

## **A.7: Conducted Band Edge**

### **Conducted Band Edge Test Requirement**

#### **15.407:**

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits

#### **KDB 789033 D02 General UNII Test Procedures New Rules v02r01:**

##### **2. Unwanted Emissions that fall Outside of the Restricted Bands**

a) For all measurements, follow the requirements in II.G.3. "General Requirements for Unwanted Emissions Measurements."

b) At frequencies below 1000 MHz, use the procedure described in II.G.4. "Procedure for Unwanted Emissions Measurements Below 1000 MHz."

c) At frequencies above 1000 MHz, use the procedure for maximum emissions described in II.G.5., "Procedure for Unwanted Emissions Measurements Above 1000 MHz."

(i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.

(ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

### **Conducted Band Edge Test Procedure**

Ref. 789033 D02 General UNII Test Procedures New Rules v02r01

ANSI C63.10: 2013

| Conducted Band Edge<br>Test Procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"><li>1. Connect the antenna port(s) to the spectrum analyzer input.</li><li>2. Place the radio in continuous transmit mode. Use the procedures in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 to substitute conducted measurements in place of radiated measurements.</li><li>3. Configure Spectrum analyzer as per test parameters below (be sure to enter all losses between the transmitter output and the spectrum analyzer).</li><li>4. Record the marker. Also measure any emissions in the restricted bands.</li><li>5. The "measure-and-sum technique" is used for measuring in-band transmit power of a device. In the measure-and-sum approach, the conducted emission level is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units. The worst-case output is recorded.</li><li>6. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands</li><li>7. Capture graphs and record pertinent measurement data.</li></ol> |

Ref. 789033 D02 General UNII Test Procedures New Rules v02r01

ANSI C63.10: 2013 Section 12.7.6 (Peak), Section 12.7.7.2 (Method AD)

|                                                                                                                                                             |                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conducted Spurious Emissions<br>Test parameters                                                                                                             |                                                                                                                                                             |
| <b>Peak</b><br>Span = 30MHz to 26.5GHz / 26.5GHz to 40GHz<br>RBW = 1 MHz<br>VBW $\geq$ 3 MHz<br>Sweep = Auto couple<br>Detector = Peak<br>Trace = Max Hold. | <b>Average</b><br>Span = 30MHz to 26.5GHz / 26.5GHz to 40GHz<br>RBW = 1 MHz<br>VBW $\geq$ 3 MHz<br>Sweep = Auto couple<br>Detector = RMS<br>Power Averaging |
| <b>Tested By:</b> Ronak Patel                                                                                                                               | <b>Date of testing:</b> 11/1/2022 - 2/10/2023                                                                                                               |
| <b>Test Result: PASS</b>                                                                                                                                    |                                                                                                                                                             |

**Test Equipment**

See Appendix C for list of test equipment

**Conducted Band Edge Peak 15407L. – Antenna gain 3dBi.****Frequency 5745 MHz**

| <b>Mode</b>                         | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|-------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT20, 6 to 54 Mbps              | 1               | 3                                    | -63.1                             |                                   | -59.7                                 | -27               | 32.74              |
| Non HT20, 6 to 54 Mbps              | 2               | 3                                    | -63.1                             | -61.1                             | -55.6                                 | -27               | 28.62              |
| Non HT20 Beam Forming, 6 to 54 Mbps | 2               | 6                                    | -63.1                             | -61.1                             | -52.6                                 | -27               | 25.62              |
| HT/VHT20, M0 to M7                  | 1               | 3                                    | -60.6                             |                                   | -57.2                                 | -27               | 30.25              |
| HT/VHT20, M0 to M7                  | 2               | 3                                    | -60.6                             | -62.5                             | -55.1                                 | -27               | 28.09              |
| HT/VHT20, M8 to M15                 | 2               | 3                                    | -60.6                             | -62.5                             | -55.1                                 | -27               | 28.09              |
| HT/VHT20 Beam Forming, M0 to M7     | 2               | 6                                    | -60.6                             | -62.5                             | -52.1                                 | -27               | 25.09              |
| HT/VHT20 Beam Forming, M8 to M15    | 2               | 3                                    | -60.6                             | -62.5                             | -55.1                                 | -27               | 28.09              |
| HT/VHT20 STBC, M8 to M15            | 2               | 3                                    | -60.6                             | -62.5                             | -55.1                                 | -27               | 28.09              |
| HE20, M0 to M11 1ss                 | 1               | 3                                    | -60.4                             |                                   | -57.1                                 | -27               | 30.07              |
| HE20, M0 to M11 1ss                 | 2               | 3                                    | -60.4                             | -61.2                             | -54.4                                 | -27               | 27.44              |
| HE20, M0 to M11 2ss                 | 2               | 3                                    | -60.4                             | -61.2                             | -54.4                                 | -27               | 27.44              |
| HE20 Beam Forming, M0 to M11 1ss    | 2               | 6                                    | -60.4                             | -61.2                             | -51.4                                 | -27               | 24.44              |
| HE20 Beam Forming, M0 to M11 2ss    | 2               | 3                                    | -60.4                             | -61.2                             | -54.4                                 | -27               | 27.44              |
| HE20 STBC, M0 to M11 2ss            | 2               | 3                                    | -60.4                             | -61.2                             | -54.4                                 | -27               | 27.44              |

**Frequency 5755 MHz**

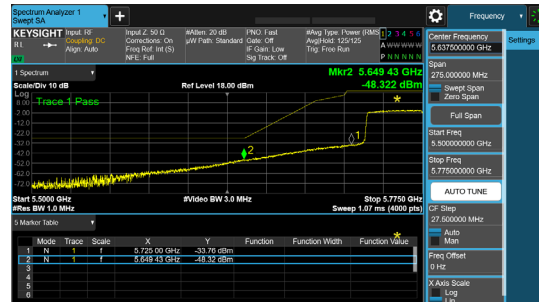
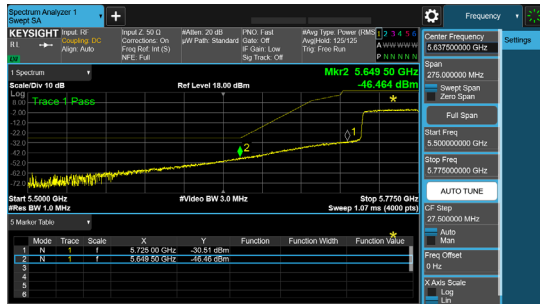
| <b>Mode</b>                      | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|----------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT40, 6 to 54 Mbps           | 1               | 3                                    | -52.4                             |                                   | -49.1                                 | -27               | 22.12              |
| Non HT40, 6 to 54 Mbps           | 2               | 3                                    | -52.4                             | -54.4                             | -47.0                                 | -27               | 19.99              |
| HT/VHT40, M0 to M7               | 1               | 3                                    | -61.5                             |                                   | -58.1                                 | -27               | 31.13              |
| HT/VHT40, M0 to M7               | 2               | 3                                    | -61.5                             | -61.8                             | -55.3                                 | -27               | 28.26              |
| HT/VHT40, M8 to M15              | 2               | 3                                    | -61.5                             | -61.8                             | -55.3                                 | -27               | 28.26              |
| HT/VHT40 Beam Forming, M0 to M7  | 2               | 6                                    | -61.5                             | -61.8                             | -52.3                                 | -27               | 25.26              |
| HT/VHT40 Beam Forming, M8 to M15 | 2               | 3                                    | -61.5                             | -61.8                             | -55.3                                 | -27               | 28.26              |
| HT/VHT40 STBC, M8 to M15         | 2               | 3                                    | -61.5                             | -61.8                             | -55.3                                 | -27               | 28.26              |
| HE40, M0 to M11 1ss              | 1               | 3                                    | -60.0                             |                                   | -56.6                                 | -27               | 29.62              |
| HE40, M0 to M11 1ss              | 2               | 3                                    | -60.0                             | -60.0                             | -53.6                                 | -27               | 26.61              |
| HE40, M0 to M11 2ss              | 2               | 3                                    | -60.0                             | -60.0                             | -53.6                                 | -27               | 26.61              |
| HE40 Beam Forming, M0 to M11 1ss | 2               | 6                                    | -60.0                             | -60.0                             | -50.6                                 | -27               | 23.61              |
| HE40 Beam Forming, M0 to M11 2ss | 2               | 3                                    | -60.0                             | -60.0                             | -53.6                                 | -27               | 26.61              |
| HE40 STBC, M0 to M11 2ss         | 2               | 3                                    | -60.0                             | -60.0                             | -53.6                                 | -27               | 26.61              |

**Frequency 5775 MHz**

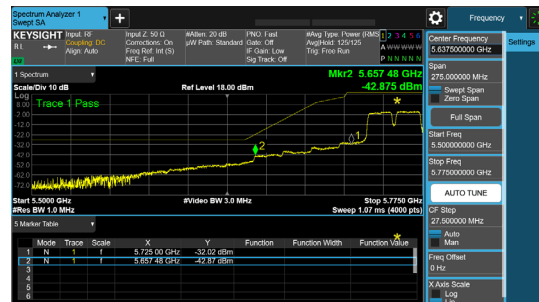
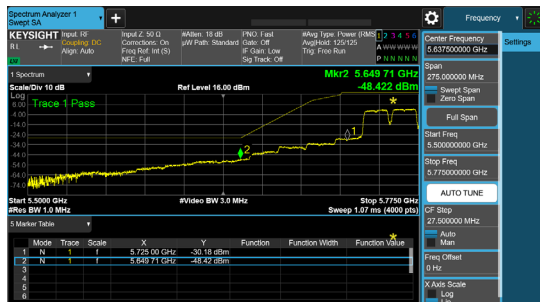
| <b>Mode</b>                              | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|------------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT80, 6 to 54 Mbps                   | 1               | 3                                    | -48.4                             |                                   | -45.0                                 | -27               | 17.97              |
| <b>Non HT80, 6 to 54 Mbps</b>            | <b>2</b>        | <b>3</b>                             | <b>-48.4</b>                      | <b>-42.9</b>                      | <b>-38.4</b>                          | <b>-27</b>        | <b>11.39</b>       |
| VHT80, M0 to M11 1ss                     | 1               | 3                                    | -48.3                             |                                   | -44.8                                 | -27               | 17.82              |
| VHT80, M0 to M11 1ss                     | 2               | 3                                    | -48.3                             | -50.4                             | -42.7                                 | -27               | 15.73              |
| VHT80, M0 to M11 2ss                     | 2               | 3                                    | -48.3                             | -50.4                             | -42.7                                 | -27               | 15.73              |
| <b>VHT80 Beam Forming, M0 to M11 1ss</b> | <b>2</b>        | <b>6</b>                             | <b>-48.3</b>                      | <b>-50.4</b>                      | <b>-39.7</b>                          | <b>-27</b>        | <b>12.73</b>       |
| VHT80 Beam Forming, M0 to M11 2ss        | 2               | 3                                    | -48.3                             | -50.4                             | -42.7                                 | -27               | 15.73              |
| VHT80 STBC, M0 to M11 2ss                | 2               | 3                                    | -48.3                             | -50.4                             | -42.7                                 | -27               | 15.73              |
| HE80, M0 to M11 1ss                      | 1               | 3                                    | -46.5                             |                                   | -43.2                                 | -27               | 16.19              |
| HE80, M0 to M11 1ss                      | 2               | 3                                    | -46.5                             | -48.3                             | -41.0                                 | -27               | 13.98              |
| HE80, M0 to M11 2ss                      | 2               | 3                                    | -46.5                             | -48.3                             | -41.0                                 | -27               | 13.98              |
| <b>HE80 Beam Forming, M0 to M11 1ss</b>  | <b>2</b>        | <b>6</b>                             | <b>-46.5</b>                      | <b>-48.3</b>                      | <b>-38.0</b>                          | <b>-27</b>        | <b>10.98</b>       |
| HE80 Beam Forming, M0 to M11 2ss         | 2               | 3                                    | -46.5                             | -48.3                             | -41.0                                 | -27               | 13.98              |
| HE80 STBC, M0 to M11 2ss                 | 2               | 3                                    | -46.5                             | -48.3                             | -41.0                                 | -27               | 13.98              |

