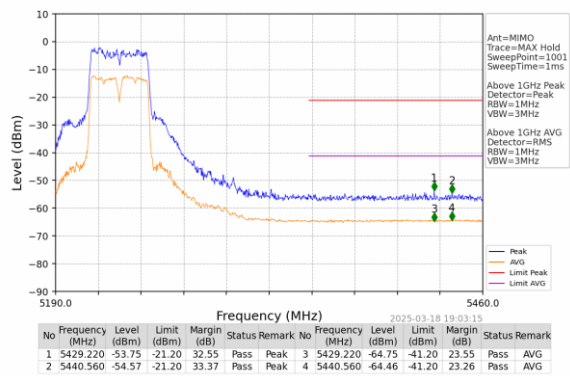
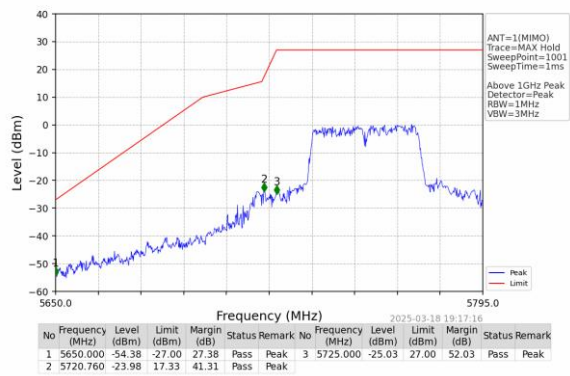


