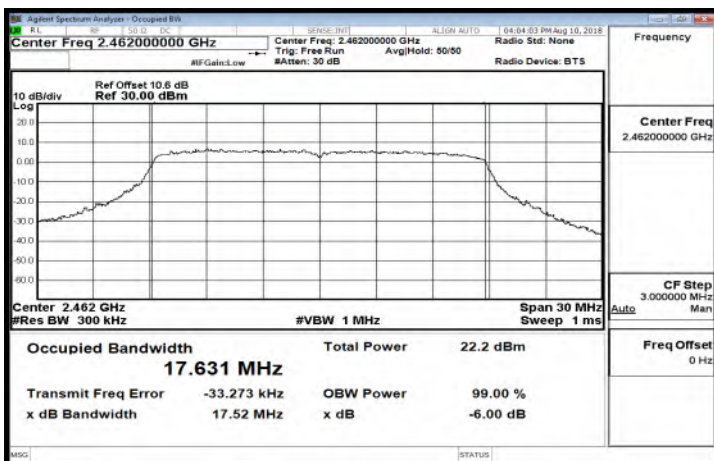
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99% Band Width Test Data CH-High 2472MHz



99% Band Width Test Data CH-High



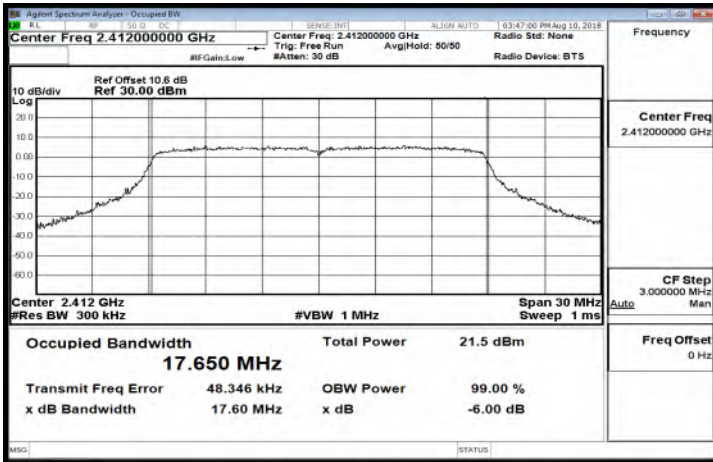
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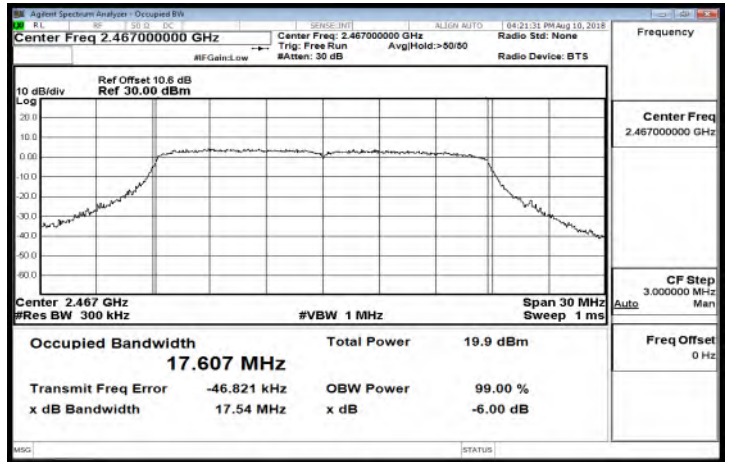
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802.11n\_20M (CH1)

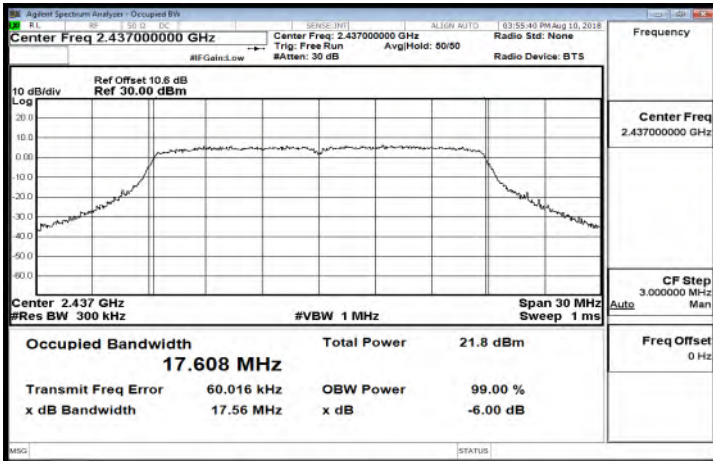
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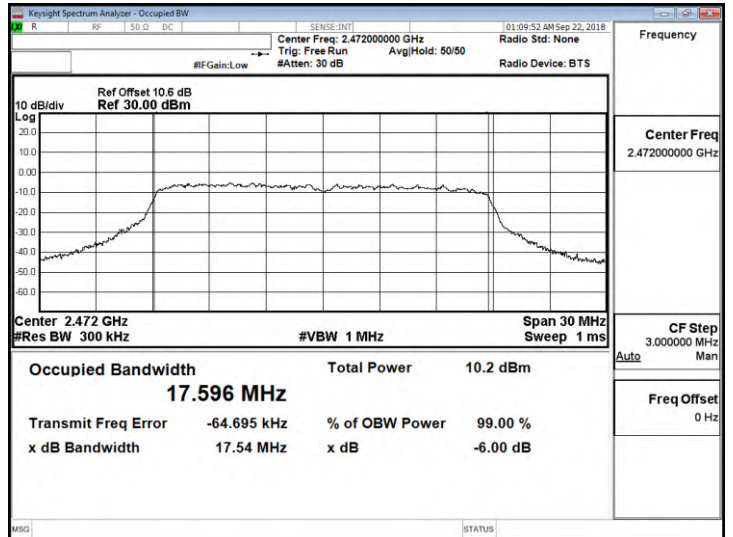
99% Band Width Test Data CH-High 2467MHz



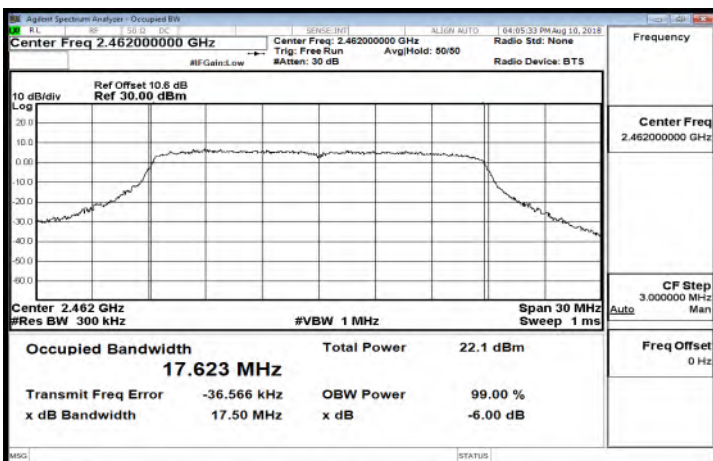
99% Band Width Test Data CH-Mid



99% Band Width Test Data CH-High 2472MHz



99% Band Width Test Data CH-High



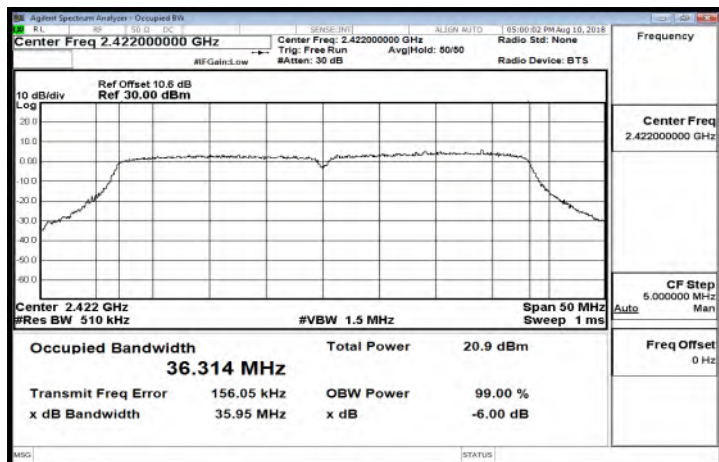
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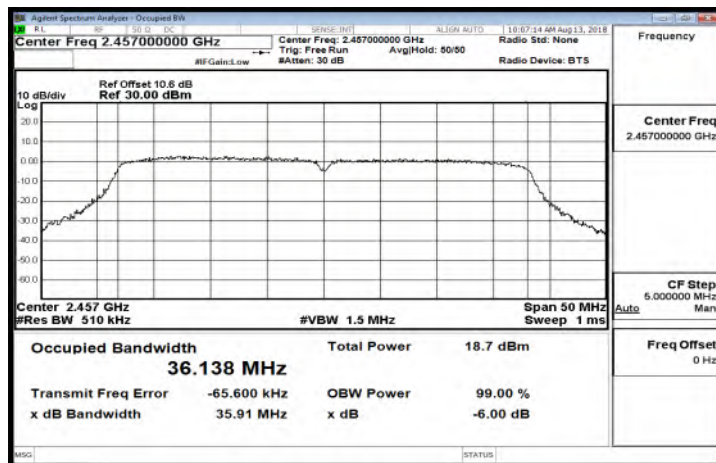
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802.11n\_40M (CH0)

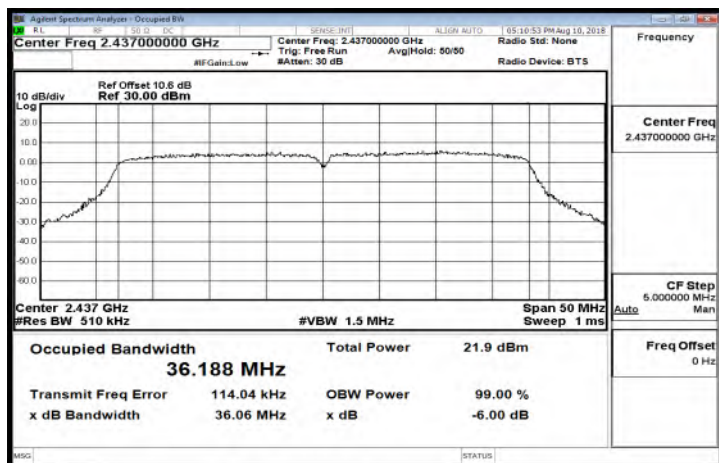
99% Band Width Test Data CH-Low



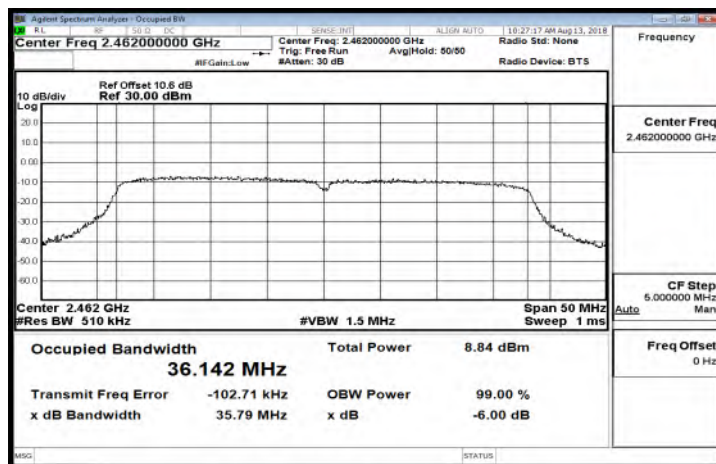
99% Band Width Test Data CH-High 2457MHz