## Data Screenshots – Antenna gain 3dBi 15407L

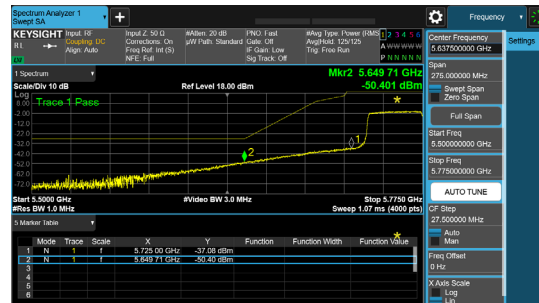
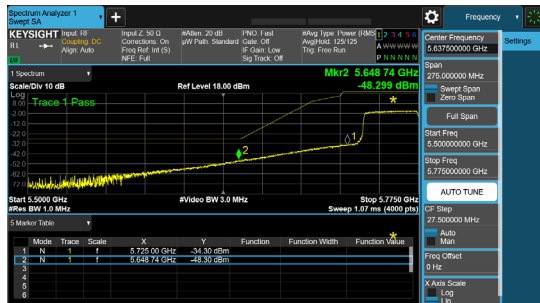
5775 MHz: HE80 Beam Forming, M0 to M11 1ss



5775 MHz: Non HT80, 6 to 54 Mbps



5775 MHz: VHT80 Beam Forming, M0 to M11 1ss



**Conducted Band Edge Peak 15407R. – Antenna gain 3dBi.****Frequency 5785 MHz**

| Mode                                   | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Band Edge Level (dBm) | Tx 2 Band Edge Level (dBm) | Total Tx Band Edge Level (dBm) | Limit (dB) | Margin (dB)  |
|----------------------------------------|----------|-------------------------------|----------------------------|----------------------------|--------------------------------|------------|--------------|
| Non HT20, 6 to 54 Mbps                 | 1        | 3                             | -61.1                      |                            | -57.7                          | -27        | 30.74        |
| Non HT20, 6 to 54 Mbps                 | 2        | 3                             | -61.1                      | -60.8                      | -54.6                          | -27        | 27.58        |
| Non HT20 Beam Forming, 6 to 54 Mbps    | 2        | 6                             | -61.1                      | -60.8                      | -51.6                          | -27        | 24.58        |
| HT/VHT20, M0 to M7                     | 1        | 3                             | -60.9                      |                            | -57.5                          | -27        | 30.55        |
| HT/VHT20, M0 to M7                     | 2        | 3                             | -60.9                      | -60.5                      | -54.3                          | -27        | 27.33        |
| HT/VHT20, M8 to M15                    | 2        | 3                             | -60.9                      | -60.5                      | -54.3                          | -27        | 27.33        |
| <b>HT/VHT20 Beam Forming, M0 to M7</b> | <b>2</b> | <b>6</b>                      | <b>-60.9</b>               | <b>-60.5</b>               | <b>-51.3</b>                   | <b>-27</b> | <b>24.33</b> |
| HT/VHT20 Beam Forming, M8 to M15       | 2        | 3                             | -60.9                      | -60.5                      | -54.3                          | -27        | 27.33        |
| HT/VHT20 STBC, M8 to M15               | 2        | 3                             | -60.9                      | -60.5                      | -54.3                          | -27        | 27.33        |
| HE20, M0 to M11 1ss                    | 1        | 3                             | -63.2                      |                            | -59.9                          | -27        | 32.87        |
| HE20, M0 to M11 1ss                    | 2        | 3                             | -63.2                      | -60.7                      | -55.4                          | -27        | 28.43        |
| HE20, M0 to M11 2ss                    | 2        | 3                             | -63.2                      | -60.7                      | -55.4                          | -27        | 28.43        |
| HE20 Beam Forming, M0 to M11 1ss       | 2        | 6                             | -63.2                      | -60.7                      | -52.4                          | -27        | 25.43        |
| HE20 Beam Forming, M0 to M11 2ss       | 2        | 3                             | -63.2                      | -60.7                      | -55.4                          | -27        | 28.43        |
| HE20 STBC, M0 to M11 2ss               | 2        | 3                             | -63.2                      | -60.7                      | -55.4                          | -27        | 28.43        |

**Frequency 5795 MHz**

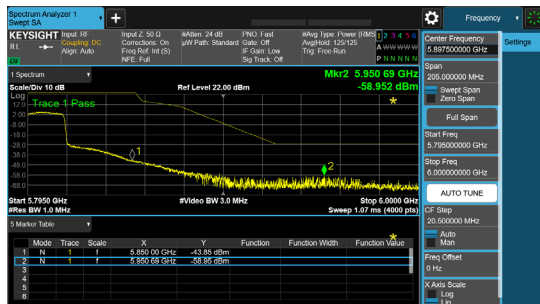
| Mode                                    | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Band Edge Level (dBm) | Tx 2 Band Edge Level (dBm) | Total Tx Band Edge Level (dBm) | Limit (dB) | Margin (dB)  |
|-----------------------------------------|----------|-------------------------------|----------------------------|----------------------------|--------------------------------|------------|--------------|
| Non HT40, 6 to 54 Mbps                  | 1        | 3                             | -57.7                      |                            | -54.4                          | -27        | 27.42        |
| Non HT40, 6 to 54 Mbps                  | 2        | 3                             | -57.7                      | -58.7                      | -51.9                          | -27        | 24.88        |
| HT/VHT40, M0 to M7                      | 1        | 3                             | -59.8                      |                            | -56.4                          | -27        | 29.43        |
| HT/VHT40, M0 to M7                      | 2        | 3                             | -59.8                      | -58.9                      | -52.9                          | -27        | 25.94        |
| HT/VHT40, M8 to M15                     | 2        | 3                             | -59.8                      | -58.9                      | -52.9                          | -27        | 25.94        |
| <b>HT/VHT40 Beam Forming, M0 to M7</b>  | <b>2</b> | <b>6</b>                      | <b>-59.8</b>               | <b>-58.9</b>               | <b>-49.9</b>                   | <b>-27</b> | <b>22.94</b> |
| HT/VHT40 Beam Forming, M8 to M15        | 2        | 3                             | -59.8                      | -58.9                      | -52.9                          | -27        | 25.94        |
| HT/VHT40 STBC, M8 to M15                | 2        | 3                             | -59.8                      | -58.9                      | -52.9                          | -27        | 25.94        |
| HE40, M0 to M11 1ss                     | 1        | 3                             | -59.0                      |                            | -55.6                          | -27        | 28.62        |
| HE40, M0 to M11 1ss                     | 2        | 3                             | -59.0                      | -58.2                      | -52.2                          | -27        | 25.19        |
| HE40, M0 to M11 2ss                     | 2        | 3                             | -59.0                      | -58.2                      | -52.2                          | -27        | 25.19        |
| <b>HE40 Beam Forming, M0 to M11 1ss</b> | <b>2</b> | <b>6</b>                      | <b>-59.0</b>               | <b>-58.2</b>               | <b>-49.2</b>                   | <b>-27</b> | <b>22.19</b> |
| HE40 Beam Forming, M0 to M11 2ss        | 2        | 3                             | -59.0                      | -58.2                      | -52.2                          | -27        | 25.19        |
| HE40 STBC, M0 to M11 2ss                | 2        | 3                             | -59.0                      | -58.2                      | -52.2                          | -27        | 25.19        |

**Frequency 5825 MHz**

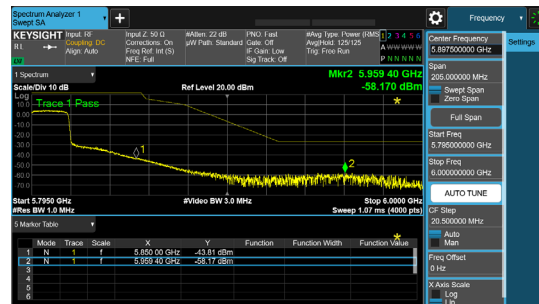
| <b>Mode</b>                         | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|-------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT20, 6 to 54 Mbps              | 1               | 3                                    | -62.9                             |                                   | -59.5                                 | -27               | 32.54              |
| Non HT20, 6 to 54 Mbps              | 2               | 3                                    | -62.9                             | -61.2                             | -55.6                                 | -27               | 28.6               |
| Non HT20 Beam Forming, 6 to 54 Mbps | 2               | 6                                    | -62.9                             | -61.2                             | -52.6                                 | -27               | 25.6               |
| HT/VHT20, M0 to M7                  | 1               | 3                                    | -60.4                             |                                   | -57.0                                 | -27               | 30.05              |
| HT/VHT20, M0 to M7                  | 2               | 3                                    | -60.4                             | -61.3                             | -54.5                                 | -27               | 27.47              |
| HT/VHT20, M8 to M15                 | 2               | 3                                    | -60.4                             | -61.3                             | -54.5                                 | -27               | 27.47              |
| HT/VHT20 Beam Forming, M0 to M7     | 2               | 6                                    | -60.4                             | -61.3                             | -51.5                                 | -27               | 24.47              |
| HT/VHT20 Beam Forming, M8 to M15    | 2               | 3                                    | -60.4                             | -61.3                             | -54.5                                 | -27               | 27.47              |
| HT/VHT20 STBC, M8 to M15            | 2               | 3                                    | -60.4                             | -61.3                             | -54.5                                 | -27               | 27.47              |
| HE20, M0 to M11 1ss                 | 1               | 3                                    | -61.1                             |                                   | -57.8                                 | -27               | 30.77              |
| HE20, M0 to M11 1ss                 | 2               | 3                                    | -61.1                             | -61.0                             | -54.7                                 | -27               | 27.71              |
| HE20, M0 to M11 2ss                 | 2               | 3                                    | -61.1                             | -61.0                             | -54.7                                 | -27               | 27.71              |
| HE20 Beam Forming, M0 to M11 1ss    | 2               | 6                                    | -61.1                             | -61.0                             | -51.7                                 | -27               | 24.71              |
| HE20 Beam Forming, M0 to M11 2ss    | 2               | 3                                    | -61.1                             | -61.0                             | -54.7                                 | -27               | 27.71              |
| HE20 STBC, M0 to M11 2ss            | 2               | 3                                    | -61.1                             | -61.0                             | -54.7                                 | -27               | 27.71              |

