

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

10.1 Applicable Standards

According to FCC §15.407(a):

For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

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 $10 + 10 \log_{10} B$, 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 \geq 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 \geq 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.

10.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rhode & Schwarz	Signal Analyzer	FSQ26	200749	2019-11-07	2 years
-	RF cable	-	-	Each time ¹	N/A
-	20 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”.

10.4 Test Environmental Conditions

Temperature:	22-24 °C
Relative Humidity:	40-41 %
ATM Pressure:	103.1-104.1 kPa

The testing was performed by Vang Lee from 2021-02-12 to 2021-02-16 in RF site.

10.5 Test Results

5150 - 5250 MHz

FCC:

Frequency (MHz)	PSD (dBm/MHz)		FCC Limit (dBm/MHz)
	ANT A	ANT B	
801.11a mode			
5180	6.58	7.01	11
5220	6.94	7.75	11
5240	6.95	7.78	11
801.11n20 mode			
5180	6.46	6.56	11
5220	6.83	7.65	11
5240	6.96	7.73	11
801.11ac20 mode			
5180	6.42	6.44	11
5220	6.89	7.68	11
5240	6.94	7.77	11
801.11n40 mode			
5190	-0.26	-0.41	11
5230	4.43	4.80	11
801.11ac40 mode			
5190	-0.40	-0.22	11
5230	4.47	4.73	11
801.11ac80 mode			
5210	-3.98	-3.48	11

IC:**Antenna A**

Frequency (MHz)	Conducted PSD (dBm/MHz)	Antenna Gain (dBi)	EIRP PSD (dBm/MHz)	IC Limit (dBm/MHz)
801.11a mode				
5180	6.58	3	9.58	10
5220	6.94	3	9.94	10
5240	6.95	3	9.95	10
801.11n20 mode				
5180	6.46	3	9.46	10
5220	6.83	3	9.83	10
5240	6.96	3	9.96	10
801.11ac20 mode				
5180	6.42	3	9.42	10
5220	6.89	3	9.89	10
5240	6.94	3	9.94	10
801.11n40 mode				
5190	-0.26	3	2.74	10
5230	4.43	3	7.43	10
801.11ac40 mode				
5190	-0.40	3	2.60	10
5230	4.47	3	7.47	10
801.11ac80 mode				
5210	-3.98	3	-0.98	10

Note: EIRP PSD (dBm/MHz) = PSD (dBm/MHz) + Antenna Gain (dBi)

Antenna B

Frequency (MHz)	Conducted PSD (dBm/MHz)	Antenna Gain (dBi)	EIRP PSD (dBm/MHz)	IC Limit (dBm/MHz)
801.11a mode				
5180	7.01	2.2	9.21	10
5220	7.75	2.2	9.95	10
5240	7.78	2.2	9.98	10
801.11n20 mode				
5180	6.56	2.2	8.76	10
5220	7.65	2.2	9.85	10
5240	7.73	2.2	9.93	10
801.11ac20 mode				
5180	6.44	2.2	8.64	10
5220	7.68	2.2	9.88	10
5240	7.77	2.2	9.97	10
801.11n40 mode				
5190	-0.41	2.2	1.79	10
5230	4.80	2.2	7.00	10
801.11ac40 mode				
5190	-0.22	2.2	1.98	10
5230	4.73	2.2	6.93	10
801.11ac80 mode				
5210	-3.48	2.2	-1.28	10

Note: EIRP PSD (dBm/MHz) = PSD (dBm/MHz) + Antenna Gain (dBi)

5725 - 5850 MHz**FCC/IC:**

Frequency (MHz)	Conducted PSD (dBm/100 kHz)		Corrected PSD (dBm/500 kHz)		FCC/ISED Limit (dBm/500 kHz)
	ANT A	ANT B	ANT A	ANT B	
801.11a mode					
5745	-0.48	-0.19	6.51	6.80	30
5785	-0.46	-0.58	6.53	6.41	30
5825	-0.64	-0.64	6.35	6.35	30
801.11n20 mode					
5745	-0.68	-0.52	6.31	6.47	30
5785	-0.64	-0.69	6.35	6.30	30
5825	-0.84	-0.87	6.15	6.12	30
801.11ac20 mode					
5745	-0.66	-0.52	6.33	6.47	30
5785	-0.63	-0.69	6.36	6.30	30
5825	-0.70	-1.19	6.29	5.80	30
801.11n40 mode					
5755	-3.88	-3.72	3.11	3.27	30
5795	-3.73	-3.77	3.26	3.22	30
801.11ac40 mode					
5755	-3.66	-3.43	3.33	3.56	30
5795	-3.96	-3.71	3.03	3.28	30
801.11ac80 mode					
5775	-5.84	-6.07	1.15	0.92	30

Note: Corrected PSD (dBm/500 kHz) = Conducted PSD (dBm/100 kHz) + 10*log (500 kHz/100 kHz)

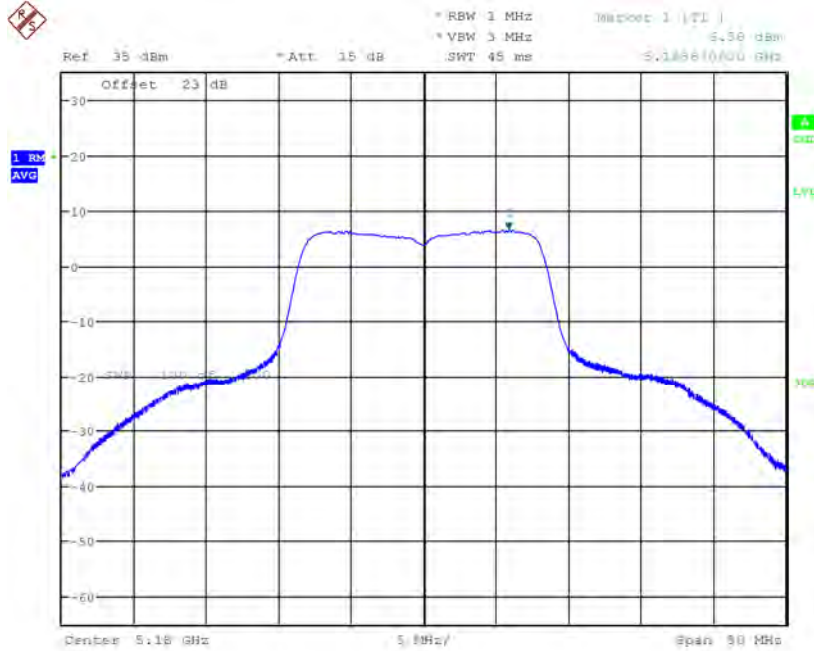
Please refer to the following plots.

FCC/IC:

5150 - 5250 MHz

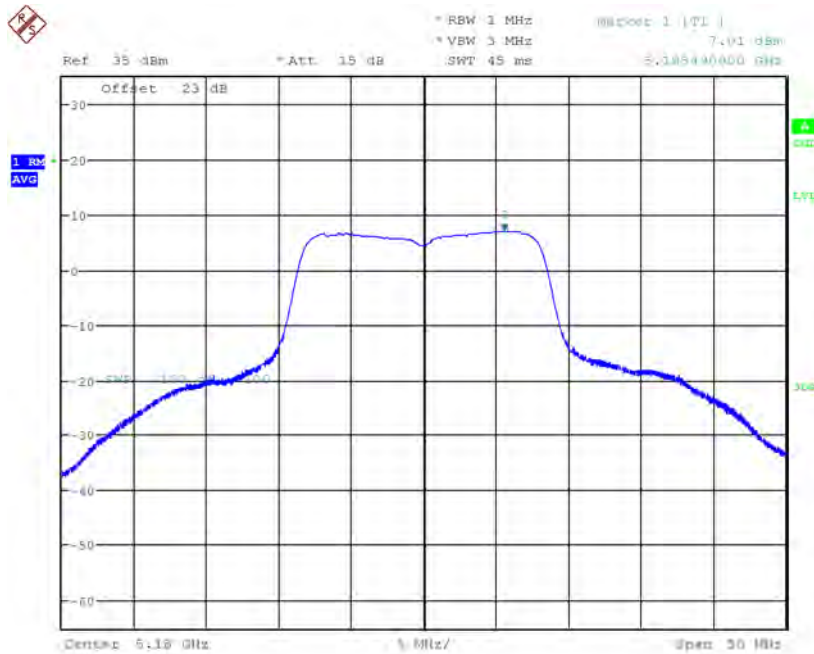
802.11a Mode

5180 MHz ANT A



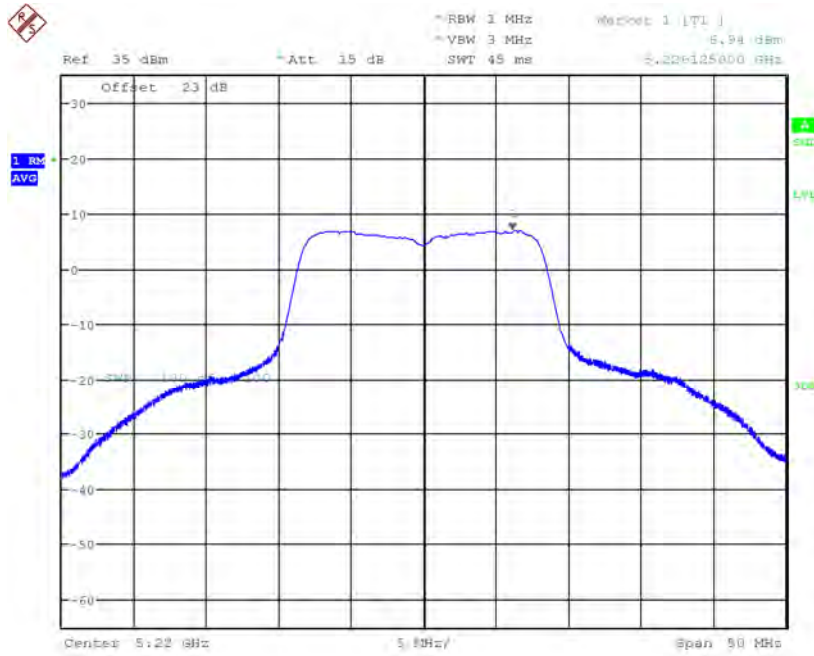
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5180 MHz ANT B



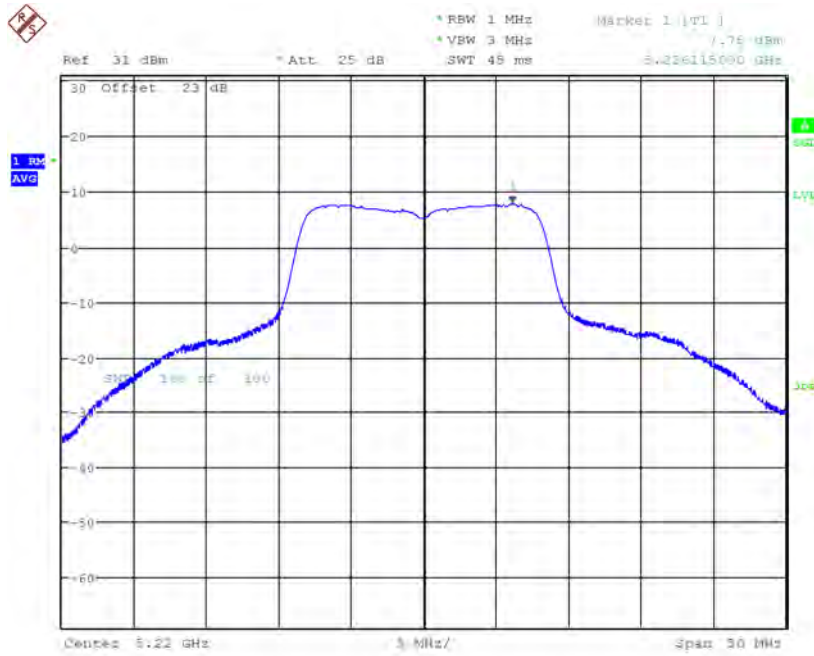
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5220 MHz ANT A



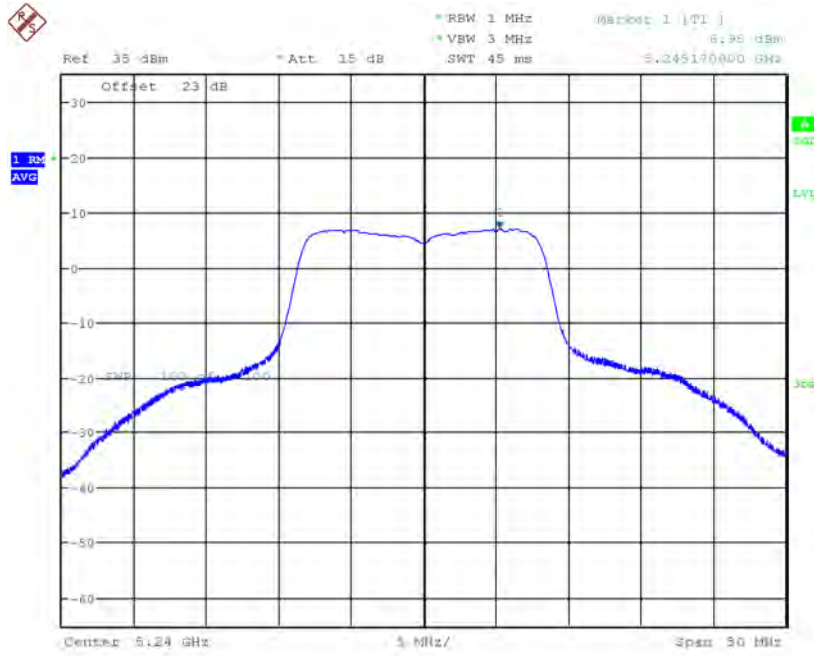
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5220 MHz ANT B



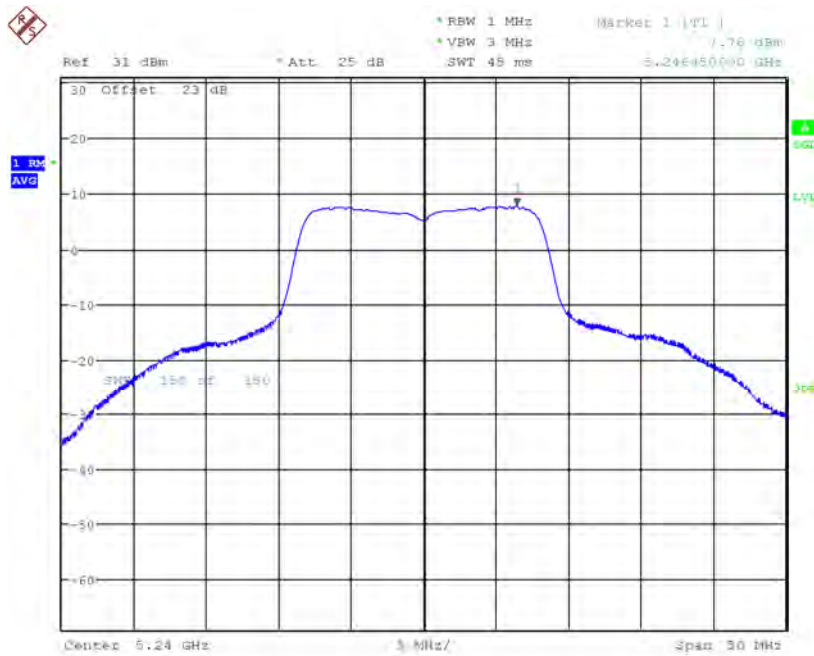
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5240 MHz ANT A



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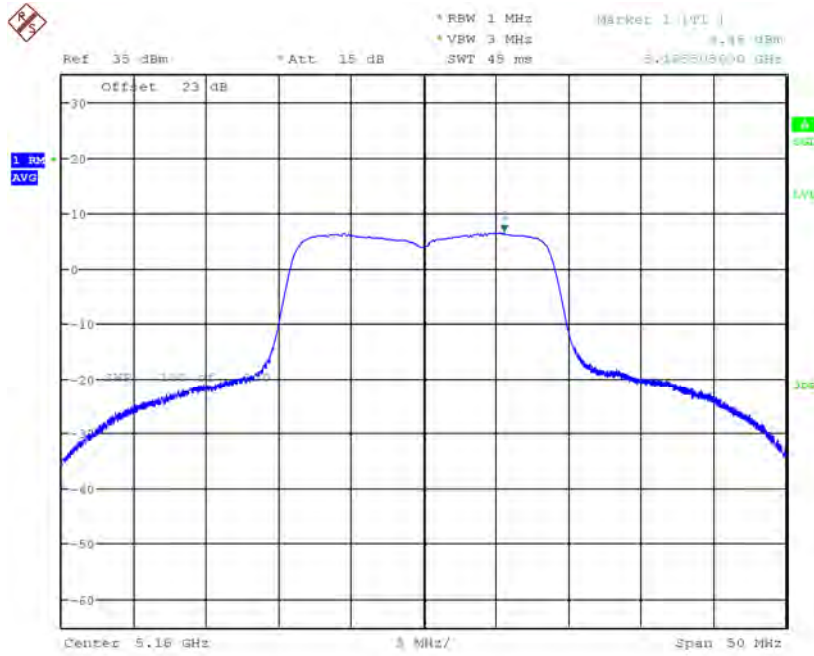
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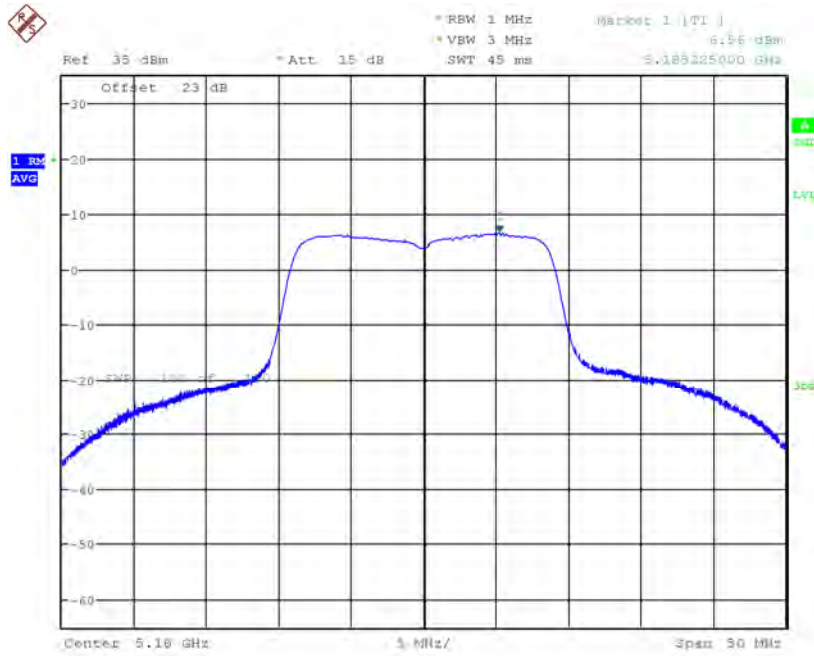
802.11n20 Mode

5180 MHz ANT A



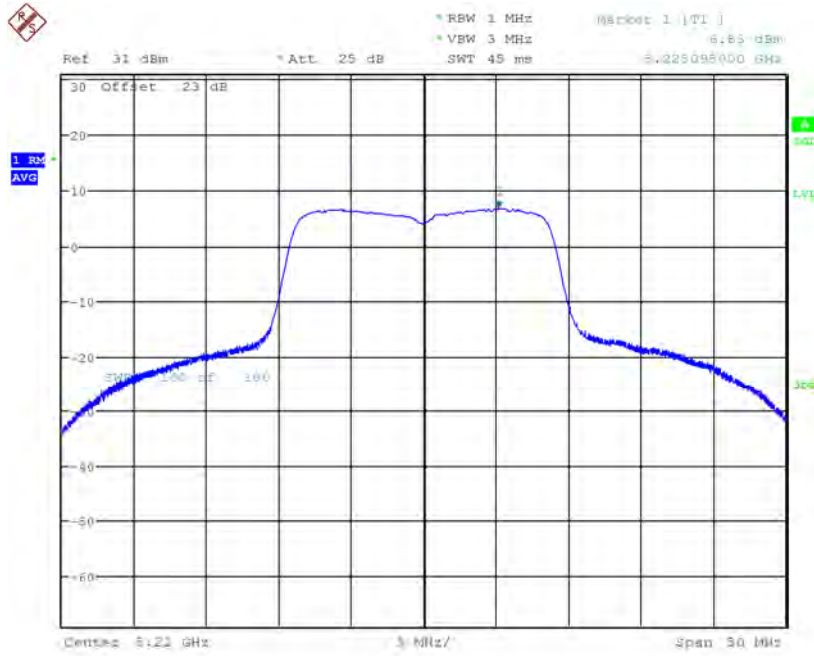
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5180 MHz ANT B



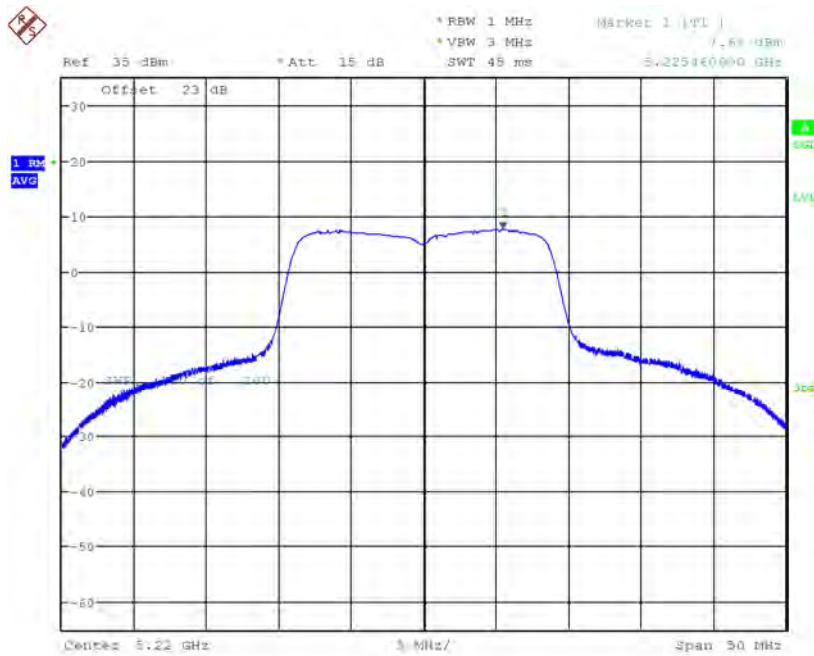
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5220 MHz ANT A



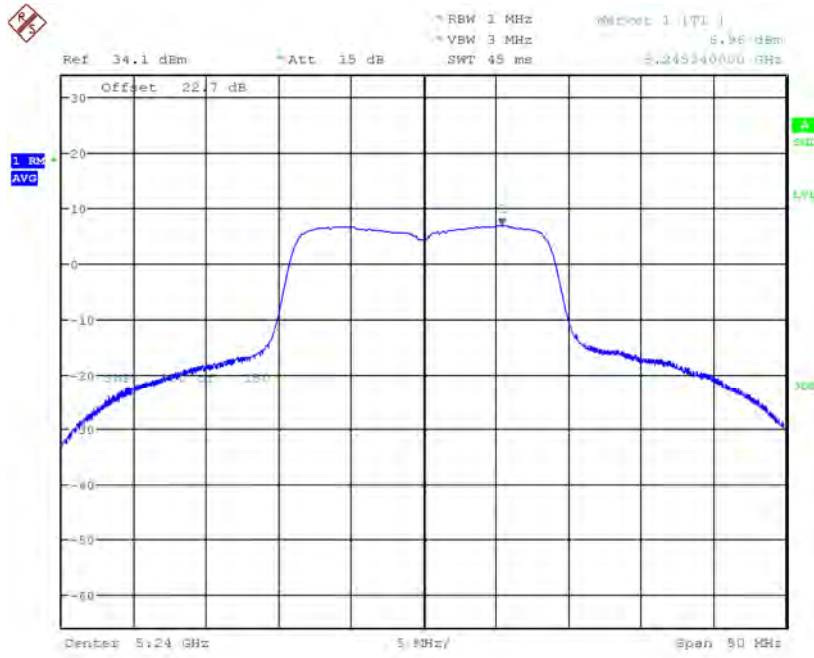
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5220 MHz ANT B



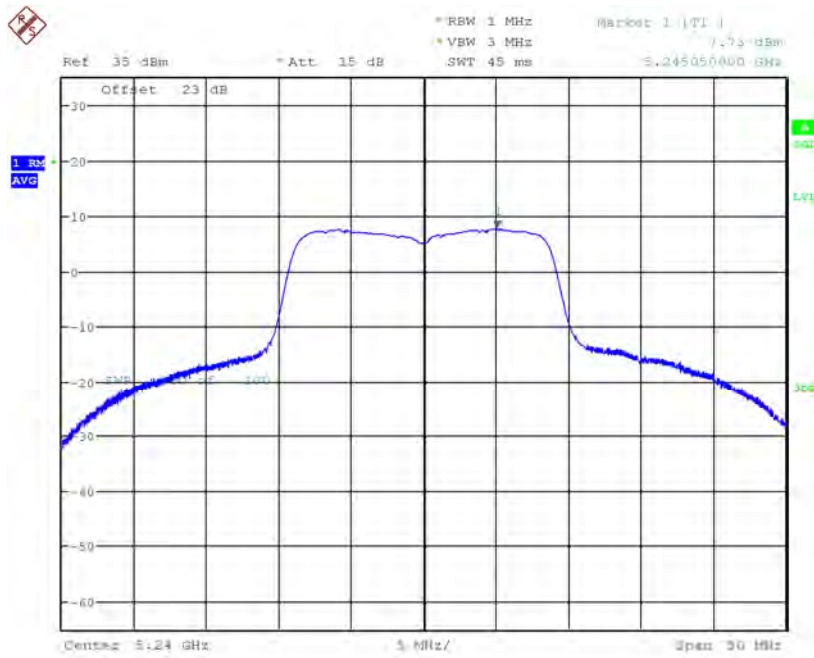
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5240 MHz ANT A



Date: 10:FEB:2021 14:40:28

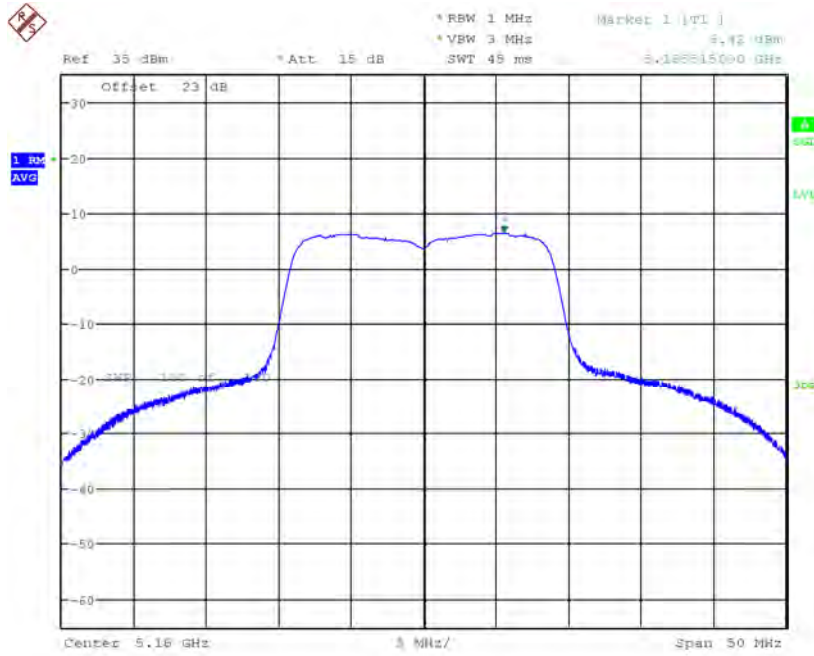
5240 MHz ANT B



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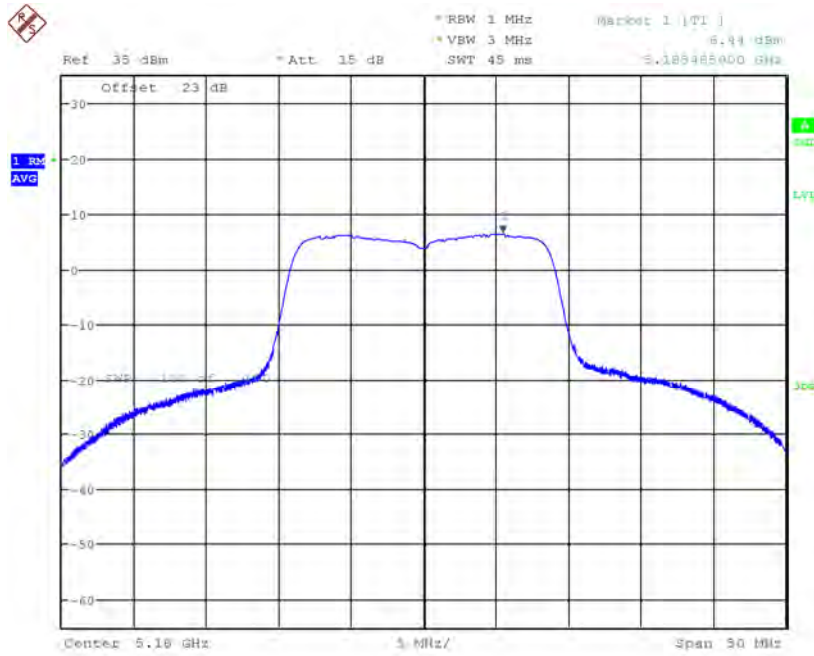
802.11ac20 Mode

5180 MHz ANT A



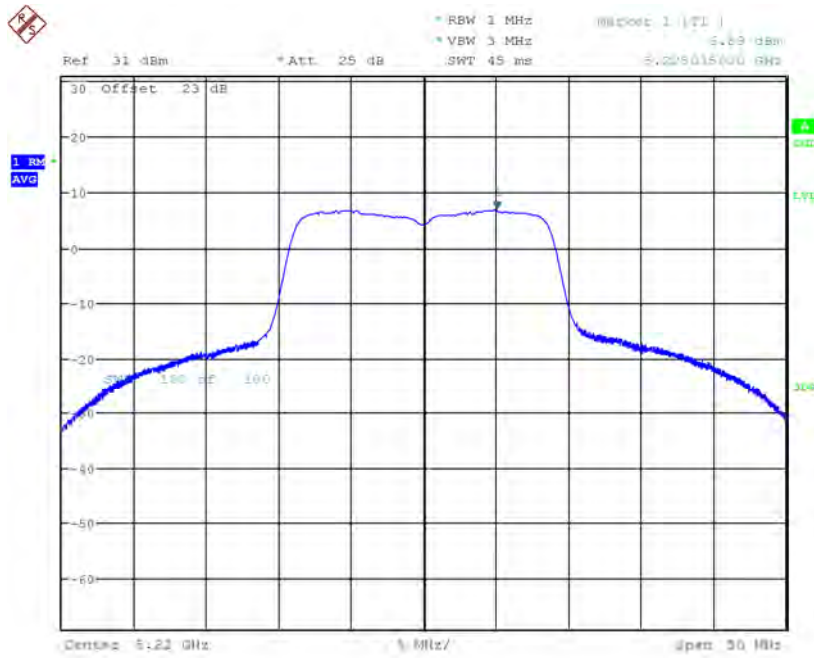
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5180 MHz ANT B



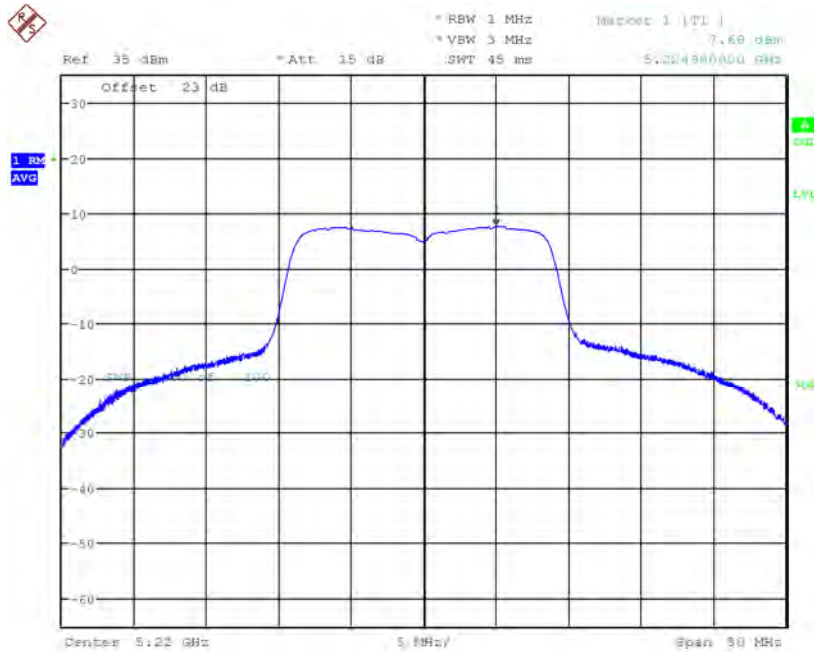
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5220 MHz ANT A



