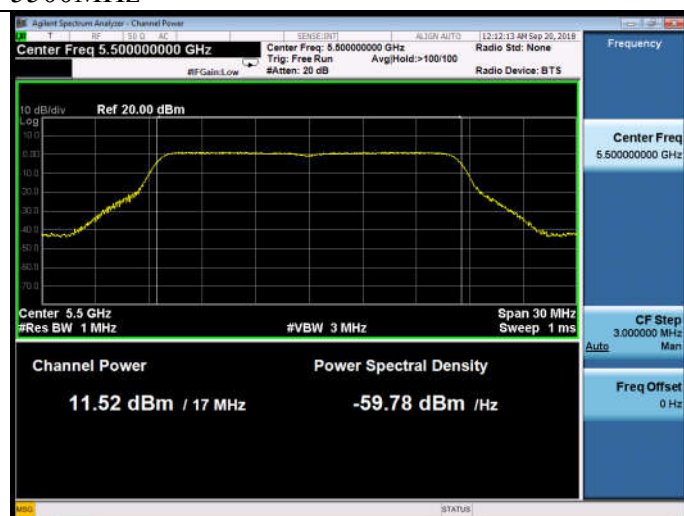


### 5500-5700MHz Band:

#### ANT 1

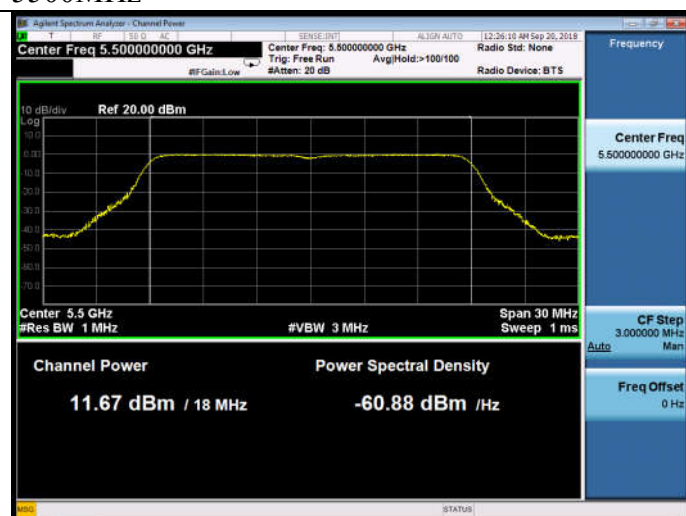
#### 11a

#### 5500MHz

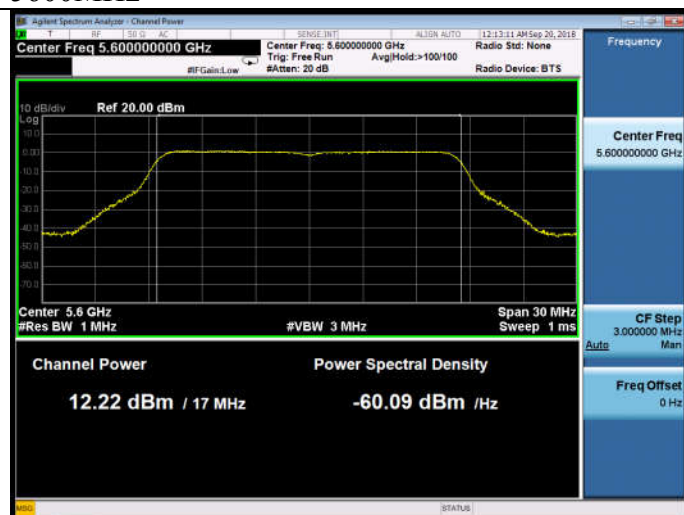


#### 11n HT20

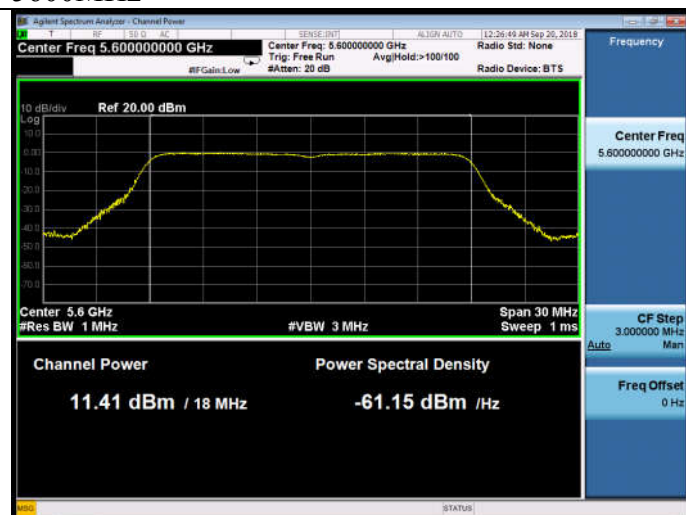
#### 5500MHz



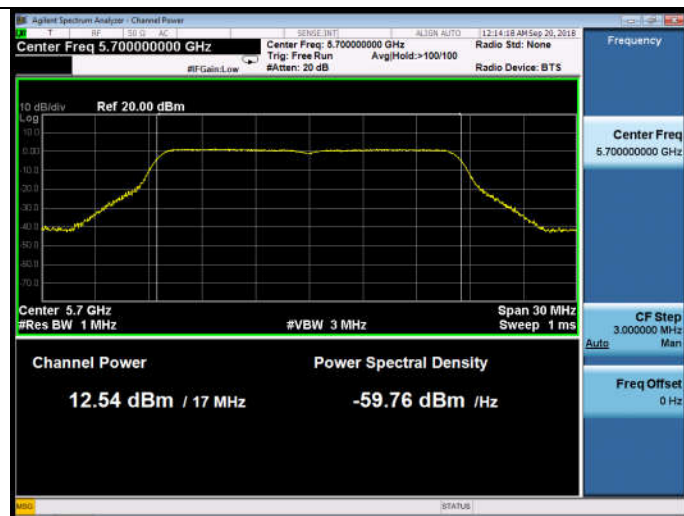
#### 5600MHz



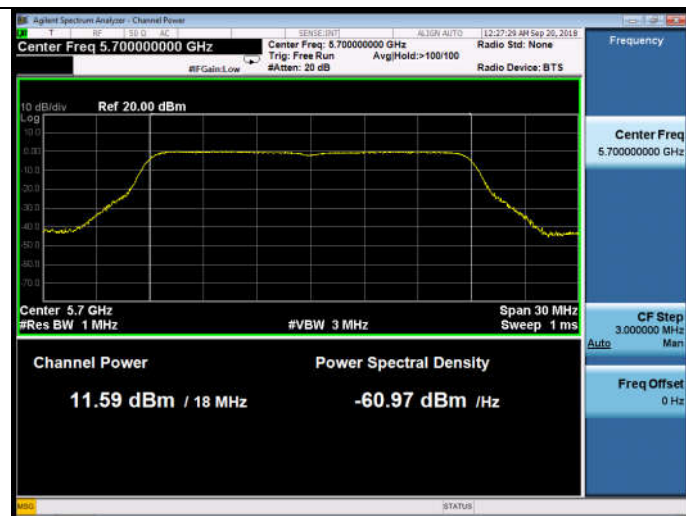
#### 5600MHz



#### 5700MHz

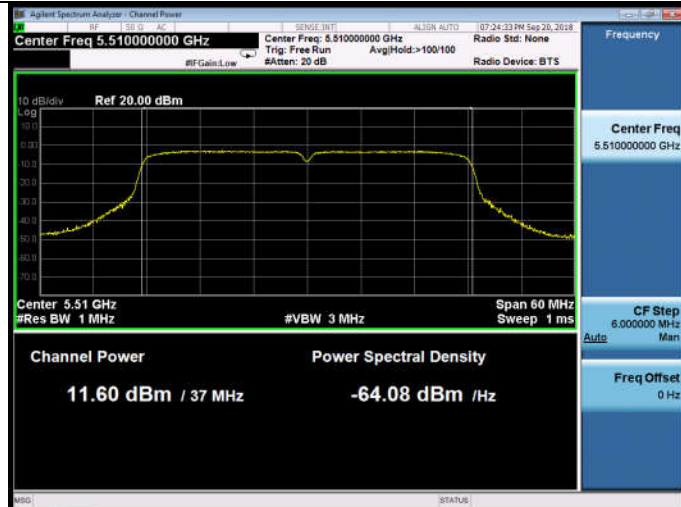


#### 5700MHz



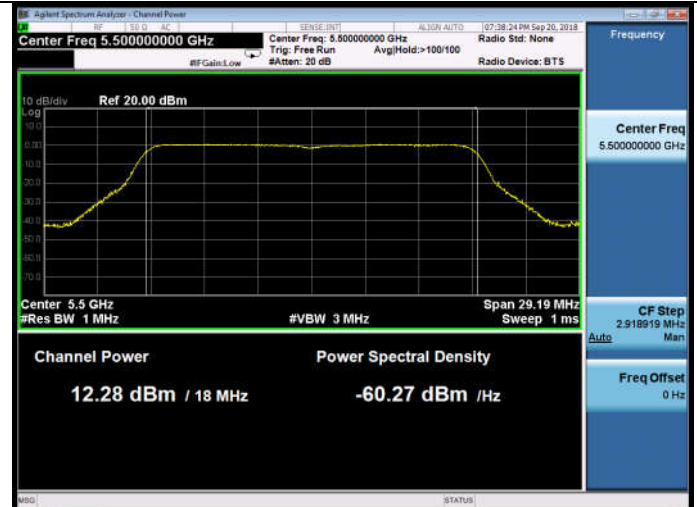
### 11n HT40

5510MHz

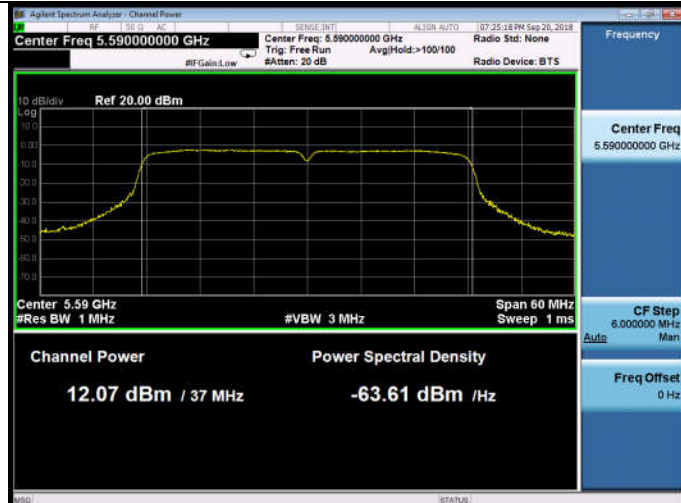


### 11ac VHT20

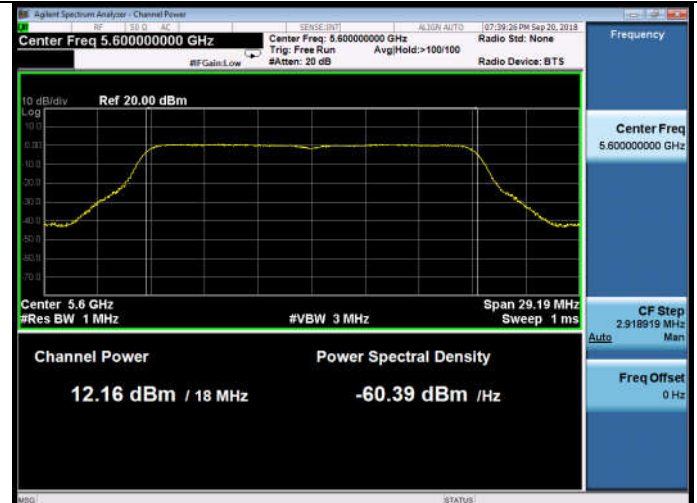
5500MHz



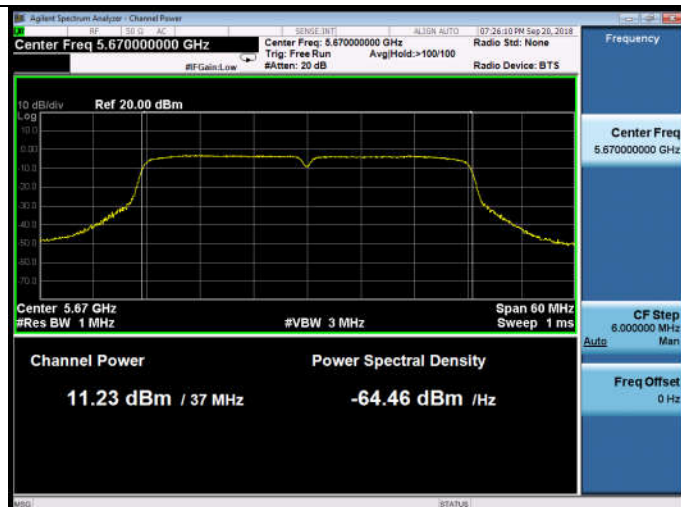
5590MHz



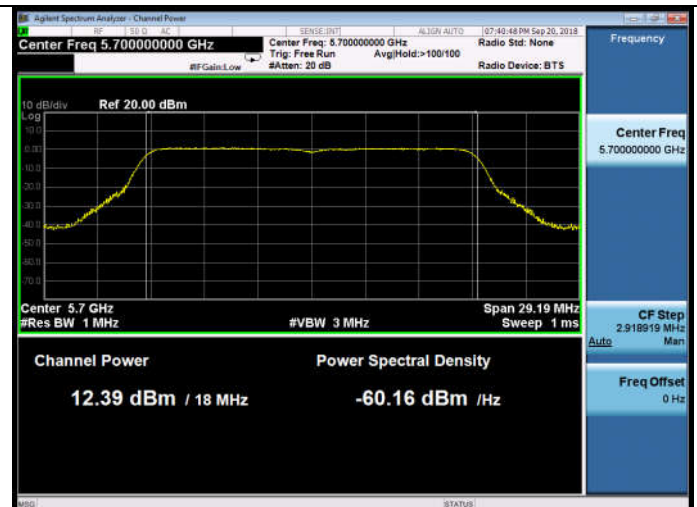
5600MHz



5670MHz



5700MHz



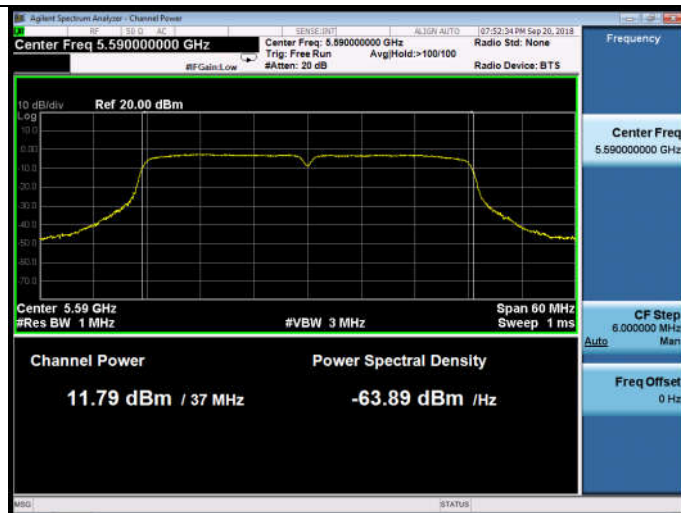
### 11ac VHT40 5510MHz



### 11ac VHT80 5530MHz



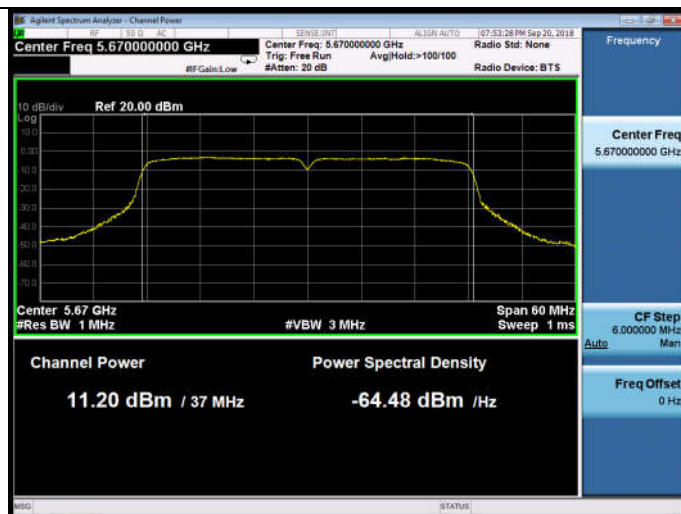
### 5590MHz



### 5610MHz



### 5670MHz

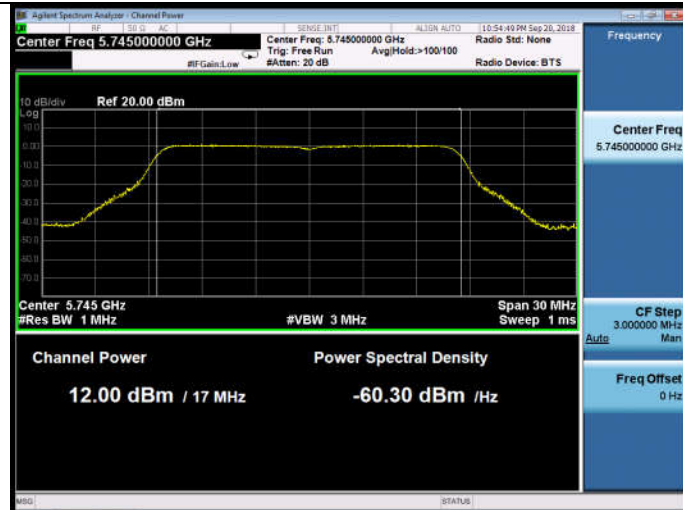


### 5745-5825MHz Band:

#### ANT 0

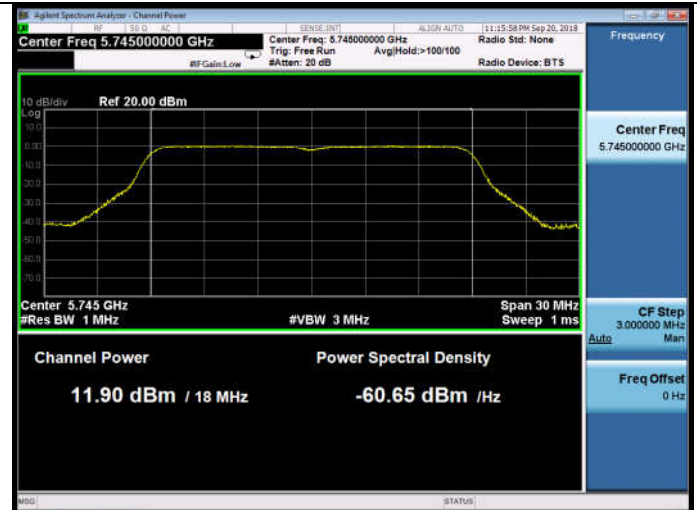
#### 11a

#### 5745MHz

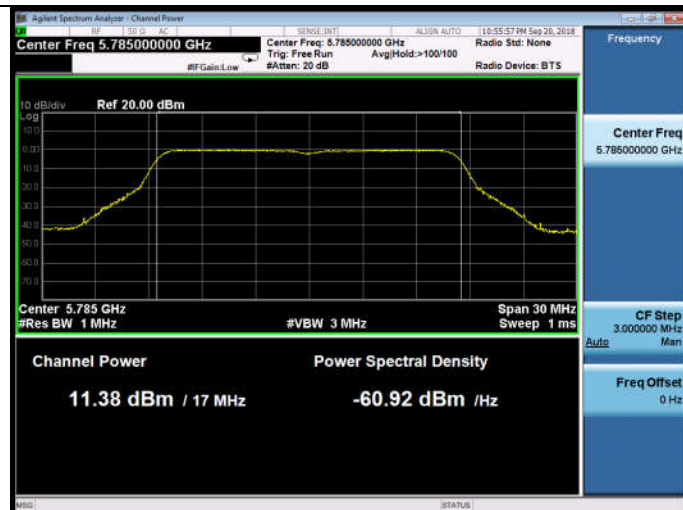


#### 11n HT20

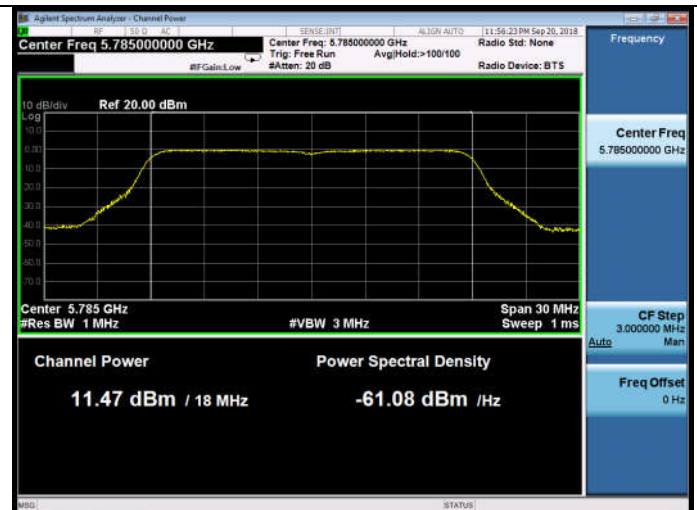
#### 5745MHz



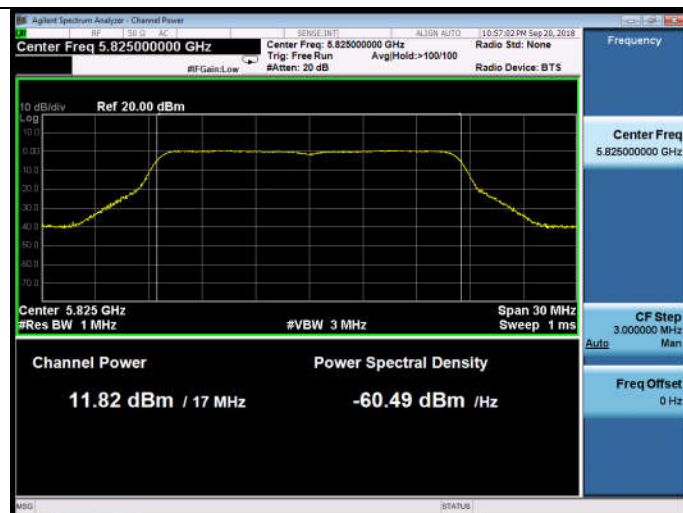
#### 5785MHz



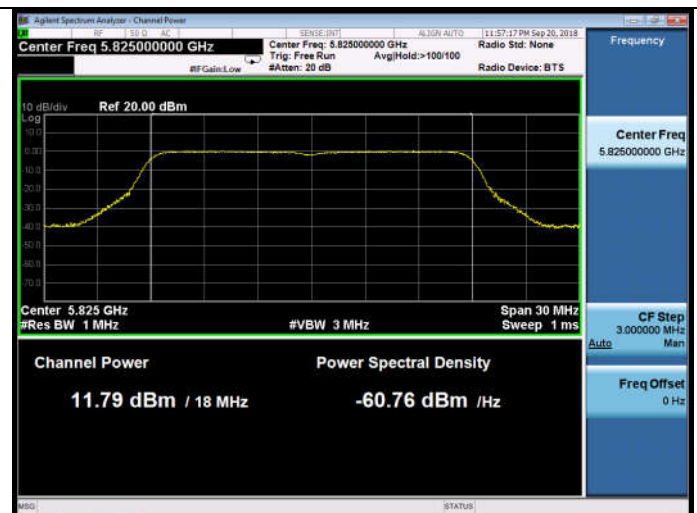
#### 5785MHz



#### 5825MHz

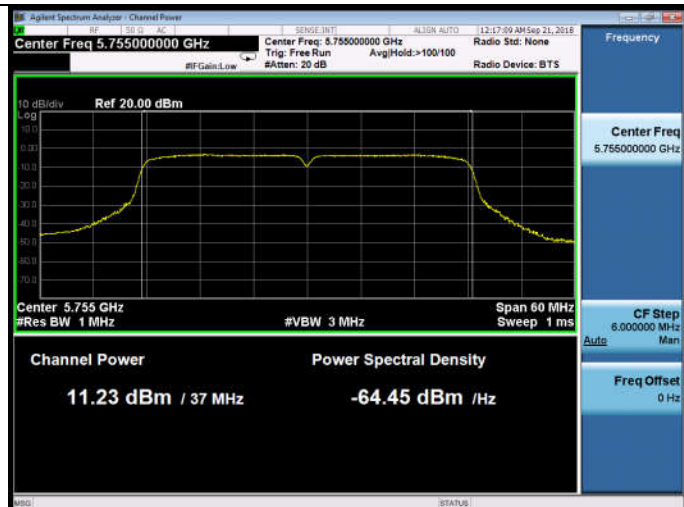


#### 5825MHz

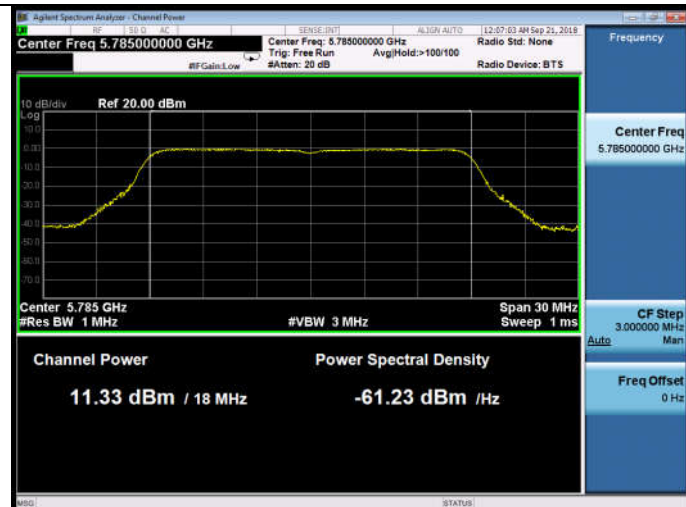


### 11n HT40

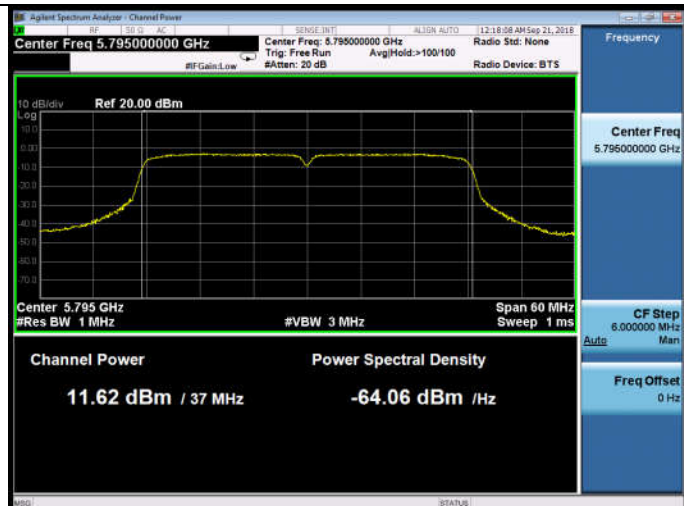
5755MHz



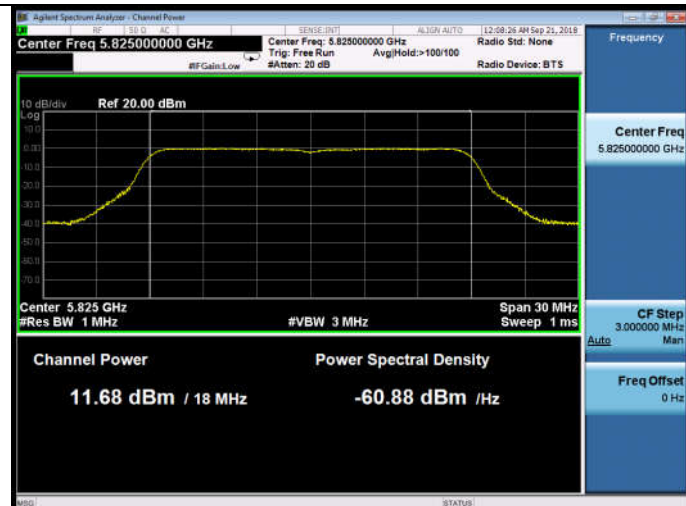
5785MHz



5795MHz

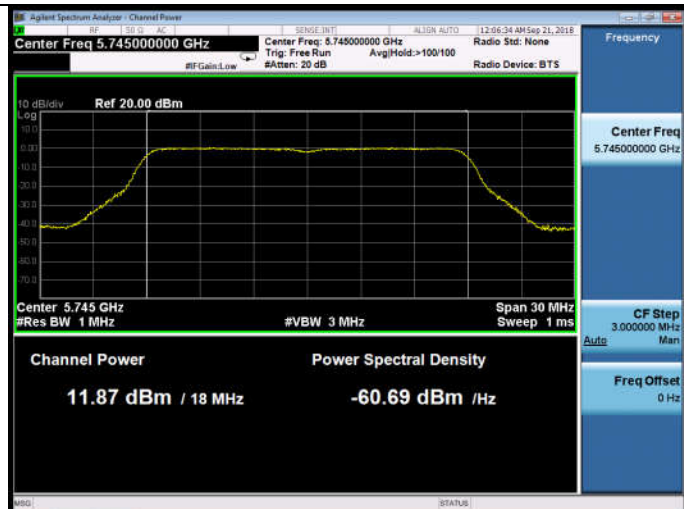


5825MHz



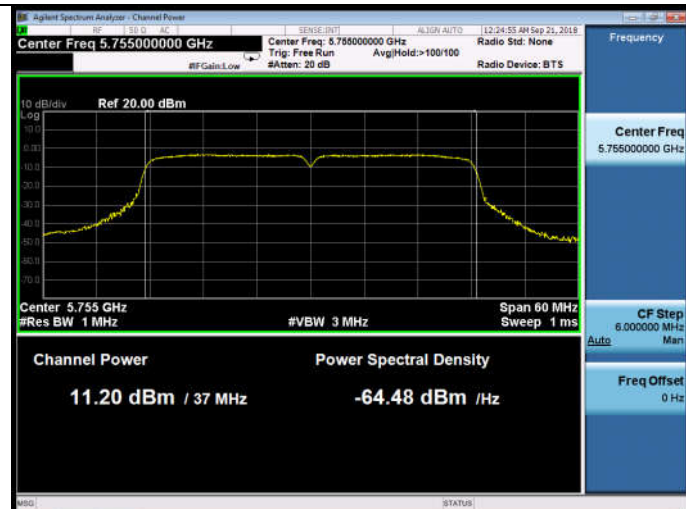
### 11ac VHT20

5745MHz