## Data Screenshots – Antenna gain 3dBi 15407R

5795 MHz: HE40 Beam Forming, M0 to M11 1ss

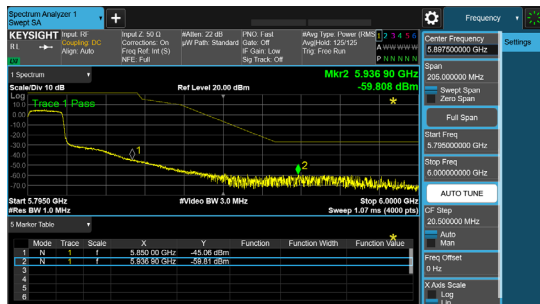


Antenna A

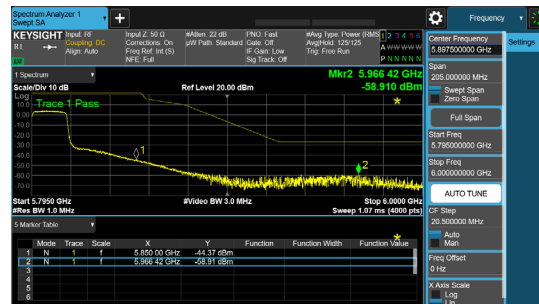


Antenna B

5795 MHz: HT/VHT40 Beam Forming, M0 to M7

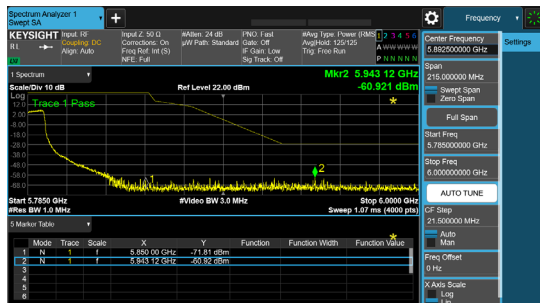


Antenna A

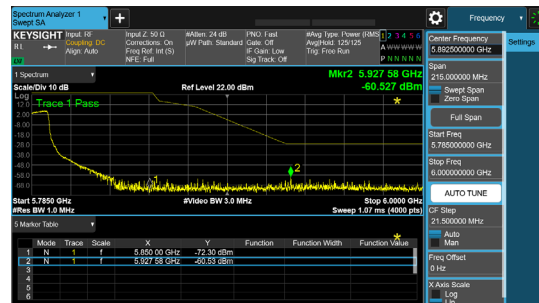


Antenna B

5785 MHz: HT/VHT20 Beam Forming, M0 to M7



Antenna A



Antenna B

**Conducted Band Edge Peak 15407L. – Antenna gain 8dBi****Frequency 5745 MHz**

| <b>Mode</b>                         | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|-------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT20, 6 to 54 Mbps              | 1               | 8                                    | -63.1                             |                                   | -54.7                                 | -27               | 27.74              |
| Non HT20, 6 to 54 Mbps              | 2               | 8                                    | -63.1                             | -61.1                             | -50.6                                 | -27               | 23.62              |
| Non HT20 Beam Forming, 6 to 54 Mbps | 2               | 11                                   | -63.1                             | -61.1                             | -47.6                                 | -27               | 20.62              |
| HT/VHT20, M0 to M7                  | 1               | 8                                    | -60.6                             |                                   | -52.2                                 | -27               | 25.25              |
| HT/VHT20, M0 to M7                  | 2               | 8                                    | -60.6                             | -62.5                             | -50.1                                 | -27               | 23.09              |
| HT/VHT20, M8 to M15                 | 2               | 8                                    | -60.6                             | -62.5                             | -50.1                                 | -27               | 23.09              |
| HT/VHT20 Beam Forming, M0 to M7     | 2               | 11                                   | -60.6                             | -62.5                             | -47.1                                 | -27               | 20.09              |
| HT/VHT20 Beam Forming, M8 to M15    | 2               | 8                                    | -60.6                             | -62.5                             | -50.1                                 | -27               | 23.09              |
| HT/VHT20 STBC, M8 to M15            | 2               | 8                                    | -60.6                             | -62.5                             | -50.1                                 | -27               | 23.09              |
| HE20, M0 to M11 1ss                 | 1               | 8                                    | -60.4                             |                                   | -52.1                                 | -27               | 25.07              |
| HE20, M0 to M11 1ss                 | 2               | 8                                    | -60.4                             | -61.2                             | -49.4                                 | -27               | 22.44              |
| HE20, M0 to M11 2ss                 | 2               | 8                                    | -60.4                             | -61.2                             | -49.4                                 | -27               | 22.44              |
| HE20 Beam Forming, M0 to M11 1ss    | 2               | 11                                   | -60.4                             | -61.2                             | -46.4                                 | -27               | 19.44              |
| HE20 Beam Forming, M0 to M11 2ss    | 2               | 8                                    | -60.4                             | -61.2                             | -49.4                                 | -27               | 22.44              |
| HE20 STBC, M0 to M11 2ss            | 2               | 8                                    | -60.4                             | -61.2                             | -49.4                                 | -27               | 22.44              |

**Frequency 5755 MHz**

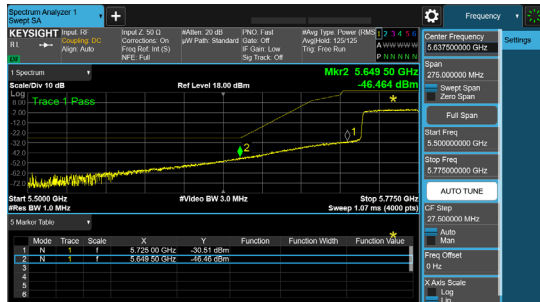
| <b>Mode</b>                      | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|----------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT40, 6 to 54 Mbps           | 1               | 8                                    | -52.4                             |                                   | -44.1                                 | -27               | 17.12              |
| Non HT40, 6 to 54 Mbps           | 2               | 8                                    | -52.4                             | -54.4                             | -42.0                                 | -27               | 14.99              |
| HT/VHT40, M0 to M7               | 1               | 8                                    | -61.5                             |                                   | -53.1                                 | -27               | 26.13              |
| HT/VHT40, M0 to M7               | 2               | 8                                    | -61.5                             | -61.8                             | -50.3                                 | -27               | 23.26              |
| HT/VHT40, M8 to M15              | 2               | 8                                    | -61.5                             | -61.8                             | -50.3                                 | -27               | 23.26              |
| HT/VHT40 Beam Forming, M0 to M7  | 2               | 11                                   | -61.5                             | -61.8                             | -47.3                                 | -27               | 20.26              |
| HT/VHT40 Beam Forming, M8 to M15 | 2               | 8                                    | -61.5                             | -61.8                             | -50.3                                 | -27               | 23.26              |
| HT/VHT40 STBC, M8 to M15         | 2               | 8                                    | -61.5                             | -61.8                             | -50.3                                 | -27               | 23.26              |
| HE40, M0 to M11 1ss              | 1               | 8                                    | -60.0                             |                                   | -51.6                                 | -27               | 24.62              |
| HE40, M0 to M11 1ss              | 2               | 8                                    | -60.0                             | -60.0                             | -48.6                                 | -27               | 21.61              |
| HE40, M0 to M11 2ss              | 2               | 8                                    | -60.0                             | -60.0                             | -48.6                                 | -27               | 21.61              |
| HE40 Beam Forming, M0 to M11 1ss | 2               | 11                                   | -60.0                             | -60.0                             | -45.6                                 | -27               | 18.61              |
| HE40 Beam Forming, M0 to M11 2ss | 2               | 8                                    | -60.0                             | -60.0                             | -48.6                                 | -27               | 21.61              |
| HE40 STBC, M0 to M11 2ss         | 2               | 8                                    | -60.0                             | -60.0                             | -48.6                                 | -27               | 21.61              |

**Frequency 5775 MHz**

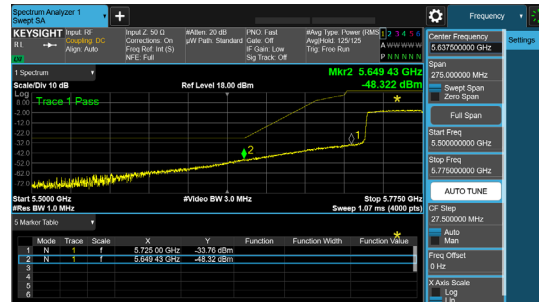
| <b>Mode</b>                              | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|------------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT80, 6 to 54 Mbps                   | 1               | 8                                    | -48.4                             |                                   | -40.0                                 | -27               | 12.97              |
| <b>Non HT80, 6 to 54 Mbps</b>            | <b>2</b>        | <b>8</b>                             | <b>-48.4</b>                      | <b>-42.9</b>                      | <b>-33.4</b>                          | <b>-27</b>        | <b>6.39</b>        |
| VHT80, M0 to M11 1ss                     | 1               | 8                                    | -48.3                             |                                   | -39.8                                 | -27               | 12.82              |
| VHT80, M0 to M11 1ss                     | 2               | 8                                    | -48.3                             | -50.4                             | -37.7                                 | -27               | 10.73              |
| VHT80, M0 to M11 2ss                     | 2               | 8                                    | -48.3                             | -50.4                             | -37.7                                 | -27               | 10.73              |
| <b>VHT80 Beam Forming, M0 to M11 1ss</b> | <b>2</b>        | <b>11</b>                            | <b>-48.3</b>                      | <b>-50.4</b>                      | <b>-34.7</b>                          | <b>-27</b>        | <b>7.73</b>        |
| VHT80 Beam Forming, M0 to M11 2ss        | 2               | 8                                    | -48.3                             | -50.4                             | -37.7                                 | -27               | 10.73              |
| VHT80 STBC, M0 to M11 2ss                | 2               | 8                                    | -48.3                             | -50.4                             | -37.7                                 | -27               | 10.73              |
| HE80, M0 to M11 1ss                      | 1               | 8                                    | -46.5                             |                                   | -38.2                                 | -27               | 11.19              |
| HE80, M0 to M11 1ss                      | 2               | 8                                    | -46.5                             | -48.3                             | -36.0                                 | -27               | 8.98               |
| HE80, M0 to M11 2ss                      | 2               | 8                                    | -46.5                             | -48.3                             | -36.0                                 | -27               | 8.98               |
| <b>HE80 Beam Forming, M0 to M11 1ss</b>  | <b>2</b>        | <b>11</b>                            | <b>-46.5</b>                      | <b>-48.3</b>                      | <b>-33.0</b>                          | <b>-27</b>        | <b>5.98</b>        |
| HE80 Beam Forming, M0 to M11 2ss         | 2               | 8                                    | -46.5                             | -48.3                             | -36.0                                 | -27               | 8.98               |
| HE80 STBC, M0 to M11 2ss                 | 2               | 8                                    | -46.5                             | -48.3                             | -36.0                                 | -27               | 8.98               |

## Data Screenshots – Antenna gain 8dBi 15407L

5775 MHz: HE80 Beam Forming, M0 to M11 1ss.

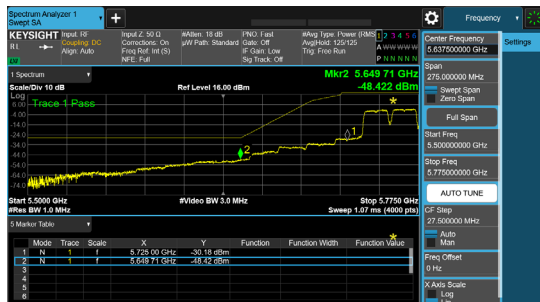


Antenna A

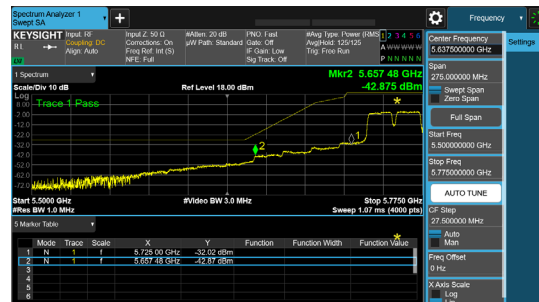


Antenna B

5775 MHz: Non HT80, 6 to 54 Mbps

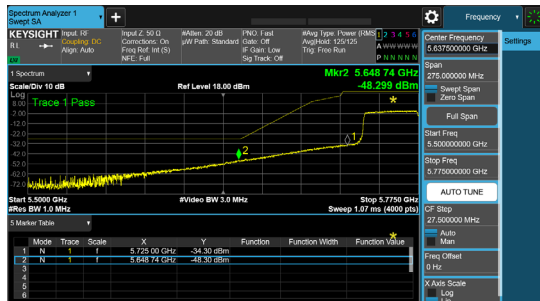


Antenna A

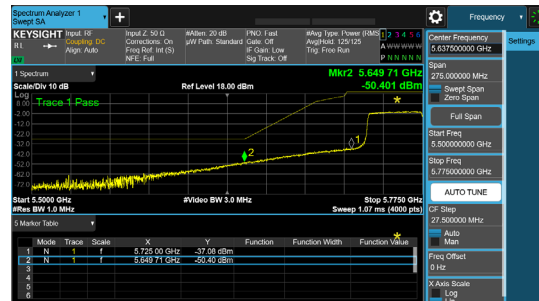


Antenna B

5775 MHz: VHT80 Beam Forming, M0 to M11 1ss.



Antenna A



Antenna B

**Conducted Band Edge Peak 15407R. – Antenna gain 8dBi.****Frequency 5785 MHz**

| <b>Mode</b>                            | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|----------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT20, 6 to 54 Mbps                 | 1               | 8                                    | -61.1                             |                                   | -52.7                                 | -27               | 25.74              |
| Non HT20, 6 to 54 Mbps                 | 2               | 8                                    | -61.1                             | -60.8                             | -49.6                                 | -27               | 22.58              |
| Non HT20 Beam Forming, 6 to 54 Mbps    | 2               | 11                                   | -61.1                             | -60.8                             | -46.6                                 | -27               | 19.58              |
| HT/VHT20, M0 to M7                     | 1               | 8                                    | -60.9                             |                                   | -52.5                                 | -27               | 25.55              |
| HT/VHT20, M0 to M7                     | 2               | 8                                    | -60.9                             | -60.5                             | -49.3                                 | -27               | 22.33              |
| HT/VHT20, M8 to M15                    | 2               | 8                                    | -60.9                             | -60.5                             | -49.3                                 | -27               | 22.33              |
| <b>HT/VHT20 Beam Forming, M0 to M7</b> | <b>2</b>        | <b>11</b>                            | <b>-60.9</b>                      | <b>-60.5</b>                      | <b>-46.3</b>                          | <b>-27</b>        | <b>19.33</b>       |
| HT/VHT20 Beam Forming, M8 to M15       | 2               | 8                                    | -60.9                             | -60.5                             | -49.3                                 | -27               | 22.33              |
| HT/VHT20 STBC, M8 to M15               | 2               | 8                                    | -60.9                             | -60.5                             | -49.3                                 | -27               | 22.33              |
| HE20, M0 to M11 1ss                    | 1               | 8                                    | -63.2                             |                                   | -54.9                                 | -27               | 27.87              |
| HE20, M0 to M11 1ss                    | 2               | 8                                    | -63.2                             | -60.7                             | -50.4                                 | -27               | 23.43              |
| HE20, M0 to M11 2ss                    | 2               | 8                                    | -63.2                             | -60.7                             | -50.4                                 | -27               | 23.43              |
| HE20 Beam Forming, M0 to M11 1ss       | 2               | 11                                   | -63.2                             | -60.7                             | -47.4                                 | -27               | 20.43              |
| HE20 Beam Forming, M0 to M11 2ss       | 2               | 8                                    | -63.2                             | -60.7                             | -50.4                                 | -27               | 23.43              |
| HE20 STBC, M0 to M11 2ss               | 2               | 8                                    | -63.2                             | -60.7                             | -50.4                                 | -27               | 23.43              |

**Frequency 5795 MHz**

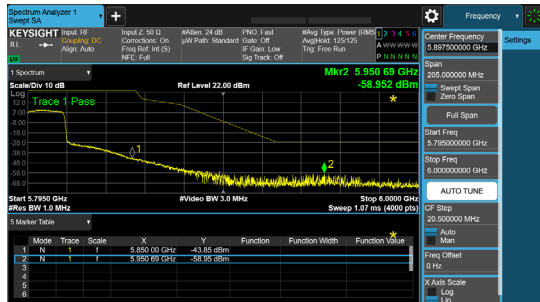
| <b>Mode</b>                             | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|-----------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT40, 6 to 54 Mbps                  | 1               | 8                                    | -57.7                             |                                   | -49.4                                 | -27               | 22.42              |
| Non HT40, 6 to 54 Mbps                  | 2               | 8                                    | -57.7                             | -58.7                             | -46.9                                 | -27               | 19.88              |
| HT/VHT40, M0 to M7                      | 1               | 8                                    | -59.8                             |                                   | -51.4                                 | -27               | 24.43              |
| HT/VHT40, M0 to M7                      | 2               | 8                                    | -59.8                             | -58.9                             | -47.9                                 | -27               | 20.94              |
| HT/VHT40, M8 to M15                     | 2               | 8                                    | -59.8                             | -58.9                             | -47.9                                 | -27               | 20.94              |
| <b>HT/VHT40 Beam Forming, M0 to M7</b>  | <b>2</b>        | <b>11</b>                            | <b>-59.8</b>                      | <b>-58.9</b>                      | <b>-44.9</b>                          | <b>-27</b>        | <b>17.94</b>       |
| HT/VHT40 Beam Forming, M8 to M15        | 2               | 8                                    | -59.8                             | -58.9                             | -47.9                                 | -27               | 20.94              |
| HT/VHT40 STBC, M8 to M15                | 2               | 8                                    | -59.8                             | -58.9                             | -47.9                                 | -27               | 20.94              |
| HE40, M0 to M11 1ss                     | 1               | 8                                    | -59.0                             |                                   | -50.6                                 | -27               | 23.62              |
| HE40, M0 to M11 1ss                     | 2               | 8                                    | -59.0                             | -58.2                             | -47.2                                 | -27               | 20.19              |
| HE40, M0 to M11 2ss                     | 2               | 8                                    | -59.0                             | -58.2                             | -47.2                                 | -27               | 20.19              |
| <b>HE40 Beam Forming, M0 to M11 1ss</b> | <b>2</b>        | <b>11</b>                            | <b>-59.0</b>                      | <b>-58.2</b>                      | <b>-44.2</b>                          | <b>-27</b>        | <b>17.19</b>       |
| HE40 Beam Forming, M0 to M11 2ss        | 2               | 8                                    | -59.0                             | -58.2                             | -47.2                                 | -27               | 20.19              |
| HE40 STBC, M0 to M11 2ss                | 2               | 8                                    | -59.0                             | -58.2                             | -47.2                                 | -27               | 20.19              |

**Frequency 5825 MHz**

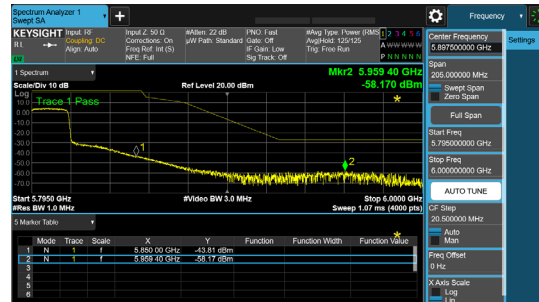
| <b>Mode</b>                         | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|-------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT20, 6 to 54 Mbps              | 1               | 8                                    | -62.9                             |                                   | -54.5                                 | -27               | 27.54              |
| Non HT20, 6 to 54 Mbps              | 2               | 8                                    | -62.9                             | -61.2                             | -50.6                                 | -27               | 23.6               |
| Non HT20 Beam Forming, 6 to 54 Mbps | 2               | 11                                   | -62.9                             | -61.2                             | -47.6                                 | -27               | 20.6               |
| HT/VHT20, M0 to M7                  | 1               | 8                                    | -60.4                             |                                   | -52.0                                 | -27               | 25.05              |
| HT/VHT20, M0 to M7                  | 2               | 8                                    | -60.4                             | -61.3                             | -49.5                                 | -27               | 22.47              |
| HT/VHT20, M8 to M15                 | 2               | 8                                    | -60.4                             | -61.3                             | -49.5                                 | -27               | 22.47              |
| HT/VHT20 Beam Forming, M0 to M7     | 2               | 11                                   | -60.4                             | -61.3                             | -46.5                                 | -27               | 19.47              |
| HT/VHT20 Beam Forming, M8 to M15    | 2               | 8                                    | -60.4                             | -61.3                             | -49.5                                 | -27               | 22.47              |
| HT/VHT20 STBC, M8 to M15            | 2               | 8                                    | -60.4                             | -61.3                             | -49.5                                 | -27               | 22.47              |
| HE20, M0 to M11 1ss                 | 1               | 8                                    | -61.1                             |                                   | -52.8                                 | -27               | 25.77              |
| HE20, M0 to M11 1ss                 | 2               | 8                                    | -61.1                             | -61.0                             | -49.7                                 | -27               | 22.71              |
| HE20, M0 to M11 2ss                 | 2               | 8                                    | -61.1                             | -61.0                             | -49.7                                 | -27               | 22.71              |
| HE20 Beam Forming, M0 to M11 1ss    | 2               | 11                                   | -61.1                             | -61.0                             | -46.7                                 | -27               | 19.71              |
| HE20 Beam Forming, M0 to M11 2ss    | 2               | 8                                    | -61.1                             | -61.0                             | -49.7                                 | -27               | 22.71              |
| HE20 STBC, M0 to M11 2ss            | 2               | 8                                    | -61.1                             | -61.0                             | -49.7                                 | -27               | 22.71              |

## Data Screenshots – Antenna gain 8dBi 15407R

5795 MHz: HE40 Beam Forming, M0 to M11 1ss.

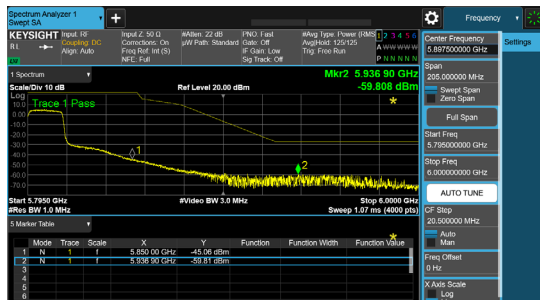


Antenna A

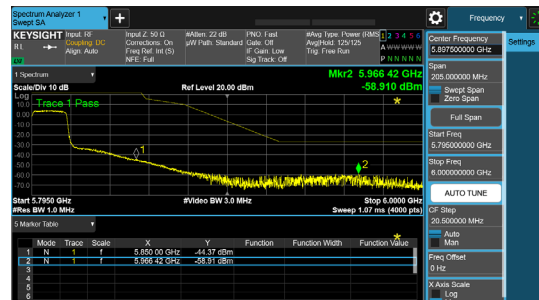


Antenna B

5795 MHz: HT/VHT40 Beam Forming, M0 to M7

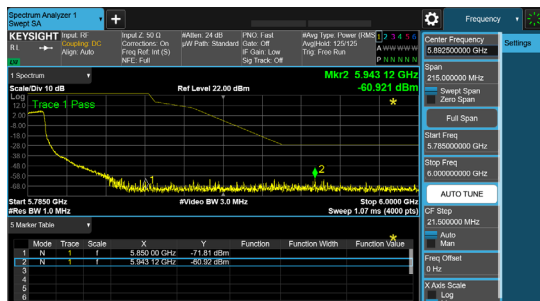


Antenna A

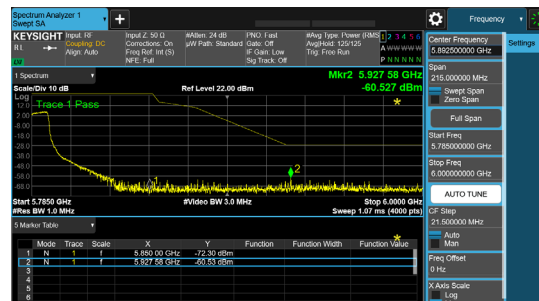


Antenna B

5785 MHz: HT/VHT20 Beam Forming, M0 to M7



Antenna A



Antenna B

**Conducted Band Edge Peak 15407L – Antenna gain 15dBi.****Frequency 5745 MHz**

| <b>Mode</b>                         | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|-------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT20, 6 to 54 Mbps              | 1               | 15                                   | -63.1                             |                                   | -47.7                                 | -27               | 20.74              |
| Non HT20, 6 to 54 Mbps              | 2               | 15                                   | -63.1                             | -61.1                             | -43.6                                 | -27               | 16.62              |
| Non HT20 Beam Forming, 6 to 54 Mbps | 2               | 15                                   | -63.1                             | -61.1                             | -43.6                                 | -27               | 16.62              |
| HT/VHT20, M0 to M7                  | 1               | 15                                   | -60.6                             |                                   | -45.2                                 | -27               | 18.25              |
| HT/VHT20, M0 to M7                  | 2               | 15                                   | -60.6                             | -62.5                             | -43.1                                 | -27               | 16.09              |
| HT/VHT20, M8 to M15                 | 2               | 15                                   | -60.6                             | -62.5                             | -43.1                                 | -27               | 16.09              |
| HT/VHT20 Beam Forming, M0 to M7     | 2               | 15                                   | -60.6                             | -62.5                             | -43.1                                 | -27               | 16.09              |
| HT/VHT20 Beam Forming, M8 to M15    | 2               | 15                                   | -60.6                             | -62.5                             | -43.1                                 | -27               | 16.09              |
| HT/VHT20 STBC, M8 to M15            | 2               | 15                                   | -60.6                             | -62.5                             | -43.1                                 | -27               | 16.09              |
| HE20, M0 to M11 1ss                 | 1               | 15                                   | -60.4                             |                                   | -45.1                                 | -27               | 18.07              |
| HE20, M0 to M11 1ss                 | 2               | 15                                   | -60.8                             | -62.7                             | -43.3                                 | -27               | 16.31              |
| HE20, M0 to M11 2ss                 | 2               | 15                                   | -60.8                             | -62.7                             | -43.3                                 | -27               | 16.31              |
| HE20 Beam Forming, M0 to M11 1ss    | 2               | 15                                   | -60.8                             | -62.7                             | -43.3                                 | -27               | 16.31              |
| HE20 Beam Forming, M0 to M11 2ss    | 2               | 15                                   | -60.8                             | -62.7                             | -43.3                                 | -27               | 16.31              |
| HE20 STBC, M0 to M11 2ss            | 2               | 15                                   | -60.8                             | -62.7                             | -43.3                                 | -27               | 16.31              |

**Frequency 5755 MHz**

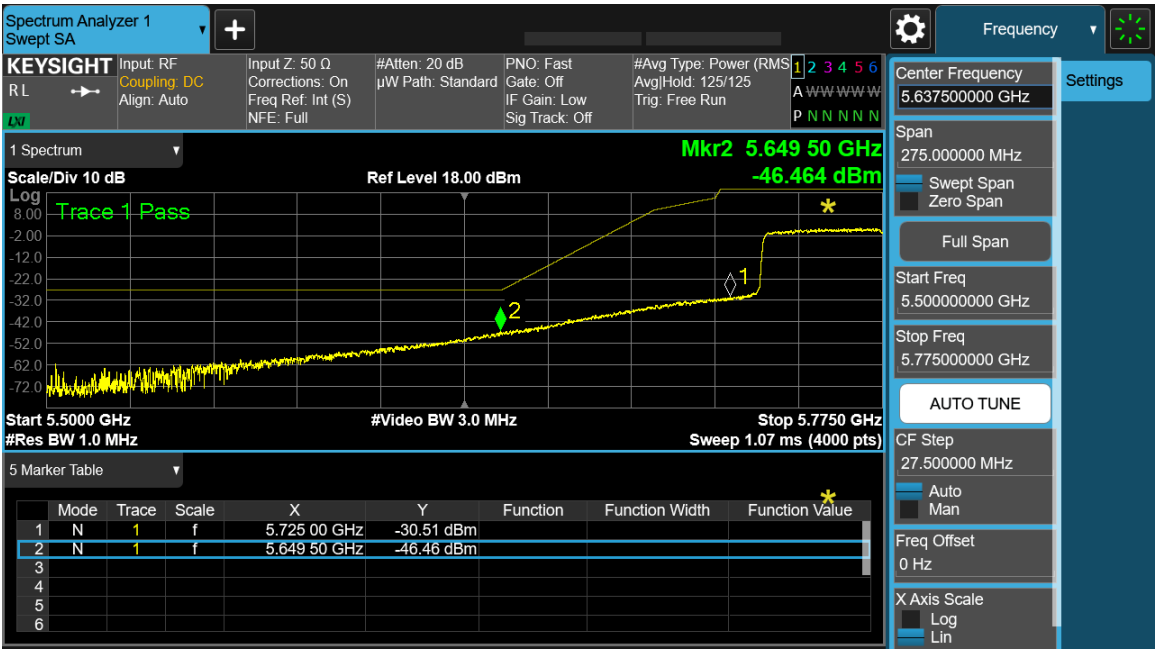
| <b>Mode</b>                      | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|----------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT40, 6 to 54 Mbps           | 1               | 15                                   | -52.4                             |                                   | -37.1                                 | -27               | 10.12              |
| Non HT40, 6 to 54 Mbps           | 2               | 15                                   | -52.4                             | -54.4                             | -35.0                                 | -27               | 7.99               |
| HT/VHT40, M0 to M7               | 1               | 15                                   | -61.5                             |                                   | -46.1                                 | -27               | 19.13              |
| HT/VHT40, M0 to M7               | 2               | 15                                   | -62.6                             | -62.1                             | -44.0                                 | -27               | 16.96              |
| HT/VHT40, M8 to M15              | 2               | 15                                   | -62.6                             | -62.1                             | -44.0                                 | -27               | 16.96              |
| HT/VHT40 Beam Forming, M0 to M7  | 2               | 15                                   | -62.6                             | -62.1                             | -44.0                                 | -27               | 16.96              |
| HT/VHT40 Beam Forming, M8 to M15 | 2               | 15                                   | -62.6                             | -62.1                             | -44.0                                 | -27               | 16.96              |
| HT/VHT40 STBC, M8 to M15         | 2               | 15                                   | -62.6                             | -62.1                             | -44.0                                 | -27               | 16.96              |
| HE40, M0 to M11 1ss              | 1               | 15                                   | -60.0                             |                                   | -44.6                                 | -27               | 17.62              |
| HE40, M0 to M11 1ss              | 2               | 15                                   | -61.9                             | -61.6                             | -43.4                                 | -27               | 16.36              |
| HE40, M0 to M11 2ss              | 2               | 15                                   | -61.9                             | -61.6                             | -43.4                                 | -27               | 16.36              |
| HE40 Beam Forming, M0 to M11 1ss | 2               | 15                                   | -61.9                             | -61.6                             | -43.4                                 | -27               | 16.36              |
| HE40 Beam Forming, M0 to M11 2ss | 2               | 15                                   | -61.9                             | -61.6                             | -43.4                                 | -27               | 16.36              |
| HE40 STBC, M0 to M11 2ss         | 2               | 15                                   | -61.9                             | -61.6                             | -43.4                                 | -27               | 16.36              |

**Frequency 5775 MHz**

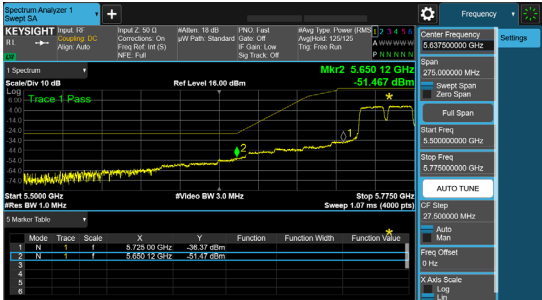
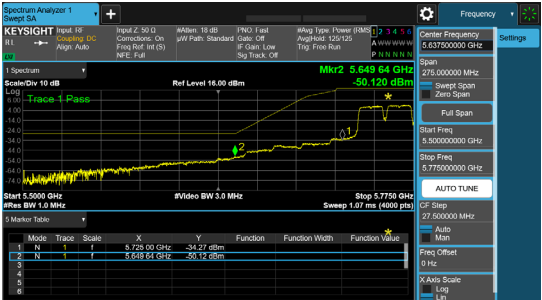
| <b>Mode</b>                       | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|-----------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT80, 6 to 54 Mbps            | 1               | 15                                   | -48.4                             |                                   | -33.0                                 | -27               | 5.97               |
| <b>Non HT80, 6 to 54 Mbps</b>     | <b>2</b>        | <b>15</b>                            | <b>-50.1</b>                      | <b>-51.5</b>                      | <b>-32.3</b>                          | <b>-27</b>        | <b>5.3</b>         |
| <b>VHT80, M0 to M11 1ss</b>       | <b>1</b>        | <b>15</b>                            | <b>-48.3</b>                      |                                   | <b>-32.8</b>                          | <b>-27</b>        | <b>5.82</b>        |
| VHT80, M0 to M11 1ss              | 2               | 15                                   | -52.3                             | -54.7                             | -34.8                                 | -27               | 7.84               |
| VHT80, M0 to M11 2ss              | 2               | 15                                   | -52.3                             | -54.7                             | -34.8                                 | -27               | 7.84               |
| VHT80 Beam Forming, M0 to M11 1ss | 2               | 15                                   | -52.3                             | -54.7                             | -34.8                                 | -27               | 7.84               |
| VHT80 Beam Forming, M0 to M11 2ss | 2               | 15                                   | -52.3                             | -54.7                             | -34.8                                 | -27               | 7.84               |
| VHT80 STBC, M0 to M11 2ss         | 2               | 15                                   | -52.3                             | -54.7                             | -34.8                                 | -27               | 7.84               |
| <b>HE80, M0 to M11 1ss</b>        | <b>1</b>        | <b>15</b>                            | <b>-46.5</b>                      |                                   | <b>-31.2</b>                          | <b>-27</b>        | <b>4.19</b>        |
| HE80, M0 to M11 1ss               | 2               | 15                                   | -50.6                             | -52.4                             | -33.1                                 | -27               | 6.08               |
| HE80, M0 to M11 2ss               | 2               | 15                                   | -50.6                             | -52.4                             | -33.1                                 | -27               | 6.08               |
| HE80 Beam Forming, M0 to M11 1ss  | 2               | 15                                   | -50.6                             | -52.4                             | -33.1                                 | -27               | 6.08               |
| HE80 Beam Forming, M0 to M11 2ss  | 2               | 15                                   | -50.6                             | -52.4                             | -33.1                                 | -27               | 6.08               |
| HE80 STBC, M0 to M11 2ss          | 2               | 15                                   | -50.6                             | -52.4                             | -33.1                                 | -27               | 6.08               |

Data Screenshots – Antenna gain 15dBi 15407L

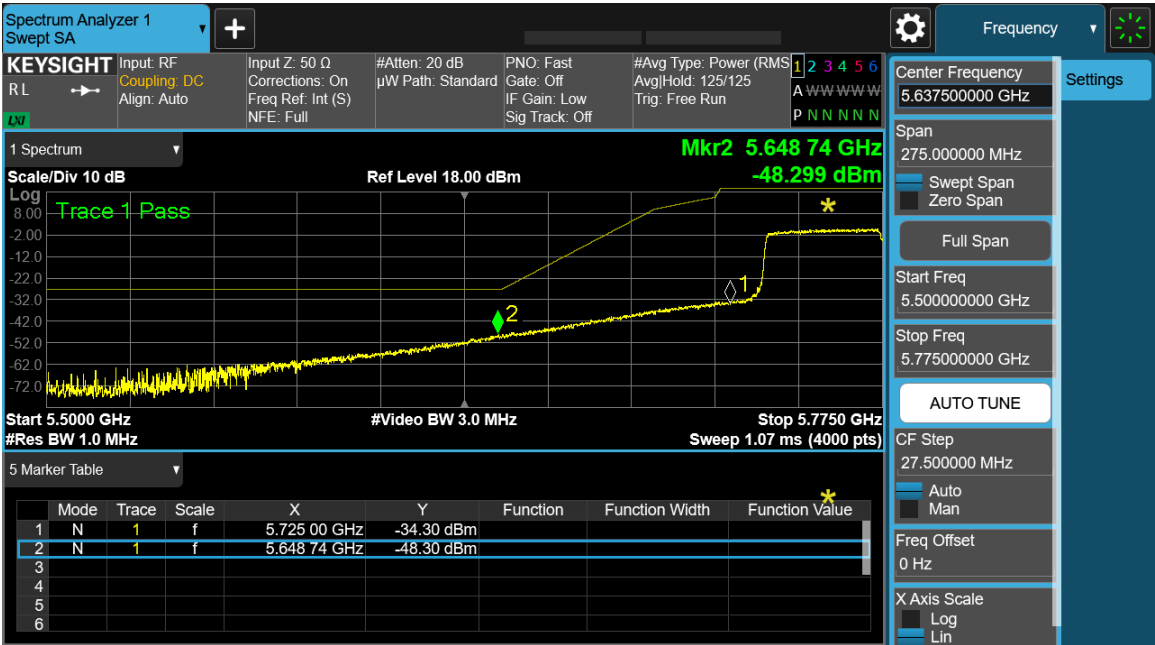
5775 MHz: HE80, M0 to M11 1ss



5775 MHz: Non HT80, 6 to 54 Mbps



5775 MHz: VHT80, M0 to M11 1ss



Antenna A

**Conducted Band Edge Peak 15407R – Antenna gain 15dBi.****Frequency 5785 MHz**

| <b>Mode</b>                         | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|-------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT20, 6 to 54 Mbps              | 1               | 15                                   | -61.1                             |                                   | -45.7                                 | -27               | 18.74              |
| Non HT20, 6 to 54 Mbps              | 2               | 15                                   | -61.1                             | -60.8                             | -42.6                                 | -27               | 15.58              |
| Non HT20 Beam Forming, 6 to 54 Mbps | 2               | 15                                   | -61.1                             | -60.8                             | -42.6                                 | -27               | 15.58              |
| HT/VHT20, M0 to M7                  | 1               | 15                                   | -60.9                             |                                   | -45.5                                 | -27               | 18.55              |
| HT/VHT20, M0 to M7                  | 2               | 15                                   | -60.9                             | -60.5                             | -42.3                                 | -27               | 15.33              |
| HT/VHT20, M8 to M15                 | 2               | 15                                   | -60.9                             | -60.5                             | -42.3                                 | -27               | 15.33              |
| HT/VHT20 Beam Forming, M0 to M7     | 2               | 15                                   | -60.9                             | -60.5                             | -42.3                                 | -27               | 15.33              |
| HT/VHT20 Beam Forming, M8 to M15    | 2               | 15                                   | -60.9                             | -60.5                             | -42.3                                 | -27               | 15.33              |
| HT/VHT20 STBC, M8 to M15            | 2               | 15                                   | -60.9                             | -60.5                             | -42.3                                 | -27               | 15.33              |
| HE20, M0 to M11 1ss                 | 1               | 15                                   | -63.2                             |                                   | -47.9                                 | -27               | 20.87              |
| HE20, M0 to M11 1ss                 | 2               | 15                                   | -60.7                             | -61.7                             | -42.8                                 | -27               | 15.83              |
| HE20, M0 to M11 2ss                 | 2               | 15                                   | -60.7                             | -61.7                             | -42.8                                 | -27               | 15.83              |
| HE20 Beam Forming, M0 to M11 1ss    | 2               | 15                                   | -60.7                             | -61.7                             | -42.8                                 | -27               | 15.83              |
| HE20 Beam Forming, M0 to M11 2ss    | 2               | 15                                   | -60.7                             | -61.7                             | -42.8                                 | -27               | 15.83              |
| HE20 STBC, M0 to M11 2ss            | 2               | 15                                   | -60.7                             | -61.7                             | -42.8                                 | -27               | 15.83              |

**Frequency 5795 MHz**

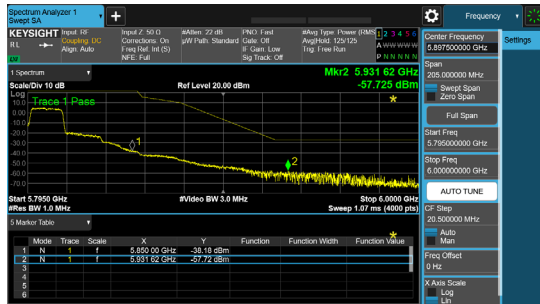
| <b>Mode</b>                      | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|----------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT40, 6 to 54 Mbps           | 1               | 15                                   | -57.7                             |                                   | -42.4                                 | -27               | 15.42              |
| <b>Non HT40, 6 to 54 Mbps</b>    | <b>2</b>        | <b>15</b>                            | <b>-57.7</b>                      | <b>-58.7</b>                      | <b>-39.9</b>                          | <b>-27</b>        | <b>12.88</b>       |
| HT/VHT40, M0 to M7               | 1               | 15                                   | -59.8                             |                                   | -44.4                                 | -27               | 17.43              |
| <b>HT/VHT40, M0 to M7</b>        | <b>2</b>        | <b>15</b>                            | <b>-59.8</b>                      | <b>-58.9</b>                      | <b>-40.9</b>                          | <b>-27</b>        | <b>13.94</b>       |
| <b>HT/VHT40, M8 to M15</b>       | <b>2</b>        | <b>15</b>                            | <b>-59.8</b>                      | <b>-58.9</b>                      | <b>-40.9</b>                          | <b>-27</b>        | <b>13.94</b>       |
| HT/VHT40 Beam Forming, M0 to M7  | 2               | 15                                   | -59.8                             | -58.9                             | -40.9                                 | -27               | 13.94              |
| HT/VHT40 Beam Forming, M8 to M15 | 2               | 15                                   | -59.8                             | -58.9                             | -40.9                                 | -27               | 13.94              |
| HT/VHT40 STBC, M8 to M15         | 2               | 15                                   | -59.8                             | -58.9                             | -40.9                                 | -27               | 13.94              |
| HE40, M0 to M11 1ss              | 1               | 15                                   | -59.0                             |                                   | -43.6                                 | -27               | 16.62              |
| HE40, M0 to M11 1ss              | 2               | 15                                   | -59.5                             | -59.3                             | -41.0                                 | -27               | 14.01              |
| HE40, M0 to M11 2ss              | 2               | 15                                   | -59.5                             | -59.3                             | -41.0                                 | -27               | 14.01              |
| HE40 Beam Forming, M0 to M11 1ss | 2               | 15                                   | -59.5                             | -59.3                             | -41.0                                 | -27               | 14.01              |
| HE40 Beam Forming, M0 to M11 2ss | 2               | 15                                   | -59.5                             | -59.3                             | -41.0                                 | -27               | 14.01              |
| HE40 STBC, M0 to M11 2ss         | 2               | 15                                   | -59.5                             | -59.3                             | -41.0                                 | -27               | 14.01              |

**Frequency 5825 MHz**

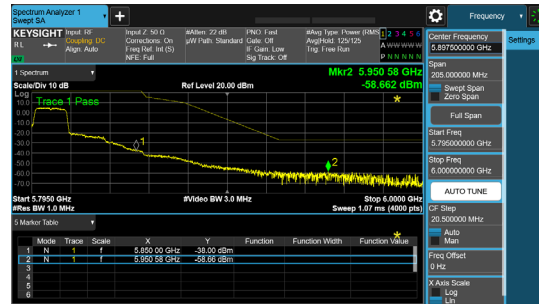
| <b>Mode</b>                         | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Band Edge Level (dBm)</b> | <b>Tx 2 Band Edge Level (dBm)</b> | <b>Total Tx Band Edge Level (dBm)</b> | <b>Limit (dB)</b> | <b>Margin (dB)</b> |
|-------------------------------------|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|-------------------|--------------------|
| Non HT20, 6 to 54 Mbps              | 1               | 15                                   | -62.9                             |                                   | -47.5                                 | -27               | 20.54              |
| Non HT20, 6 to 54 Mbps              | 2               | 15                                   | -62.9                             | -61.2                             | -43.6                                 | -27               | 16.6               |
| Non HT20 Beam Forming, 6 to 54 Mbps | 2               | 15                                   | -62.9                             | -61.2                             | -43.6                                 | -27               | 16.6               |
| HT/VHT20, M0 to M7                  | 1               | 15                                   | -60.4                             |                                   | -45.0                                 | -27               | 18.05              |
| HT/VHT20, M0 to M7                  | 2               | 15                                   | -60.4                             | -61.3                             | -42.5                                 | -27               | 15.47              |
| HT/VHT20, M8 to M15                 | 2               | 15                                   | -60.4                             | -61.3                             | -42.5                                 | -27               | 15.47              |
| HT/VHT20 Beam Forming, M0 to M7     | 2               | 15                                   | -60.4                             | -61.3                             | -42.5                                 | -27               | 15.47              |
| HT/VHT20 Beam Forming, M8 to M15    | 2               | 15                                   | -60.4                             | -61.3                             | -42.5                                 | -27               | 15.47              |
| HT/VHT20 STBC, M8 to M15            | 2               | 15                                   | -60.4                             | -61.3                             | -42.5                                 | -27               | 15.47              |
| HE20, M0 to M11 1ss                 | 1               | 15                                   | -61.1                             |                                   | -45.8                                 | -27               | 18.77              |
| HE20, M0 to M11 1ss                 | 2               | 15                                   | -61.3                             | -60.5                             | -42.5                                 | -27               | 15.54              |
| HE20, M0 to M11 2ss                 | 2               | 15                                   | -61.3                             | -60.5                             | -42.5                                 | -27               | 15.54              |
| HE20 Beam Forming, M0 to M11 1ss    | 2               | 15                                   | -61.3                             | -60.5                             | -42.5                                 | -27               | 15.54              |
| HE20 Beam Forming, M0 to M11 2ss    | 2               | 15                                   | -61.3                             | -60.5                             | -42.5                                 | -27               | 15.54              |
| HE20 STBC, M0 to M11 2ss            | 2               | 15                                   | -61.3                             | -60.5                             | -42.5                                 | -27               | 15.54              |

**Data Screenshots – Antenna gain 15dBi 15407L**

5795 MHz: Non HT40, 6 to 54 Mbps

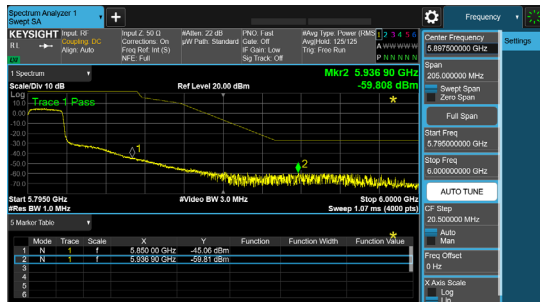


Antenna A

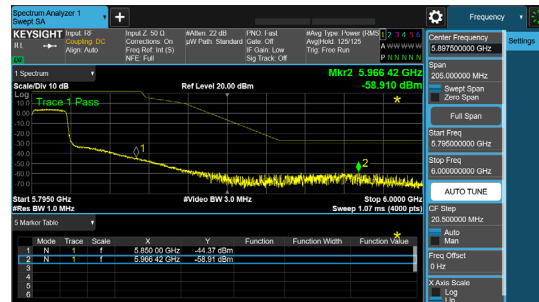


Antenna B

5795 MHz: HT/VHT40, M0 to M7

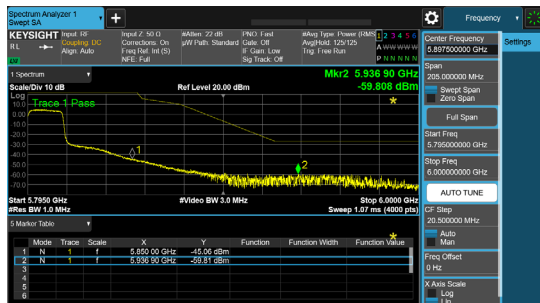


Antenna A

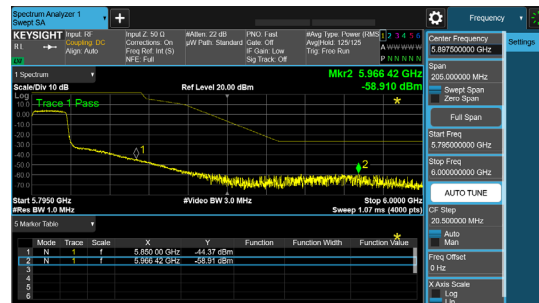


Antenna B

5795 MHz: HT/VHT40, M8 to M15



Antenna A

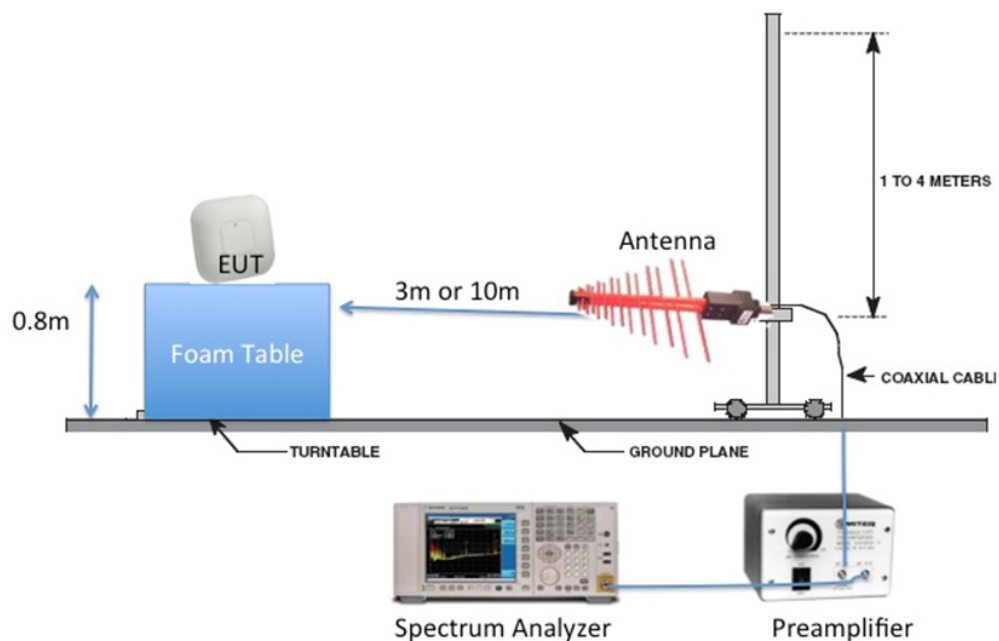


Antenna B

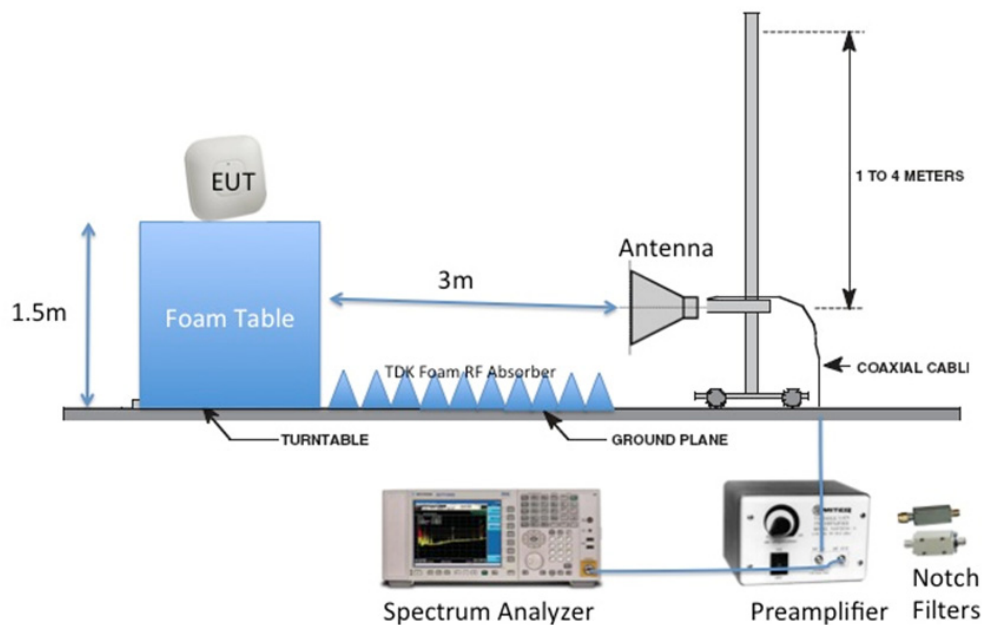
## Appendix B: Emission Test Results

Testing Laboratory: Cisco Systems, Inc., 125 West Tasman Drive, San Jose, CA 95134, USA

### Radiated Emission Setup Diagram-Below 1G



### Radiated Emission Setup Diagram-Above 1G



## **B.1: Radiated Spurious Emissions**

### **FCC 15.205 | 15.407 | LP0002 (2018-01-10) (3.6)**

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Radiated emissions test results are covered in EDCS # 24346978.

Note: Although 100kHz RBW is required for emissions below 1GHz, 1MHz RBW was used in order to show compliance under worst-case setting

Note: emissions above 12GHz are only noise floor and that data can be additionally shown in radiated report

## **B.2: Radiated Emissions 30MHz to 1GHz**

### **FCC 15.209 | 15.205 | 15.407**

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)) and RSS-Gen §8.9.

**Ref.** ANSI C63.10: 2013 section 6.5

Radiated emissions test results are covered in EDCS # 24346978.

## **B.3: AC Conducted Emissions**

### **FCC 15.207 | LP0002 (2020-07-01) (3.3)**

Except when the requirements applicable to a given device state otherwise, for any radio apparatus equipped to operate from the public utility AC power supply, either directly or indirectly (such as with a battery charger), the radio frequency voltage of emissions conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the table in these sections. The more stringent limit applies at the frequency range boundaries.

#### **Measurement Procedure**

**Accordance with ANSI C63.10:2013 section 6.2**

**Case Details**

|                                                               |                  |                                                                                                                                                                                                                                              |                 |
|---------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>Test Case ID: 5088      Test Type: Conducted Emissions</b> |                  |                                                                                                                                                                                                                                              |                 |
| <b>Product Standard</b>                                       | <b>Port Type</b> | <b>Test Details</b>                                                                                                                                                                                                                          | <b>Comments</b> |
| FCC CFR 15.207                                                | DC (Indoor)      | Start Freq: 0.15MHz - Stop Freq: 30MHz<br>Power: DC<br>Range: 150KHz to 30MHz.<br>Class: N/A<br>Measure: Voltage(dBuV)<br>Detector(s): Quasi-Peak and Average<br>150kHz - 500kHz - 89dBuV (QP) 76(AV)<br>500kHz - 30MHz - 83dBuV (QP) 70(AV) |                 |
| <b>Basic Standard</b>                                         | CISPR16 Series   |                                                                                                                                                                                                                                              |                 |
| <b>Overall Result</b>                                         | Pass             |                                                                                                                                                                                                                                              |                 |
| <b>Deviation</b>                                              | NA               |                                                                                                                                                                                                                                              |                 |

**Subtest Details**

|                                                 |                                                |                 |
|-------------------------------------------------|------------------------------------------------|-----------------|
| Subtest Number: 5088-1 Subtest Date: 1/25/2023  |                                                |                 |
| Engineer                                        | Jose Huamani                                   |                 |
| Lab Information                                 | Bldg. P - Shield Room 1                        |                 |
| Subtest Results                                 |                                                |                 |
| Subtest Title                                   | 5088-1                                         |                 |
| Port Reference                                  | [J] DC Input                                   |                 |
| Measured Voltage                                | 48VDC                                          |                 |
| Transducer                                      | LISN                                           |                 |
| Subtest Result                                  | Pass                                           |                 |
| Comments on the above Test Results              | Powered by 48VDC. DC Input port is under test. |                 |
| Environmental Conditions                        |                                                |                 |
| Temperature: (59 to 95) °F                      | 72                                             |                 |
| Humidity: (10 to 75) %                          | 41                                             |                 |
| Test Result File                                | Start Freq [MHz]                               | Stop Freq [MHz] |
| plce_150k-30m_lisn_m22e_48vdc [24-1-2023 15.53] | .15                                            | 30              |

**Operation Mode**

|              |              |                                                                                                                                                                             |
|--------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mode#</b> | <b>Title</b> | <b>Description</b>                                                                                                                                                          |
| 1            | Formal Test  | EUT is set to auto-boot with Linux version 4.4.60 (root@137067b22dab) (gcc version 5.2.0 (OpenWrt GCC 5.2.0 c17576669+r49254)) #41 SMP PREEMPT Tue Oct 25 15:03:29 UTC 2022 |

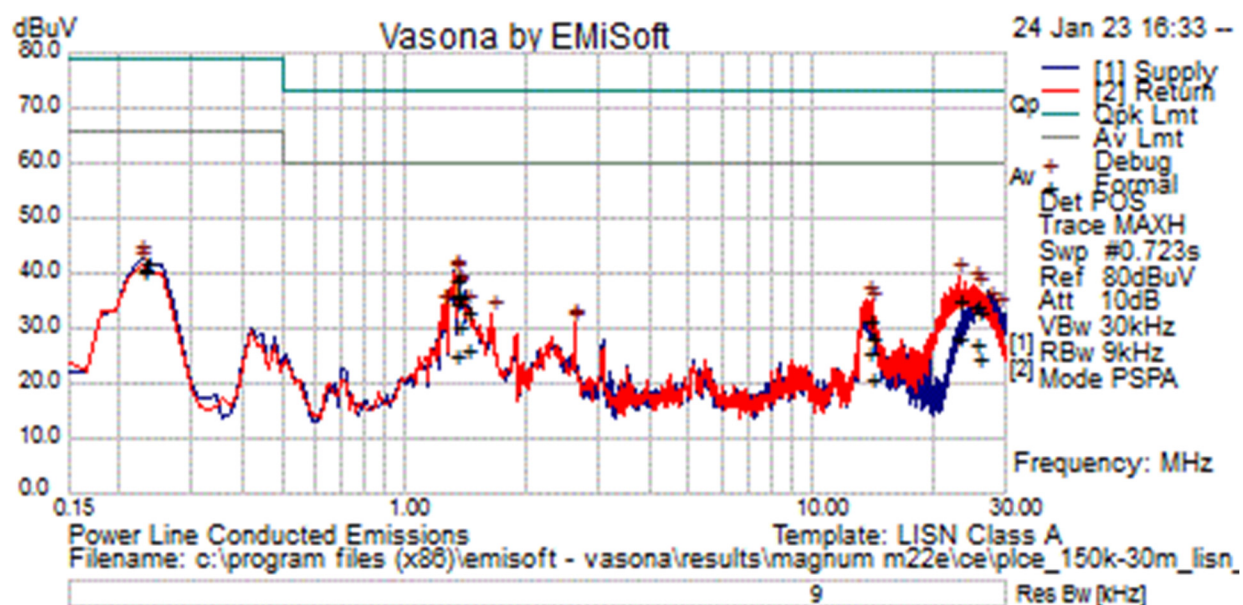
**Hardware Configuration**

|                |                       |                                                 |
|----------------|-----------------------|-------------------------------------------------|
| <b>Config#</b> | <b>Title</b>          | <b>Description</b>                              |
| 1              | Mode-1 (DC Generator) | M22E powered up directly through a DC generator |

**Systems Details**

|                      |                                                     |                |                          |
|----------------------|-----------------------------------------------------|----------------|--------------------------|
| <b>System Number</b> | <b>Description</b>                                  | <b>Samples</b> | <b>System under Test</b> |
| 5                    | IXIA Traffic Generator (Support)                    | 1, 3, 2        | No                       |
| 3                    | Support - 2.4GHz & 5GHz Clients, Switch, and Laptop | 4, 5, 8, 9     | No                       |

| System Number | Description                                                        | Samples | System under Test |
|---------------|--------------------------------------------------------------------|---------|-------------------|
| 1             | EUT - Config. 1: M22E powered up through DC Generator, without M12 | 1       | Yes               |

**Test Results Details**

| Formal Data |               |          |            |            |            |                  |        |            |           |            |          |
|-------------|---------------|----------|------------|------------|------------|------------------|--------|------------|-----------|------------|----------|
| No          | Frequency MHz | Raw dBuV | Cable Loss | Factors dB | Level dBuV | Measurement Type | Line   | Limit dBuV | Margin dB | Pass /Fail | Comments |
| 1           | 1.333         | 16.1     | 19.9       | .0         | 36.1       | Average          | Supply | 60.0       | -23.9     | Pass       |          |
| 2           | 1.333         | 16.1     | 19.9       | .0         | 36.0       | Average          | Return | 60.0       | -24.0     | Pass       |          |
| 3           | .231          | 21.7     | 20.1       | .0         | 41.8       | Average          | Supply | 66.0       | -24.2     | Pass       |          |
| 4           | .230          | 20.5     | 20.1       | .0         | 40.6       | Average          | Return | 66.0       | -25.4     | Pass       |          |
| 5           | 1.365         | 10.6     | 19.9       | .0         | 30.5       | Average          | Supply | 60.0       | -29.5     | Pass       |          |
| 6           | 23.014        | 7.5      | 20.5       | .1         | 28.1       | Average          | Return | 60.0       | -31.9     | Pass       |          |
| 7           | 25.218        | 6.8      | 20.5       | .2         | 27.4       | Average          | Return | 60.0       | -32.6     | Pass       |          |
| 8           | 1.416         | 6.4      | 19.9       | .0         | 26.4       | Average          | Supply | 60.0       | -33.6     | Pass       |          |
| 9           | 1.333         | 18.9     | 19.9       | .0         | 38.8       | Quasi Peak       | Supply | 73.0       | -34.2     | Pass       |          |
| 10          | 1.333         | 18.8     | 19.9       | .0         | 38.8       | Quasi Peak       | Return | 73.0       | -34.2     | Pass       |          |

|    |        |      |      |    |      |            |        |      |       |      |  |
|----|--------|------|------|----|------|------------|--------|------|-------|------|--|
| 11 | 13.789 | 5.3  | 20.2 | .1 | 25.7 | Average    | Return | 60.0 | -34.3 | Pass |  |
| 12 | 1.341  | 5.0  | 19.9 | .0 | 24.9 | Average    | Return | 60.0 | -35.1 | Pass |  |
| 13 | 25.564 | 3.8  | 20.5 | .2 | 24.5 | Average    | Supply | 60.0 | -35.5 | Pass |  |
| 14 | .231   | 22.0 | 20.1 | .0 | 42.1 | Quasi Peak | Supply | 79.0 | -36.9 | Pass |  |
| 15 | 1.365  | 15.7 | 19.9 | .0 | 35.7 | Quasi Peak | Supply | 73.0 | -37.3 | Pass |  |
| 16 | 23.014 | 14.6 | 20.5 | .1 | 35.2 | Quasi Peak | Return | 73.0 | -37.8 | Pass |  |
| 17 | .230   | 21.0 | 20.1 | .0 | 41.1 | Quasi Peak | Return | 79.0 | -37.9 | Pass |  |
| 18 | 1.341  | 14.4 | 19.9 | .0 | 34.4 | Quasi Peak | Return | 73.0 | -38.6 | Pass |  |
| 19 | 14.125 | .7   | 20.2 | .1 | 21.1 | Average    | Supply | 60.0 | -38.9 | Pass |  |
| 20 | 25.218 | 13.3 | 20.5 | .2 | 34.0 | Quasi Peak | Return | 73.0 | -39.0 | Pass |  |
| 21 | 1.416  | 13.1 | 19.9 | .0 | 33.0 | Quasi Peak | Supply | 73.0 | -40.0 | Pass |  |
| 22 | 25.564 | 12.1 | 20.5 | .2 | 32.8 | Quasi Peak | Supply | 73.0 | -40.2 | Pass |  |
| 23 | 13.789 | 10.9 | 20.2 | .1 | 31.2 | Quasi Peak | Return | 73.0 | -41.8 | Pass |  |
| 24 | 14.125 | 7.7  | 20.2 | .1 | 28.1 | Quasi Peak | Supply | 73.0 | -44.9 | Pass |  |

**Appendix C: List of Test Equipment Used to perform the test**

| Equipment #                                              | Manufacturer/ Model                           | Description                                             | Last Cal                    | Next Due                    | Test Item |
|----------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------|-----------------------------|-----------------------------|-----------|
| <b>Test Equipment used for conducted tests – Rack 11</b> |                                               |                                                         |                             |                             |           |
| 58721                                                    | Cisco/Automation Test Insertion Loss          | Rack 11                                                 | Verify Before Use           | Verify Before Use           | A.1-A.6   |
| 58785                                                    | Keysight (Agilent/HP)/ N9030B-550 OPT LNP EP0 | PXA Signal Analyzer, 2Hz-50GHz with Options LNP and EP0 | 20 <sup>th</sup> July 2022  | 20 <sup>th</sup> July 2023  | A.1-A.6   |
| 58803                                                    | NATIONAL INSTRUMENTS / PXIe-1085              | CHASSIS                                                 | Cal Required Not            | Cal Required Not            | A.1-A.6   |
| 58787                                                    | NATIONAL INSTRUMENTS / PXIe-8840              | Up to 2.6 GHz Quad-Core PXI Express Controller          | Cal Required Not            | Cal Required Not            | A.1-A.6   |
| 58788                                                    | NATIONAL INSTRUMENTS / PXI-2796               | 40 GHz Dual 6x1 Multiplexer (SP6T)                      | Verify Before Use           | Verify Before Use           | A.1-A.6   |
| 58789                                                    | NATIONAL INSTRUMENTS / PXI-2796               | 40 GHz Dual 6x1 Multiplexer (SP6T)                      | Verify Before Use           | Verify Before Use           | A.1-A.6   |
| 58786                                                    | NATIONAL INSTRUMENTS / PXI-2799               | Switch 1x1                                              | Verify Before Use           | Verify Before Use           | A.1-A.6   |
| 54235                                                    | PASTERNAK/ PE5019-1                           | Torque Wrench                                           | 23 <sup>rd</sup> March 2022 | 23 <sup>rd</sup> March 2023 | A.1-A.6   |
| 58256                                                    | COMET/ T7611-4                                | WEB SENSOR FOR REMOTE THERMOMETER HYGROMETER            | 2 <sup>nd</sup> Feb 2023    | 2 <sup>nd</sup> Feb 2024    | A.1-A.6   |
| 56122                                                    | PASTERNAK/PE6072                              | SMA 50 Ohm Termination                                  | 1 <sup>st</sup> Sep 2022    | 1 <sup>st</sup> Sep 2023    | A.1-A.6   |
| 56127                                                    | PASTERNAK/PE6072                              | SMA 50 Ohm Termination                                  | 1 <sup>st</sup> Sep 2022    | 1 <sup>st</sup> Sep 2023    | A.1-A.6   |

**Test Equipment used for AC line Conducted emissions.**

| <b>Cis-Id</b> | <b>Manufacturer</b>           | <b>Model</b>       | <b>Description</b>                                                  | <b>Calibrated Date</b> | <b>Calibration Due Date</b> |
|---------------|-------------------------------|--------------------|---------------------------------------------------------------------|------------------------|-----------------------------|
| 008187        | Fischer Communications Custom | FCC-450B-2.4-N     | Instrumentation Limiter                                             | 2/12/2022              | 2/12/2023                   |
| 008478        | Bird                          | 5-T-MB             | 5W,50 Ohm Terminator, Type BNC                                      | 6/23/2022              | 6/23/2023                   |
| 018960        | York                          | CNE V              | Comparison Noise Emitter, 30 - 1000MHz                              | NA                     | NA                          |
| 035242        | Klein Tools                   | 926-8ME            | 8 Meter Tape Measure                                                | NA                     | NA                          |
| 044022        | Fischer Communications Custom | FCC-801-M2-32A     | Power Line Coupling Decoupling Network                              | 3/4/2022               | 3/4/2023                    |
| 045982        | Fischer Communications Custom | F-090527-1009-1    | Line Impedance Stabilization Network                                | 12/21/2022             | 12/21/2023                  |
| 045983        | Fischer Communications Custom | F-090527-1009-2    | LISN Adapter                                                        | 12/21/2022             | 12/21/2023                  |
| 002125        | FLUKE                         | 79 II              | MULTIMETER                                                          | 11/18/2022             | 11/18/2023                  |
| 058276        | ROHDE & SCHWARZ               | ESR3               | EMI Receiver                                                        | 7/29/2022              | 7/29/2023                   |
| 058663        | Vibration Research Corp       | VR9500             | Controller                                                          | 7/18/2022              | 7/18/2023                   |
| 062419        | TTE                           | H785-150K-50-21378 | 150kHz Hi Pass Filter                                               | 2/12/2022              | 2/12/2023                   |
| 063067        | COMET                         | T7611-4            | Temperature/Relative Humidity/Barometric Pressure Gauge/Transmitter | 7/13/2022              | 7/13/2023                   |

**Appendix D: Abbreviation Key and Definitions**

The following table defines abbreviations used within this test report.

| Abbreviation | Description                                                          | Abbreviation | Description                         |
|--------------|----------------------------------------------------------------------|--------------|-------------------------------------|
| EMC          | Electro Magnetic Compatibility                                       | °F           | Degrees Fahrenheit                  |
| EMI          | Electro Magnetic Interference                                        | °C           | Degrees Celsius                     |
| EUT          | Equipment Under Test                                                 | Temp         | Temperature                         |
| ITE          | Information Technology Equipment                                     | S/N          | Serial Number                       |
| TAP          | Test Assessment Schedule                                             | Qty          | Quantity                            |
| ESD          | Electro Static Discharge                                             | emf          | Electromotive force                 |
| EFT          | Electric Fast Transient                                              | RMS          | Root mean square                    |
| EDCS         | Engineering Document Control System                                  | Qp           | Quasi Peak                          |
| Config       | Configuration                                                        | Av           | Average                             |
| CIS#         | Cisco Number (unique identification number for Cisco test equipment) | Pk           | Peak                                |
| Cal          | Calibration                                                          | kHz          | Kilohertz ( $1 \times 10^3$ )       |
| EN           | European Norm                                                        | MHz          | MegaHertz ( $1 \times 10^6$ )       |
| IEC          | International Electro technical Commission                           | GHz          | Gigahertz ( $1 \times 10^9$ )       |
| CISPR        | International Special Committee on Radio Interference                | H            | Horizontal                          |
| CDN          | Coupling/Decoupling Network                                          | V            | Vertical                            |
| LISN         | Line Impedance Stabilization Network                                 | dB           | decibel                             |
| PE           | Protective Earth                                                     | V            | Volt                                |
| GND          | Ground                                                               | kV           | Kilovolt ( $1 \times 10^3$ )        |
| L1           | Line 1                                                               | $\mu$ V      | Microvolt ( $1 \times 10^{-6}$ )    |
| L2           | Line2                                                                | A            | Amp                                 |
| L3           | Line 3                                                               | $\mu$ A      | Micro Amp ( $1 \times 10^{-6}$ )    |
| DC           | Direct Current                                                       | mS           | Milli Second ( $1 \times 10^{-3}$ ) |
| RAW          | Uncorrected measurement value, as indicated by the measuring device  | $\mu$ S      | Micro Second ( $1 \times 10^{-6}$ ) |
| RF           | Radio Frequency                                                      | $\mu$ S      | Micro Second ( $1 \times 10^{-6}$ ) |
| SLCE         | Signal Line Conducted Emissions                                      | m            | Meter                               |
| Meas dist    | Measurement distance                                                 | Spec dist    | Specification distance              |
| N/A or NA    | Not Applicable                                                       | SL           | Signal Line (or Telecom Line)       |
| P            | Power Line                                                           | L            | Live Line                           |
| N            | Neutral Line                                                         | R            | Return                              |
| S            | Supply                                                               | AC           | Alternating Current                 |

## **Appendix E: Photographs of Test Setups**

EUT Photos have been omitted from this test report. Photos can be found in the supplementary exhibit included in the submission and EDCS# 24347009 (5GHz and BLE Conducted test setup pictures) . All radiated test setup pictures are included in the Radiated emissions test report.

## **Appendix F: Software Used to Perform Testing**

Cisco Internal LabView Radio Test Automation Software:

RF Automation Main versions: 208, 218  
RF Domain Report Generation - version 3

## **Appendix G: Test Procedures**

Measurements were made in accordance with:

- LP0002 (2020-07-01)
- KDB Publication No. 789033 - D02 General UNII Test Procedures New Rules v02r01
- KDB Publication No. 662911 - MIMO
- ANSI C63.4 2014 Unintentional Radiators
- ANSI C63.10 2013 Intentional Radiators

Test procedures are summarized below:

|                              |                |
|------------------------------|----------------|
| FCC 5GHz Test Procedures     | EDCS # 1445048 |
| FCC 5GHz RSE Test Procedures | EDCS # 1511600 |

## **Appendix H: Scope of Accreditation (A2LA certificate number 1178-01)**

The scope of accreditation of Cisco Systems, Inc. can be found on the A2LA web page at:

<http://www.a2la.org/scopepdf/1178-01.pdf>

## **Appendix I: Test Assessment Plan**

Compliance Test Plan (Excel) EDCS# 24086914  
Target Power Tables EDCS# 23409888

## **Appendix J: Worst Case Justification**

N/A

# **End**