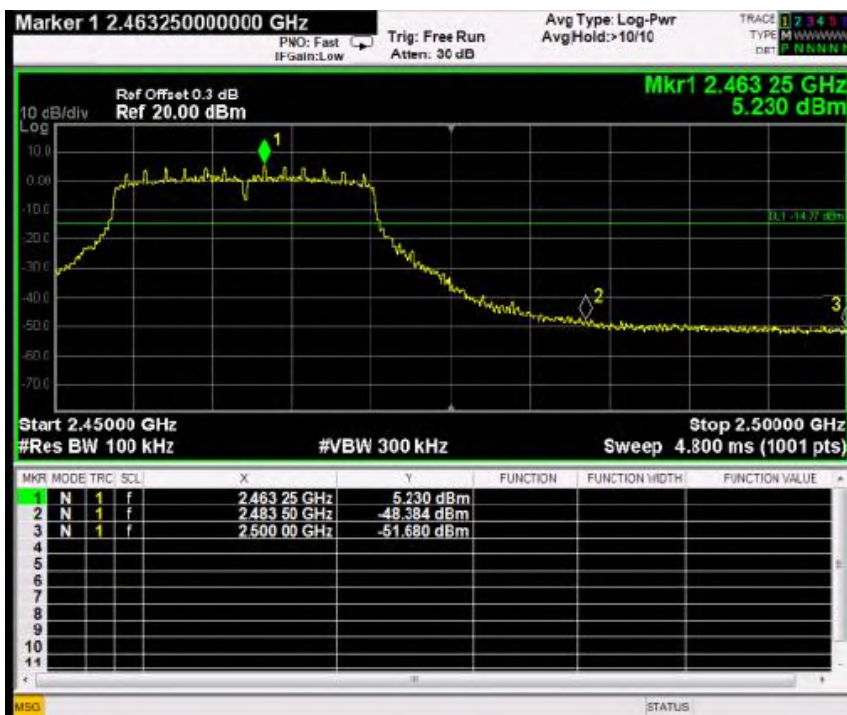
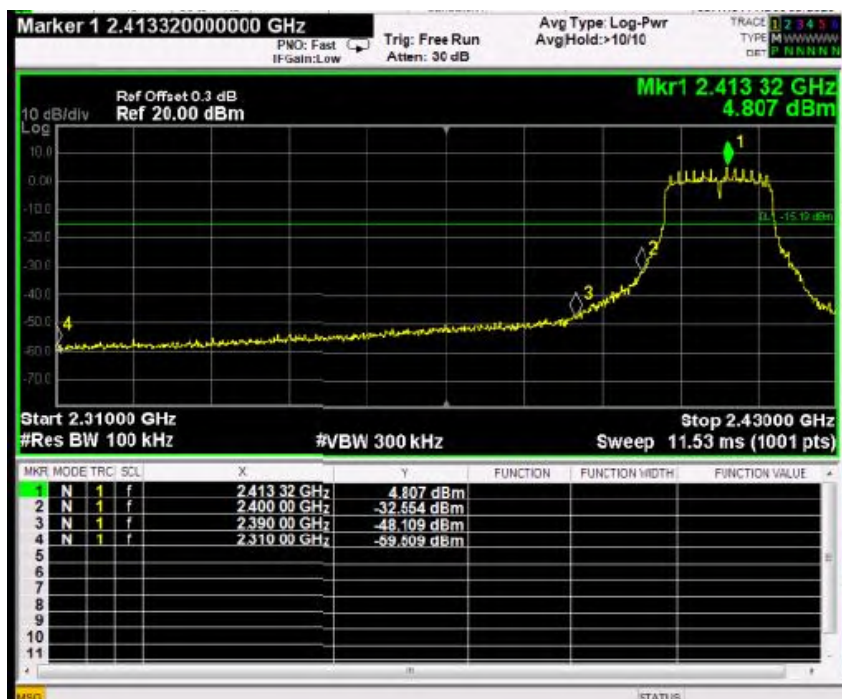


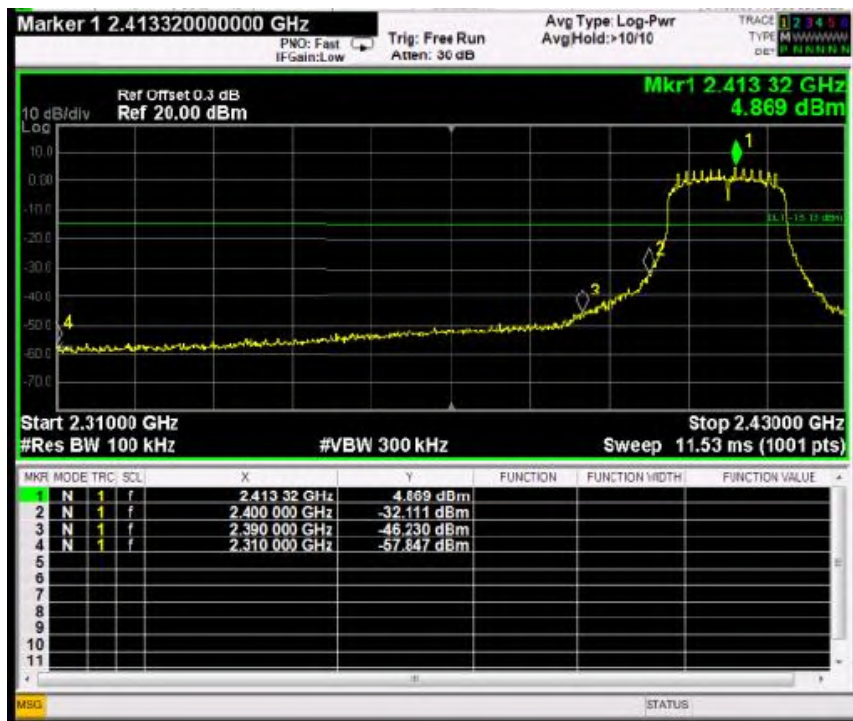


802.11g Antenna A





802.11n-H20 Antenna A





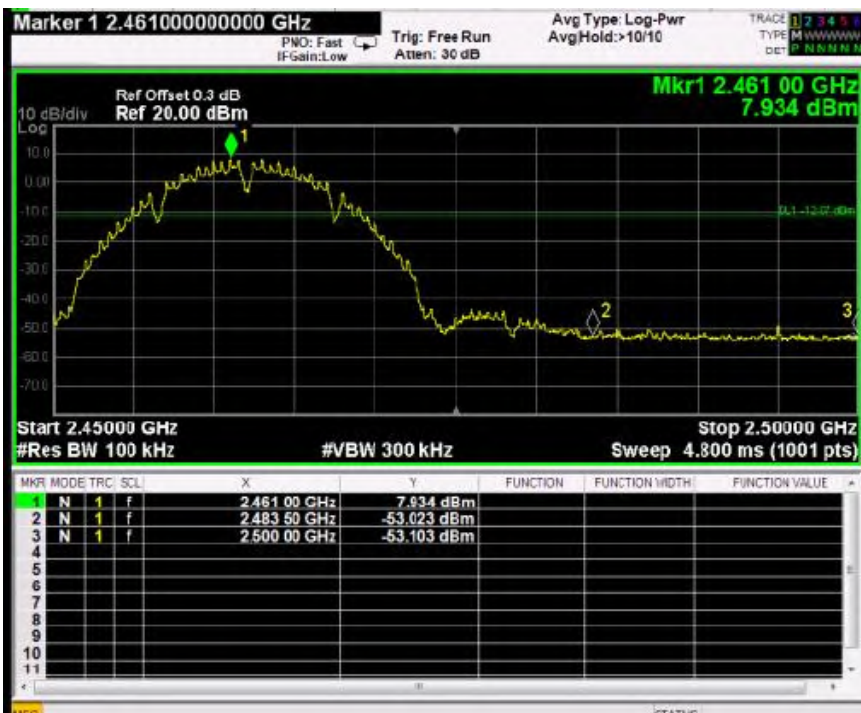
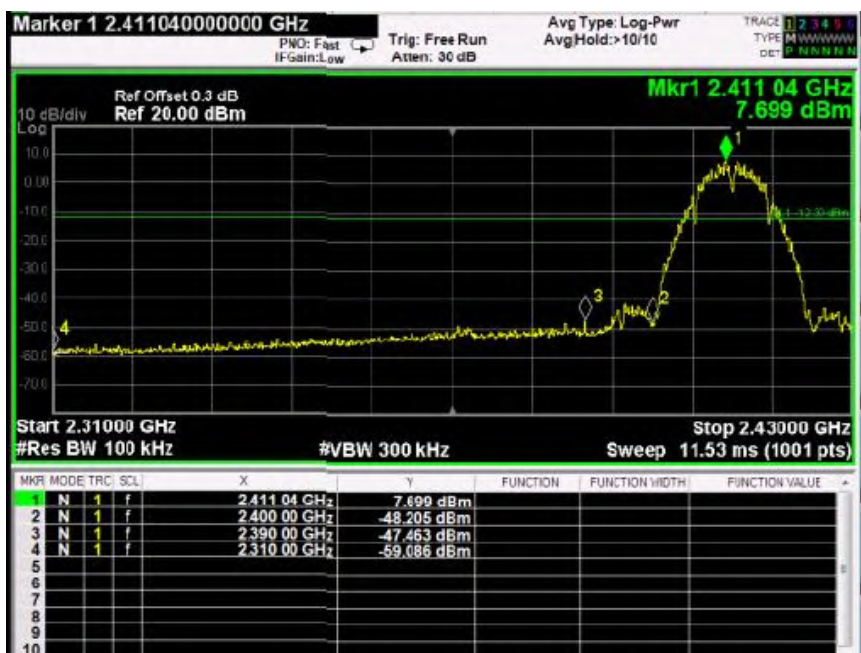
802.11n-H40 Antenna A





