10 FCC §15.407(a) & ISEDC RSS-247 §6.2 - Power Spectral Density

10.1 Applicable Standards

According to FCC §15.407(a):

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

According to ISEDC RSS-247 §6.2.1 for frequency band 5150-5250 MHz:

The maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log 10B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

According to ISEDC RSS-247 §6.2.2 for frequency band 5250-5350 MHz:

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}$ B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10}B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

According to ISEDC RSS-247 §6.2.3 for frequency band 5470-5600 MHz and 5650-5725 MHz:

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}$ B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10}B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

According to ISEDC RSS-247 §6.2.4 for frequency band 5725-5850 MHz:

The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the 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 devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

10.2 Measurement Procedure

(i) Set span to encompass the entire emission bandwidth (EBW) of the signal.

(ii) Set RBW = 1 MHz.

(iii) Set VBW \geq 3 MHz.

(iv) Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is \leq RBW/2, so that narrowband signals are not lost between frequency bins.)

(v) Sweep time = auto.

(vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.

(vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle \ge 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run". (viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.

(ix) Compute power by integrating the spectrum across the 26 dB EBW of the signal using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges. If the spectrum analyzer does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW of the spectrum.

| Manufacturer | Description | Model No. | Serial No. | Calibration Date | Calibration Interval |
|--------------|-------------------|-----------|------------|------------------------|-------------------------|
| Agilent | Spectrum Analyzer | E4446A | MY48250238 | 2019-06-26 | 2 years |
| - | RF cable | - | - | Each time ¹ | N/A |
| - | 20 dB attenuator | - | - | Each time ¹ | N/A |

10.3 Test Equipment List and Details

Note¹: cable and attenuator included in the test set-up will be checked each time before testing.

Statement of Traceability: BACL Corp. attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".

10.4 Test Environmental Conditions

| Temperature: | 22-24 °C |
|---------------------------|-----------------|
| Relative Humidity: | 50-55 % |
| ATM Pressure: | 102.1-102.7 kPa |

The testing was performed by Zhao Zhao and Allen Huang from 2021-01-07 to 2021-01-14 in RF site.

10.5 Test Results

Ruckus Wireless, Inc.

5150 - 5250 MHz

FCC:

| Channel | Frequency | PSD (dE | 8m/MHz) | DCCF | | ted PSD 'MHz) | FCC Limit | | | |
|--------------|-----------------|---------|------------|----------|---------|------------------|-----------|--|--|--|
| | (MHz) | ANT J12 | ANT J15 | (dB) | ANT J12 | ANT J15 | (dBm/MHz) | | | |
| 802.11a mode | | | | | | | | | | |
| 36 | 5180 | 7.843 | 8.159 | 0.31 | 8.15 | 8.47 | 17 | | | |
| 44 | 5220 | 8.554 | 8.317 | 0.31 | 8.86 | 8.63 | 17 | | | |
| 48 | 5240 | 8.607 | 8.095 | 0.31 | 8.92 | 8.41 | 17 | | | |
| | | | 802.11n/ac | 20 mode | | | | | | |
| 36 | 5180 | 7.270 | 7.740 | 0.24 | 10. | 762 | 17 | | | |
| 44 | 5220 | 7.460 | 7.451 | 0.24 | 10. | 706 | 17 | | | |
| 48 | 5240 | 8.039 | 7.598 | 0.24 | 11. | 074 | 17 | | | |
| | | | 802.11ax2 | 20 mode | - | | | | | |
| 36 | 5180 | 7.239 | 7.628 | 0.18 | 10. | 628 | 17 | | | |
| 44 | 5220 | 7.776 | 7.395 | 0.18 | 10.780 | | 17 | | | |
| 48 | 5240 | 7.736 | 7.625 | 0.18 | 10. | 871 | 17 | | | |
| | | | 802.11n/ac | :40 mode | | | | | | |
| 38 | 5190 | 4.457 | 3.723 | 0.20 | 7.316 | | 17 | | | |
| 46 | 5230 | 5.534 | 4.772 | 0.20 | 8.3 | 80 | 17 | | | |
| | | | 802.11ax4 | 40 mode | | | | | | |
| 38 | 5190 | 3.791 | 3.044 | 0.32 | 6.764 | | 17 | | | |
| 46 | 5230 | 5.180 | 4.293 | 0.32 | 8.089 | | 17 | | | |
| | 802.11ac20 mode | | | | | | | | | |
| 42 | 5210 | -0.416 | -1.145 | 0.61 | 2.855 | | 17 | | | |
| | | | 802.11ax8 | 30 mode | | | | | | |
| 42 | 5210 | -0.121 | -1.061 | 0.24 | 2.6 | 585 | 17 | | | |

| 1 | 1 | ٦ | • |
|---|---|---|---|
| | | ` | • |
| | | | |

| Channel | hannal ¹ ^v | | DCCF | | | IC Limit EIRP | | | | | |
|---------|----------------------------------|--------|------------|----------|-----------|------------------|-------|--|--|--|--|
| | (MHz) ANT J12 ANT J15 (dB) | (dB) | ANT J12 | ANT J15 | (dBm/MHz) | | | | | | |
| | 802.11a mode | | | | | | | | | | |
| 36 | 5180 | 7.843 | 8.159 | 0.31 | 9.15 | 9.47 | 10.00 | | | | |
| 44 | 5220 | 8.554 | 8.317 | 0.31 | 9.86 | 9.63 | 10.00 | | | | |
| 48 | 5240 | 8.607 | 8.095 | 0.31 | 9.92 | 9.41 | 10.00 | | | | |
| | | | 802.11n/ac | 20 mode | | | | | | | |
| 36 | 5180 | 7.270 | 7.740 | 0.24 | 8.51 | 8.98 | 10.00 | | | | |
| 44 | 5220 | 7.460 | 7.451 | 0.24 | 8.70 | 8.69 | 10.00 | | | | |
| 48 | 5240 | 8.039 | 7.598 | 0.24 | 9.28 | 8.84 | 10.00 | | | | |
| | | | 802.11ax2 | 20 mode | | | | | | | |
| 36 | 5180 | 7.239 | 7.628 | 0.18 | 8.42 | 8.81 | 10.00 | | | | |
| 44 | 5220 | 7.776 | 7.395 | 0.18 | 8.96 | 8.58 | 10.00 | | | | |
| 48 | 5240 | 7.736 | 7.625 | 0.18 | 8.92 | 8.81 | 10.00 | | | | |
| | | | 802.11n/ac | :40 mode | | | | | | | |
| 38 | 5190 | 4.457 | 3.723 | 0.20 | 5.66 | 4.92 | 10.00 | | | | |
| 46 | 5230 | 5.534 | 4.772 | 0.20 | 6.73 | 5.97 | 10.00 | | | | |
| | | | 802.11ax4 | 40 mode | | | | | | | |
| 38 | 5190 | 3.791 | 3.044 | 0.32 | 5.11 | 4.36 | 10.00 | | | | |
| 46 | 5230 | 5.180 | 4.293 | 0.32 | 6.50 | 5.61 | 10.00 | | | | |
| | 802.11ac20 mode | | | | | | | | | | |
| 42 | 5210 | -0.416 | -1.145 | 0.61 | 1.19 | 0.47 | 10.00 | | | | |
| | | | 802.11ax8 | 80 mode | | | | | | | |
| 42 | 5210 | -0.121 | -1.061 | 0.24 | 1.12 | 0.18 | 10.00 | | | | |

Note: Corrected PSD EIRP = PSD (dBm/MHz) + DCCF (dB) + antenna gain (dB)

Note: The antenna gain was 1 dBi declared by the manufacturer.

Note: According to MIMO FCC KDB 662911 D02 MIMO with Cross Polarized Antenna v01, Where an FCC rule specifies limits in radiated terms such as EIRP or ERP, the limits apply to the maximum emission that would be observed by a linearly polarized measurement antenna. For radiated measurements, the maximum need be performed only over two polarizations for the receive antenna— horizontal and vertical.

| Channel | Frequency | PSD (dF | Bm/MHz) | DCCF | Corrected Total PSD (dBm/MHz) | | FCC/IC Limit | | |
|--------------|-----------------|---------|------------|----------|----------------------------------|---------|-----------------|--|--|
| | (MHz) | ANT J12 | ANT J15 | (dB) | ANT J12 | ANT J15 | (dBm/MHz) | | |
| 802.11a mode | | | | | | | | | |
| 52 | 5260 | 8.737 | 8.171 | 0.31 | 9.05 | 8.48 | 11 | | |
| 60 | 5300 | 9.202 | 8.118 | 0.31 | 9.51 | 8.43 | 11 | | |
| 64 | 5320 | 9.107 | 7.921 | 0.31 | 9.42 | 8.23 | 11 | | |
| | | | 802.11n/ac | 20 mode | | | | | |
| 52 | 5260 | 7.995 | 7.404 | 0.24 | 10. | 960 | 11 | | |
| 60 | 5300 | 6.556 | 6.230 | 0.24 | 9.6 | 546 | 11 | | |
| 64 | 5320 | 7.020 | 6.363 | 0.24 | 9.9 | 954 | 11 | | |
| | | | 802.11ax2 | 20 mode | | | | | |
| 52 | 5260 | 5.983 | 6.039 | 0.18 | 9.201 | | 11 | | |
| 60 | 5300 | 6.292 | 6.122 | 0.18 | 9.398 | | 11 | | |
| 64 | 5320 | 8.195 | 6.987 | 0.18 | 10.823 | | 11 | | |
| | | | 802.11n/ac | :40 mode | | | | | |
| 54 | 5270 | 5.849 | 5.558 | 0.20 | 8.916 | | 11 | | |
| 62 | 5310 | 6.320 | 5.511 | 0.20 | 9.1 | .45 | 11 | | |
| | | | 802.11ax4 | 40 mode | | | | | |
| 54 | 5270 | 6.228 | 5.276 | 0.32 | 9.108 | | 11 | | |
| 62 | 5310 | 6.188 | 5.020 | 0.32 | 8.973 | | 11 | | |
| | 802.11ac80 mode | | | | | | | | |
| 58 | 5290 | -0.224 | -0.246 | 0.61 | 3.385 | | 11 | | |
| | | | 802.11ax8 | 80 mode | | | | | |
| 58 | 5290 | 0.335 | -0.400 | 0.24 | 3.2 | 233 | 11 | | |

5250 - 5350 MHz

Ruckus Wireless, Inc.

5470 MHz – 5725 MHz

| Channel | Frequency | PSD (dl | 3m/MHz) | DCCF | Corrected (dBm/ | Total PSD 'MHz) | FCC/IC Limit |
|---------|-----------|---------|------------|----------|--------------------|--------------------|-----------------|
| | (MHz) | ANT J12 | ANT J15 | (dB) | ANT J12 | ANT J15 | (dBm/MHz) |
| | | | 802.11a | mode | | | |
| 100 | 5500 | 9.392 | 9.052 | 0.31 | 9.70 | 9.36 | 11 |
| 116 | 5580 | 9.061 | 8.980 | 0.31 | 9.37 | 9.29 | 11 |
| 140 | 5700 | 9.124 | 8.752 | 0.31 | 9.43 | 9.06 | 11 |
| 144 | 5720 | 8.734 | 8.152 | 0.31 | 9.04 | 8.46 | 11 |
| | | | 802.11n/ac | 20 mode | | | |
| 100 | 5500 | 7.333 | 7.067 | 0.24 | 10. | 452 | 11 |
| 116 | 5580 | 7.736 | 7.392 | 0.24 | 10. | 818 | 11 |
| 140 | 5700 | 7.299 | 6.773 | 0.24 | 10. | 294 | 11 |
| 144 | 5720 | 7.922 | 7.428 | 0.24 | 10. | 932 | 11 |
| | | - | 802.11ax2 | 20 mode | | | |
| 100 | 5500 | 6.878 | 7.426 | 0.18 | 10. | 351 | 11 |
| 116 | 5580 | 7.319 | 7.789 | 0.18 | 10. | 751 | 11 |
| 140 | 5700 | 6.801 | 7.163 | 0.18 | 10.176 | | 11 |
| 144 | 5720 | 7.814 | 7.803 | 0.18 | 10.999 | | 11 |
| | | | 802.11n/ac | :40 mode | | | |
| 102 | 5510 | 5.844 | 5.428 | 0.20 | 8.851 | | 11 |
| 110 | 5550 | 6.049 | 6.133 | 0.20 | 9.3 | 02 | 11 |
| 134 | 5670 | 5.683 | 5.445 | 0.20 | 8.7 | 76 | 11 |
| 142 | 5710 | 6.518 | 6.251 | 0.20 | 9.5 | 597 | 11 |
| | | • | 802.11ax4 | 40 mode | | | |
| 102 | 5510 | 4.881 | 4.698 | 0.32 | 8.1 | 21 | 11 |
| 110 | 5550 | 5.703 | 5.941 | 0.32 | 9.1 | 54 | 11 |
| 134 | 5670 | 5.403 | 4.993 | 0.32 | 8.5 | 533 | 11 |
| 142 | 5710 | 6.137 | 6.114 | 0.32 | 9.456 | | 11 |
| | | | 802.11ac8 | 30 mode | | | |
| 106 | 5530 | 1.315 | 1.034 | 0.61 | 4.797 | | 11 |
| 122 | 5610 | 3.075 | 2.692 | 0.61 | 6.508 | | 11 |
| 138 | 5690 | 2.746 | 2.492 | 0.61 | 6.241 | | 11 |
| | | | 802.11ax8 | 30 mode | | | |
| 106 | 5530 | 0.938 | 0.903 | 0.24 | 4.1 | 71 | 11 |
| 122 | 5610 | 3.260 | 2.778 | 0.24 | 6.2 | 276 | 11 |
| 138 | 5690 | 3.096 | 2.762 | 0.24 | 6.1 | .83 | 11 |

Corrected Total PSD (dBm/MHz) = PSD (dBm/MHz) + Duty Cycle Correction (dB)

FCC ID: S9GH550; IC: 5912A-H550

Ruckus Wireless, Inc.

| Channel | Frequency | PSD (dBn | n/100kHz) | DCCF | | Total PSD 500kHz) | FCC/IC Limit | | | |
|--------------|-----------------|----------|-----------|-----------|---------|----------------------|--------------|--|--|--|
| | (MHz) | ANT J12 | ANT J15 | (dB) | ANT J12 | ANT J15 | (dBm/500kHz) | | | |
| 802.11a mode | | | | | | | | | | |
| 149 | 5745 | -0.470 | -0.706 | 0.31 | 6.83 | 6.59 | 30 | | | |
| 157 | 5785 | -0.516 | -0.776 | 0.31 | 6.78 | 6.52 | 30 | | | |
| 165 | 5825 | -1.482 | -1.395 | 0.31 | 5.82 | 5.91 | 30 | | | |
| | | _ | 802.11n/a | ac20 mode | | | | | | |
| 149 | 5745 | -1.184 | -1.492 | 0.24 | 8.9 | 905 | 30 | | | |
| 157 | 5785 | -0.640 | -1.391 | 0.24 | 9.2 | 241 | 30 | | | |
| 165 | 5825 | -1.155 | -1.556 | 0.24 | 8.8 | 389 | 30 | | | |
| | | | 802.11a | x20 mode | | | | | | |
| 149 | 5745 | -2.292 | -2.684 | 0.18 | 7.696 | | 30 | | | |
| 157 | 5785 | -2.663 | -2.453 | 0.18 | 7.623 | | 30 | | | |
| 165 | 5825 | -2.706 | -2.919 | 0.18 | 7.3 | 369 | 30 | | | |
| | | | 802.11n/s | ac40 mode | | | | | | |
| 151 | 5755 | -3.535 | -4.556 | 0.2 | 6.184 | | 30 | | | |
| 159 | 5795 | -3.721 | -3.713 | 0.2 | 6.4 | 183 | 30 | | | |
| | | | 802.11a | x40 mode | | | | | | |
| 151 | 5755 | -5.077 | -6.066 | 0.32 | 4.777 | | 30 | | | |
| 159 | 5795 | -5.168 | -6.247 | 0.32 | 4.646 | | 30 | | | |
| | 802.11ac20 mode | | | | | | | | | |
| 155 | 5775 | -9.723 | -9.963 | 0.61 | 0.769 | | 30 | | | |
| | | | 802.11a | x80 mode | | | | | | |
| 155 | 5775 | -10.016 | -10.398 | 0.24 | 0.0 |)37 | 30 | | | |

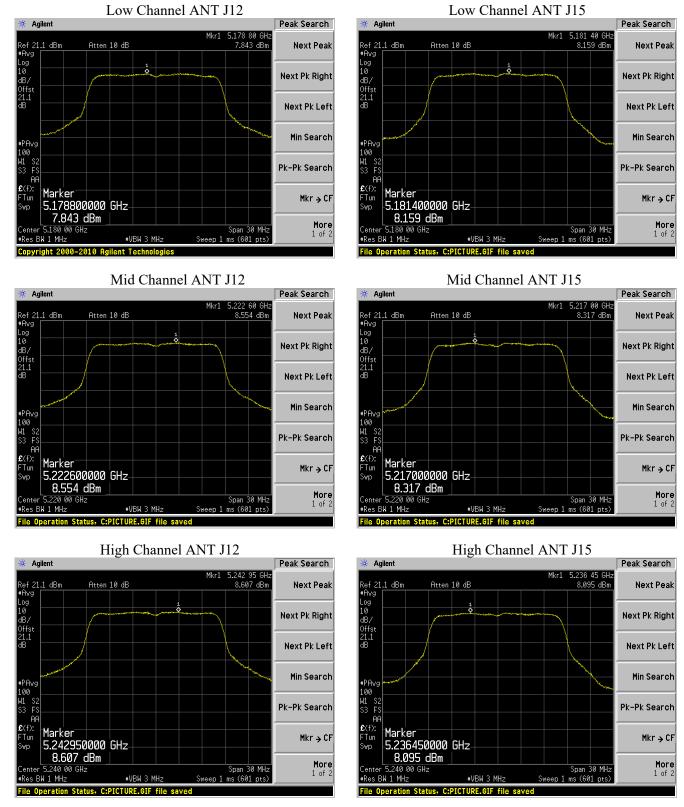
5725MHz – 5850MHz

Note: Corrected Total PSD (dBm/500kHz) = PSD (dBm/100kHz) + RBW Correction (dB) + Duty Cycle Correction (dB)

Note: The RBW Correction from 100 kHz to 500kHz is 10*log(500kHz/100kHz) =6.990

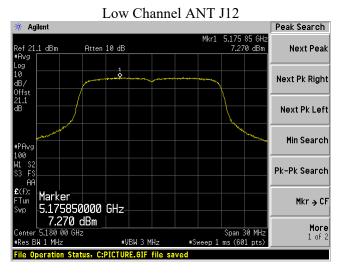
Please refer to the following plots.

