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|-----------------|--|------------------|----------------------|-----------------|
| Test Item | Conducted power spectral density | | | |
| Test Mode | Mode 3: IEEE 802.11ac 20MHz Continuous TX mode | | | |
| Frequency (MHz) | ANT-2 | | | |
| | Measurement (dBm/MHz) | Duty Factor (dB) | Calculated (dBm/MHz) | Limit (dBm/MHz) |
| 5180 | 2.660 | 0.404 | 3.064 | ≤ 8.35 |
| 5200 | 2.814 | 0.404 | 3.218 | |
| 5240 | 2.836 | 0.404 | 3.240 | |
| 5260 | 2.856 | 0.404 | 3.260 | |
| 5280 | 2.705 | 0.404 | 3.109 | |
| 5320 | 2.506 | 0.404 | 2.910 | |
| 5500 | 2.925 | 0.404 | 3.329 | |
| 5560 | 2.497 | 0.404 | 2.901 | |
| 5700 | 3.060 | 0.404 | 3.464 | |

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|-----------------|--|--|--------|
| Test Item | Power Spectral Density and E.I.R.P. Spectral Density | | |
| Test Mode | Mode 3: IEEE 802.11ac 20MHz Continuous TX mode | | |
| Frequency (MHz) | ANT-0+1+2 | | Limit |
| | (dBm/MHz) | | |
| 5180.0 | 7.885 | | ≤ 8.35 |
| 5200.0 | 8.167 | | |
| 5240.0 | 8.305 | | |
| 5260.0 | 7.742 | | |
| 5280.0 | 7.705 | | |
| 5320.0 | 7.771 | | |
| 5500.0 | 7.197 | | |
| 5560.0 | 6.913 | | |
| 5700.0 | 7.232 | | |

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.



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|-----------------|--|------------------|-------------------------|--------------------|
| Test Item | Conducted power spectral density | | | |
| Test Mode | Mode 3: IEEE 802.11ac 20MHz Continuous TX mode | | | |
| Frequency (MHz) | ANT-0 | | | |
| | Measurement (dBm/100KHz) | Duty Factor (dB) | Calculated (dBm/500KHz) | Limit (dBm/500KHz) |
| | 5745 | -5.72 | 0.404 | ≤ 30 |
| | 5785 | -6.55 | 0.404 | |
| 5825 | -6.98 | 0.404 | | |
| Frequency (MHz) | ANT-1 | | | |
| | Measurement (dBm/100KHz) | Duty Factor (dB) | Calculated (dBm/500KHz) | Limit (dBm/500KHz) |
| | 5745 | -6.59 | 0.404 | ≤ 30 |
| | 5785 | -6.73 | 0.404 | |
| 5825 | -8.71 | 0.404 | | |
| Frequency (MHz) | ANT-2 | | | |
| | Measurement (dBm/100KHz) | Duty Factor (dB) | Calculated (dBm/500KHz) | Limit (dBm/500KHz) |
| | 5745 | -6.16 | 0.404 | ≤ 30 |
| | 5785 | -7.47 | 0.404 | |
| 5825 | -7.01 | 0.404 | | |
| Frequency (MHz) | ANT-0+1+2 | | | Limit (dBm/500KHz) |
| | Calculated (dBm/500KHz) | | | |
| | 5745 | 6.02 | | |
| | 5785 | 5.27 | | |
| 5825 | 4.67 | | ≤ 27.35 | |

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)



| Test Item | Conducted power spectral density | | | |
|-----------------|--|------------------|----------------------|-----------------|
| Test Mode | Mode 4: IEEE 802.11ac 40MHz Continuous TX mode | | | |
| Frequency (MHz) | ANT-0 | | | |
| | Measurement (dBm/MHz) | Duty Factor (dB) | Calculated (dBm/MHz) | Limit (dBm/MHz) |
| 5190 | -3.379 | 0.746 | -2.633 | ≤ 8.35 |
| 5230 | -3.716 | 0.746 | -2.970 | |
| 5270 | -0.919 | 0.746 | -0.173 | |
| 5310 | -0.915 | 0.746 | -0.169 | |
| 5510 | -3.435 | 0.746 | -2.689 | |
| 5550 | -2.768 | 0.746 | -2.022 | |
| 5670 | -4.019 | 0.746 | -3.273 | |
| Frequency (MHz) | ANT-1 | | | |
| | Measurement (dBm/MHz) | Duty Factor (dB) | Calculated (dBm/MHz) | Limit (dBm/MHz) |
| 5190 | 0.063 | 0.746 | 0.809 | ≤ 8.35 |
| 5230 | 1.917 | 0.746 | 2.663 | |
| 5270 | 2.895 | 0.746 | 3.641 | |
| 5310 | 2.651 | 0.746 | 3.397 | |
| 5510 | 2.287 | 0.746 | 3.033 | |
| 5550 | 2.908 | 0.746 | 3.654 | |
| 5670 | 2.969 | 0.746 | 3.715 | |
| Frequency (MHz) | ANT-2 | | | |
| | Measurement (dBm/MHz) | Duty Factor (dB) | Calculated (dBm/MHz) | Limit (dBm/MHz) |
| 5190 | -1.511 | 0.746 | -0.765 | ≤ 8.35 |
| 5230 | -1.416 | 0.746 | -0.670 | |
| 5270 | -0.482 | 0.746 | 0.264 | |
| 5310 | -0.526 | 0.746 | 0.220 | |
| 5510 | -1.110 | 0.746 | -0.364 | |
| 5550 | -1.667 | 0.746 | -0.921 | |
| 5670 | -1.763 | 0.746 | -1.017 | |

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.



| Test Item | Conducted power spectral density | |
|-----------------|--|--------|
| Test Mode | Mode 4: IEEE 802.11ac 40MHz Continuous TX mode | |
| Frequency (MHz) | ANT-0+1+2 | Limit |
| | (dBm/MHz) | |
| 5190.0 | 4.131 | ≤ 8.35 |
| 5230.0 | 5.063 | |
| 5270.0 | 6.371 | |
| 5310.0 | 6.233 | |
| 5510.0 | 5.402 | |
| 5550.0 | 5.748 | |
| 5670.0 | 5.580 | |

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.



| | | | | |
|-----------------|--|------------------|-------------------------|--------------------|
| Test Item | Conducted power spectral density | | | |
| Test Mode | Mode 4: IEEE 802.11ac 40MHz Continuous TX mode | | | |
| Frequency (MHz) | ANT-0 | | | |
| | Measurement (dBm/100KHz) | Duty Factor (dB) | Calculated (dBm/500KHz) | Limit (dBm/500KHz) |
| 5755 | -8.76 | 0.746 | -1.03 | ≤ 30 |
| 5795 | -9.50 | 0.746 | -1.77 | |
| Frequency (MHz) | ANT-1 | | | |
| | Measurement (dBm/100KHz) | Duty Factor (dB) | Calculated (dBm/500KHz) | Limit (dBm/500KHz) |
| 5755 | -10.18 | 0.746 | -2.44 | ≤ 30 |
| 5795 | -11.80 | 0.746 | -4.06 | |
| Frequency (MHz) | ANT-2 | | | |
| | Measurement (dBm/100KHz) | Duty Factor (dB) | Calculated (dBm/500KHz) | Limit (dBm/500KHz) |
| 5755 | -10.13 | 0.746 | -2.39 | ≤ 30 |
| 5795 | -9.63 | 0.746 | -1.89 | |
| Frequency (MHz) | ANT-0+1+2 | | | Limit (dBm/500KHz) |
| | Calculated (dBm/500KHz) | | | |
| 5755 | 2.87 | | | ≤ 27.35 |
| 5795 | 2.32 | | | |

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)



| | | | | |
|-----------------|--|------------------|----------------------|-----------------|
| Test Item | Conducted power spectral density | | | |
| Test Mode | Mode 5: IEEE 802.11ac 80MHz Continuous TX mode | | | |
| Frequency (MHz) | ANT-0 | | | |
| | Measurement (dBm/MHz) | Duty Factor (dB) | Calculated (dBm/MHz) | Limit (dBm/MHz) |
| 5210 | -5.970 | 1.257 | -4.713 | ≤ 8.35 |
| 5290 | -3.938 | 1.257 | -2.681 | |
| 5530 | -4.786 | 1.257 | -3.529 | |
| 5610 | -6.888 | 1.257 | -5.631 | |
| Frequency (MHz) | ANT-1 | | | |
| | Measurement (dBm/MHz) | Duty Factor (dB) | Calculated (dBm/MHz) | Limit (dBm/MHz) |
| 5210 | -5.493 | 1.257 | -4.236 | ≤ 8.35 |
| 5290 | 0.770 | 1.257 | 2.027 | |
| 5530 | 0.357 | 1.257 | 1.614 | |
| 5610 | 0.848 | 1.257 | 2.105 | |
| Frequency (MHz) | ANT-1 | | | |
| | Measurement (dBm/MHz) | Duty Factor (dB) | Calculated (dBm/MHz) | Limit (dBm/MHz) |
| 5210 | -5.660 | 1.257 | -4.403 | ≤ 8.35 |
| 5290 | -2.573 | 1.257 | -1.316 | |
| 5530 | -3.531 | 1.257 | -2.274 | |
| 5610 | 0.131 | 1.257 | 1.388 | |
| Frequency (MHz) | ANT-0+1+2 | | | Limit |
| | (dBm/MHz) | | | |
| 5210.0 | 0.325 | | | ≤ 8.35 |
| 5290.0 | 4.583 | | | |
| 5530.0 | 3.955 | | | |
| 5610.0 | 5.150 | | | |

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.



| | | | | |
|-----------------|--|------------------|-------------------------|-----------------|
| Test Item | Conducted power spectral density | | | |
| Test Mode | Mode 5: IEEE 802.11ac 80MHz Continuous TX mode | | | |
| Frequency (MHz) | ANT-0 | | | |
| | Measurement (dBm/100KHz) | Duty Factor (dB) | Calculated (dBm/500KHz) | Limit (dBm/MHz) |
| 5775 | -11.96 | 1.257 | -3.72 | ≤ 30 |
| Frequency (MHz) | ANT-1 | | | |
| | Measurement (dBm/100KHz) | Duty Factor (dB) | Calculated (dBm/500KHz) | Limit (dBm/MHz) |
| 5775 | -12.40 | 1.257 | -4.15 | ≤ 30 |
| Frequency (MHz) | ANT-2 | | | |
| | Measurement (dBm/100KHz) | Duty Factor (dB) | Calculated (dBm/500KHz) | Limit (dBm/MHz) |
| 5775 | -12.57 | 1.257 | -4.33 | ≤ 30 |
| Frequency (MHz) | ANT-0+1+2 | | | Limit (dBm/MHz) |
| | Calculated (dBm/500KHz) | | | Limit (dBm/MHz) |
| 5775 | 0.71 | | | ≤ 27.35 |

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)



■ Test Graphs

| Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0 | |
|--|--|
| 5180 MHz |  |
| 5200 MHz |  |
| 5240 MHz |  |



| Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0 | |
|--|--|
| 5260 MHz | <p>Ref Offset 11.4 dB Ref 20.00 dBm</p> <p>Mkr1 5.266 24 GHz 7.165 dBm</p> <p>Center 5.26000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p> <p>Center Freq: 5.26000000 GHz Start Freq: 5.24000000 GHz Stop Freq: 5.28000000 GHz CF Step: 4.000000 MHz Freq Offset: 0 Hz</p> |
| 5280 MHz | <p>Ref Offset 11.4 dB Ref 20.00 dBm</p> <p>Mkr1 5.273 88 GHz 7.014 dBm</p> <p>Center 5.28000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p> <p>Center Freq: 5.28000000 GHz Start Freq: 5.26000000 GHz Stop Freq: 5.30000000 GHz CF Step: 4.000000 MHz Freq Offset: 0 Hz</p> |
| 5320 MHz | <p>Ref Offset 11.4 dB Ref 20.00 dBm</p> <p>Mkr1 5.314 24 GHz 6.395 dBm</p> <p>Center 5.32000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p> <p>Center Freq: 5.32000000 GHz Start Freq: 5.30000000 GHz Stop Freq: 5.34000000 GHz CF Step: 4.000000 MHz Freq Offset: 0 Hz</p> |



| Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0 | |
|--|--|
| 5500 MHz | |
| 5560 MHz | |
| 5700 MHz | |



| Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0 | |
|--|---|
| 5745 MHz | <p>Agilent Spectrum Analyzer: Swept SA</p> <p>Ref Offset 11.6 dB Ref 10.00 dBm</p> <p>Mkr1 5.741 25 GHz 0.390 dBm</p> <p>Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p> |
| 5785 MHz | <p>Agilent Spectrum Analyzer: Swept SA</p> <p>Ref Offset 11.6 dB Ref 10.00 dBm</p> <p>Mkr1 5.778 73 GHz -0.006 dBm</p> <p>Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p> |
| 5825 MHz | <p>Agilent Spectrum Analyzer: Swept SA</p> <p>Ref Offset 11.6 dB Ref 10.00 dBm</p> <p>Mkr1 5.818 73 GHz 0.145 dBm</p> <p>Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p> |