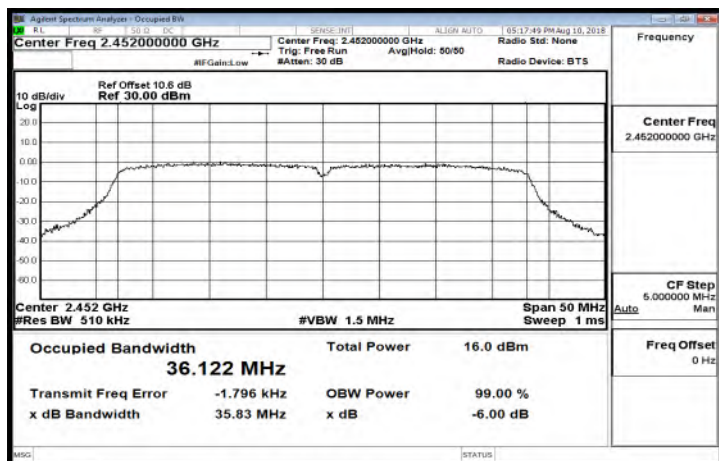
99% Band Width Test Data CH-Mid



99% Band Width Test Data CH-High 2462MHz



99% Band Width Test Data CH-High



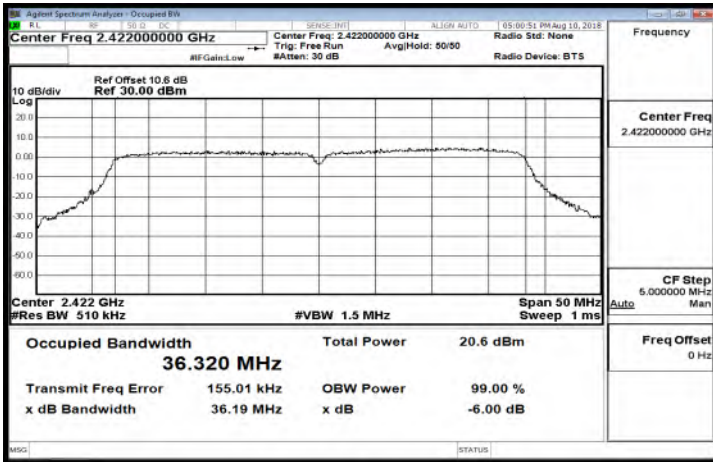
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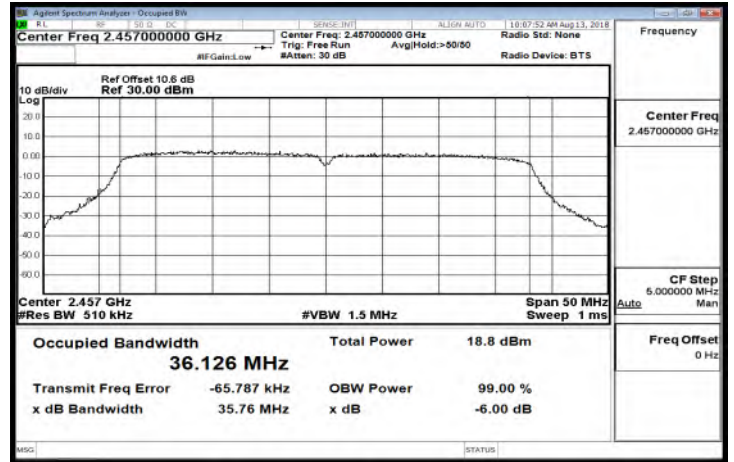
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802.11n\_40M (CH1)

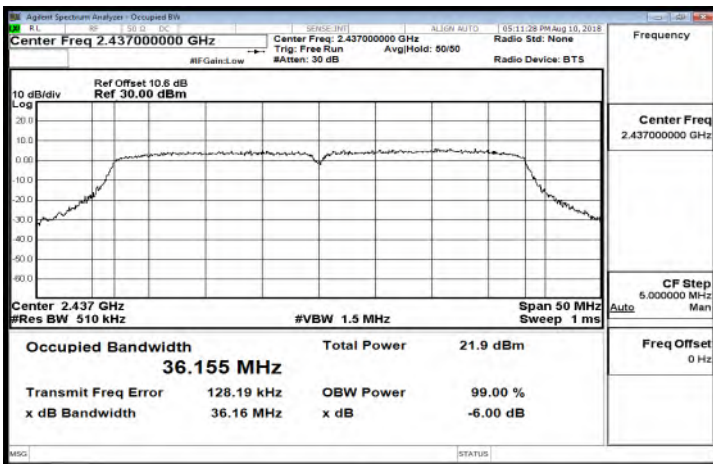
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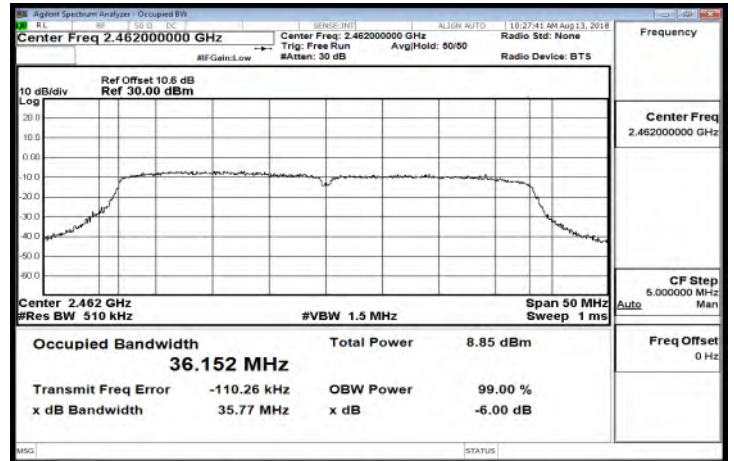
99% Band Width Test Data CH-High 2457MHz



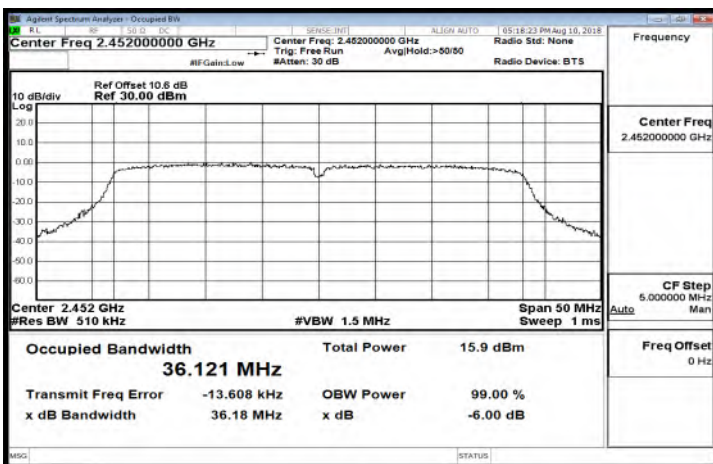
99% Band Width Test Data CH-Mid



99% Band Width Test Data CH-High 2462MHz



99% Band Width Test Data CH-High



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## 10 CONDUCTED BAND EDGE AND SPURIOUS EMISSION MEASUREMENT

### 10.1 Standard Applicable

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

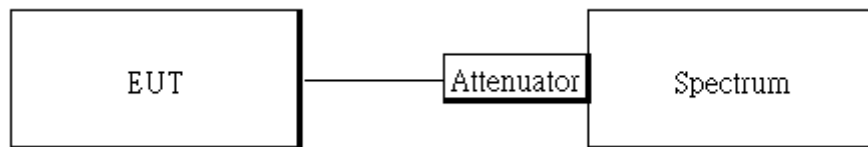
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a) & RSS-Gen §8.10, must also comply with the radiated emission limits specified in §15.209(a) & RSS-Gen §8.8.

If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

### 10.2 Measurement Equipment Used

| Conducted Emission Test Site |           |              |               |            |            |
|------------------------------|-----------|--------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR       | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| Spectrum Analyzer            | Agilent   | N9010A       | MY51440113    | 2018/06/20 | 2019/06/19 |
| Attenuator                   | Marvelous | MVE2213-10   | RF30          | 2017/12/26 | 2018/12/25 |
| DC Block                     | PASTERNAK | PE8210       | RF29          | 2017/12/26 | 2018/12/25 |
| Notebook                     | Lenovo    | L420         | S0011721      | N/A        | N/A        |

### 10.3 Test SET-UP



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## 10.4 Measurement Procedure

### Conducted Band Edge Reference Level Measurement Procedure

1. Set analyzer center frequency to DTS channel center frequency.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Set the span to 1.5 times the DTS channel bandwidth.
4. Set the RBW = 100kHz & VBW = 300 kHz.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.

### Conducted Band Edge:

1. To connect Antenna Port of EUT to Spectrum.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
4. Set start to edge frequency, and stop frequency of spectrum analyzer so as to encompass the spectrum to be examined.
5. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz, Detector = Peak, Sweep = auto
6. Mark the highest reading of the emission as the reference level measurement.
7. Set DL as the limit = reading on marker 1 – 20dBm
8. Marker on frequency, 2.3999GHz and 2.4836GHz, and examine shall 100 kHz immediately outside the authorized (2400~2483.5) be attenuated by 20dB at least relative to the maximum emission of power.
9. Repeat above procedures until all default test channel (low, middle, and high) was complete.

### Conducted Spurious Emission:

1. To connect Antenna Port of EUT to Spectrum
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Set RBW = 100 kHz & VBW= 300 kHz, Detector =Peak, Sweep = Auto.
4. Allow trace to fully stabilize.
5. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
6. Repeat above procedures until all default test channel measured were complete.
7. 802.11n MIMO mode: offset is set following “measure and add 10 Log (N)” on spectrum to measure the PSD for MIMO mode. Offset = cable loss + 10 log (N), where N is number of transmitting antenna. N=2 for this given application for the test of PSD at MIMO mode, the highest emission of worst case is employing.