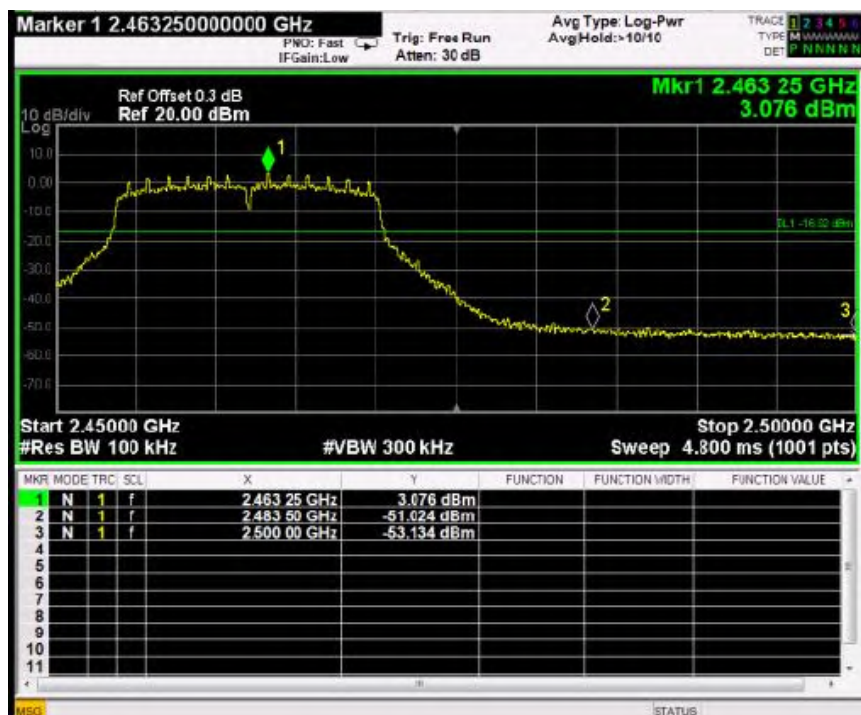


802.11b Antenna B



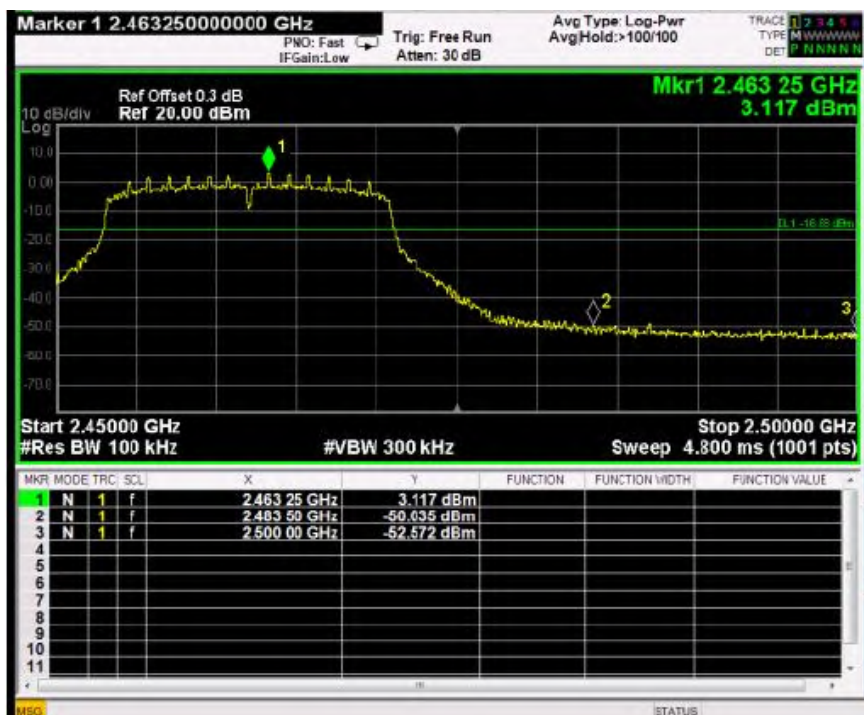


## 802.11g Antenna B





802.11n20 Antenna B







802.11n40 Antenna B





## 9 6dB Bandwidth Measurement

Test Requirement : FCC CFR47 Part 15 Section 15.247

Test Method : ANSI C63.10:2013

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

### 9.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

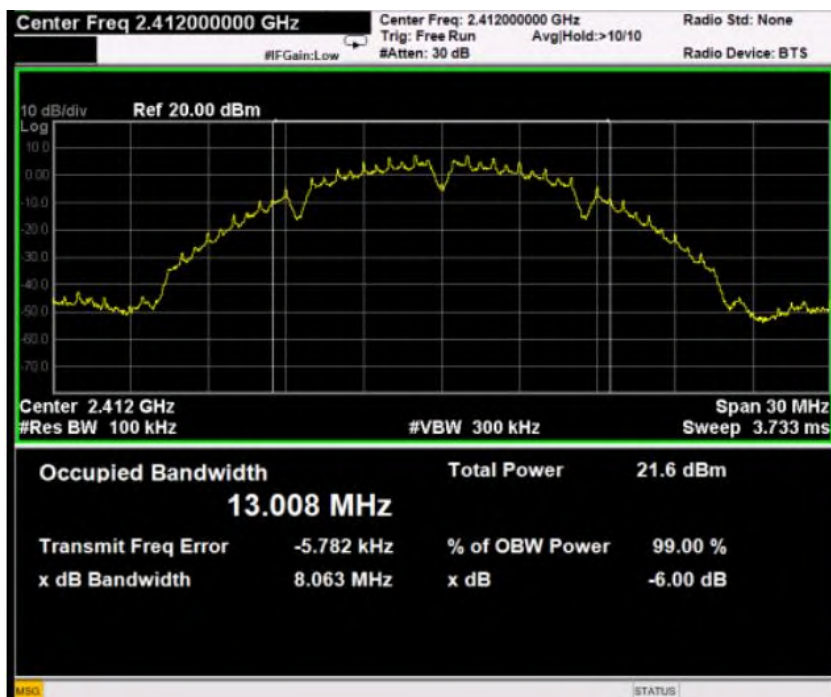
### 9.2 Test Result

| Modulation   | Antenna A Bandwidth(MHz) |                |              | Limit   |
|--------------|--------------------------|----------------|--------------|---------|
|              | Low Channel              | Middle Channel | High Channel |         |
| 802.11b      | 8.063                    | 8.062          | 8.062        | ≥500kHz |
| 802.11g      | 15.14                    | 15.10          | 15.13        | ≥500kHz |
| 802.11n-HT20 | 15.13                    | 15.10          | 15.03        | ≥500kHz |
| 802.11n-HT40 | 35.05                    | 35.10          | 35.12        | ≥500kHz |

