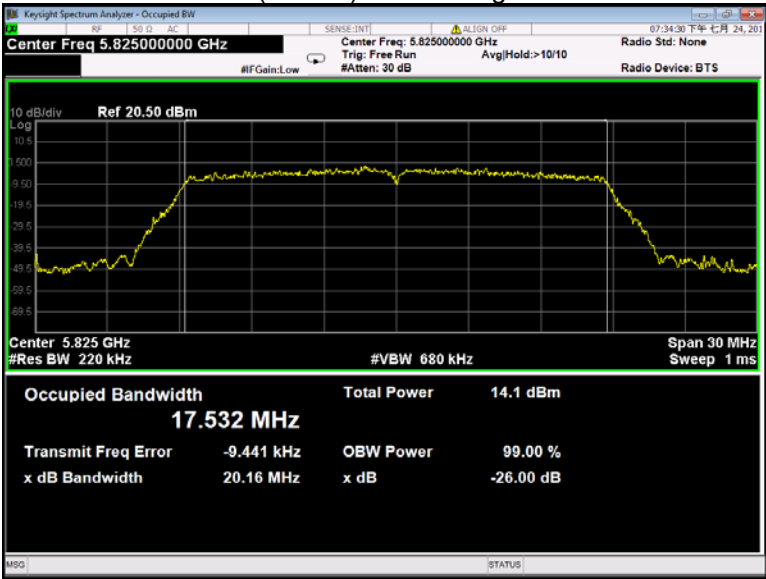
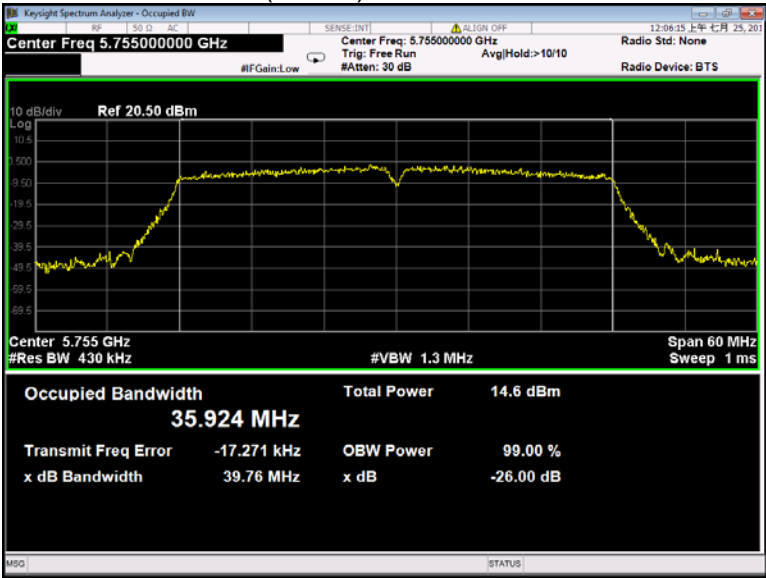


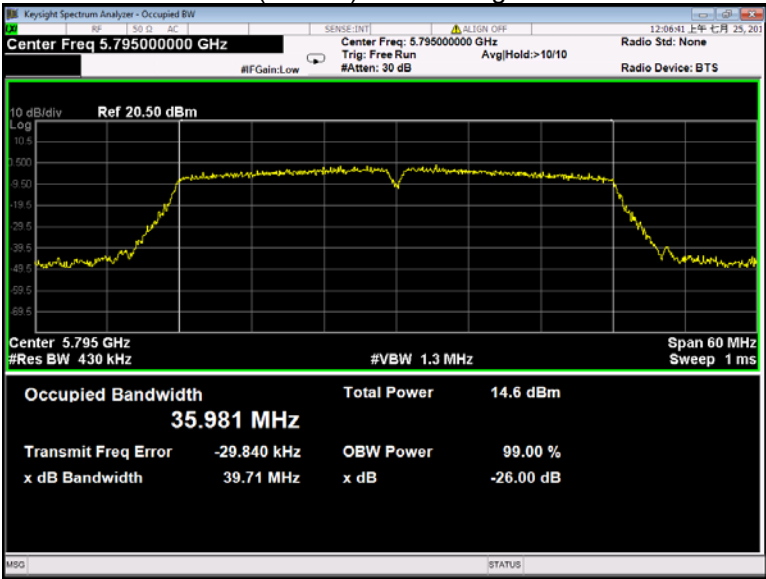
802.11ac(VHT20) U-NII-3 High channel



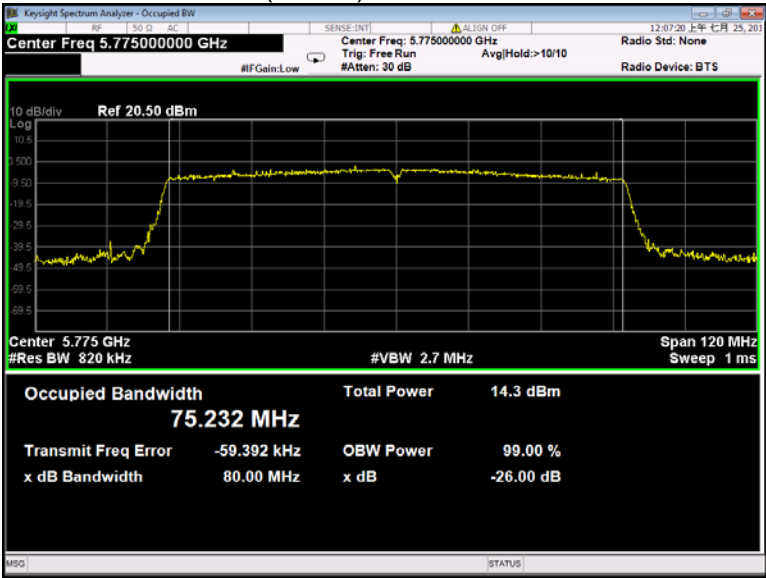
802.11ac(VHT40) U-NII-3 Low channel



802.11ac(VHT40) U-NII-3 High channel



802.11ac(VHT80) U-NII-3 Low channel



## 13 Conducted Output Power

|                   |                                                                                             |
|-------------------|---------------------------------------------------------------------------------------------|
| Test Requirement: | FCC 47CFR Part 15 Section 15.407(a)<br>KDB662911 D01 Multiple Transmitter Output v02r01     |
| Test Method:      | KDB789033 D02 General U-NII Test Procedures New Rules v02r01<br>Section E                   |
| Test Limit:       | U-NII-1 250mW(24dBm)<br>U-NII-2A 250mW(24dBm)<br>U-NII-2C 250mW(24dBm)<br>U-NII-3 1W(30dBm) |
| Test Result:      | PASS<br>Conducted output power= measurement power+10log(1/x)                                |
| Remark:           | X is duty cycle=1, so 10log(1/1)=0<br>Conducted output power= measurement power             |

### 13.1 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 = 1 MHz. VBW = 3 MHz. Sweep = auto; Detector Function = Peak, Set the span to fully encompass the DTS bandwidth.
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

**13.2 Test Result**

| Band    | Operation mode  | Conducted Output Power (dBm) |        |       |
|---------|-----------------|------------------------------|--------|-------|
|         |                 | Low                          | Middle | High  |
| U-NII-1 | 802.11a         | 14.21                        | 13.74  | 13.49 |
|         | 802.11n(HT20)   | 13.78                        | 13.24  | 13.18 |
|         | 802.11n(HT40)   | 12.62                        | /      | 12.19 |
|         | 802.11ac(VHT20) | 12.91                        | 12.63  | 12.39 |
|         | 802.11ac(VHT40) | 12.80                        | /      | 12.47 |
|         | 802.11ac(VHT80) | /                            | 12.23  | /     |

| Band     | Operation mode  | Conducted Output Power (dBm) |        |       |
|----------|-----------------|------------------------------|--------|-------|
|          |                 | Low                          | Middle | High  |
| U-NII-2A | 802.11a         | 13.90                        | 13.58  | 13.37 |
|          | 802.11n(HT20)   | 13.49                        | 13.24  | 13.11 |
|          | 802.11n(HT40)   | 12.68                        | /      | 12.38 |
|          | 802.11ac(VHT20) | 12.59                        | 12.47  | 12.20 |
|          | 802.11ac(VHT40) | 12.59                        | /      | 11.99 |
|          | 802.11ac(VHT80) | 12.30                        | /      | /     |

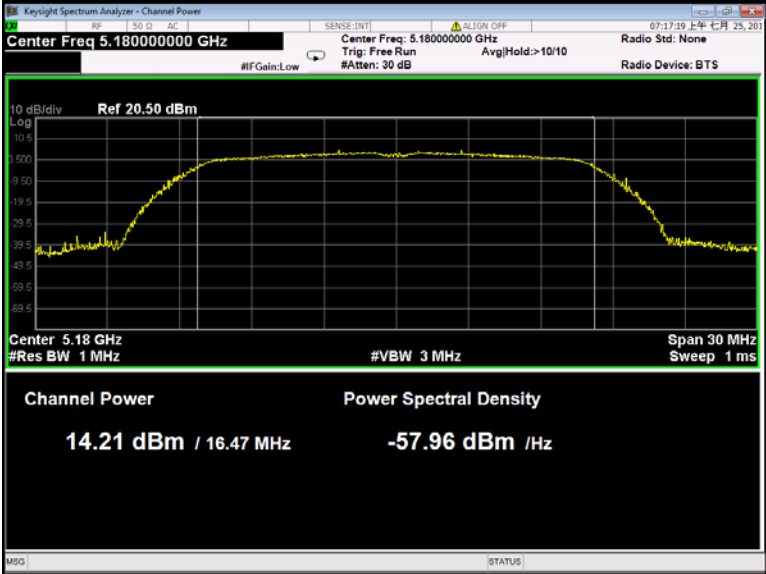
| Band     | Operation mode  | Conducted Output Power (dBm) |        |       |
|----------|-----------------|------------------------------|--------|-------|
|          |                 | Low                          | Middle | High  |
| U-NII-2C | 802.11a         | 12.96                        | 12.29  | 11.54 |
|          | 802.11n(HT20)   | 12.79                        | 12.19  | 11.50 |
|          | 802.11n(HT40)   | 12.05                        | 11.58  | 10.12 |
|          | 802.11ac(VHT20) | 12.07                        | 11.33  | 10.60 |
|          | 802.11ac(VHT40) | 11.88                        | 11.55  | 10.35 |
|          | 802.11ac(VHT80) | 11.38                        | 11.21  |       |

| Band    | Operation mode  | Conducted Output Power (dBm) |        |       |
|---------|-----------------|------------------------------|--------|-------|
|         |                 | Low                          | Middle | High  |
| U-NII-3 | 802.11a         | 12.16                        | 11.55  | 10.44 |
|         | 802.11n(HT20)   | 11.58                        | 11.32  | 10.44 |
|         | 802.11n(HT40)   | 10.58                        | /      | 10.05 |
|         | 802.11ac(VHT20) | 10.65                        | 10.17  | 9.36  |
|         | 802.11ac(VHT40) | 10.61                        | /      | 9.93  |
|         | 802.11ac(VHT80) | /                            | 10.31  | /     |

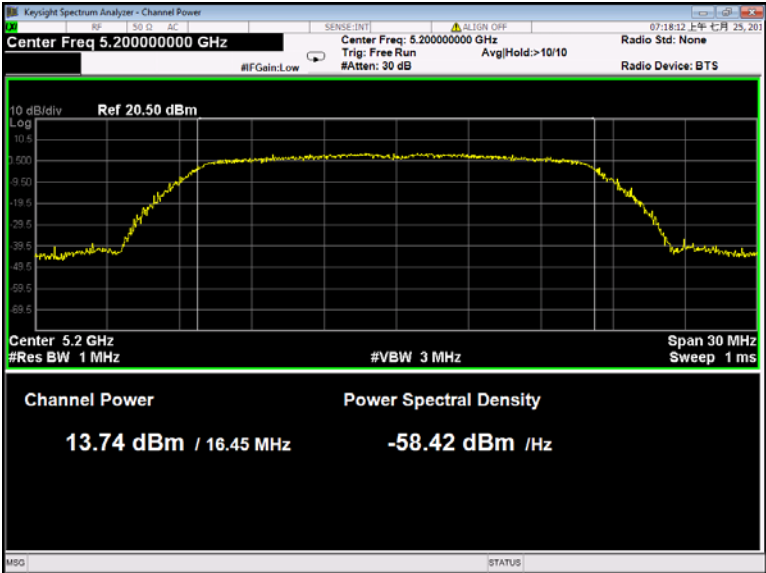
\* All transmit signals are completely uncorrelated with each other, Directional gain =  $G_{ANT}$  which is less than 6dBi. So the limit does not be reduced.

Test result plots shown as follows:

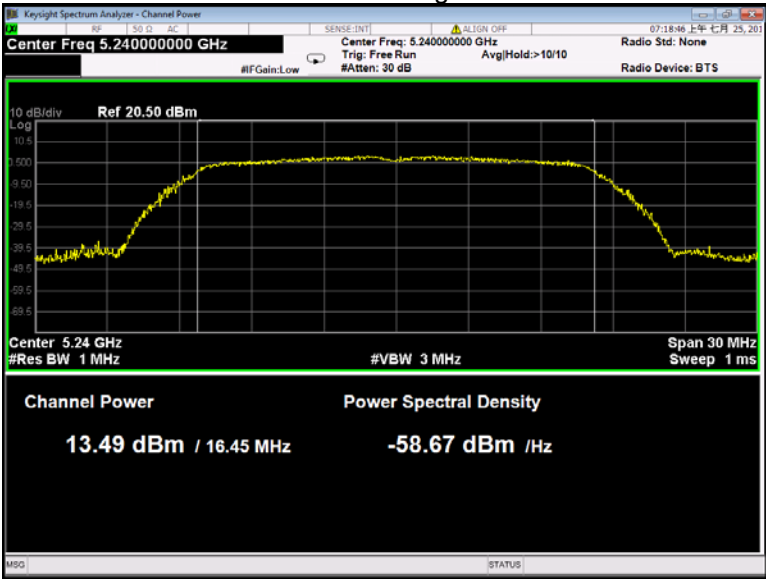
802.11a U-NII-1 Low channel



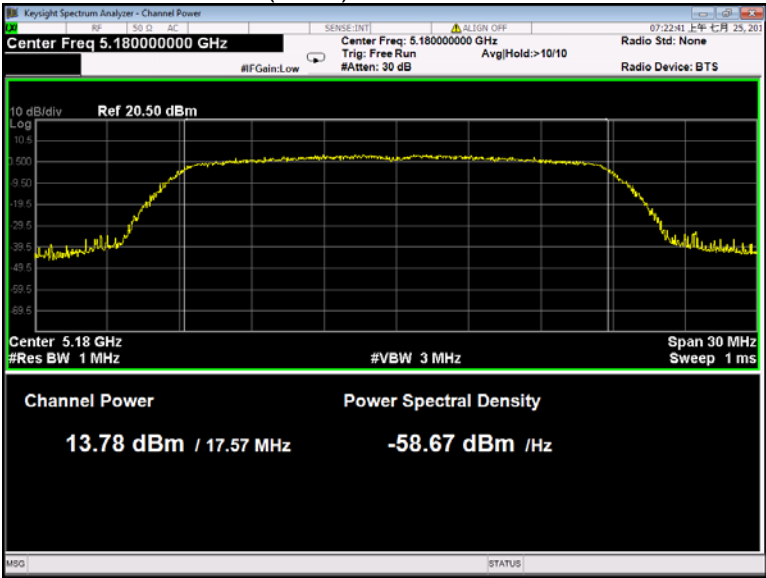
802.11a U-NII-1 Middle channel



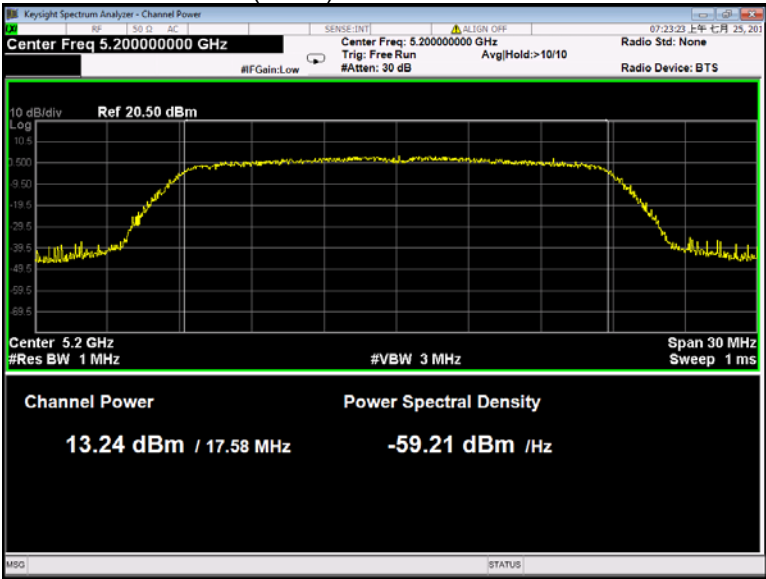
802.11a U-NII-1 High channel



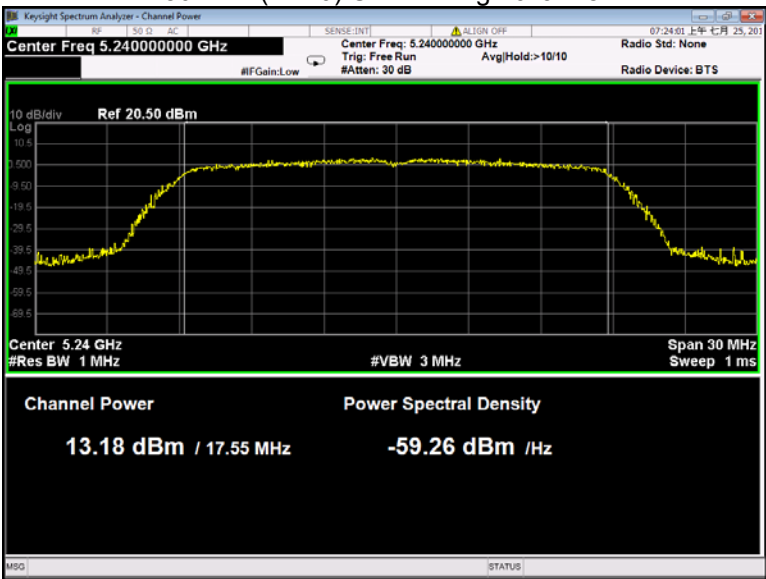
802.11n(HT20) U-NII-1 Low channel



802.11n(HT20) U-NII-1 Middle channel

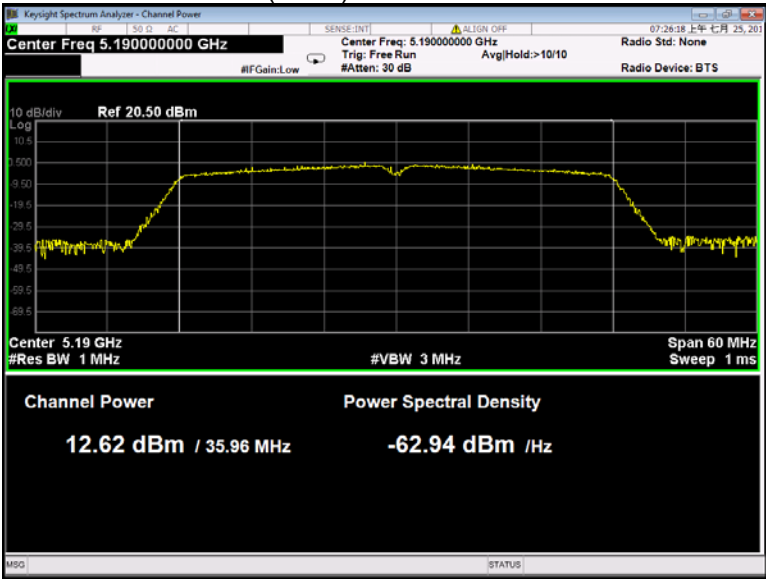


802.11n(HT20) U-NII-1 High channel

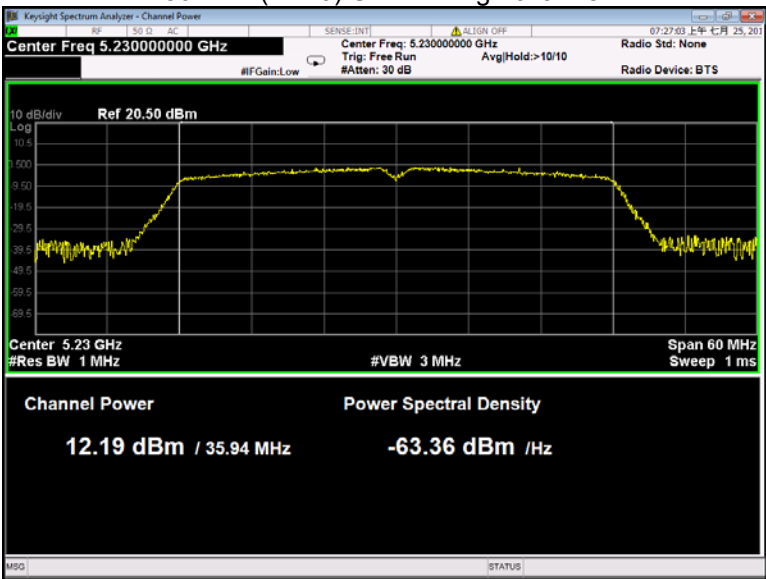




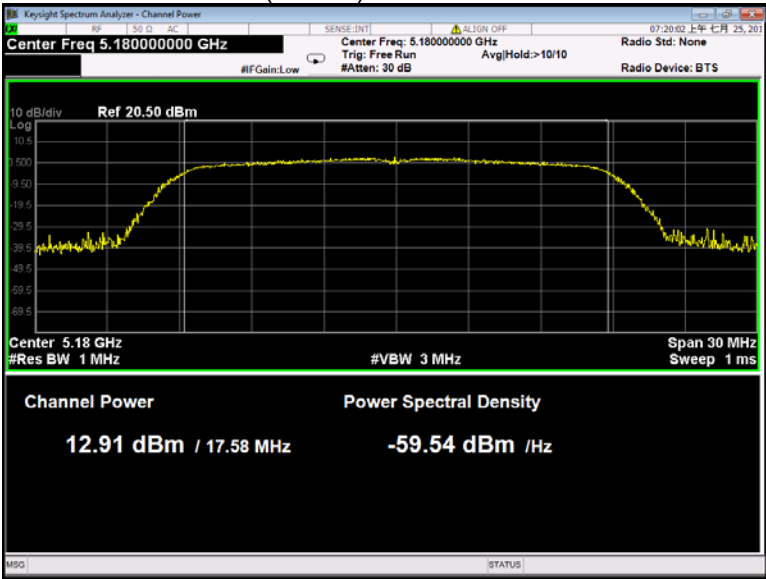
802.11n(HT40) U-NII-1 Low channel



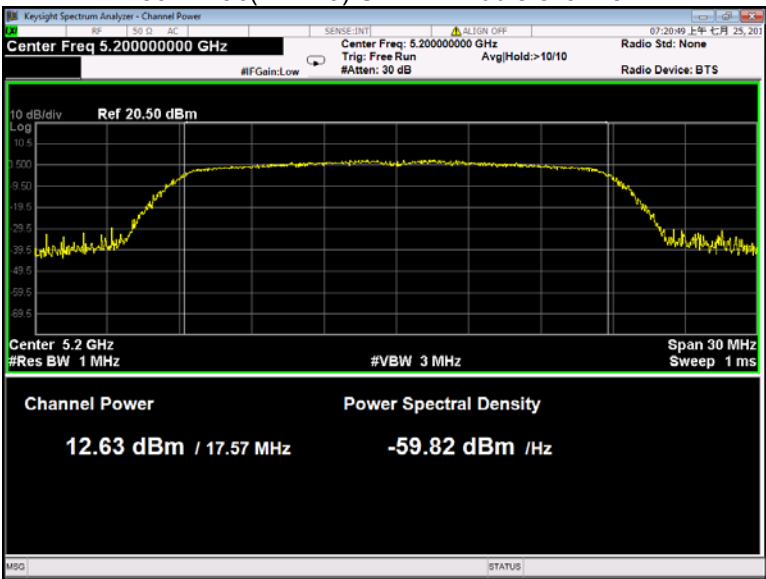
802.11n(HT40) U-NII-1 High channel



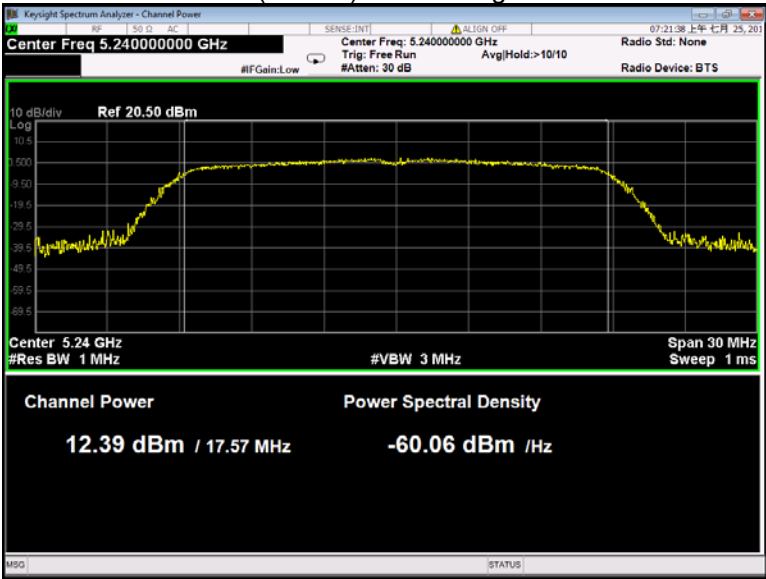
802.11ac(VHT20) U-NII-1 Low channel



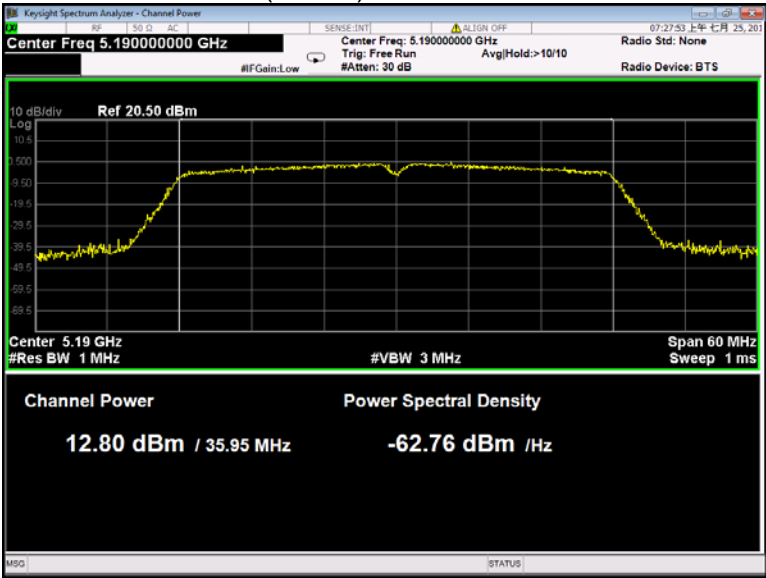
802.11ac(VHT20) U-NII-1 Middle channel



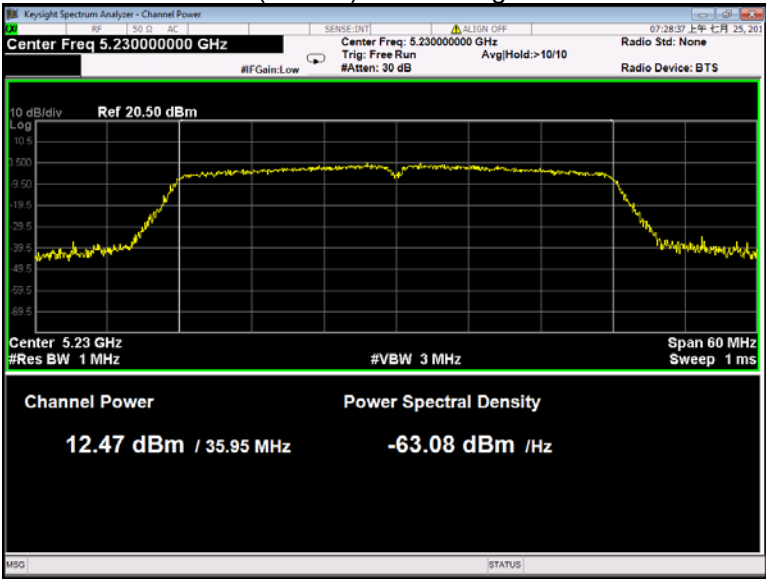
802.11ac(VHT20) U-NII-1 High channel