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### 10.5 Measurement Result

| Reference Level of Limit 802.11b mode |           |                                | Reference Level of Limit 802.11g mode |           |                                |
|---------------------------------------|-----------|--------------------------------|---------------------------------------|-----------|--------------------------------|
| Freq. (MHz)                           | PSD (dBm) | Reference Level of Limit (dBm) | Freq. (MHz)                           | PSD (dBm) | Reference Level of Limit (dBm) |
| 2412                                  | 9.050     | -10.95                         | 2412                                  | 6.760     | -13.24                         |
| 2437                                  | 9.819     | -10.18                         | 2437                                  | 6.536     | -13.46                         |
| 2462                                  | 9.300     | -10.70                         | 2462                                  | 7.020     | -12.98                         |
| 2467                                  | 8.990     | -11.01                         | 2467                                  | 5.810     | -14.19                         |
| 2472                                  | 9.250     | -10.75                         | 2472                                  | -2.741    | -22.74                         |

| Reference Level of Limit 802.11n20 mode |           |                                | Reference Level of Limit 802.11n40 MODE |           |                                |
|---|-----------|--------------------------------|---|-----------|--------------------------------|
| Freq. (MHz)                             | PSD (dBm) | Reference Level of Limit (dBm) | Freq. (MHz)                             | PSD (dBm) | Reference Level of Limit (dBm) |
| 2412                                    | 6.620     | -13.38                         | 2422                                    | 2.850     | -17.15                         |
| 2437                                    | 7.450     | -12.55                         | 2437                                    | 3.834     | -16.17                         |
| 2462                                    | 7.020     | -12.98                         | 2452                                    | -1.818    | -21.82                         |
| 2467                                    | 4.920     | -15.08                         | 2457                                    | 1.036     | -18.96                         |
| 2472                                    | -2.511    | -22.51                         | 2462                                    | -8.421    | -28.42                         |

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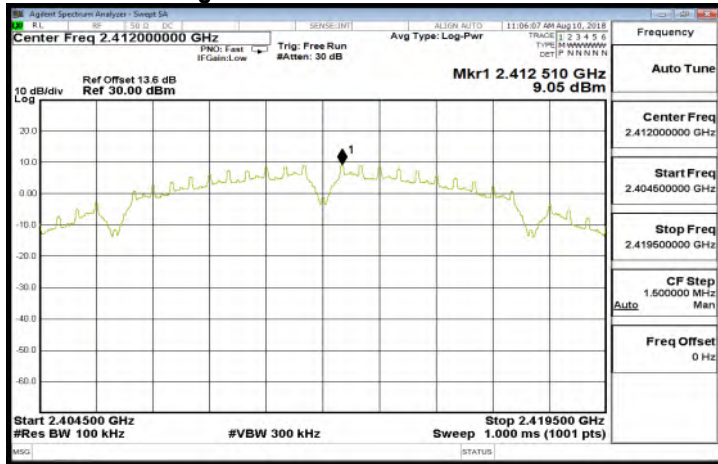
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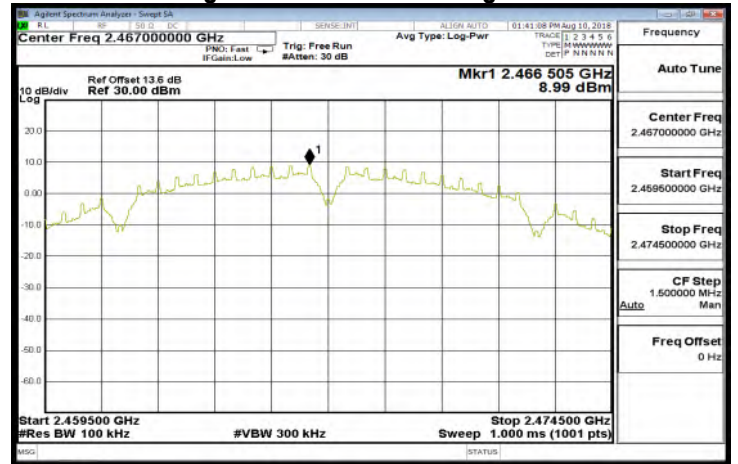
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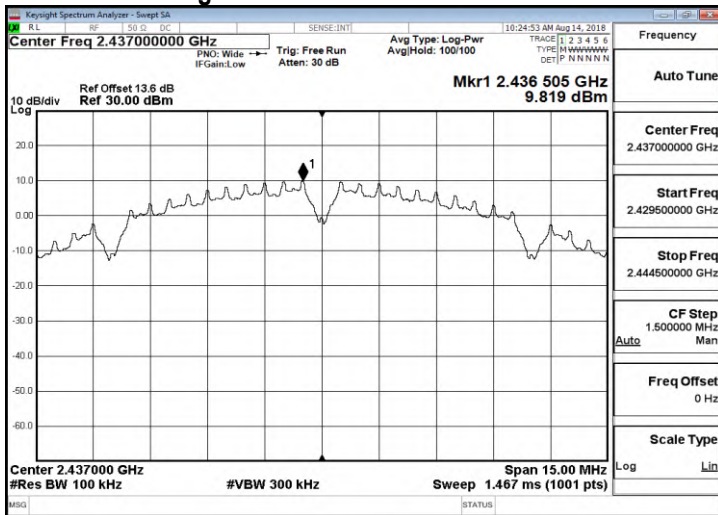
### 802.11b Band Edge Limit Test Data CH-Low



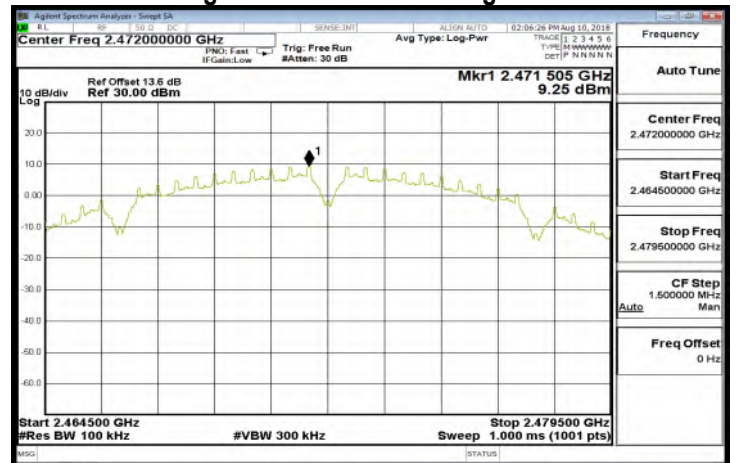
### 802.11b Band Edge Limit Test Data CH-High 2467MHz



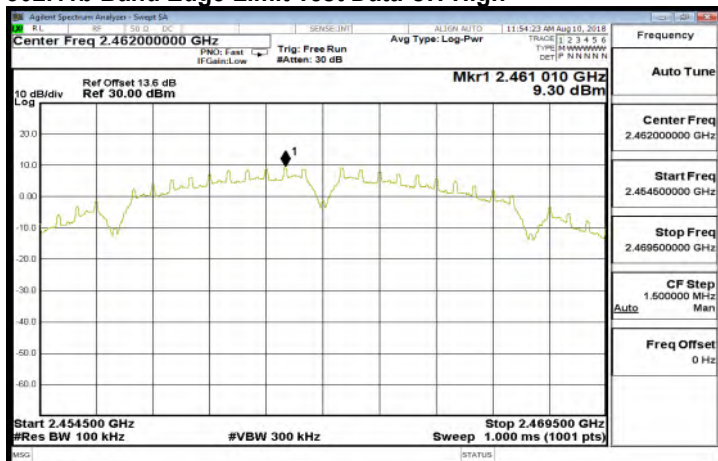
### 802.11b Band Edge Limit Test Data CH-Mid



### 802.11b Band Edge Limit Test Data CH-High 2472MHz



### 802.11b Band Edge Limit Test Data CH-High

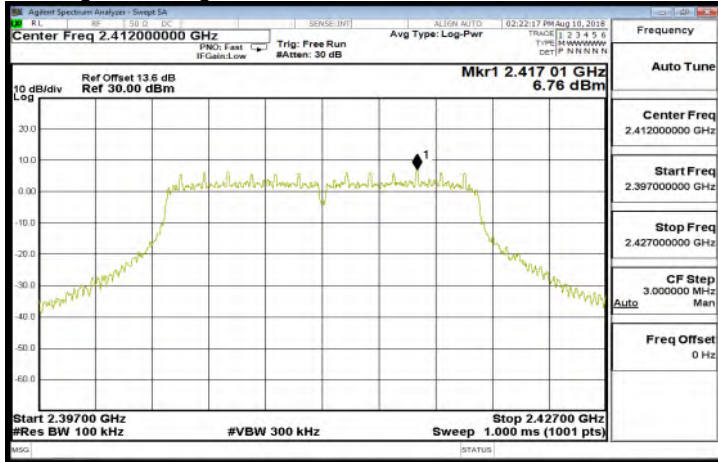


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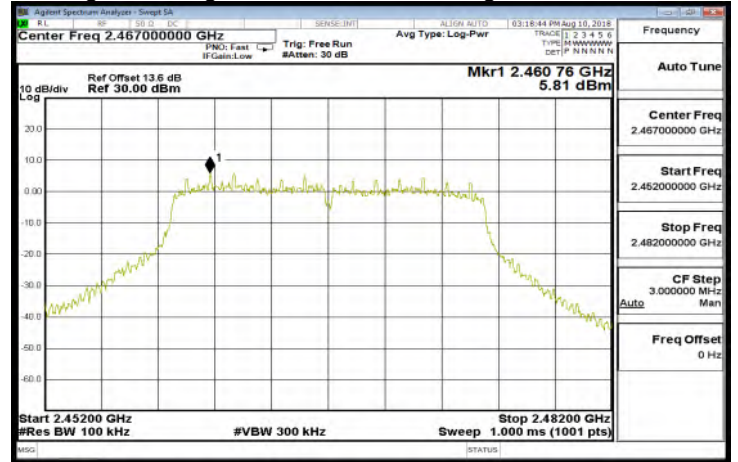
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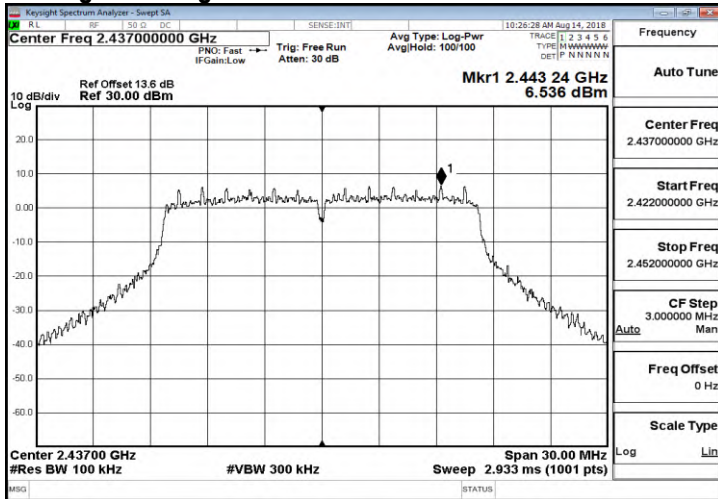
### 802.11g Band Edge Limit Test Data CH-Low



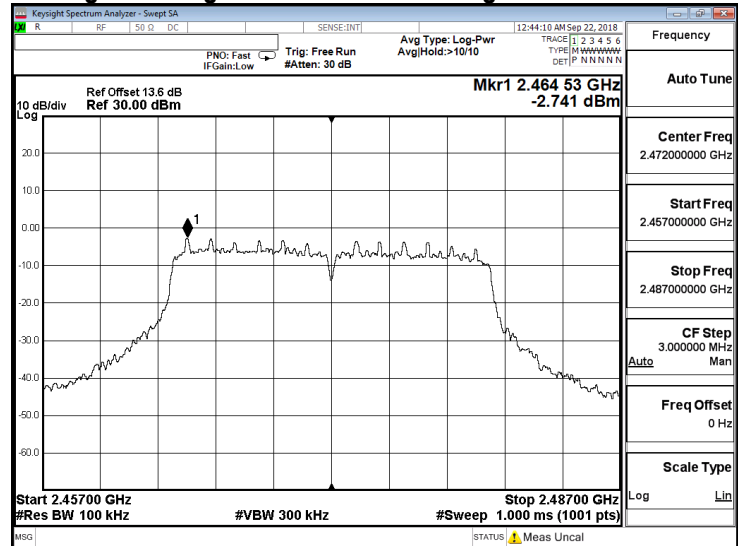
### 802.11g Band Edge Limit Test Data CH-High 2467MHz