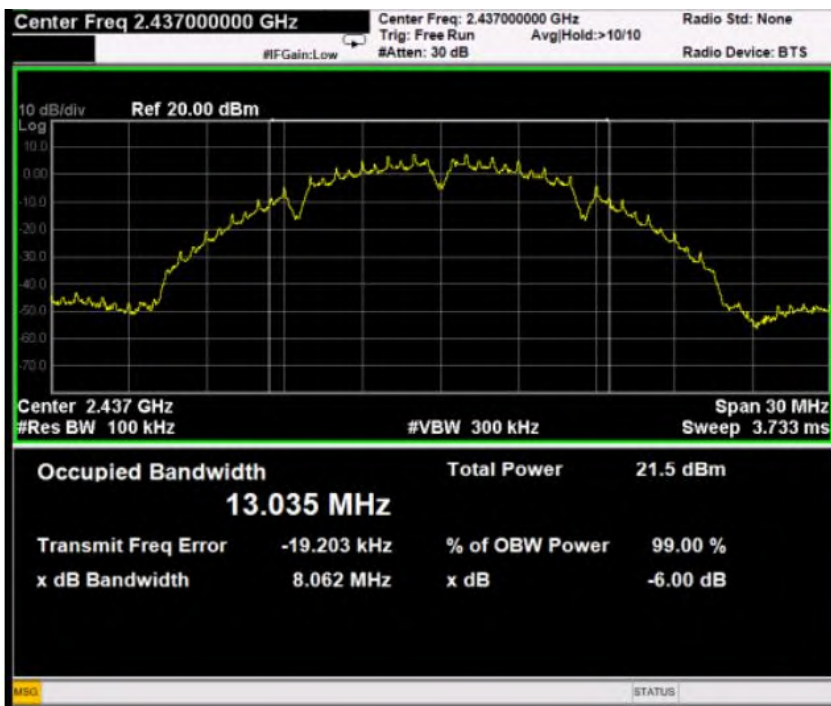




802.11b Low Channel

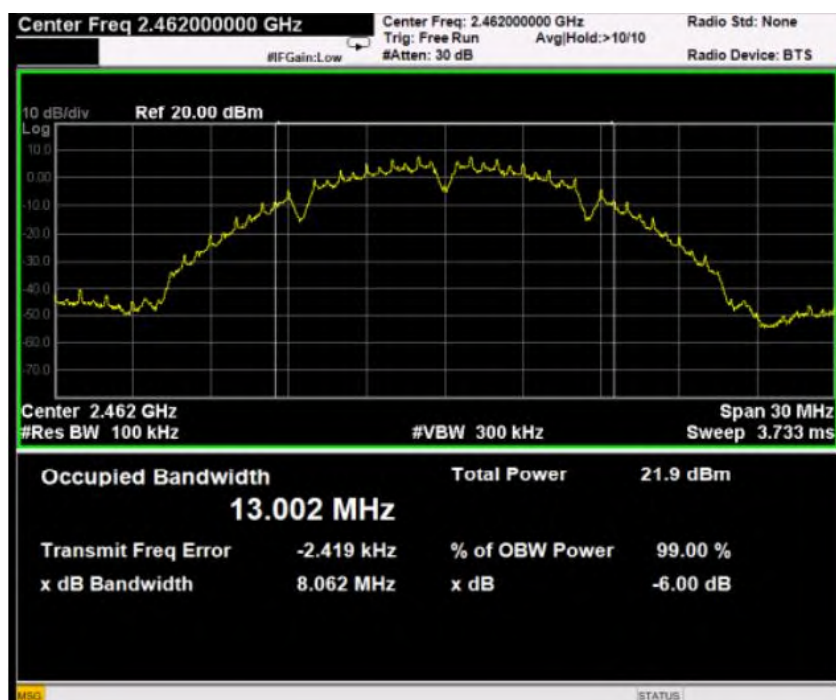


802.11b Middle Channel

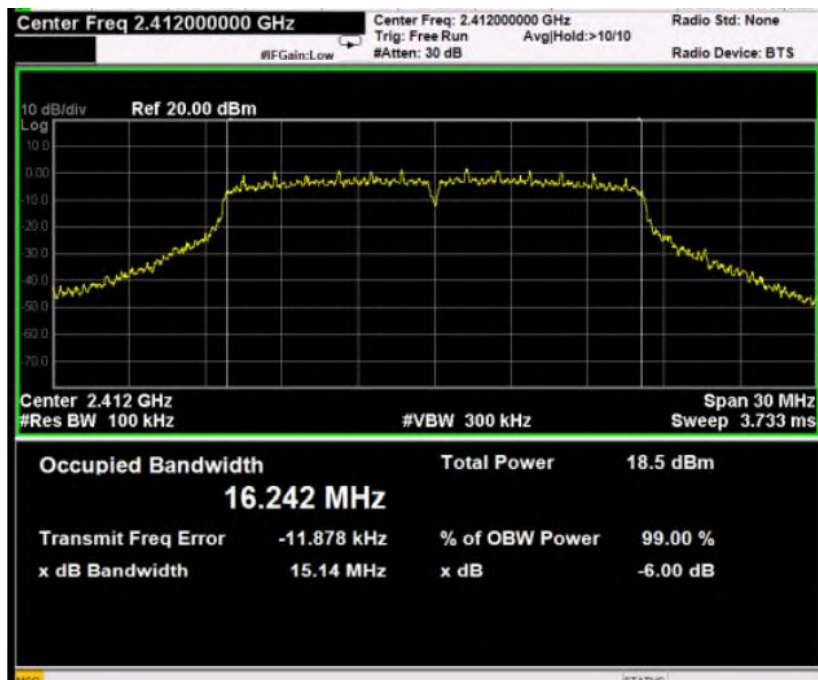




### 802.11b High Channel

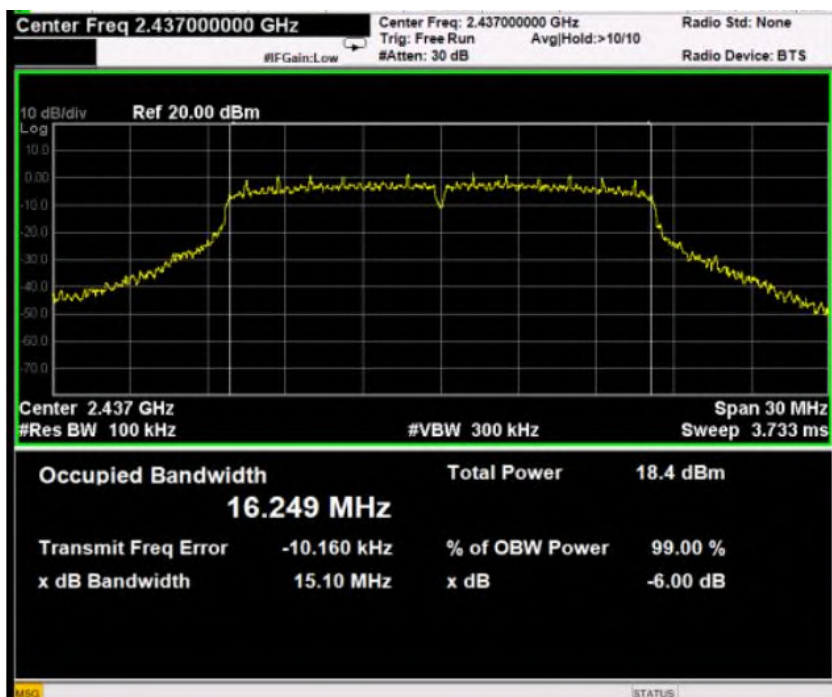


### 802.11g Low Channel

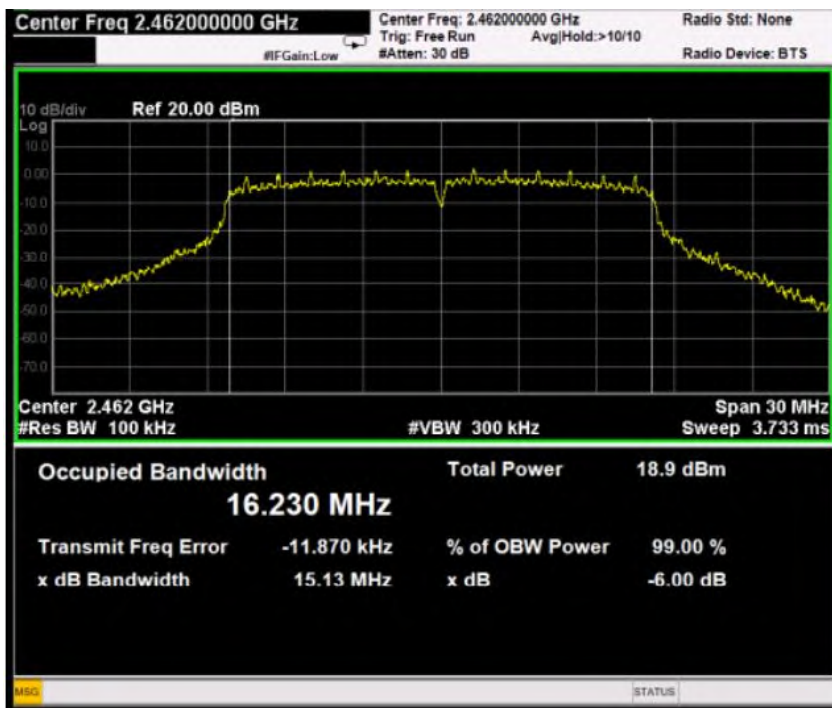




### 802.11g Middle Channel



### 802.11g High Channel

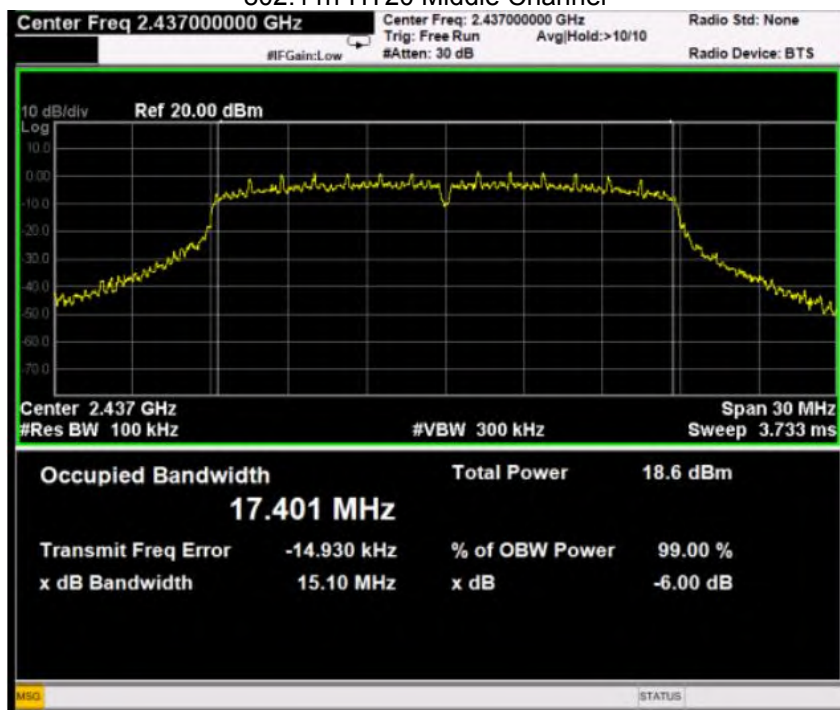




802.11n-HT20 Low Channel



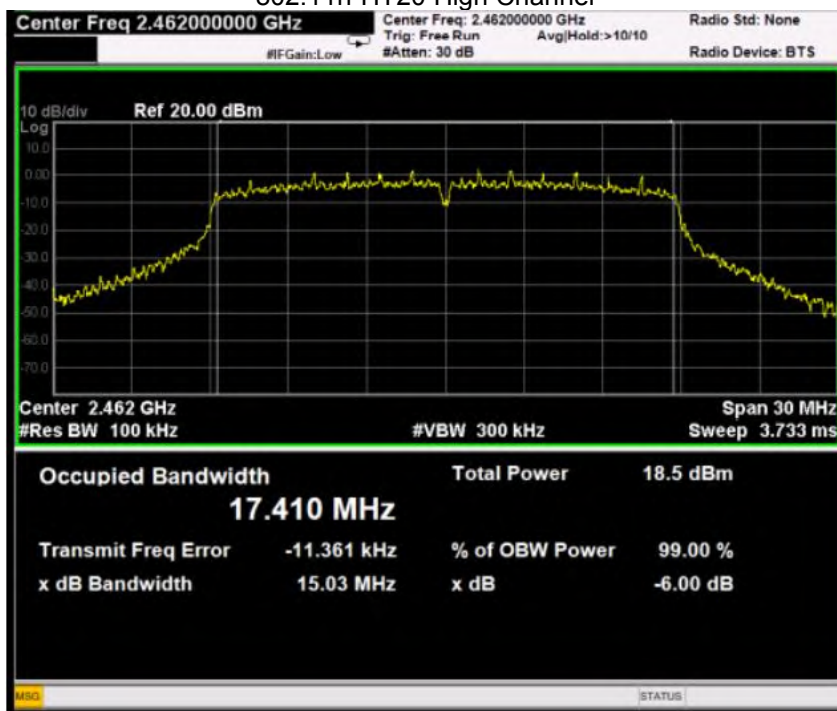
802.11n-HT20 Middle Channel



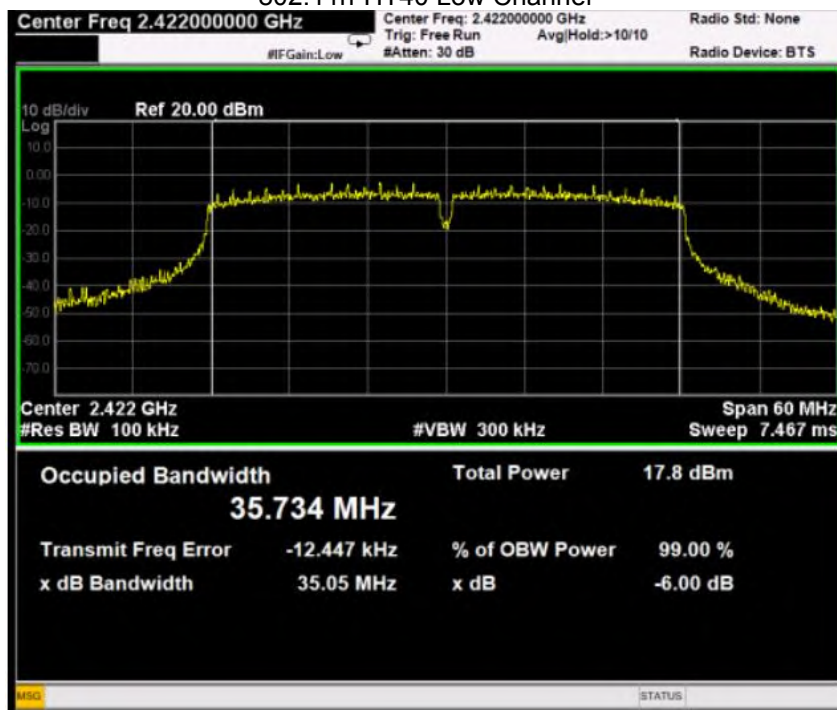




### 802.11n-HT20 High Channel

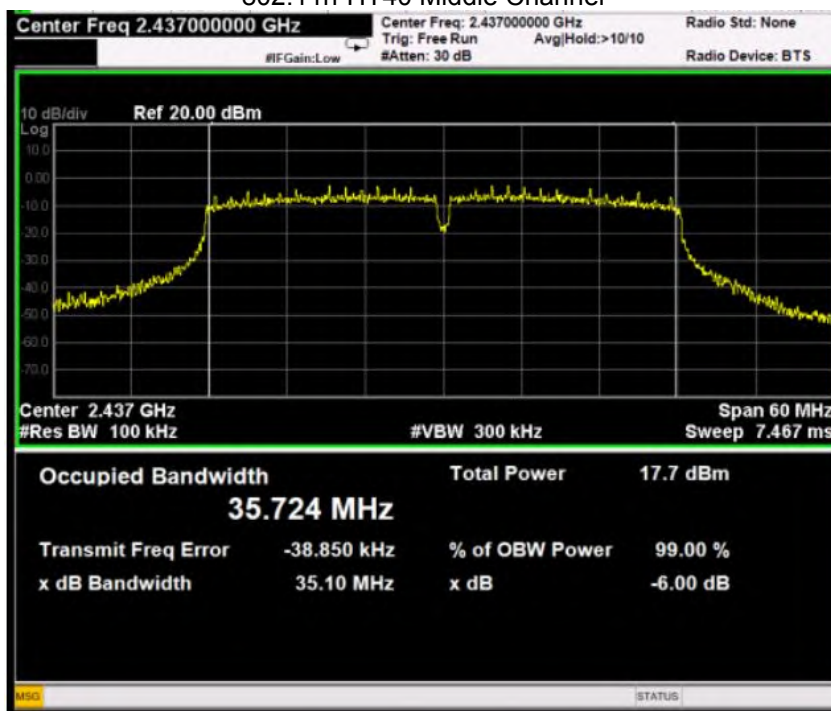


### 802.11n-HT40 Low Channel

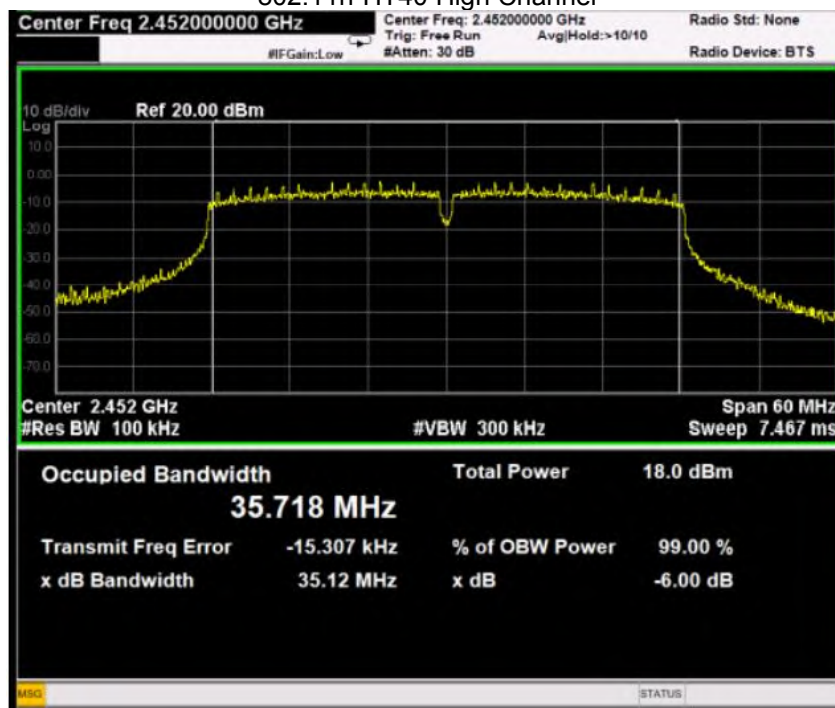