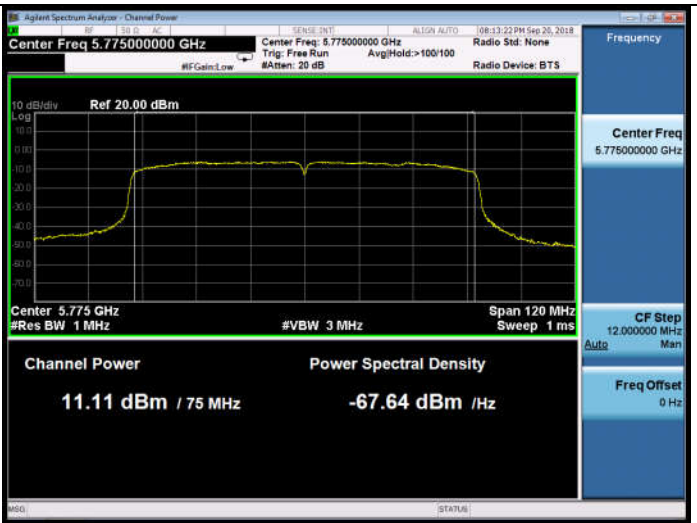
### 11ac VHT40

5755MHz



**11ac VHT80**  
**5775MHz**

5795MHz

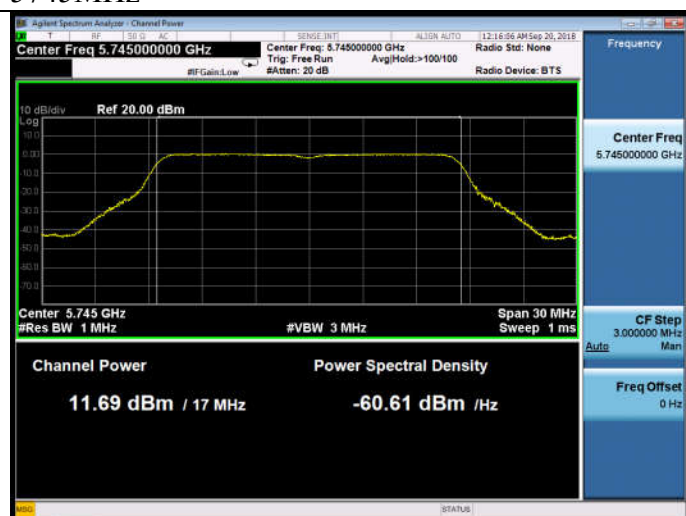


### 5745-5825MHz Band:

#### ANT 1

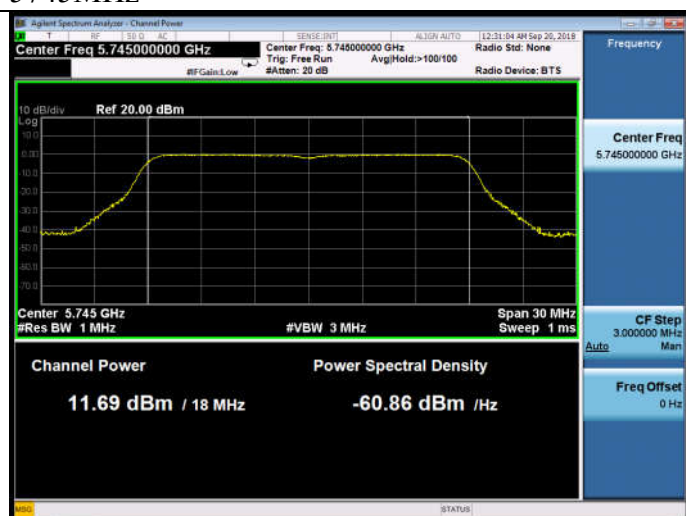
#### 11a

#### 5745MHz

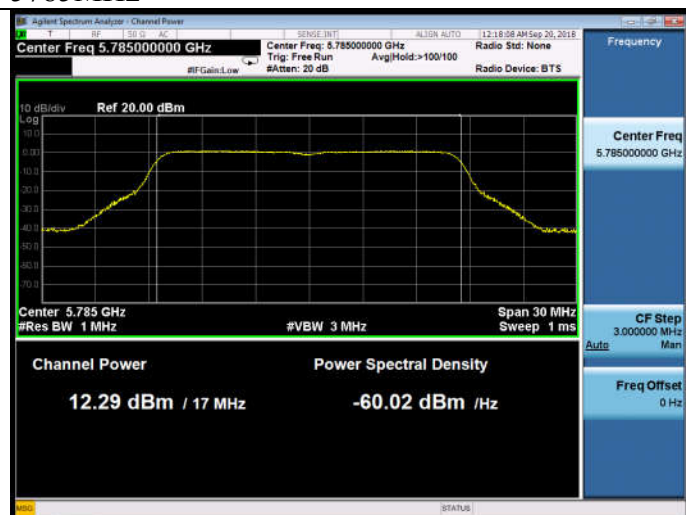


#### 11n HT20

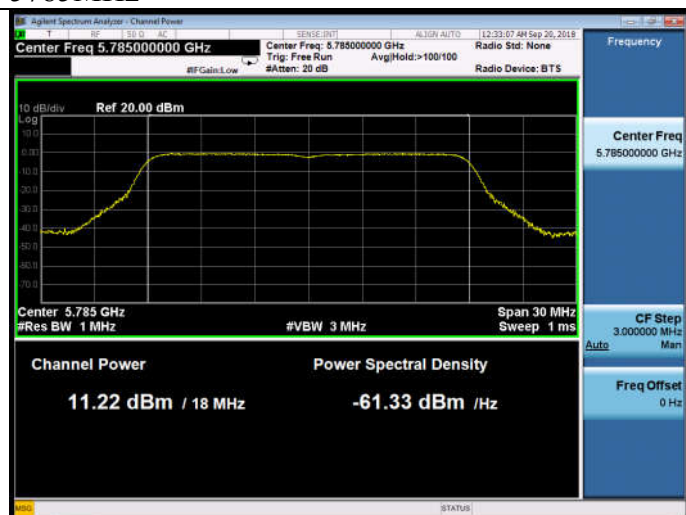
#### 5745MHz



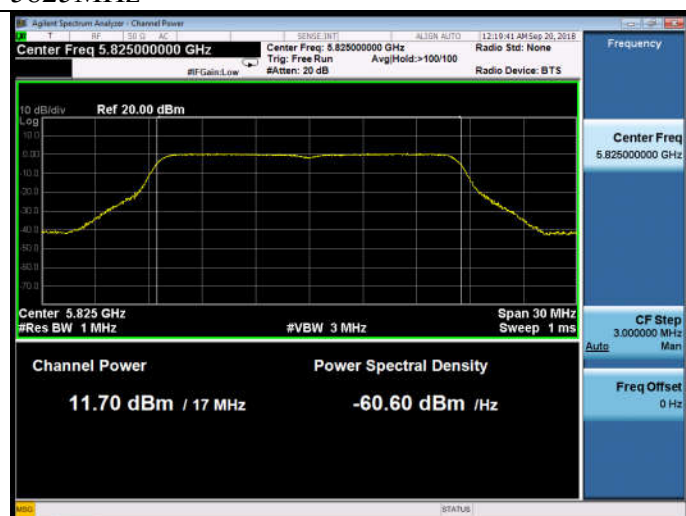
#### 5785MHz



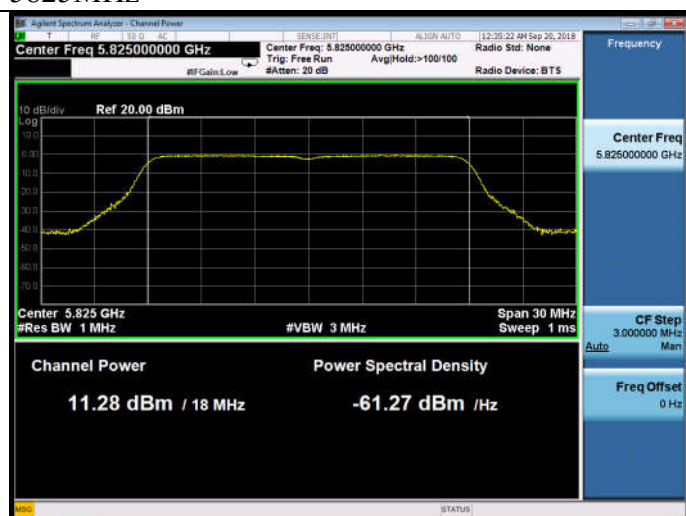
#### 5785MHz



#### 5825MHz

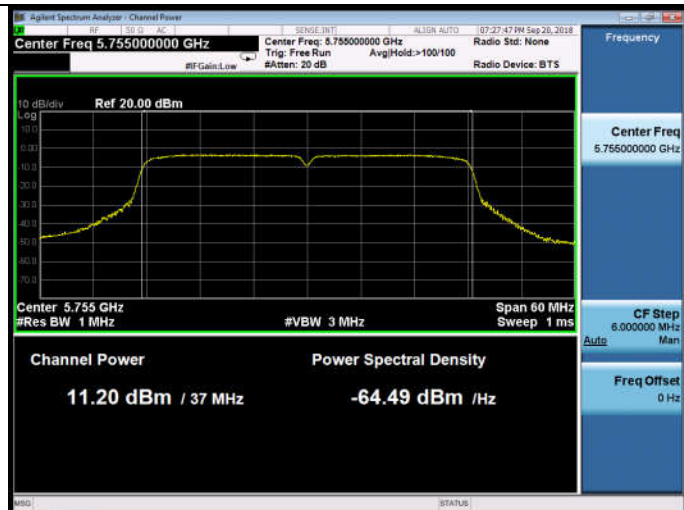


#### 5825MHz

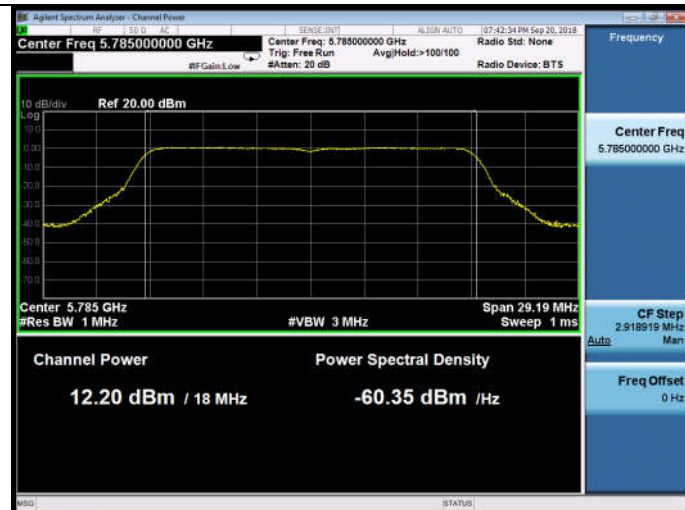


### 11n HT40

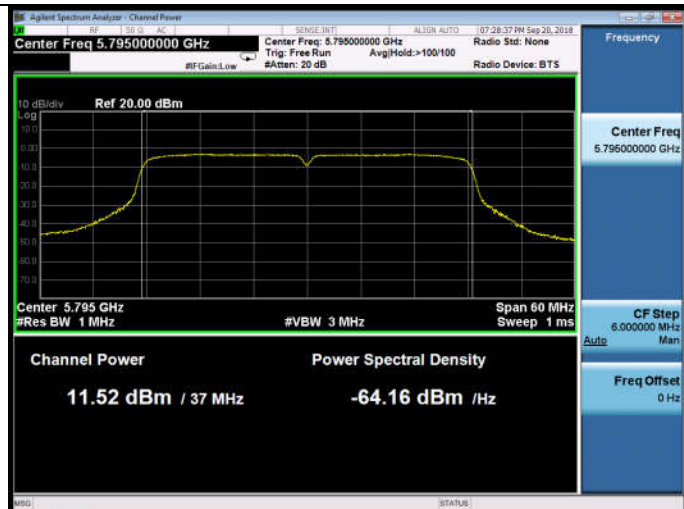
5755MHz



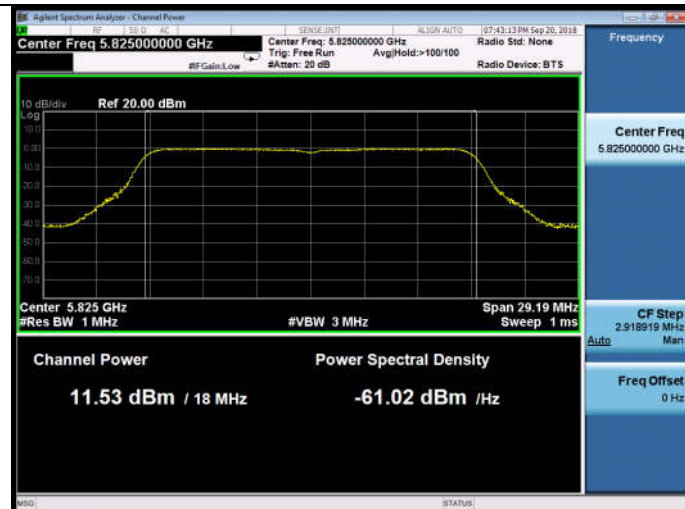
5785MHz



5795MHz

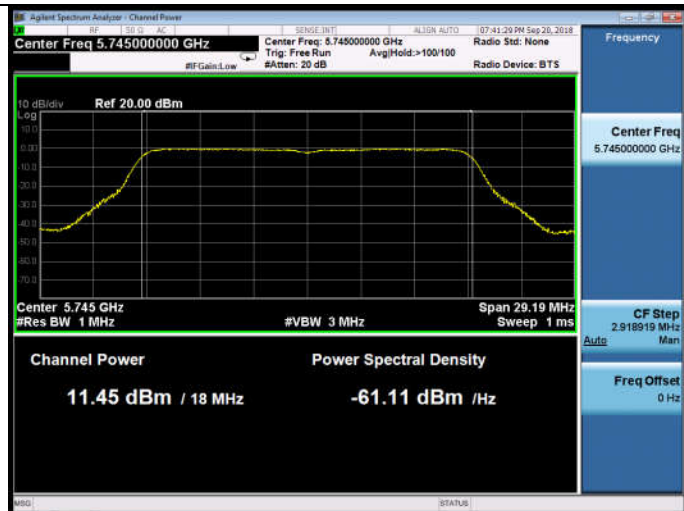


5825MHz



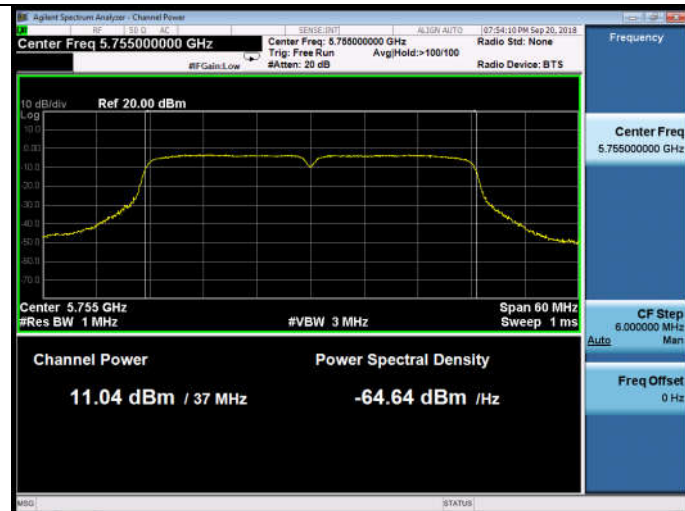
### 11ac VHT20

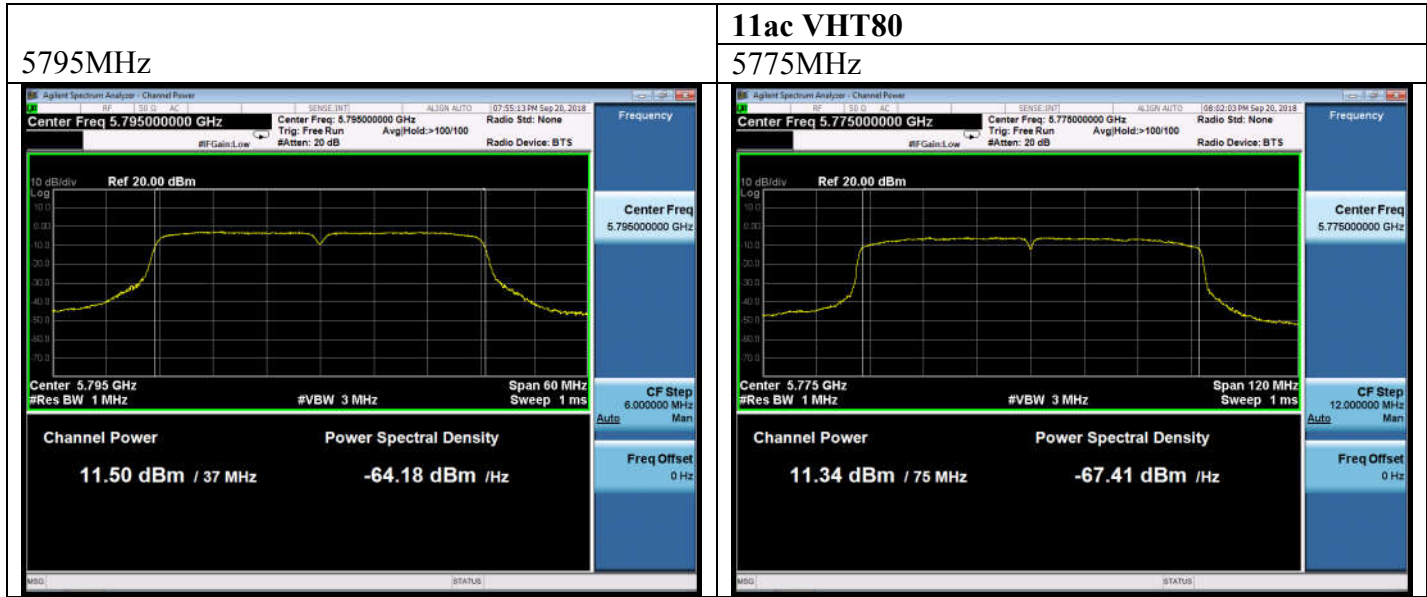
5745MHz



### 11ac VHT40

5755MHz





## 8. SPECTRAL DENSITY TEST

### 8.1. Test Equipment

| Item | Equipment           | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|---------------------|--------------|-----------|------------|-----------|---------------|
| 1.   | PXA Signal Analyzer | Agilent      | N9030A    | MY51380221 | Sep.08,18 | 1 Year        |
| 2.   | Attenuator (20dB)   | Agilent      | 8491B     | MY39262165 | Oct.14,17 | 1 Year        |
| 3.   | RF Cable            | Hubersuhner  | RF Cable  | No.5       | Oct.15,17 | 1 Year        |

### 8.2. Limit

**Band 5150-5250 MHz:**

The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

**Band 5250-5350 MHz:**

The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

**Band 5470-5725 MHz:**

The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