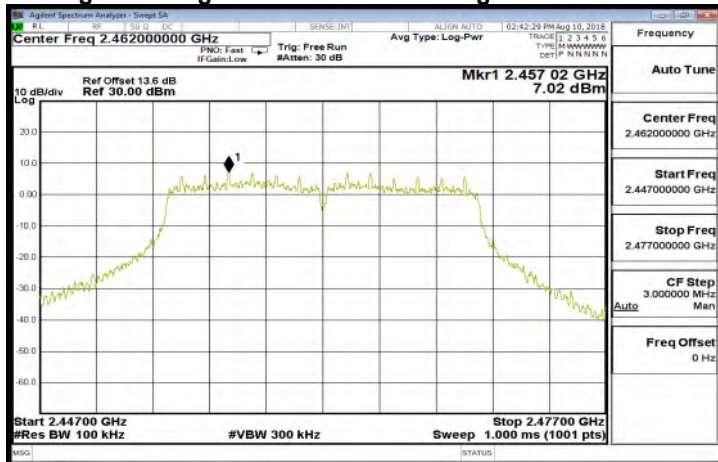
### 802.11g Band Edge Limit Test Data CH-Mid



### 802.11g Band Edge Limit Test Data CH-High 2472MHz



### 802.11g Band Edge Limit Test Data CH-High

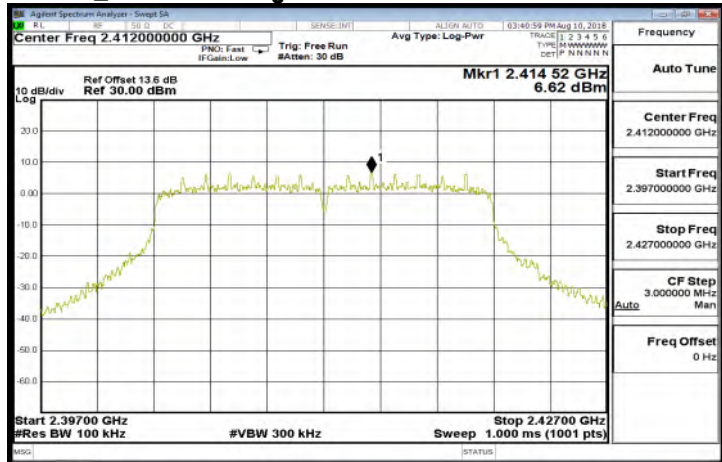


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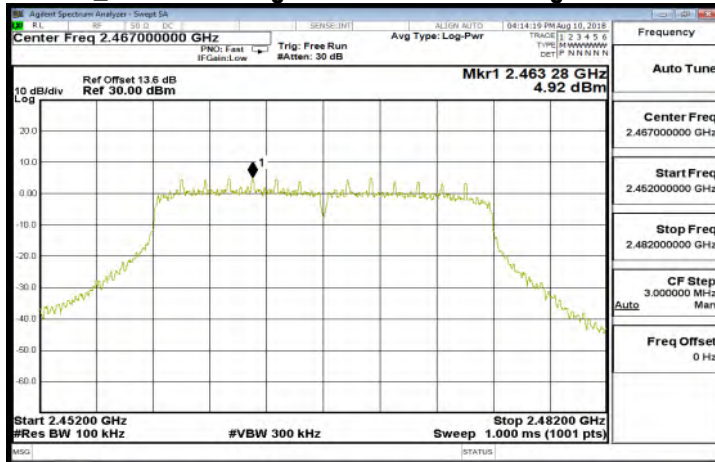
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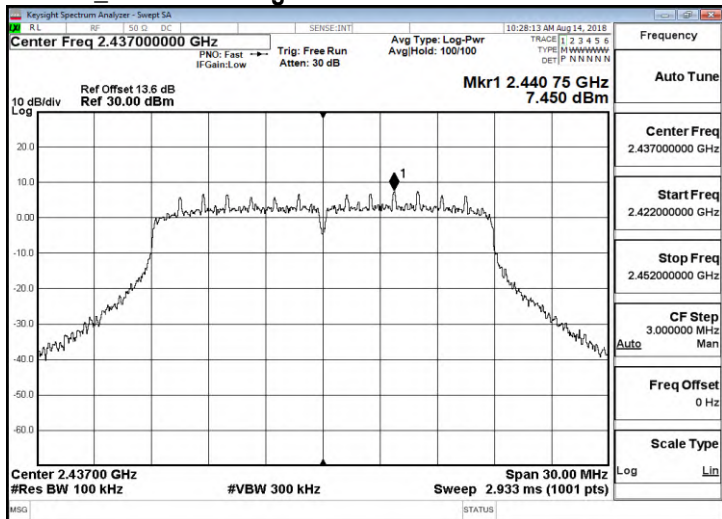
802.11n\_HT20 Band Edge Limit Test Data CH-Low



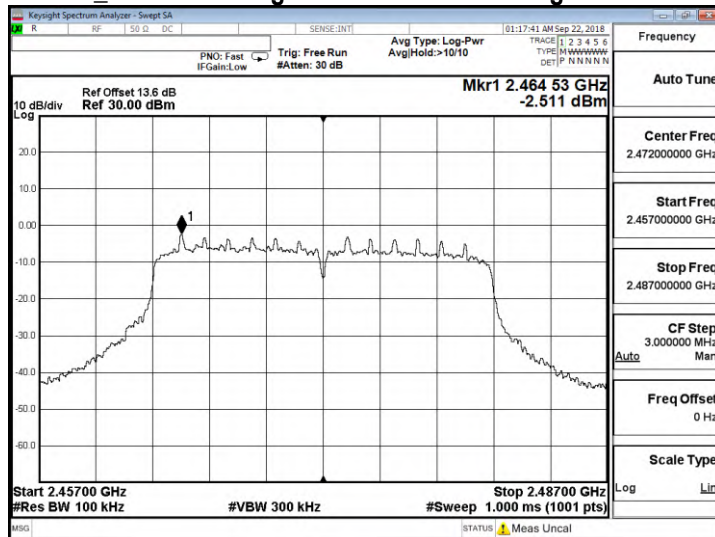
802.11n\_HT20 Band Edge Limit Test Data CH-High 2467MHz



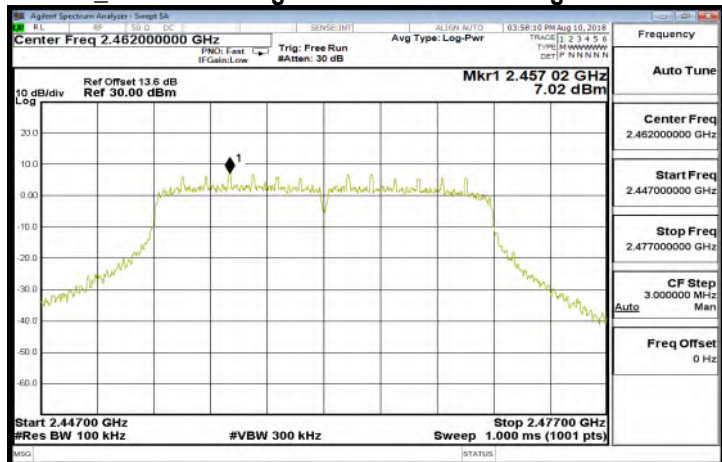
802.11n\_HT20 Band Edge Limit Test Data CH-Mid



802.11n\_HT20 Band Edge Limit Test Data CH-High 2472MHz



802.11n\_HT20 Band Edge Limit Test Data CH-High

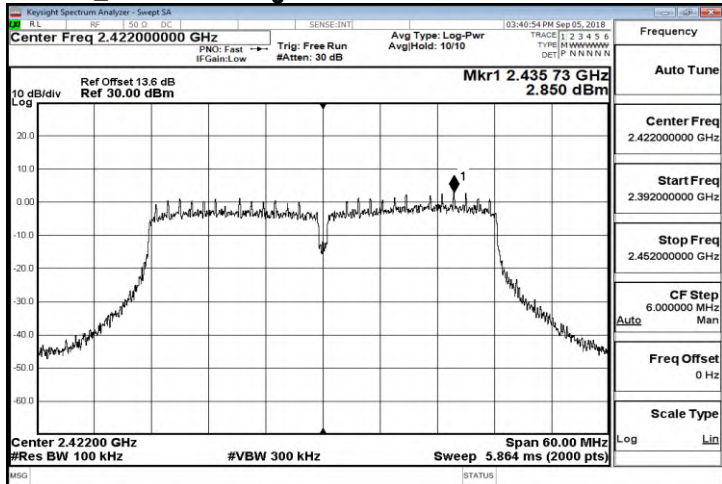


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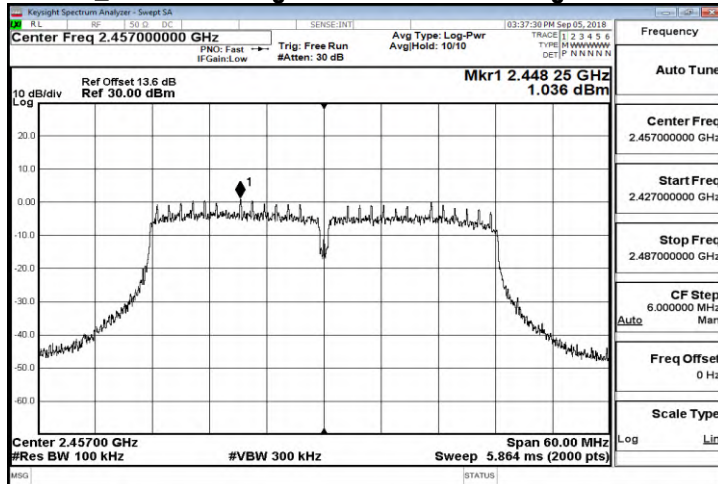
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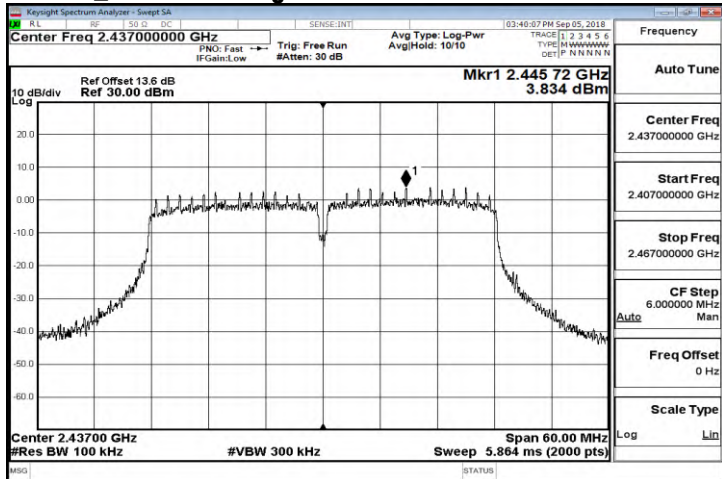
### 802.11n\_HT40 Band Edge Limit Test Data CH-Low