5150 - 5250 MHz

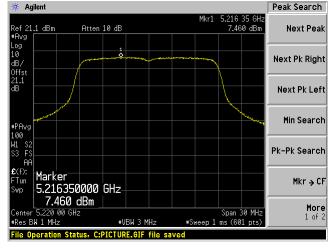


802.11a Mode

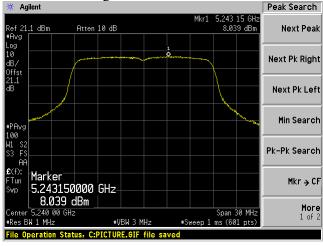
802.11ac20 Mode

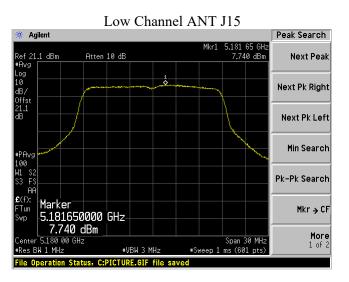


Mid Channel ANT J12

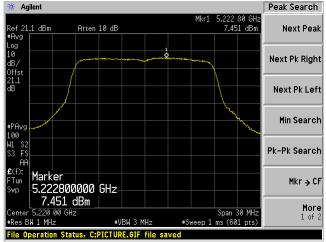


High Channel ANT J12

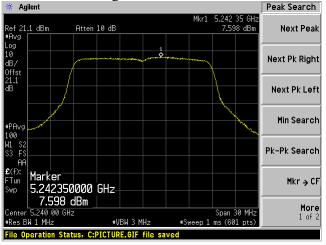




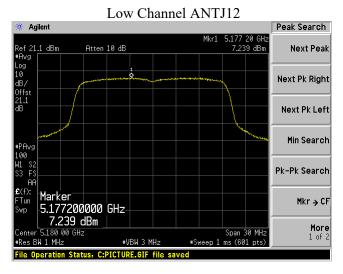
Mid Channel ANT J15



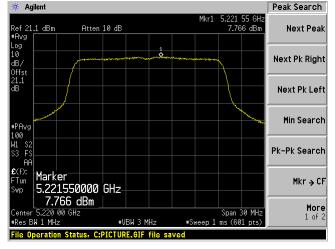
High Channel ANT J15



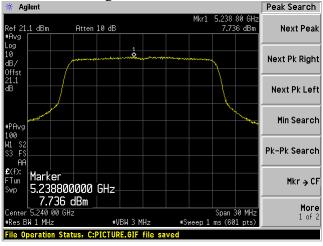
802.11ax20 Mode

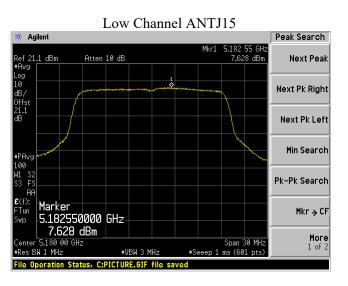


Mid Channel ANTJ12

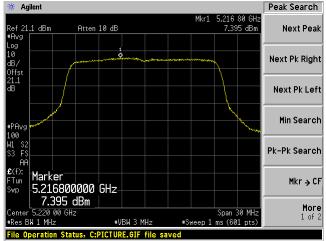


High Channel ANTJ12

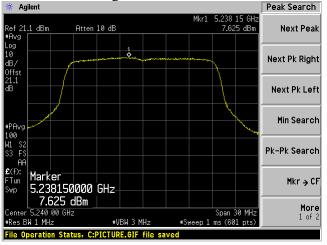




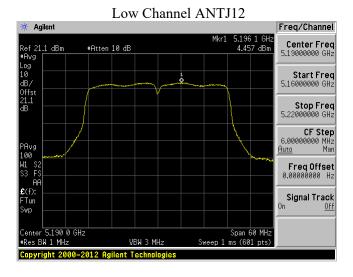
Mid Channel ANTJ15

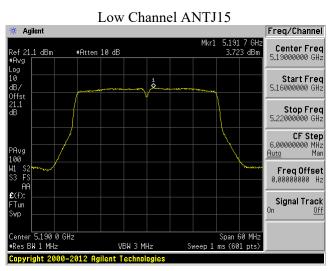


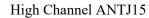
High Channel ANTJ15

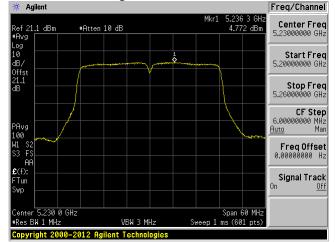


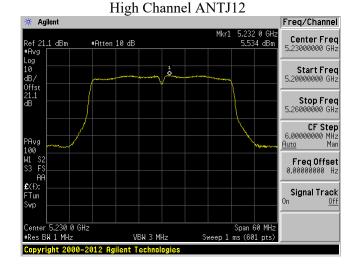
802.11ac40 Mode



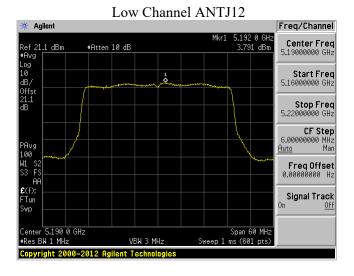


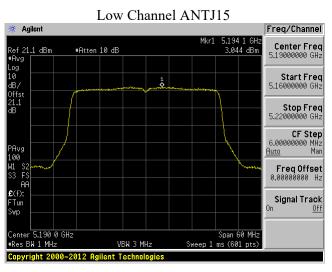


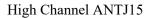


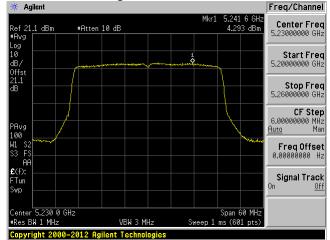


802.11ax40 Mode

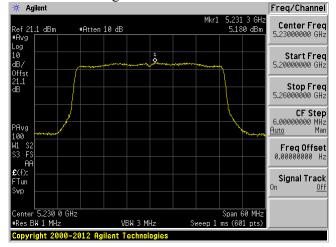






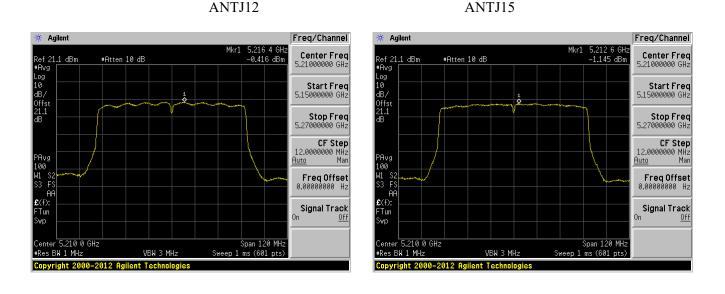






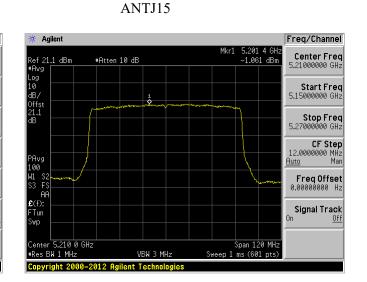
Ruckus Wireless, Inc.

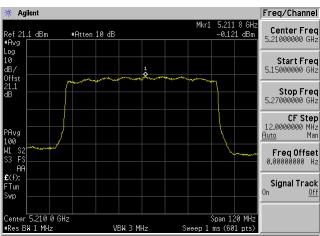
802.11ac80 Mode



802.11ax80 Mode

ANTJ12

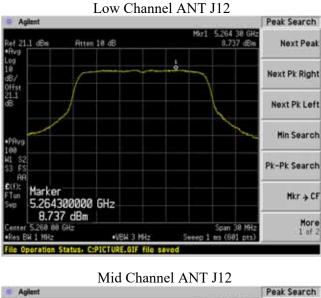


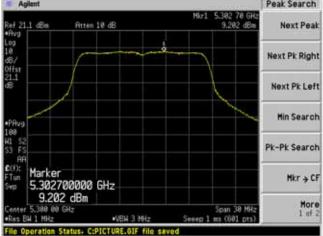


Copyright 2000-2012 Agilent Technologies

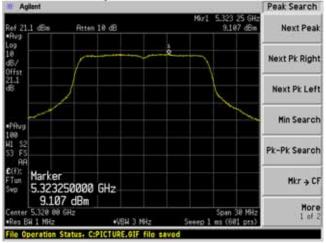
5250 - 5350 MHz

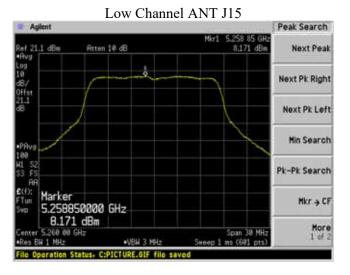
802.11a Mode

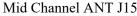


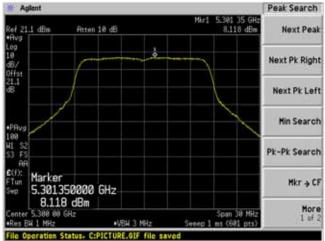


High Channel ANT J12

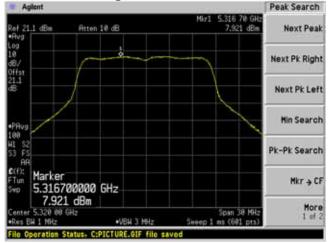




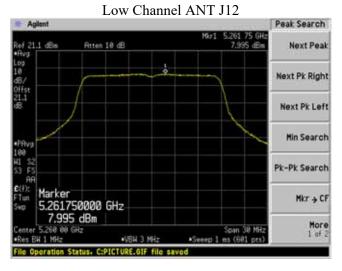




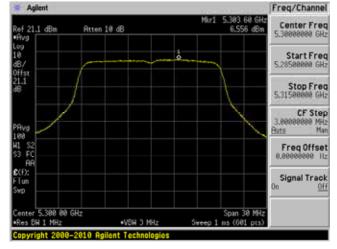
High Channel ANT J15



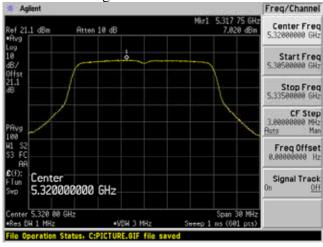
802.11ac20 Mode

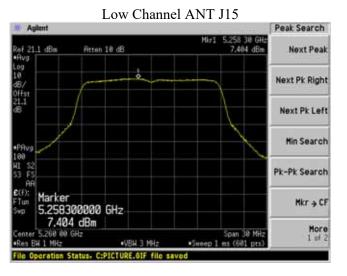


Mid Channel ANT J12

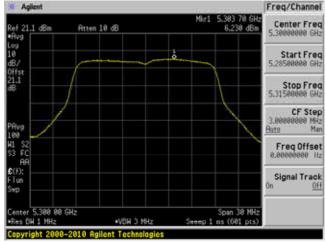


High Channel ANT J12

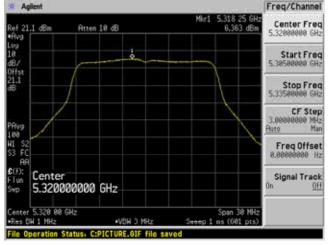




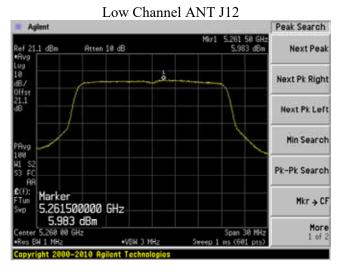
Mid Channel ANT J15



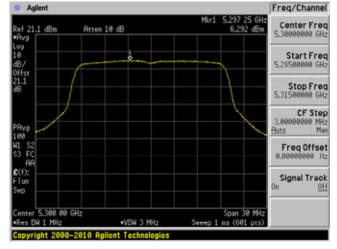
High Channel ANT J15



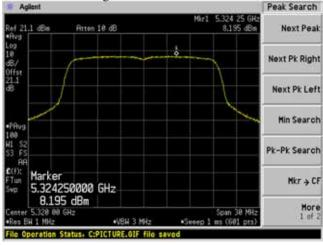
802.11ax20 Mode

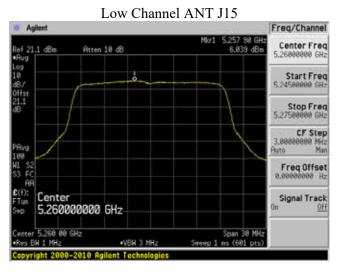


Mid Channel ANT J12



High Channel ANT J12

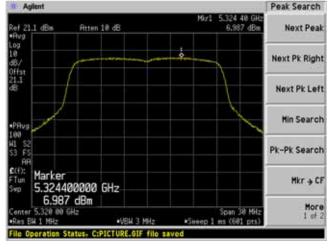




Mid Channel ANT J15

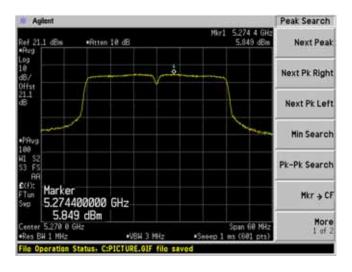


High Channel ANT J15

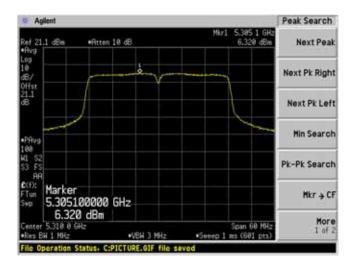


802.11ac40 Mode

Low Channel ANT J12

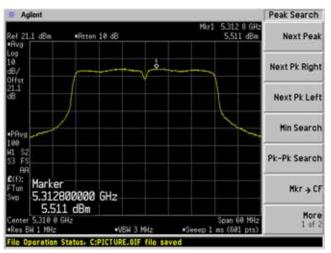


High Channel ANT J12



Peak Search 5.273 8 GH 5.558 dBr ef 21.1 dBm •Atten 10 dB Next Peak .09 18 0 Next Pk Right offsi 21.1 Next Pk Left **Hin Search** Pk-Pk Search D(F): Marker Mkr + CF Tu 5.273000000 GHz 5.558 dBm More 1 of 2 Span 60 MHz •Sweep 1 ms (601 pts) 78 8 GHz VEH 3 MHz File Operation Status, C:PICTURE.GIF file saved

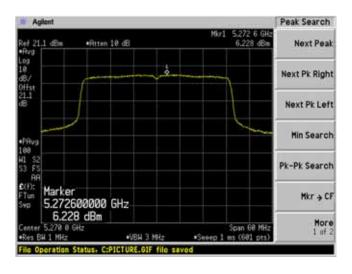




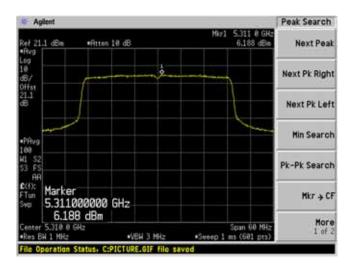
Low Channel ANT J15

802.11ax40 Mode

Low Channel ANT J12

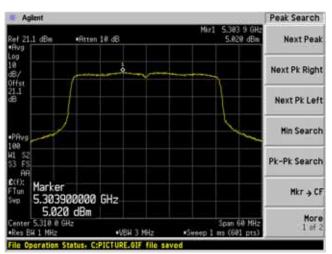


High Channel ANT J12



Peak Search ef 21.1 dBm •Atten 10 dB 5.276 dBa Next Peak B Next Pk Right offsi 21.1 Next Pk Left **Hin Search** Pk-Pk Search D(F): Marker Mkr + CF Tur 5.272800000 GHz 5.276 dBm More 1 of 2 Span 60 MHz •Sweep 1 ms (601 pts) 78 0 GHz VEH 3 MHz RU 1 MU-File Operation Status, C:PICTURE.GIF file saved

High Channel ANT J15



Low Channel ANT J15

ANT J15

ANT J15

Anile

lef 21.1 dBm

Avg 8 8

56/

Diffun 21.1

88

£(f):

-

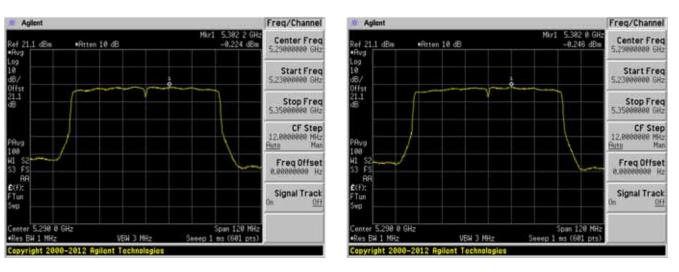
5.298 8 GHz

Res BH 1 MHz

•Atten 10 dB

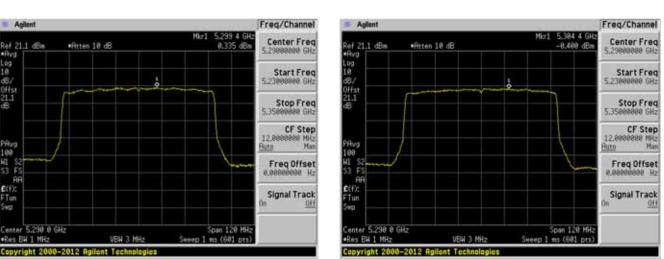
802.11ac80 Mode





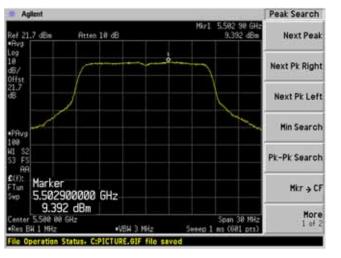
802.11ax80 Mode

ANT J12

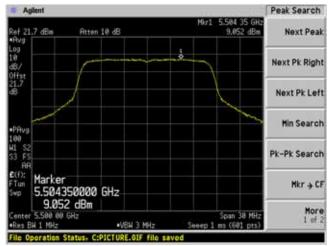


5470 - 5725 MHz

802.11a Mode

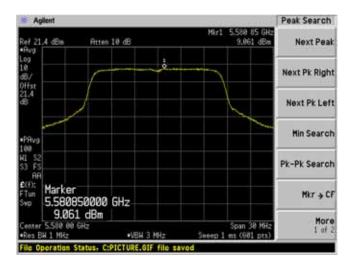


Low Channel ANT J12

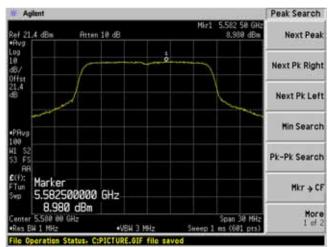


Low Channel ANT J15

Mid Channel ANT J12

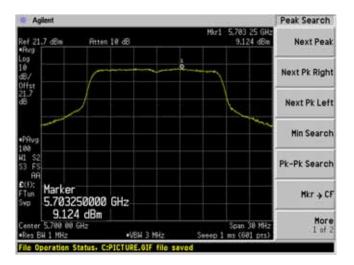


Mid Channel ANT J15

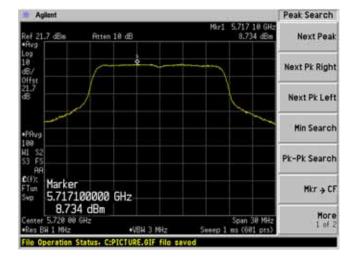


Ruckus Wireless, Inc.

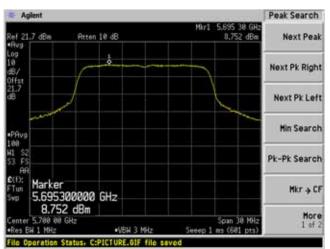
Second High Channel ANT J12



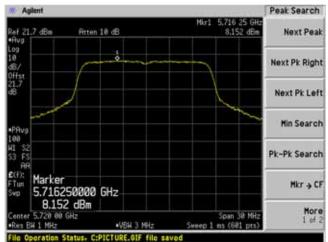
High Channel ANT J12



Second High Channel ANT J15

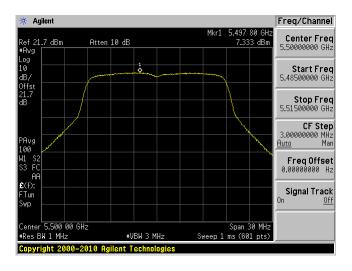


High Channel ANT J15

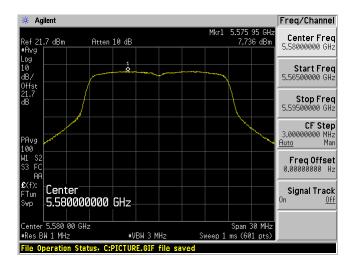


802.11ac20 Mode

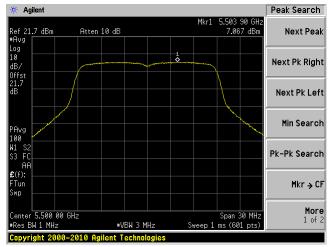
Low Channel ANT J12



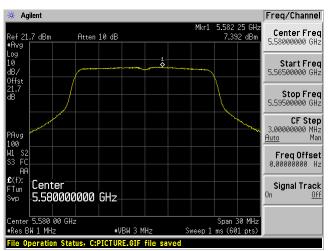
Mid Channel ANT J12



Low Channel ANT J15

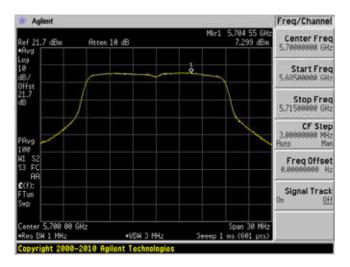


Mid Channel ANT J15

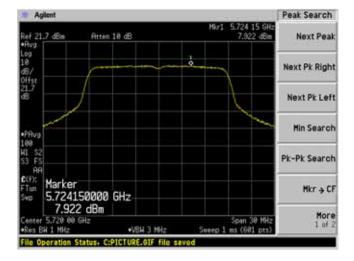


Ruckus Wireless, Inc.

