



9 PEAK POWER SPECTRAL DENSITY (PSD)

Peak power spectral density measurements were performed.

9.1 Requirements:

For an outdoor 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 6dBi. In addition, the maximum power spectral density shall not exceed 17dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125mW (21dBm).

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.

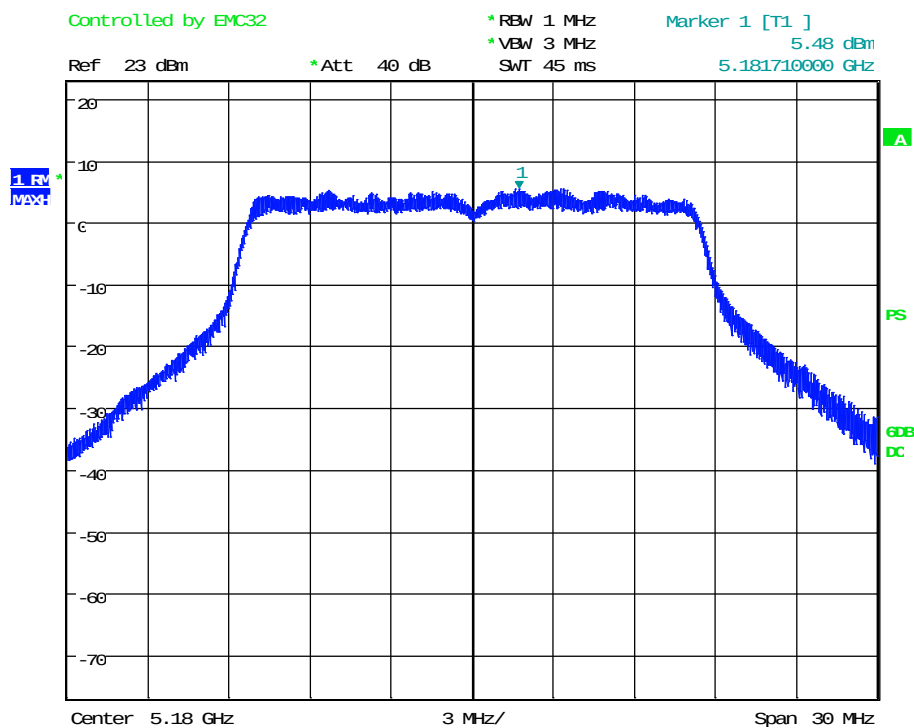
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1W. **In addition, the maximum power spectral density shall not exceed 30dBm in any 500 kHz band.**



9.2 Peak Power Spectral Density Test Data

Test Date(s):	2020-10-29 to 2021-05-05	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.407(a)(1,3); KDB789033	Air Temperature:	23.8°C
		Relative Humidity:	42%

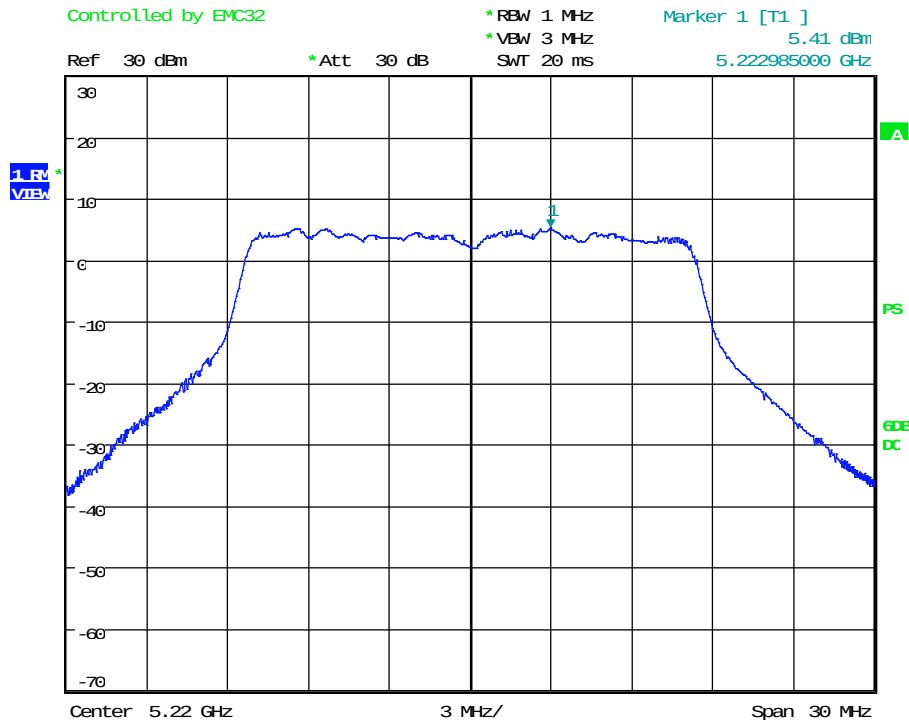
UNII 1, Port 1: OFDM, Low Channel



Date: 29.OCT.2020 13:35:59



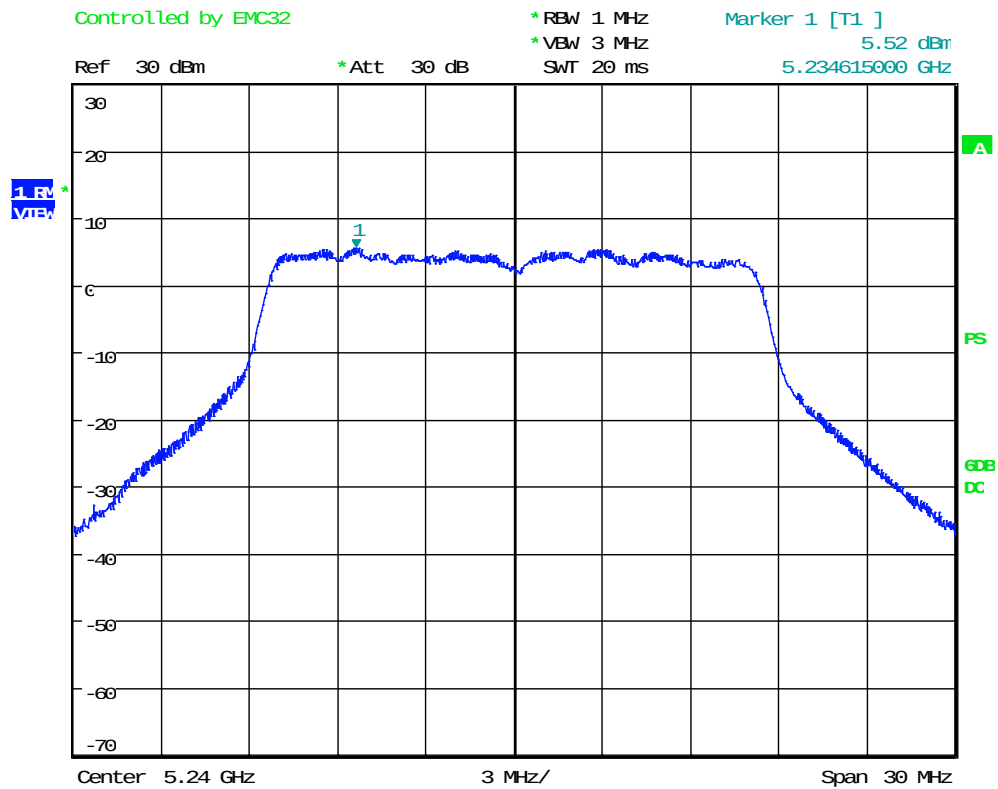
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Date: 5.MAY.2021 10:03:00



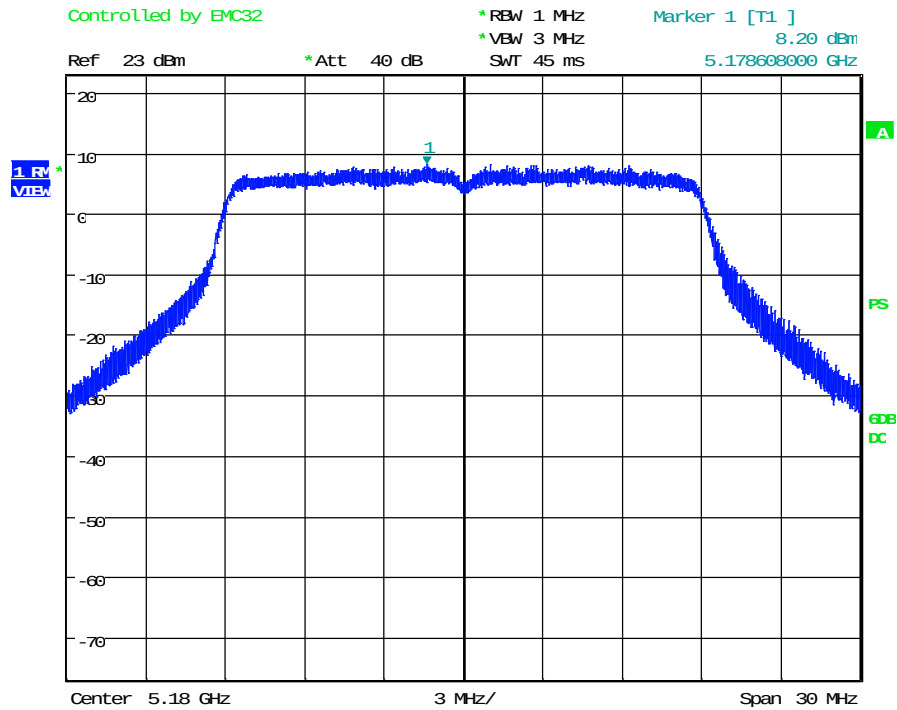
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Date: 5.MAY.2021 10:04:50



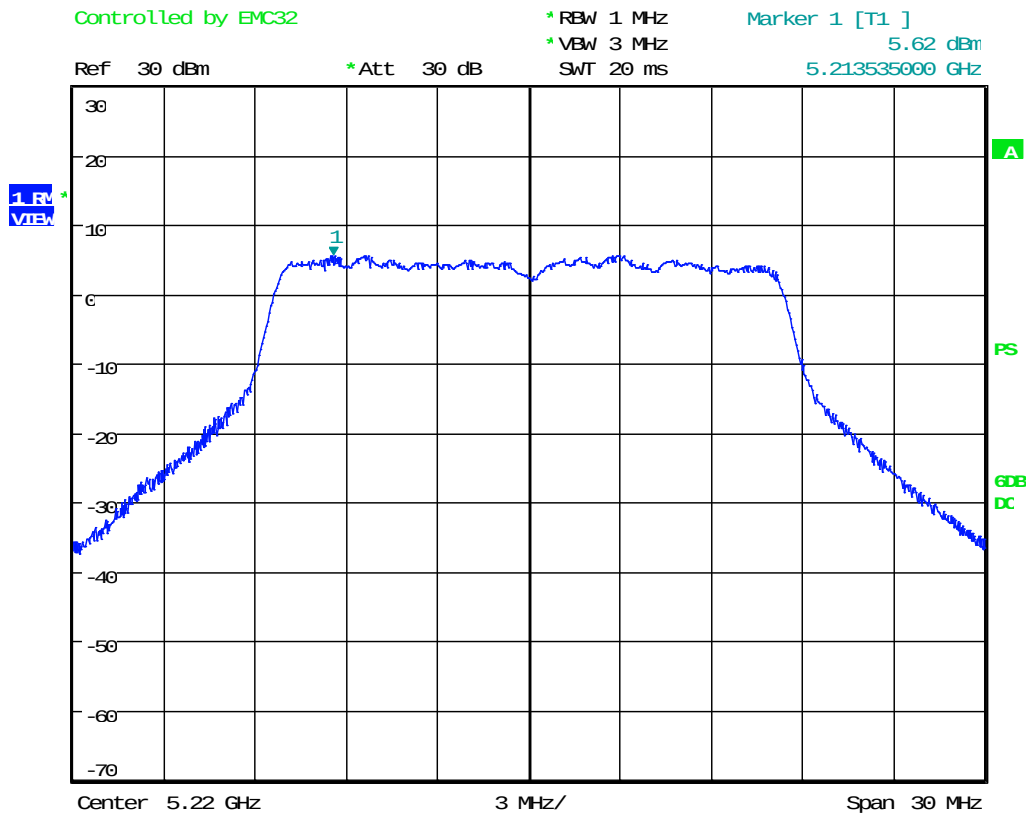
UNII 1, Port 1: HT20, Low Channel



Date: 29.OCT.2020 13:41:12



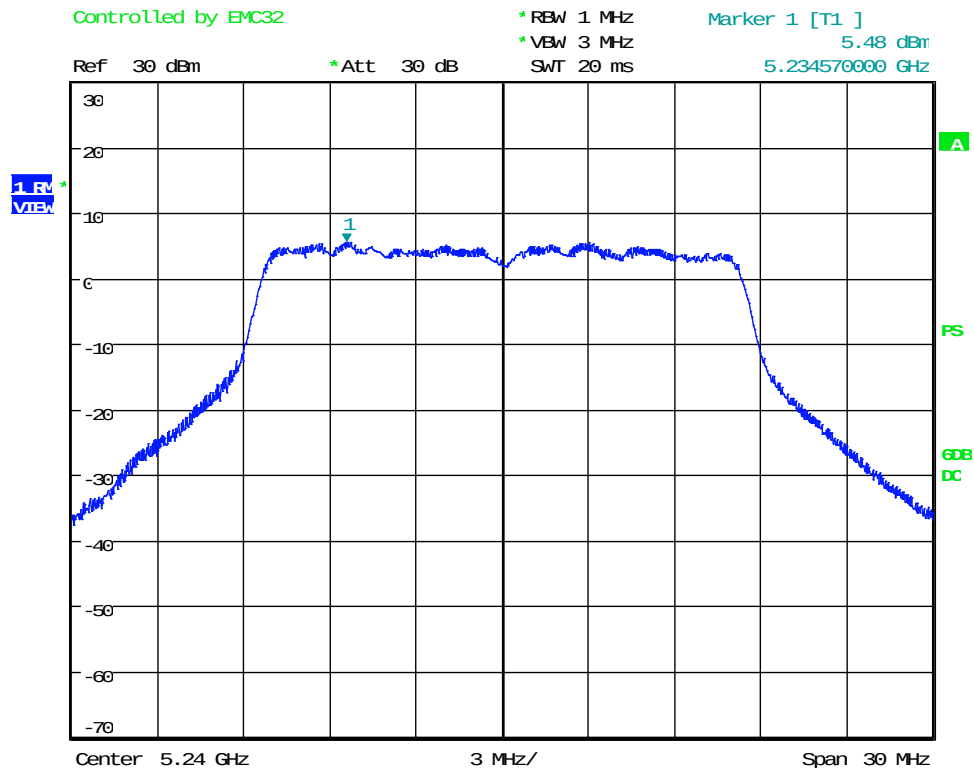
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Date: 5.MAY.2021 10:08:06



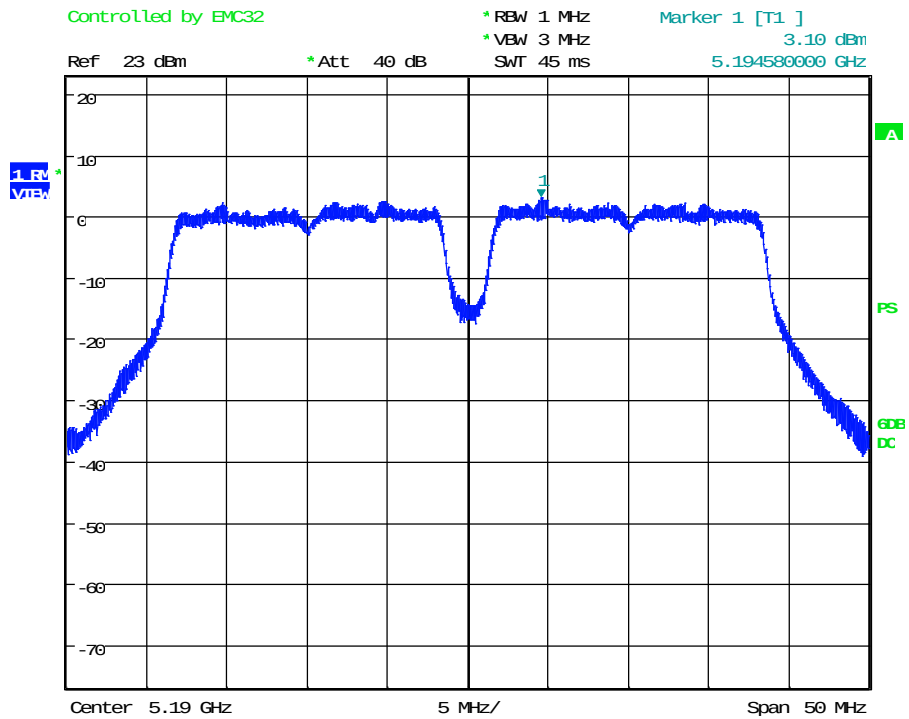
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Date: 5.MAY.2021 10:09:09



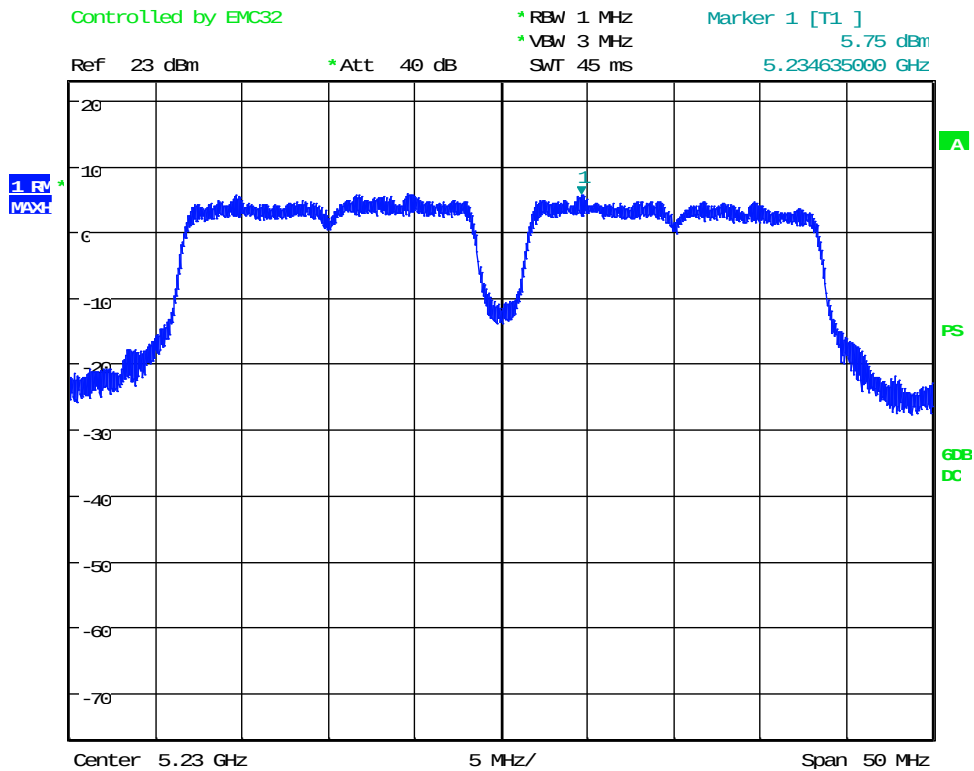
UNII 1, Port 1: non HT40, Low Channel



Date: 29.OCT.2020 13:45:17



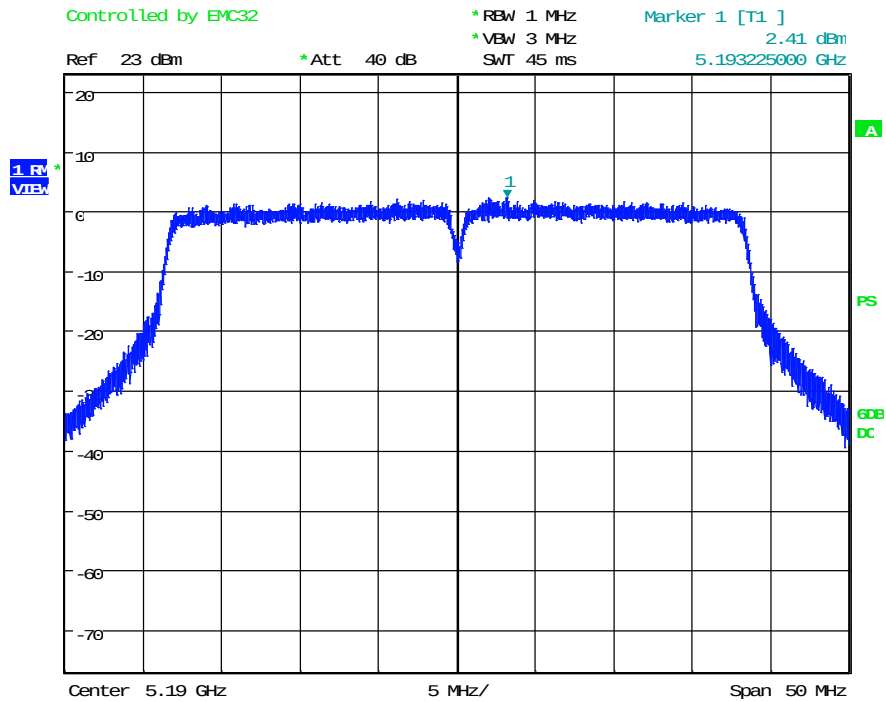
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Date: 29.OCT.2020 13:48:30



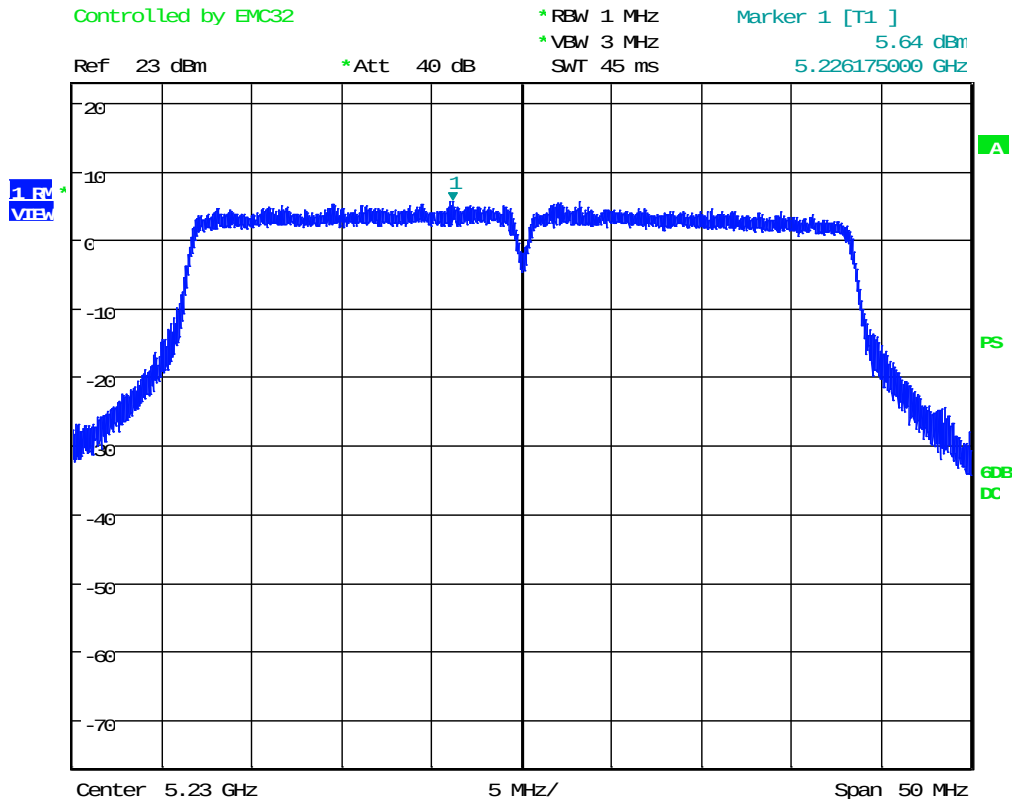
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Date: 29.OCT.2020 13:49:48