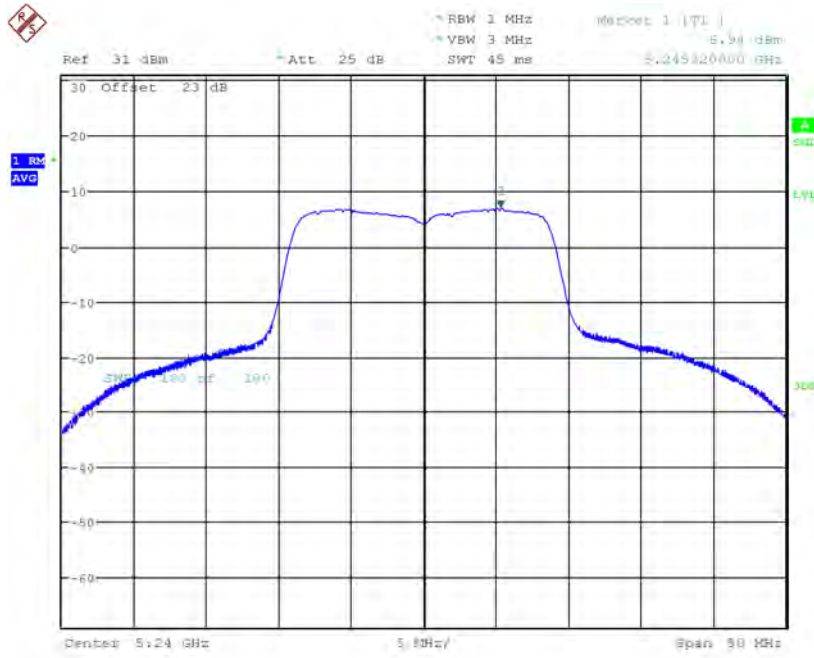
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5220 MHz ANT B



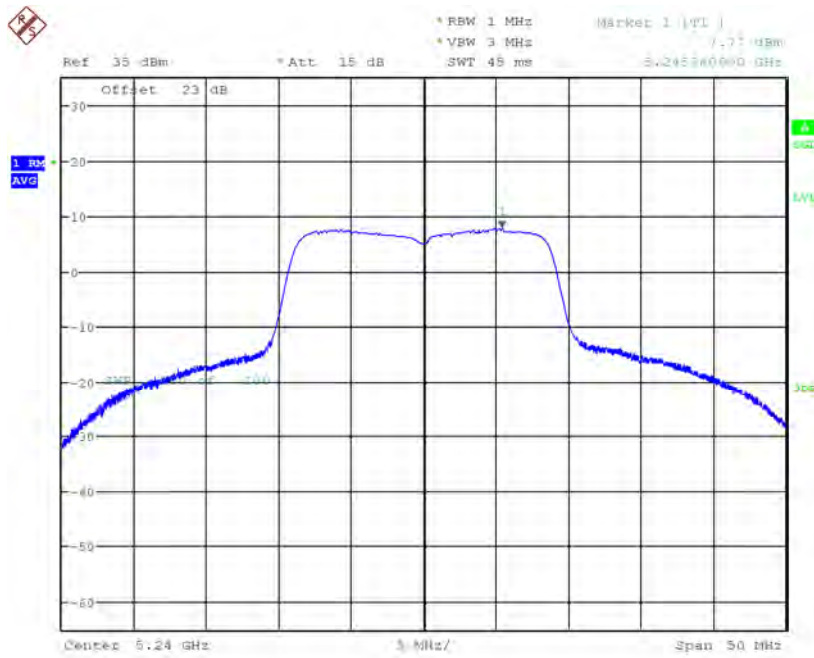
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5240 MHz ANT A



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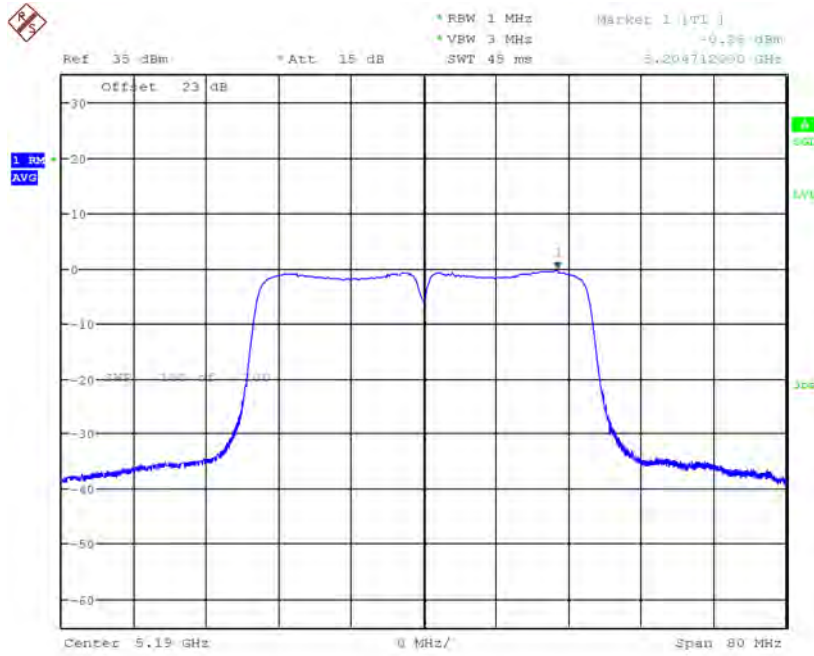
5240 MHz ANT B



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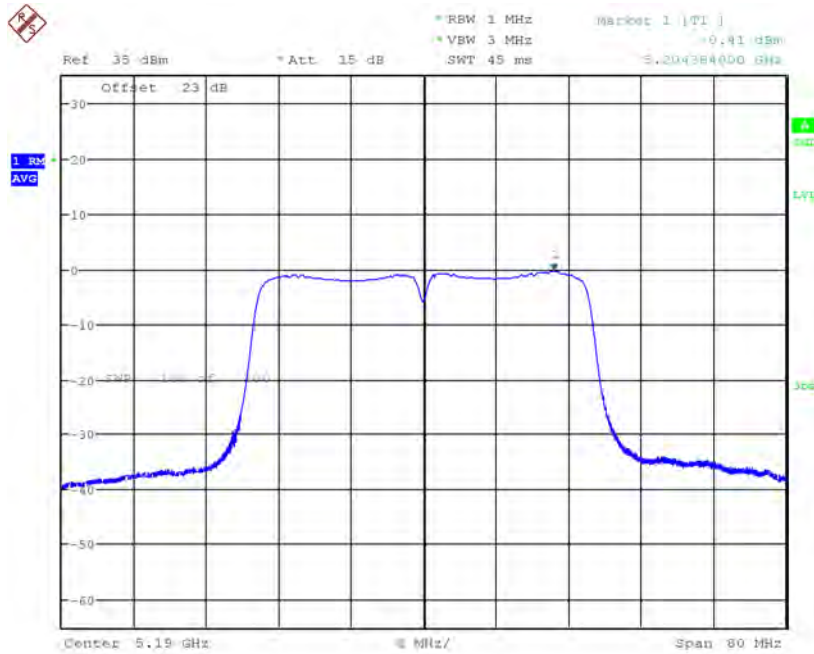
802.11n40 Mode

5190 MHz ANT A



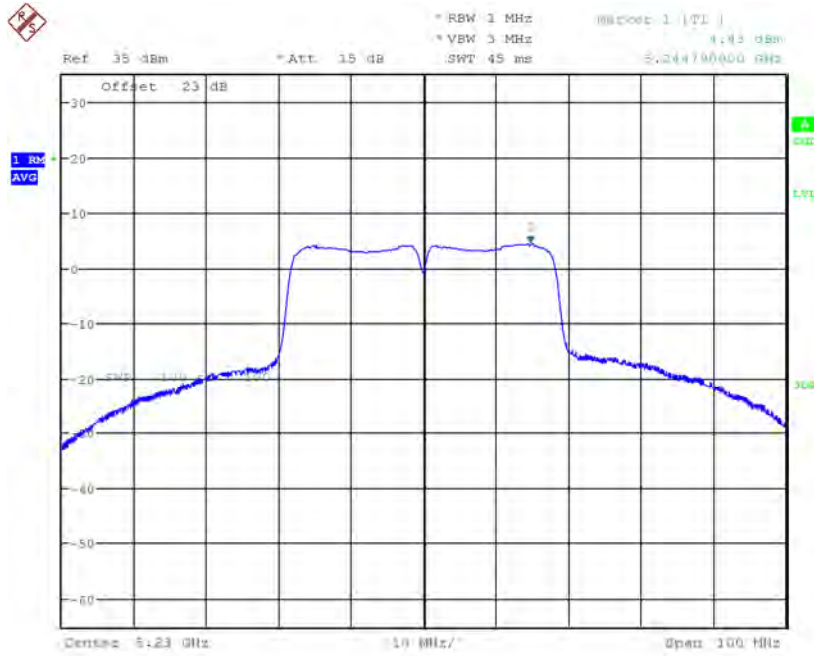
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5190 MHz ANT B



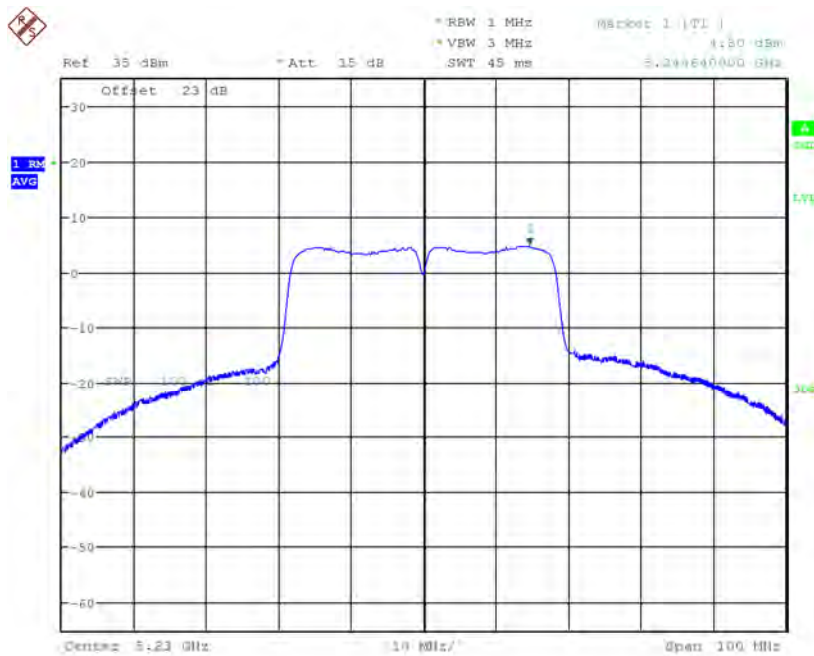
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5230 MHz ANT A



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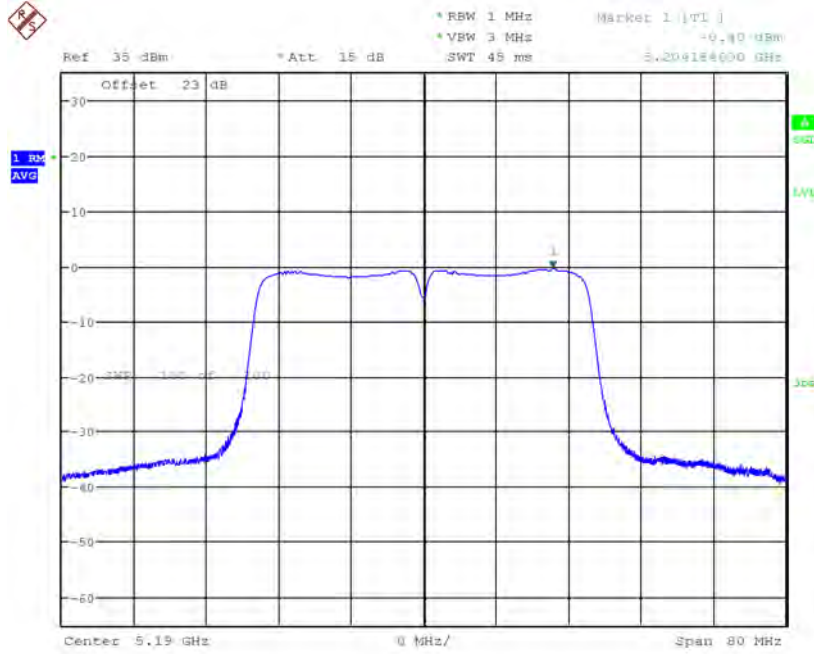
5230 MHz ANT B



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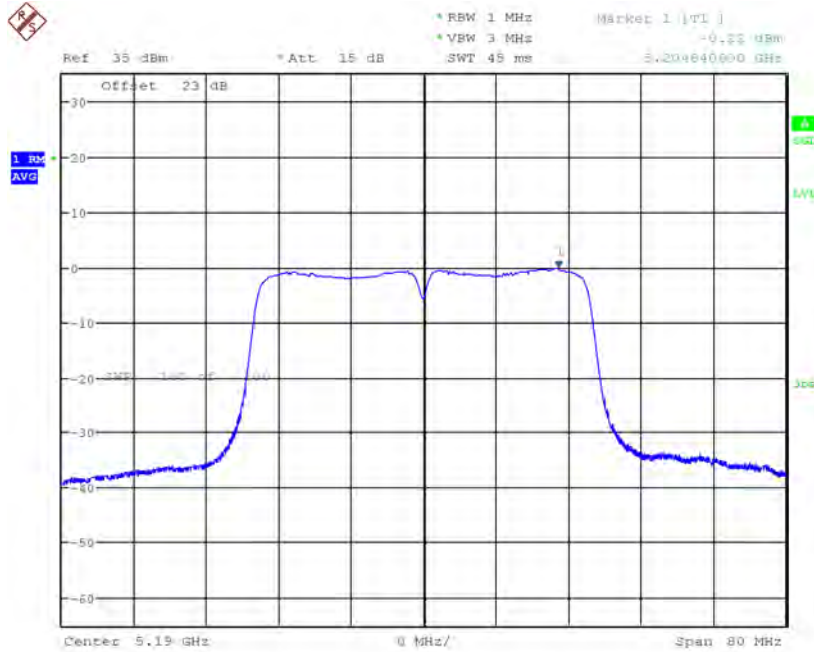
802.11ac40 Mode

5190 MHz ANT A



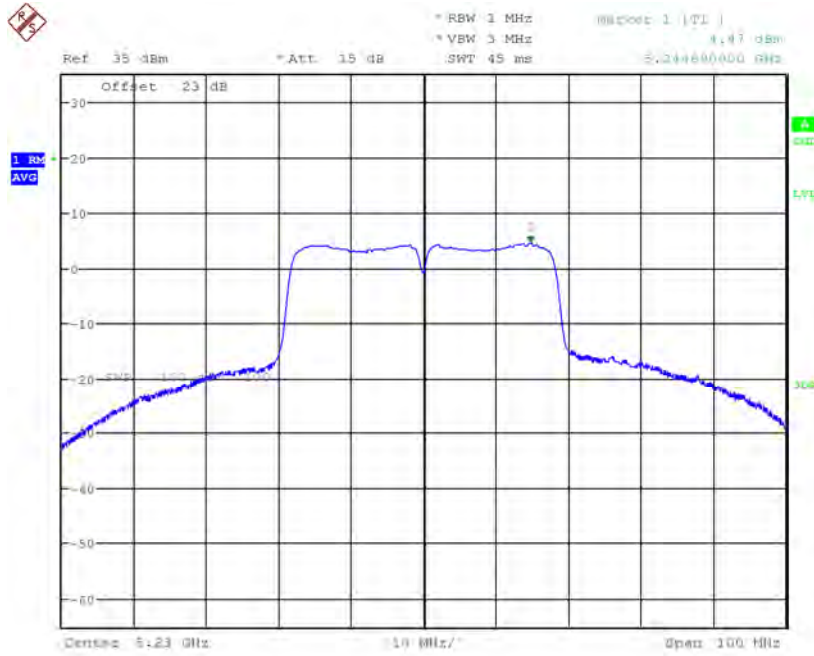
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5190 MHz ANT B



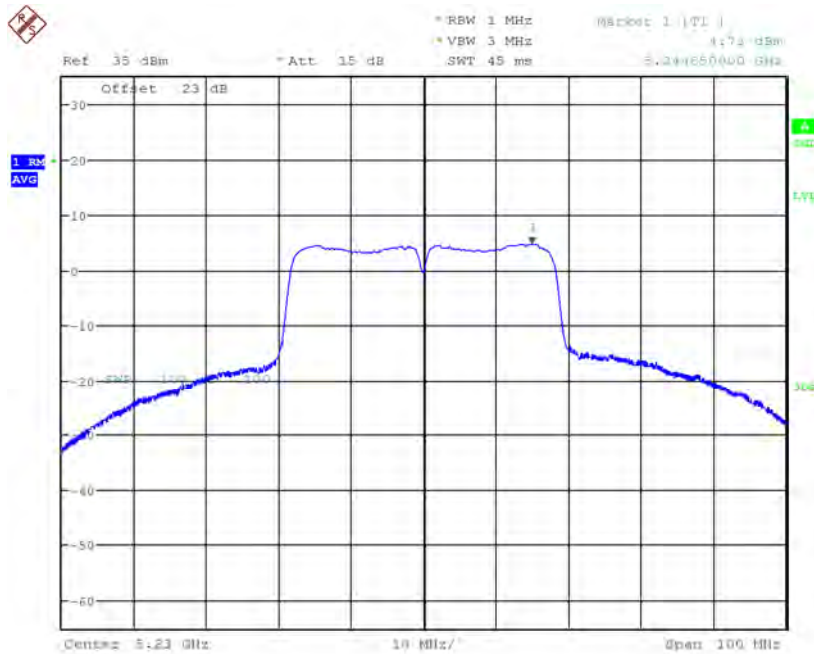
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5230 MHz ANT A



Date: 12.FEB.2021 14:35:59

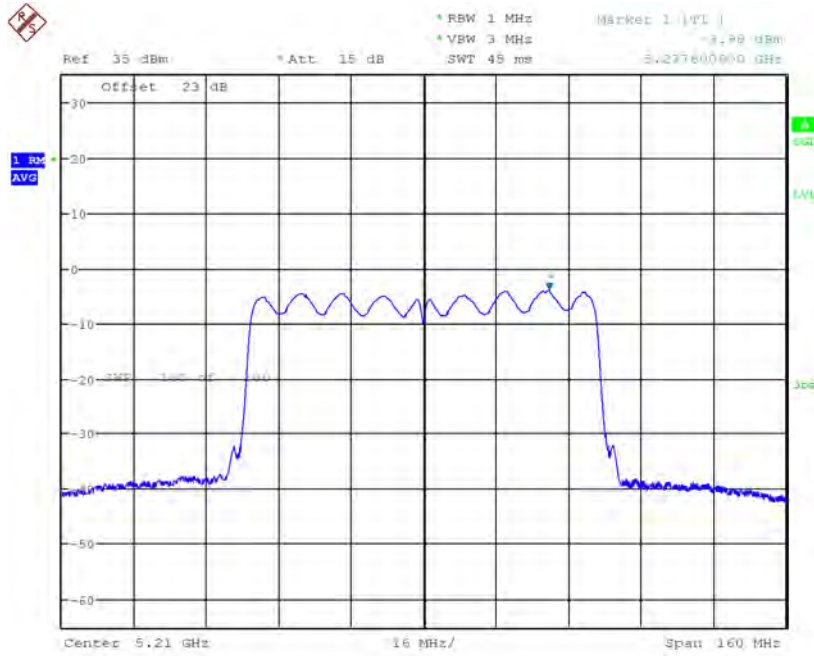
5230 MHz ANT B



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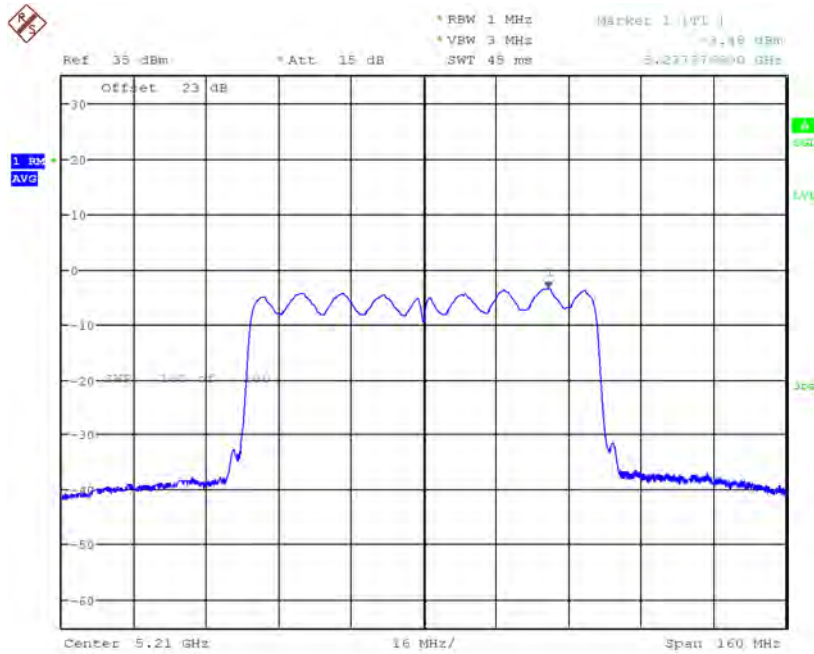
802.11ac80 Mode

5210 MHz ANT A



Date: 12.FEB.2021 14:39:54

5210 MHz ANT B

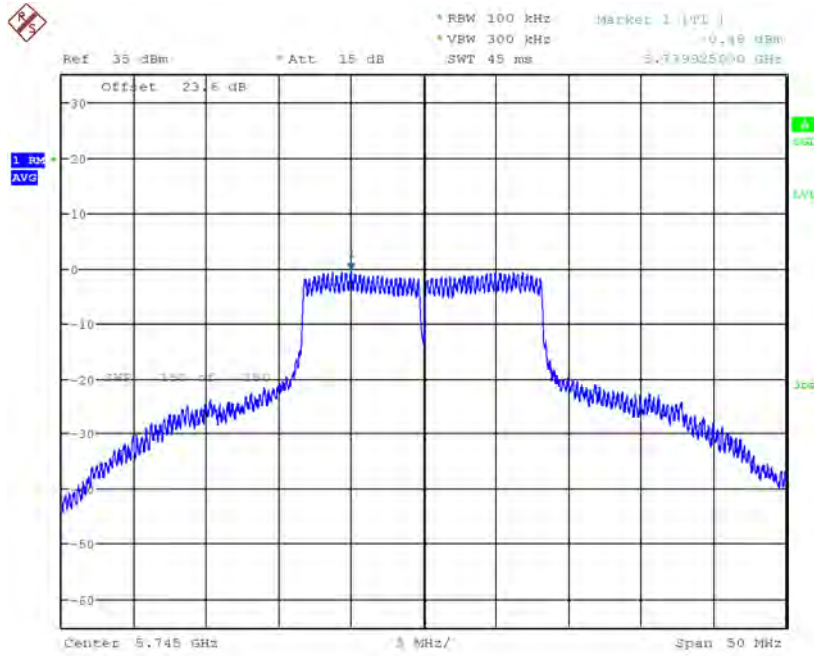


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5725 - 5850 MHz

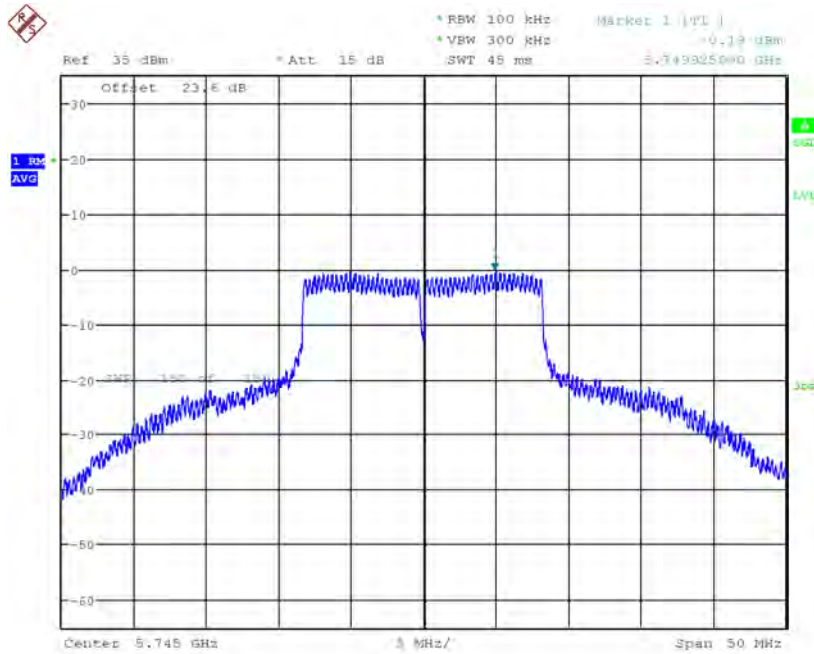
802.11a Mode

5745 MHz ANT A



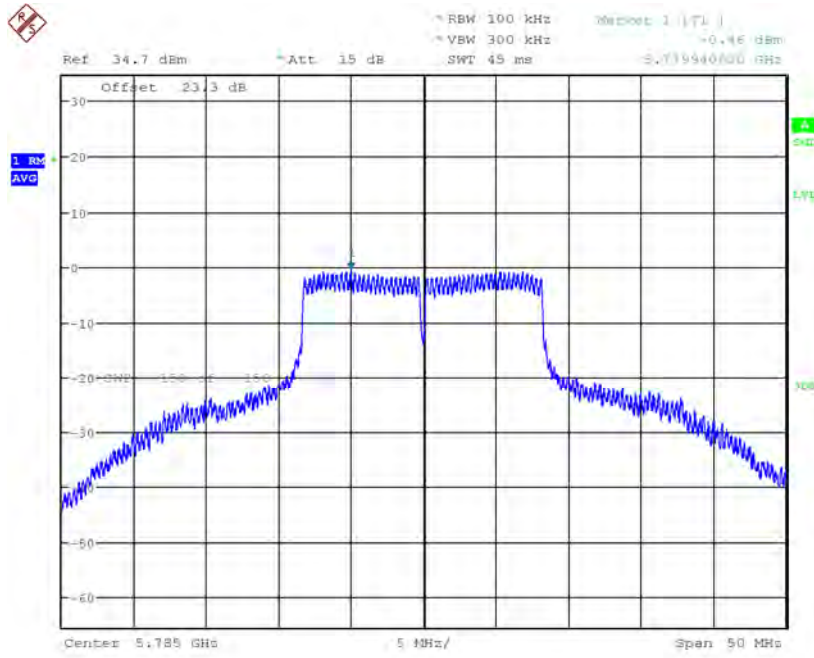
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5745 MHz ANT B



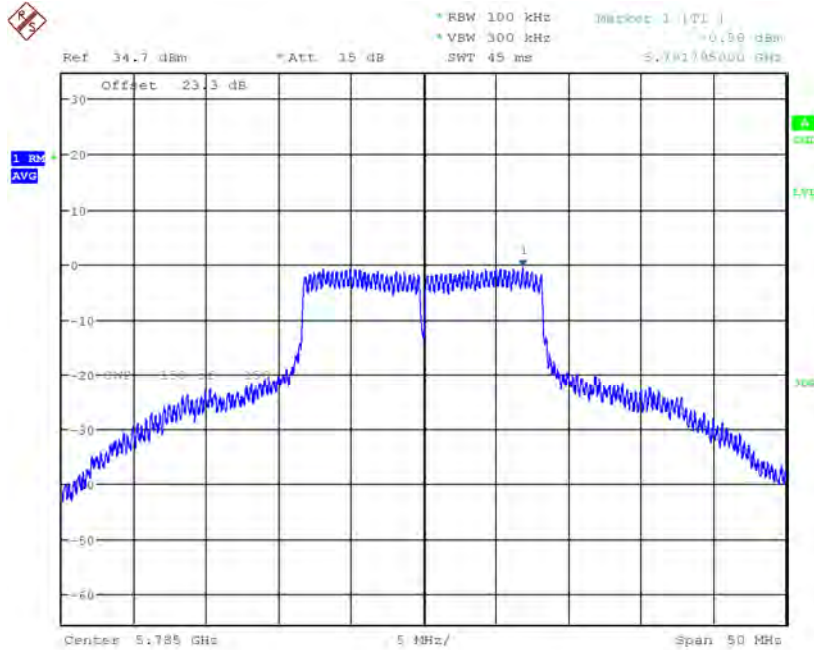
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5785 MHz ANT A



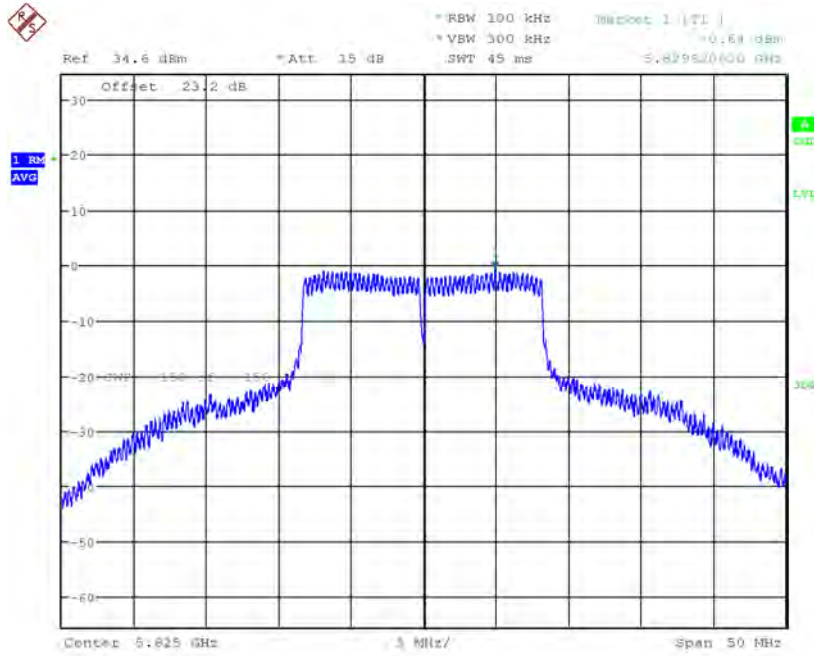
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5785 MHz ANT B



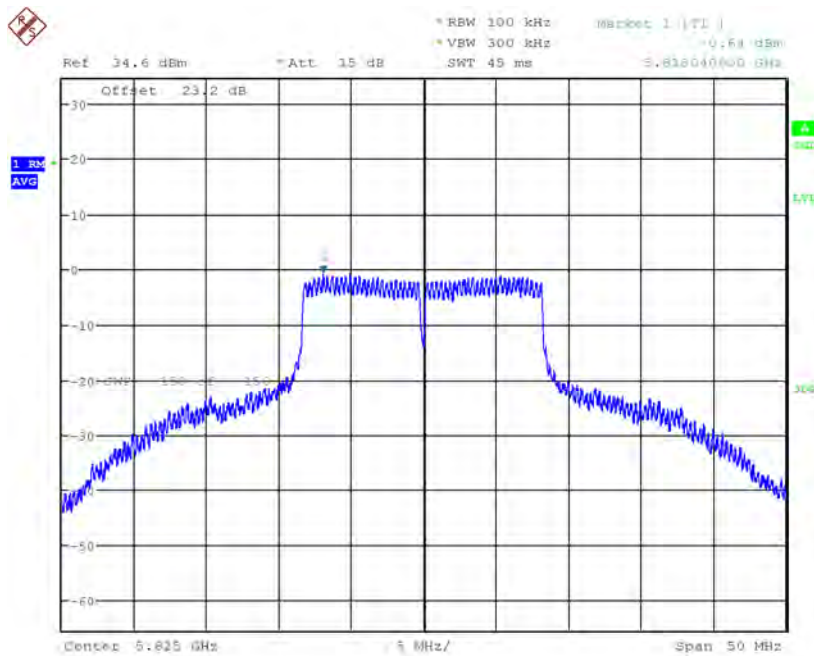
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5825 MHz ANT A