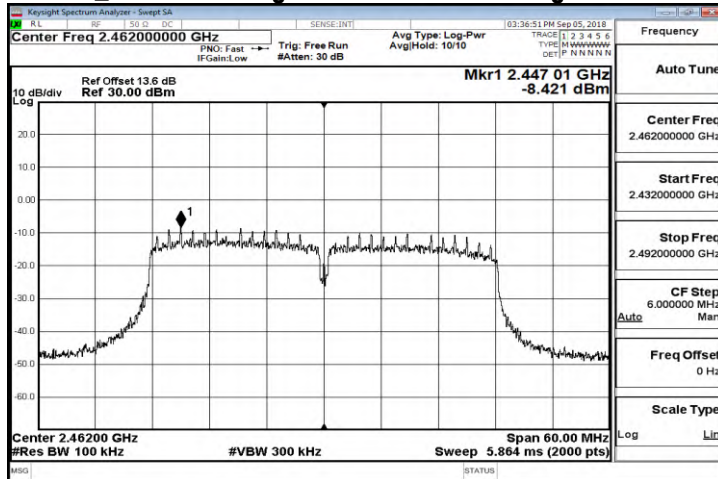
### 802.11n\_HT40 Band Edge Limit Test Data CH-High 2457MHz



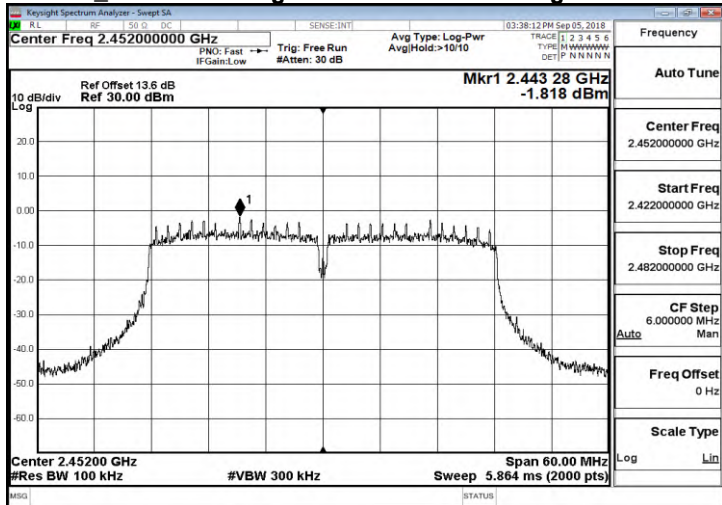
### 802.11n\_HT40 Band Edge Limit Test Data CH-Mid



### 802.11n\_HT40 Band Edge Limit Test Data CH-High 2462MHz



### 802.11n\_HT40 Band Edge Limit Test Data CH-High



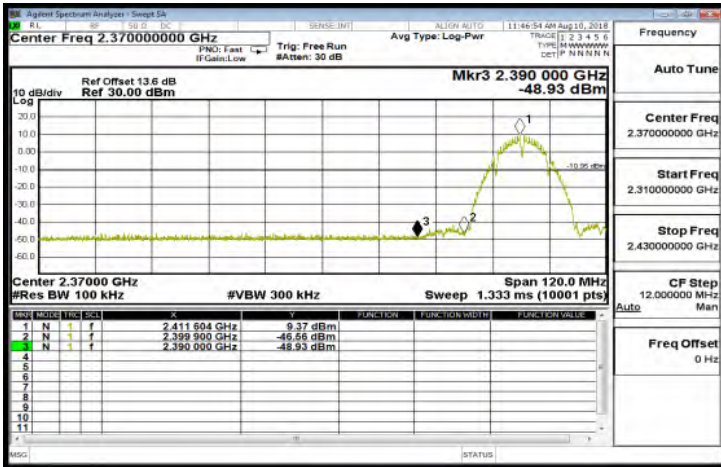
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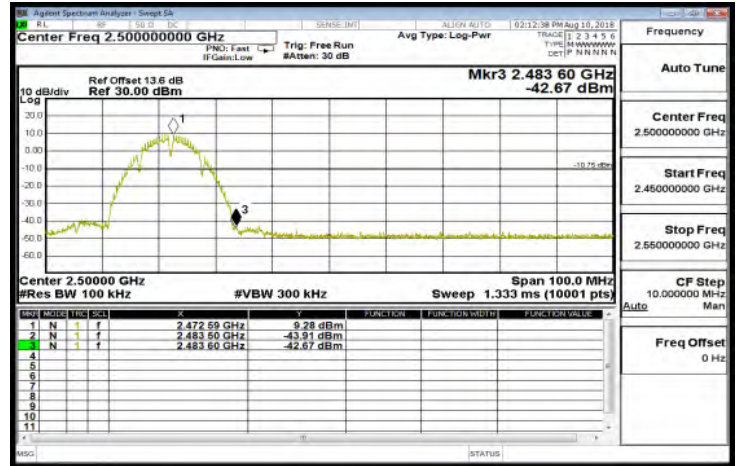
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802.11b

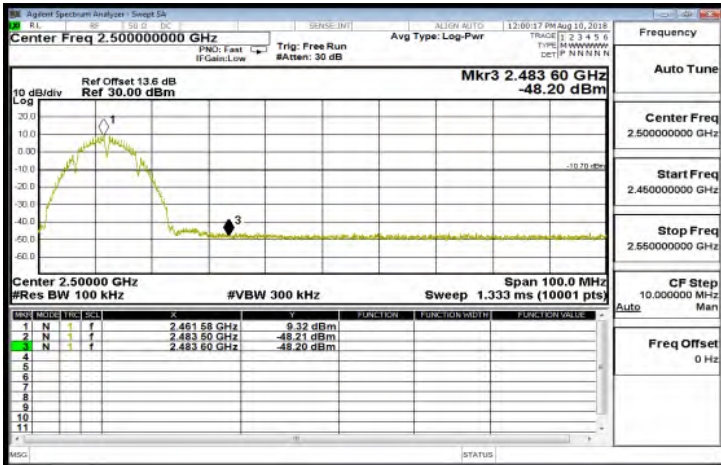
Band Edge Test Data CH-Low



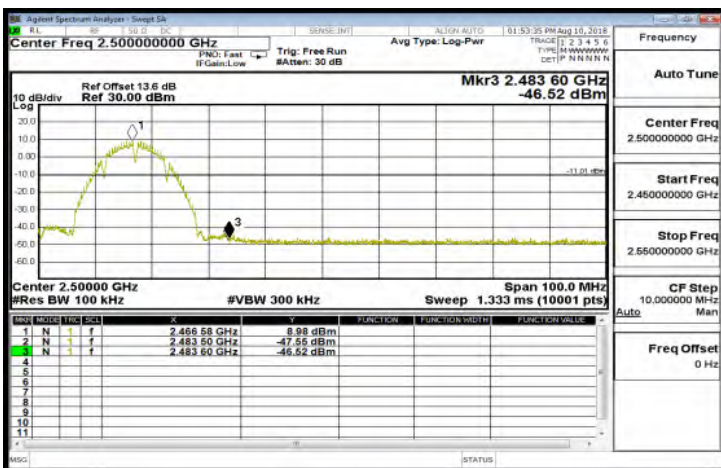
Band Edge Test Data CH-High 2472MHz



Band Edge Test Data CH-High



Band Edge Test Data CH-High 2467MHz



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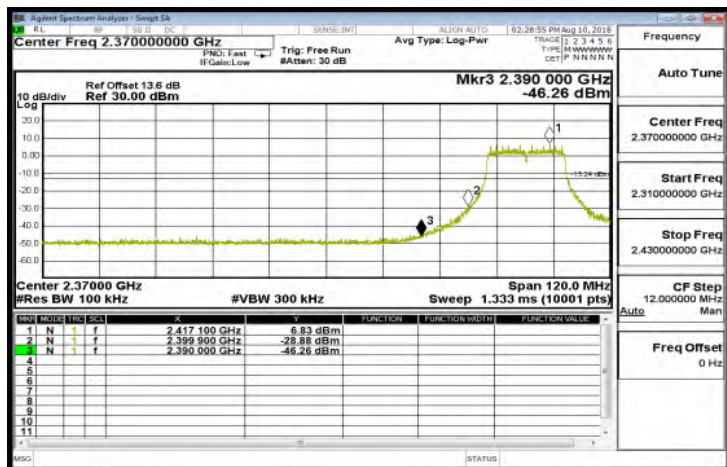
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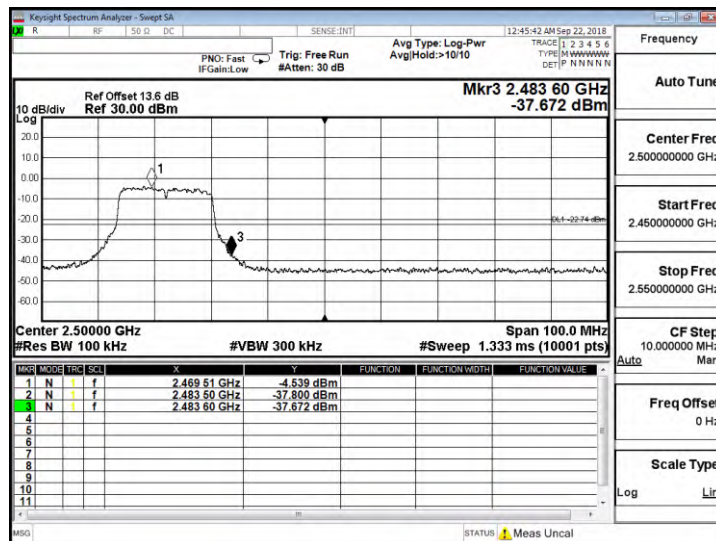