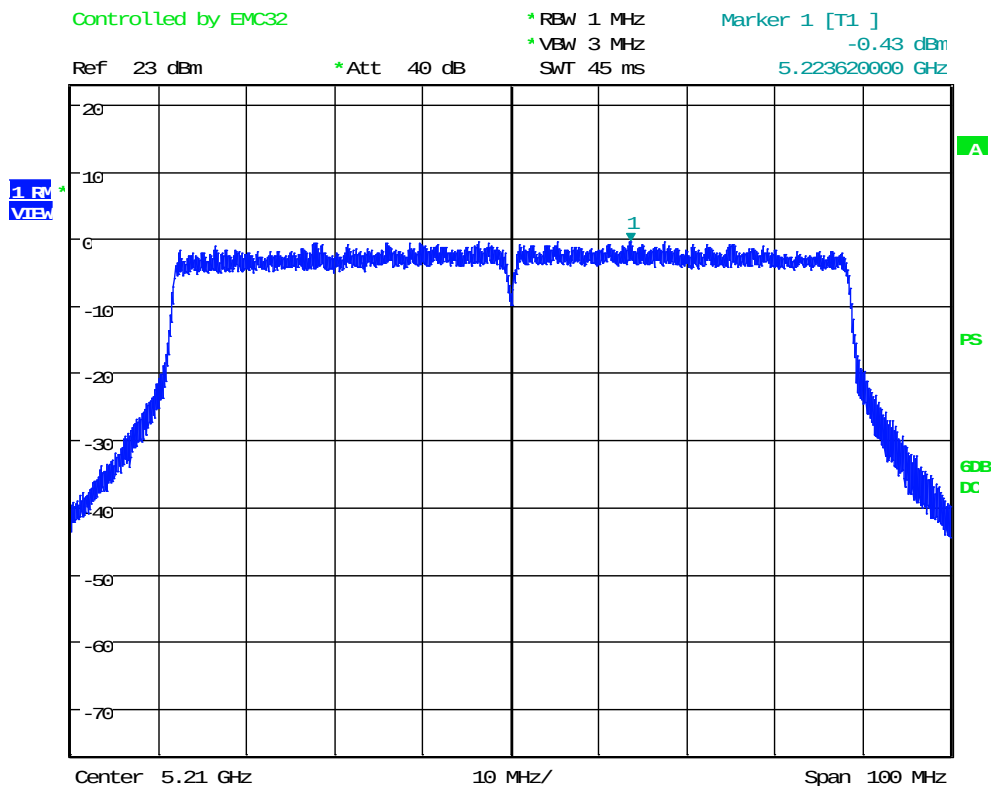
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Date: 29.OCT.2020 13:50:40



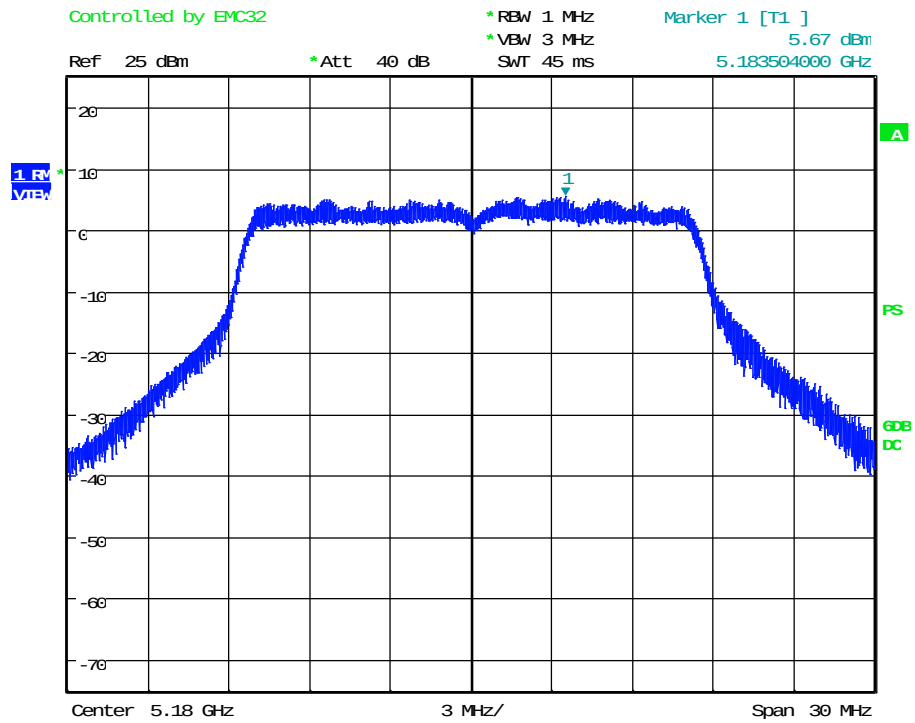
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Date: 29.OCT.2020 13:53:11



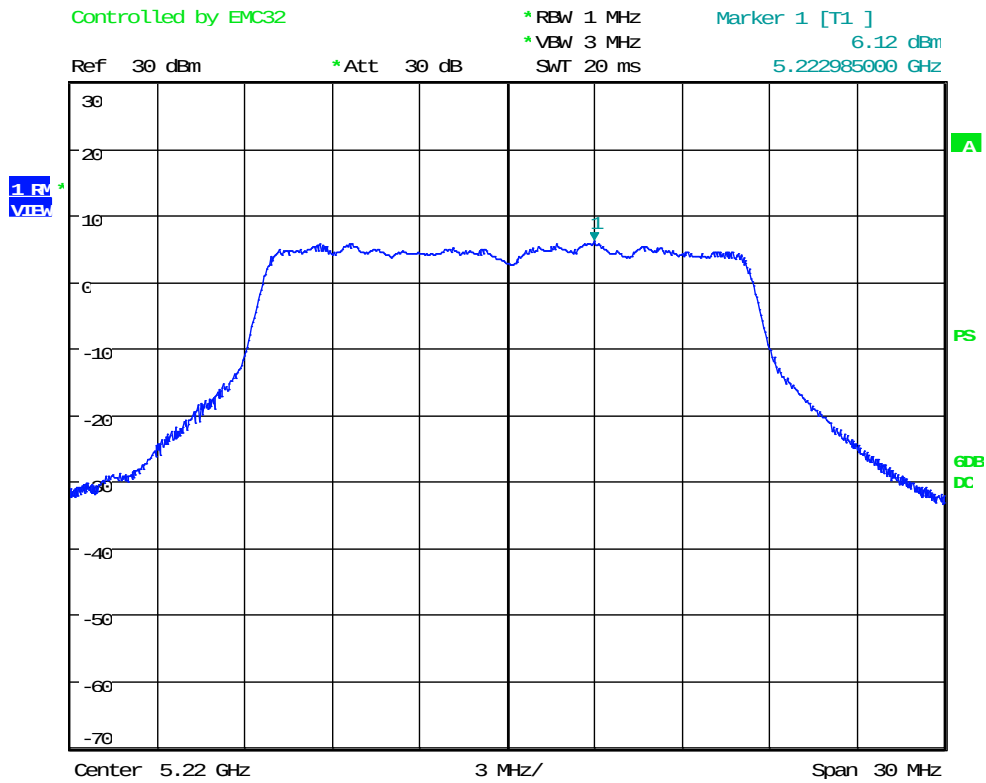
UNII 1, Port 2: OFDM, Low Channel



Date: 2.NOV.2020 09:38:10



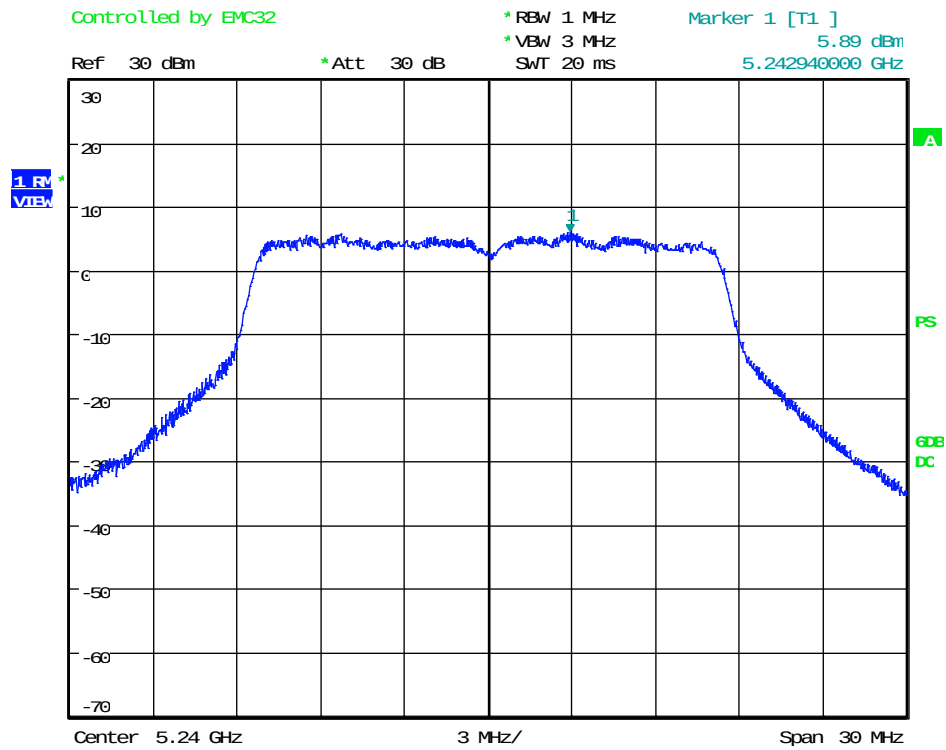
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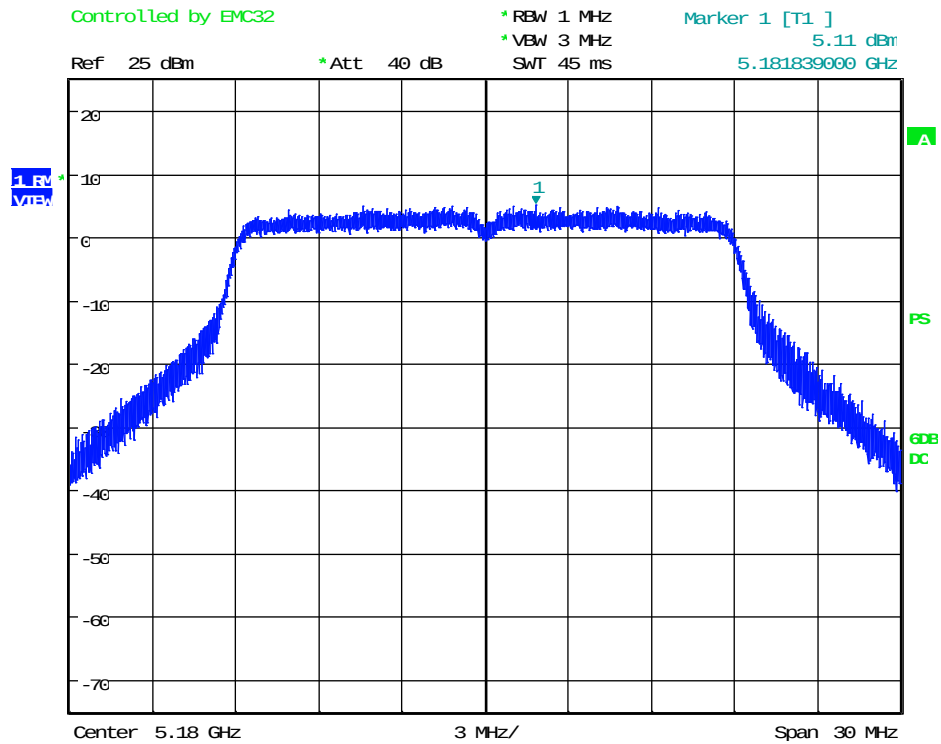
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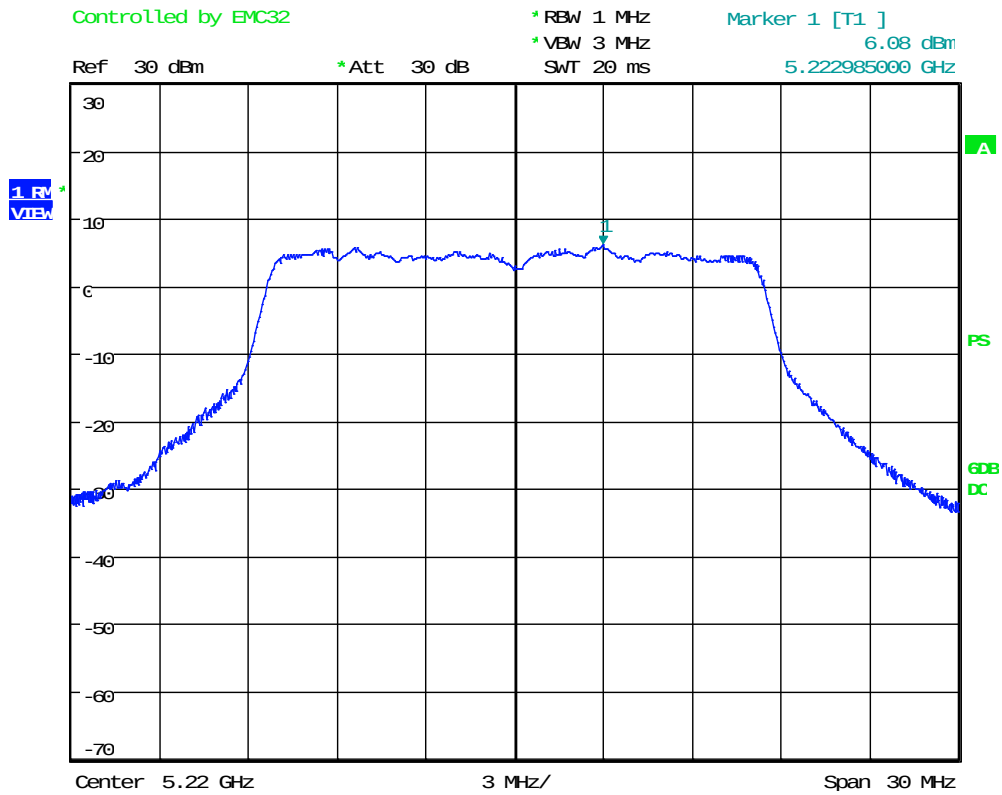
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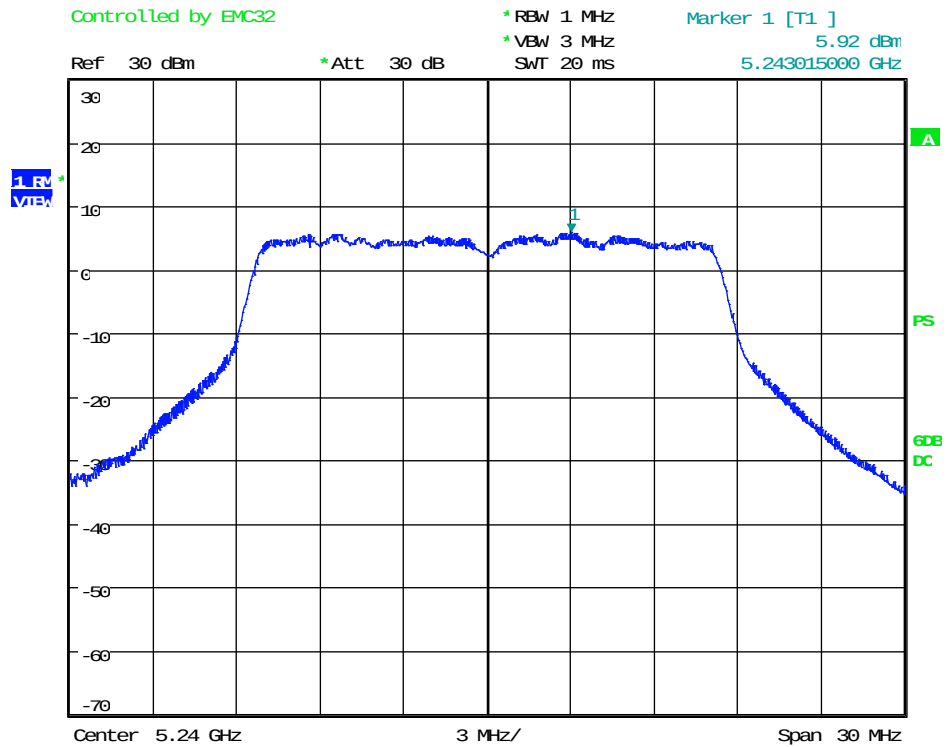
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Date: 5.MAY.2021 09:55:59



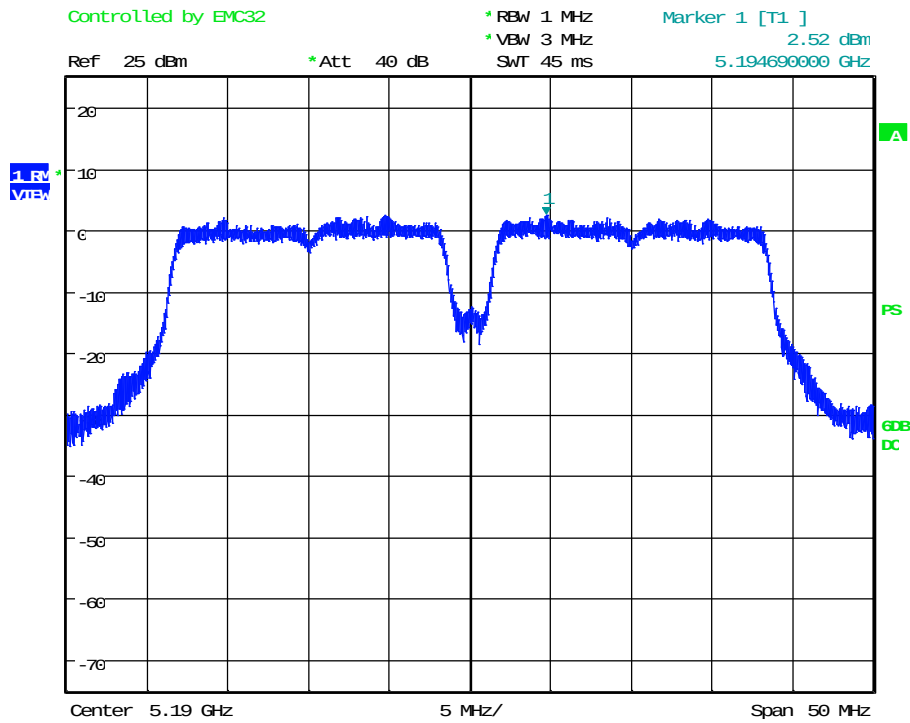
UNII 1, Port 2: HT20, High Channel



Date: 5.MAY.2021 09:57:27



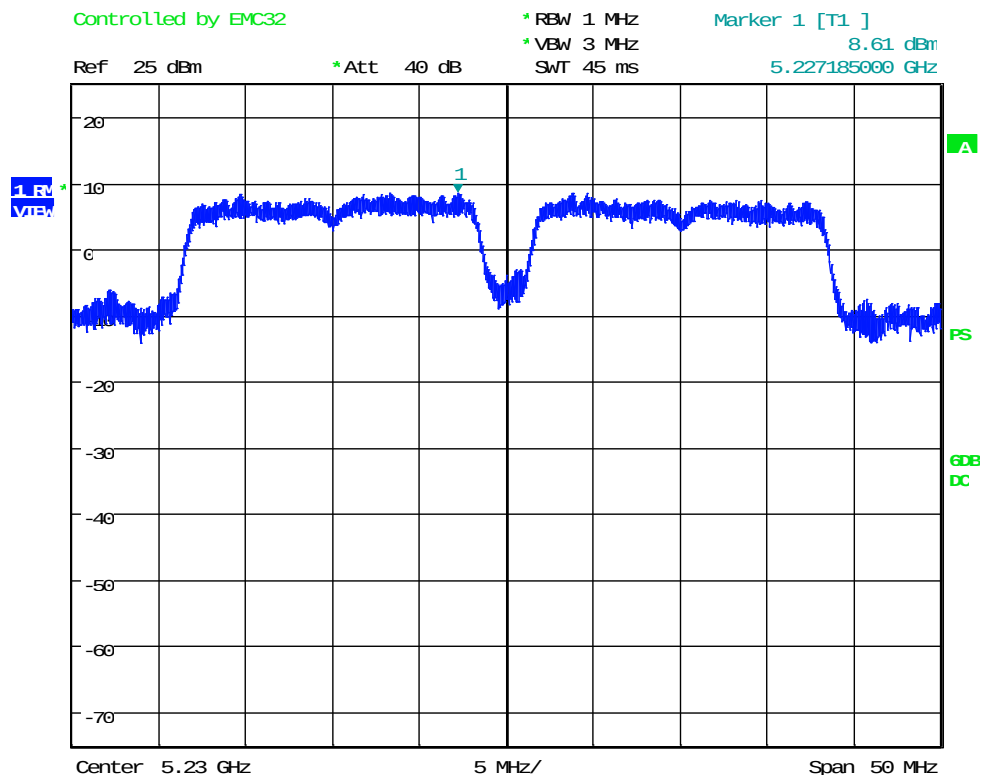
UNII 1, Port 2: non HT40, Low Channel



Date: 2.NOV.2020 09:59:13



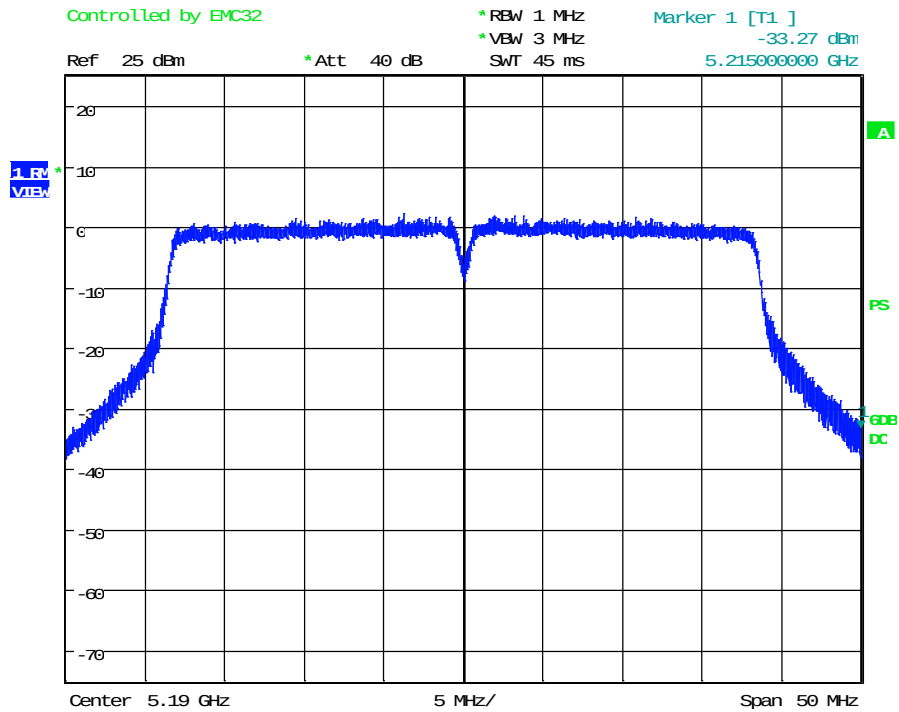
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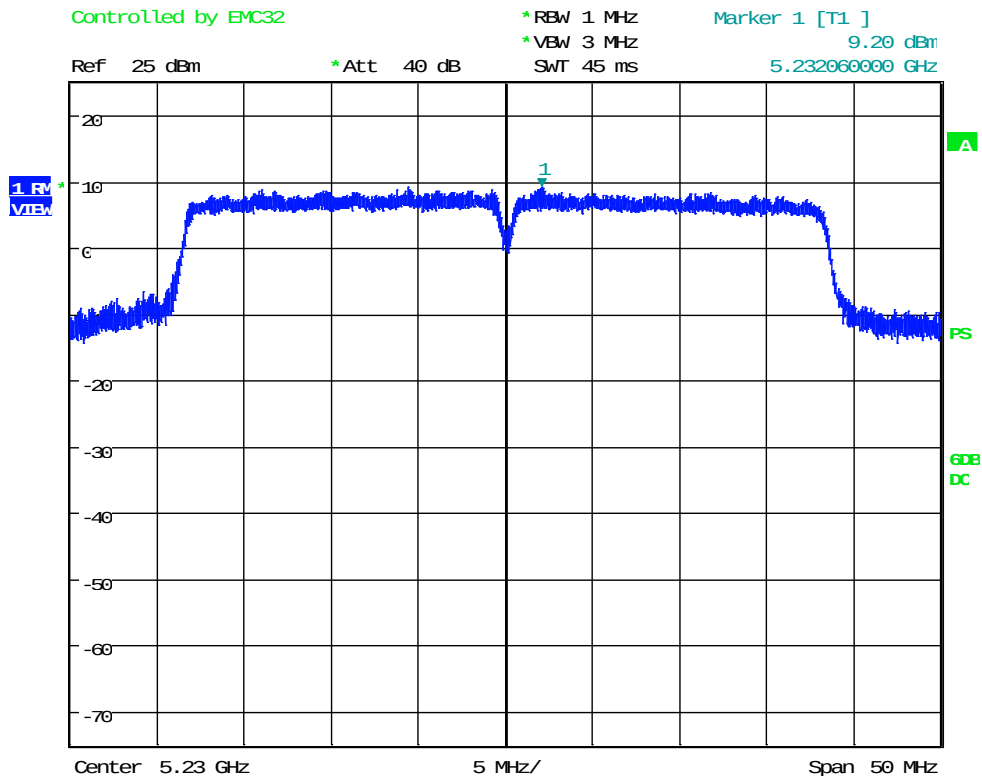
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Date: 2.NOV.2020 10:00:54