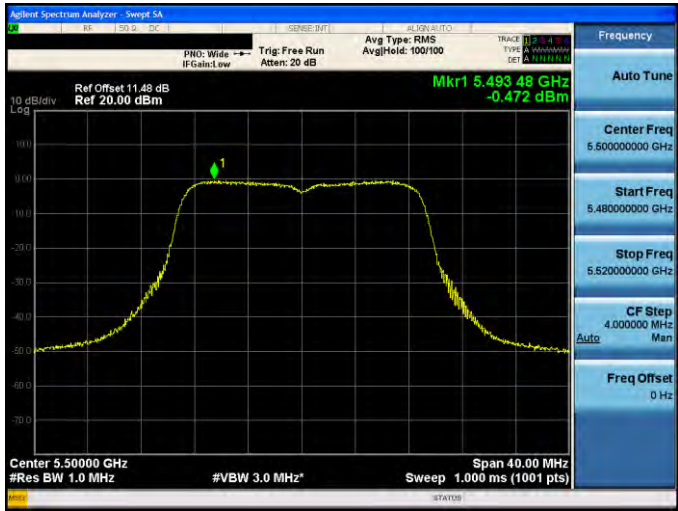
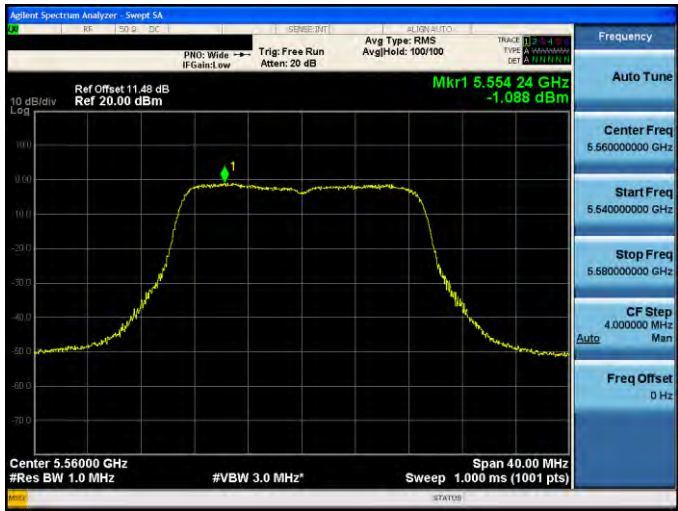
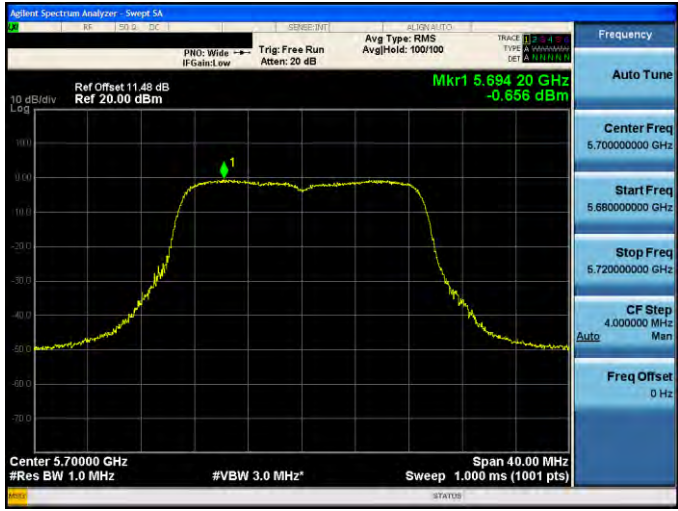


| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-0 | |
|--|--|
| 5180 MHz | |
| 5200 MHz | |
| 5240 MHz | |

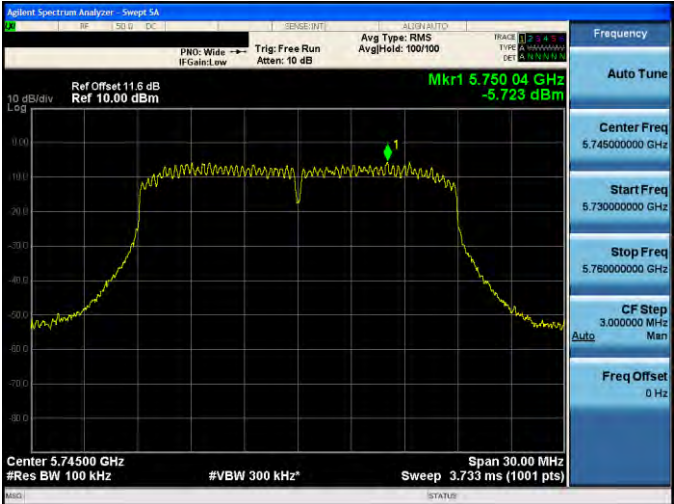
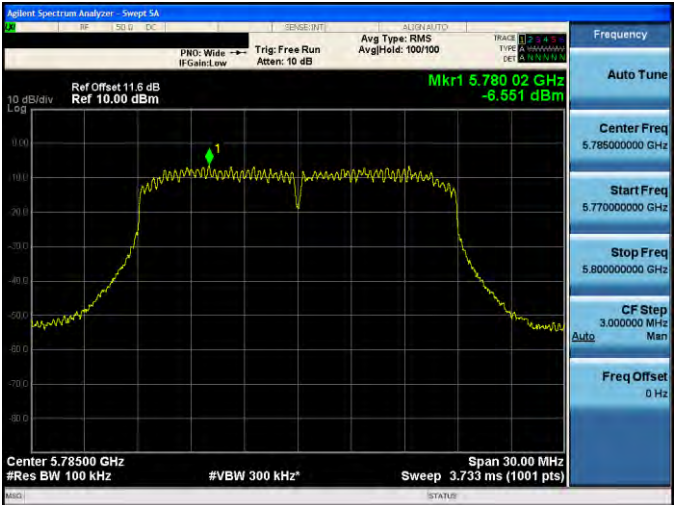


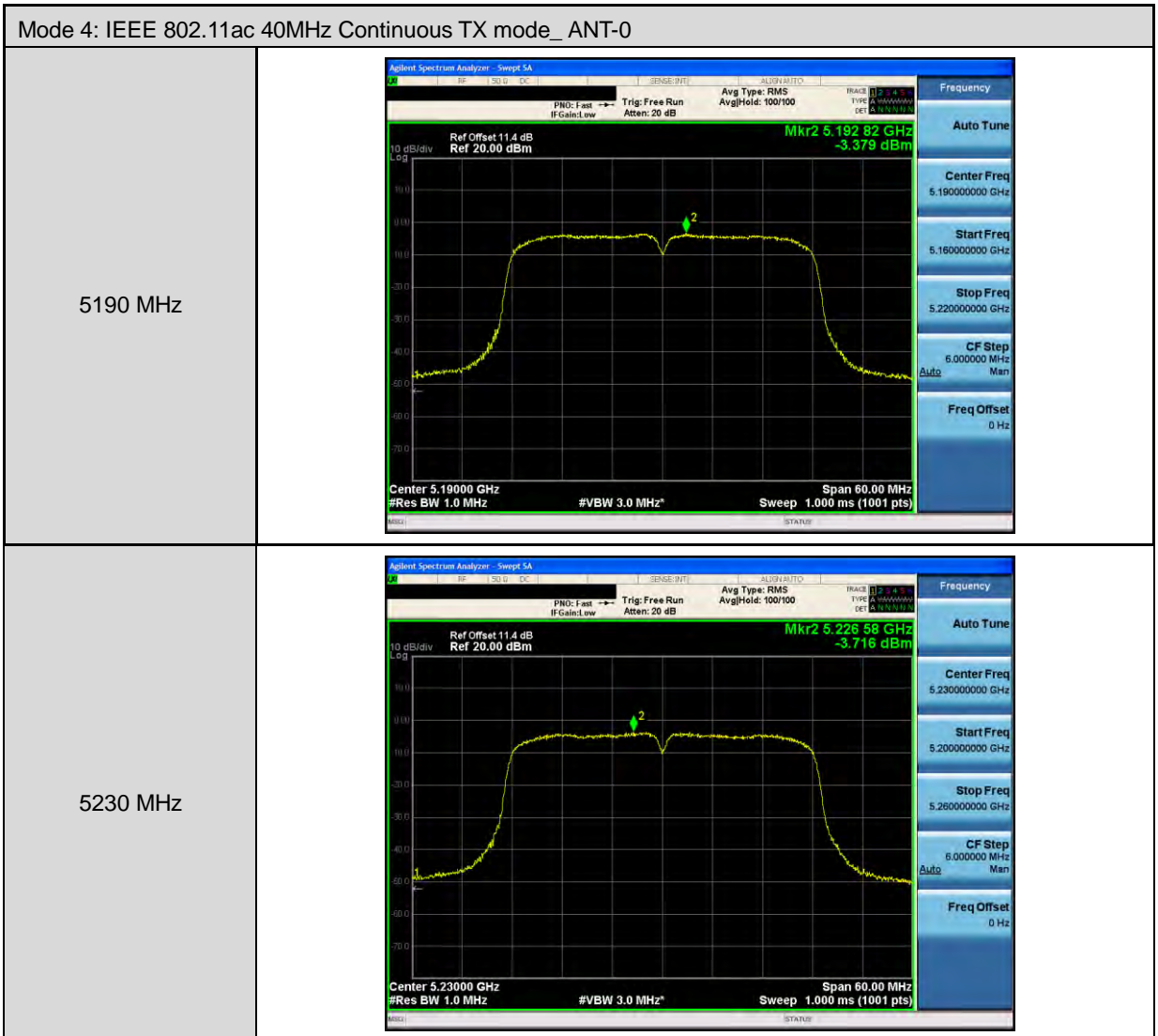
| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-0 | |
|--|--|
| 5260 MHz | |
| 5280 MHz | |
| 5320 MHz | |

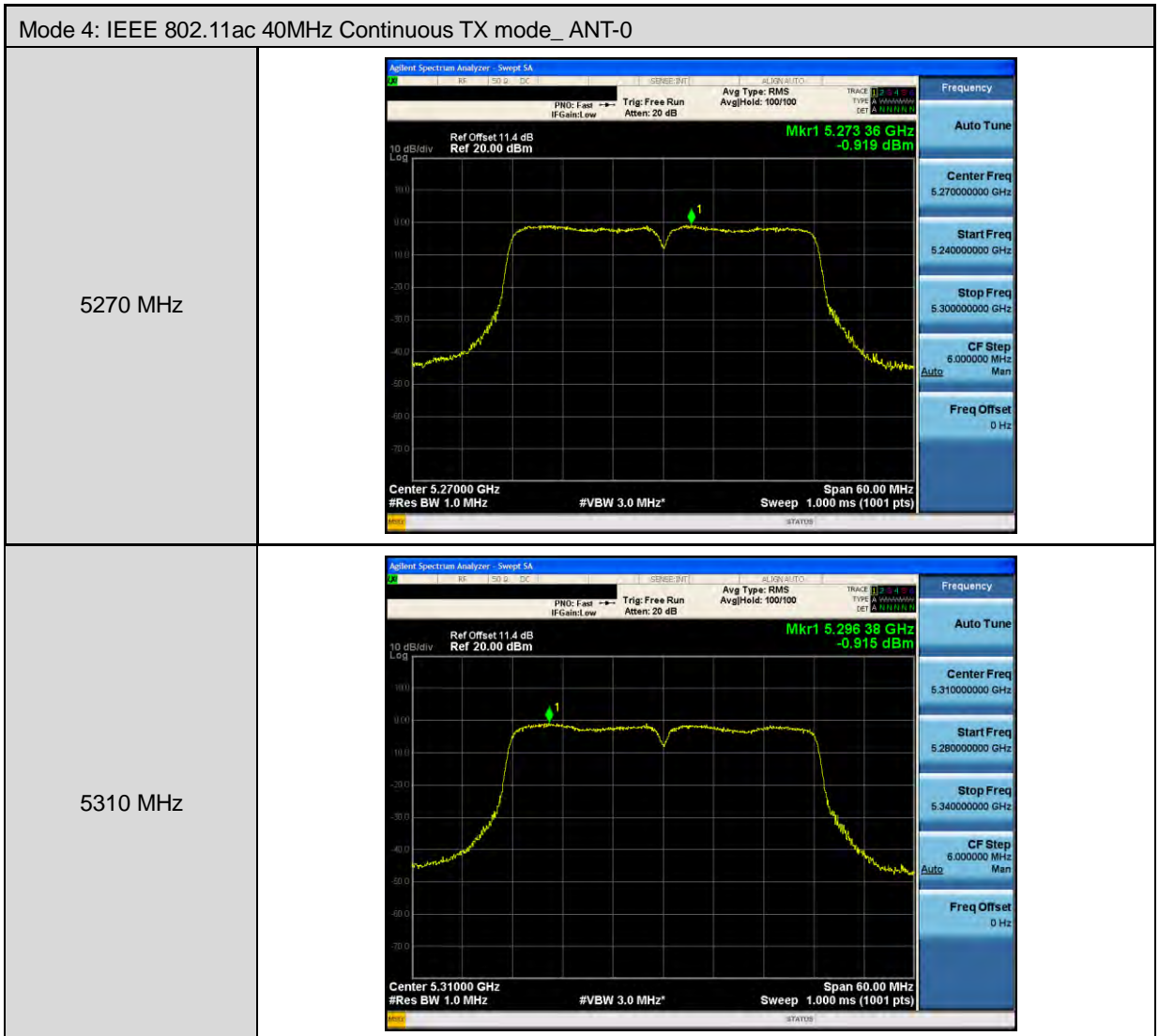


| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-0 | |
|--|--|
| 5500 MHz |  <p>Ref Offset 11.49 dB Ref 20.00 dBm Mkr1 5.49348 GHz -0.472 dBm</p> <p>Center 5.50000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> <p>Frequency Auto Tune Center Freq 5.50000000 GHz Start Freq 5.48000000 GHz Stop Freq 5.52000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz</p> |
| 5560 MHz |  <p>Ref Offset 11.49 dB Ref 20.00 dBm Mkr1 5.55424 GHz -1.088 dBm</p> <p>Center 5.56000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> <p>Frequency Auto Tune Center Freq 5.56000000 GHz Start Freq 5.54000000 GHz Stop Freq 5.58000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz</p> |
| 5700 MHz |  <p>Ref Offset 11.49 dB Ref 20.00 dBm Mkr1 5.69420 GHz -0.656 dBm</p> <p>Center 5.70000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> <p>Frequency Auto Tune Center Freq 5.70000000 GHz Start Freq 5.68000000 GHz Stop Freq 5.72000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz</p> |