**Band 5725-5850 MHz:**

The power spectral density shall not exceed 30 dBm in any 500 KHz band.

### 8.3. Test Procedure

For the Band 5.15-5.35GHz; 5.47-5.725 GHz:

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW; Detector: RMS mode.

For the band 5.725-5.85 GHz:

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW, RMS Detector.

So use the test method described in KDB789033 clause E

- 1) Set the RBW=100kHz and VBW =3MHz
- 2) Number of points in sweep  $\geq 2 \text{ Span} / \text{RBW}$ . (This ensures that bin-to-bin spacing is  $\leq \text{RBW}/2$  so that narrowband signals are not lost between frequency bins.)
- 3) Sweep time = auto
- 4) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- 5) Use the "peak search" function of spectrum analyzer find the max value, then add  $10\log(500\text{kHz}/\text{RBW})$  to the measured result.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

## 8.4.Test Results

### 5180-5240MHz Band:

|                          |                         |                         |
|--------------------------|-------------------------|-------------------------|
| EUT: POS Terminal        |                         |                         |
| M/N: SPD1-01             |                         |                         |
| Test date: 2018-09-20~21 | Pressure: 102.5±1.0 kpa | Humidity: 53.1±3.0%     |
| Tested by: Lynn          | Test site: RF site      | Temperature:22.6±0.6 °C |

| Test Mode        | Frequency ( MHz ) | Power density ( dBm/MHz ) |        | Limit (dBm/MHz) |      |
|------------------|-------------------|---------------------------|--------|-----------------|------|