UNII 1, Port 2: HT40, High Channel



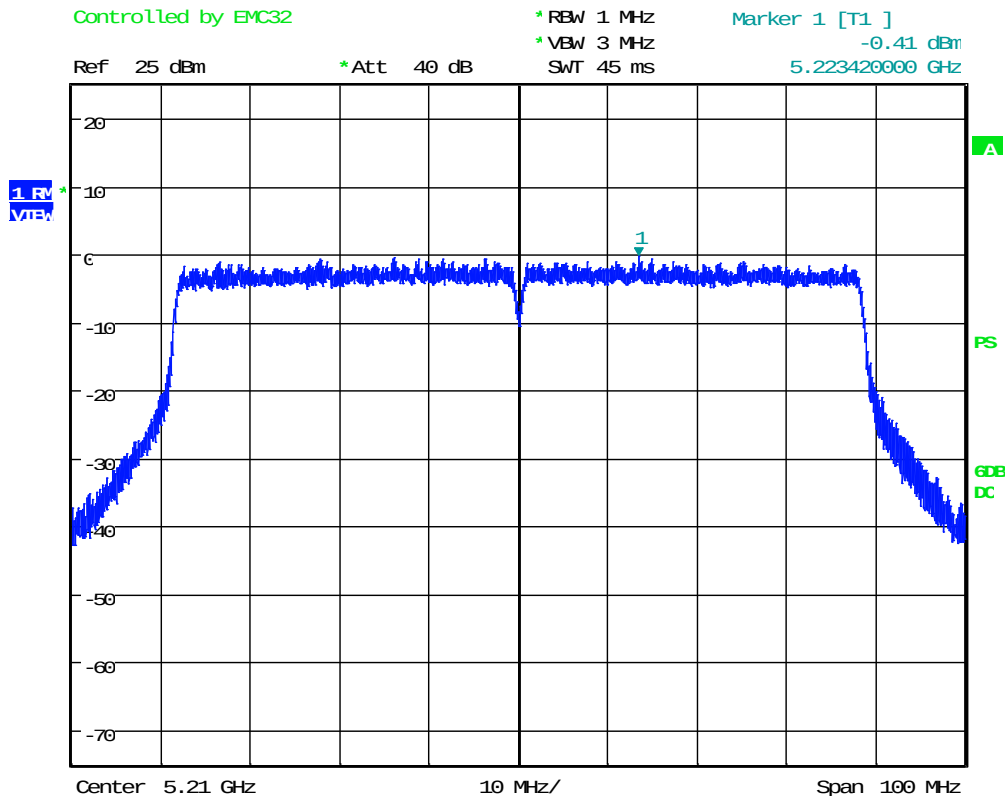
Date: 2.NOV.2020 10:01:31



Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

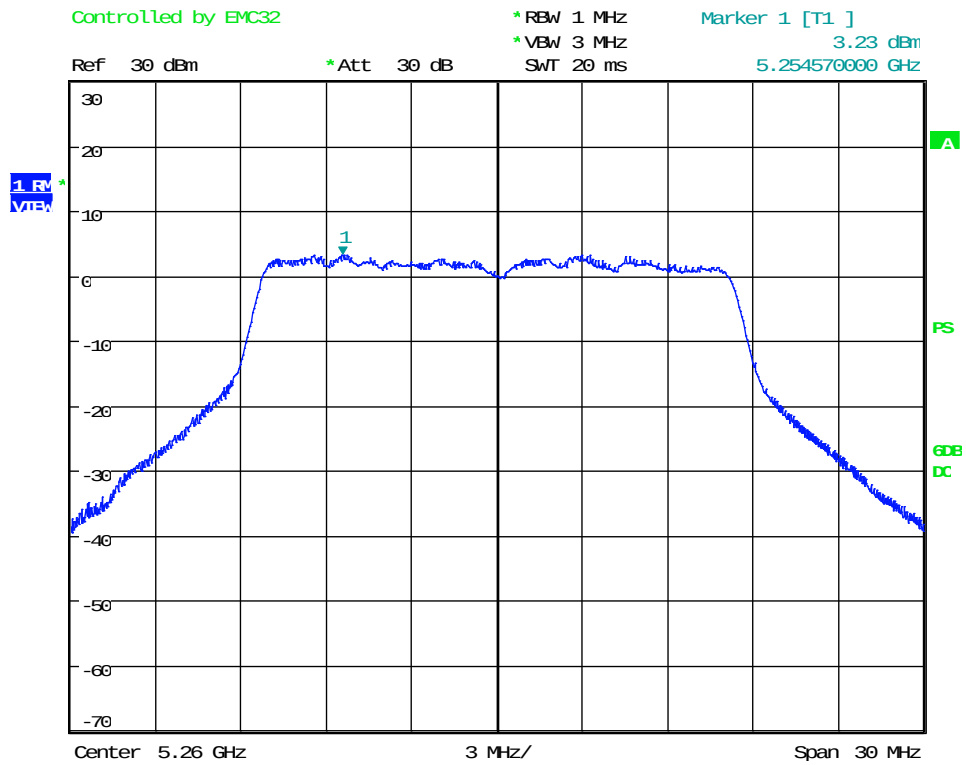
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Date: 2.NOV.2020 10:03:13



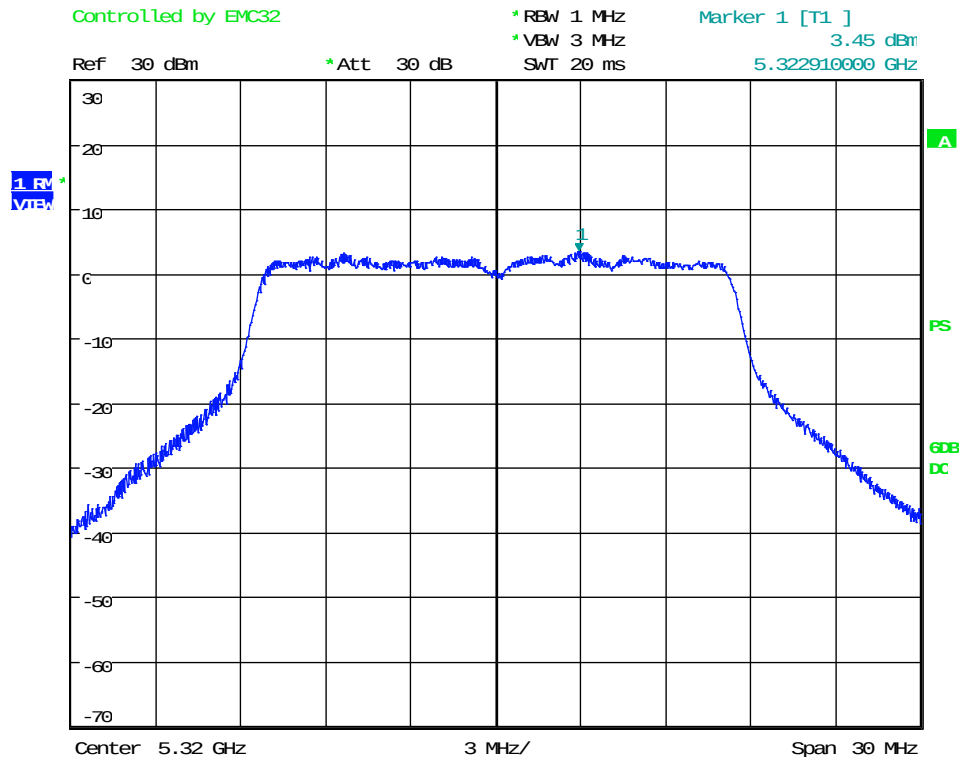
UNII 2A, Port 1: OFDM, Low Channel



Date: 5.MAY.2021 10:13:24



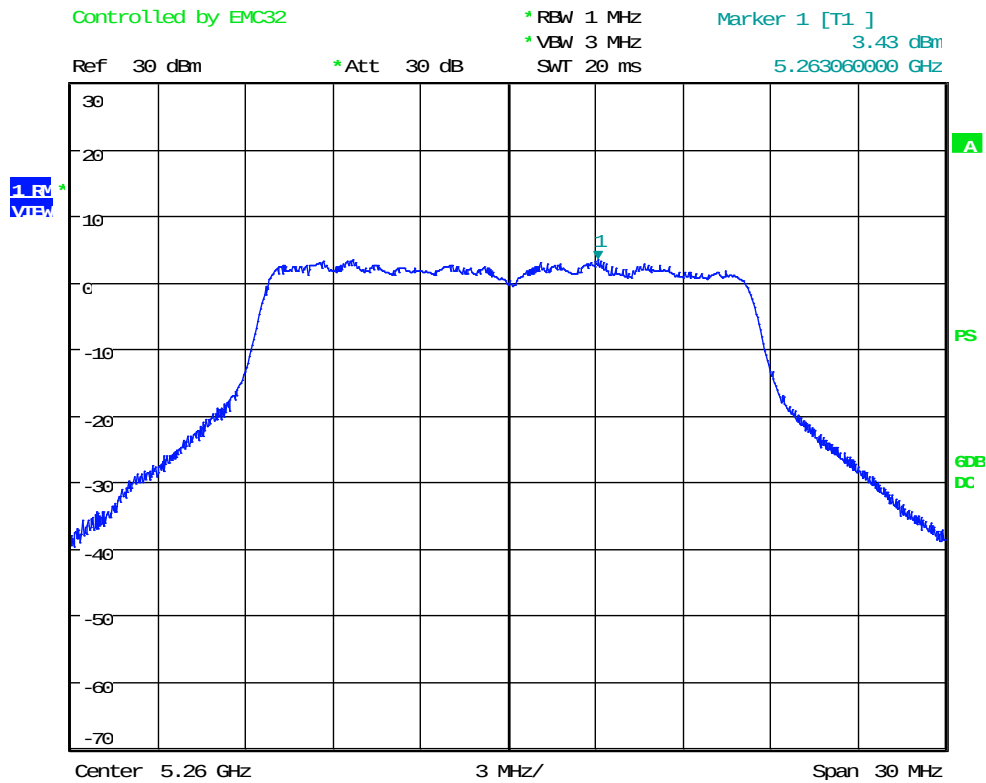
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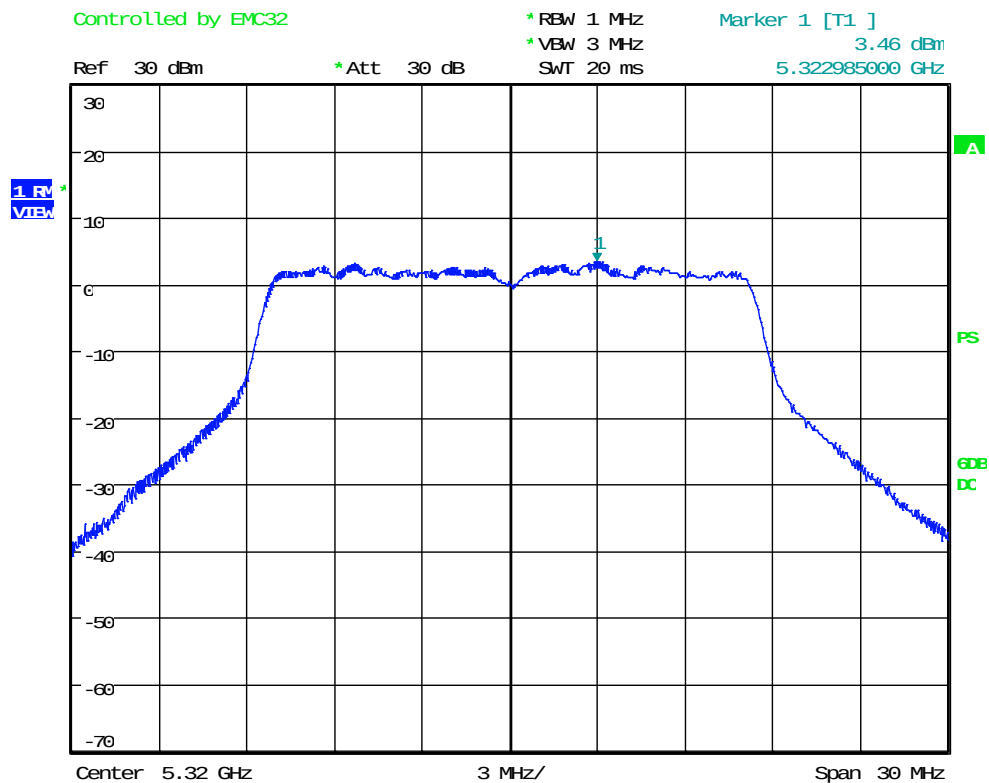
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Date: 5.MAY.2021 10:18:41



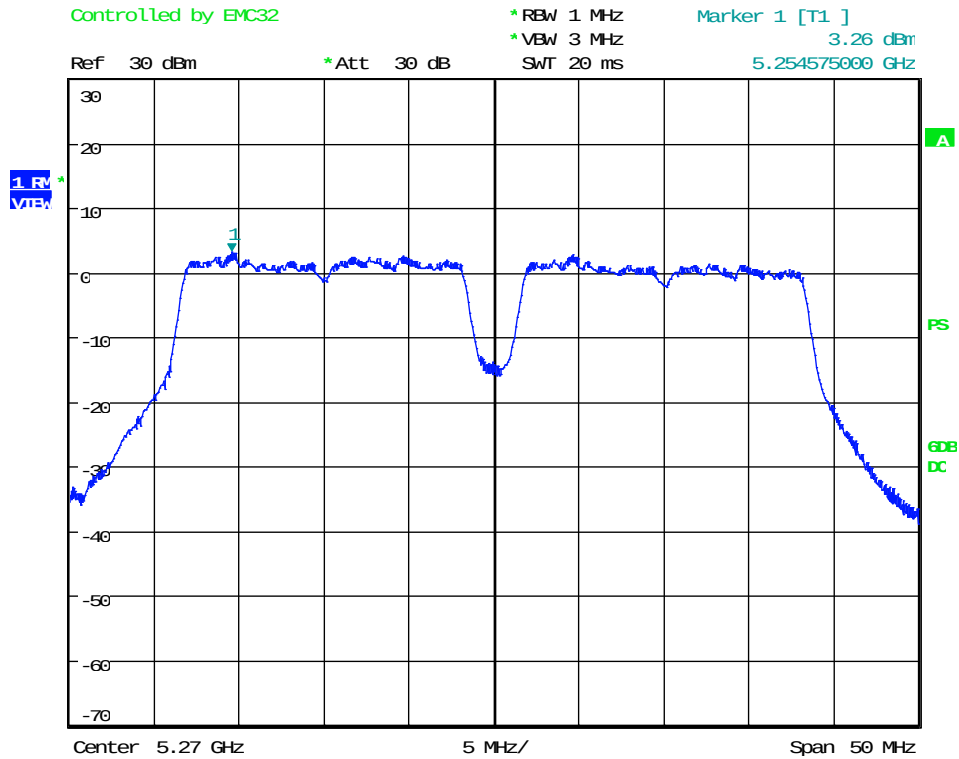
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Date: 5.MAY.2021 10:17:11



UNII 2A, Port 1: non HT40, Low Channel



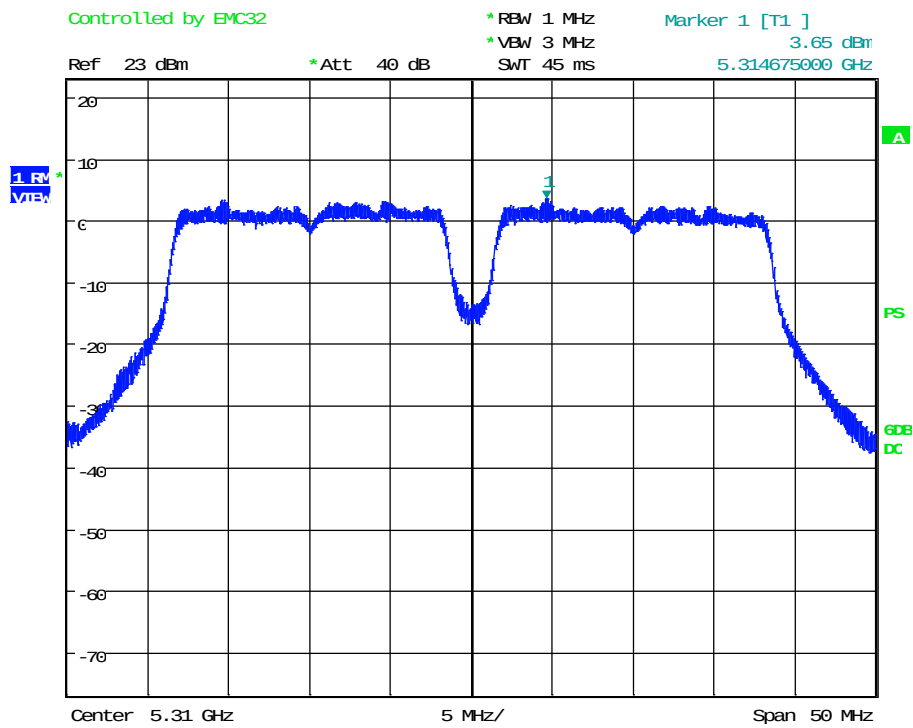
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Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

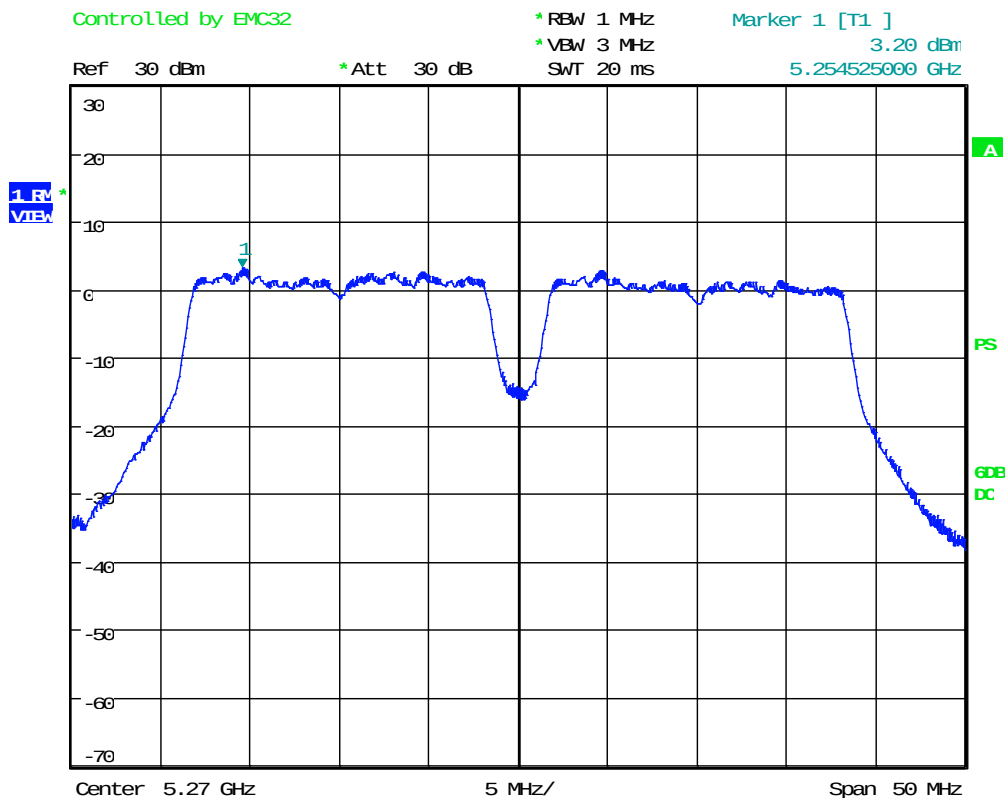
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Date: 29.OCT.2020 14:34:43