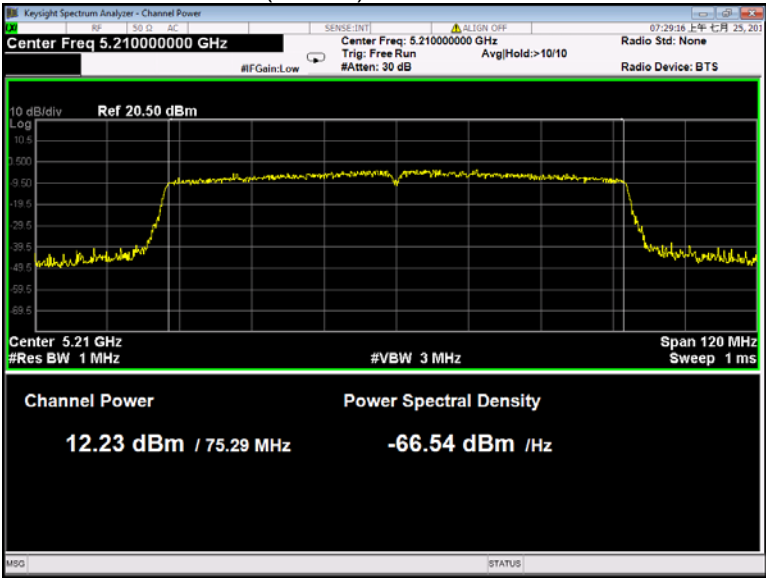
802.11ac(VHT40) U-NII-1 Low channel



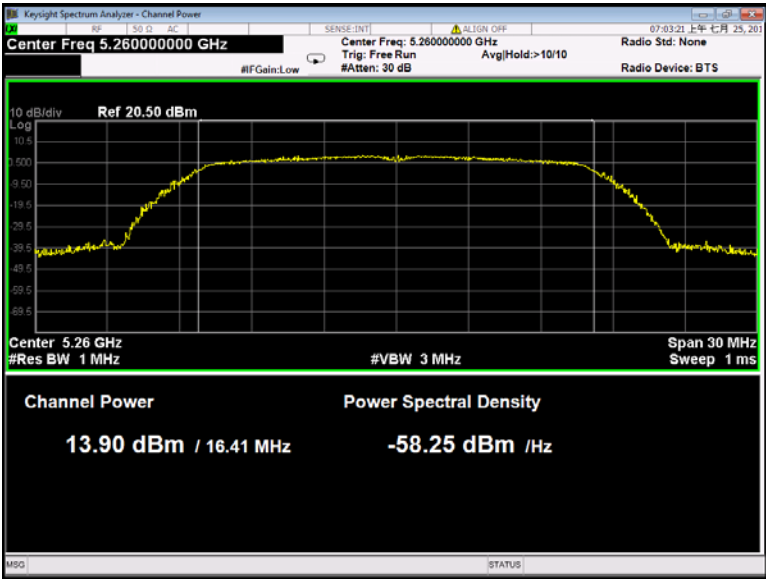
802.11ac(VHT40) U-NII-1 High channel



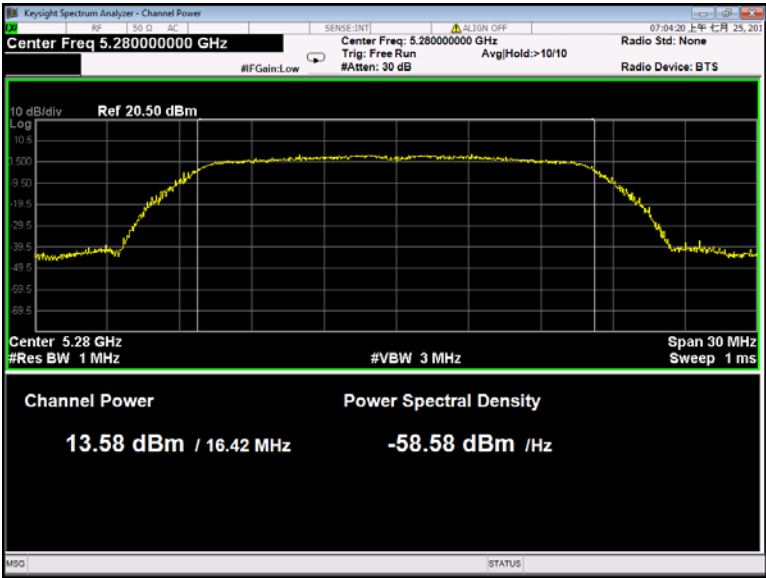
802.11ac(VHT80) U-NII-1 Low channel



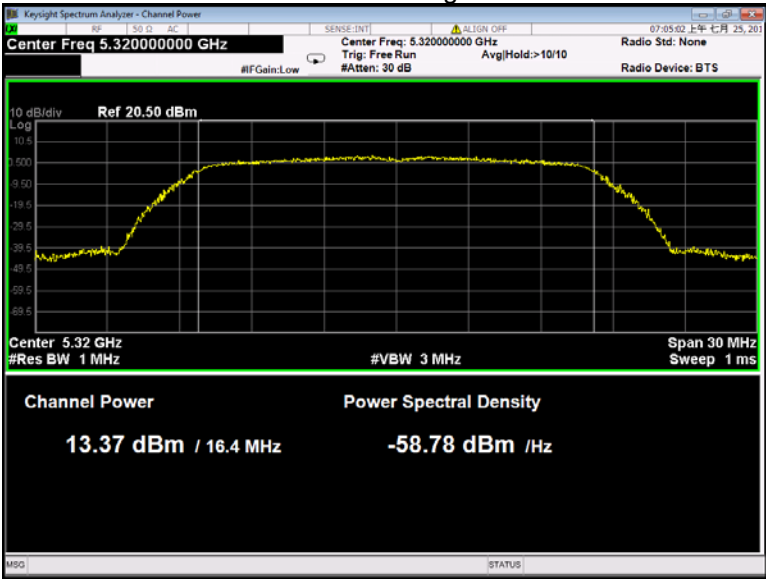
802.11a U-NII-2A Low channel



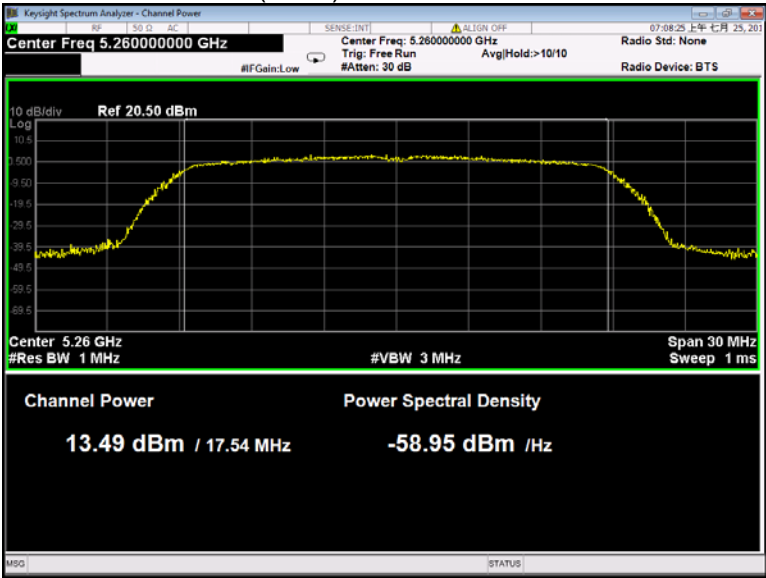
802.11a U-NII-2A Middle channel



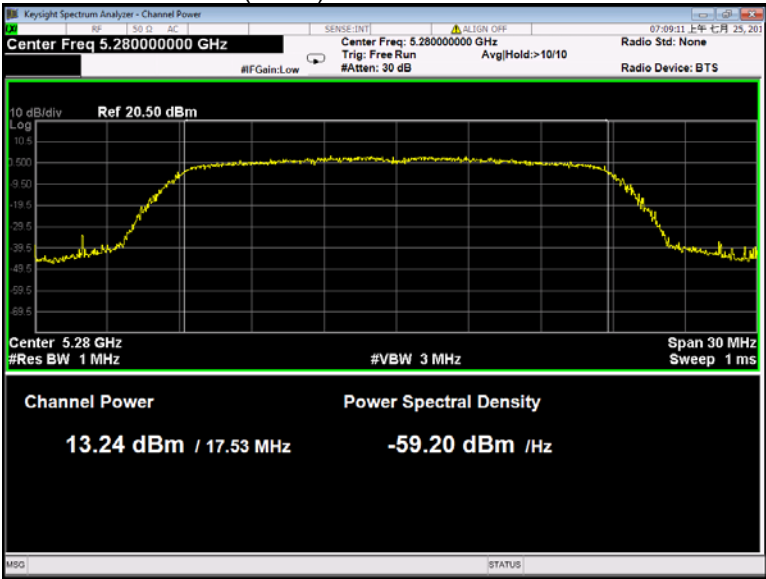
802.11a U-NII-2A High channel



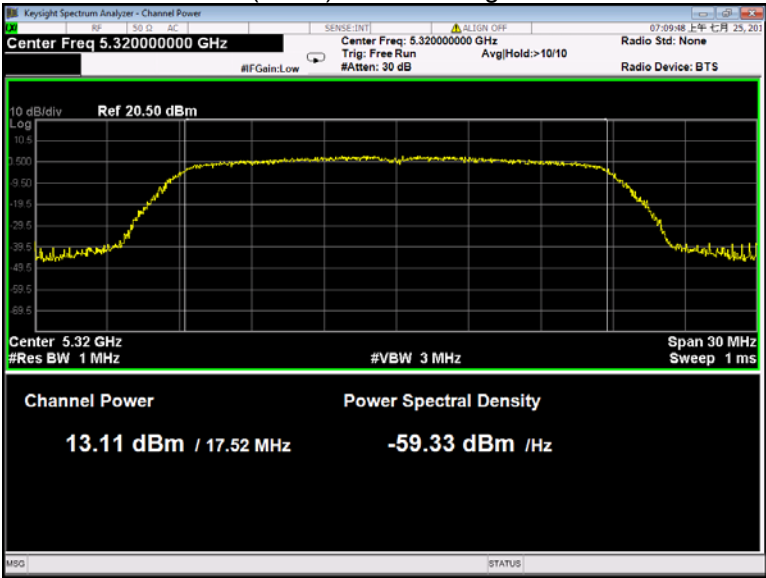
802.11n(HT20) U-NII-2A Low channel



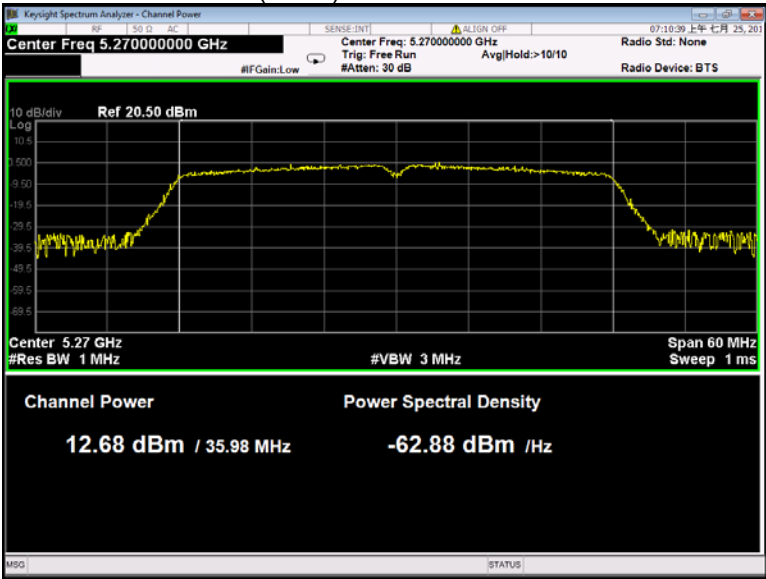
802.11n(HT20) U-NII-2A Middle channel



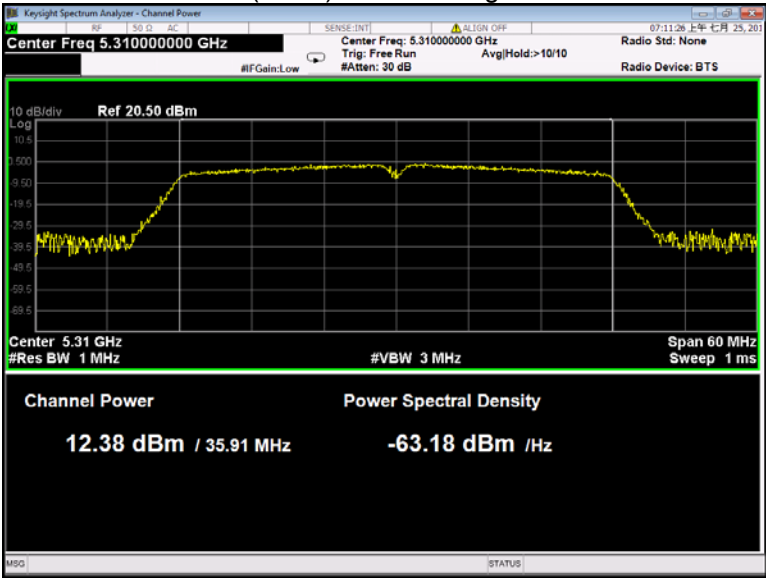
802.11n(HT20) U-NII-2A High channel



802.11n(HT40) U-NII-2A Low channel

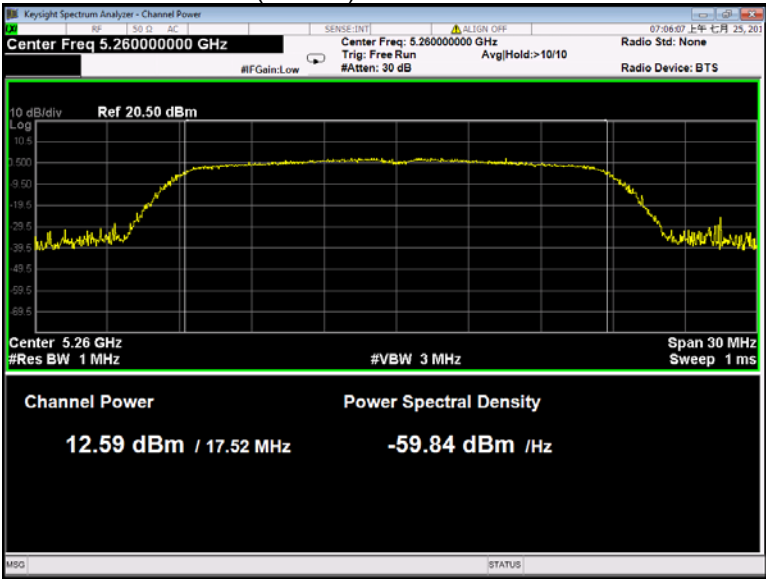


802.11n(HT40) U-NII-2A High channel