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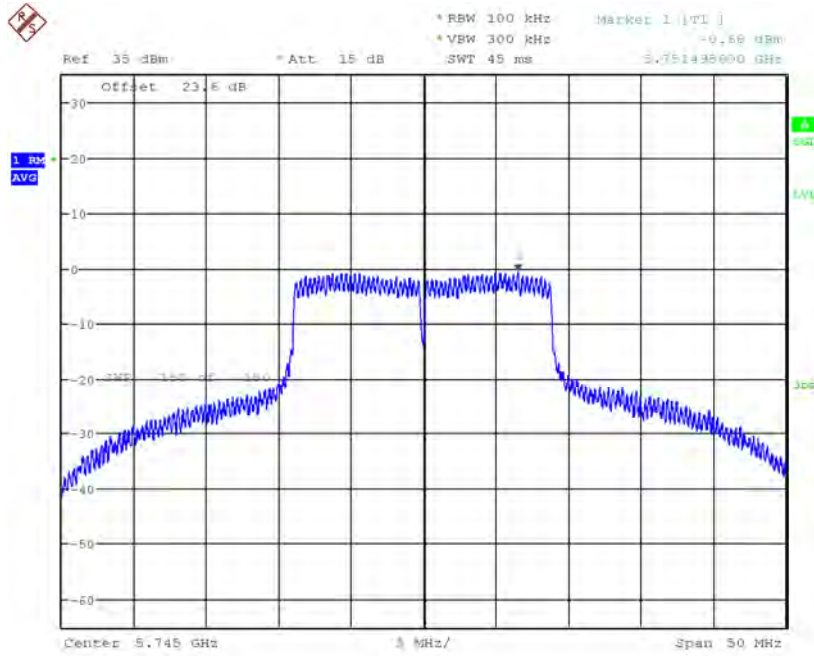
5825 MHz ANT B



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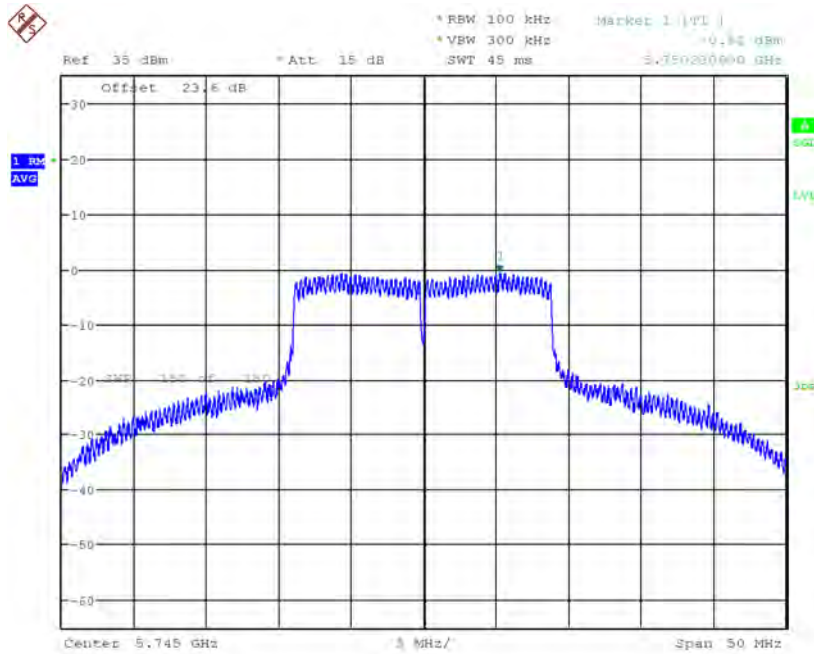
802.11n20 Mode

5745 MHz ANT A



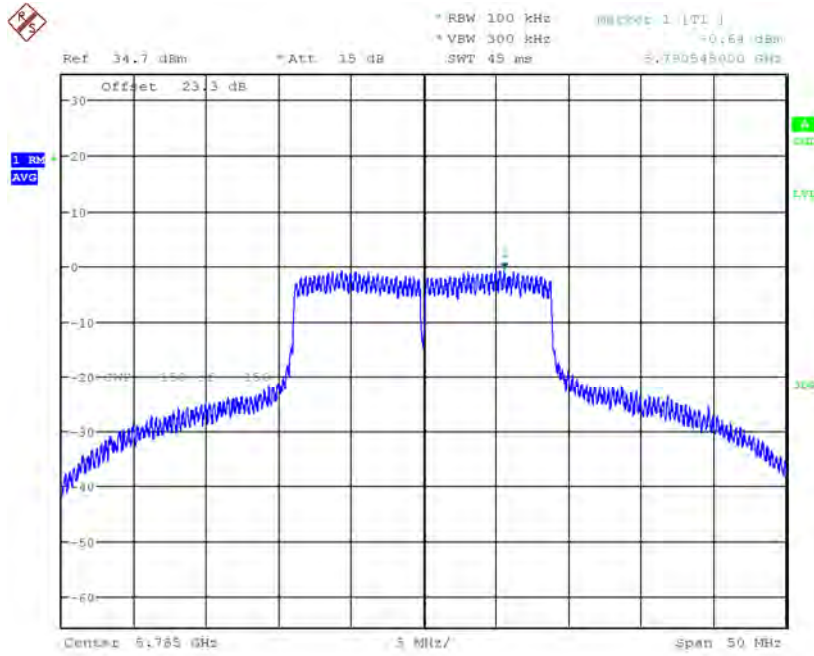
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5745 MHz ANT B



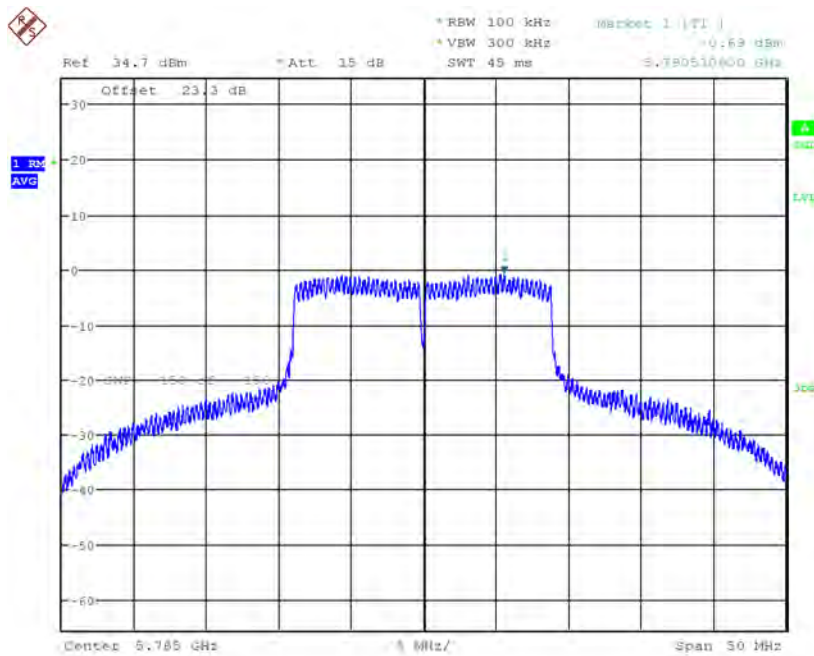
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5785 MHz ANT A



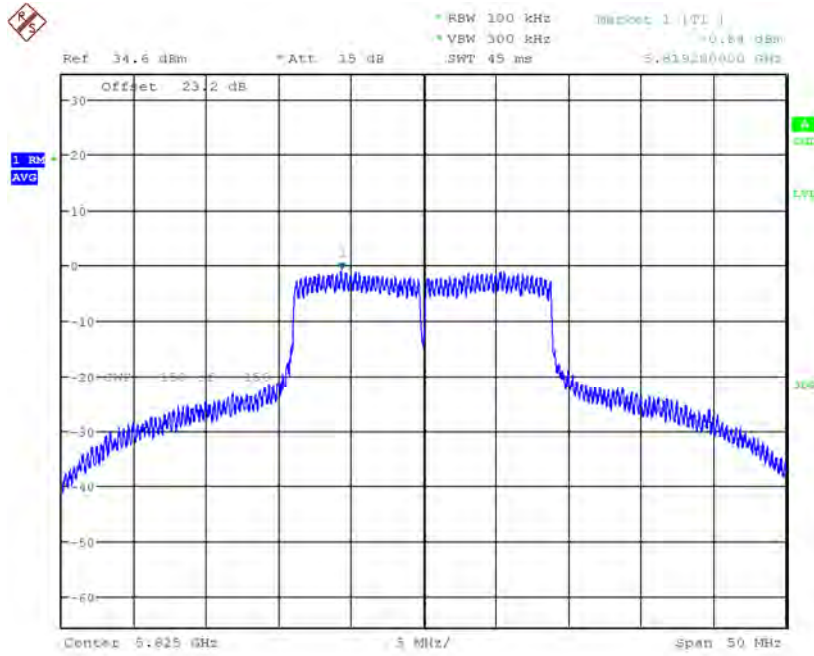
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5785 MHz ANT B



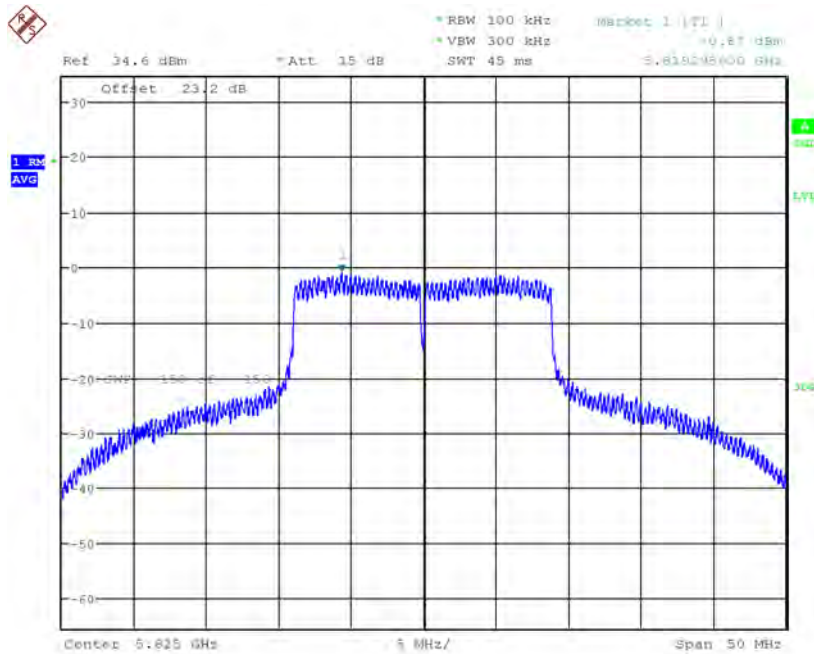
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5825 MHz ANT A



Date: 16.FEB.2021 10:00:03

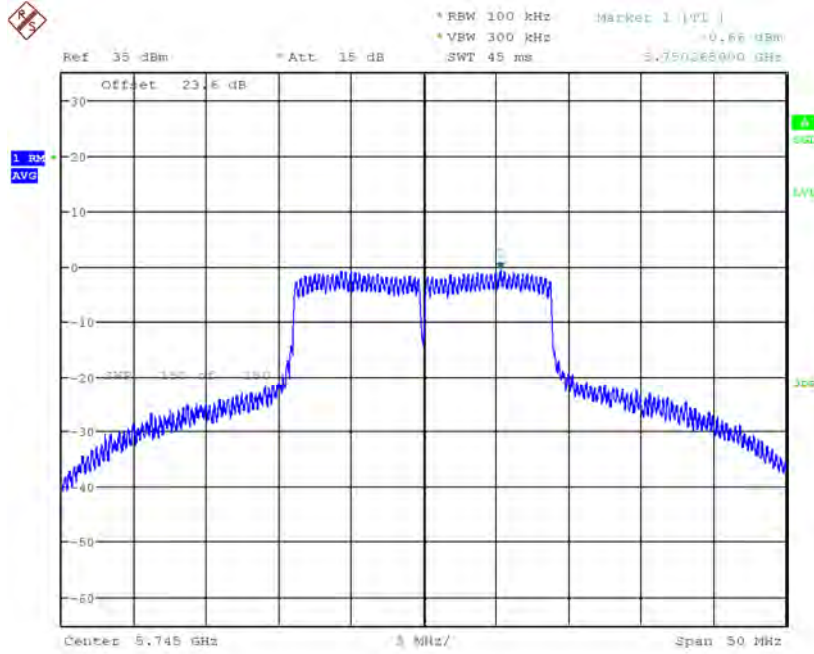
5825 MHz ANT B



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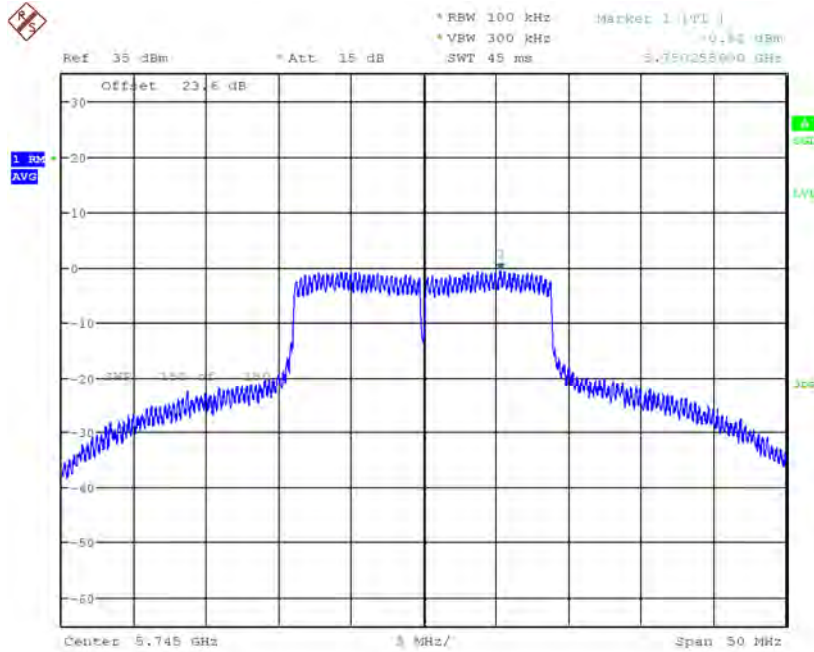
802.11ac20 Mode

5745 MHz ANT A



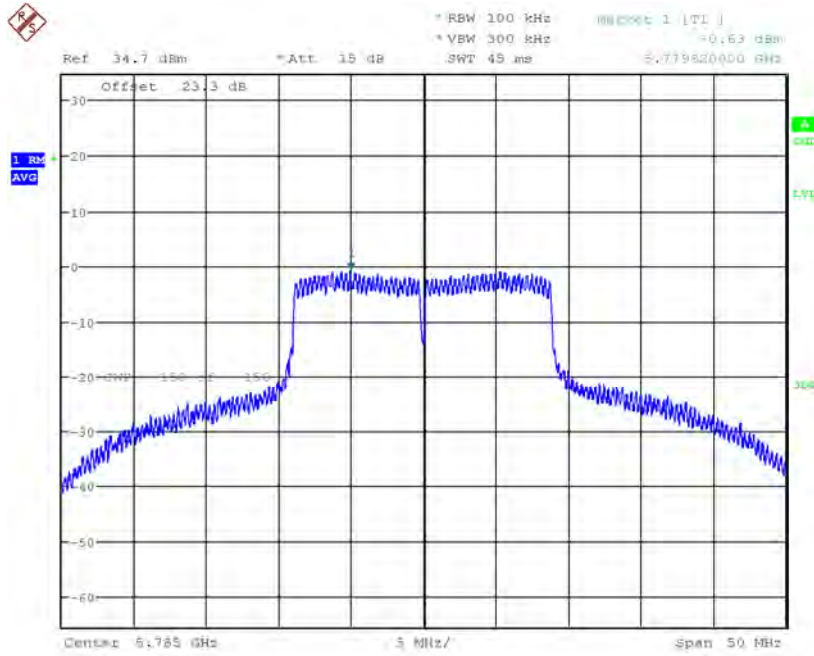
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5745 MHz ANT B



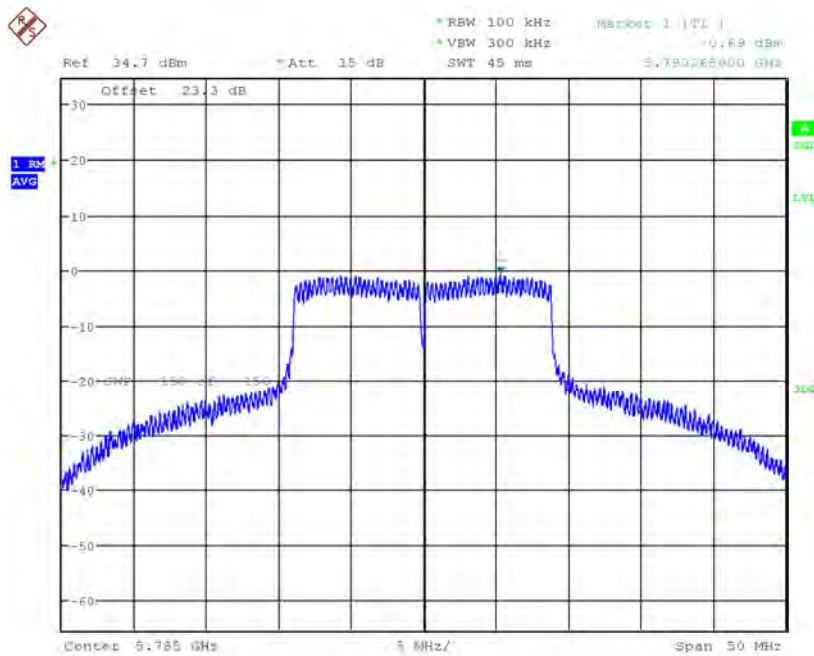
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5785 MHz ANT A