UNII 2A, Port 1: HT40, Low Channel



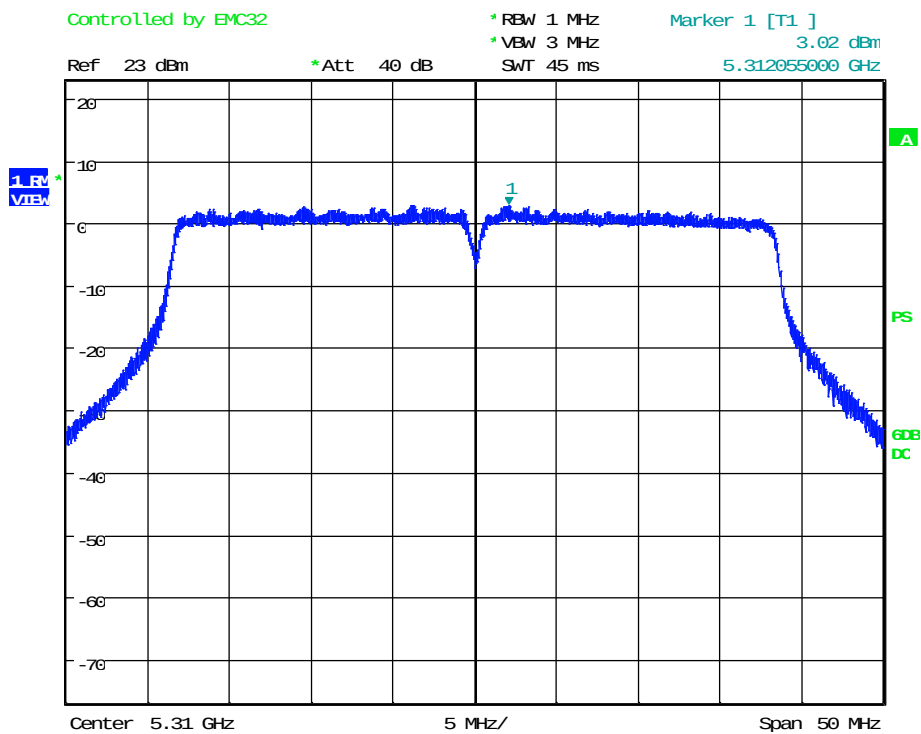
Date: 5.MAY.2021 10:27:36



Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

UNII 2A, Port 1: HT40, High Channel



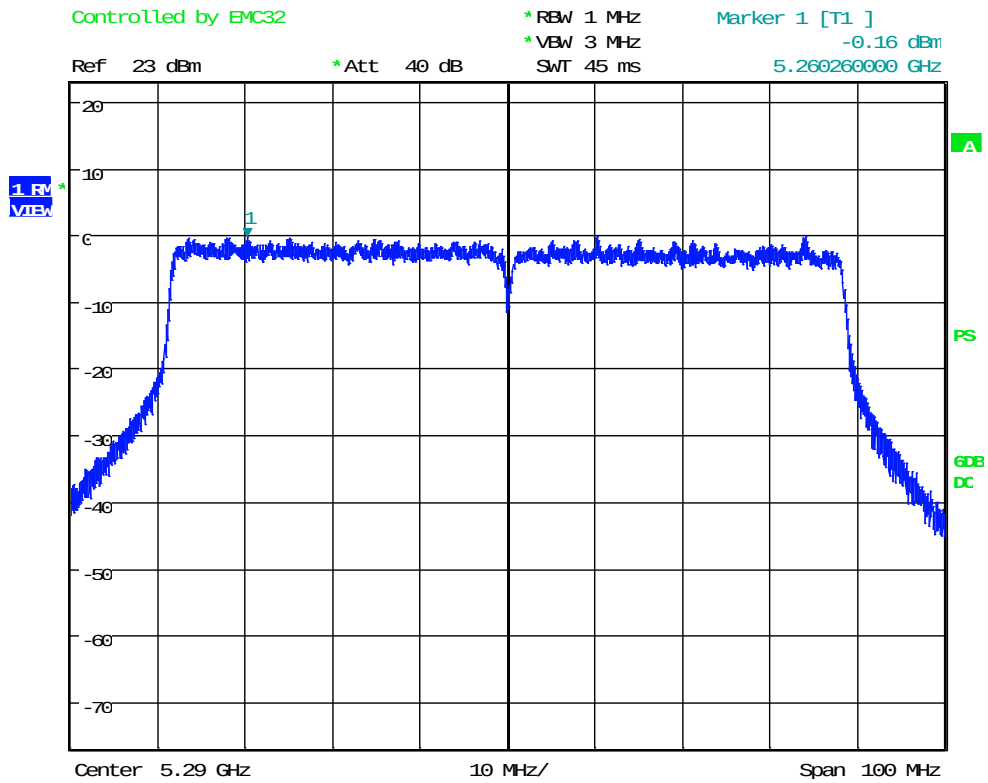
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Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

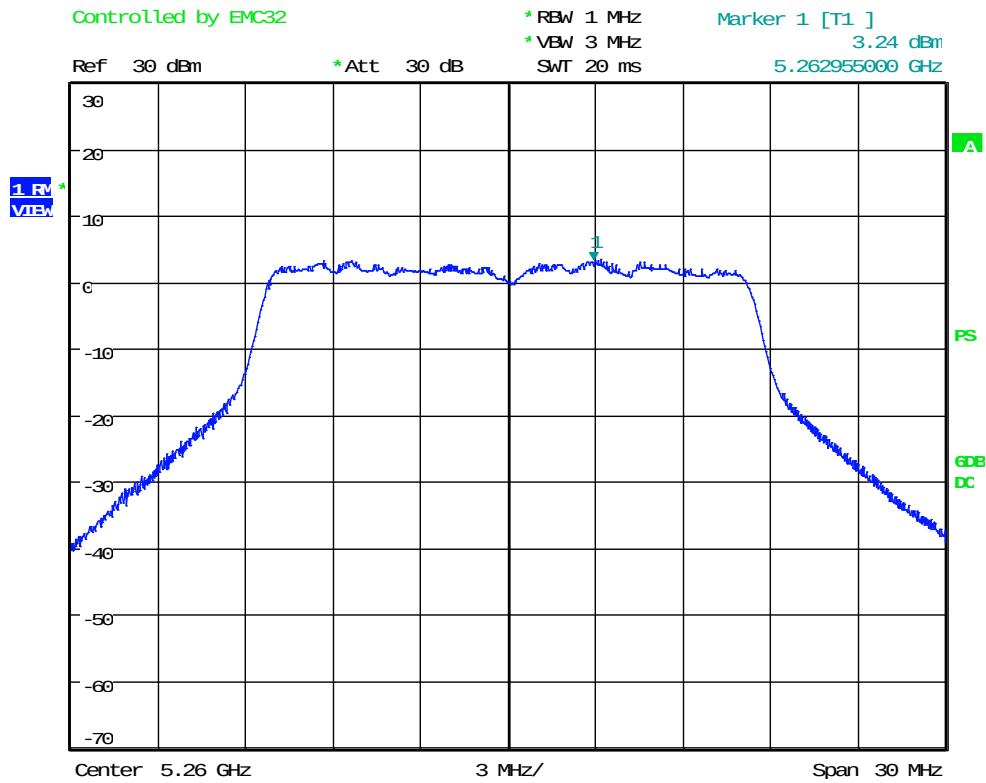
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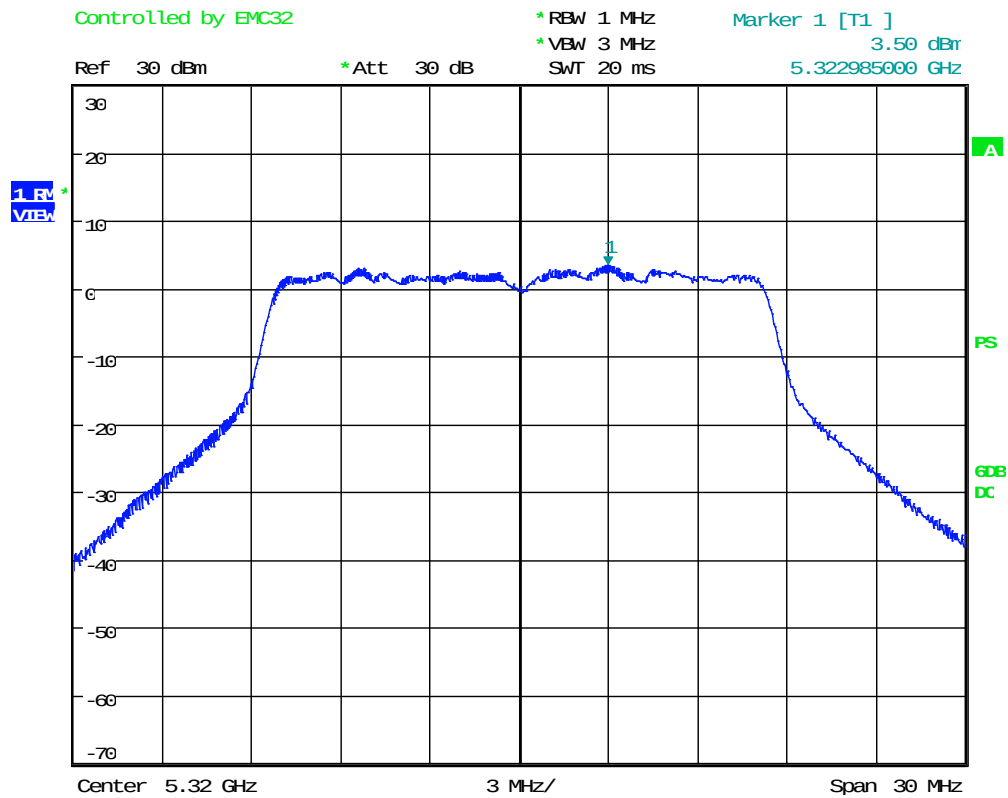
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Date: 5.MAY.2021 11:03:32



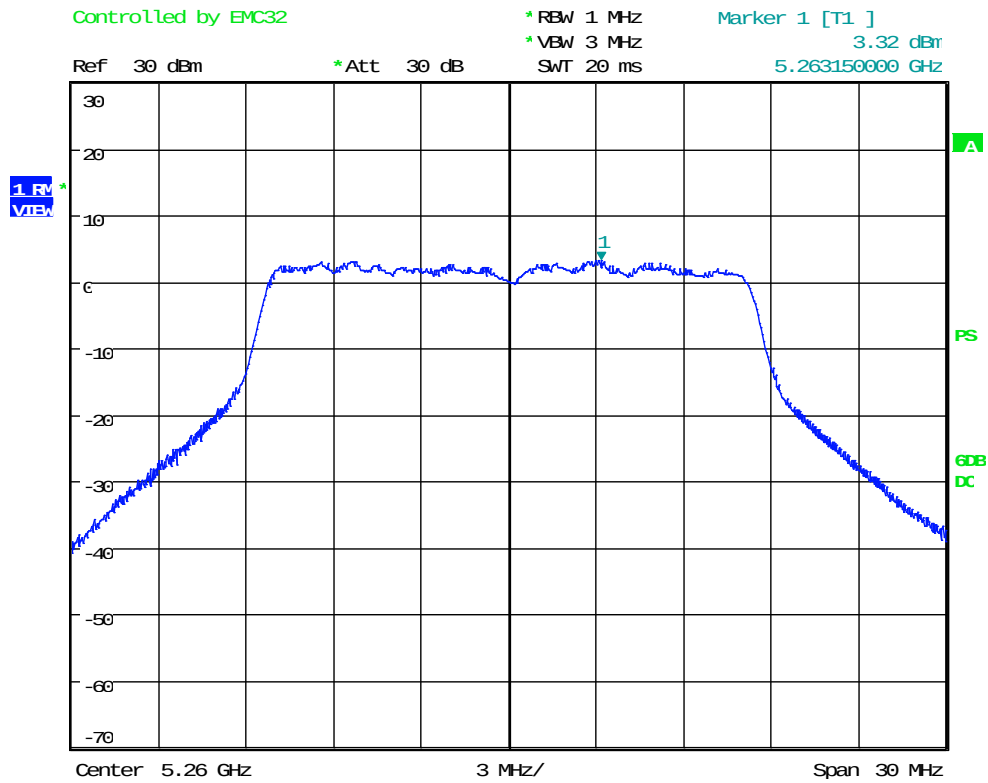
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Date: 5.MAY.2021 11:04:41



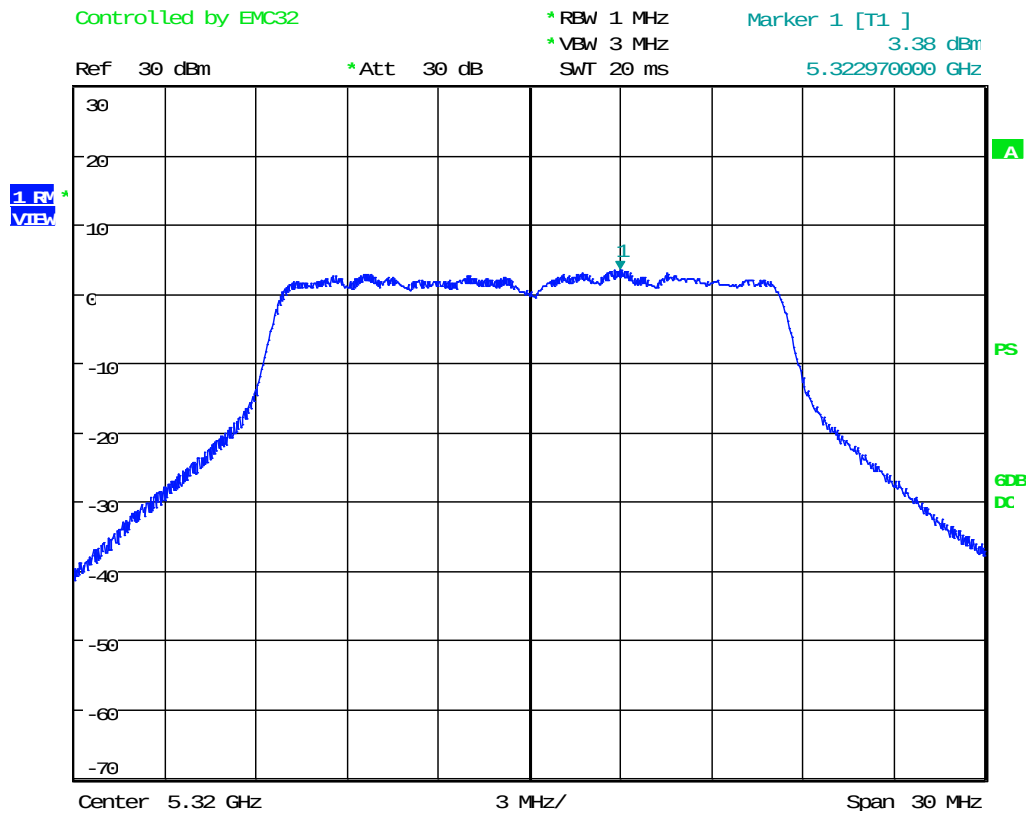
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Date: 5.MAY.2021 10:59:07