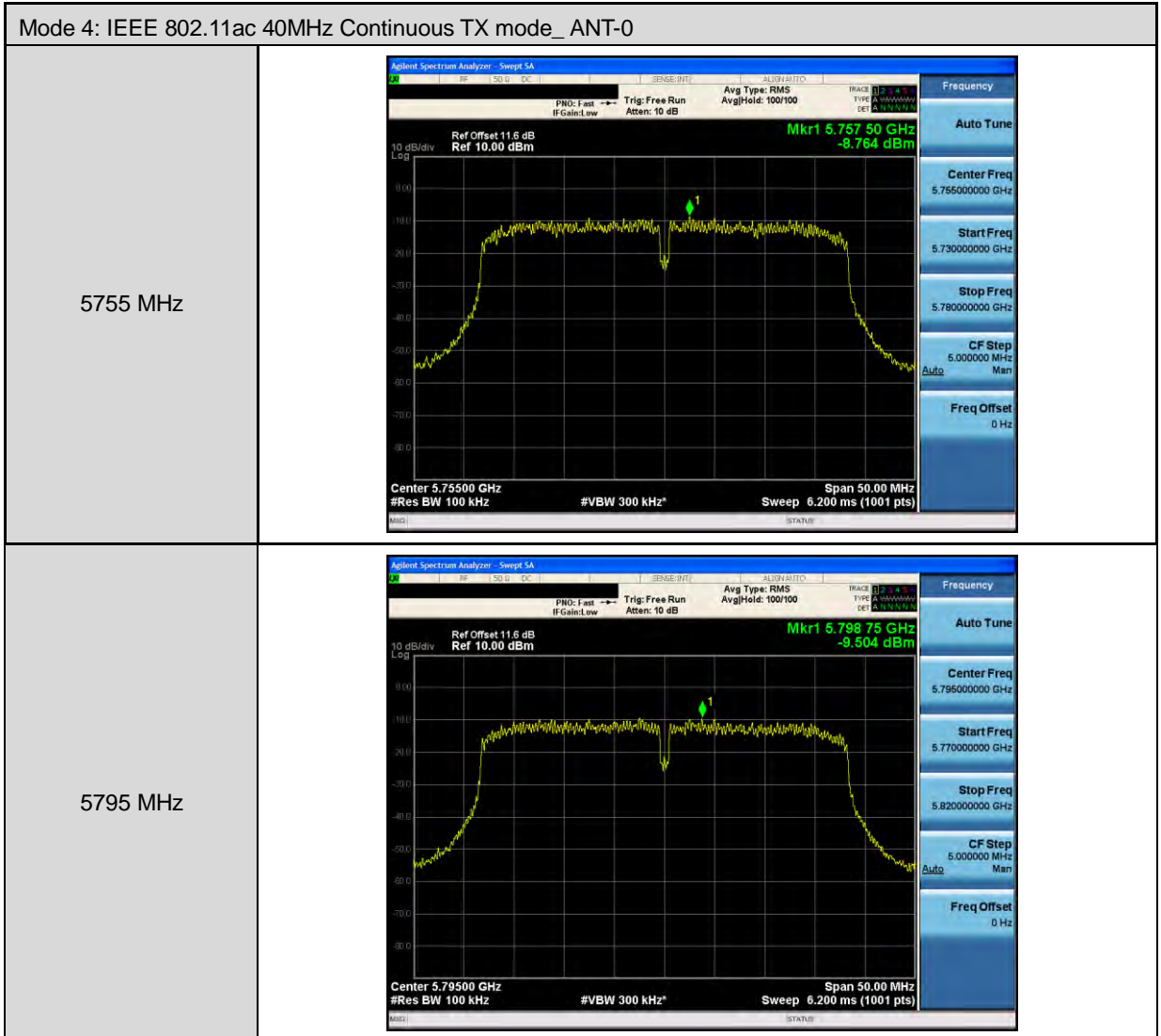
| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-0 | |
|--|--|
| 5745 MHz |  <p>Agilent Spectrum Analyzer - Swept SA</p> <p>PHO: Wide → Trig: Free Run Avg Type: RMS IF Gain: Low Atten: 10 dB Avg/Hold: 100/100</p> <p>Ref Offset 11.6 dB Ref 10.00 dBm</p> <p>Mkr1 5.750 04 GHz -5.723 dBm</p> <p>Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p> <p>Frequency: Auto Tune Center Freq: 5.74500000 GHz Start Freq: 5.73000000 GHz Stop Freq: 5.76000000 GHz CF Step: 3.00000 MHz (Auto/Man) Freq Offset: 0 Hz</p> |
| 5785 MHz |  <p>Agilent Spectrum Analyzer - Swept SA</p> <p>PHO: Wide → Trig: Free Run Avg Type: RMS IF Gain: Low Atten: 10 dB Avg/Hold: 100/100</p> <p>Ref Offset 11.6 dB Ref 10.00 dBm</p> <p>Mkr1 5.780 02 GHz -6.551 dBm</p> <p>Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p> <p>Frequency: Auto Tune Center Freq: 5.78500000 GHz Start Freq: 5.77000000 GHz Stop Freq: 5.80000000 GHz CF Step: 3.00000 MHz (Auto/Man) Freq Offset: 0 Hz</p> |
| 5825 MHz |  <p>Agilent Spectrum Analyzer - Swept SA</p> <p>PHO: Wide → Trig: Free Run Avg Type: RMS IF Gain: Low Atten: 10 dB Avg/Hold: 100/100</p> <p>Ref Offset 11.6 dB Ref 10.00 dBm</p> <p>Mkr1 5.831 27 GHz -6.980 dBm</p> <p>Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p> <p>Frequency: Auto Tune Center Freq: 5.82500000 GHz Start Freq: 5.81000000 GHz Stop Freq: 5.84000000 GHz CF Step: 3.00000 MHz (Auto/Man) Freq Offset: 0 Hz</p> |

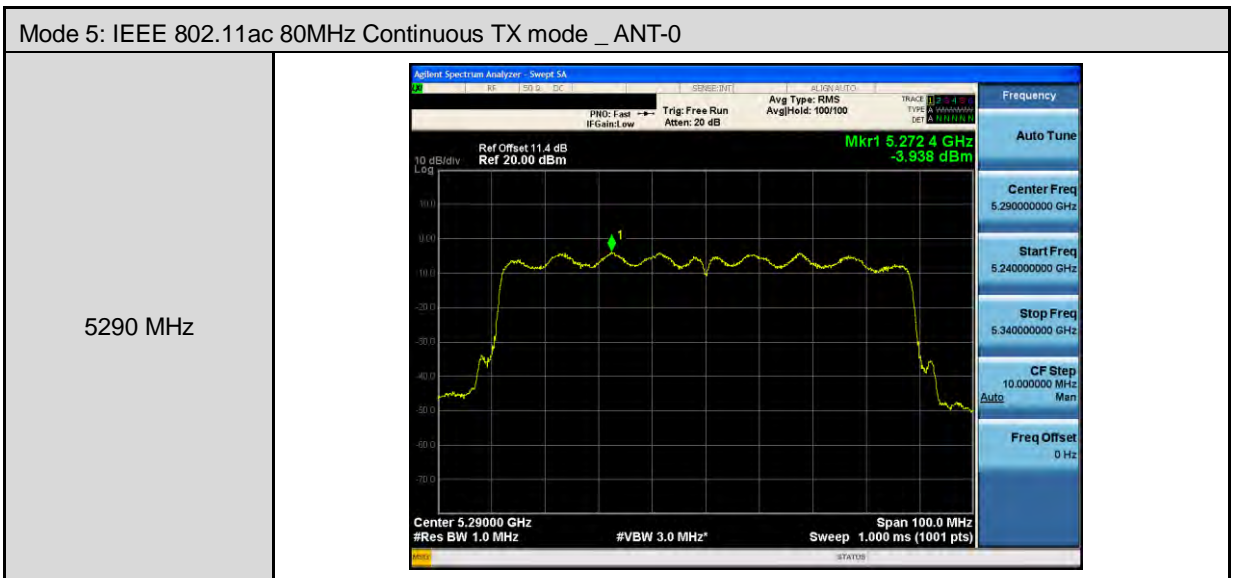
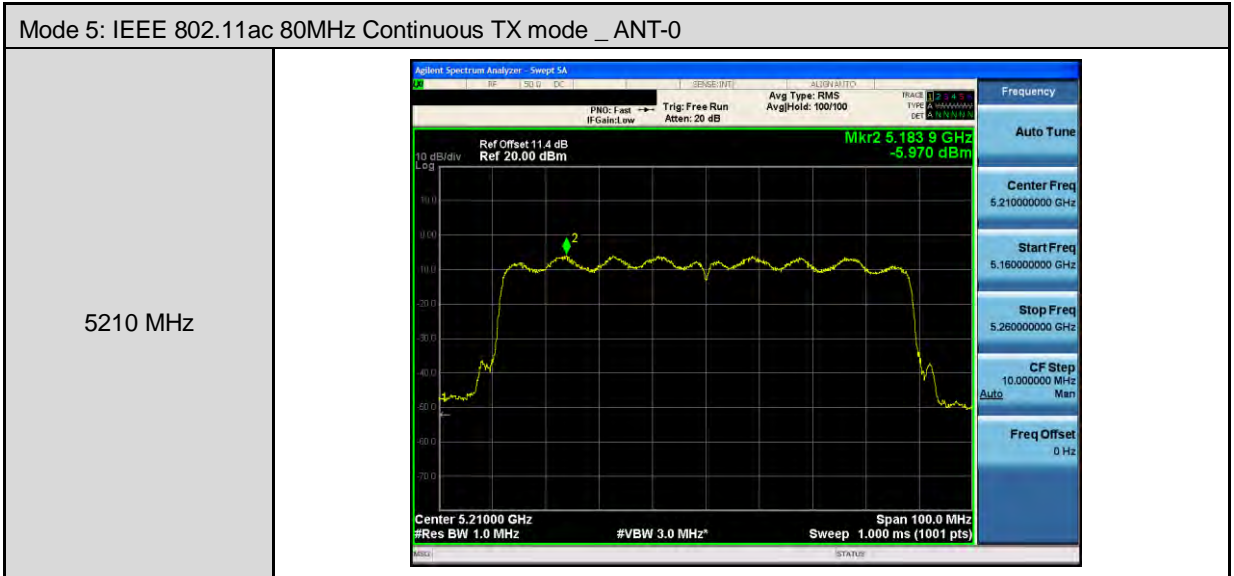


