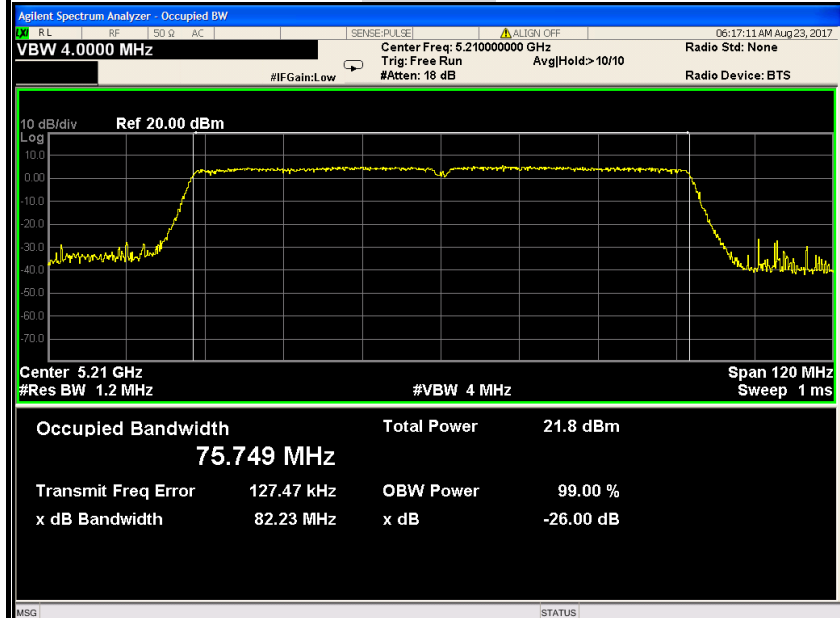




IEEE 802.11ac 80 mode / 5210MHz

26dB Bandwidth

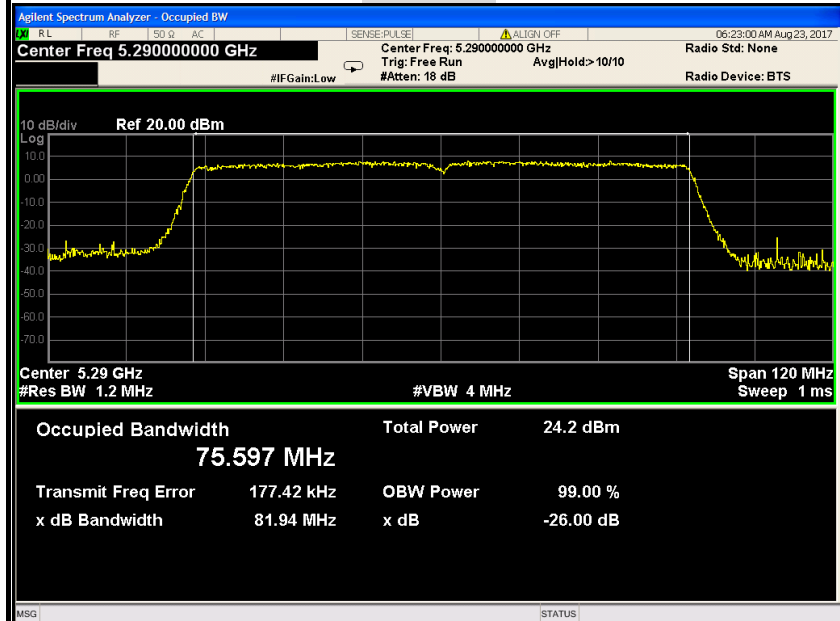
Antenna 0

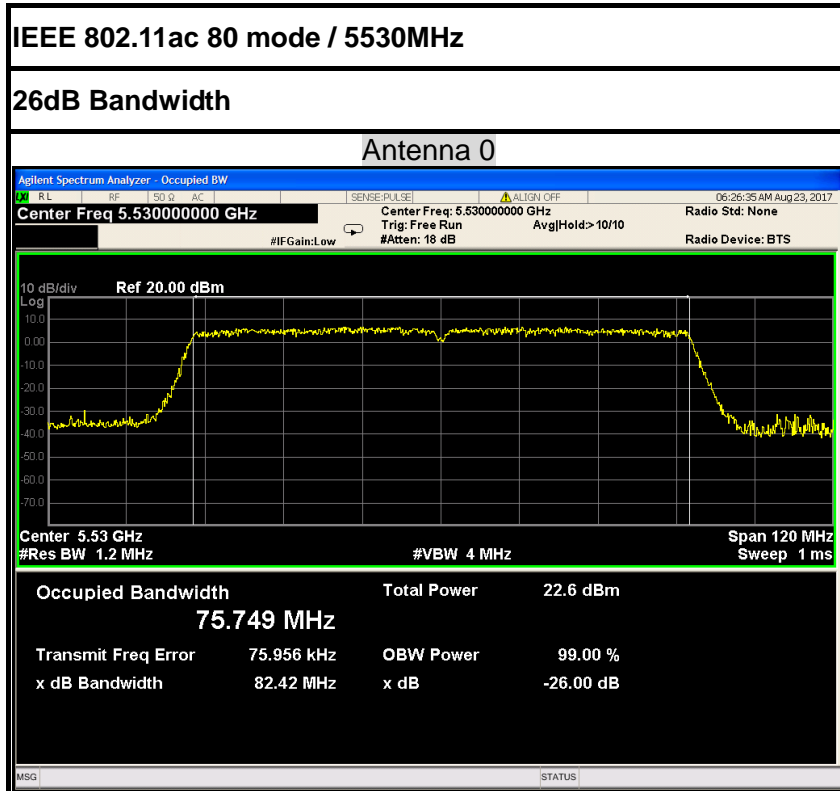


IEEE 802.11ac 80 mode / 5290MHz

26dB Bandwidth

Antenna 0



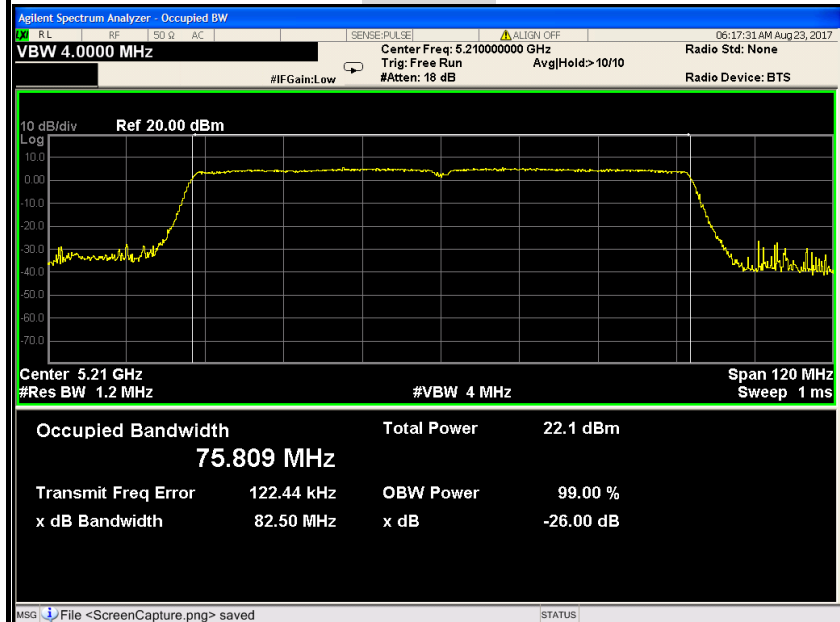




IEEE 802.11ac 80 mode / 5210MHz

26dB Bandwidth

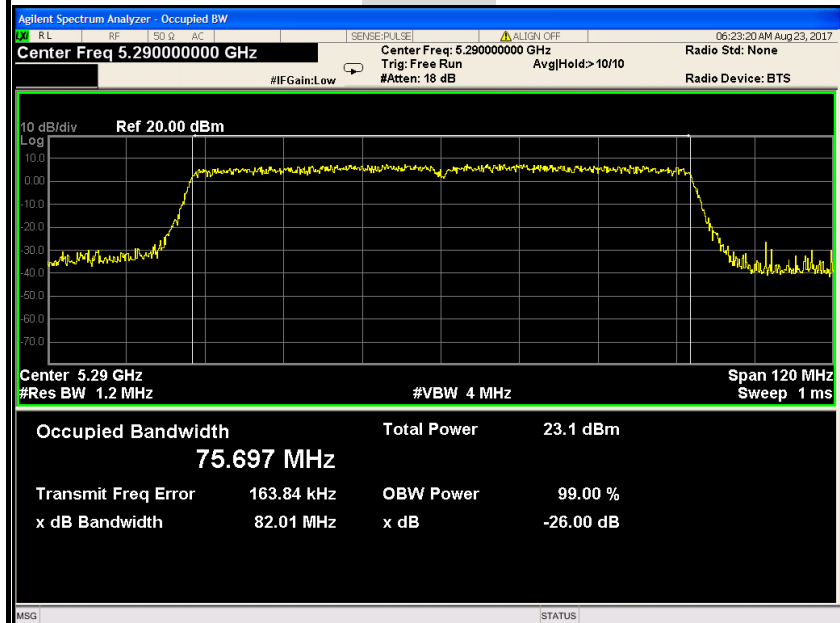
Antenna 1



IEEE 802.11ac 80 mode / 5290MHz

26dB Bandwidth

Antenna 1

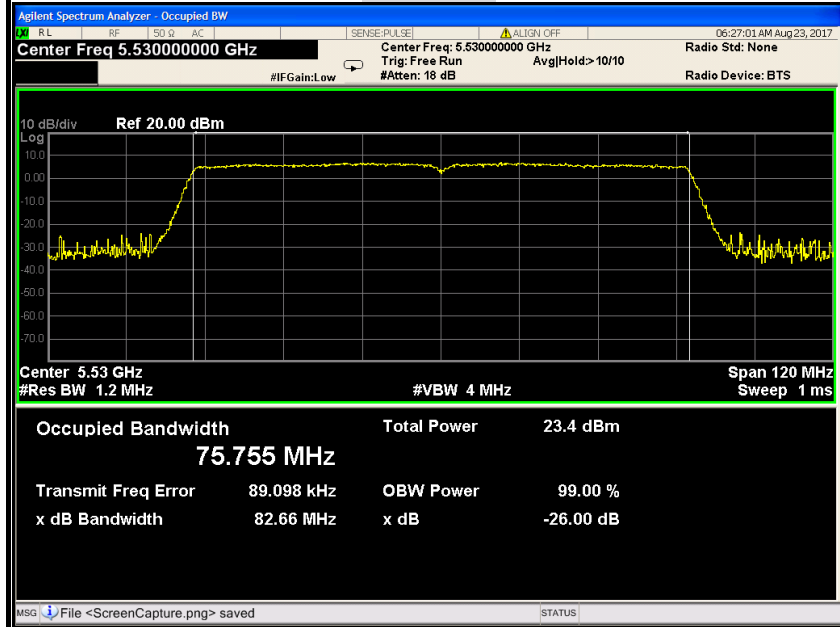




IEEE 802.11ac 80 mode / 5530MHz

26dB Bandwidth

Antenna 1

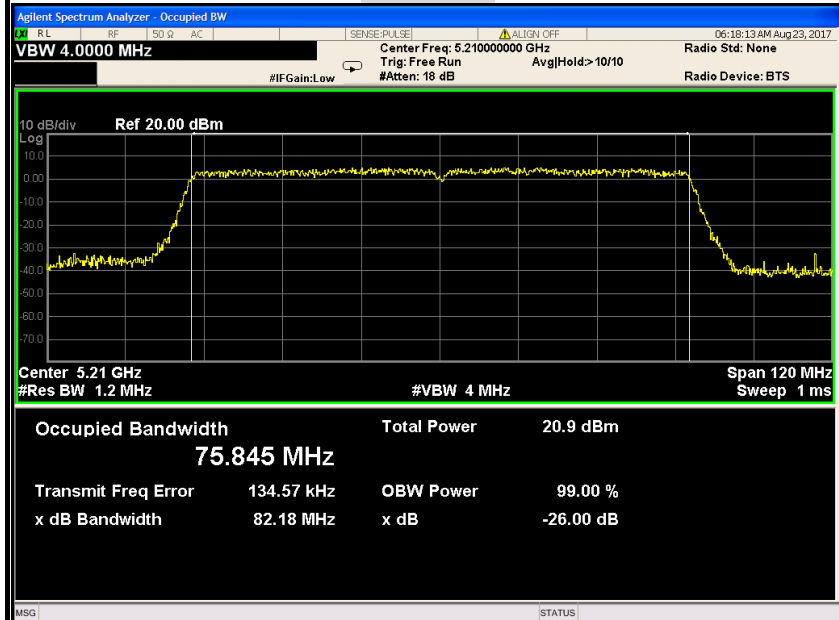




IEEE 802.11ac 80 mode / 5210MHz

26dB Bandwidth

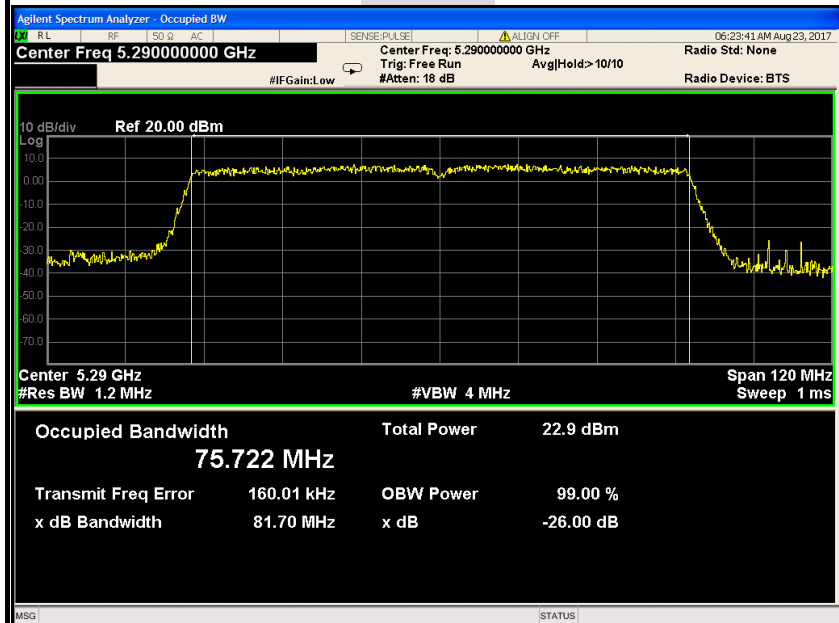
Antenna 2



IEEE 802.11ac 80 mode / 5290MHz

26dB Bandwidth

Antenna 2

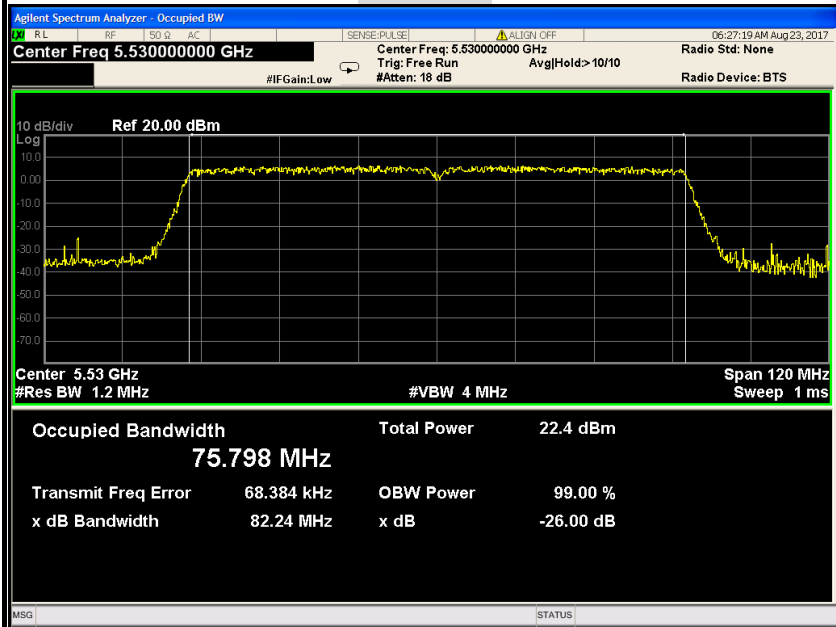




IEEE 802.11ac 80 mode / 5530MHz

26dB Bandwidth

Antenna 2





## 6.2 6dB BANDWIDTH MEASUREMENT

### 6.2.1 LIMITS

According to §15.407(e), Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

### 6.2.2 TEST INSTRUMENTS

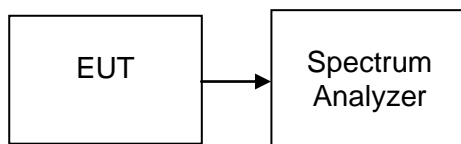
| Name of Equipment | Manufacturer | Model  | Serial Number | Last Calibration | Calibration Due |
|-------------------|--------------|--------|---------------|------------------|-----------------|
| Spectrum Analyzer | Agilent      | N9010A | MY52221469    | 02/21/2017       | 02/20/2018      |

### 6.2.3 TEST PROCEDURES (please refer to measurement standard)

#### 8.1 Option 2:

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW  $\geq$  3 RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be  $\geq$  6 dB.

### 6.2.4 TEST SETUP







## 6.2.5 TEST RESULTS

*No non-compliance noted*

### Test Data

Test mode: IEEE 802.11a mode / 5745 ~ 5825MHz

| Channel | Frequency (MHz) | 6dB Bandwidth(B) (MHz) |           |           | Limit (kHz) | Test Result |
|---------|-----------------|------------------------|-----------|-----------|-------------|-------------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 |             |             |
| Low     | 5745            | 16.37                  | 16.37     | 16.36     | >500        | PASS        |
| Mid     | 5785            | 16.44                  | 16.38     | 16.34     |             | PASS        |
| High    | 5825            | 16.37                  | 16.37     | 16.39     |             | PASS        |

Test mode: IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

| Channel | Frequency (MHz) | 6dB Bandwidth(B) (MHz) |           |           | Limit (kHz) | Test Result |
|---------|-----------------|------------------------|-----------|-----------|-------------|-------------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 |             |             |
| Low     | 5745            | 17.63                  | 17.62     | 17.64     | >500        | PASS        |
| Mid     | 5785            | 17.60                  | 17.61     | 17.60     |             | PASS        |
| High    | 5825            | 17.65                  | 17.65     | 17.54     |             | PASS        |

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

| Channel | Frequency (MHz) | 6dB Bandwidth(B) (MHz) |           |           | Limit (kHz) | Test Result |
|---------|-----------------|------------------------|-----------|-----------|-------------|-------------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 |             |             |
| Low     | 5755            | 36.07                  | 36.38     | 36.37     | >500        | PASS        |
| High    | 5795            | 36.37                  | 36.12     | 36.12     |             | PASS        |

Test mode: IEEE 802.11ac 80 mode / 5775MHz

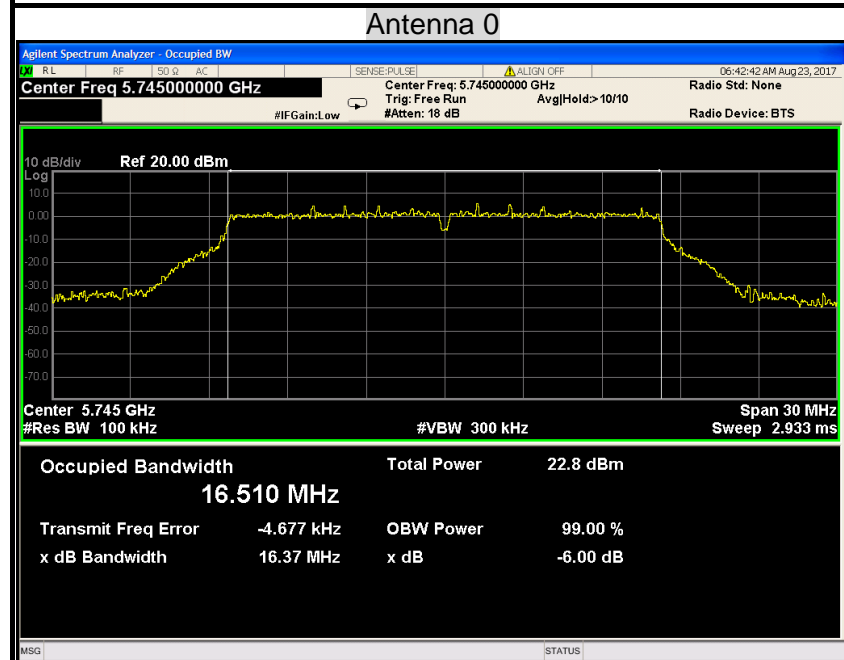
| Channel | Frequency (MHz) | 6dB Bandwidth(B) (MHz) |           |           | Limit (kHz) | Test Result |
|---------|-----------------|------------------------|-----------|-----------|-------------|-------------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 |             |             |
|         | 5775            | 75.62                  | 75.33     | 75.62     | >500        | PASS        |



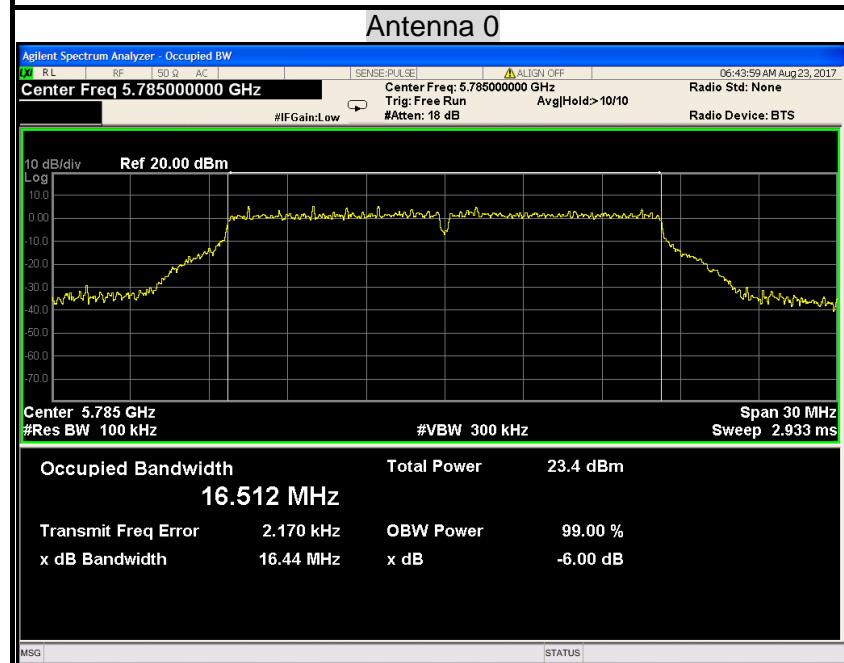
## Test Plot

IEEE 802.11a mode / 5745 ~ 5825MHz

6dB Bandwidth (CH Low)



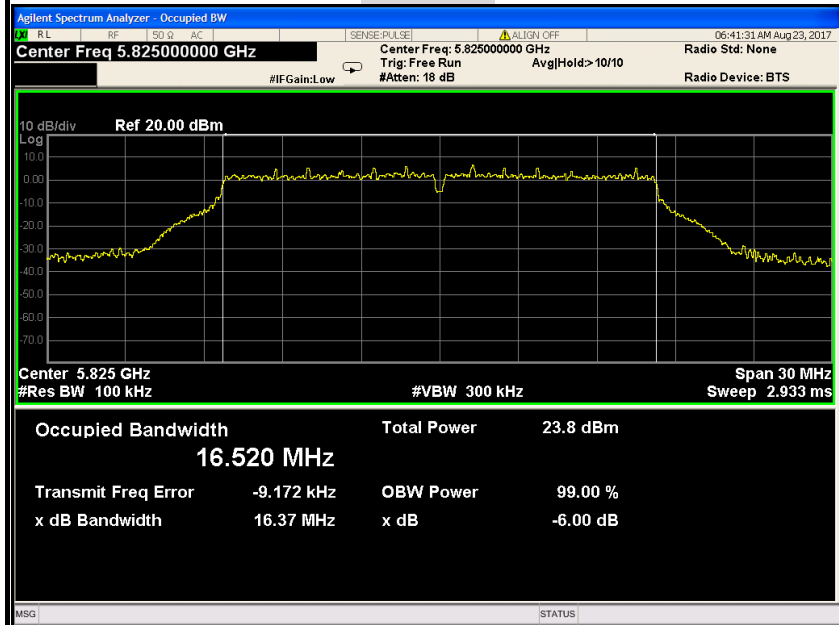
6dB Bandwidth (CH Mid)