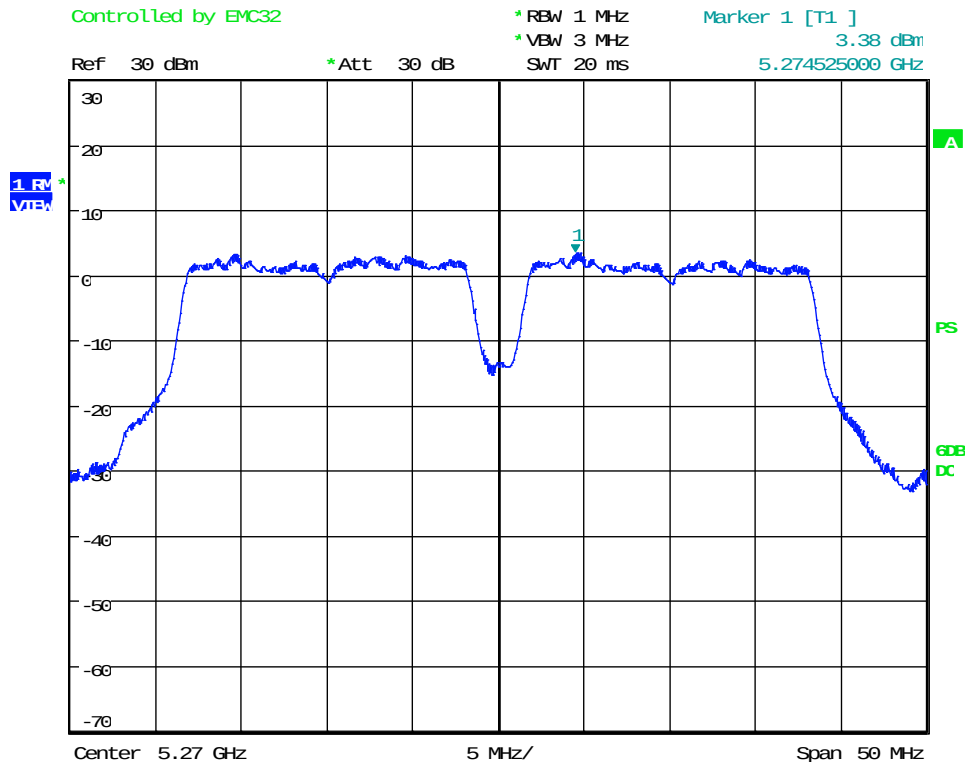
UNII 1, Port 2: HT20, High Channel



Date: 5.MAY.2021 10:57:41



UNII 2A, Port 2: non HT40, Low Channel



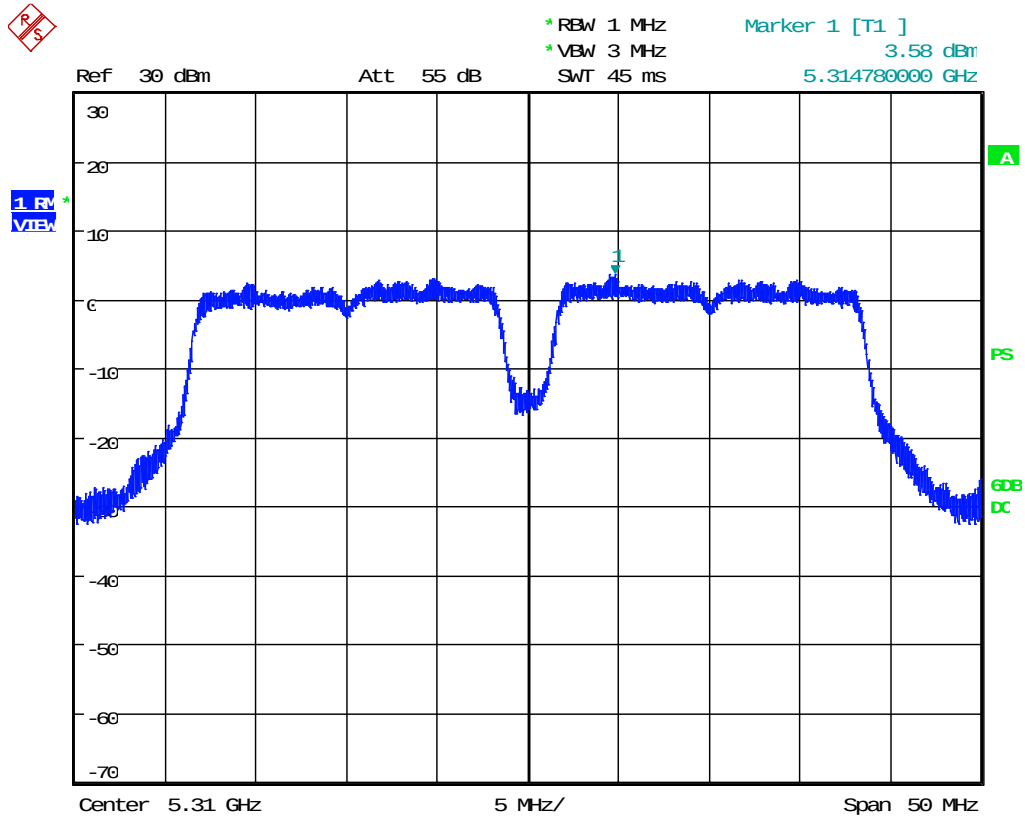
Date: 5.MAY.2021 10:47:22



Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

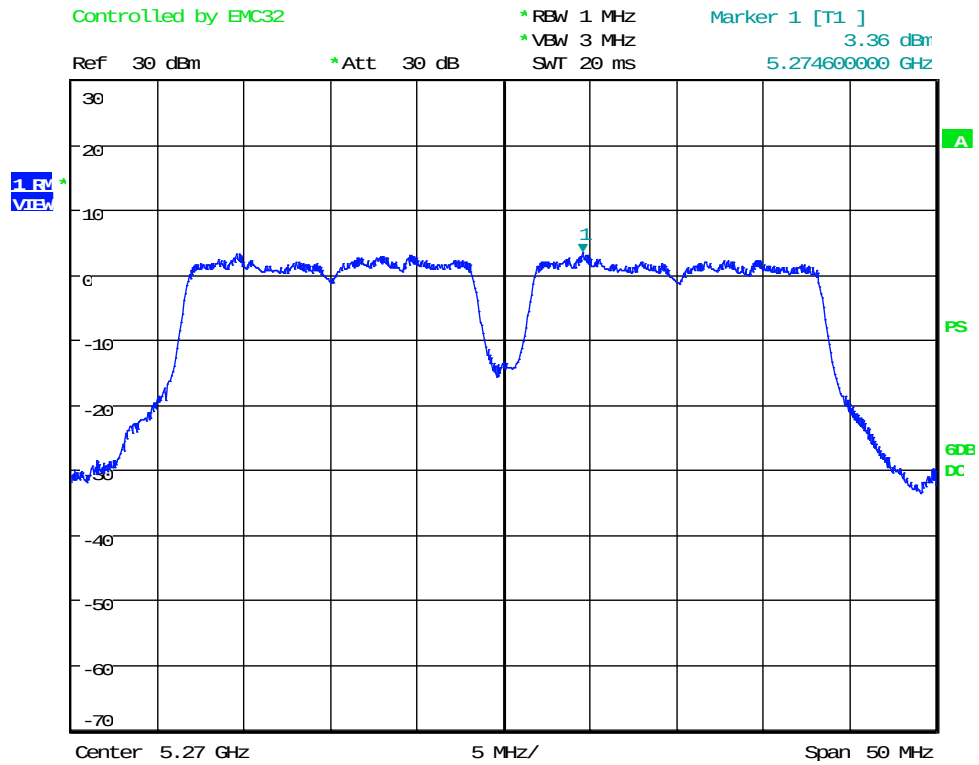
UNII 2A, Port 2: non HT40, High Channel



Date: 17.NOV.2020 13:32:01



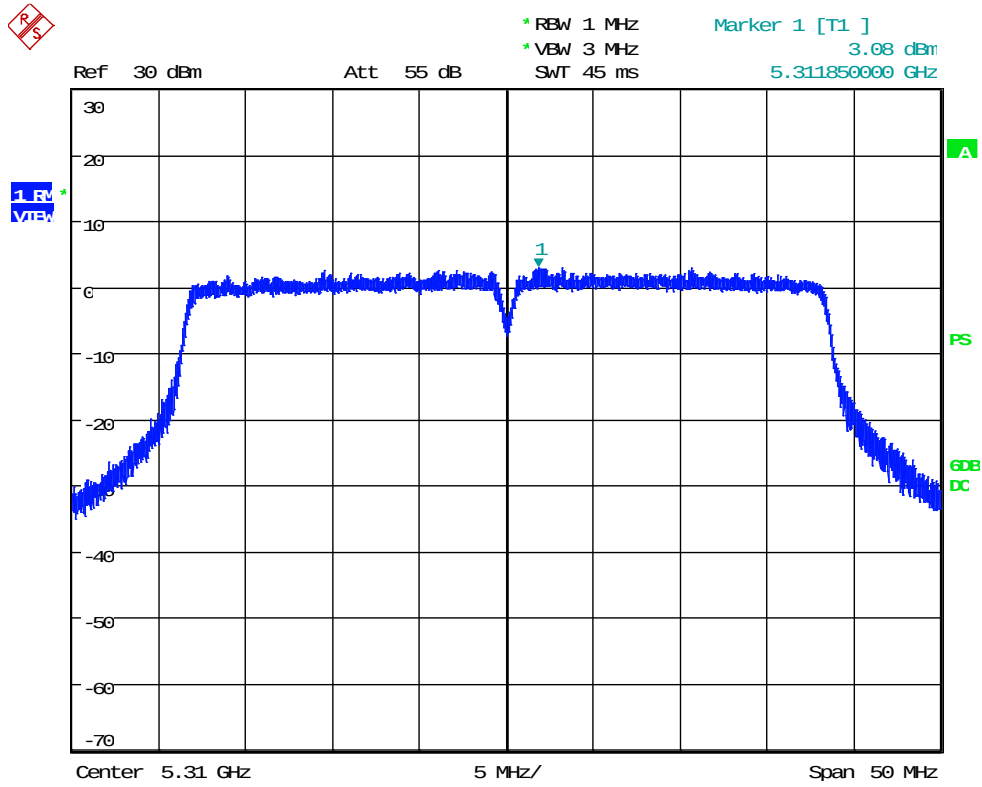
UNII 2A, Port 2: HT40, Low Channel



Date: 5.MAY.2021 10:44:18



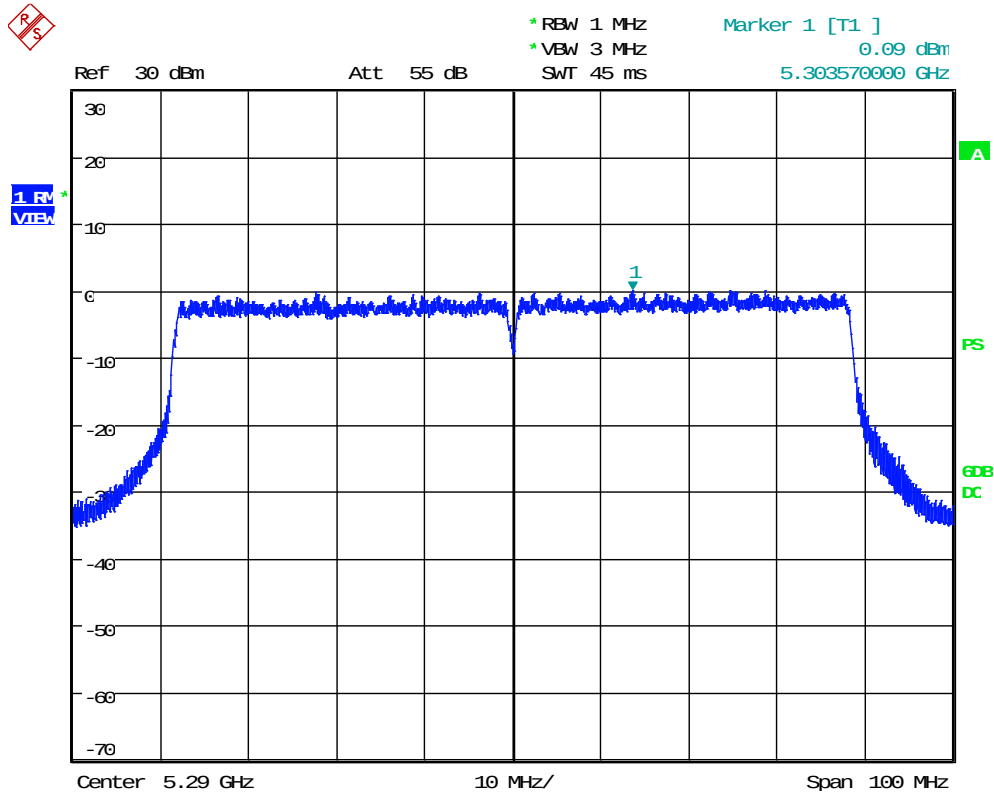
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Date: 17.NOV.2020 13:34:36



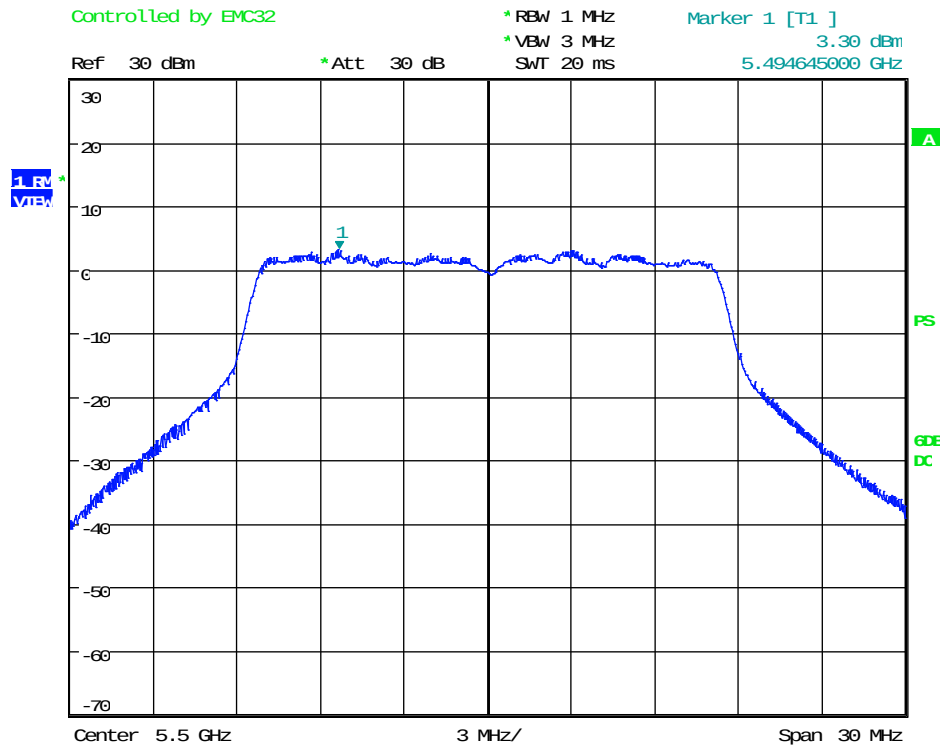
UNII 2A, Port 2: HT80



Date: 17.NOV.2020 13:36:10



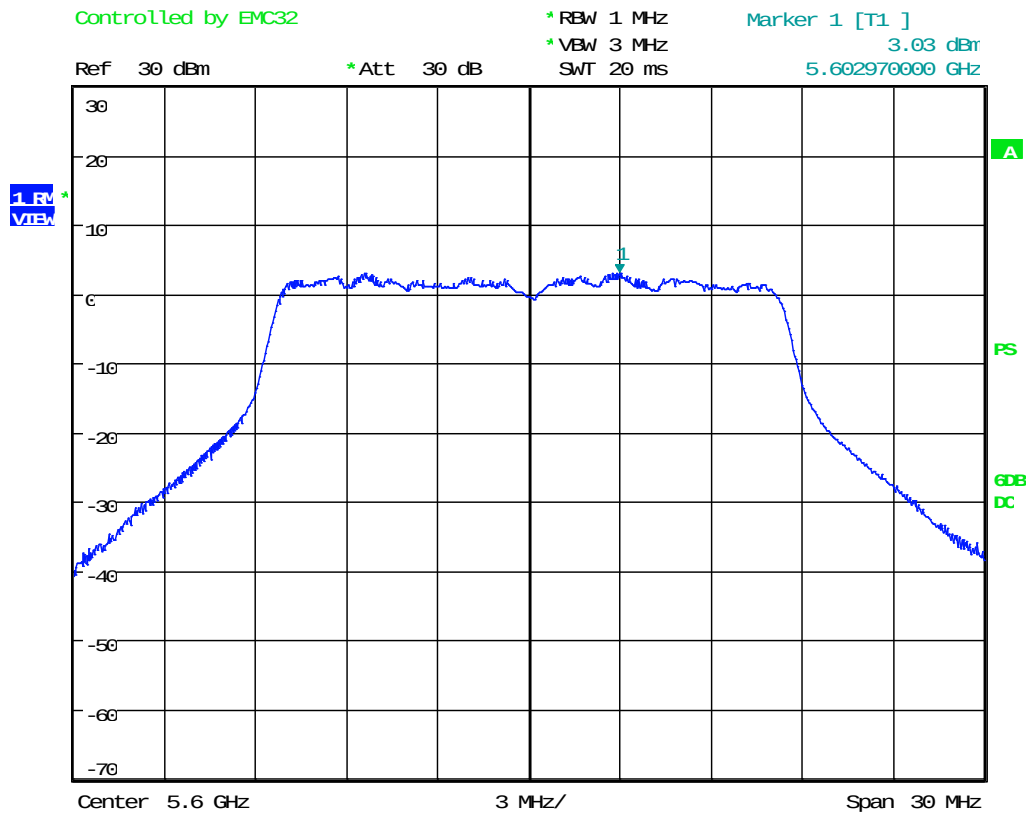
UNII 2C, Port 1: OFDM, Low Channel



Date: 5.MAY.2021 12:23:50



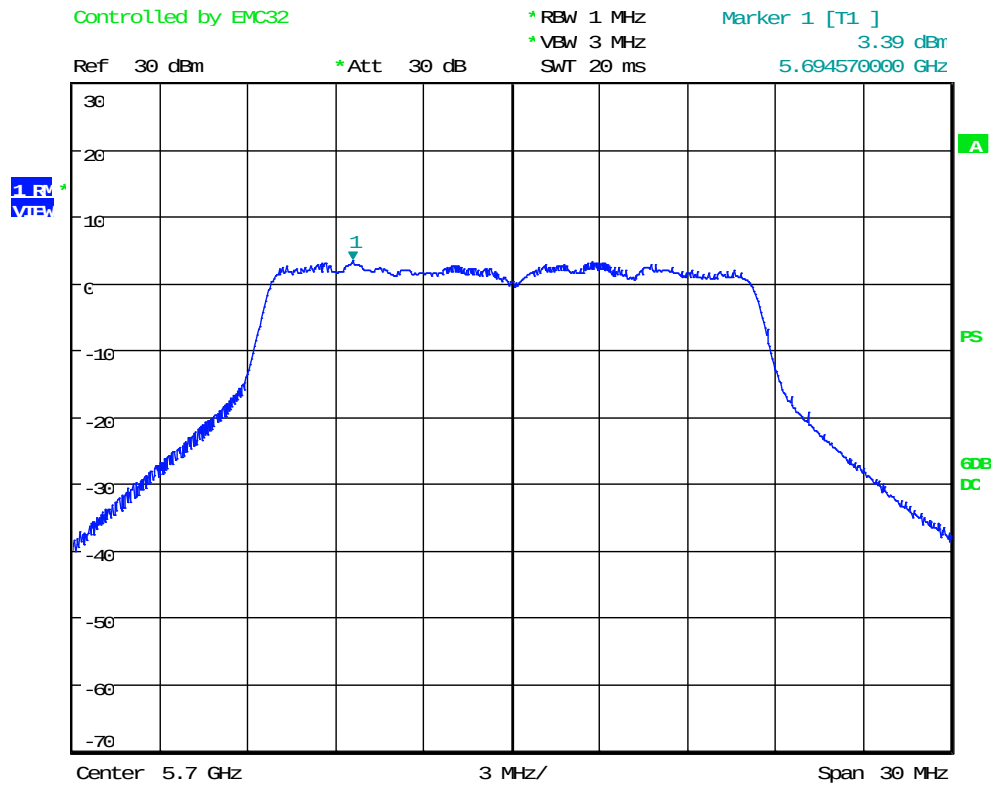
UNII 2C, Port 1: OFDM, Mid Channel



Date: 5.MAY.2021 12:22:04



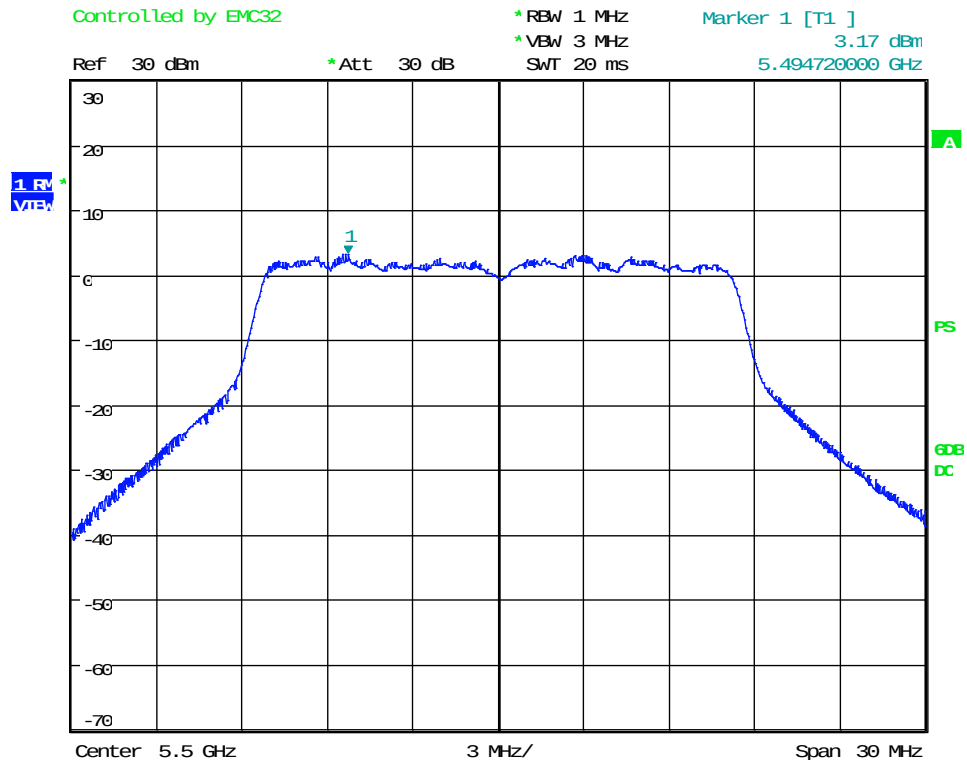
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Date: 5.MAY.2021 12:20:22



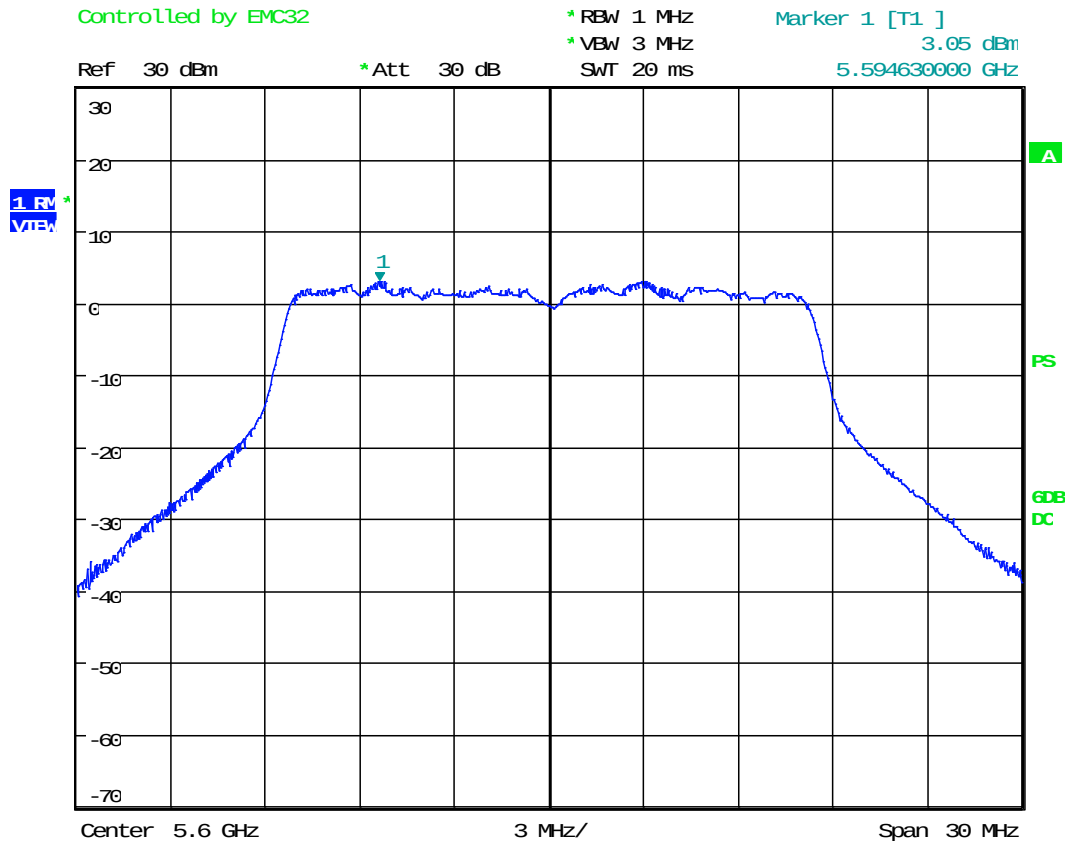
UNII 2C, Port 1: HT20, Low Channel



Date: 5.MAY.2021 12:15:52



UNII 2C, Port 1: HT20, Mid Channel



Date: 5.MAY.2021 12:17:20



Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

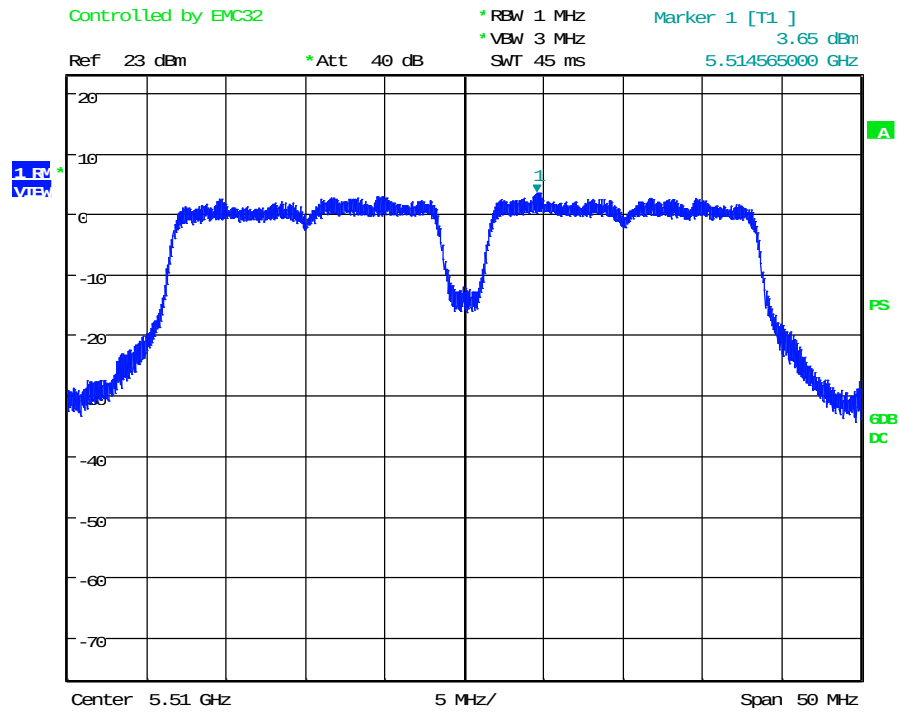
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Date: 5.MAY.2021 12:18:57



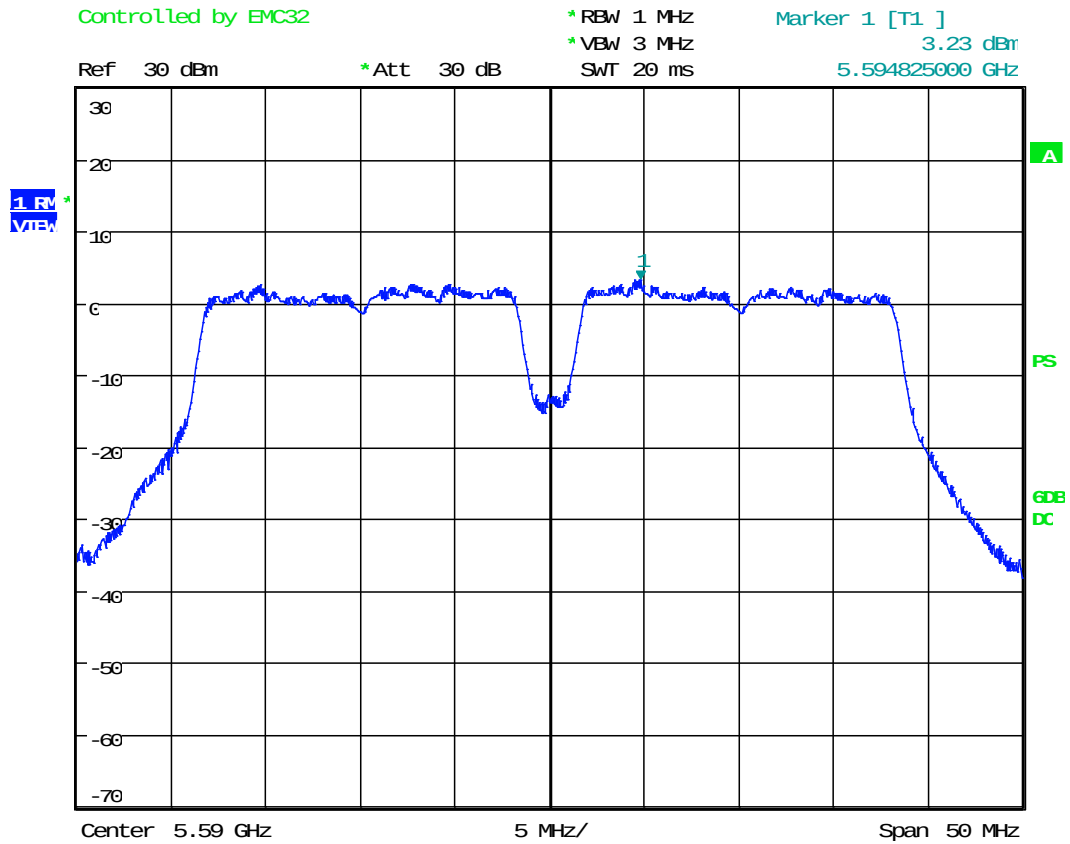
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Date: 29.OCT.2020 15:11:14