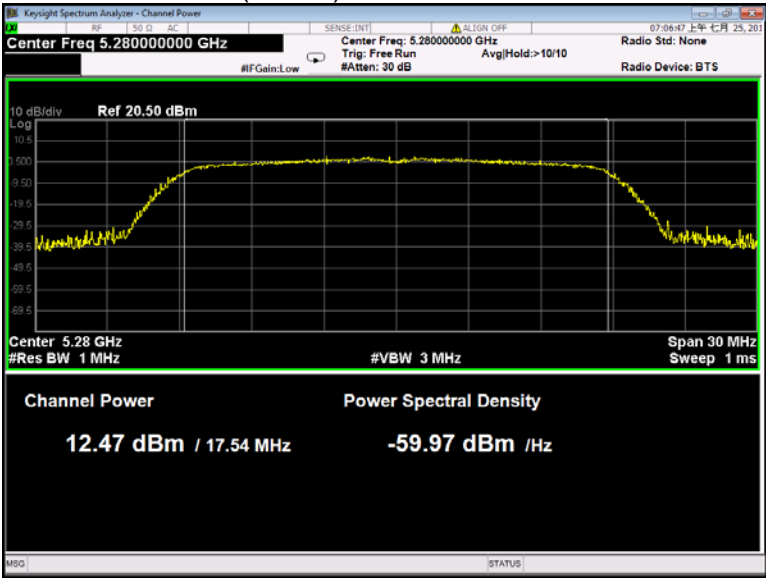




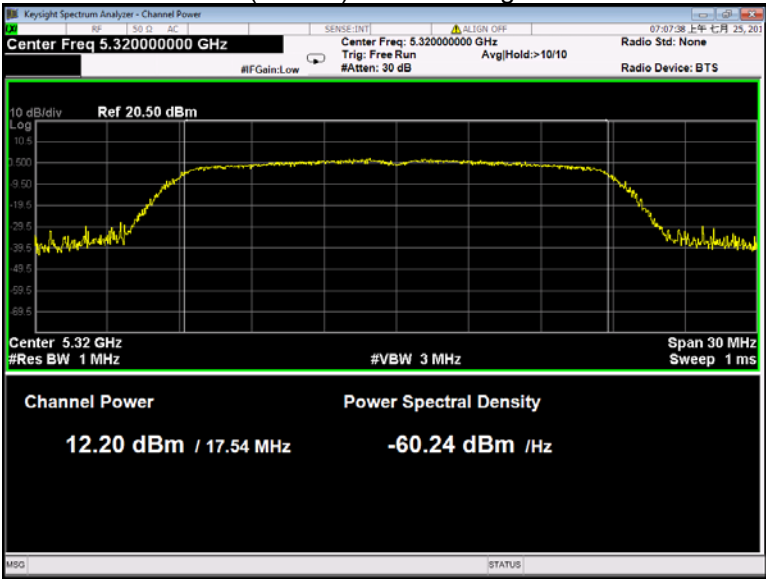
802.11ac(VHT20) U-NII-2A Low channel



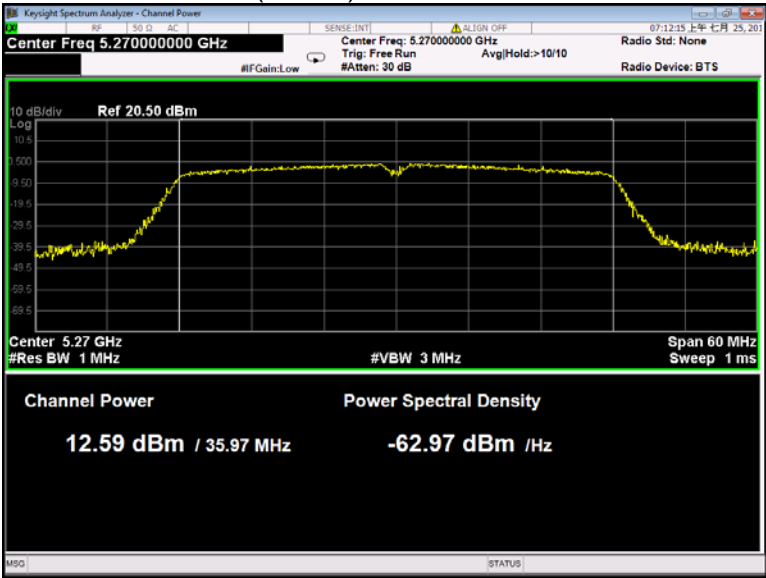
802.11ac(VHT20) U-NII-2A Middle channel



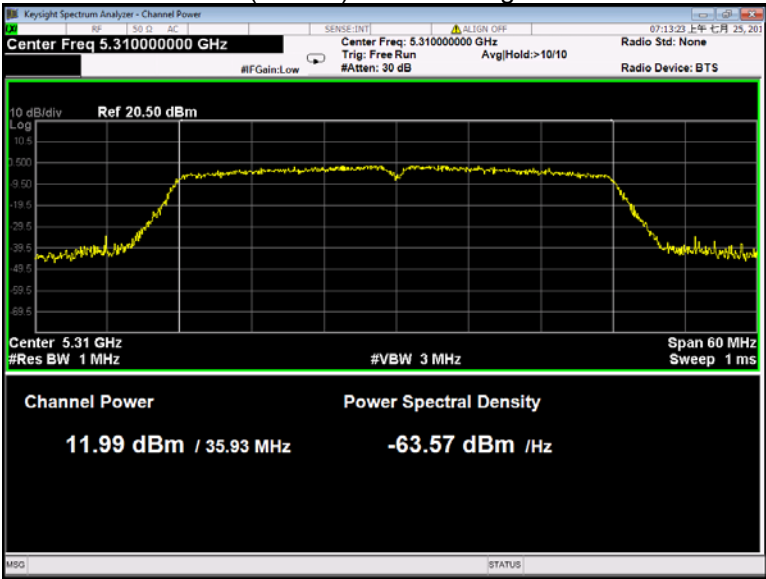
802.11ac(VHT20) U-NII-2A High channel



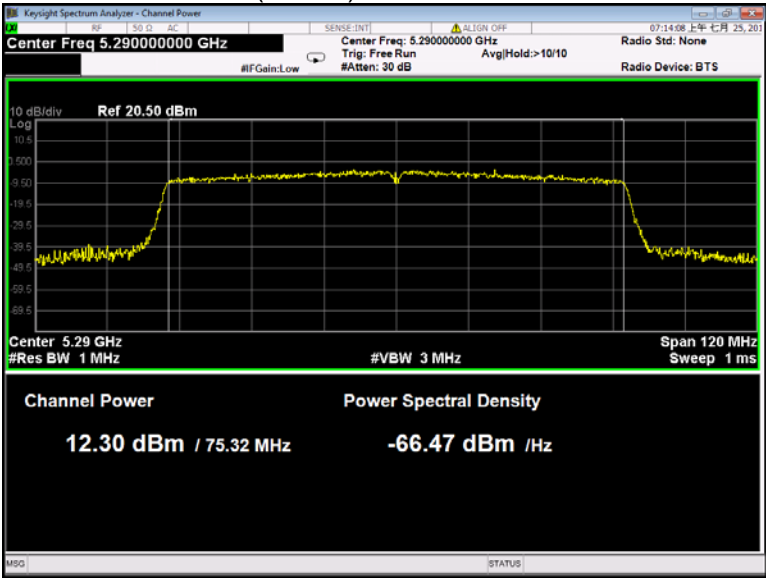
802.11ac(VHT40) U-NII-2A Low channel



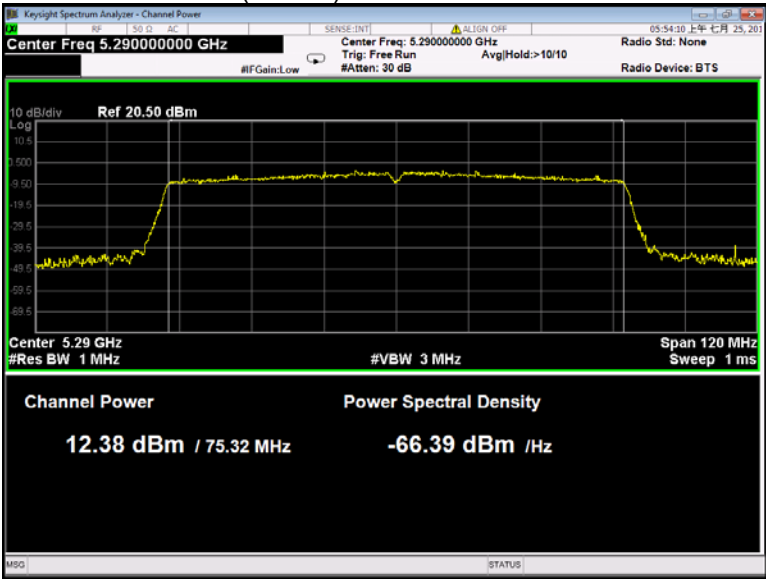
802.11ac(VHT40) U-NII-2A High channel



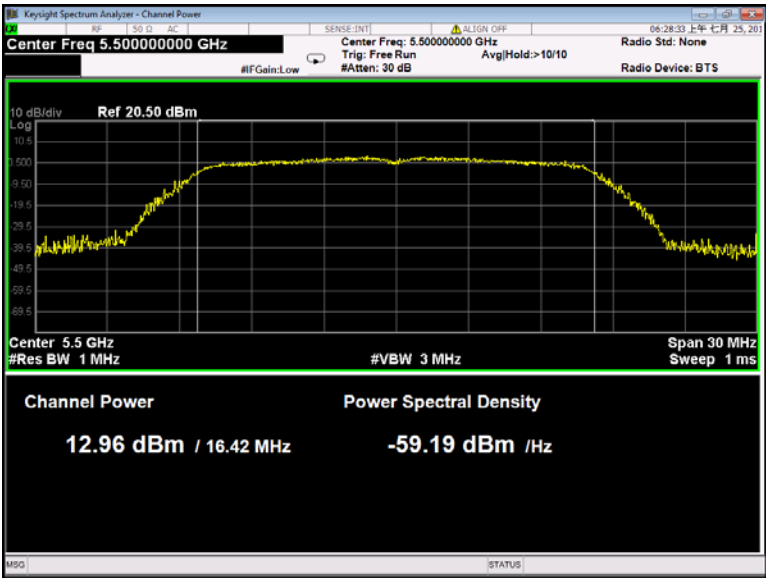
802.11ac(VHT80) U-NII-2A Low channel



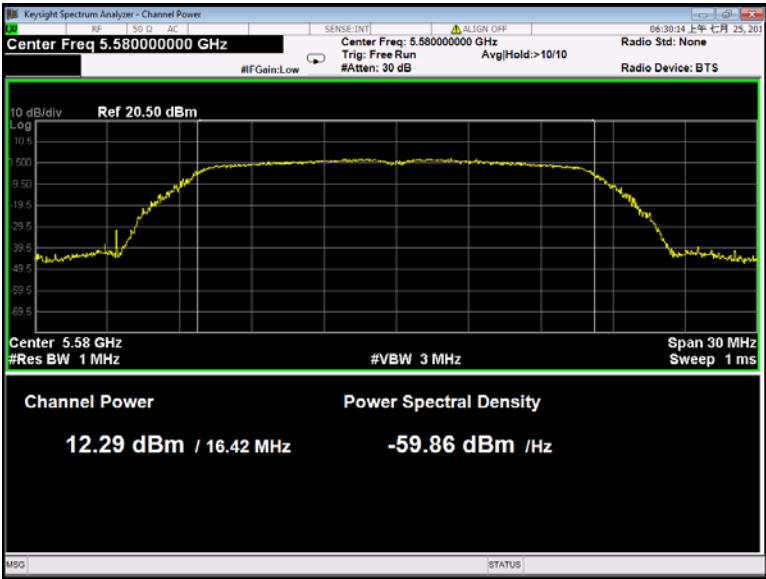
802.11ac(VHT80) U-NII-2A Middle channel



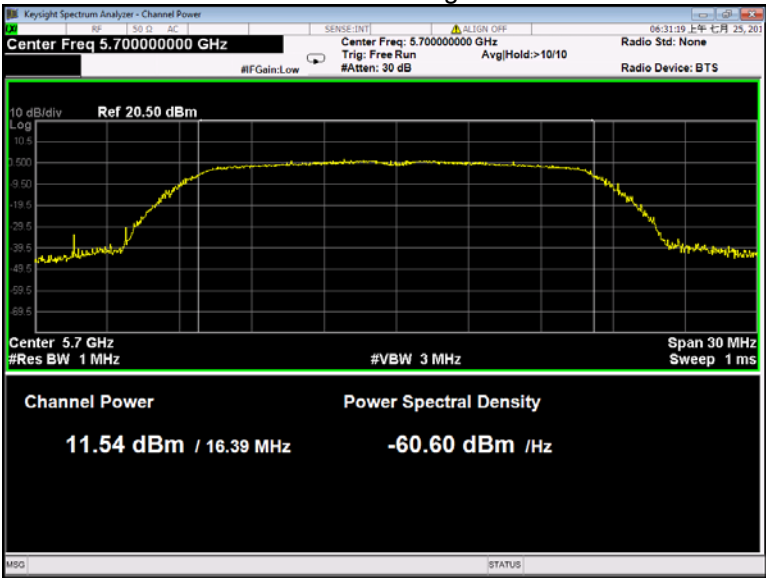
802.11a U-NII-2C Low channel



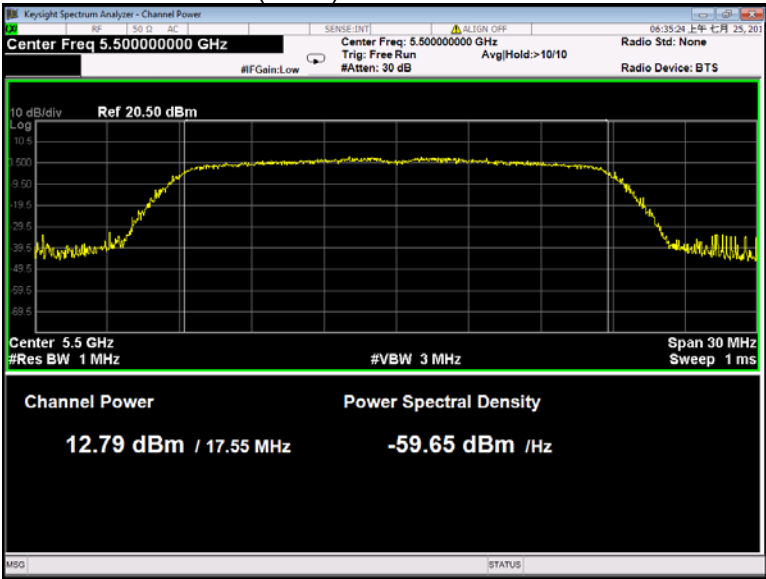
802.11a U-NII-2C Middle channel



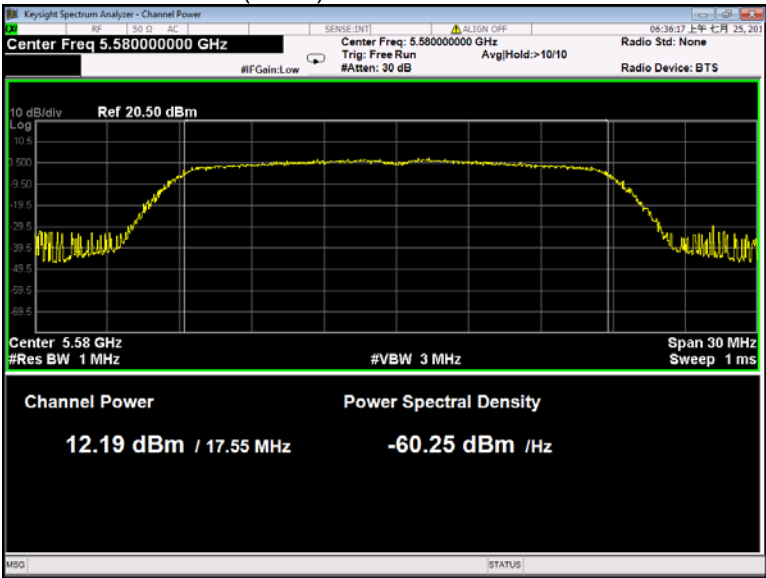
802.11a U-NII-2C High channel



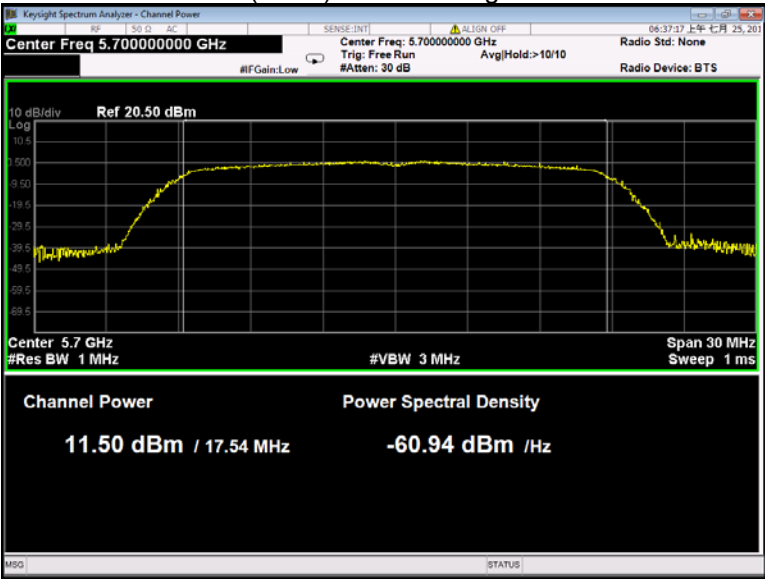