Second High Channel ANT J12

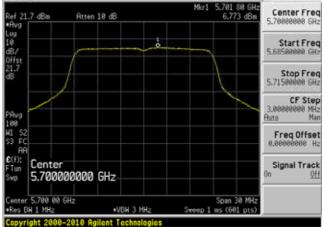


High Channel ANT J12

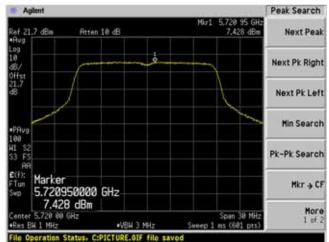




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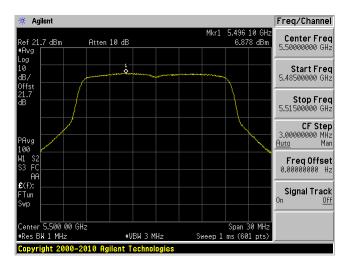


High Channel ANT J15

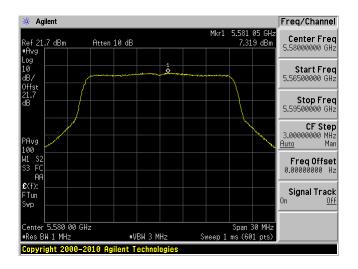


802.11ax20 Mode

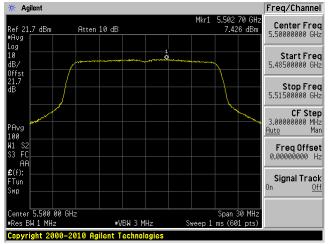
Low Channel ANT J12



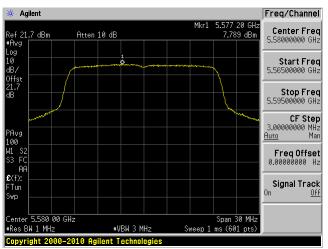
Mid Channel ANT J12



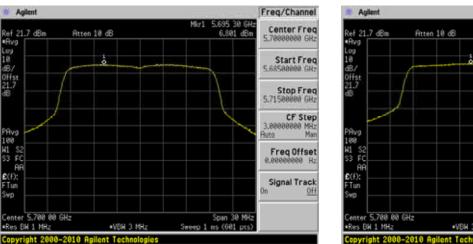
Low Channel ANT J15



Mid Channel ANT J15

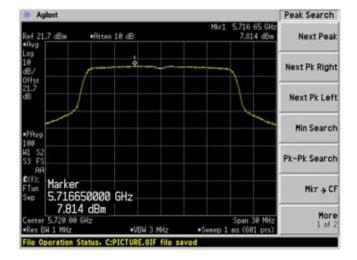


Second High Channel ANT J15



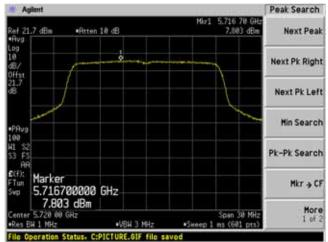
High Channel ANT J12

Second High Channel ANT J12



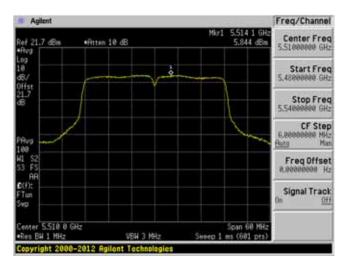


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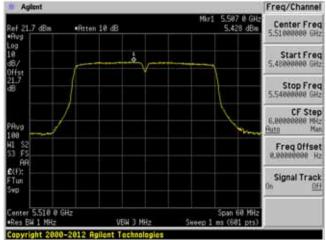


802.11ac40 Mode

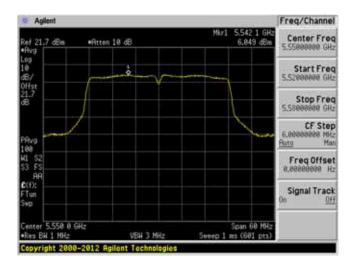
Low Channel ANT J12



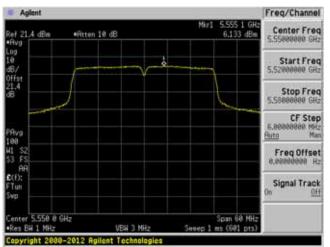
Low Channel ANT J15



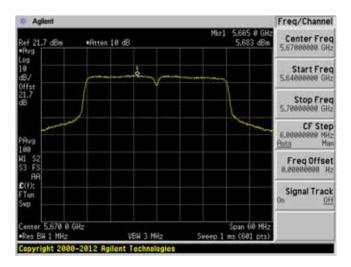
Mid Channel ANT J15



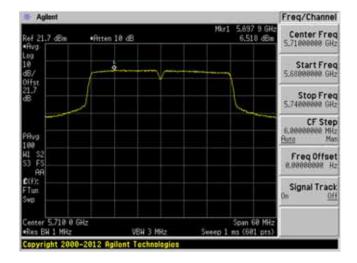
Mid Channel ANT J12

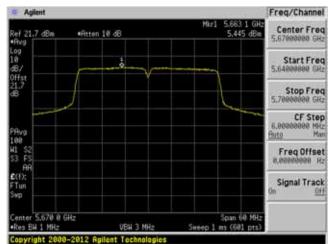


Second High Channel ANT J12



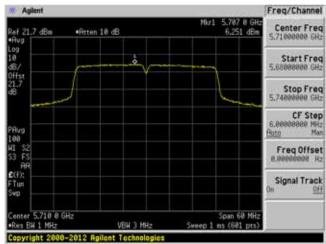
High Channel ANT J12





Second High Channel ANT J15

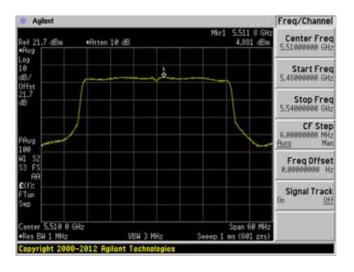
High Channel ANT J15



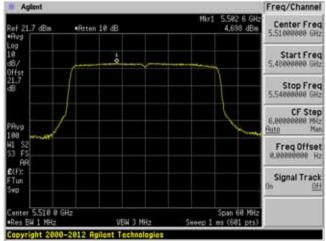
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802.11ax40 Mode

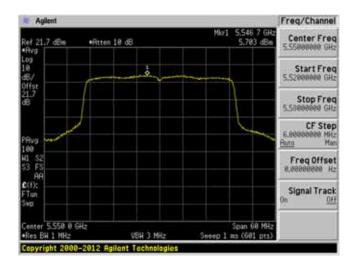
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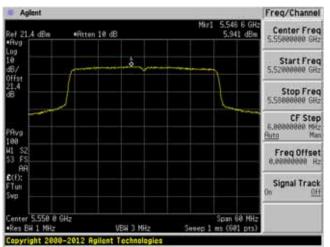
Low Channel ANT J15



Mid Channel ANT J15

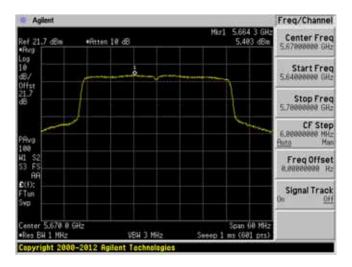


Mid Channel ANT J12

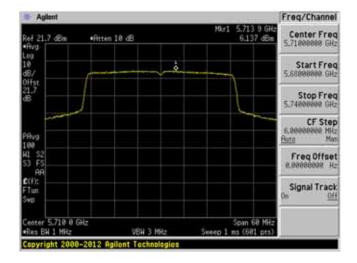


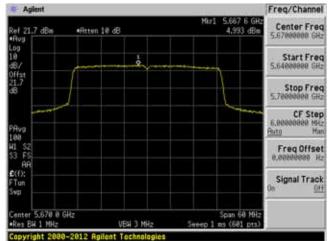
FCC Part 15.407/ISEDC RSS-247 Test Report

Second High Channel ANT J12



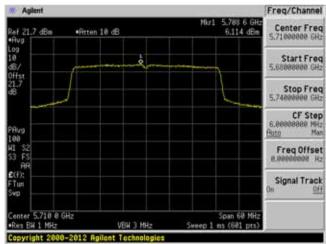
High Channel ANT J12



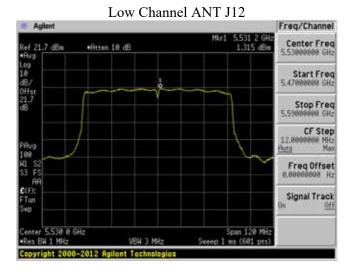


Second High Channel ANT J15

High Channel ANT J15

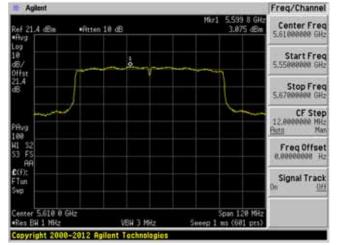


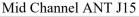
802.11ac80 Mode

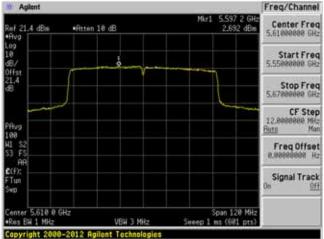


Low Channel ANT J15 Agilent Freq/Channel Center Freq 5.5300000 GHz 1.034 dB Ref 21.7 dBa •Rtten 10 dB Log 10 06/ Start Freq 5.47000000 GH 0ffst 21.7 68 Stop Freq 5,5988 **CF** Step 12.000000 MH PAvg 100 Auto Ma 11 Freq Offset E(f): Signal Track Tun 0# Span 120 MHz Sweep 1 ms (601 pts) enter 5,538 8 GHz Res BW 1 MHz VEW 3 MHz Copyright 2000-2012 Agilent Tec

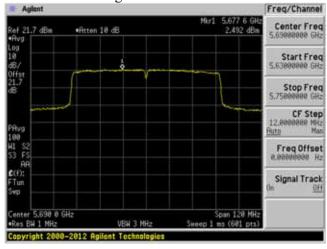
Mid Channel ANT J12



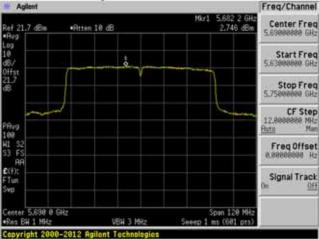




High Channel ANT J15



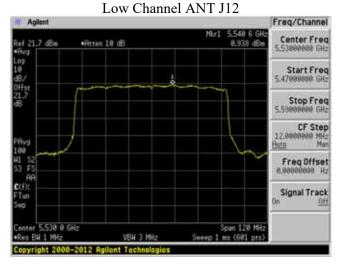
High Channel ANT J12



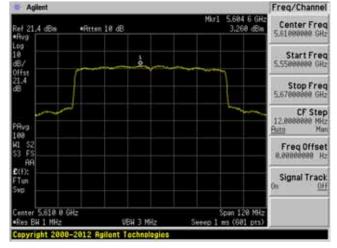
Report Number: R2007201-02

FCC Part 15.407/ISEDC RSS-247 Test Report

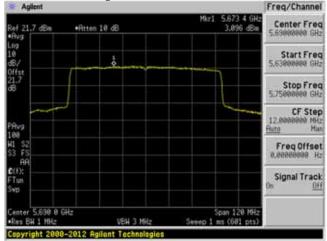
802.11ax80 Mode

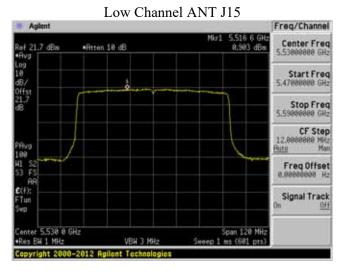


Mid Channel ANT J12

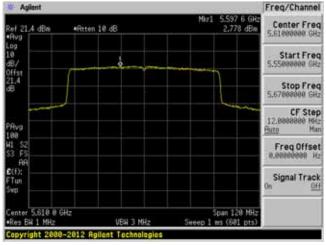


High Channel ANT J12

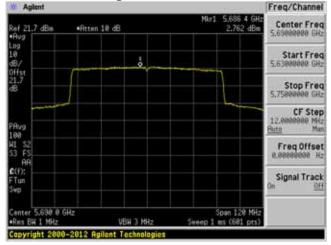




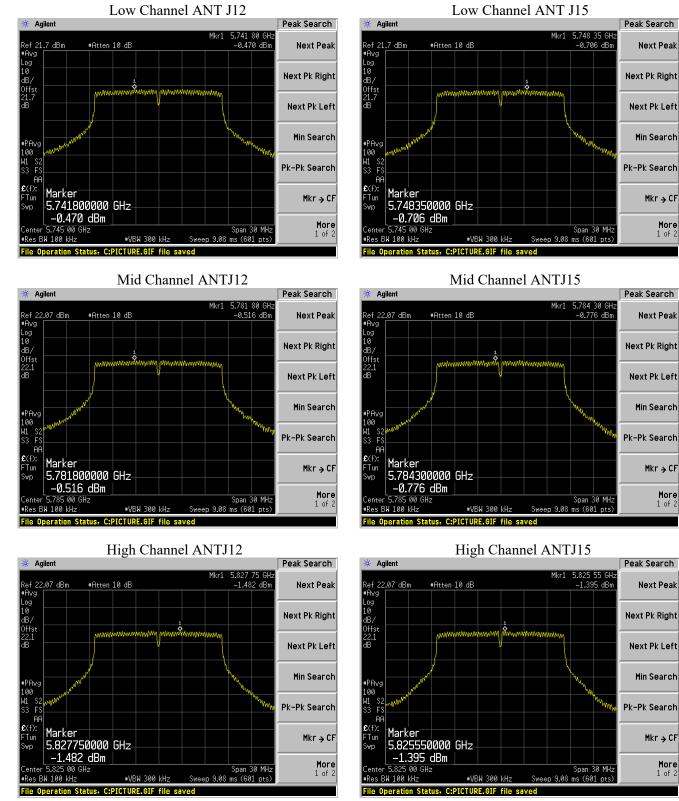
Mid Channel ANT J15



High Channel ANT J15

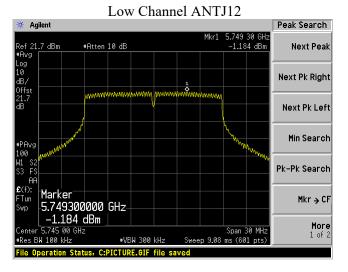


5725 - 5850 MHz

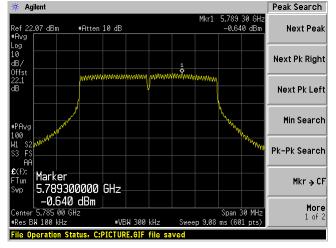


802.11a Mode

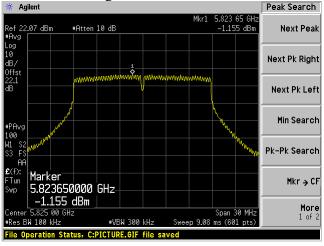
802.11ac20 Mode

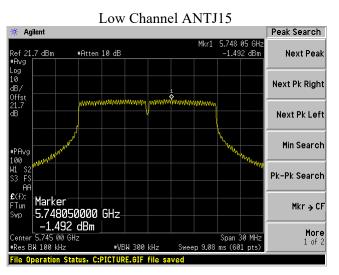


Mid Channel ANTJ12

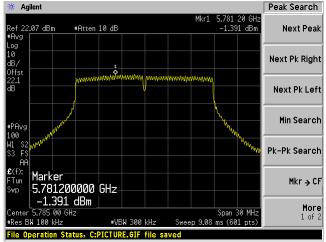


High Channel ANTJ12

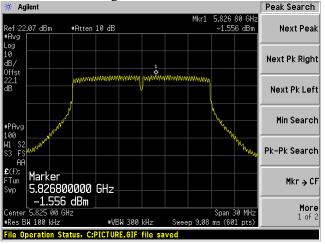




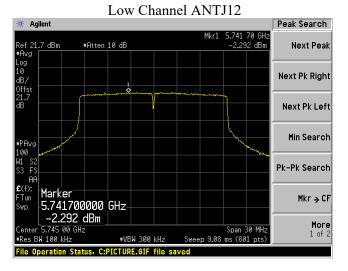
Mid Channel ANTJ15



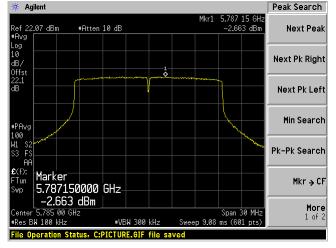
High Channel ANTJ15



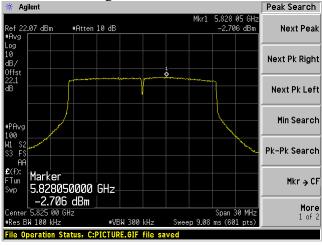
802.11ax20 Mode

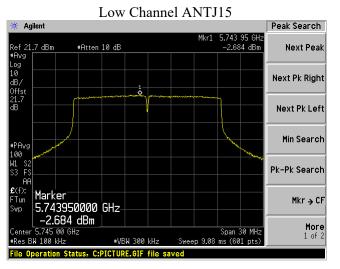


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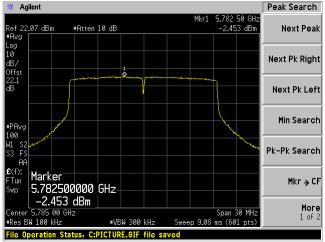


High Channel ANTJ12

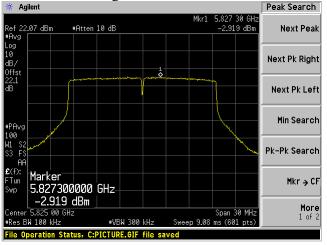




Mid Channel ANTJ15

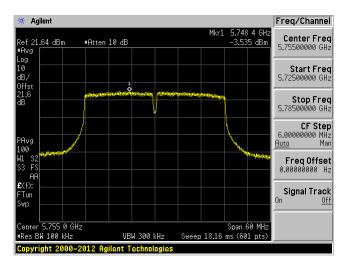


High Channel ANTJ15

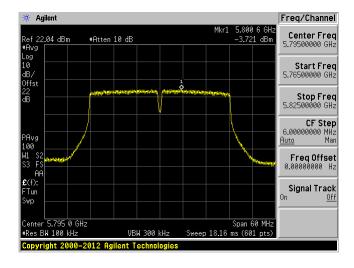


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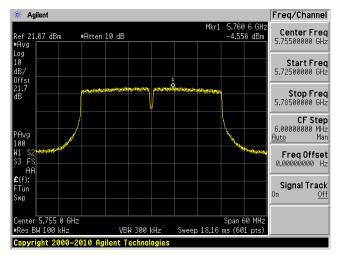
Low Channel ANTJ12

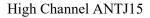


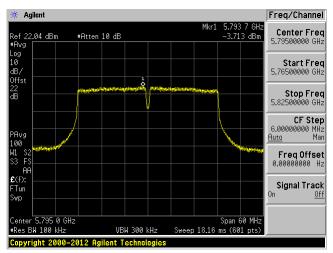
High Channel ANTJ12



Low Channel ANTJ15

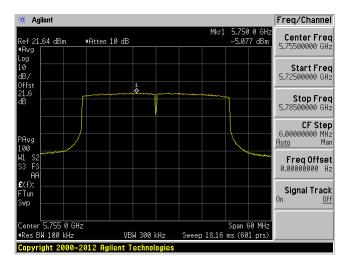




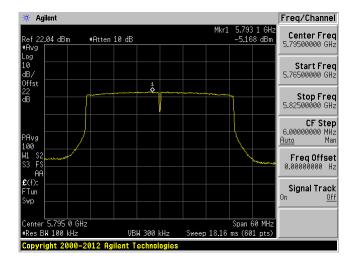


802.11ax40 Mode

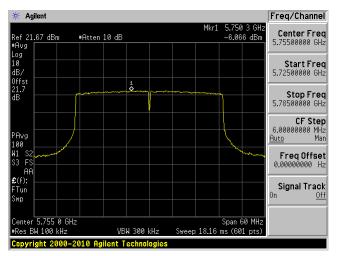
Low Channel ANTJ12

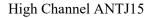


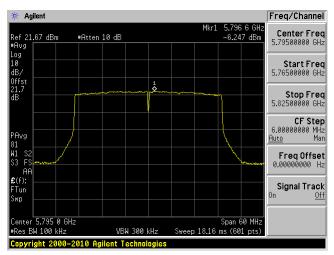
High Channel ANTJ12



Low Channel ANTJ15







Freq/Channel

Center Freq 5.77500000 GHz

Start Freq 5.71500000 GHz

Stop Freq 5.83500000 GHz

CF Step 12.0000000 MHz <u>Auto</u>Man

FreqOffset 0.00000000 Hz

Signal Track

<u>0ff</u>

<u>Auto</u>

0n

5.769 2 GHz -10.398 dBm

4kr1

Span 120 MHz Sweep 36.28 ms (601 pts)

#Atten 10 dB

VBW 300 kHz

Agilent

Ref 22.04 dBm #Avg

Log 10 dB/ Offst

JR

PAvg

Ĥ £(f):

5.775 0 GHz

Copyright 2000-2012 Agilent Technologies

#Res BW 100 kHz

Tun

wb

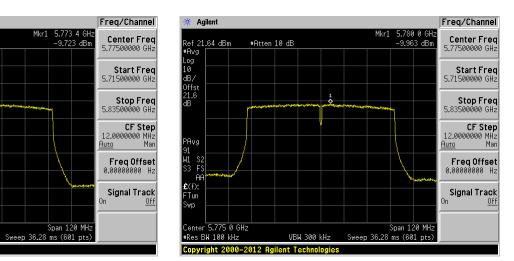
ente

W1 S3

802.11ac80 Mode

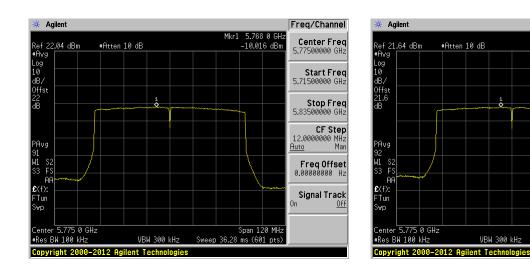
802.11ax80 Mode





ANTJ15

ANTJ12



ANTJ15

11 FCC §15.407(b) & ISEDC RSS-247 §6.2 - Out of Band Emissions

11.1 Applicable Standards

According to FCC §15.407(b):

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: 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 16.6 dBm/MHz at 5 MHz above or below the band edge.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

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

According to ISEDC RSS-247 §6.2.1 for devices operatinging in the frequency band 5150-5250 MHz:

For transmitters operating in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. However, any unwanted emissions that fall into the band 5250-5350 MHz must be 26 dBc, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth, above 5.25 GHz. Otherwise, the transmission is considered as intentional and the devices shall implement dynamic frequency selection (DFS) and transmitter power control (TPC) as per the requirements for the band 5250-5350 MHz.