UNII 2C, Port 1: non HT40, Mid Channel



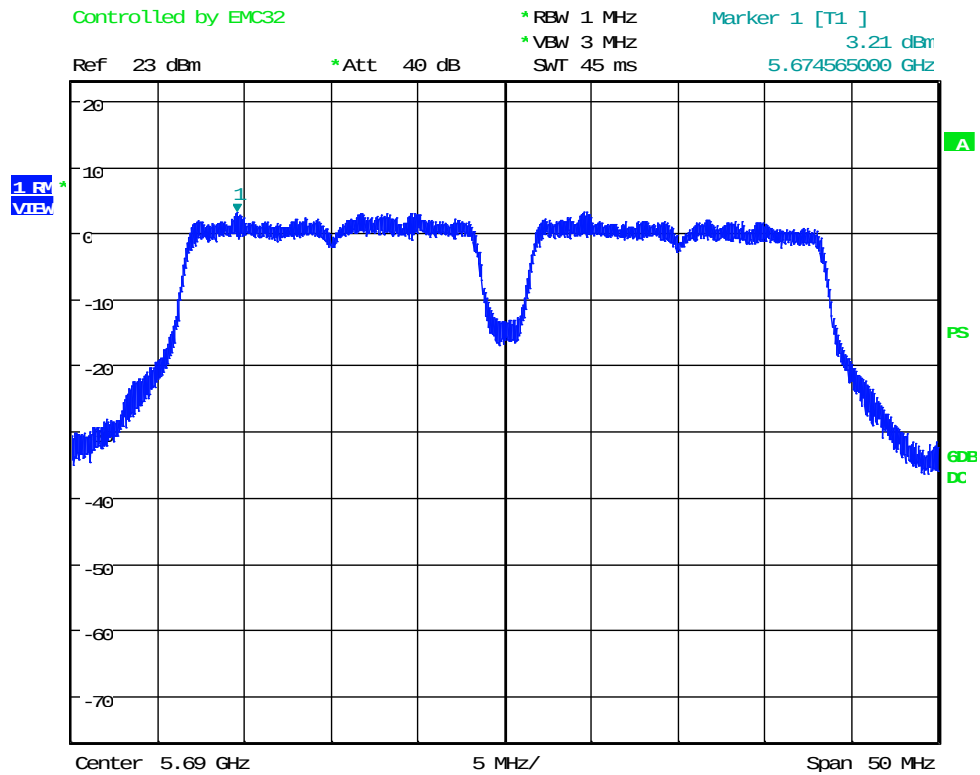
Date: 5.MAY.2021 12:05:19



Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

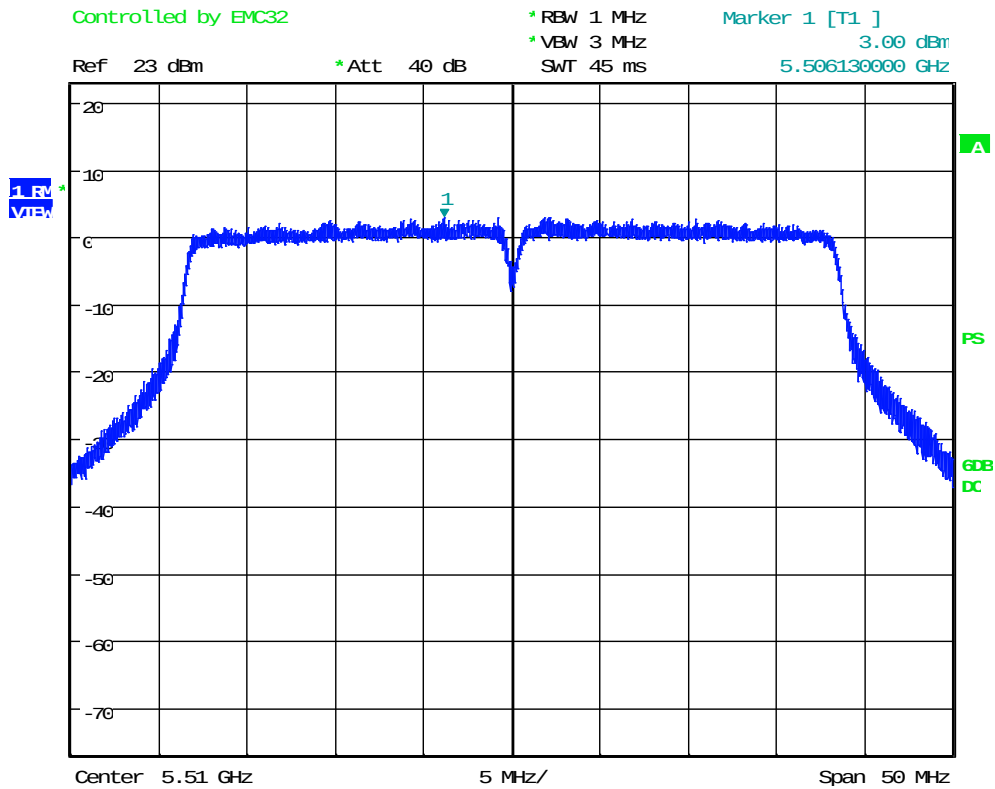
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Date: 29.OCT.2020 15:12:50



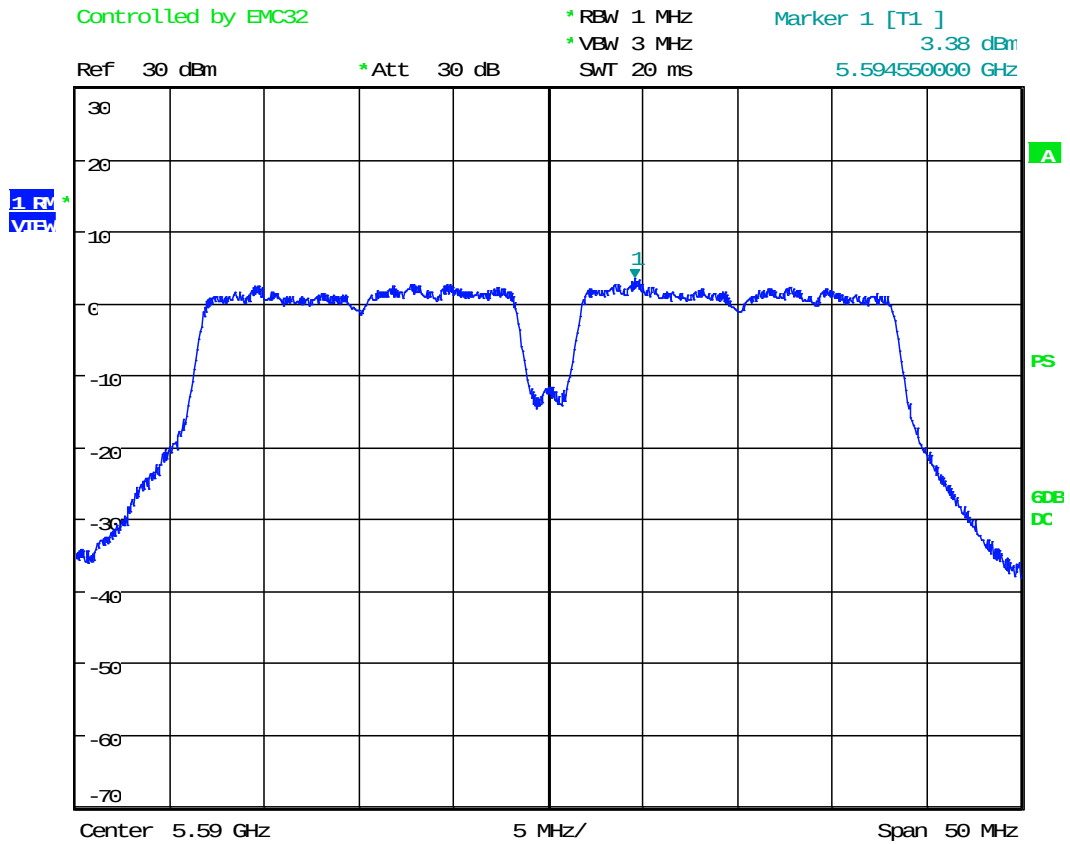
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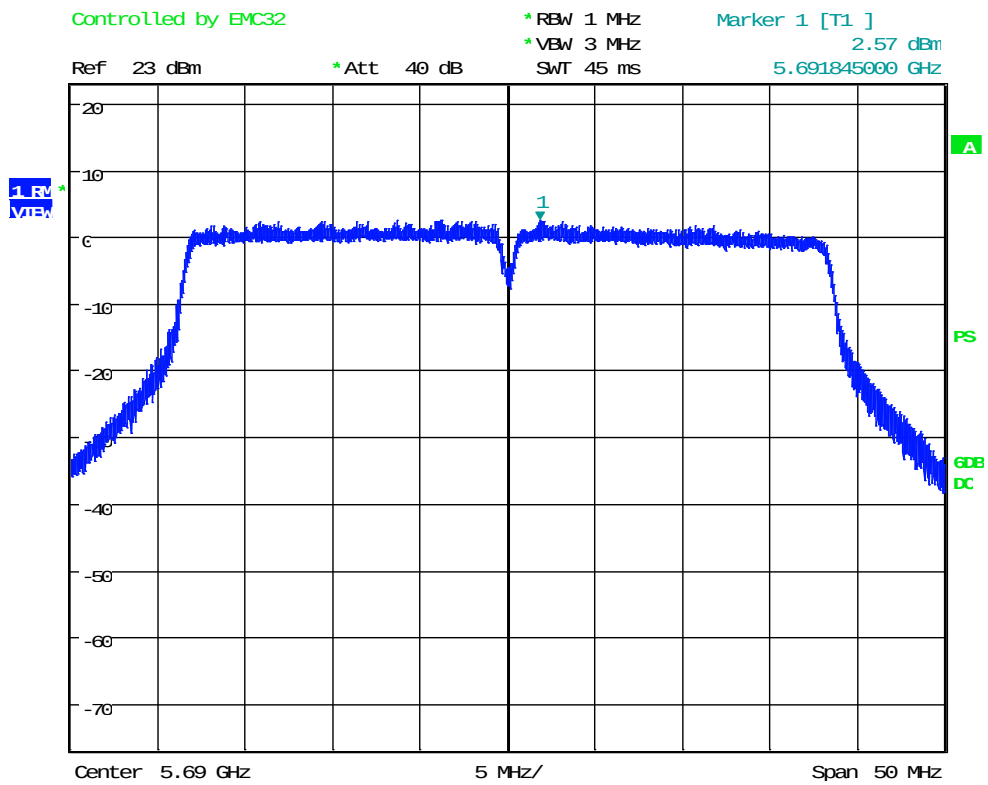
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Date: 5.MAY.2021 12:04:02



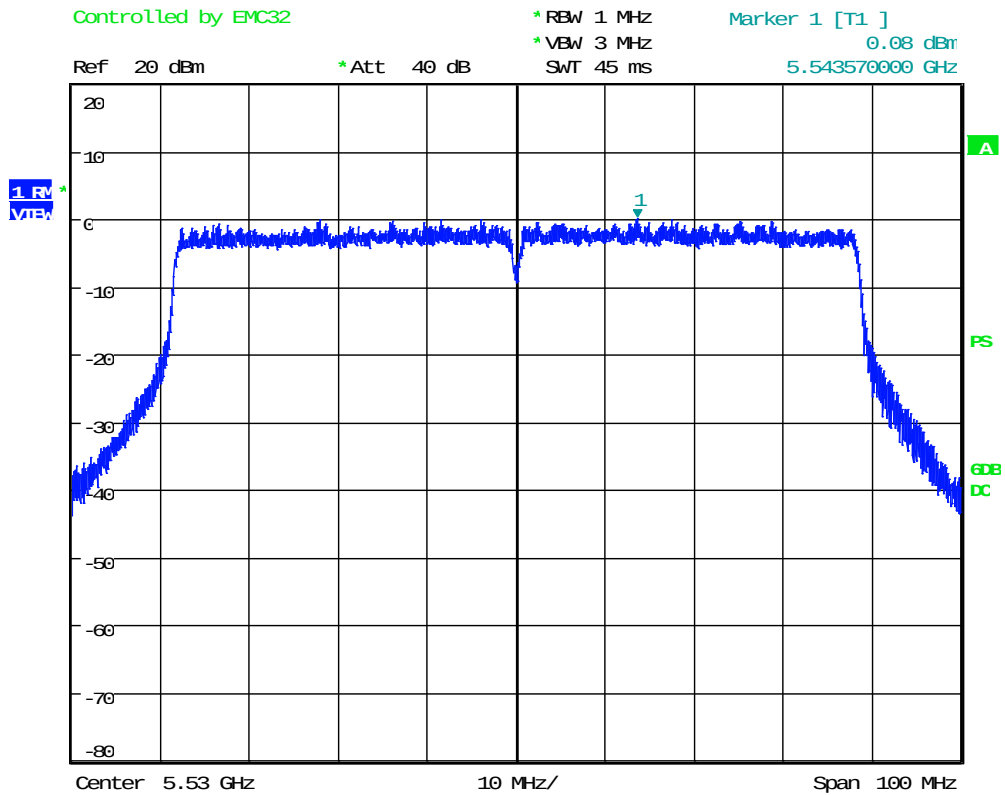
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Date: 29.OCT.2020 15:19:04



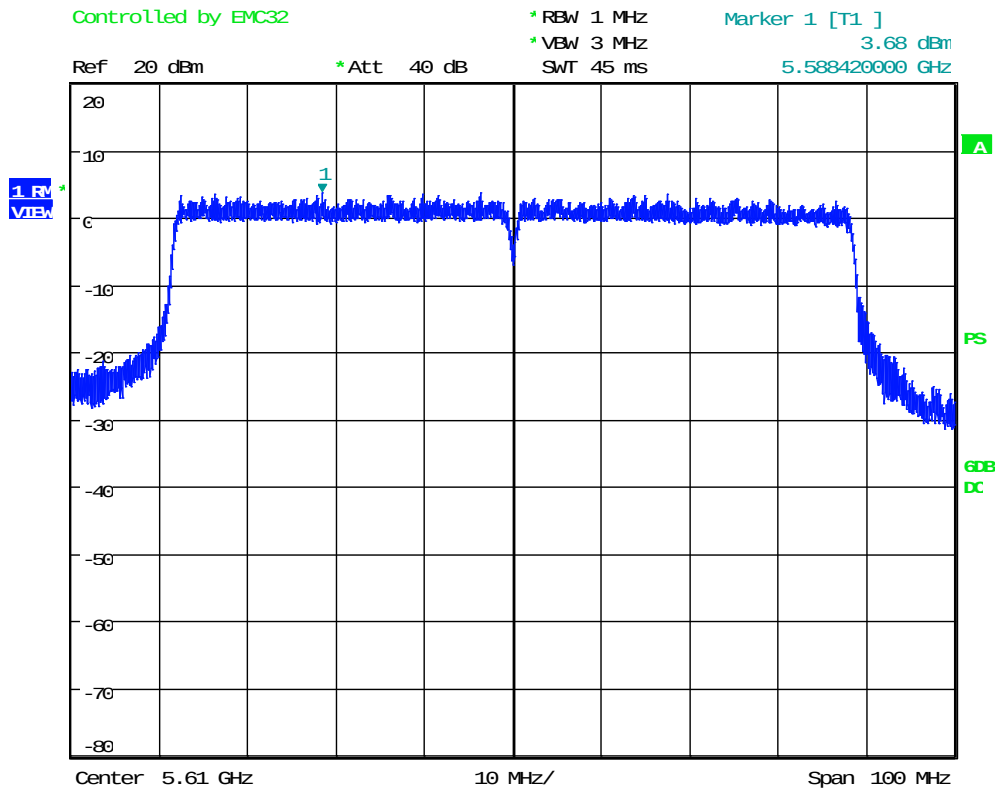
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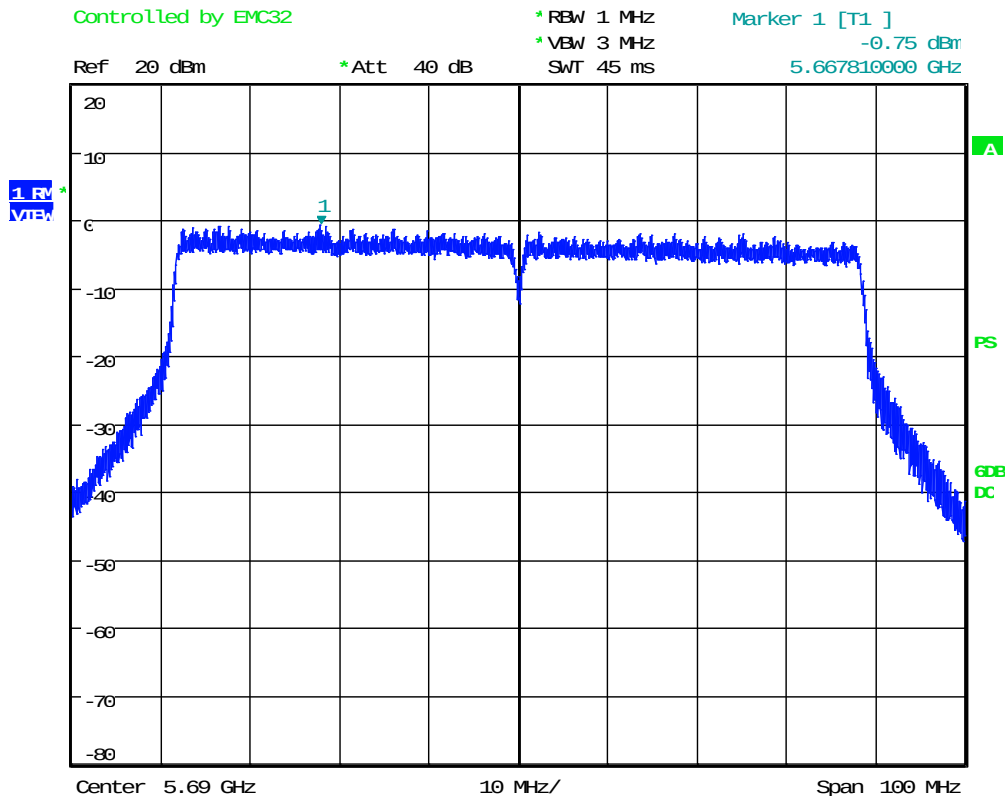
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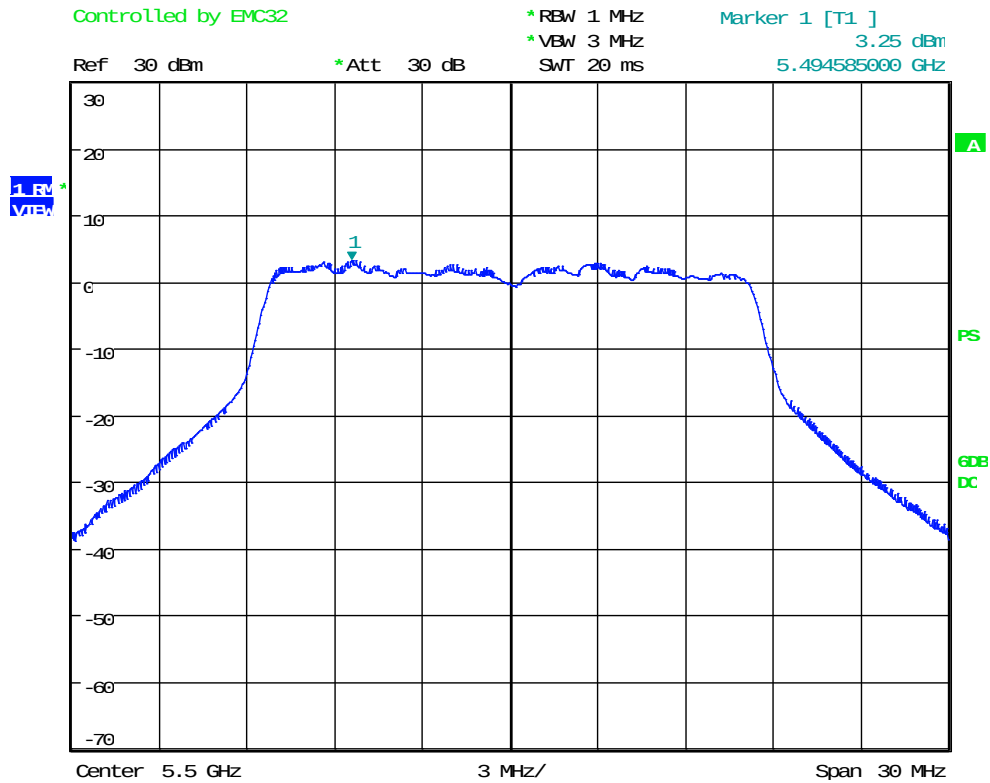
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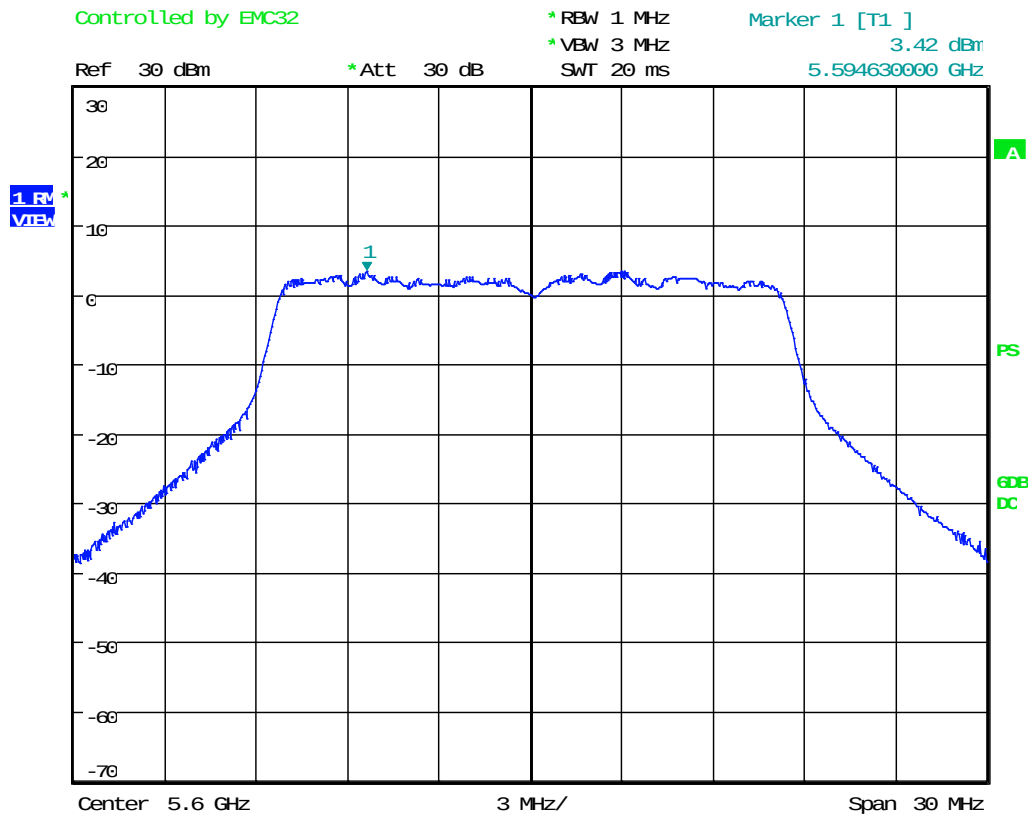
UNII 2C, Port 2: OFDM, Low Channel