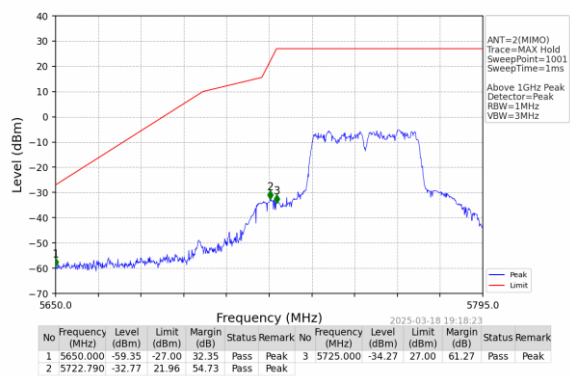
802.11ac(VHT40) HCH 5230MHz MIMO NTN



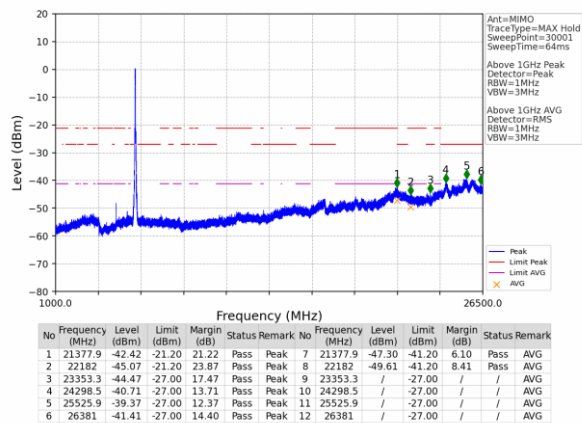
802.11ac(VHT40) LCH 5755MHz Ant1 NTN



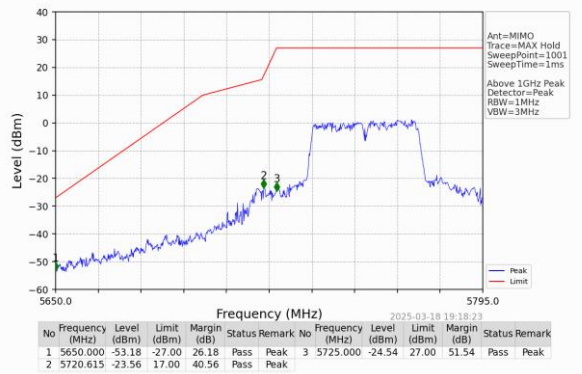
802.11ac(VHT40) LCH 5755MHz Ant2 NTN



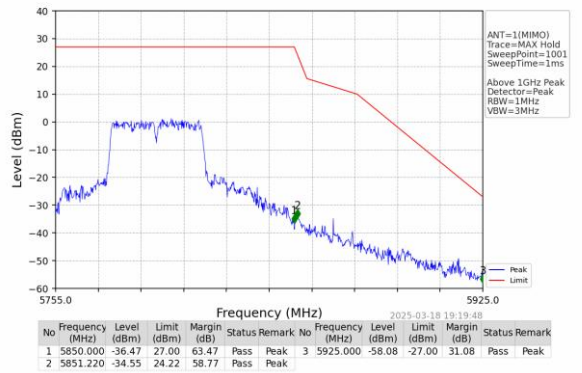
802.11ac(VHT40) LCH 5755MHz MIMO\_NTNV

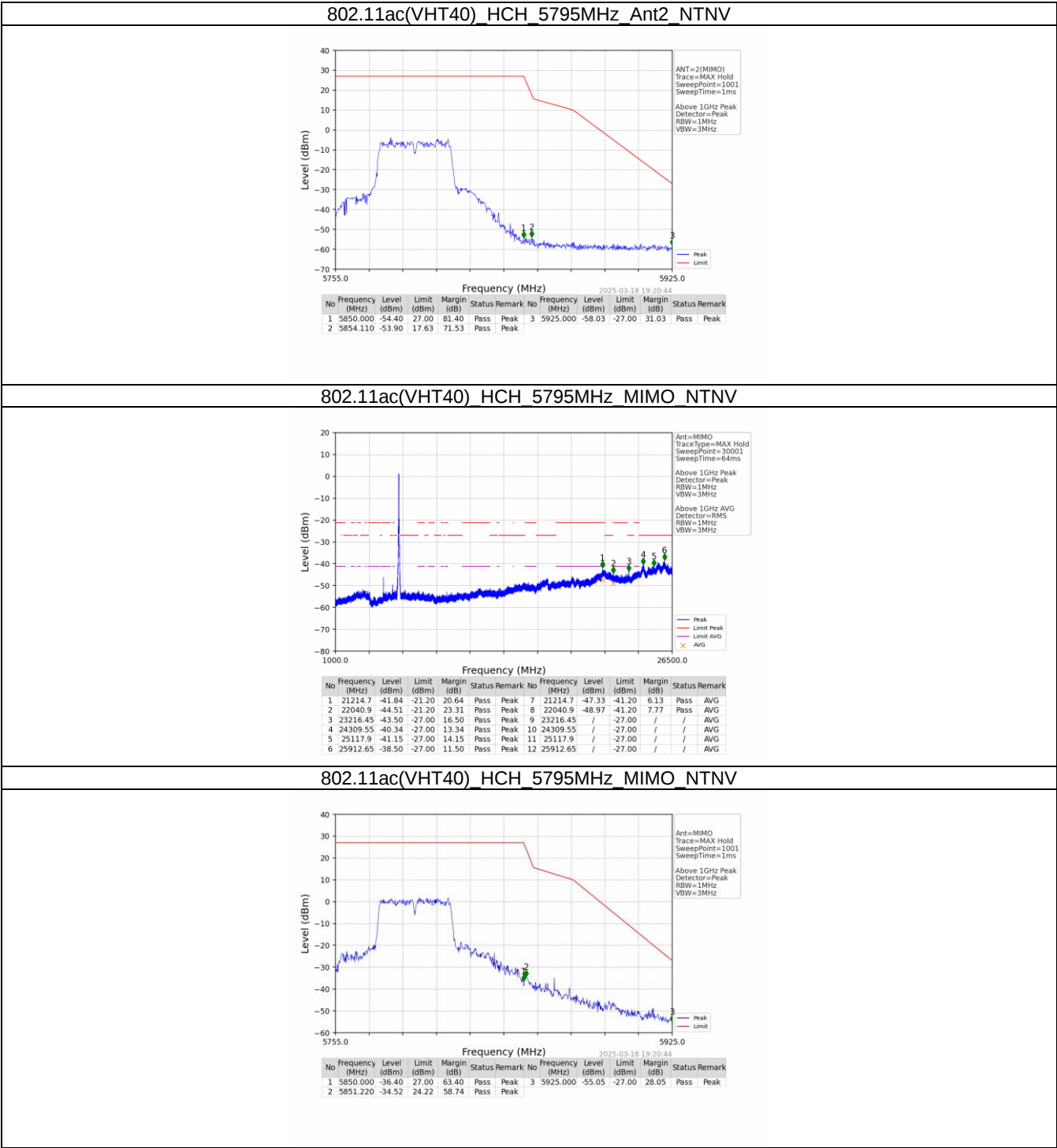


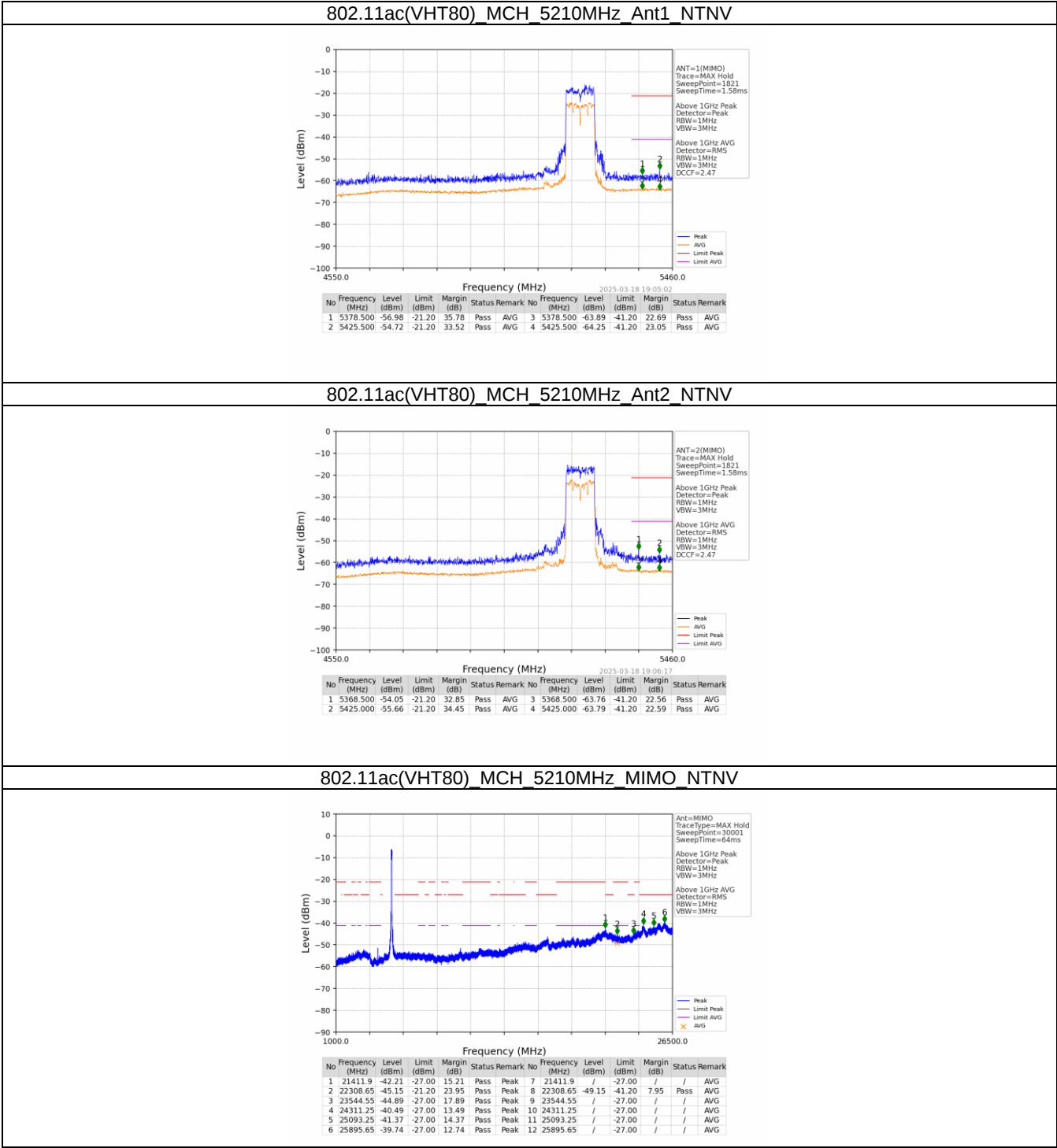