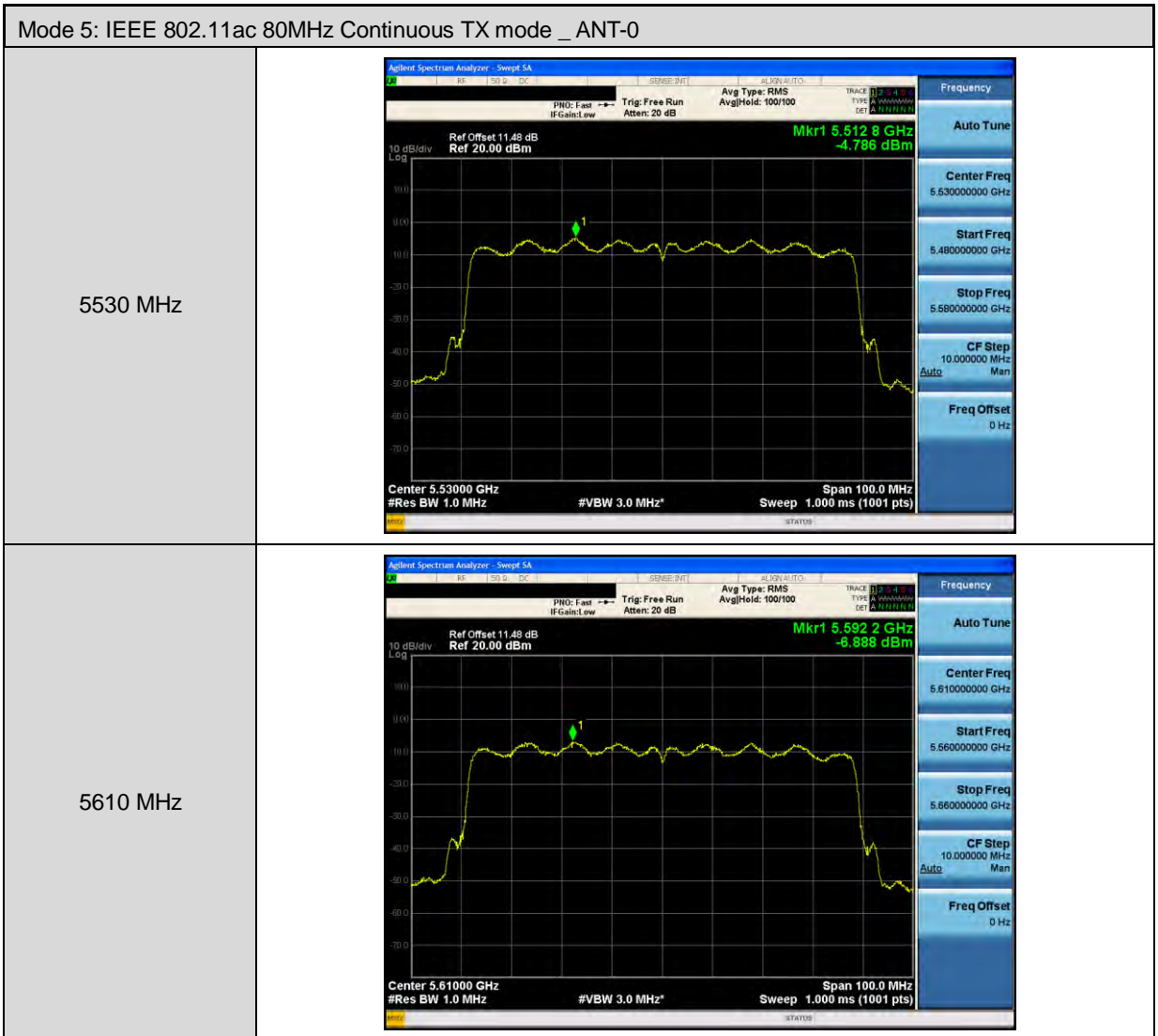


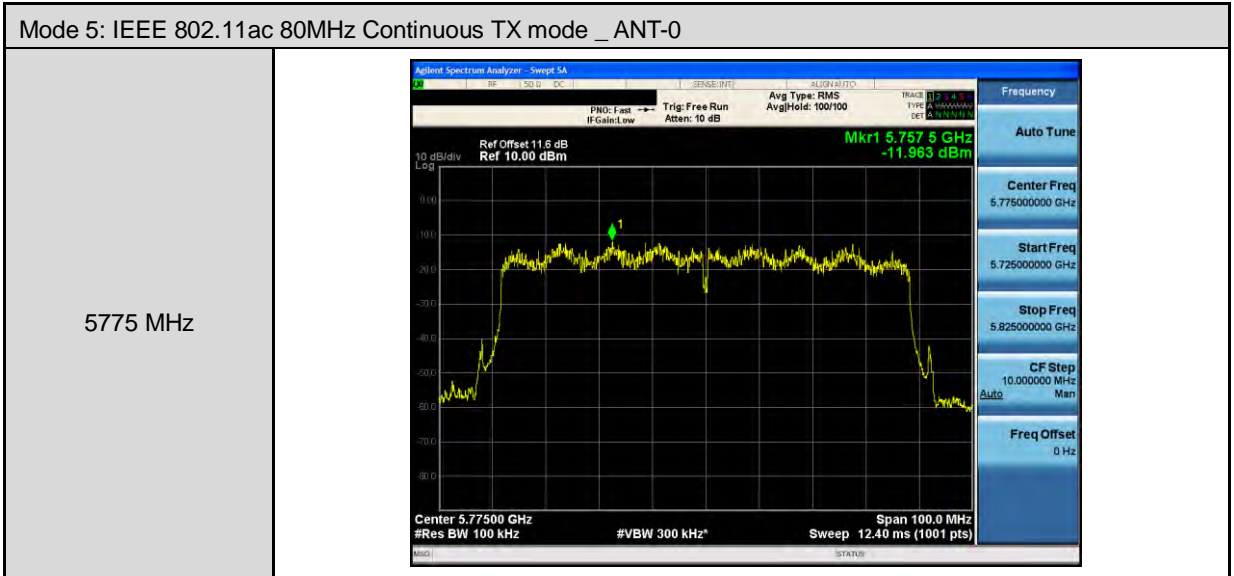


| Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-0 | |
|---|--|
| 5510 MHz | <p>Ref Offset 11.49 dB Ref 20.00 dBm Mkr1 5.498 30 GHz -3.435 dBm</p> <p>Center 5.51000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 60.00 MHz Sweep 1.000 ms (1001 pts)</p> |
| 5550 MHz | <p>Ref Offset 11.49 dB Ref 20.00 dBm Mkr1 5.547 72 GHz -2.768 dBm</p> <p>Center 5.55000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 60.00 MHz Sweep 1.000 ms (1001 pts)</p> |
| 5670 MHz | <p>Ref Offset 11.49 dB Ref 20.00 dBm Mkr1 5.655 90 GHz -4.019 dBm</p> <p>Center 5.67000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 60.00 MHz Sweep 1.000 ms (1001 pts)</p> |






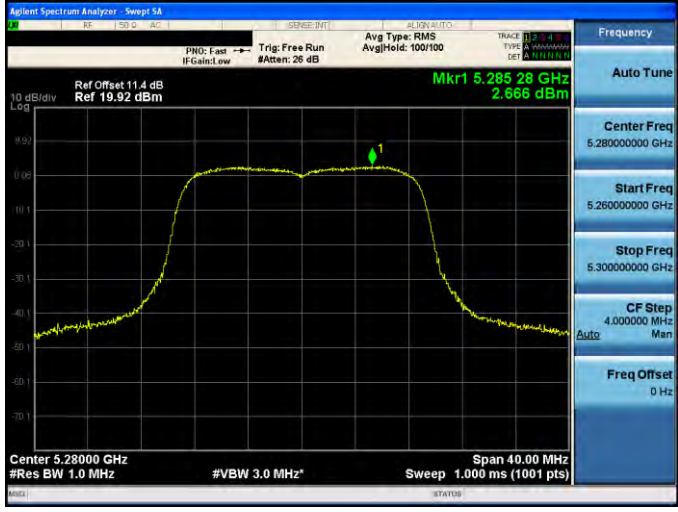







| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-1 | |
|--|---|
| 5180 MHz | <p>Agilent Spectrum Analyzer - Sweep SA PHO: Wide → Trig: Free Run Avg Type: RMS IF Gain: Low Atten: 20 dB Avg Hold: 100/100 Ref Offset 11.4 dB Ref 20.00 dBm Mkr2 5.186 80 GHz 4.382 dBm Center 5.18000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> |
| 5200 MHz | <p>Agilent Spectrum Analyzer - Sweep SA PHO: Wide → Trig: Free Run Avg Type: RMS IF Gain: Low Atten: 20 dB Avg Hold: 100/100 Ref Offset 11.4 dB Ref 20.00 dBm Mkr2 5.195 68 GHz 4.915 dBm Center 5.20000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> |
| 5240 MHz | <p>Agilent Spectrum Analyzer - Sweep SA PHO: Wide → Trig: Free Run Avg Type: RMS IF Gain: Low Atten: 20 dB Avg Hold: 100/100 Ref Offset 11.4 dB Ref 20.00 dBm Mkr2 5.234 84 GHz 5.375 dBm Center 5.24000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> |



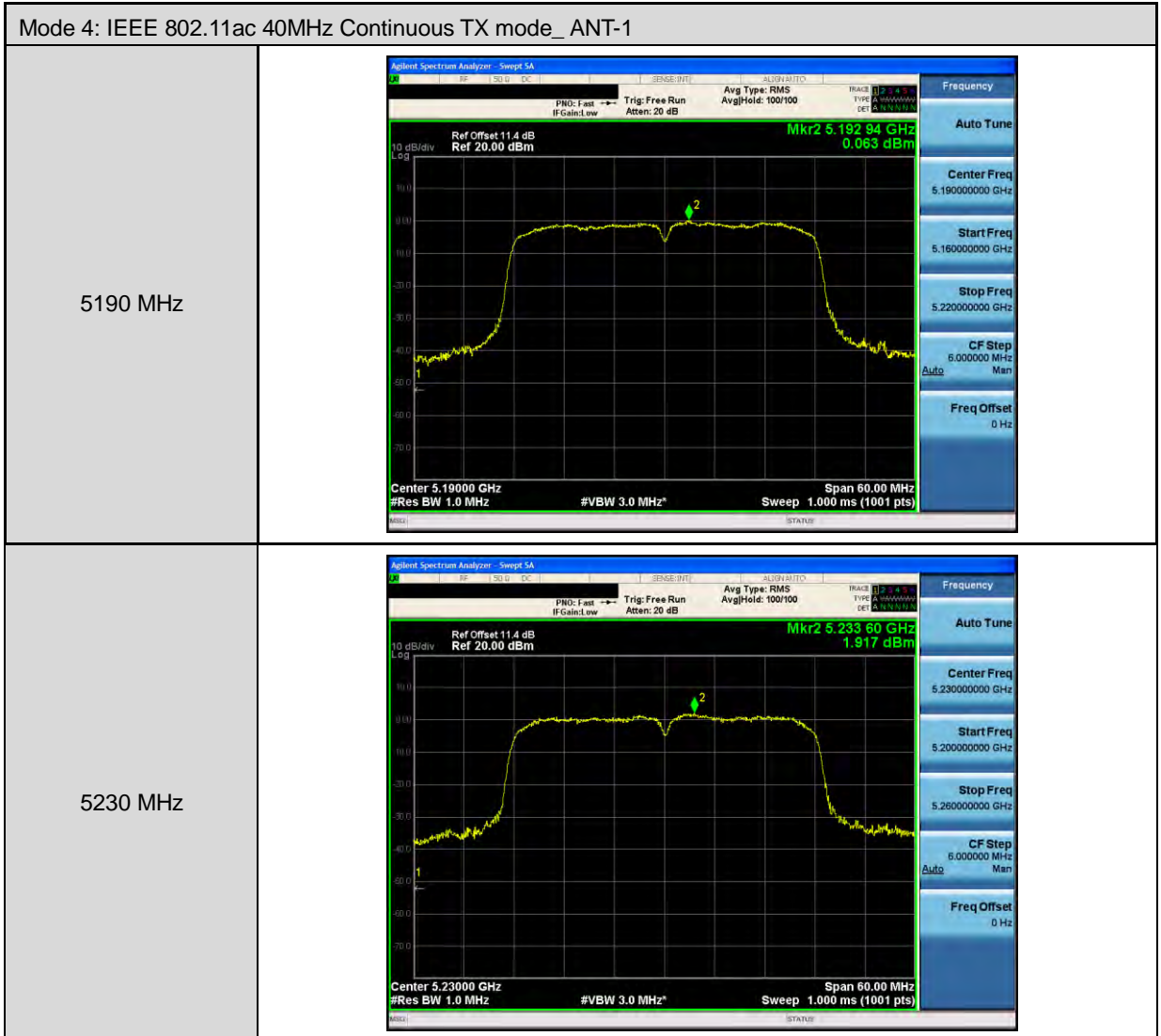
| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-1 | |
|--|--|
| 5260 MHz |  |
| 5280 MHz |  |
| 5320 MHz |  |