|                  |                   | ANT0                      | ANT1   | ANT0            | ANT1 |
| 11a              | 5180              | 0.594                     | 0.696  | 11              | 11   |
|                  | 5200              | 1.003                     | 1.302  | 11              | 11   |
|                  | 5240              | 0.233                     | 0.590  | 11              | 11   |
| 11n HT20         | 5180              | 0.138                     | -0.002 | 11              | 11   |
|                  | 5200              | 0.851                     | 0.472  | 11              | 11   |
|                  | 5240              | 0.169                     | -0.287 | 11              | 11   |
| 11n HT40         | 5190              | -2.410                    | -2.981 | 11              | 11   |
|                  | 5230              | -2.340                    | -2.844 | 11              | 11   |
| 11ac VHT20       | 5180              | -0.037                    | 0.275  | 11              | 11   |
|                  | 5200              | 0.596                     | 1.012  | 11              | 11   |
|                  | 5240              | 0.200                     | 0.276  | 11              | 11   |
| 11ac VHT40       | 5190              | -2.679                    | -2.600 | 11              | 11   |
|                  | 5230              | -1.764                    | -2.329 | 11              | 11   |
| 11ac VHT80       | 5210              | -6.007                    | -5.786 | 11              | 11   |
| Conclusion: PASS |                   |                           |        |                 |      |

Note: For ANT0:

Antenna Gain= 3.07dBi<6dBi.

For ANT1:

Antenna Gain=5.05dBi<6dBi.

**5260-5320MHz Band:**

|                          |                         |                          |
|--------------------------|-------------------------|--------------------------|
| EUT: POS Terminal        |                         |                          |
| M/N: SPD1-01             |                         |                          |
| Test date: 2018-09-20~21 | Pressure: 102.3±1.0 kpa | Humidity: 51.6±3.0%      |
| Tested by: Lynn          | Test site: RF site      | Temperature: 22.5±0.6 °C |

| Test Mode        | Frequency (MHz) | Power density (dBm/MHz) |        | Limit (dBm/MHz) |      |
|------------------|-----------------|-------------------------|--------|-----------------|------|
|                  |                 | ANT0                    | ANT1   | ANT0            | ANT1 |
| 11a              | 5260            | 0.467                   | 0.931  | 11              | 11   |
|                  | 5300            | 1.058                   | 1.465  | 11              | 11   |
|                  | 5320            | 1.572                   | 1.192  | 11              | 11   |
| 11n HT20         | 5260            | 0.383                   | -0.147 | 11              | 11   |
|                  | 5300            | -0.036                  | 0.145  | 11              | 11   |
|                  | 5320            | 0.140                   | 0.594  | 11              | 11   |
| 11n HT40         | 5270            | -2.979                  | -2.294 | 11              | 11   |
|                  | 5310            | -2.424                  | -2.165 | 11              | 11   |
| 11ac VHT20       | 5260            | 0.248                   | 0.446  | 11              | 11   |
|                  | 5300            | 0.945                   | 0.907  | 11              | 11   |
|                  | 5320            | 0.933                   | 1.066  | 11              | 11   |
| 11ac VHT40       | 5270            | -2.584                  | -2.834 | 11              | 11   |
|                  | 5310            | -2.410                  | -2.752 | 11              | 11   |
| 11ac VHT80       | 5290            | -5.379                  | -5.551 | 11              | 11   |
| Conclusion: PASS |                 |                         |        |                 |      |

Note: For ANT0:

Antenna Gain= 3.07dBi<6dBi.

For ANT1:

Antenna Gain=5.05dBi<6dBi.

**5500-5700MHz Band:**

|                          |                         |                          |
|--------------------------|-------------------------|--------------------------|
| EUT: POS Terminal        |                         |                          |
| M/N: SPD1-01             |                         |                          |
| Test date: 2018-09-20~21 | Pressure: 102.8±1.0 kpa | Humidity: 51.8±3.0%      |
| Tested by: Lynn          | Test site: RF site      | Temperature: 23.2±0.6 °C |

| Test Mode        | Frequency (MHz) | Power density (dBm/MHz) |        | Limit (dBm/MHz) |       |
|------------------|-----------------|-------------------------|--------|-----------------|-------|
|                  |                 | ANT0                    | ANT1   | ANT0            | ANT1  |
| 11a              | 5500            | 1.689                   | 1.675  | 11              | 10.82 |
|                  | 5600            | 1.602                   | 1.069  | 11              | 10.82 |
|                  | 5700            | 0.880                   | 1.476  | 11              | 10.82 |
| 11n HT20         | 5500            | 0.577                   | 0.429  | 11              | 10.82 |
|                  | 5600            | 0.353                   | 0.154  | 11              | 10.82 |
|                  | 5700            | 0.534                   | 0.166  | 11              | 10.82 |
| 11n HT40         | 5510            | -2.879                  | -2.722 | 11              | 10.82 |
|                  | 5590            | -2.821                  | -1.389 | 11              | 10.82 |
|                  | 5670            | -3.047                  | -2.962 | 11              | 10.82 |
| 11ac VHT20       | 5500            | 0.459                   | 0.890  | 11              | 10.82 |
|                  | 5600            | 0.238                   | 0.914  | 11              | 10.82 |
|                  | 5700            | 0.725                   | 1.082  | 11              | 10.82 |
| 11ac VHT40       | 5510            | -2.968                  | -1.964 | 11              | 10.82 |
|                  | 5590            | -2.695                  | -2.398 | 11              | 10.82 |
|                  | 5670            | -3.299                  | -2.904 | 11              | 10.82 |
| 11ac VHT80       | 5530            | -5.157                  | -5.947 | 11              | 10.82 |
|                  | 5610            | -4.726                  | -5.270 | 11              | 10.82 |
| Conclusion: PASS |                 |                         |        |                 |       |

Note: For ANT0:

Antenna Gain= 3.38dBi<6dBi.

For ANT1:

Antenna Gain= 6.18dBi>6dBi.

**5745-5825MHz Band:**

|                          |                         |                          |
|--------------------------|-------------------------|--------------------------|
| EUT: POS Terminal        |                         |                          |
| M/N: SPD1-01             |                         |                          |
| Test date: 2018-09-20~21 | Pressure: 102.7±1.0 kpa | Humidity: 54.1±3.0%      |
| Tested by: Lynn          | Test site: RF site      | Temperature: 23.4±0.6 °C |

| Test Mode        | Frequency (MHz) | Power density (dBm/500KHz) |        | Limit (dBm/500KHz) |       |
|------------------|-----------------|----------------------------|--------|--------------------|-------|
|                  |                 | ANT0                       | ANT1   | ANT0               | ANT1  |
| 11a              | 5745            | -0.860                     | -1.503 | 30                 | 29.42 |
|                  | 5785            | -1.708                     | -0.798 | 30                 | 29.42 |
|                  | 5825            | -1.228                     | -1.471 | 30                 | 29.42 |
| 11n HT20         | 5745            | -1.322                     | -1.191 | 30                 | 29.42 |
|                  | 5785            | -1.690                     | -2.096 | 30                 | 29.42 |
|                  | 5825            | -0.922                     | -1.732 | 30                 | 29.42 |
| 11n HT40         | 5755            | -4.599                     | -4.652 | 30                 | 29.42 |
|                  | 5795            | -4.415                     | -4.352 | 30                 | 29.42 |
| 11ac VHT20       | 5745            | -0.971                     | -1.241 | 30                 | 29.42 |
|                  | 5785            | -1.522                     | -0.902 | 30                 | 29.42 |
|                  | 5825            | -1.466                     | -1.376 | 30                 | 29.42 |
| 11ac VHT40       | 5755            | -4.544                     | -4.486 | 30                 | 29.42 |
|                  | 5795            | -4.347                     | -4.528 | 30                 | 29.42 |
| 11ac VHT80       | 5775            | -7.622                     | -7.443 | 30                 | 29.42 |
| Conclusion: PASS |                 |                            |        |                    |       |

Note: 1. For ANT0:

Antenna Gain= 2.96dBi<6dBi.

For ANT1:

Antenna Gain= 6.58dBi>6dBi.

2. The total result = Reading + 10log(500kHz/100kHz)

5180-5240MHz Band:

ANT 0

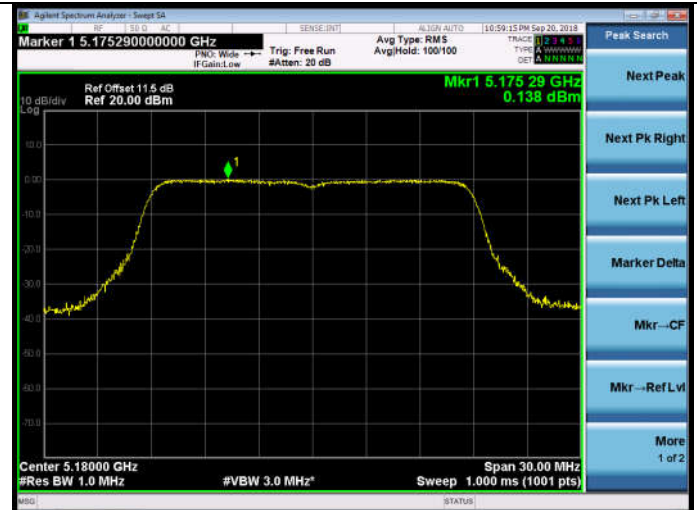
11a

5180MHz



11n HT20

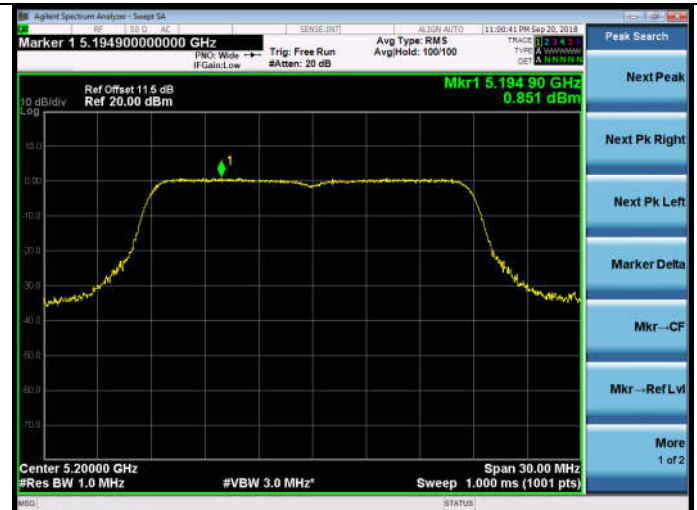
5180MHz



5200MHz



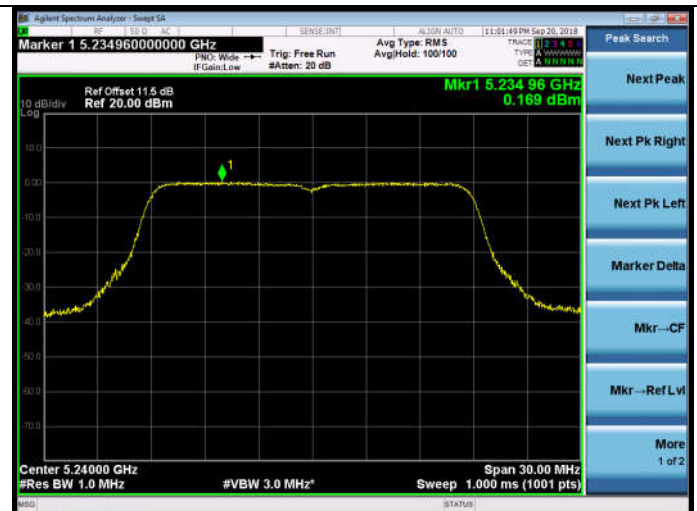
5200MHz



5240MHz



5240MHz

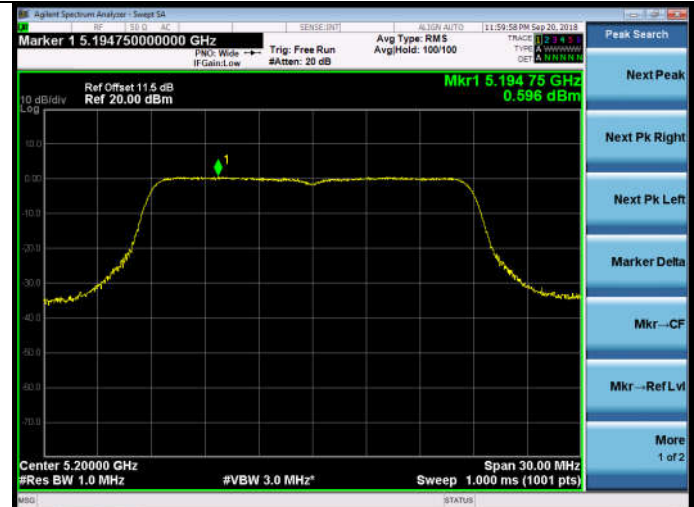


### 11n HT40

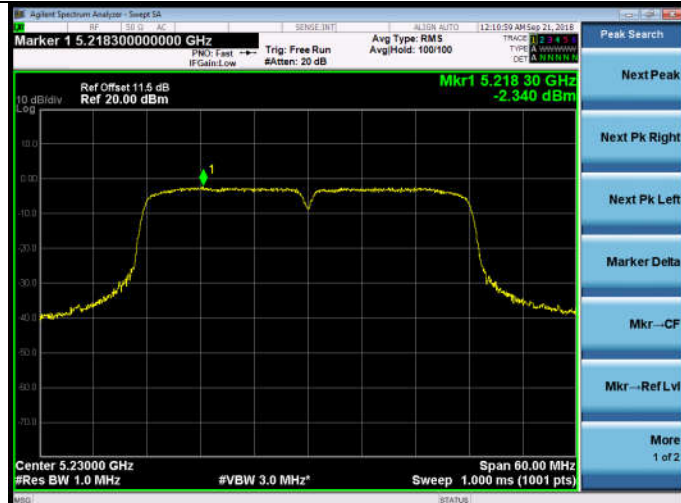
5190MHz



5200MHz



5230MHz



5240MHz



### 11ac VHT20

5180MHz

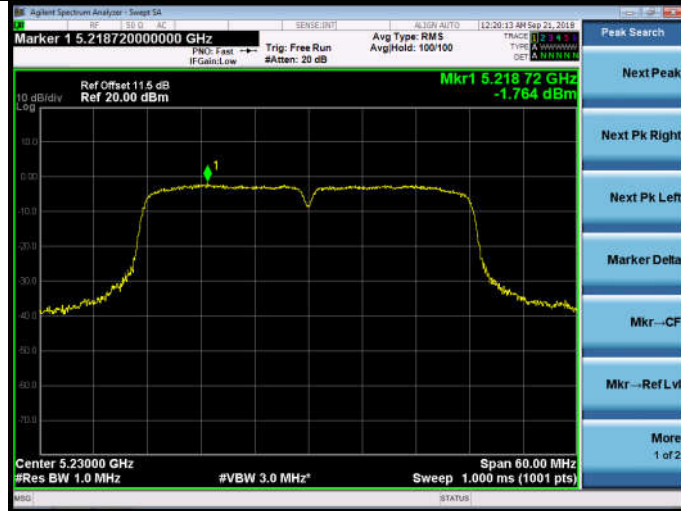


### 11ac VHT40

5190MHz

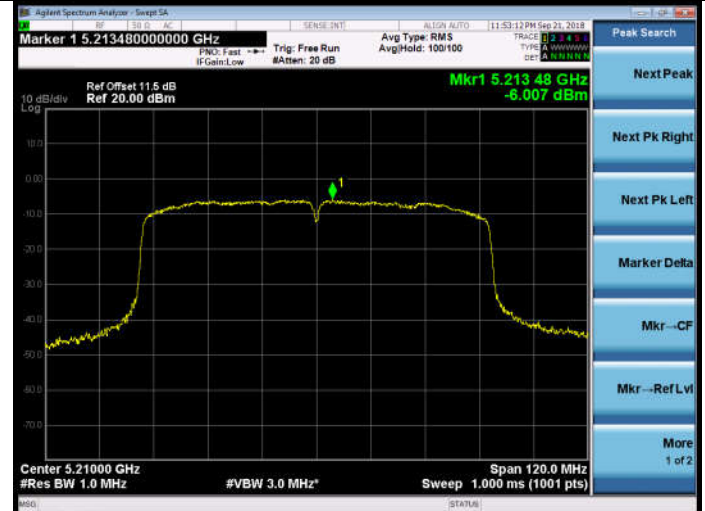


5230MHz



11ac VHT80

5210MHz

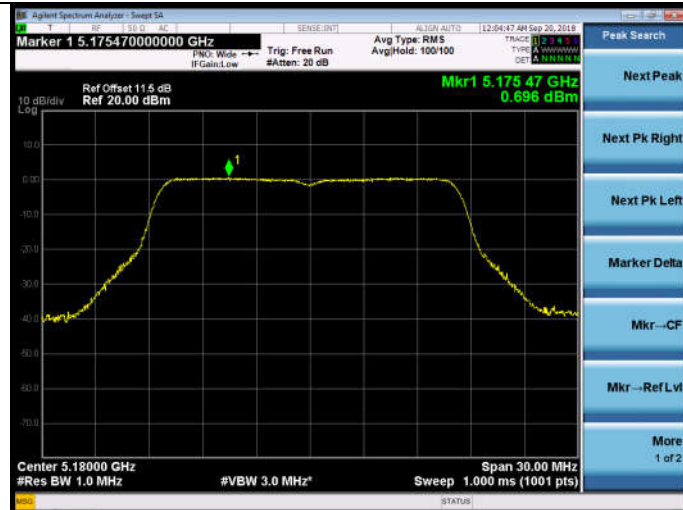


5180-5240MHz Band:

ANT 1

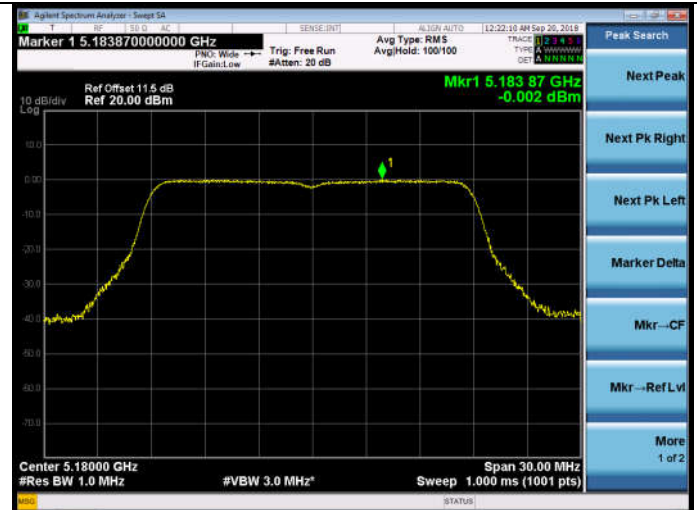
11a

5180MHz

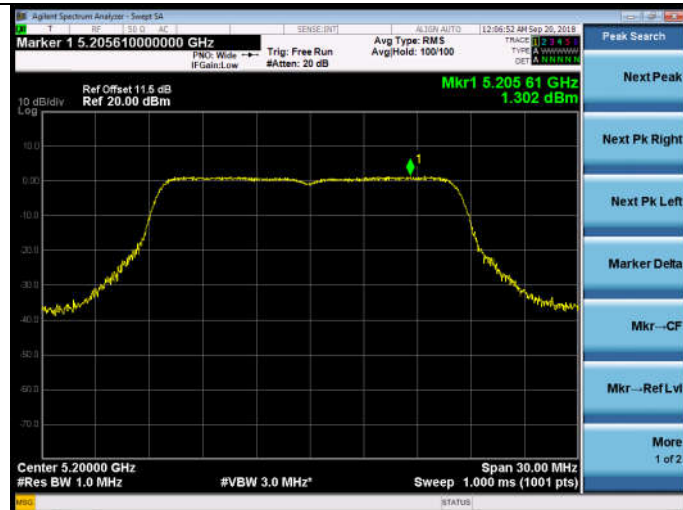


11n HT20

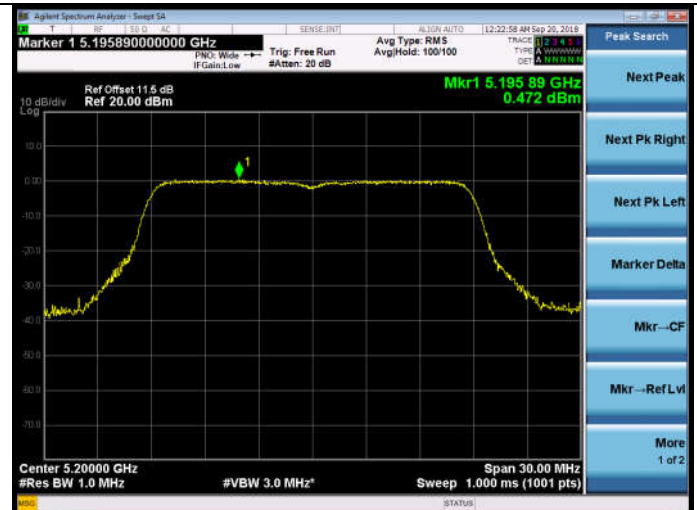
5180MHz



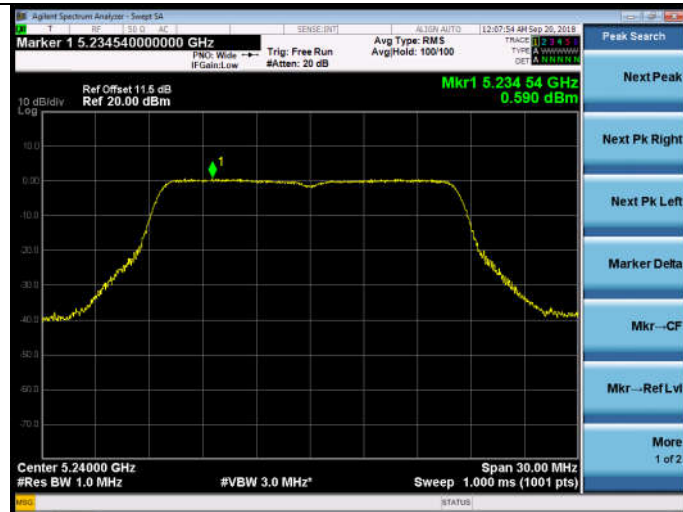
5200MHz



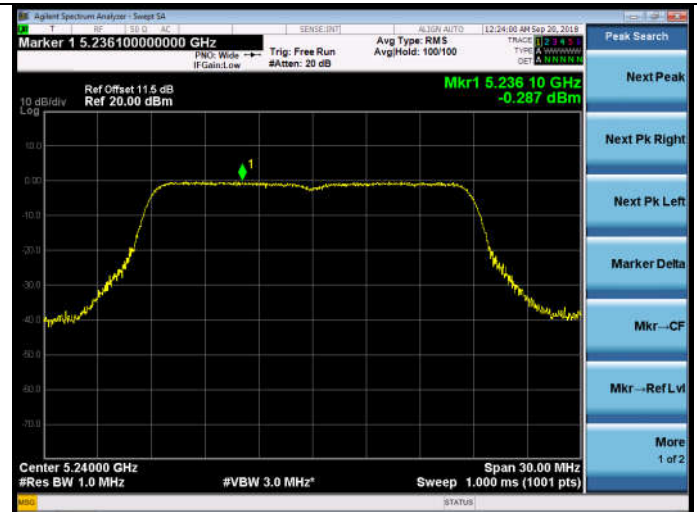
5200MHz



5240MHz

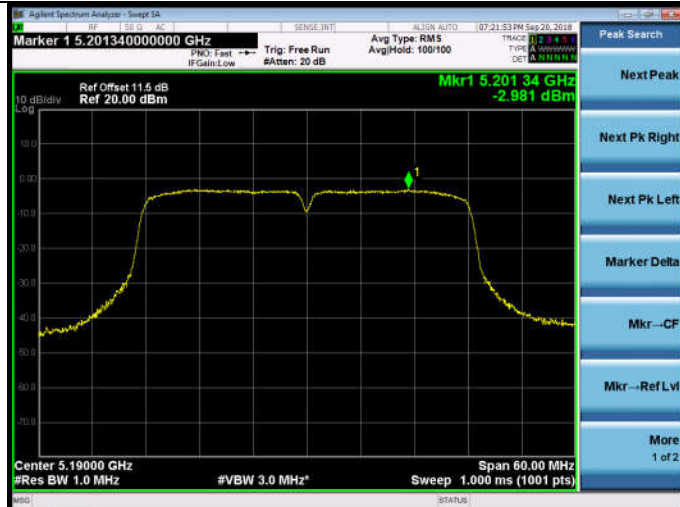


5240MHz

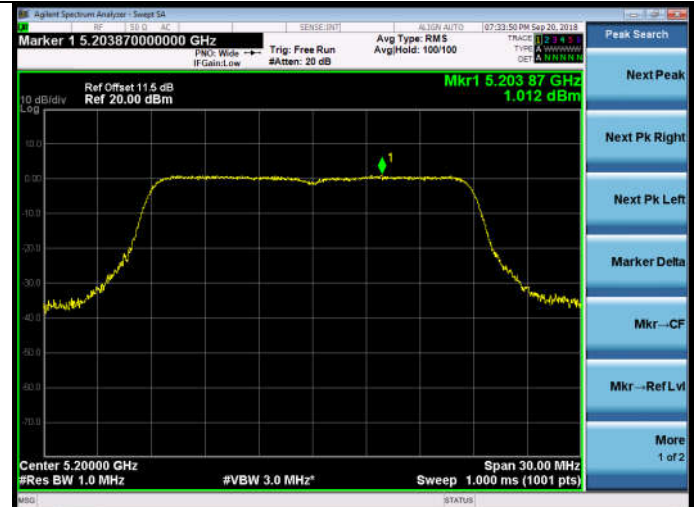


# 11n HT40

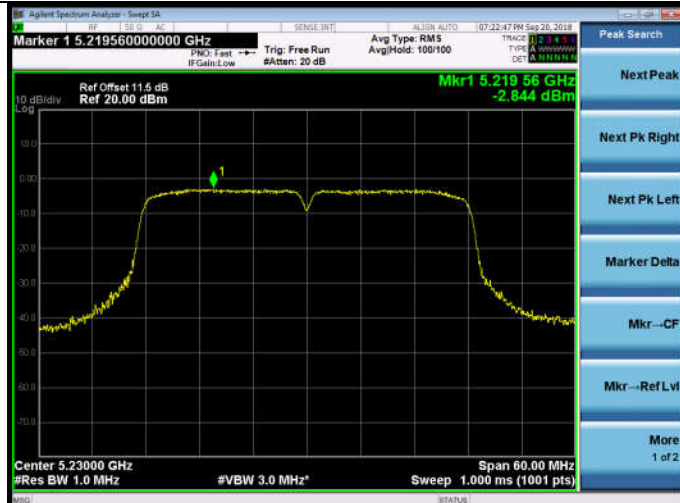
5190MHz



5200MHz



5230MHz

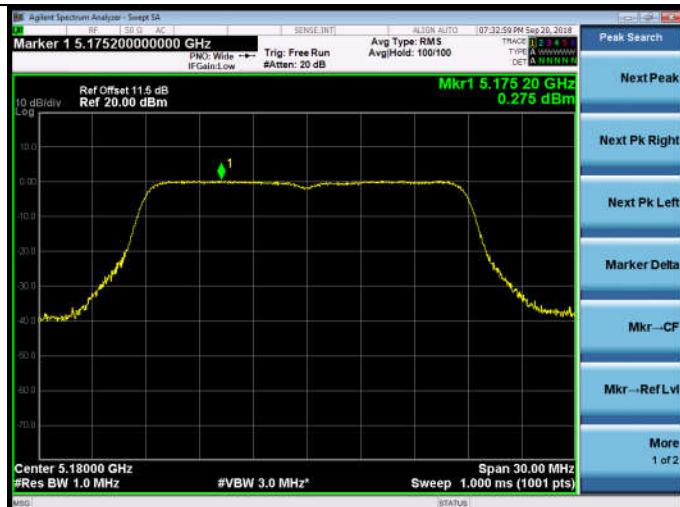


5240MHz



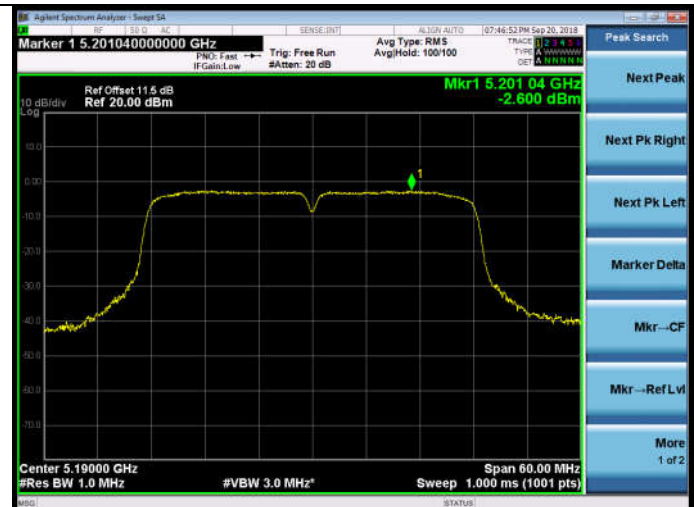
# 11ac VHT20

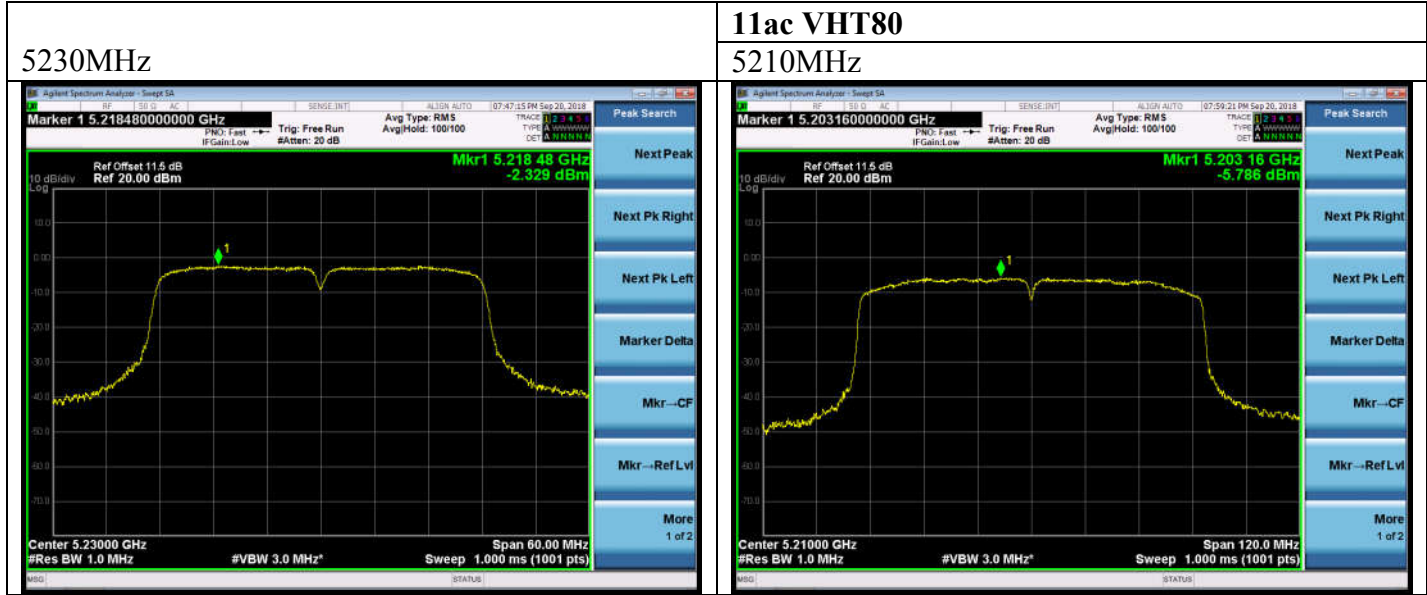
5180MHz



# 11ac VHT40

5190MHz





5260-5320MHz Band:

ANT 0

11a

5260MHz

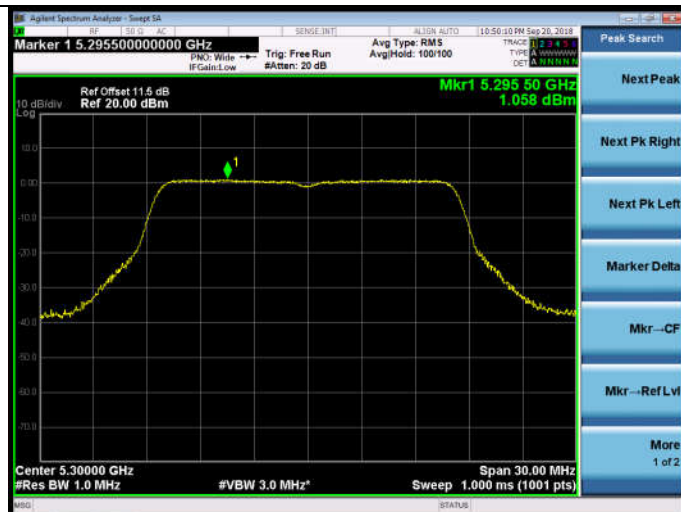


11n HT20

5260MHz



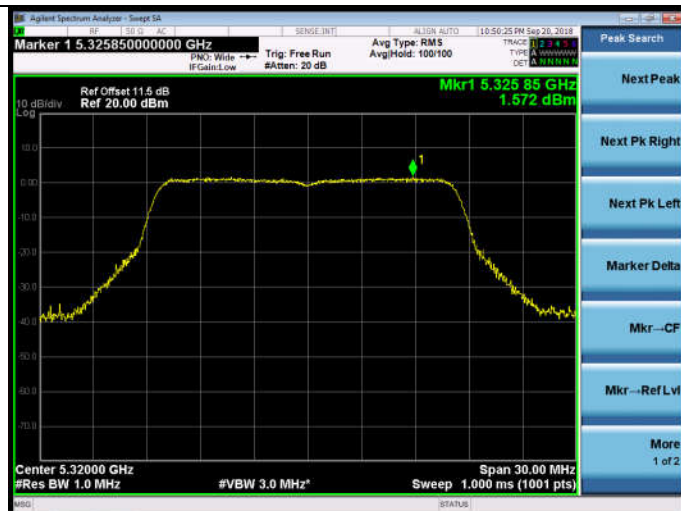
5300MHz



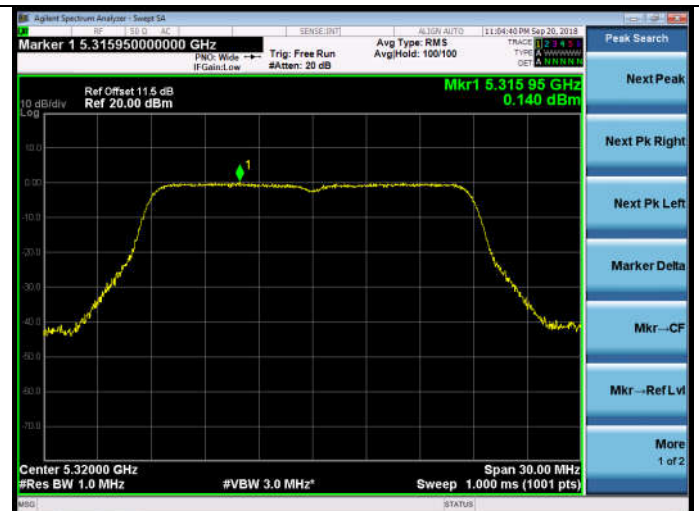
5300MHz



5320MHz

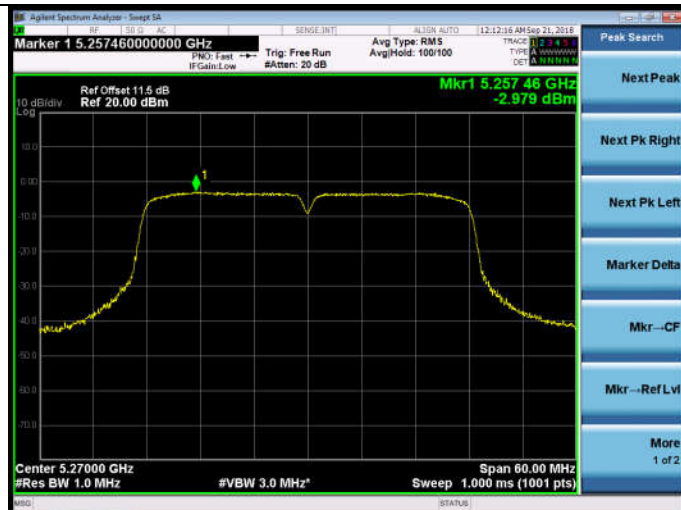


5320MHz



### 11n HT40

5270MHz



5300MHz



5310MHz

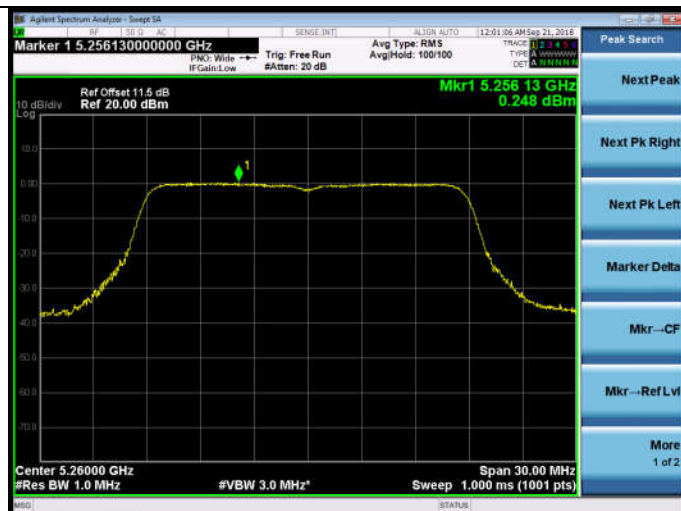


5320MHz



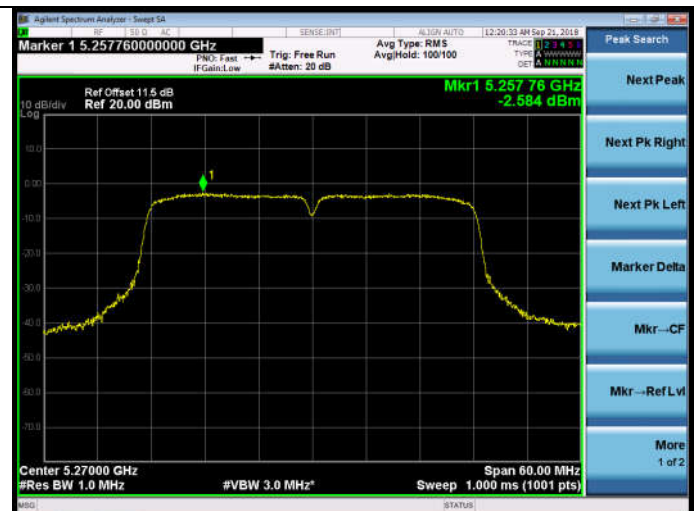
### 11ac VHT20

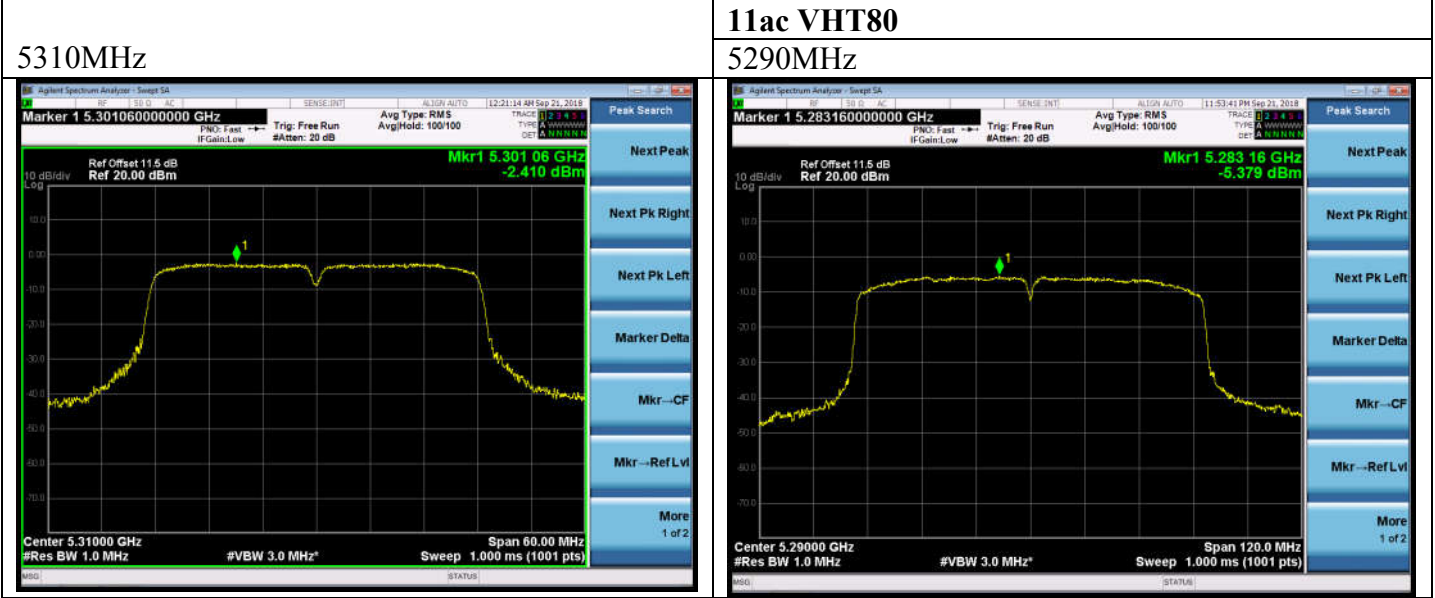
5260MHz



### 11ac VHT40

5270MHz



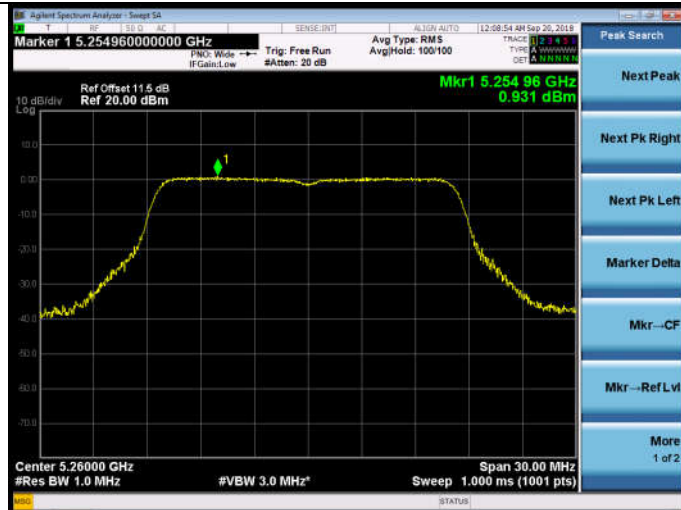


5260-5320MHz Band:

ANT 1

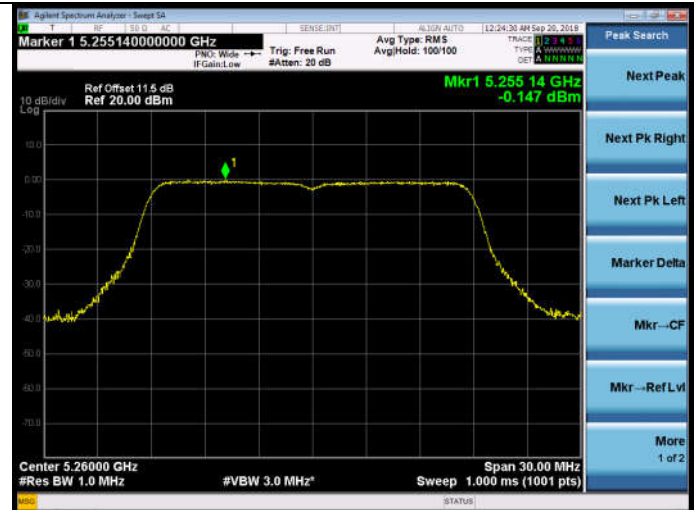
11a

5260MHz

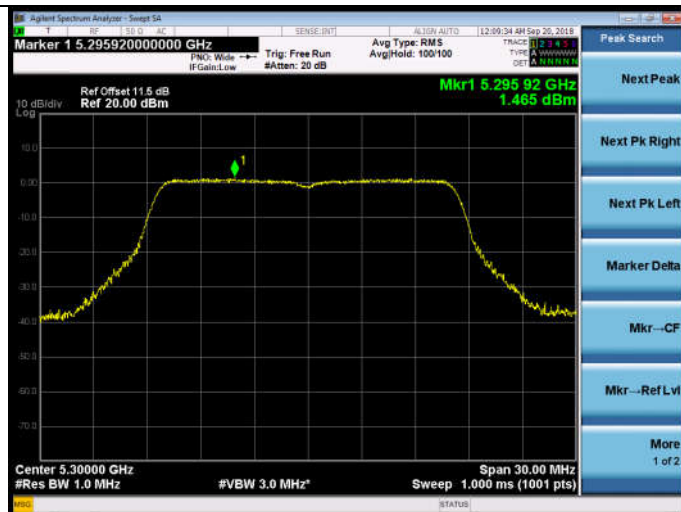


11n HT20

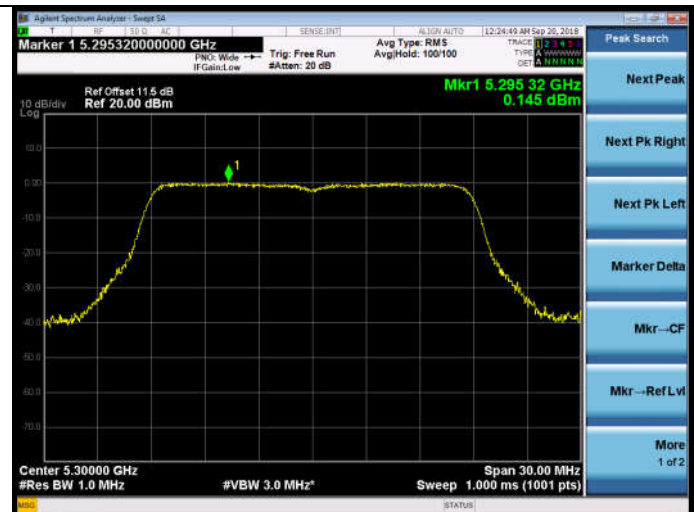
5260MHz



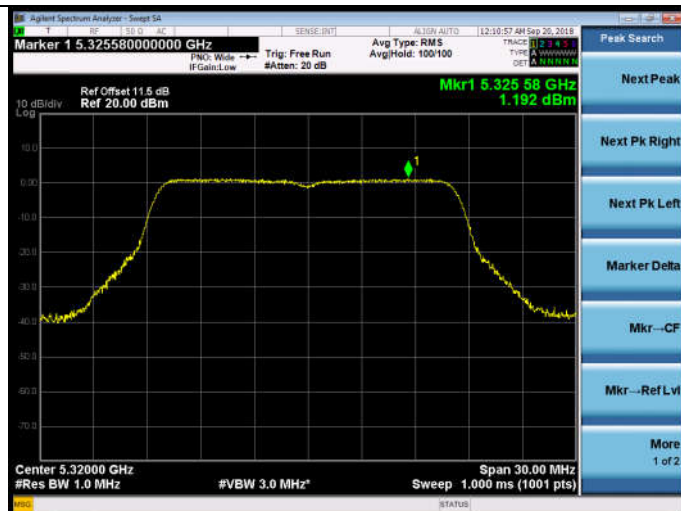
5300MHz



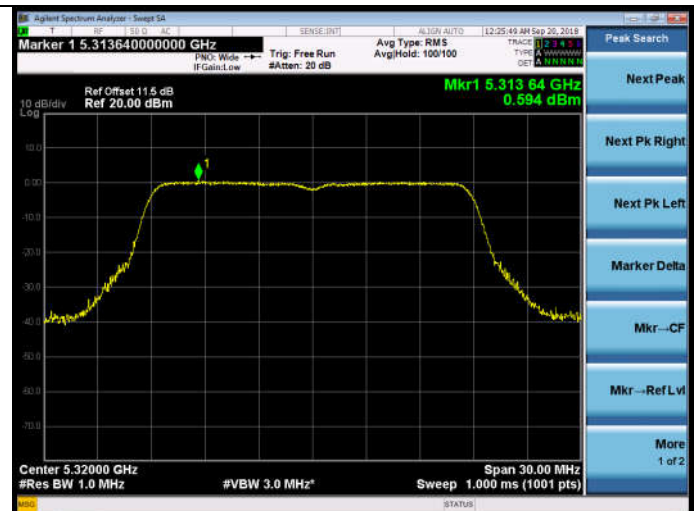
5300MHz



5320MHz



5320MHz

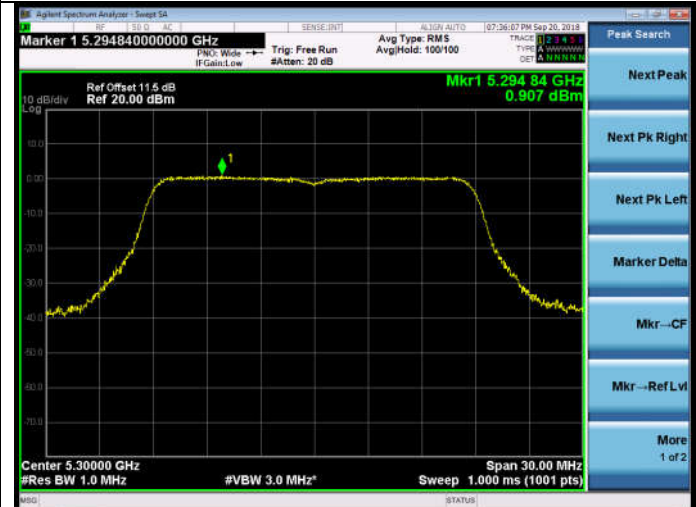


# 11n HT40

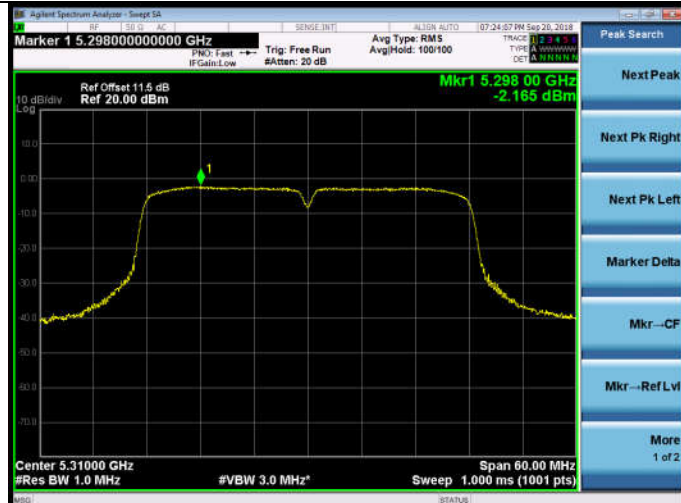
5270MHz



5300MHz



5310MHz



5320MHz



# 11ac VHT20

5260MHz



# 11ac VHT40

5270MHz