802.11ac(VHT40) LCH 5755MHz MIMO\_NTNV



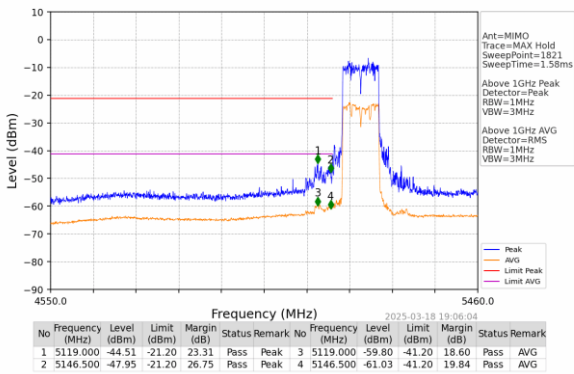
802.11ac(VHT40) HCH 5795MHz Ant1\_NTNV



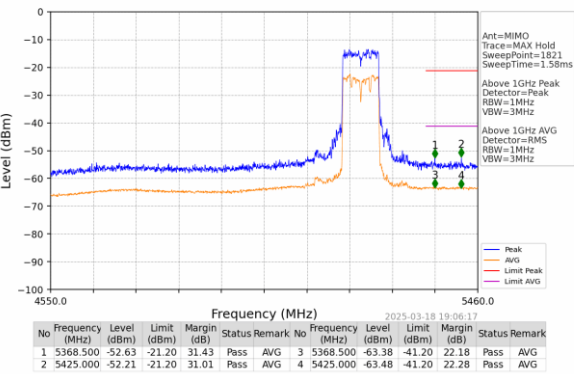




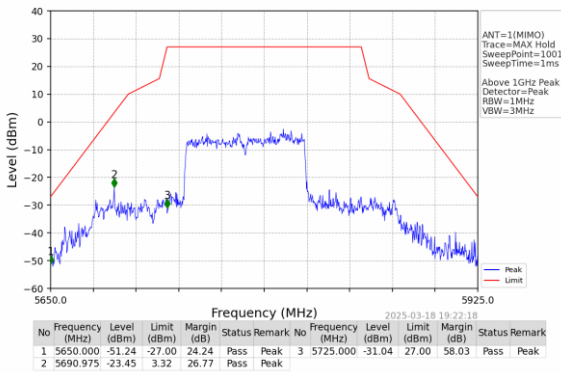
802.11ac(VHT80) MCH 5210MHz MIMO NTN

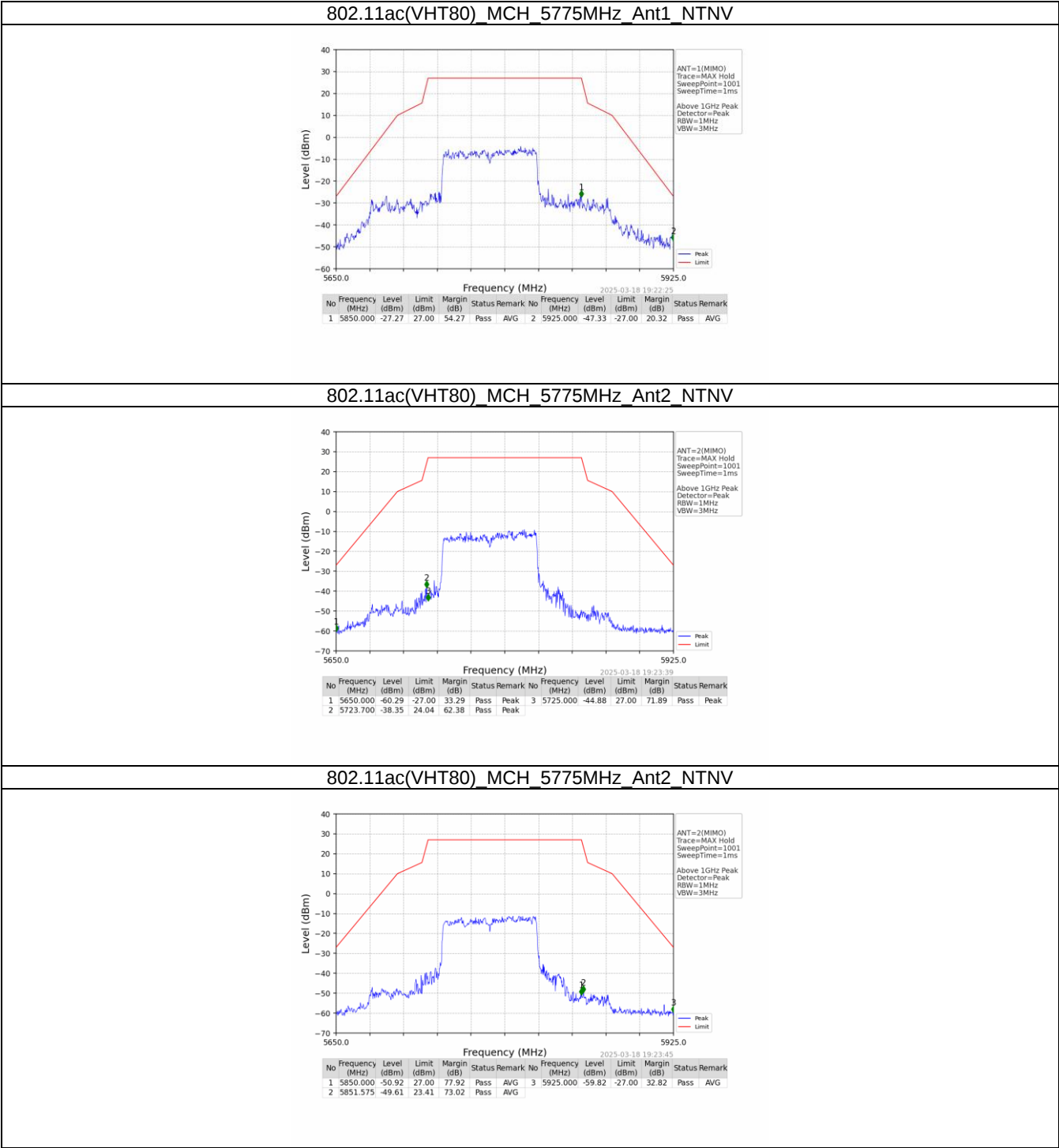


802.11ac(VHT80) MCH 5210MHz MIMO NTN

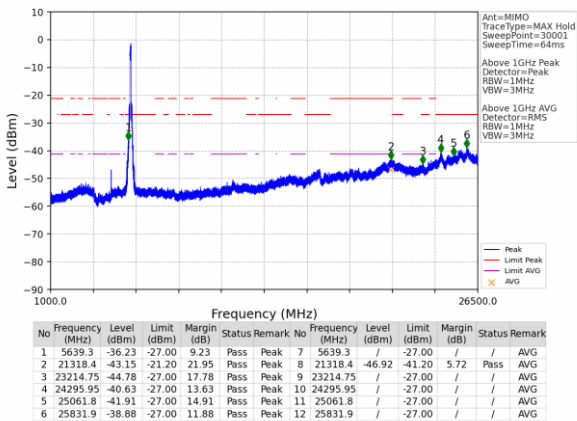


802.11ac(VHT80) MCH 5775MHz Ant1 NTN

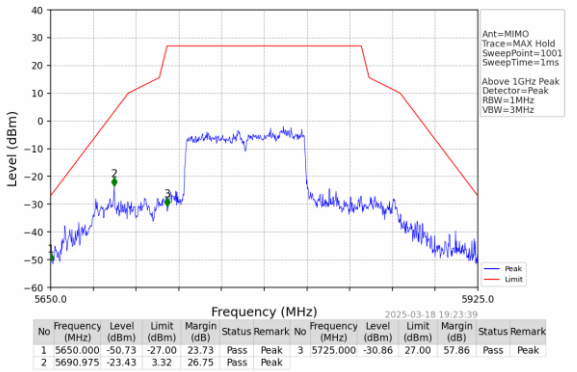