### 6dB Bandwidth (CH High)

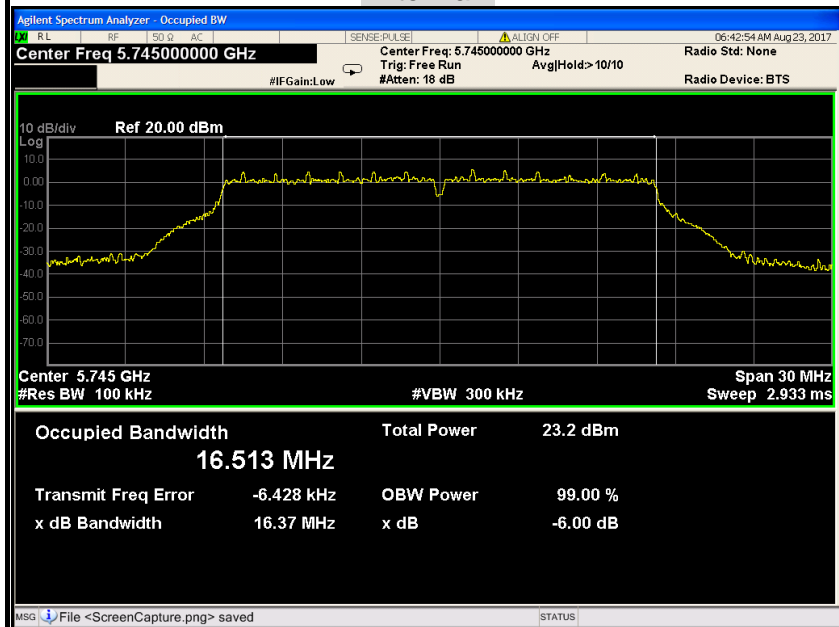
#### Antenna 0

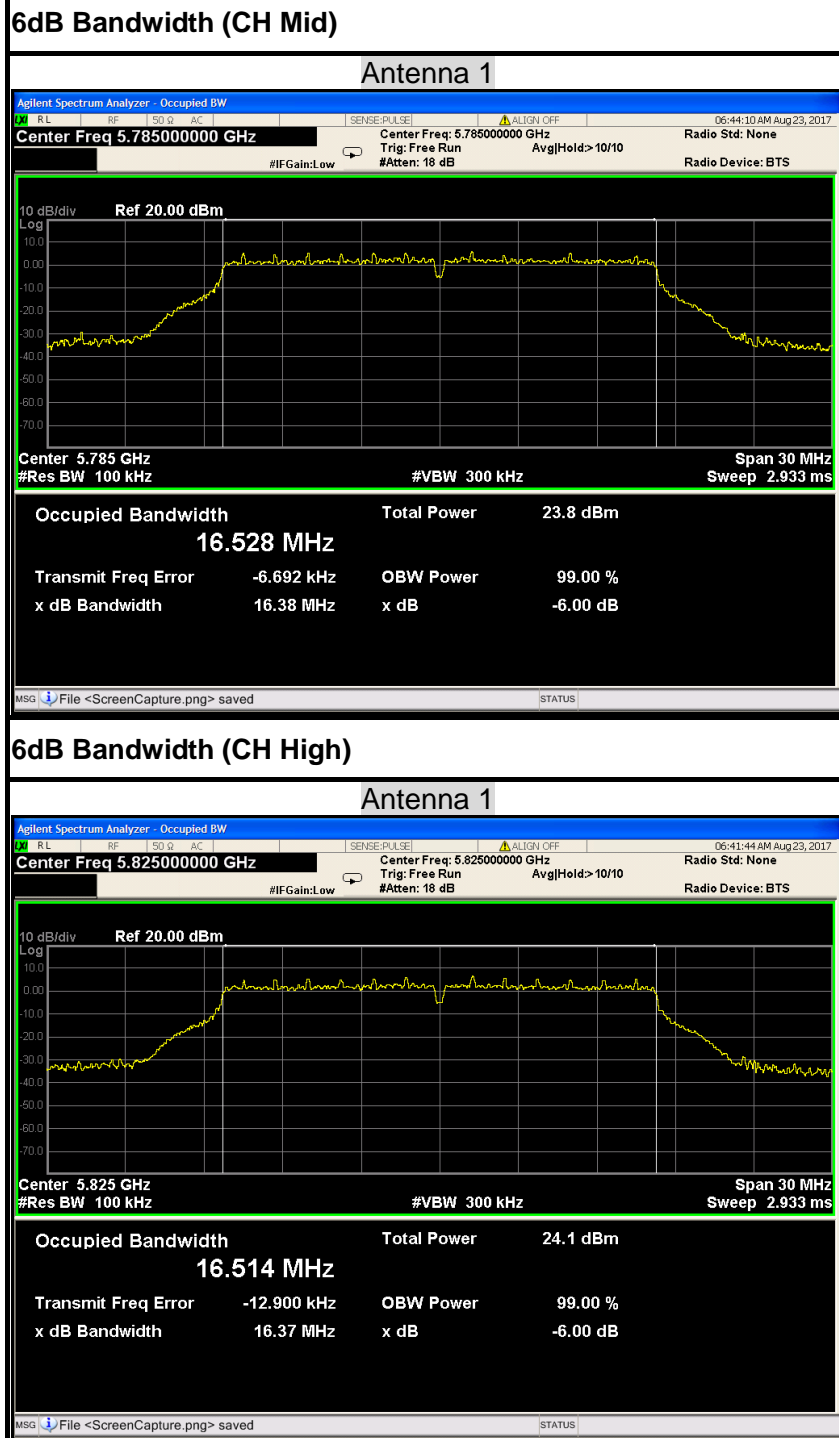


### IEEE 802.11a mode / 5745 ~ 5825MHz

### 6dB Bandwidth (CH Low)

#### Antenna 1



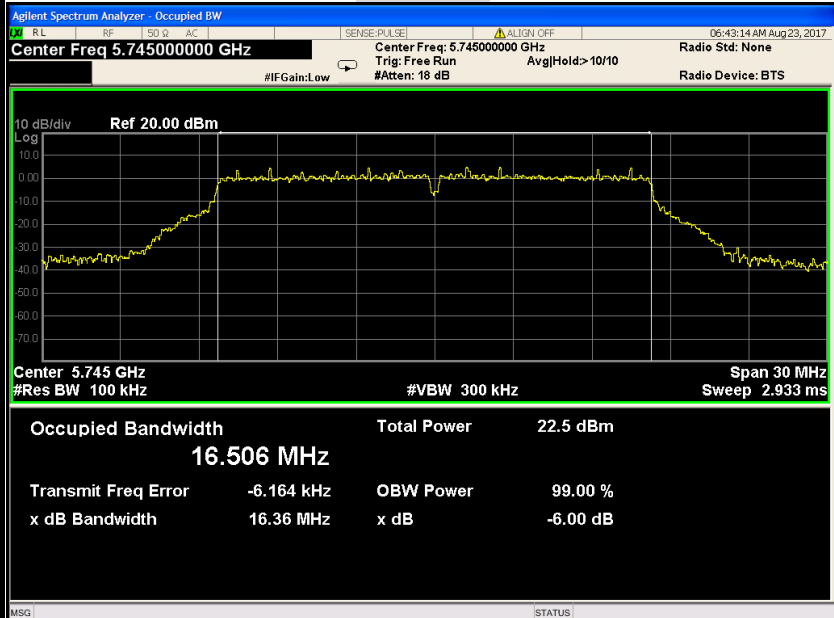




IEEE 802.11a mode / 5745 ~ 5825MHz

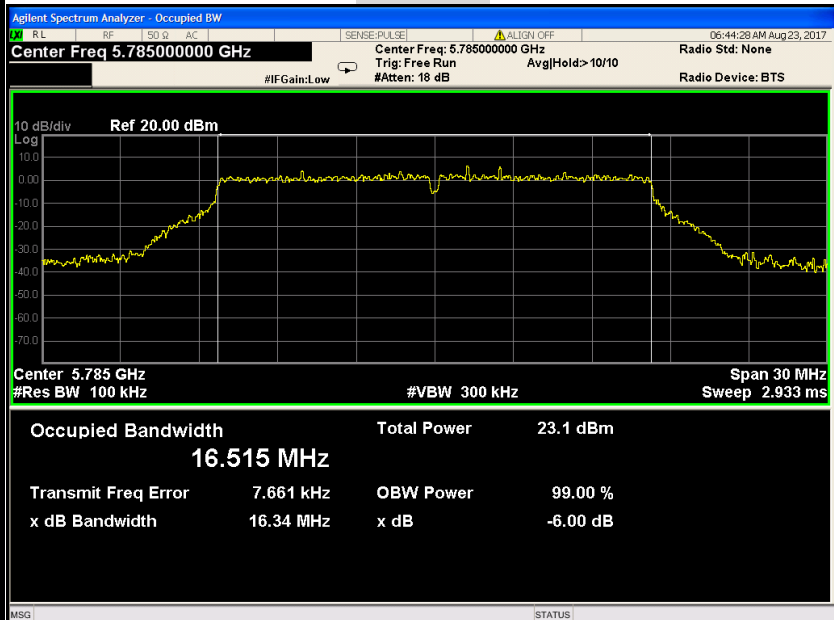
6dB Bandwidth (CH Low)

Antenna 2



6dB Bandwidth (CH Mid)

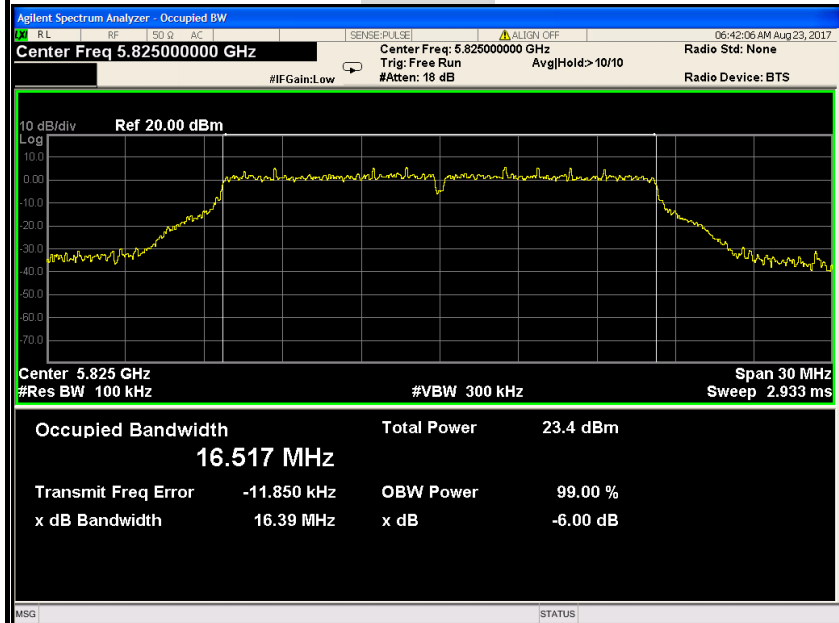
Antenna 2





### 6dB Bandwidth (CH High)

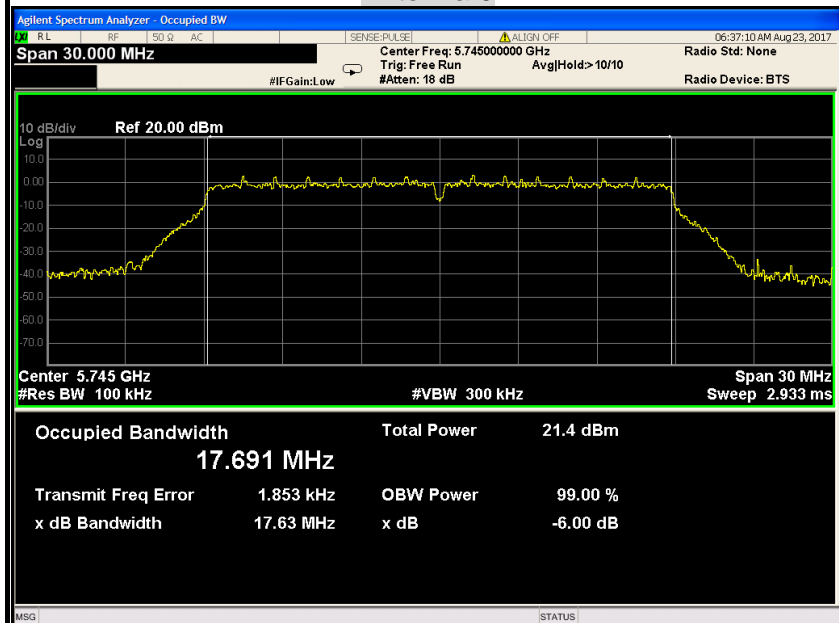
#### Antenna 2



### IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

### 6dB Bandwidth (CH Low)

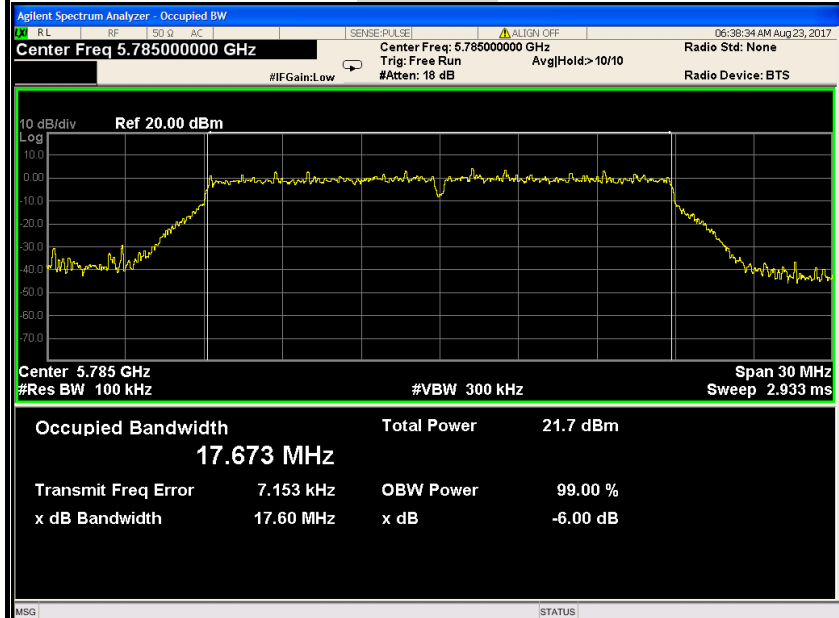
#### Antenna 0





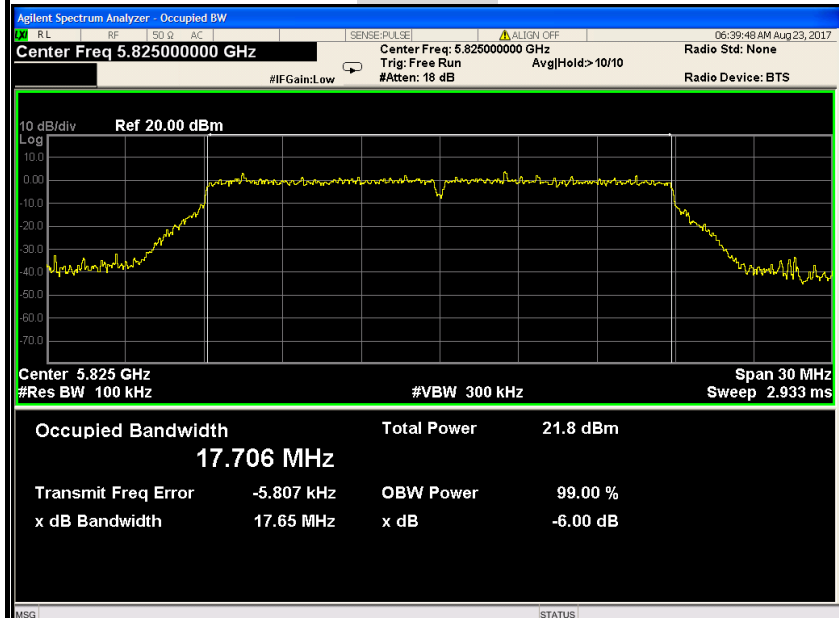
### 6dB Bandwidth (CH Mid)

Antenna 0



### 6dB Bandwidth (CH High)

Antenna 0

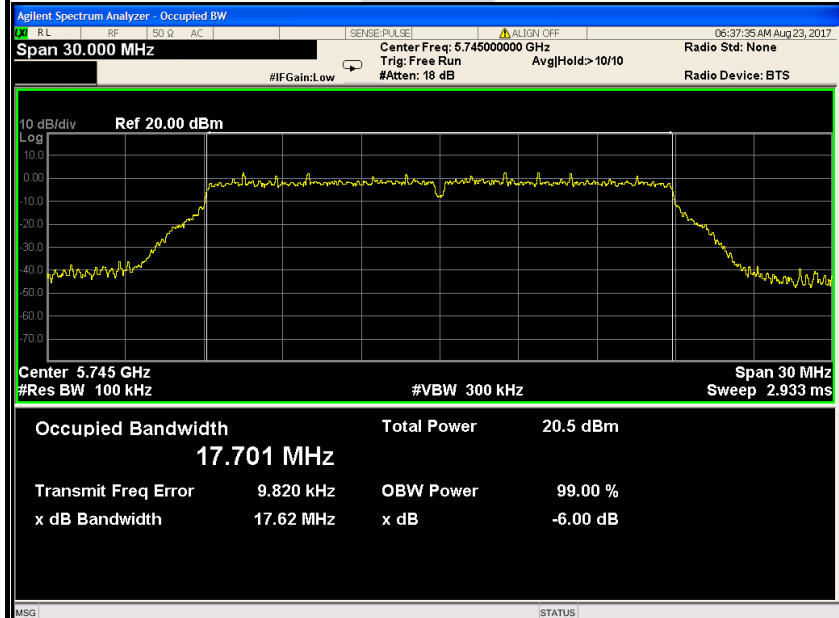




IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

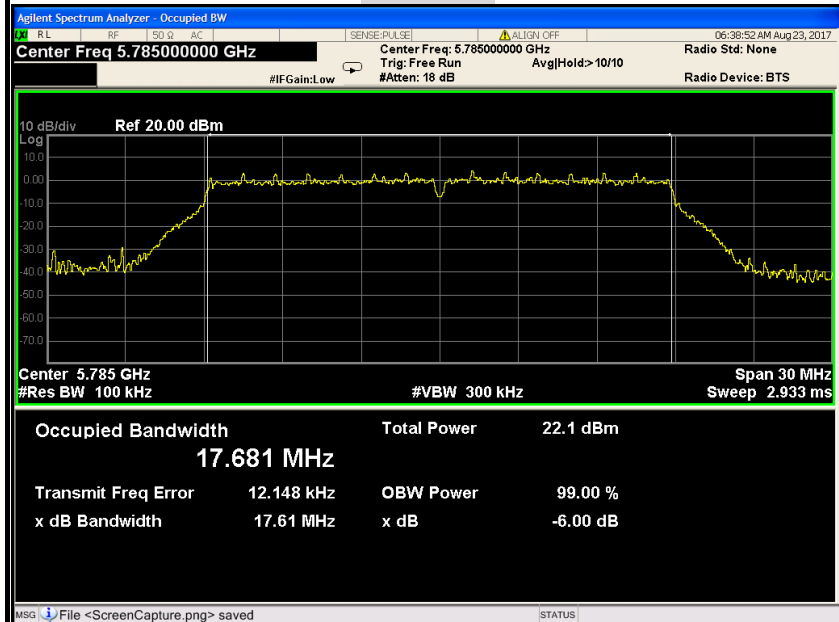
6dB Bandwidth (CH Low)

Antenna 1



6dB Bandwidth (CH Mid)