According to ISEDC RSS-247 §6.2.2 for devices operatinging in the frequency band 5250-5350 MHz:

For devices with both operating frequencies and channel bandwidths contained within the band 5250-5350 MHz, the device shall comply with the following:

- 1. All emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. if the equipment is intended for outdoor use; or
- 2. All emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. and any emissions within the band 5150-5250 MHz shall meet the power spectral density limits of Section 6.2.1. The device shall be labelled "for indoor use only."

For devices with operating frequencies in the band 5250-5350 MHz but having a channel bandwidth that overlaps the band 5150-5250 MHz, the devices' unwanted emission shall not exceed -27 dBm/MHz e.i.r.p. outside the band 5150-5350 MHz and its power shall comply with the spectral power density for operation within the band 5150-5250 MHz. The device shall be labelled "for indoor use only." According to ISEDC RSS-247 §6.2.3 for devices operatinging in the frequency band 5470-5600 MHz and 5650-5725 MHz. Emissions outside the band 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p.

According to ISEDC RSS-247 §6.2.4 for devices operatinging in the frequency band 5725-5850 MHz:

| Report Number: R2007201-02 | Page 136 of 234 | FCC Part 15.407/ISEDC RSS-247 Test Report |
|----------------------------|-----------------|---|
| | | |

For the band 5725-5850 MHz, emissions at frequencies from the band edges to 10 MHz above or below the band edges shall not exceed -17 dBm/MHz e.i.r.p. For emissions at frequencies more than 10 MHz above or below the band edges, the emissions power shall not

exceed -27 dBm/MHz.

11.2 Measurement Procedure

Add a correction factor (antenna gain+ Attenuator loss+cable loss) to the offset of the spectrum analyzer.

Unwanted Emission Measurement:

Maximum emission levels are measured by setting the analyzer as follows:

- RBW = 1 MHzi.
- ii. $VBW \ge 3 MHz$
- iii. Detector = Peak
- iv. Sweep time = auto
- Trace mode = max hold v

Integration Method:

- 1. For peak emissions measurements, follow the procedures described in section H)5), "Procedures for Peak Unwanted Emissions Measurements above 1000 MHz", except for the following changes:
- Set RBW = 100 kHz•
- Set VBW = 3RBW
- Perform a band-power integration across the 1 MHz bandwidth in which the band-edge emission level is to be measured. CAUTION: You must ensure that the spectrum analyzer or EMI receiver is set for peak-detection and max-hold for this measurement.
- 2. For average emissions measurements, follow the procedures described in section H)6), "Procedures for Average Unwanted Emissions Measurements above 1000 MHz", except for the following changes:
- Set RBW = 100 kHz
- Set VBW = 3RBW
- Perform a band-power integration across the 1 MHz bandwidth in which the band-edge emission level is to be measured.

11.3 Test Equipment List and Details

| Manufacturer | Description | Model No. | Serial No. | Calibration Date | Calibration Interval |
|--------------|-------------------|-----------|------------|------------------------|-------------------------|
| Agilent | Spectrum Analyzer | E4446A | MY48250238 | 2019-06-26 | 2 years |
| - | RF cable | - | - | Each time ¹ | N/A |
| - | 10 dB attenuator | - | - | Each time ¹ | N/A |

Note¹: cable and attenuator included in the test set-up will be checked each time before testing.

Statement of Traceability: BACL Corp. attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".

11.4 Test Environmental Conditions

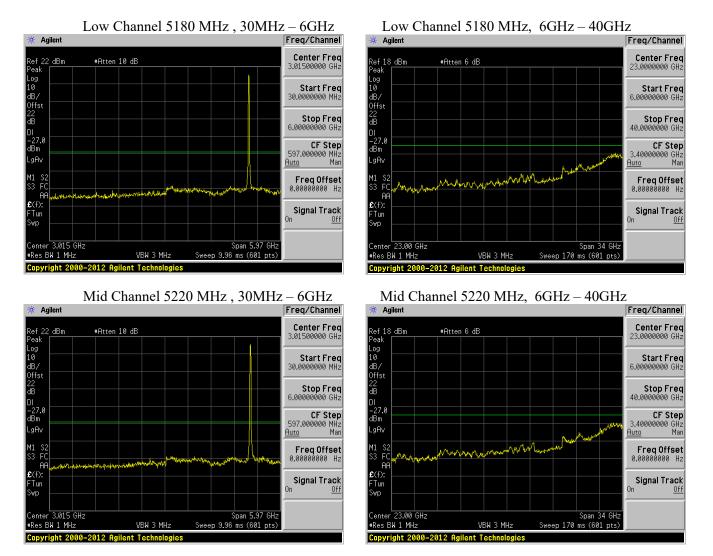
| Temperature: | 22-24 °C | | |
|---------------------------|-----------------|--|--|
| Relative Humidity: | 50-55 % | | |
| ATM Pressure: | 102.1-102.7 kPa | | |

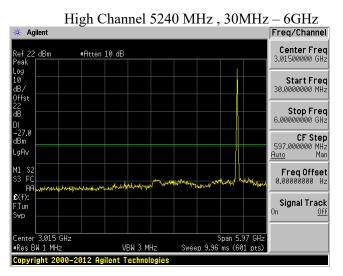
The testing was performed by Zhao Zhao from 2021-01-05 to 2021-01-14 in RF site.

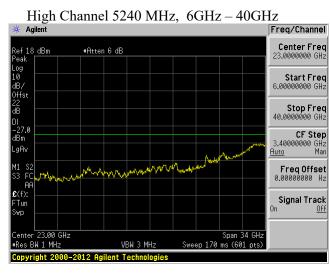
11.5 Test Results

Spurious Emissions

5150 - 5250 MHz, 802.11a Mode, ANTENNA J12







^beak

Log 10 dB/

Offst 22 dB

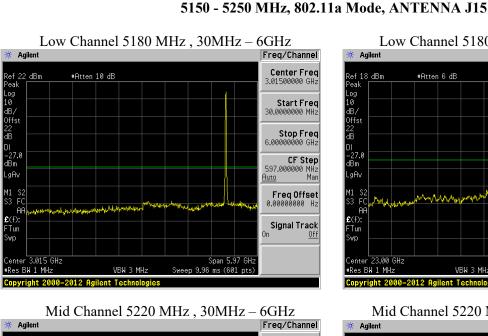
.gAv

M1 S3

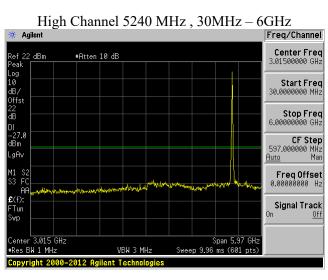
£(f):

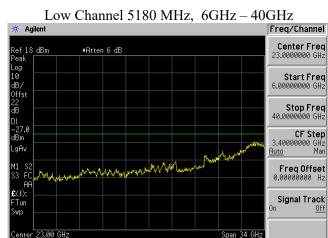
Tun

/p

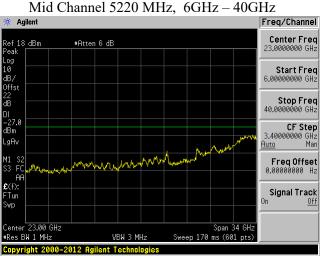


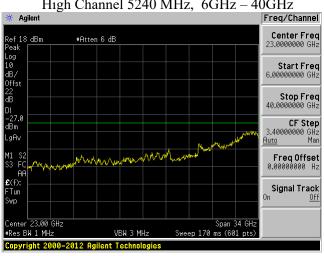
🔆 Agilent Center Freq 3.01500000 GHz Ref 22 dBm ^Peak #Atten 10 dB Log 10 dB/ Offst Start Freq 30.0000000 MHz Stop Freq 6.0000000 GHz dB DI -27.0 dBm **CF Step** 597.000000 MHz Aut<u>o</u> Man _aAv Μ1 S: F(FreqOffset 0.00000000 Hz Ĥ £(f): Signal Track Tun Ûn Off wp 3.015 GHz Span 5.97 GHz ente VBW 3 MHz Sweep 9.96 ms (601 pts) #Res BW 1 MHz Copyright 2000-2012 Agilent Technologies





170 ms (601 pt #Res BW 1 MHz VBW 3 MHz Copyright 2000-2012 Agilent Tec





High Channel 5240 MHz, 6GHz – 40GHz

🔆 Agilent

Ref 22 dBm ^Peak

Log 10 dB/ Offst

dB DI -27.0 dBm

_aAv

M1 S3

£(f):

Tun

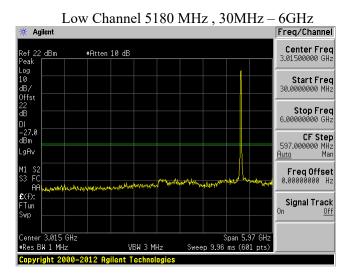
wp

ente

Ĥ

3.015 GHz

#Atten 10 dB



Mid Channel 5220 MHz, 30MHz-6GHz

5150 - 5250 MHz, 802.11ac20 Mode, ANTENNA J12

Freq/Channel

Center Freq 3.01500000 GHz

Start Freq 30.0000000 MHz

Stop Freq 6.0000000 GHz

CF Step 597.000000 MHz Aut<u>o</u> Man

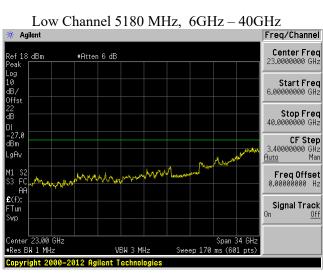
FreqOffset 0.00000000 Hz

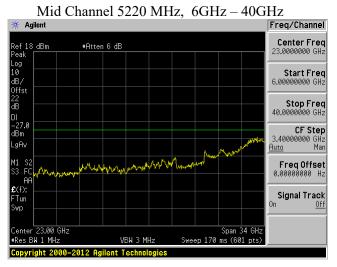
Signal Track

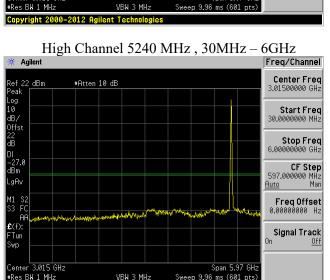
Off

Ûn

Span 5.97 GHz

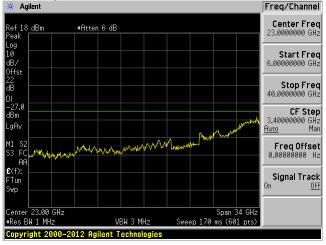






Topyright 2000-2012 Agilent Technologies

High Channel 5240 MHz, 6GHz – 40GHz



Μ1

Ĥ

3.015 GHz

Copyright 2000-2012 Agilent Technologies

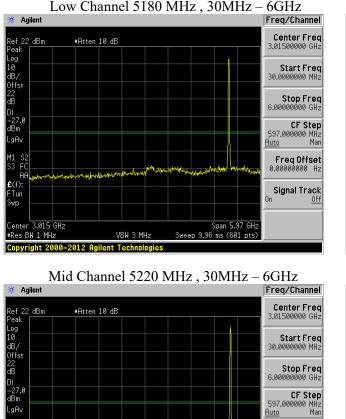
£(f):

Tun

wp

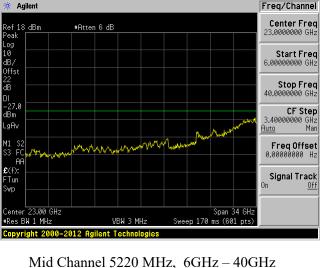
ente

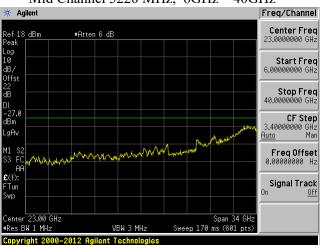
#Res BW 1 MHz

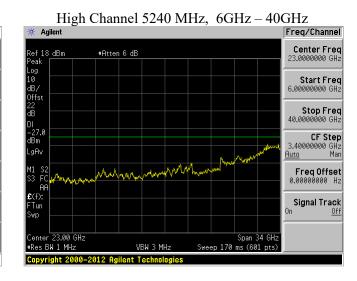


5150 - 5250 MHz, 802.11ac20 Mode, ANTENNA J15

Low Channel 5180 MHz, 6GHz – 40GHz

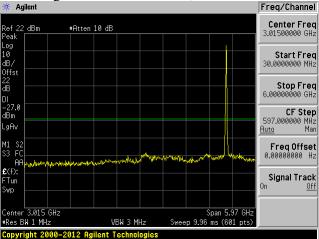






High Channel 5240 MHz , 30MHz – 6GHz

VBW 3 MHz



FreqOffset 0.00000000 Hz

Signal Track

Off

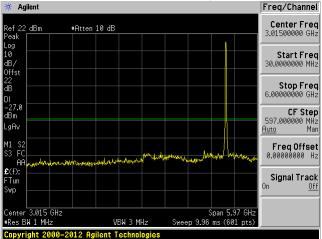
Ûn

Span 5.97 GHz

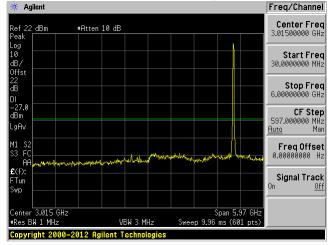
Sweep 9.96 ms (601 pts)

5150 - 5250 MHz, 802.11ax20 Mode, ANTENNA J12

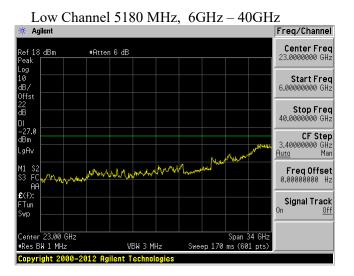
Low Channel 5180 MHz, 30MHz-6GHz

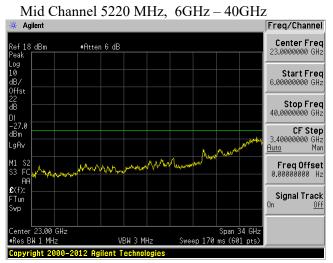


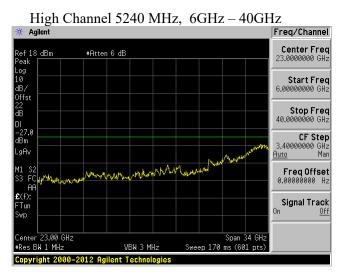
Mid Channel 5220 MHz, 30MHz-6GHz



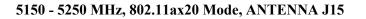
High Channel 5240 MHz, 30MHz-6GHz 🔆 Agilent Freq/Channel Center Freq 3.01500000 GHz Ref 22 dBm #Atten 10 dB Peak Log 10 dB/ Offst Start Freq 30.0000000 MHz Stop Freq 6.0000000 GHz dB DI –27.0 dBm **CF** Step 597.000000 MHz Auto Man LgAv <u>Auto</u> M1 \$3 S2 F0 Freq Offset 0.00000000 Hz ĤĤ £(f): Signal Track Tun Ûn Off ď۵ Span 5.97 GHz Sweep 9.96 ms (601 pts) 3.015 GHz Cente VBW 3 MHz #Res BW 1 MHz Copyright 2000-2012 Agilent Technologies



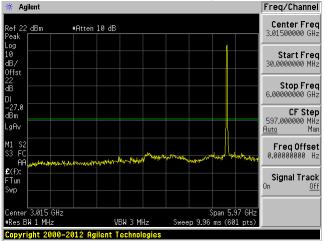




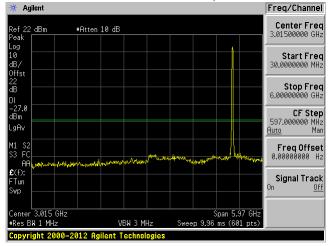
Freq/Channel



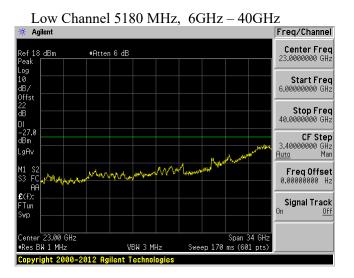


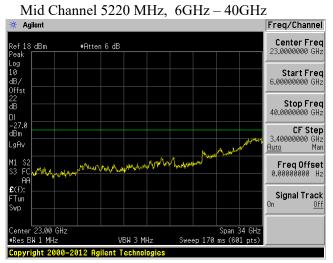


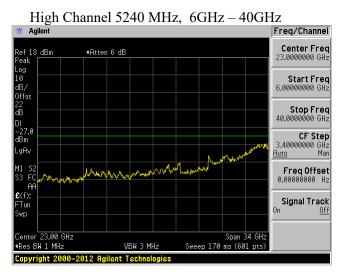
Mid Channel 5220 MHz, 30MHz-6GHz

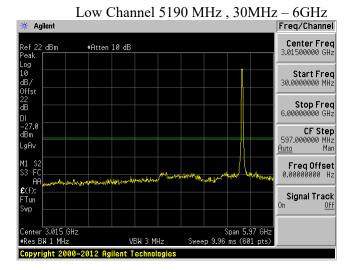


High Channel 5240 MHz, 30MHz-6GHz 🔆 Agilent Freq/Channel Center Freq 3.01500000 GHz Ref 22 dBm #Atten 10 dB Peak Log 10 dB/ Offst Start Freq 30.0000000 MHz Stop Freq 6.0000000 GHz dB DI –27.0 dBm **CF Step** 597.000000 MHz <u>Auto</u> Man LgAv <u>Auto</u> M1 \$3 Freq Offset 0.00000000 Hz ĤĤ £(f): Signal Track Tun Ûn Off ď۵ Span 5.97 GHz Sweep 9.96 ms (601 pts) 3.015 GHz Cente VBW 3 MHz #Res BW 1 MHz Copyright 2000-2012 Agilent Technologies



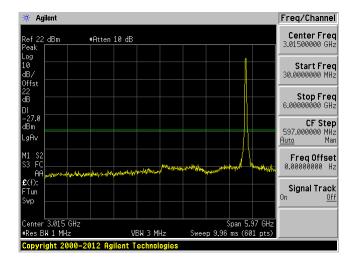


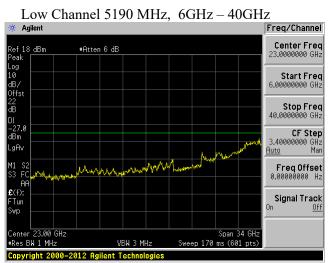




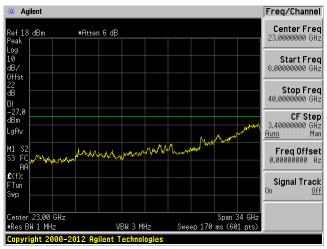
5150 - 5250 MHz, 802.11ac40 Mode, ANTENNA J12

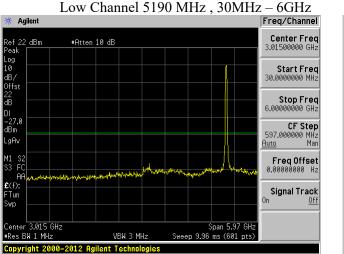
Mid Channel 5230 MHz , 30MHz - 6GHz



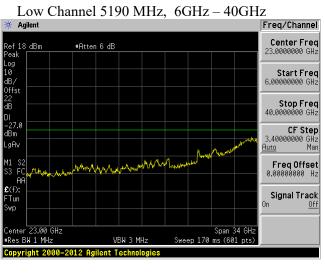


Mid Channel 5230 MHz, 6GHz-40GHz

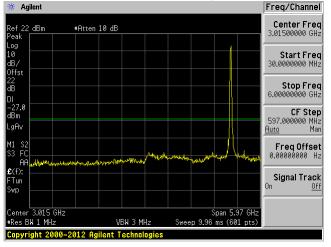




5150 - 5250 MHz, 802.11ac40 Mode, ANTENNA J15



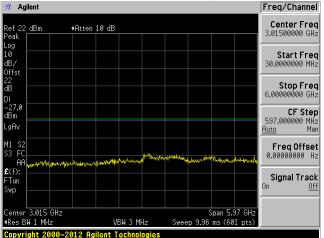
Mid Channel 5230 MHz , 30MHz – 6GHz Mid Channel 5230 MHz, 6GHz – 40GHz

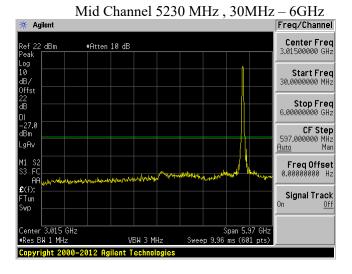


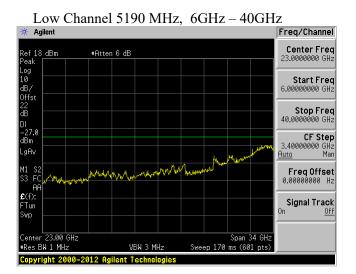


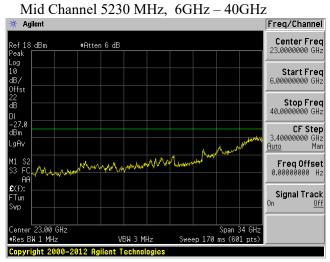
5150 - 5250 MHz, 802.11ax40 Mode, ANTENNA J12











CF Step

<u>0ff</u>

0n

Span 34 GHz Sweep 170 ms (601 pts)

Off

Ruckus Wireless, Inc.