802.11n(HT20) U-NII-2C Low channel



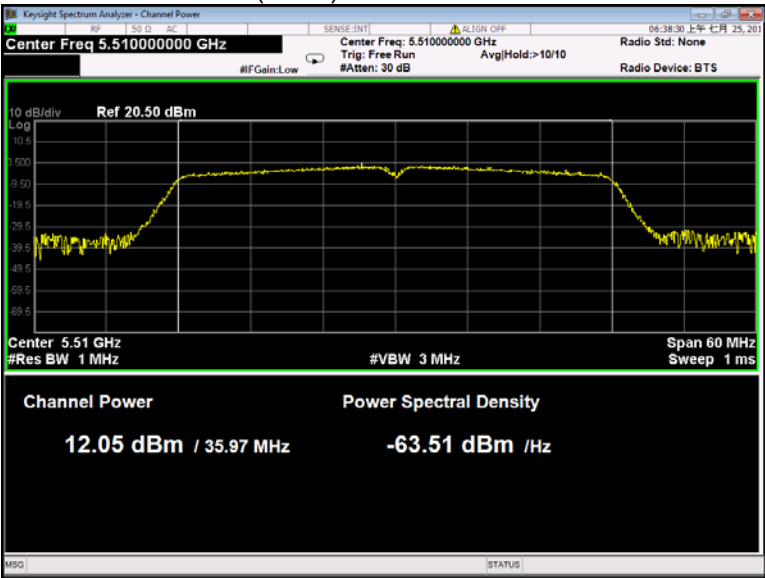
802.11n(HT20) U-NII-2C Middle channel



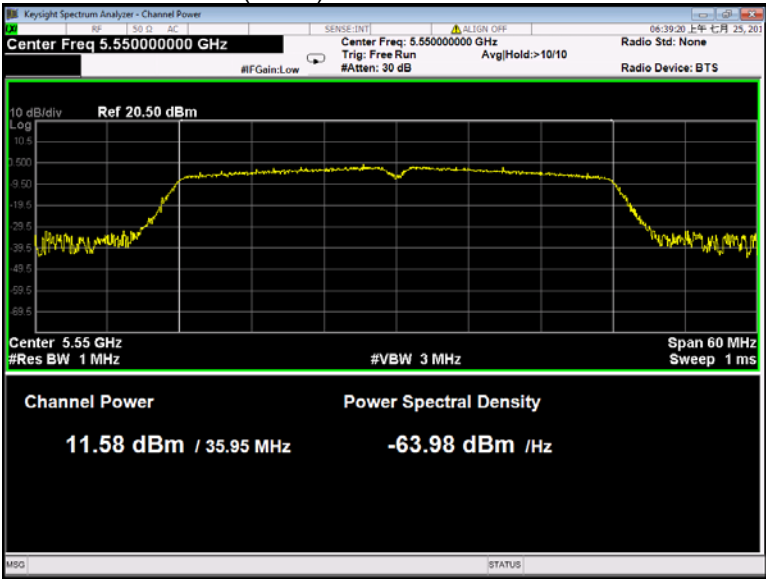
802.11n(HT20) U-NII-2C High channel



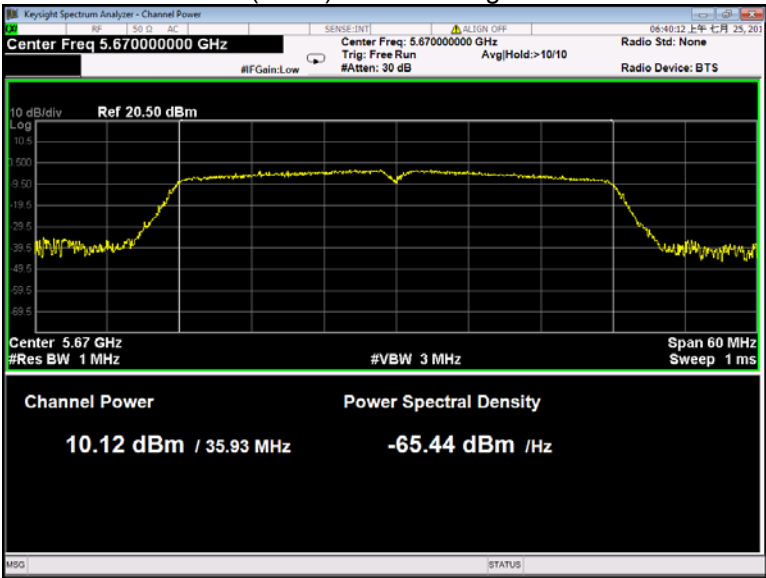
802.11n(HT40) U-NII-2C Low channel



802.11n(HT40) U-NII-2C Middle channel

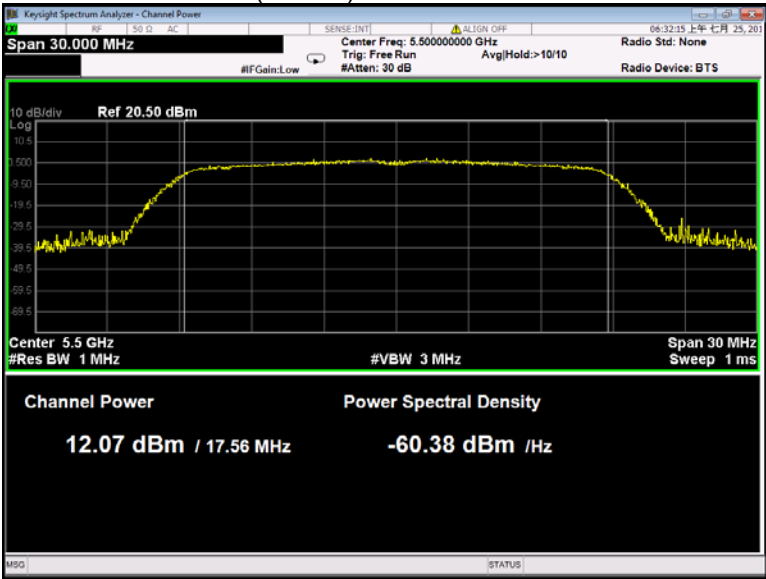


802.11n(HT40) U-NII-2C High channel

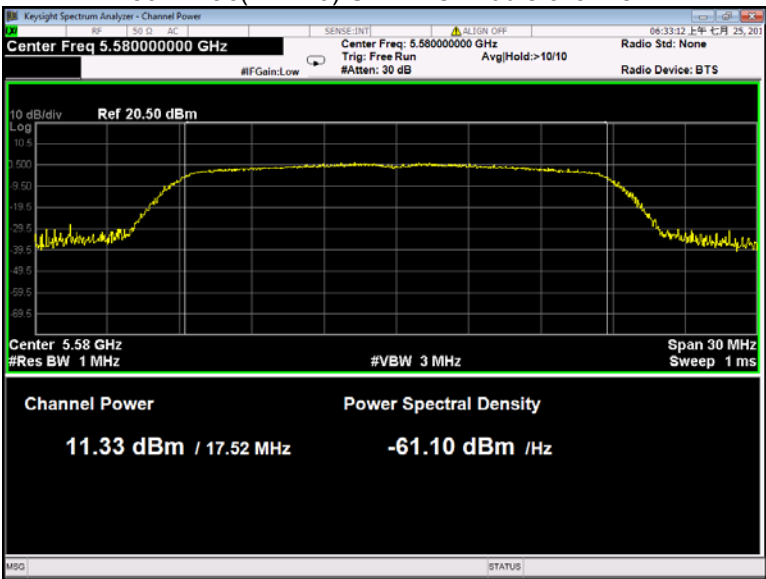




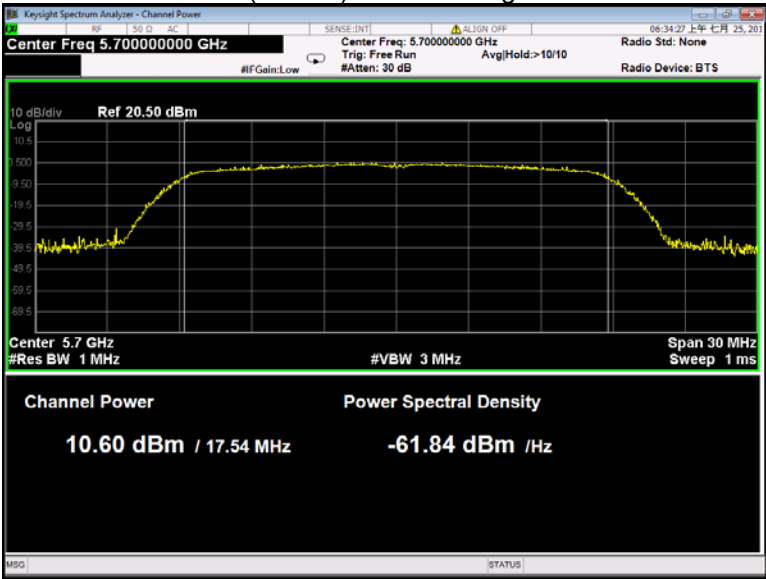
802.11ac(VHT20) U-NII-2C Low channel



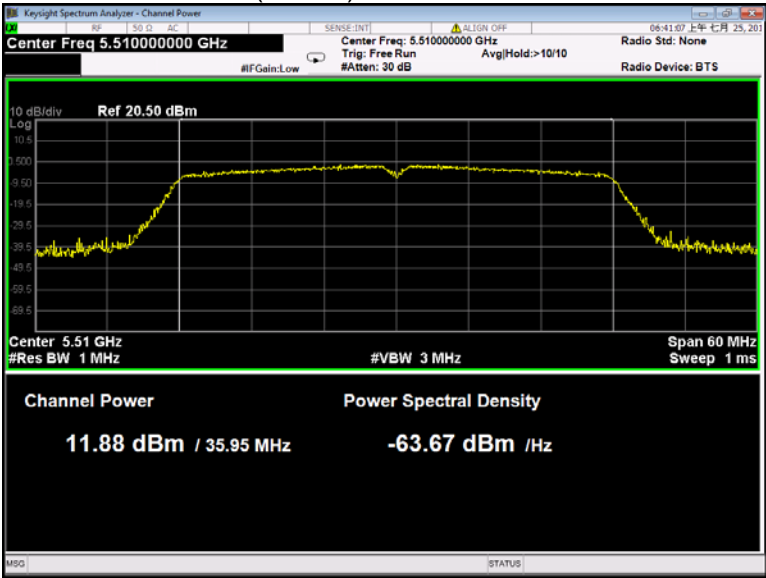
802.11ac(VHT20) U-NII-2C Middle channel



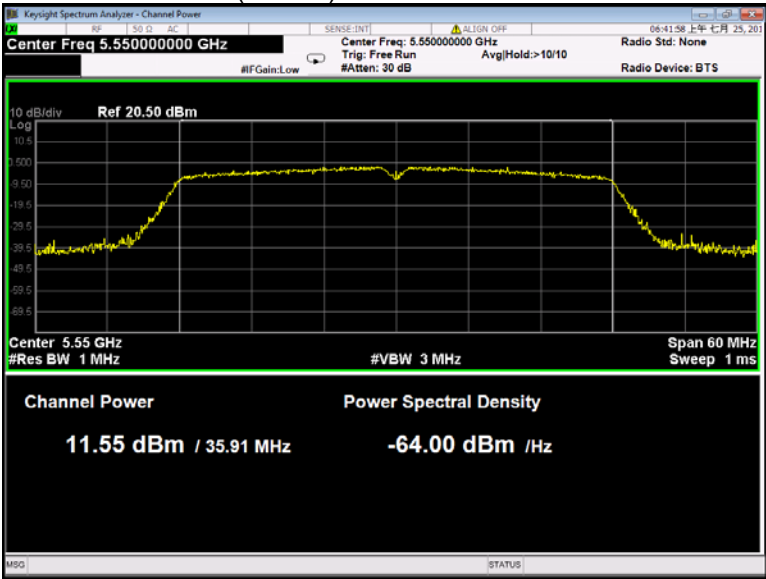
802.11ac(VHT20) U-NII-2C High channel



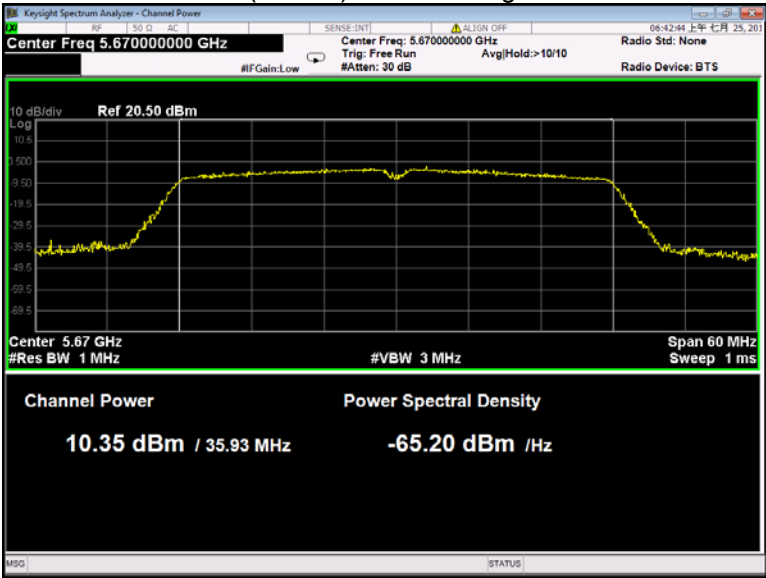
802.11ac(VHT40) U-NII-2C Low channel



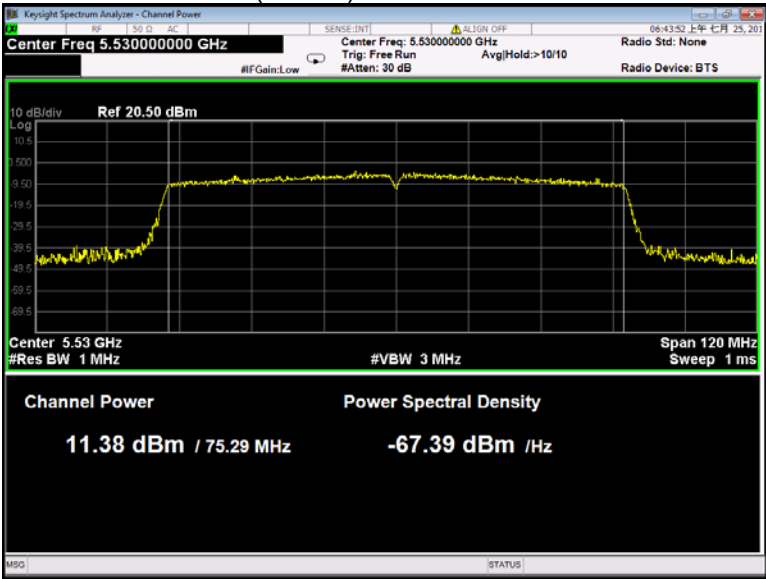