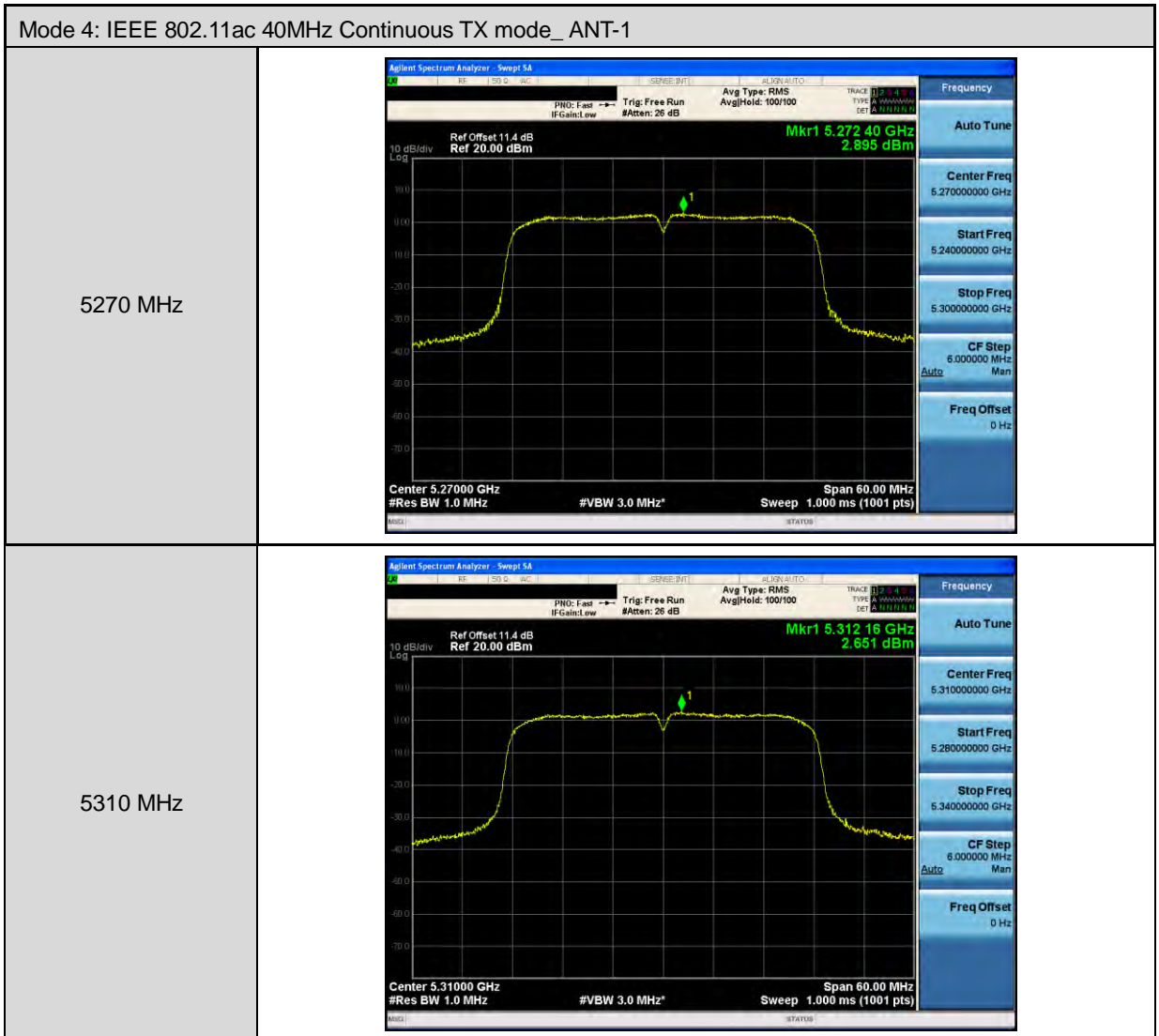


| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-1 | |
|--|---|
| 5500 MHz | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Ref Offset 11.49 dB Ref 20.00 dBm</p> <p>Mkr1 5.504 96 GHz 2.834 dBm</p> <p>Center 5.50000 GHz #Res BW 1.0 MHz</p> <p>Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> |
| 5560 MHz | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Ref Offset 11.49 dB Ref 20.00 dBm</p> <p>Mkr1 5.566 00 GHz 2.835 dBm</p> <p>Center 5.56000 GHz #Res BW 1.0 MHz</p> <p>Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> |
| 5700 MHz | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Ref Offset 11.49 dB Ref 20.00 dBm</p> <p>Mkr1 5.694 80 GHz 2.867 dBm</p> <p>Center 5.70000 GHz #Res BW 1.0 MHz</p> <p>Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> |



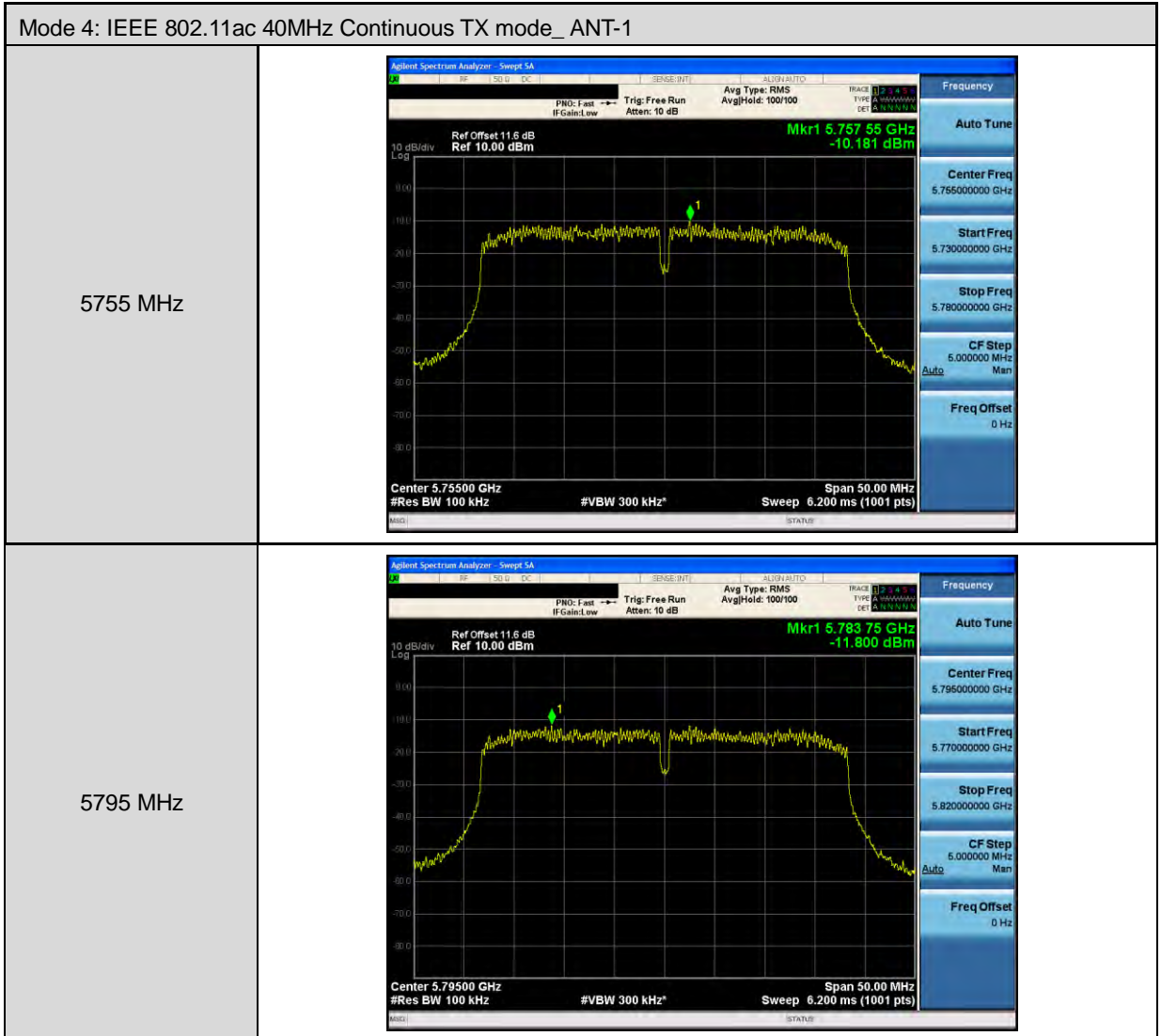
| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-1 | |
|--|--|
| 5745 MHz | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>PHO: Wide → Trig: Free Run Avg Type: RMS IF Gain: Low Atten: 10 dB Avg Hold: 100/100</p> <p>Ref Offset 11.6 dB Mkr1 5.738 76 GHz Ref 10.00 dBm -6.592 dBm</p> <p>Center 5.74500 GHz Span 30.00 MHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts)</p> <p>Frequency: 5.74500000 GHz Auto Tune Center Freq: 5.74500000 GHz Start Freq: 5.73000000 GHz Stop Freq: 5.76000000 GHz CF Step: 3.000000 MHz Auto Man Freq Offset: 0 Hz</p> |
| 5785 MHz | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>PHO: Wide → Trig: Free Run Avg Type: RMS IF Gain: Low Atten: 10 dB Avg Hold: 100/100</p> <p>Ref Offset 11.6 dB Mkr1 5.780 05 GHz Ref 10.00 dBm -6.728 dBm</p> <p>Center 5.78500 GHz Span 30.00 MHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts)</p> <p>Frequency: 5.78500000 GHz Auto Tune Center Freq: 5.78500000 GHz Start Freq: 5.77000000 GHz Stop Freq: 5.80000000 GHz CF Step: 3.000000 MHz Auto Man Freq Offset: 0 Hz</p> |
| 5825 MHz | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>PHO: Wide → Trig: Free Run Avg Type: RMS IF Gain: Low Atten: 10 dB Avg Hold: 100/100</p> <p>Ref Offset 11.6 dB Mkr1 5.820 68 GHz Ref 10.00 dBm -8.713 dBm</p> <p>Center 5.82500 GHz Span 30.00 MHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts)</p> <p>Frequency: 5.82500000 GHz Auto Tune Center Freq: 5.82500000 GHz Start Freq: 5.81000000 GHz Stop Freq: 5.84000000 GHz CF Step: 3.000000 MHz Auto Man Freq Offset: 0 Hz</p> |

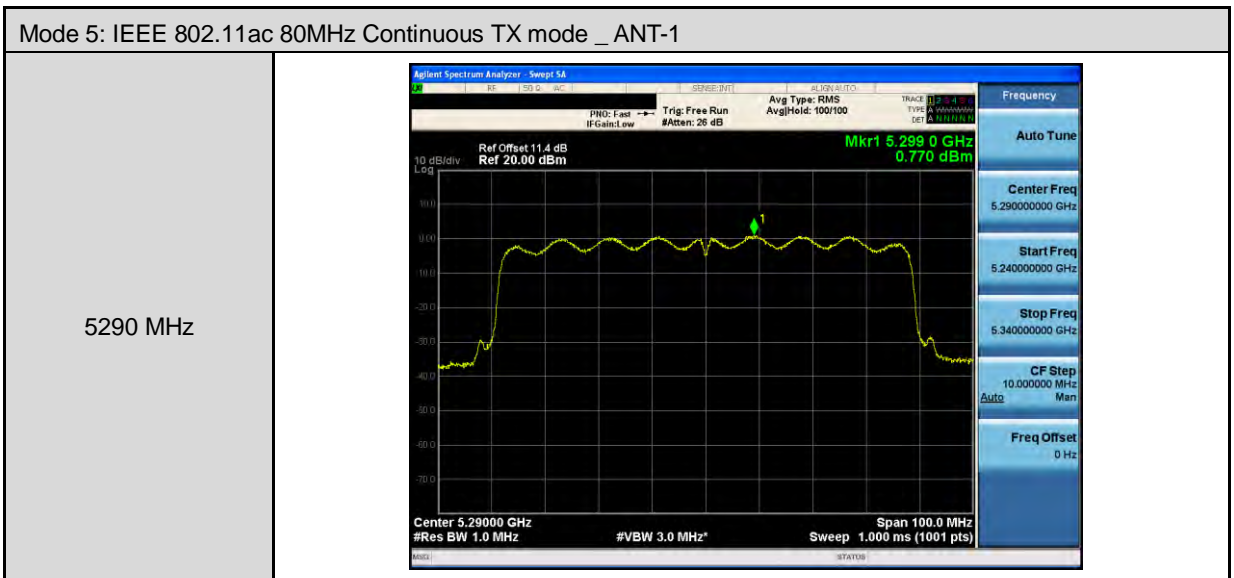
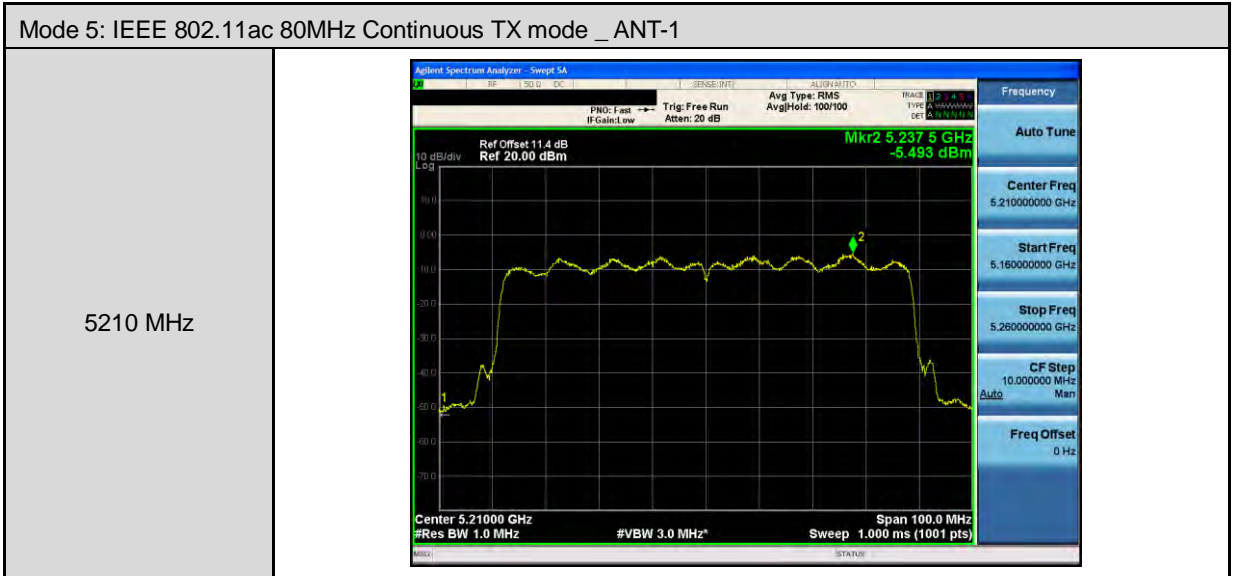


