

ANT 0:

Test Mode: IEEE 802.11AC(20)

| Channel | Frequency (MHz) | Maximum transmit power (dBm) | Limit (dBm) | Result |
|---------|-----------------|------------------------------|-------------|--------|
| Low     | 5180            | 10.10                        | 21.99       | Pass   |
| Mid     | 5200            | 10.07                        | 21.99       | Pass   |
| High    | 5240            | 9.33                         | 21.99       | Pass   |
| Low     | 5745            | 8.84                         | 27.99       | Pass   |
| Mid     | 5785            | 8.81                         | 27.99       | Pass   |
| High    | 5825            | 8.41                         | 27.99       | Pass   |

ANT 0:

Test Mode: IEEE 802.11AC(40)

| Channel | Frequency (MHz) | Maximum transmit power (dBm) | Limit (dBm) | Result |
|---------|-----------------|------------------------------|-------------|--------|
| Low     | 5190            | 11.31                        | 21.99       | Pass   |
| High    | 5230            | 10.70                        | 21.99       | Pass   |
| Low     | 5755            | 9.77                         | 27.99       | Pass   |
| High    | 5795            | 9.58                         | 27.99       | Pass   |

ANT 0:

Test Mode: IEEE 802.11AC(80)

| Frequency (MHz) | Maximum transmit power (dBm) | Limit (dBm) | Result |
|-----------------|------------------------------|-------------|--------|
| 5190            | 11.34                        | 21.99       | Pass   |
| 5755            | 9.42                         | 27.99       | Pass   |

ANT 1:

Test Mode: IEEE 802.11AC(20)

| Channel | Frequency (MHz) | Maximum transmit power (dBm) | Limit (dBm) | Result |
|---------|-----------------|------------------------------|-------------|--------|
| Low     | 5180            | 11.32                        | 21.99       | Pass   |
| Mid     | 5200            | 11.54                        | 21.99       | Pass   |
| High    | 5240            | 11.75                        | 21.99       | Pass   |
| Low     | 5745            | 7.98                         | 27.99       | Pass   |
| Mid     | 5785            | 8.45                         | 27.99       | Pass   |
| High    | 5825            | 7.66                         | 27.99       | Pass   |

ANT 1:

Test Mode: IEEE 802.11AC(40)

| Channel | Frequency (MHz) | Maximum transmit power (dBm) | Limit (dBm) | Result |
|---------|-----------------|------------------------------|-------------|--------|
| Low     | 5190            | 11.76                        | 21.99       | Pass   |
| High    | 5230            | 11.45                        | 21.99       | Pass   |
| Low     | 5755            | 8.25                         | 27.99       | Pass   |
| High    | 5795            | 7.46                         | 27.99       | Pass   |

ANT 1:

Test Mode: IEEE 802.11AC(80)

| Frequency (MHz) | Maximum transmit power (dBm) | Limit (dBm) | Result |
|-----------------|------------------------------|-------------|--------|
| 5190            | 11.02                        | 21.99       | Pass   |
| 5755            | 8.81                         | 27.99       | Pass   |

| Channel                         | Channel Frequency (MHz) | ANT 0 Output Power (dBm) | ANT 1 Output Power (dBm) | Data Rate (Mbps) | MIMO Output Power (dBm) | Limit (dBm) |
|---------------------------------|-------------------------|--------------------------|--------------------------|------------------|-------------------------|-------------|
| <b>802.11ac (20M MIMO) Mode</b> |                         |                          |                          |                  |                         |             |
| Low                             | 5180                    | 10.10                    | 11.32                    | MCS0             | 13.76                   | 21.99       |
| Middle                          | 5200                    | 10.07                    | 11.54                    | MCS0             | 13.88                   | 21.99       |
| High                            | 5240                    | 9.33                     | 11.75                    | MCS0             | 13.72                   | 21.99       |
| Low                             | 5745                    | 8.84                     | 7.98                     | MCS0             | 11.44                   | 27.99       |
| Middle                          | 5785                    | 8.81                     | 8.45                     | MCS0             | 11.64                   | 27.99       |
| High                            | 5825                    | 8.41                     | 7.66                     | MCS0             | 11.06                   | 27.99       |
| <b>802.11ac (40M MIMO) Mode</b> |                         |                          |                          |                  |                         |             |
| Low                             | 5190                    | 11.31                    | 11.76                    | MCS0             | 14.55                   | 21.99       |
| High                            | 5230                    | 10.7                     | 11.45                    | MCS0             | 14.10                   | 21.99       |
| Low                             | 5755                    | 9.77                     | 8.25                     | MCS0             | 12.09                   | 27.99       |
| High                            | 5795                    | 9.58                     | 7.46                     | MCS0             | 11.66                   | 27.99       |
| <b>802.11ac (80M MIMO) Mode</b> |                         |                          |                          |                  |                         |             |
| Low                             | 5210                    | 11.34                    | 11.02                    | MCS0             | 14.19                   | 21.99       |
| High                            | 5775                    | 9.42                     | 8.81                     | MCS0             | 12.14                   | 27.99       |

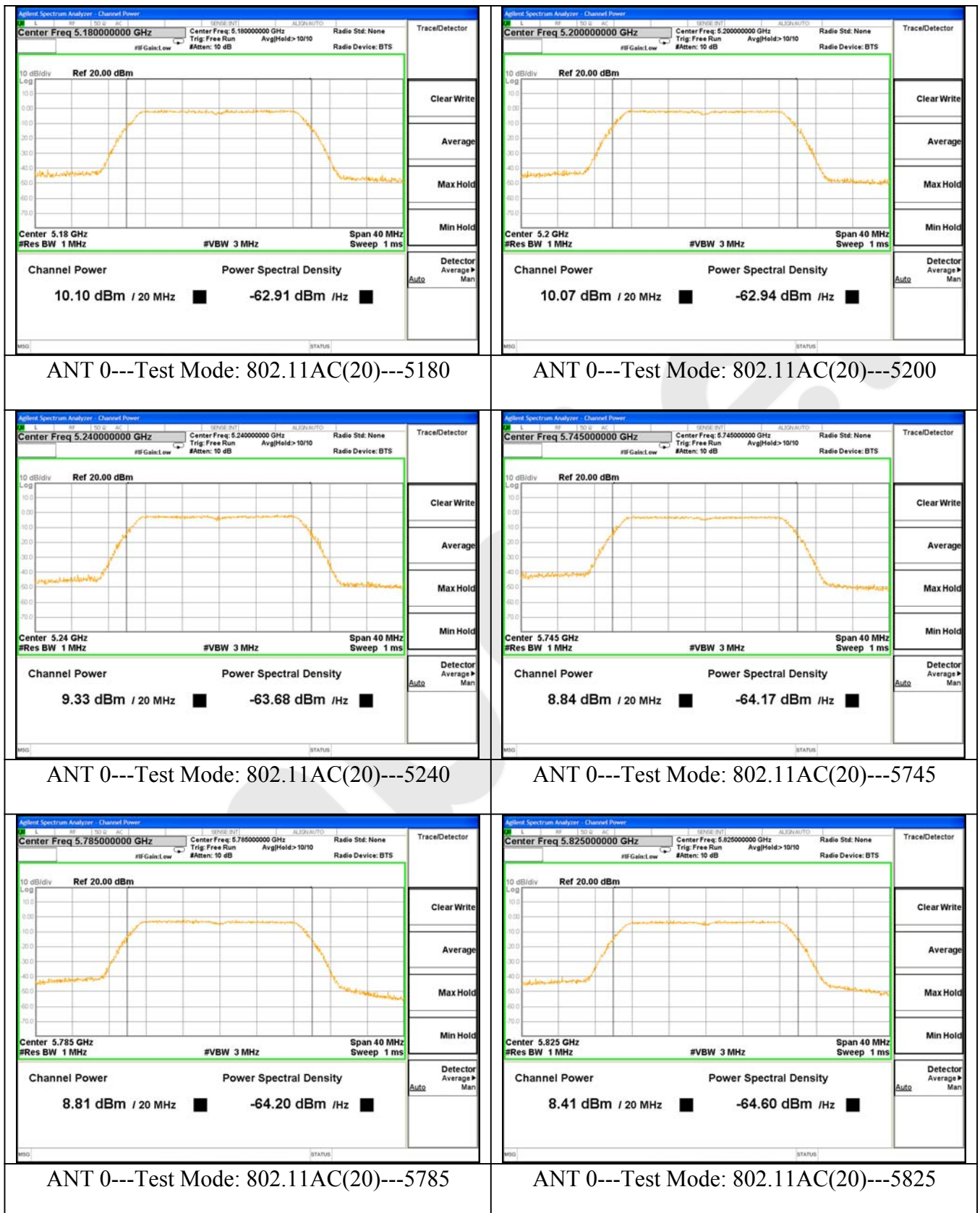
Remark:

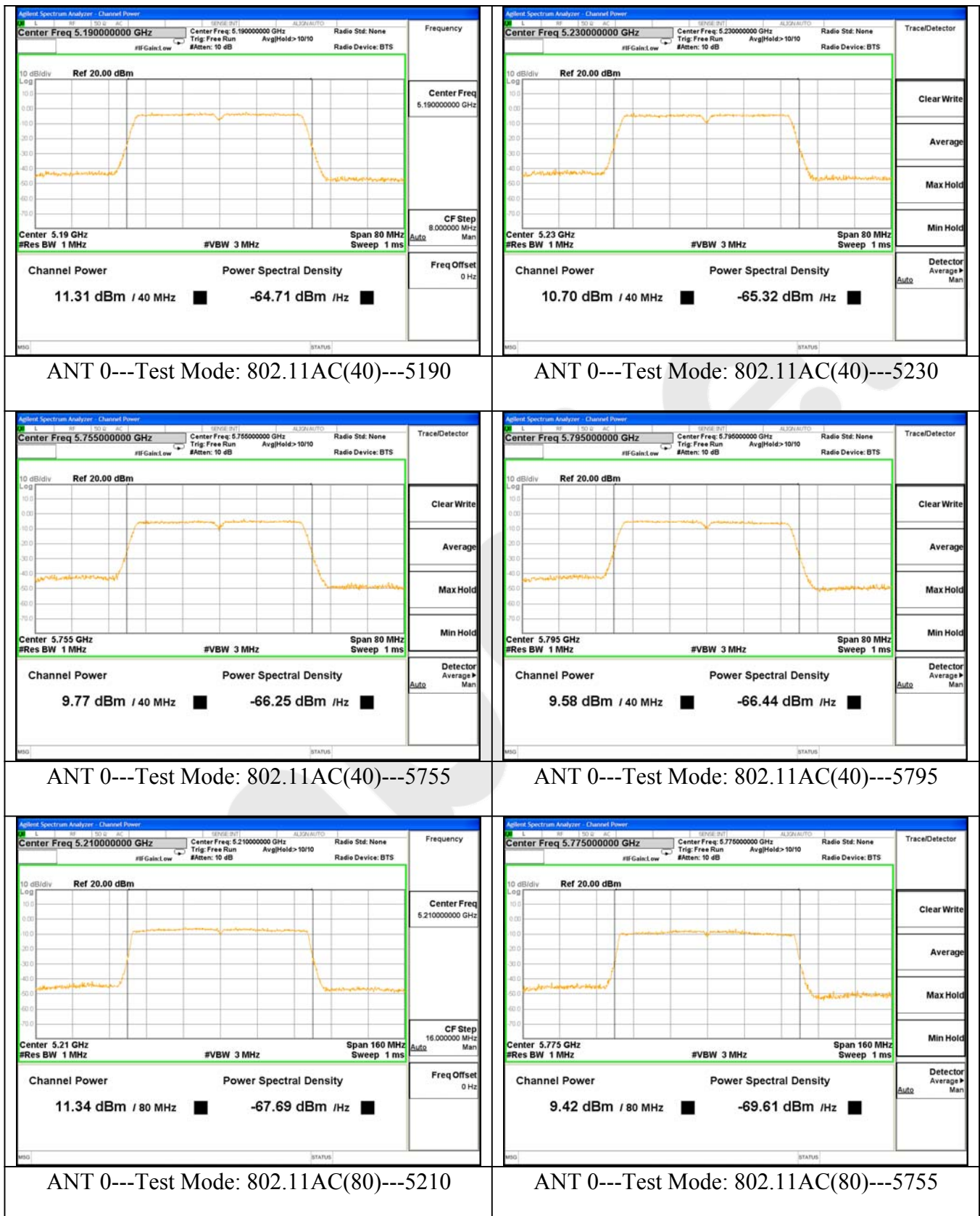
ANT 0 Gain= 5.0dBi

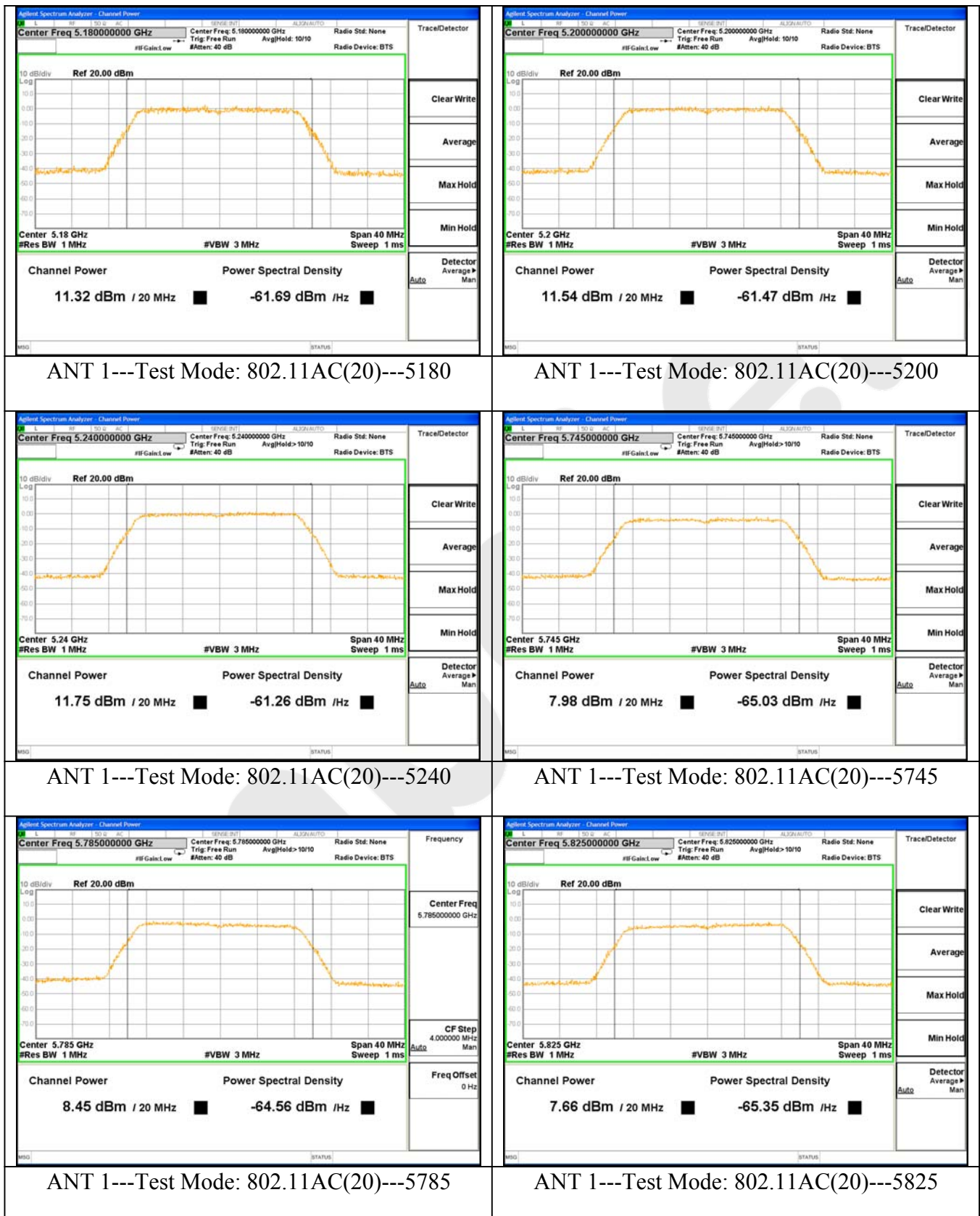
ANT 0 Gain= 5.0dBi

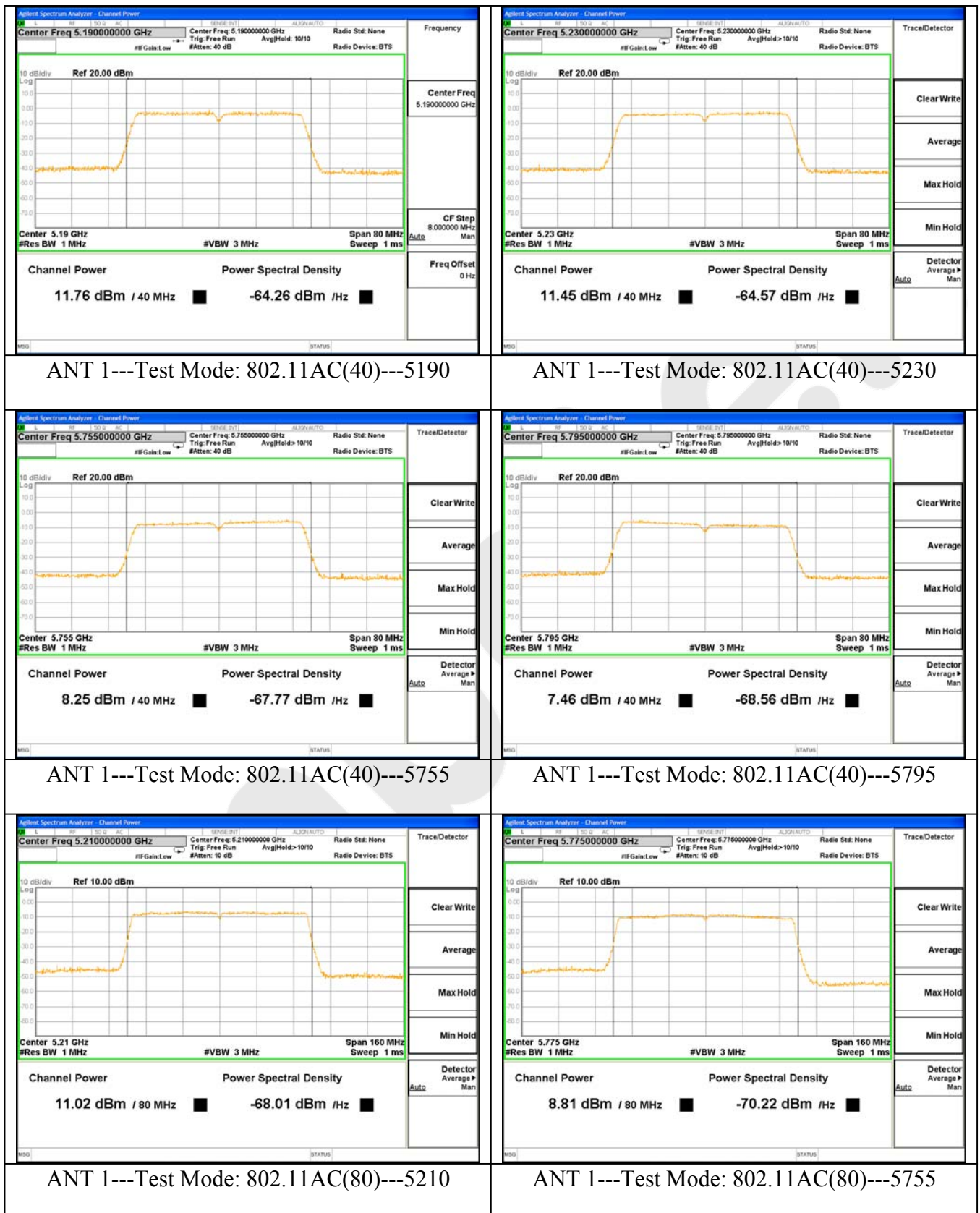
$$10 * \log[10^{(x/10)} + 10^{(y/10)}] = 8.01 \text{dBi}$$

**Output Power Limit=Limit-(6-Ant gain)**









## 6. Peak Power Spectral Density Test

### 6.1. Test Limit

1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional

gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

## 6.2. Test Setup



## 6.3. Test Procedure

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz).

1. The EUT is directly connected to the spectrum analyzer;
2. Set  $RBW \geq 1/T$ ;
3. Set  $VBW \geq 3 RBW$  ;
3. Set the span to encompass the entire emissions bandwidth (EBW) of the signal;
5. Detector=RMS;
6. Sweep time= auto couple;
7. Trace mode=max. hold;

#### 6.4. Test Equipment

Same as clause 4.4.

#### 6.5. Test Results

Pass.

Please refer to the following data.