Antenna 1

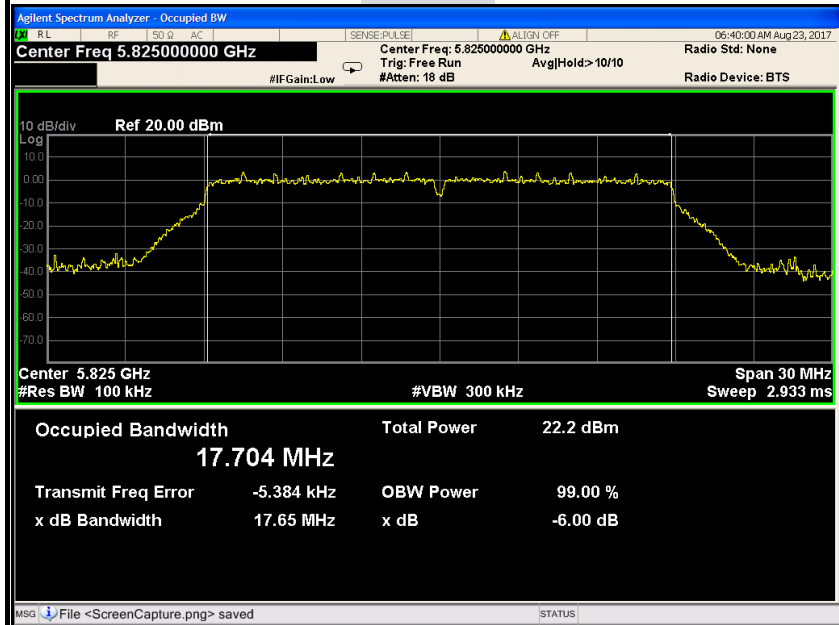






### 6dB Bandwidth (CH High)

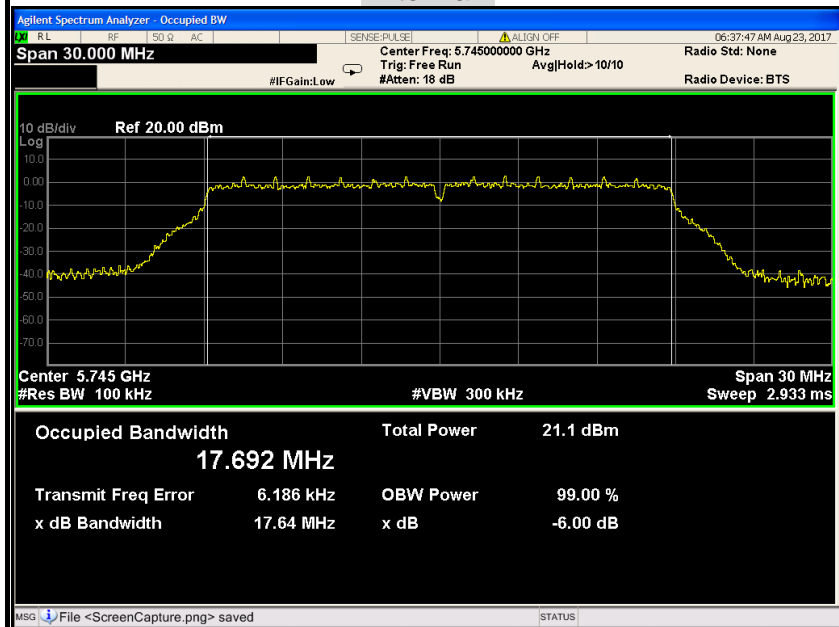
#### Antenna 1



### IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

### 6dB Bandwidth (CH Low)

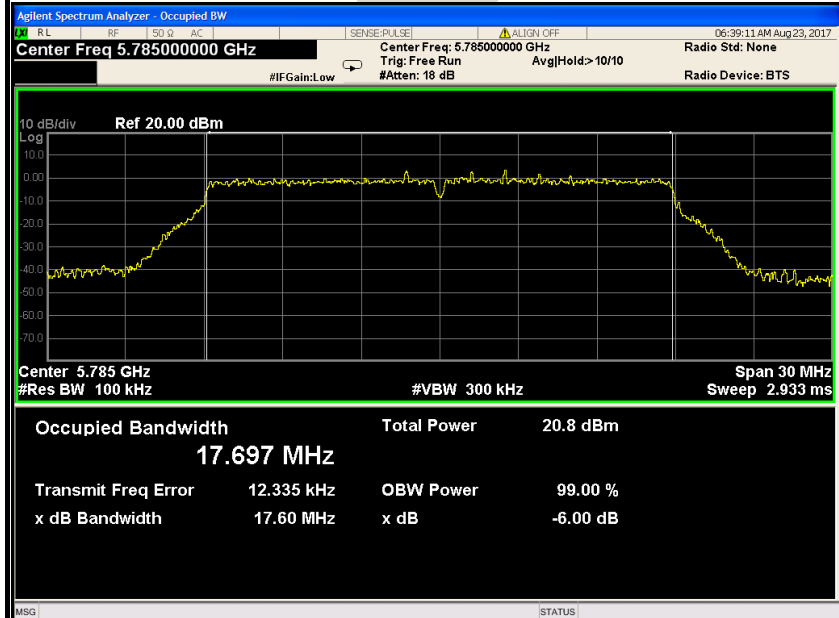
#### Antenna 2





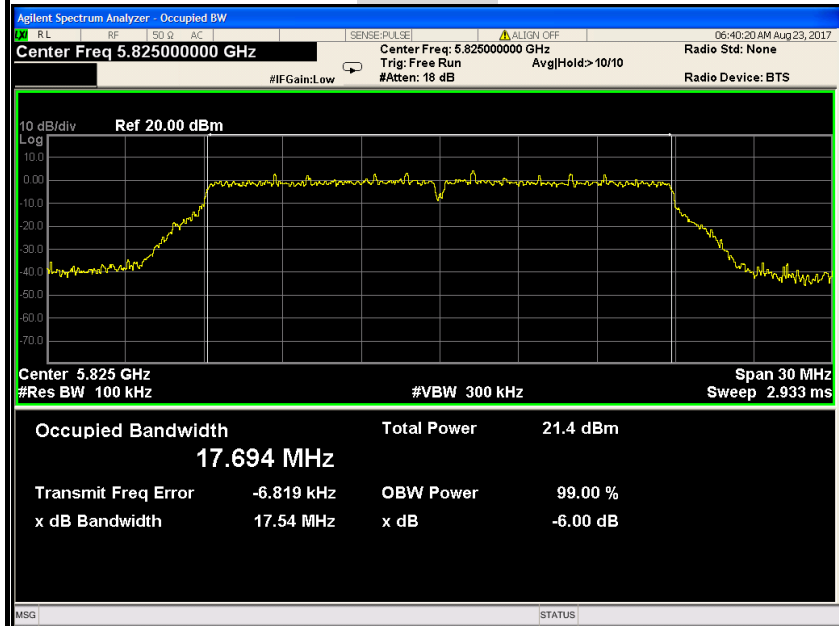
### 6dB Bandwidth (CH Mid)

Antenna 2



### 6dB Bandwidth (CH High)

Antenna 2

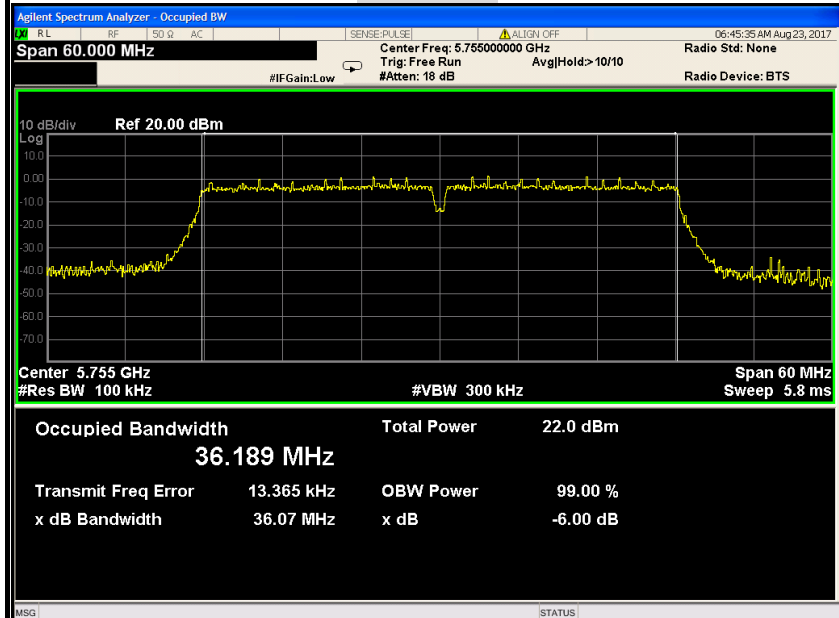




IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

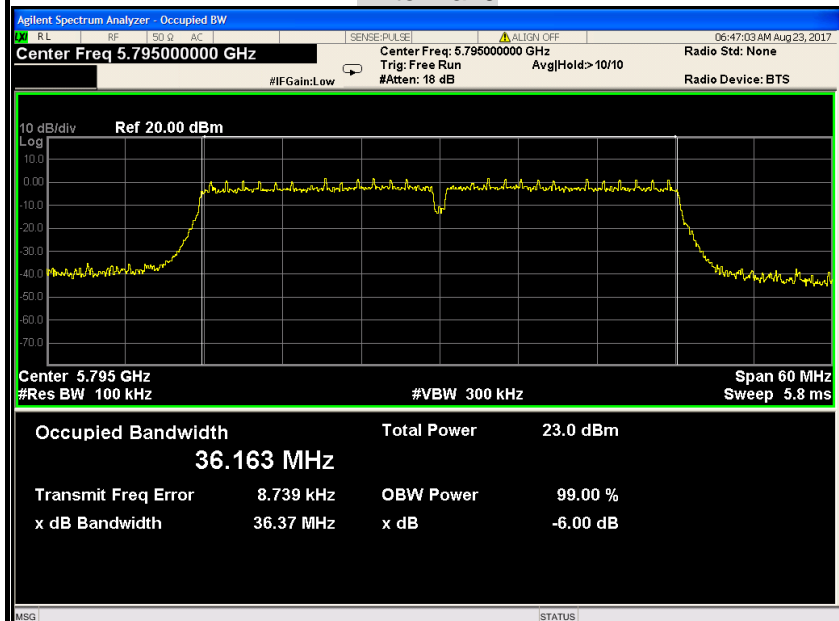
6dB Bandwidth (CH Low)

Antenna 0



6dB Bandwidth (CH High)

Antenna 0

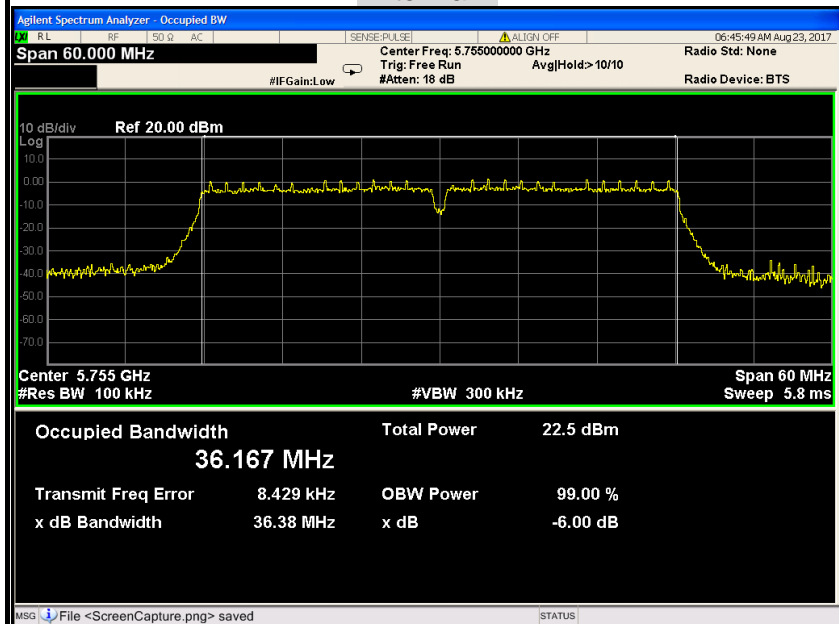




IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

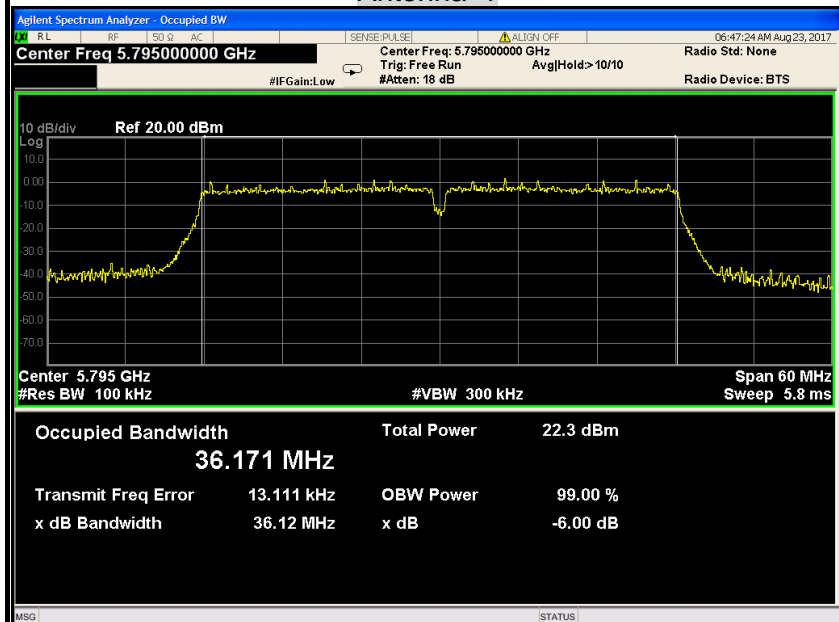
6dB Bandwidth (CH Low)

Antenna 1



6dB Bandwidth (CH High)

Antenna 1

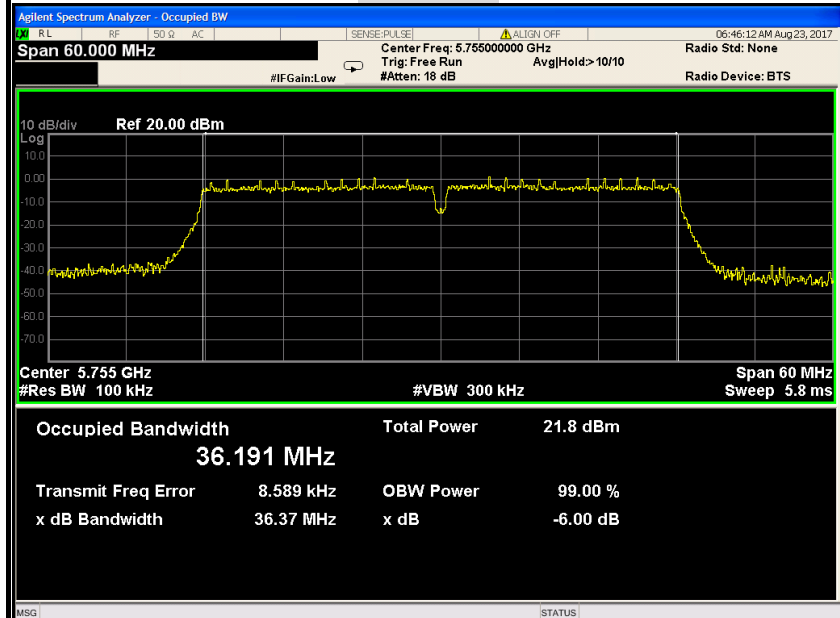




IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

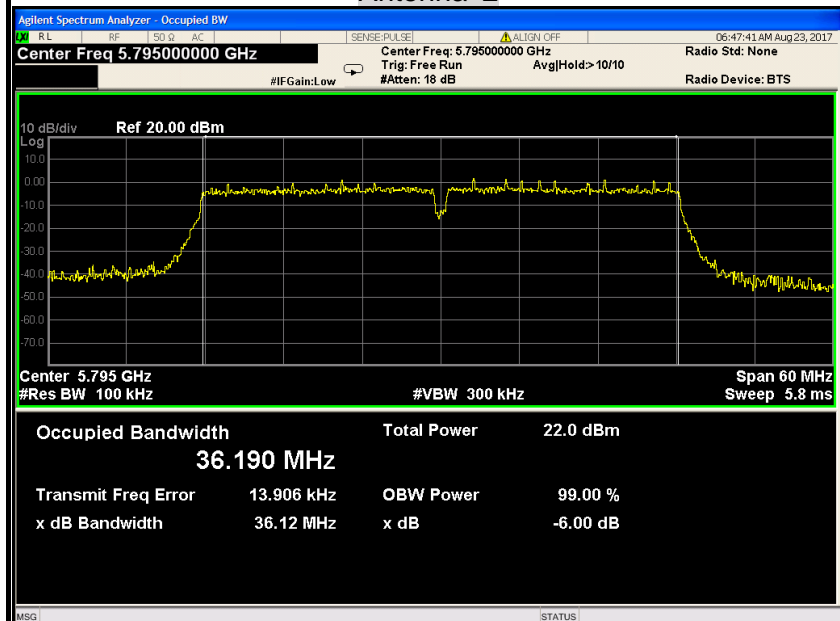
6dB Bandwidth (CH Low)

Antenna 2



6dB Bandwidth (CH High)

Antenna 2

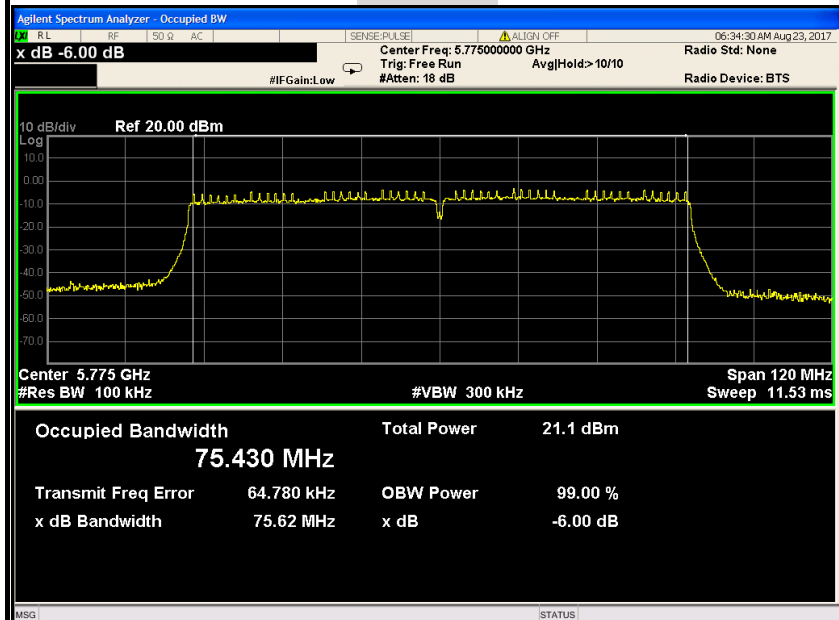




IEEE 802.11ac 80 MHz mode / 5775MHz

6dB Bandwidth

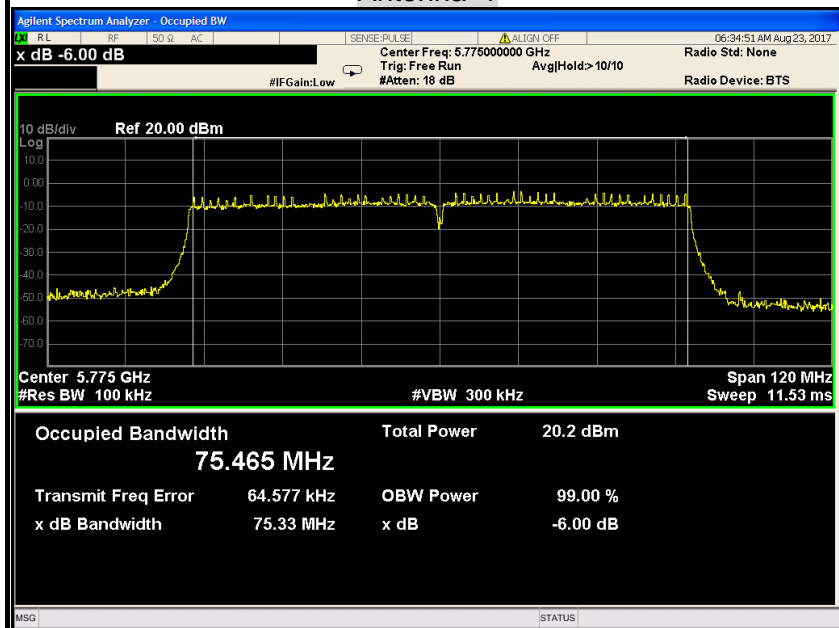
Antenna 0

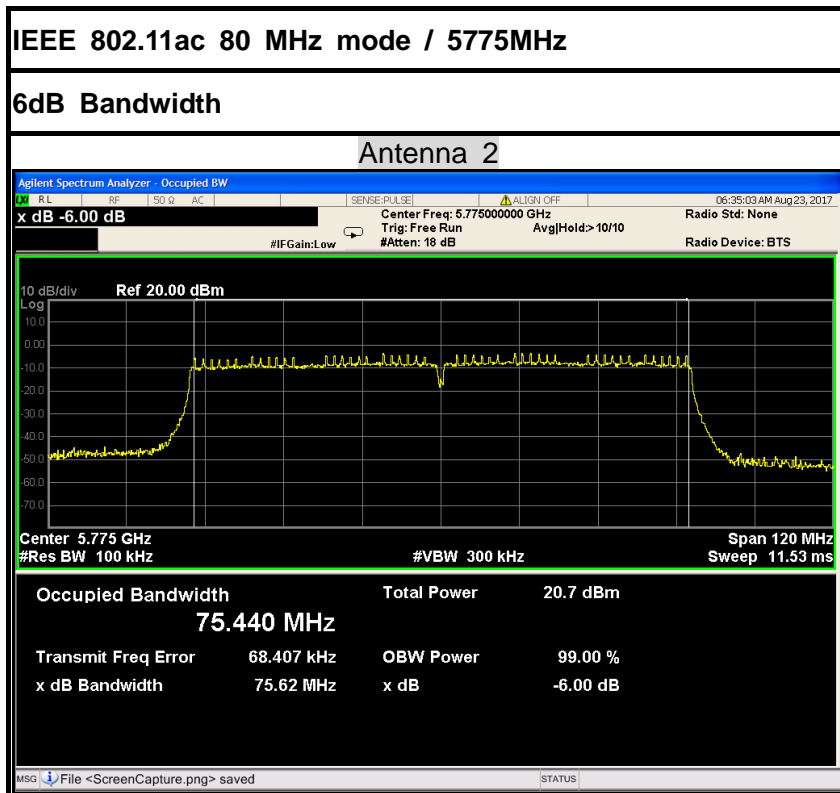


IEEE 802.11ac 80 MHz mode / 5775MHz

6dB Bandwidth

Antenna 1







## 6.3 ANTENNA GAIN

### MEASUREMENT

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For UNII devices, the IEEE 802.11a mode is used.

### MEASUREMENT PARAMETERS

| Measurement parameter |          |
|-----------------------|----------|
| Detector              | Peak     |
| Sweep time            | Auto     |
| Resolution bandwidth  | 3 MHz    |
| Video bandwidth       | 3 MHz    |
| Trace-Mode            | Max hold |

### LIMITS

| FCC          | IC |
|--------------|----|
| Antenna Gain |    |
| 6 dBi        |    |





## TEST RESULTS

### Antenna 0

#### IEEE 802.11a mode / 5180 ~ 5240MHz

| T <sub>nom</sub>                                       | V <sub>nom</sub> | Lowest channel<br>5180MHz        | Highest channel<br>5240MHz |
|--|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured<br>with OFDM modulation |                  | 2.73                             | 3.16                       |
| Radiated power [dBm] Measured<br>with OFDM modulation  |                  | 5.26                             | 5.81                       |
| Gain [dBi] Calculated                                  |                  | 2.53                             | 2.65                       |
| Measurement uncertainty                                |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

#### IEEE 802.11a mode / 5260 ~ 5320MHz

| T <sub>nom</sub>                                       | V <sub>nom</sub> | Lowest channel<br>5260MHz        | Highest channel<br>5320MHz |
|--|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured<br>with OFDM modulation |                  | 5.72                             | 5.80                       |
| Radiated power [dBm] Measured<br>with OFDM modulation  |                  | 8.21                             | 8.51                       |
| Gain [dBi] Calculated                                  |                  | 2.49                             | 2.71                       |
| Measurement uncertainty                                |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

#### IEEE 802.11a mode / 5500 ~ 5700MHz

| T <sub>nom</sub>                                       | V <sub>nom</sub> | Lowest channel<br>5500MHz        | Highest channel<br>5700MHz |
|--|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured<br>with OFDM modulation |                  | 4.96                             | 4.74                       |
| Radiated power [dBm] Measured<br>with OFDM modulation  |                  | 7.25                             | 7.15                       |
| Gain [dBi] Calculated                                  |                  | 2.29                             | 2.41                       |
| Measurement uncertainty                                |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

#### IEEE 802.11a mode / 5745 ~ 5825MHz

| T <sub>nom</sub>                                       | V <sub>nom</sub> | Lowest channel<br>5745MHz        | Highest channel<br>5825MHz |
|--|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured<br>with OFDM modulation |                  | 5.28                             | 5.18                       |
| Radiated power [dBm] Measured<br>with OFDM modulation  |                  | 7.23                             | 7.31                       |
| Gain [dBi] Calculated                                  |                  | 1.95                             | 2.13                       |
| Measurement uncertainty                                |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

**Antenna 1****IEEE 802.11a mode / 5180 ~ 5240MHz**

| T <sub>nom</sub>                                    | V <sub>nom</sub> | Lowest channel<br>5180MHz        | Highest channel<br>5240MHz |
|---|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured with OFDM modulation |                  | 2.90                             | 3.04                       |
| Radiated power [dBm] Measured with OFDM modulation  |                  | 5.15                             | 5.26                       |
| Gain [dBi] Calculated                               |                  | 2.25                             | 2.22                       |
| Measurement uncertainty                             |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

**IEEE 802.11a mode / 5260 ~ 5320MHz**

| T <sub>nom</sub>                                    | V <sub>nom</sub> | Lowest channel<br>5260MHz        | Highest channel<br>5320MHz |
|---|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured with OFDM modulation |                  | 5.77                             | 5.55                       |
| Radiated power [dBm] Measured with OFDM modulation  |                  | 7.42                             | 7.18                       |
| Gain [dBi] Calculated                               |                  | 1.65                             | 1.63                       |
| Measurement uncertainty                             |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

**IEEE 802.11a mode / 5500 ~ 5700MHz**

| T <sub>nom</sub>                                    | V <sub>nom</sub> | Lowest channel<br>5500MHz        | Highest channel<br>5700MHz |
|---|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured with OFDM modulation |                  | 4.79                             | 4.77                       |
| Radiated power [dBm] Measured with OFDM modulation  |                  | 6.19                             | 7.26                       |
| Gain [dBi] Calculated                               |                  | 1.40                             | 2.49                       |
| Measurement uncertainty                             |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

**IEEE 802.11a mode / 5745 ~ 5825MHz**

| T <sub>nom</sub>                                    | V <sub>nom</sub> | Lowest channel<br>5745MHz        | Highest channel<br>5825MHz |
|---|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured with OFDM modulation |                  | 5.34                             | 5.16                       |
| Radiated power [dBm] Measured with OFDM modulation  |                  | 7.15                             | 7.26                       |
| Gain [dBi] Calculated                               |                  | 1.81                             | 2.10                       |
| Measurement uncertainty                             |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

**Antenna 2****IEEE 802.11a mode / 5180 ~ 5240MHz**

| T <sub>nom</sub>                                    | V <sub>nom</sub> | Lowest channel<br>5180MHz        | Highest channel<br>5240MHz |
|---|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured with OFDM modulation |                  | 2.32                             | 2.42                       |
| Radiated power [dBm] Measured with OFDM modulation  |                  | 4.82                             | 5.18                       |
| Gain [dBi] Calculated                               |                  | 2.50                             | 2.76                       |
| Measurement uncertainty                             |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

**IEEE 802.11a mode / 5260 ~ 5320MHz**

| T <sub>nom</sub>                                    | V <sub>nom</sub> | Lowest channel<br>5260MHz        | Highest channel<br>5320MHz |
|---|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured with OFDM modulation |                  | 5.55                             | 5.42                       |
| Radiated power [dBm] Measured with OFDM modulation  |                  | 7.53                             | 7.89                       |
| Gain [dBi] Calculated                               |                  | 1.98                             | 2.47                       |
| Measurement uncertainty                             |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

**IEEE 802.11a mode / 5500 ~ 5700MHz**

| T <sub>nom</sub>                                    | V <sub>nom</sub> | Lowest channel<br>5500MHz        | Highest channel<br>5700MHz |
|---|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured with OFDM modulation |                  | 5.18                             | 5.05                       |
| Radiated power [dBm] Measured with OFDM modulation  |                  | 7.25                             | 7.26                       |
| Gain [dBi] Calculated                               |                  | 2.07                             | 2.21                       |
| Measurement uncertainty                             |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |

**IEEE 802.11a mode / 5745 ~ 5825MHz**

| T <sub>nom</sub>                                    | V <sub>nom</sub> | Lowest channel<br>5745MHz        | Highest channel<br>5825MHz |
|---|------------------|----------------------------------|----------------------------|
| Conducted power [dBm] Measured with OFDM modulation |                  | 5.54                             | 5.34                       |
| Radiated power [dBm] Measured with OFDM modulation  |                  | 7.26                             | 7.26                       |
| Gain [dBi] Calculated                               |                  | 1.72                             | 1.92                       |
| Measurement uncertainty                             |                  | ± 1.5 dB (cond.) / ± 3 dB (rad.) |                            |



## 6.4 OUTPUT POWER

### 6.4.1 LIMIT

#### According to §15.407(a)& FCC R&O FCC 14 - 30,

(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.