802.11g

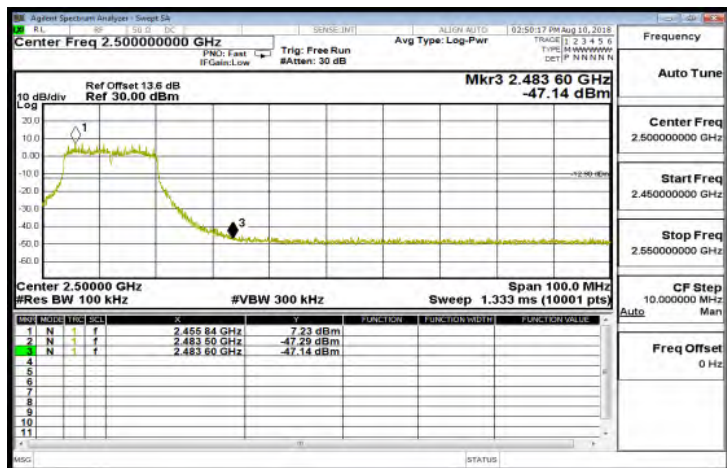
Band Edge Test Data CH-Low



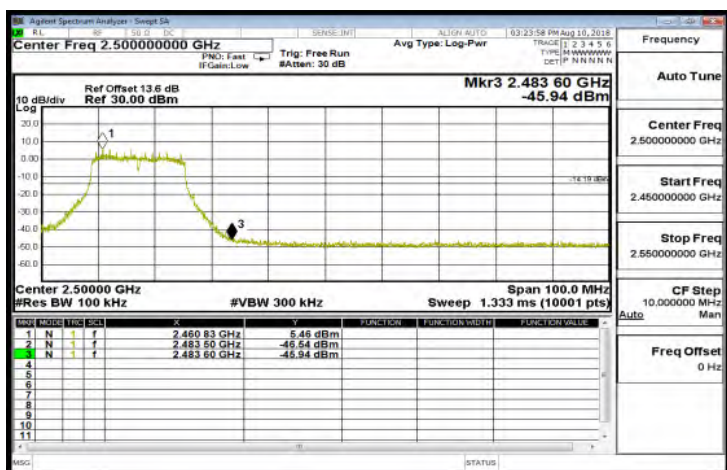
Band Edge Test Data CH-High 2472MHz



Band Edge Test Data CH-High



Band Edge Test Data CH-High 2467MHz



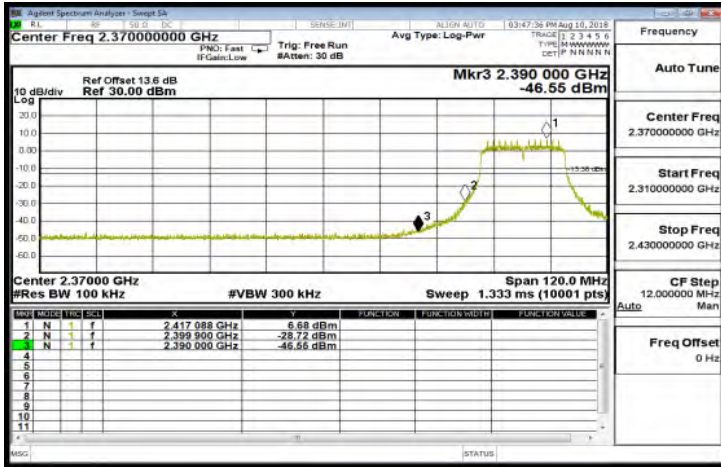
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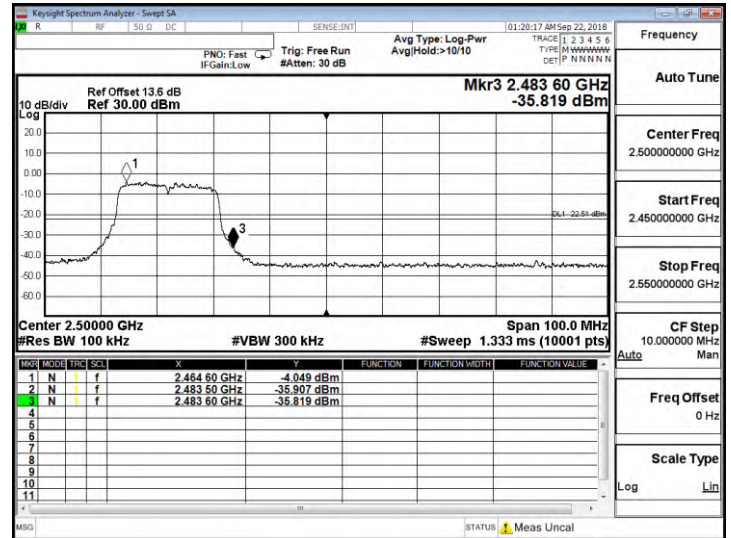
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802.11n\_HT20

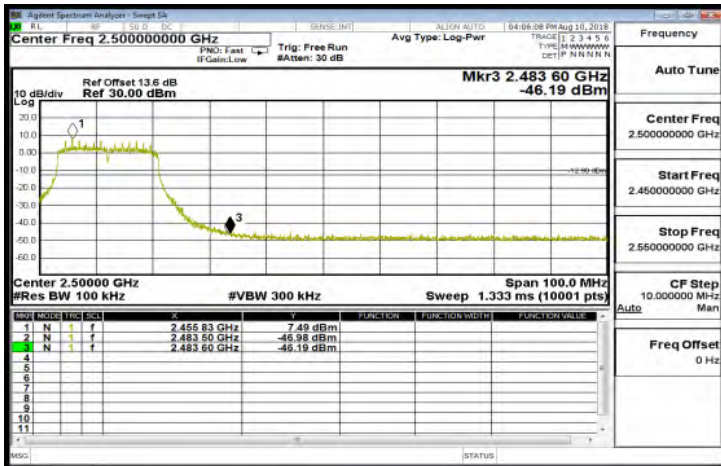
Band Edge Test Data CH-Low



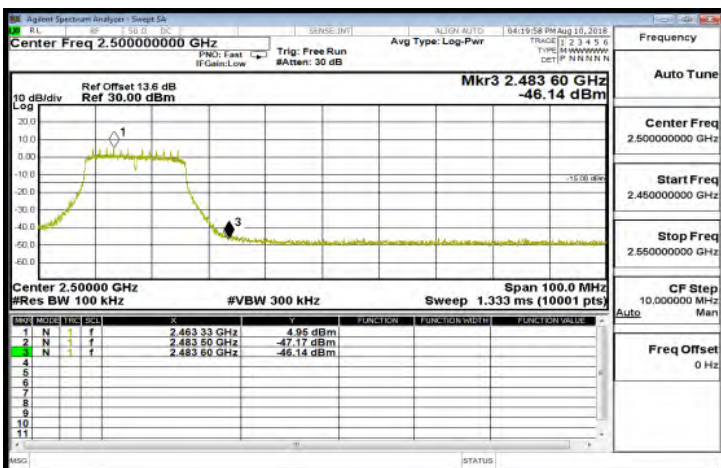
Band Edge Test Data CH-High 2472 MHz



Band Edge Test Data CH-High



Band Edge Test Data CH-High 2467MHz



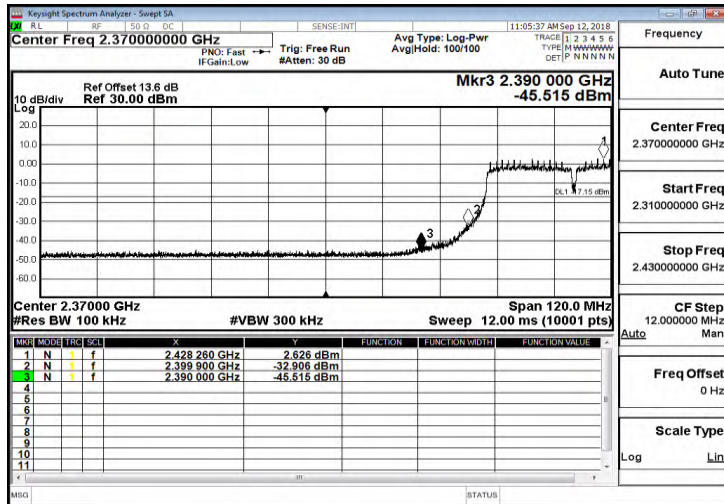
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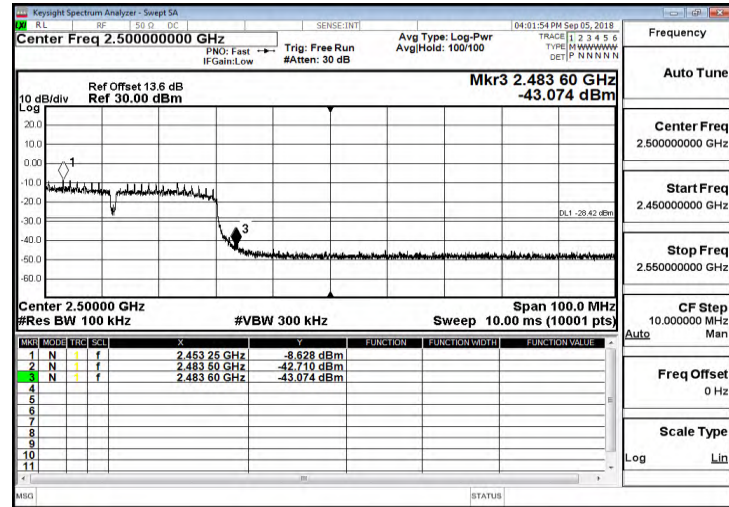
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802.11n\_HT40