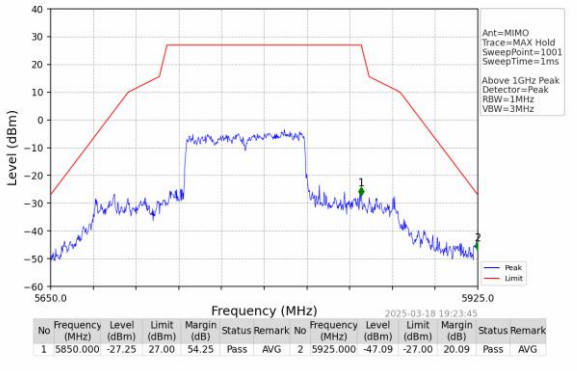
802.11ac(VHT80) MCH 5775MHz MIMO NTN



802.11ac(VHT80) MCH 5775MHz MIMO NTN



802.11ac(VHT80) MCH 5775MHz MIMO NTN



### 4.3 Maximum Conducted Average Output Power

#### Limit

##### **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.

(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.

(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.

(iv) For 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.

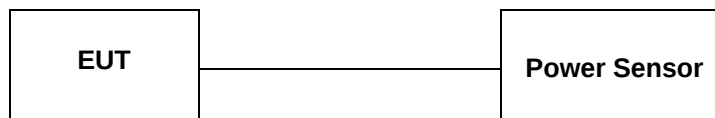
**For the 5.25-5.35 GHz and 5.47-5.725 GHz bands**, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in megahertz.

**For the band 5.725-5.85 GHz**, the maximum conducted output power over the frequency band of operation shall not exceed 1 W

#### Test Procedure

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power sensor.