802.11n-HT40 Middle Channel



802.11n-HT40 High Channel





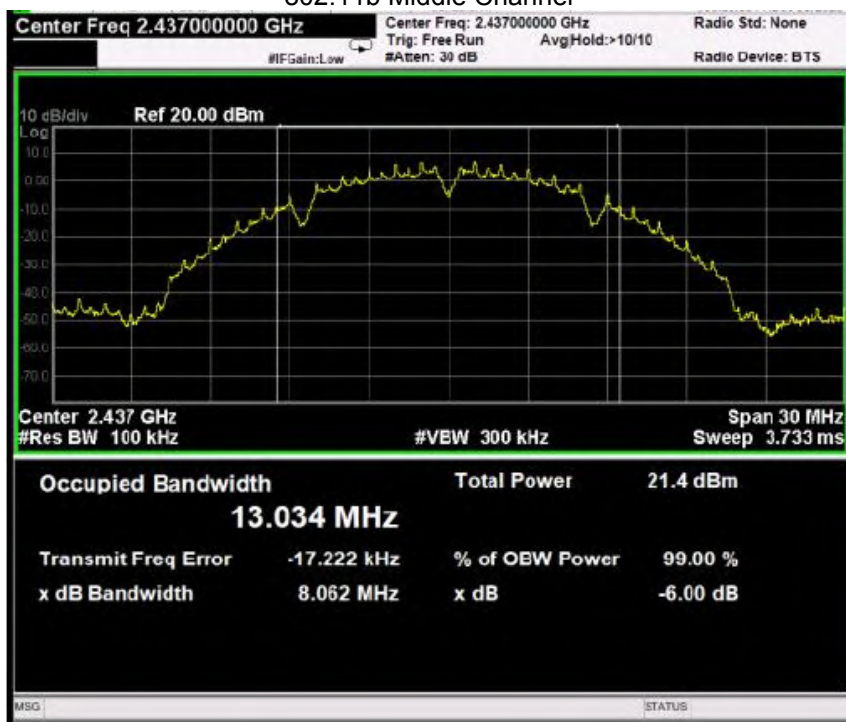
| Modulation   | Antenna B Bandwidth(MHz) |                |              | Limit   |
|--------------|--------------------------|----------------|--------------|---------|
|              | Low Channel              | Middle Channel | High Channel |         |
| 802.11b      | 8.063                    | 8.062          | 8.063        | ≥500kHz |
| 802.11g      | 15.14                    | 15.10          | 15.13        | ≥500kHz |
| 802.11n-HT20 | 15.13                    | 15.13          | 15.14        | ≥500kHz |
| 802.11n-HT40 | 35.09                    | 35.11          | 35.11        | ≥500kHz |