Date: 5.MAY.2021 11:27:27



UNII 2C, Port 2: OFDM, Mid Channel



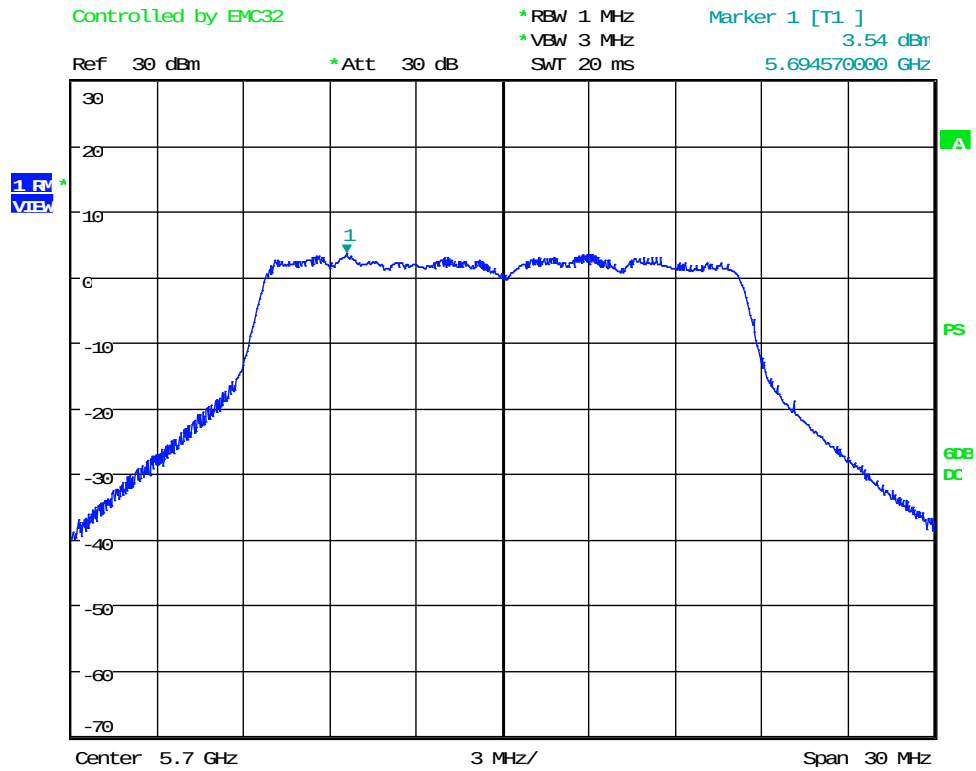
Date: 5.MAY.2021 11:31:15



Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

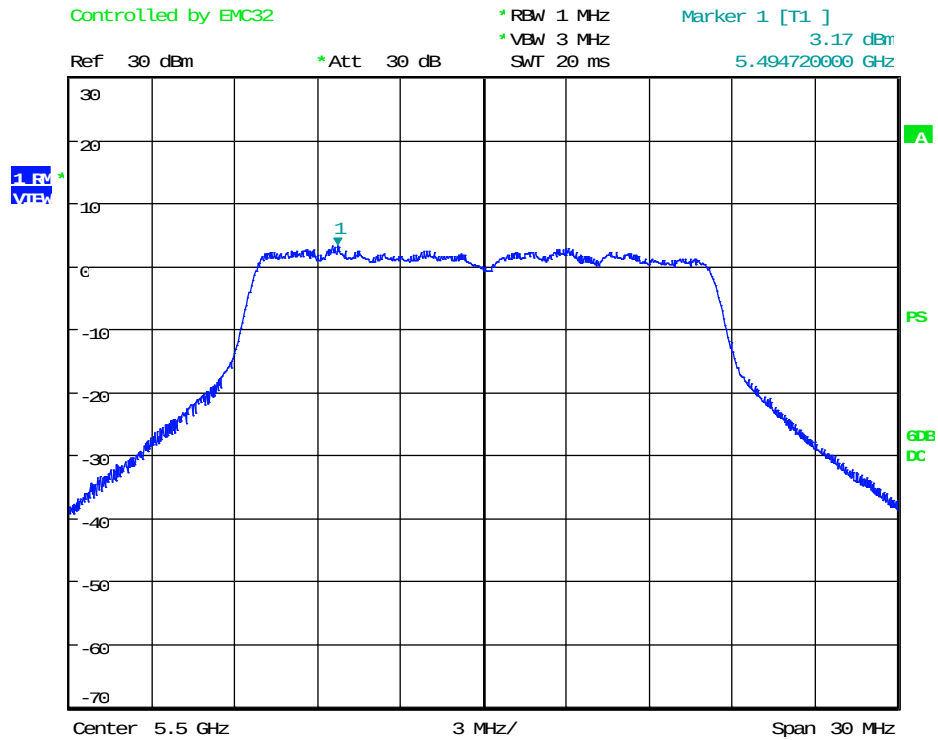
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Date: 5.MAY.2021 11:32:36



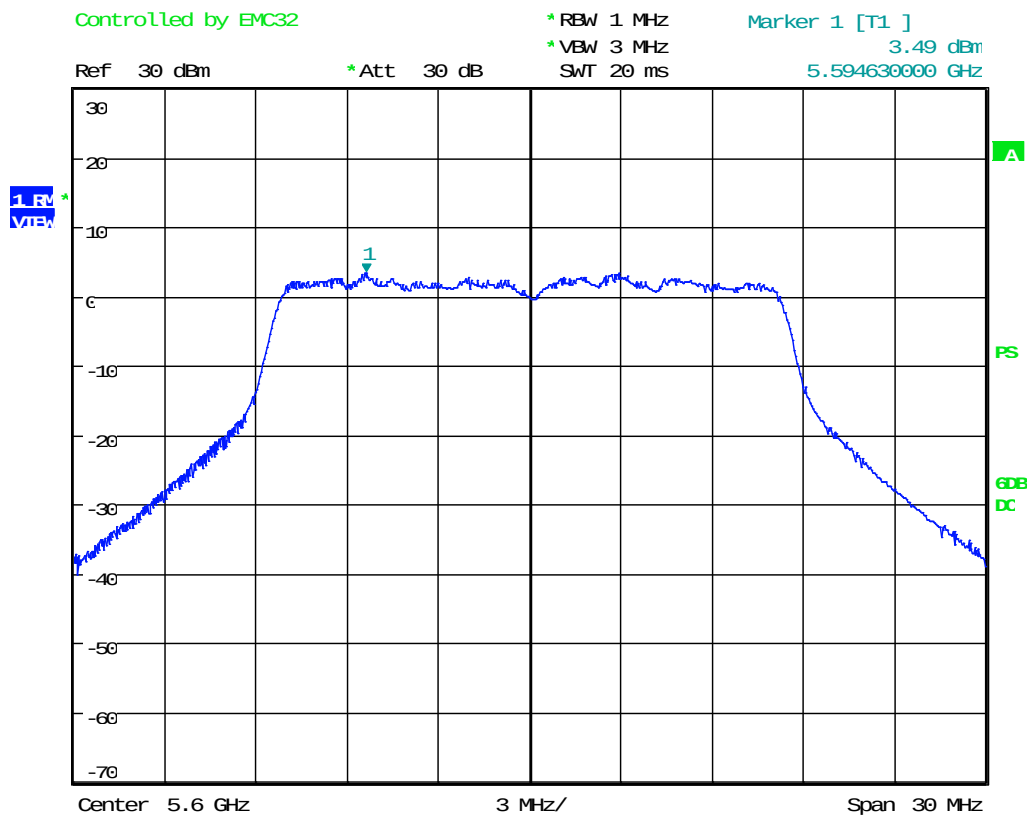
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Date: 5.MAY.2021 11:45:15



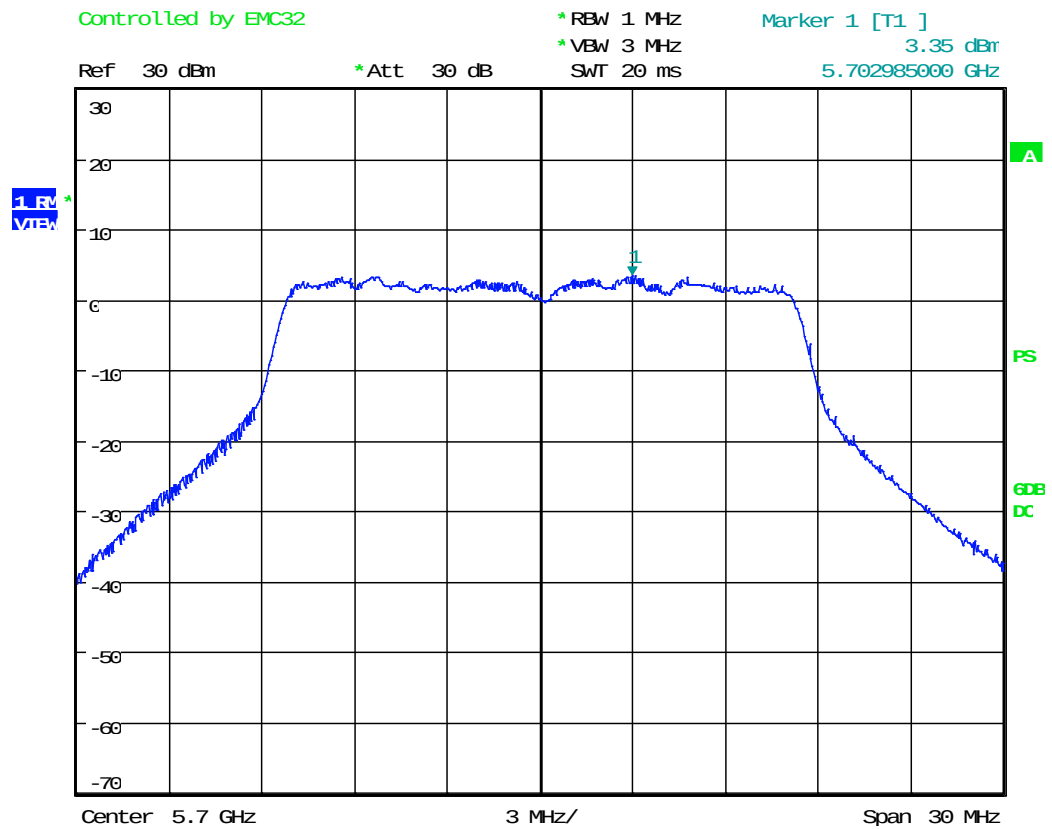
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Date: 5.MAY.2021 11:47:30



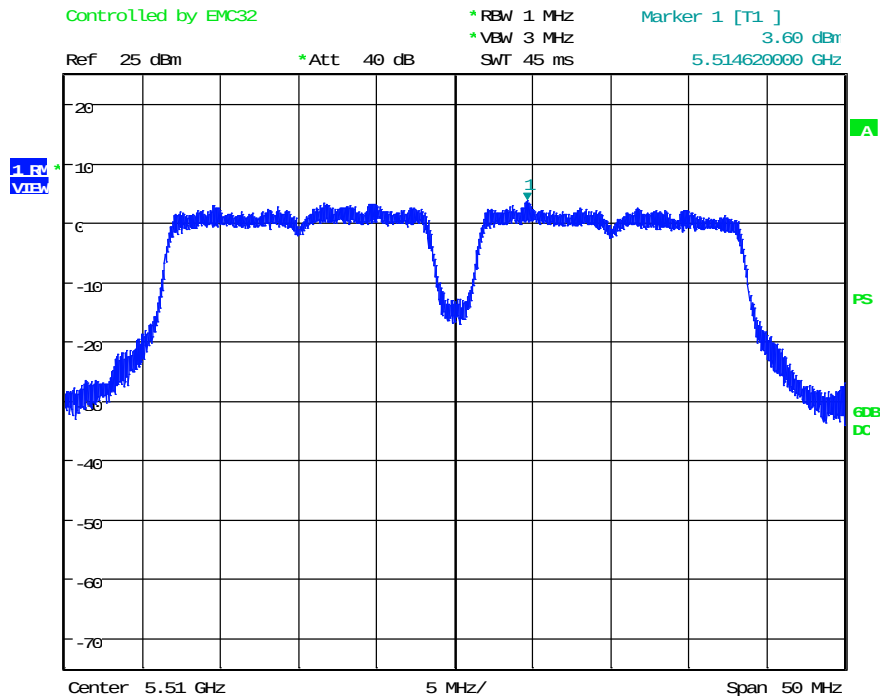
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Date: 5.MAY.2021 11:49:38



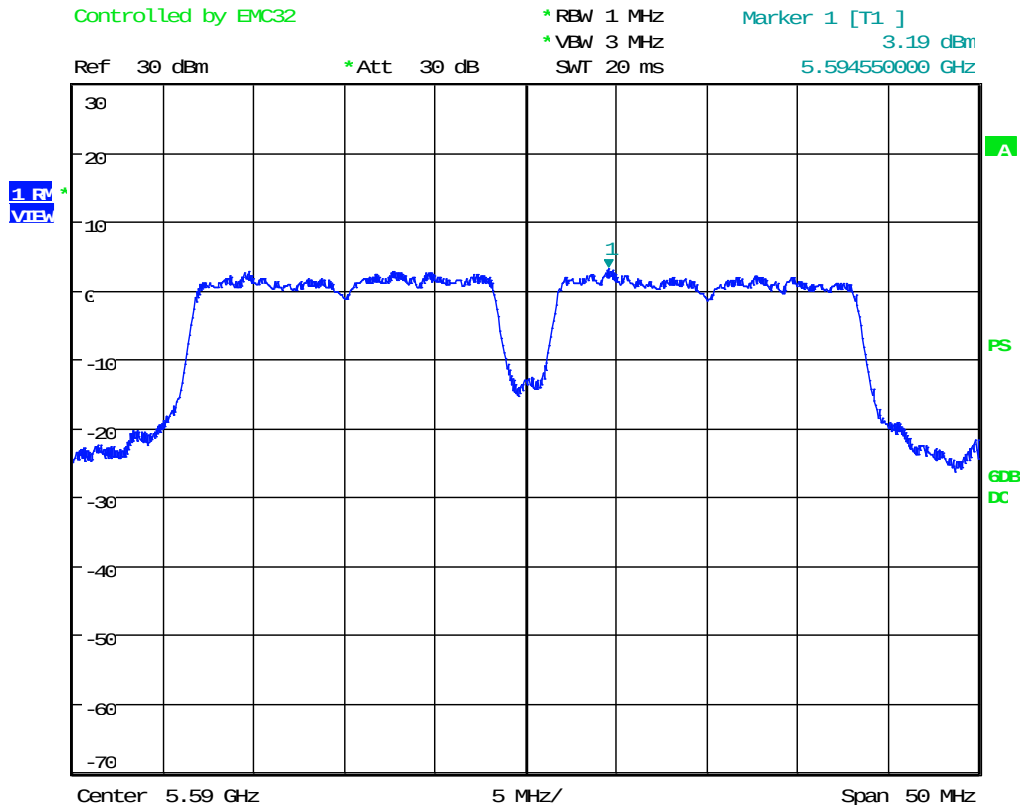
UNII 2C, Port 2: non HT40, Low Channel



Date: 30.OCT.2020 15:14:04



UNII 2C, Port 2: non HT40, Mid Channel



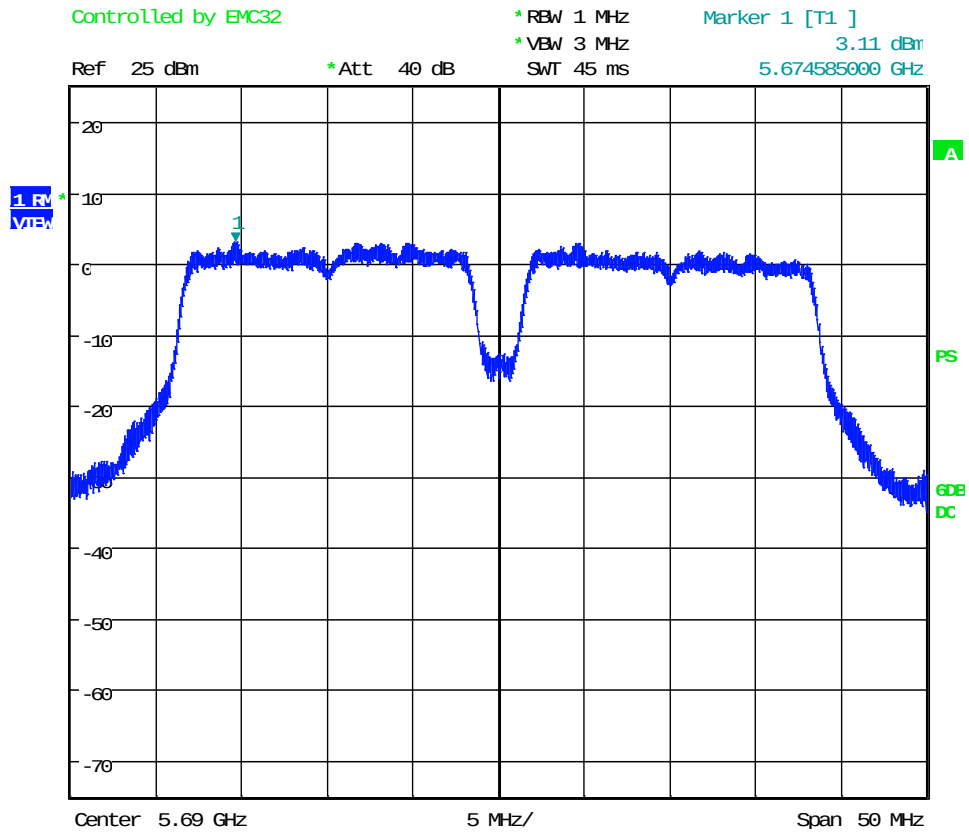
Date: 5.MAY.2021 12:10:01



Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

UNII 2C, Port 2: non HT40, High Channel



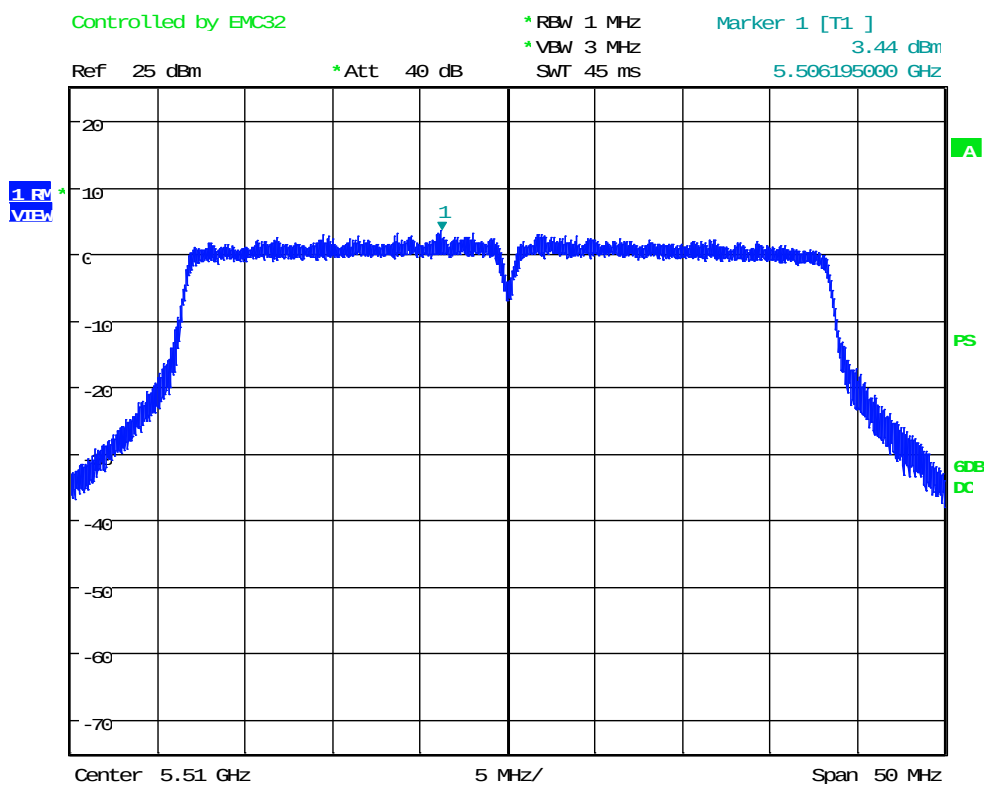
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Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

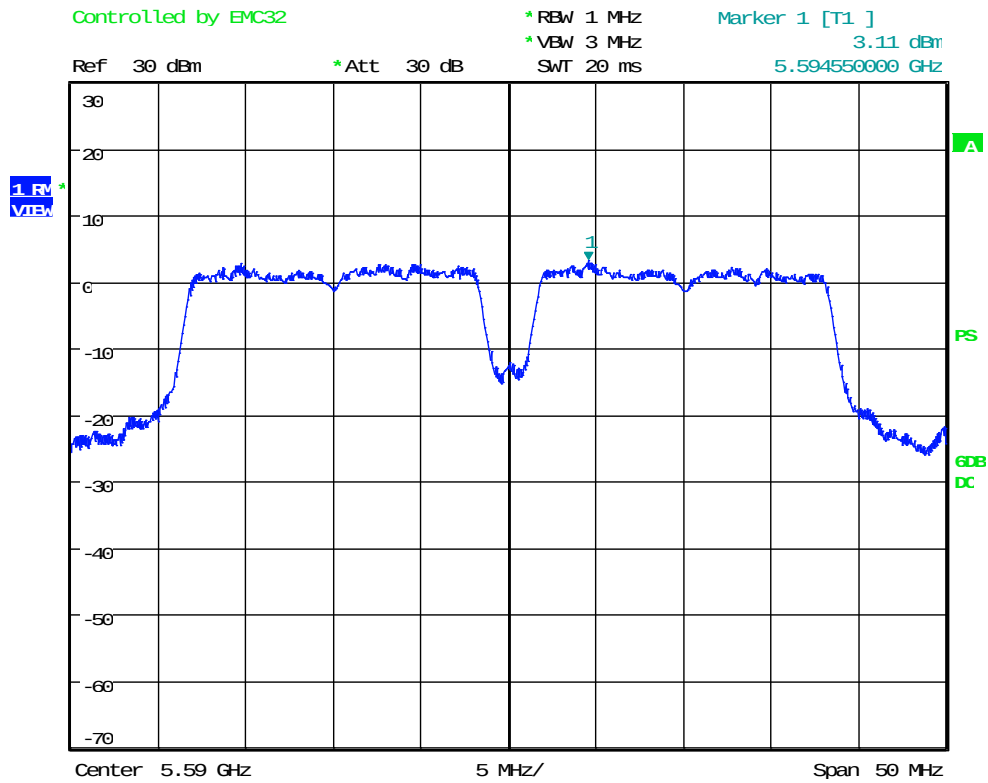
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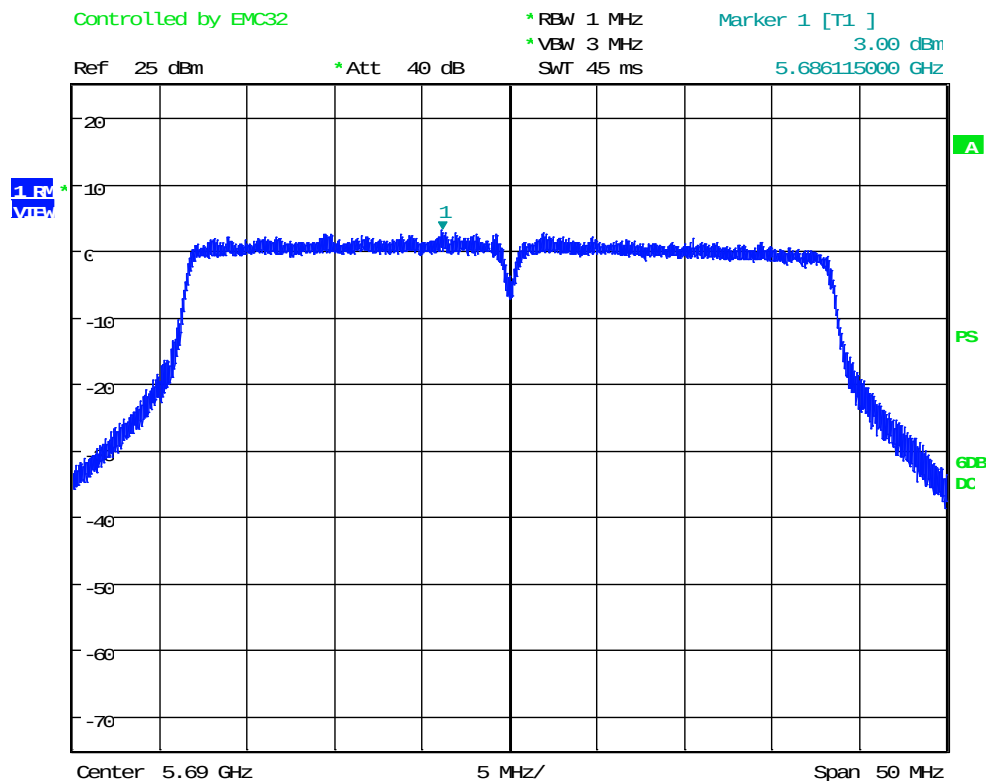
UNII 2C, Port 2: HT40, Mid Channel