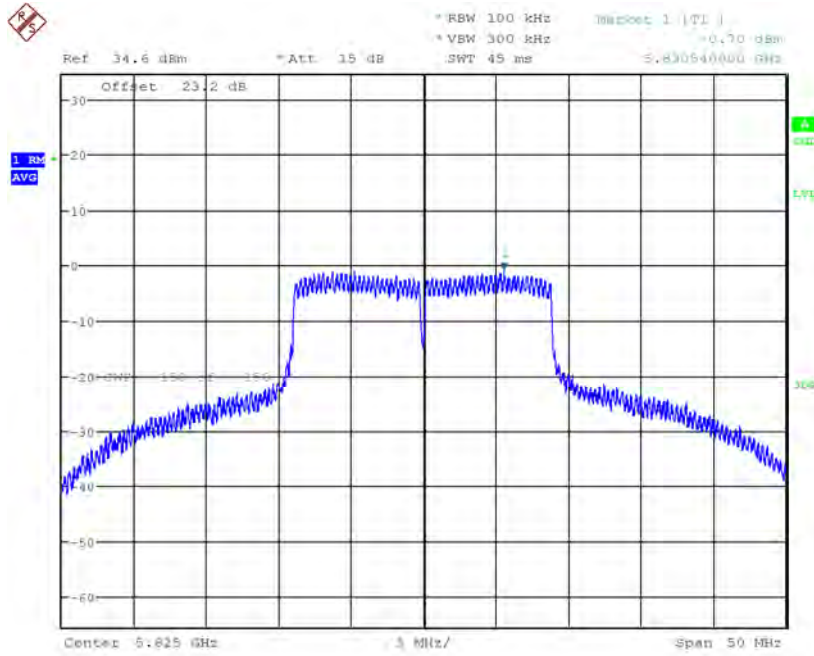
Date: 16.FEB.2021 09:55:17

5785 MHz ANT B



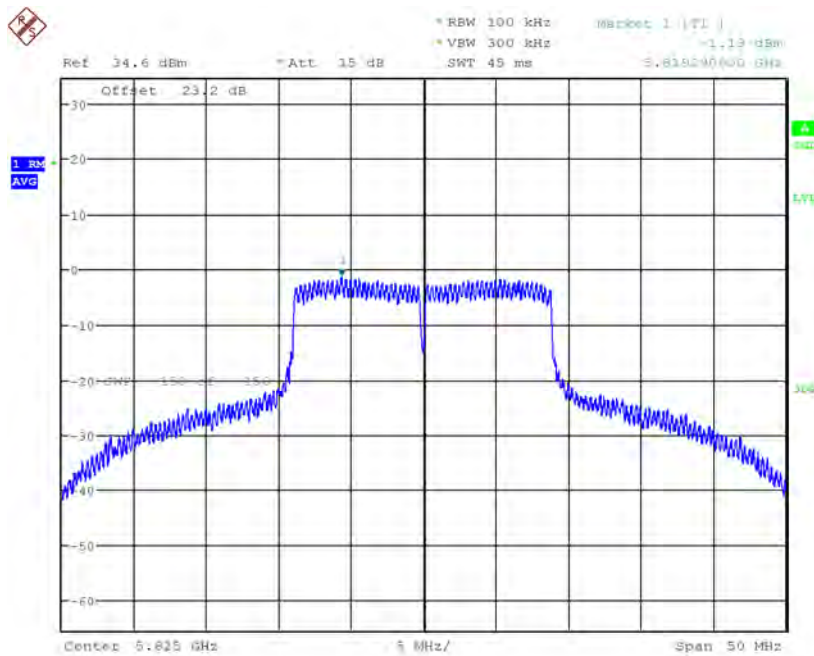
Date: 16.FEB.2021 10:38:21

5825 MHz ANT A



Date: 16.FEB.2021 10:02:26

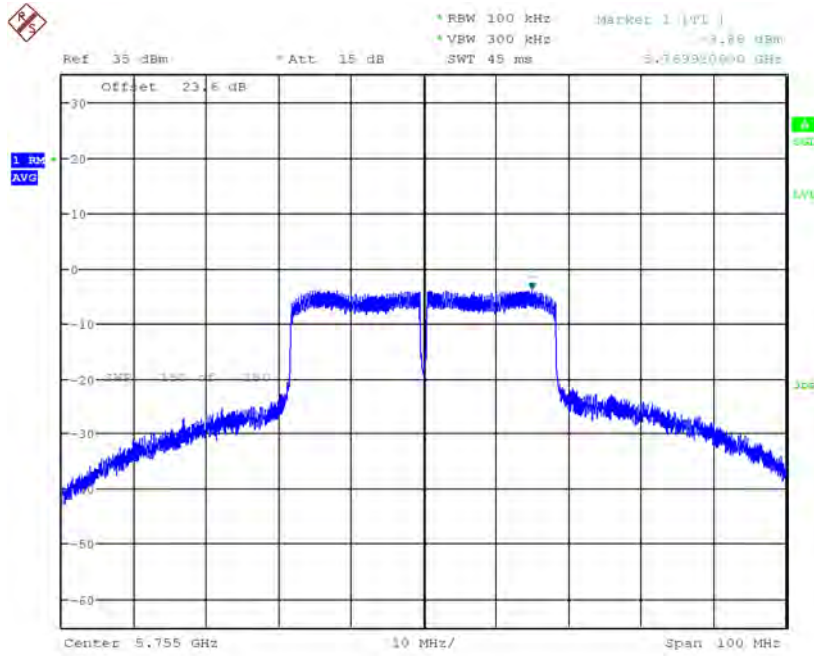
5825 MHz ANT B



Date: 16.FEB.2021 10:46:58

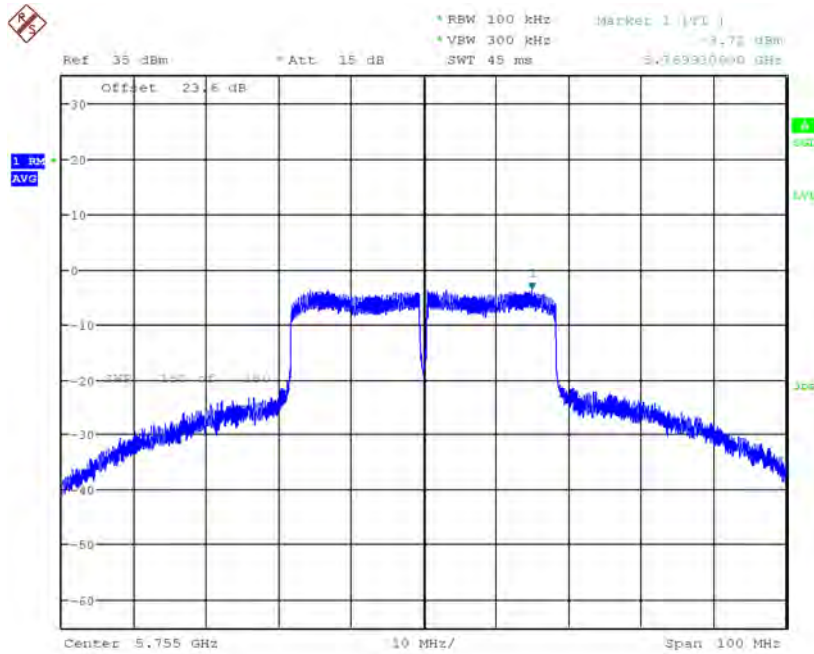
802.11n40 Mode

5755 MHz ANT A



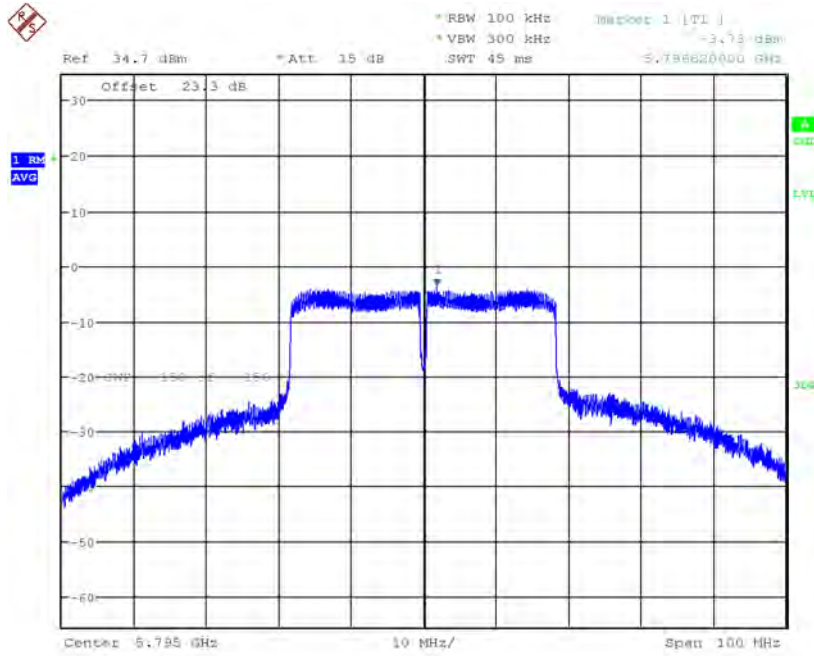
Date: 16.FEB.2021 10:05:08

5755 MHz ANT B



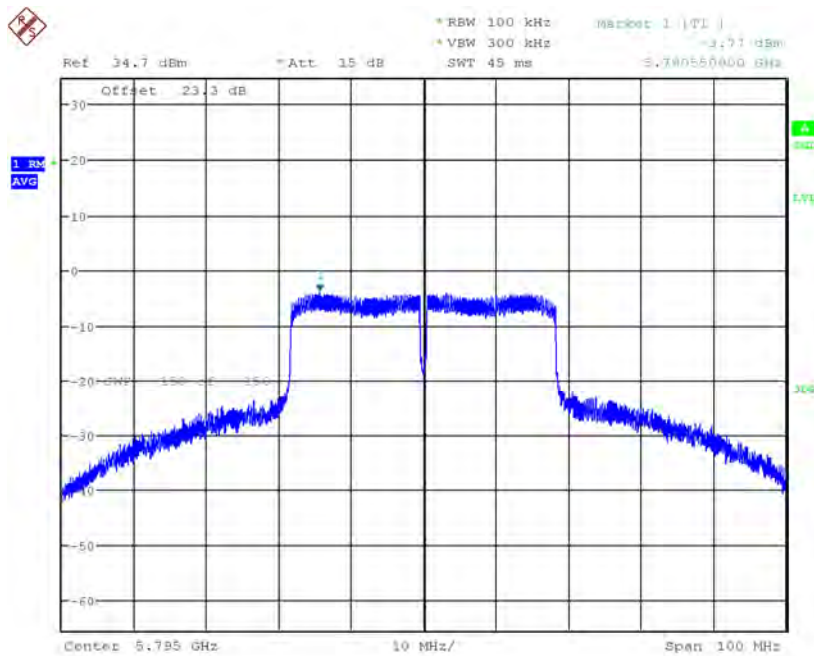
Date: 16.FEB.2021 10:51:51

5795 MHz ANT A



Date: 16.FEB.2021 10:10:28

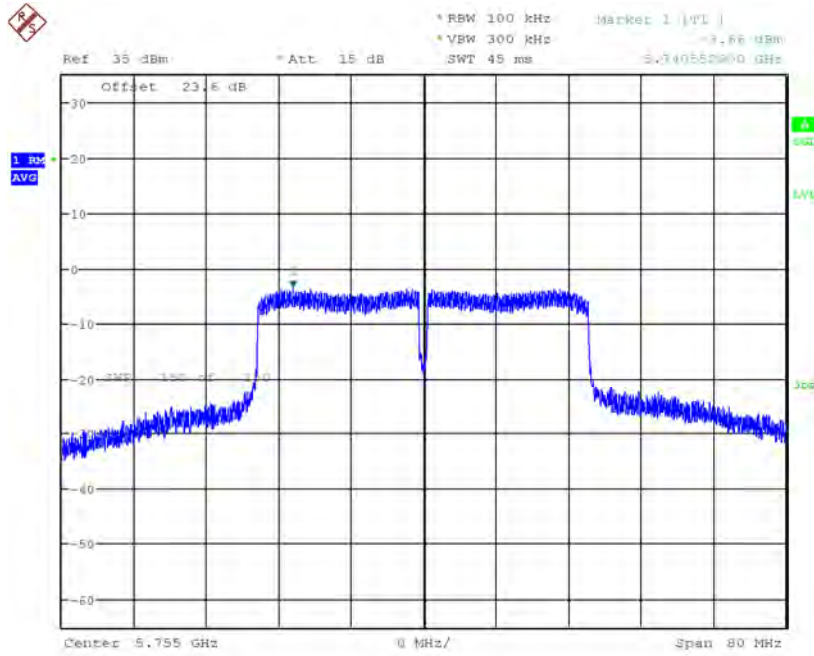
5795 MHz ANT B



Date: 16.FEB.2021 10:56:21

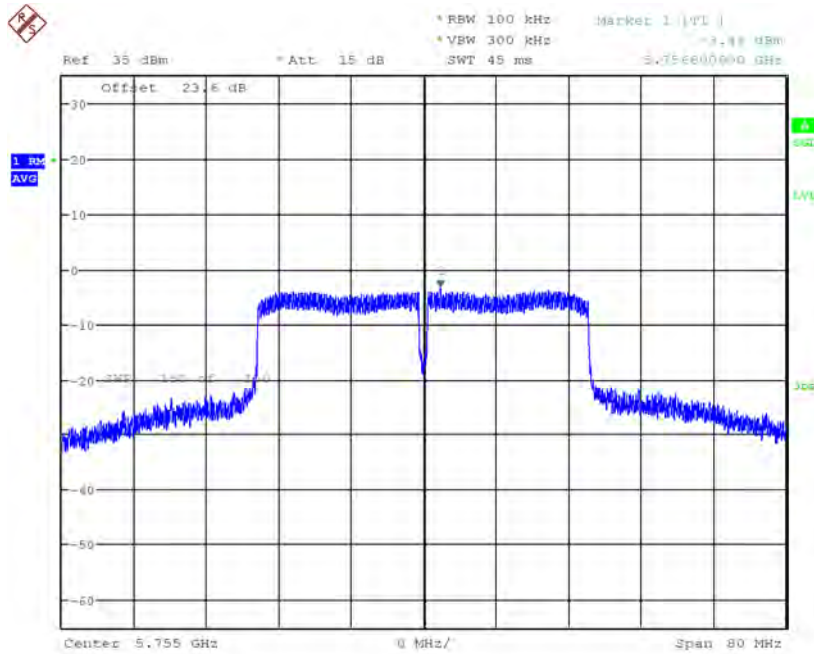
802.11ac40 Mode

5755 MHz ANT A



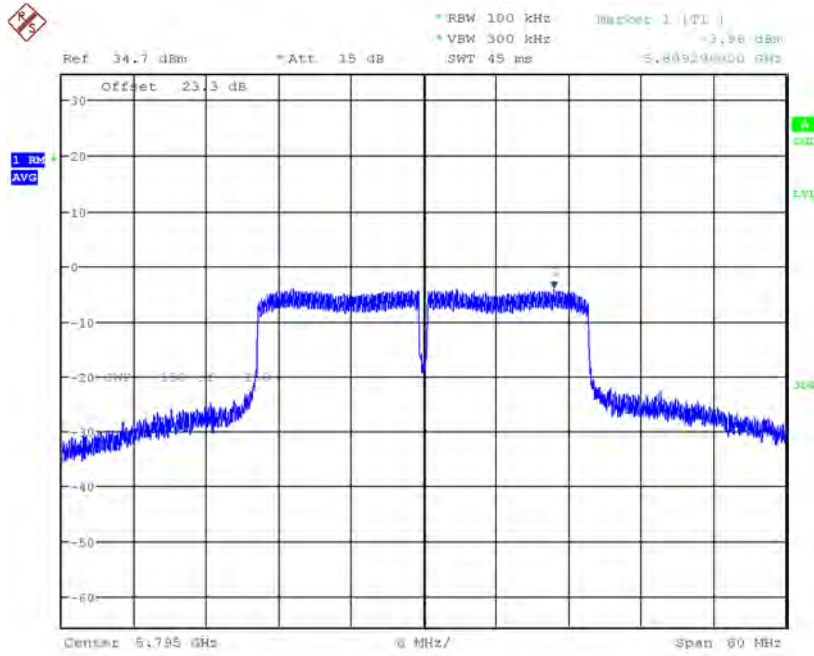
Date: 16.FEB.2021 10:07:59

5755 MHz ANT B



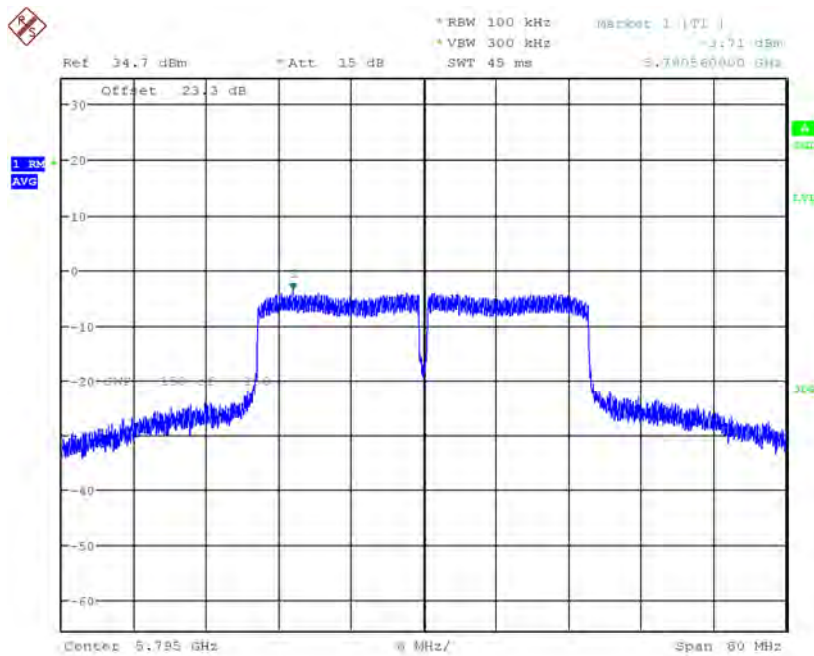
Date: 16.FEB.2021 10:58:59

5795 MHz ANT A



Date: 16.FEB.2021 10:16:04

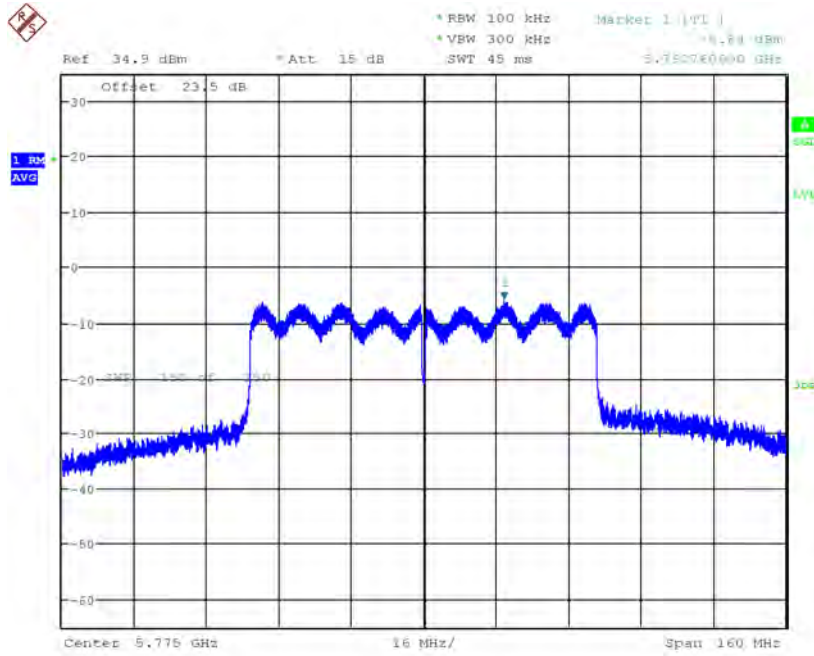
5795 MHz ANT B



Date: 16.FEB.2021 10:56:07

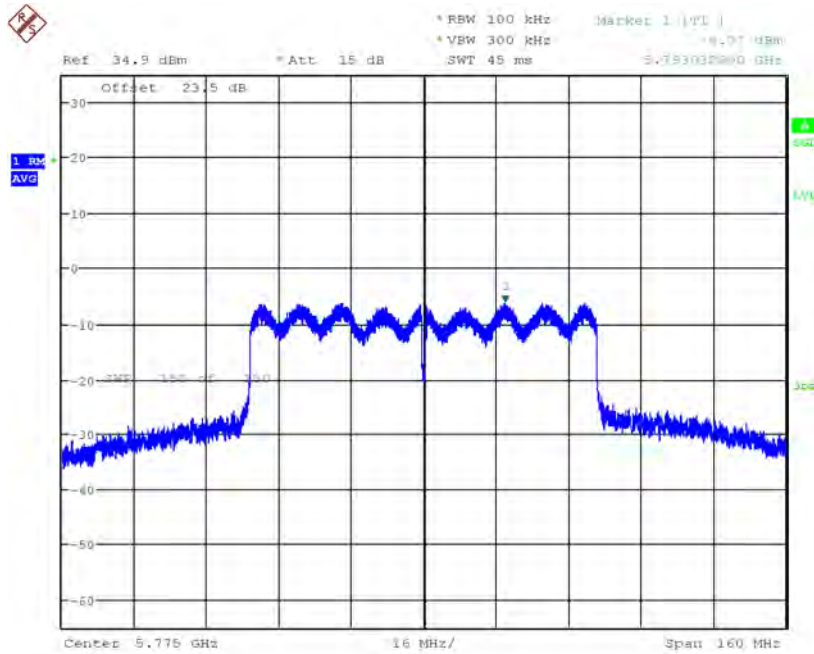
802.11ac80 Mode

5775 MHz ANT A



Date: 16.FEB.2021 10:14:48

5775 MHz ANT B



Date: 16.FEB.2021 11:00:20

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 27 dBm/MHz at 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 operating 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 operating 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 operating 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 operating in the frequency band 5725-5850 MHz:

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:

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

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
Rhode & Schwarz	Signal Analyzer	FSV40	1321.3008K39 -101203-UW	2019-08-06	2 years
-	RF cable	-	-	Each time ¹	N/A
-	Notch Filter	-	-	Each time ¹	N/A
-	10 dB attenuator	-	-	Each time ¹	N/A
-	20 dB attenuator	-	-	Each time ¹	N/A

Note¹: equipment 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:	40-41 %
ATM Pressure:	103.1-104.1 kPa

The testing was performed by Vang Lee from 2021-01-29 to 2021-02-17 in RF site.

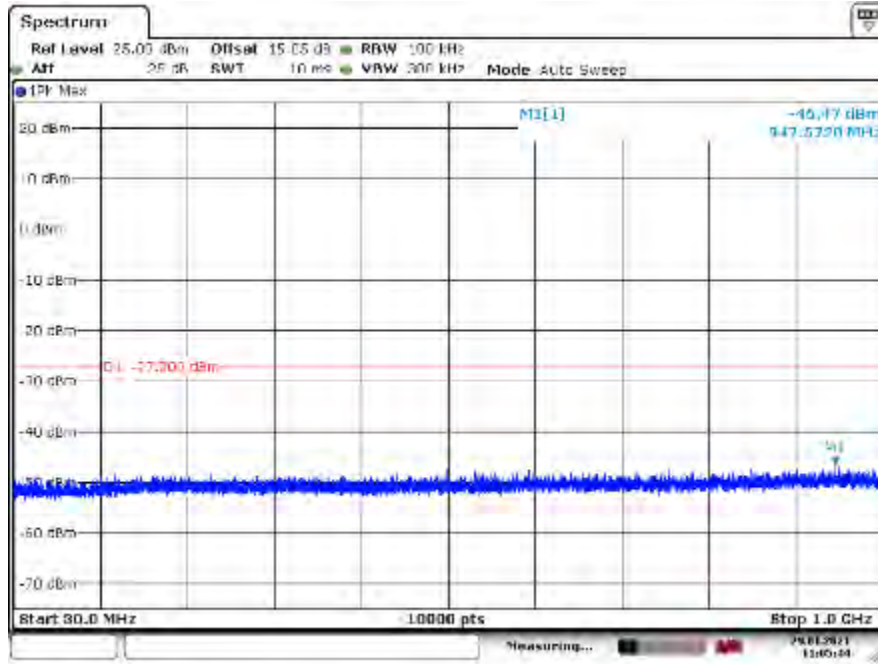
11.5 Test Results

Please refer to the following plots

Spurious Emissions

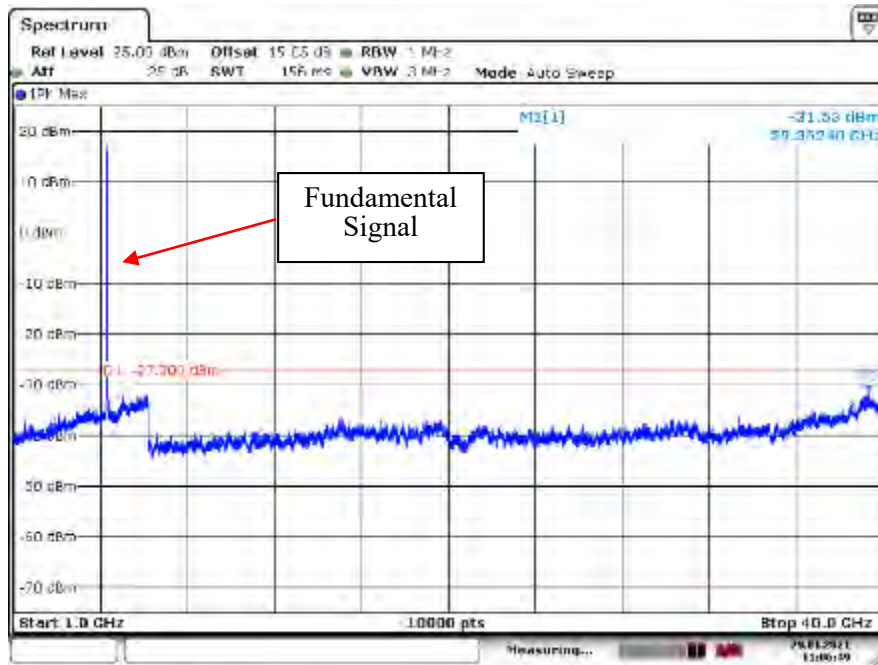
5150 - 5250 MHz, 802.11a Mode, Antenna A

5180 MHz, 30MHz – 1GHz



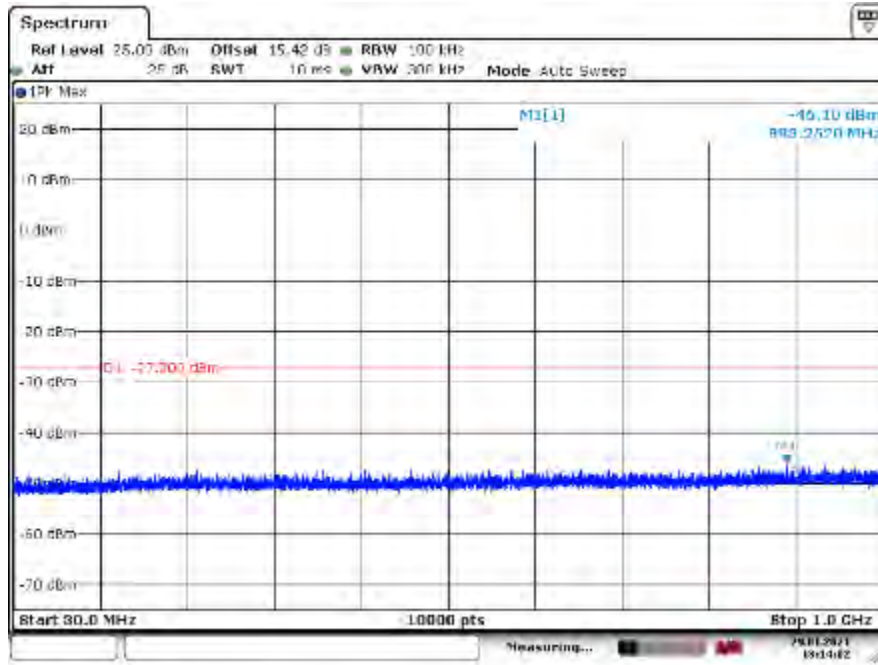
Date: 28 JAN 2021 11:06:45

5180 MHz, 1GHz – 40GHz



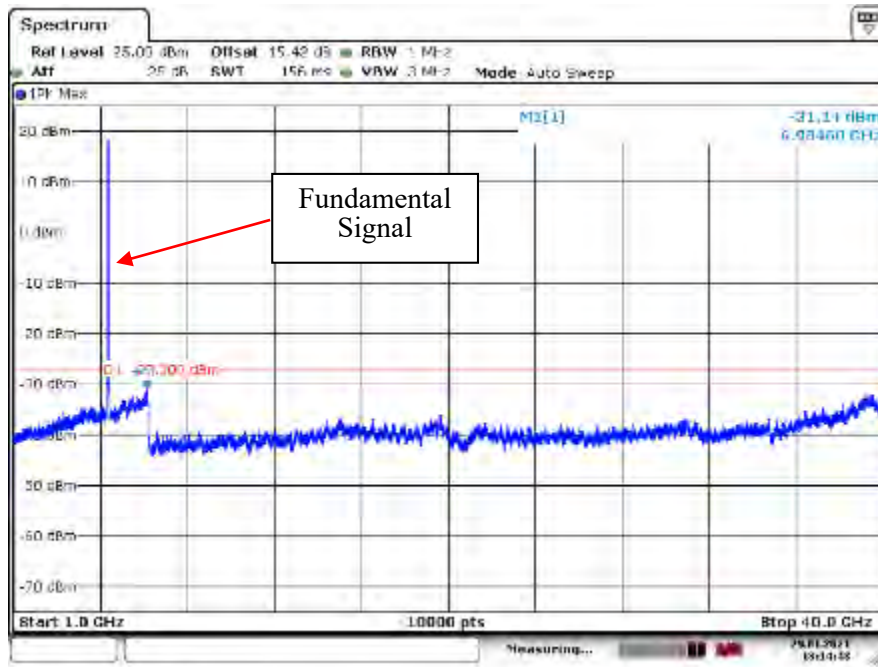
Date: 28 JAN 2021 11:06:49

5220 MHz, 30MHz – 1GHz



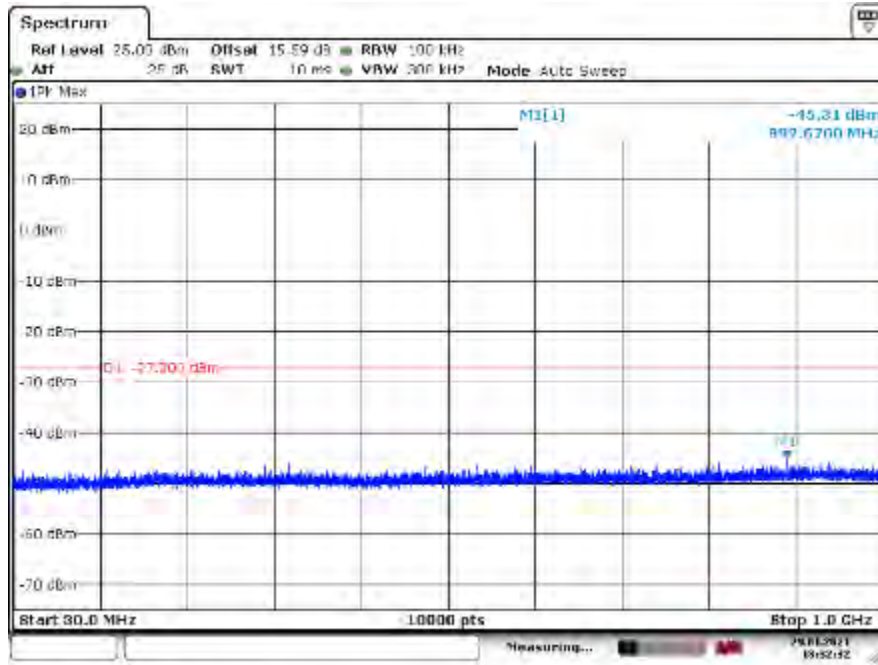
Date: 29 JAN 2021 13:14:02

5220 MHz, 1GHz – 40GHz

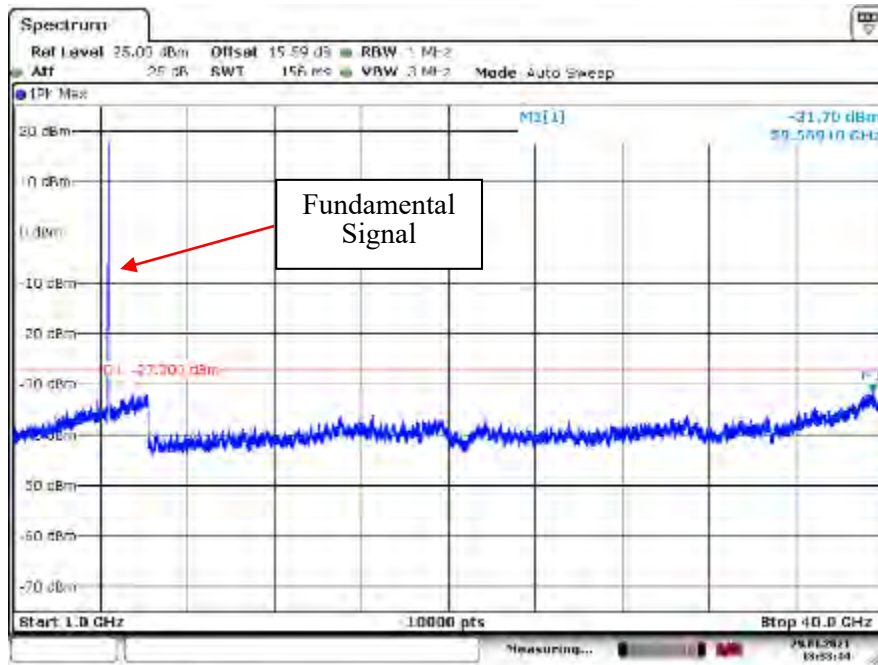


Date: 29 JAN 2021 13:14:44

5240 MHz, 30MHz – 1GHz

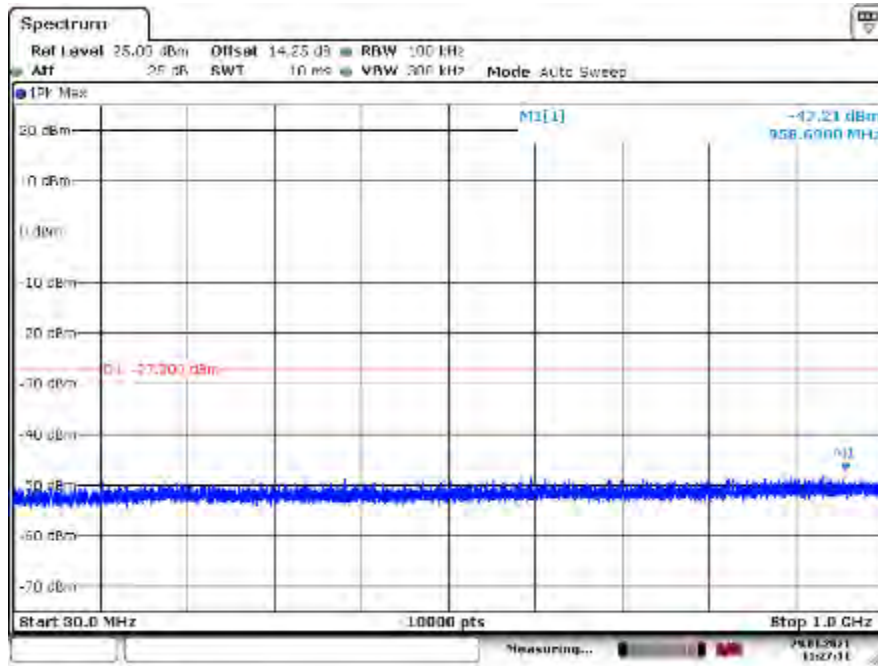


5240 MHz, 1GHz – 40GHz



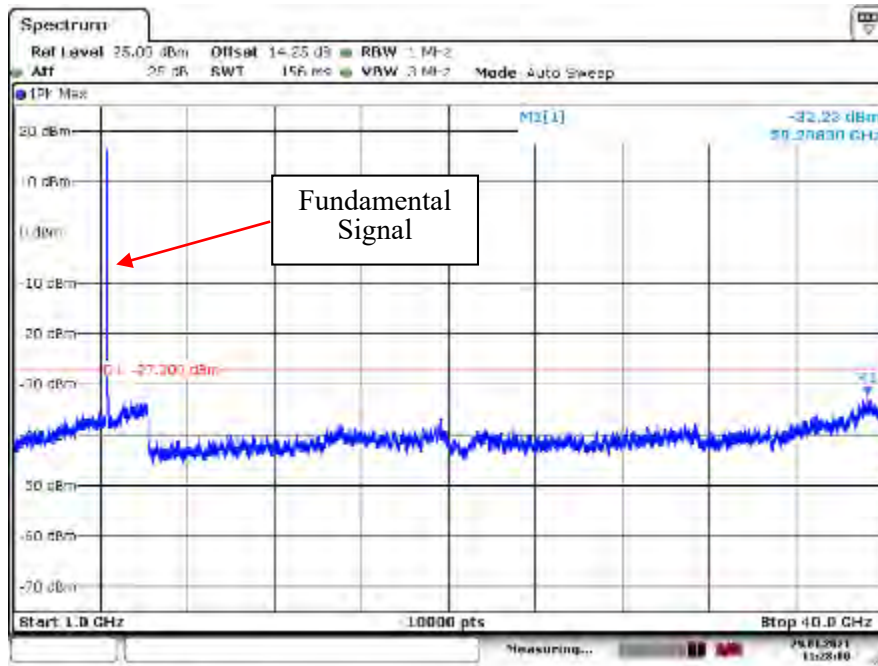
5150 - 5250 MHz, 802.11a Mode, Antenna B

5180 MHz, 30MHz – 1GHz



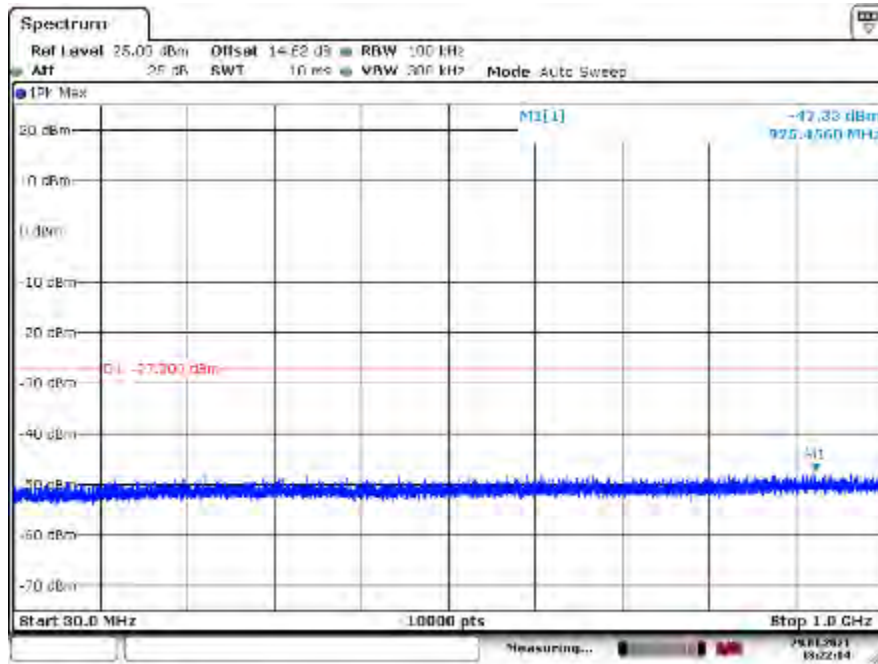
Date: 29 JAN 2021 11:29:12

5180 MHz, 1GHz – 40GHz



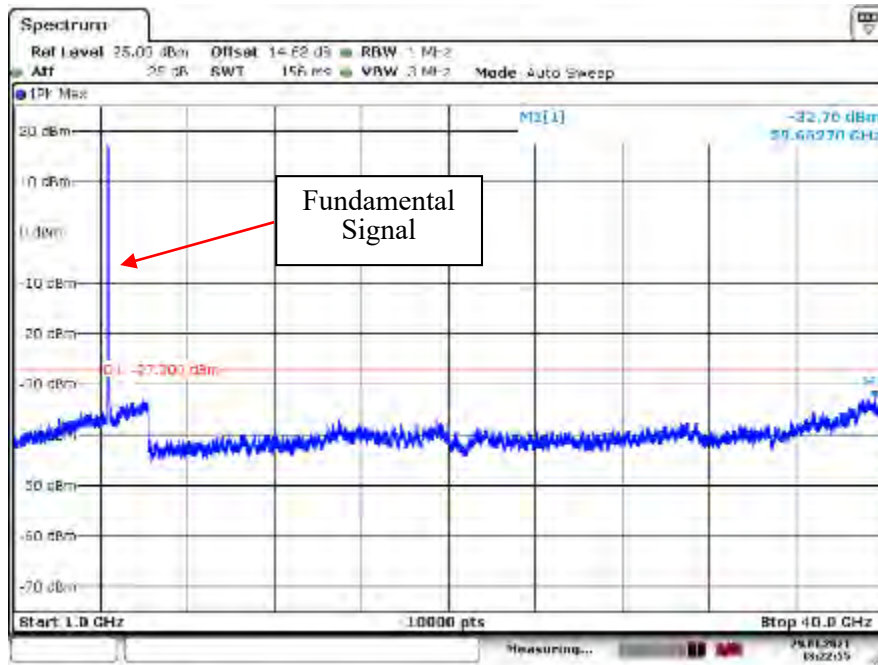
Date: 29 JAN 2021 11:28:00

5220 MHz, 30MHz – 1GHz



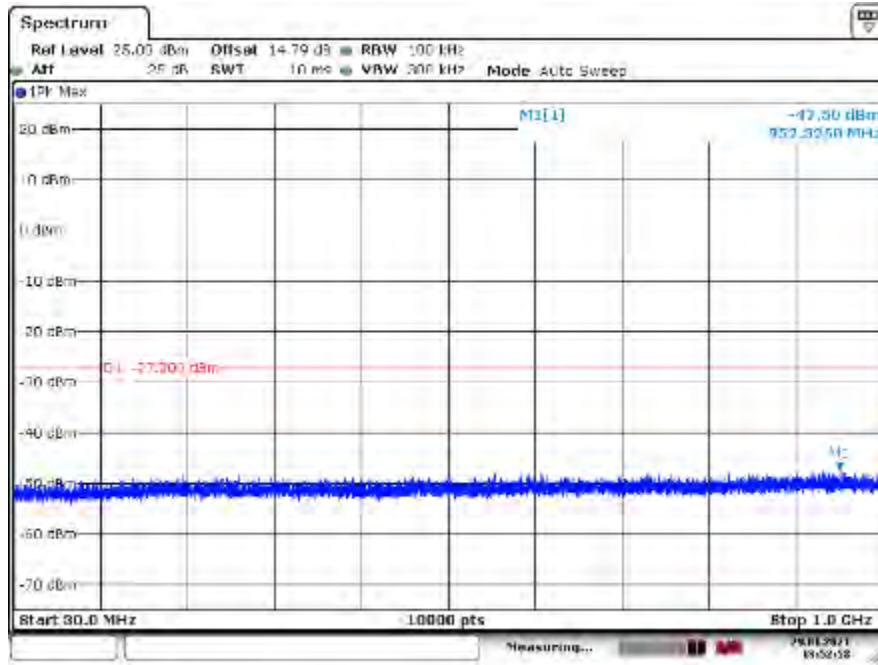
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5220 MHz, 1GHz – 40GHz

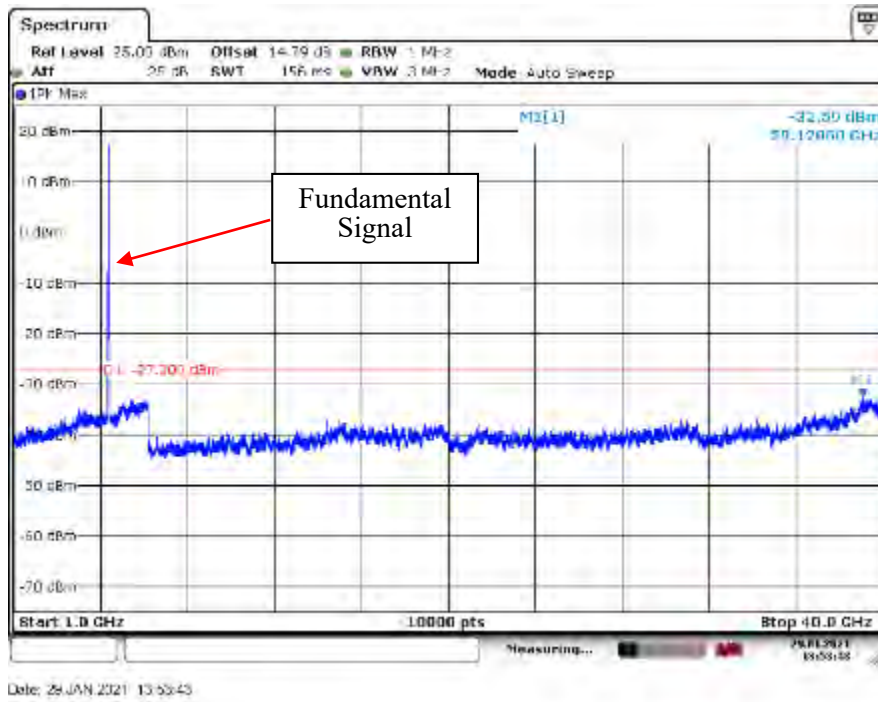


Date: 26 JAN 2021 13:22:55

5240 MHz, 30MHz – 1GHz

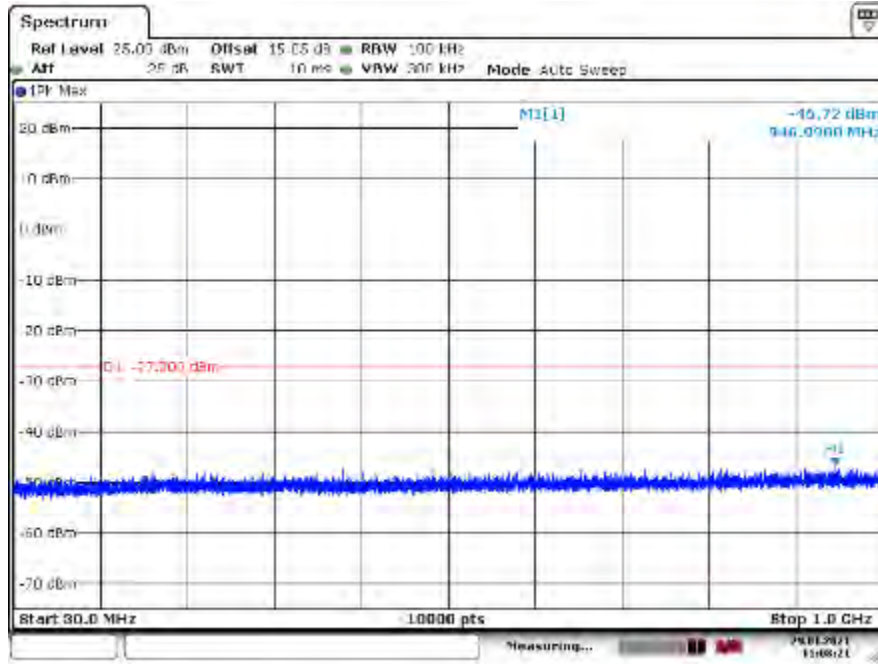


5240 MHz, 1GHz – 40GHz



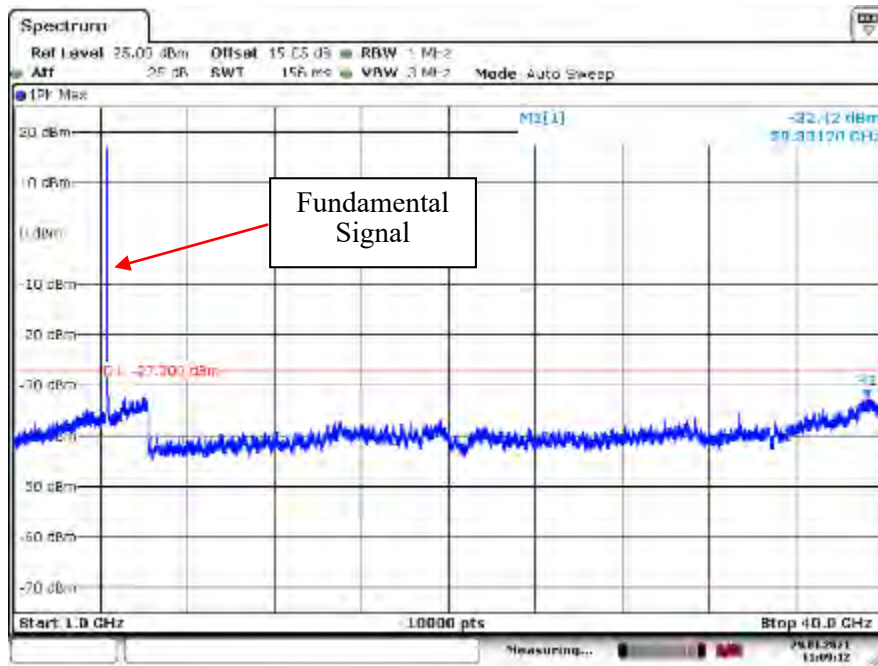
5150 - 5250 MHz, 802.11n20 Mode, Antenna A