802.11b Low Channel

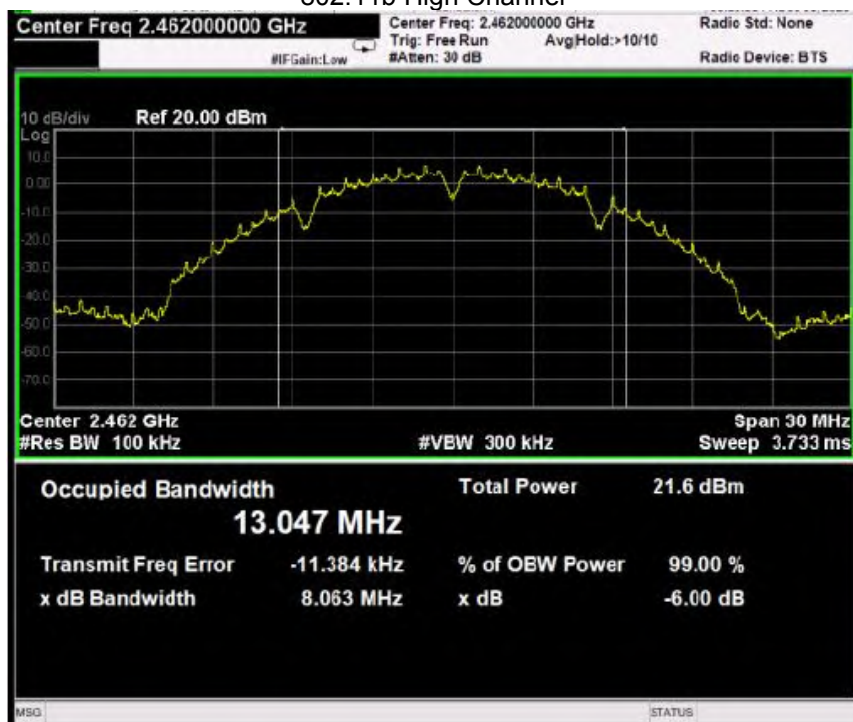




## 802.11b Middle Channel



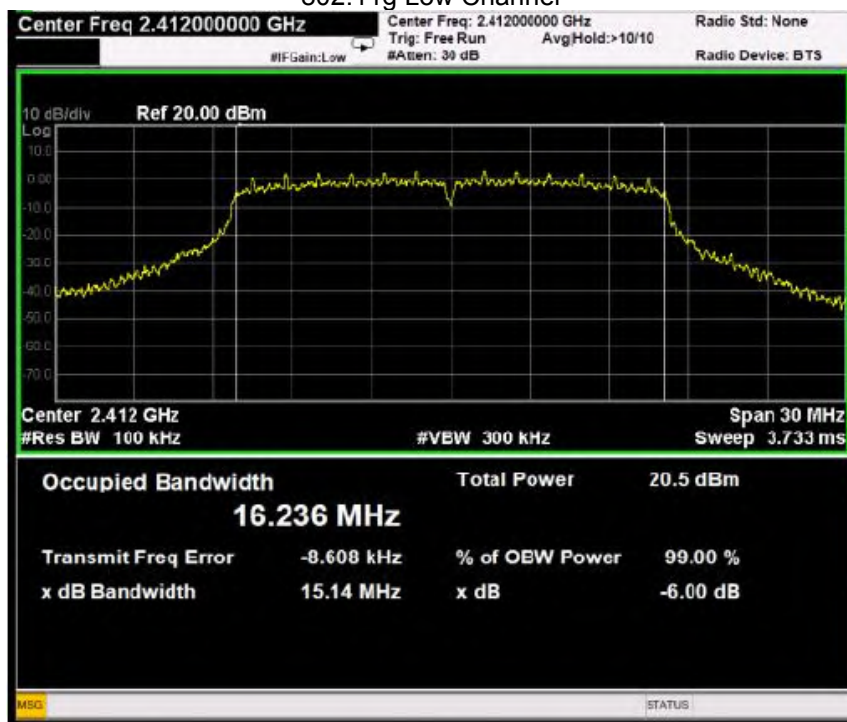
## 802.11b High Channel



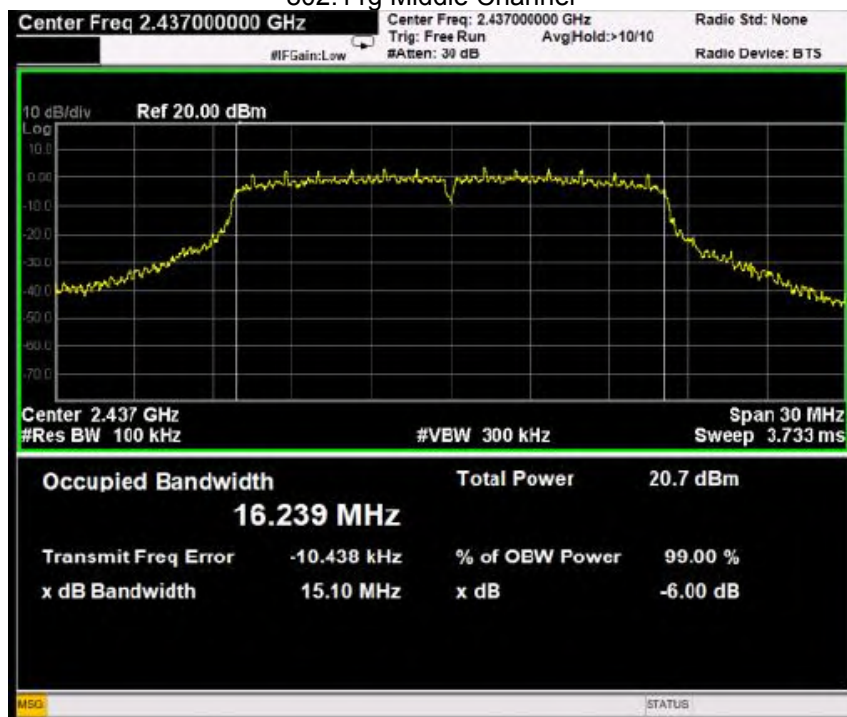




### 802.11g Low Channel

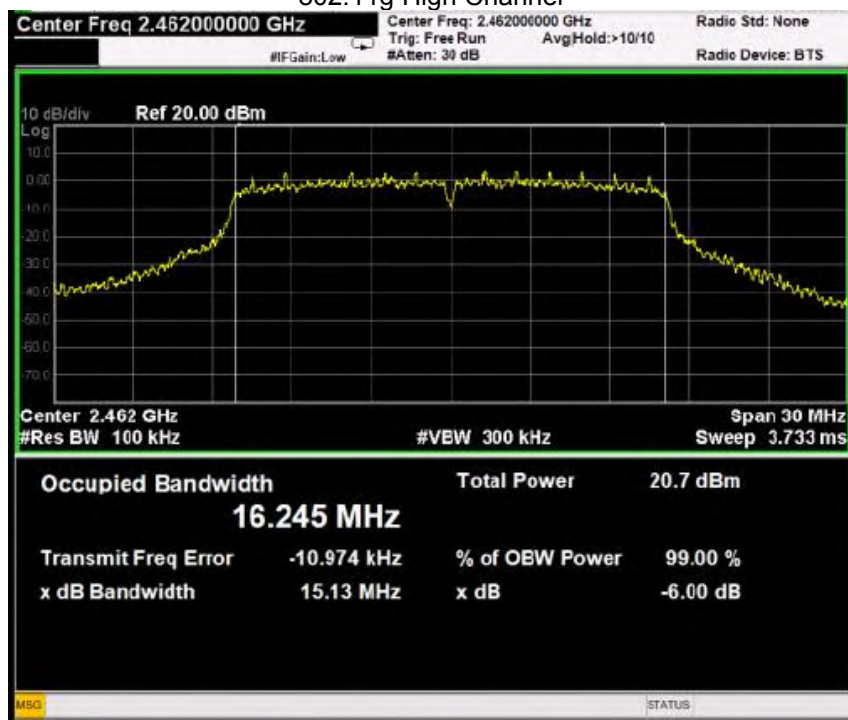


### 802.11g Middle Channel





### 802.11g High Channel

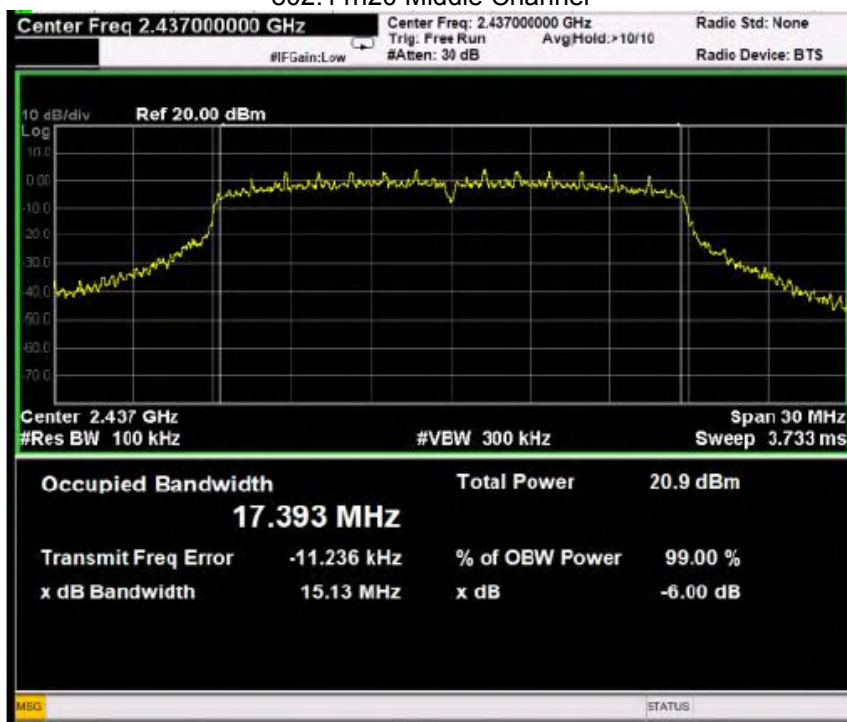


### 802.11n20 Low Channel

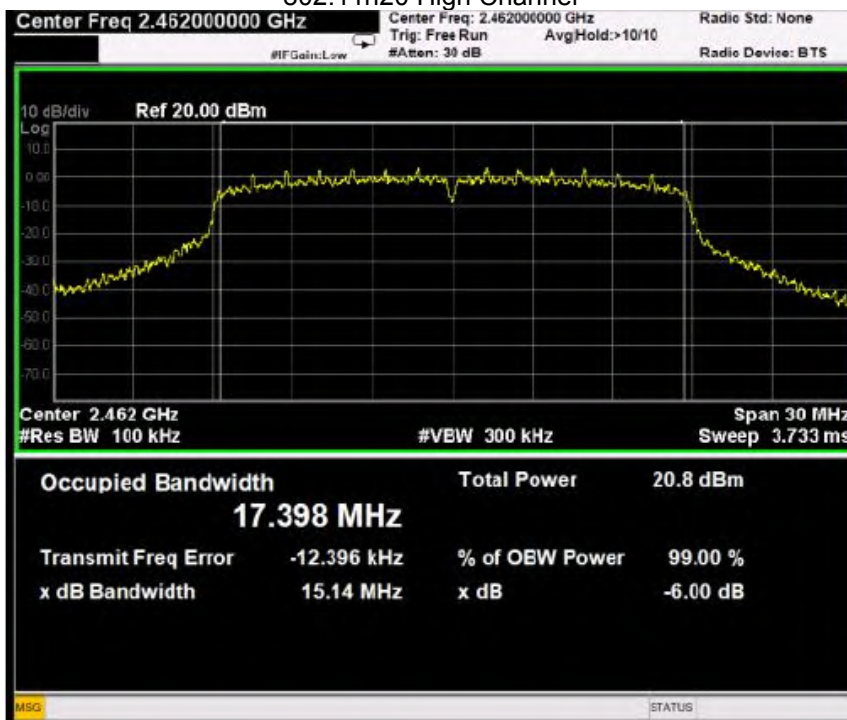




802.11n20 Middle Channel

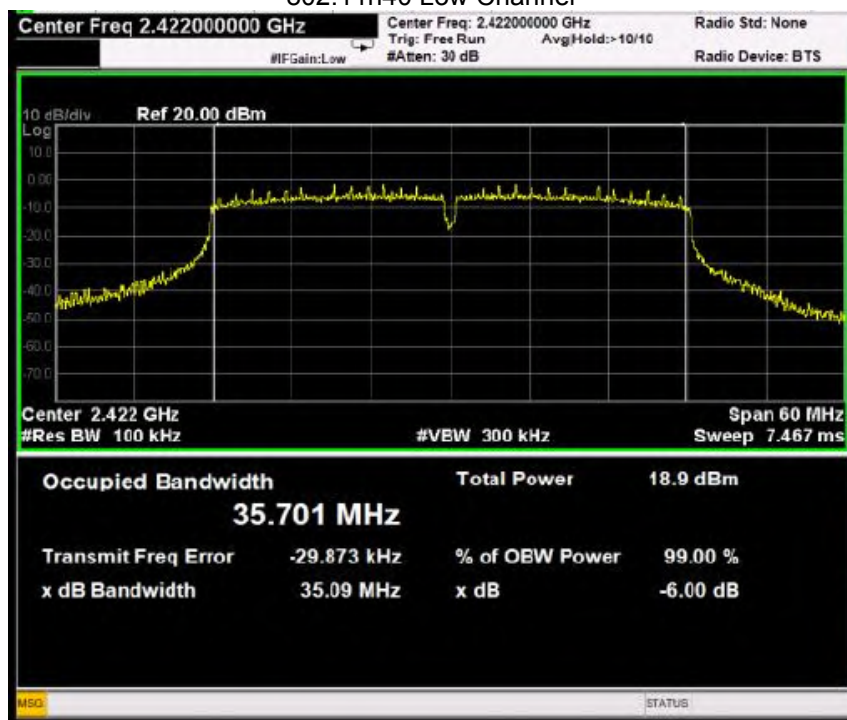


802.11n20 High Channel

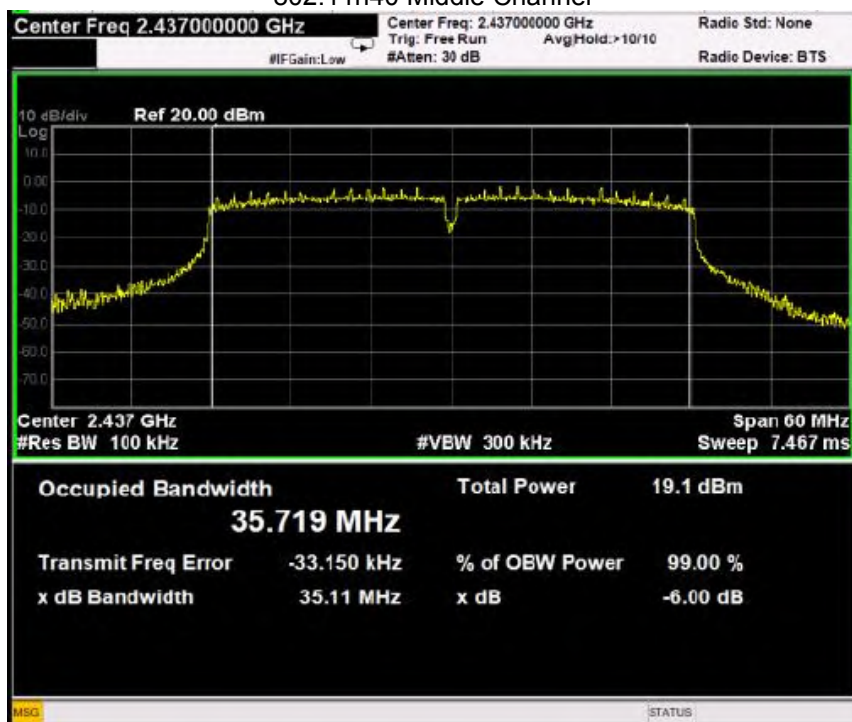




## 802.11n40 Low Channel



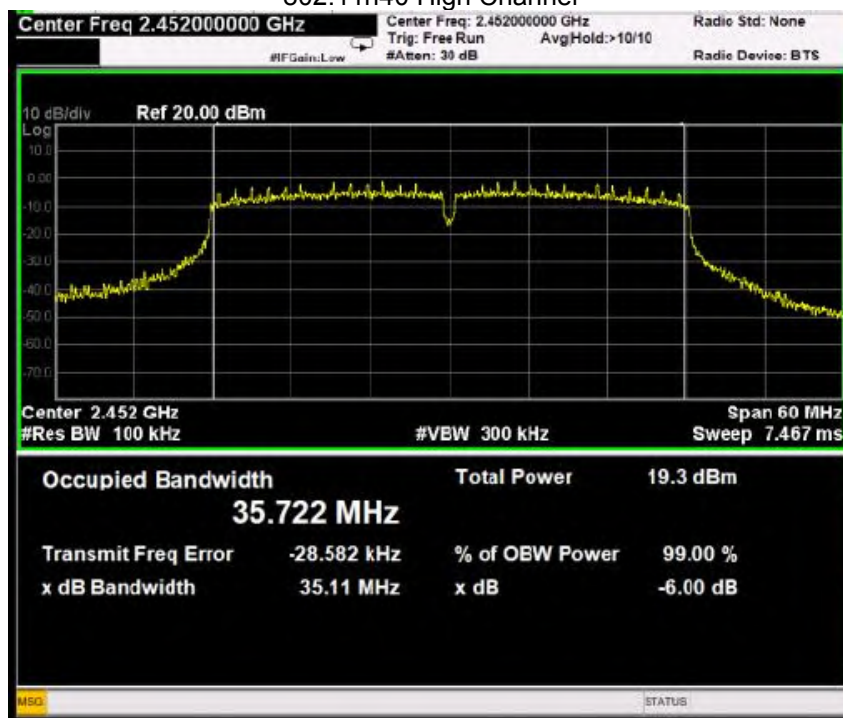
## 802.11n40 Middle Channel







802.11n40 High Channel





## 10 Maximum Peak Output Power

|                  |                                                                                                                                                                                                                                                                                               |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement | : FCC CFR47 Part 15 Section 15.247                                                                                                                                                                                                                                                            |
| Test Method      | : ANSI C63.10:2013                                                                                                                                                                                                                                                                            |
| Test Limit       | : Regulation 15.247 (b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. |

### 10.1 Test Procedure

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 D01 15.247 Meas Guidance v05 section 8.3.1.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

### 10.2 Test Result

| Modulation   | Antenna A Maximum Peak Output Power (dBm) |                |              | Limit     |
|--------------|-------------------------------------------|----------------|--------------|-----------|
|              | Low Channel                               | Middle Channel | High Channel |           |
| 802.11b      | 17.658                                    | 17.735         | 17.824       | 1W(30dBm) |
| 802.11g      | 17.730                                    | 17.714         | 17.692       | 1W(30dBm) |
| 802.11n-HT20 | 17.523                                    | 17.541         | 17.552       | 1W(30dBm) |
| 802.11n-HT40 | 16.241                                    | 16.236         | 16.205       | 1W(30dBm) |

| Modulation   | Antenna B Maximum Peak Output Power (dBm) |                |              | Limit     |
|--------------|-------------------------------------------|----------------|--------------|-----------|
|              | Low Channel                               | Middle Channel | High Channel |           |
| 802.11b      | 17.232                                    | 17.004         | 17.032       | 1W(30dBm) |
| 802.11g      | 16.356                                    | 16.347         | 16.369       | 1W(30dBm) |
| 802.11n-HT20 | 16.352                                    | 16.478         | 16.774       | 1W(30dBm) |
| 802.11n-HT40 | 15.669                                    | 15.814         | 15.773       | 1W(30dBm) |



## 11 Power Spectral density

|                  |                                                                                                                                                                                                                                                                                                                                |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement | : FCC CFR47 Part 15 Section 15.247                                                                                                                                                                                                                                                                                             |
| Test Method      | : ANSI C63.10:2013                                                                                                                                                                                                                                                                                                             |
| Test Limit       | : Regulation 15.247(f) The power spectral density conducted from the intentional radiator to the antenna due to the digital modulation operation of the hybrid system, with the frequency hopping operation turned off, shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. |

### 11.1 Test Procedure

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Configure the spectrum analyzer as shown below:  
Center frequency=DTS channel center frequency  
Span = 1.5 times the DTS bandwidth  
RBW = 3KHz, VBW = 10KHz  
Sweep time = auto couple  
Detector = peak  
Trace mode =max hold
3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter wave form on the spectrum analyzer.
4. Use the peak marker function to determine the maximum amplitude level within the RBW.
5. If measured value exceeds limit, reduce RBW(no less than 3KHz) and repeat.

### 11.2 Test Result

| Modulation   | Antenna A Power Spectral density (dBm/3kHz) |                |              | Limit     |
|--------------|---------------------------------------------|----------------|--------------|-----------|
|              | Low Channel                                 | Middle Channel | High Channel |           |
| 802.11b      | -9.223                                      | -9.021         | -8.974       | 8dBm/3kHz |
| 802.11g      | -11.838                                     | -11.229        | -11.481      | 8dBm/3kHz |
| 802.11n-HT20 | -12.129                                     | -10.080        | -11.181      | 8dBm/3kHz |
| 802.11n-HT40 | -15.008                                     | -15.079        | -14.895      | 8dBm/3kHz |