(2) 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.

*Note to paragraph (a)(3): The Commission strongly recommends that parties employing U-NII devices to provide critical communications services should determine if there are any nearby Government radar systems that could affect their operation.*



## Specified Limit of the Output Power

## Test mode: IEEE 802.11a mode / 5260 ~ 5320MHz

| Channel | Frequency (MHz) | 26 dB Bandwidth (B) (MHz) Antenna |       |       | 10*Log(B) (dB) Antenna |       |       | 11 + 10*Log(B) (dBm) Antenna |       |       | Maximum Conducted Output Power Limit (dBm) Antenna |       |       |
|---------|-----------------|-----------------------------------|-------|-------|------------------------|-------|-------|------------------------------|-------|-------|--|-------|-------|
|         |                 | 0                                 | 1     | 2     | 0                      | 1     | 2     | 0                            | 1     | 2     | 0  | 1     | 2     |
| Low     | 5260            | 21.47                             | 21.47 | 21.19 | 13.32                  | 13.32 | 13.26 | 24.32                        | 24.32 | 24.26 | 24.00  | 24.00 | 24.00 |
| Mid     | 5300            | 21.35                             | 21.34 | 21.11 | 13.29                  | 13.29 | 13.24 | 24.29                        | 24.29 | 24.24 | 24.00  | 24.00 | 24.00 |
| High    | 5320            | 21.46                             | 21.17 | 21.13 | 13.32                  | 13.26 | 13.25 | 24.32                        | 24.26 | 24.25 | 24.00  | 24.00 | 24.00 |

## Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

| Channel | Frequency (MHz) | 26 dB Bandwidth (B) (MHz) Antenna |       |       | 10*Log(B) (dB) Antenna |       |       | 11 + 10*Log(B) (dBm) Antenna |       |       | Maximum Conducted Output Power Limit (dBm) Antenna |       |       |
|---------|-----------------|-----------------------------------|-------|-------|------------------------|-------|-------|------------------------------|-------|-------|--|-------|-------|
|         |                 | 0                                 | 1     | 2     | 0                      | 1     | 2     | 0                            | 1     | 2     | 0  | 1     | 2     |
| Low     | 5500            | 21.01                             | 21.20 | 21.19 | 13.22                  | 13.26 | 13.26 | 24.22                        | 24.26 | 24.26 | 24.00  | 24.00 | 24.00 |
| Mid     | 5580            | 21.01                             | 21.13 | 21.10 | 13.22                  | 13.25 | 13.24 | 24.22                        | 24.25 | 24.24 | 24.00  | 24.00 | 24.00 |
| High    | 5700            | 21.41                             | 21.29 | 21.40 | 13.31                  | 13.28 | 13.30 | 24.31                        | 24.28 | 24.30 | 24.00  | 24.00 | 24.00 |

## Test mode: IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz

| Channel | Frequency (MHz) | 26 dB Bandwidth (B) (MHz) Antenna |       |       | 10*Log(B) (dB) Antenna |       |       | 11 + 10*Log(B) (dBm) Antenna |       |       | Maximum Conducted Output Power Limit (dBm) Antenna |       |       |
|---------|-----------------|-----------------------------------|-------|-------|------------------------|-------|-------|------------------------------|-------|-------|--|-------|-------|
|         |                 | 0                                 | 1     | 2     | 0                      | 1     | 2     | 0                            | 1     | 2     | 0  | 1     | 2     |
| Low     | 5260            | 21.33                             | 21.23 | 21.33 | 13.29                  | 13.27 | 13.29 | 24.29                        | 24.27 | 24.29 | 24.00  | 24.00 | 24.00 |
| Mid     | 5300            | 21.24                             | 21.35 | 21.25 | 13.27                  | 13.29 | 13.27 | 24.27                        | 24.29 | 24.27 | 24.00  | 24.00 | 24.00 |
| High    | 5320            | 21.33                             | 20.98 | 21.36 | 13.29                  | 13.22 | 13.30 | 24.29                        | 24.22 | 24.30 | 24.00  | 24.00 | 24.00 |

## Test mode: IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz

| Channel | Frequency (MHz) | 26 dB Bandwidth (B) (MHz) Antenna |       |       | 10*Log(B) (dB) Antenna |       |       | 11 + 10*Log(B) (dBm) Antenna |       |       | Maximum Conducted Output Power Limit (dBm) Antenna |       |       |
|---------|-----------------|-----------------------------------|-------|-------|------------------------|-------|-------|------------------------------|-------|-------|--|-------|-------|
|         |                 | 0                                 | 1     | 2     | 0                      | 1     | 2     | 0                            | 1     | 2     | 0  | 1     | 2     |
| Low     | 5500            | 21.24                             | 21.26 | 21.23 | 13.27                  | 13.28 | 13.27 | 24.27                        | 24.28 | 24.27 | 24.00  | 24.00 | 24.00 |
| Mid     | 5580            | 21.26                             | 21.07 | 21.32 | 13.28                  | 13.24 | 13.29 | 24.28                        | 24.24 | 24.29 | 24.00  | 24.00 | 24.00 |
| High    | 5700            | 21.39                             | 21.46 | 21.45 | 13.30                  | 13.32 | 13.31 | 24.30                        | 24.32 | 24.31 | 24.00  | 24.00 | 24.00 |

**IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz**

| Channel | Frequency (MHz) | 26 dB Bandwidth (B) (MHz) Antenna |       |       | 10*Log(B) (dB) Antenna |       |       | 11 + 10*Log(B) (dBm) Antenna |       |       | Maximum Conducted Output Power Limit (dBm) Antenna |       |       |
|---------|-----------------|-----------------------------------|-------|-------|------------------------|-------|-------|------------------------------|-------|-------|--|-------|-------|
|         |                 | 0                                 | 1     | 2     | 0                      | 1     | 2     | 0                            | 1     | 2     | 0  | 1     | 2     |
| Low     | 5270            | 40.34                             | 40.51 | 40.32 | 16.06                  | 16.08 | 16.06 | 27.06                        | 27.08 | 27.06 | 24.00  | 24.00 | 24.00 |
| High    | 5310            | 40.25                             | 40.63 | 40.32 | 16.05                  | 16.09 | 16.06 | 27.05                        | 27.09 | 27.06 | 24.00  | 24.00 | 24.00 |

**IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz**

| Channel | Frequency (MHz) | 26 dB Bandwidth (B) (MHz) Antenna |       |       | 10*Log(B) (dB) Antenna |       |       | 11 + 10*Log(B) (dBm) Antenna |       |       | Maximum Conducted Output Power Limit (dBm) Antenna |       |       |
|---------|-----------------|-----------------------------------|-------|-------|------------------------|-------|-------|------------------------------|-------|-------|--|-------|-------|
|         |                 | 0                                 | 1     | 2     | 0                      | 1     | 2     | 0                            | 1     | 2     | 0  | 1     | 2     |
| Low     | 5510            | 40.37                             | 40.64 | 40.23 | 16.06                  | 16.09 | 16.05 | 27.06                        | 27.09 | 27.05 | 24.00  | 24.00 | 24.00 |
| Mid     | 5550            | 40.25                             | 40.65 | 40.65 | 16.05                  | 16.09 | 16.09 | 27.05                        | 27.09 | 27.09 | 24.00  | 24.00 | 24.00 |
| High    | 5670            | 40.16                             | 40.43 | 40.27 | 16.04                  | 16.07 | 16.05 | 27.04                        | 27.07 | 27.05 | 24.00  | 24.00 | 24.00 |

**IEEE 802.11ac 80 mode / 5290MHz**

| Channel | Frequency (MHz) | 26 dB Bandwidth (B) (MHz) Antenna |       |       | 10*Log(B) (dB) Antenna |       |       | 11 + 10*Log(B) (dBm) Antenna |       |       | Maximum Conducted Output Power Limit (dBm) Antenna |       |       |
|---------|-----------------|-----------------------------------|-------|-------|------------------------|-------|-------|------------------------------|-------|-------|--|-------|-------|
|         |                 | 0                                 | 1     | 2     | 0                      | 1     | 2     | 0                            | 1     | 2     | 0  | 1     | 2     |
|         | 5290            | 81.94                             | 82.01 | 81.70 | 19.13                  | 19.14 | 19.12 | 30.13                        | 30.14 | 30.12 | 24.00  | 24.00 | 24.00 |

**IEEE 802.11ac 80 mode / 5530MHz**

| Channel | Frequency (MHz) | 26 dB Bandwidth (B) (MHz) Antenna |       |       | 10*Log(B) (dB) Antenna |       |       | 11 + 10*Log(B) (dBm) Antenna |       |       | Maximum Conducted Output Power Limit (dBm) Antenna |       |       |
|---------|-----------------|-----------------------------------|-------|-------|------------------------|-------|-------|------------------------------|-------|-------|--|-------|-------|
|         |                 | 0                                 | 1     | 2     | 0                      | 1     | 2     | 0                            | 1     | 2     | 0  | 1     | 2     |
|         | 5530            | 82.42                             | 82.66 | 82.24 | 19.16                  | 19.17 | 19.15 | 30.16                        | 30.17 | 30.15 | 24.00  | 24.00 | 24.00 |

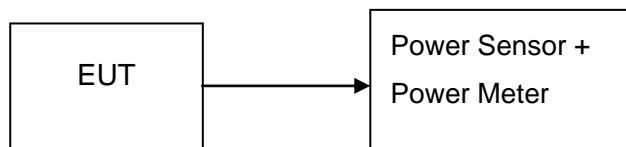


#### 6.4.2 MEASUREMENT EQUIPMENT USED

| Name of Equipment | Manufacturer | Model   | Serial Number | Last Calibration | Calibration Due |
|-------------------|--------------|---------|---------------|------------------|-----------------|
| Power Meter       | Anritsu      | ML2495A | 1204003       | 02/21/2017       | 02/20/2018      |
| Power Sensor      | Anritsu      | MA2411B | 1126150       | 02/21/2017       | 02/20/2018      |

**Remark:** Each piece of equipment is scheduled for calibration once a year.

#### 6.4.3 TEST CONFIGURATIONS



#### 6.4.4 TEST PROCEDURE

The EUT was connected to a Power Meter through a 50Ω RF cable.

#### 6.4.5 TEST RESULTS

*No non-compliance noted*



**6.4.6 TEST DATA****IEEE 802.11a mode / 5180 ~ 5240MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           | AVG Output Power (W) |           |           | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|----------------------|-----------|-----------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Antenna 0            | Antenna 1 | Antenna 2 |             |        |
| Low     | 5180            | 15.94                  | 16.13     | 15.55     | 0.03926              | 0.04102   | 0.03589   | 30.00       | PASS   |
| Mid     | 5200            | 16.12                  | 16.09     | 15.56     | 0.04093              | 0.04064   | 0.03597   |             | PASS   |
| High    | 5240            | 16.39                  | 16.30     | 15.68     | 0.04355              | 0.04266   | 0.03698   |             | PASS   |

**IEEE 802.11a mode / 5260~ 5320MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           | AVG Output Power (W) |           |           | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|----------------------|-----------|-----------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Antenna 0            | Antenna 1 | Antenna 2 |             |        |
| Low     | 5260            | 19.04                  | 19.09     | 18.81     | 0.08017              | 0.08110   | 0.07603   | 24.00       | PASS   |
| Mid     | 5300            | 19.18                  | 18.91     | 18.54     | 0.08279              | 0.07780   | 0.07145   |             | PASS   |
| High    | 5320            | 19.12                  | 18.81     | 18.67     | 0.08166              | 0.07603   | 0.07362   |             | PASS   |

**IEEE 802.11a mode / 5500 ~ 5700MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           | AVG Output Power (W) |           |           | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|----------------------|-----------|-----------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Antenna 0            | Antenna 1 | Antenna 2 |             |        |
| Low     | 5500            | 18.18                  | 18.05     | 18.44     | 0.06577              | 0.06383   | 0.06982   | 24.00       | PASS   |
| Mid     | 5580            | 18.33                  | 18.23     | 18.40     | 0.06808              | 0.06653   | 0.06918   |             | PASS   |
| High    | 5700            | 18.05                  | 18.05     | 18.35     | 0.06383              | 0.06383   | 0.06839   |             | PASS   |

**IEEE 802.11a mode / 5745 ~ 5825MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           | AVG Output Power (W) |           |           | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|----------------------|-----------|-----------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Antenna 0            | Antenna 1 | Antenna 2 |             |        |
| Low     | 5745            | 18.55                  | 18.61     | 18.74     | 0.07161              | 0.07261   | 0.07482   | 30.00       | PASS   |
| Mid     | 5785            | 18.42                  | 18.39     | 18.74     | 0.06950              | 0.06902   | 0.07482   |             | PASS   |
| High    | 5825            | 18.38                  | 18.42     | 18.65     | 0.06887              | 0.06950   | 0.07328   |             | PASS   |

**IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
| Low     | 5180            | 7.41                   | 7.88      | 8.00      | 12.54 | 0.01796              | 28.23       | PASS   |
| Mid     | 5200            | 7.40                   | 7.58      | 8.04      | 12.45 | 0.01759              |             | PASS   |
| High    | 5240            | 7.34                   | 7.61      | 7.96      | 12.42 | 0.01744              |             | PASS   |

**IEEE 802.11n HT 20 MHz mode / 5260~ 5320MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
| Low     | 5260            | 12.61                  | 12.84     | 16.66     | 19.23 | 0.08381              | 22.23       | PASS   |
| Mid     | 5300            | 12.46                  | 12.43     | 16.60     | 19.08 | 0.08083              |             | PASS   |
| High    | 5320            | 12.42                  | 12.41     | 16.55     | 19.03 | 0.08006              |             | PASS   |

**IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
| Low     | 5500            | 16.67                  | 16.39     | 15.80     | 21.07 | 0.12802              | 22.23       | PASS   |
| Mid     | 5580            | 16.28                  | 16.37     | 15.85     | 20.94 | 0.12427              |             | PASS   |
| High    | 5700            | 16.40                  | 16.10     | 15.81     | 20.88 | 0.12250              |             | PASS   |

**IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
| Low     | 5745            | 16.58                  | 16.55     | 16.35     | 21.27 | 0.13384              | 28.23       | PASS   |
| Mid     | 5785            | 16.60                  | 16.48     | 16.14     | 21.18 | 0.13129              |             | PASS   |
| High    | 5825            | 16.33                  | 16.33     | 16.25     | 21.07 | 0.12808              |             | PASS   |

**IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
| Low     | 5190            | 10.52                  | 10.23     | 10.68     | 15.25 | 0.03351              | 28.23       | PASS   |
| High    | 5230            | 10.46                  | 10.04     | 10.86     | 15.24 | 0.03340              |             | PASS   |

**IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
| Low     | 5270            | 13.83                  | 14.14     | 15.96     | 19.52 | 0.08954              | 22.23       | PASS   |
| High    | 5310            | 14.03                  | 13.94     | 15.94     | 19.51 | 0.08933              |             | PASS   |

**IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
| Low     | 5510            | 16.69                  | 16.96     | 14.53     | 20.96 | 0.12470              | 22.23       | PASS   |
| Mid     | 5550            | 16.67                  | 16.94     | 14.12     | 20.85 | 0.12171              |             | PASS   |
| High    | 5670            | 16.73                  | 16.61     | 14.13     | 20.75 | 0.11879              |             | PASS   |

**IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
| Low     | 5775            | 16.74                  | 16.64     | 14.18     | 20.77 | 0.11952              | 28.23       | PASS   |
| High    | 5795            | 16.77                  | 16.75     | 14.12     | 20.82 | 0.12067              |             | PASS   |

**IEEE 802.11ac 80 mode / 5210MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
|         | 5210            | 13.10                  | 13.23     | 13.05     | 17.90 | 0.06164              | 28.23       | PASS   |

**IEEE 802.11ac 80 mode / 5290MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
|         | 5290            | 15.62                  | 15.54     | 14.01     | 19.89 | 0.09746              | 22.23       | PASS   |

**IEEE 802.11ac 80 mode / 5530MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
|         | 5530            | 16.42                  | 16.45     | 14.22     | 20.59 | 0.11443              | 22.23       | PASS   |

**IEEE 802.11ac 80 mode / 5775MHz**

| Channel | Frequency (MHz) | AVG Output Power (dBm) |           |           |       | AVG Output Power (W) | Limit (dBm) | Result |
|---------|-----------------|------------------------|-----------|-----------|-------|----------------------|-------------|--------|
|         |                 | Antenna 0              | Antenna 1 | Antenna 2 | Total |                      |             |        |
|         | 5775            | 16.36                  | 16.72     | 14.15     | 20.65 | 0.11624              | 28.23       | PASS   |



## 6.5 BAND EDGES MEASUREMENT

### 6.5.1 LIMIT

According to §15.407(b)

- (1) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
- (2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

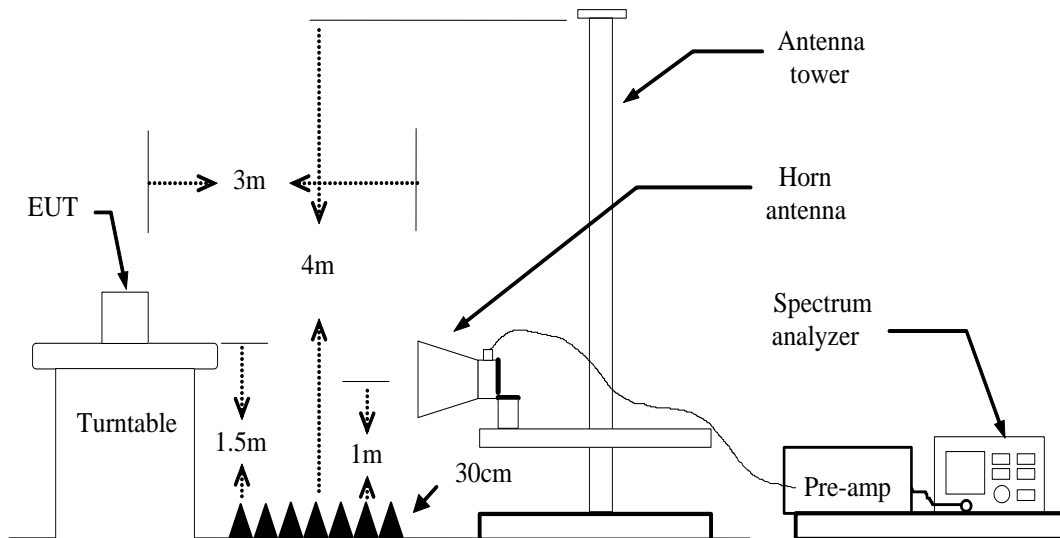
### 6.5.2 MEASUREMENT EQUIPMENT USED

| Radiated Emission Test Site 966 (2) |                |                    |               |                  |                 |
|-------------------------------------|----------------|--------------------|---------------|------------------|-----------------|
| Name of Equipment                   | Manufacturer   | Model Number       | Serial Number | Last Calibration | Due Calibration |
| PSA Series Spectrum Analyzer        | Agilent        | N9010A             | MY52221469    | 02/21/2017       | 02/20/2018      |
| EMI TEST RECEIVER                   | ROHDE&SCHWARZ  | ESCI               | 100783        | 02/21/2017       | 02/20/2018      |
| Amplifier                           | EMEC           | EM330              | 060661        | 03/18/2017       | 03/17/2018      |
| High Noise Amplifier                | Agilent        | 8449B              | 3008A01838    | 02/21/2017       | 02/20/2018      |
| Loop Antenna                        | COM-POWER      | AL-130             | 121044        | 09/25/2016       | 09/24/2017      |
| Bilog Antenna                       | SCHAFFNER      | CBL6143            | 5082          | 02/21/2017       | 02/20/2018      |
| Horn Antenna                        | SCHWARZBECK    | BBHA9120           | D286          | 02/27/2017       | 02/27/2018      |
| Board-Band Horn Antenna             | Schwarzbeck    | BBHA 9170          | 9170-497      | 02/27/2017       | 02/27/2018      |
| Turn Table                          | N/A            | N/A                | N/A           | N.C.R            | N.C.R           |
| Antenna Tower                       | SUNOL          | TLT2               | N/A           | N.C.R            | N.C.R           |
| Controller                          | Sunol Sciences | SC104V             | 022310-1      | N.C.R            | N.C.R           |
| Controller                          | CT             | N/A                | N/A           | N.C.R            | N.C.R           |
| Temp. / Humidity Meter              | Anymetre       | JR913              | N/A           | 02/21/2017       | 02/20/2018      |
| Test S/W                            | FARAD          | LZ-RF / CCS-SZ-3A2 |               |                  |                 |

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
2. The FCC Site Registration number is 101879.  
3. N.C.R = No Calibration Required.