Anbotek

ANT 0:

Test Mode: IEEE 802.11a

| Channel | Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|---------|-----------------|------------------------------------|------------------------------------|--------|
| Low     | 5180            | 3.249                              | 8.99                               | Pass   |
| Mid     | 5200            | 3.084                              | 8.99                               | Pass   |
| High    | 5240            | 1.890                              | 8.99                               | Pass   |
| Low     | 5745            | -3.023                             | 27.99                              | Pass   |
| Mid     | 5785            | -1.550                             | 27.99                              | Pass   |
| High    | 5825            | -2.748                             | 27.99                              | Pass   |

ANT 0:

Test Mode: IEEE 802.11n(HT20)

| Channel | Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|---------|-----------------|------------------------------------|------------------------------------|--------|
| Low     | 5180            | 4.003                              | 8.99                               | Pass   |
| Mid     | 5200            | 3.370                              | 8.99                               | Pass   |
| High    | 5240            | 2.189                              | 8.99                               | Pass   |
| Low     | 5745            | -2.273                             | 27.99                              | Pass   |
| Mid     | 5785            | -1.275                             | 27.99                              | Pass   |
| High    | 5825            | -2.674                             | 27.99                              | Pass   |

ANT 0:

Test Mode: IEEE 802.11n(HT40)

| Channel | Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|---------|-----------------|------------------------------------|------------------------------------|--------|
| Low     | 5190            | 0.680                              | 8.99                               | Pass   |
| High    | 5230            | 0.982                              | 8.99                               | Pass   |
| Low     | 5755            | -4.230                             | 27.99                              | Pass   |
| High    | 5795            | -4.406                             | 27.99                              | Pass   |

ANT 1:

Test Mode: IEEE 802.11a

| Channel | Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|---------|-----------------|------------------------------------|------------------------------------|--------|
| Low     | 5180            | 3.357                              | 8.99                               | Pass   |
| Mid     | 5200            | 2.953                              | 8.99                               | Pass   |
| High    | 5240            | 2.369                              | 8.99                               | Pass   |
| Low     | 5745            | -4.577                             | 27.99                              | Pass   |
| Mid     | 5785            | -3.545                             | 27.99                              | Pass   |
| High    | 5825            | -4.468                             | 27.99                              | Pass   |

ANT 1:

Test Mode: IEEE 802.11n(HT20)

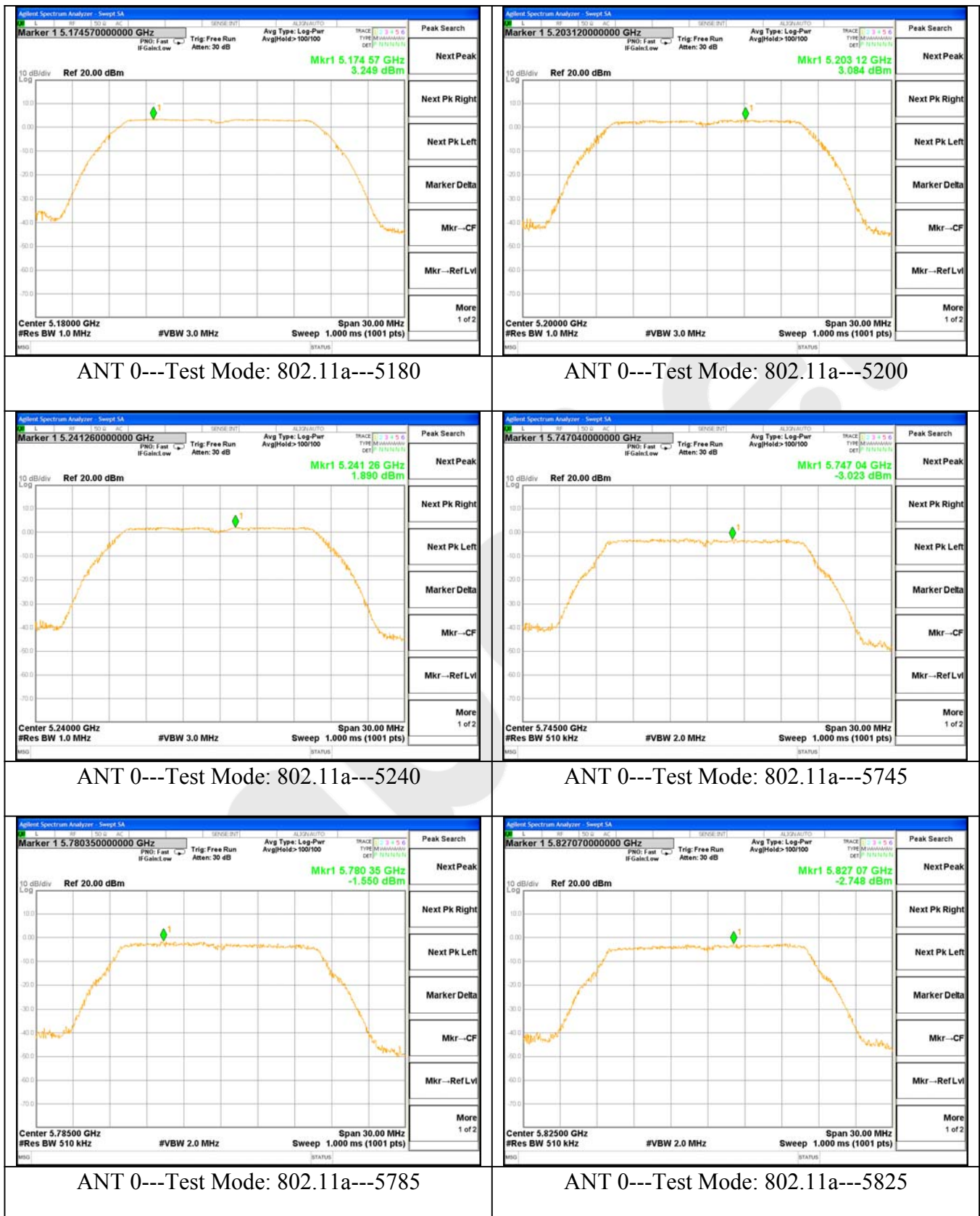
| Channel | Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|---------|-----------------|------------------------------------|------------------------------------|--------|
| Low     | 5180            | 4.260                              | 8.99                               | Pass   |
| Mid     | 5200            | 3.023                              | 8.99                               | Pass   |
| High    | 5240            | 3.247                              | 8.99                               | Pass   |
| Low     | 5745            | -4.259                             | 27.99                              | Pass   |
| Mid     | 5785            | -2.538                             | 27.99                              | Pass   |
| High    | 5825            | -4.053                             | 27.99                              | Pass   |

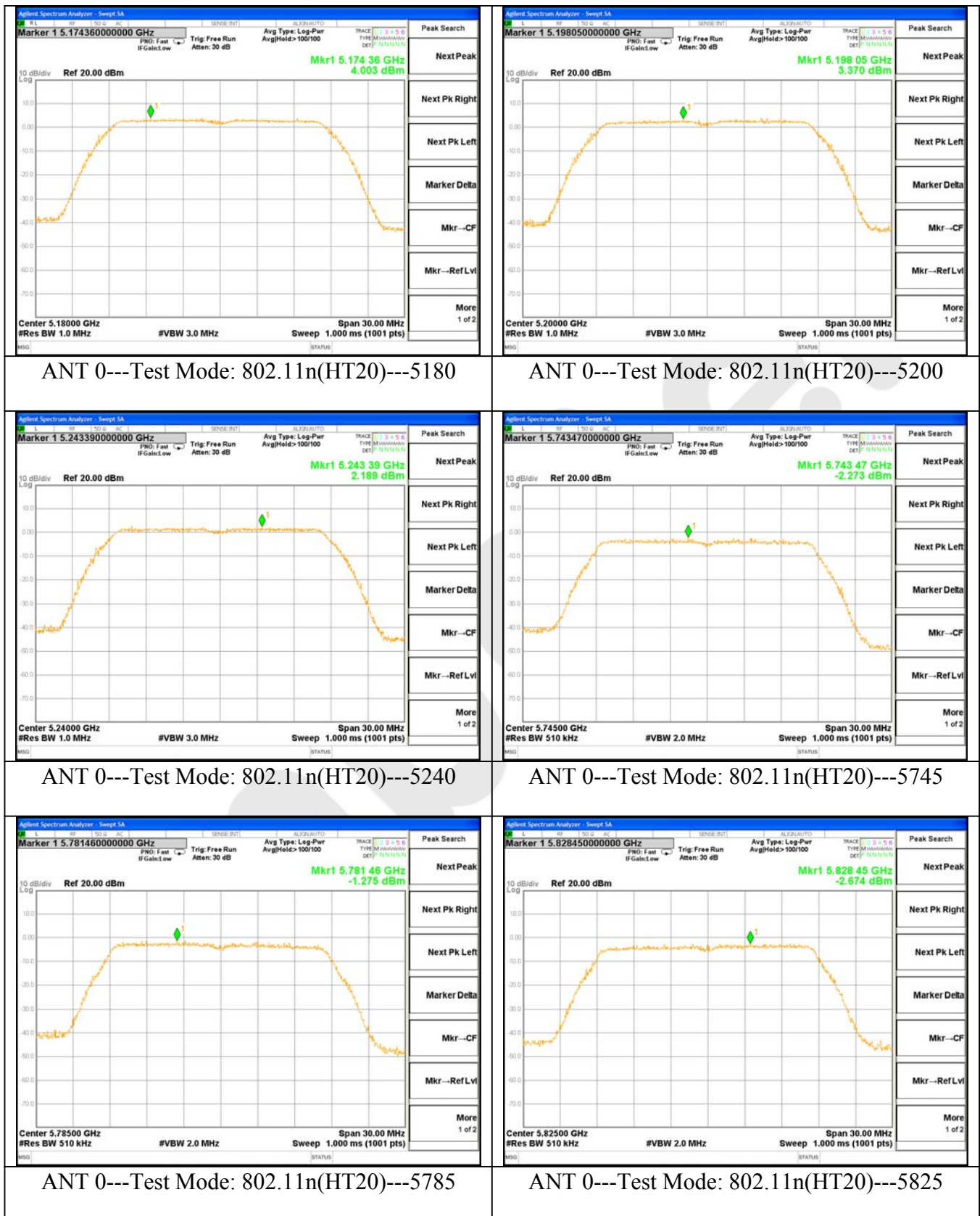
ANT 1:

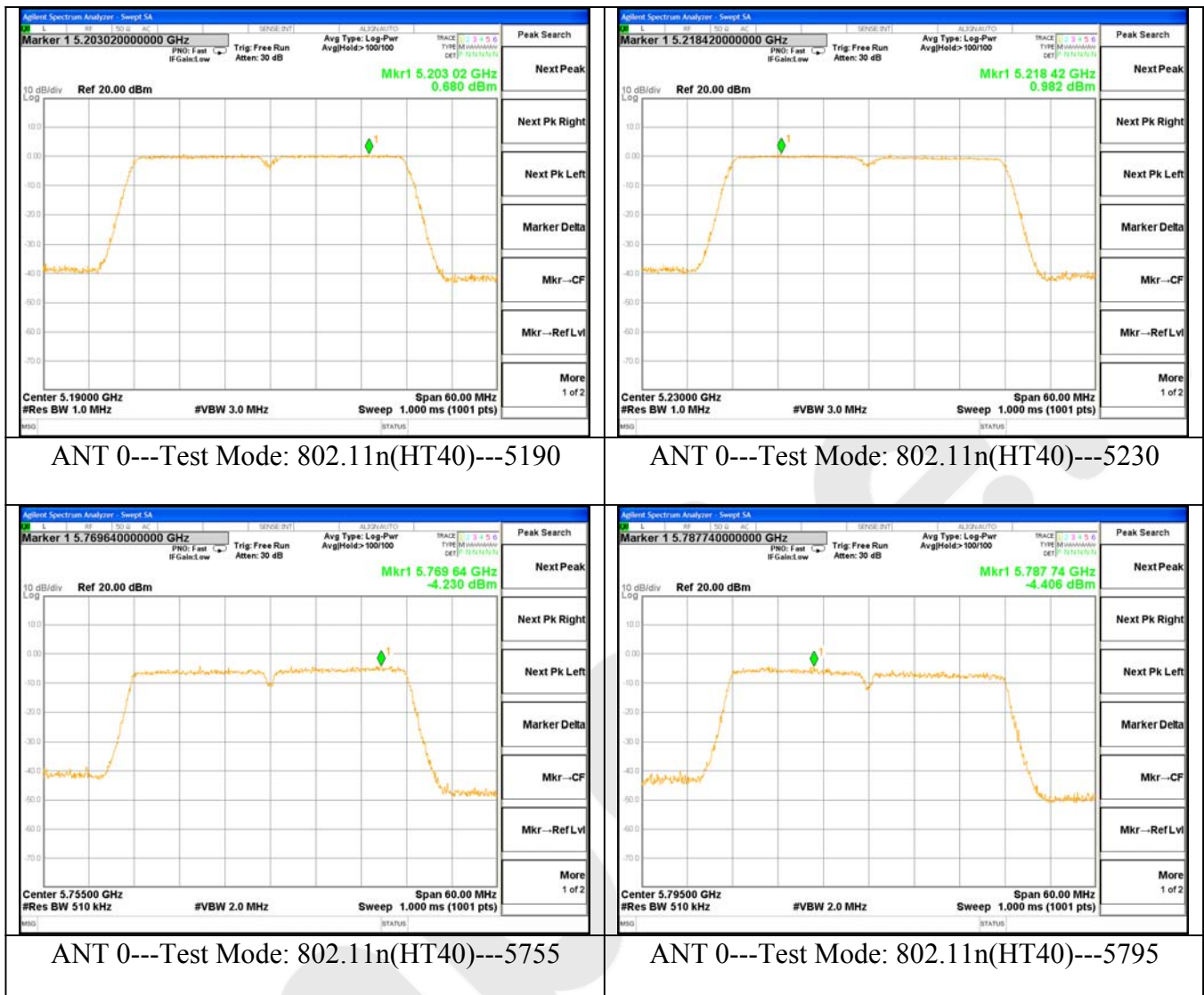
Test Mode: IEEE 802.11n(HT40)

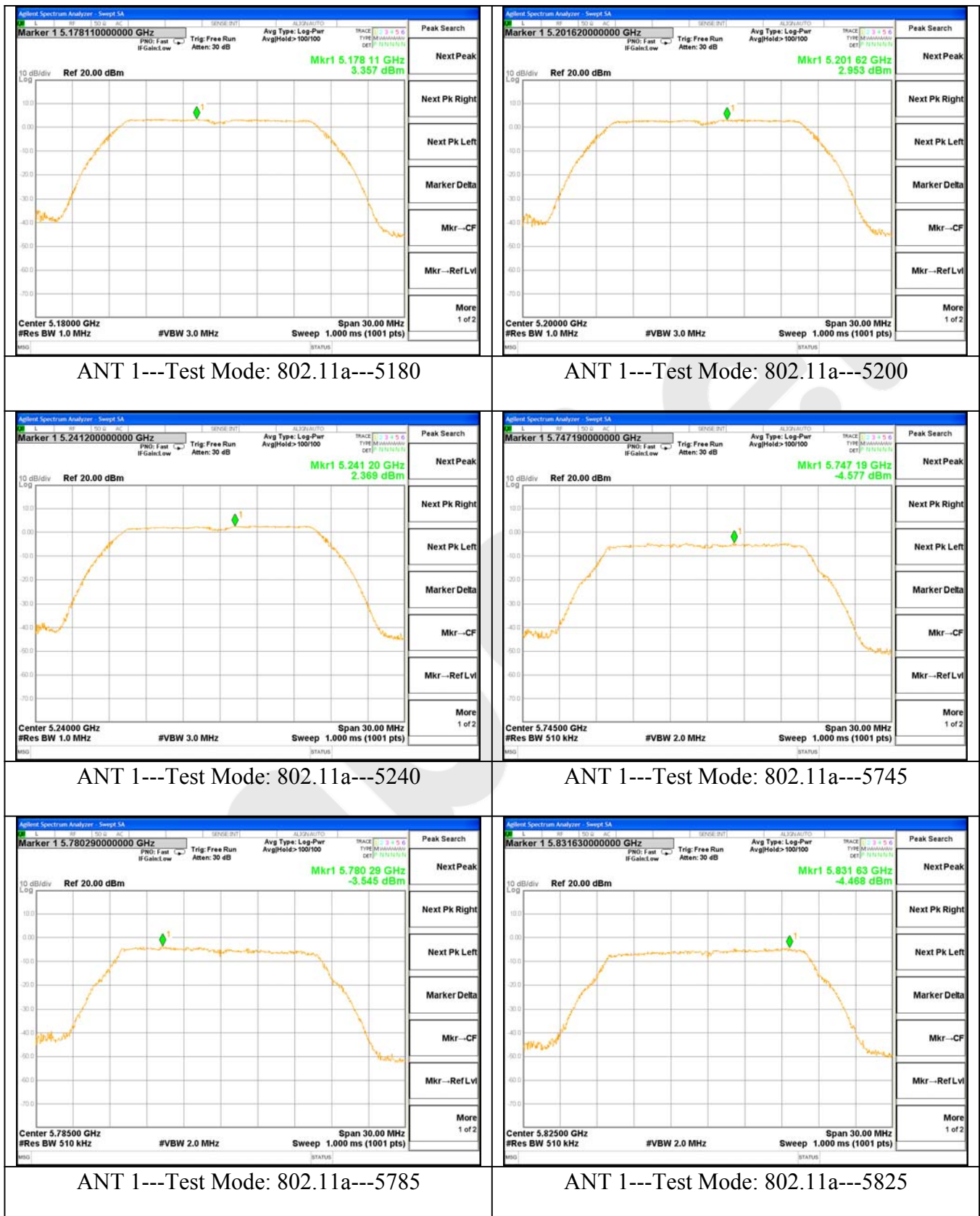
| Channel | Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|---------|-----------------|------------------------------------|------------------------------------|--------|
| Low     | 5190            | 0.540                              | 8.99                               | Pass   |
| High    | 5230            | 0.390                              | 8.99                               | Pass   |
| Low     | 5755            | -5.206                             | 27.99                              | Pass   |
| High    | 5795            | -6.231                             | 27.99                              | Pass   |

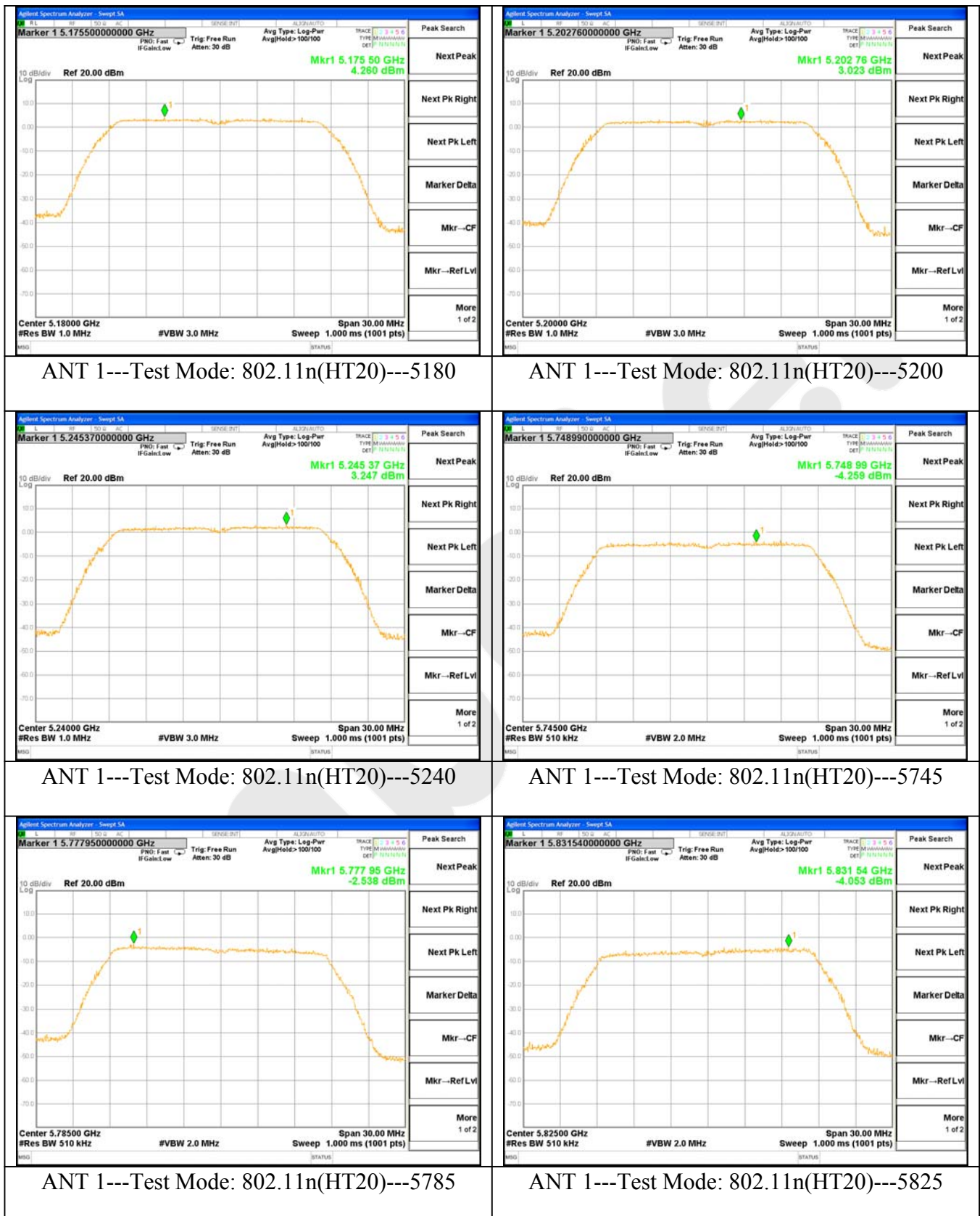
**Power Spectral Density Limit=Limit-(6-Ant gain)**