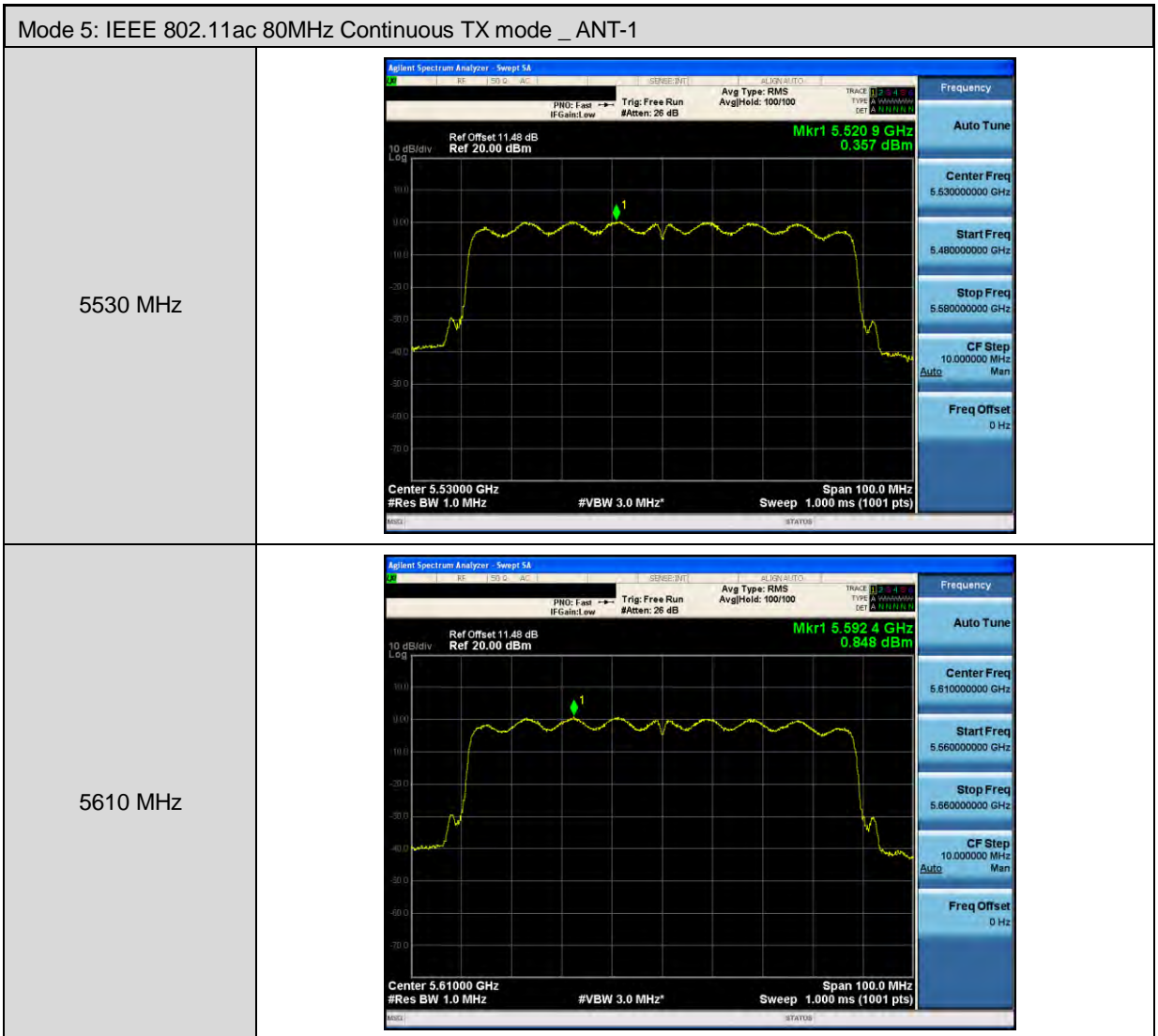


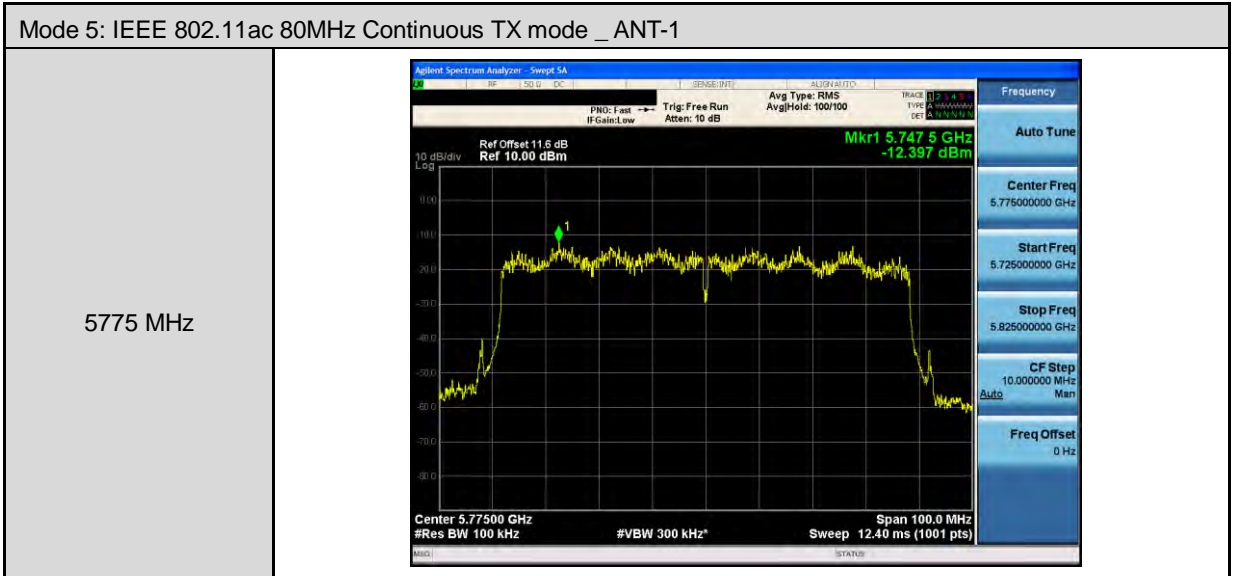


| Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-1 | |
|---|--|
| 5510 MHz | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Ref Offset 11.49 dB Ref 20.00 dBm</p> <p>Mkr1 5.511 08 GHz 2.287 dBm</p> <p>Center 5.51000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 60.00 MHz</p> <p>Frequency: 5.51000000 GHz</p> <p>Auto Tune</p> <p>Center Freq: 5.51000000 GHz</p> <p>Start Freq: 5.48000000 GHz</p> <p>Stop Freq: 5.54000000 GHz</p> <p>CF Step: 6.000000 MHz (Auto/Man)</p> <p>Freq Offset: 0 Hz</p> |
| 5550 MHz | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Ref Offset 11.49 dB Ref 20.00 dBm</p> <p>Mkr1 5.551 50 GHz 2.908 dBm</p> <p>Center 5.55000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 60.00 MHz</p> <p>Frequency: 5.55000000 GHz</p> <p>Auto Tune</p> <p>Center Freq: 5.55000000 GHz</p> <p>Start Freq: 5.52000000 GHz</p> <p>Stop Freq: 5.58000000 GHz</p> <p>CF Step: 6.000000 MHz (Auto/Man)</p> <p>Freq Offset: 0 Hz</p> |
| 5670 MHz | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Ref Offset 11.49 dB Ref 20.00 dBm</p> <p>Mkr1 5.672 22 GHz 2.969 dBm</p> <p>Center 5.67000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 60.00 MHz</p> <p>Frequency: 5.67000000 GHz</p> <p>Auto Tune</p> <p>Center Freq: 5.67000000 GHz</p> <p>Start Freq: 5.64000000 GHz</p> <p>Stop Freq: 5.70000000 GHz</p> <p>CF Step: 6.000000 MHz (Auto/Man)</p> <p>Freq Offset: 0 Hz</p> |





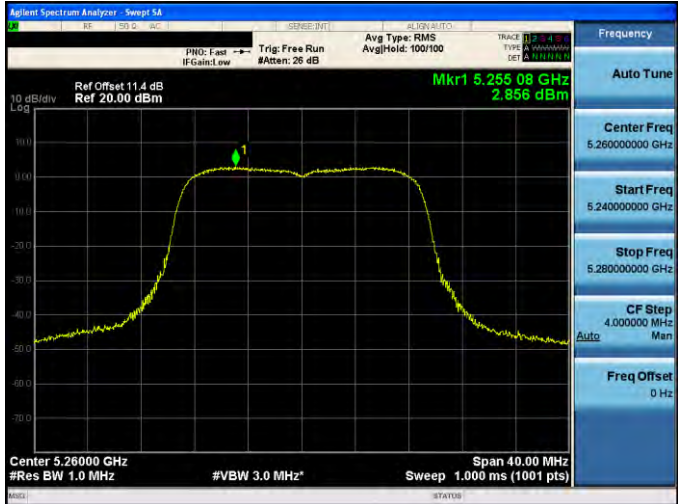
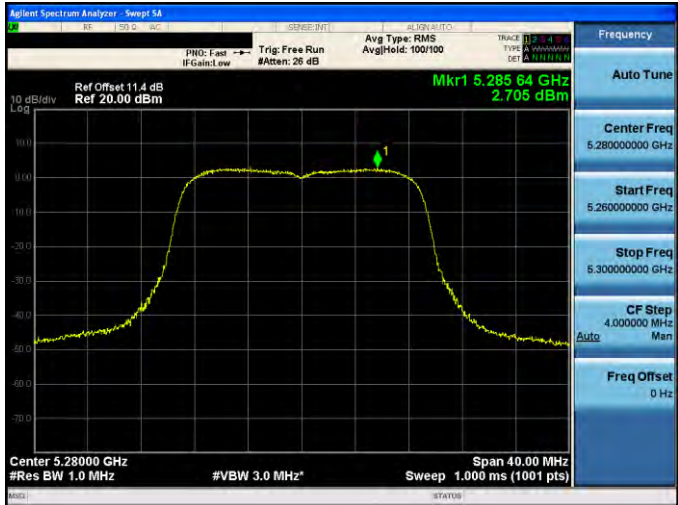






| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-2 | |
|--|--|
| 5180 MHz | |
| 5200 MHz | |
| 5240 MHz | |



| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-2 | |
|--|--|
| 5260 MHz |  <p>Ref Offset 11.4 dB Ref 20.00 dBm</p> <p>Mkr1 5.255 08 GHz 2.856 dBm</p> <p>Center 5.26000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p> <p>Frequency: Auto Tune Center Freq: 5.26000000 GHz Start Freq: 5.24000000 GHz Stop Freq: 5.28000000 GHz CF Step: 4.000000 MHz Freq Offset: 0 Hz</p> |
| 5280 MHz |  <p>Ref Offset 11.4 dB Ref 20.00 dBm</p> <p>Mkr1 5.285 64 GHz 2.705 dBm</p> <p>Center 5.28000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p> <p>Frequency: Auto Tune Center Freq: 5.28000000 GHz Start Freq: 5.26000000 GHz Stop Freq: 5.30000000 GHz CF Step: 4.000000 MHz Freq Offset: 0 Hz</p> |
| 5320 MHz |  <p>Ref Offset 11.4 dB Ref 20.00 dBm</p> <p>Mkr1 5.325 56 GHz 2.506 dBm</p> <p>Center 5.32000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p> <p>Frequency: Auto Tune Center Freq: 5.32000000 GHz Start Freq: 5.30000000 GHz Stop Freq: 5.34000000 GHz CF Step: 4.000000 MHz Freq Offset: 0 Hz</p> |