### 802.11b Low Channel



### 802.11b Middle Channel



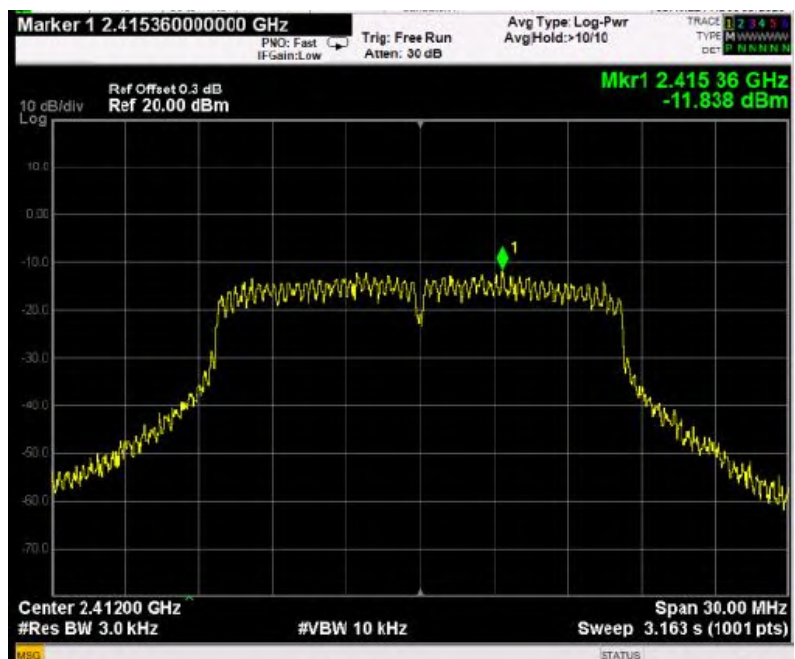




802.11b High Channel

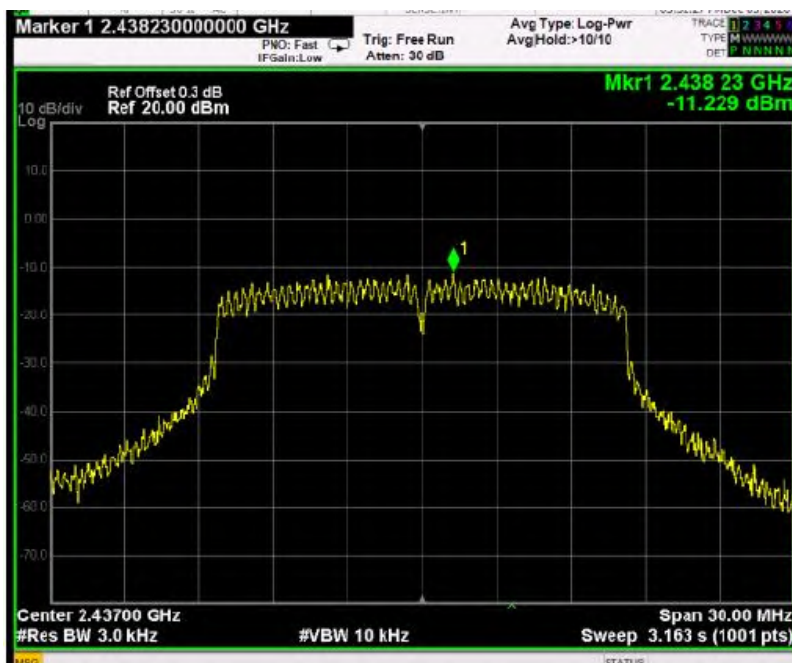


802.11g Low Channel

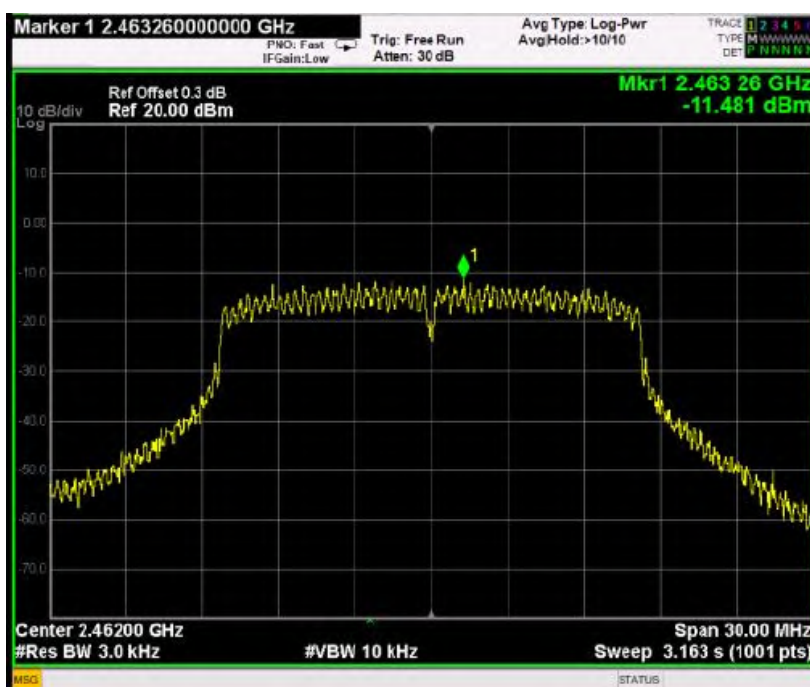




### 802.11g Middle Channel

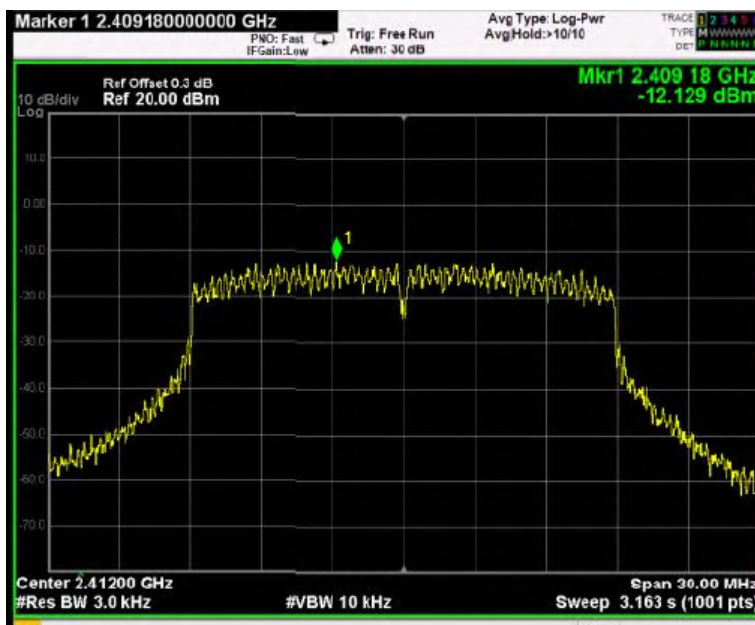


### 802.11g High Channel

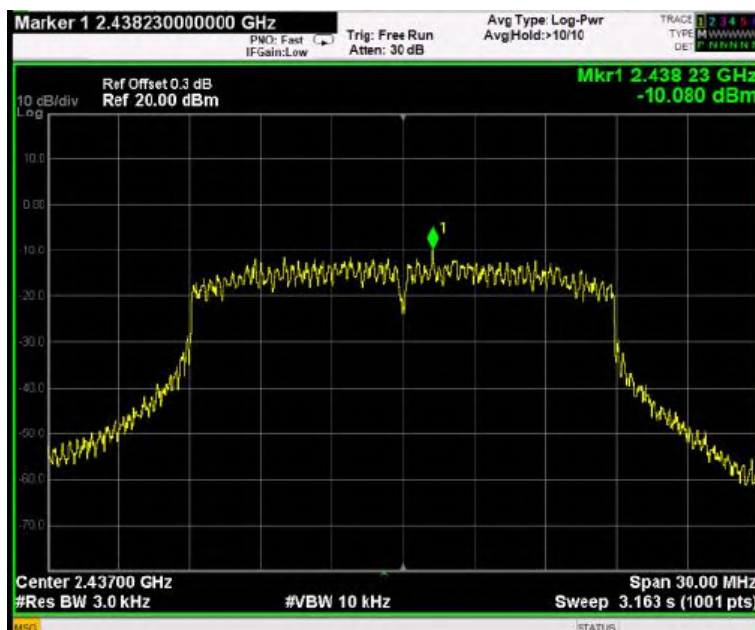




802.11n-HT20 Low Channel

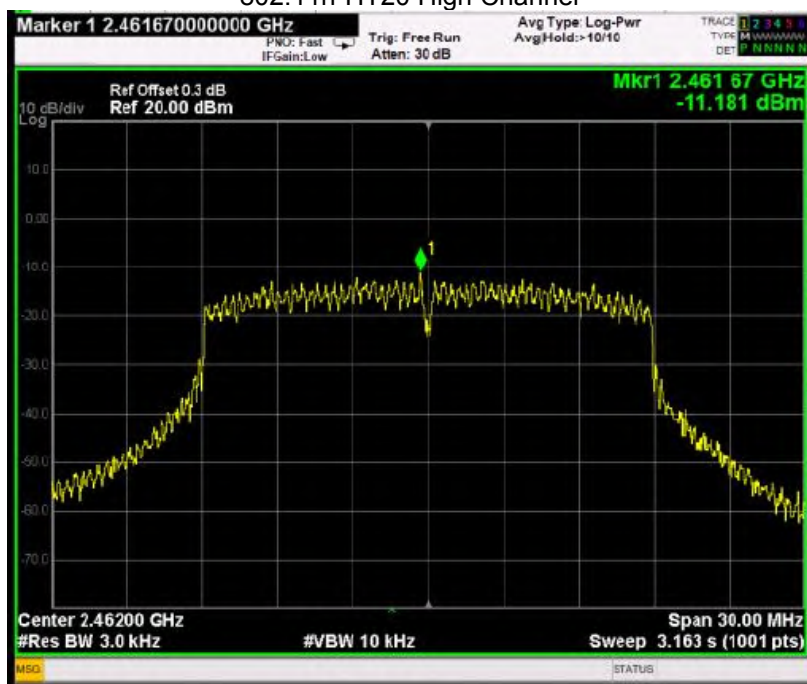


802.11n-HT20 Middle Channel

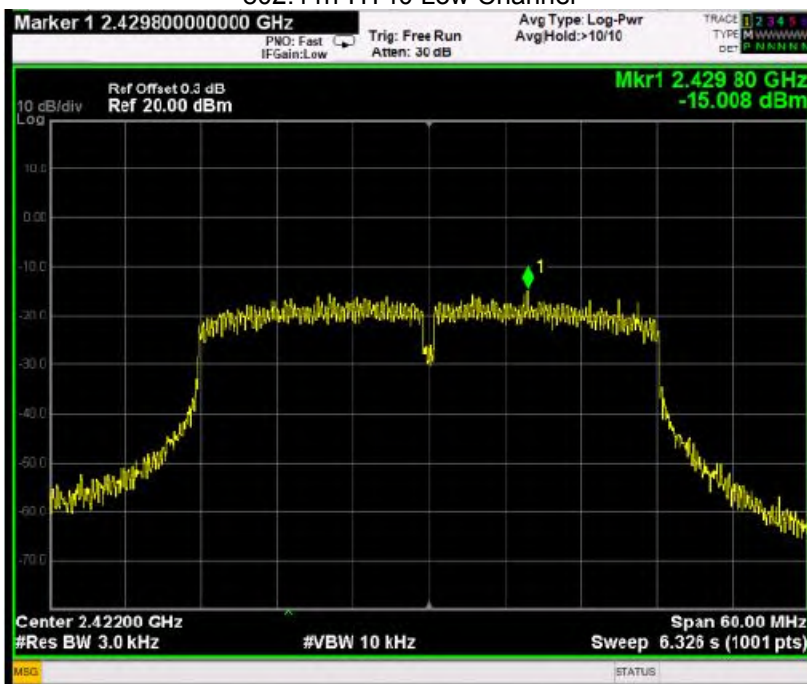




### 802.11n-HT20 High Channel



### 802.11n-HT40 Low Channel







### 802.11n-HT40 Middle Channel



### 802.11n-HT40 High Channel





| Modulation   | Antenna B Power Spectral density (dBm/3kHz) |                |              | Limit     |
|--------------|---------------------------------------------|----------------|--------------|-----------|
|              | Low Channel                                 | Middle Channel | High Channel |           |
| 802.11b      | -10.000                                     | -9.021         | -7.953       | 8dBm/3kHz |
| 802.11g      | -13.551                                     | -13.806        | -13.310      | 8dBm/3kHz |
| 802.11n-HT20 | -13.670                                     | -13.792        | -11.530      | 8dBm/3kHz |
| 802.11n-HT40 | -15.930                                     | -16.127        | -16.073      | 8dBm/3kHz |