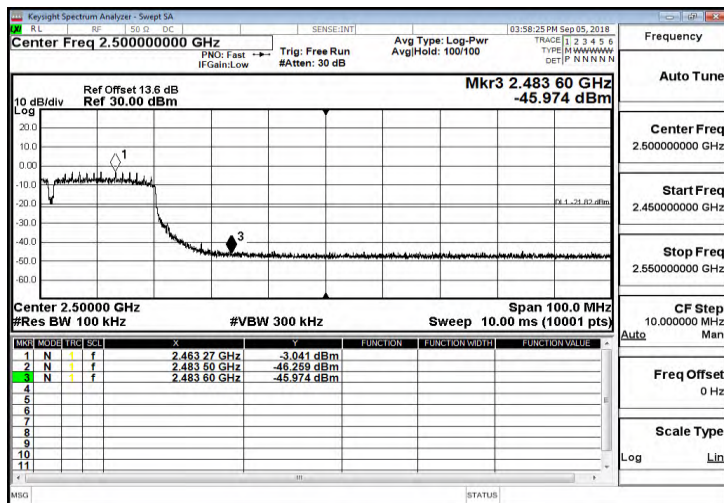
Band Edge Test Data CH-Low



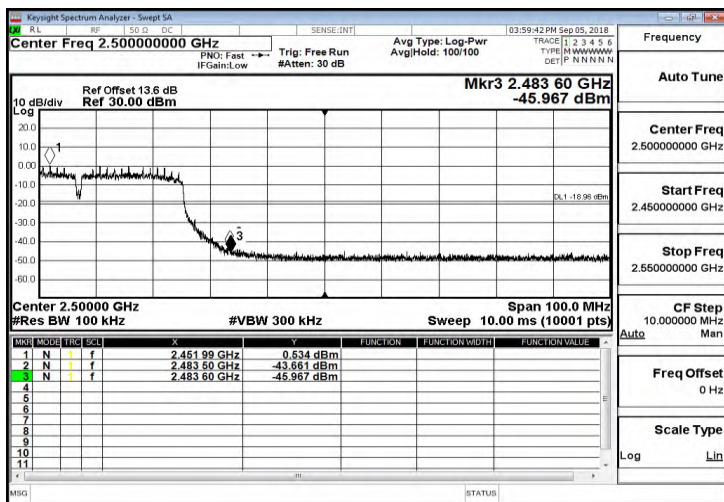
Band Edge Test Data CH-High 2462MHz



Band Edge Test Data CH-High



Band Edge Test Data CH-High 2457MHz



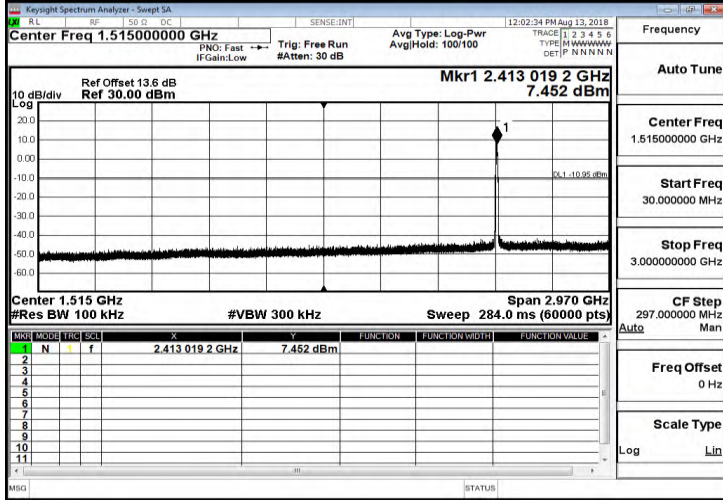
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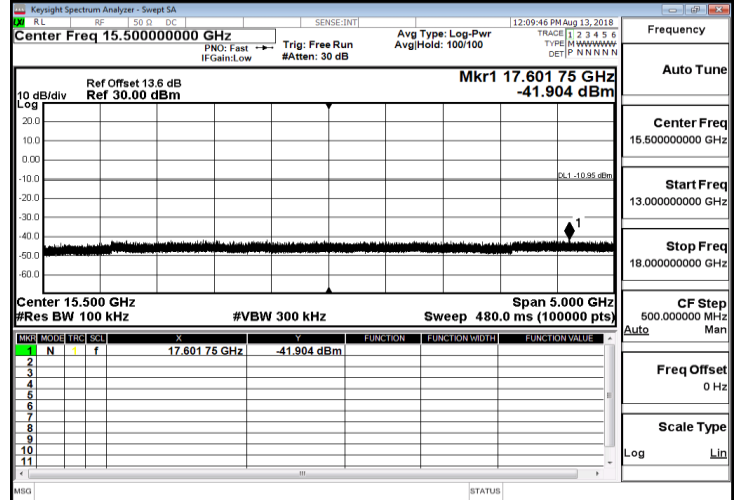
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802.11b

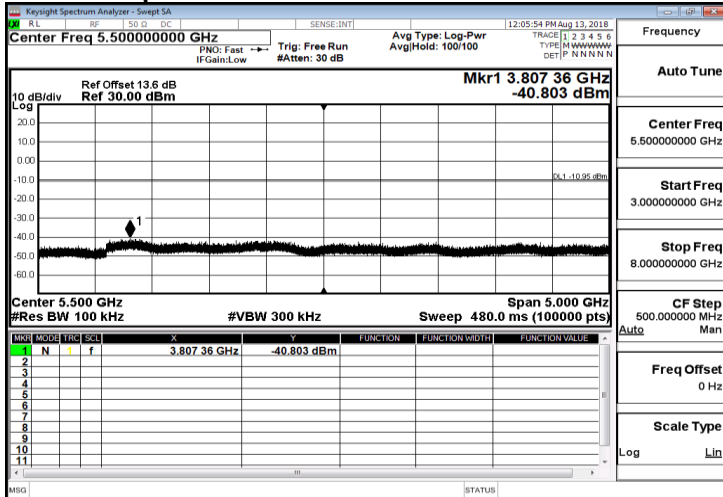
30M-3GHz Spurious Emission Test Data CH-Low



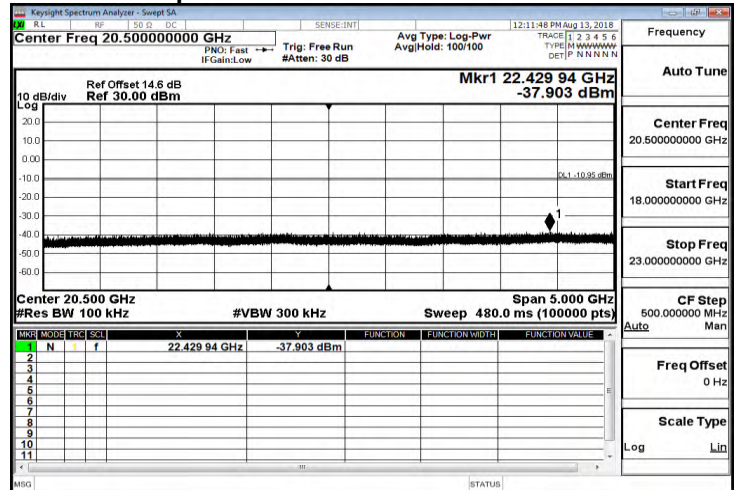
13G-18GHz Spurious Emission Test Data CH-Low



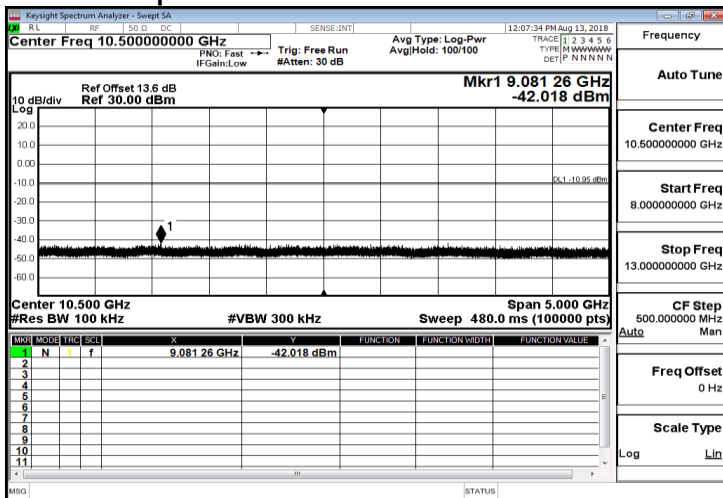
3G-8GHz Spurious Emission Test Data CH-Low



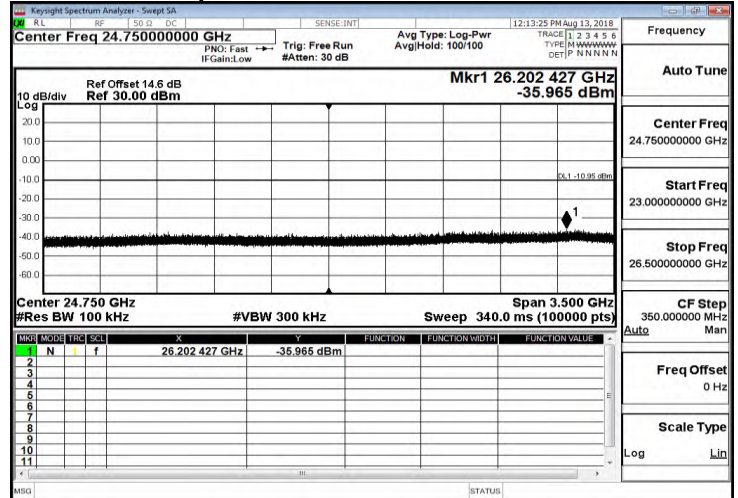
18G-23GHz Spurious Emission Test Data CH-Low



8G-13GHz Spurious Emission Test Data CH-Low



23G-26.5GHz Spurious Emission Test Data CH-Low

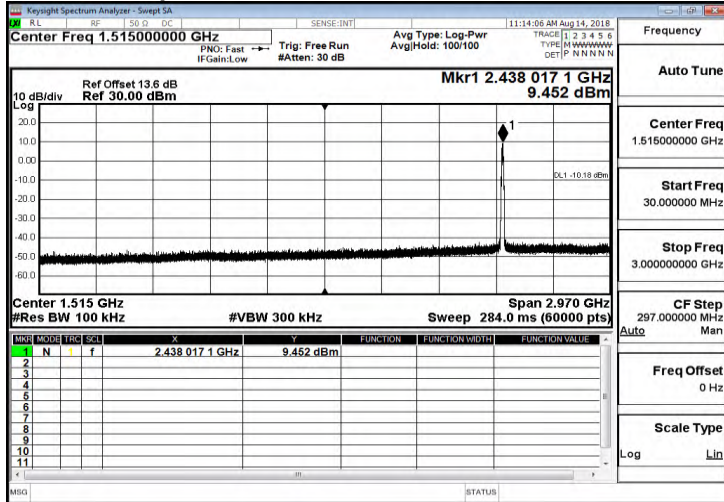


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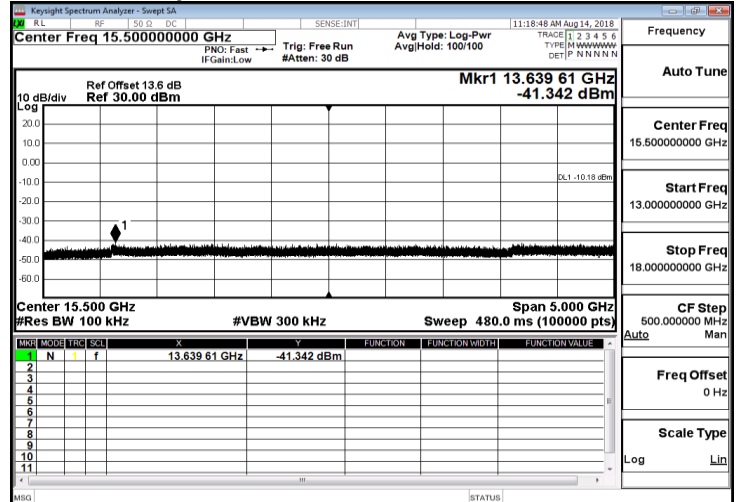
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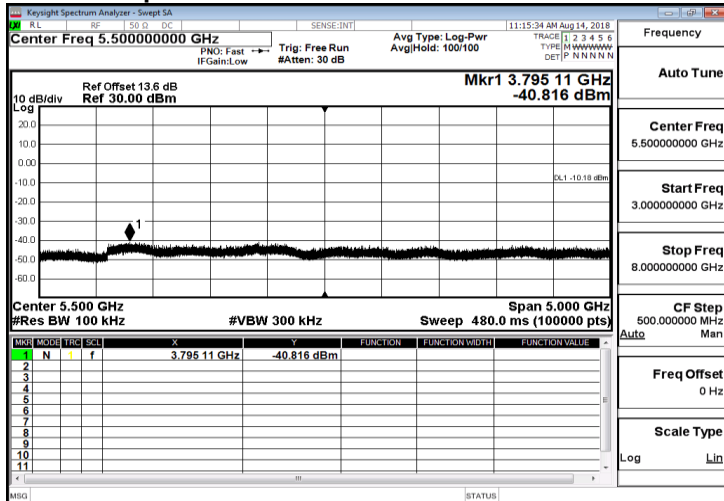
### 30M-3GHz Spurious Emission Test Data CH-Mid