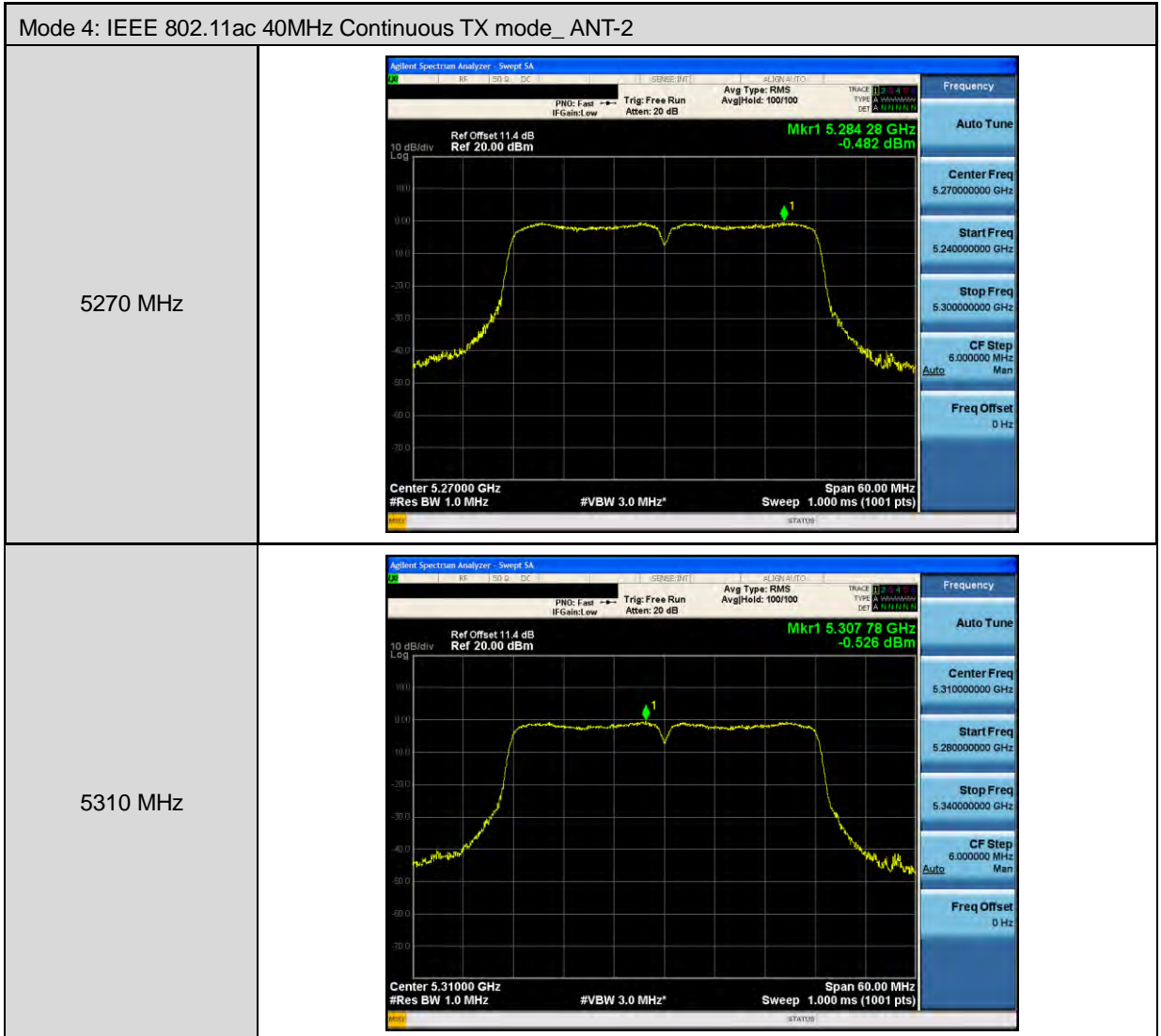


| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-2 | |
|--|---|
| 5500 MHz | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Ref Offset 11.49 dB Ref 20.00 dBm</p> <p>Mkr1 5.494 68 GHz 2.925 dBm</p> <p>Center 5.50000 GHz #Res BW 1.0 MHz</p> <p>Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> |
| 5560 MHz | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Ref Offset 11.49 dB Ref 20.00 dBm</p> <p>Mkr1 5.554 00 GHz 2.497 dBm</p> <p>Center 5.56000 GHz #Res BW 1.0 MHz</p> <p>Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> |
| 5700 MHz | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Ref Offset 11.49 dB Ref 20.00 dBm</p> <p>Mkr1 5.705 84 GHz 3.060 dBm</p> <p>Center 5.70000 GHz #Res BW 1.0 MHz</p> <p>Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p> |



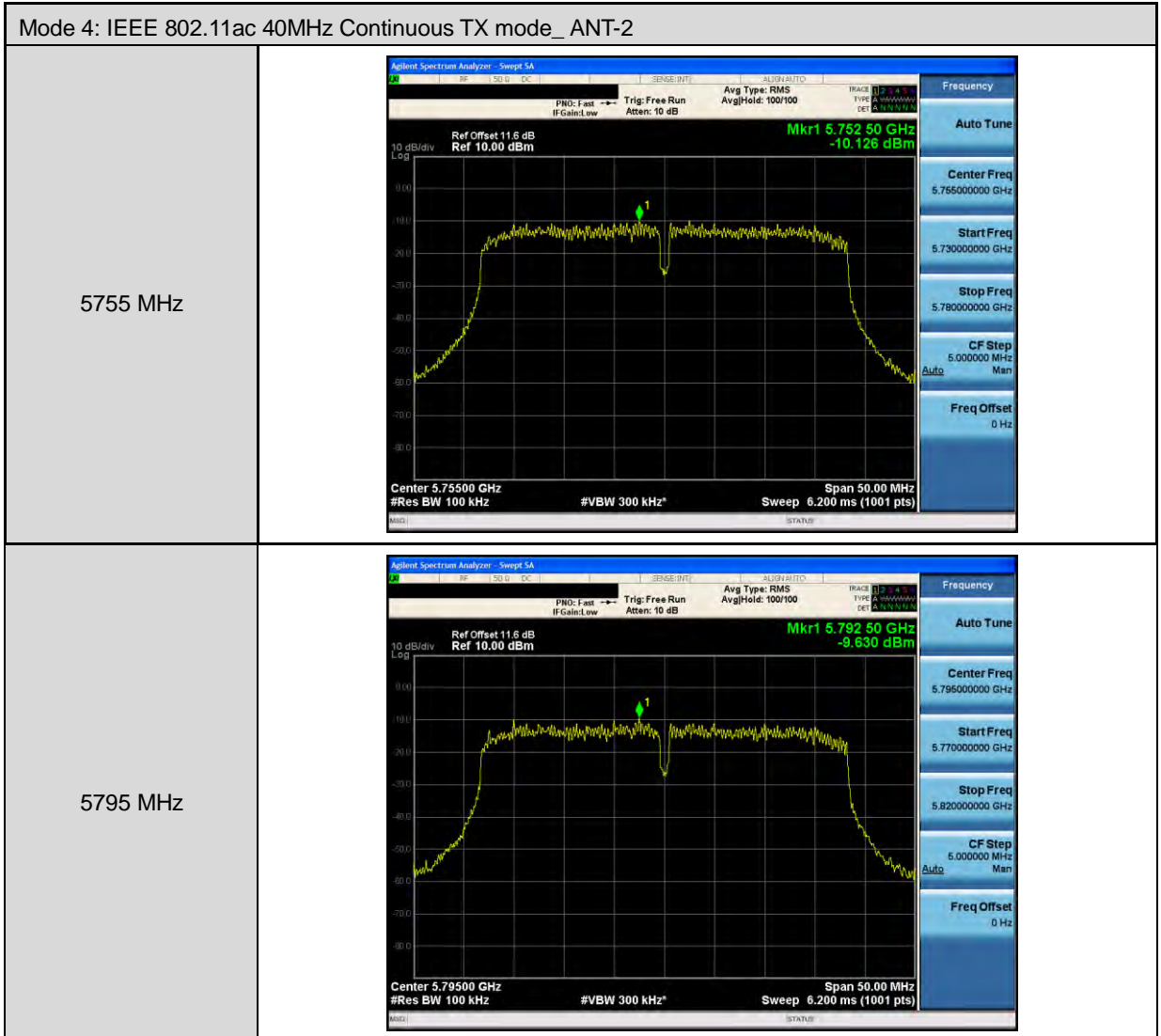
| Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-2 | |
|--|--|
| 5745 MHz | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Ref Offset 11.6 dB Ref 10.00 dBm</p> <p>Mkr1 5.739 99 GHz -6.159 dBm</p> <p>Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p> <p>Frequency: 5.74500000 GHz Center Freq: 5.74500000 GHz Start Freq: 5.73000000 GHz Stop Freq: 5.76000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p> |
| 5785 MHz | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Ref Offset 11.6 dB Ref 10.00 dBm</p> <p>Mkr1 5.780 02 GHz -7.470 dBm</p> <p>Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p> <p>Frequency: 5.78500000 GHz Center Freq: 5.78500000 GHz Start Freq: 5.77000000 GHz Stop Freq: 5.80000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p> |
| 5825 MHz | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Ref Offset 11.6 dB Ref 10.00 dBm</p> <p>Mkr1 5.819 99 GHz -7.014 dBm</p> <p>Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p> <p>Frequency: 5.82500000 GHz Center Freq: 5.82500000 GHz Start Freq: 5.81000000 GHz Stop Freq: 5.84000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p> |

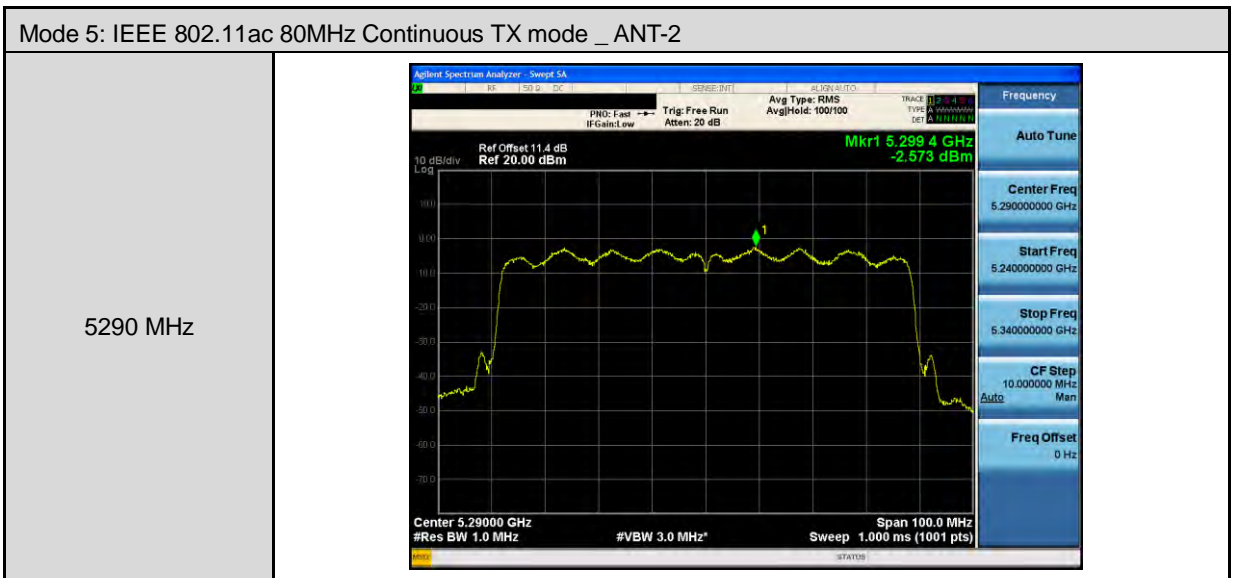
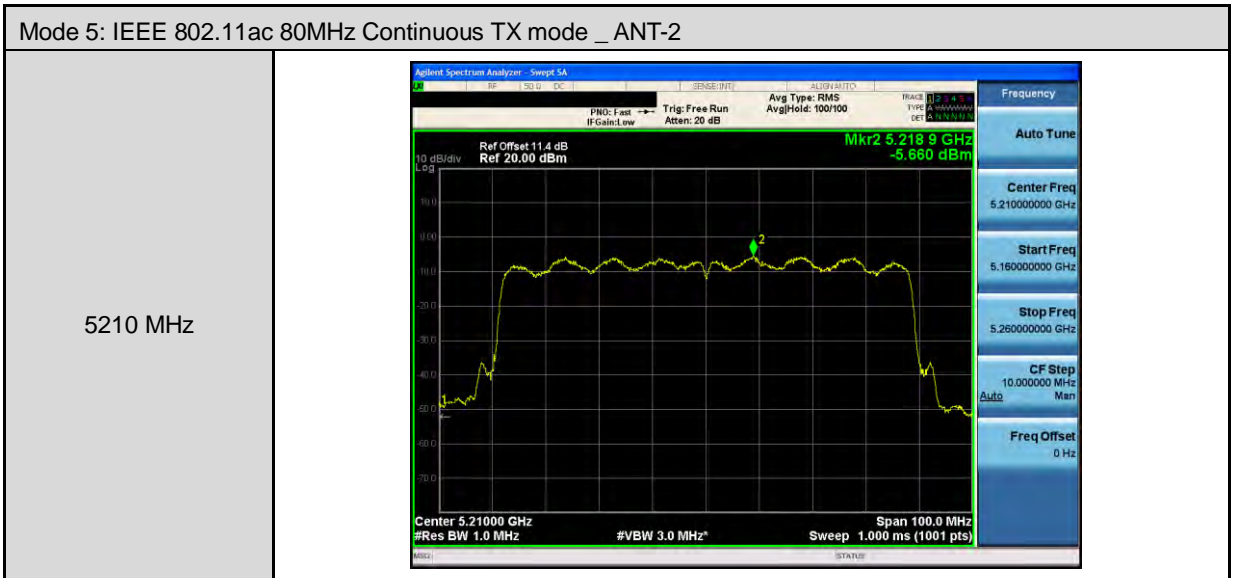