5180 MHz, 30MHz – 1GHz



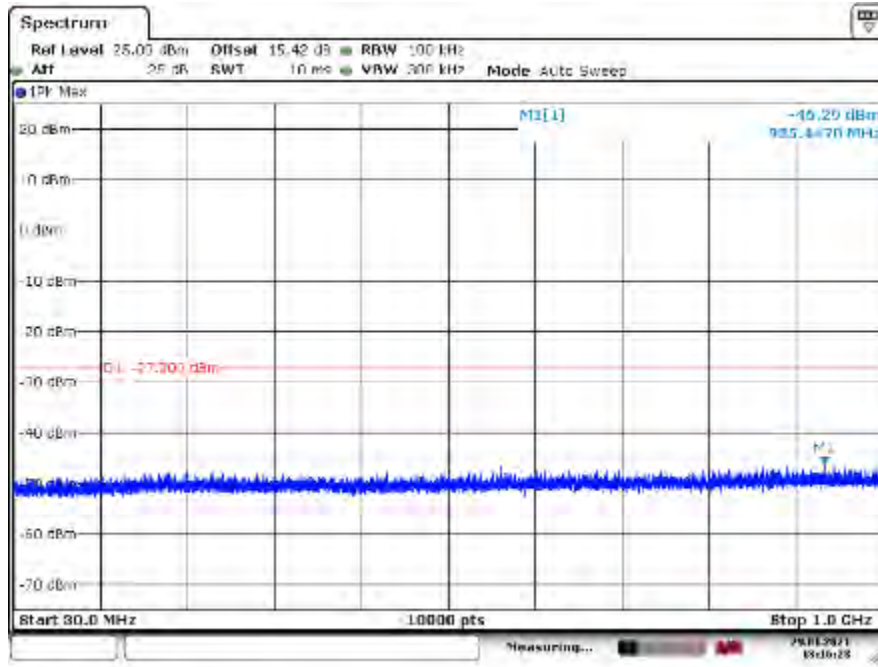
Date: 29 JAN 2021 11:08:21

5180 MHz, 1GHz – 40GHz



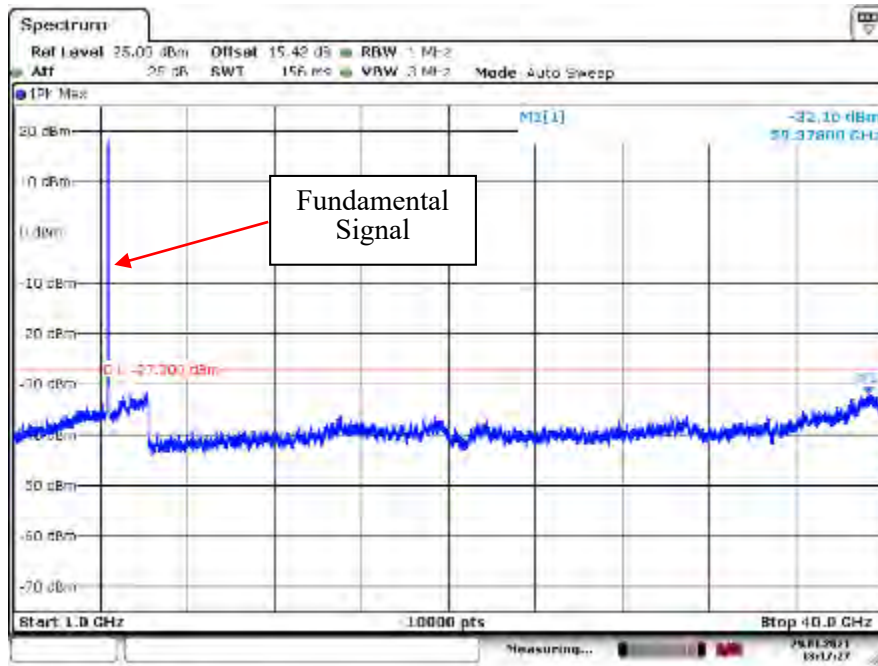
Date: 29 JAN 2021 11:08:13

5220 MHz, 30MHz – 1GHz



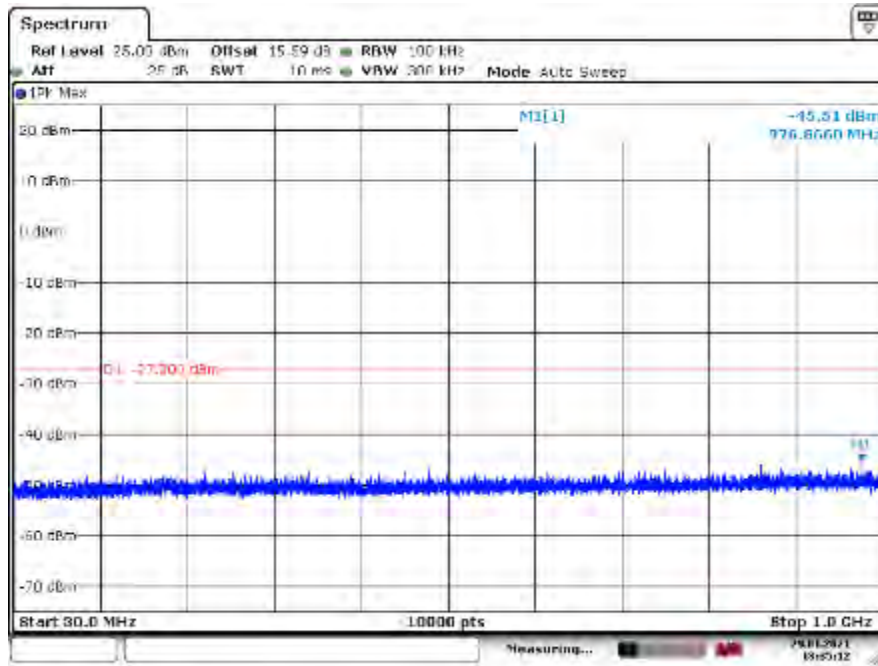
Date: 29 JAN 2021 13:16:29

5220 MHz, 1GHz – 40GHz



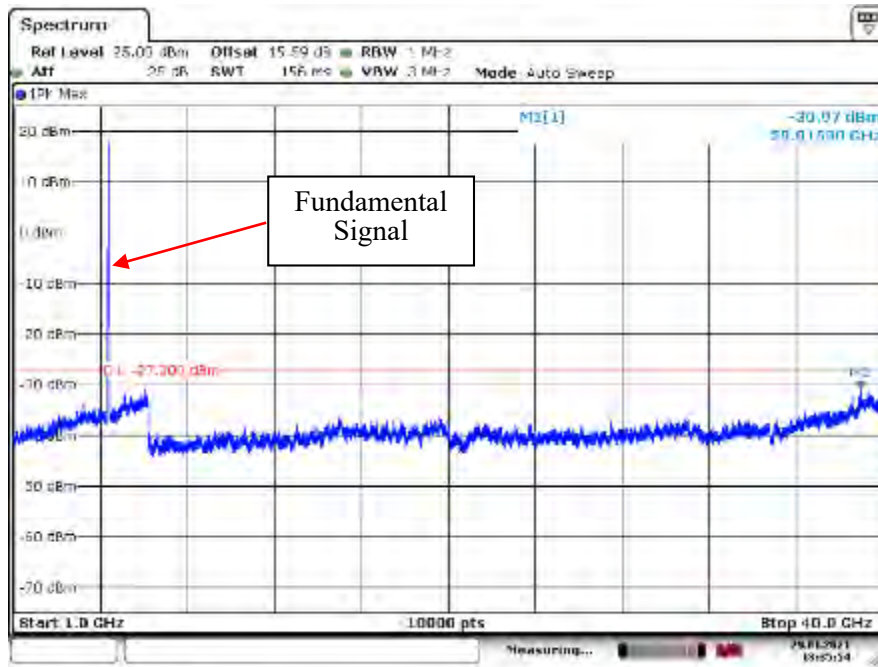
Date: 29 JAN 2021 13:17:27

5240 MHz, 30MHz – 1GHz



Date: 29 JAN 2021 13:35:12

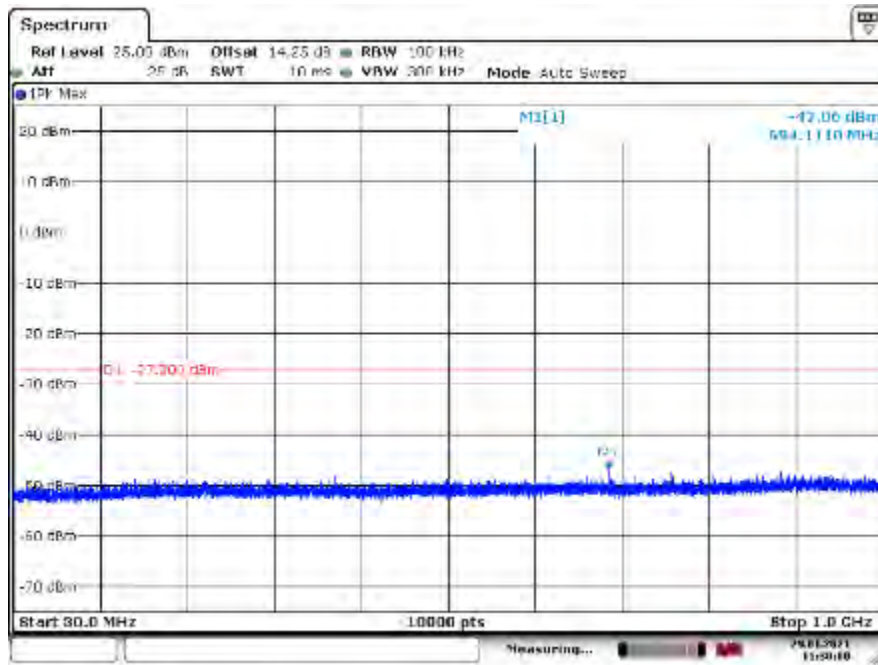
5240 MHz, 1GHz – 40GHz



Date: 29 JAN 2021 13:35:55

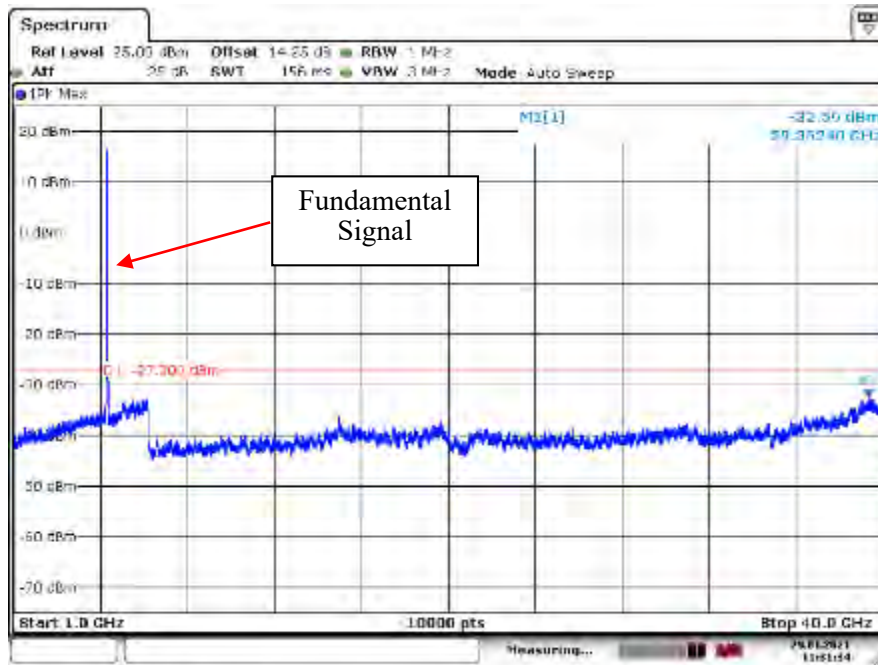
5150 - 5250 MHz, 802.11n20 Mode, Antenna B

5180 MHz, 30MHz – 1GHz



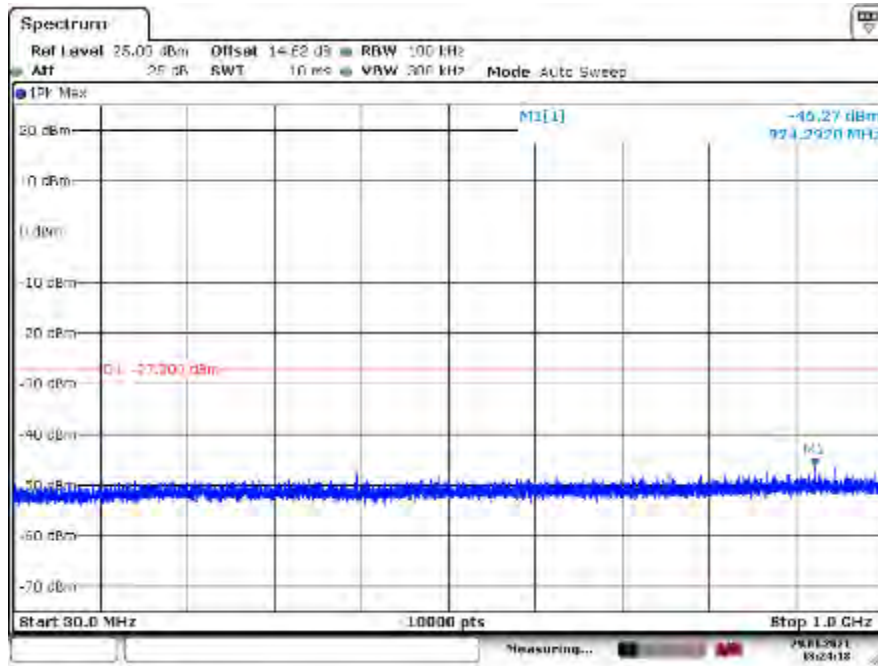
Date: 25 JAN 2021 11:29:59

5180 MHz, 1GHz – 40GHz



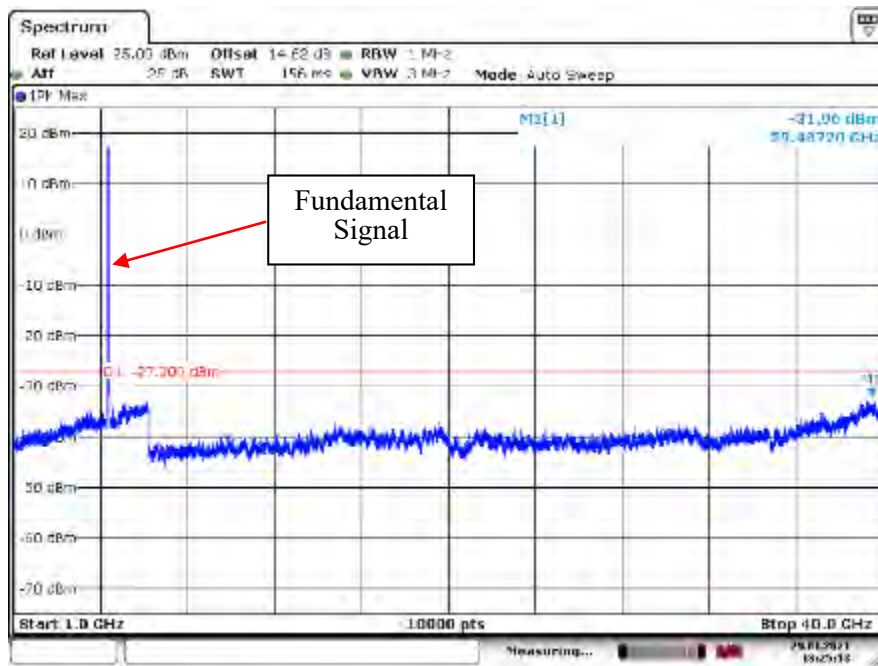
Date: 25 JAN 2021 11:31:34

5220 MHz, 30MHz – 1GHz



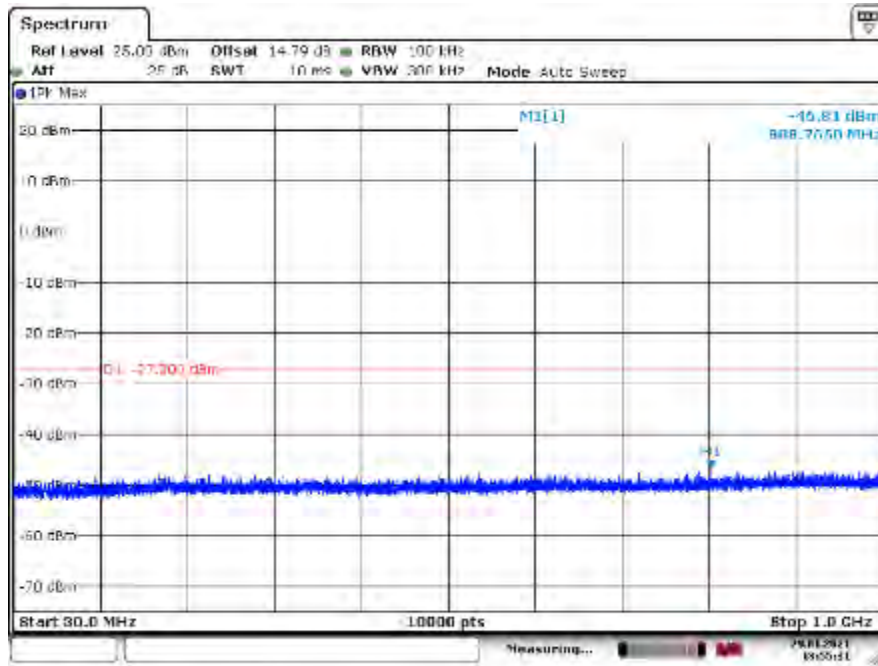
Date: 28 JAN 2021 13:24:18

5220 MHz, 1GHz – 40GHz



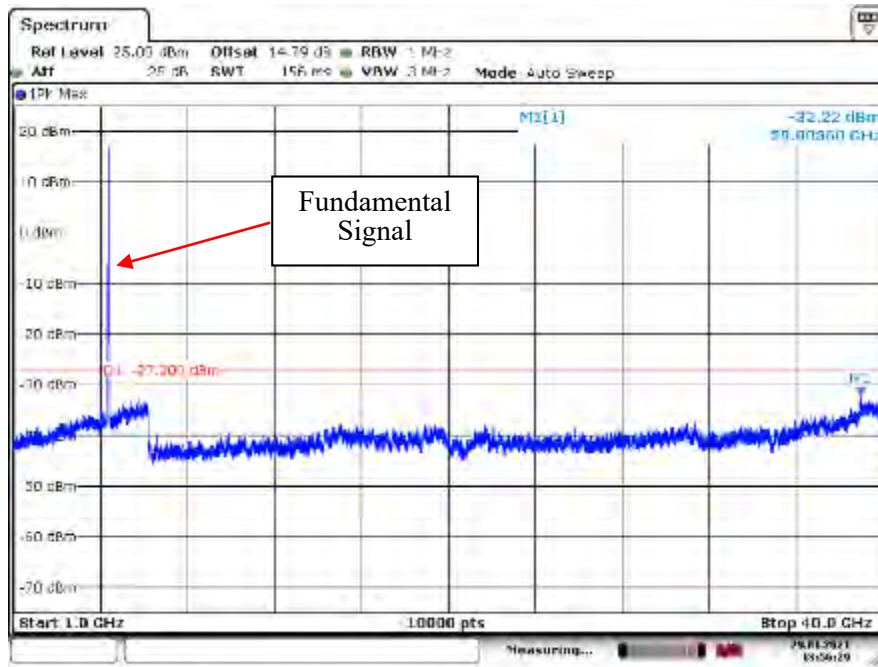
Date: 28 JAN 2021 13:25:13

5240 MHz, 30MHz – 1GHz



Date: 29 JAN 2021 13:58:31

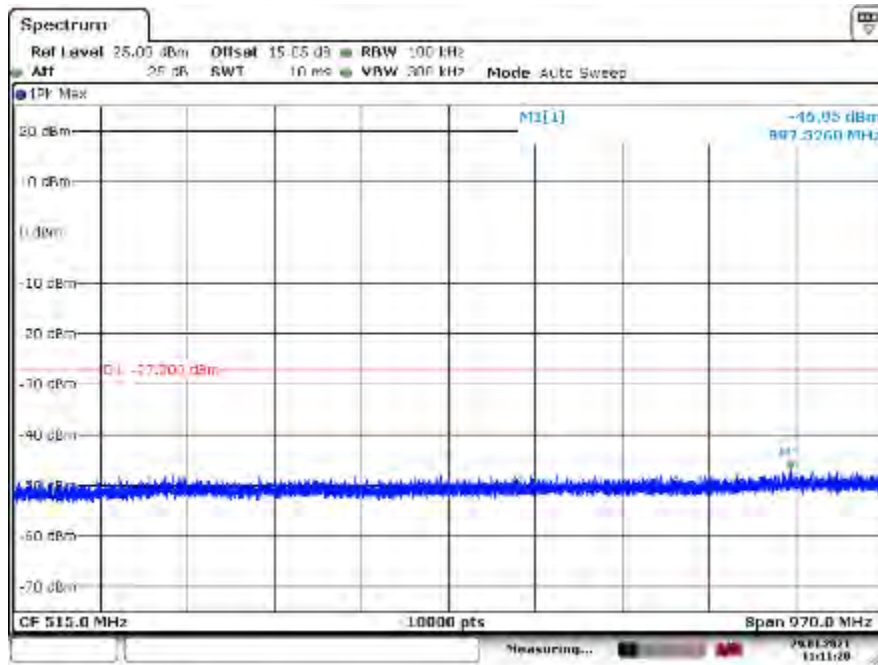
5240 MHz, 1GHz – 40GHz



Date: 29 JAN 2021 13:58:30

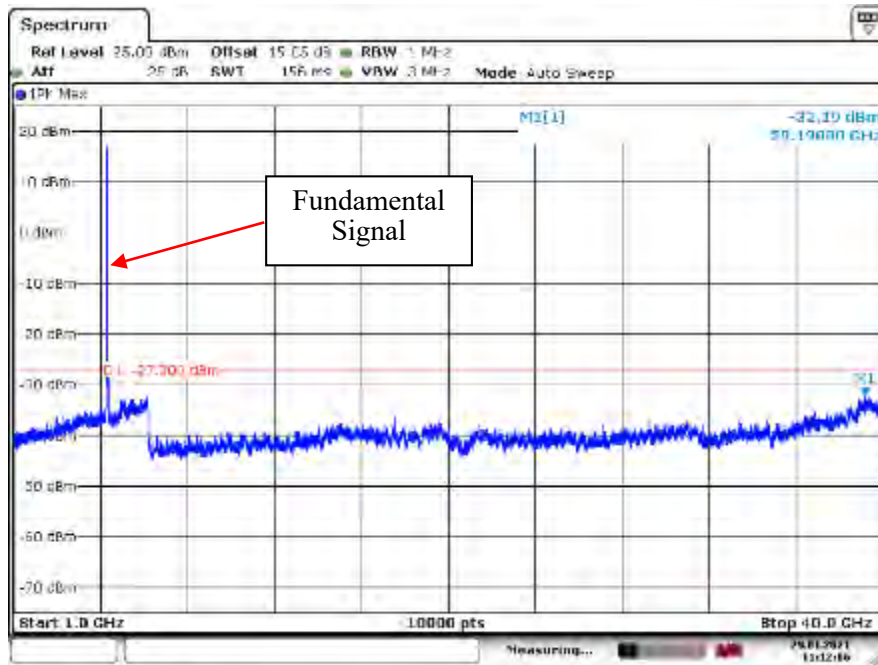
5150 - 5250 MHz, 802.11ac20 Mode, Antenna A