802.11ac(VHT40) U-NII-2C Middle channel



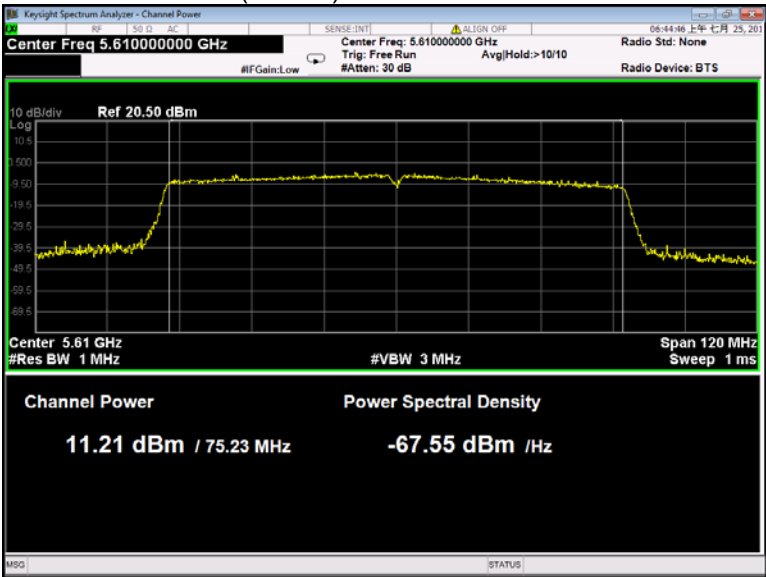
802.11ac(VHT40) U-NII-2C High channel



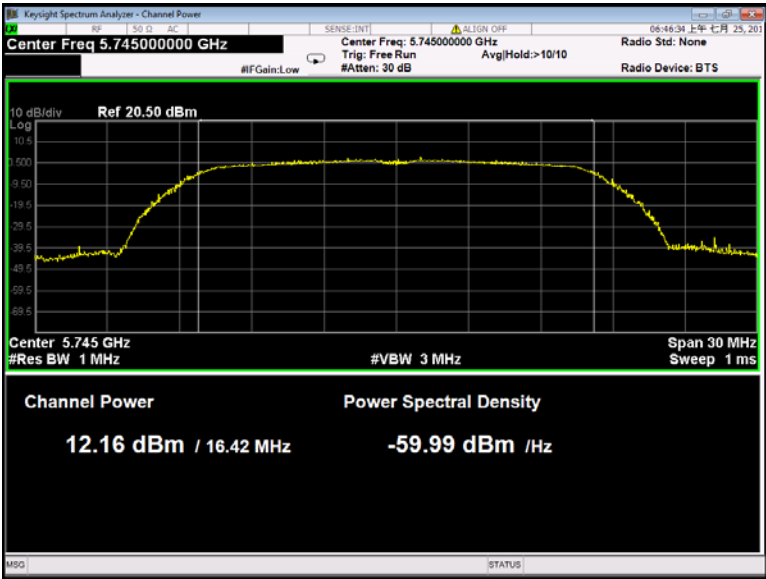
802.11ac(VHT80) U-NII-2C Low channel



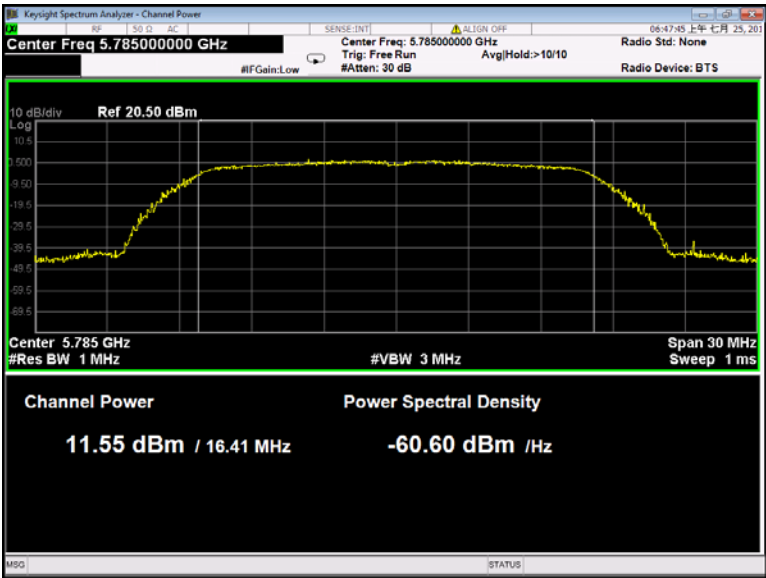
802.11ac(VHT80) U-NII-2C Middle channel



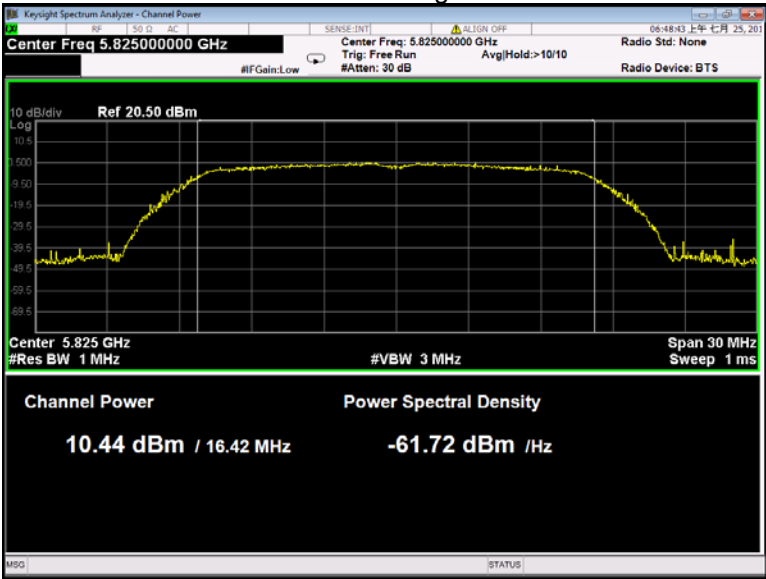
802.11a U-NII-3 Low channel



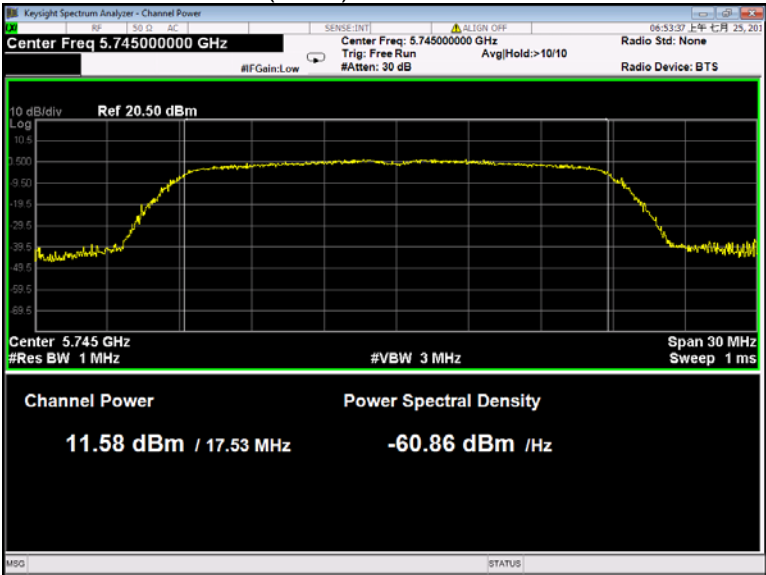
802.11a U-NII-3 Middle channel



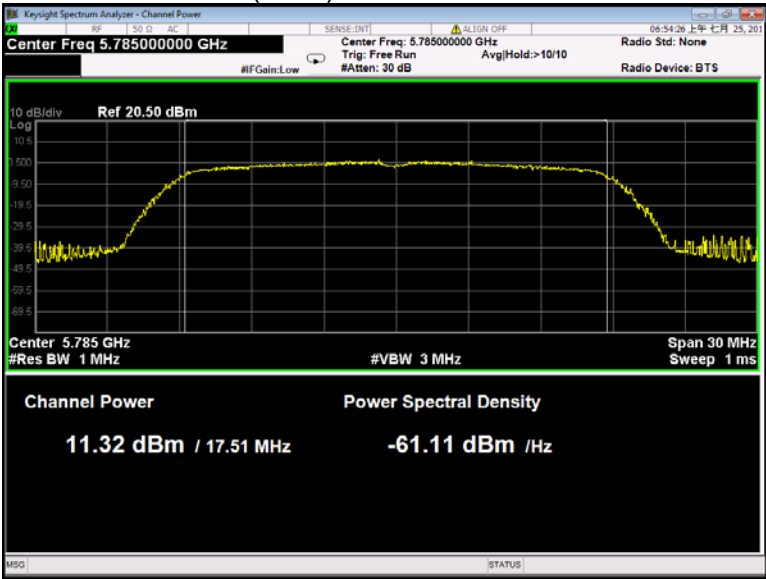
802.11a U-NII-3 High channel



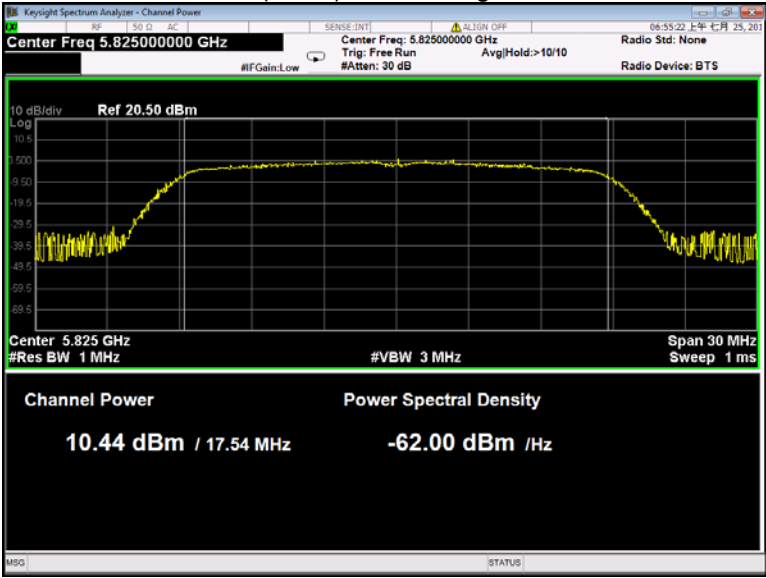
802.11n(HT20) U-NII-3 Low channel



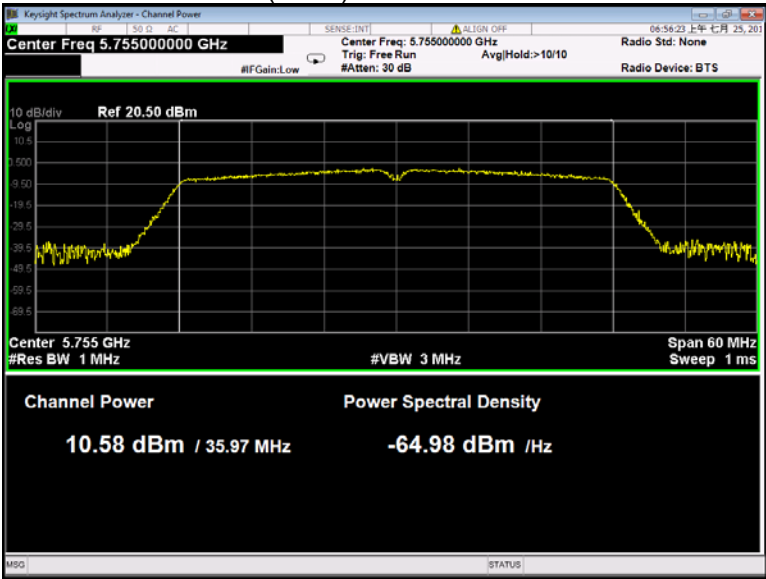
802.11n(HT20) U-NII-3 Middle channel



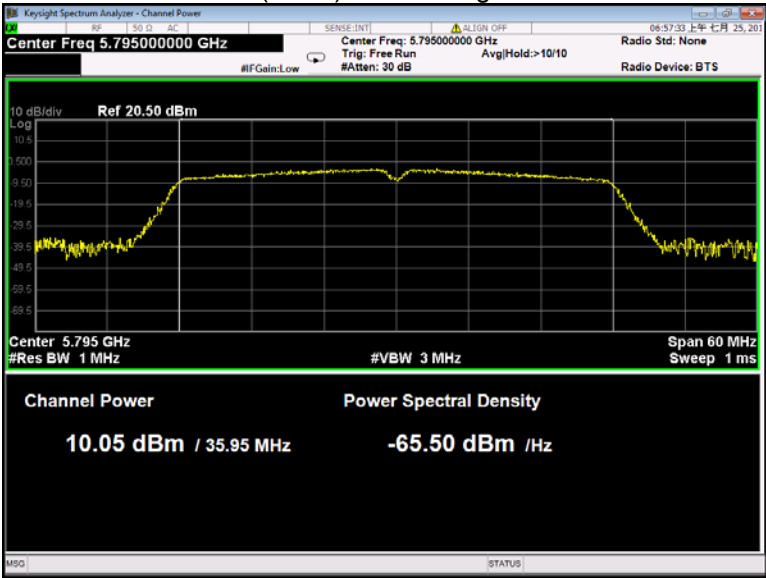
802.11n(HT20) U-NII-3 High channel



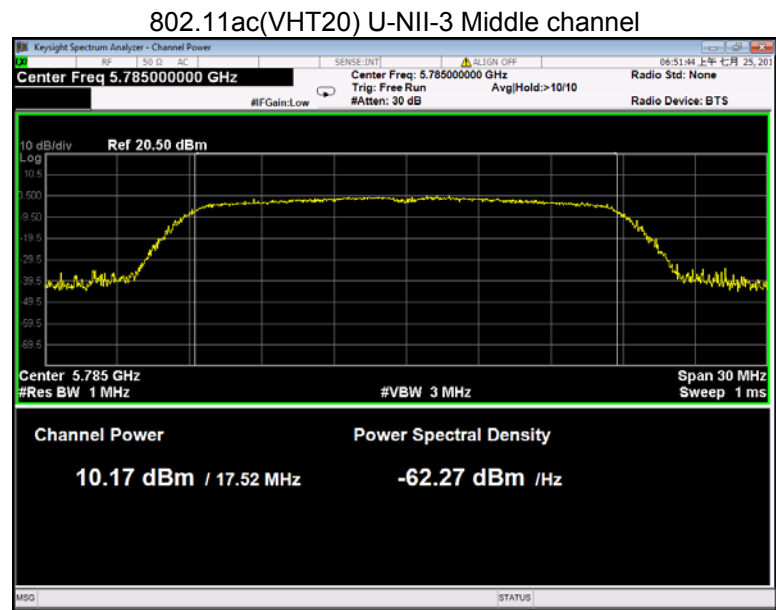
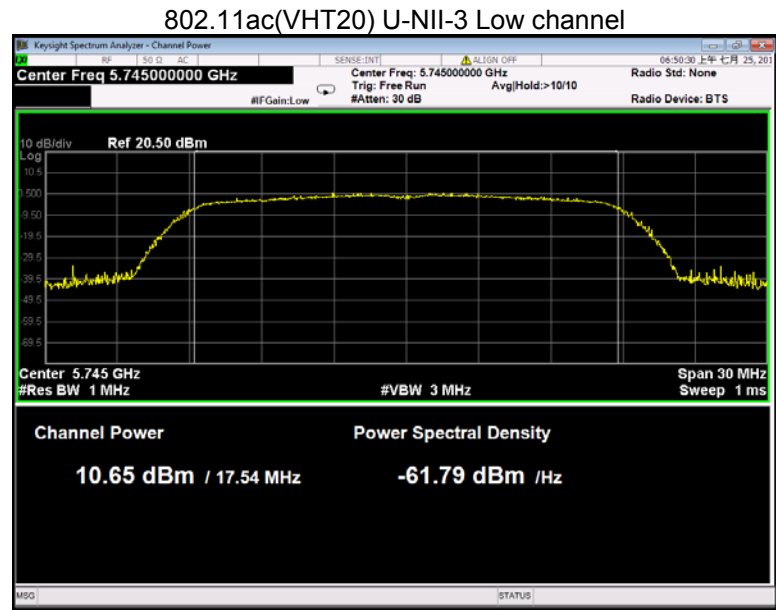
802.11n(HT40) U-NII-3 Low channel