#### Test Configuration



**Test Results**

## Module 1:

| Mode             | TX Type | Frequency (MHz) | Maximum Average Conducted Output Power (dBm) |       |      |         | Verdict |
|------------------|---------|-----------------|----------------------------------------------|-------|------|---------|---------|
|                  |         |                 | ANT1                                         | ANT2  | MIMO | Limit   |         |
| 802.11a          | SISO    | 5180            | 2.50                                         | 3.39  | /    | <=23.98 | Pass    |
|                  |         | 5200            | 2.69                                         | 4.08  | /    | <=23.98 | Pass    |
|                  |         | 5240            | 1.36                                         | 4.03  | /    | <=23.98 | Pass    |
|                  |         | 5745            | 6.30                                         | 1.90  | /    | <=30    | Pass    |
|                  |         | 5785            | 6.82                                         | 2.31  | /    | <=30    | Pass    |
|                  |         | 5825            | 7.08                                         | 2.80  | /    | <=30    | Pass    |
| 802.11n (HT20)   | MIMO    | 5180            | 2.41                                         | 3.69  | 6.11 | <=23.98 | Pass    |
|                  |         | 5200            | 2.24                                         | 3.54  | 5.95 | <=23.98 | Pass    |
|                  |         | 5240            | 0.95                                         | 3.68  | 5.54 | <=23.98 | Pass    |
|                  |         | 5745            | 5.57                                         | 1.19  | 6.92 | <=30    | Pass    |
|                  |         | 5785            | 6.11                                         | 0.39  | 7.14 | <=30    | Pass    |
|                  |         | 5825            | 5.77                                         | 1.46  | 7.14 | <=30    | Pass    |
| 802.11n (HT40)   | MIMO    | 5190            | 1.91                                         | 3.05  | 5.53 | <=23.98 | Pass    |
|                  |         | 5230            | 0.85                                         | 3.40  | 5.32 | <=23.98 | Pass    |
|                  |         | 5755            | 6.06                                         | 1.45  | 7.35 | <=30    | Pass    |
|                  |         | 5795            | 5.79                                         | 0.93  | 7.02 | <=30    | Pass    |
| 802.11ac (VHT20) | MIMO    | 5180            | 1.21                                         | 1.95  | 4.61 | <=23.98 | Pass    |
|                  |         | 5200            | 1.23                                         | 1.97  | 4.63 | <=23.98 | Pass    |
|                  |         | 5240            | -0.17                                        | 2.05  | 4.09 | <=23.98 | Pass    |
|                  |         | 5745            | 6.11                                         | 0.31  | 7.12 | <=30    | Pass    |
|                  |         | 5785            | 7.07                                         | 1.10  | 8.05 | <=30    | Pass    |
|                  |         | 5825            | 6.63                                         | 1.63  | 7.82 | <=30    | Pass    |
| 802.11ac (VHT40) | MIMO    | 5190            | 0.87                                         | 1.67  | 4.30 | <=23.98 | Pass    |
|                  |         | 5230            | -0.06                                        | 2.00  | 4.10 | <=23.98 | Pass    |
|                  |         | 5755            | 5.68                                         | -0.07 | 6.70 | <=30    | Pass    |
|                  |         | 5795            | 6.50                                         | 0.51  | 7.48 | <=30    | Pass    |
| 802.11ac (VHT80) | MIMO    | 5210            | 1.00                                         | 2.36  | 4.74 | <=23.98 | Pass    |
|                  |         | 5775            | 7.61                                         | 1.17  | 8.50 | <=30    | Pass    |

## Module 2:

| Mode             | TX Type | Frequency (MHz) | Maximum Average Conducted Output Power (dBm) |      |      |         | Verdict |
|------------------|---------|-----------------|----------------------------------------------|------|------|---------|---------|
|                  |         |                 | ANT1                                         | ANT2 | MIMO | Limit   |         |
| 802.11a          | SISO    | 5180            | 2.65                                         | 4.36 | /    | <=23.98 | Pass    |
|                  |         | 5200            | 2.60                                         | 4.34 | /    | <=23.98 | Pass    |
|                  |         | 5240            | 1.45                                         | 4.50 | /    | <=23.98 | Pass    |
|                  |         | 5745            | 5.40                                         | 1.65 | /    | <=30    | Pass    |
|                  |         | 5785            | 6.92                                         | 2.78 | /    | <=30    | Pass    |
|                  |         | 5825            | 5.82                                         | 1.97 | /    | <=30    | Pass    |
| 802.11n (HT20)   | MIMO    | 5180            | 1.94                                         | 3.59 | 5.85 | <=23.98 | Pass    |
|                  |         | 5200            | 1.98                                         | 3.55 | 5.85 | <=23.98 | Pass    |
|                  |         | 5240            | 0.72                                         | 3.60 | 5.40 | <=23.98 | Pass    |
|                  |         | 5745            | 4.95                                         | 1.22 | 6.48 | <=30    | Pass    |
|                  |         | 5785            | 5.46                                         | 1.43 | 6.91 | <=30    | Pass    |
| 802.11n (HT40)   | MIMO    | 5190            | 1.57                                         | 3.11 | 5.42 | <=23.98 | Pass    |
|                  |         | 5230            | 0.68                                         | 3.49 | 5.32 | <=23.98 | Pass    |
|                  |         | 5755            | 5.13                                         | 0.91 | 6.52 | <=30    | Pass    |
|                  |         | 5795            | 5.44                                         | 0.97 | 6.77 | <=30    | Pass    |
| 802.11ac (VHT20) | MIMO    | 5180            | 1.00                                         | 2.01 | 4.54 | <=23.98 | Pass    |
|                  |         | 5200            | 1.09                                         | 2.07 | 4.62 | <=23.98 | Pass    |
|                  |         | 5240            | -0.28                                        | 2.22 | 4.16 | <=23.98 | Pass    |
|                  |         | 5745            | 5.40                                         | 0.41 | 6.60 | <=30    | Pass    |
|                  |         | 5785            | 6.59                                         | 1.07 | 7.66 | <=30    | Pass    |
| 802.11ac (VHT40) | MIMO    | 5190            | 0.61                                         | 1.69 | 4.19 | <=23.98 | Pass    |
|                  |         | 5230            | -0.38                                        | 1.97 | 3.96 | <=23.98 | Pass    |
|                  |         | 5755            | 5.37                                         | 0.08 | 6.50 | <=30    | Pass    |
|                  |         | 5795            | 6.23                                         | 0.72 | 7.31 | <=30    | Pass    |
| 802.11ac (VHT80) | MIMO    | 5210            | 0.60                                         | 2.25 | 4.51 | <=23.98 | Pass    |
|                  |         | 5775            | 7.04                                         | 1.29 | 8.06 | <=30    | Pass    |