5180 MHz, 30MHz – 1GHz



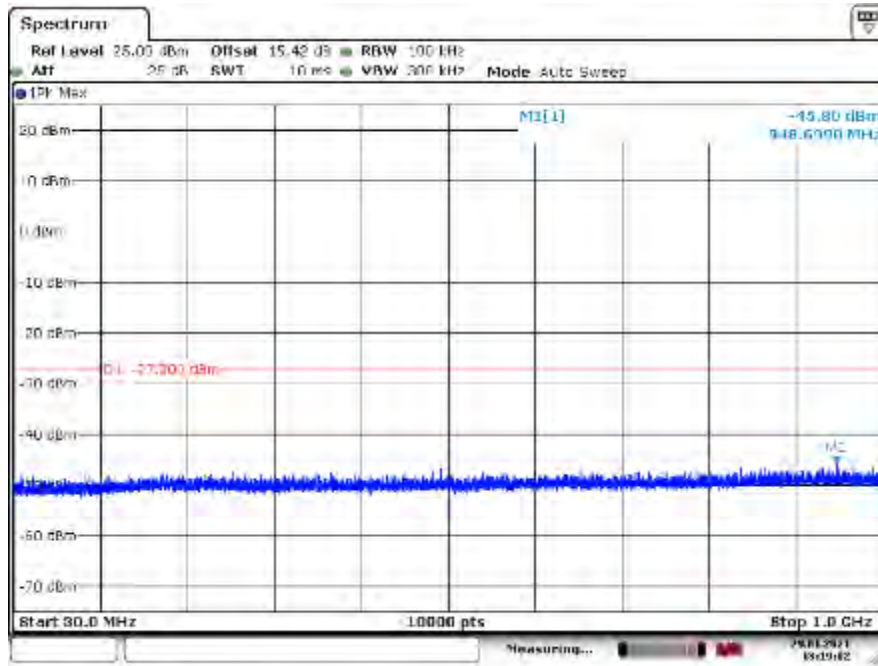
Date: 25 JAN 2021 11:11:20

5180 MHz, 1GHz – 40GHz



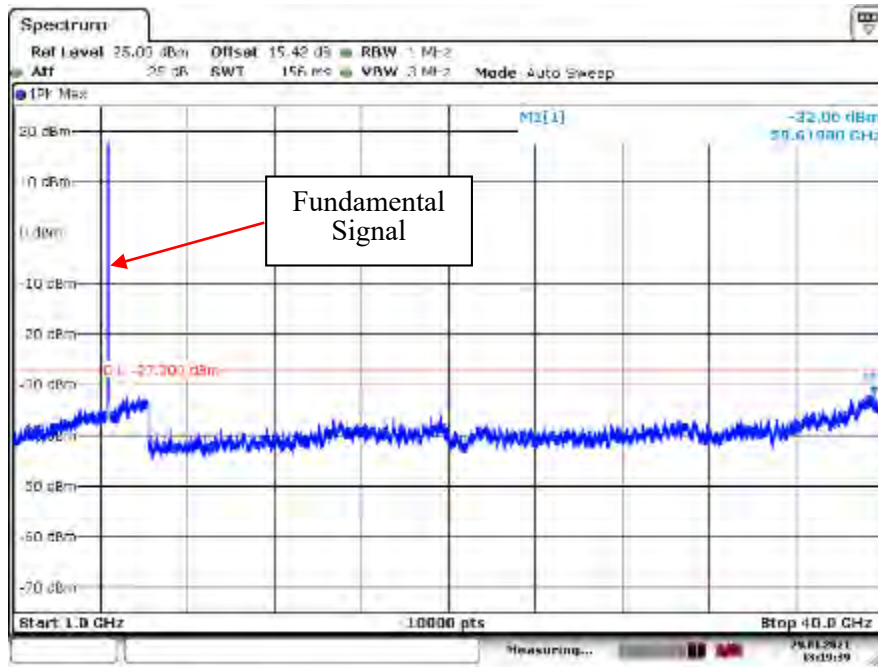
Date: 25 JAN 2021 11:12:05

5220 MHz, 30MHz – 1GHz



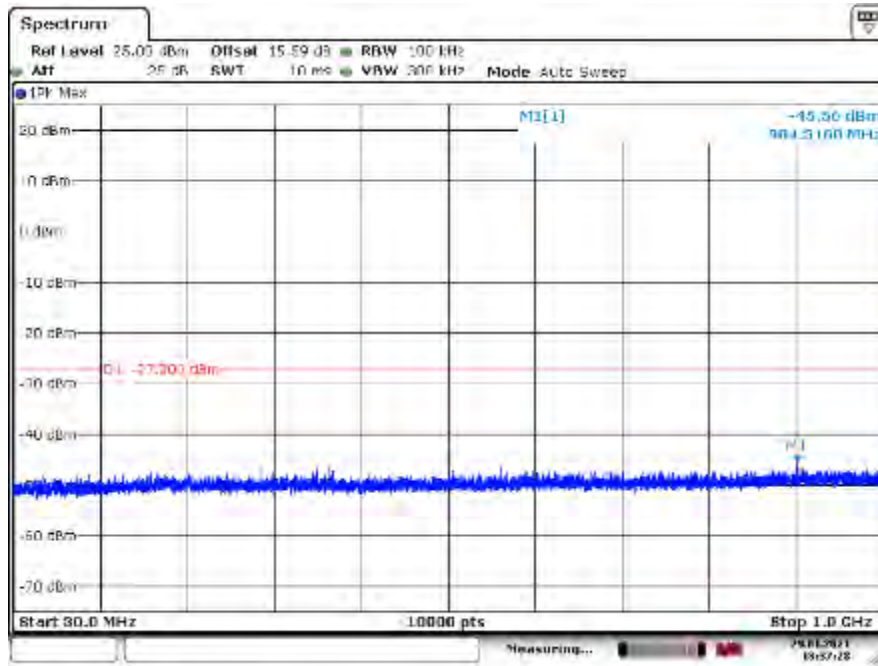
Date: 25 JAN 2021 13:19:02

5220 MHz, 1GHz – 40GHz



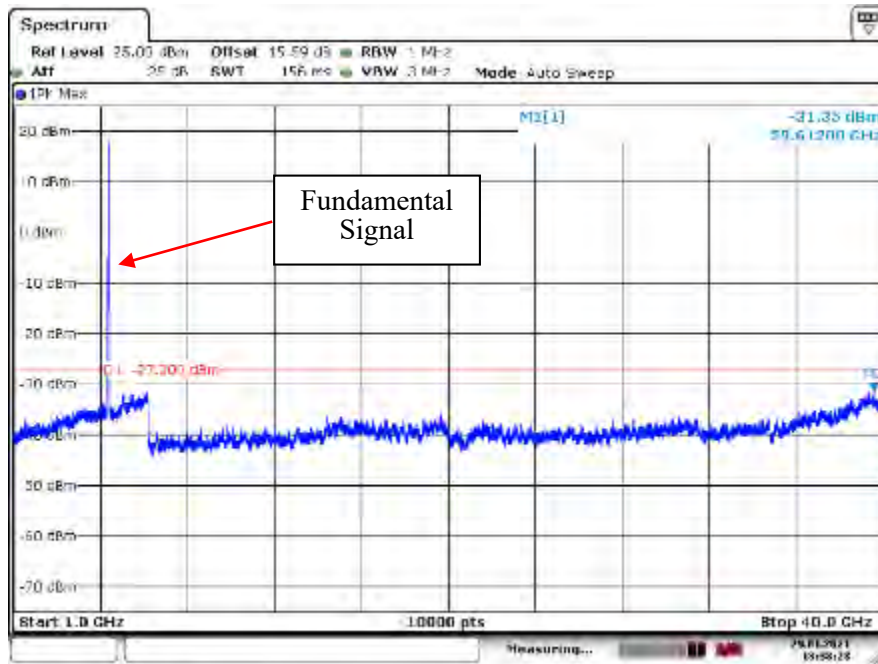
Date: 25 JAN 2021 13:19:49

5240 MHz, 30MHz – 1GHz



Date: 25 JAN 2021 13:37:28

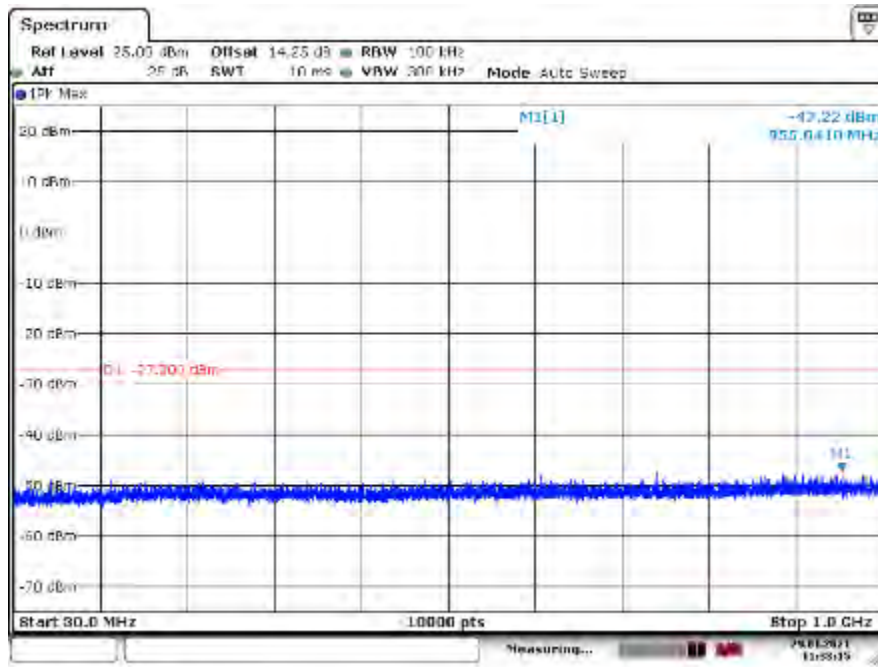
5240 MHz, 1GHz – 40GHz



Date: 25 JAN 2021 13:38:25

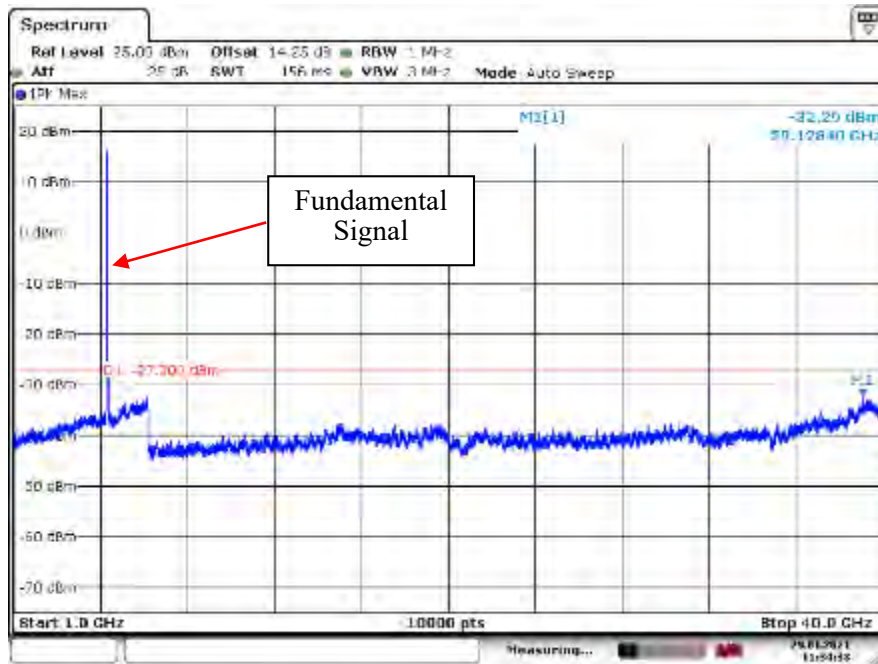
5150 - 5250 MHz, 802.11ac20 Mode, Antenna B

5180 MHz, 30MHz – 1GHz



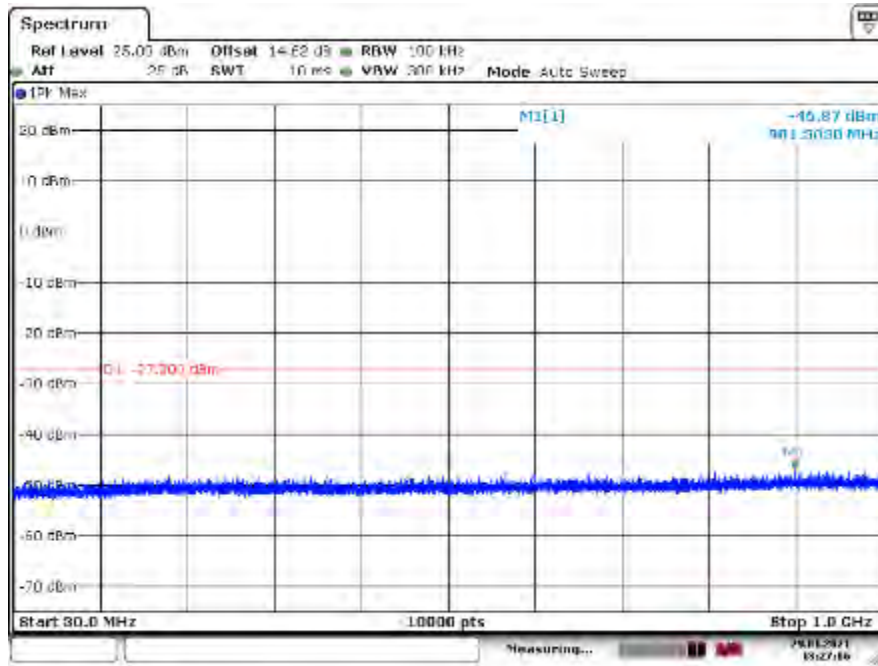
Date: 29 JAN 2021 11:33:16

5180 MHz, 1GHz – 40GHz



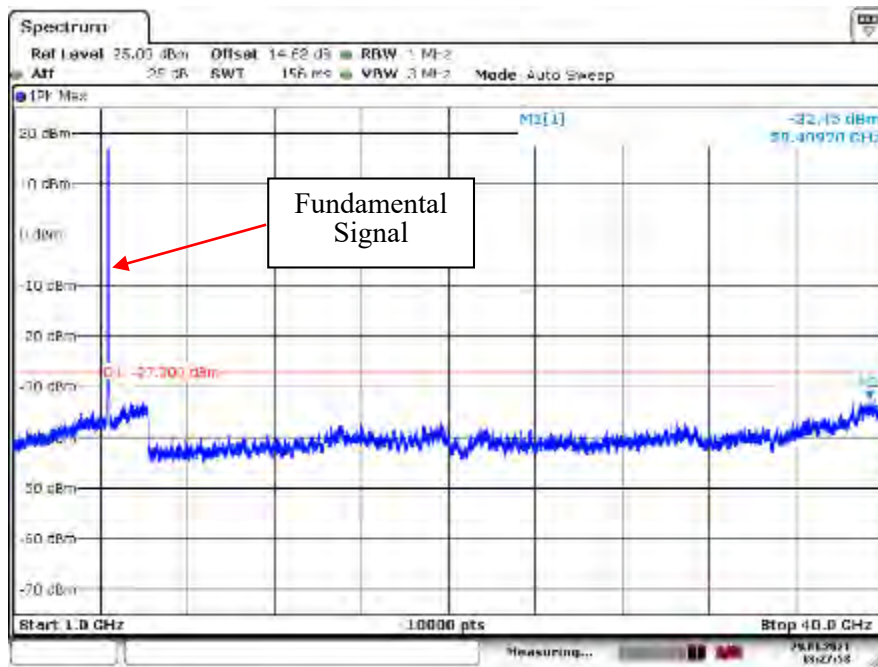
Date: 29 JAN 2021 11:34:08

5220 MHz, 30MHz – 1GHz



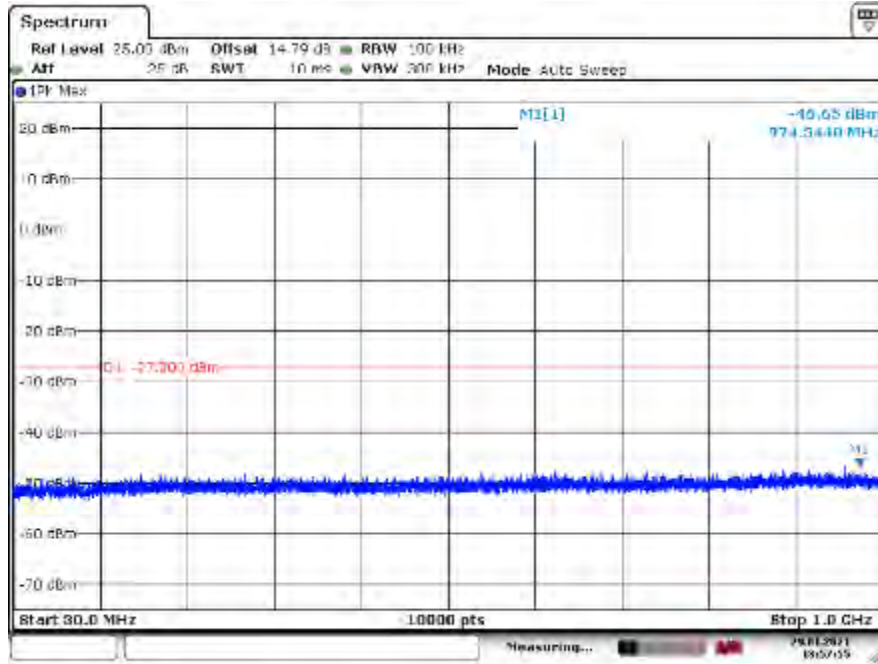
Date: 29 JAN 2021 13:27:06

5220 MHz, 1GHz – 40GHz

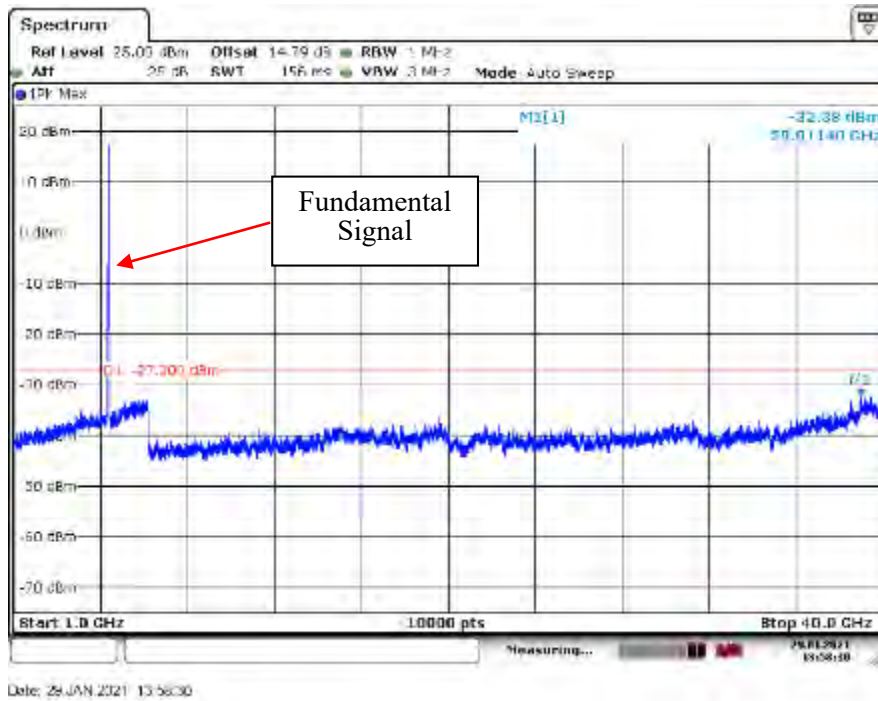


Date: 29 JAN 2021 13:27:54

5240 MHz, 30MHz – 1GHz

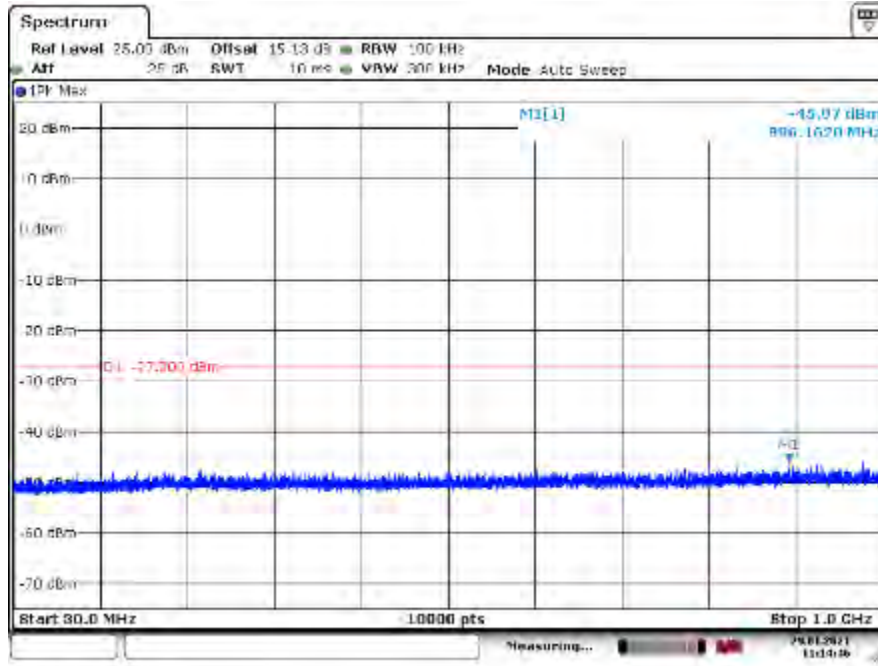


5240 MHz, 1GHz – 40GHz



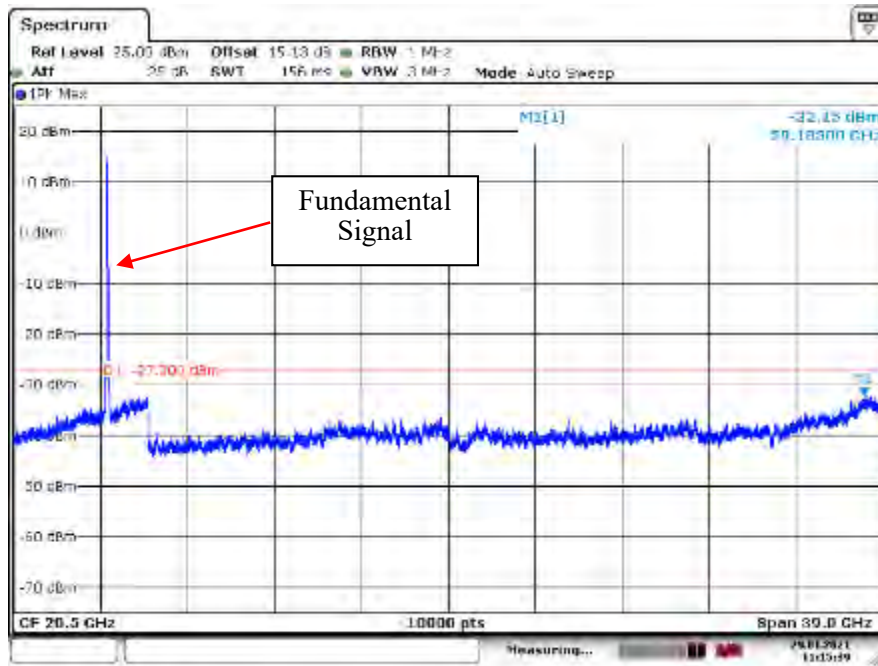
5150 - 5250 MHz, 802.11n40 Mode, Antenna A

5190 MHz, 30MHz – 1GHz



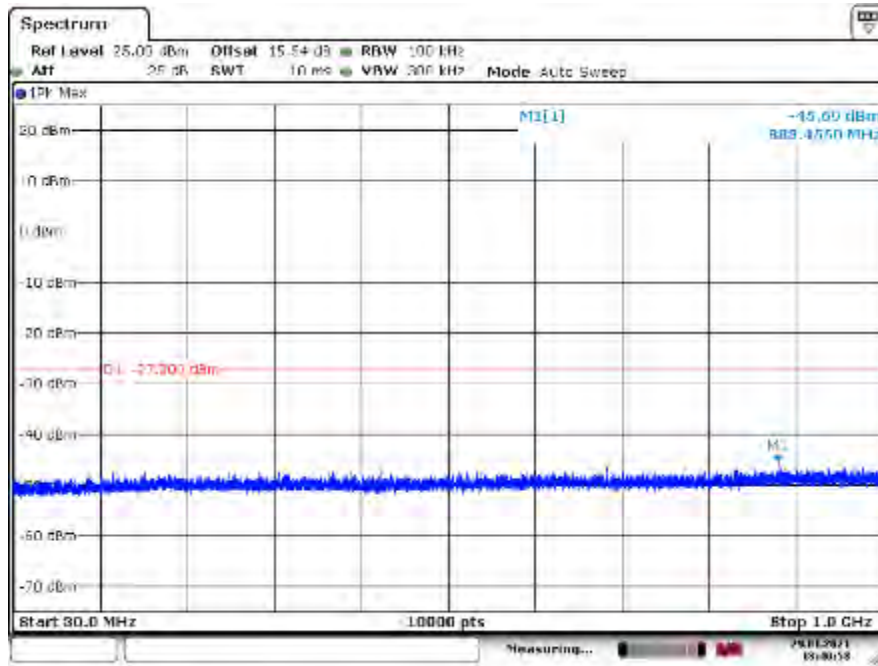
Date: 29 JAN 2021 11:14:46

5190 MHz, 1GHz – 40GHz



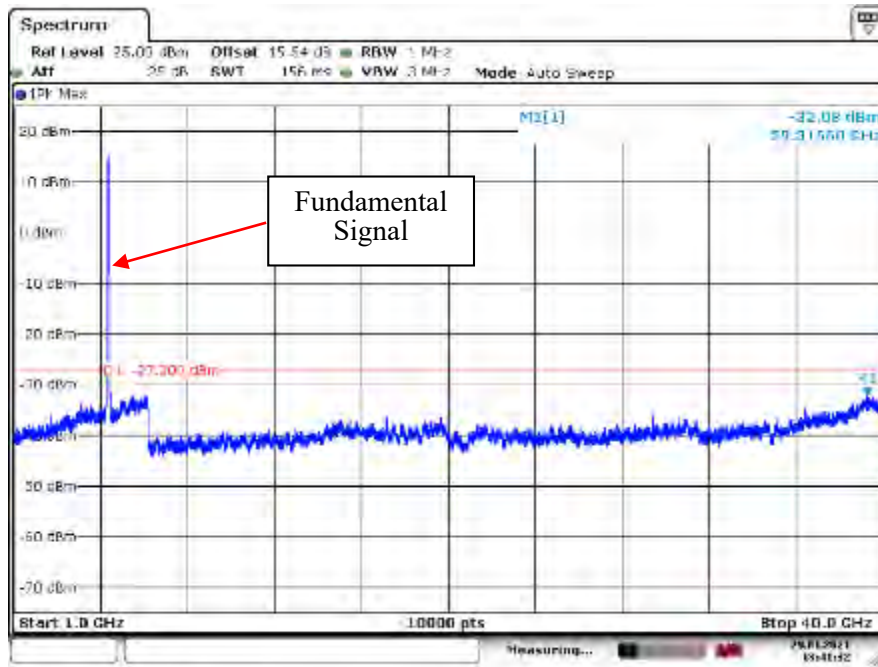
Date: 29 JAN 2021 11:15:39

5230 MHz, 30MHz – 1GHz



Date: 29 JAN 2021 15:40:53

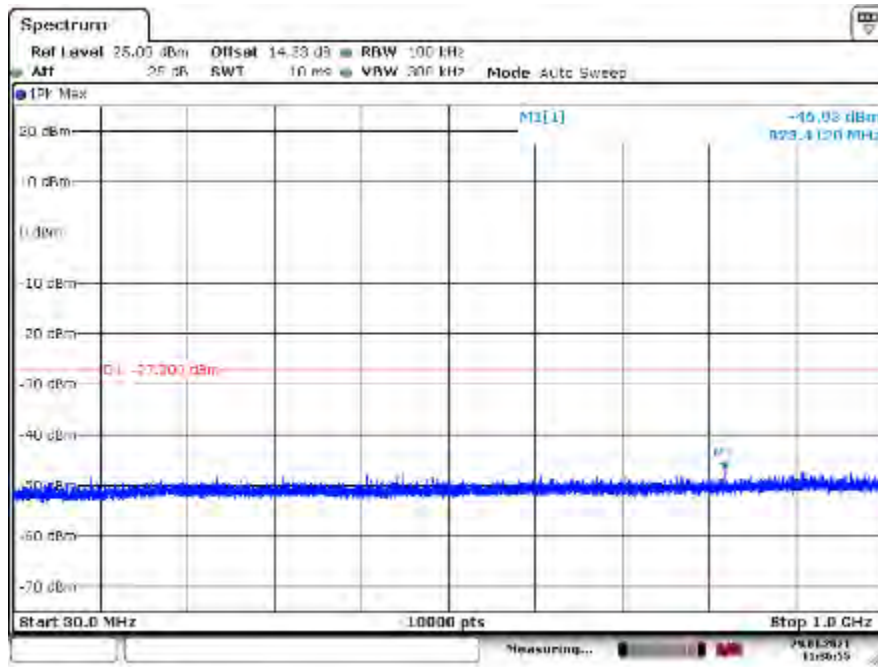
5230 MHz, 1GHz – 40GHz



Date: 29 JAN 2021 15:41:32

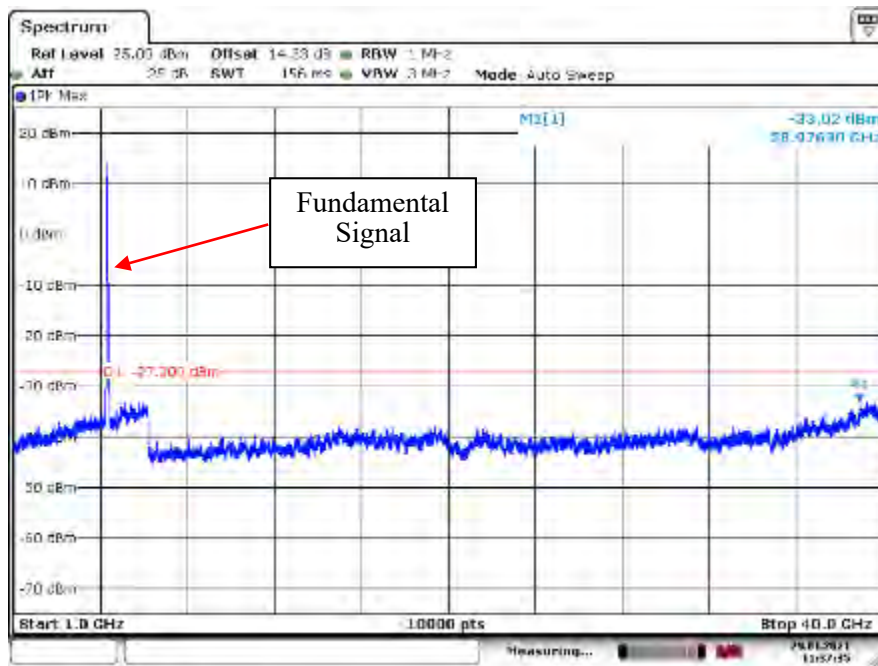
5150 - 5250 MHz, 802.11n40 Mode, Antenna B

5190 MHz, 30MHz – 1GHz



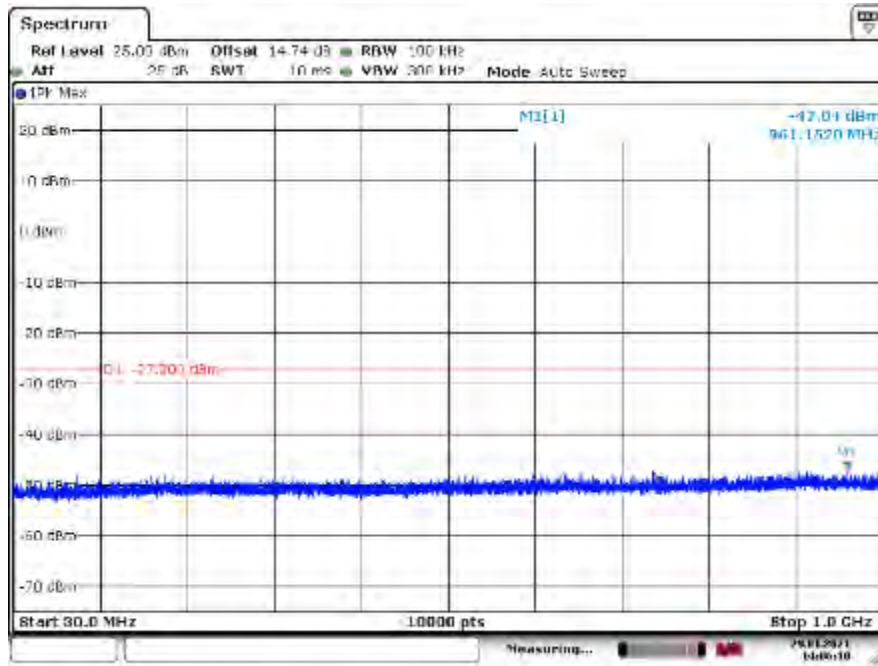
Date: 28 JAN 2021 11:36:36

5190 MHz, 1GHz – 40GHz



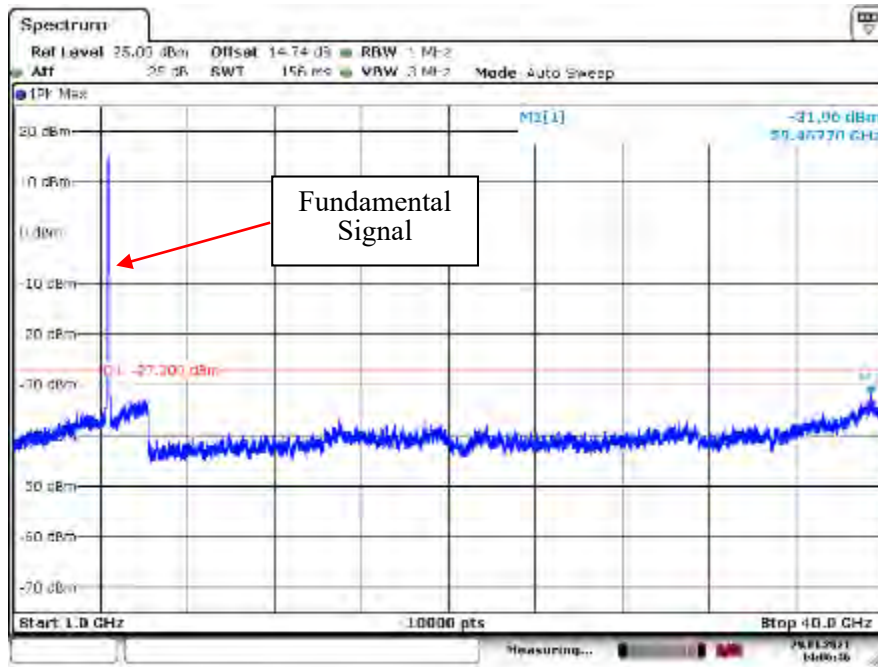
Date: 28 JAN 2021 11:37:35

5230 MHz, 30MHz – 1GHz



Date: 29 JAN 2021 14:08:10

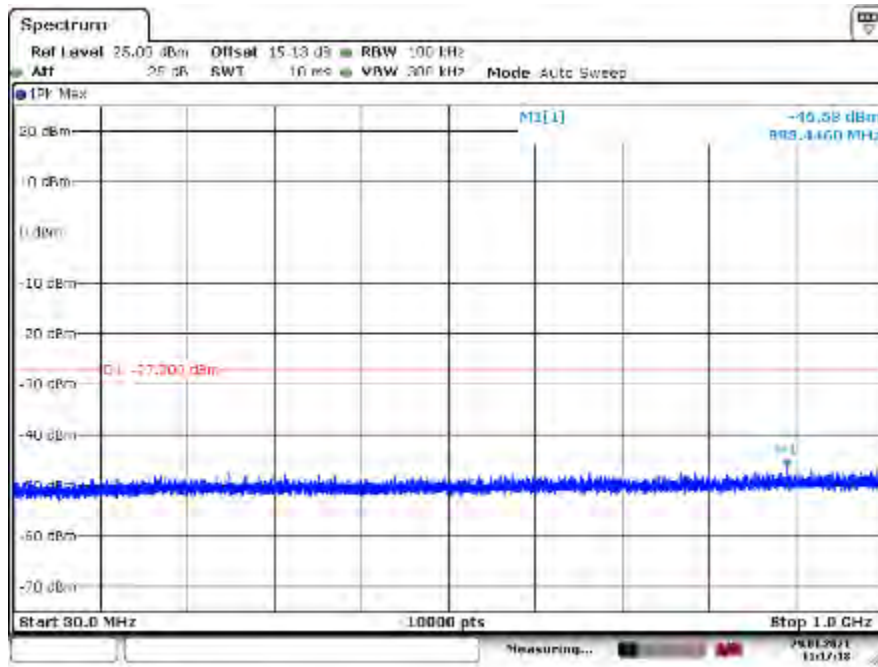
5230 MHz, 1GHz – 40GHz



Date: 29 JAN 2021 14:08:47

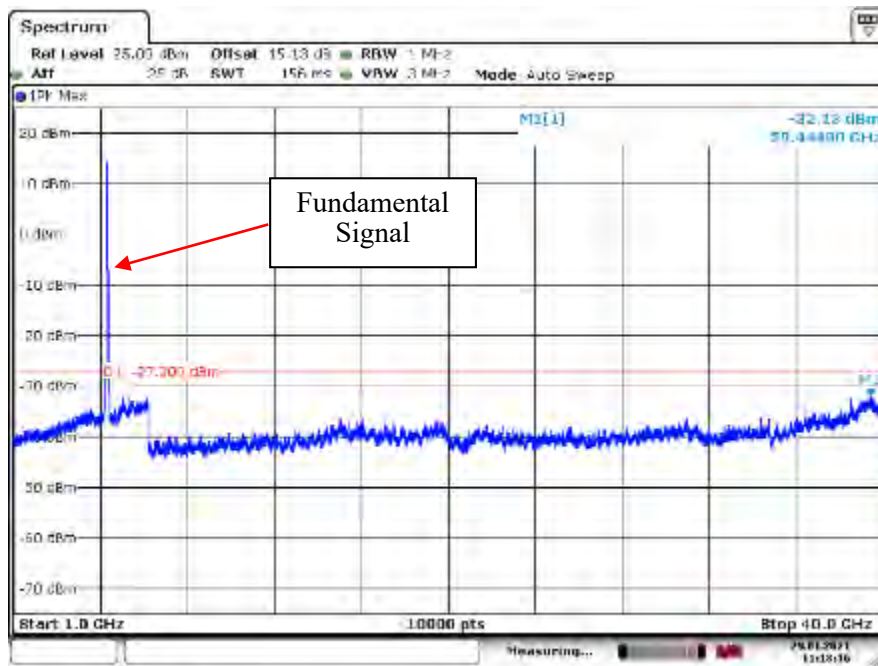
5150 - 5250 MHz, 802.11ac40 Mode, Antenna A