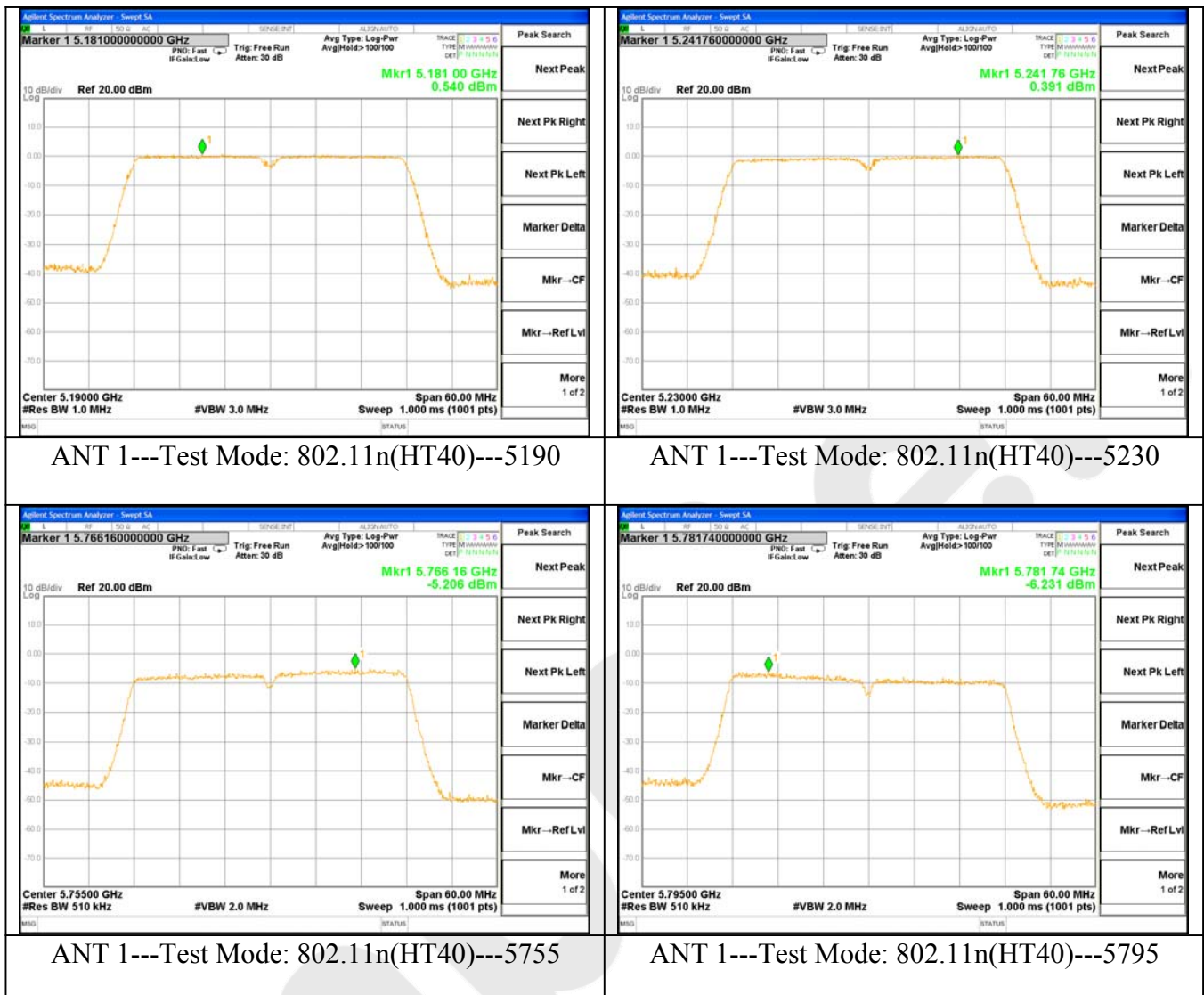












ANT 0:

Test Mode: IEEE 802.11AC(HT20)

| Channel | Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|---------|-----------------|------------------------------------|------------------------------------|--------|
| Low     | 5180            | 4.099                              | 11                                 | Pass   |
| Mid     | 5200            | 2.972                              | 11                                 | Pass   |
| High    | 5240            | 2.830                              | 11                                 | Pass   |
| Low     | 5745            | -2.284                             | 30                                 | Pass   |
| Mid     | 5785            | -1.499                             | 30                                 | Pass   |
| High    | 5825            | -2.969                             | 30                                 | Pass   |

ANT 0:

Test Mode: IEEE 802.11AC(HT40)

| Channel | Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|---------|-----------------|------------------------------------|------------------------------------|--------|
| Low     | 5190            | 0.837                              | 11                                 | Pass   |
| High    | 5230            | 0.555                              | 11                                 | Pass   |
| Low     | 5755            | -3.735                             | 30                                 | Pass   |
| High    | 5795            | -3.919                             | 30                                 | Pass   |

ANT 0:

Test Mode: IEEE 802.11AC(HT80)

| Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|-----------------|------------------------------------|------------------------------------|--------|
| 5210            | -1.252                             | 11                                 | Pass   |
| 5755            | -7.812                             | 30                                 | Pass   |

ANT 1:

Test Mode: IEEE 802.11AC(HT20)

| Channel | Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|---------|-----------------|------------------------------------|------------------------------------|--------|
| Low     | 5180            | 3.436                              | 11                                 | Pass   |
| Mid     | 5200            | 3.214                              | 11                                 | Pass   |
| High    | 5240            | 2.617                              | 11                                 | Pass   |
| Low     | 5745            | -3.605                             | 30                                 | Pass   |
| Mid     | 5785            | -3.183                             | 30                                 | Pass   |
| High    | 5825            | -4.468                             | 30                                 | Pass   |

ANT 1:

Test Mode: IEEE 802.11AC(HT40)

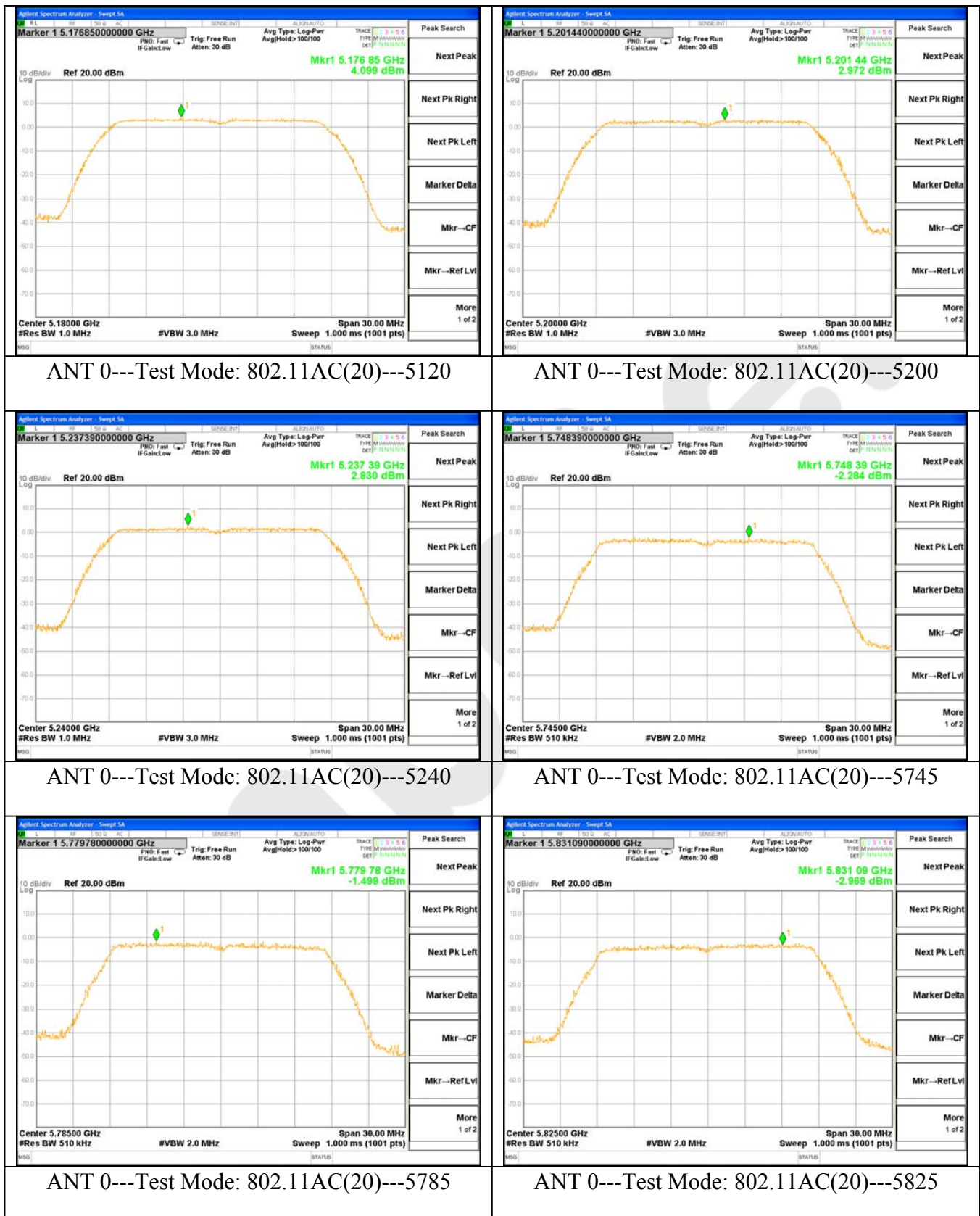
| Channel | Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|---------|-----------------|------------------------------------|------------------------------------|--------|
| Low     | 5190            | 1.410                              | 11                                 | Pass   |
| High    | 5230            | 2.000                              | 11                                 | Pass   |
| Low     | 5755            | -4.871                             | 30                                 | Pass   |
| High    | 5795            | -6.687                             | 30                                 | Pass   |

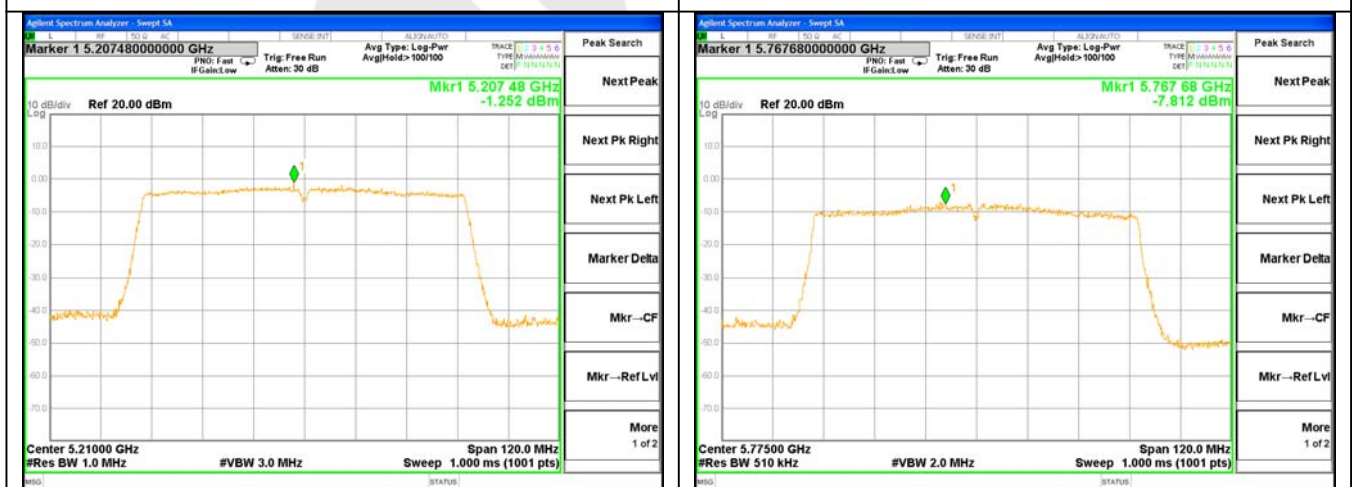
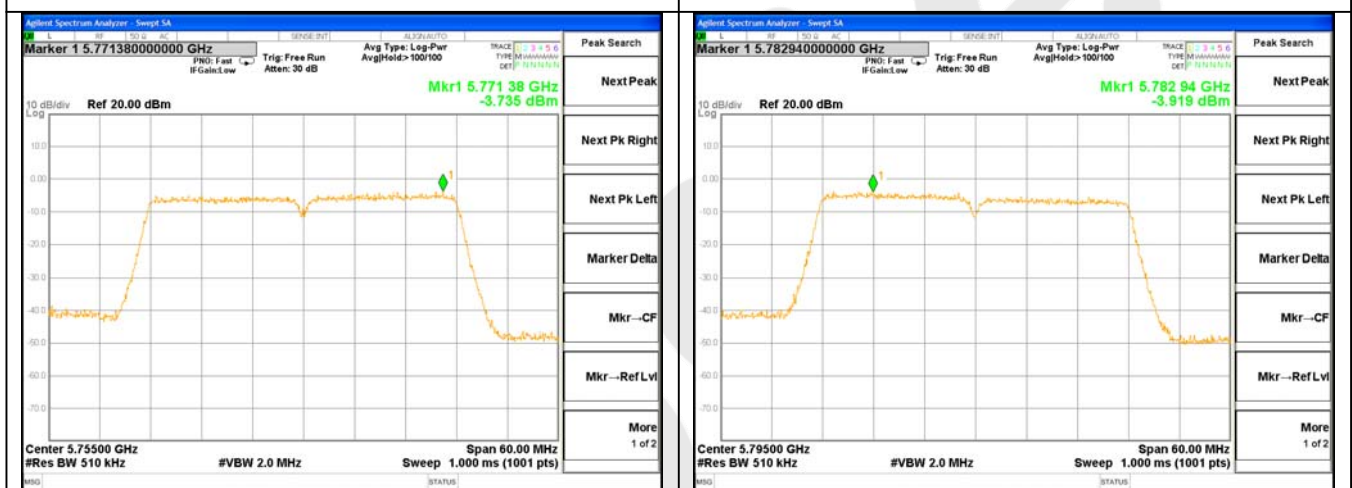
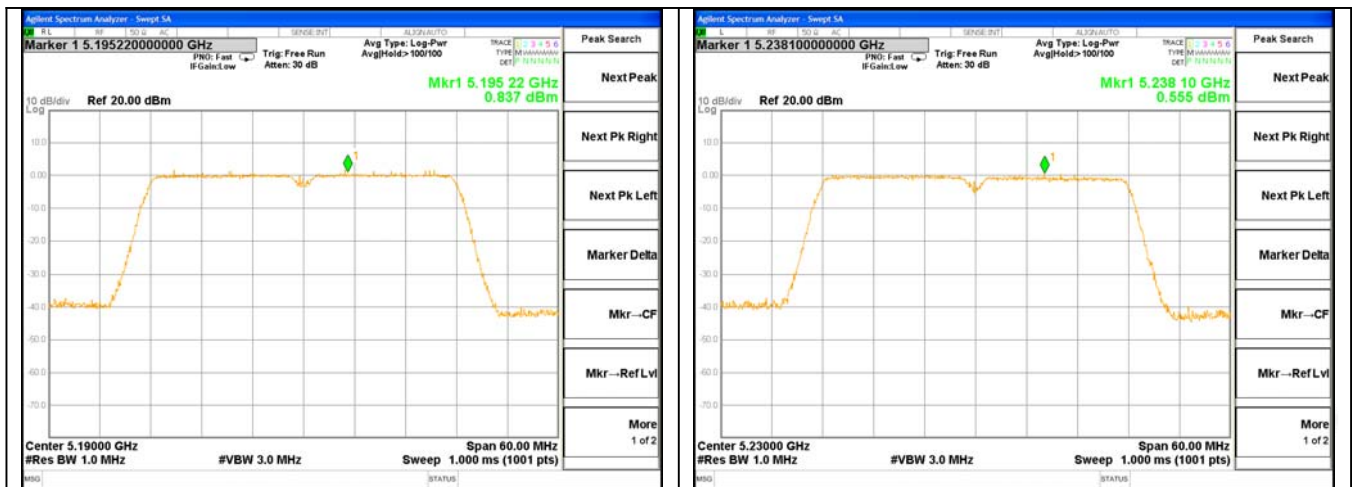
ANT 1:

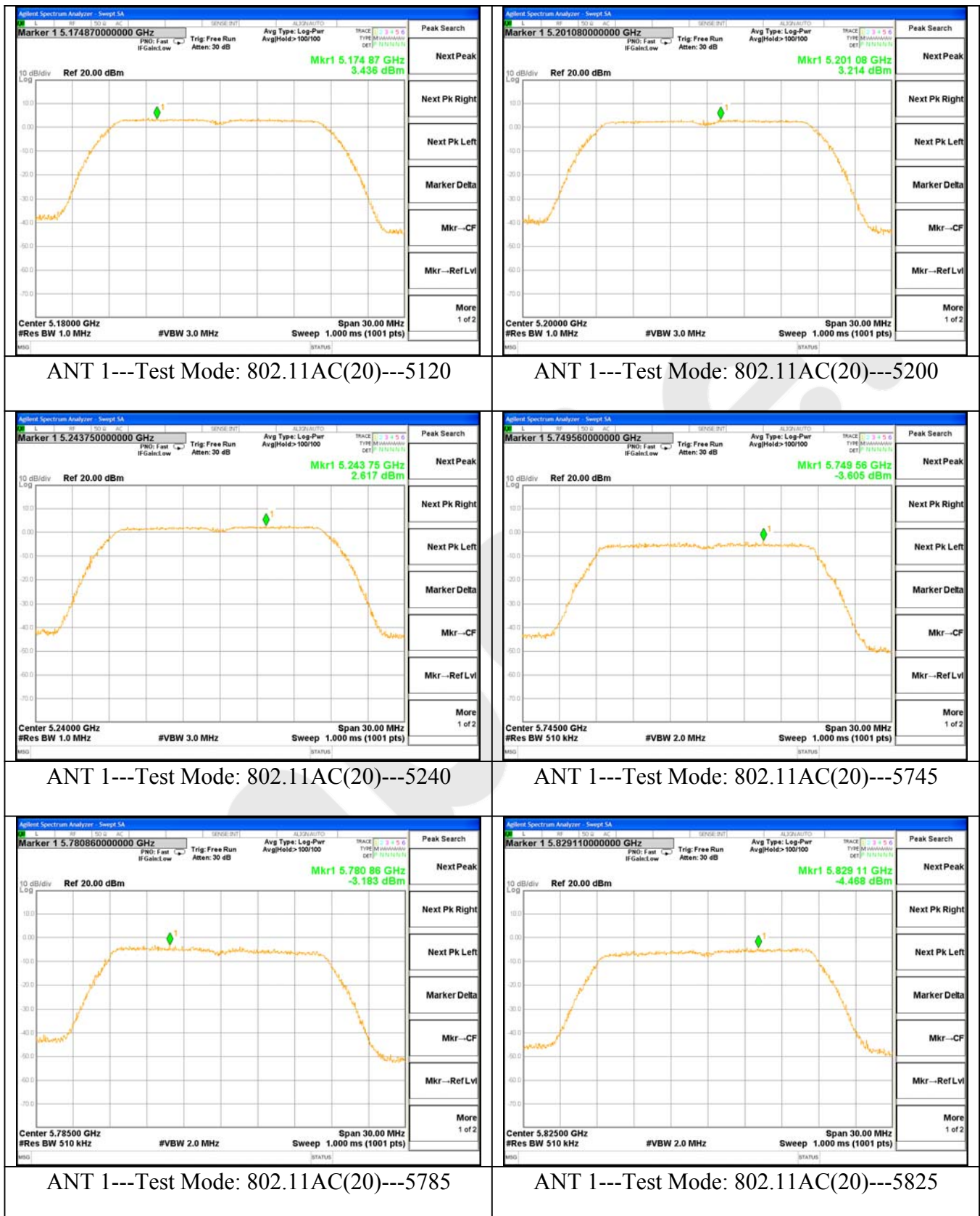
Test Mode: IEEE 802.11AC(HT80)

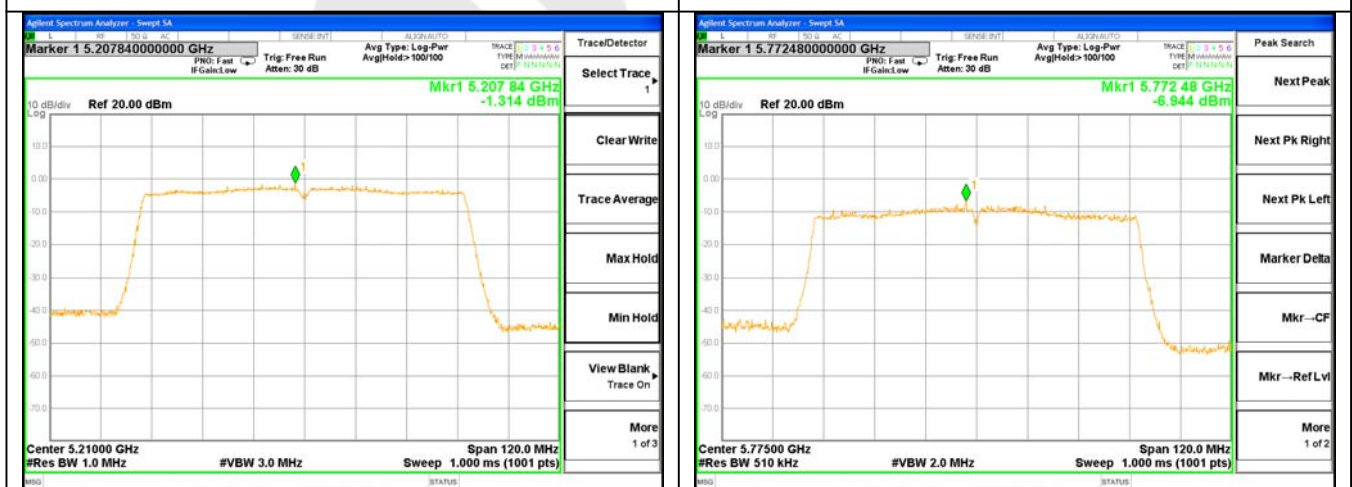
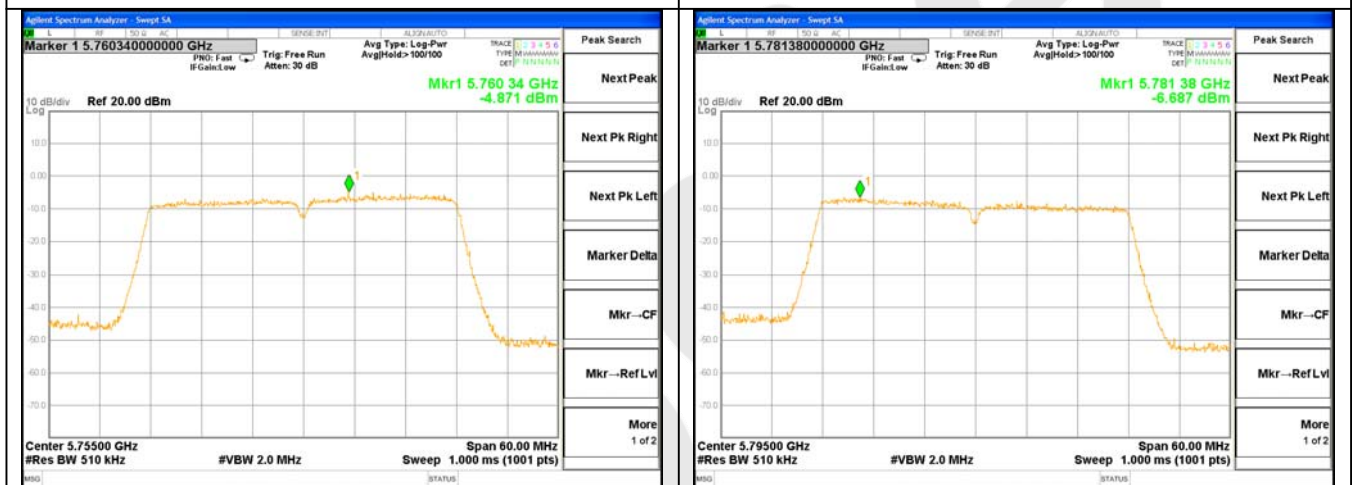
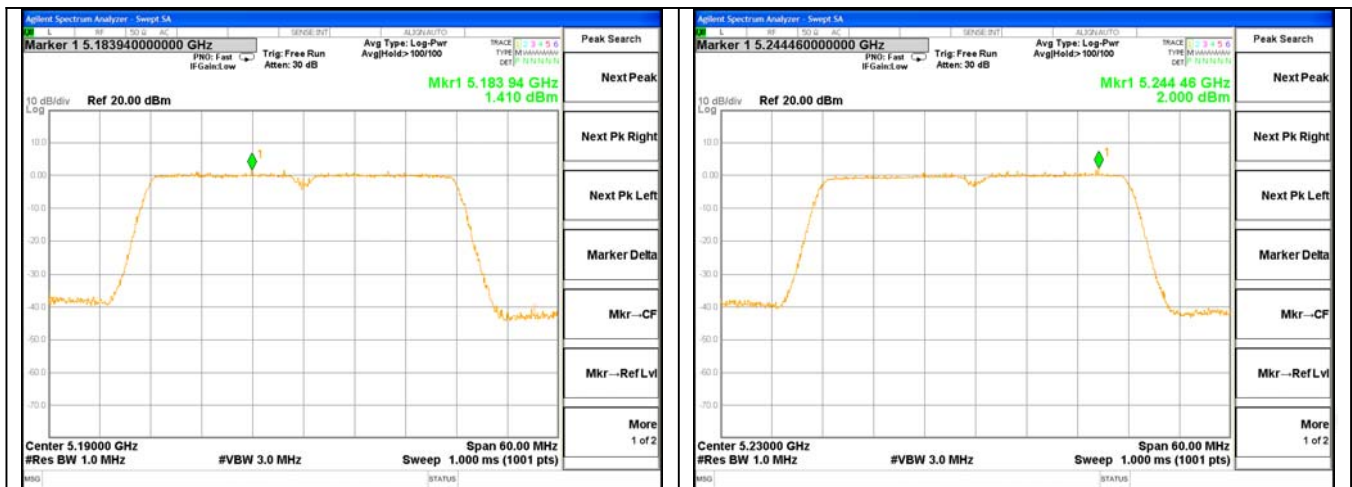
| Frequency (MHz) | Final Power Spectral Density (dBm) | Power Spectral Density Limit (dBm) | Result |
|-----------------|------------------------------------|------------------------------------|--------|
| 5210            | -1.314                             | 11                                 | Pass   |
| 5755            | -6.944                             | 30                                 | Pass   |