## 4.4 Power Spectral Density

### 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 power spectral density shall not exceed 17 dBm in any 1 MHz band.<sup>note1</sup>

(ii) For an indoor access point operating in the band 5.15 - 5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 MHz band.<sup>note1</sup>

(iii) For fixed point-to-point access points operating in the band 5.15 - 5.25 GHz, transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.

(iv) For mobile and portable client devices in the 5.15 - 5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 MHz band.<sup>note1</sup>

(2) For the 5.25 - 5.35 GHz and 5.47 - 5.725 GHz bands, the peak power spectral density shall not exceed 11 dBm in any 1 MHz band.<sup>note1</sup>

(3) For the band 5.725 - 5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500 kHz band.<sup>note1, note2</sup>

Note1: If transmitting antennas of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note2: 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.

### Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW = 1MHz for U-NII 1, U-NII 2A, U-NII C band and 510KHz for U-NII 3 band.
3. Set the VBW  $\geq 3 \times$  RBW.
4. Set the span to encompass the entire EBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum power level.

### Test Configuration



**Test Results**

Module 1:

**U-NII 1**

| Mode             | TX Type | Frequency (MHz) | Maximum PSD (dBm/MHz) |        |        |       | Verdict |
|------------------|---------|-----------------|-----------------------|--------|--------|-------|---------|
|                  |         |                 | ANT1                  | ANT2   | MIMO   | Limit |         |
| 802.11a          | SISO    | 5180            | -8.58                 | -7.77  | /      | <=11  | Pass    |
|                  |         | 5200            | -8.46                 | -7.21  | /      | <=11  | Pass    |
|                  |         | 5240            | -9.74                 | -7.11  | /      | <=11  | Pass    |
| 802.11n (HT20)   | MIMO    | 5180            | -8.57                 | -7.61  | -5.11  | <=11  | Pass    |
|                  |         | 5200            | -9.12                 | -7.86  | -5.55  | <=11  | Pass    |
|                  |         | 5240            | -10.09                | -7.46  | -5.76  | <=11  | Pass    |
| 802.11n (HT40)   | MIMO    | 5190            | -12.14                | -10.86 | -8.57  | <=11  | Pass    |
|                  |         | 5230            | -13.10                | -10.51 | -8.73  | <=11  | Pass    |
| 802.11ac (VHT20) | MIMO    | 5180            | -10.18                | -9.34  | -6.85  | <=11  | Pass    |
|                  |         | 5200            | -10.10                | -9.33  | -6.85  | <=11  | Pass    |
|                  |         | 5240            | -11.25                | -9.26  | -7.29  | <=11  | Pass    |
| 802.11ac (VHT40) | MIMO    | 5190            | -13.07                | -12.23 | -9.82  | <=11  | Pass    |
|                  |         | 5230            | -13.82                | -11.73 | -9.80  | <=11  | Pass    |
| 802.11ac (VHT80) | MIMO    | 5210            | -16.27                | -14.62 | -12.39 | <=11  | Pass    |

**U-NII 3**

| Mode             | TX Type | Frequency (MHz) | Maximum PSD (dBm/500kHz) |        |        |       | Verdict |
|------------------|---------|-----------------|--------------------------|--------|--------|-------|---------|
|                  |         |                 | ANT1                     | ANT2   | MIMO   | Limit |         |
| 802.11a          | SISO    | 5745            | -7.29                    | -11.71 | /      | <=30  | Pass    |
|                  |         | 5785            | -6.89                    | -11.27 | /      | <=30  | Pass    |
|                  |         | 5825            | -6.64                    | -10.86 | /      | <=30  | Pass    |
| 802.11n (HT20)   | MIMO    | 5745            | -7.72                    | -12.04 | -6.39  | <=30  | Pass    |
|                  |         | 5785            | -7.93                    | -11.87 | -6.50  | <=30  | Pass    |
|                  |         | 5825            | -7.35                    | -11.88 | -6.11  | <=30  | Pass    |
| 802.11n (HT40)   | MIMO    | 5755            | -9.38                    | -13.40 | -8.15  | <=30  | Pass    |
|                  |         | 5795            | -10.00                   | -14.52 | -8.90  | <=30  | Pass    |
| 802.11ac (VHT20) | MIMO    | 5745            | -7.30                    | -12.50 | -6.37  | <=30  | Pass    |
|                  |         | 5785            | -6.38                    | -12.16 | -5.47  | <=30  | Pass    |
|                  |         | 5825            | -6.64                    | -11.39 | -5.48  | <=30  | Pass    |
| 802.11ac (VHT40) | MIMO    | 5755            | -9.75                    | -15.35 | -8.77  | <=30  | Pass    |
|                  |         | 5795            | -9.10                    | -15.18 | -8.23  | <=30  | Pass    |
| 802.11ac (VHT80) | MIMO    | 5775            | -11.12                   | -16.71 | -10.25 | <=30  | Pass    |