5190 MHz, 30MHz – 1GHz



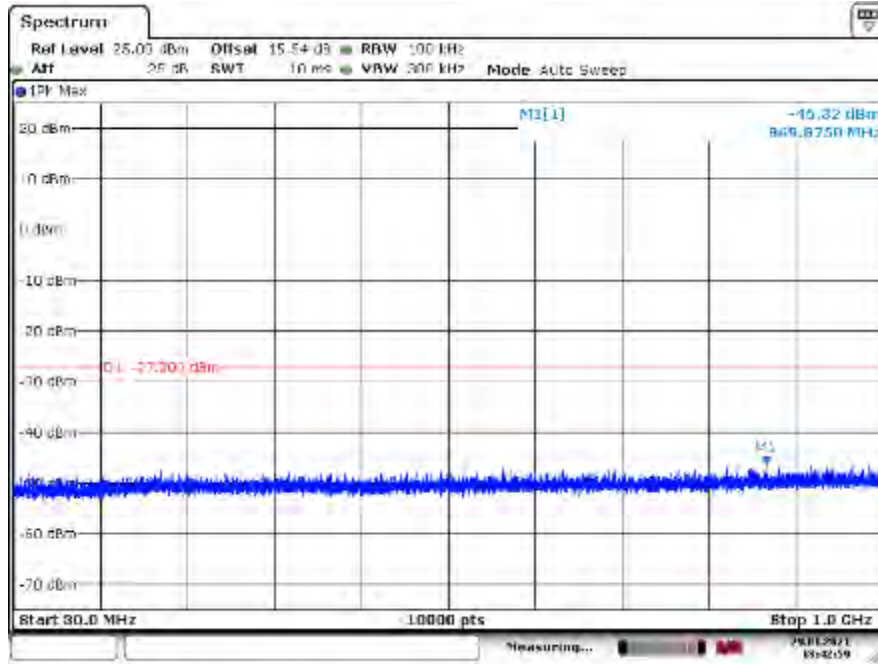
Date: 29 JAN 2021 11:15:16

5190 MHz, 1GHz – 40GHz



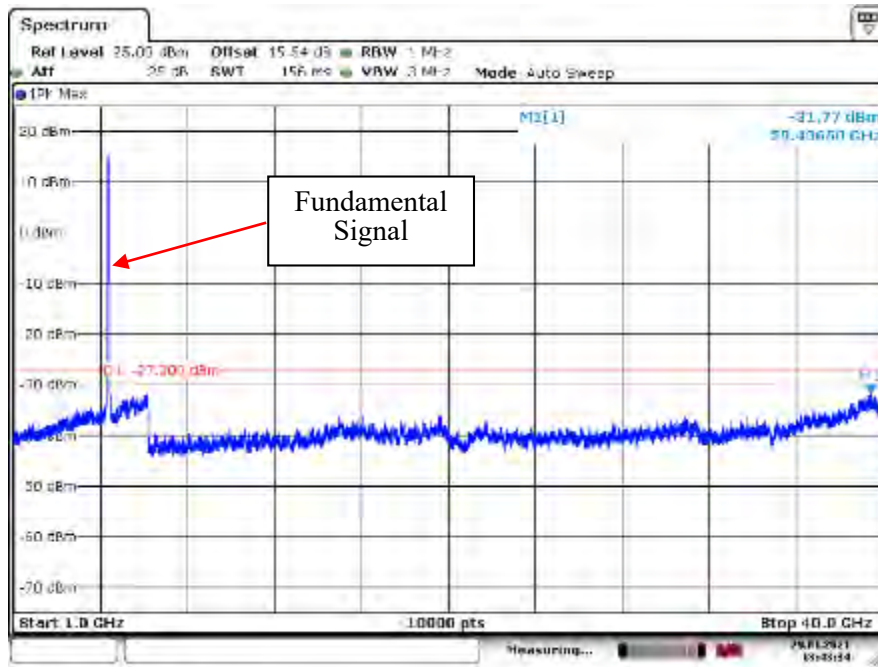
Date: 29 JAN 2021 11:16:16

5230 MHz, 30MHz – 1GHz



Date: 29 JAN 2021 15:42:59

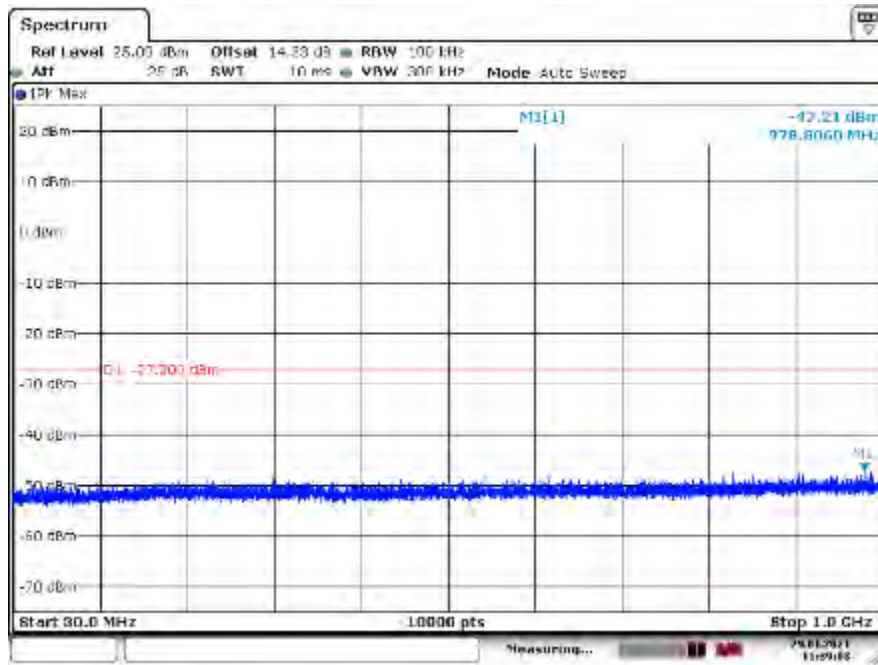
5230 MHz, 1GHz – 40GHz



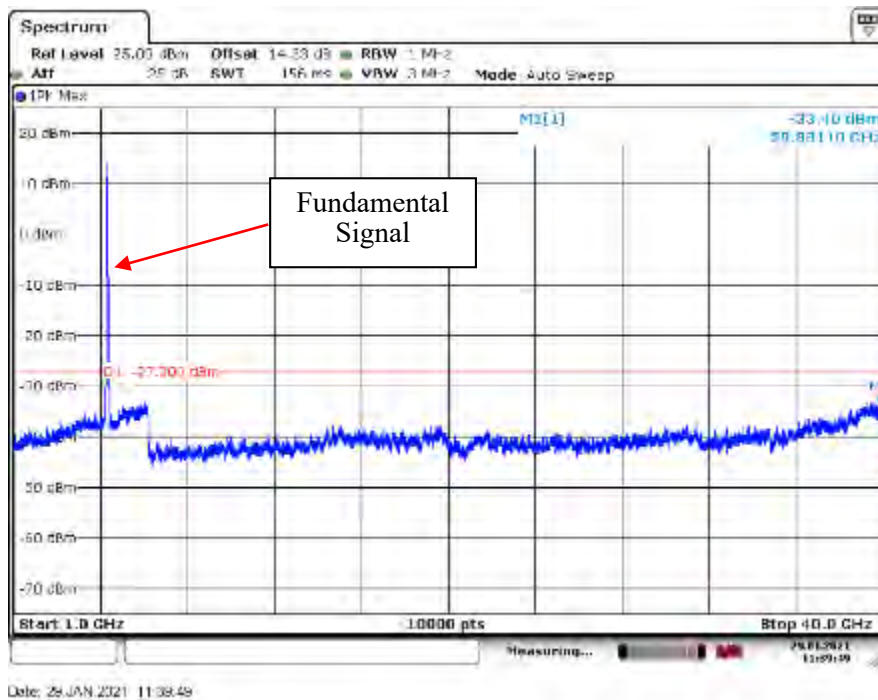
Date: 29 JAN 2021 15:43:35

5150 - 5250 MHz, 802.11n40 Mode, Antenna B

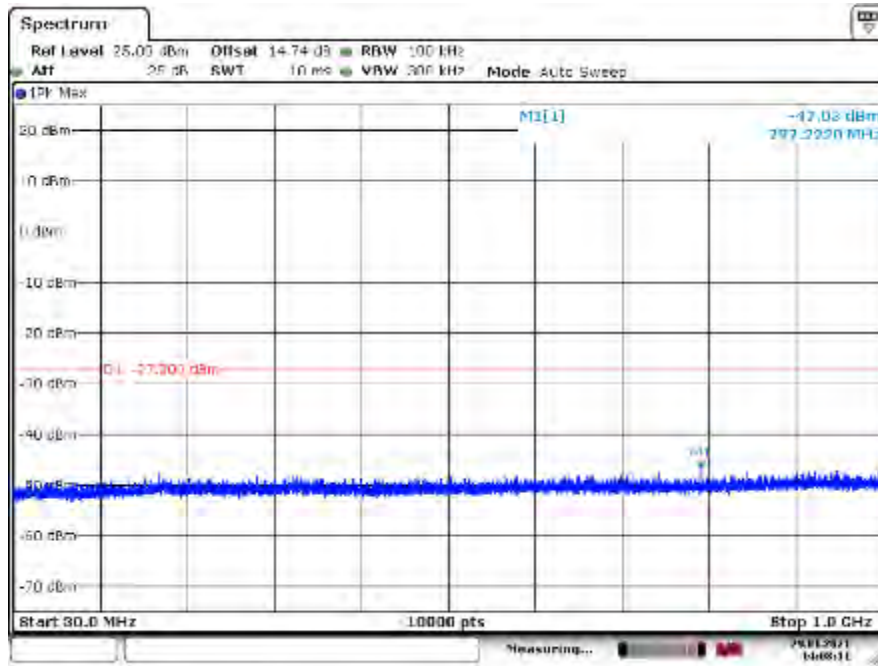
5190 MHz, 30MHz – 1GHz



5190 MHz, 1GHz – 40GHz

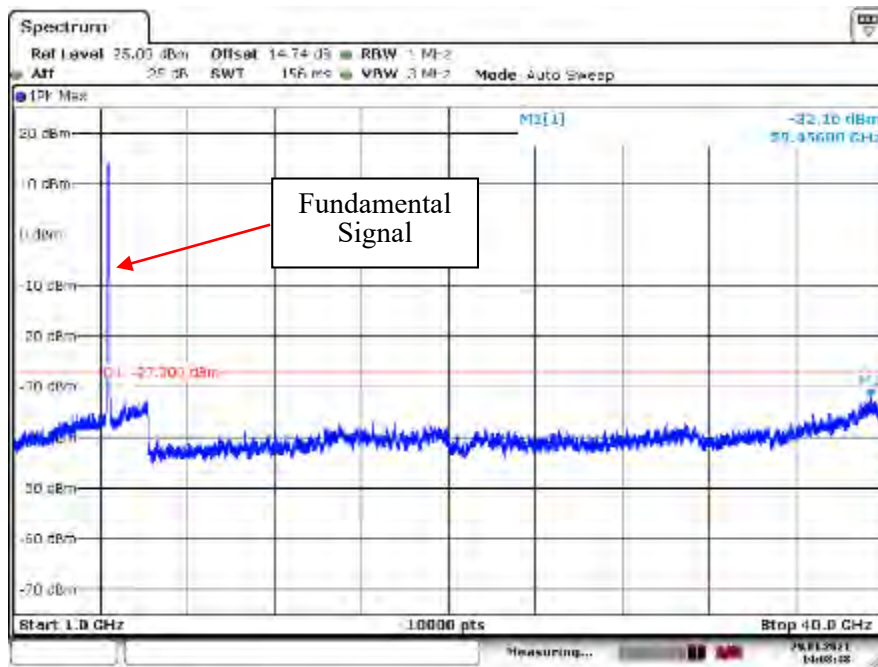


5230 MHz, 30MHz – 1GHz



Date: 29 JAN 2021 14:08:11

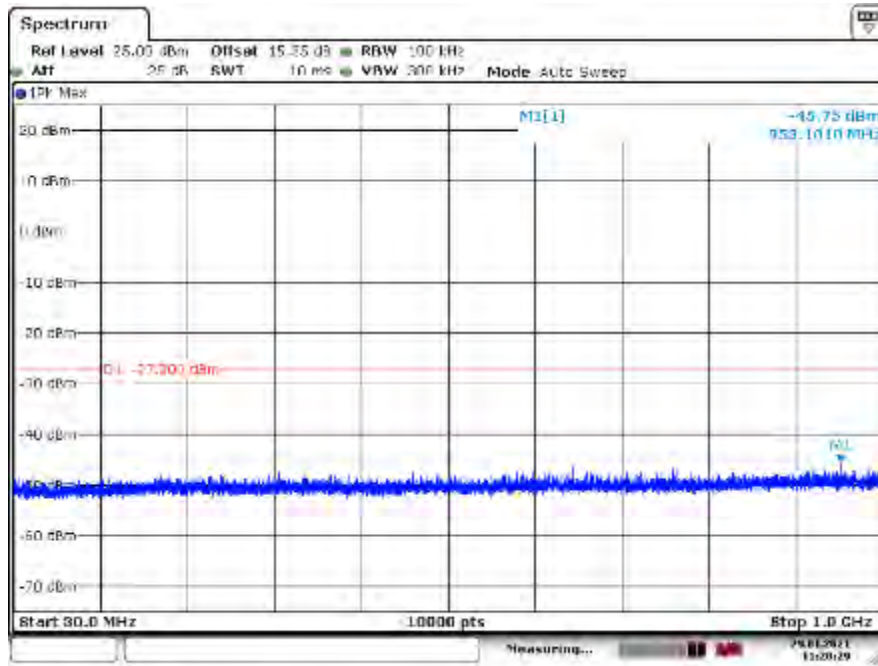
5230 MHz, 1GHz – 40GHz



Date: 29 JAN 2021 14:08:49

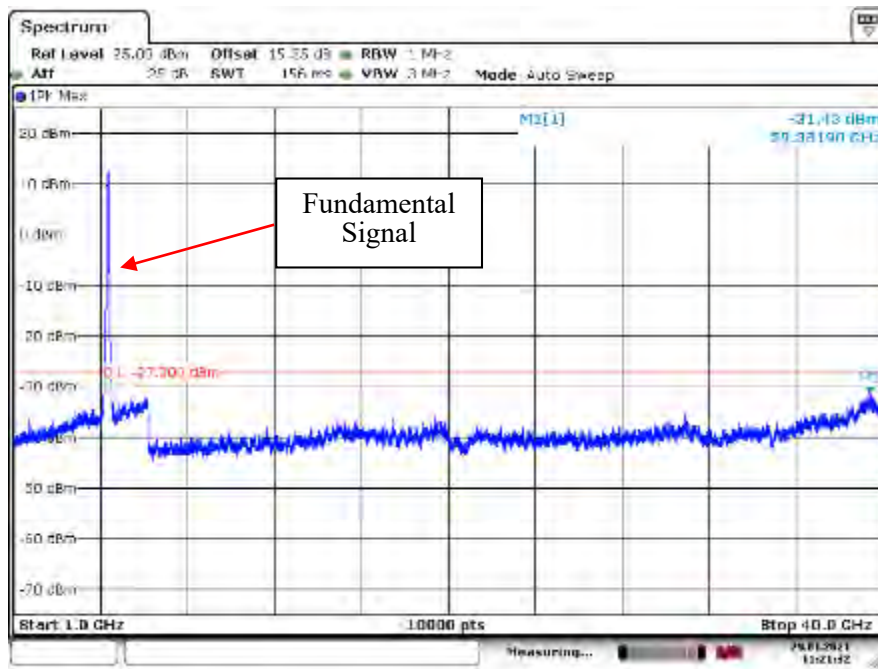
5150 - 5250 MHz, 802.11ac80 Mode, Antenna A

5210 MHz, 30MHz – 1GHz



Date: 29 JAN 2021 11:21:29

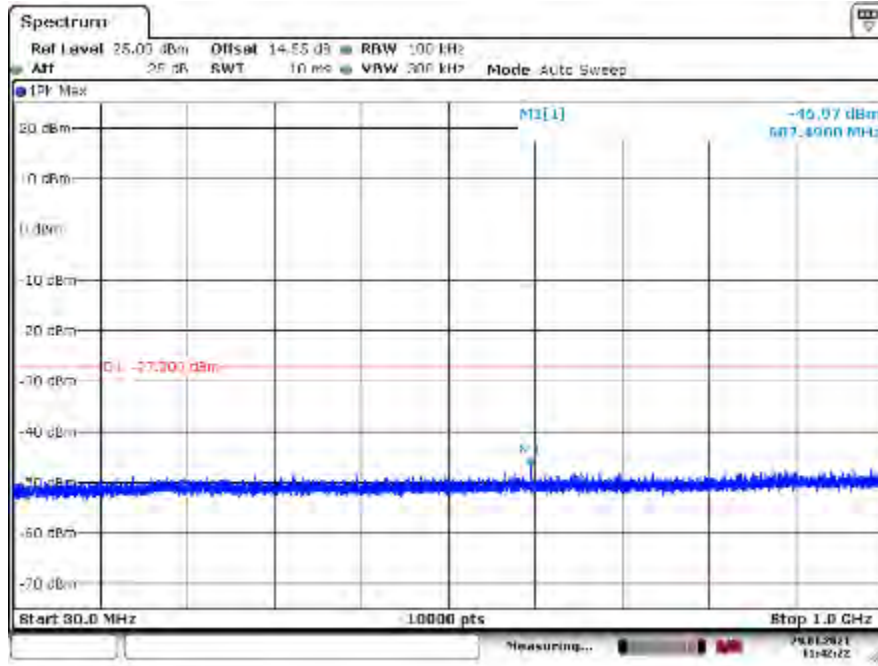
5210 MHz, 1GHz – 40GHz



Date: 29 JAN 2021 11:21:32

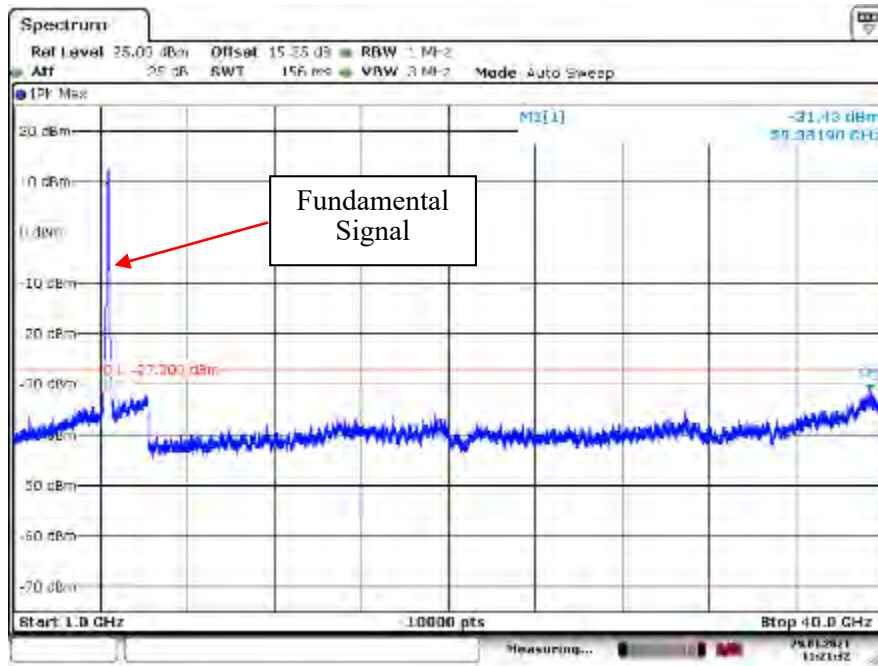
5150 - 5250 MHz, 802.11n40 Mode, Antenna B