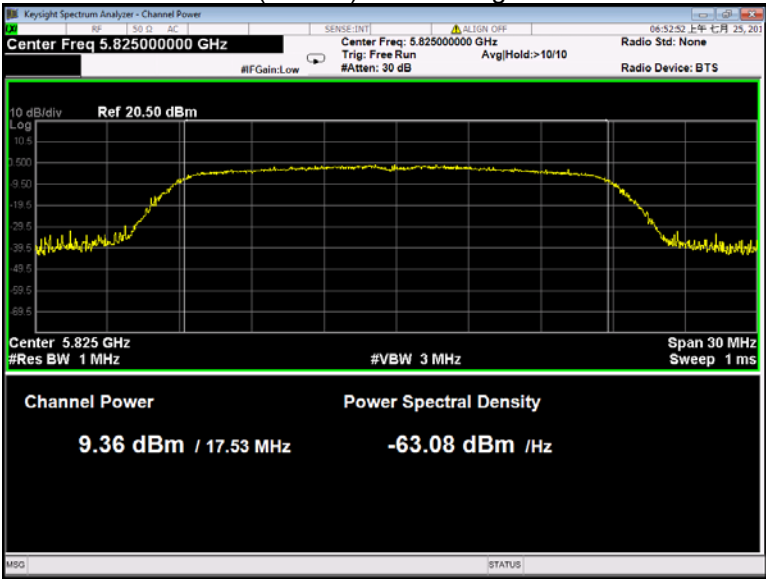
802.11n(HT40) U-NII-3 High channel



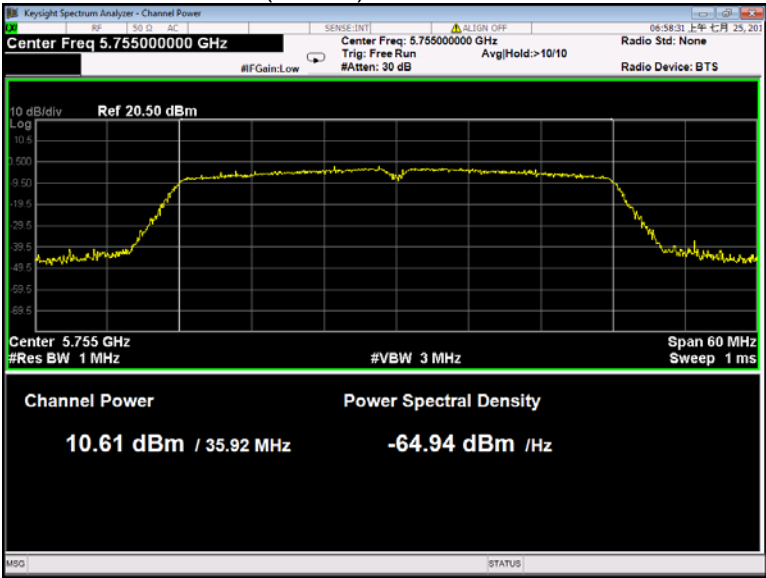


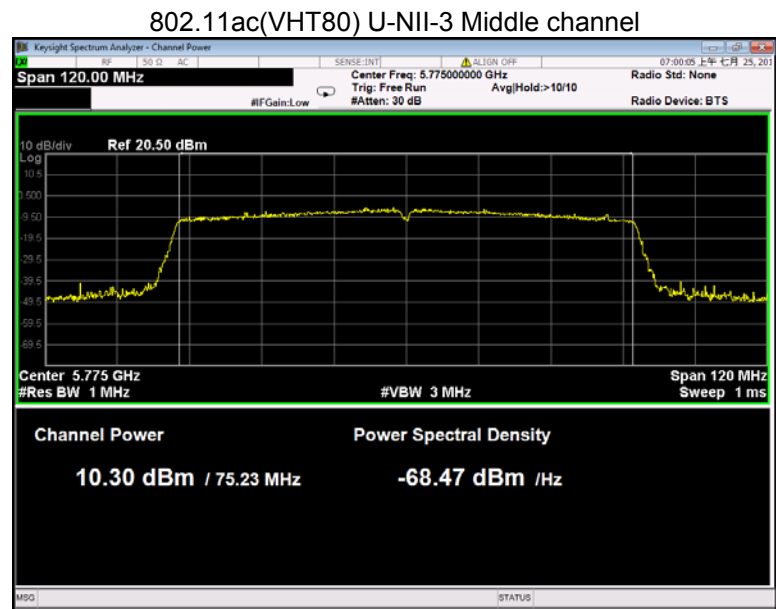
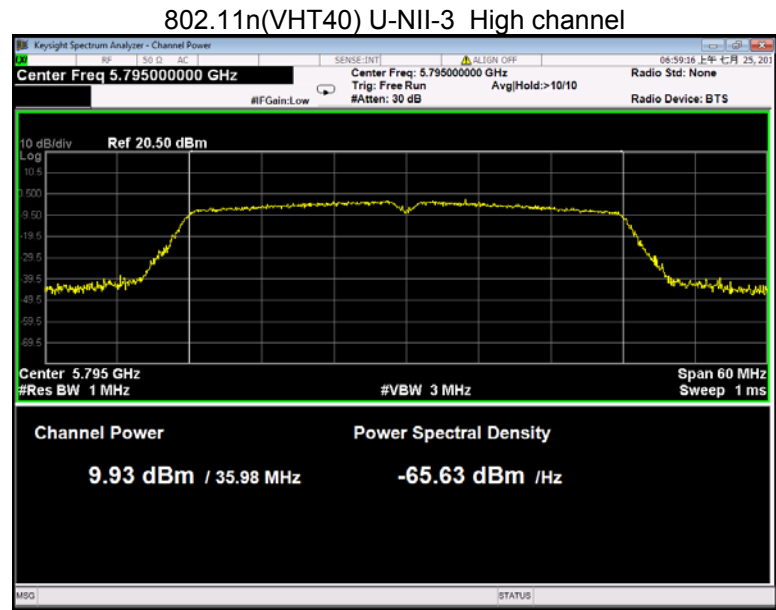


802.11ac(VHT20) U-NII-3 High channel



802.11ac(VHT40) U-NII-3 Low channel





## 14 Power Spectral density

|                   |                                                                                                                                                                                                  |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC 47CFR Part 15 Section 15.407(a)                                                                                                                                                              |
| Test Method:      | KDB 789033 D02 General U-NII Test Procedures New Rules v02r01                                                                                                                                    |
| Test Limit:       | $\leq 11\text{dBm/MHz}$ for Operation in the U-NII-1(5150MHz-5250MHz, 5250-5350MHz and 5470-5725MHz)of device; $\leq 30\text{dBm/500kHz}$ for Operation in the U-NII-3(5725MHz-5850MHz)of device |
| Test Result:      | PASS                                                                                                                                                                                             |

### 14.1 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:  
U-NII-1  
RBW = 1MHz, VBW  $\geq 3 \times$  RBW Sweep = auto; Detector Function = Peak. Trace = Max hold.  
U-NII-3  
RBW = 510KHz, VBW  $\geq 3 \times$  RBW Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section  
Submit this plot.

**14.2 Test Result**

| Band    | Operation mode  | Power Spectral Density (dBm/MHz) |        |        |
|---------|-----------------|----------------------------------|--------|--------|
|         |                 | Low                              | Middle | High   |
| U-NII-1 | 802.11a         | 3.991                            | 3.634  | 3.825  |
|         | 802.11n(HT20)   | 2.641                            | 3.440  | 3.899  |
|         | 802.11n(HT40)   | 0.255                            | /      | 0.396  |
|         | 802.11ac(VHT20) | 2.491                            | 2.845  | 2.860  |
|         | 802.11ac(VHT40) | -0.456                           | /      | -0.412 |
|         | 802.11ac(VHT80) | /                                | -2.698 | /      |
|         | Limit           | ≤11.00dBm/MHz                    |        |        |

| Band     | Operation mode  | Power Spectral Density (dBm/MHz) |        |       |
|----------|-----------------|----------------------------------|--------|-------|
|          |                 | Low                              | Middle | High  |
| U-NII-2A | 802.11a         | 4.688                            | 4.387  | 4.218 |
|          | 802.11n(HT20)   | 4.014                            | 4.264  | 4.693 |
|          | 802.11n(HT40)   | 0.456                            | /      | 0.398 |
|          | 802.11ac(VHT20) | 2.964                            | 2.903  | 2.889 |
|          | 802.11ac(VHT40) | 0.435                            | /      | 0.344 |
|          | 802.11ac(VHT80) | /                                | -2.312 | /     |
|          | Limit           | ≤11.00dBm/MHz                    |        |       |

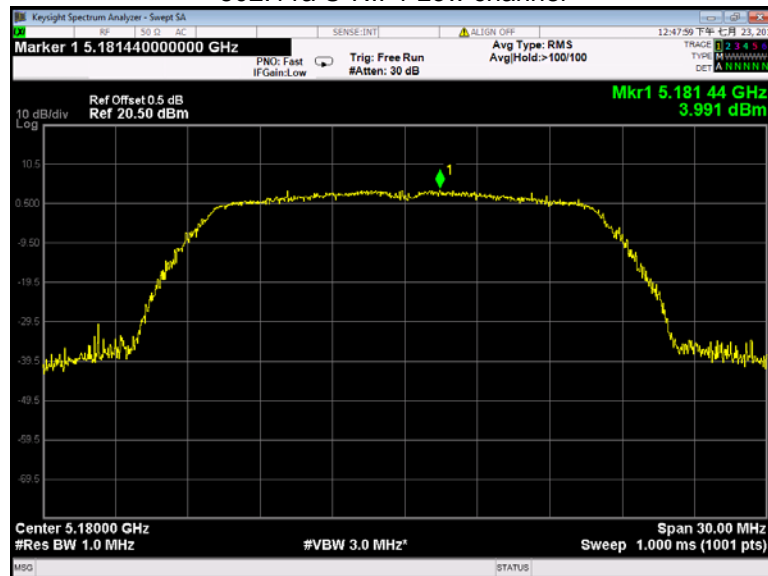
| Band     | Operation mode  | Power Spectral Density (dBm/MHz) |        |        |
|----------|-----------------|----------------------------------|--------|--------|
|          |                 | Low                              | Middle | High   |
| U-NII-2C | 802.11a         | 3.378                            | 3.244  | 3.043  |
|          | 802.11n(HT20)   | 3.249                            | 3.266  | 3.066  |
|          | 802.11n(HT40)   | -0.305                           | -0.067 | -0.220 |
|          | 802.11ac(VHT20) | 2.259                            | 2.059  | 2.268  |
|          | 802.11ac(VHT40) | -0.513                           | -0.275 | -0.334 |
|          | 802.11ac(VHT80) | -3.037                           | /      | -3.226 |
|          | Limit           | ≤11.00dBm/MHz                    |        |        |

| Band    | Operation mode  | Power Spectral Density (dBm/MHz) |        |        |
|---------|-----------------|----------------------------------|--------|--------|
|         |                 | Low                              | Middle | High   |
| U-NII-3 | 802.11a         | 1.536                            | 1.334  | 1.595  |
|         | 802.11n(HT20)   | 0.359                            | 0.879  | 0.524  |
|         | 802.11n(HT40)   | -2.629                           | /      | -2.813 |
|         | 802.11ac(VHT20) | -0.015                           | -0.781 | -0.671 |
|         | 802.11ac(VHT40) | -2.520                           | /      | -2.877 |
|         | 802.11ac(VHT80) | -5.998                           | /      | /      |
|         | Limit           | $\leq 30.00 \text{ dBm/500kHz}$  |        |        |

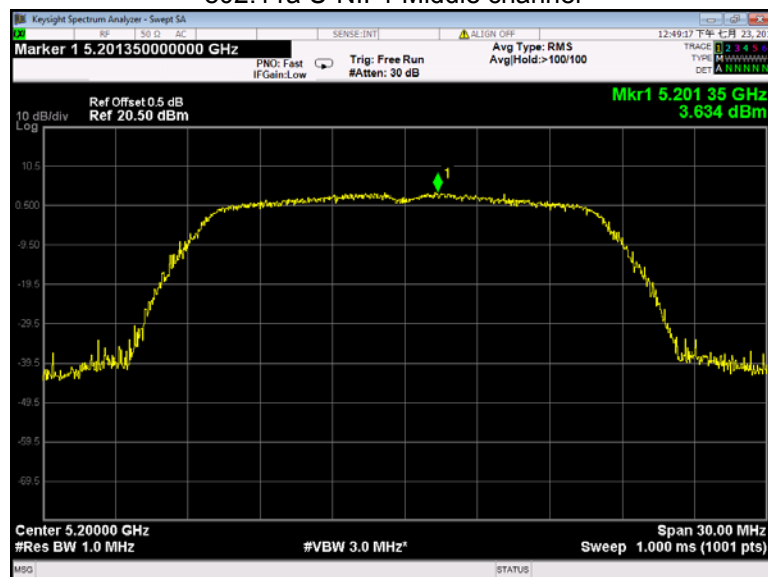
\* All transmit signals are completely uncorrelated with each other, Directional gain =  $G_{\text{ANT}}$  which is less than 6dBi. So the limit does not be reduced.