**Power Spectral Density Limit=Limit-(6-Ant gain)**









## 7. Radiated Emission Test

### 7.1. Test Limit

#### 8.1.1. Test Limits (< 30 MHz)

| Frequency<br>(MHz) | Field Strength<br>(microvolts/meter) | Measurement Distance<br>(meter) |
|--------------------|--------------------------------------|---------------------------------|
| 0.009-0.490        | 2400/F(kHz)                          | 300                             |
| 0.490-1.705        | 24000/F(kHz)                         | 30                              |
| 1.705-30.0         | 30                                   | 30                              |

#### 7.1.2. Test Limits ( $\geq 30$ MHz)

| FIELD STRENGTH<br>of Fundamental:<br>@3M | FIELD STRENGTH<br>of Harmonics | S15.209<br>30 - 88 MHz | 40 dBuV/m |
|------------------------------------------|--------------------------------|------------------------|-----------|
| 902-928 MHz                              |                                | 88 - 216 MHz           | 43.5      |
| 2.4-2.4835 GHz                           |                                | 216 - 960 MHz          | 46        |
| 94 dB $\mu$ V/m @3m                      | 54 dB $\mu$ V/m @3m            | ABOVE 960 MHz          | 54dBuV/m  |

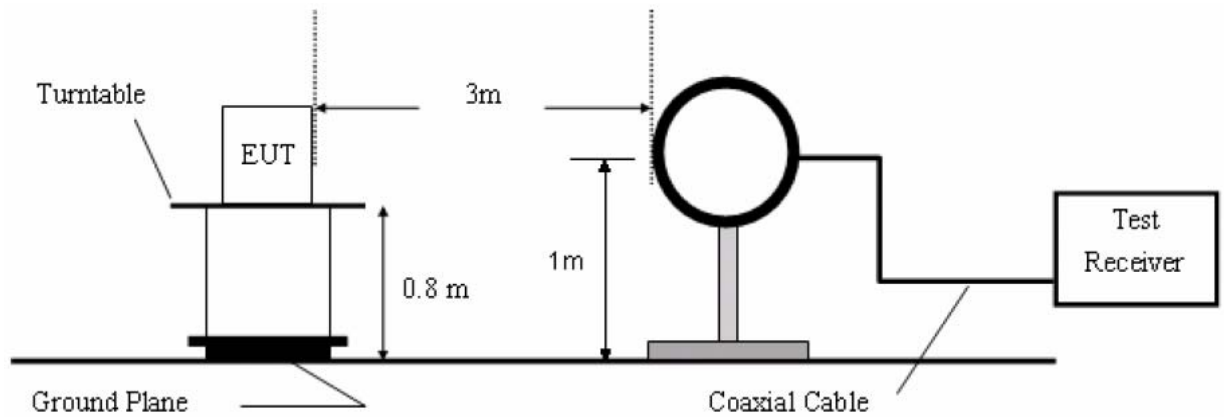
#### 7.1.3. Restriction Band of Operation

| MHz             | MHz                 | MHz           | GHz         |
|-----------------|---------------------|---------------|-------------|
| 0.090-0.110     | 16.42-16.423        | 399.9-410     | 4.5-5.15    |
| 10.495-0.505    | 16.69475-16.69525   | 608-614       | 5.35-5.46   |
| 2.1735-2.1905   | 16.80425-16.80475   | 960-1240      | 7.25-7.75   |
| 4.125-4.128     | 25.5-25.67          | 1300-1427     | 8.025-8.5   |
| 4.17725-4.17775 | 37.5-38.25          | 1435-1626.5   | 9.0-9.2     |
| 4.20725-4.20775 | 73-74.6             | 1645.5-1646.5 | 9.3-9.5     |
| 6.215-6.218     | 74.8-75.2           | 1660-1710     | 10.6-12.7   |
| 6.26775-6.26825 | 108-121.94          | 1718.8-1722.2 | 13.25-13.4  |
| 6.31175-6.31225 | 123-138             | 2200-2300     | 14.47-14.5  |
| 8.291-8.294     | 149.9-150.05        | 2310-2390     | 15.35-16.2  |
| 8.362-8.366     | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4   |
| 8.37625-8.38675 | 156.7-156.9         | 2690-2900     | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17     | 3260-3267     | 23.6-24.0   |
| 12.29-12.293    | 167.72-173.2        | 3332-3339     | 31.2-31.8   |

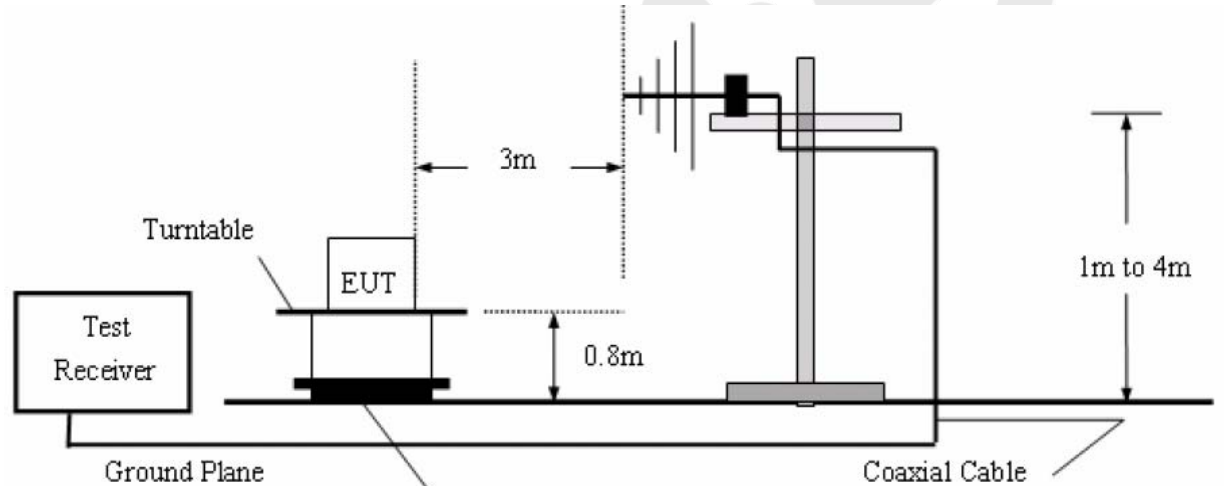
All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

## 7.2. Test Setup

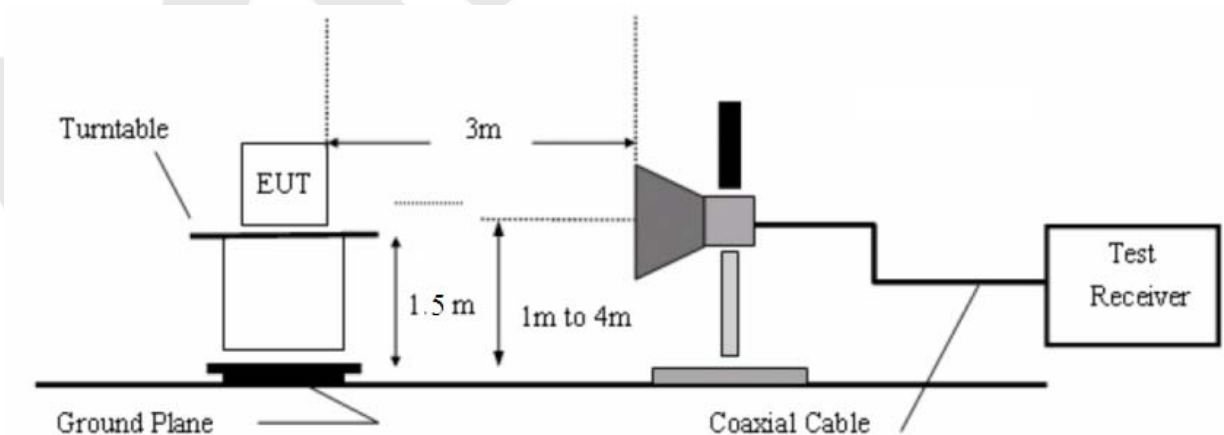
### 7.2.1. 9k to 30MHz emissions:



### 7.2.2. 30M to 1G emissions:



### 7.2.3. 1G to 40G emissions:



### 7.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.

For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turntable shall be rotated 360 degrees to determine the position of max. emission level. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

Measurements are made on 9KHz to 30MHz and 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz.

The EUT is tested in 9\*6\*6 Chamber. The device is evaluated in xyz orientation.

The test results are listed in Section 8.5.

### 7.4. Test Equipment

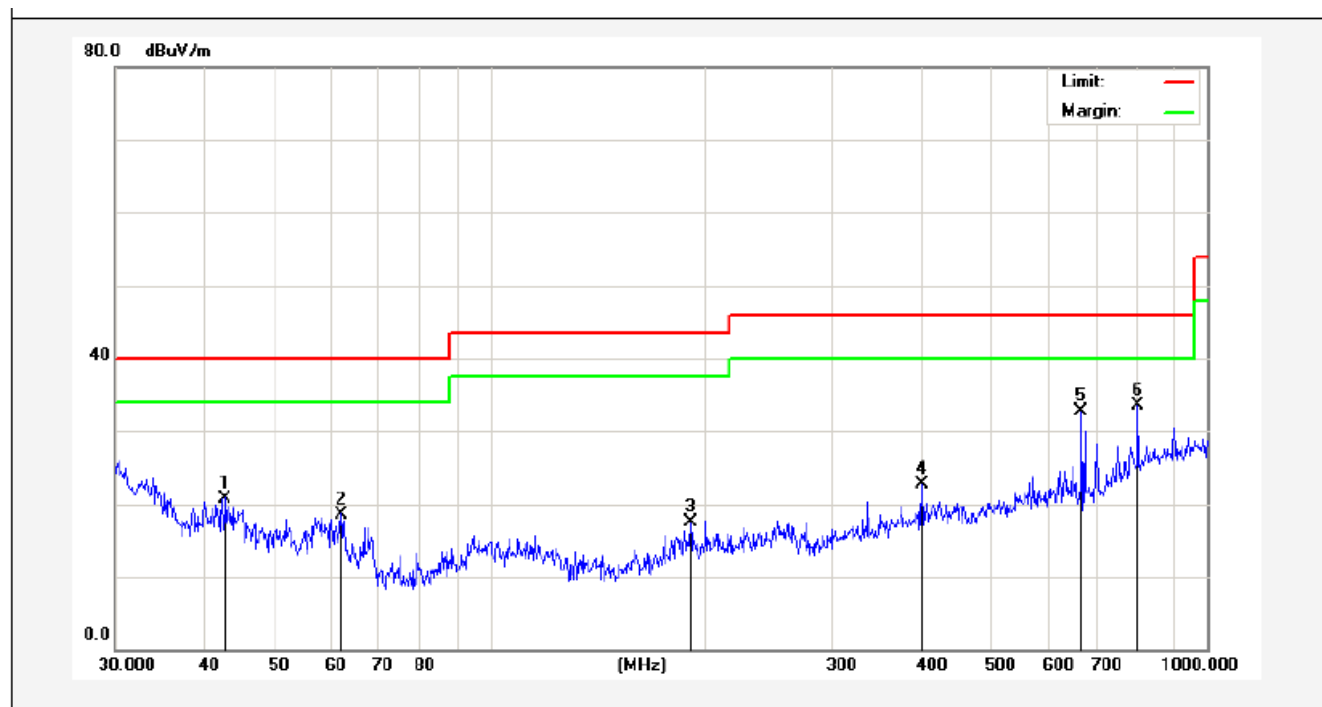
Same as clause 4.4.

### 7.5. Test Results

The EUT was tested on (WiFi Mode) is attached in the following pages.

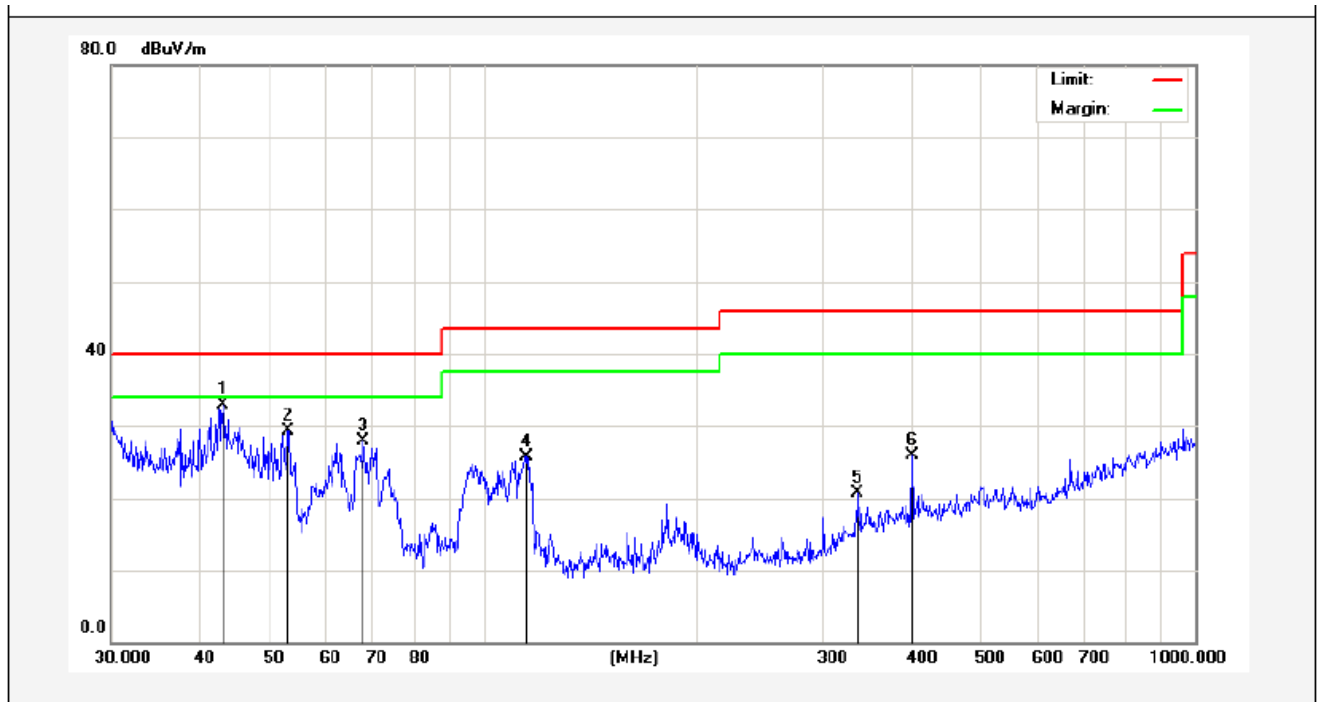
Only the worst case (x orientation).

|            |                      |                     |                     |
|------------|----------------------|---------------------|---------------------|
| Job No.:   | 011609746I           | Plarization:        | Horizontal          |
| Standard:  | (RE)FCC PART15 C _3m | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test       | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | WiFi Mode            | Distance:           | 3m                  |



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/ | Over Limit (dB) | Detector | Height (cm) | degree (deg) | Remark |
|-----|-------------|------------------|---------------|-----------------|--------------|-----------------|----------|-------------|--------------|--------|
| 1   | 42.7496     | 32.25            | -11.45        | 20.80           | 40.00        | -19.20          | peak     |             |              |        |
| 2   | 61.9951     | 34.82            | -16.22        | 18.60           | 40.00        | -21.40          | peak     |             |              |        |
| 3   | 190.4050    | 38.42            | -20.92        | 17.50           | 43.50        | -26.00          | peak     |             |              |        |
| 4   | 400.4318    | 35.50            | -12.86        | 22.64           | 46.00        | -23.36          | peak     |             |              |        |
| 5   | 668.1422    | 41.98            | -9.35         | 32.63           | 46.00        | -13.37          | peak     |             |              |        |
| 6   | 801.7862    | 40.02            | -6.54         | 33.48           | 46.00        | -12.52          | peak     |             |              |        |

|            |                      |                     |                     |
|------------|----------------------|---------------------|---------------------|
| Job No.:   | 011609746I           | Plarization:        | Vertical            |
| Standard:  | (RE)FCC PART15 C _3m | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test       | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | WiFi Mode            | Distance:           | 3m                  |



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/ | Over Limit (dB) | Detector | Height (cm) | degree (deg) | Remark |
|-----|-------------|------------------|---------------|-----------------|--------------|-----------------|----------|-------------|--------------|--------|
| 1   | 43.0504     | 44.55            | -11.57        | 32.98           | 40.00        | -7.02           | peak     |             |              |        |
| 2   | 53.1313     | 44.11            | -14.79        | 29.32           | 40.00        | -10.68          | peak     |             |              |        |
| 3   | 67.9128     | 46.59            | -18.73        | 27.86           | 40.00        | -12.14          | peak     |             |              |        |
| 4   | 114.9167    | 41.70            | -15.97        | 25.73           | 43.50        | -17.77          | peak     |             |              |        |
| 5   | 336.0350    | 34.10            | -13.49        | 20.61           | 46.00        | -25.39          | peak     |             |              |        |
| 6   | 400.4318    | 37.78            | -11.86        | 25.92           | 46.00        | -20.08          | peak     |             |              |        |

The EUT was tested on (IEEE 802.11a, IEEE 802.11n(HT20), IEEE 802.11n(HT40), IEEE 802.11ac(HT20), IEEE 802.11ac(HT40), 802.11ac(HT80))modes, only the worst data of (IEEE 802.11n(HT20)) is attached in the following pages.