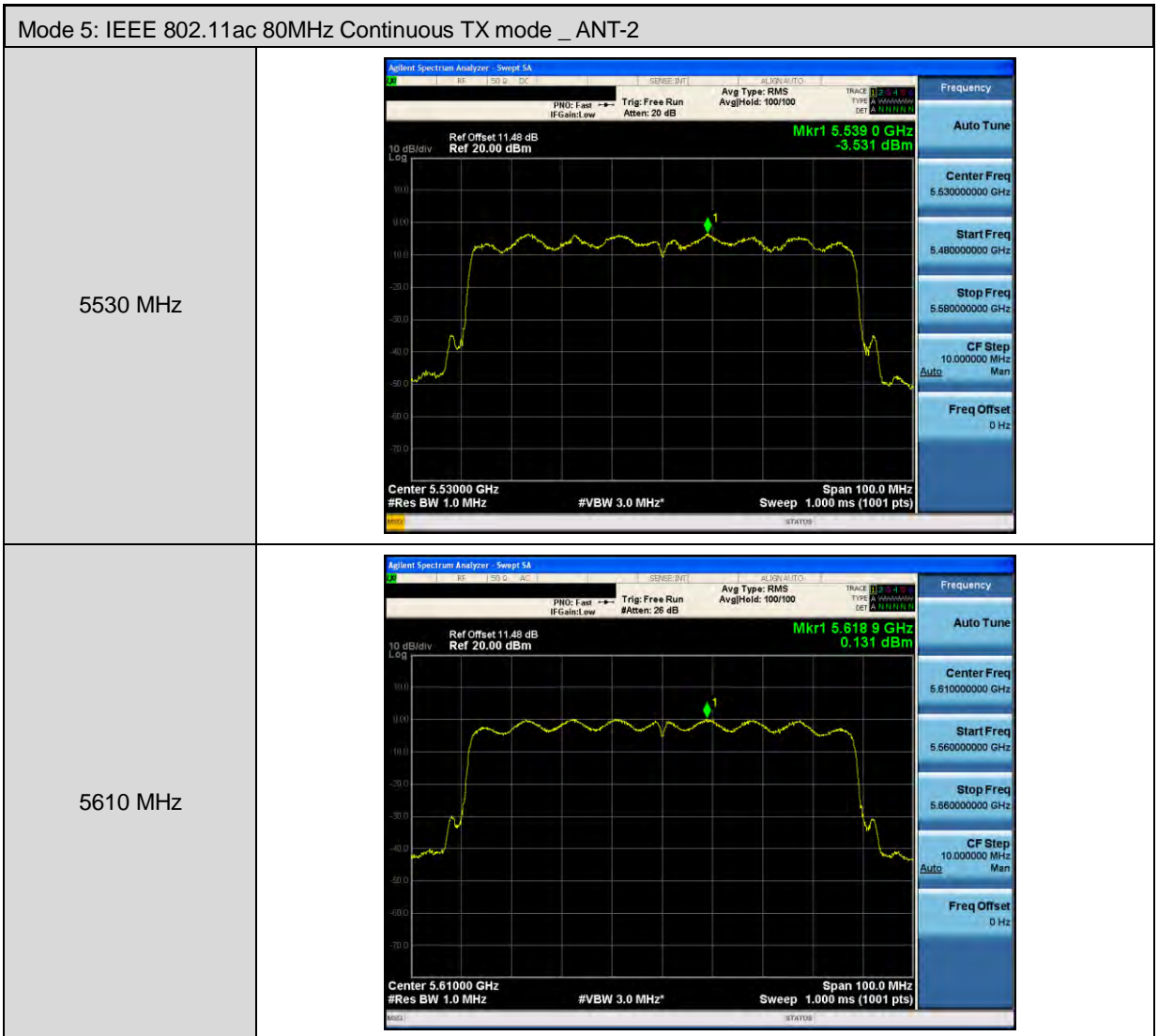


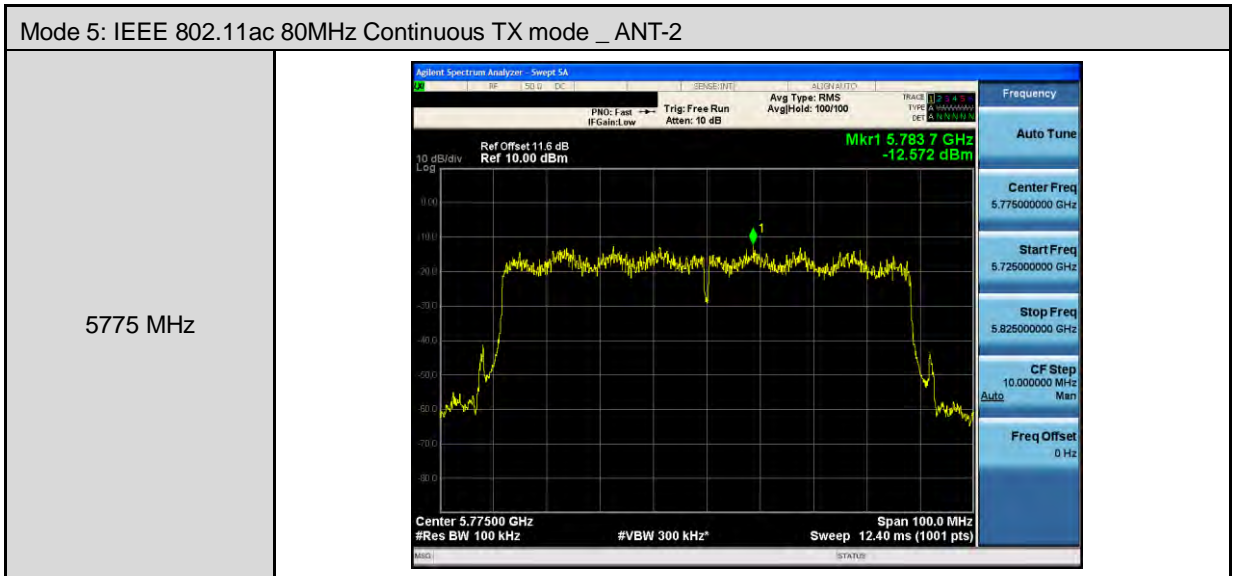


| Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-2 | |
|---|--|
| 5510 MHz | |
| 5550 MHz | |
| 5670 MHz | |







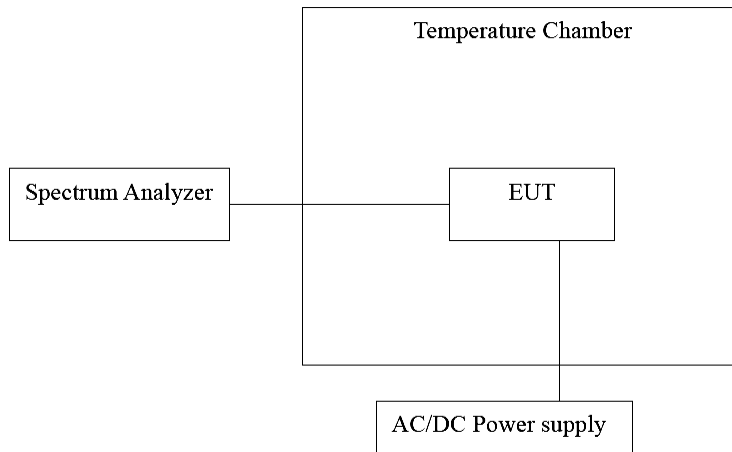


4.8. Frequency Stability Measurement

■ Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

■ Test Setup



■ Test Instruments

| Equipment | Manufacturer | Model Number | Serial Number | Cal. Date | Remark |
|--------------------------------|--------------|--------------|---------------|------------|--------|
| Spectrum Analyzer | Agilent | E4408B | MY45107753 | 08/08/2016 | 1 year |
| Temperature & Humidity Chamber | TAICHY | MHU-225LA | 980729 | 04/17/2017 | 1 year |
| Test Site | ATL | TE05 | TE05 | N.C.R. | ----- |

Note: N.C.R. = No Calibration Request.

■ Test Procedure

1. The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.



■ Test Result

Temperature Variations

| Test Item | Frequency Stability | | | | | |
|-----------|---------------------|---------------|----------------------|------------------|-----------------|--------------------|
| Frequency | Temp. (°C) | Voltage (Vac) | Measured Freq. (MHz) | Delta Freq. (Hz) | Tolerance (ppm) | Result (Pass/Fail) |
| 5200 MHz | 0 | 120 | 5199.9867 | -13300 | -2.558 | Pass |
| | 10 | | 5200.0021 | 2100 | 0.404 | Pass |
| | 20 | | 5200.0051 | 5100 | 0.981 | Pass |
| | 30 | | 5200.0272 | 27200 | 5.231 | Pass |
| | 40 | | 5200.0387 | 38700 | 7.442 | Pass |
| 5280 MHz | 0 | 120 | 5279.9736 | -26400 | -5.000 | Pass |
| | 10 | | 5279.9842 | -15800 | -2.992 | Pass |
| | 20 | | 5279.9913 | -8700 | -1.648 | Pass |
| | 30 | | 5280.0101 | 10100 | 1.913 | Pass |
| | 40 | | 5280.0236 | 23600 | 4.470 | Pass |
| 5560 MHz | 0 | 120 | 5559.9701 | -29900 | -5.378 | Pass |
| | 10 | | 5559.9789 | -21100 | -3.795 | Pass |
| | 20 | | 5559.9895 | -10500 | -1.888 | Pass |
| | 30 | | 5560.0102 | 10200 | 1.835 | Pass |
| | 40 | | 5560.0271 | 27100 | 4.874 | Pass |
| 5785 MHz | 0 | 120 | 5784.9871 | -12900 | -2.230 | Pass |
| | 10 | | 5784.9988 | -1200 | -0.207 | Pass |
| | 20 | | 5785.0027 | 2700 | 0.467 | Pass |
| | 30 | | 5785.0170 | 17000 | 2.939 | Pass |
| | 40 | | 5785.0338 | 33800 | 5.843 | Pass |

**Voltage Variations**

| Test Item | Frequency Stability | | | | | |
|-----------|---------------------|---------------|----------------------|------------------|-----------------|--------------------|
| Frequency | Temp. (°C) | Voltage (Vac) | Measured Freq. (MHz) | Delta Freq. (Hz) | Tolerance (ppm) | Result (Pass/Fail) |
| 5200 MHz | 20 | 138.00 | 5200.0043 | 4300 | 0.827 | Pass |
| | | 120.00 | 5200.0100 | 10000 | 1.923 | Pass |
| | | 102.00 | 5200.0199 | 19900 | 3.827 | Pass |
| 5280 MHz | 20 | 138.00 | 5279.9898 | -10200 | -1.932 | Pass |
| | | 120.00 | 5279.9913 | -8700 | -1.648 | Pass |
| | | 102.00 | 5280.009 | 9000 | 1.705 | Pass |
| 5560 MHz | 20 | 138.00 | 5559.982 | -18000 | -3.237 | Pass |
| | | 120.00 | 5559.9895 | -10500 | -1.888 | Pass |
| | | 102.00 | 5560.0024 | 2400 | 0.432 | Pass |
| 5785 MHz | 20 | 138.00 | 5784.9969 | -3100 | -0.536 | Pass |
| | | 120.00 | 5785.0079 | 7900 | 1.366 | Pass |
| | | 102.00 | 5785.0218 | 21800 | 3.768 | Pass |

Note: The manufacturer's frequency stability specification is better than 20ppm.



4.9. Antenna Requirement

■ Limit

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And According to 15.407 (a), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

■ Antenna Connector Construction

See section 2 – antenna information.

■ Directional Gain Calculated

Directional Gain = $10 \cdot \log\{[10^{(G1/20)} + 10^{(G2/20)} + \dots + 10^{(Gn/20)}]^2 / NANT\}$ = 8.65 dBi > 6dBi

| Operate Freq. Band | | Directional Gain (dBi) |
|---------------------|-----------------|------------------------|
| IEEE 802.11ac 20MHz | U-NII Band I | 8.65 |
| | U-NII Band II-A | 8.65 |
| | U-NII Band II-C | 8.65 |
| | U-NII Band III | 8.65 |
| IEEE 802.11ac 40MHz | U-NII Band I | 8.65 |
| | U-NII Band II-A | 8.65 |
| | U-NII Band II-C | 8.65 |
| | U-NII Band III | 8.65 |
| IEEE 802.11ac 80MHz | U-NII Band I | 8.65 |
| | U-NII Band II-A | 8.65 |
| | U-NII Band II-C | 8.65 |
| | U-NII Band III | 8.65 |