### 6.5.3 TEST CONFIGURATION



### 6.5.4 TEST PROCEDURE

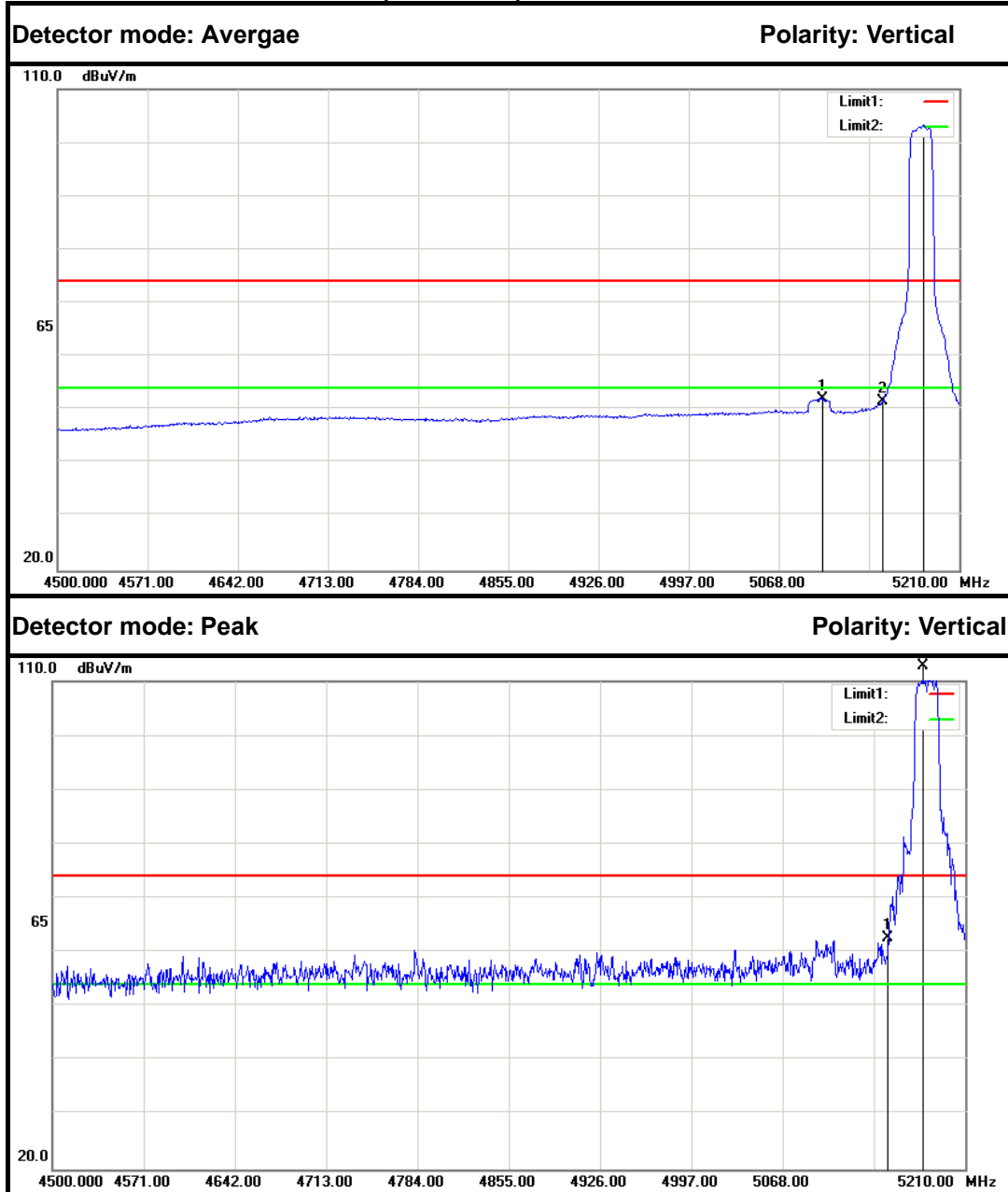
1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
  - (a) PEAK: RBW=1 / VBW=3MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz / VBW=1/T / Sweep=AUTO / Detector=Peak
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.



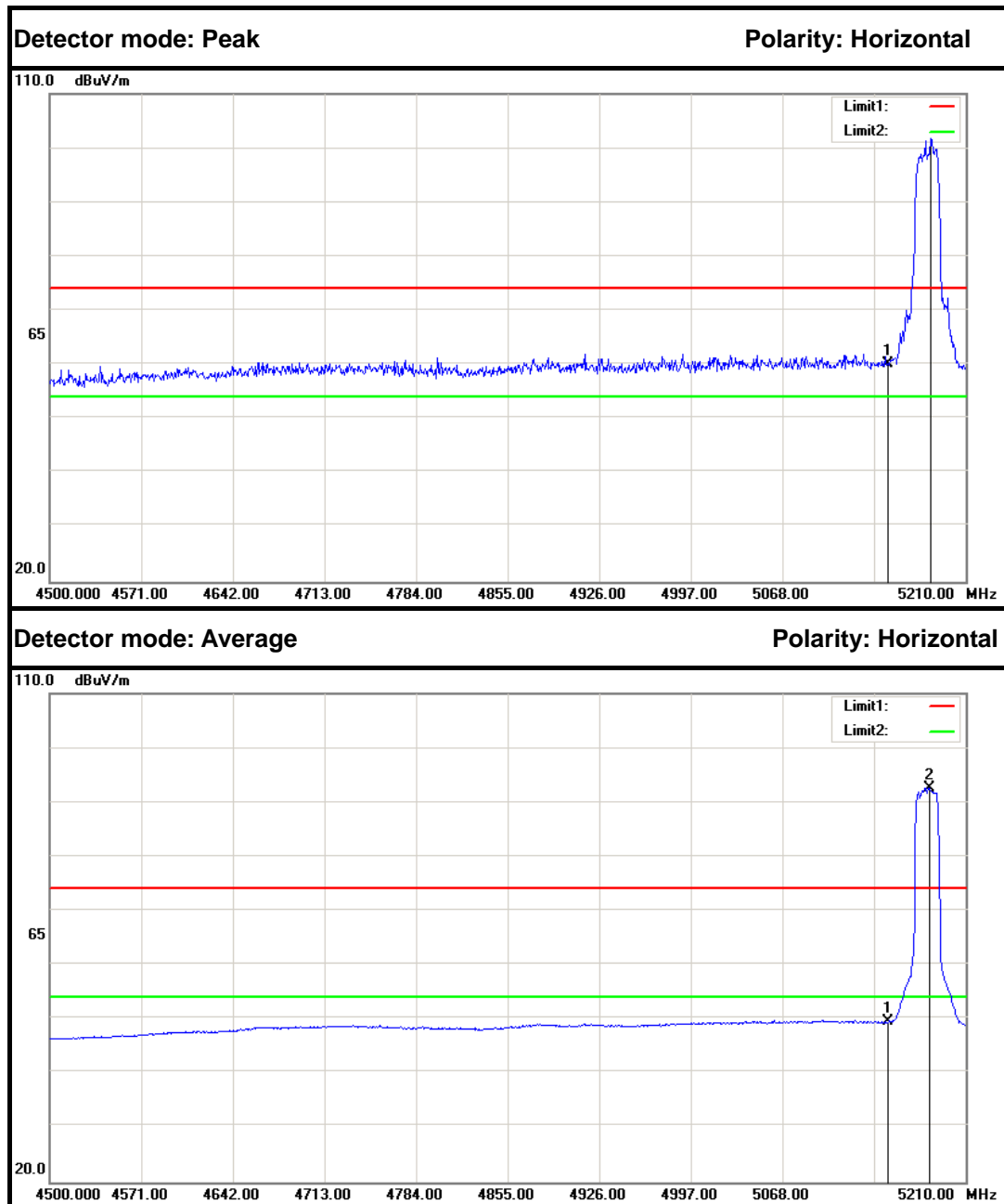
## 6.5.5 TEST RESULT

### Test Plot

IEEE 802.11a mode / 5180MHz (Antenna 0)



| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5102.080        | 46.94        | 5.16          | 52.10         | 54.00        | -1.90       | Average | Vertical      |
| 2   | 5150.000        | 46.40        | 5.25          | 51.65         | 54.00        | -2.35       | Average | Vertical      |
| 3   | 5182.310        | 97.97        | 5.30          | 103.27        | ---          | ---         | Average | Vertical      |
| 1   | 5150.000        | 57.31        | 5.25          | 62.56         | 74.00        | -11.44      | Peak    | Vertical      |
| 2   | 5177.340        | 107.69       | 5.30          | 112.99        | ---          | ---         | Peak    | Vertical      |

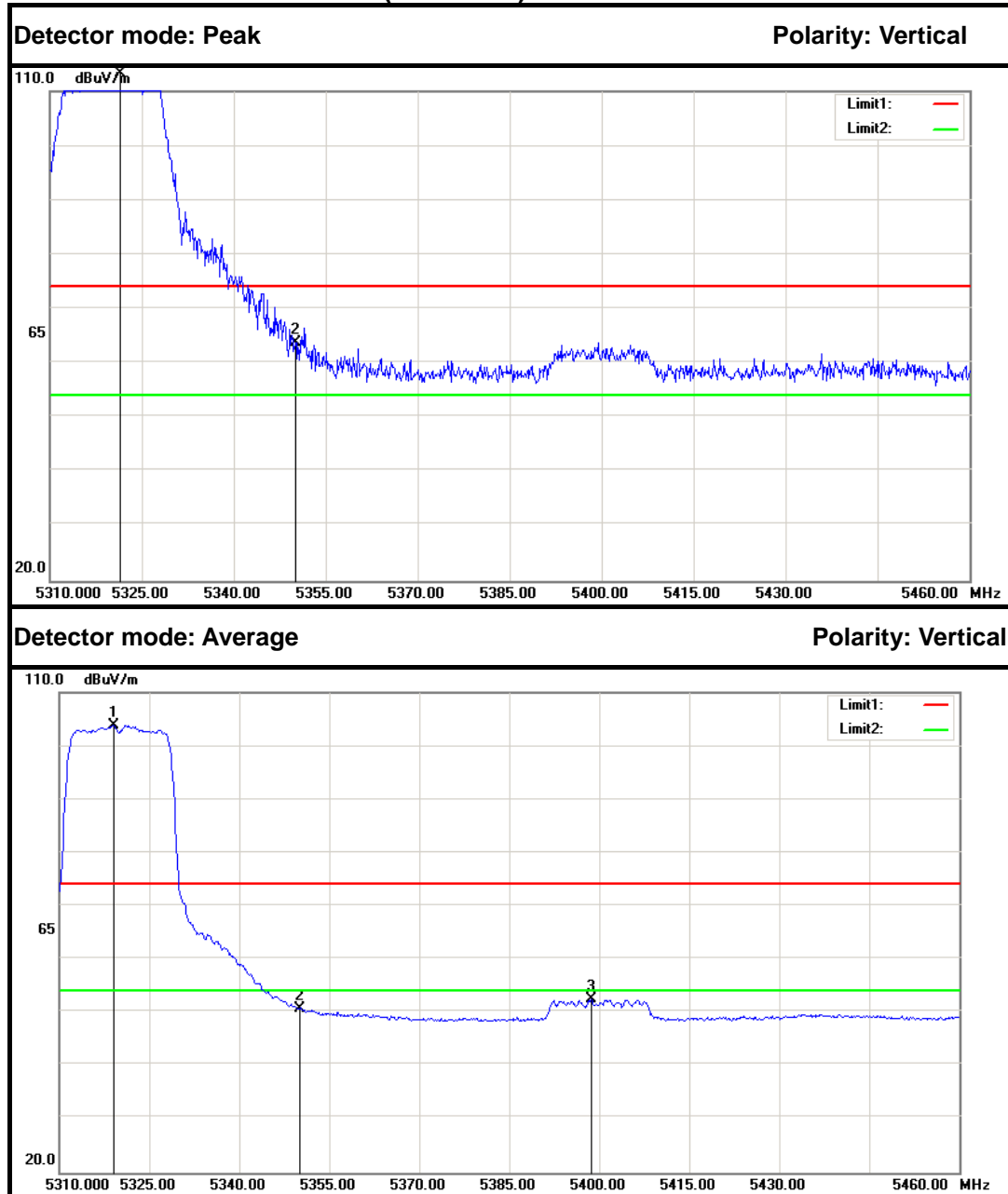


| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 54.87        | 5.25          | 60.12         | 74.00        | -13.88      | Peak    | Horizontal    |
| 2   | 5183.020        | 96.40        | 5.31          | 101.71        | ---          | ---         | Peak    | Horizontal    |
| 1   | 5150.000        | 44.24        | 5.25          | 49.49         | 54.00        | -4.51       | Average | Horizontal    |
| 2   | 5181.600        | 87.33        | 5.30          | 92.63         | ---          | ---         | Average | Horizontal    |

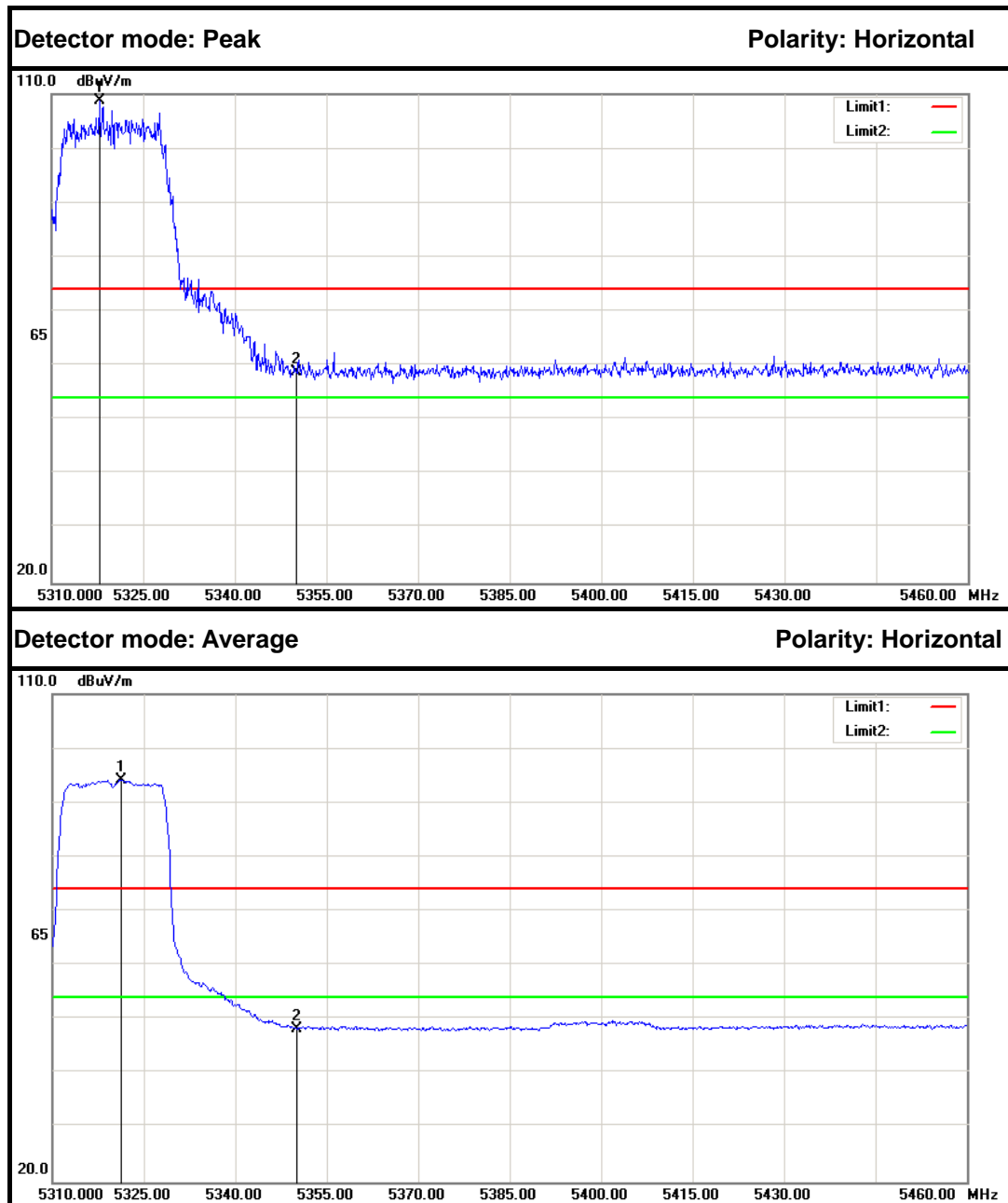




IEEE 802.11a mode / 5320MHz (Antenna 0)



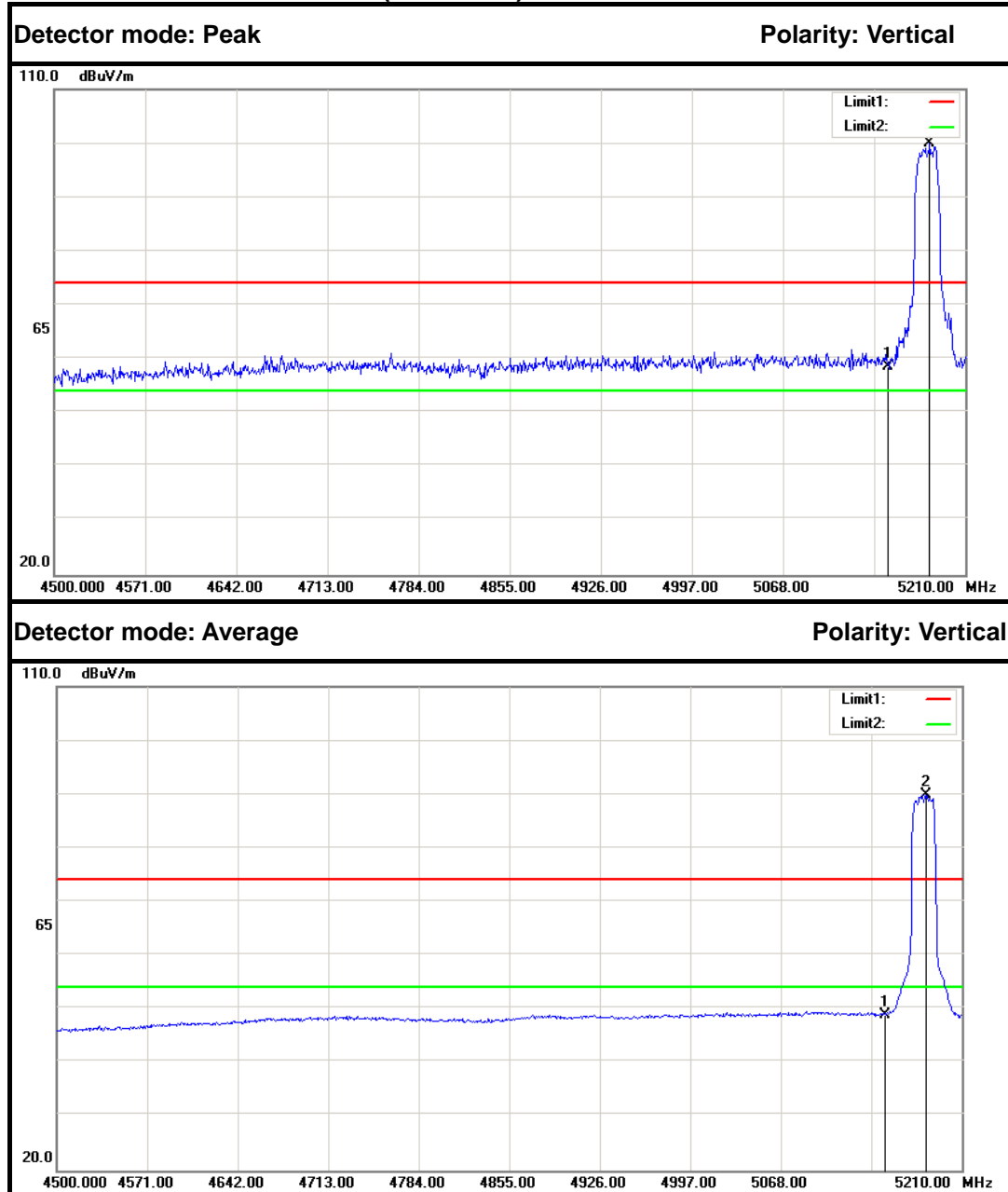
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5321.400        | 107.83       | 5.55          | 113.38        | ---          | ---         | Peak    | Vertical      |
| 2   | 5350.000        | 58.27        | 5.60          | 63.87         | 74.00        | -10.13      | Peak    | Vertical      |
| 1   | 5319.150        | 98.31        | 5.55          | 103.86        | ---          | ---         | Average | Vertical      |
| 2   | 5350.000        | 45.11        | 5.60          | 50.71         | 54.00        | -3.29       | Average | Vertical      |
| 3   | 5398.650        | 46.79        | 5.69          | 52.48         | 54.00        | -1.52       | Average | Vertical      |



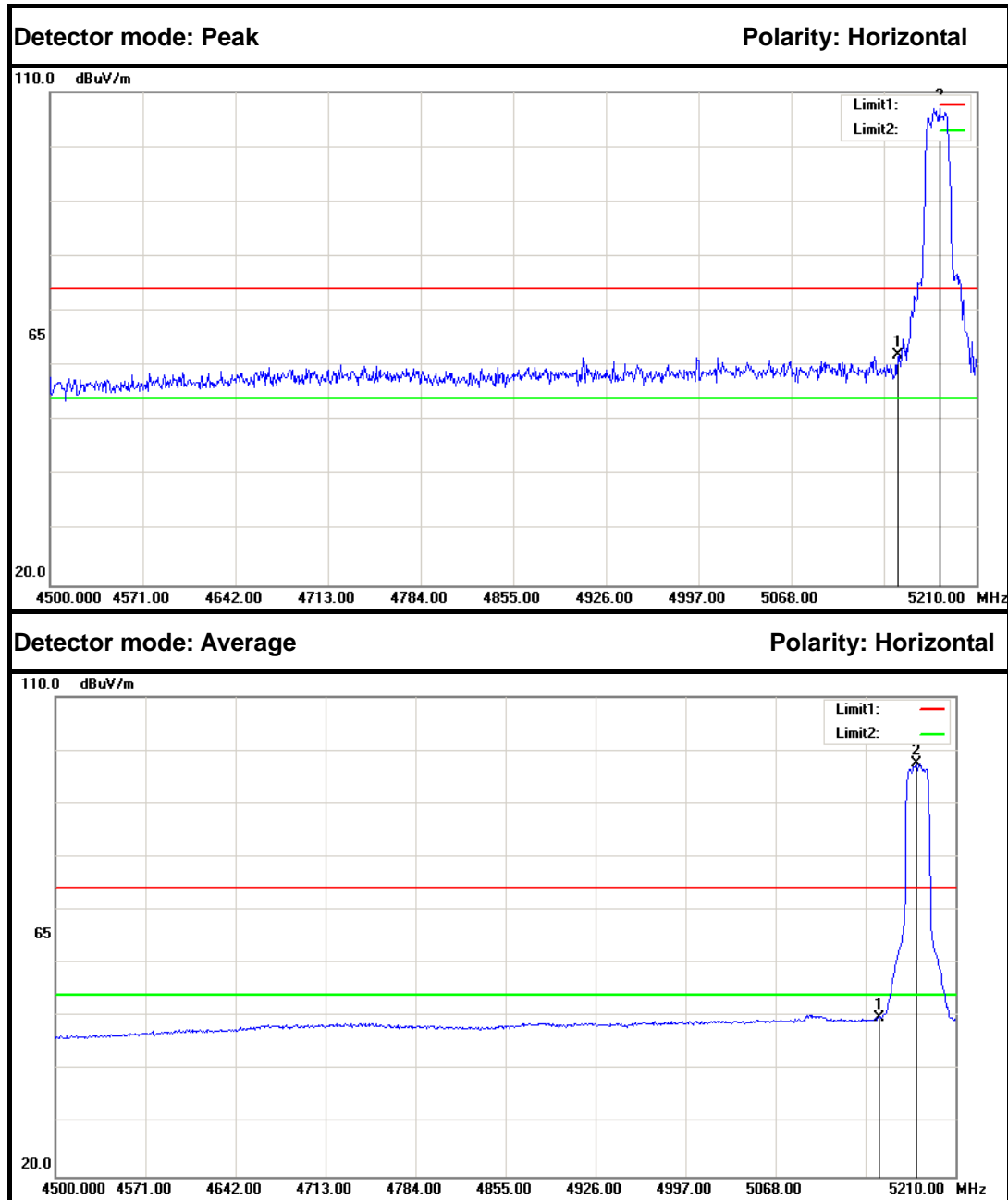
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5317.800        | 103.10       | 5.55          | 108.65        | ---          | ---         | Peak    | Horizontal    |
| 2   | 5350.000        | 53.30        | 5.60          | 58.90         | 74.00        | -15.10      | Peak    | Horizontal    |
| 1   | 5321.250        | 88.61        | 5.55          | 94.16         | ---          | ---         | Average | Horizontal    |
| 2   | 5350.000        | 42.72        | 5.60          | 48.32         | 54.00        | -5.68       | Average | Horizontal    |