🔆 Agilent

Ref 22 dBm

eak

Log 10 dB/ 0ffst 22 dB

DI -27.0 dBm

.gAv

M1 S3

Ĥ £(f):

Center 3.015 GHz

#Res BW 1 MHz

🔆 Agilent

Ref 22 dBm Peak

Log 10 dB/ Offst

22 dB

–27.0 dBm

_aAv

M1 S3 S F

£(f):

Tun

wp

ente

#Res BW 1 MHz

Ĥ

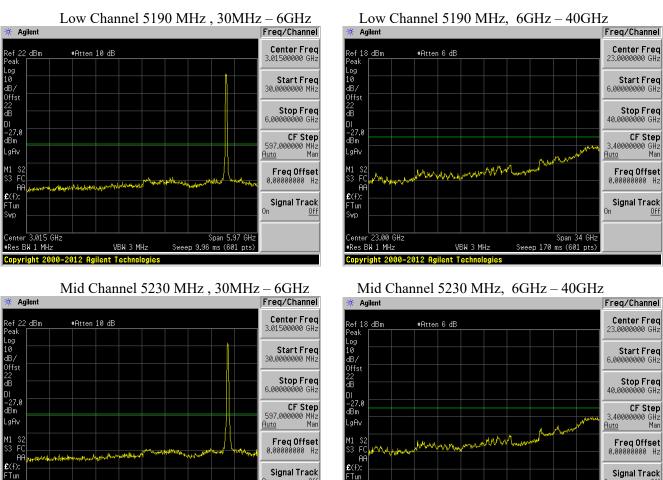
3.015 GHz

Copyright 2000-2012 Agilent Technologies

VBW 3 MHz

Tun

/p



0n

Span 5.97 GHz

Sweep 9.96 ms (601 pts)

Off

wp

ente

#Res BW 1 MHz

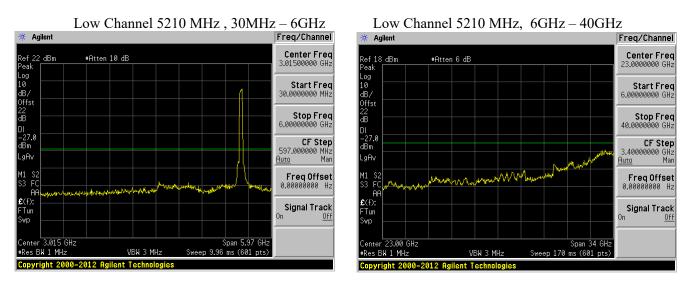
23.00 GHz

Copyright 2000–2012 Agilent Technologies

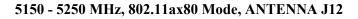
5150 - 5250 MHz, 802.11ac40 Mode, ANTENNA J15

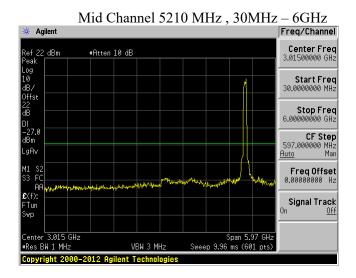
Report Number: R2007201-02

VBW 3 MHz

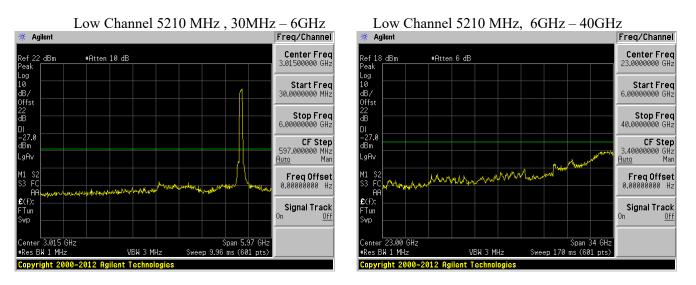


5150 - 5250 MHz, 802.11ac80 Mode, ANTENNA J12



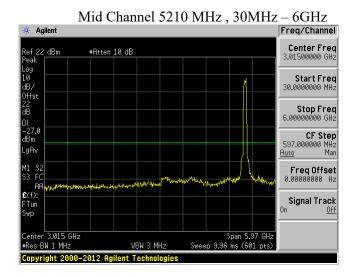


Mid Channel 5210 MHz, 6GHz – 40GHz Agilent Freq/Channel Center Freq 23.0000000 GHz Ref 18_dBm #Atten 6 dB ⊃eak Log 10 dB/ Offst Start Freq 6.00000000 GHz ΖΖ dB Stop Freq 40.0000000 GHz DI -27.0 dBm **CF Step** 3.40000000 GHz <u>Auto</u> Man _gAv Auto M1 \$3 monten FreqOffset 0.00000000 Hz AF £(f): Signal Track Tun 0n <u>0ff</u> ٨þ Span 34 GHz Sweep 170 ms (601 pts) 23.00 GHz Centei #Res BW 1 MHz VBW 3 MHz Copyright 2000-2012 Agilent Technologies



5150 - 5250 MHz, 802.11ac80 Mode, ANTENNA J15

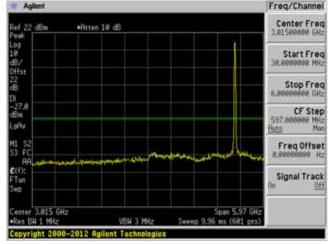




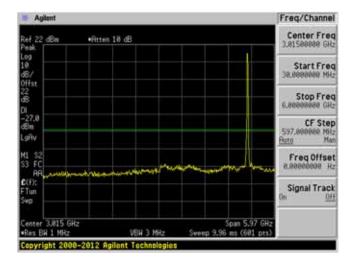
Mid Channel 5210 MHz, 6GHz – 40GHz Agilent Freq/Channel Center Freq 23.0000000 GHz Ref 18_dBm #Atten 6 dB ⊃eak Log 10 dB/ Offst Start Freq 6.00000000 GHz ΖΖ dB Stop Freq 40.0000000 GHz DI -27.0 dBm **CF Step** 3.40000000 GHz <u>Auto</u> Man _gAv Auto M1 \$3 www FreqOffset 0.00000000 Hz £(f): Signal Track Tun 0n <u>0ff</u> wp Span 34 GHz Sweep 170 ms (601 pts) 23.00 GHz Centei #Res BW 1 MHz VBW 3 MHz Copyright 2000-2012 Agilent Technologies

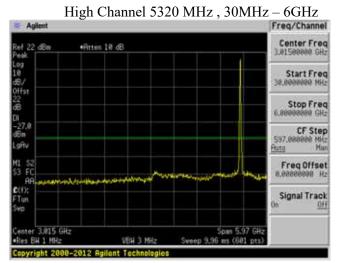
5250 - 5350 MHz, 802.11a Mode, ANT J12

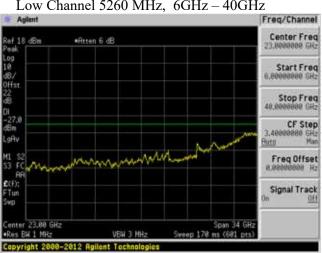
Low Channel 5260 MHz, 30MHz – 6GHz



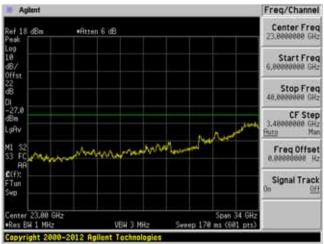
Mid Channel 5300 MHz, 30MHz – 6GHz

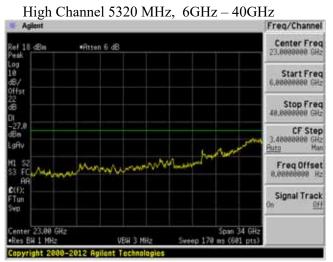






Mid Channel 5300 MHz, 6GHz – 40GHz

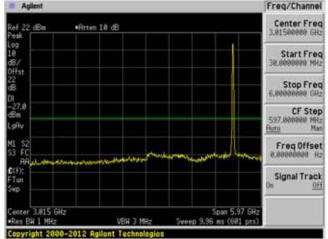




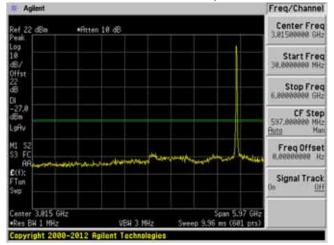
Low Channel 5260 MHz, 6GHz – 40GHz

5250 - 5350 MHz, 802.11a Mode, ANTJ15

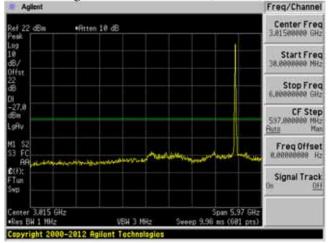
Low Channel 5260 MHz, 30MHz – 6GHz

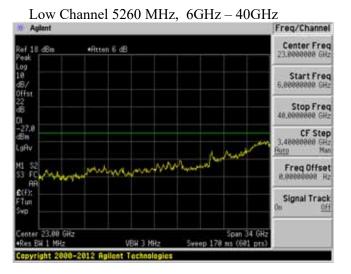


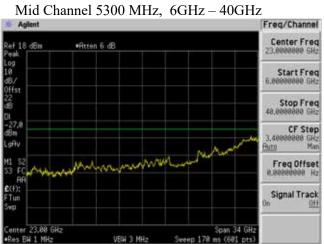
Mid Channel 5300 MHz, 30MHz-6GHz



High Channel 5320 MHz , 30MHz – 6GHz

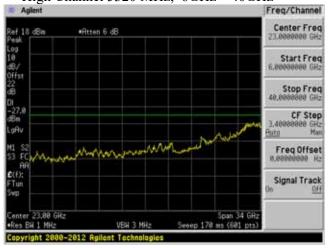






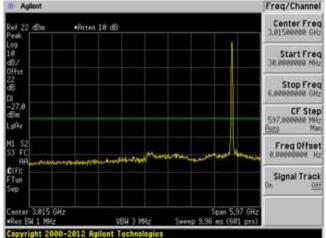
High Channel 5320 MHz, 6GHz – 40GHz

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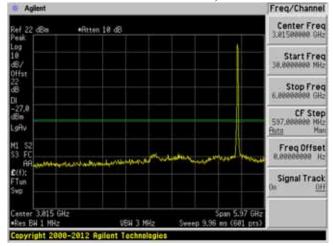


5250 - 5350 MHz, 802.11ac20 Mode, ANTJ12

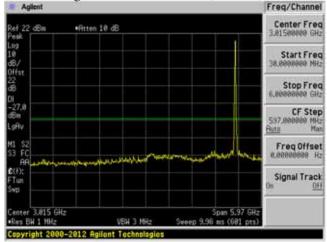
Low Channel 5260 MHz, 30MHz – 6GHz

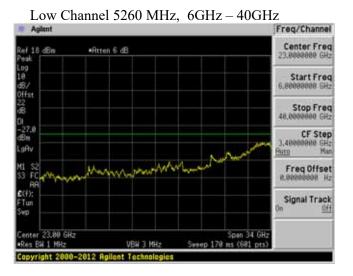


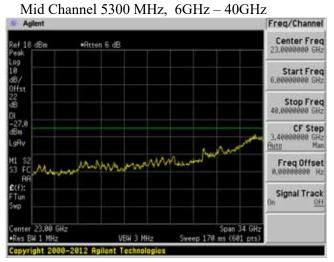
Mid Channel 5300 MHz, 30MHz-6GHz

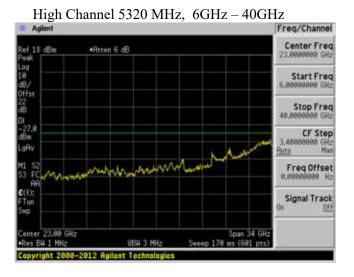


High Channel 5320 MHz , 30MHz – 6GHz



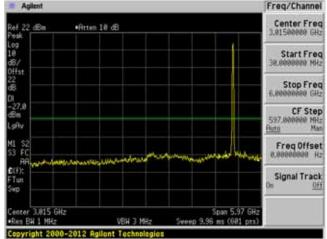




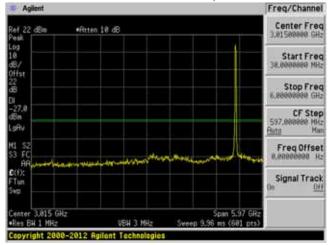


5250 - 5350 MHz, 802.11ac20 Mode, ANTJ15

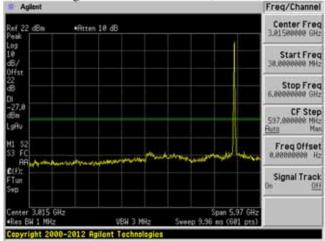
Low Channel 5260 MHz, 30MHz – 6GHz

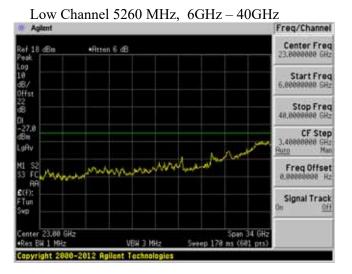


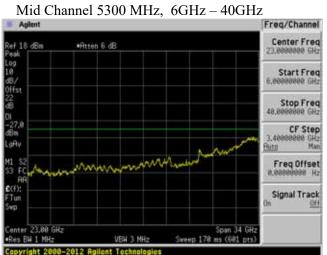
Mid Channel 5300 MHz, 30MHz-6GHz



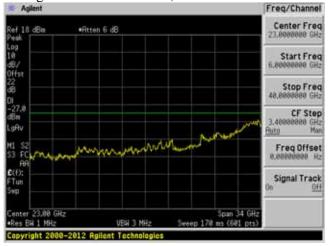
High Channel 5320 MHz, 30MHz-6GHz





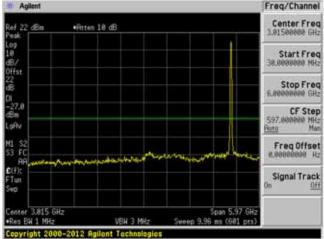


High Channel 5320 MHz, 6GHz – 40GHz

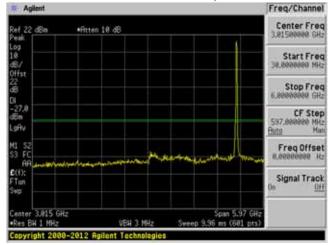


5250 - 5350 MHz, 802.11ax20 Mode, ANTJ12

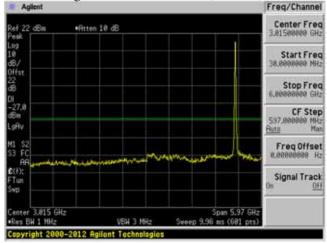
Low Channel 5260 MHz, 30MHz – 6GHz

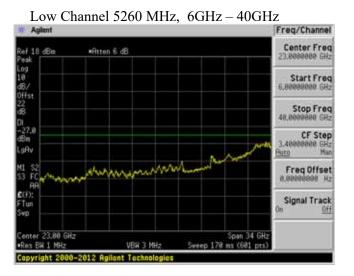


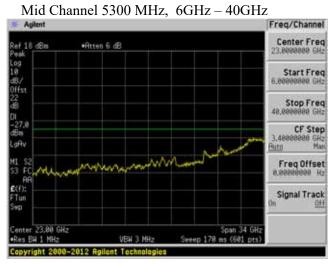
Mid Channel 5300 MHz, 30MHz-6GHz

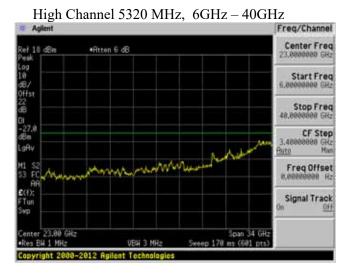


High Channel 5320 MHz, 30MHz-6GHz



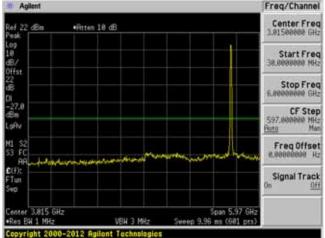




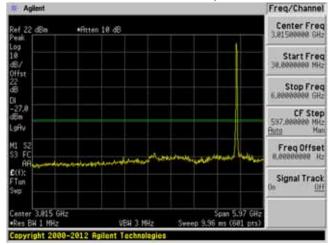


5250 - 5350 MHz, 802.11ax20 Mode, ANTJ15

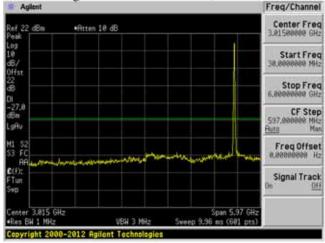
Low Channel 5260 MHz, 30MHz – 6GHz

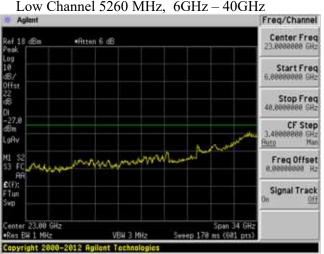


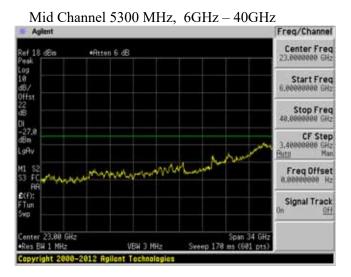
Mid Channel 5300 MHz, 30MHz-6GHz

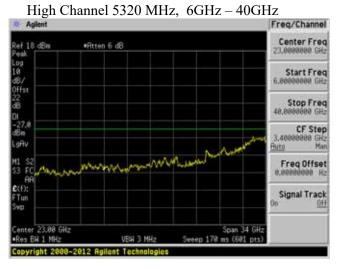


High Channel 5320 MHz, 30MHz-6GHz



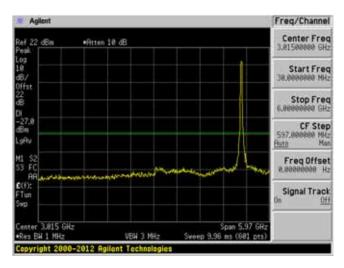




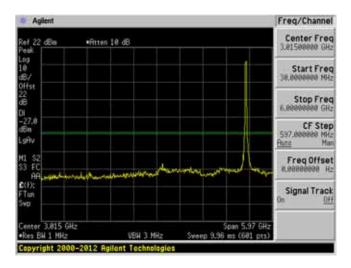


5250 - 5350 MHz, 802.11ac40 Mode, ANTJ12

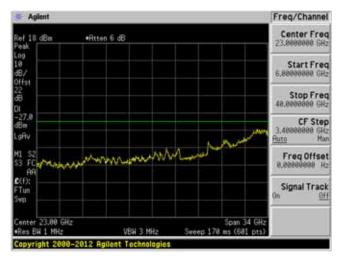
Low Channel 5270 MHz , 30 MHz - 6 GHz



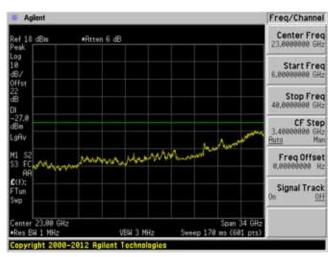
High Channel 5310 MHz , 30MHz – 6GHz



Low Channel 5270 MHz, 6GHz - 40GHz

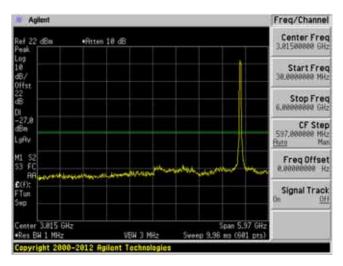


High Channel 5310 MHz, 6GHz - 40GHz

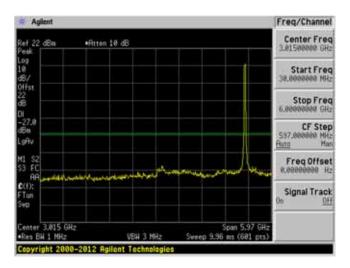


5250 - 5350 MHz, 802.11ac40 Mode, ANTJ15

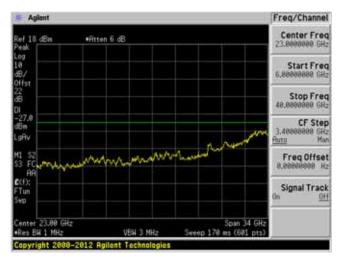
Low Channel 5270 MHz , 30 MHz - 6 GHz



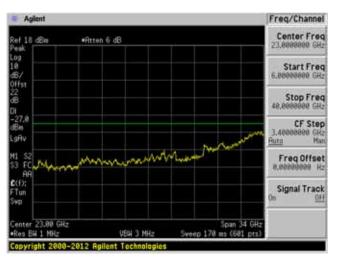
High Channel 5310 MHz , 30 MHz - 6 GHz



Low Channel 5270 MHz, 6GHz - 40GHz

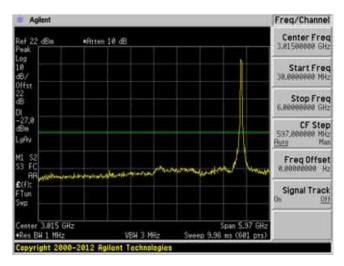


High Channel 5310 MHz, 6GHz – 40GHz

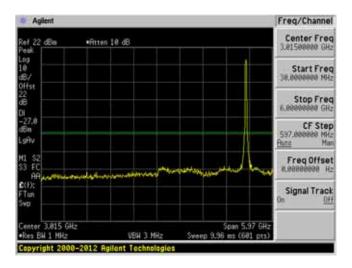


5250 - 5350 MHz, 802.11ax40 Mode, ANTJ12

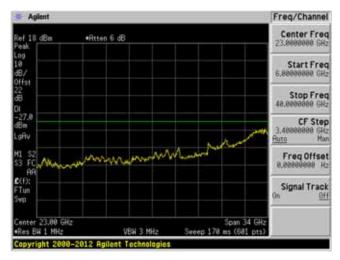
Low Channel 5270 MHz , 30 MHz - 6 GHz



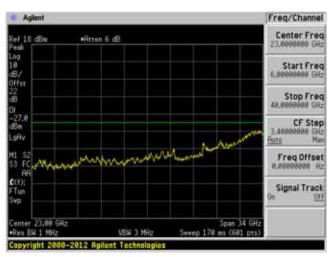
High Channel 5310 MHz , 30 MHz - 6 GHz



Low Channel 5270 MHz, 6GHz - 40GHz

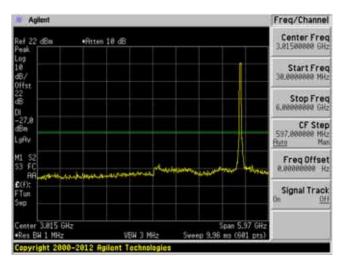


High Channel 5310 MHz, 6GHz - 40GHz

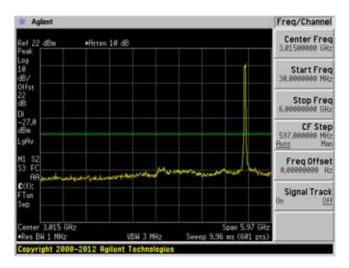


5250 - 5350 MHz, 802.11ax40 Mode, ANTJ15

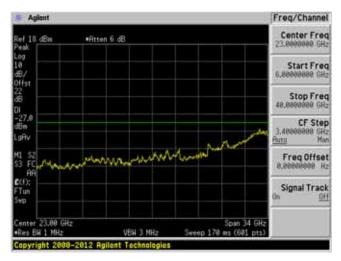
Low Channel 5270 MHz , 30 MHz - 6 GHz



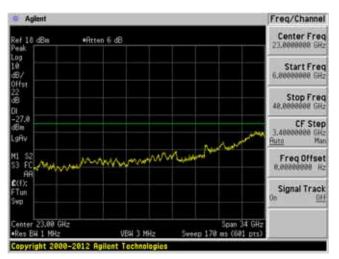
High Channel 5310 MHz , 30 MHz - 6 GHz



Low Channel 5270 MHz, 6GHz-40GHz

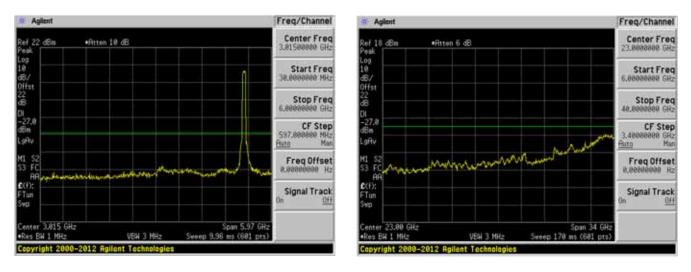


High Channel 5310 MHz, 6GHz - 40GHz



5250 - 5350 MHz, 802.11ac80 Mode, ANTJ12

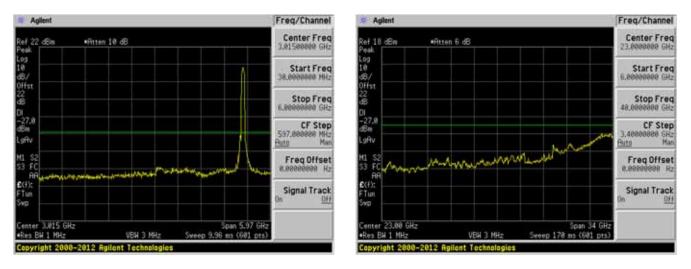
 $5290\ MHz$, 30MHz-6GHz



5250 - 5350 MHz, 802.11ax80 Mode, ANTJ12

 $5290\ MHz$, 30MHz-6GHz





5290 MHz, 6GHz - 40GHz

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200

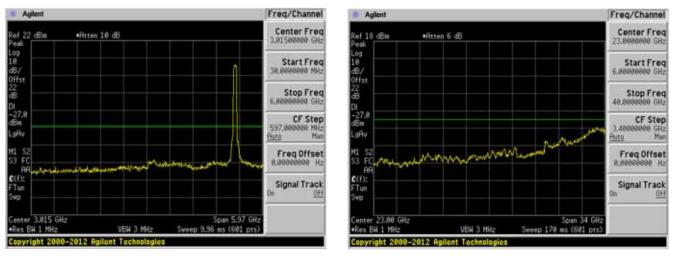
18/

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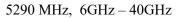
5250 - 5350 MHz, 802.11ac80 Mode, ANTJ15

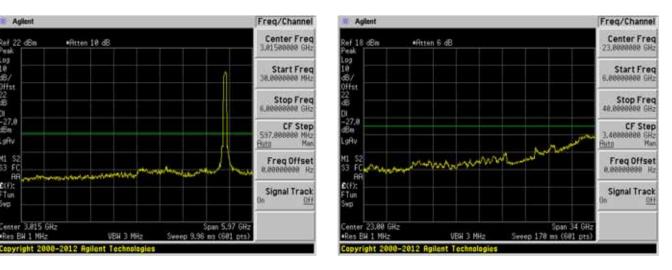
5290 MHz , 30MHz - 6GHz



5250 - 5350 MHz, 802.11ax80 Mode, ANTJ15

5290 MHz, 30 MHz - 6 GHz

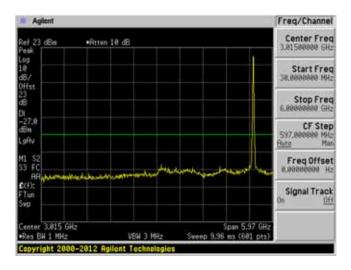




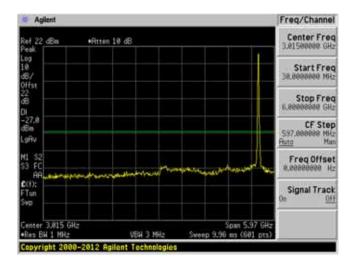
5290 MHz, 6GHz - 40GHz

5470 - 5725 MHz, 802.11a Mode, ANTJ12

Low Channel 5500 MHz , 30 MHz - 6 GHz



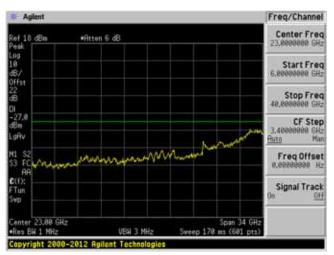
Mid Channel 5580 MHz , 30MHz - 6GHz



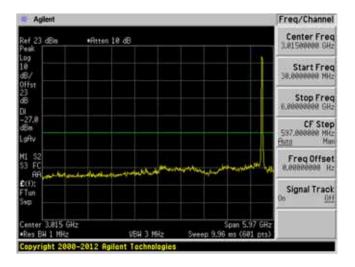
Low Channel 5500 MHz, 6GHz – 40GHz



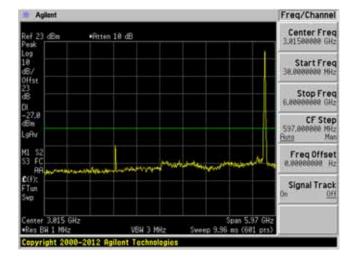




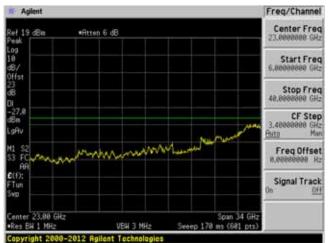
2^{nd} High Channel 5700 MHz , 30 MHz-6 GHz



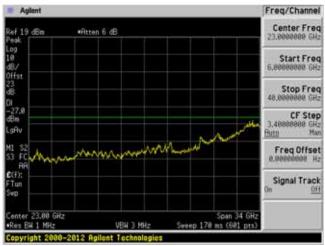
High Channel 5720 MHz , 30 MHz - 6 GHz



2nd High Channel 5700 MHz, 6GHz – 40GHz

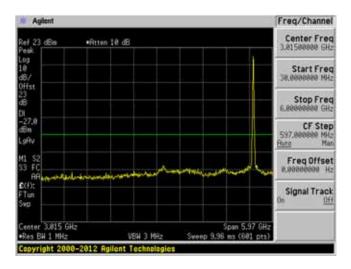


High Channel 5720 MHz, 6GHz - 40GHz

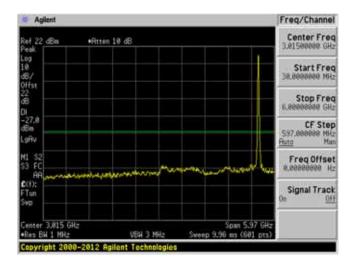


5470 - 5725 MHz, 802.11a Mode, ANTJ15

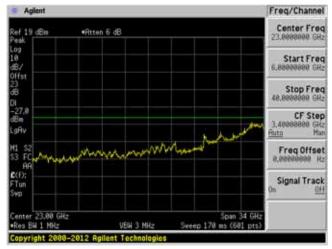
Low Channel 5500 MHz , 30 MHz - 6 GHz



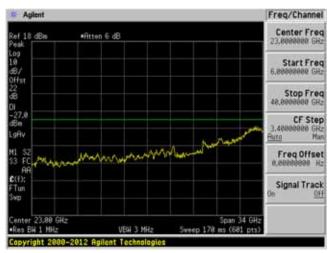
Mid Channel 5580 MHz , 30MHz - 6GHz



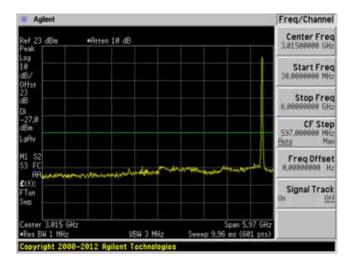
Low Channel 5500 MHz, 6GHz - 40GHz



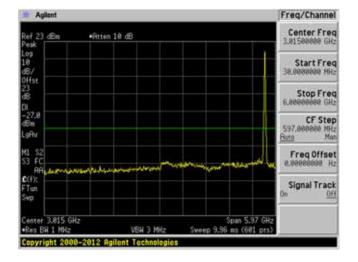
Mid Channel 5580 MHz, 6GHz-40GHz



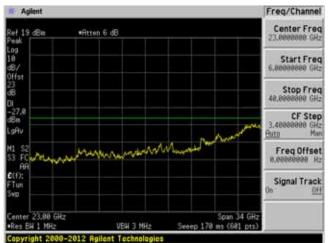
2^{nd} High Channel 5700 MHz , 30 MHz-6 GHz



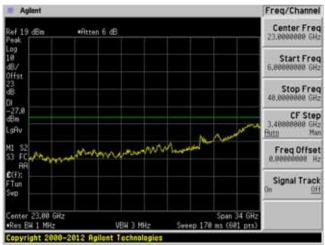
High Channel 5720 MHz , 30 MHz - 6 GHz



2nd High Channel 5700 MHz, 6GHz – 40GHz

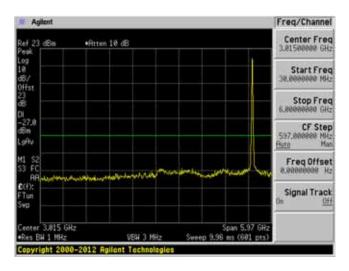


High Channel 5720 MHz, 6GHz - 40GHz

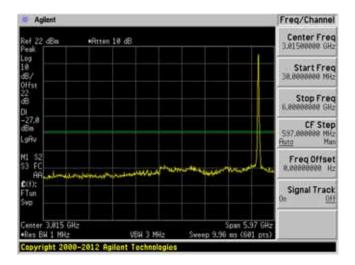


5470 - 5725 MHz, 802.11ac20 Mode, ANTJ12

Low Channel 5500 MHz , 30MHz - 6GHz



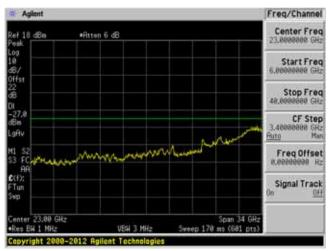
Mid Channel 5580 MHz, 30MHz-6GHz



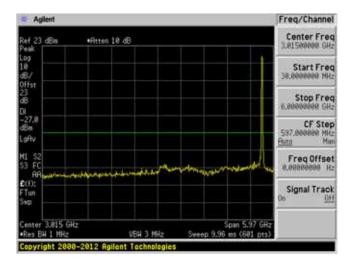
Low Channel 5500 MHz, 6GHz – 40GHz



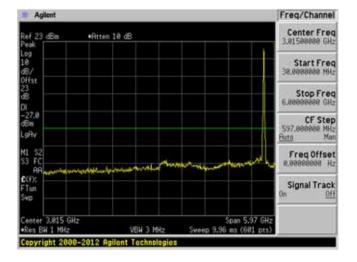
Mid Channel 5580 MHz, 6GHz-40GHz



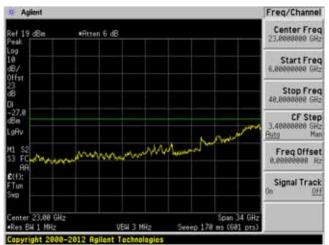
2^{nd} High Channel 5700 MHz , 30 MHz-6 GHz



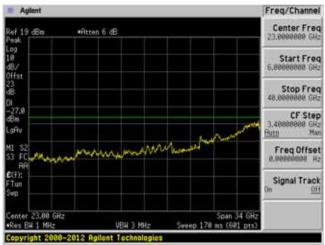
High Channel 5720 MHz , 30 MHz - 6 GHz



2nd High Channel 5700 MHz, 6GHz – 40GHz

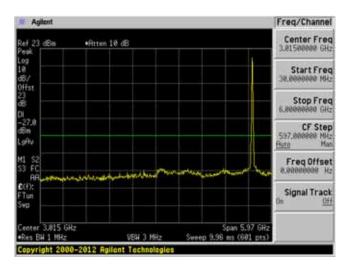


High Channel 5720 MHz, 6GHz-40GHz

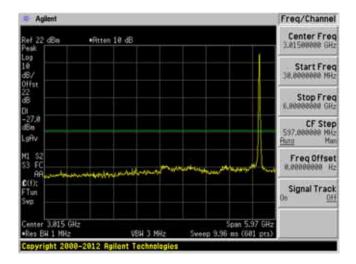


5470 - 5725 MHz, 802.11ac20 Mode, ANTJ15

Low Channel 5500 MHz , 30MHz - 6GHz



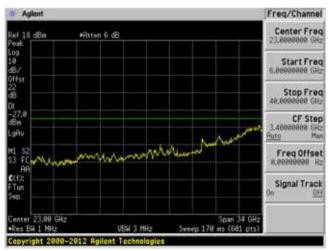
Mid Channel 5580 MHz, 30MHz-6GHz



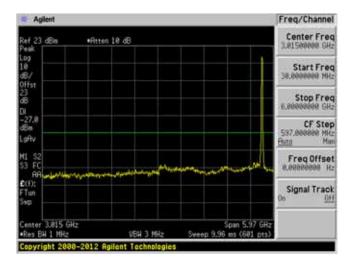
Low Channel 5500 MHz, 6GHz-40GHz



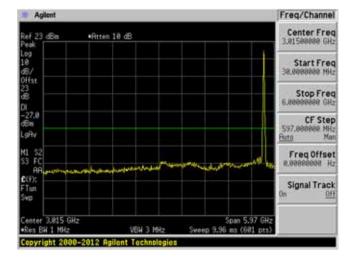
Mid Channel 5580 MHz, 6GHz-40GHz



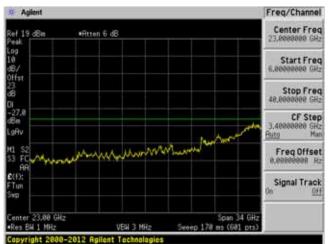
2^{nd} High Channel 5700 MHz , 30 MHz-6 GHz



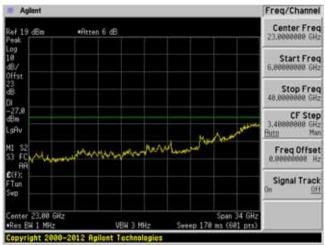
High Channel 5720 MHz , 30 MHz - 6 GHz



2nd High Channel 5700 MHz, 6GHz – 40GHz

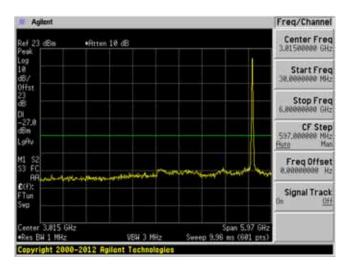


High Channel 5720 MHz, 6GHz-40GHz

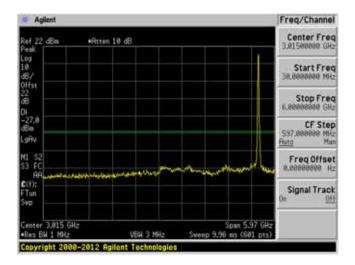


5470 - 5725 MHz, 802.11ax20 Mode, ANTJ12

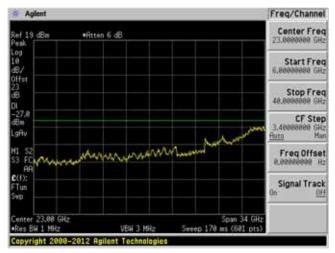
Low Channel 5500 MHz , 30MHz - 6GHz



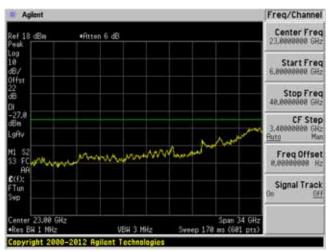
Mid Channel 5580 MHz , 30MHz - 6GHz



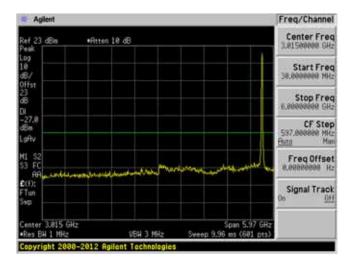
Low Channel 5500 MHz, 6GHz-40GHz



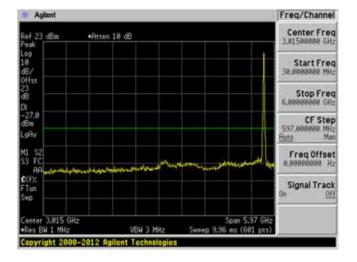
Mid Channel 5580 MHz, 6GHz-40GHz



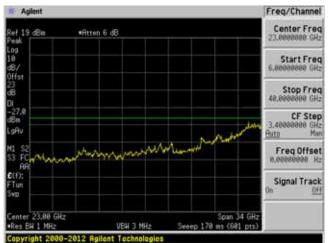
2^{nd} High Channel 5700 MHz , 30 MHz-6 GHz



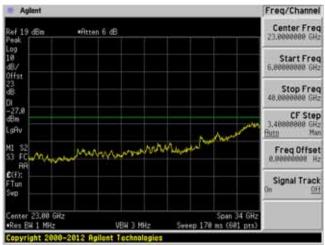
High Channel 5720 MHz , 30 MHz - 6 GHz



2nd High Channel 5700 MHz, 6GHz – 40GHz

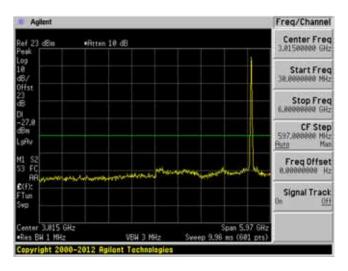


High Channel 5720 MHz, 6GHz-40GHz

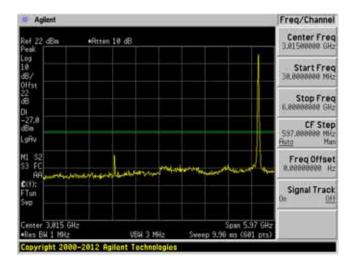


5470 - 5725 MHz, 802.11ax20 Mode, ANTJ15

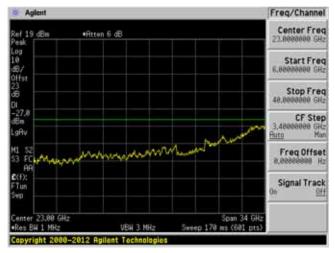
Low Channel 5500 MHz , 30 MHz - 6 GHz



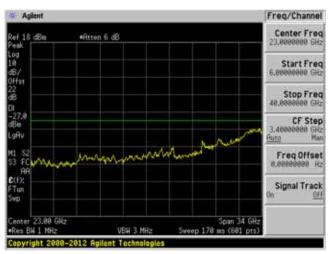
Mid Channel 5580 MHz, 30MHz-6GHz



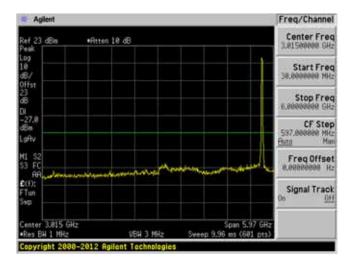
Low Channel 5500 MHz, 6GHz-40GHz



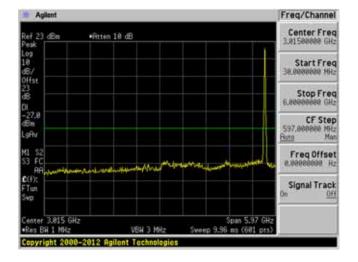




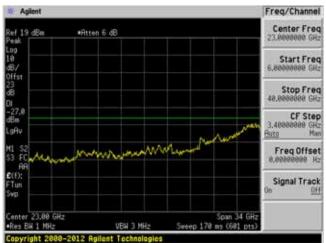
2^{nd} High Channel 5700 MHz , 30 MHz-6 GHz



High Channel 5720 MHz , 30 MHz - 6 GHz



2nd High Channel 5700 MHz, 6GHz – 40GHz

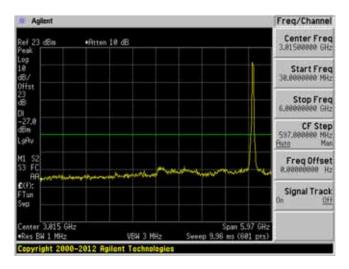


High Channel 5720 MHz, 6GHz - 40GHz

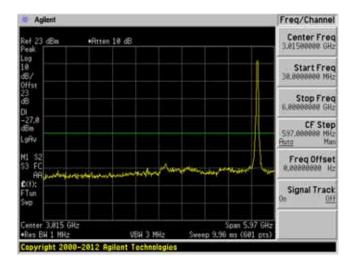


5470 - 5725 MHz, 802.11ac40 Mode, ANTJ12

Low Channel 5510 MHz , 30MHz – 6GHz



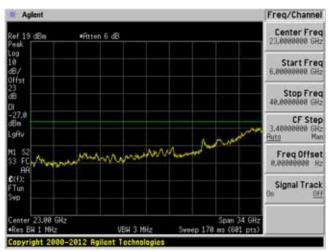
Mid Channel 5550 MHz, 30MHz-6GHz



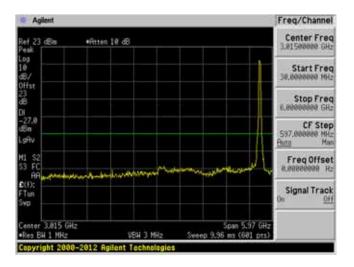
Low Channel 5510 MHz, 6GHz-40GHz



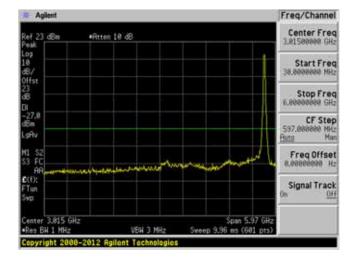




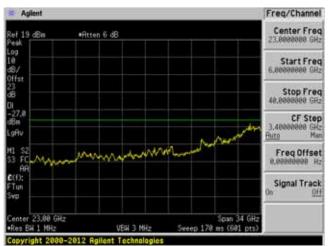
$2^{nd}\ High\ Channel\ 5670\ MHz$, 30MHz-6GHz



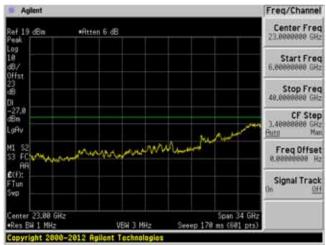
High Channel 5710 MHz , 30MHz - 6GHz



2nd High Channel 5670 MHz, 6GHz - 40GHz

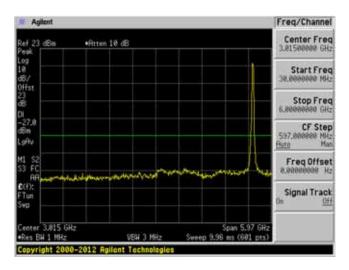


High Channel 5710 MHz, 6GHz-40GHz

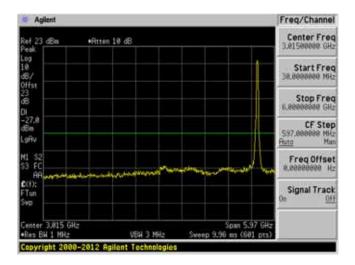


5470 - 5725 MHz, 802.11ac40 Mode, ANTJ15

Low Channel 5510 MHz , 30MHz – 6GHz



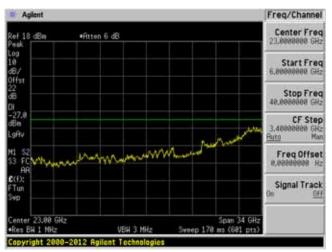
Mid Channel 5550 MHz, 30MHz-6GHz



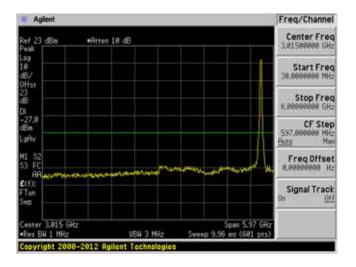
Low Channel 5510 MHz, 6GHz-40GHz



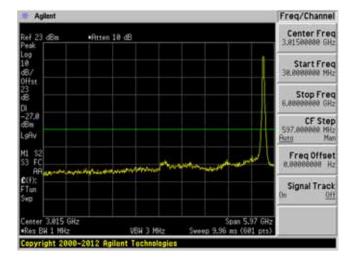




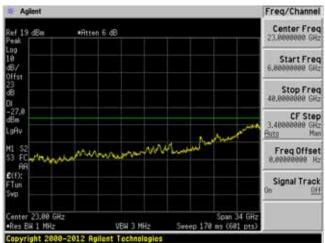
2^{nd} High Channel 5670 MHz , 30 MHz - 6 GHz



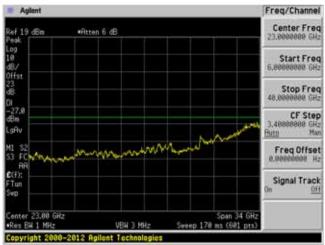
High Channel 5710 MHz , 30 MHz - 6 GHz



2nd High Channel 5670 MHz, 6GHz - 40GHz

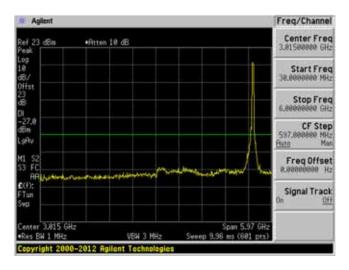


High Channel 5710 MHz, 6GHz-40GHz

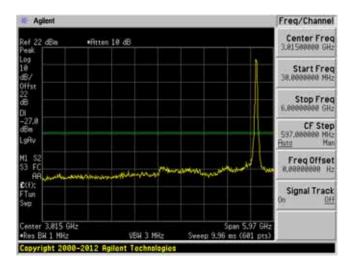


5470 - 5725 MHz, 802.11ax40 Mode, ANTJ12

Low Channel 5510 MHz , 30MHz - 6GHz



Mid Channel 5550 MHz, 30MHz-6GHz



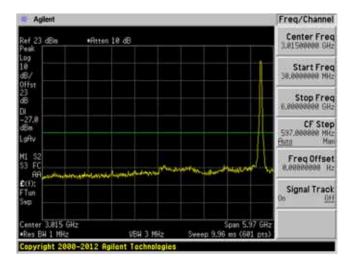
Agilent Freq/Channel Center Freq tef 19 dBm •Atten 6 dB 23,800000 GH 200 Start Freq dB/ Offst 6,886 Stop Freq 49 996 27.0 **CF** Step 3,4000000 GH gĤy Auto Ma M1 S2 S3 FC Freq Offset $\sim \Lambda$ AA. £(f); Signal Track Tun 66 Span 34 GHz Sweep 178 ms (681 pts) 23.00 GHz enter BH 1 MHz VEH 3 MHz Copyright 2000-2012 Agilent Technologies

Low Channel 5510 MHz, 6GHz – 40GHz

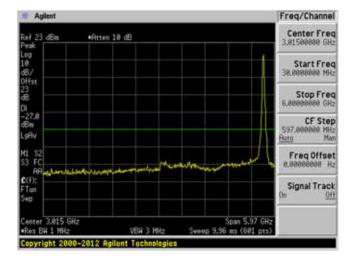
Mid Channel 5550 MHz, 6GHz – 40GHz



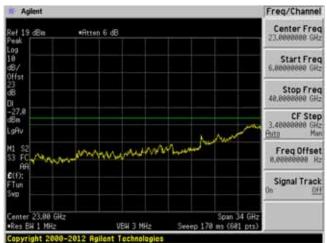
2^{nd} High Channel 5670 MHz , 30 MHz-6 GHz



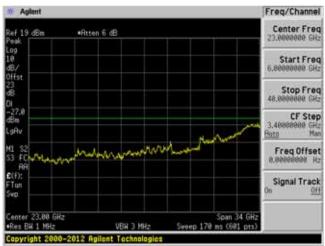
High Channel 5710 MHz , 30 MHz - 6 GHz



2nd High Channel 5670 MHz, 6GHz - 40GHz

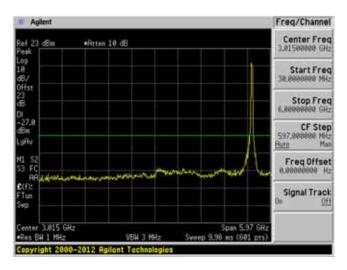


High Channel 5710 MHz, 6GHz-40GHz

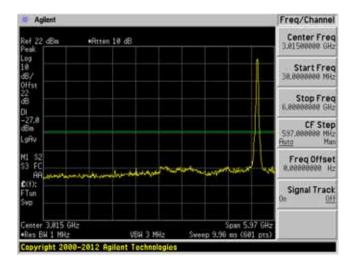


5470 - 5725 MHz, 802.11ax40 Mode, ANTJ15

Low Channel 5510 MHz , 30MHz - 6GHz



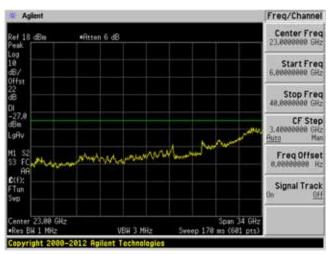
Mid Channel 5550 MHz, 30MHz-6GHz



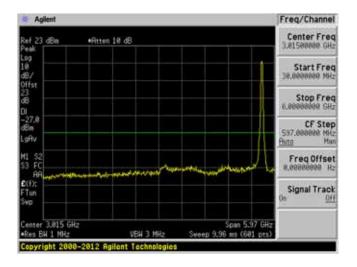
Low Channel 5510 MHz, 6GHz-40GHz



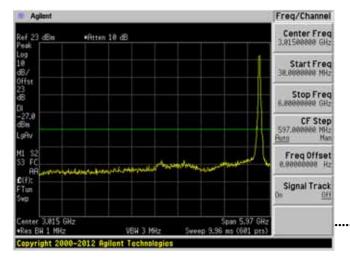




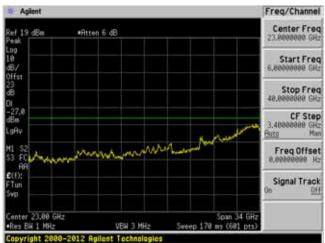
2^{nd} High Channel 5670 MHz , 30 MHz-6 GHz



High Channel 5710 MHz , 30 MHz - 6 GHz



2nd High Channel 5670 MHz, 6GHz - 40GHz



High Channel 5710 MHz, 6GHz-40GHz



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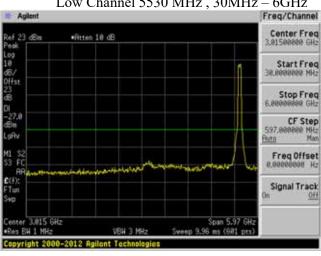
D(F):

Tu

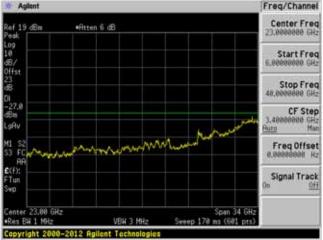
3.815 GHz

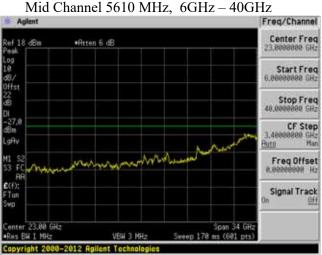
Res BW 1 MRz

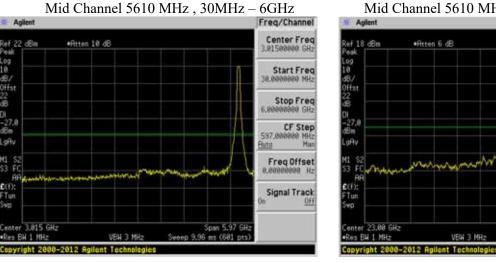
+Rtten 10 dB



Low Channel 5530 MHz, 6GHz – 40GHz

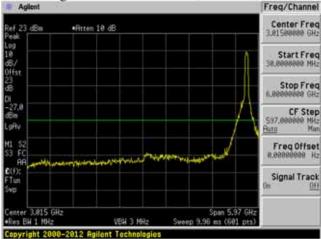


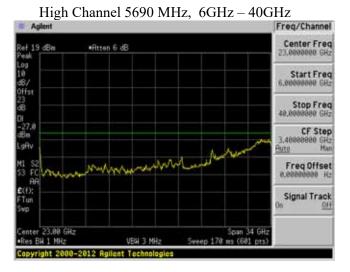




5470 - 5725 MHz, 802.11ac80 Mode, ANTJ12

High Channel 5690 MHz, 30MHz-6GHz





Low Channel 5530 MHz, 30MHz – 6GHz

lef 22 dBn

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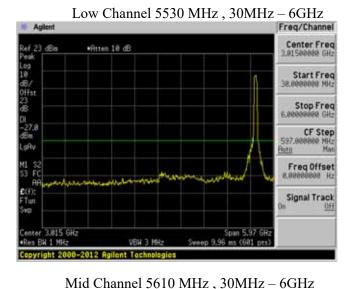
3,815 GHz

Copyright 2000-2012 Agilent Technologies

BH 1 MH

Atten 10 dB

VEW 3 MHz



5470 - 5725 MHz, 802.11ac80 Mode, ANTJ15

Freq/Channel Center Freq

3,81500008 GHz

38.88

5,889

Auto

Span 5.97 GHz Sweep 9.96 ms (681 pts) Start Freq

Stop Freq

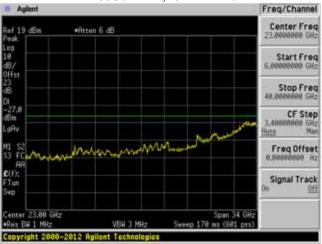
CF Step 597.888888 MHz

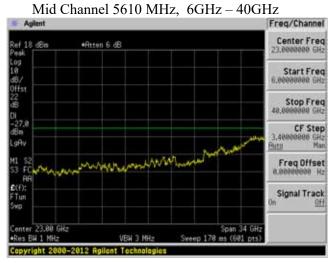
Freq Offset

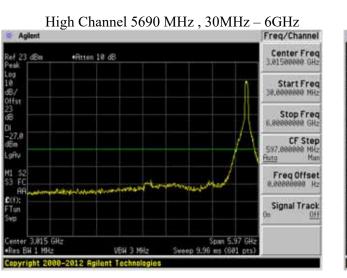
Signal Track

Ma

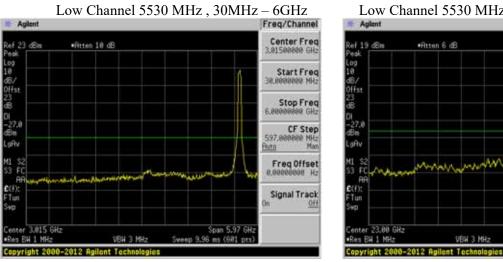
Low Channel 5530 MHz, 6GHz – 40GHz

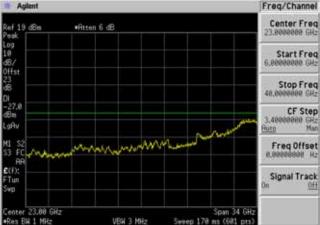








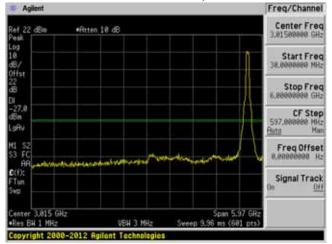




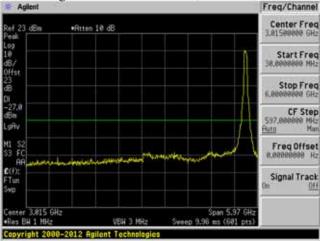
Low Channel 5530 MHz, 6GHz – 40GHz

Mid Channel 5610 MHz , 30MHz - 6GHz

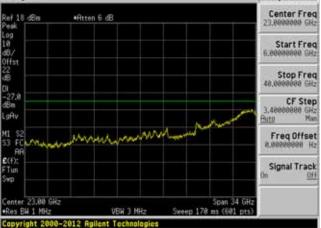
5470 - 5725 MHz, 802.11ax80 Mode, ANTJ12



High Channel 5690 MHz, 30MHz-6GHz

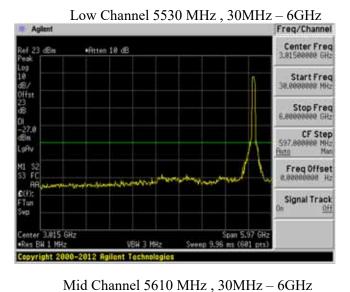






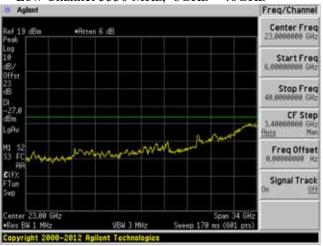


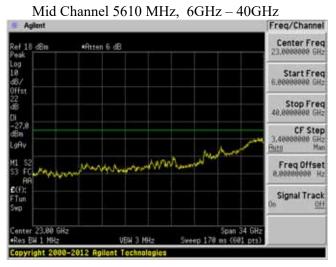
High Channel 5690 MHz, 6GHz – 40GHz

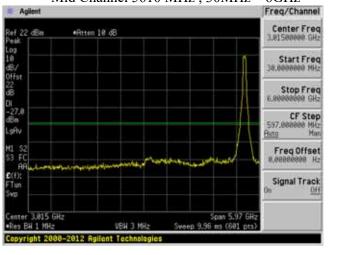


5470 - 5725 MHz, 802.11ax80 Mode, ANTJ15

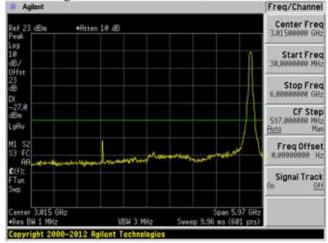
Low Channel 5530 MHz, 6GHz – 40GHz







High Channel 5690 MHz , 30 MHz - 6 GHz

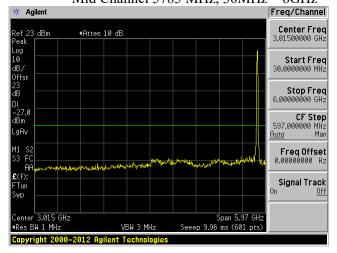


High Channel 5690 MHz, 6GHz – 40GHz

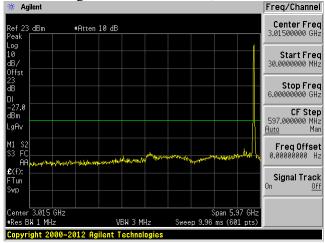


Low Channel 5745 MHz, 30MHz – 6GHz 🔆 Agilent Freq/Channel Center Freq Ref 23_dBm #Atten 10 dB 3.01500000 GHz [>]eak Log 10 dB/ Start Freq 30.0000000 MHz Offst 23 dB Stop Freq -27.0 dBm CF Step 597.000000 MHz A<u>uto</u>Man .gAv <u>Auto</u> M1 S3 Sa F(FreqOffset 0.00000000 Hz Ĥ £(f): Signal Track Tun 0n <u>0ff</u> ۷þ Span 5.97 GHz Center 3.015 GHz 9.96 ms (601 ≢Res BW 1 MHz VBW 3 MHz Copyright 2000-2012 Agilent Te

Mid Channel 5785 MHz, 30MHz - 6GHz



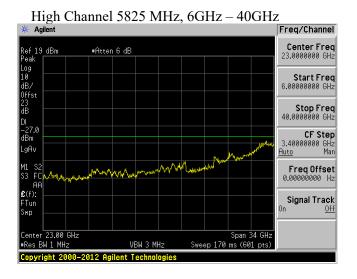
High Channel 5825 MHz, 30MHz –6GHz





Mid Channel 5785 MHz, 6GHz – 40GHz Agilent



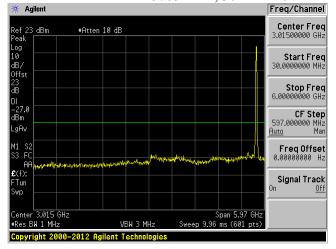


Low Channel 5745 MHz, 6GHz – 40GHz

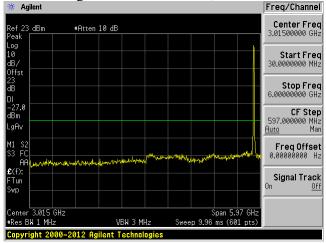
5745 - 5825 MHz, 802.11a Mode J12

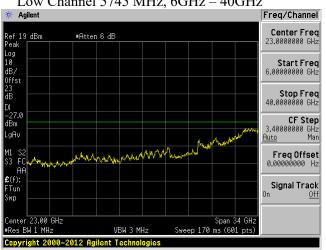
Low Channel 5745 MHz, 30MHz – 6GHz 🔆 Agilent Freq/Channel Center Freq Ref 23_dBm #Atten 10 dB 3.01500000 GHz [>]eak Log 10 dB/ Start Freq 30.0000000 MHz Offst 23 dB Stop Freq 6.0000000 GHz -27.0 dBm CF Step 597.000000 MHz A<u>uto</u>Man .gAv <u>Auto</u> M1 S3 FreqOffset 0.00000000 Hz Ĥ £(f): Signal Track Tun 0n <u>0ff</u> ۷þ Span 5.97 GHz 3.015 GHz Center 9.96 ms (601 ≢Res BW 1 MHz VBW 3 MHz Copyright 2000-2012 Agilent Te

Mid Channel 5785 MHz, 30MHz - 6GHz



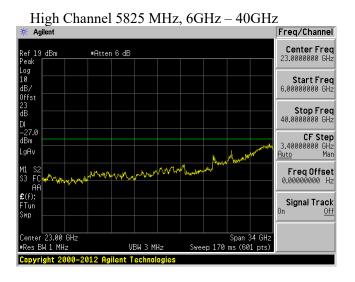
High Channel 5825 MHz, 30MHz –6GHz





Mid Channel 5785 MHz, 6GHz – 40GHz Agilent



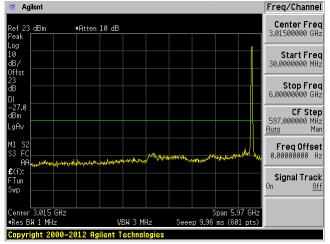


Low Channel 5745 MHz, 6GHz – 40GHz

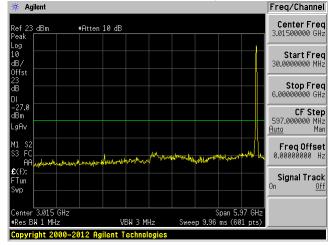
5745 - 5825 MHz, 802.11a Mode J15

5745 - 5825 MHz, 802.11ac20 Mode J12

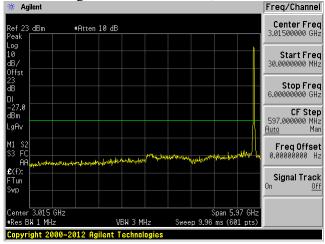
Low Channel 5745 MHz, 30MHz – 6GHz

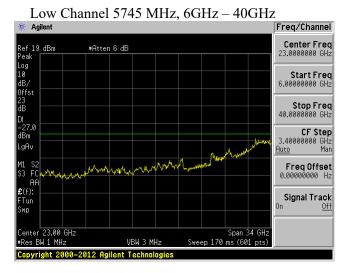


Mid Channel 5785 MHz, 30MHz - 6GHz



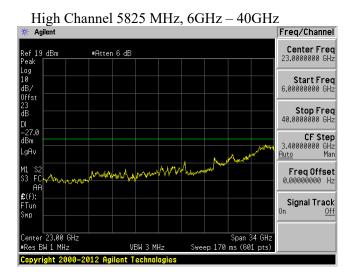
High Channel 5825 MHz, 30MHz –6GHz





Mid Channel 5785 MHz, 6GHz – 40GHz





M1 S3

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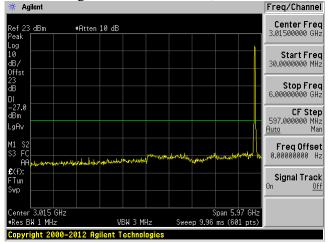
Μ1

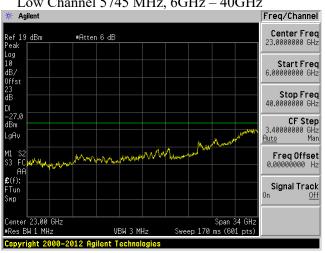
Low Channel 5745 MHz, 30MHz – 6GHz 🔆 Agilent Freq/Channel Center Freq Ref 23_dBm #Atten 10 dB 3.01500000 GHz [>]eak Log 10 dB/ Start Freq 30.0000000 MHz Offst 23 dB Stop Freq 6.0000000 GHz -27.0 dBm CF Step 597.000000 MHz A<u>uto</u>Man .gAv <u>Auto</u> Sa F(FreqOffset 0.00000000 Hz ۴ £(f): Signal Track Tun 0n <u>0ff</u> ۷þ Span 5.97 GHz 3.015 GHz Center 9.96 ms (601 ≢Res BW 1 MHz VBW 3 MHz Copyright 2000-2012 Agilent Te

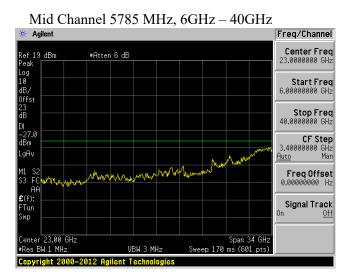
Mid Channel 5785 MHz, 30MHz - 6GHz 🔆 Agilent Freq/Channel Center Freq 3.01500000 GHz Ref 23 dBm ^Peak #Atten 10 dB Log 10 dB/ Offst Start Freq 30.0000000 MHz Stop Freq 6.0000000 GHz –27.0 dBm

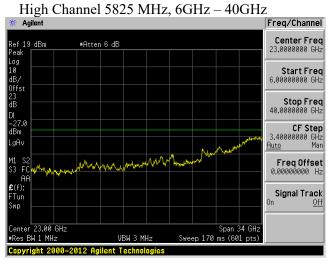
CF Step 597.000000 MHz Auto Man _aAv Auto FreqOffset 0.00000000 Hz Ĥ £(f): Signal Track Tun Ûn Off wp 3.015 GHz Span 5.97 GHz ente Sweep 9.96 ms (601 pts) VBW 3 MHz #Res BW 1 MHz Copyright 2000–2012 Agilent Technologies

High Channel 5825 MHz, 30MHz –6GHz







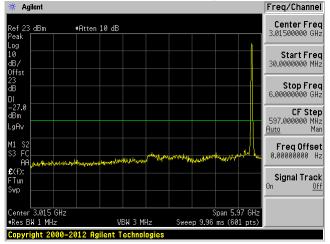


Low Channel 5745 MHz, 6GHz – 40GHz

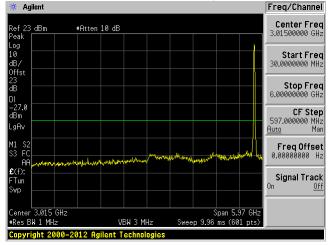
5745 - 5825 MHz, 802.11ac20 Mode J15

5745 - 5825 MHz, 802.11ax20 Mode J12

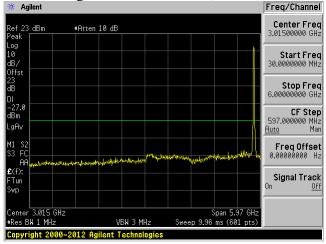
Low Channel 5745 MHz, 30MHz – 6GHz

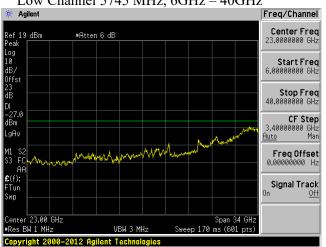


Mid Channel 5785 MHz, 30MHz - 6GHz



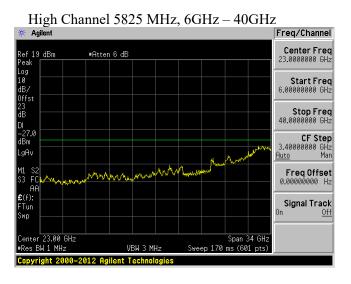
High Channel 5825 MHz, 30MHz –6GHz





Mid Channel 5785 MHz, 6GHz – 40GHz

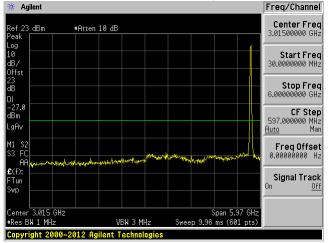




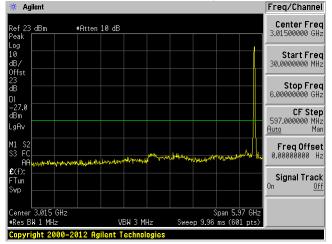
Low Channel 5745 MHz, 6GHz – 40GHz

5745 - 5825 MHz, 802.11ax20 Mode J15

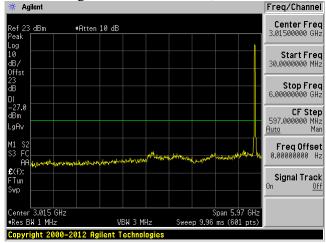
Low Channel 5745 MHz, 30MHz – 6GHz



Mid Channel 5785 MHz, 30MHz - 6GHz



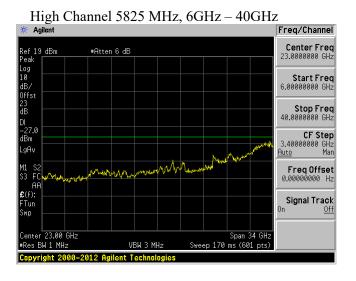
High Channel 5825 MHz, 30MHz –6GHz





Mid Channel 5785 MHz, 6GHz – 40GHz



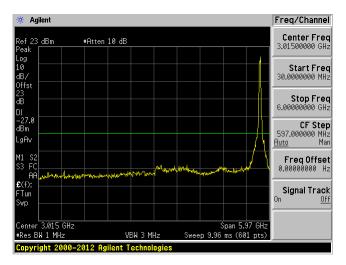


Report Number: R2007201-02

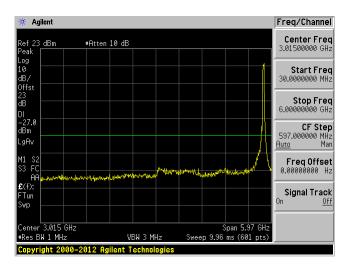
Low Channel 5745 MHz, 6GHz – 40GHz

5745 - 5825 MHz, 802.11ac40 Mode J12

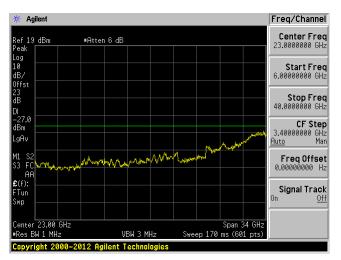
Low Channel 5755 MHz, 30MHz - 6GHz



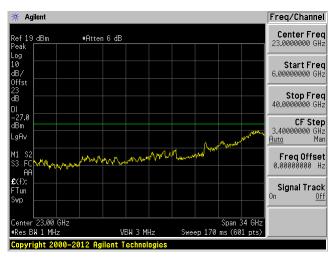
High Channel 5795 MHz, 30MHz –6GHz



Low Channel 5755 MHz, 6GHz – 40GHz

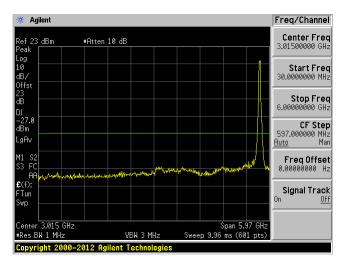


High Channel 5795 MHz, 6GHz – 40GHz

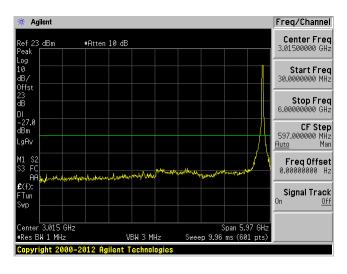


5745 - 5825 MHz, 802.11ac40 Mode J15

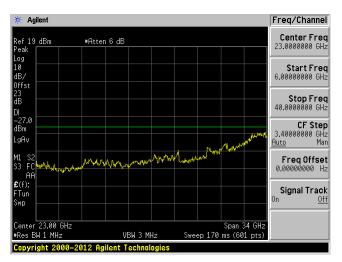
Low Channel 5755 MHz, 30MHz - 6GHz



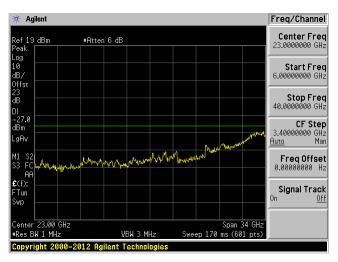
High Channel 5795 MHz, 30MHz –6GHz



Low Channel 5755 MHz, 6GHz – 40GHz

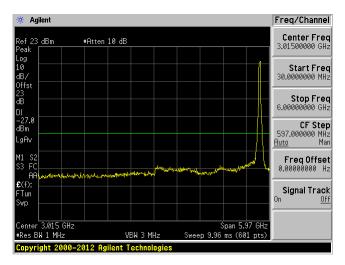


High Channel 5795 MHz, 6GHz - 40GHz

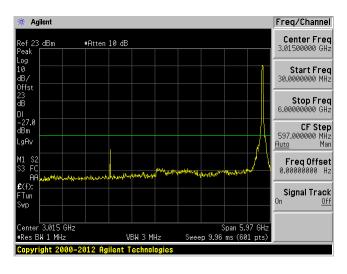


5745 - 5825 MHz, 802.11ax40 Mode J12

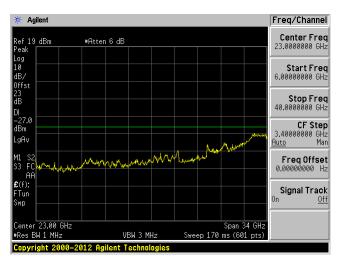
Low Channel 5755 MHz, 30MHz - 6GHz



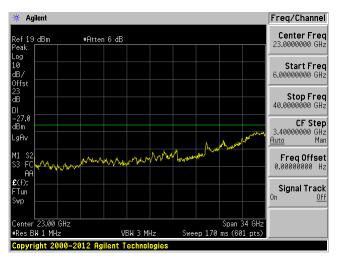
High Channel 5795 MHz, 30MHz –6GHz



Low Channel 5755 MHz, 6GHz – 40GHz

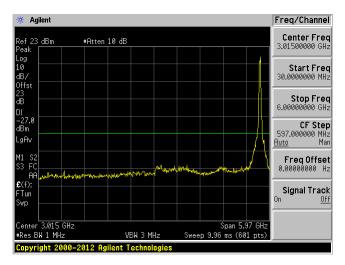


High Channel 5795 MHz, 6GHz – 40GHz

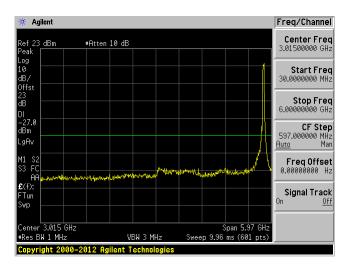


5745 - 5825 MHz, 802.11ax40 Mode J15

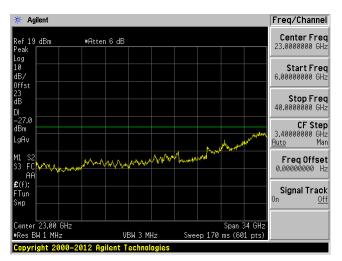
Low Channel 5755 MHz, 30MHz - 6GHz



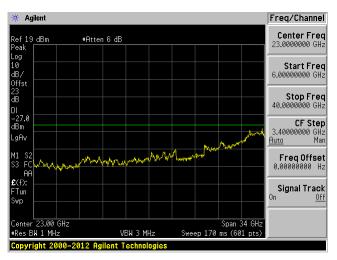
High Channel 5795 MHz, 30MHz –6GHz



Low Channel 5755 MHz, 6GHz – 40GHz



High Channel 5795 MHz, 6GHz – 40GHz

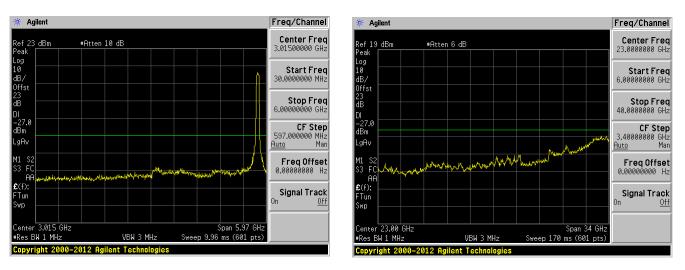


5755 MHz, 6GHz – 40GHz

Ruckus Wireless, Inc.

5745 - 5825 MHz, 802.11ac80 Mode J12

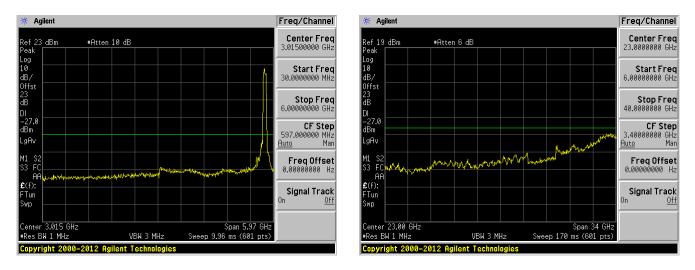
 $5775 \; MHz, \\ 30 MHz - 6 GHz$



5745 - 5825 MHz, 802.11ac80 Mode J15

5775 MHz, 30MHz - 6GHz

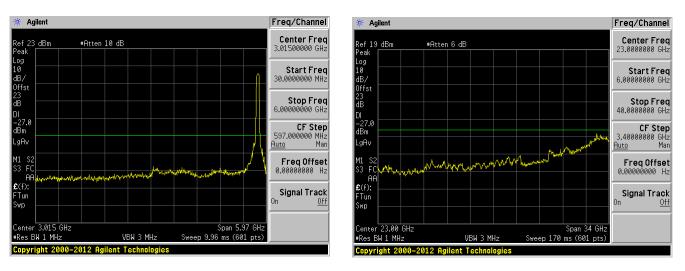




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5745 - 5825 MHz, 802.11ax80 Mode J12

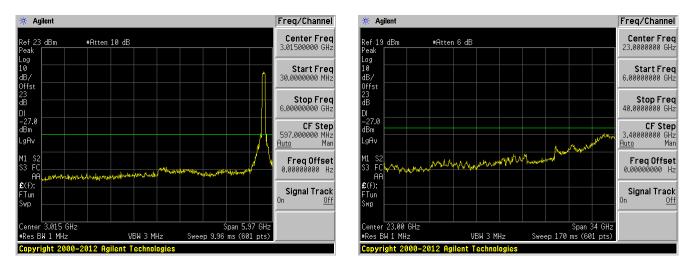
 $5775 \; MHz, \\ 30 MHz - 6 GHz$



5745 - 5825 MHz, 802.11ax80 Mode J15

5775 MHz, 30MHz - 6GHz





5755 MHz, 6GHz - 40GHz