802.11b Low Channel





### 802.11b Middle Channel

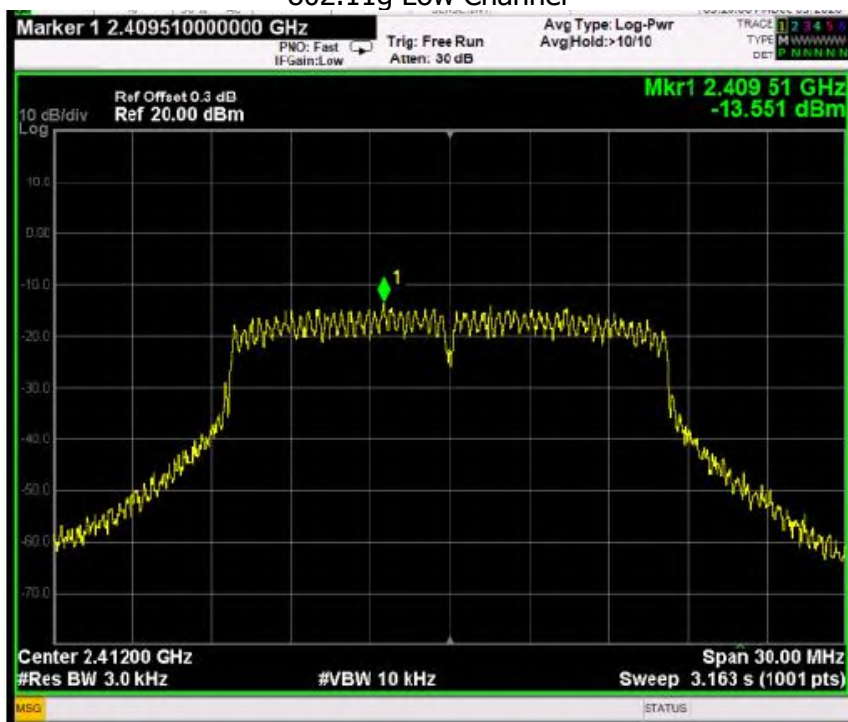


### 802.11b High Channel

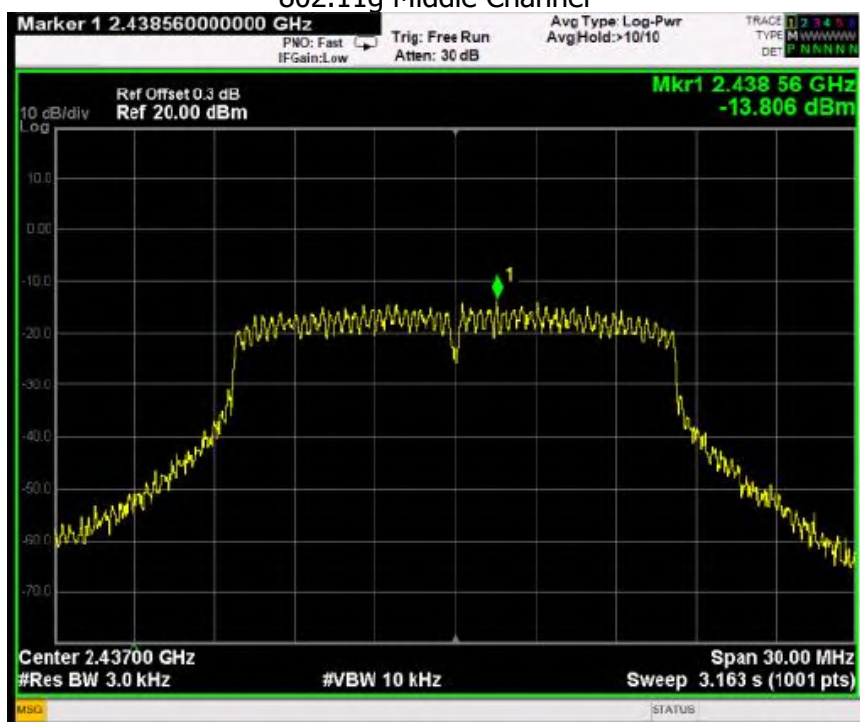




### 802.11g Low Channel



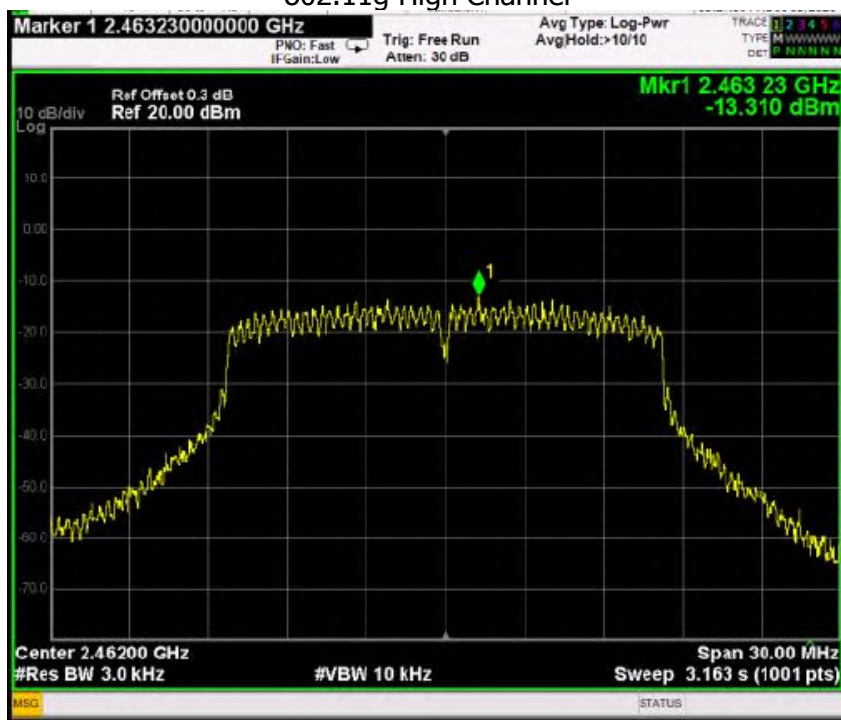
### 802.11g Middle Channel



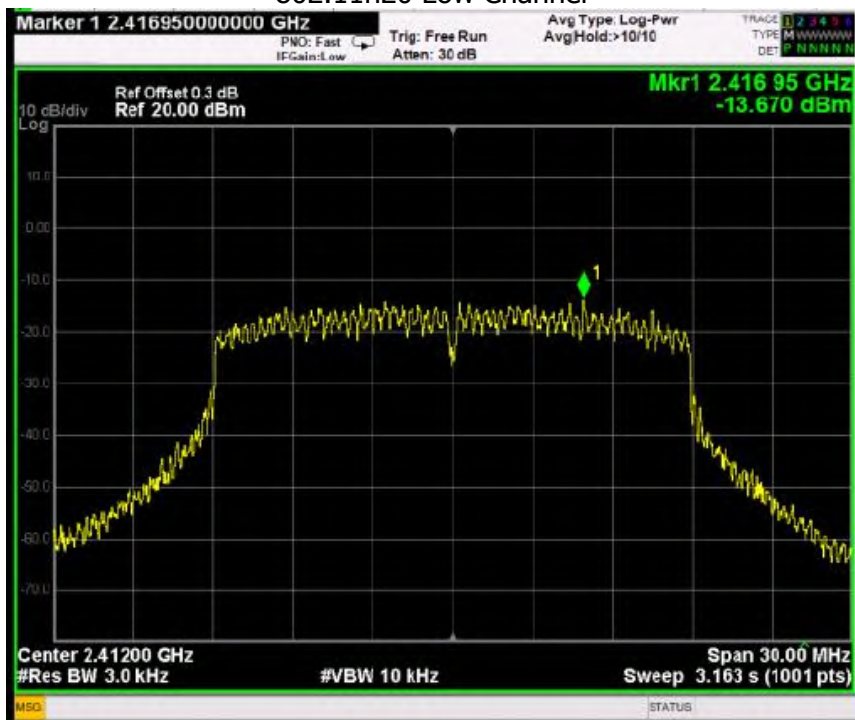




### 802.11g High Channel



### 802.11n20 Low Channel

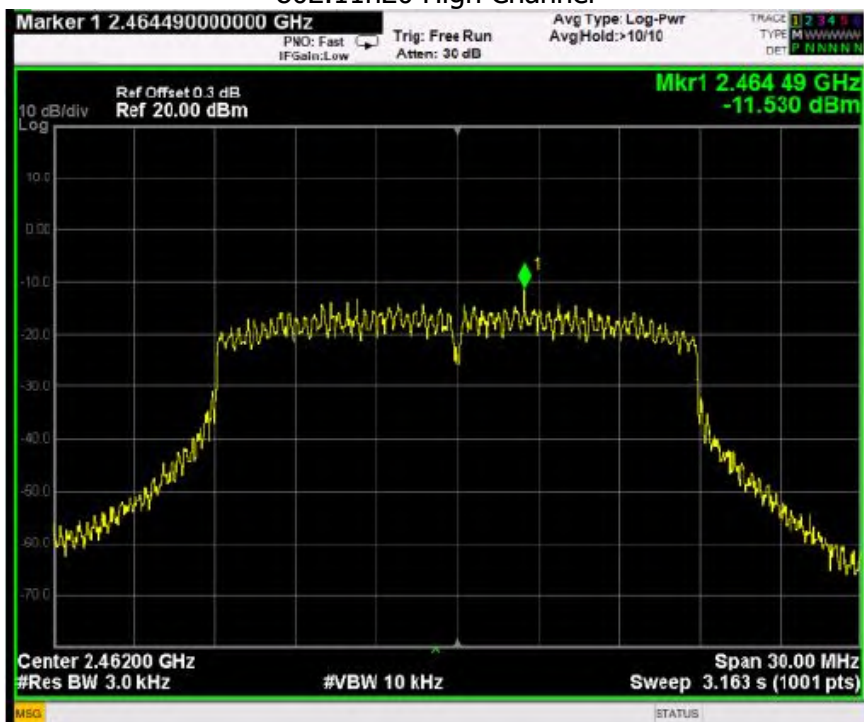




### 802.11n20 Middle Channel

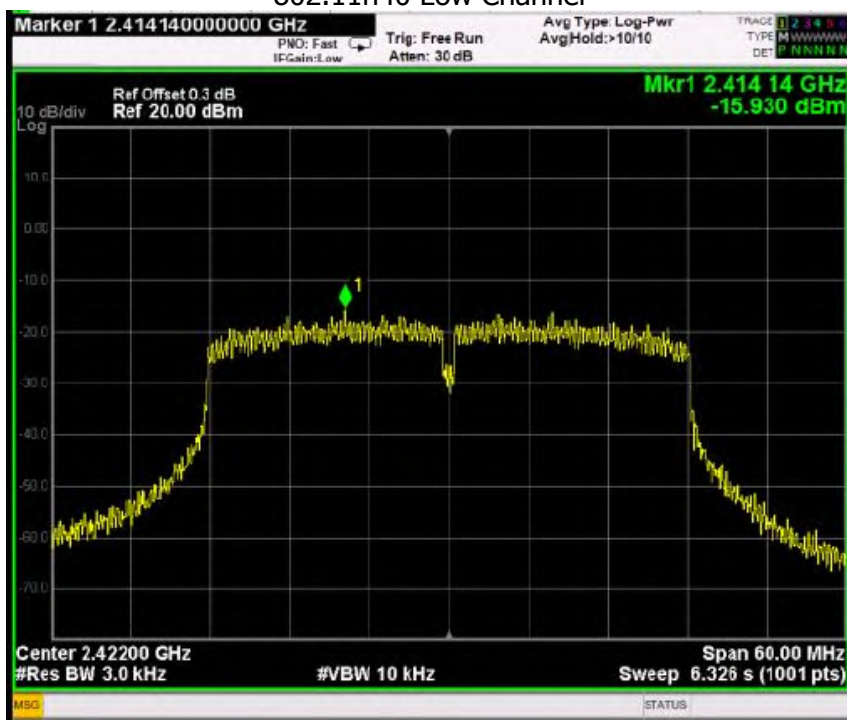


### 802.11n20 High Channel

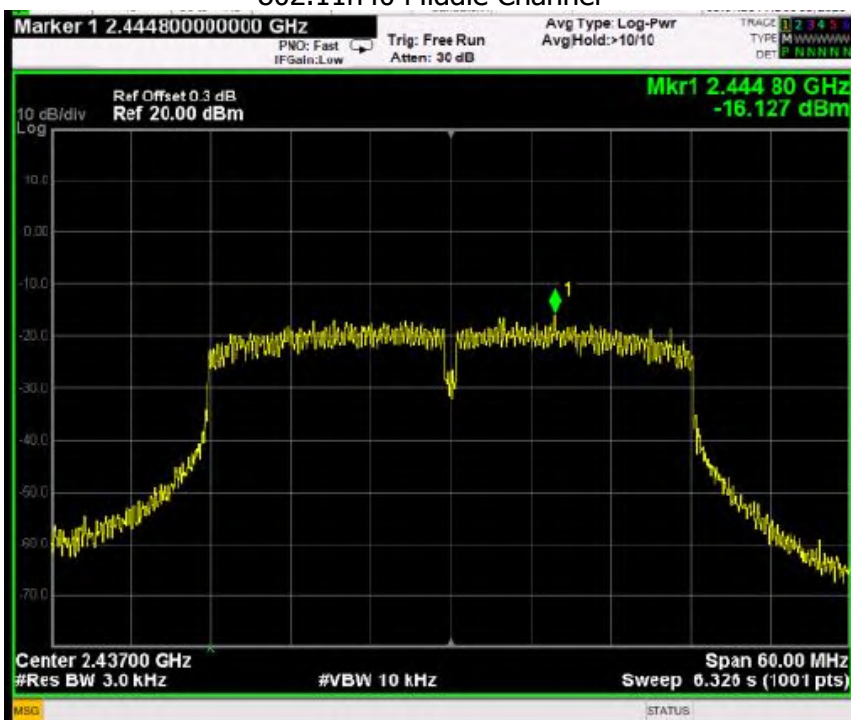




### 802.11n40 Low Channel



### 802.11n40 Middle Channel





### 802.11n40 High Channel







## **12 Antenna Application**

### **12.1 Antenna Requirement**

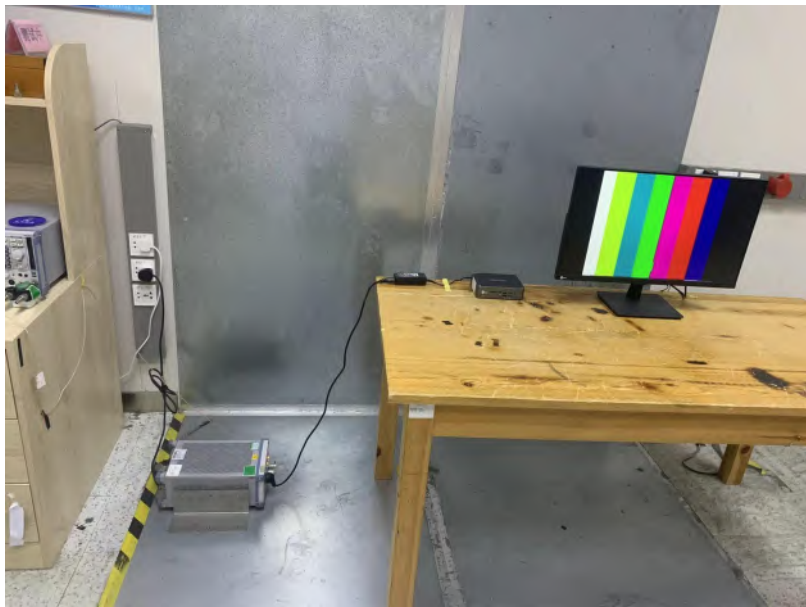
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### **12.2 Result**

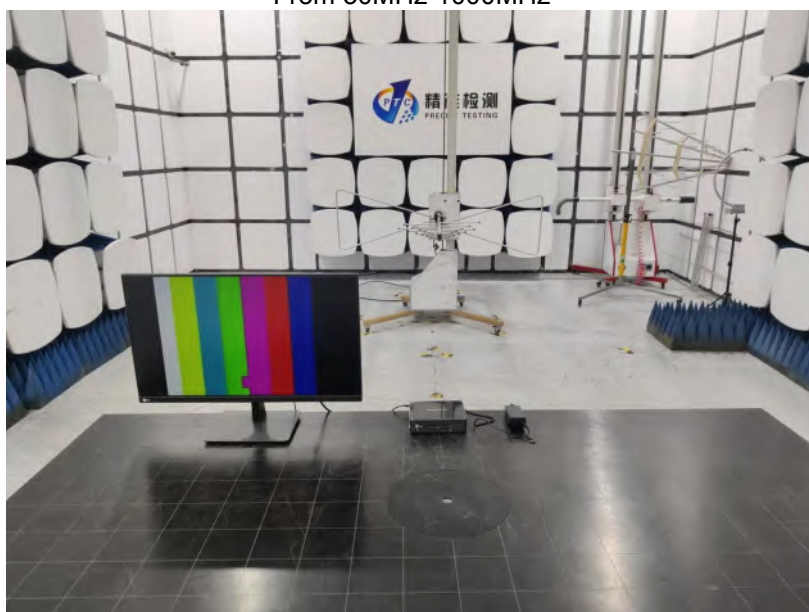
The EUT'S antenna, permanent attached antenna, is FPC Antenna. The antenna's gain is 3.0 dBi and meets the requirement.