## Module 2:

## U-NII 1

| Mode             | TX Type | Frequency (MHz) | Maximum PSD (dBm/MHz) |        |        |       | Verdict |
|------------------|---------|-----------------|-----------------------|--------|--------|-------|---------|
|                  |         |                 | ANT1                  | ANT2   | MIMO   | Limit |         |
| 802.11a          | SISO    | 5180            | -8.79                 | -7.05  | /      | <=11  | Pass    |
|                  |         | 5200            | -8.49                 | -6.76  | /      | <=11  | Pass    |
|                  |         | 5240            | -9.99                 | -6.97  | /      | <=11  | Pass    |
| 802.11n (HT20)   | MIMO    | 5180            | -9.40                 | -7.55  | -5.49  | <=11  | Pass    |
|                  |         | 5200            | -9.39                 | -7.65  | -5.59  | <=11  | Pass    |
|                  |         | 5240            | -10.52                | -7.74  | -5.99  | <=11  | Pass    |
| 802.11n (HT40)   | MIMO    | 5190            | -12.43                | -10.86 | -8.80  | <=11  | Pass    |
|                  |         | 5230            | -13.18                | -10.58 | -8.82  | <=11  | Pass    |
| 802.11ac (VHT20) | MIMO    | 5180            | -10.40                | -9.26  | -6.92  | <=11  | Pass    |
|                  |         | 5200            | -10.27                | -9.27  | -6.87  | <=11  | Pass    |
|                  |         | 5240            | -11.55                | -9.01  | -7.23  | <=11  | Pass    |
| 802.11ac (VHT40) | MIMO    | 5190            | -13.16                | -12.25 | -9.90  | <=11  | Pass    |
|                  |         | 5230            | -14.11                | -11.46 | -9.91  | <=11  | Pass    |
| 802.11ac (VHT80) | MIMO    | 5210            | -16.01                | -14.55 | -12.30 | <=11  | Pass    |

## U-NII 3

| Mode             | TX Type | Frequency (MHz) | Maximum PSD (dBm/500kHz) |        |        |       | Verdict |
|------------------|---------|-----------------|--------------------------|--------|--------|-------|---------|
|                  |         |                 | ANT1                     | ANT2   | MIMO   | Limit |         |
| 802.11a          | SISO    | 5745            | -8.07                    | -11.91 | /      | <=30  | Pass    |
|                  |         | 5785            | -6.76                    | -10.86 | /      | <=30  | Pass    |
|                  |         | 5825            | -7.88                    | -11.67 | /      | <=30  | Pass    |
| 802.11n (HT20)   | MIMO    | 5745            | -8.08                    | -11.88 | -6.83  | <=30  | Pass    |
|                  |         | 5785            | -7.56                    | -11.54 | -6.20  | <=30  | Pass    |
|                  |         | 5825            | -7.87                    | -11.91 | -6.54  | <=30  | Pass    |
| 802.11n (HT40)   | MIMO    | 5755            | -10.20                   | -13.71 | -8.87  | <=30  | Pass    |
|                  |         | 5795            | -10.22                   | -14.62 | -8.98  | <=30  | Pass    |
| 802.11ac (VHT20) | MIMO    | 5745            | -7.84                    | -13.01 | -6.71  | <=30  | Pass    |
|                  |         | 5785            | -6.79                    | -11.77 | -5.70  | <=30  | Pass    |
|                  |         | 5825            | -6.87                    | -11.28 | -5.74  | <=30  | Pass    |
| 802.11ac (VHT40) | MIMO    | 5755            | -10.16                   | -15.51 | -9.14  | <=30  | Pass    |
|                  |         | 5795            | -9.67                    | -15.09 | -8.72  | <=30  | Pass    |
| 802.11ac (VHT80) | MIMO    | 5775            | -11.31                   | -16.47 | -10.16 | <=30  | Pass    |

Test plot as follows  
Module 1:

