# 10. Average Power

## 10.1. Test Limit

**Output Power:**

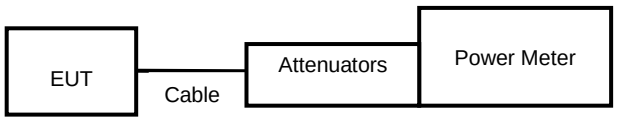
| Frequency Band | | | Limit |
|---|---|---|---|
| ☒ | 5.15~5.25GHz | | |
| | Operating Mode | | |
| | ☐ | Outdoor access point | The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30degrees as measured from the horizon must not exceed125 mW (21 dBm). |
| | ☒ | Indoor access point | The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. |
| | ☐ | Fixed point-to-point access points | The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. |
| | ☐ | client devices | The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. |

| Frequency Band | | Limit |
|---|---|---|
| ☒ | 5.25-5.35 GHz | The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. |
| ☒ | 5.470-5.725 GHz | |
| ☒ | 5.725~5.85 GHz | The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. |

## 10.2. Test Procedure

According to the methods defined in ANSI C63.10-2013 Section 12.3
The transmitter output is connected to a power meter.
The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

## 10.3. Test Setup Layout



## 10.4.Test Result and Data

### Non-beamforming

**In the 5.2G Band**

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Measured value of each antenna port (dBm) | | Total power (dBm) | Total power (mW) | FCC Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | | | |
| 11a | 6 Mbps | 36 | 5180 | 18.53 | 19.61 | 22.11 | 162.70 | 30.00 |
| 11a | 6 Mbps | 40 | 5200 | 18.94 | 19.90 | 22.46 | 176.07 | 30.00 |
| 11a | 6 Mbps | 48 | 5240 | 18.95 | 19.21 | 22.09 | 161.89 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 36 | 5180 | 18.48 | 19.39 | 21.97 | 157.37 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 40 | 5200 | 18.45 | 19.75 | 22.16 | 164.39 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 48 | 5240 | 19.91 | 20.71 | 23.34 | 215.71 | 30.00 |
| 11ax HE40 | NSS1-MCS0 | 38 | 5190 | 14.97 | 15.78 | 18.40 | 69.25 | 30.00 |
| 11ax HE40 | NSS1-MCS0 | 46 | 5230 | 18.98 | 19.68 | 22.35 | 171.96 | 30.00 |
| 11ax HE80 | NSS1-MCS0 | 42 | 5210 | 13.98 | 14.81 | 17.43 | 55.27 | 30.00 |

**In the 5.3G Band**

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Measured value of each antenna port (dBm) | | Total power (dBm) | Total power (mW) | FCC Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | | | |
| 11a | 6 Mbps | 52 | 5260 | 16.98 | 16.90 | 19.95 | 98.87 | 23.73 |
| 11a | 6 Mbps | 60 | 5300 | 16.74 | 17.28 | 20.03 | 100.66 | 23.73 |
| 11a | 6 Mbps | 64 | 5320 | 17.14 | 17.43 | 20.30 | 107.10 | 23.76 |
| 11ax HE20 | NSS1-MCS0 | 52 | 5260 | 17.95 | 17.64 | 20.81 | 120.45 | 24.00 |
| 11ax HE20 | NSS1-MCS0 | 60 | 5300 | 17.56 | 17.86 | 20.72 | 118.11 | 24.00 |
| 11ax HE20 | NSS1-MCS0 | 64 | 5320 | 17.41 | 17.89 | 20.67 | 116.60 | 24.00 |
| 11ax HE40 | NSS1-MCS0 | 54 | 5270 | 19.40 | 20.09 | 22.77 | 189.19 | 24.00 |
| 11ax HE40 | NSS1-MCS0 | 62 | 5310 | 15.27 | 15.68 | 18.49 | 70.63 | 24.00 |
| 11ax HE80 | NSS1-MCS0 | 58 | 5290 | 15.38 | 15.14 | 18.27 | 67.17 | 24.00 |

**In the 5.5G Band**

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Measured value of each antenna port (dBm) | | Total power (dBm) | Total power (mW) | FCC Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | | | |
| 11a | 6 Mbps | 100 | 5500 | 16.64 | 16.71 | 19.69 | 93.01 | 23.72 |
| 11a | 6 Mbps | 120 | 5600 | 17.13 | 17.57 | 20.37 | 108.79 | 23.75 |
| 11a | 6 Mbps | 140 | 5700 | 15.71 | 16.24 | 18.99 | 79.31 | 23.72 |
| 11ax HE20 | NSS1-MCS0 | 100 | 5500 | 17.46 | 17.50 | 20.49 | 111.95 | 24.00 |
| 11ax HE20 | NSS1-MCS0 | 120 | 5600 | 17.33 | 17.43 | 20.39 | 109.41 | 24.00 |
| 11ax HE20 | NSS1-MCS0 | 140 | 5700 | 15.25 | 15.60 | 18.44 | 69.80 | 24.00 |
| 11ax HE40 | NSS1-MCS0 | 102 | 5510 | 15.05 | 15.14 | 18.11 | 64.65 | 24.00 |
| 11ax HE40 | NSS1-MCS0 | 118 | 5590 | 19.44 | 19.65 | 22.56 | 180.16 | 24.00 |
| 11ax HE40 | NSS1-MCS0 | 134 | 5670 | 15.10 | 15.55 | 18.34 | 68.25 | 24.00 |
| 11ax HE80 | NSS1-MCS0 | 106 | 5530 | 15.62 | 15.99 | 18.82 | 76.19 | 24.00 |
| 11ax HE80 | NSS1-MCS0 | 122 | 5610 | 15.72 | 16.11 | 18.93 | 78.16 | 24.00 |
| 11ax HE160 | NSS1-MCS0 | 114 | 5570 | 10.92 | 11.75 | 14.37 | 27.32 | 24.00 |

**In the 5.8G Band**

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Measured value of each antenna port (dBm) | | Total power (dBm) | Total power (mW) | FCC Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | | | |
| 11a | 6 Mbps | 149 | 5745 | 20.38 | 20.07 | 23.24 | 210.77 | 30.00 |
| 11a | 6 Mbps | 157 | 5785 | 20.26 | 20.31 | 23.30 | 213.57 | 30.00 |
| 11a | 6 Mbps | 165 | 5825 | 20.15 | 20.36 | 23.27 | 212.16 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 149 | 5745 | 20.41 | 20.37 | 23.40 | 218.79 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 157 | 5785 | 20.06 | 20.28 | 23.18 | 208.05 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 165 | 5825 | 20.16 | 20.38 | 23.28 | 212.90 | 30.00 |
| 11ax HE40 | NSS1-MCS0 | 151 | 5755 | 19.26 | 19.65 | 22.47 | 176.59 | 30.00 |
| 11ax HE40 | NSS1-MCS0 | 159 | 5795 | 19.57 | 19.98 | 22.79 | 190.11 | 30.00 |
| 11ax HE80 | NSS1-MCS0 | 155 | 5775 | 16.41 | 16.86 | 19.65 | 92.28 | 30.00 |

| FCC Maximum Conducted Output Power (Within 5150-5250MHz band)<br>RF Output Power(dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Modulation Type | Data Rate | Frequency (MHz) | W/O Duty Factor Measured value of each antenna port (dBm) | | W/O duty factor Total power (dBm) | Duty Factor (dB) | With duty factor Total power (mW) | With duty factor Total power (dBm) | FCC Limit (dBm) |
| | | | ANT C | ANT D | | | | | |
| 11ax HE160 | NSS1-MCS0 | 5250 | 6.04 | 5.70 | 8.88 | 0.71 | 9.107 | 9.59 | 30.00 |

| FCC Maximum Conducted Output Power (Extends across 5250MHz band)<br>RF Output Power(dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Modulation Type | Data Rate | Frequency (MHz) | W/O Duty Factor Measured value of each antenna port (dBm) | | W/O duty factor Total power (dBm) | Duty Factor (dB) | With duty factor Total power (mW) | With duty factor Total power (dBm) | FCC Limit (dBm) |
| | | | ANT C | ANT D | | | | | |
| 11ax HE160 | NSS1-MCS0 | 5250 | 5.70 | 5.70 | 8.71 | 0.71 | 8.750 | 9.42 | 24.00 |

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Avg Power Output (dBm) | | Total Power |
|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | (dBm) |
| Meter power (for full power) | | | | | | |
| 11ax HE160 | NSS1-MCS0 | 50 | 5250 | 9.17 | 9.26 | 12.23 |

Note: Power Meter Average power is for reference only.

| FCC Maximum Conducted Output Power (Within 5470-5725MHz band)<br>RF Output Power(dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Modulation Type | Data Rate | Frequency (MHz) | W/O Duty Factor Measured value of each antenna port (dBm) | | W/O duty factor Total power (dBm) | Duty Factor (dB) | With duty factor Total power (mW) | With duty factor Total power (dBm) | FCC Limit (dBm) |
| | | | ANT C | ANT D | | | | | |
| 11a | 6M | 5720 | 16.12 | 15.94 | 19.04 | 0.21 | 84.163 | 19.25 | 22.65 |
| 11ax HE20 | NSS1-MCS0 | 5720 | 16.67 | 16.65 | 19.67 | 0.37 | 100.933 | 20.04 | 22.92 |
| 11ax HE40 | NSS1-MCS0 | 5710 | 20.01 | 19.49 | 22.77 | 0.36 | 205.498 | 23.13 | 24.00 |
| 11ax HE80 | NSS1-MCS0 | 5690 | 18.32 | 18.39 | 21.37 | 0.37 | 149.123 | 21.74 | 24.00 |

| FCC Maximum Conducted Output Power (Extends across 5725MHz band)<br>RF Output Power(dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Modulation Type | Data Rate | Frequency (MHz) | W/O Duty Factor Measured value of each antenna port (dBm) | | W/O duty factor Total power (dBm) | Duty Factor (dB) | With duty factor Total power (mW) | With duty factor Total power (dBm) | FCC Limit (dBm) |
| | | | ANT C | ANT D | | | | | |
| 11a | 6M | 5720 | 7.36 | 7.77 | 10.58 | 0.21 | 11.995 | 10.79 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 5720 | 9.51 | 8.78 | 12.17 | 0.37 | 17.950 | 12.54 | 30.00 |
| 11ax HE40 | NSS1-MCS0 | 5710 | 7.61 | 7.99 | 10.81 | 0.36 | 13.105 | 11.17 | 30.00 |
| 11ax HE80 | NSS1-MCS0 | 5690 | 2.61 | 2.38 | 5.51 | 0.37 | 3.870 | 5.88 | 30.00 |

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Avg Power Output (dBm) | | Total Power |
|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | (dBm) |
| Meter power (for full power) | | | | | | |
| 11a | 6 Mbps | Ch144 | 5720MHz | 16.72 | 16.66 | 19.70 |
| 11ax HE20 | NSS1-MCS0 | Ch144 | 5720MHz | 17.74 | 17.69 | 20.73 |
| 11ax HE40 | NSS1-MCS0 | Ch142 | 5710MHz | 19.58 | 19.13 | 22.37 |
| 11ax HE80 | NSS1-MCS0 | Ch138 | 5690MHz | 18.26 | 18.52 | 21.40 |

Note: Power Meter Average power is for reference only.

**Beamforming**

**In the 5.2G Band**

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Measured value of each antenna port (dBm) | | Total power (dBm) | Total power (mW) | FCC Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | | | |
| 11ax HE20 | NSS1-MCS0 | 36 | 5180 | 18.48 | 19.39 | 21.97 | 157.365 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 40 | 5200 | 18.45 | 19.75 | 22.16 | 164.390 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 48 | 5240 | 19.91 | 20.71 | 23.34 | 215.710 | 30.00 |
| 11ax HE40 | NSS1-MCS0 | 38 | 5190 | 14.97 | 15.78 | 18.40 | 69.249 | 30.00 |
| 11ax HE40 | NSS1-MCS0 | 46 | 5230 | 18.98 | 19.68 | 22.35 | 171.965 | 30.00 |
| 11ax HE80 | NSS1-MCS0 | 42 | 5210 | 13.98 | 14.81 | 17.43 | 55.273 | 30.00 |

**In the 5.3G Band**

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Measured value of each antenna port (dBm) | | Total power (dBm) | Total power (mW) | FCC Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | | | |
| 11ax HE20 | NSS1-MCS0 | 52 | 5260 | 17.95 | 17.64 | 20.81 | 120.450 | 23.95 |
| 11ax HE20 | NSS1-MCS0 | 60 | 5300 | 17.56 | 17.86 | 20.72 | 118.111 | 23.95 |
| 11ax HE20 | NSS1-MCS0 | 64 | 5320 | 17.41 | 17.89 | 20.67 | 116.598 | 23.95 |
| 11ax HE40 | NSS1-MCS0 | 54 | 5270 | 19.40 | 20.09 | 22.77 | 189.190 | 23.95 |
| 11ax HE40 | NSS1-MCS0 | 62 | 5310 | 15.27 | 15.68 | 18.49 | 70.634 | 23.95 |
| 11ax HE80 | NSS1-MCS0 | 58 | 5290 | 15.38 | 15.14 | 18.27 | 67.173 | 23.95 |

**In the 5.5G Band**

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Measured value of each antenna port (dBm) | | Total power (dBm) | Total power (mW) | FCC Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | | | |
| 11ax HE20 | NSS1-MCS0 | 100 | 5500 | 17.46 | 17.50 | 20.49 | 111.953 | 23.89 |
| 11ax HE20 | NSS1-MCS0 | 120 | 5600 | 17.33 | 17.43 | 20.39 | 109.410 | 23.89 |
| 11ax HE20 | NSS1-MCS0 | 140 | 5700 | 15.25 | 15.60 | 18.44 | 69.804 | 23.89 |
| 11ax HE40 | NSS1-MCS0 | 102 | 5510 | 15.05 | 15.14 | 18.11 | 64.648 | 23.89 |
| 11ax HE40 | NSS1-MCS0 | 118 | 5590 | 19.44 | 19.65 | 22.56 | 180.159 | 23.89 |
| 11ax HE40 | NSS1-MCS0 | 134 | 5670 | 15.10 | 15.55 | 18.34 | 68.252 | 23.89 |
| 11ax HE80 | NSS1-MCS0 | 106 | 5530 | 15.62 | 15.99 | 18.82 | 76.195 | 23.89 |
| 11ax HE80 | NSS1-MCS0 | 122 | 5610 | 15.72 | 16.11 | 18.93 | 78.157 | 23.89 |
| 11ax HE160 | NSS1-MCS0 | 114 | 5570 | 10.92 | 11.75 | 14.37 | 27.322 | 23.89 |

**In the 5.8G Band**

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Measured value of each antenna port (dBm) | | Total power (dBm) | Total power (mW) | FCC Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | | | |
| 11ax HE20 | NSS1-MCS0 | 149 | 5745 | 20.41 | 20.37 | 23.40 | 218.794 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 157 | 5785 | 20.06 | 20.28 | 23.18 | 208.051 | 30.00 |
| 11ax HE20 | NSS1-MCS0 | 165 | 5825 | 20.16 | 20.38 | 23.28 | 212.897 | 30.00 |
| 11ax HE40 | NSS1-MCS0 | 151 | 5755 | 19.26 | 19.65 | 22.47 | 176.591 | 30.00 |
| 11ax HE40 | NSS1-MCS0 | 159 | 5795 | 19.57 | 19.98 | 22.79 | 190.114 | 30.00 |
| 11ax HE80 | NSS1-MCS0 | 155 | 5775 | 16.41 | 16.86 | 19.65 | 92.281 | 30.00 |

| FCC Maximum Conducted Output Power (Within 5150-5250MHz band)<br>RF Output Power(dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Modulation Type | Data Rate | Frequency (MHz) | W/O Duty Factor Measured value of each antenna port (dBm) | | W/O duty factor Total power (dBm) | Duty Factor (dB) | With duty factor Total power (mW) | With duty factor Total power (dBm) | FCC Limit (dBm) |
| | | | ANT C | ANT D | | | | | |
| 11ax HE160 | NSS1-MCS0 | 5250 | 6.04 | 5.70 | 8.88 | 0.71 | 9.107 | 9.59 | 30.00 |

| FCC Maximum Conducted Output Power (Extends across 5250MHz band)<br>RF Output Power(dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Modulation Type | Data Rate | Frequency (MHz) | W/O Duty Factor Measured value of each antenna port (dBm) | | W/O duty factor Total power (dBm) | Duty Factor (dB) | With duty factor Total power (mW) | With duty factor Total power (dBm) | FCC Limit (dBm) |
| | | | ANT C | ANT D | | | | | |
| 11ax HE160 | NSS1-MCS0 | 5250 | 5.70 | 5.70 | 8.71 | 0.71 | 8.750 | 9.42 | 23.95 |

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Avg Power Output (dBm) | | Total Power |
|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | (dBm) |
| Meter power (for full power) | | | | | | |
| 11ax HE160 | NSS1-MCS0 | 50 | 5250 | 9.17 | 9.26 | 12.23 |

Note: Power Meter Average power is for reference only.

| FCC Maximum Conducted Output Power (Within 5470-5725MHz band)<br>RF Output Power(dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Modulation Type | Data Rate | Frequency (MHz) | W/O Duty Factor Measured value of each antenna port (dBm) | | W/O duty factor Total power (dBm) | Duty Factor (dB) | With duty factor Total power (mW) | With duty factor Total power (dBm) | FCC Limit (dBm) |
| | | | ANT C | ANT D | | | | | |
| 11ax HE20 | NSS1-MCS0 | 5720 | 16.67 | 16.65 | 19.67 | 0.37 | 100.933 | 20.04 | 22.81 |
| 11ax HE40 | NSS1-MCS0 | 5710 | 20.01 | 19.49 | 22.77 | 0.36 | 205.498 | 23.13 | 23.89 |
| 11ax HE80 | NSS1-MCS0 | 5690 | 18.32 | 18.39 | 21.37 | 0.37 | 149.123 | 21.74 | 23.89 |

| FCC Maximum Conducted Output Power (Extends across 5725MHz band)<br>RF Output Power(dBm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Modulation Type | Data Rate | Frequency (MHz) | W/O Duty Factor Measured value of each antenna port (dBm) | | W/O duty factor Total power (dBm) | Duty Factor (dB) | With duty factor Total power (mW) | With duty factor Total power (dBm) | FCC Limit (dBm) |
| | | | ANT C | ANT D | | | | | |
| 11ax HE20 | NSS1-MCS0 | 5720 | 9.51 | 8.78 | 12.17 | 0.37 | 17.950 | 12.54 | 30.00 |
| 11ax HE40 | NSS1-MCS0 | 5710 | 7.61 | 7.99 | 10.81 | 0.36 | 13.105 | 11.17 | 30.00 |
| 11ax HE80 | NSS1-MCS0 | 5690 | 2.61 | 2.38 | 5.51 | 0.37 | 3.870 | 5.88 | 30.00 |

| Modulation Type | Data Rate | Channel | Frequency (MHz) | Avg Power Output (dBm) | | Total Power |
|---|---|---|---|---|---|---|
| | | | | ANT C | ANT D | (dBm) |
| Meter power (for full power) | | | | | | |
| 11ax HE20 | NSS1-MCS0 | Ch144 | 5720MHz | 17.74 | 17.69 | 20.73 |
| 11ax HE40 | NSS1-MCS0 | Ch142 | 5710MHz | 19.58 | 19.13 | 22.37 |
| 11ax HE80 | NSS1-MCS0 | Ch138 | 5690MHz | 18.26 | 18.52 | 21.40 |

Note: Power Meter Average power is for reference only.

**Non-beamforming**

Within 5150-5250MHz band
Modulation Type: 802.11ax HE160 CH50
ANT C


Extends across 5250MHz band
Modulation Type: 802.11ax HE160 CH50
ANT C


ANT D


ANT D

**Non-beamforming**

Within 5470-5725MHz Band, Straddle Channel

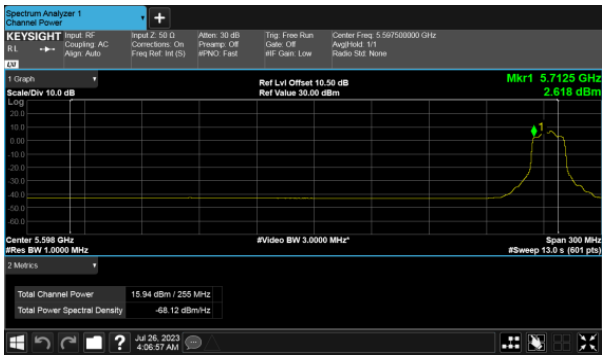
Modulation Type: 802.11a CH144

ANT C


Modulation Type: 802.11ax HE20 CH144

ANT C


ANT D



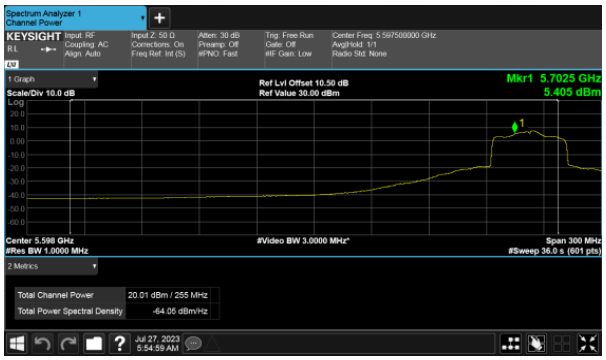

ANT D

**Non-beamforming**

Within 5470-5725MHz Band, Straddle Channel

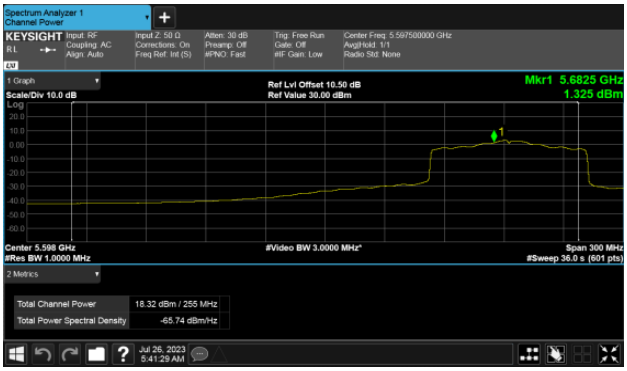
Modulation Type: 802.11ax HE40 CH142

ANT C

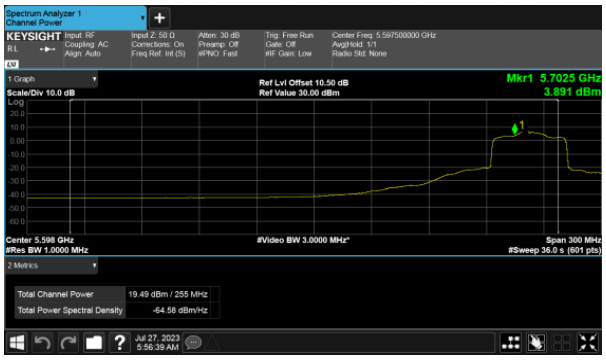



Modulation Type: 802.11ax HE80 CH138

ANT C




ANT D



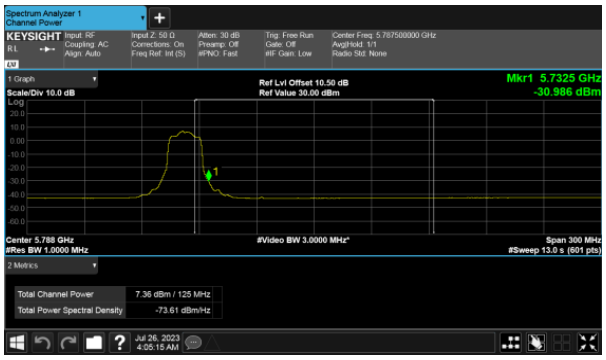

ANT D

**Non-beamforming**

Extends across 5725MHz band, Straddle Channel

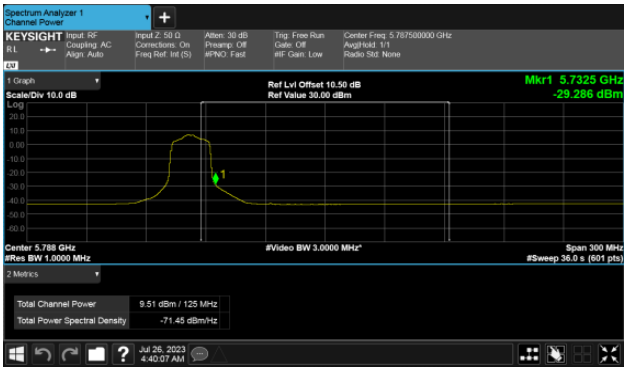
Modulation Type: 802.11a CH144

ANT C

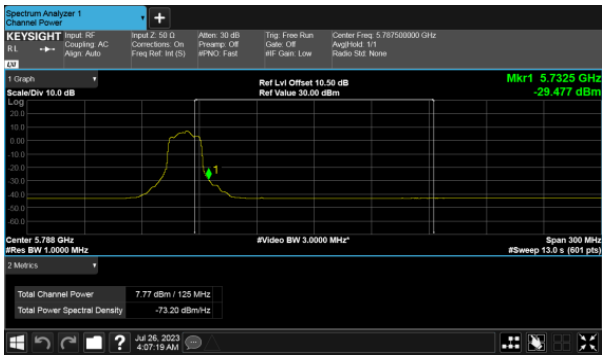



Modulation Type: 802.11ax HE20 CH144

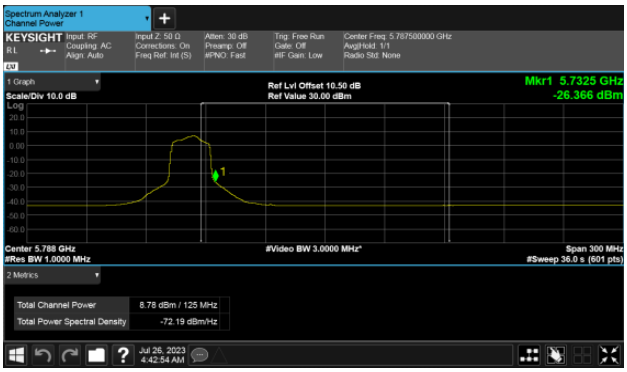
ANT C




ANT D




ANT D



**Non-beamforming**

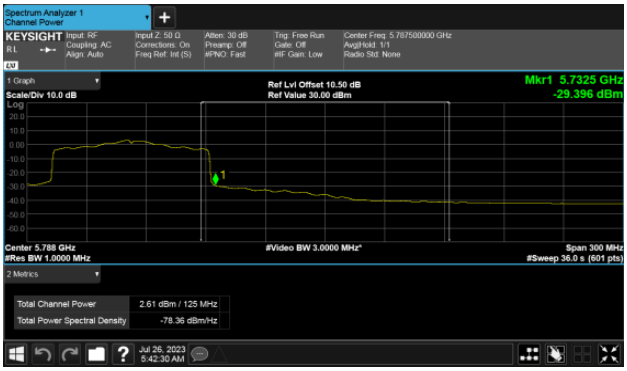
Extends across 5725MHz band, Straddle Channel

Modulation Type: 802.11ax HE40 CH142

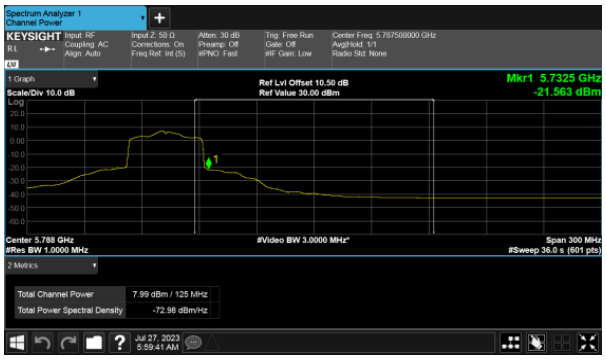
ANT C


Modulation Type: 802.11ax HE80 CH138

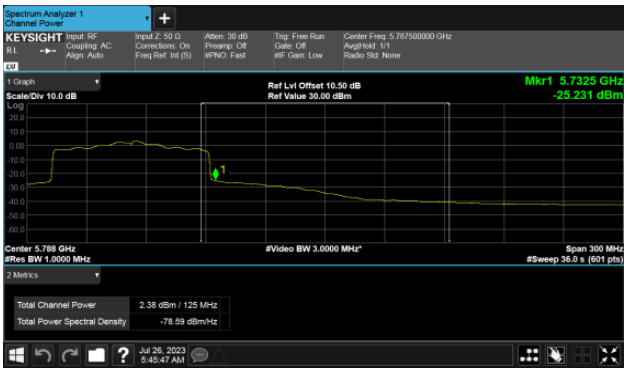
ANT C




ANT D




ANT D



# 11. Power Spectral Density

## 11.1.Test Limit

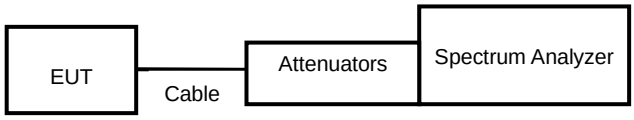
**PSD:**

| Frequency Band | | | Limit |
|---|---|---|---|
| ☒ | 5.15~5.25GHz | | |
| | Operating Mode | | |
| | ☐ | Outdoor access point | 17 dBm/MHz |
| | ☒ | Indoor access point | 17 dBm/MHz |
| | ☐ | Fixed point-to-point access points | 17 dBm/MHz |
| | ☐ | Mobile and portable client devices | 11 dBm/MHz |
| ☒ | 5.725~5.85 GHz | | 11 dBm/MHz |
| ☒ | 5.470-5.725 GHz | | 11 dBm/MHz |
| ☒ | 5.725~5.85 GHz | | 30 dBm/500kHz |

## 11.2.Test Procedure

Reference to KDB789033 D02 General UNII Test Procedures New Rules v02r01

## 11.3.Test Setup Layout



## 11.4. Test Result and Data

In the 5.2G Band

| Modulation Type | Channel | Frequency (MHz) | Meas PSD (dBm/MHz) | | Sum chain (dBm) | Duty Cycle CF(dB) | Total Corr'd PSD (dBm/MHz) | PSD Limit (dBm/MHz) |
|---|---|---|---|---|---|---|---|---|
| | | | ANT C | ANT D | | | | |
| 11a | 36 | 5180 | 9.14 | 9.99 | 12.60 | 0.21 | 12.81 | 17.00 |
| 11a | 40 | 5200 | 9.66 | 10.27 | 12.99 | 0.21 | 13.20 | 17.00 |
| 11a | 48 | 5240 | 9.23 | 9.40 | 12.33 | 0.21 | 12.54 | 17.00 |
| 11ax HE20 | 36 | 5180 | 8.31 | 9.42 | 11.91 | 0.37 | 12.28 | 17.00 |
| 11ax HE20 | 40 | 5200 | 8.93 | 9.59 | 12.28 | 0.37 | 12.65 | 17.00 |
| 11ax HE20 | 48 | 5240 | 9.77 | 10.08 | 12.94 | 0.37 | 13.31 | 17.00 |
| 11ax HE40 | 38 | 5190 | 2.18 | 2.99 | 5.62 | 0.36 | 5.98 | 17.00 |
| 11ax HE40 | 46 | 5230 | 5.99 | 6.47 | 9.25 | 0.36 | 9.61 | 17.00 |
| 11ax HE80 | 42 | 5210 | -1.67 | -0.76 | 1.82 | 0.37 | 2.19 | 17.00 |

In the 5.3G Band

| Modulation Type | Channel | Frequency (MHz) | Meas PSD (dBm/MHz) | | Sum chain (dBm) | Duty Cycle CF(dB) | Total Corr'd PSD (dBm/MHz) | PSD Limit (dBm/MHz) |
|---|---|---|---|---|---|---|---|---|
| | | | ANT C | ANT D | | | | |
| 11a | 52 | 5260 | 7.35 | 7.23 | 10.30 | 0.21 | 10.51 | 10.95 |
| 11a | 60 | 5300 | 7.37 | 7.50 | 10.45 | 0.21 | 10.66 | 10.95 |
| 11a | 64 | 5320 | 7.67 | 7.73 | 10.71 | 0.21 | 10.92 | 10.95 |
| 11ax HE20 | 52 | 5260 | 7.73 | 7.07 | 10.42 | 0.37 | 10.79 | 10.95 |
| 11ax HE20 | 60 | 5300 | 7.08 | 7.38 | 10.24 | 0.37 | 10.61 | 10.95 |
| 11ax HE20 | 64 | 5320 | 7.30 | 7.65 | 10.49 | 0.37 | 10.86 | 10.95 |
| 11ax HE40 | 54 | 5270 | 6.92 | 6.94 | 9.94 | 0.36 | 10.30 | 10.95 |
| 11ax HE40 | 62 | 5310 | 2.55 | 2.82 | 5.69 | 0.36 | 6.05 | 10.95 |
| 11ax HE80 | 58 | 5290 | -0.66 | -0.44 | 2.47 | 0.37 | 2.84 | 10.95 |

In the 5.5G Band

| Modulation Type | Channel (MHz) | Frequency (MHz) | Meas PSD (dBm/MHz) | | Sum chain (dBm) | Duty Cycle CF(dB) | Total Corr'd PSD (dBm/MHz) | PSD Limit (dBm/MHz) |
|---|---|---|---|---|---|---|---|---|
| | | | ANT C | ANT D | | | | |
| 11a | 100 | 5500 | 7.12 | 7.22 | 10.18 | 0.21 | 10.39 | 10.89 |
| 11a | 120 | 5600 | 7.17 | 7.75 | 10.48 | 0.21 | 10.69 | 10.89 |
| 11a | 140 | 5700 | 6.60 | 6.90 | 9.76 | 0.21 | 9.97 | 10.89 |
| 11a | 144 | 5720 | 7.24 | 7.24 | 10.25 | 0.21 | 10.46 | 10.89 |
| 11ax HE20 | 100 | 5500 | 7.31 | 7.43 | 10.38 | 0.37 | 10.75 | 10.89 |
| 11ax HE20 | 120 | 5600 | 6.99 | 7.54 | 10.28 | 0.37 | 10.65 | 10.89 |
| 11ax HE20 | 140 | 5700 | 5.05 | 5.41 | 8.24 | 0.37 | 8.61 | 10.89 |
| 11ax HE20 | 144 | 5720 | 7.38 | 7.35 | 10.37 | 0.37 | 10.74 | 10.89 |
| 11ax HE40 | 102 | 5510 | 2.05 | 2.28 | 5.18 | 0.36 | 5.54 | 10.89 |
| 11ax HE40 | 118 | 5590 | 6.74 | 7.10 | 9.93 | 0.36 | 10.29 | 10.89 |
| 11ax HE40 | 134 | 5670 | 2.20 | 2.68 | 5.46 | 0.36 | 5.82 | 10.89 |
| 11ax HE40 | 142 | 5710 | 7.72 | 7.16 | 10.46 | 0.36 | 10.82 | 10.89 |
| 11ax HE80 | 106 | 5530 | -0.29 | 0.07 | 2.91 | 0.37 | 3.28 | 10.89 |
| 11ax HE80 | 122 | 5610 | -0.17 | 0.53 | 3.21 | 0.37 | 3.58 | 10.89 |
| 11ax HE80 | 138 | 5690 | 3.07 | 3.21 | 6.15 | 0.37 | 6.52 | 10.89 |

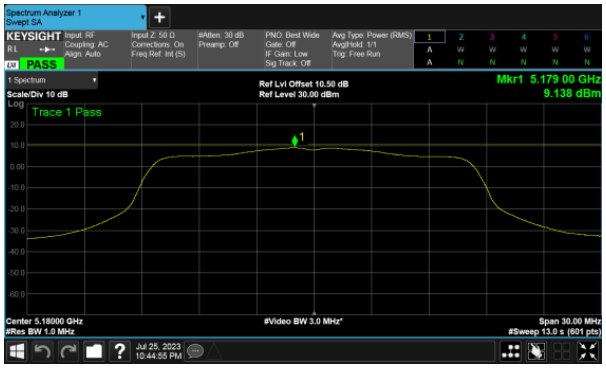
In the 5.8G Band

| Modulation Type | Channel (MHz) | Frequency (MHz) | Meas PSD (dBm/MHz) | | Sum chain (dBm) | Duty Cycle CF (dB) | 10log (500KHz /RBW) CF (dB) | Total Corr'd PSD (dBm/ 500kHz) | PSD Limit (dBm/ 500kHz) |
|---|---|---|---|---|---|---|---|---|---|
| | | | ANT C | ANT D | | | | | |
| 11a | 149 | 5745 | 10.85 | 10.43 | 13.66 | 0.21 | -3.01 | 10.86 | 30.00 |
| 11a | 157 | 5785 | 10.22 | 10.61 | 13.43 | 0.21 | -3.01 | 10.63 | 30.00 |
| 11a | 165 | 5825 | 10.36 | 10.73 | 13.56 | 0.21 | -3.01 | 10.76 | 30.00 |
| 11ax HE20 | 149 | 5745 | 10.04 | 10.20 | 13.13 | 0.37 | -3.01 | 10.49 | 30.00 |
| 11ax HE20 | 157 | 5785 | 9.36 | 9.62 | 12.50 | 0.37 | -3.01 | 9.86 | 30.00 |
| 11ax HE20 | 165 | 5825 | 9.69 | 10.04 | 12.88 | 0.37 | -3.01 | 10.24 | 30.00 |
| 11ax HE40 | 151 | 5755 | 5.48 | 5.97 | 8.74 | 0.36 | -3.01 | 6.09 | 30.00 |
| 11ax HE40 | 159 | 5795 | 6.03 | 6.64 | 9.35 | 0.36 | -3.01 | 6.70 | 30.00 |
| 11ax HE80 | 155 | 5775 | 0.27 | 0.87 | 3.59 | 0.37 | -3.01 | 0.95 | 30.00 |

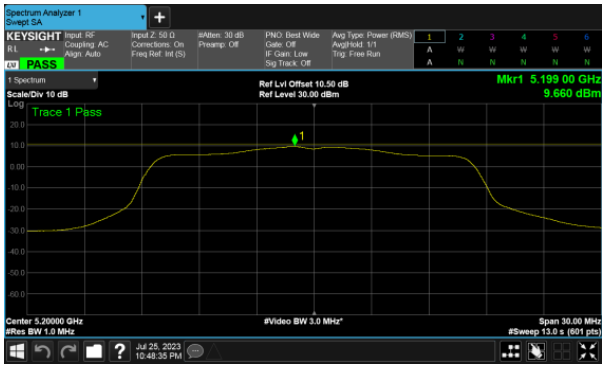
802.11ax(160)

| Modulation Type | Channel (MHz) | Frequency (MHz) | Meas PSD (dBm/MHz) | | Sum chain (dBm) | Duty Cycle CF(dB) | Total Corr'd PSD (dBm/MHz) | PSD Limit (dBm/MHz) |
|---|---|---|---|---|---|---|---|---|
| | | | ANT C | ANT D | | | | |
| 11ac HE160 | 50 | 5210 | -9.44 | -9.85 | -6.63 | 0.71 | -5.92 | 17.00 |
| 11ac HE160 | | 5290 | -9.50 | -9.95 | -6.71 | 0.71 | -6.00 | 10.95 |
| 11ac HE160 | 114 | 5570 | -7.13 | -6.47 | -3.78 | 0.71 | -3.07 | 10.89 |

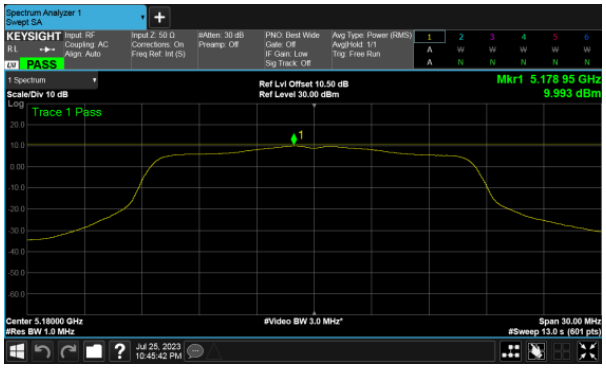
Modulation Type: 802.11a CH36
ANT C



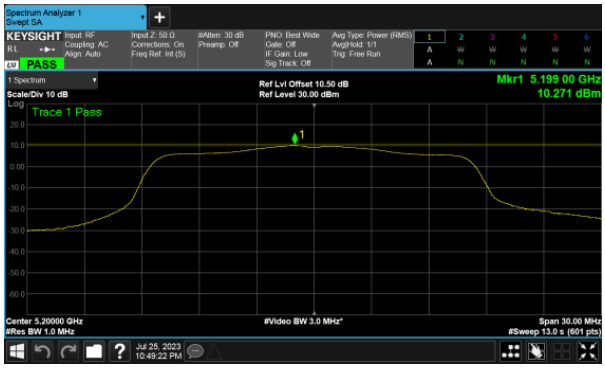

Modulation Type: 802.11a CH40
ANT C



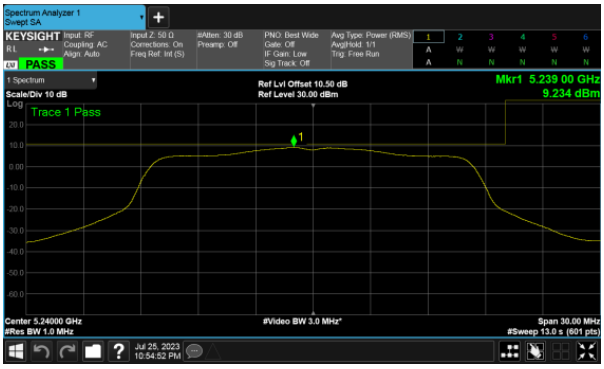

ANT D



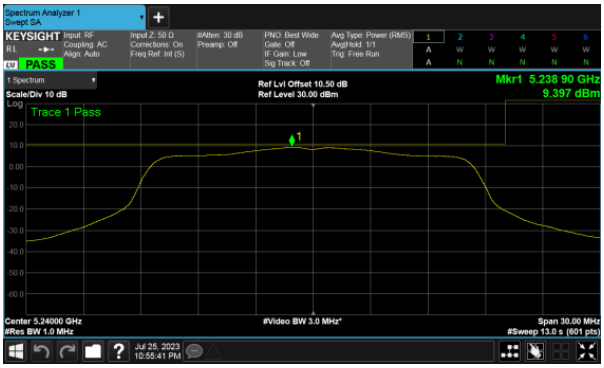

ANT D



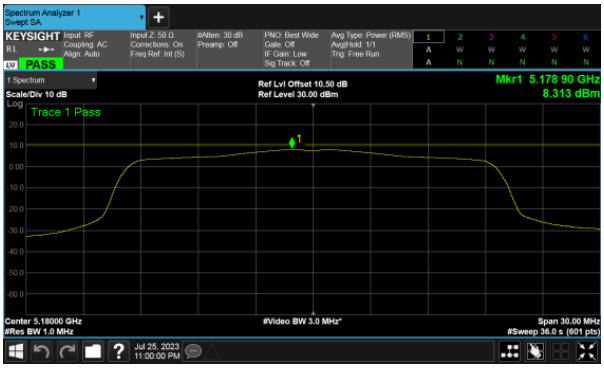
Modulation Type: 802.11a CH48
ANT C



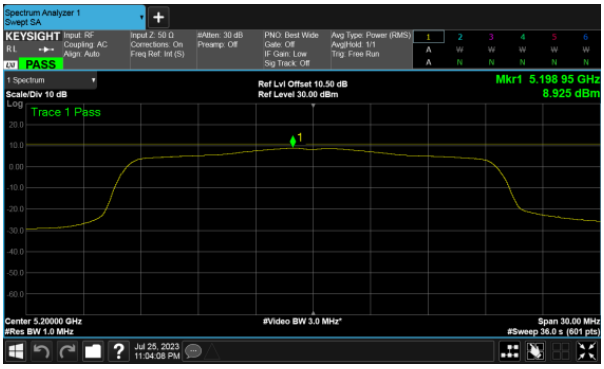

ANT D



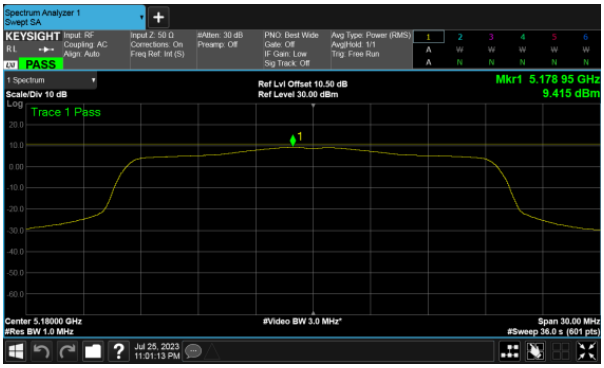
Modulation Type: 802.11ax HE20 CH36
ANT C



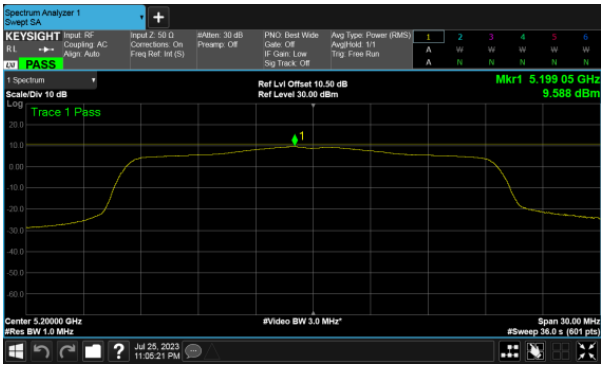

Modulation Type: 802.11ax HE20 CH40
ANT C



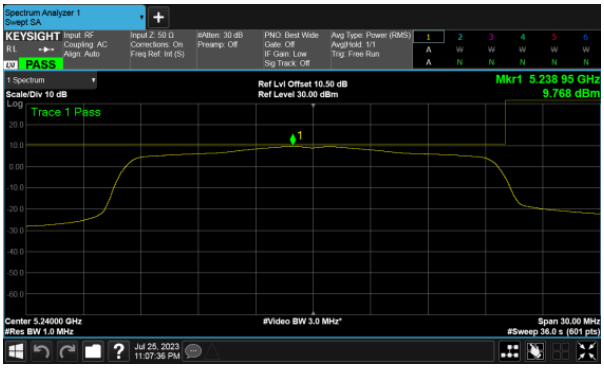

ANT D



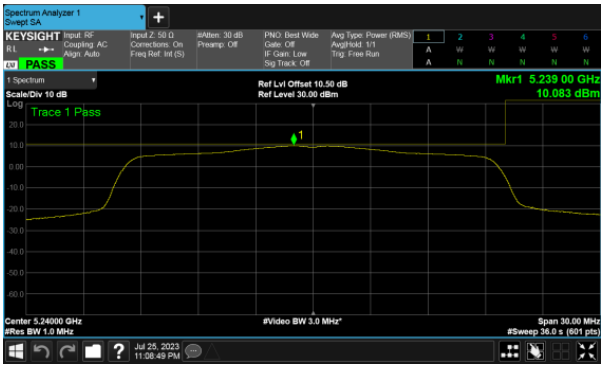

ANT D



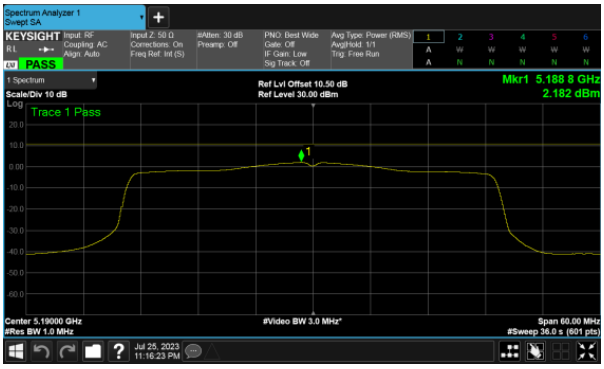
Modulation Type: 802.11ax HE20 CH48
ANT C



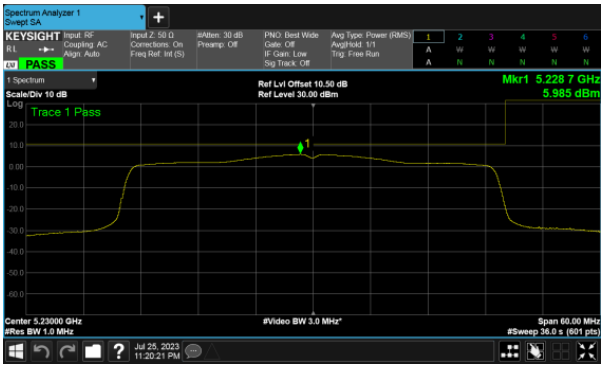

ANT D



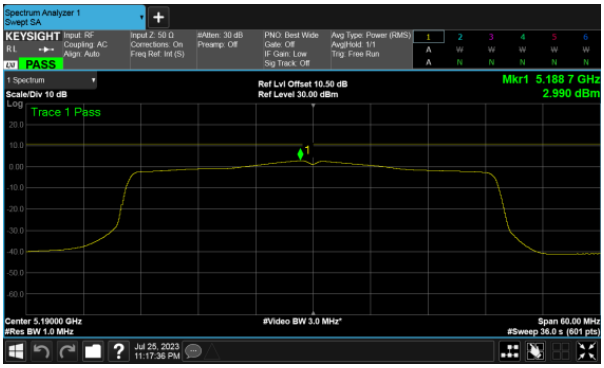
Modulation Type: 802.11ax HE40 CH38
ANT C



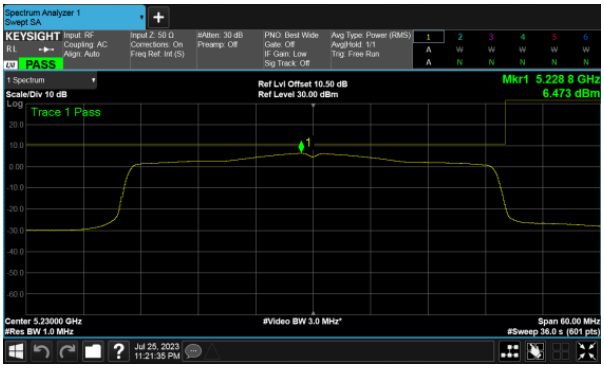

Modulation Type: 802.11ax HE40 CH46
ANT C



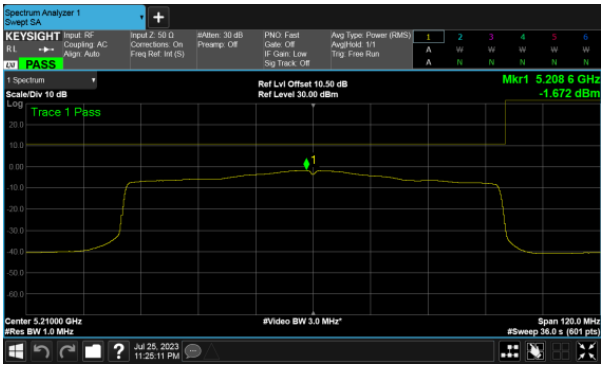

ANT D



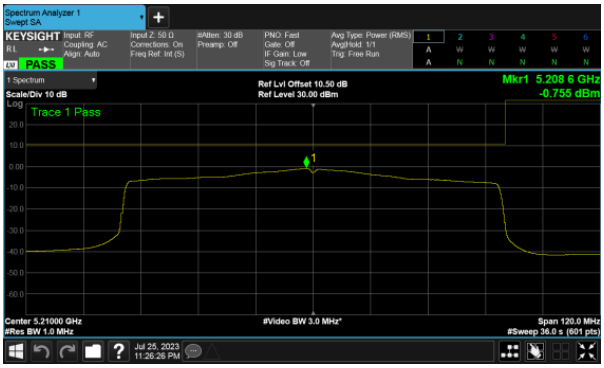

ANT D



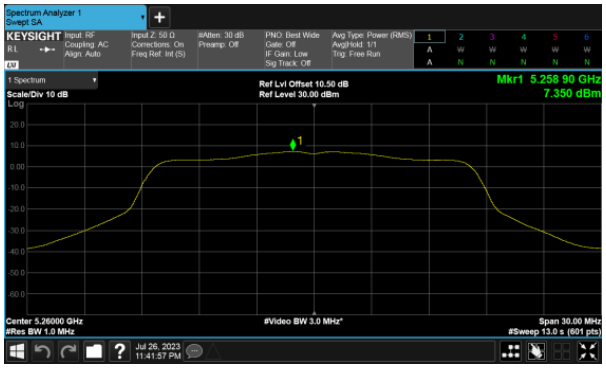
Modulation Type: 802.11ax HE80 CH42
ANT C



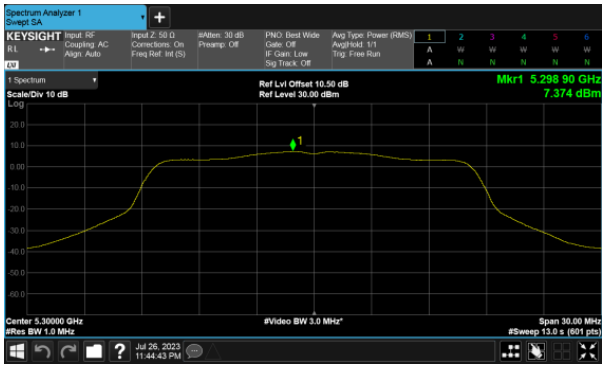

ANT D



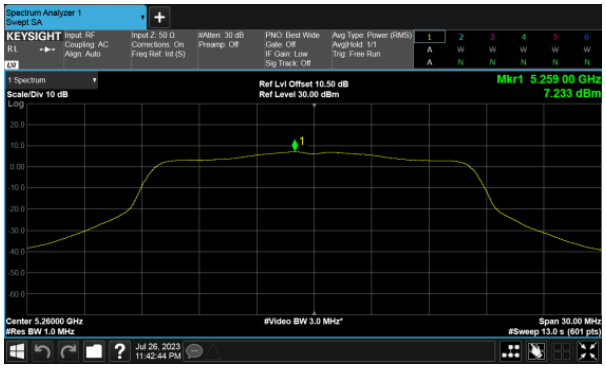
Modulation Type: 802.11a CH52
ANT C



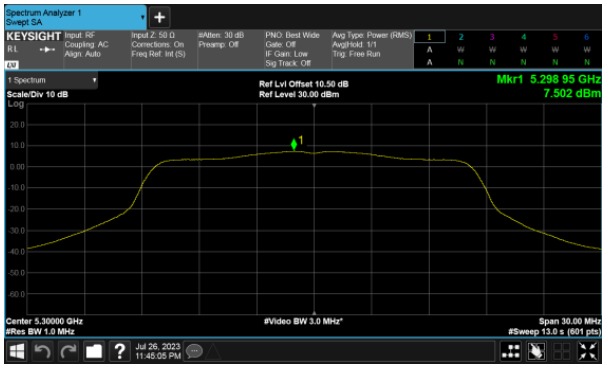

Modulation Type: 802.11a CH60
ANT C



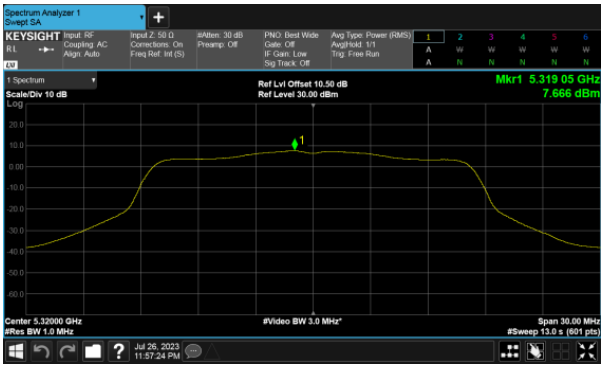

ANT D



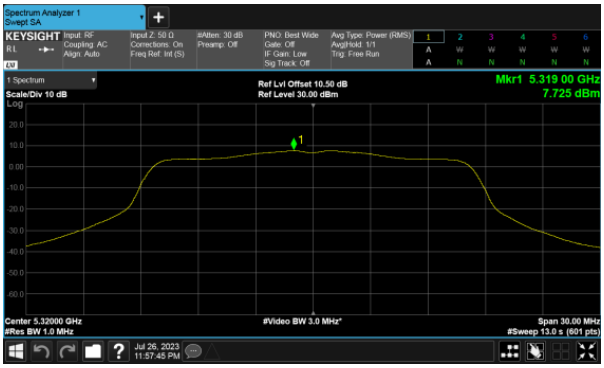

ANT D



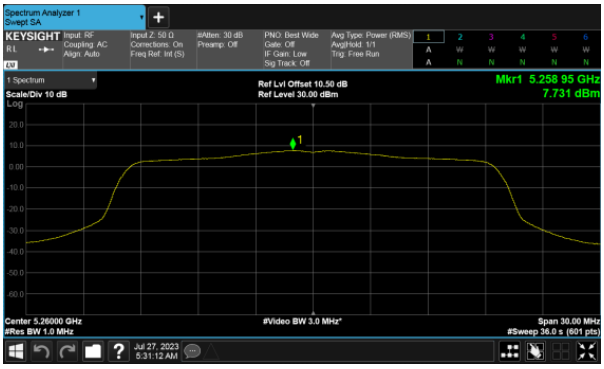
Modulation Type: 802.11a CH64
ANT C



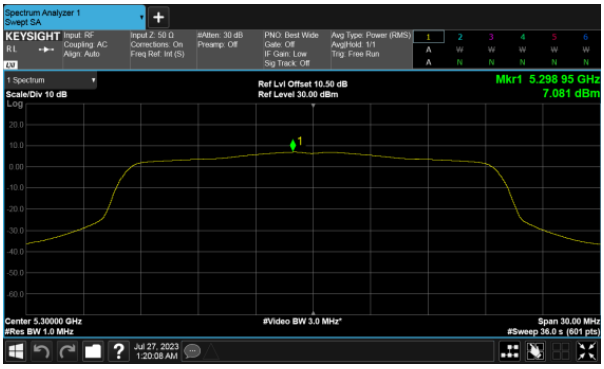

ANT D



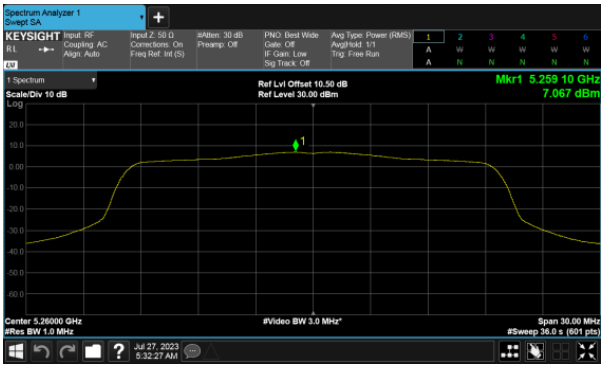
Modulation Type: 802.11ax HE20 CH52
ANT C



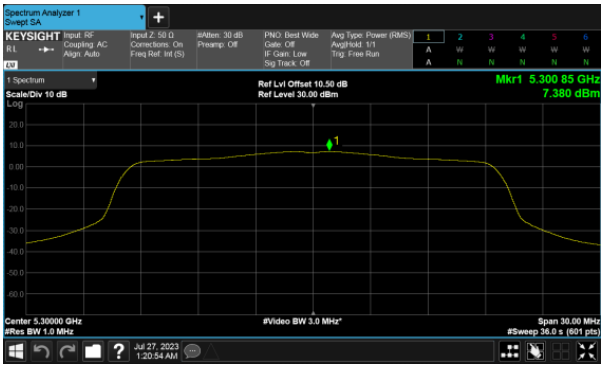

Modulation Type: 802.11ax HE20 CH60
ANT C



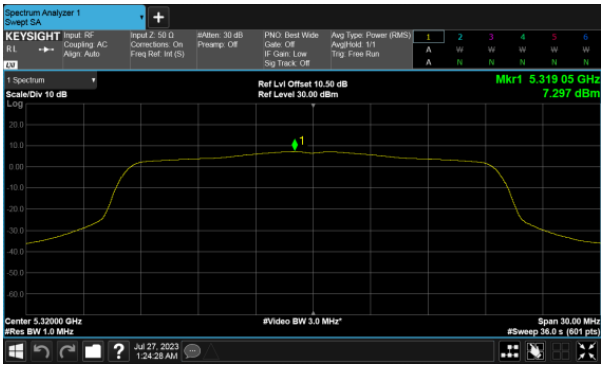

ANT D



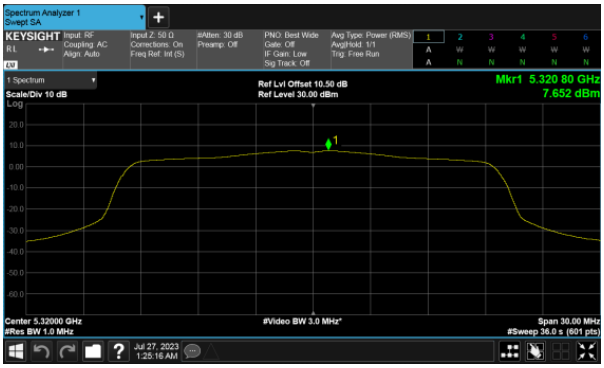

ANT D



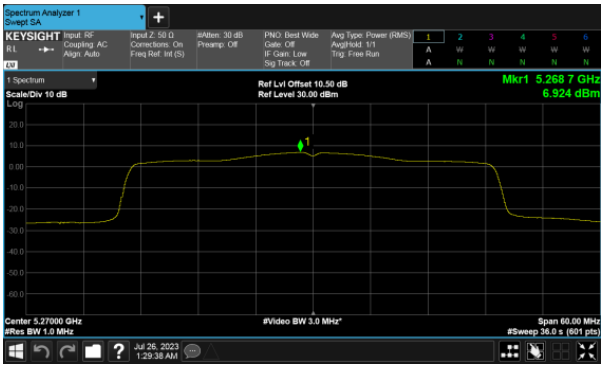
Modulation Type: 802.11ax HE20 CH64
ANT C



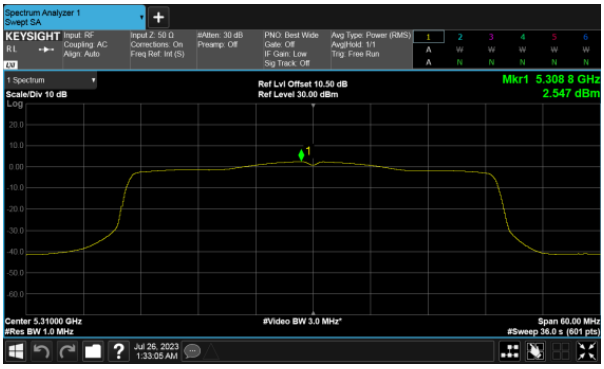

ANT D



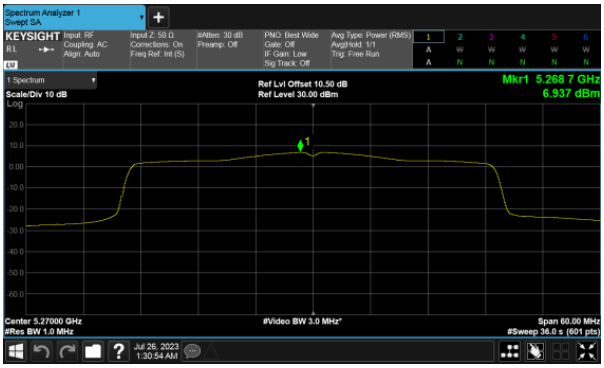
Modulation Type: 802.11ax HE40 CH54
ANT C



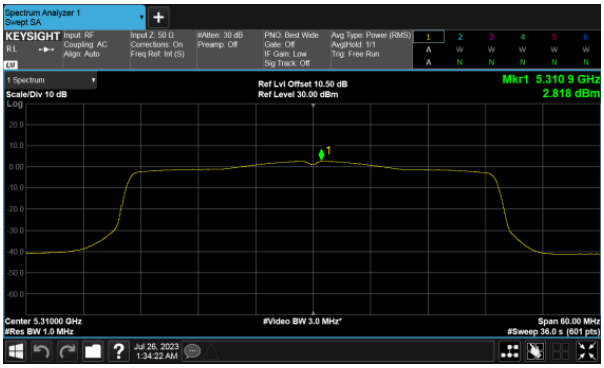

Modulation Type: 802.11ax HE40 CH62
ANT C



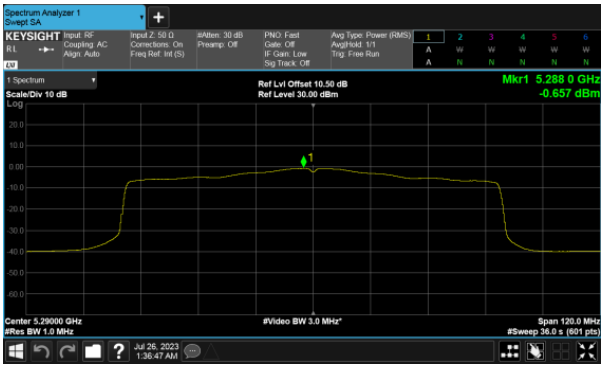

ANT D



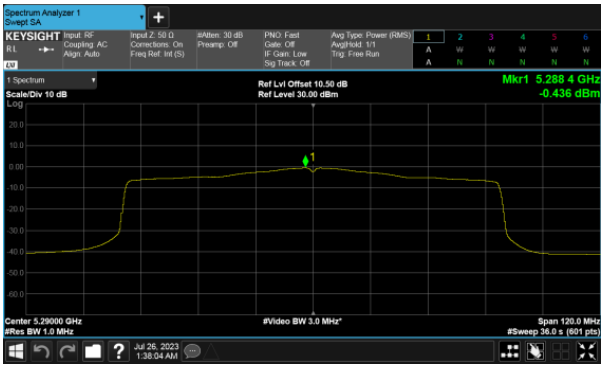

ANT D



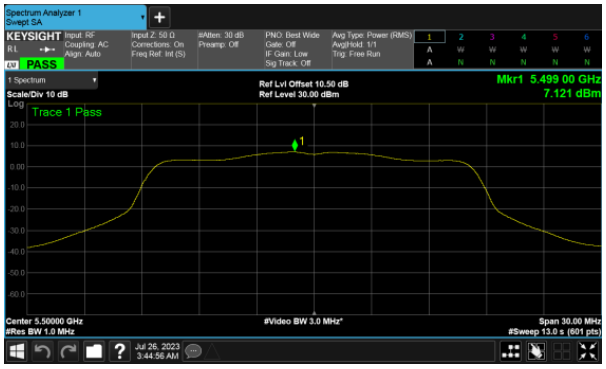
Modulation Type: 802.11ax HE80 CH58
ANT C



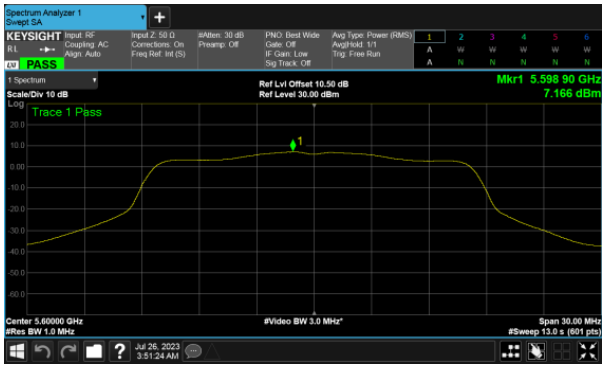

ANT D



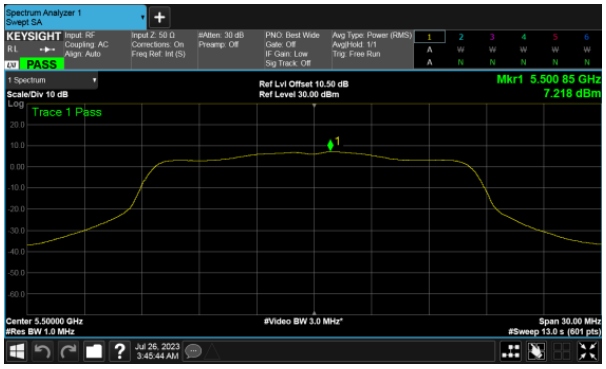
Modulation Type: 802.11a CH100
ANT C



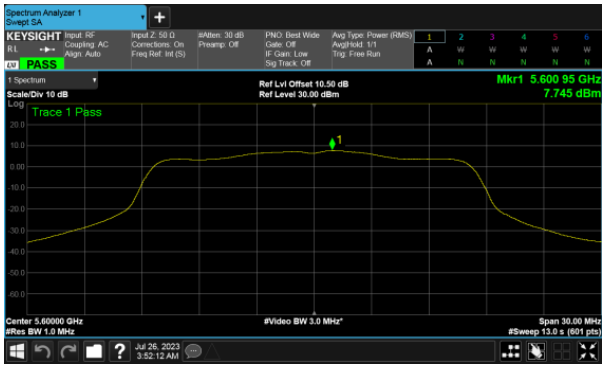

Modulation Type: 802.11a CH120
ANT C



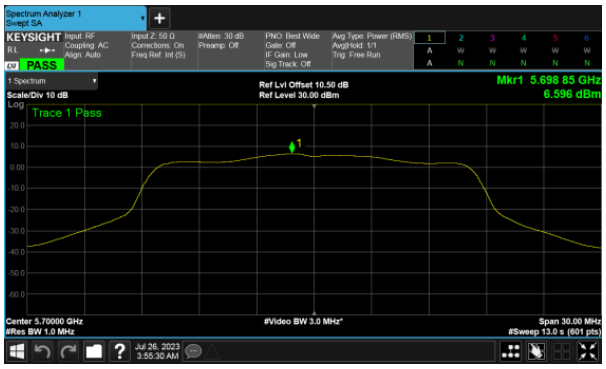

ANT D



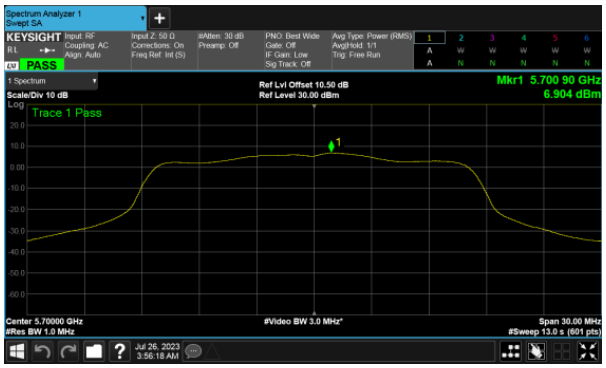

ANT D



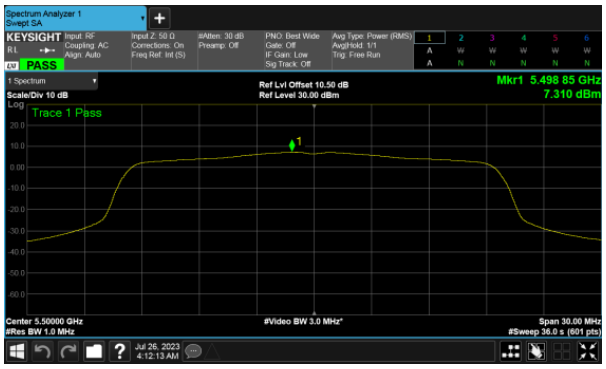
Modulation Type: 802.11a CH140
ANT C



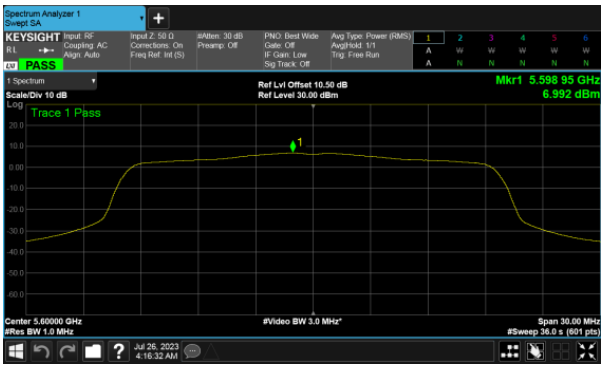

ANT D



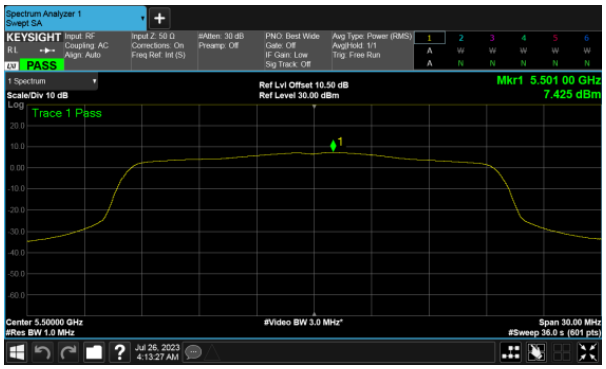
Modulation Type: 802.11ax HE20 CH100
ANT C



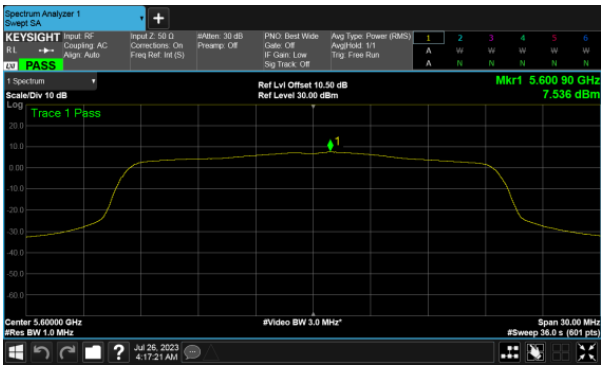

Modulation Type: 802.11ax HE20 CH120
ANT C



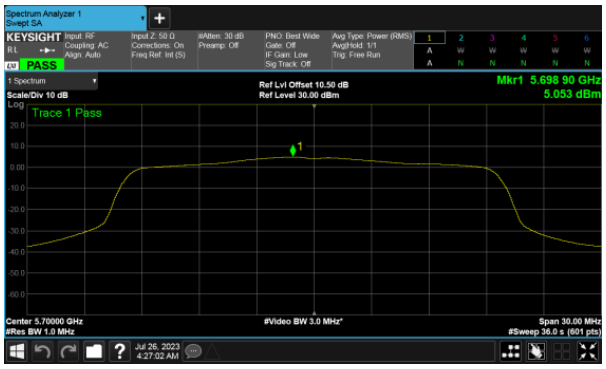

ANT D



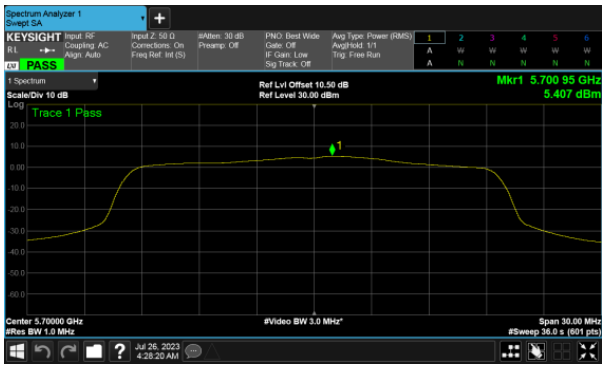

ANT D



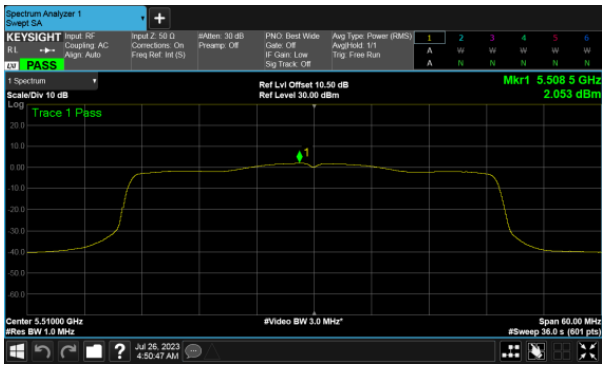
Modulation Type: 802.11ax HE20 CH140
ANT C



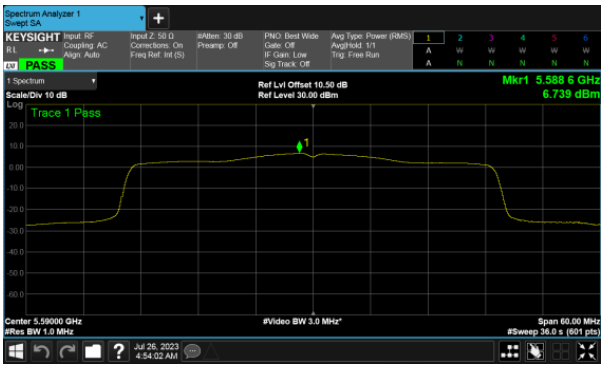

ANT D



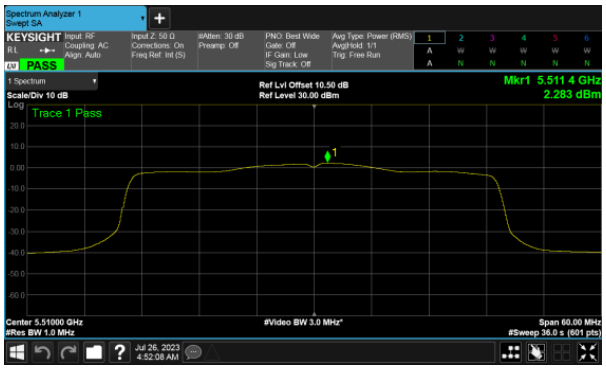
Modulation Type: 802.11ax HE40 CH102
ANT C



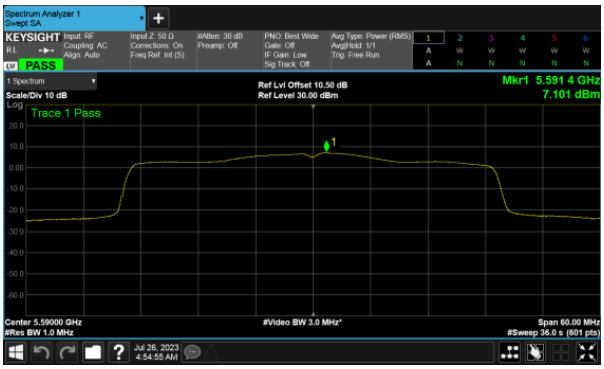

Modulation Type: 802.11ax HE40 CH118
ANT C



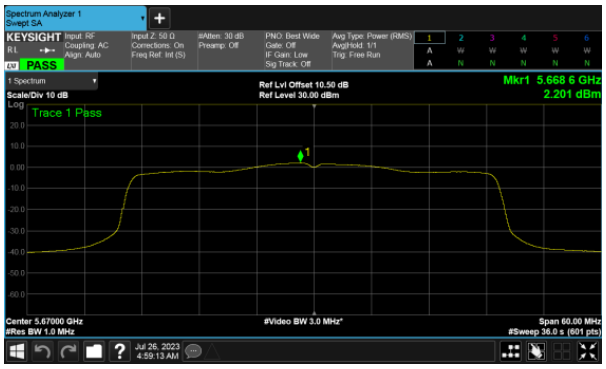

ANT D



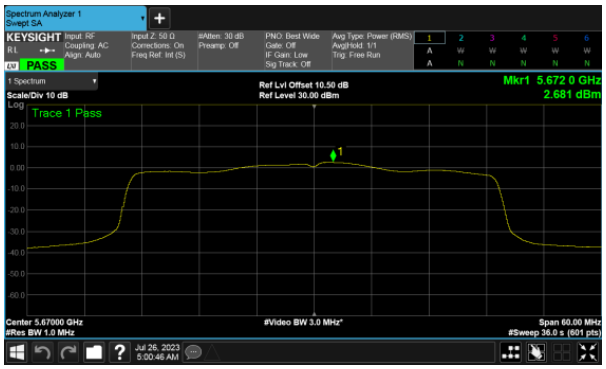

ANT D



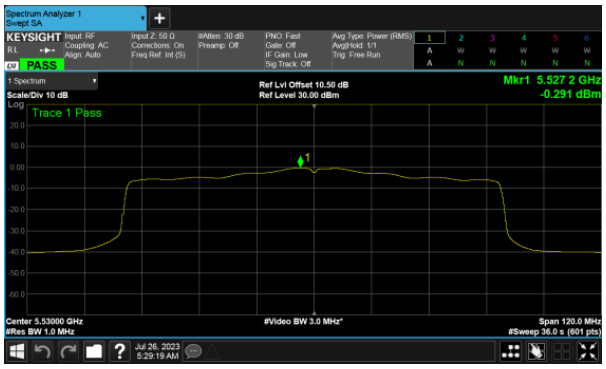
Modulation Type: 802.11ax HE40 CH134
ANT C



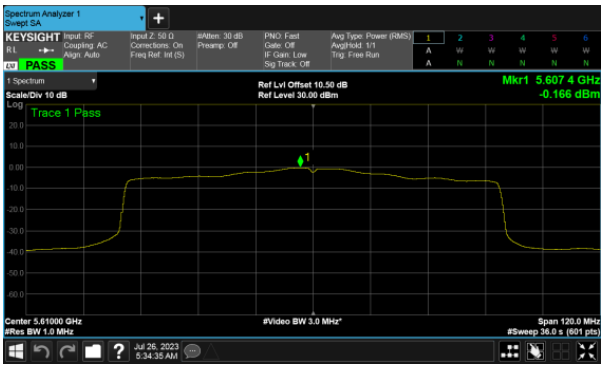

ANT D



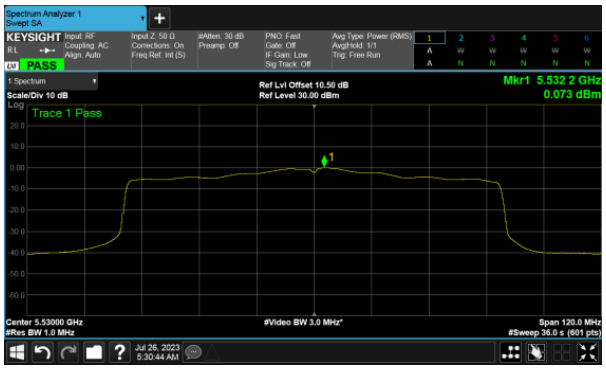
Modulation Type: 802.11ax HE80 CH106
ANT C



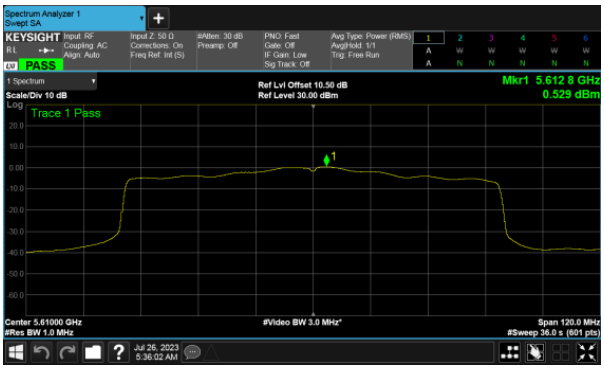

Modulation Type: 802.11ax HE80 CH122
ANT C



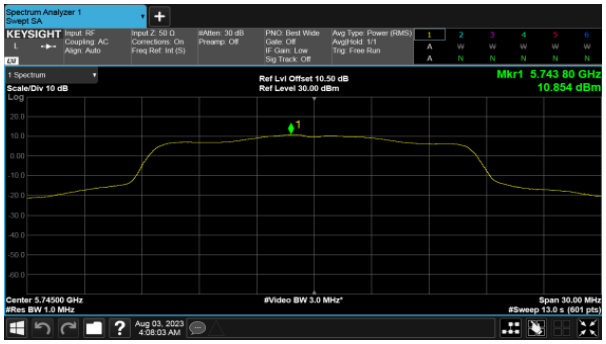

ANT D



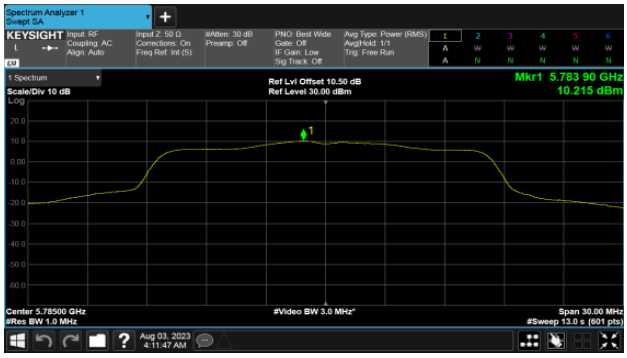

ANT D



Modulation Type: 802.11a CH149
ANT C




Modulation Type: 802.11a CH157
ANT C




ANT D

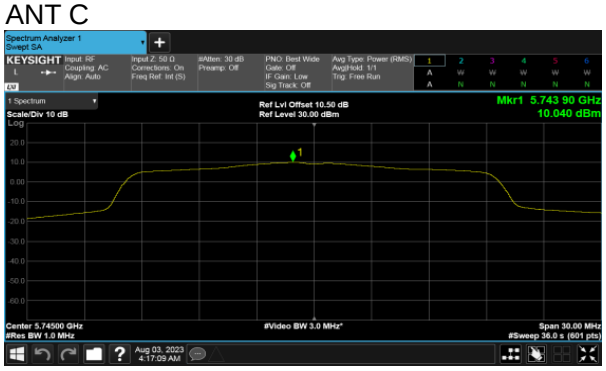

ANT D

Modulation Type: 802.11a CH165

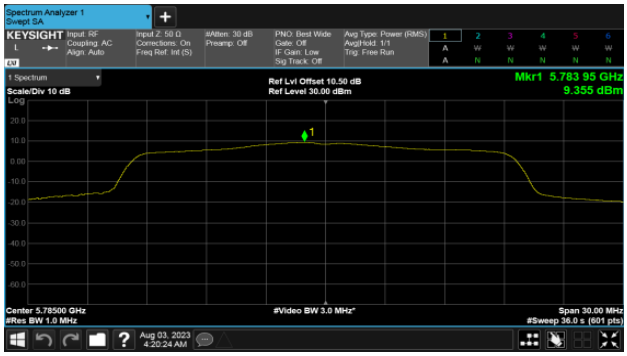
ANT C


ANT D

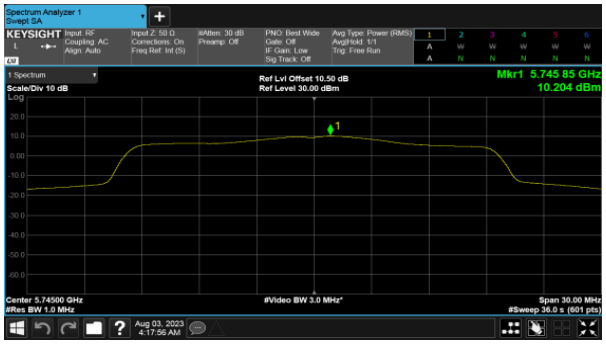
Modulation Type: 802.11ax HE20 CH149
ANT C



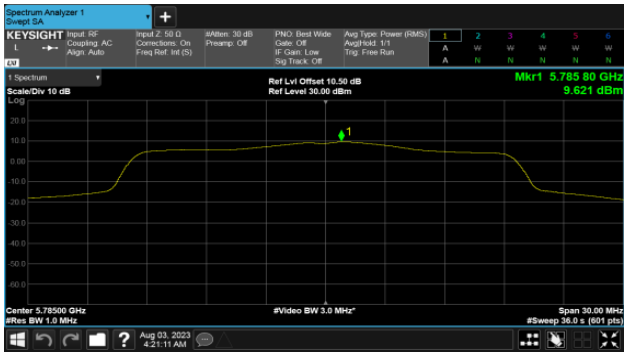

Modulation Type: 802.11ax HE20 CH157
ANT C




ANT D

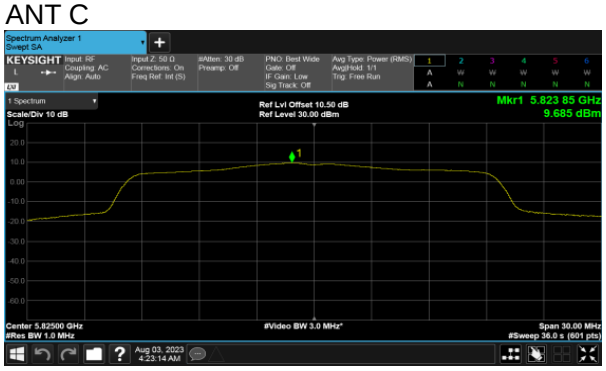



ANT D

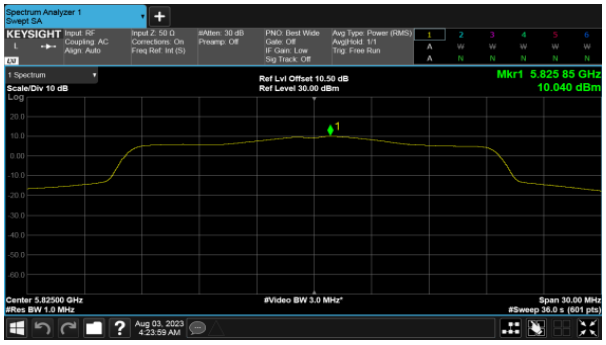


Modulation Type: 802.11ax HE20 CH165

ANT C

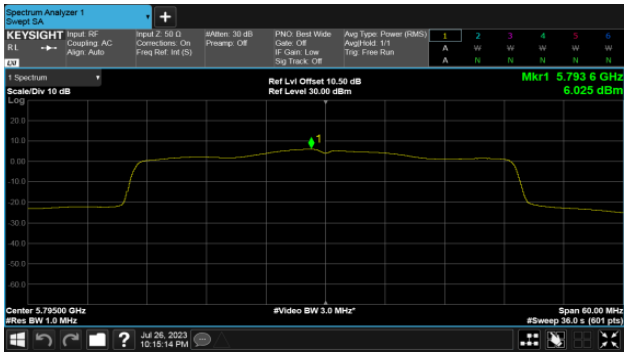



ANT D

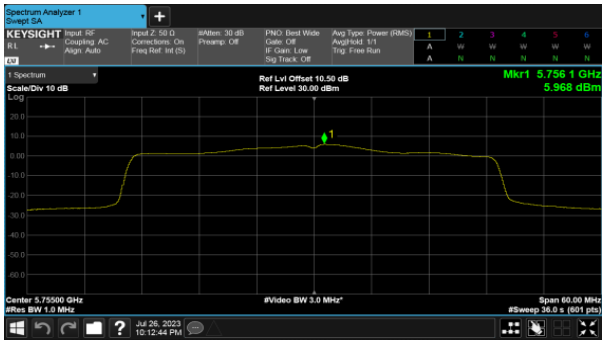


Modulation Type: 802.11ax HE40 CH151
ANT C

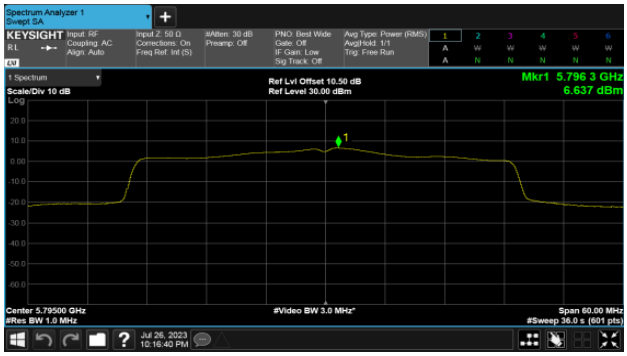

Modulation Type: 802.11ax HE40 CH159
ANT C




ANT D

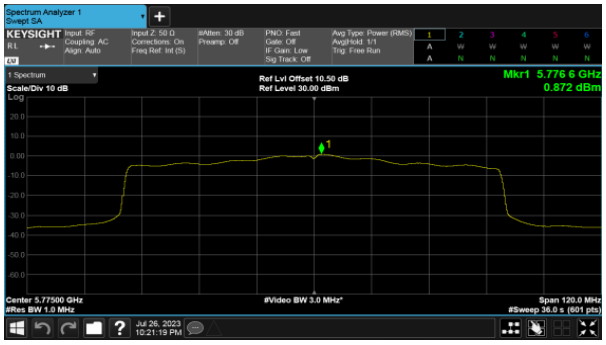



ANT D



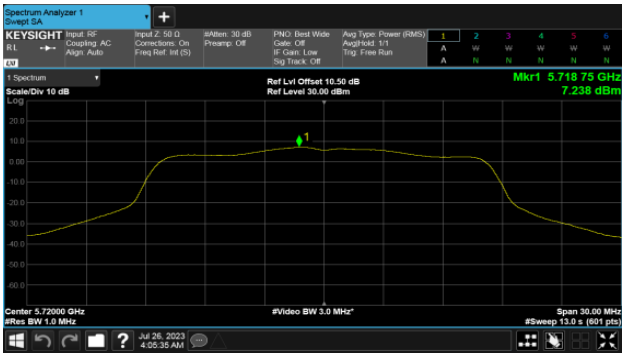
Modulation Type: 802.11ax HE80 CH155
ANT C


ANT D

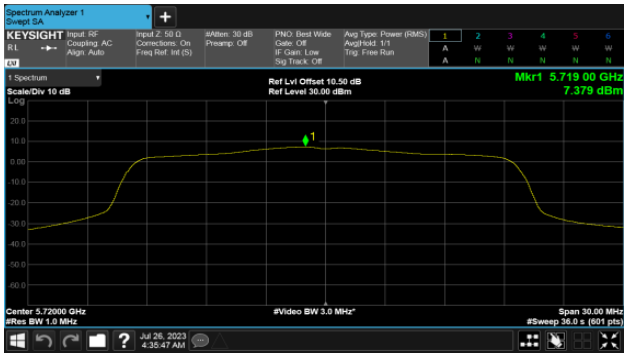


Straddle Channel

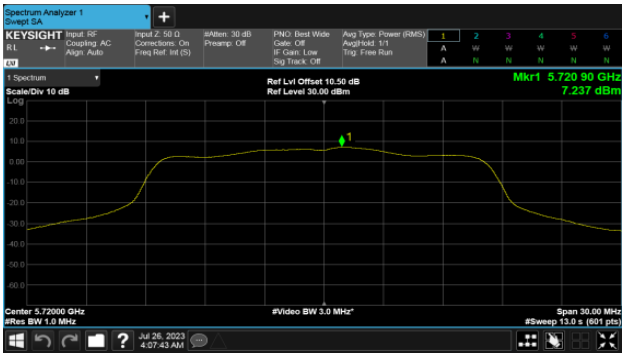
Modulation Type: 802.11a CH144
ANT C



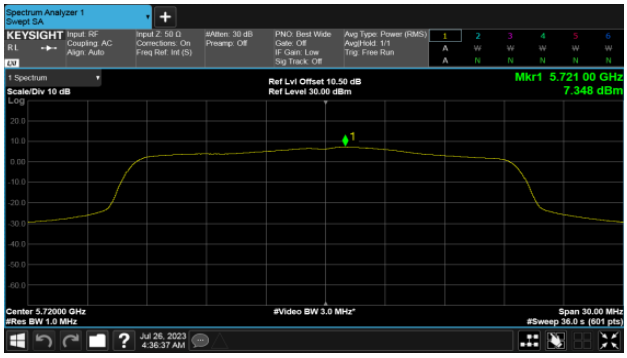

Modulation Type: 802.11ax HE20 CH144
ANT C



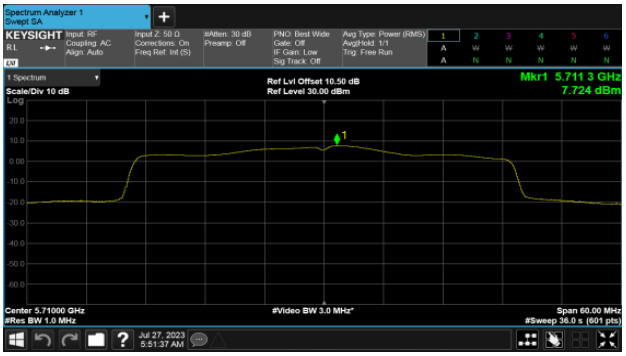

ANT D



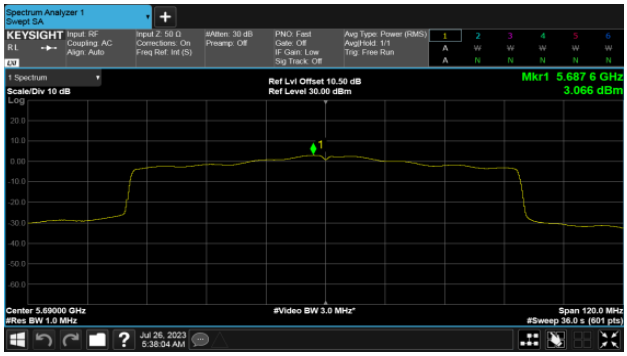

ANT D



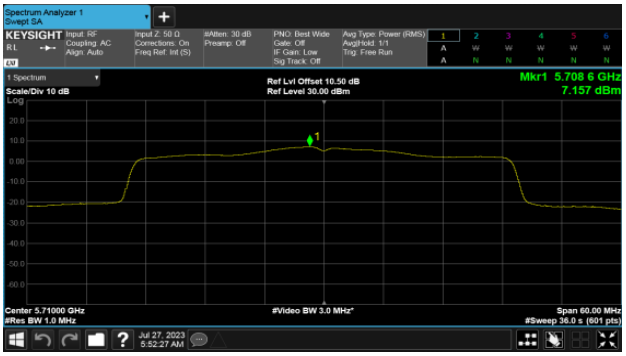
Modulation Type: 802.11ax HE40 CH142
ANT C



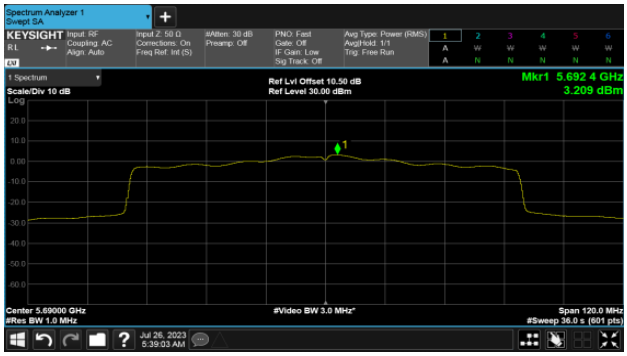

Modulation Type: 802.11ax HE80 CH138
ANT C



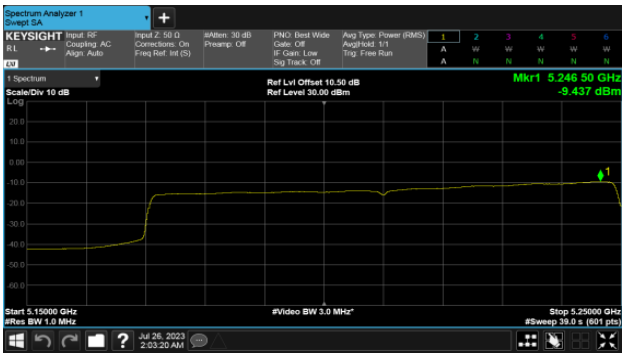

ANT D



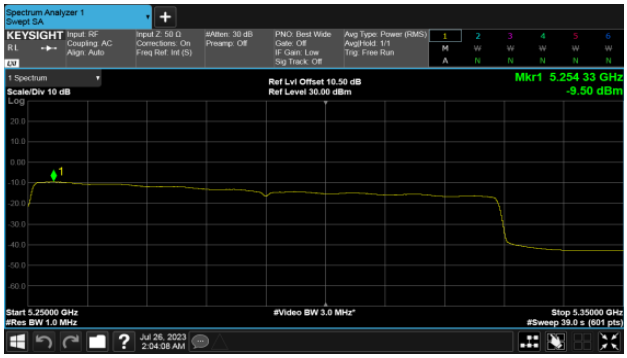

ANT D



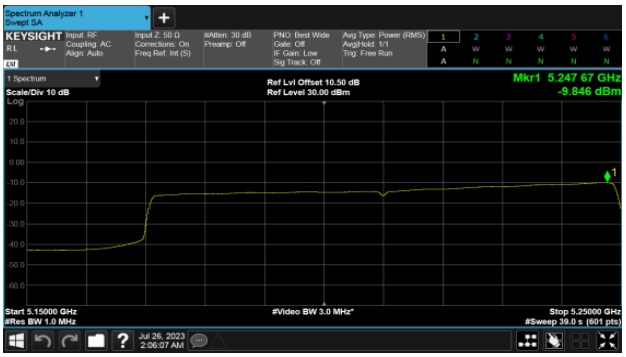
Modulation Type: 802.11ax HE160 CH50
ANT C



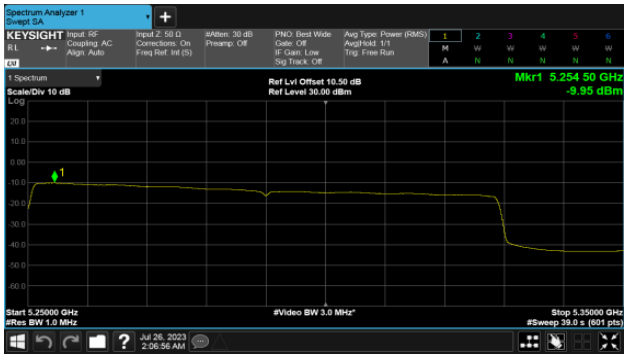

Modulation Type: 802.11ax HE160 CH50
ANT C



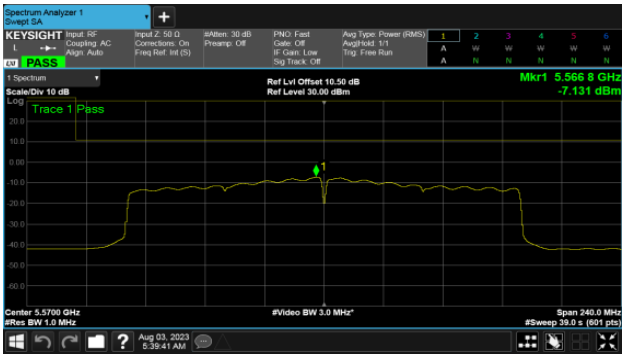

ANT D




ANT D



Modulation Type: 802.11ax HE160 CH114
ANT C




ANT D