IEEE 802.11a mode / 5180MHz (Antenna 1)



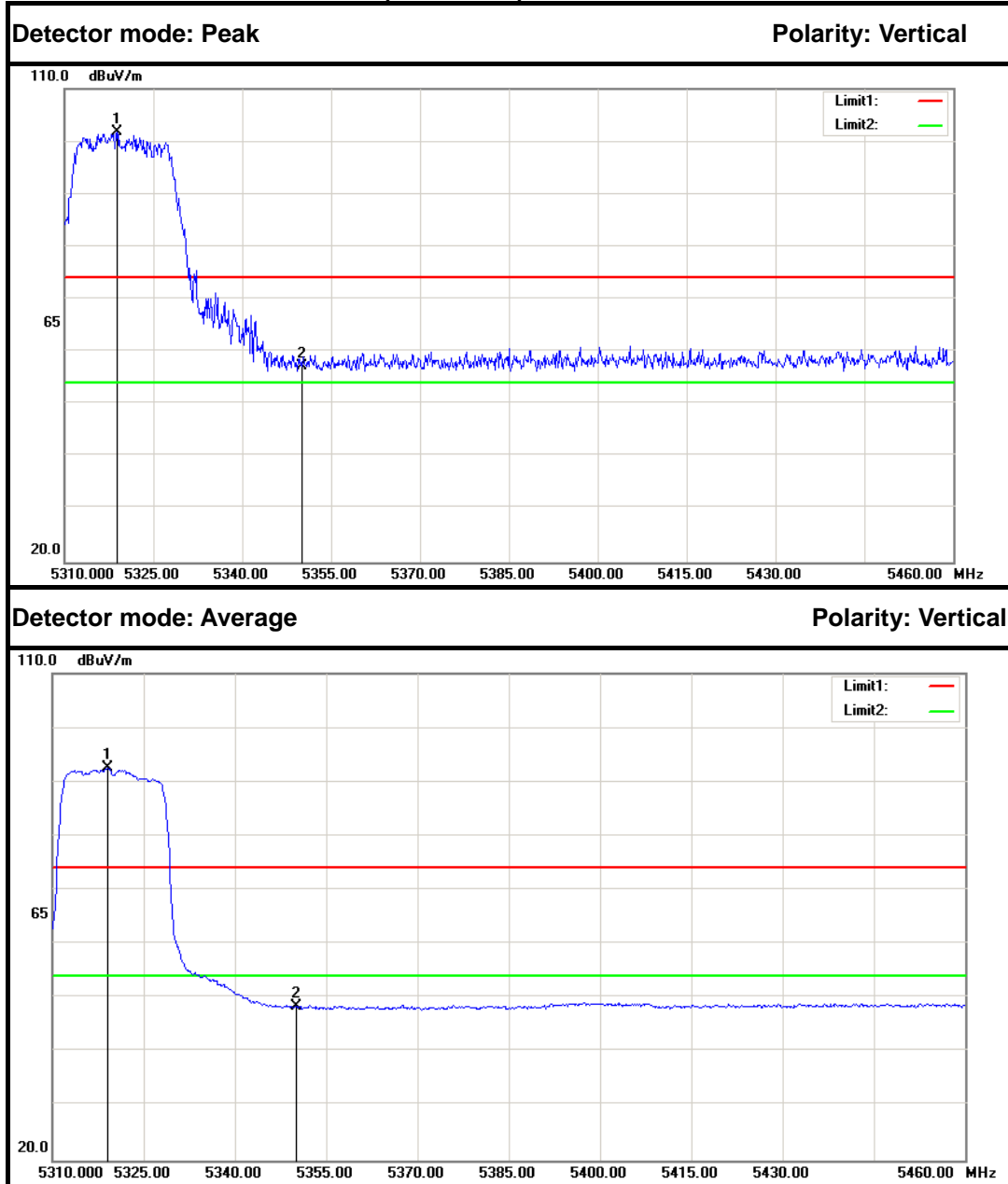
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 53.40        | 5.25          | 58.65         | 74.00        | -15.35      | Peak    | Vertical      |
| 2   | 5182.310        | 94.68        | 5.30          | 99.98         | ---          | ---         | Peak    | Vertical      |
| 1   | 5150.000        | 43.75        | 5.25          | 49.00         | 54.00        | -5.00       | Average | Vertical      |
| 2   | 5181.600        | 84.67        | 5.30          | 89.97         | ---          | ---         | Average | Vertical      |



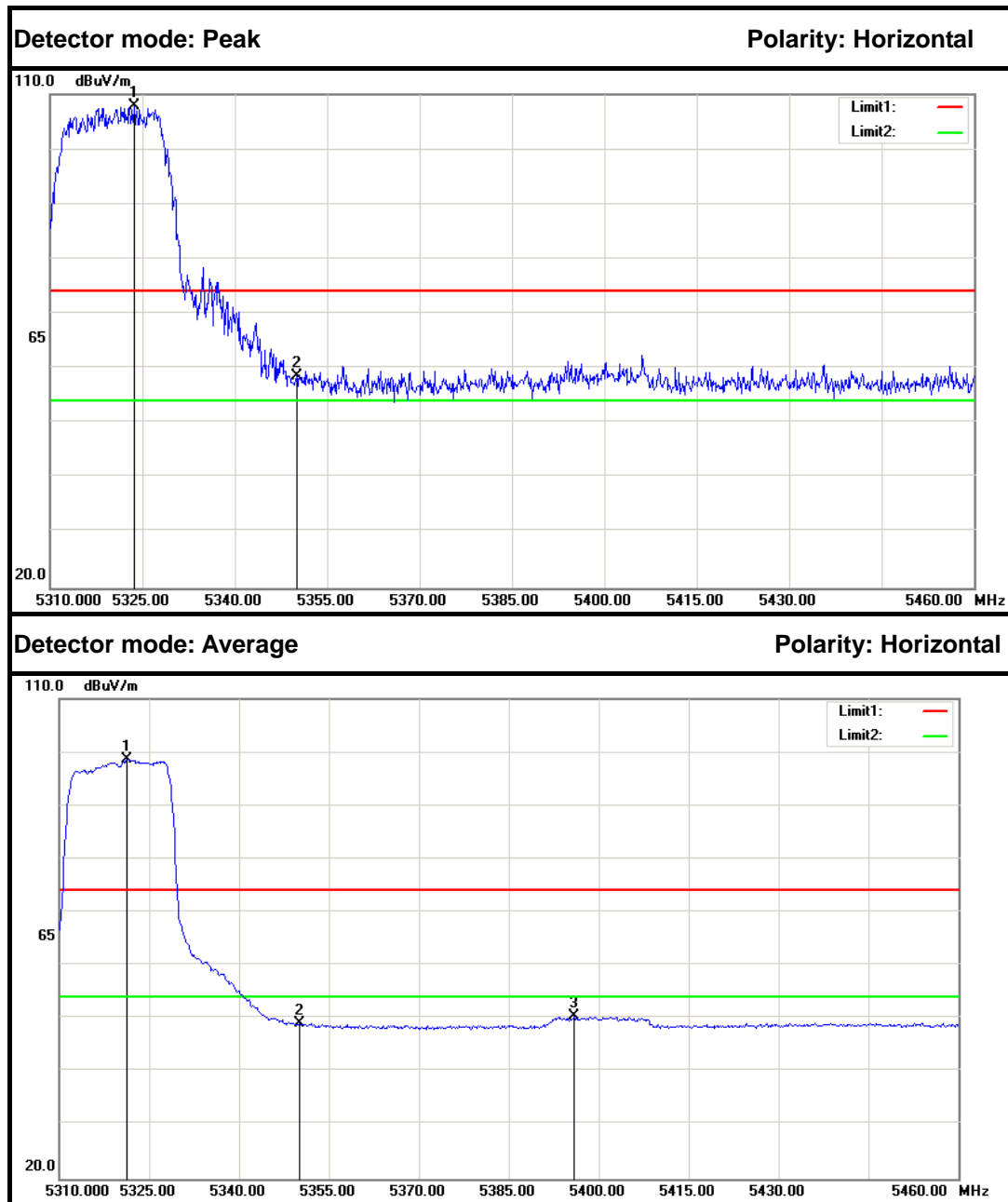
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 56.61        | 5.25          | 61.86         | 74.00        | -12.14      | Peak    | Horizontal    |
| 2   | 5181.600        | 101.70       | 5.30          | 107.00        | ---          | ---         | Peak    | Horizontal    |
| 1   | 5150.000        | 44.53        | 5.25          | 49.78         | 54.00        | -4.22       | Average | Horizontal    |
| 2   | 5179.470        | 92.21        | 5.30          | 97.51         | ---          | ---         | Average | Horizontal    |



IEEE 802.11a mode / 5320MHz (Antenna 1)



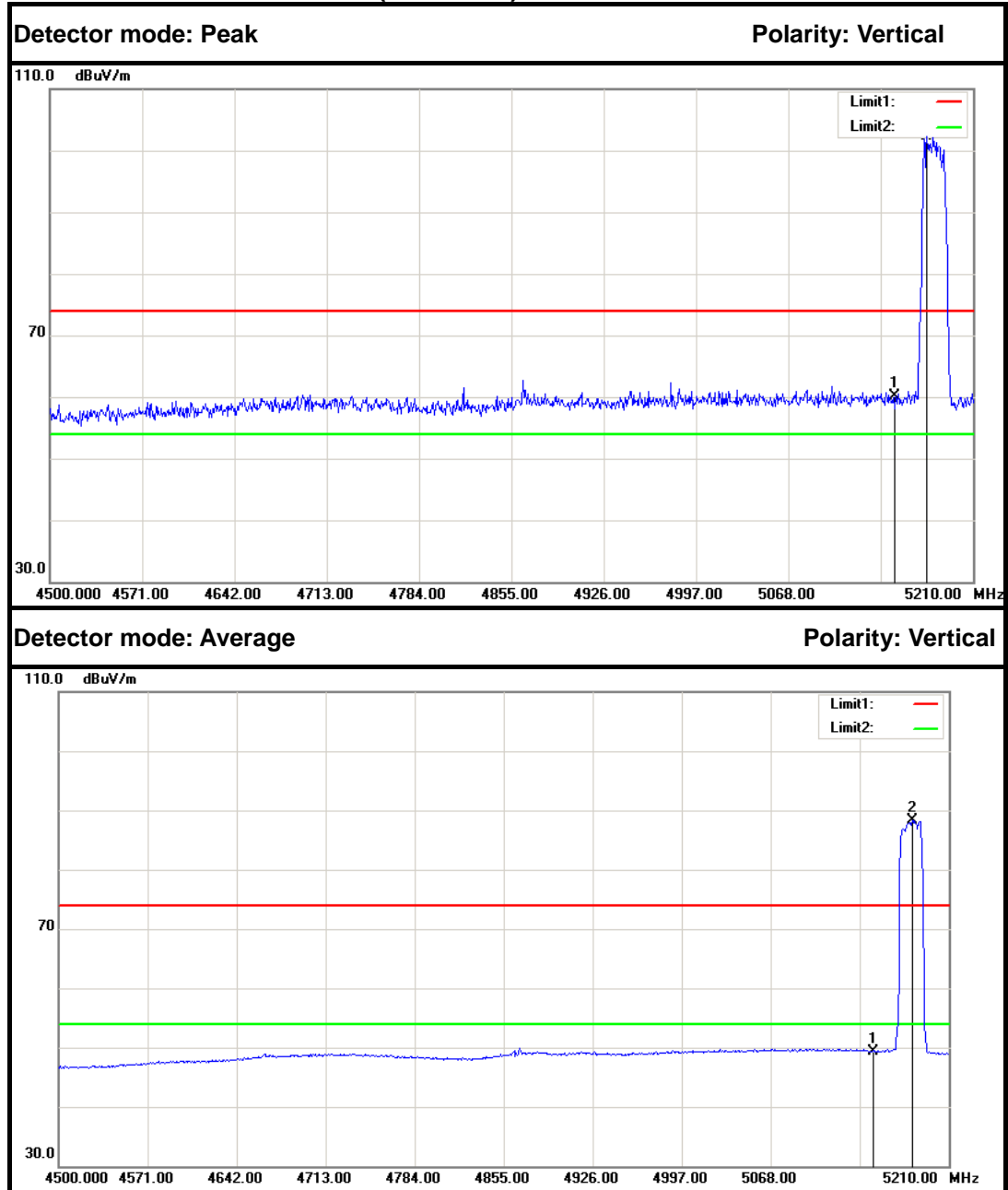
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5318.850        | 96.26        | 5.55          | 101.81        | ---          | ---         | Peak    | Vertical      |
| 2   | 5350.000        | 51.60        | 5.60          | 57.20         | 74.00        | -16.80      | Peak    | Vertical      |
| 1   | 5319.150        | 86.99        | 5.55          | 92.54         | ---          | ---         | Average | Vertical      |
| 2   | 5350.000        | 42.76        | 5.60          | 48.36         | 54.00        | -5.64       | Average | Vertical      |



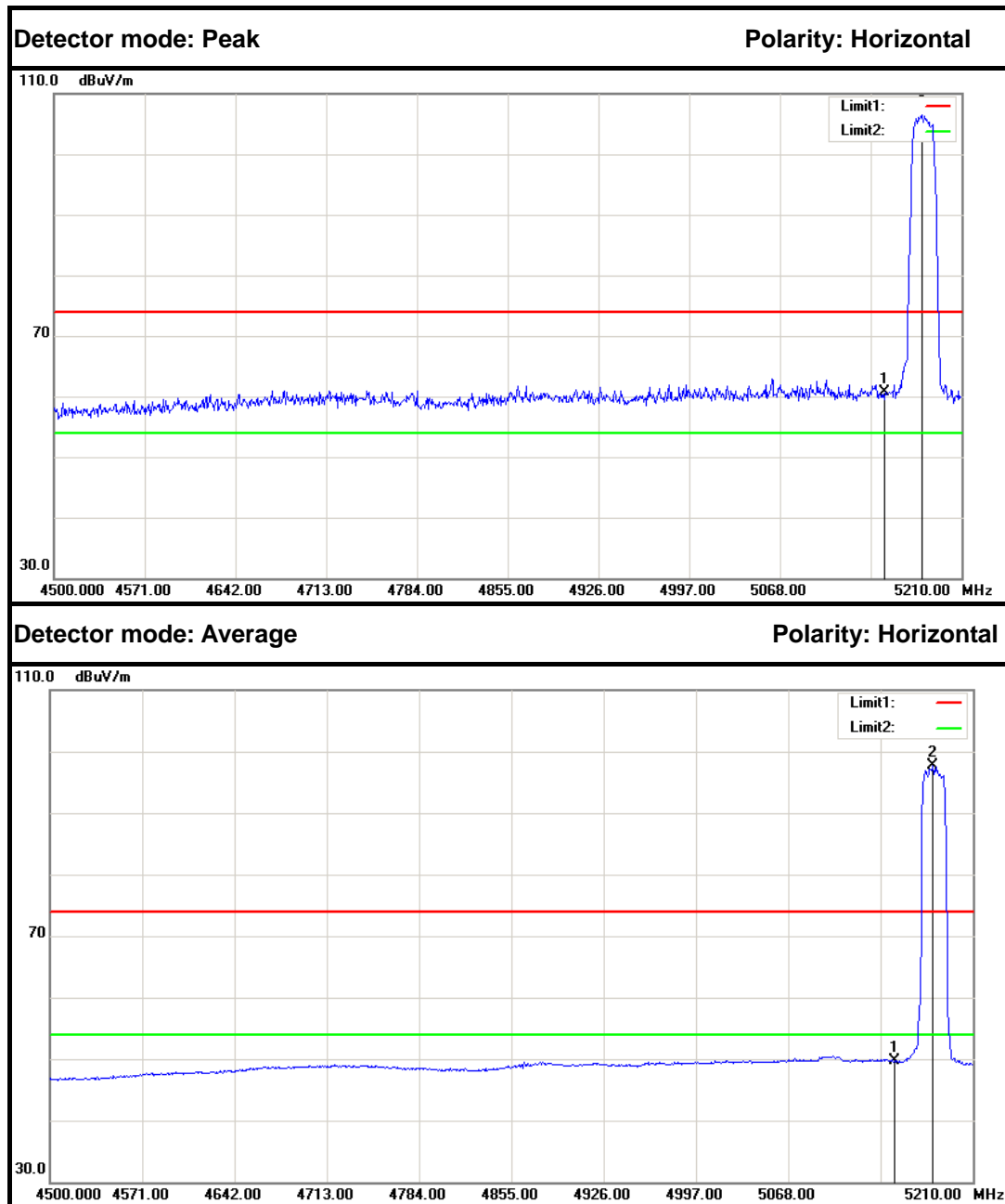
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5323.650        | 102.27       | 5.56          | 107.83        | ---          | ---         | Peak    | Horizontal    |
| 2   | 5350.000        | 53.06        | 5.60          | 58.66         | 74.00        | -15.34      | Peak    | Horizontal    |
| 1   | 5321.250        | 93.13        | 5.55          | 98.68         | ---          | ---         | Average | Horizontal    |
| 2   | 5350.000        | 43.45        | 5.60          | 49.05         | 54.00        | -4.95       | Average | Horizontal    |
| 3   | 5395.950        | 44.77        | 5.68          | 50.45         | 54.00        | -3.55       | Average | Horizontal    |



IEEE 802.11a mode / 5180MHz (Antenna 2)



| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 54.90        | 5.25          | 60.15         | 74.00        | -13.85      | Peak    | Vertical      |
| 2   | 5174.500        | 96.98        | 5.29          | 102.27        | ---          | ---         | Peak    | Vertical      |
| 1   | 5150.000        | 44.06        | 5.25          | 49.31         | 54.00        | -4.69       | Average | Vertical      |
| 2   | 5180.890        | 82.96        | 5.30          | 88.26         | ---          | ---         | Average | Vertical      |

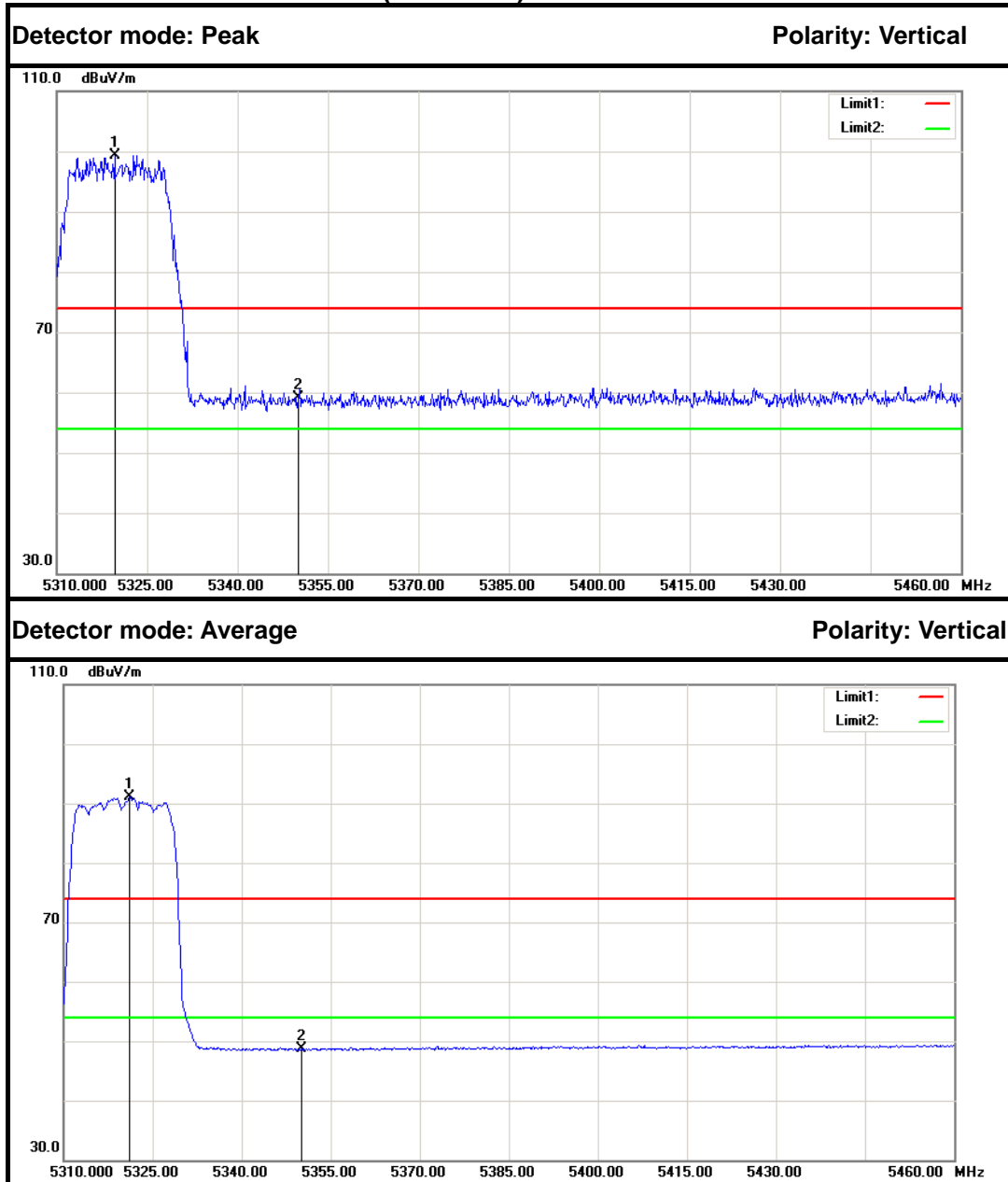


| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 55.54        | 5.25          | 60.79         | 74.00        | -13.21      | Peak    | Horizontal    |
| 2   | 5178.760        | 101.12       | 5.30          | 106.42        | ---          | ---         | Peak    | Horizontal    |
| 1   | 5150.000        | 44.43        | 5.25          | 49.68         | 54.00        | -4.32       | Average | Horizontal    |
| 2   | 5179.470        | 92.33        | 5.30          | 97.63         | ---          | ---         | Average | Horizontal    |