### Test mode: IEEE 802.11n(HT20)

#### Low Channel(5180MHz)

| Frequency | Antenna      | Reading  | Cable Loss | Ant Factor | Amplifier | Corrected Level | Limits   | Det  |
|-----------|--------------|----------|------------|------------|-----------|-----------------|----------|------|
| (MHz)     | Polarization | (dBuV/m) | (dB)       | (dB)       | (dB)      | (dBuV/m)        | (dBuV/m) | Mode |
| 10400     | H            | 47.34    | 3.55       | 38.2       | 32.1      | 56.99           | 74       | PK   |
| 10360     | H            | 40.29    | 3.55       | 38.2       | 32.1      | 49.94           | 54       | AV   |
| 10360     | V            | 47.95    | 3.55       | 38.2       | 32.1      | 57.60           | 74       | PK   |
| 10360     | V            | 40.28    | 3.55       | 38.2       | 32.1      | 49.93           | 54       | AV   |
| 15540     | H            | 47.63    | 5.81       | 39.8       | 31.75     | 61.49           | 74       | PK   |
| 15540     | H            | 37.38    | 5.81       | 39.8       | 31.75     | 51.24           | 54       | AV   |
| 15540     | V            | 44.94    | 5.81       | 39.8       | 31.75     | 58.80           | 74       | PK   |
| 15540     | V            | 37.28    | 5.81       | 39.8       | 31.75     | 51.14           | 54       | AV   |
| 20720     | H            | --       | 7.85       | 40.2       | 40.4      | --              | 74       | PK   |
| 20720     | H            | --       | 7.85       | 40.2       | 40.4      | --              | 54       | AV   |
| 20720     | V            | --       | 7.85       | 40.2       | 40.4      | --              | 74       | PK   |
| 20720     | V            | --       | 7.85       | 40.2       | 40.4      | --              | 54       | AV   |

#### Middle Channel(5200MHz)

| Frequency | Antenna      | Reading  | Cable Loss | Ant Factor | Amplifier | Corrected Level | Limits   | Det  |
|-----------|--------------|----------|------------|------------|-----------|-----------------|----------|------|
| (MHz)     | Polarization | (dBuV/m) | (dB)       | (dB)       | (dB)      | (dBuV/m)        | (dBuV/m) | Mode |
| 10400     | H            | 47.26    | 3.61       | 38.2       | 32.1      | 56.97           | 74       | PK   |
| 10400     | H            | 39.82    | 3.61       | 38.2       | 32.1      | 49.53           | 54       | AV   |
| 10400     | V            | 48.20    | 3.61       | 38.2       | 32.1      | 57.91           | 74       | PK   |
| 10400     | V            | 39.23    | 3.61       | 38.2       | 32.1      | 48.94           | 54       | AV   |
| 15600     | H            | 48.12    | 5.83       | 39.8       | 31.75     | 62.00           | 74       | PK   |
| 15600     | H            | 37.42    | 5.83       | 39.8       | 31.75     | 51.30           | 54       | AV   |
| 15600     | V            | 45.01    | 5.83       | 39.8       | 31.75     | 58.89           | 74       | PK   |
| 15600     | V            | 37.19    | 5.83       | 39.8       | 31.75     | 51.07           | 54       | AV   |
| 20800     | H            | --       | 7.92       | 40.2       | 40.4      | --              | 74       | PK   |
| 20800     | H            | --       | 7.92       | 40.2       | 40.4      | --              | 54       | AV   |
| 20800     | V            | --       | 7.92       | 40.2       | 40.4      | --              | 74       | PK   |
| 20800     | V            | --       | 7.92       | 40.2       | 40.4      | --              | 54       | AV   |

### High Channel(5240MHz)

| Frequency | Antenna      | Reading  | Cable Loss | Ant Factor | Amplifier | Corrected Level | Limits   | Det  |
|-----------|--------------|----------|------------|------------|-----------|-----------------|----------|------|
| (MHz)     | Polarization | (dBuV/m) | (dB)       | (dB)       | (dB)      | (dBuV/m)        | (dBuV/m) | Mode |
| 10480     | H            | 47.87    | 3.62       | 38.2       | 32.1      | 57.59           | 74       | PK   |
| 10480     | H            | 39.68    | 3.62       | 38.2       | 32.1      | 49.40           | 54       | AV   |
| 10480     | V            | 48.28    | 3.62       | 38.2       | 32.1      | 58.00           | 74       | PK   |
| 10480     | V            | 40.11    | 3.62       | 38.2       | 32.1      | 49.83           | 54       | AV   |
| 15720     | H            | 47.83    | 5.86       | 39.8       | 31.75     | 61.74           | 74       | PK   |
| 15720     | H            | 37.13    | 5.86       | 39.8       | 31.75     | 51.04           | 54       | AV   |
| 15720     | V            | 45.30    | 5.86       | 39.8       | 31.75     | 59.21           | 74       | PK   |
| 15720     | V            | 36.98    | 5.86       | 39.8       | 31.75     | 50.89           | 54       | AV   |
| 20960     | H            | --       | 7.95       | 40.2       | 40.4      | --              | 74       | PK   |
| 20960     | H            | --       | 7.95       | 40.2       | 40.4      | --              | 54       | AV   |
| 20960     | V            | --       | 7.95       | 40.2       | 40.4      | --              | 74       | PK   |
| 20960     | V            | --       | 7.95       | 40.2       | 40.4      | --              | 54       | AV   |

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

Note: 2. Remark "---" means that the emissions level is too low to be measured

### Low Channel(5745MHz)

| Frequency | Antenna      | Reading  | Cable Loss | Ant Factor | Amplifier | Corrected Level | Limits   | Det  |
|-----------|--------------|----------|------------|------------|-----------|-----------------|----------|------|
| (MHz)     | Polarization | (dBuV/m) | (dB)       | (dB)       | (dB)      | (dBuV/m)        | (dBuV/m) | Mode |
| 11490     | H            | 47.75    | 3.63       | 38.2       | 32.1      | 57.48           | 74       | PK   |
| 11490     | H            | 39.08    | 3.63       | 38.2       | 32.1      | 48.81           | 54       | AV   |
| 11490     | V            | 47.79    | 3.63       | 38.2       | 32.1      | 57.52           | 74       | PK   |
| 11490     | V            | 39.36    | 3.63       | 38.2       | 32.1      | 49.09           | 54       | AV   |
| 17235     | H            | 48.51    | 5.85       | 39.8       | 31.75     | 62.41           | 74       | PK   |
| 17235     | H            | 37.43    | 5.85       | 39.8       | 31.75     | 51.33           | 54       | AV   |
| 17235     | V            | 45.22    | 5.85       | 39.8       | 31.75     | 59.12           | 74       | PK   |
| 17235     | V            | 37.34    | 5.85       | 39.8       | 31.75     | 51.24           | 54       | AV   |
| 22980     | H            | --       | 7.97       | 40.2       | 40.4      | --              | 74       | PK   |
| 22980     | H            | --       | 7.97       | 40.2       | 40.4      | --              | 54       | AV   |
| 22980     | V            | --       | 7.97       | 40.2       | 40.4      | --              | 74       | PK   |
| 22980     | V            | --       | 7.97       | 40.2       | 40.4      | --              | 54       | AV   |

### Middle Channel(5785MHz)

| Frequency | Antenna      | Reading  | Cable Loss | Ant Factor | Amplifier | Corrected Level | Limits   | Det  |
|-----------|--------------|----------|------------|------------|-----------|-----------------|----------|------|
| (MHz)     | Polarization | (dBuV/m) | (dB)       | (dB)       | (dB)      | (dBuV/m)        | (dBuV/m) | Mode |
| 11570     | H            | 46.79    | 3.66       | 38.2       | 32.1      | 56.55           | 74       | PK   |
| 11570     | H            | 39.72    | 3.66       | 38.2       | 32.1      | 49.48           | 54       | AV   |
| 11570     | V            | 48.15    | 3.66       | 38.2       | 32.1      | 57.91           | 74       | PK   |
| 11570     | V            | 39.47    | 3.66       | 38.2       | 32.1      | 49.23           | 54       | AV   |
| 17355     | H            | 48.04    | 5.88       | 39.8       | 31.75     | 61.97           | 74       | PK   |
| 17355     | H            | 36.22    | 5.88       | 39.8       | 31.75     | 50.15           | 54       | AV   |
| 17355     | V            | 44.61    | 5.88       | 39.8       | 31.75     | 58.54           | 74       | PK   |
| 17355     | V            | 37.26    | 5.88       | 39.8       | 31.75     | 51.19           | 54       | AV   |
| 23140     | H            | --       | 7.95       | 40.2       | 40.4      | --              | 74       | PK   |
| 23140     | H            | --       | 7.95       | 40.2       | 40.4      | --              | 54       | AV   |
| 23140     | V            | --       | 7.95       | 40.2       | 40.4      | --              | 74       | PK   |
| 23140     | V            | --       | 7.95       | 40.2       | 40.4      | --              | 54       | AV   |

### High Channel(5825MHz)

| Frequency | Antenna      | Reading  | Cable Loss | Ant Factor | Amplifier | Corrected Level | Limits   | Det  |
|-----------|--------------|----------|------------|------------|-----------|-----------------|----------|------|
| (MHz)     | Polarization | (dBuV/m) | (dB)       | (dB)       | (dB)      | (dBuV/m)        | (dBuV/m) | Mode |
| 11650     | H            | 46.72    | 3.68       | 38.2       | 32.1      | 56.50           | 74       | PK   |
| 11650     | H            | 40.17    | 3.68       | 38.2       | 32.1      | 49.95           | 54       | AV   |
| 11650     | V            | 48.35    | 3.68       | 38.2       | 32.1      | 58.13           | 74       | PK   |
| 11650     | V            | 40.39    | 3.68       | 38.2       | 32.1      | 50.17           | 54       | AV   |
| 17475     | H            | 47.49    | 5.89       | 39.8       | 31.75     | 61.43           | 74       | PK   |
| 17475     | H            | 36.87    | 5.89       | 39.8       | 31.75     | 50.81           | 54       | AV   |
| 17475     | V            | 44.55    | 5.89       | 39.8       | 31.75     | 58.49           | 74       | PK   |
| 17475     | V            | 36.47    | 5.89       | 39.8       | 31.75     | 50.41           | 54       | AV   |
| 23300     | H            | --       | 7.98       | 40.2       | 40.4      | --              | 74       | PK   |
| 23300     | H            | --       | 7.98       | 40.2       | 40.4      | --              | 54       | AV   |
| 23300     | V            | --       | 7.98       | 40.2       | 40.4      | --              | 74       | PK   |
| 23300     | V            | --       | 7.98       | 40.2       | 40.4      | --              | 54       | AV   |

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

Note: 2. Remark "---" means that the emissions level is too low to be measured

## 8. Band Edge Test

### 8.1. Test Limit

For transmitter operating in the 5.15-5.25GHz band: all emissions outside of the 5.15-5.35GHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5.25-5.35GHz band: all emissions outside of the 5.15-5.35GHz band shall not exceed an EIRP of -27dBm/MHz. Devices operating in the 5.25-5.35GHz band that generate emissions in the 5.15-5.25GHz band must meet all applicable technical requirements for operation in the 5.15-5.25GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27dBm/MHz in the 5.15-5.25GHz band.

For transmitters operating in the 5.45-5.725GHz band: all emissions outside of the 5.47-5.725GHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5.725-5.825GHz band: all emissions within the frequency range from the band edge to 10MHz above or below the band edge shall not exceed an EIRP of -17dBm/MHz; for frequencies 10MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27dBm/MHz.

### 8.2. Test Setup

Same as clause 7.2.

### 8.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.  
For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turntable shall be rotated 360 degrees to determine the position of max. emission level. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

Measurements are made on 9KHz to 30MHz and 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz.

The EUT is tested in 9\*6\*6 Chamber.

The test results are listed in Section 9.5.

#### 8.4. Test Equipment

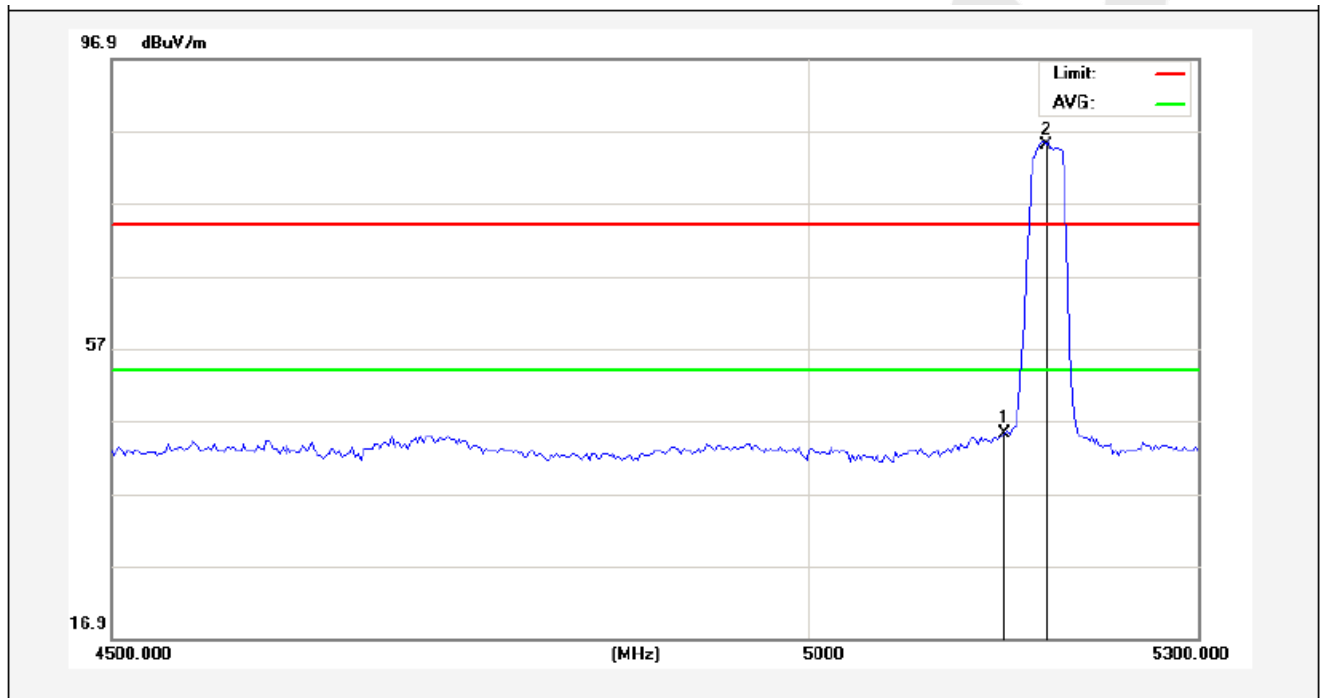
Same as clause 4.4.

#### 8.5. Test Results

Please refer to the following pages.

The EUT was tested on (IEEE 802.11a, IEEE 802.11n(HT20), IEEE 802.11n(HT40), IEEE 802.11ac(HT20), IEEE 802.11ac(HT40), 802.11ac(HT80))modes, only the worst data of (IEEE 802.11n(HT20)) is attached in the following pages.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Horizontal-PEAK     |
| Standard:  | (RE)FCC PART15 E_3m             | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5180MHz) | Distance:           | 3m                  |

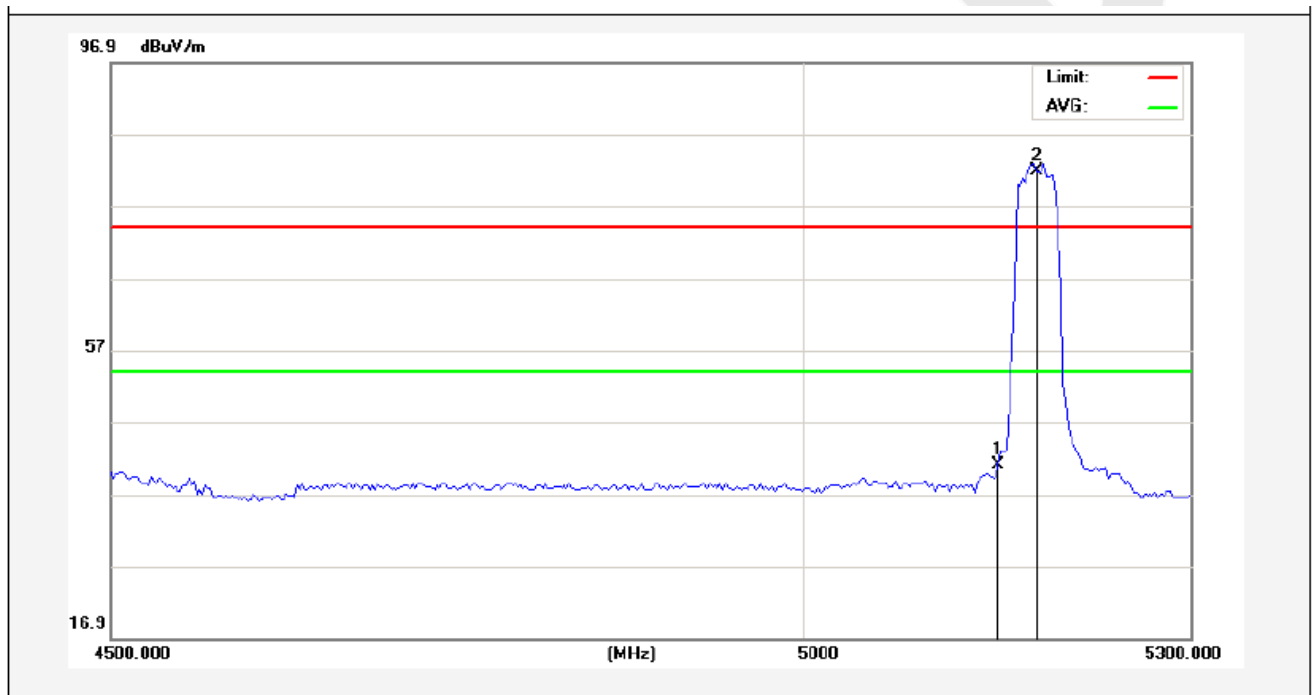


| Frequency | CableLoss | AntFactor | PreampFactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5150.000  | 3.85      | 37.51     | 32.60        | 40.56     | 49.32  | 74.00  | -24.68     | Peak   |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Vertical-PEAK       |
| Standard:  | (RE)FCC PART15 E_3m             | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5180MHz) | Distance:           | 3m                  |

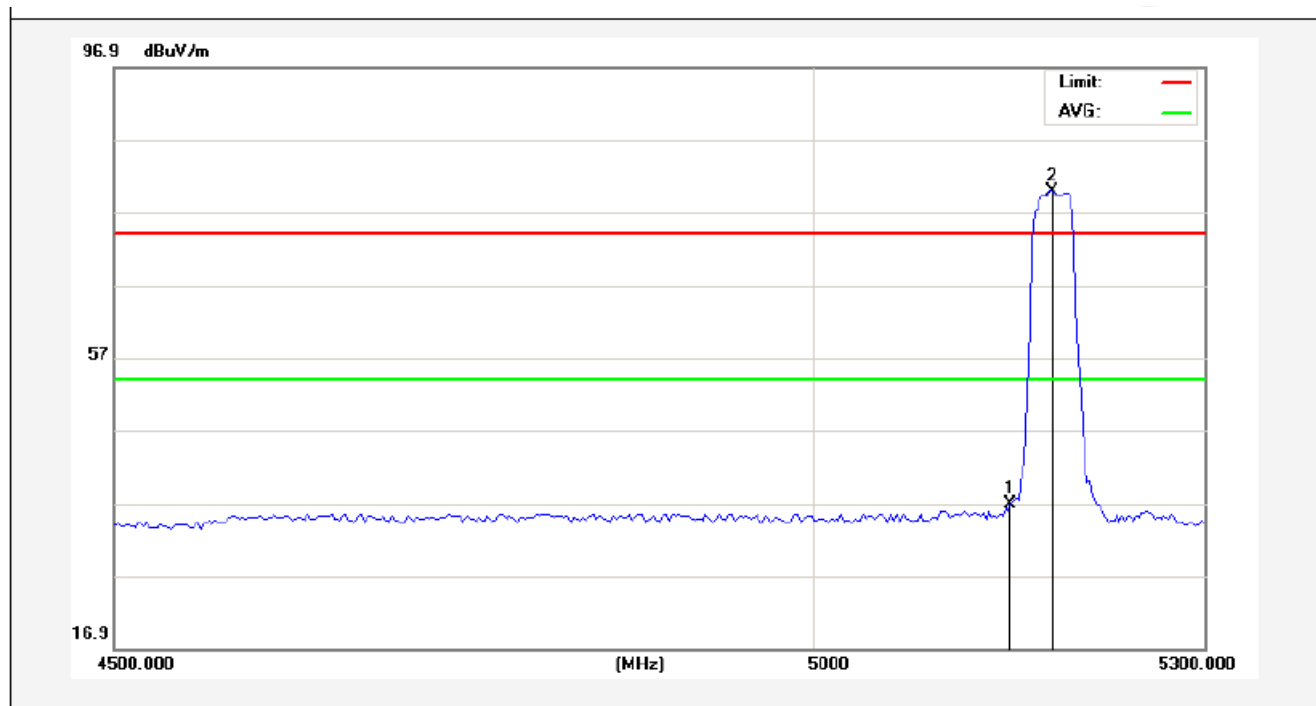


| Frequency | CableLoss | AntFactor | PreampFactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5150.000  | 3.85      | 37.51     | 32.60        | 30.52     | 39.28  | 74.00  | -34.72     | Peak   |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Horizontal-AV       |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5180MHz) | Distance:           | 3m                  |

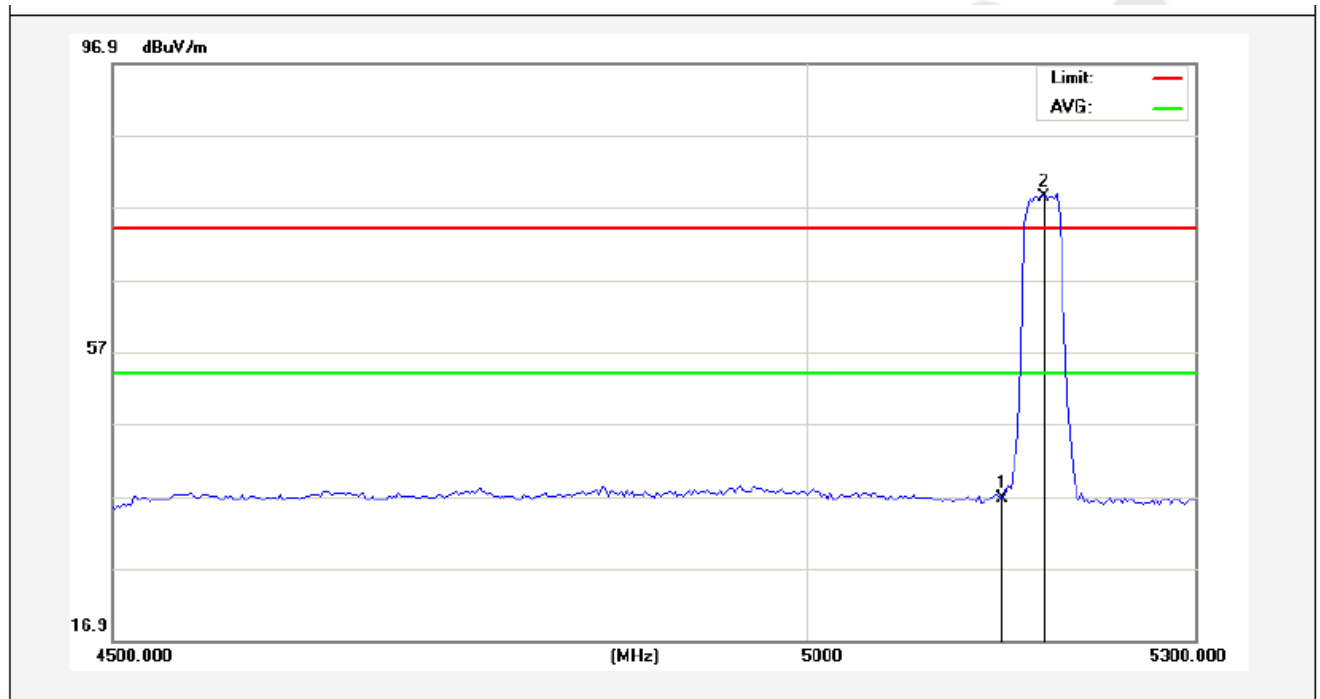


| Frequency | CableLoss | AntFactor | PreampFactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5150.000  | 3.85      | 37.51     | 32.60        | 32.50     | 41.26  | 54.00  | -12.74     | AVG    |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Vertical-AV         |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5180MHz) | Distance:           | 3m                  |

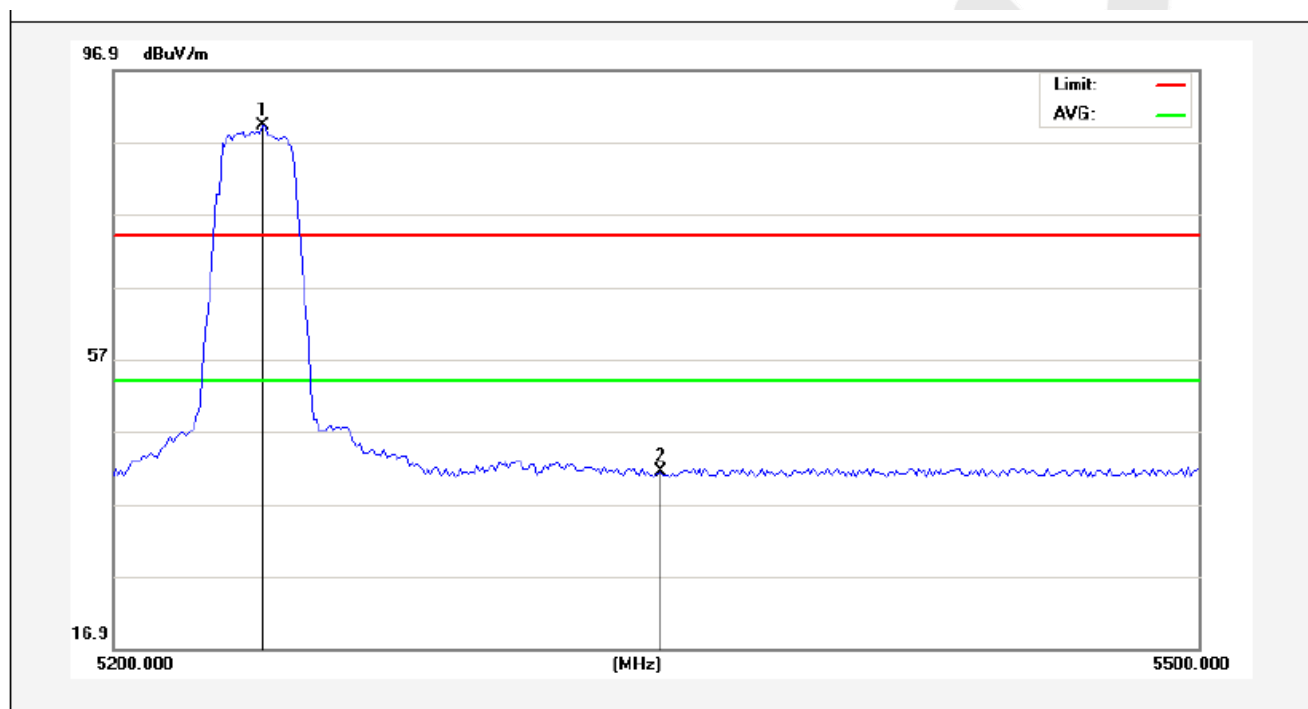


| Frequency | CableLoss | AntFactor | Preamplifier | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBuV      | dBuV/m | dBuV/m | dB         |        |
| 5150.000  | 3.85      | 37.51     | 32.60        | 31.77     | 40.53  | 54.00  | -13.47     | AVG    |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Horizontal-PEAK     |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5240MHz) | Distance:           | 3m                  |

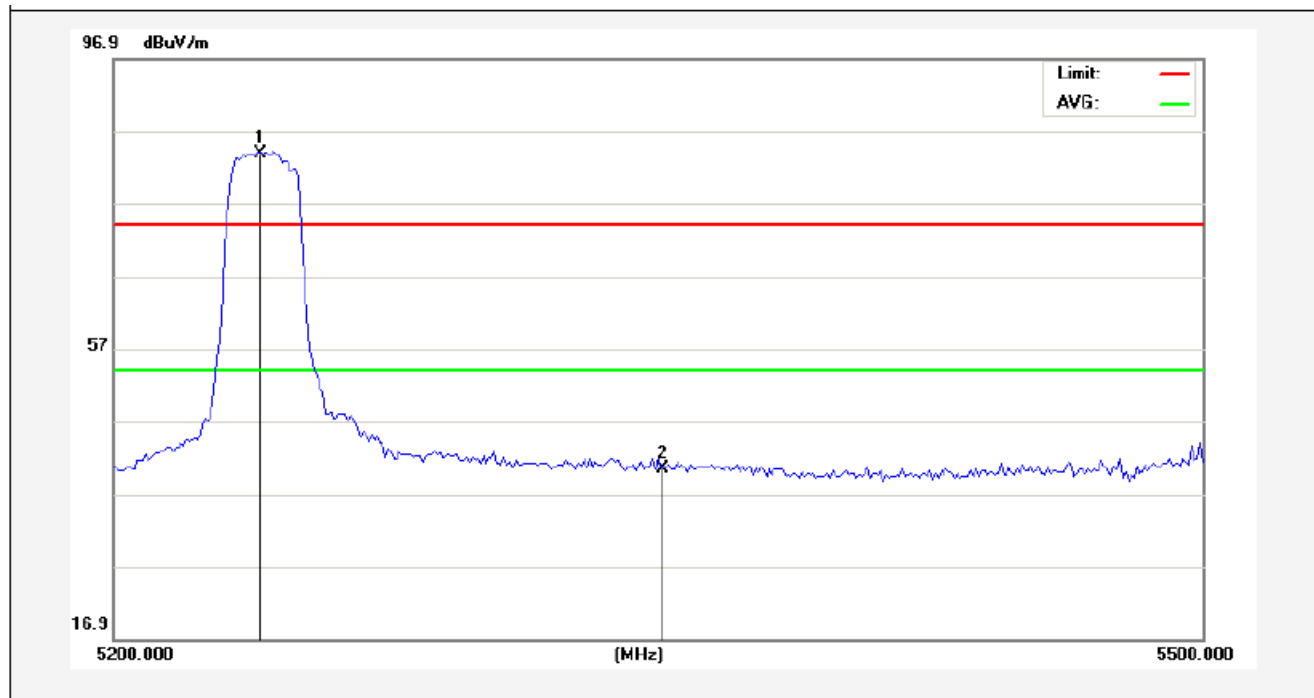


| Frequency | CableLoss | AntFactor | Preampfac<br>tor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|------------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB               | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5350.000  | 3.87      | 37.59     | 32.60            | 37.39     | 46.25  | 74.00  | -27.75     | Peak   |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Vertical-PEAK       |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5240MHz) | Distance:           | 3m                  |

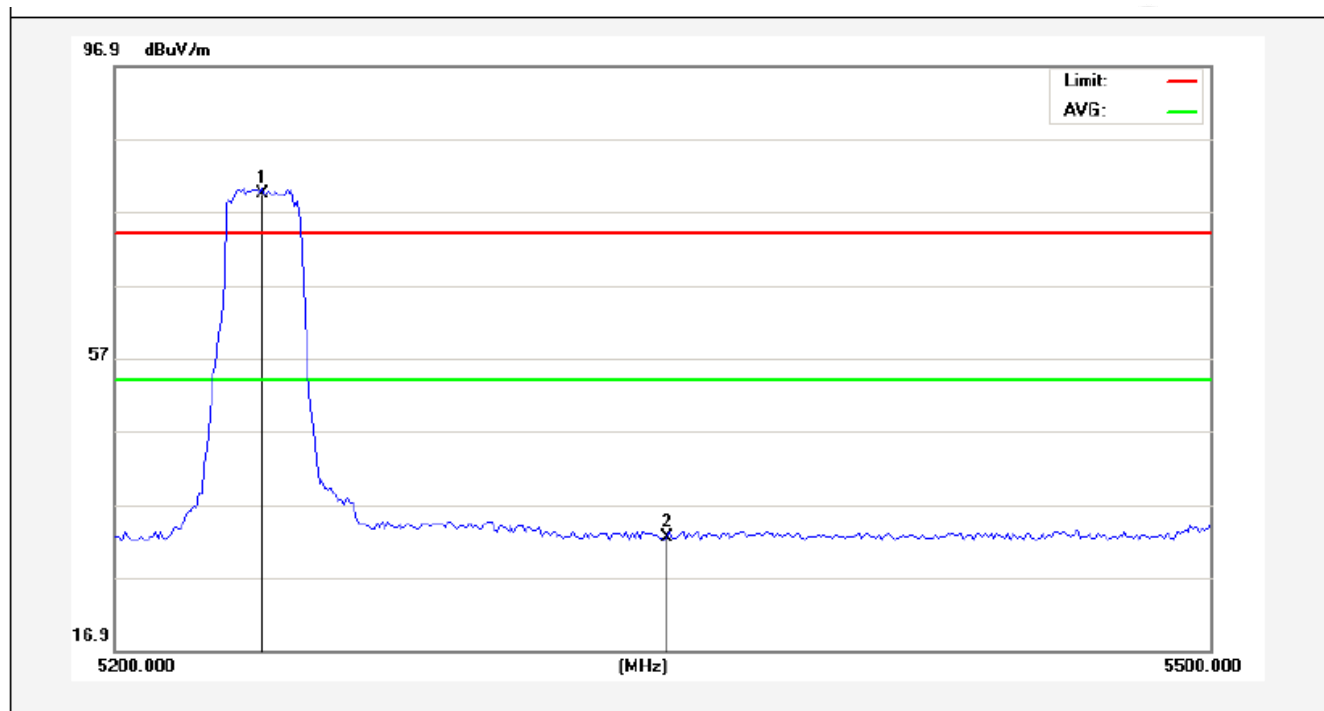


| Frequency | CableLoss | AntFactor | PreampFactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5350.000  | 3.87      | 37.59     | 32.60        | 36.75     | 45.61  | 74.00  | -28.39     | Peak   |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Horizontal-AV       |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5240MHz) | Distance:           | 3m                  |

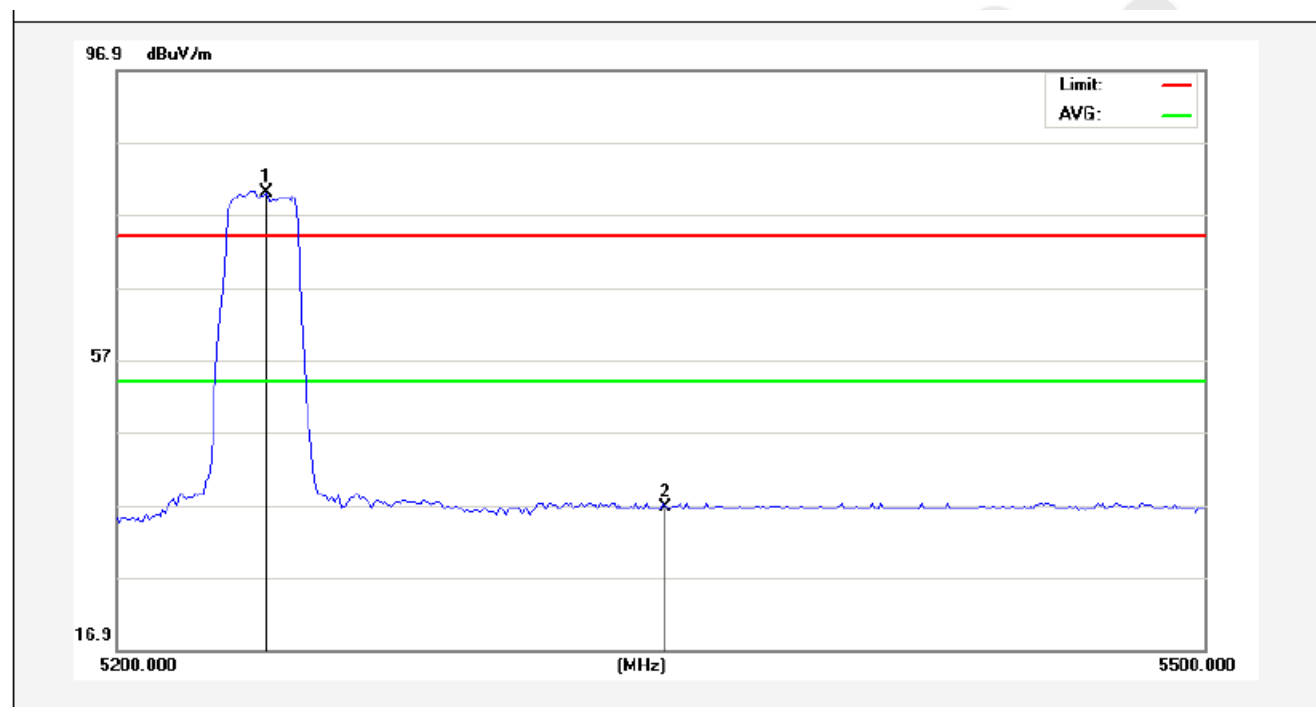


| Frequency | CableLoss | AntFactor | PreampFactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5350.000  | 3.87      | 37.59     | 32.60        | 29.78     | 38.64  | 54.00  | -15.36     | AVG    |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Vertical-AV         |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5240MHz) | Distance:           | 3m                  |

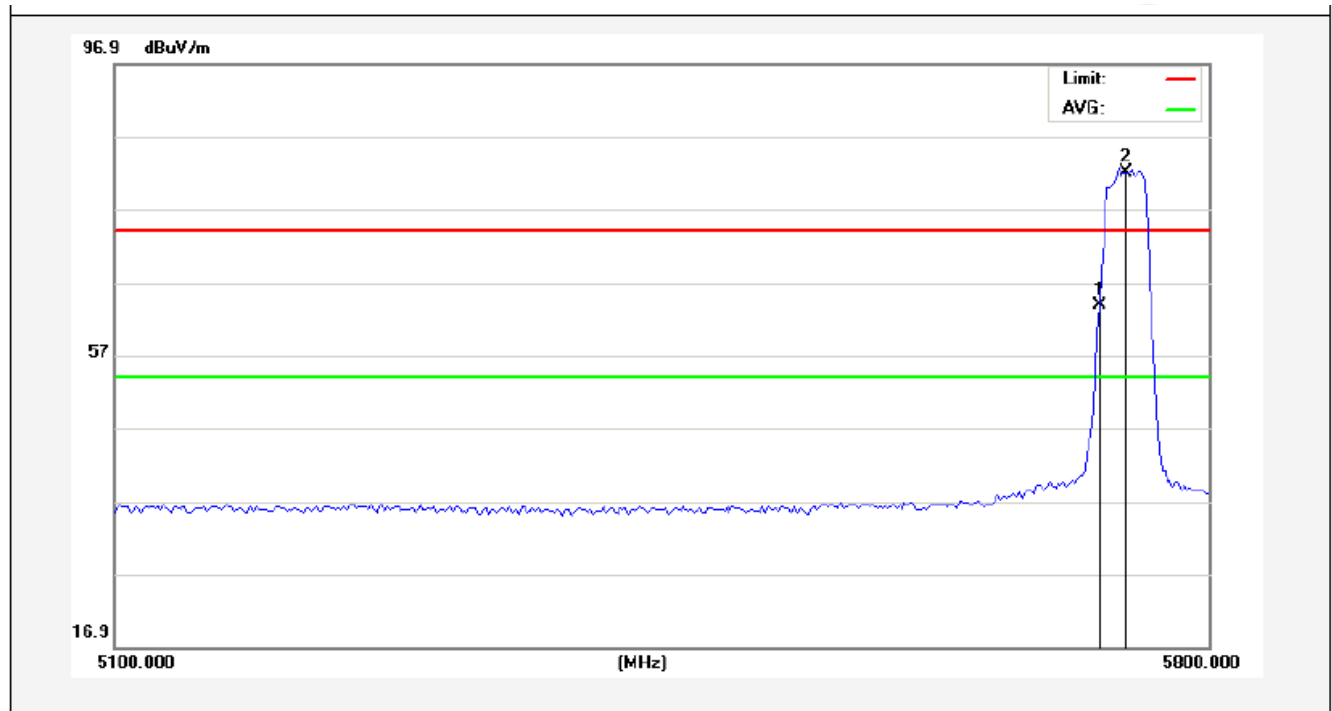


| Frequency | CableLoss | AntFactor | PreampFactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5350.000  | 3.87      | 37.59     | 32.60        | 31.39     | 40.25  | 54.00  | -13.75     | AVG    |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Horizontal-PEAK     |
| Standard:  | (RE)FCC PART15 E_3m             | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5745MHz) | Distance:           | 3m                  |

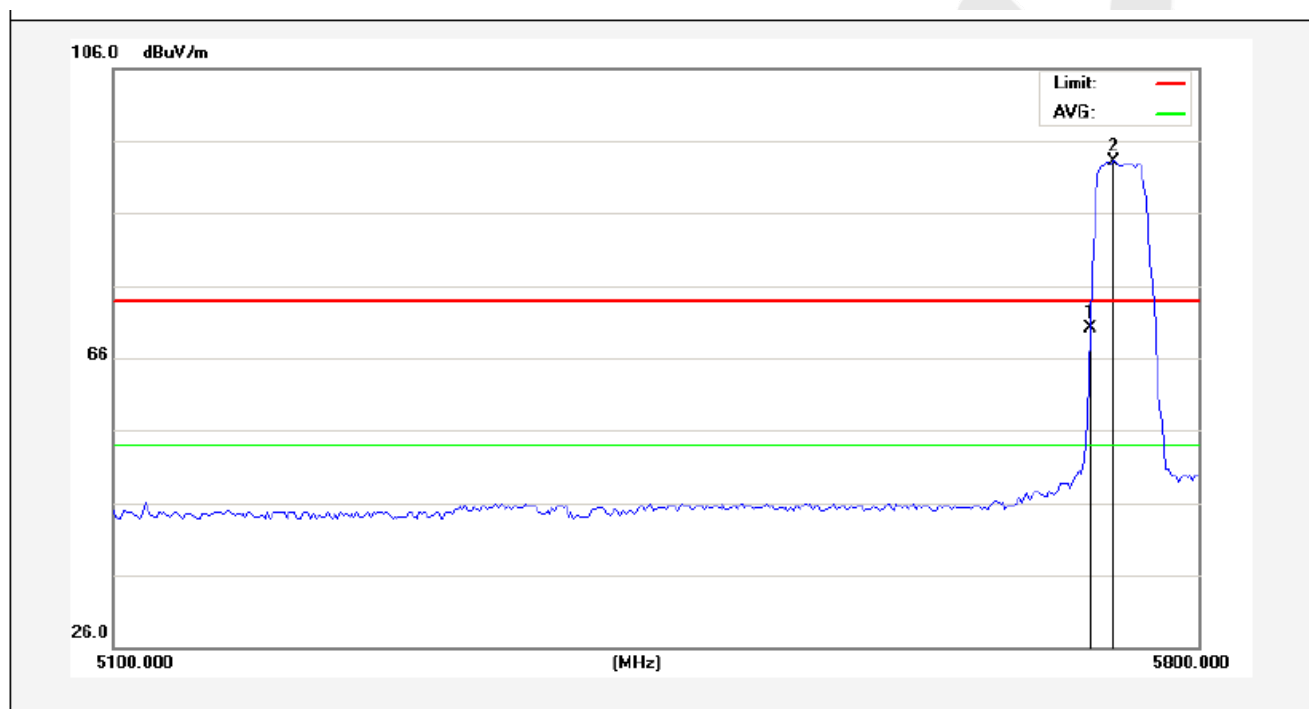


| Frequency | CableLoss | AntFactor | Preamplifier | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5725.000  | 3.92      | 37.63     | 32.60        | 58.74     | 67.69  | 74.00  | -6.31      | Peak   |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Vertical-PEAK       |
| Standard:  | (RE)FCC PART15 E_3m             | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5745MHz) | Distance:           | 3m                  |

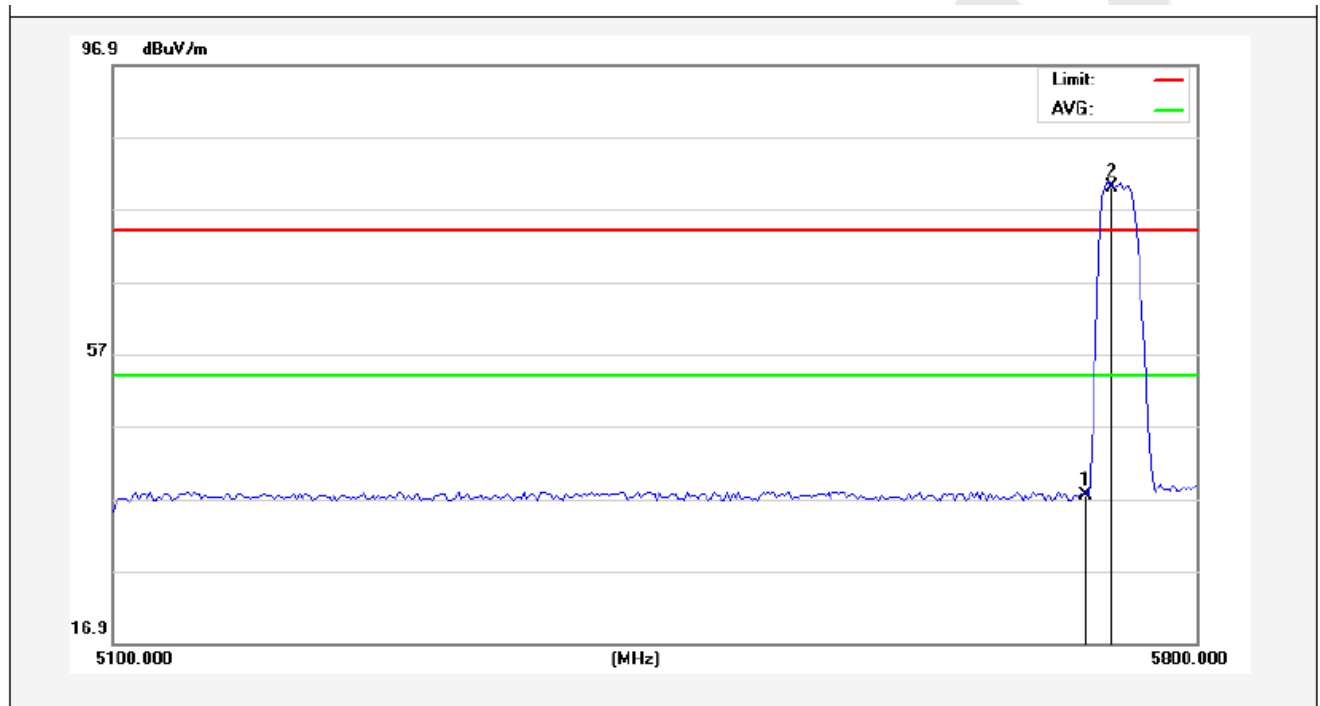


| Frequency | CableLoss | AntFactor | Preampfactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5725.000  | 3.92      | 37.63     | 32.60        | 59.99     | 68.94  | 74.00  | -5.06      | Peak   |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|                   |                                         |                            |                            |
|-------------------|-----------------------------------------|----------------------------|----------------------------|
| <b>Job No.:</b>   | <b>011609746I</b>                       | <b>Plarization:</b>        | <b>Horizontal-AV</b>       |
| <b>Standard:</b>  | <b>(RE)FCC PART15 E _3m</b>             | <b>Power Source:</b>       | <b>AC 120V/60Hz for PC</b> |
| <b>Test item:</b> | <b>Radiation Test</b>                   | <b>Temp.(C)/Hum.(%RH):</b> | <b>24.3(C)/55%RH</b>       |
| <b>Test Mode:</b> | <b>IEEE 802.11n(HT20)<br/>(5745MHz)</b> | <b>Distance:</b>           | <b>3m</b>                  |

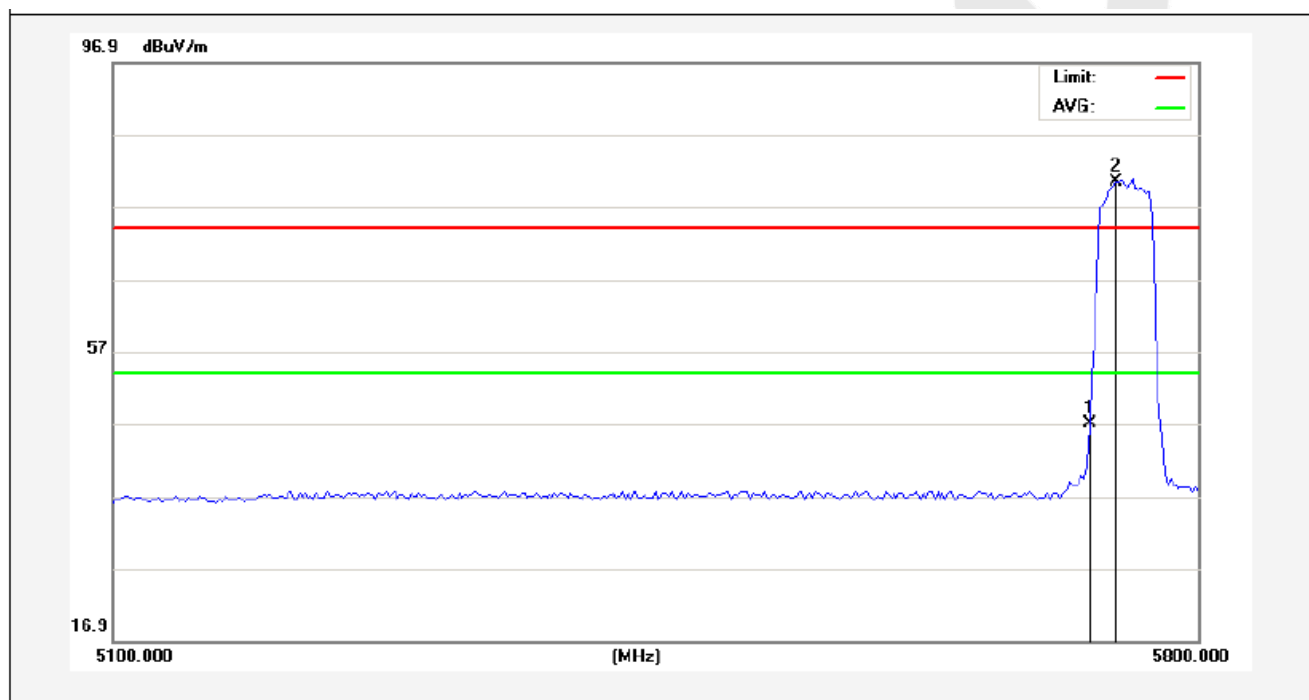


| Frequency | CableLoss | AntFactor | PreampFactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5725.000  | 3.92      | 37.63     | 32.60        | 31.36     | 40.31  | 54.00  | -13.69     | AVG    |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Vertical-AV         |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5745MHz) | Distance:           | 3m                  |

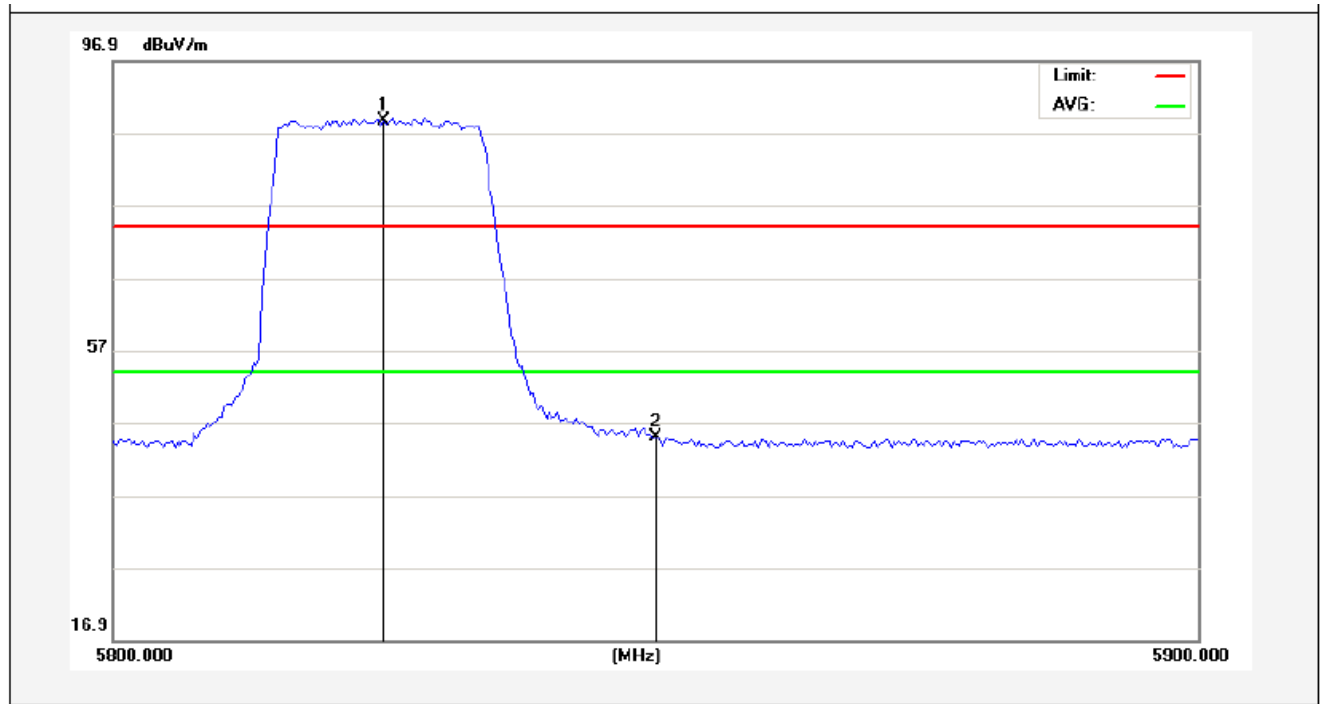


| Frequency | CableLoss | AntFactor | Preampfac<br>tor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|------------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB               | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5725.000  | 3.92      | 37.63     | 32.60            | 32.33     | 41.28  | 54.00  | -12.72     | AVG    |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Horizontal-PEAK     |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5825MHz) | Distance:           | 3m                  |

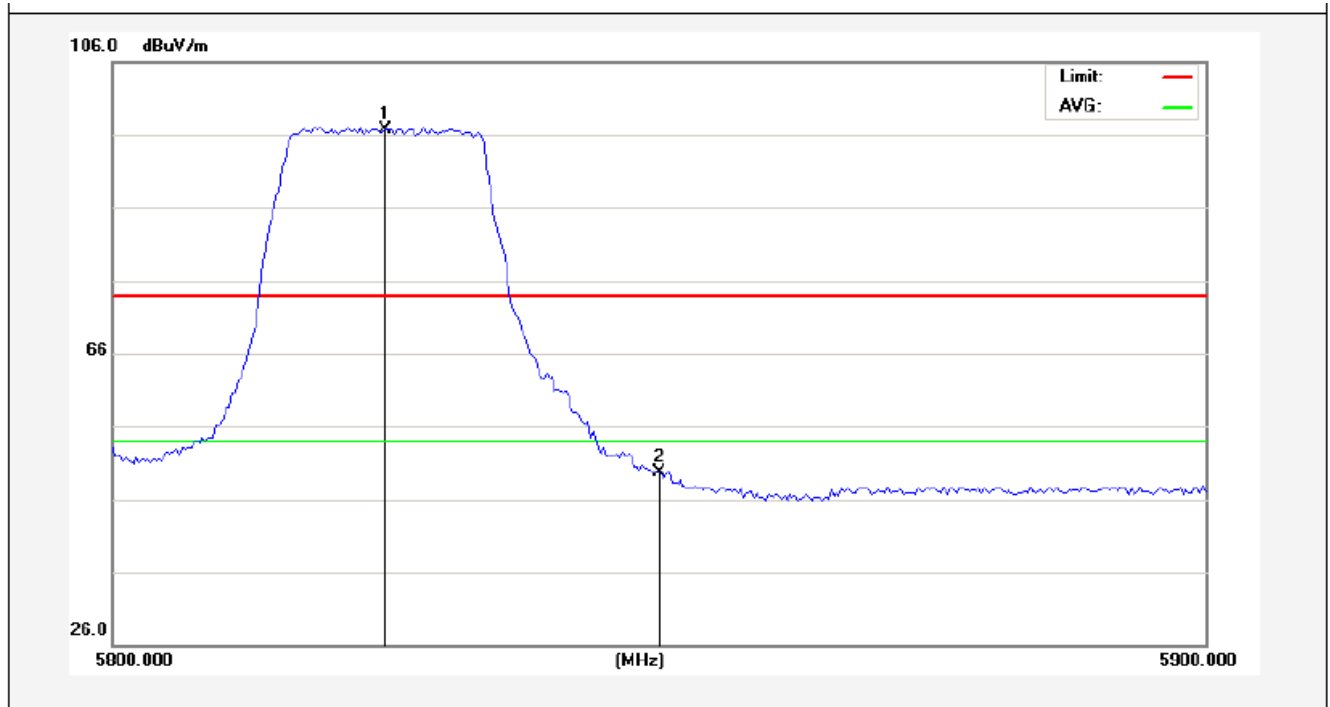


| Frequency | CableLoss | AntFactor | PreampFactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5850.000  | 3.95      | 37.67     | 32.60        | 40.33     | 49.35  | 74.00  | -24.65     | Peak   |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Vertical-PEAK       |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5825MHz) | Distance:           | 3m                  |

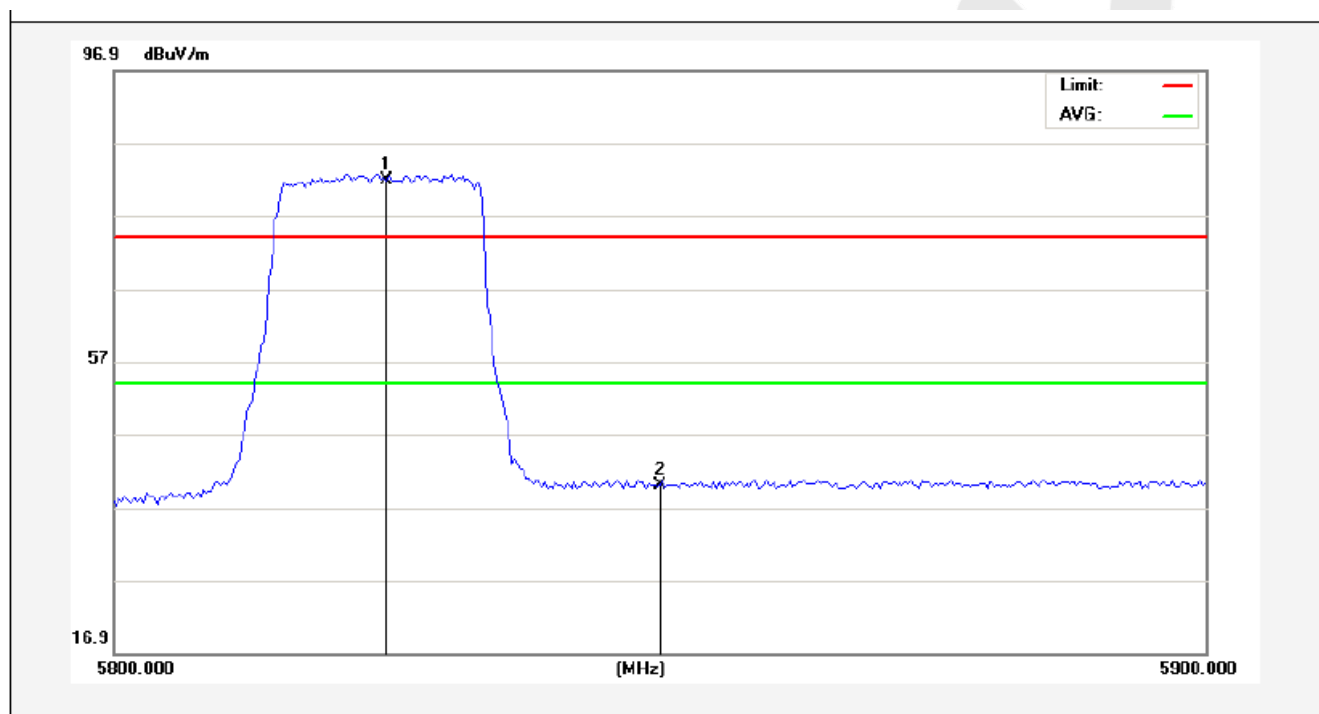


| Frequency | CableLoss | AntFactor | PreampFactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|--------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB           | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5850.000  | 3.95      | 37.67     | 32.60        | 37.56     | 46.58  | 74.00  | -27.42     | Peak   |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Horizontal-AV       |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5825MHz) | Distance:           | 3m                  |

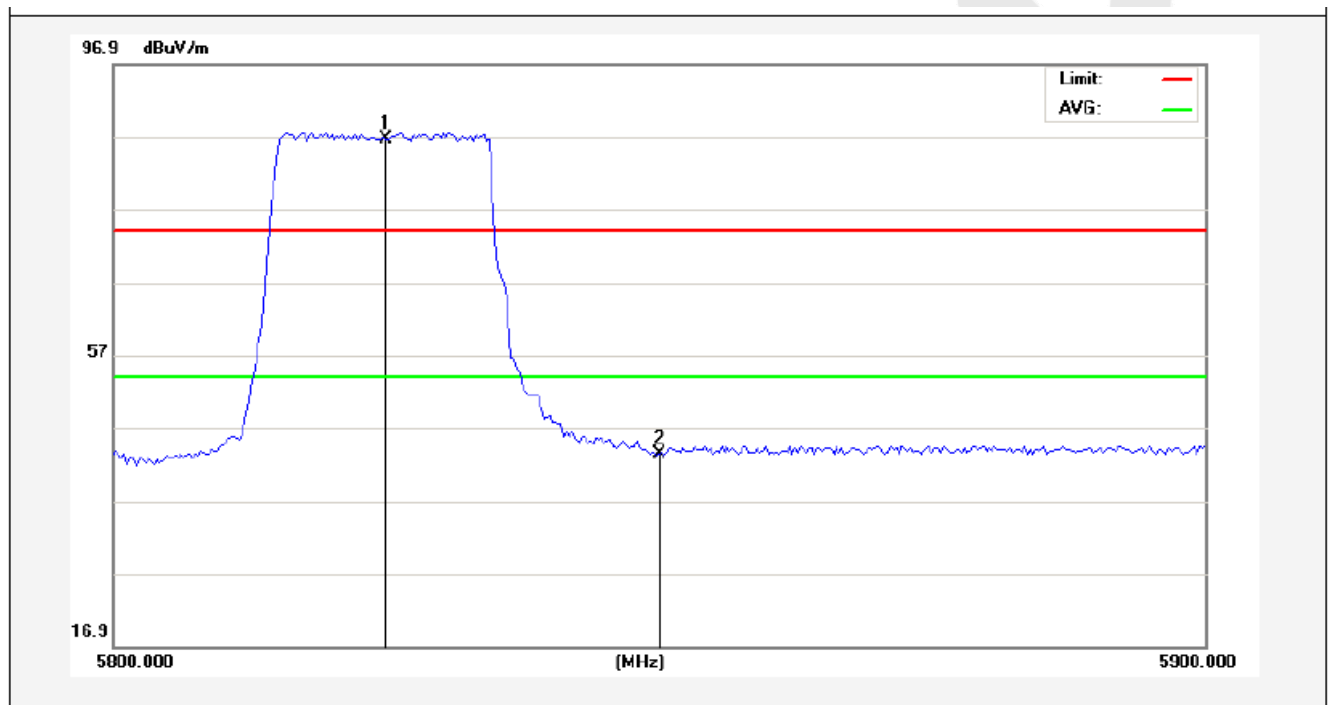


| Frequency | CableLoss | AntFactor | Preampfac<br>tor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|------------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB               | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5725.000  | 3.92      | 37.63     | 32.60            | 35.34     | 44.29  | 54.00  | -9.71      | AVG    |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

|            |                                 |                     |                     |
|------------|---------------------------------|---------------------|---------------------|
| Job No.:   | 011609746I                      | Plarization:        | Vertical-AV         |
| Standard:  | (RE)FCC PART15 E _3m            | Power Source:       | AC 120V/60Hz for PC |
| Test item: | Radiation Test                  | Temp.(C)/Hum.(%RH): | 24.3(C)/55%RH       |
| Test Mode: | IEEE 802.11n(HT20)<br>(5825MHz) | Distance:           | 3m                  |



| Frequency | CableLoss | AntFactor | PreamplFactor | ReadLevel | Level  | Limit  | Over Limit | Remark |
|-----------|-----------|-----------|---------------|-----------|--------|--------|------------|--------|
| MHz       | dB        | dB/m      | dB            | dBμV      | dBμV/m | dBμV/m | dB         |        |
| 5725.000  | 3.92      | 37.63     | 32.60         | 37.34     | 46.29  | 54.00  | -7.71      | AVG    |

**Remark:**

According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

## 9. ANTENNA APPLICATION

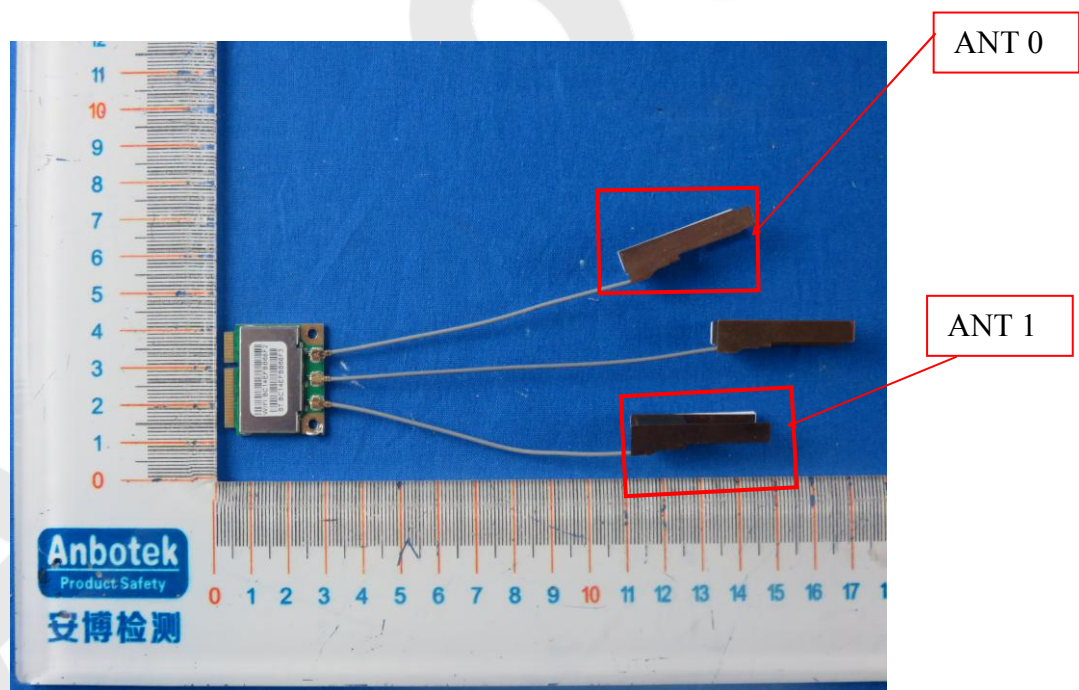
### 9.1. Antenna requirement

The EUT'S antenna is met the requirement of FCC part 15C section 15.407.