## 13 Test Setup

Conducted Emissions



Radiated Spurious Emissions  
From 30MHz-1000MHz



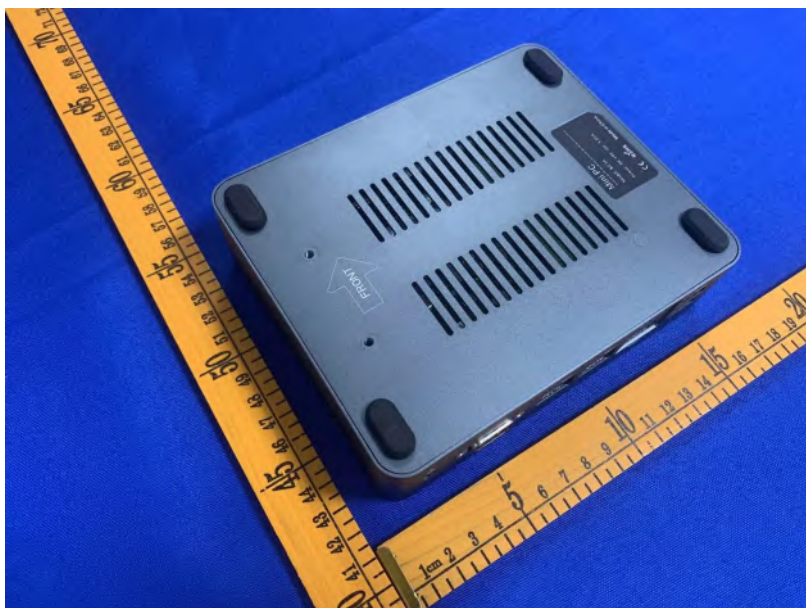
Test frequency from Above 1GHz



## 14 EUT PHOTOS



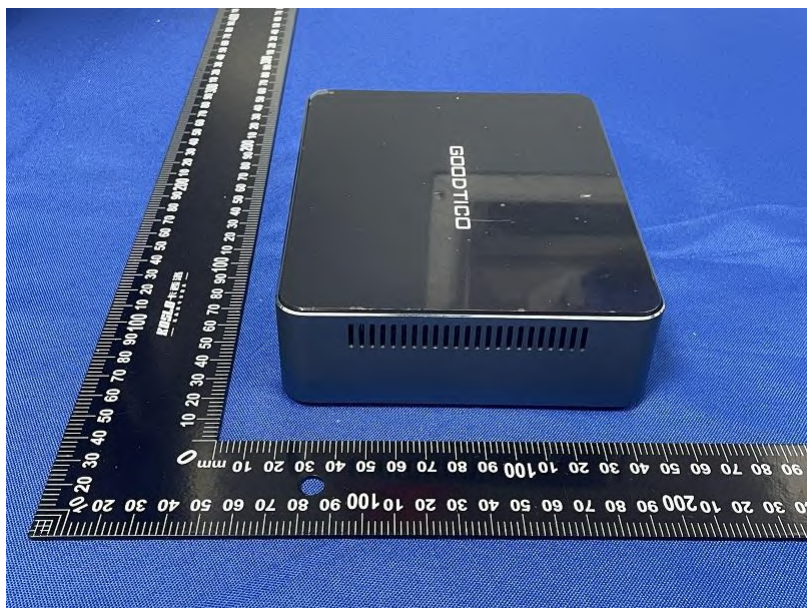








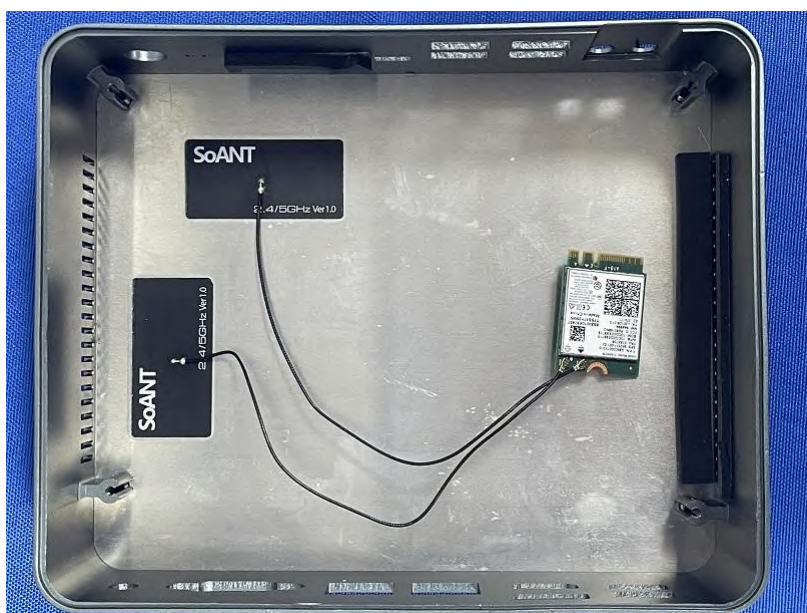


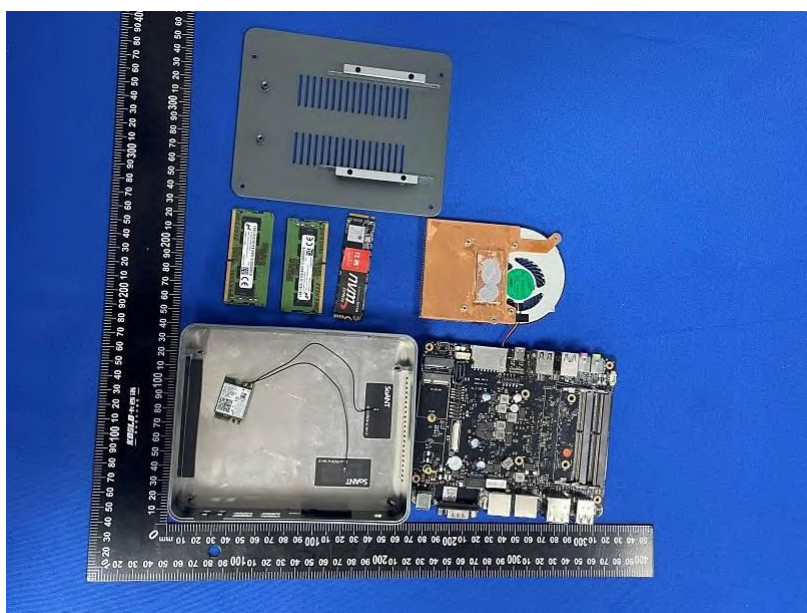
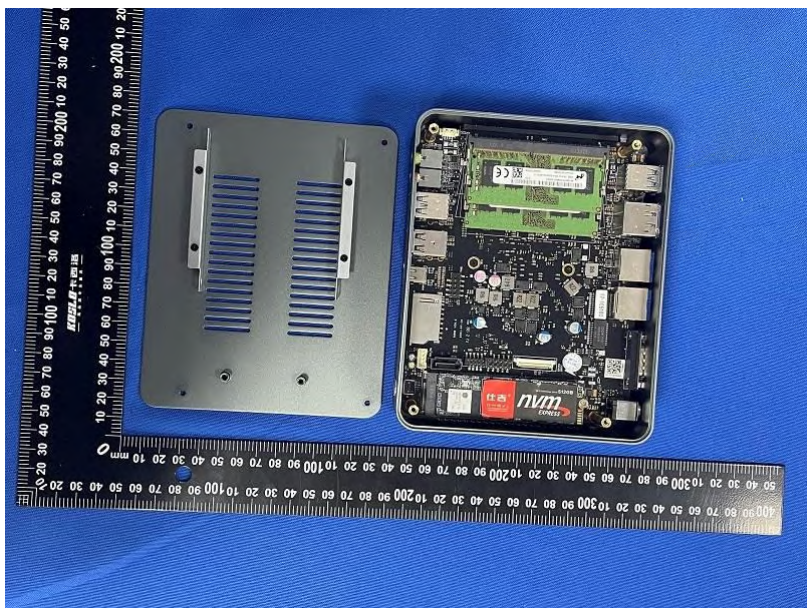




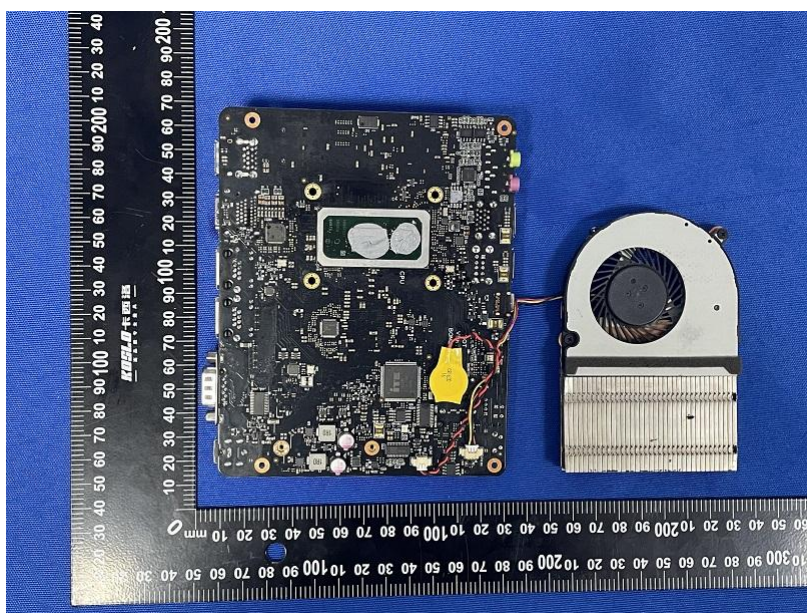
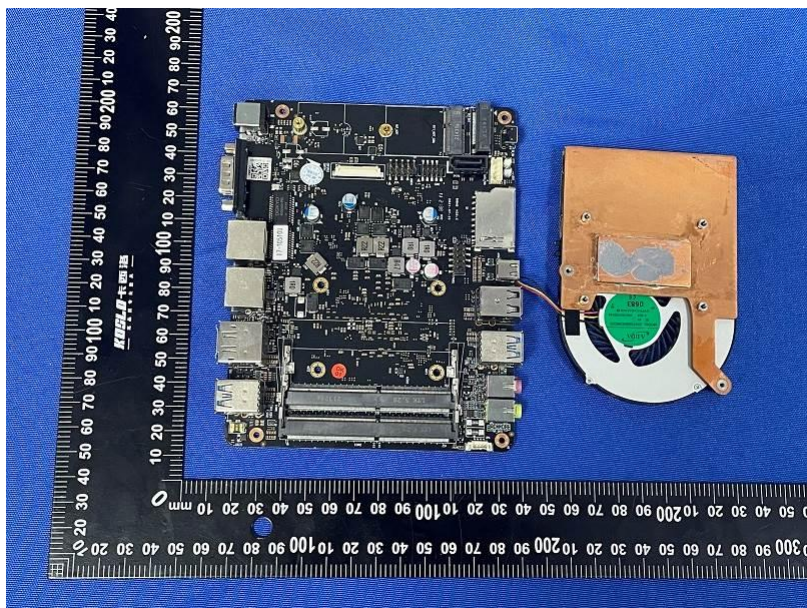




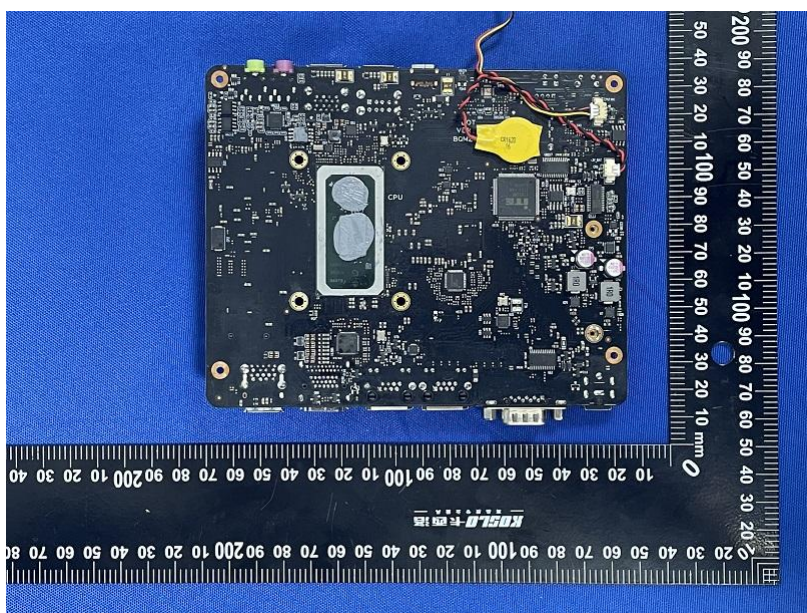
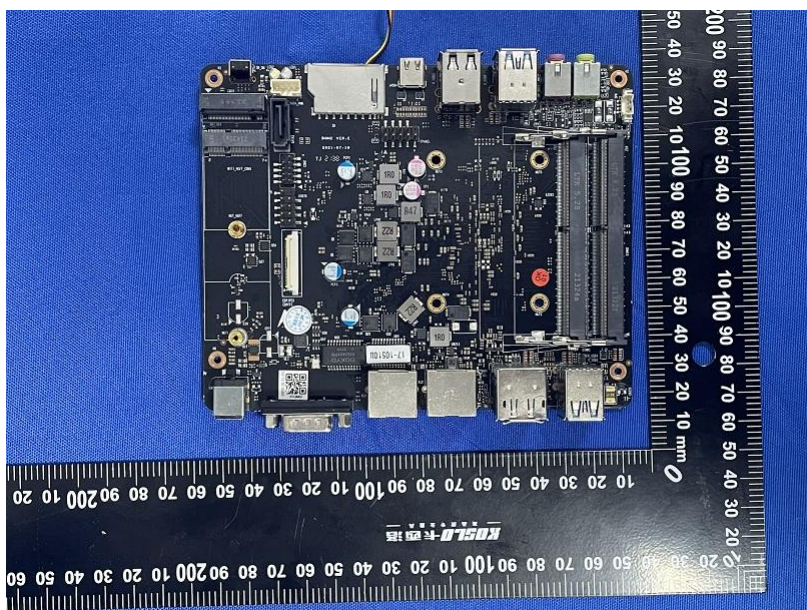




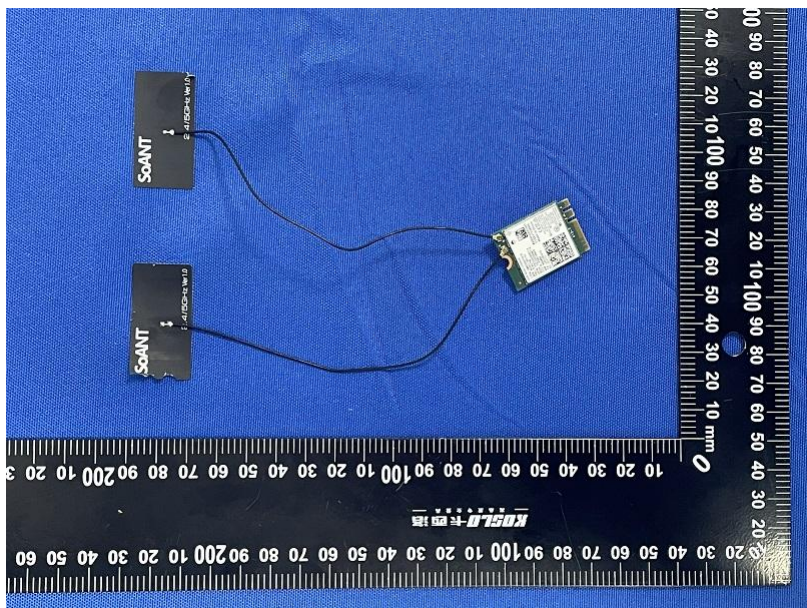














**\*\*\*\*\*THE END REPORT\*\*\*\*\***