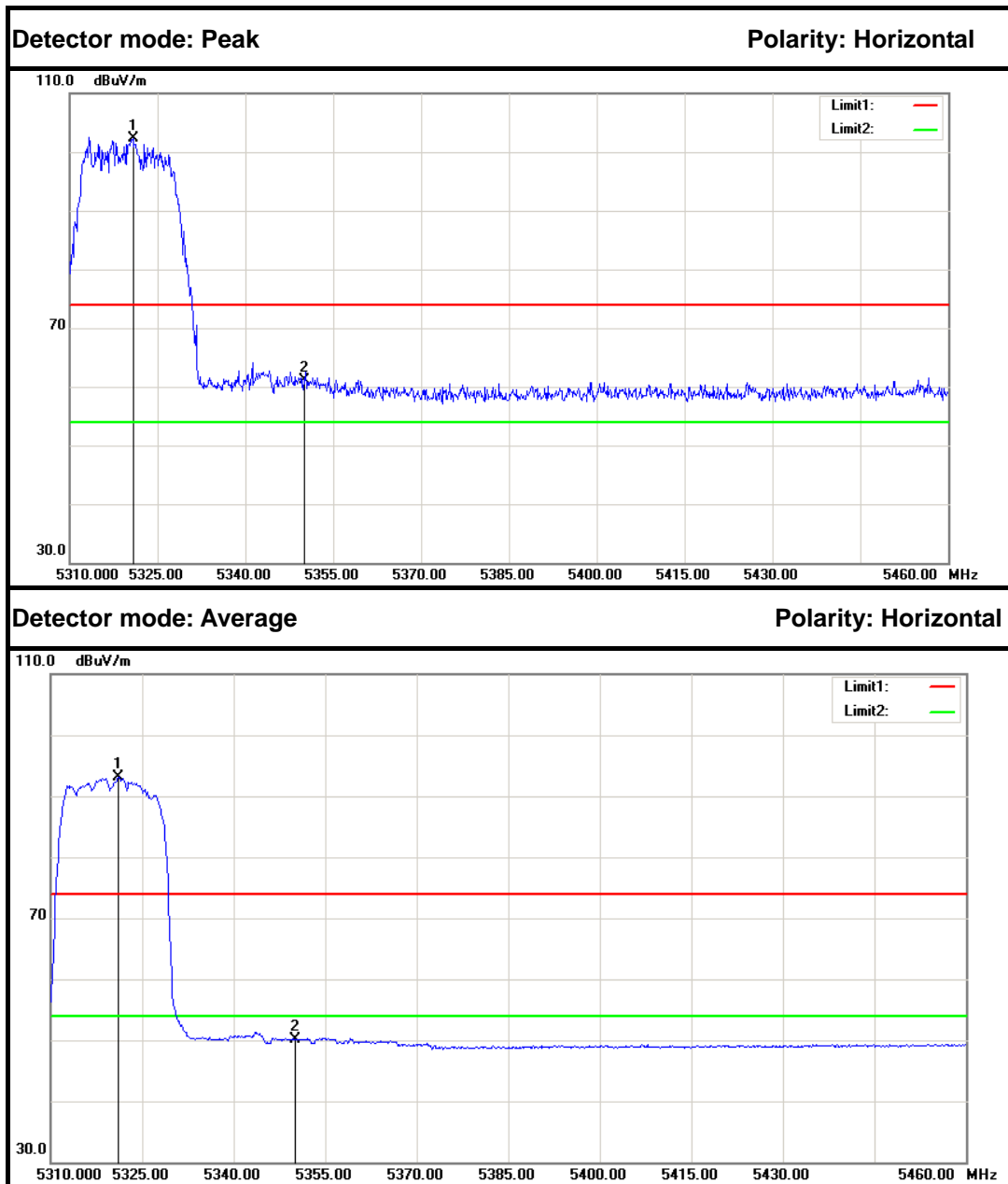




IEEE 802.11a mode / 5320MHz (Antenna 2)



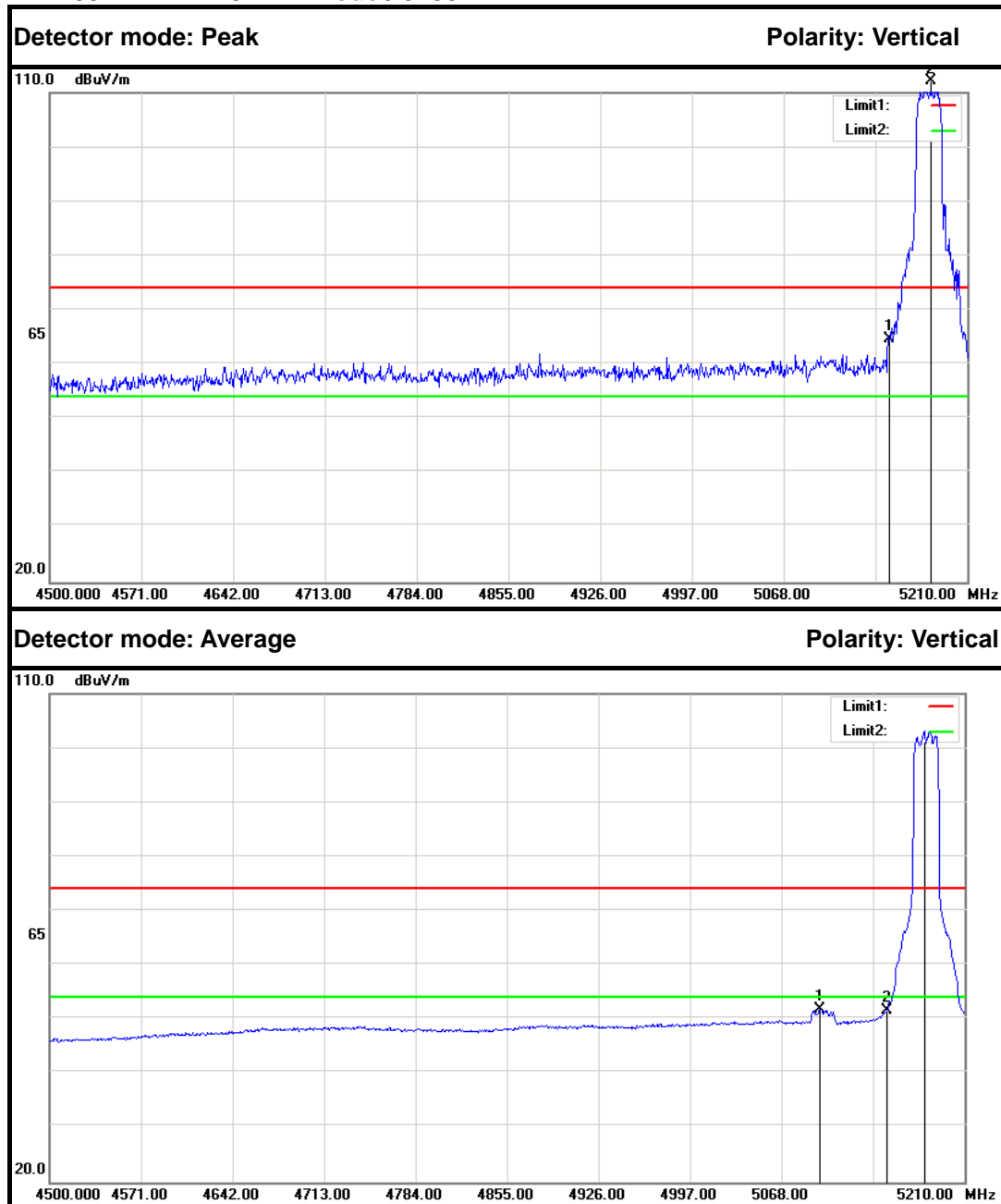
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5319.600        | 93.82        | 5.55          | 99.37         | ---          | ---         | Peak    | Vertical      |
| 2   | 5350.000        | 53.54        | 5.60          | 59.14         | 74.00        | -14.86      | Peak    | Vertical      |
| 1   | 5321.100        | 85.48        | 5.55          | 91.03         | ---          | ---         | Average | Vertical      |
| 2   | 5350.000        | 43.04        | 5.60          | 48.64         | 54.00        | -5.36       | Average | Vertical      |



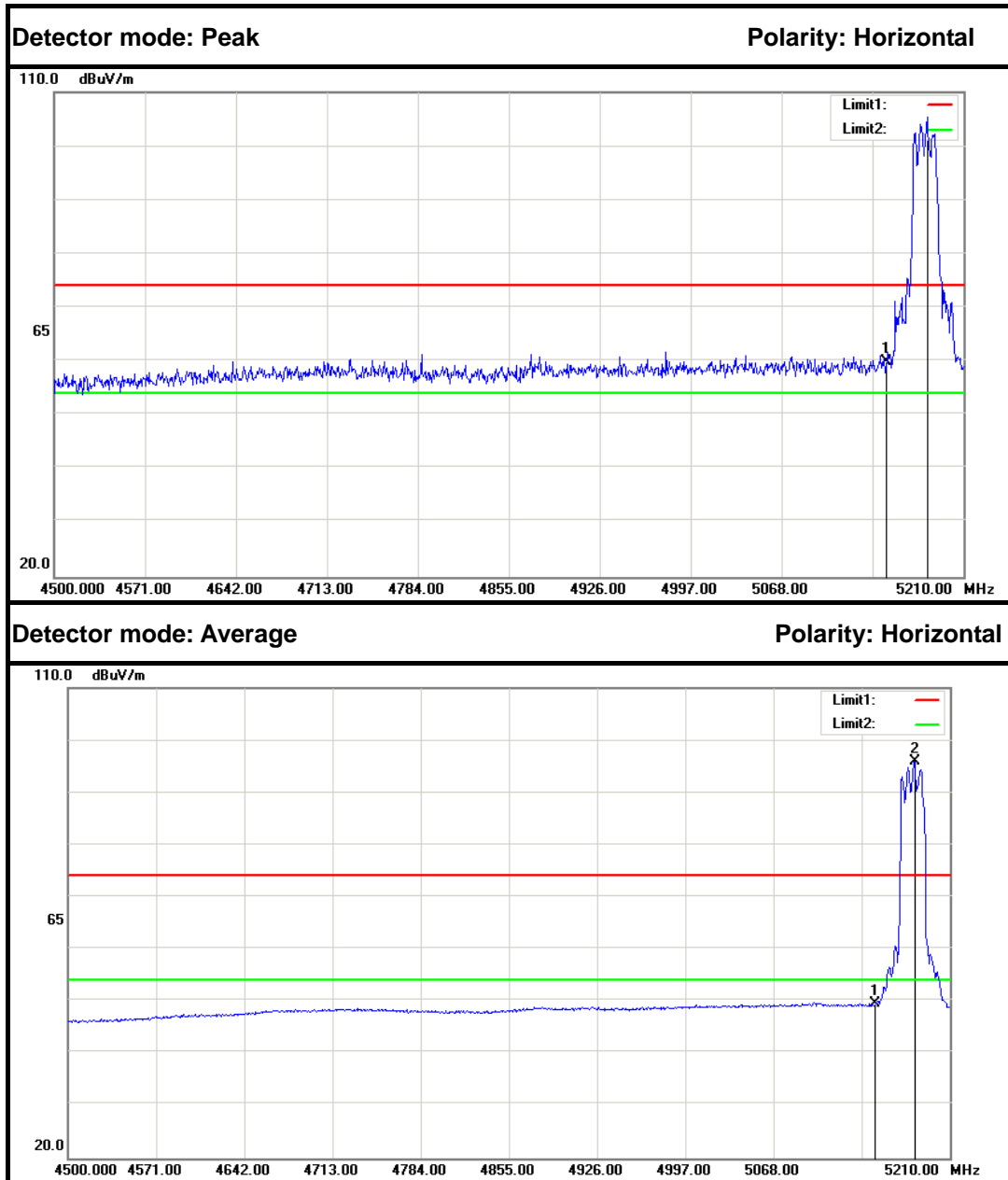
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5320.800        | 96.75        | 5.55          | 102.30        | ---          | ---         | Peak    | Horizontal    |
| 2   | 5350.000        | 55.54        | 5.60          | 61.14         | 74.00        | -12.86      | Peak    | Horizontal    |
| 1   | 5321.100        | 87.48        | 5.55          | 93.03         | ---          | ---         | Average | Horizontal    |
| 2   | 5350.000        | 44.54        | 5.60          | 50.14         | 54.00        | -3.86       | Average | Horizontal    |



Combine with Antenna 0 and Antenna 1 and Antenna 2  
IEEE 802.11n HT 20 MHz mode / 5180 MHz



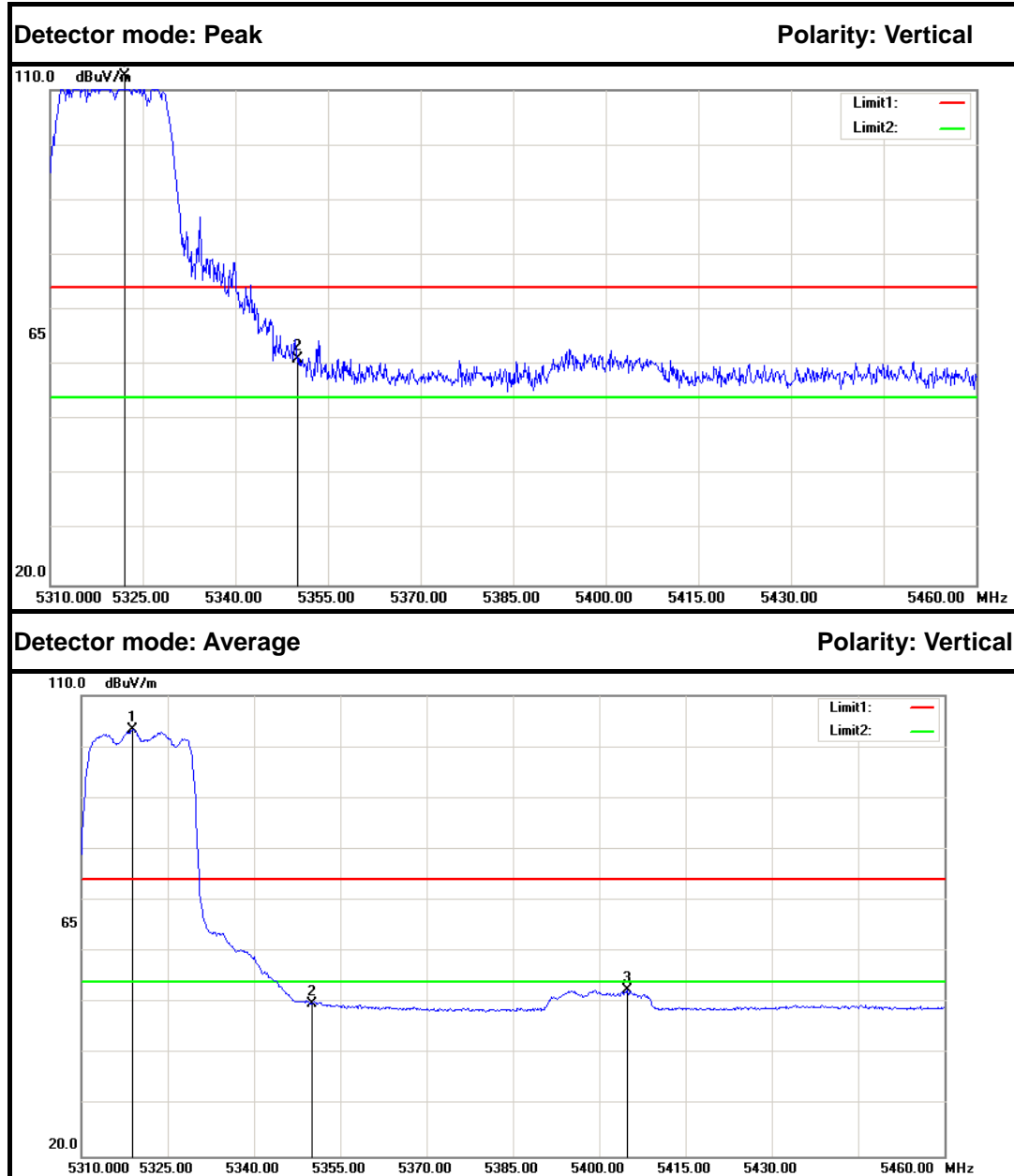
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 59.47        | 5.25          | 64.72         | 74.00        | -9.28       | Peak    | Vertical      |
| 2   | 5181.600        | 106.89       | 5.30          | 112.19        | ---          | ---         | Peak    | Vertical      |
| 1   | 5097.820        | 46.73        | 5.15          | 51.88         | 54.00        | -2.12       | Average | Vertical      |
| 2   | 5150.000        | 46.43        | 5.25          | 51.68         | 54.00        | -2.32       | Average | Vertical      |
| 3   | 5178.760        | 97.74        | 5.30          | 103.04        | ---          | ---         | Average | Vertical      |



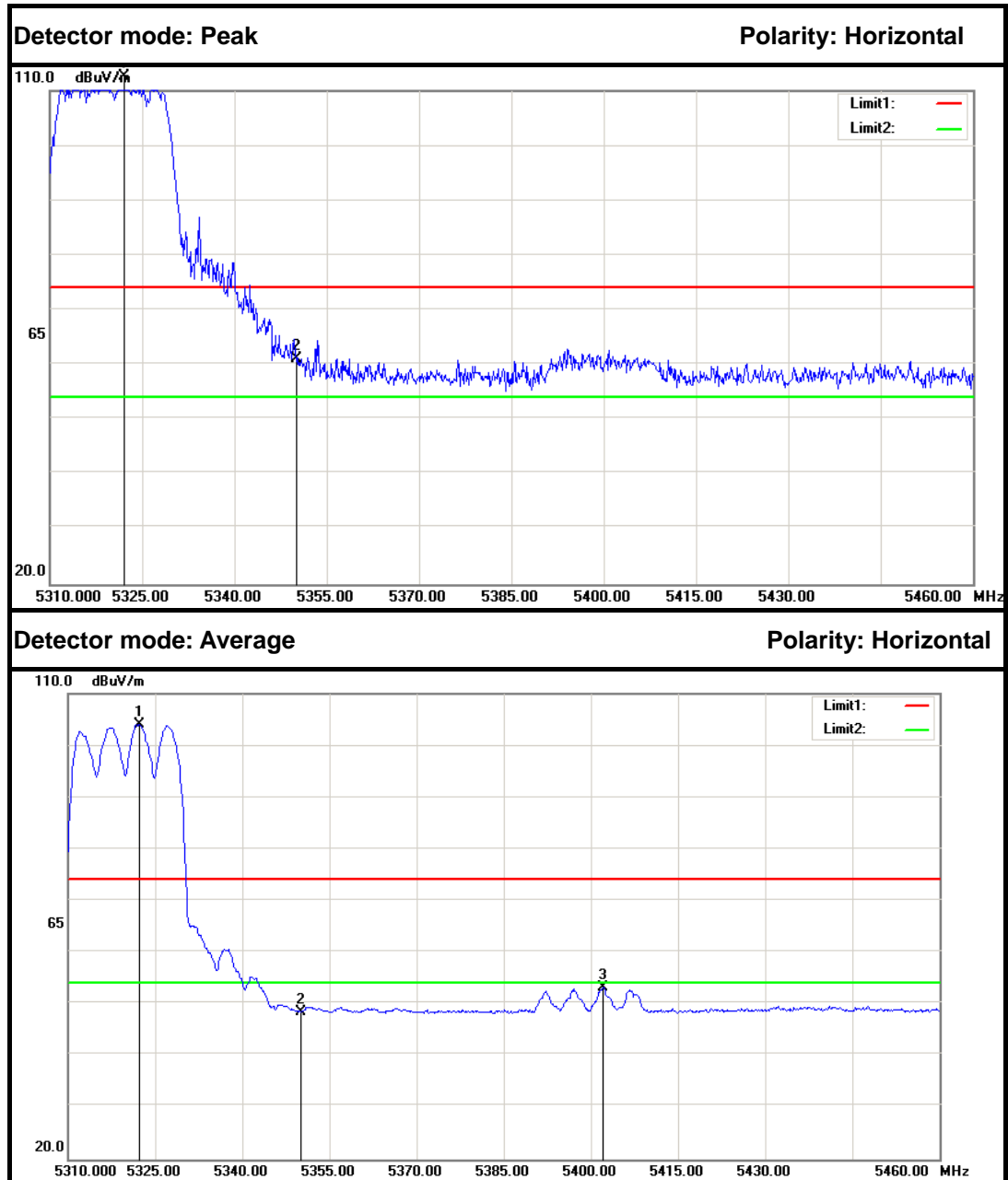
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 54.78        | 5.25          | 60.03         | 74.00        | -13.97      | Peak    | Horizontal    |
| 2   | 5181.600        | 99.99        | 5.30          | 105.29        | ---          | ---         | Peak    | Horizontal    |
| 1   | 5150.000        | 44.29        | 5.25          | 49.54         | 54.00        | -4.46       | Average | Horizontal    |
| 2   | 5181.600        | 90.59        | 5.30          | 95.89         | ---          | ---         | Average | Horizontal    |



IEEE 802.11n HT 20 MHz mode / 5320 MHz



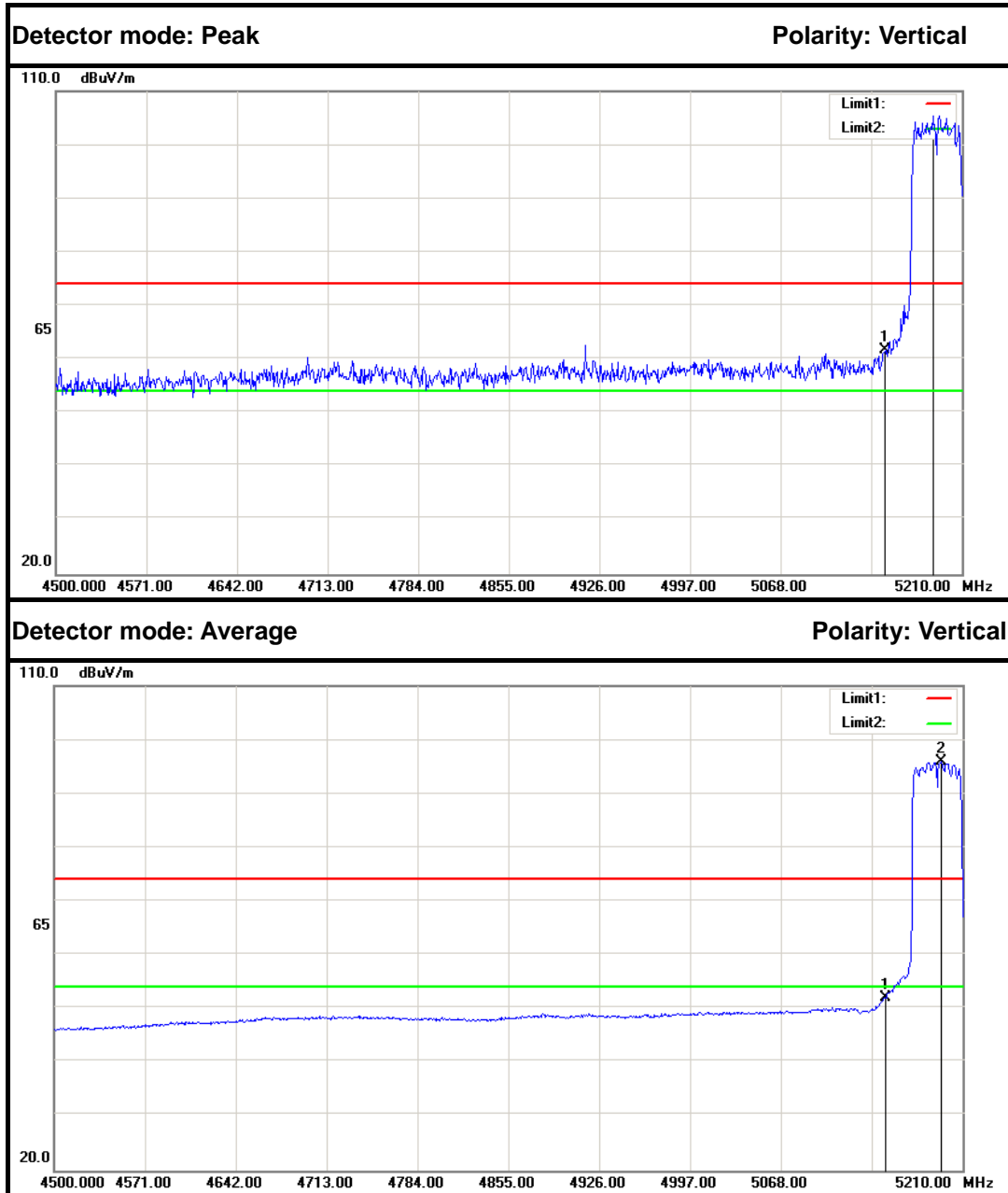
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5322.150        | 107.28       | 5.55          | 112.83        | ---          | ---         | Peak    | Vertical      |
| 2   | 5350.000        | 55.37        | 5.60          | 60.97         | 74.00        | -13.03      | Peak    | Vertical      |
| 1   | 5318.850        | 97.78        | 5.55          | 103.33        | ---          | ---         | Average | Vertical      |
| 2   | 5350.000        | 44.24        | 5.60          | 49.84         | 54.00        | -4.16       | Average | Vertical      |
| 3   | 5404.800        | 46.73        | 5.70          | 52.43         | 54.00        | -1.57       | Average | Vertical      |