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

### 9.2. Result

The EUT's antenna used a copper Antenna, which is permanently attached to the PCB with glue, The antenna's gain is 5dBi and meets the requirement.



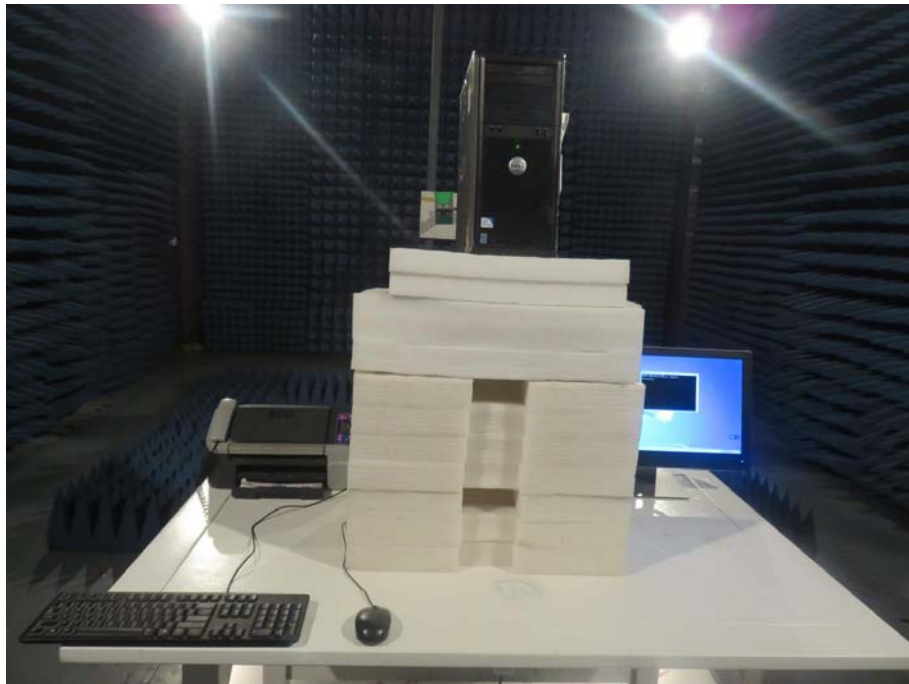
## 10. PHOTOGRAPH

### 10.1. Photo of Conducted Emission Measurement

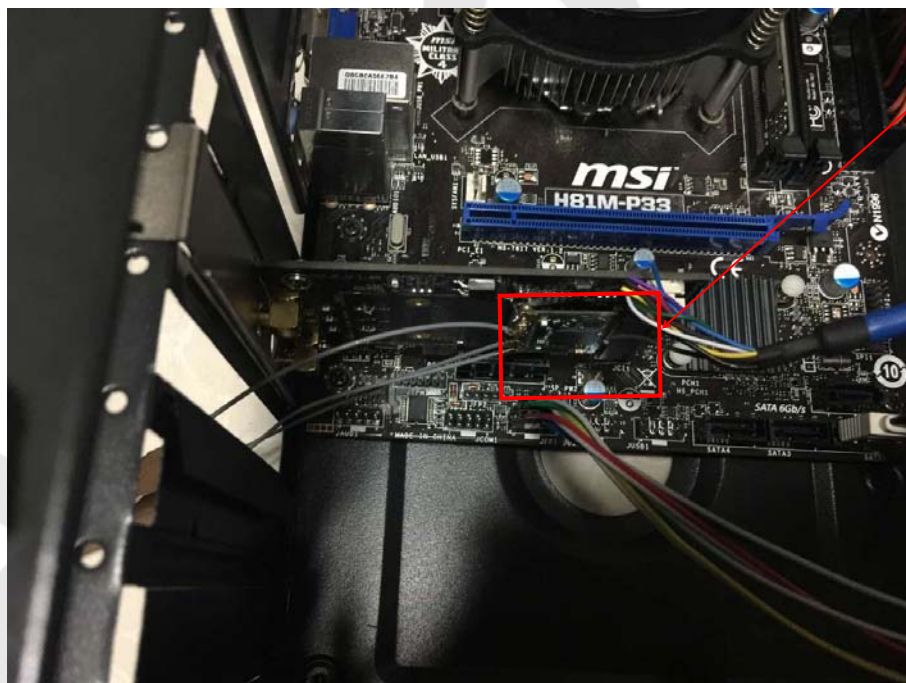


### 10.2. Photo of Radiation Emission Test





10.3. Photo of EUT in the PC



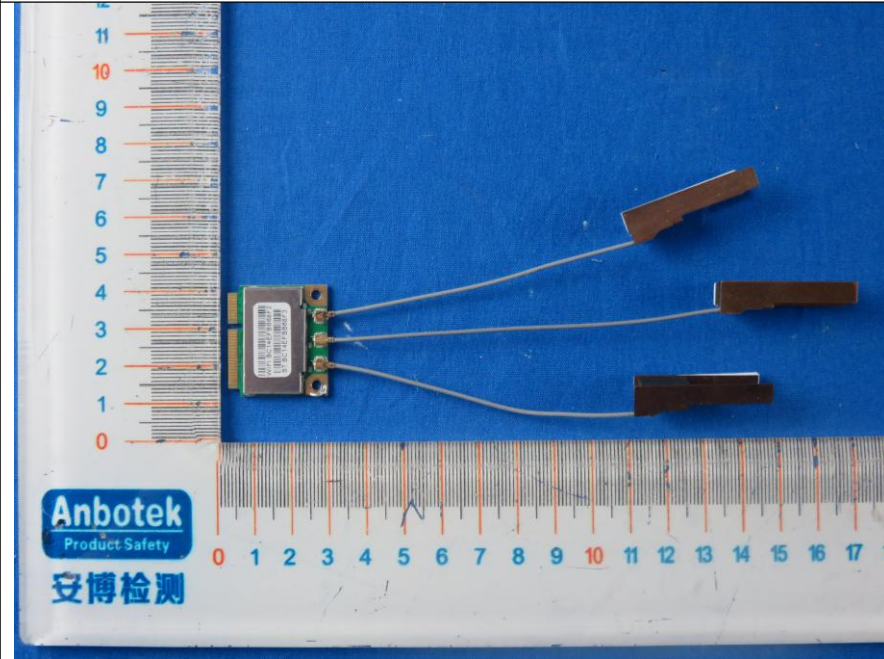
EUT



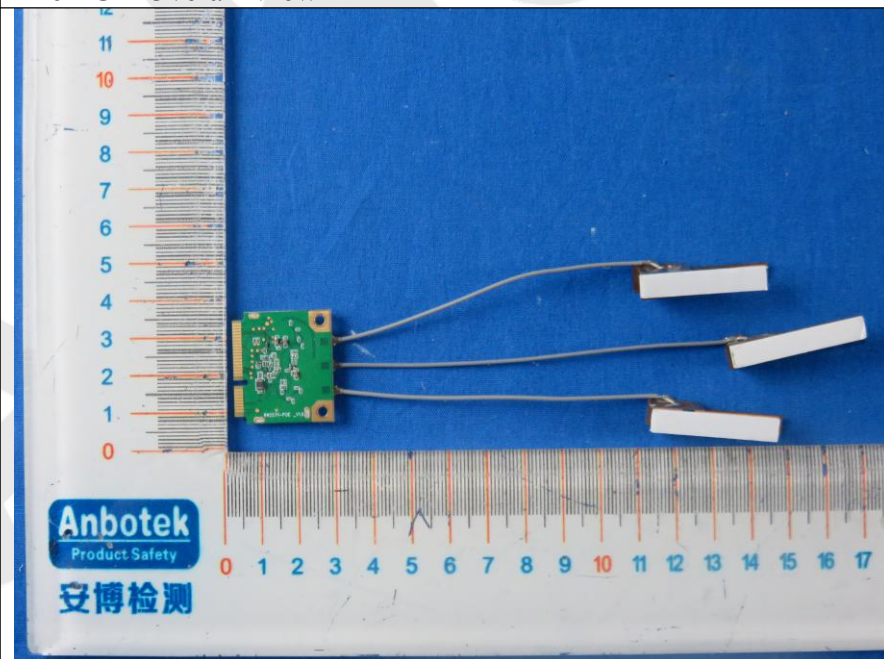
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## APPENDIX I (EXTERNAL PHOTOS)

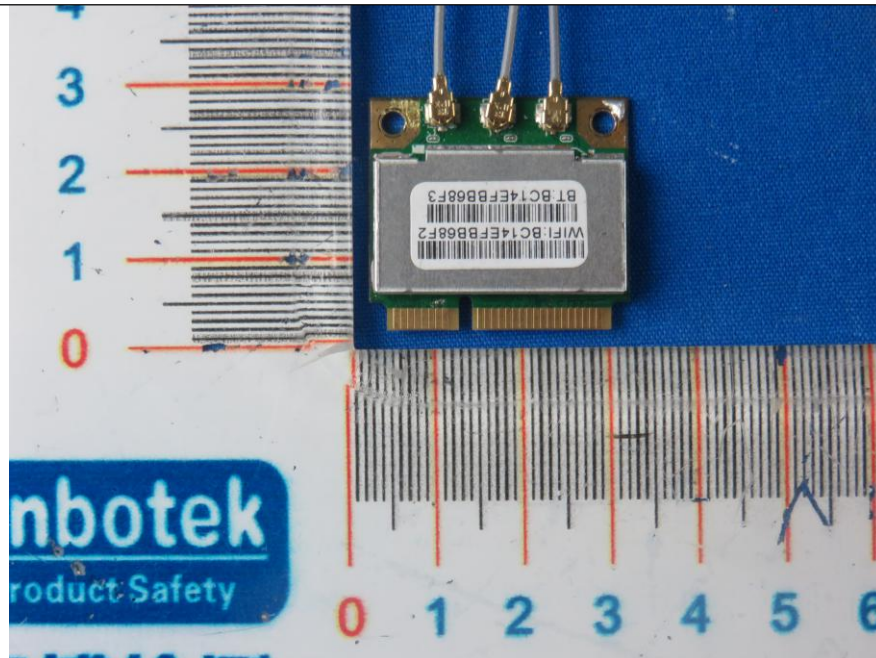
1. Figure  
The EUT-Overall View



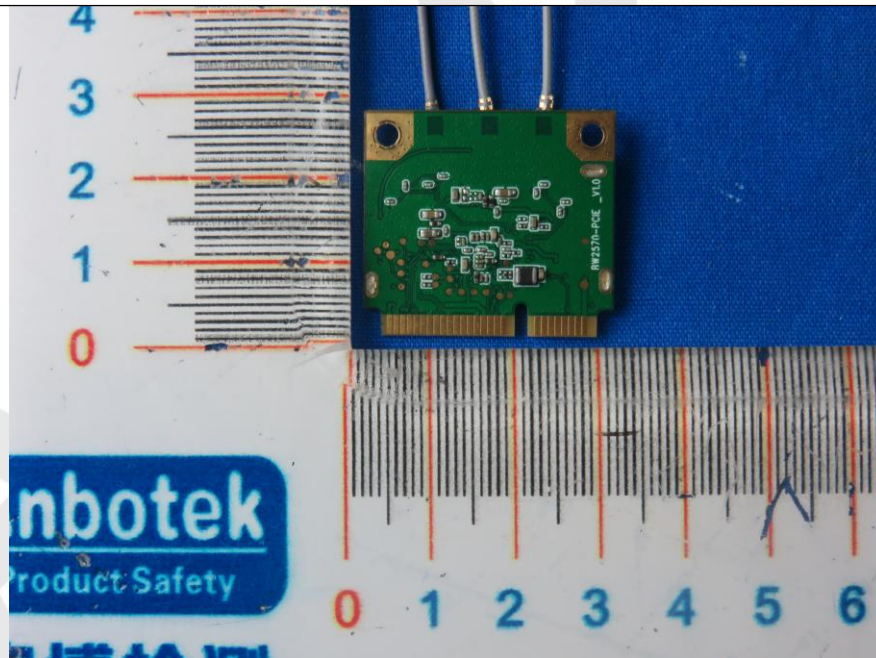
2. Figure  
The EUT-Overall View



3. Figure  
The EUT-Front View

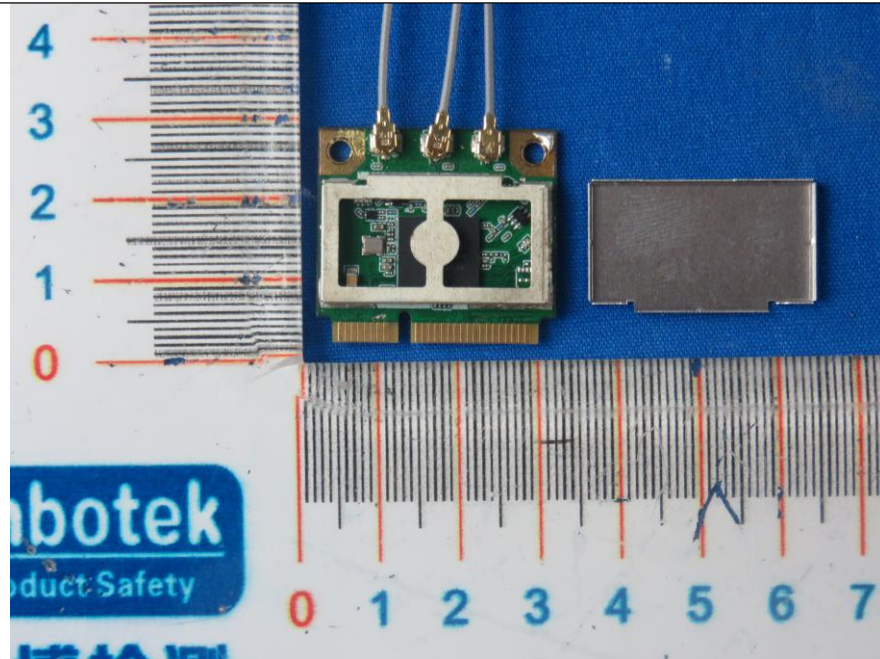


4. Figure  
The EUT-Back View

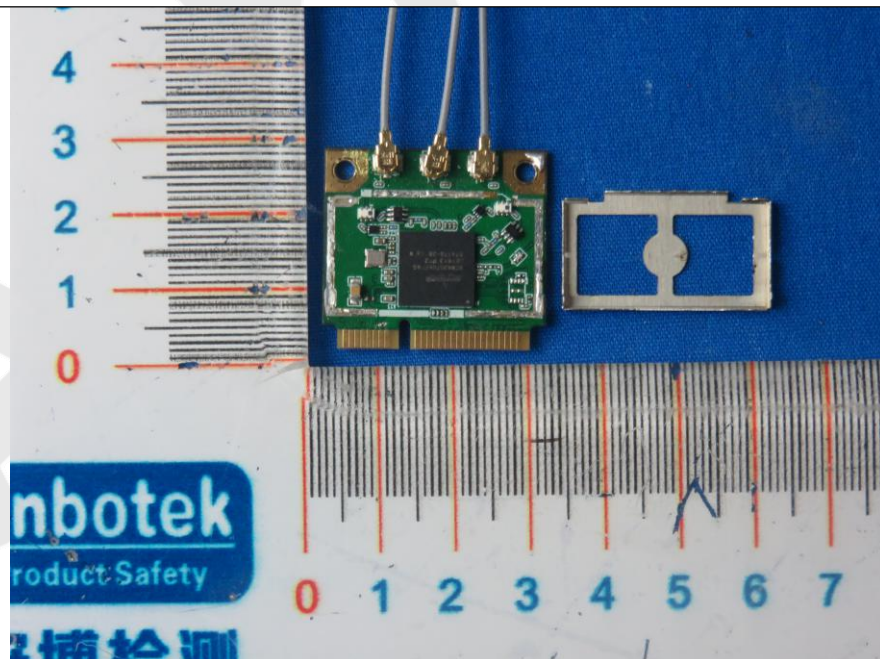


## APPENDIX II (INTERNAL PHOTOS)

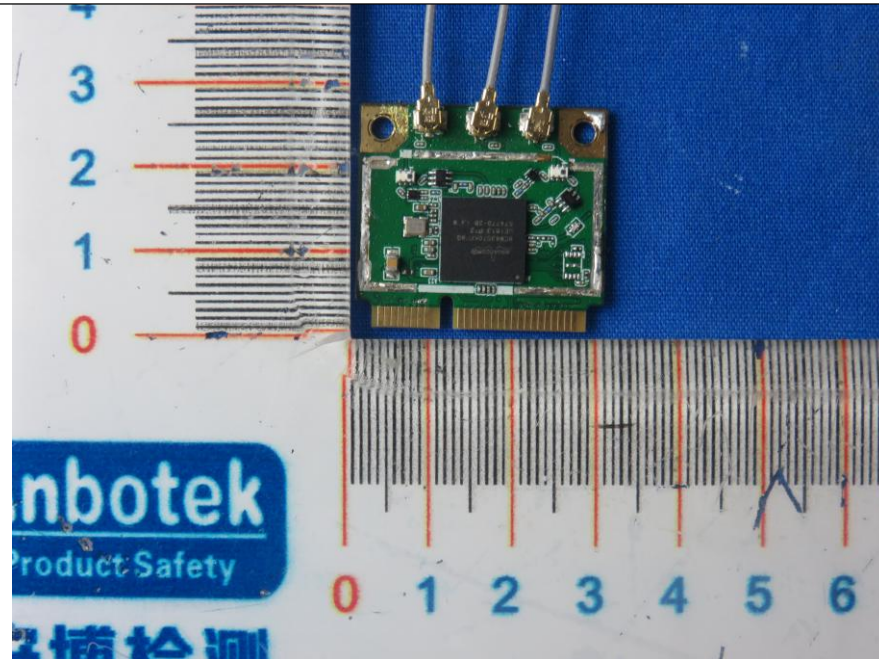
1. Figure  
The EUT-Inside View



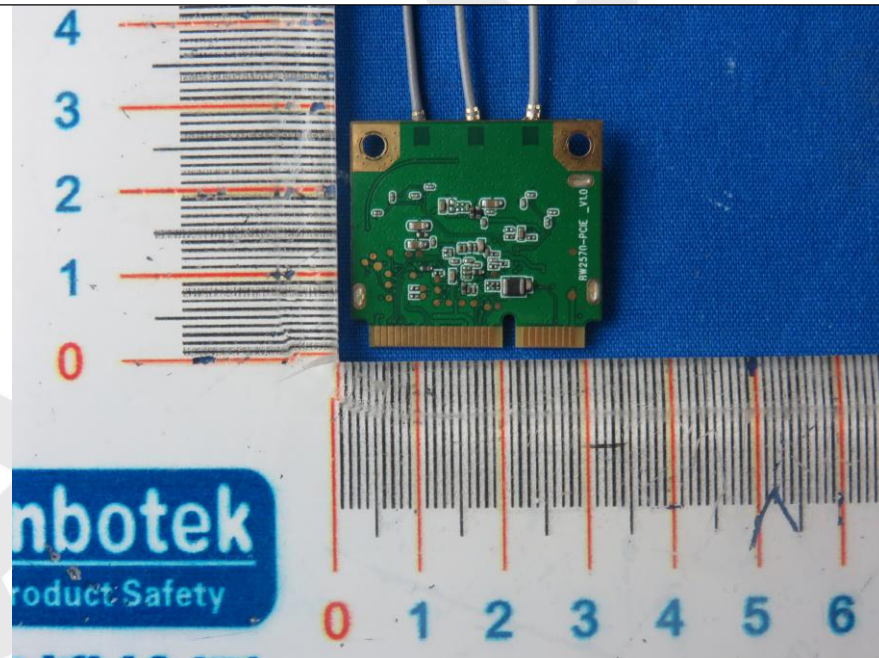
2. Figure  
The EUT-Inside View



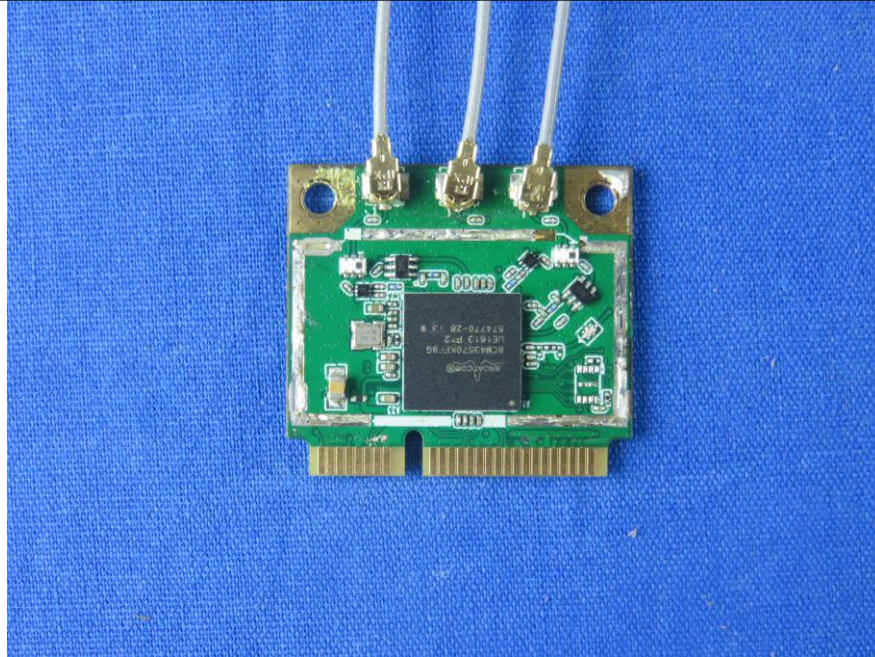
3. Figure  
PCB of the EUT-Front View



4. Figure  
PCB of the EUT-Back View



5. Figure  
PCB of the EUT-Front View



6. Figure  
PCB of the EUT-Back View