5210 MHz, 30MHz – 1GHz



Date: 29 JAN 2021 11:42:22

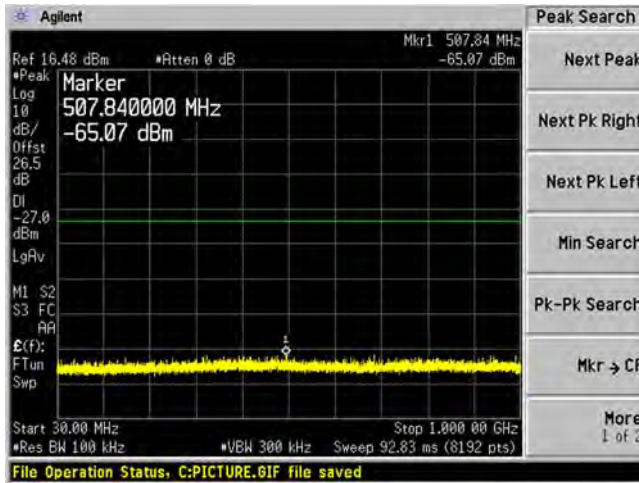
5210 MHz, 1GHz – 40GHz



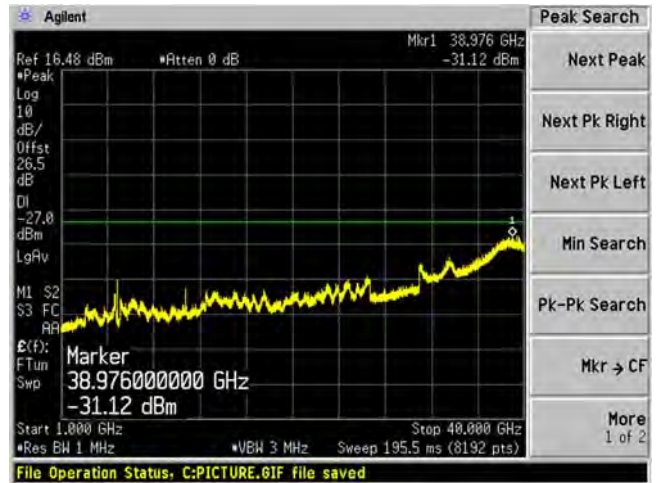
Date: 29 JAN 2021 11:21:52

5725 - 5850 MHz, 802.11a Mode, Antenna A

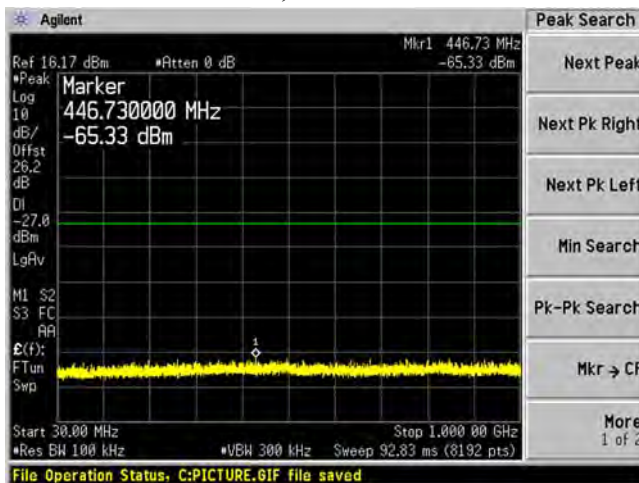
5745 MHz, 30MHz – 1GHz



5745 MHz, 1GHz – 40GHz



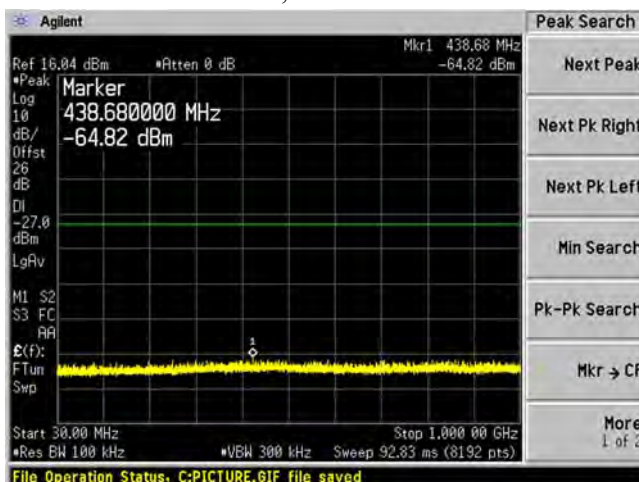
5785 MHz, 30MHz – 1GHz



5785 MHz, 1GHz – 40GHz



5825 MHz, 30MHz – 1GHz

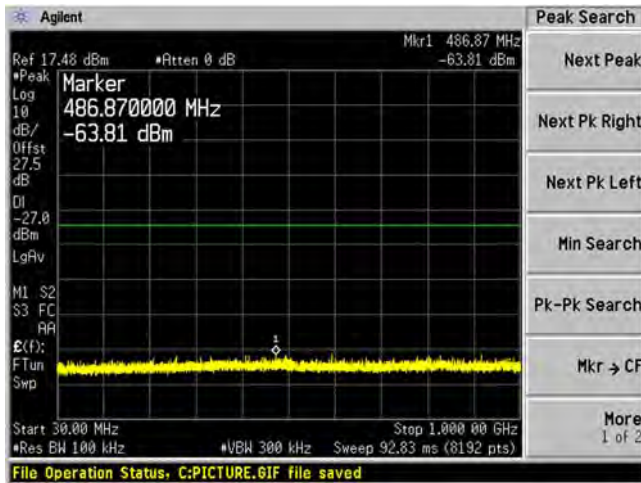


5825 MHz, 1GHz – 40GHz

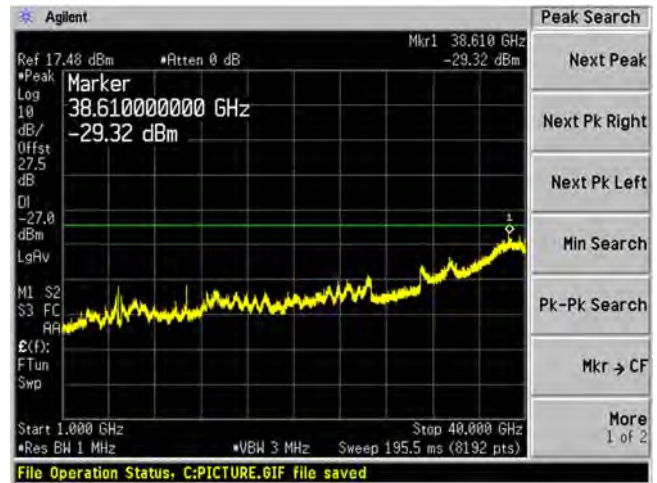


5725 - 5850 MHz, 802.11a Mode, Antenna B

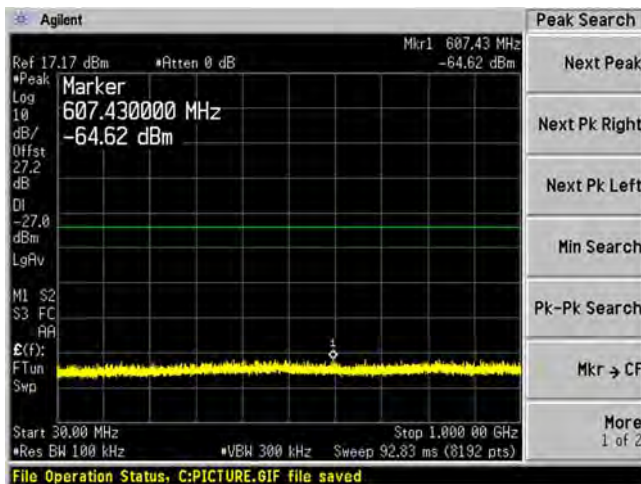
5745 MHz, 30MHz – 1GHz



5745 MHz, 1GHz – 40GHz



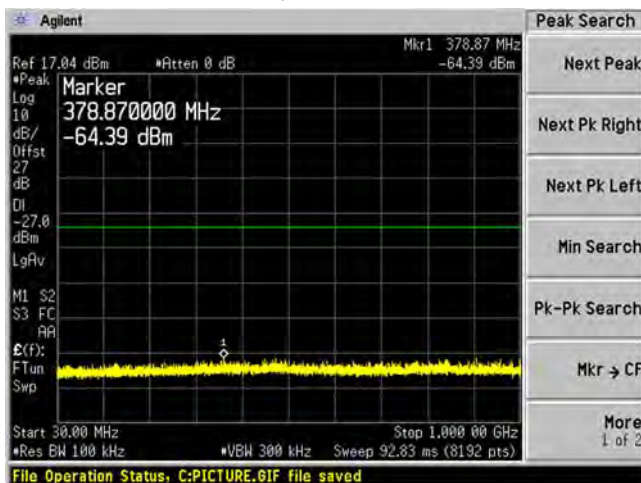
5785 MHz, 30MHz – 1GHz



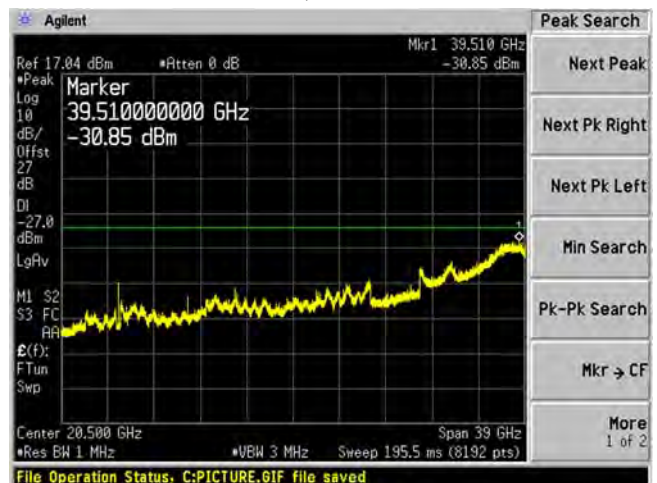
5785 MHz, 1GHz – 40GHz



5825 MHz, 30MHz – 1GHz

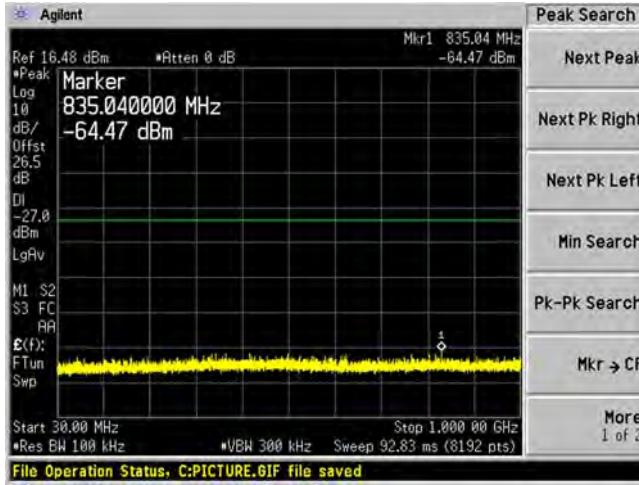


5825 MHz, 1GHz – 40GHz



5725 - 5850 MHz, 802.11n20 Mode, Antenna A

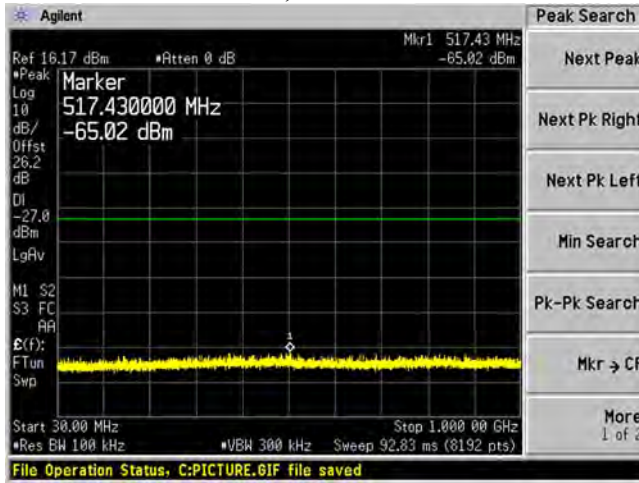
5745 MHz, 30MHz – 1GHz



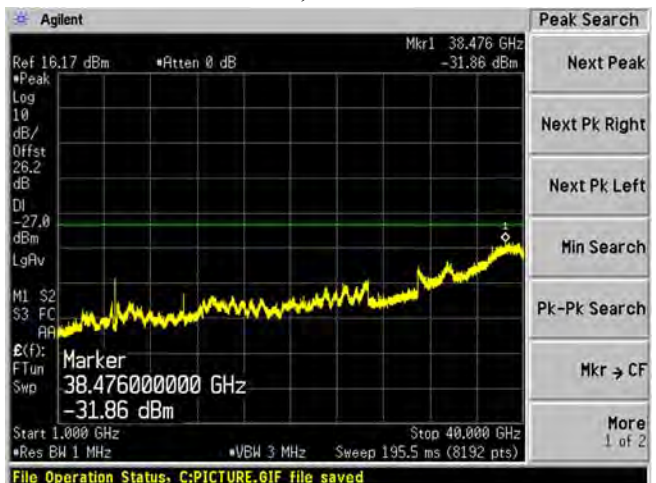
5745 MHz, 1GHz – 40GHz



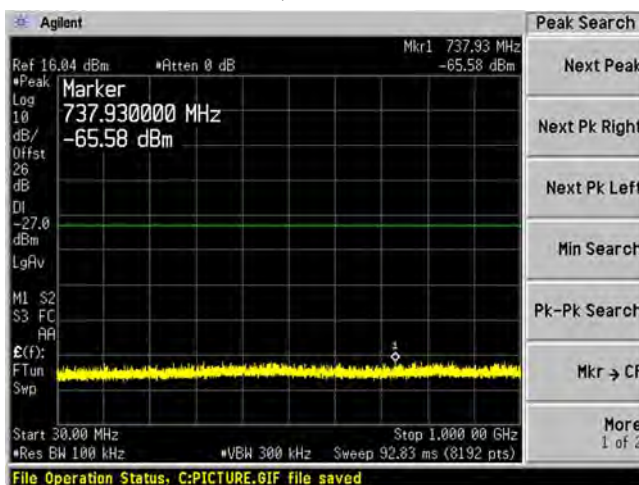
5785 MHz, 30MHz – 1GHz



5785MHz, 1GHz – 40GHz



5825 MHz, 30MHz – 1GHz

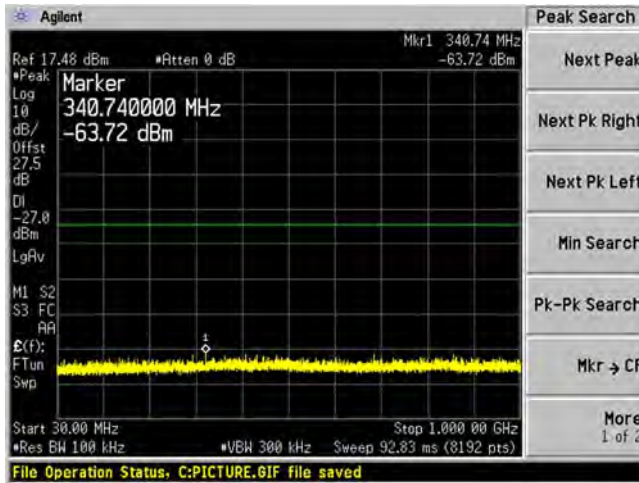


5825 MHz, 1GHz – 40GHz



5725 - 5850 MHz, 802.11n20 Mode, Antenna B

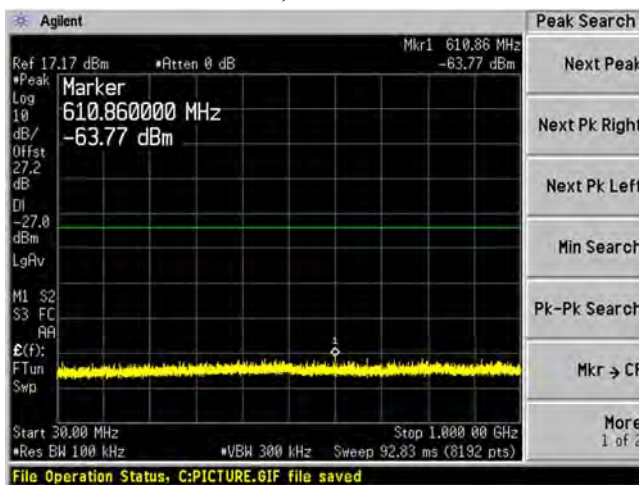
5745 MHz, 30MHz – 1GHz



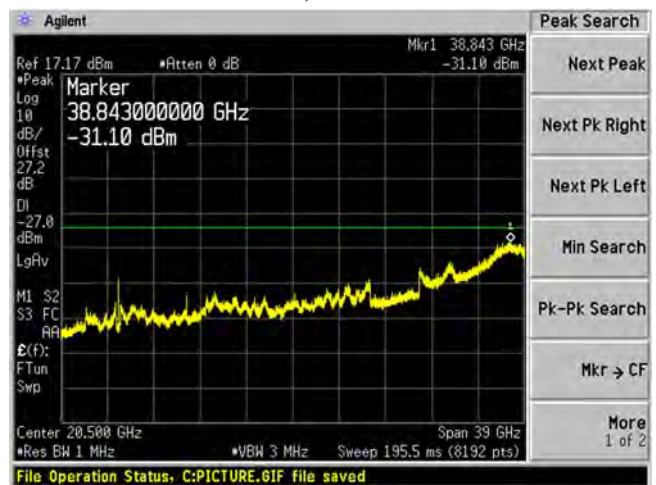
5745 MHz, 1GHz – 40GHz



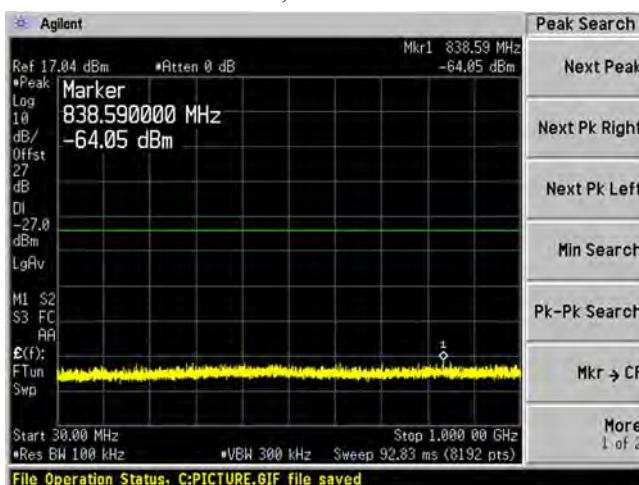
5785 MHz, 30MHz – 1GHz



5785 MHz, 1GHz – 40GHz



5825 MHz, 30MHz – 1GHz

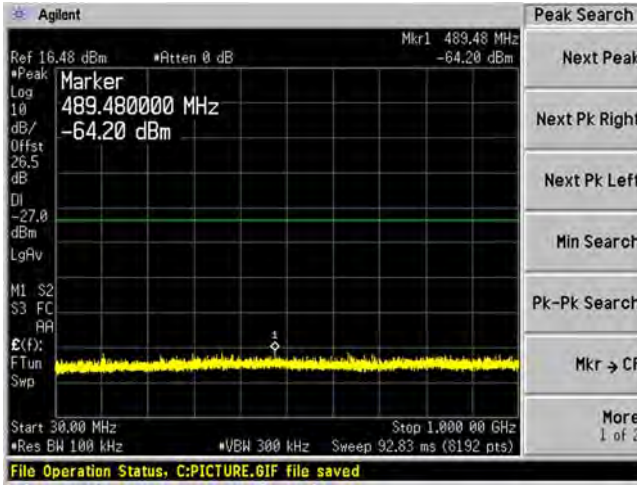


5825 MHz, 1GHz – 40GHz

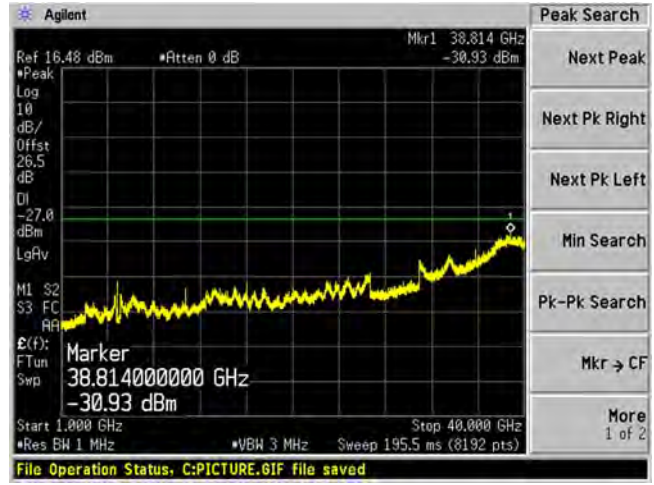


5725 - 5850 MHz, 802.11ac20 Mode, Antenna A

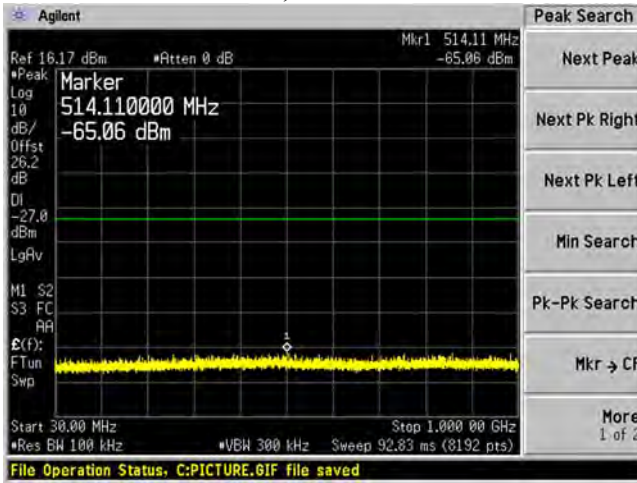
5745 MHz, 30MHz – 1GHz



5745 MHz, 1GHz – 40GHz



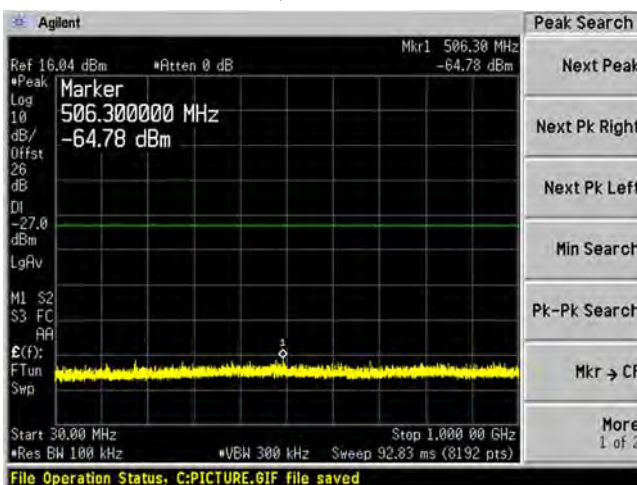
5785 MHz, 30MHz – 1GHz



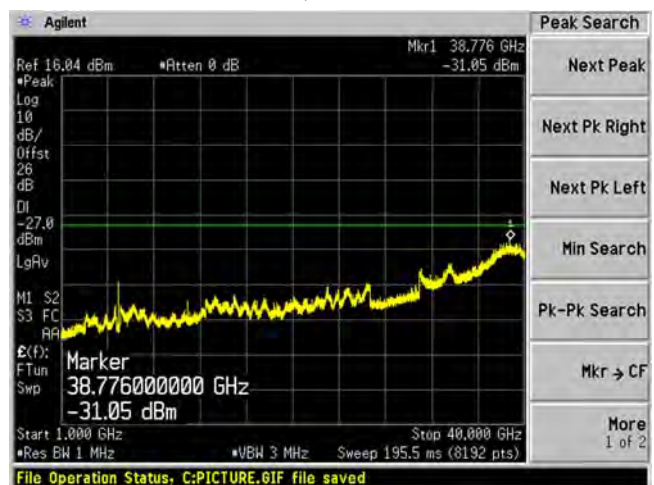
5785MHz, 1GHz – 40GHz



5825 MHz, 30MHz – 1GHz

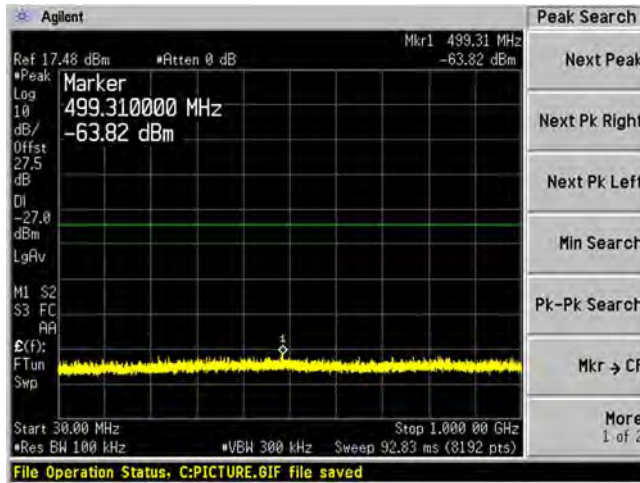


5825 MHz, 1GHz – 40GHz



5725 - 5850 MHz, 802.11ac20 Mode, Antenna B

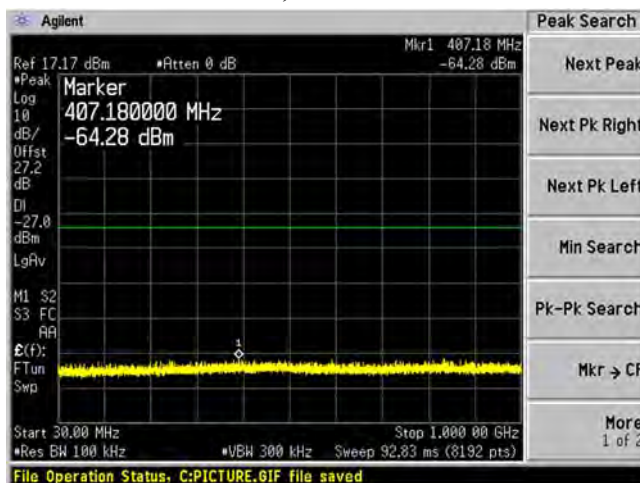
5745 MHz, 30MHz – 1GHz



5745 MHz, 1GHz – 40GHz



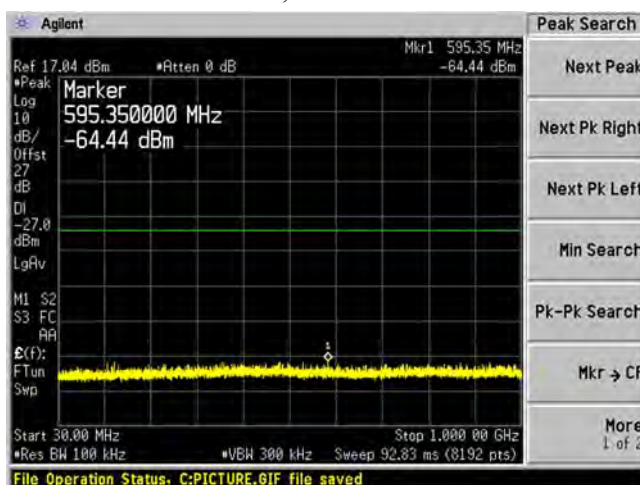
5785 MHz, 30MHz – 1GHz



5785 MHz, 1GHz – 40GHz



5825 MHz, 30MHz – 1GHz

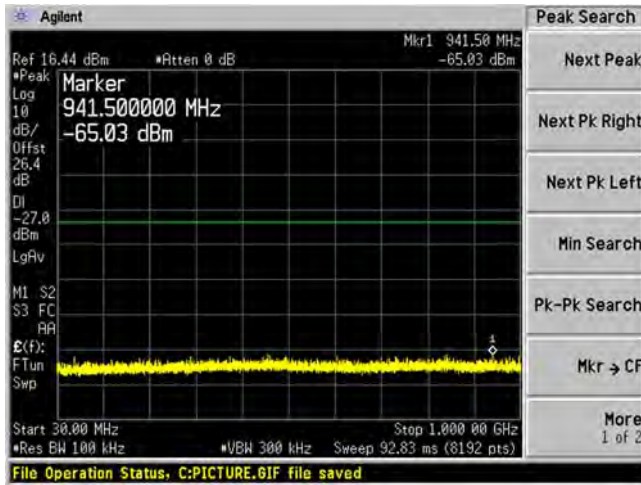


5825 MHz, 1GHz – 40GHz

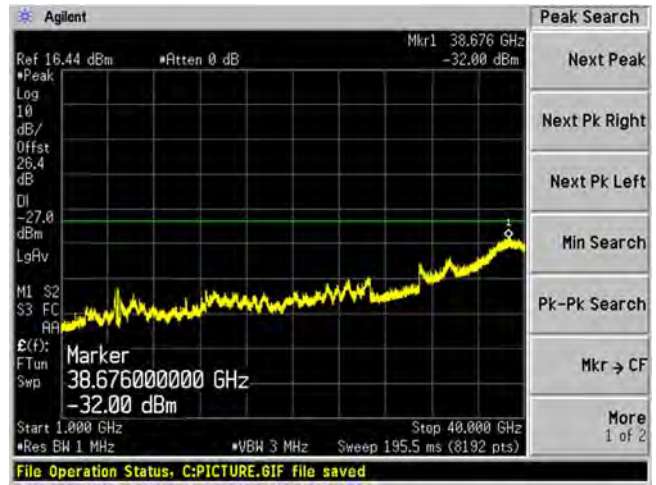


5725 - 5850 MHz, 802.11n40 Mode, Antenna A

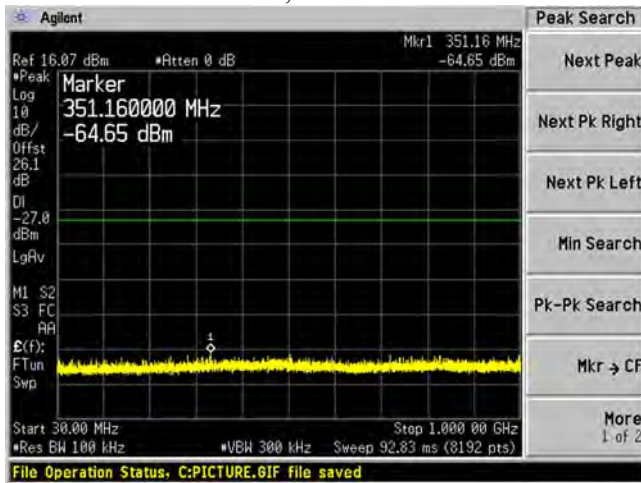
5755 MHz, 30MHz – 1GHz



5755 MHz, 1GHz – 40GHz



5795 MHz, 30MHz – 1GHz

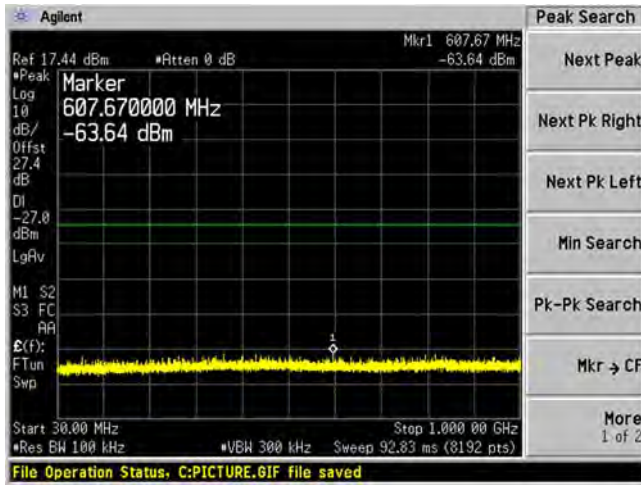


5795MHz, 1GHz – 40GHz

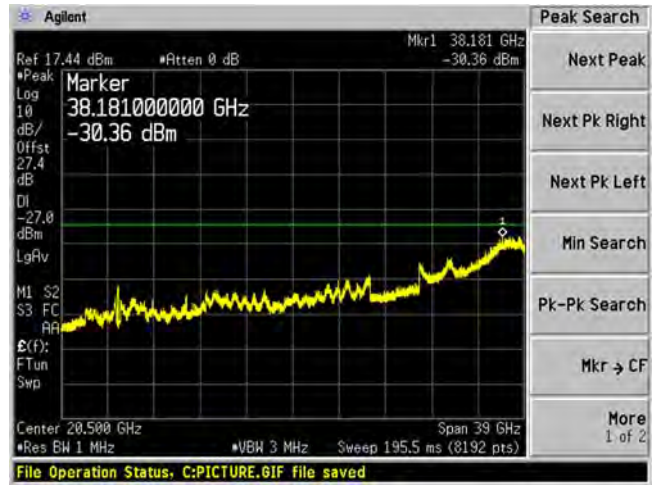


5725 - 5850 MHz, 802.11n40 Mode, Antenna B

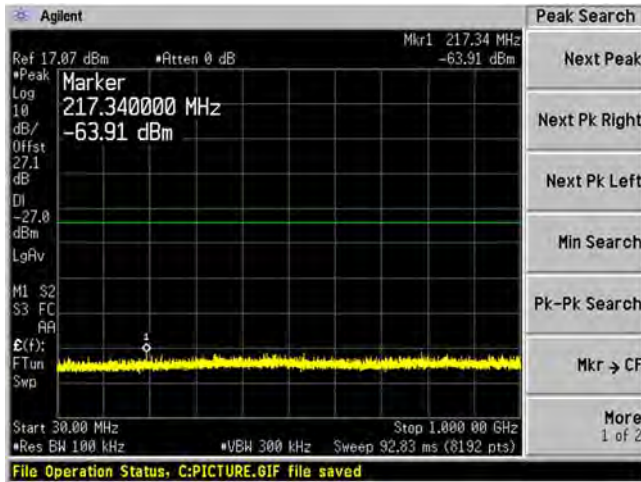
5755 MHz, 30MHz – 1GHz



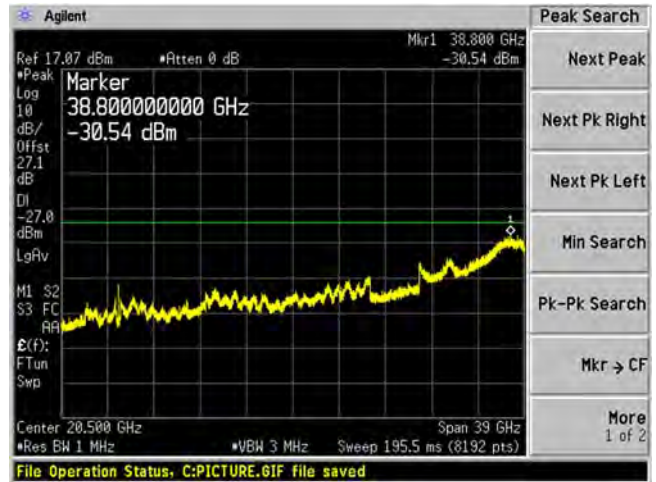
5755 MHz, 1GHz – 40GHz



5795 MHz, 30MHz – 1GHz

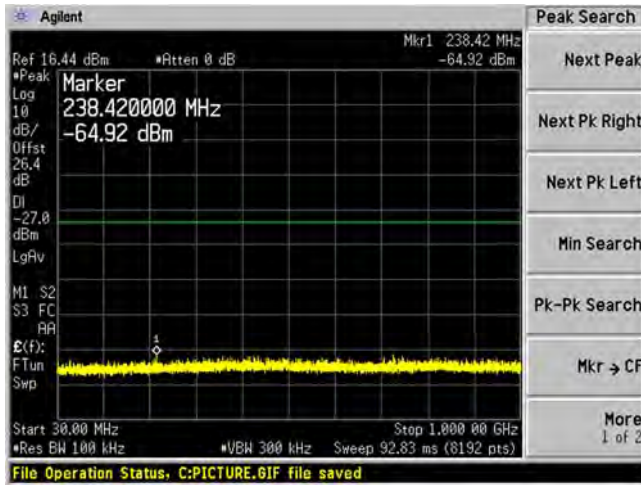


5795 MHz, 1GHz – 40GHz



5725 - 5850 MHz, 802.11ac40 Mode, Antenna A

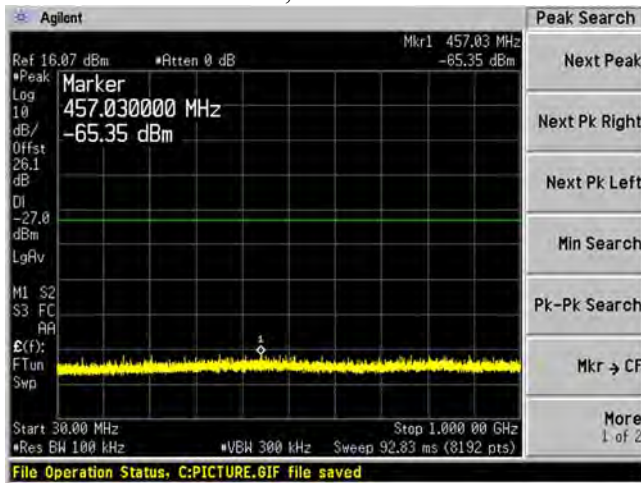
5755 MHz, 30MHz – 1GHz



5755 MHz, 1GHz – 40GHz



5795 MHz, 30MHz – 1GHz

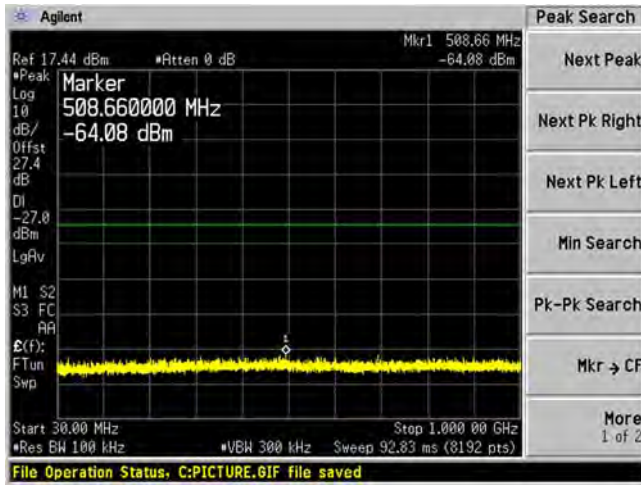


5795MHz, 1GHz – 40GHz

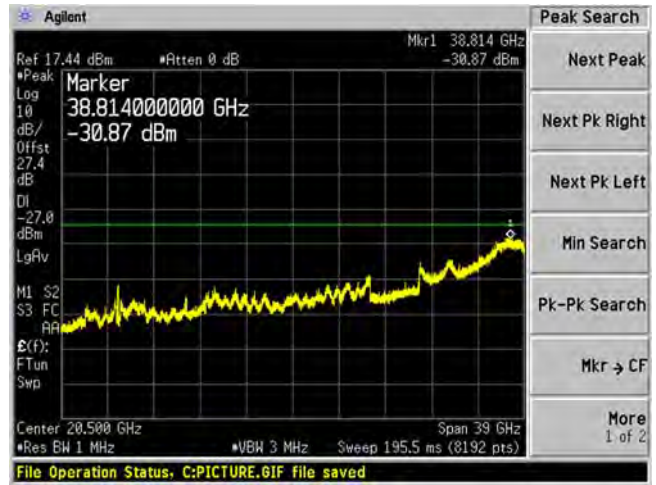


5725 - 5850 MHz, 802.11ac40 Mode, Antenna B

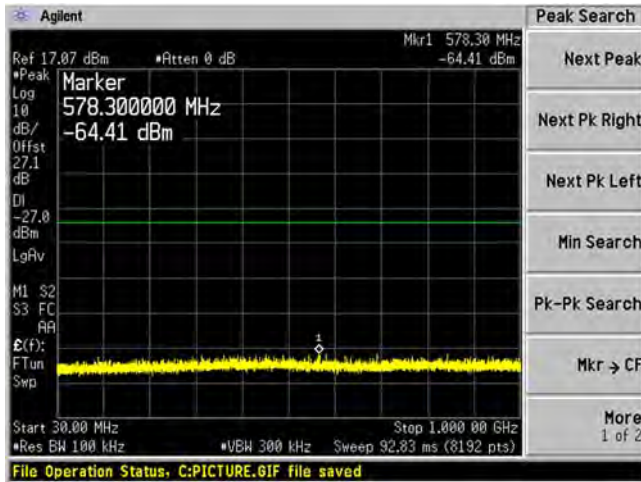
5755 MHz, 30MHz – 1GHz



5755 MHz, 1GHz – 40GHz



5795 MHz, 30MHz – 1GHz

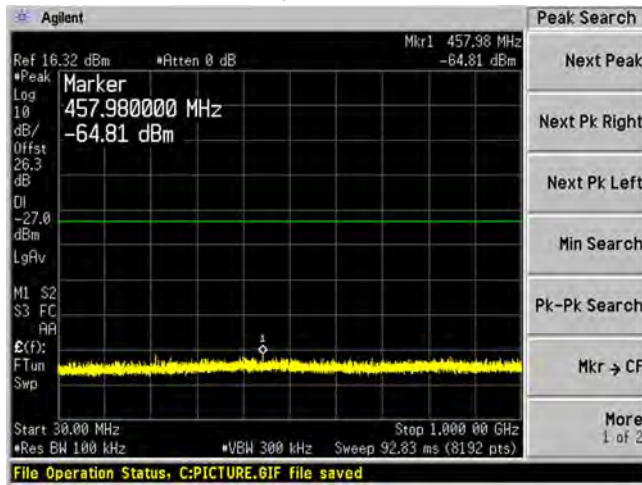


5795 MHz, 1GHz – 40GHz

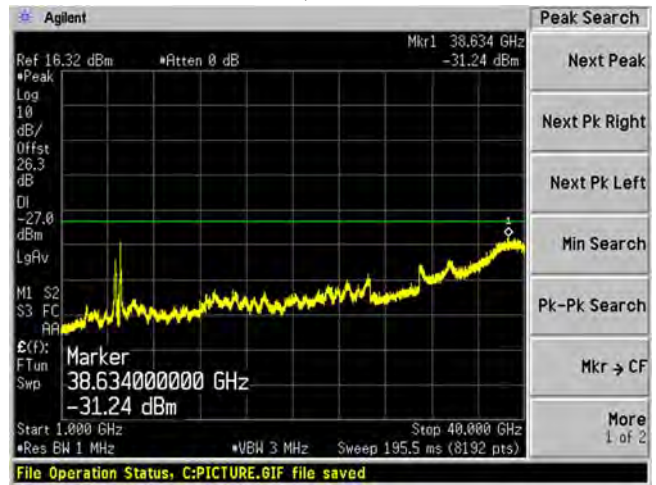


5725 - 5850 MHz, 802.11ac80 Mode, Antenna A

5775 MHz, 30MHz – 1GHz

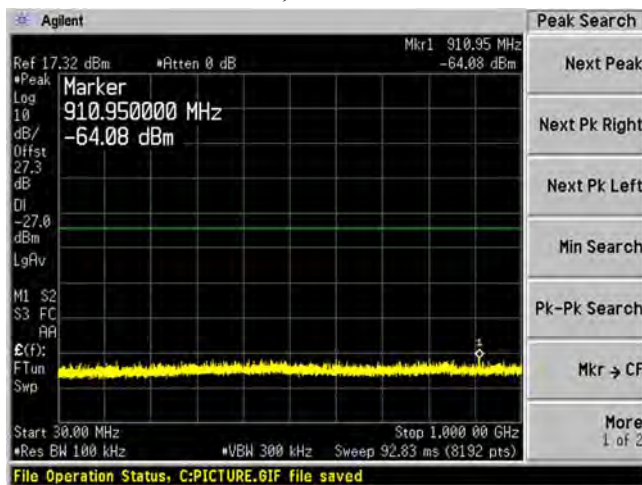


5775 MHz, 1GHz – 40GHz



5725 - 5850 MHz, 802.11ac40 Mode, ANTENNA B

5775 MHz, 30MHz – 1GHz



5775 MHz, 1GHz – 40GHz



Note: A notch filter was used for 5745-5825 MHz spurious emissions.
Note: 5.8 GHz emission mask was evaluated in the radiated spurious emission section.

12 Annex A (Normative) - EUT Test Setup Photographs

Please refer to the attachment.

13 Annex B (Normative) - EUT External Photographs

Please refer to the attachment.

14 Annex C (Normative) - EUT Internal Photographs

Please refer to the attachment.

15 Annex D (Normative) - A2LA Electrical Testing Certificate



Accredited Laboratory

A2LA has accredited

BAY AREA COMPLIANCE LABORATORIES CORP.

Sunnyvale, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This laboratory also meets A2LA R222 - Specific Requirements EPA ENERGY STAR Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

Presented this 10th day of March 2021.



Trace McInturf, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3297.02
Valid to September 30, 2022

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

Please follow the web link below for a full ISO 17025 scope

<https://www.a2la.org/scopepdf/3297-02.pdf>

--- END OF REPORT ---