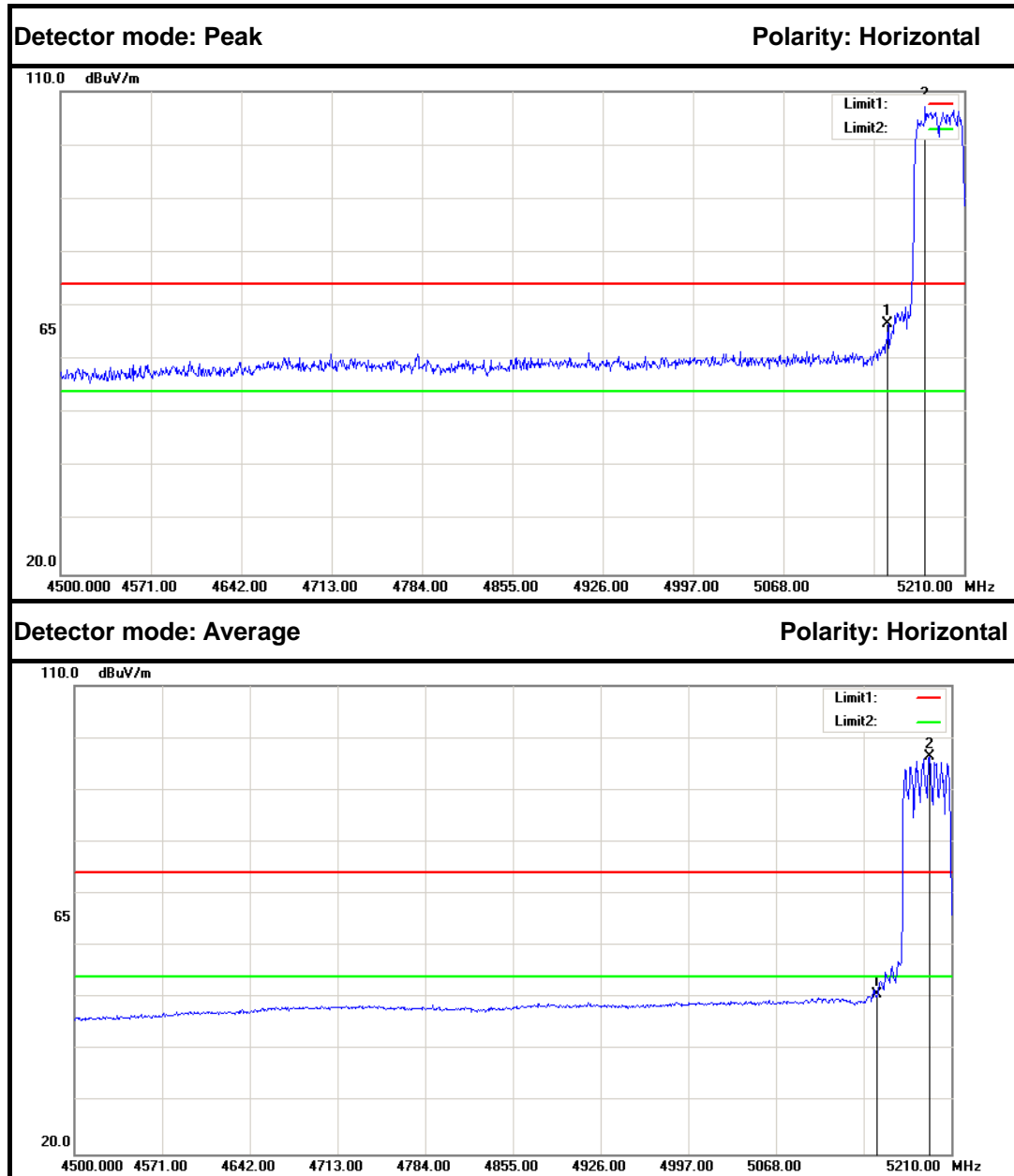
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5322.150        | 107.28       | 5.55          | 112.83        | ---          | ---         | Peak    | Horizontal    |
| 2   | 5350.000        | 55.37        | 5.60          | 60.97         | 74.00        | -13.03      | Peak    | Horizontal    |
| 1   | 5322.300        | 98.41        | 5.55          | 103.96        | ---          | ---         | Average | Horizontal    |
| 2   | 5350.000        | 42.97        | 5.60          | 48.57         | 54.00        | -5.43       | Average | Horizontal    |
| 3   | 5402.100        | 47.49        | 5.70          | 53.19         | 54.00        | -0.81       | Average | Horizontal    |



IEEE 802.11n HT 40 MHz mode / 5190 MHz



| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 56.40        | 5.25          | 61.65         | 74.00        | -12.35      | Peak    | Vertical      |
| 2   | 5187.280        | 100.06       | 5.31          | 105.37        | ---          | ---         | Peak    | Vertical      |
| 1   | 5150.000        | 46.79        | 5.25          | 52.04         | 54.00        | -1.96       | Average | Vertical      |
| 2   | 5193.670        | 90.58        | 5.32          | 95.90         | ---          | ---         | Average | Vertical      |

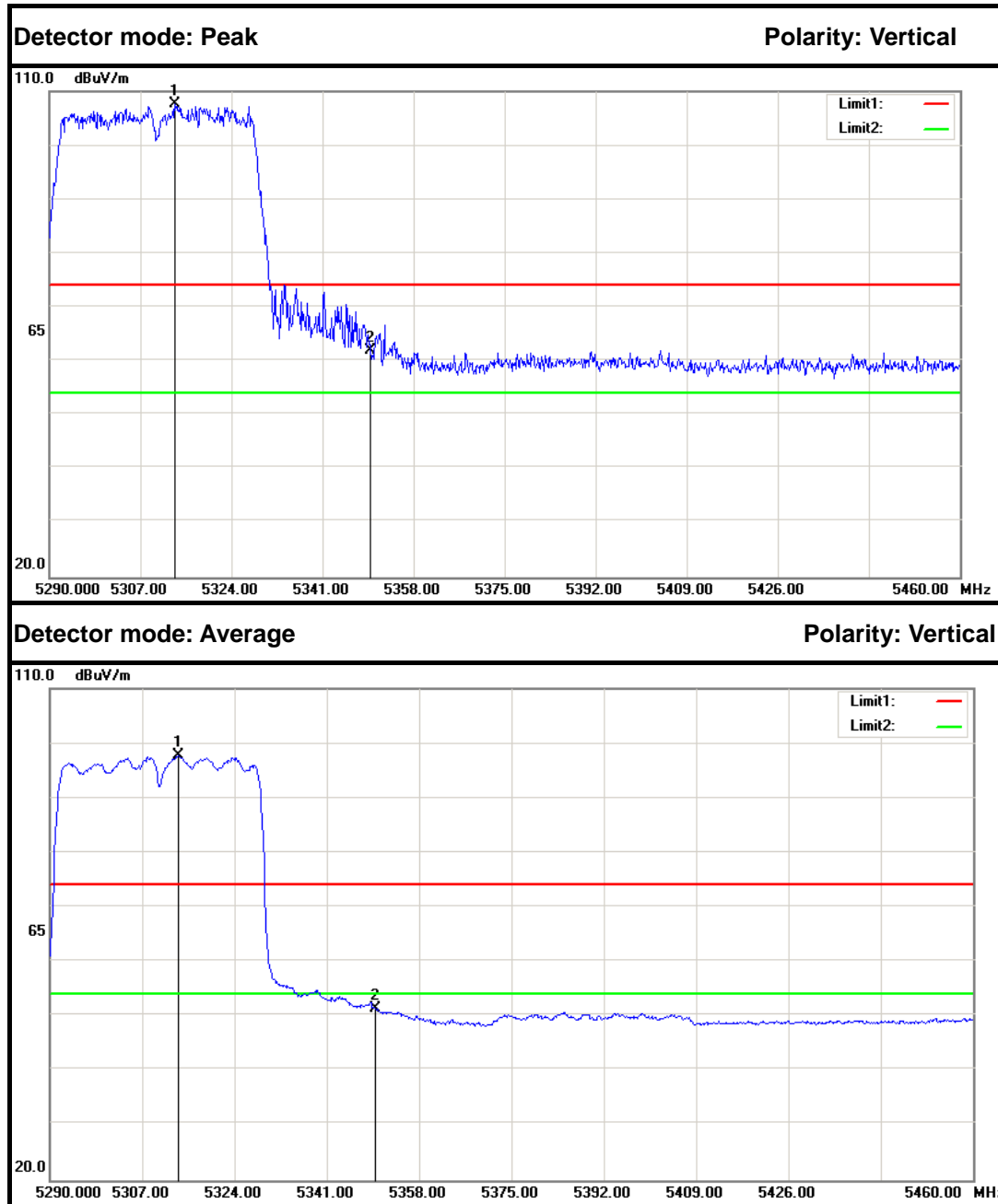


| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 61.53        | 5.25          | 66.78         | 74.00        | -7.22       | Peak    | Horizontal    |
| 2   | 5179.470        | 101.99       | 5.30          | 107.29        | ---          | ---         | Peak    | Horizontal    |
| 1   | 5150.000        | 45.45        | 5.25          | 50.70         | 54.00        | -3.30       | Average | Horizontal    |
| 2   | 5192.250        | 91.13        | 5.32          | 96.45         | ---          | ---         | Average | Horizontal    |

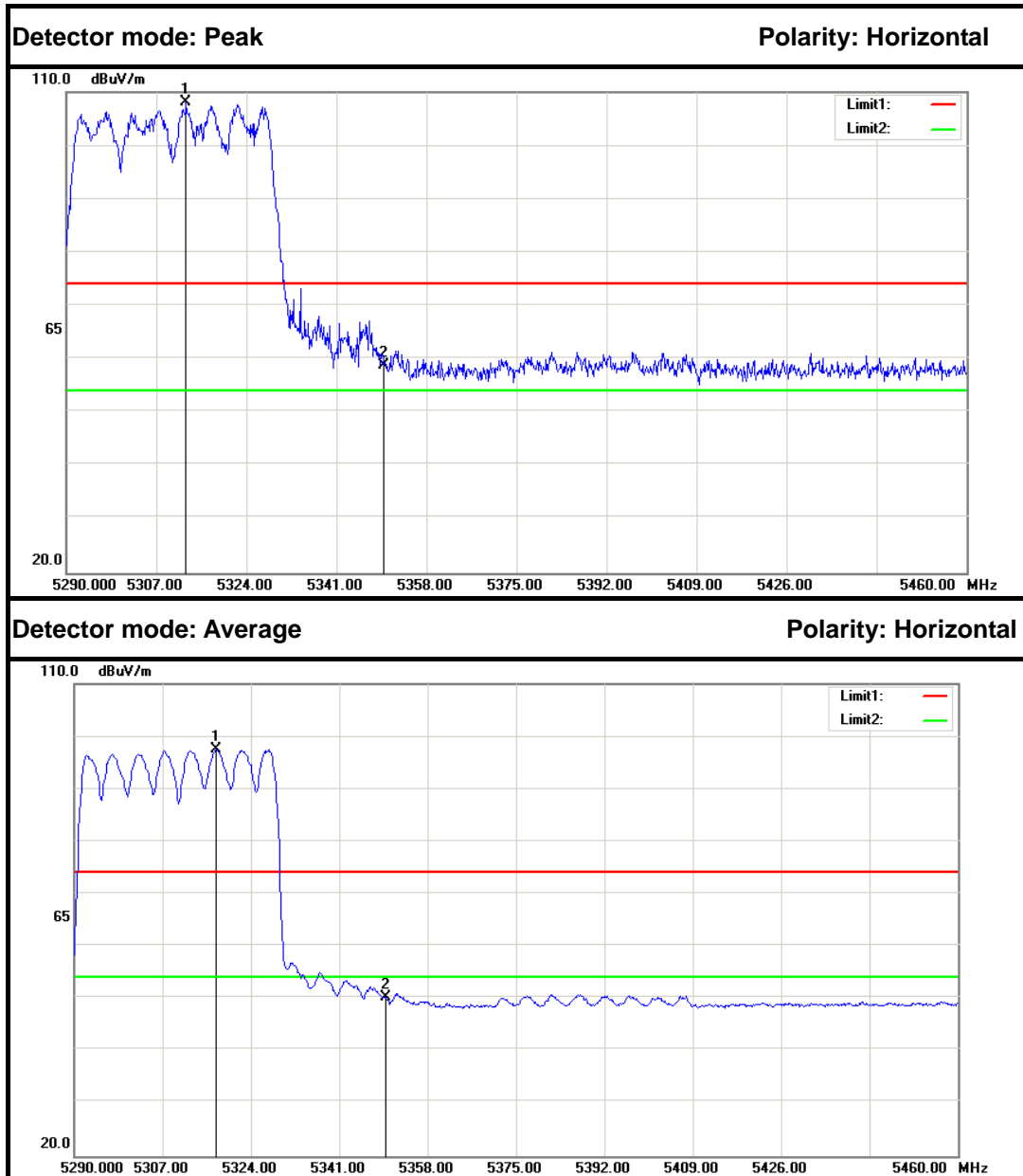




IEEE 802.11n HT 40 MHz mode / 5310 MHz



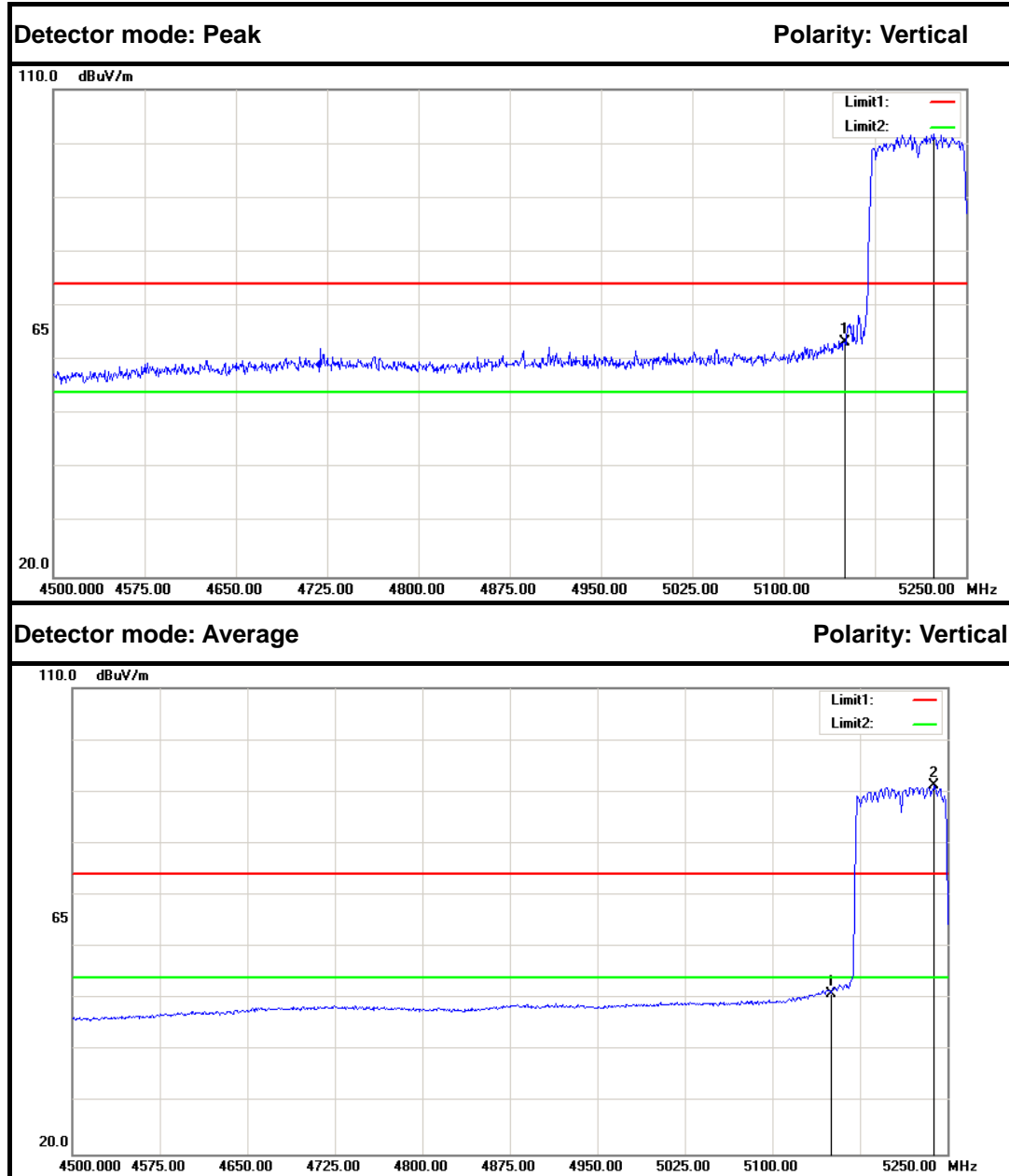
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5313.460        | 102.13       | 5.54          | 107.67        | ---          | ---         | Peak    | Vertical      |
| 2   | 5350.000        | 56.27        | 5.60          | 61.87         | 74.00        | -12.13      | Peak    | Vertical      |
| 1   | 5313.630        | 92.15        | 5.54          | 97.69         | ---          | ---         | Average | Vertical      |
| 2   | 5350.000        | 45.81        | 5.60          | 51.41         | 54.00        | -2.59       | Average | Vertical      |



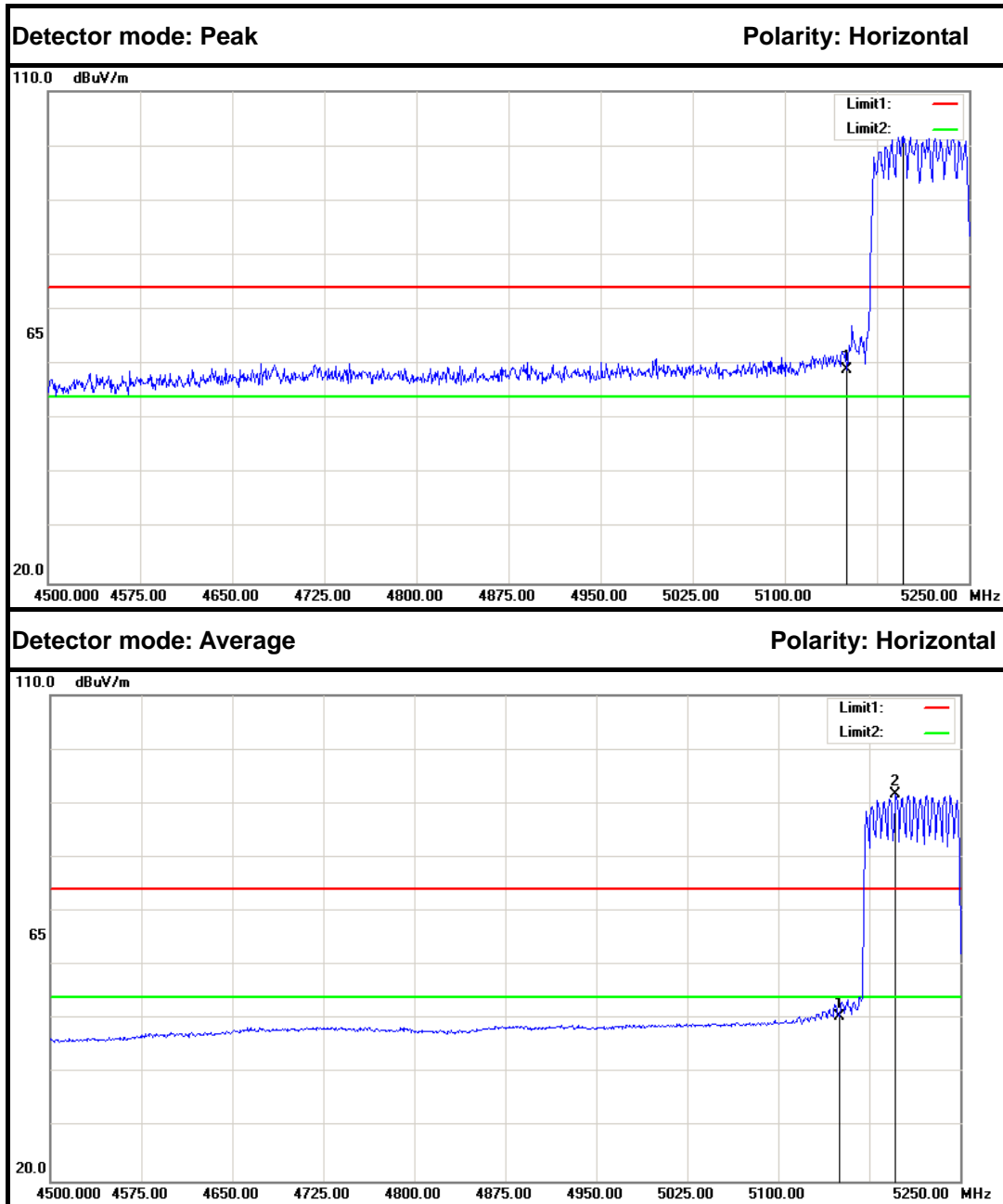
| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5312.610        | 102.53       | 5.54          | 108.07        | ---          | ---         | Peak    | Horizontal    |
| 2   | 5350.000        | 53.30        | 5.60          | 58.90         | 74.00        | -15.10      | Peak    | Horizontal    |
| 1   | 5317.370        | 92.00        | 5.54          | 97.54         | ---          | ---         | Average | Horizontal    |
| 2   | 5350.000        | 44.56        | 5.60          | 50.16         | 54.00        | -3.84       | Average | Horizontal    |



IEEE 802.11ac 80 mode / 5210 MHz



| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 58.15        | 5.25          | 63.40         | 74.00        | -10.60      | Peak    | Vertical      |
| 2   | 5223.000        | 96.42        | 5.38          | 101.80        | ---          | ---         | Peak    | Vertical      |
| 1   | 5150.000        | 45.80        | 5.25          | 51.05         | 54.00        | -2.95       | Average | Vertical      |
| 2   | 5238.750        | 85.71        | 5.40          | 91.11         | ---          | ---         | Average | Vertical      |



| No. | Frequency (MHz) | Reading (dB) | Factor (dB/m) | Result (dB/m) | Limit (dB/m) | Margin (dB) | Remark  | Antenna Polar |
|-----|-----------------|--------------|---------------|---------------|--------------|-------------|---------|---------------|
| 1   | 5150.000        | 53.85        | 5.25          | 59.10         | 74.00        | -14.90      | Peak    | Horizontal    |
| 2   | 5196.000        | 96.42        | 5.33          | 101.75        | ---          | ---         | Peak    | Horizontal    |
| 1   | 5150.000        | 45.30        | 5.25          | 50.55         | 54.00        | -3.45       | Average | Horizontal    |
| 2   | 5196.750        | 86.29        | 5.33          | 91.62         | ---          | ---         | Average | Horizontal    |