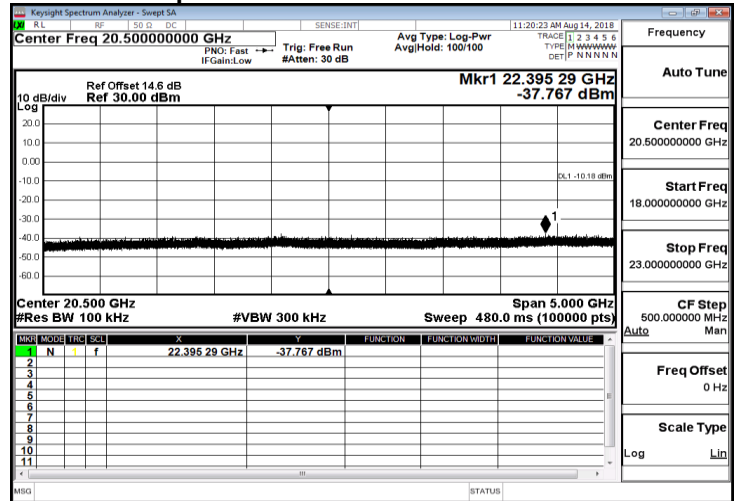
### 13G-18GHz Spurious Emission Test Data CH-Mid



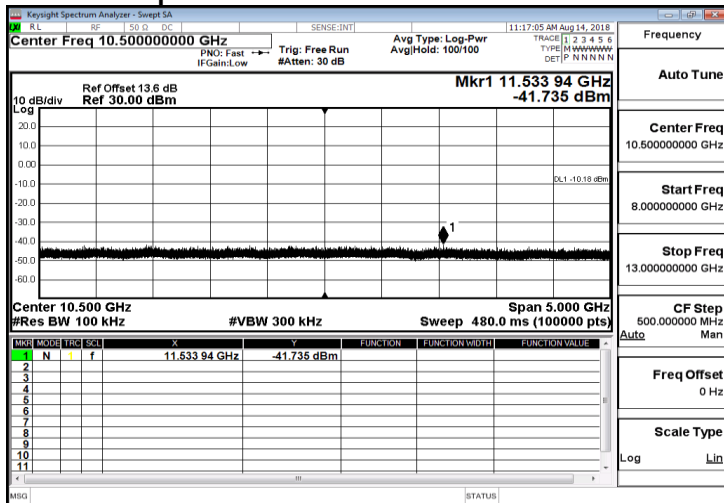
### 3G-8GHz Spurious Emission Test Data CH-Mid



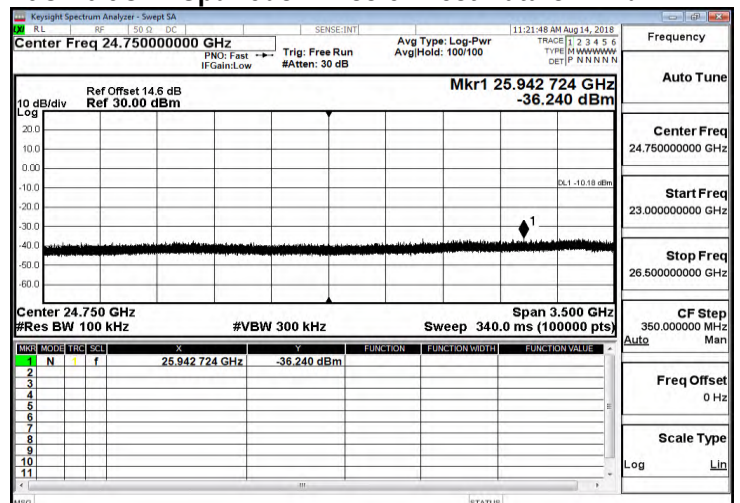
### 18G-23GHz Spurious Emission Test Data CH-Mid



### 8G-13GHz Spurious Emission Test Data CH-Mid



### 23G-26.5GHz Spurious Emission Test Data CH-Mid

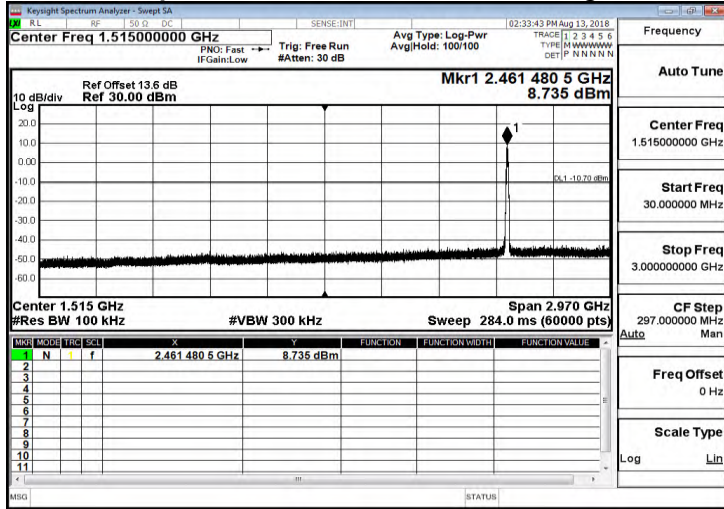


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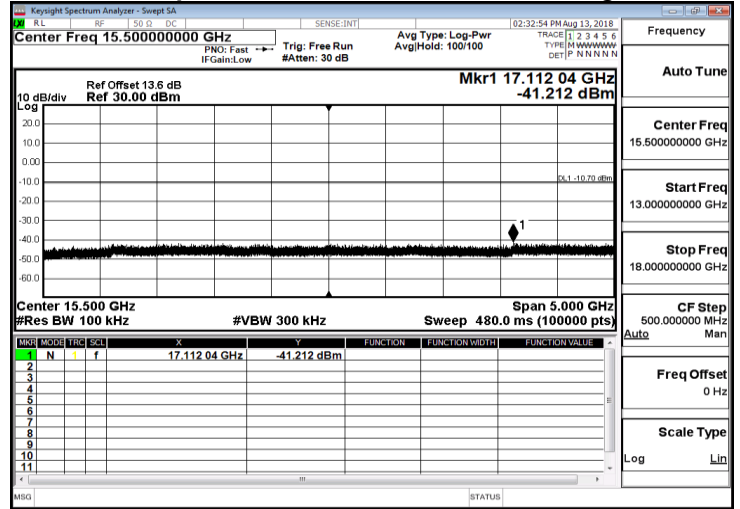
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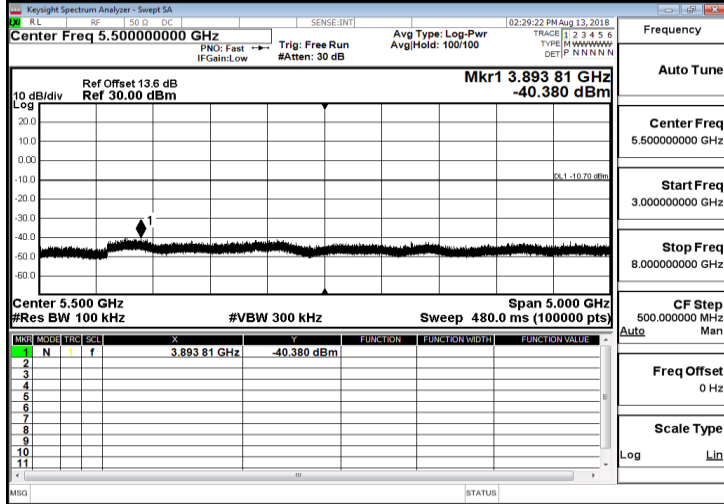
### 30M-3GHz Spurious Emission Test Data CH-High



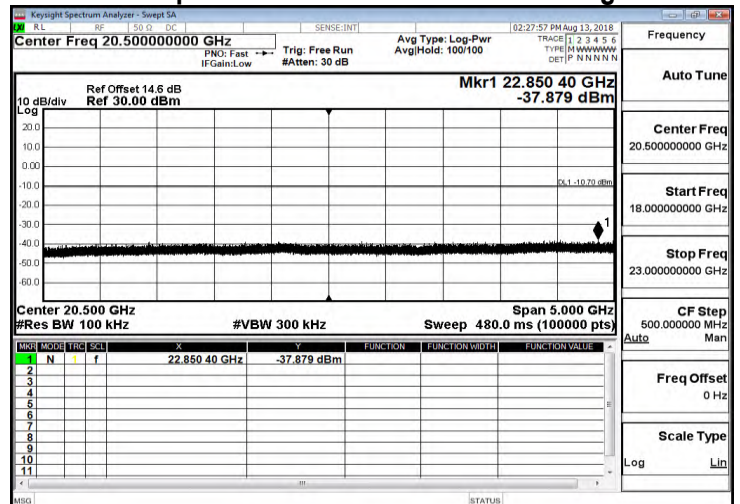
### 13G-18GHz Spurious Emission Test Data CH-High



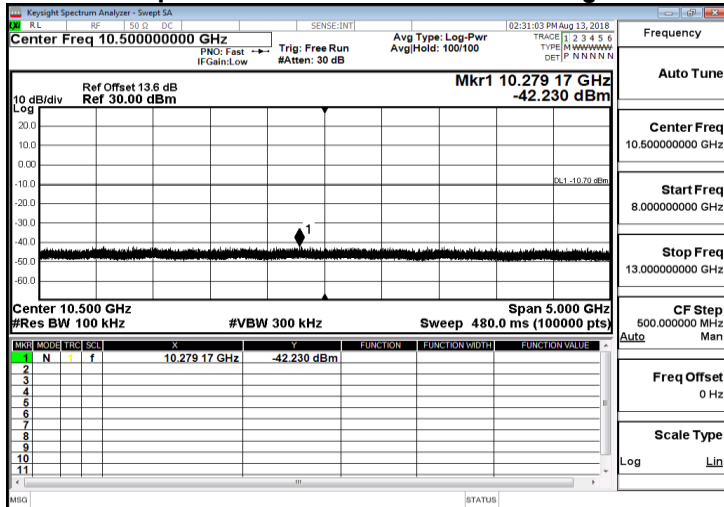
### 3G-8GHz Spurious Emission Test Data CH-High



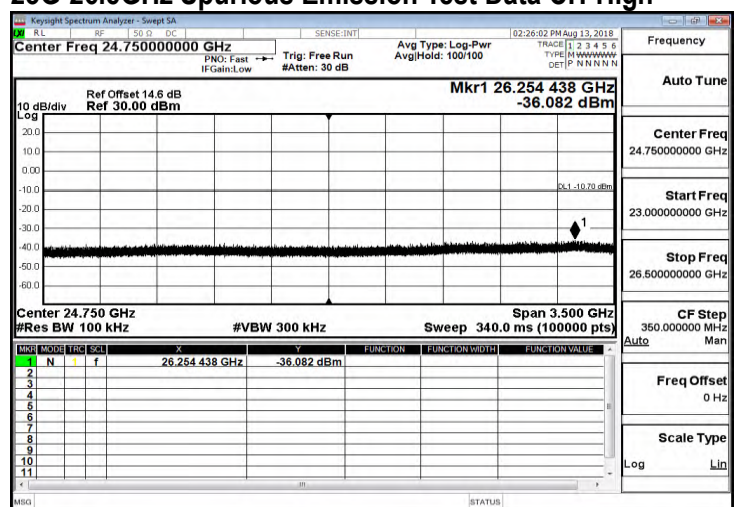
### 18G-23GHz Spurious Emission Test Data CH-High



### 8G-13GHz Spurious Emission Test Data CH-High



### 23G-26.5GHz Spurious Emission Test Data CH-High



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