Test result plots shown as follows:

802.11a U-NII-1 Low channel



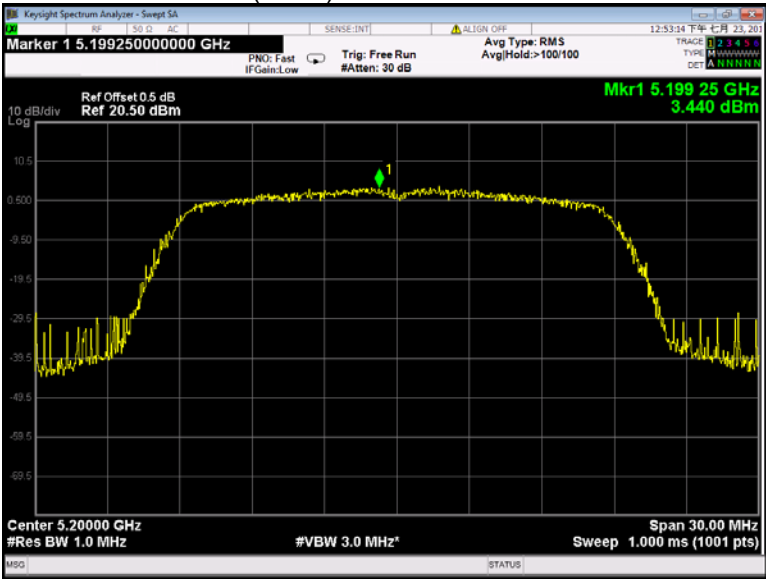
802.11a U-NII-1 Middle channel



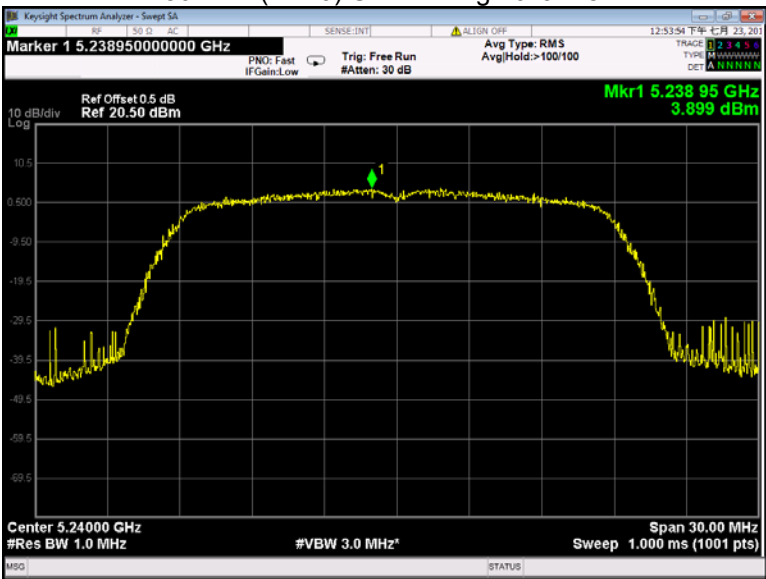




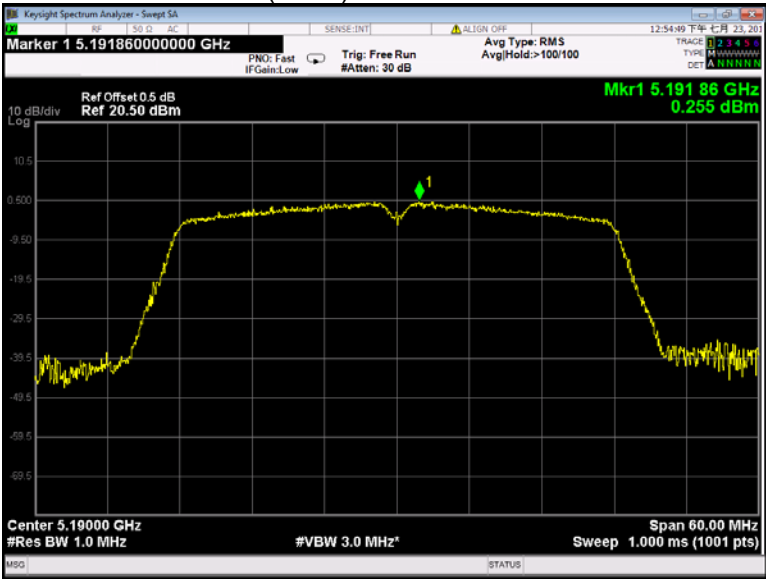
802.11n(HT20) U-NII-1 Middle channel



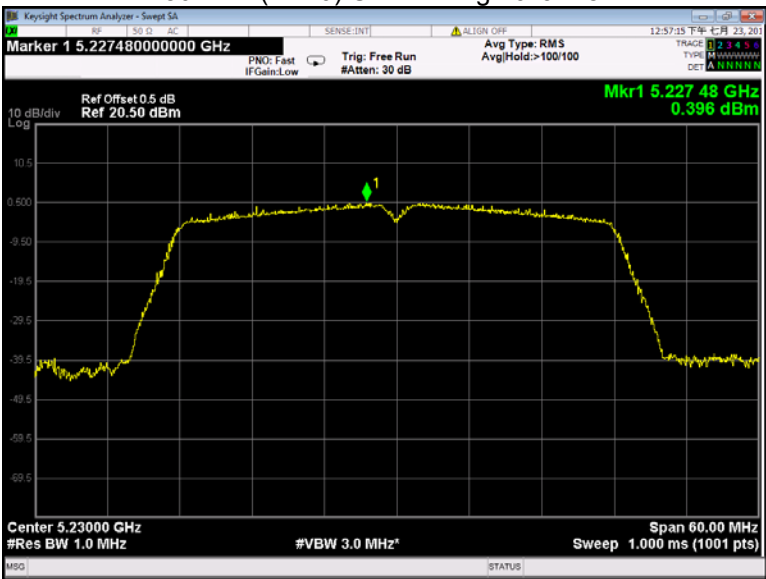
802.11n(HT20) U-NII-1 High channel



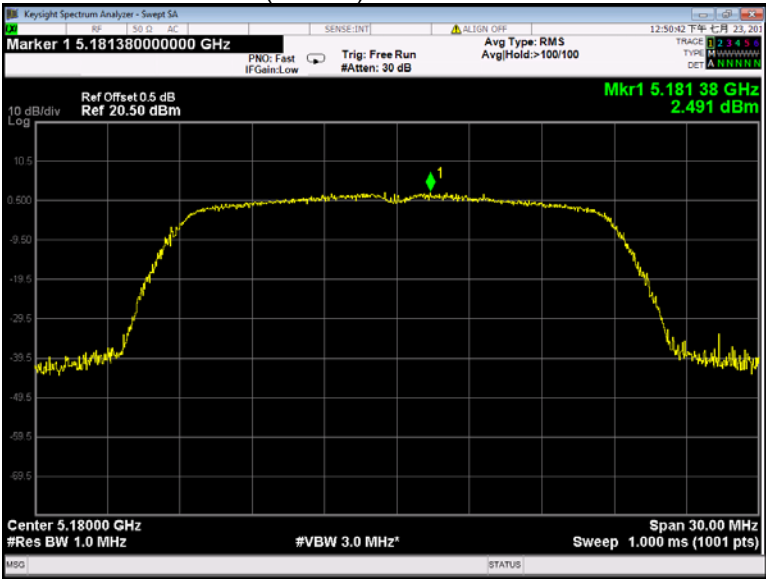
802.11n(HT40) U-NII-1 Low channel



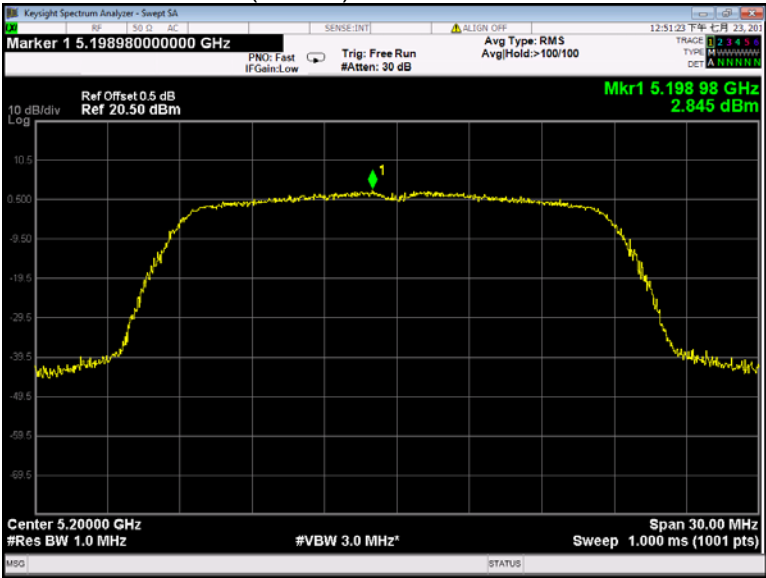
802.11n(HT40) U-NII-1 High channel



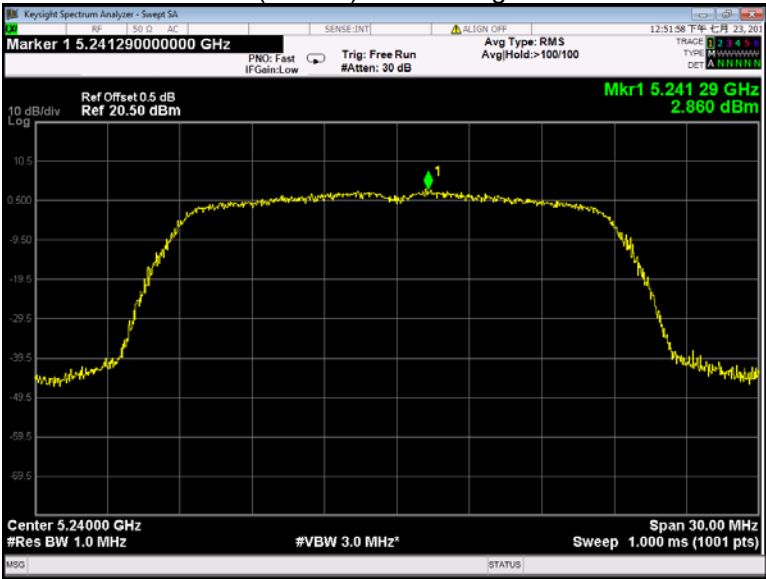
802.11ac(VHT20) U-NII-1 Low channel



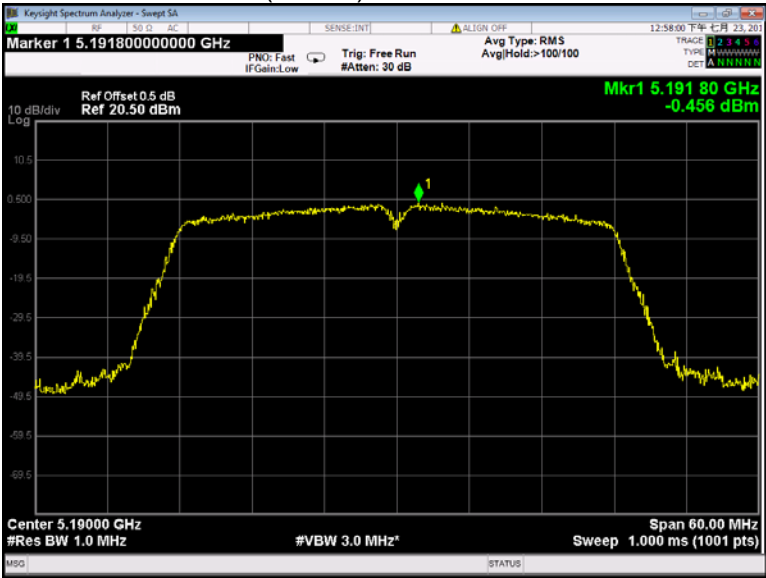
802.11ac(VHT20) U-NII-1 Middle channel



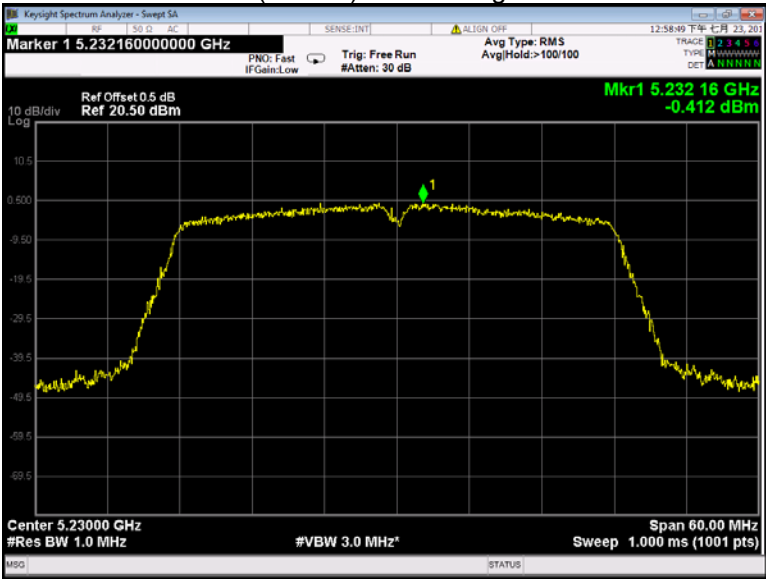
802.11ac(VHT20) U-NII-1 High channel



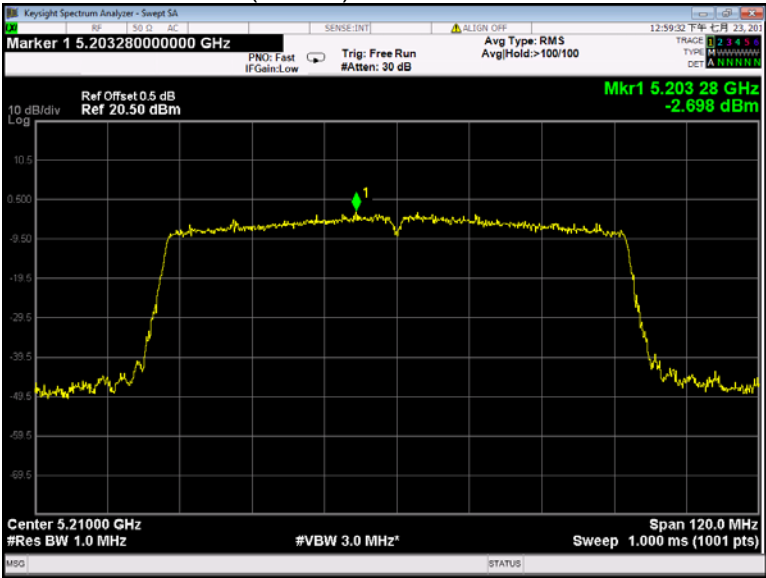
802.11ac(VHT40) U-NII-1 Low channel



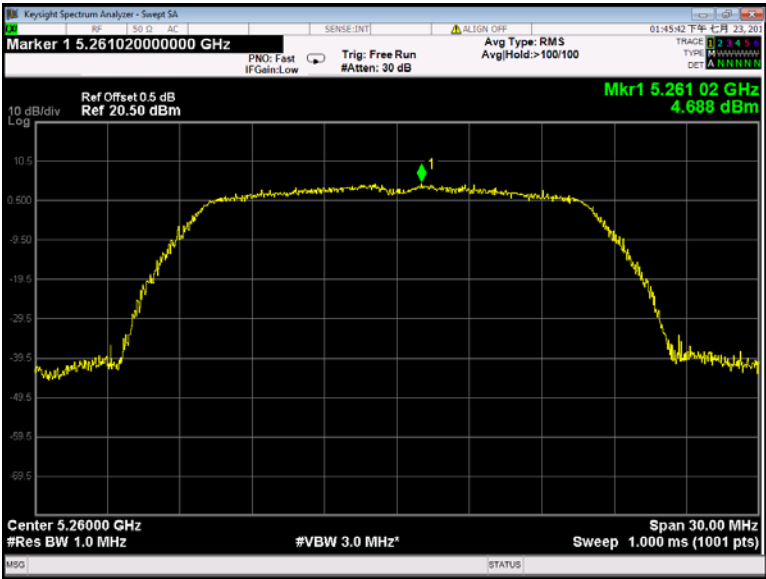
802.11ac(VHT40) U-NII-1 High channel



802.11ac(VHT80) U-NII-1 Middle channel



802.11a U-NII-2A Low channel



802.11a U-NII-2A Middle channel