Date: 5.MAY.2021 11:56:29



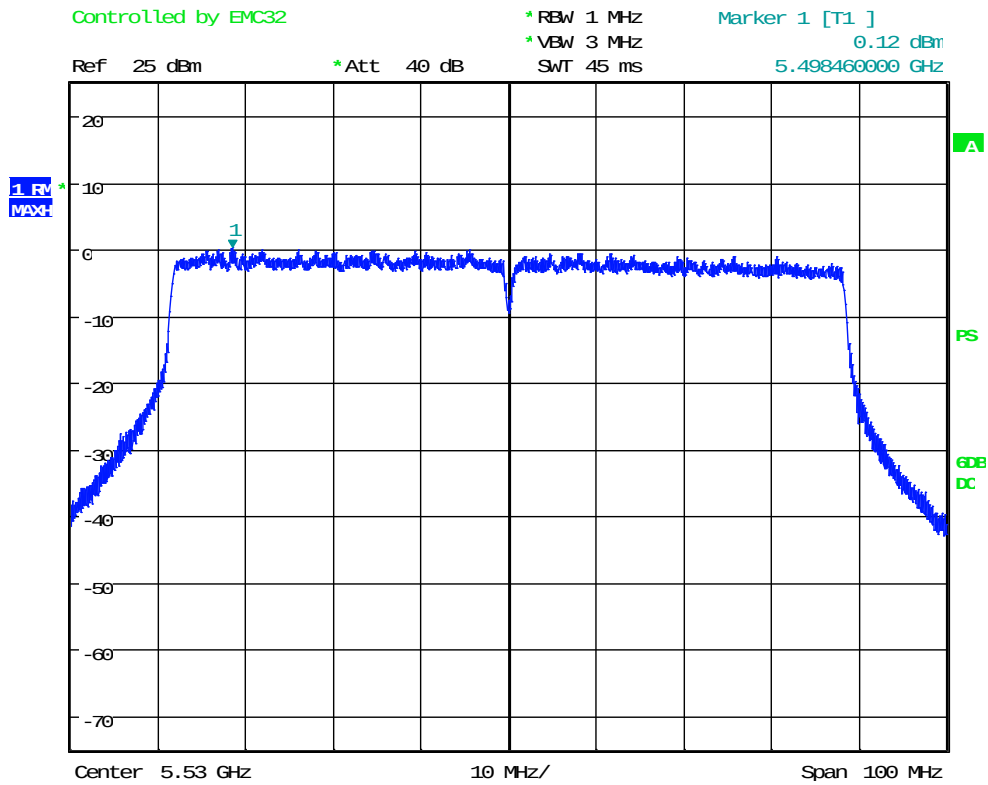
UNII 2C, Port 2: HT40, High Channel



Date: 30.OCT.2020 15:17:49



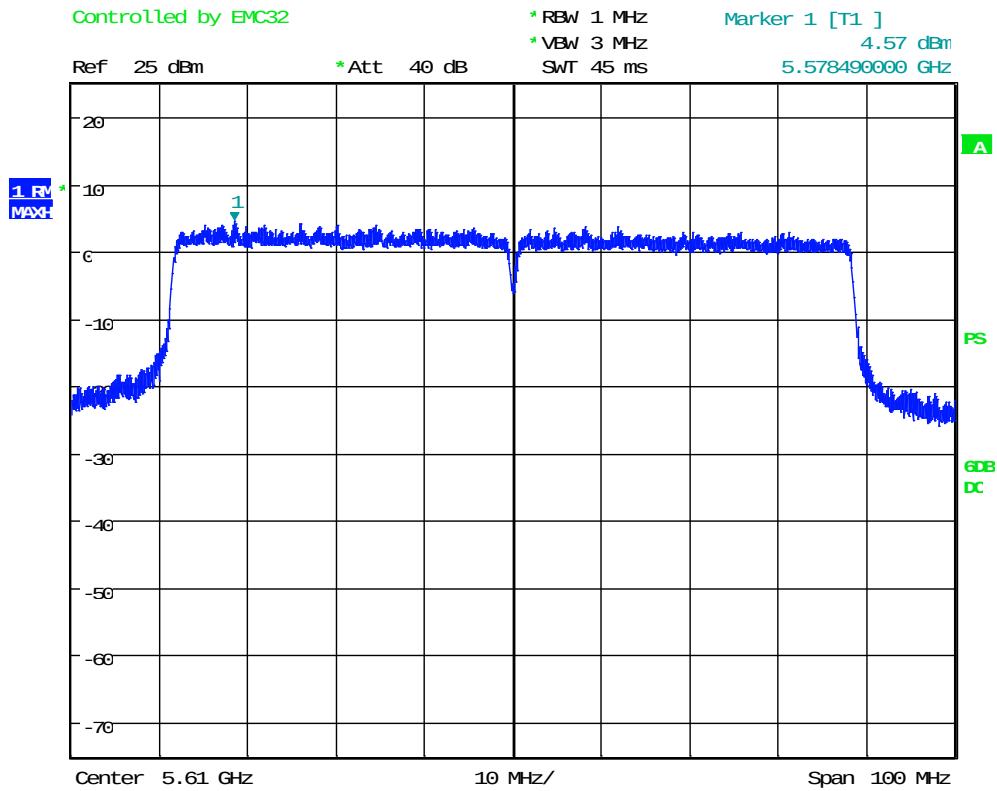
UNII 2C, Port 2: HT80, Low Channel



Date: 30.OCT.2020 15:02:18



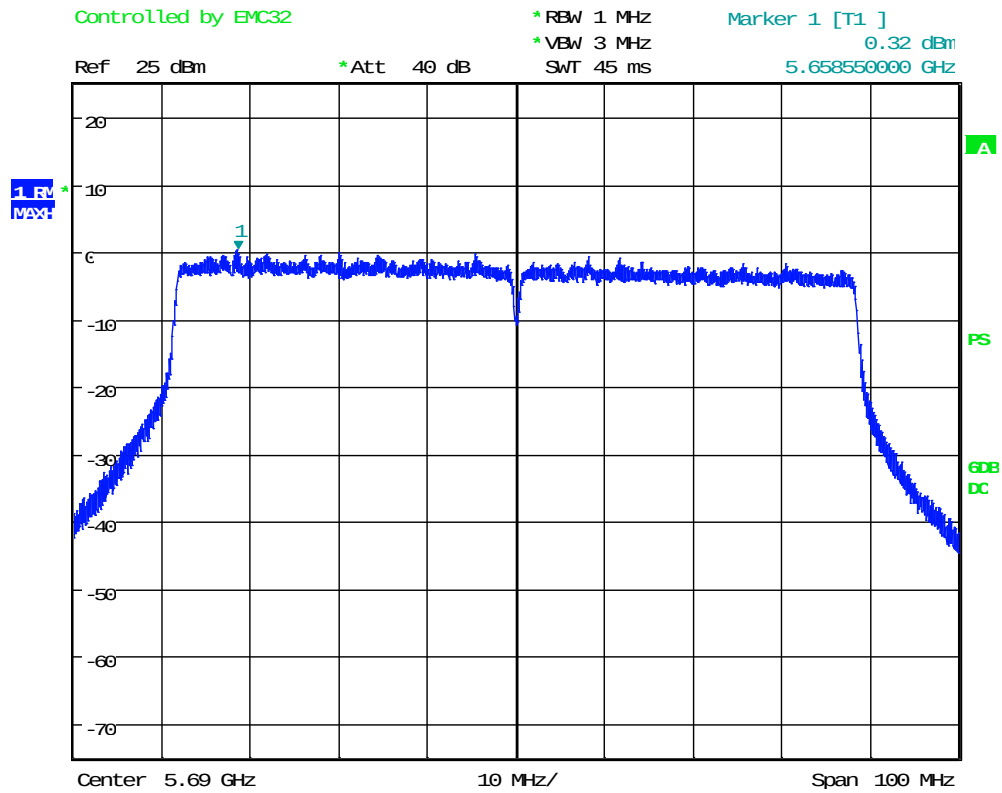
UNII 2C, Port 2: HT80, Mid Channel



Date: 30.OCT.2020 15:03:06



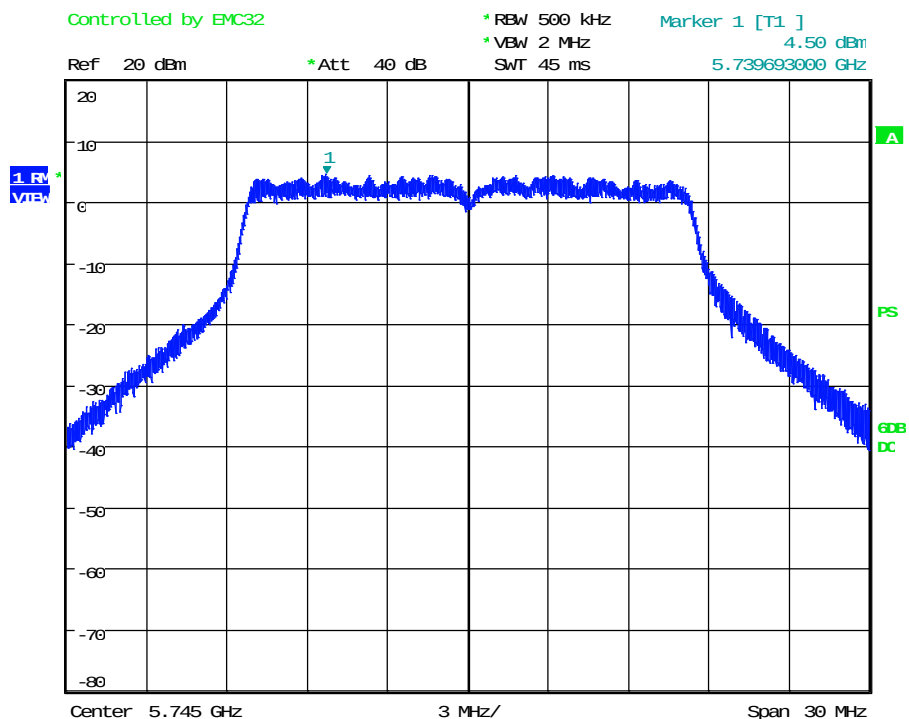
UNII 2C, Port 2: HT80, High Channel



Date: 30.OCT.2020 15:03:50



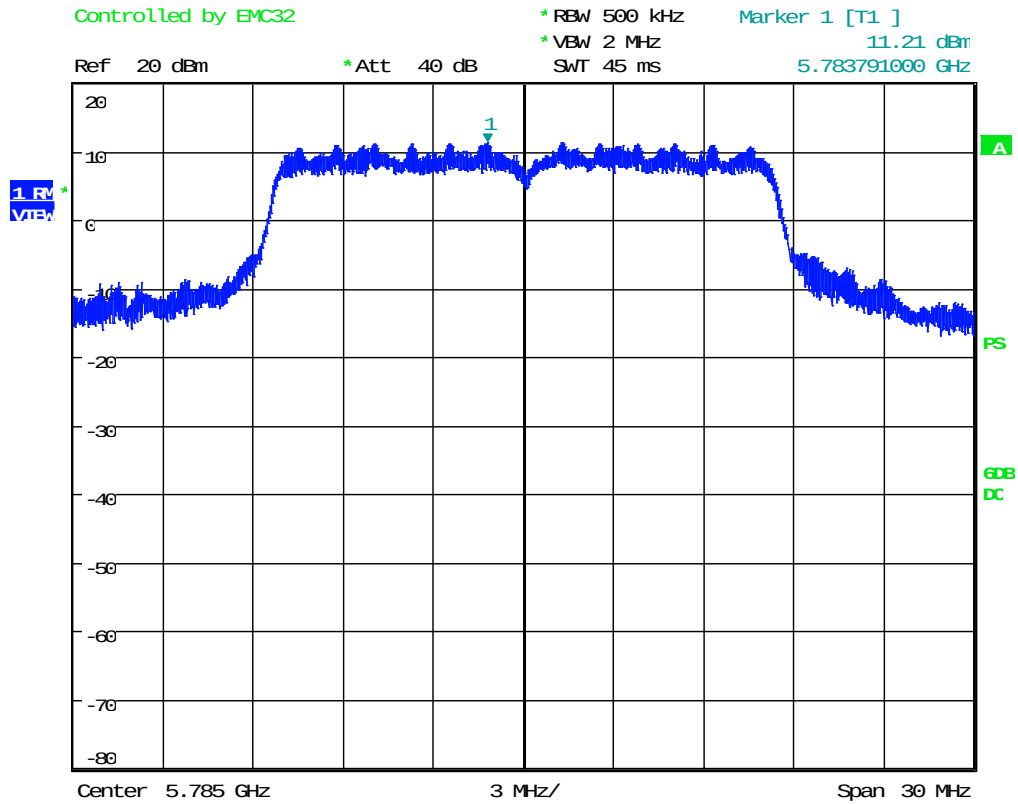
UNII 3, Port 1: OFDM, Low Channel



Date: 29.OCT.2020 15:32:28



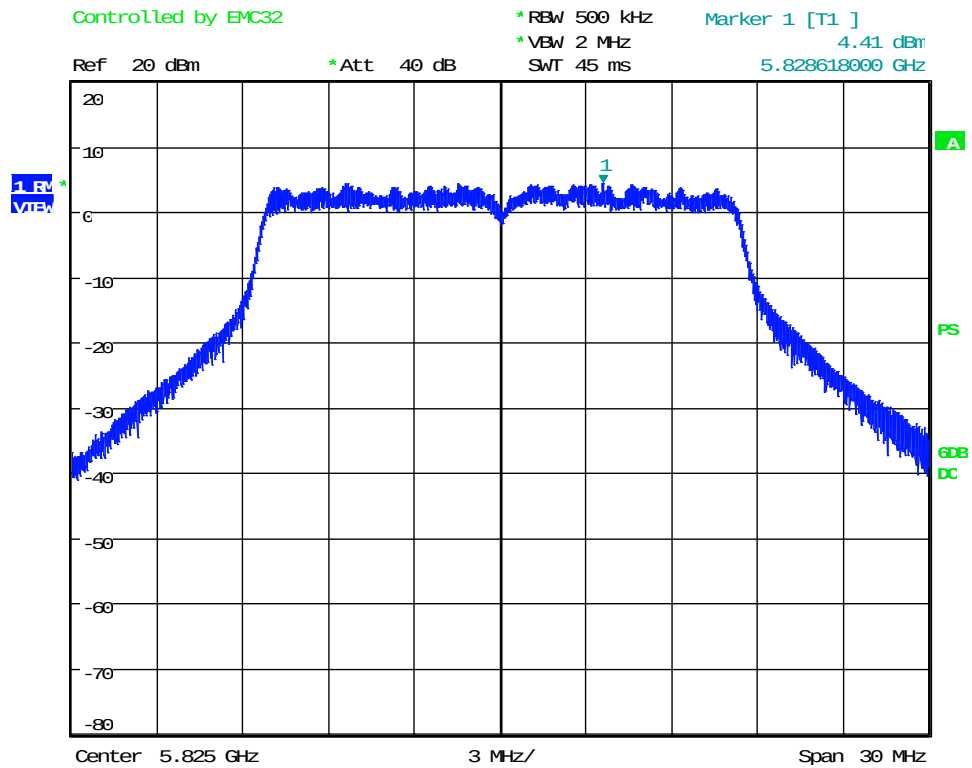
UNII 3, Port 1: OFDM, Mid Channel



Date: 29.OCT.2020 15:33:19



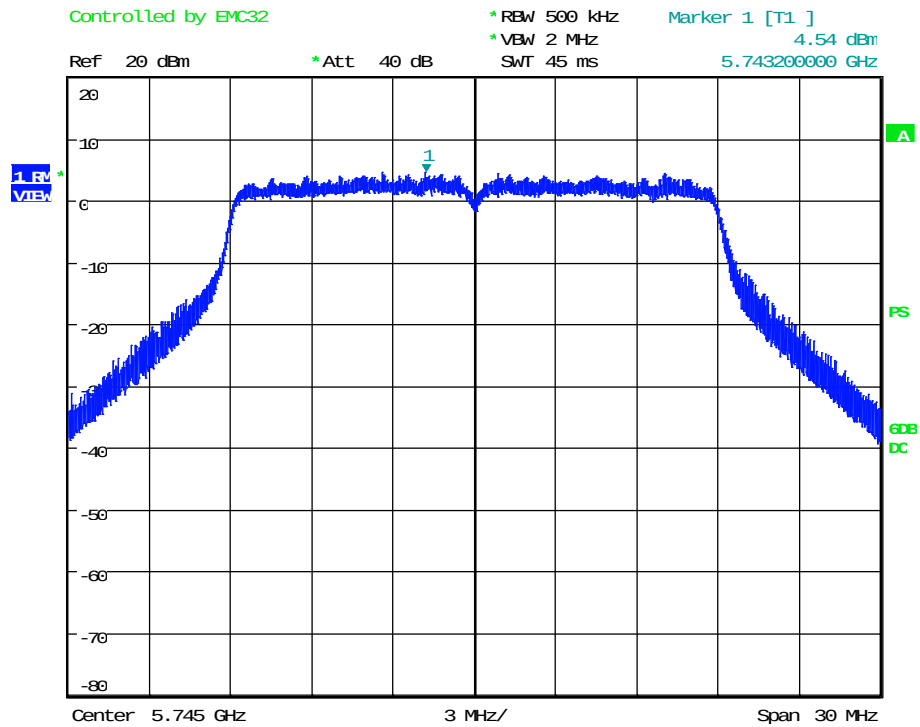
UNII 3, Port 1: OFDM, High Channel



Date: 29.OCT.2020 15:34:17



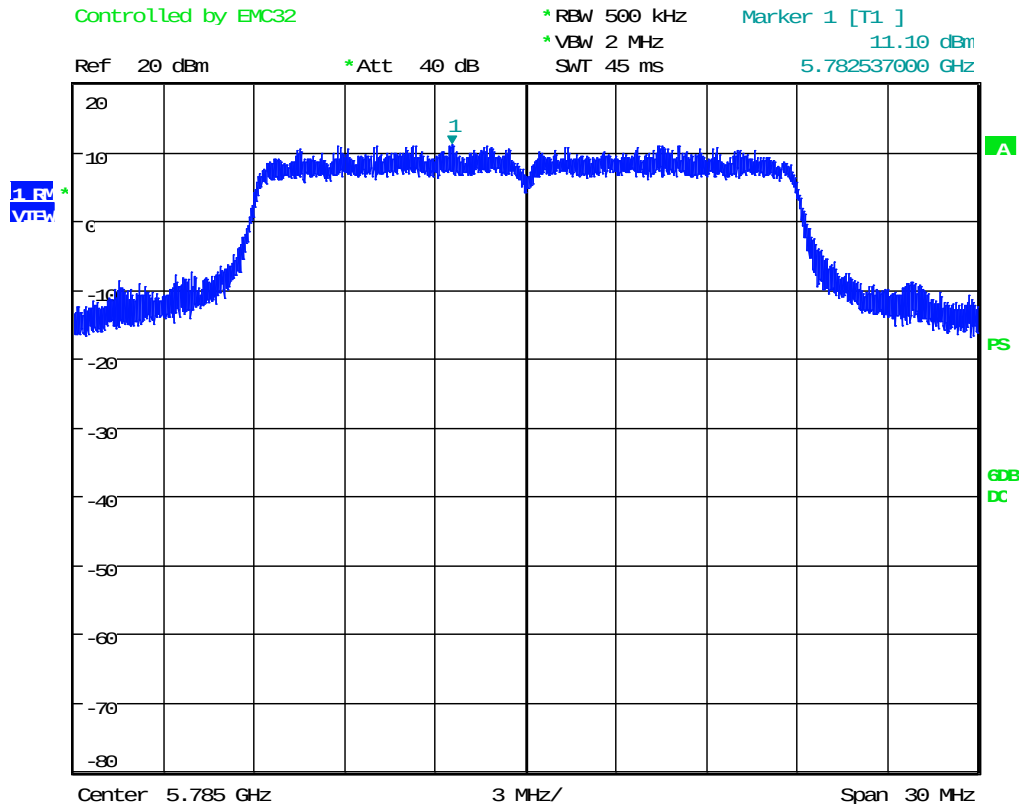
UNII 3, Port 1: HT20, Low Channel



Date: 29.OCT.2020 15:37:08



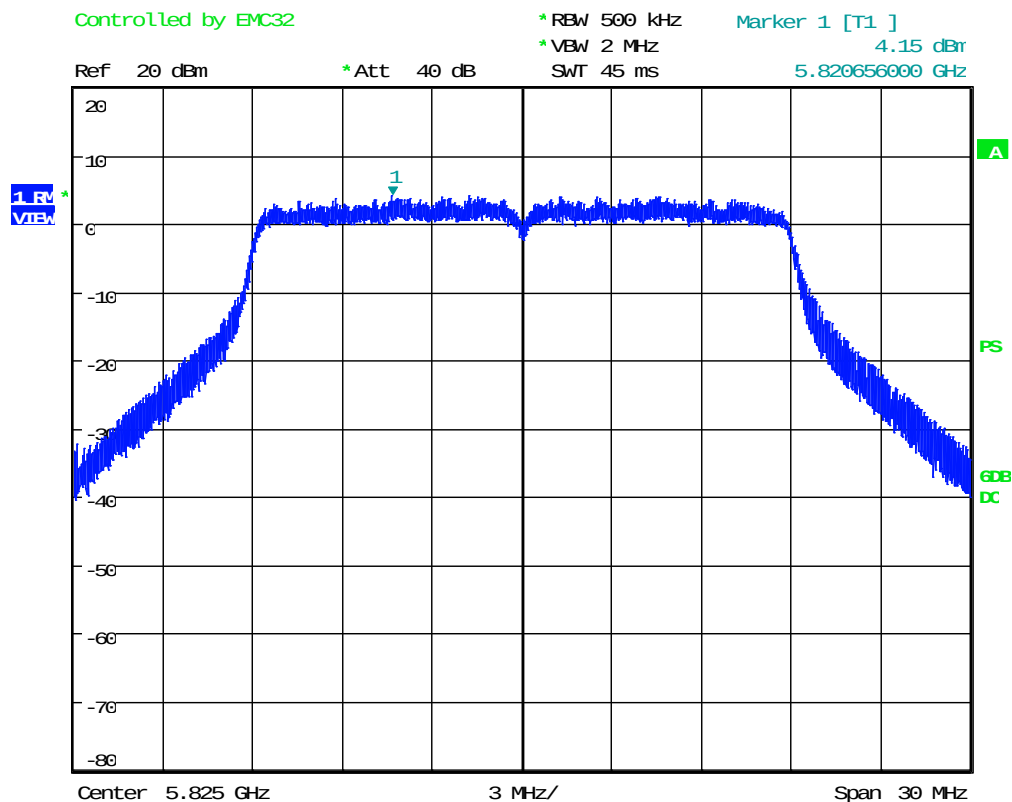
UNII 3, Port 1: HT20, Mid Channel



Date: 29.OCT.2020 15:37:56



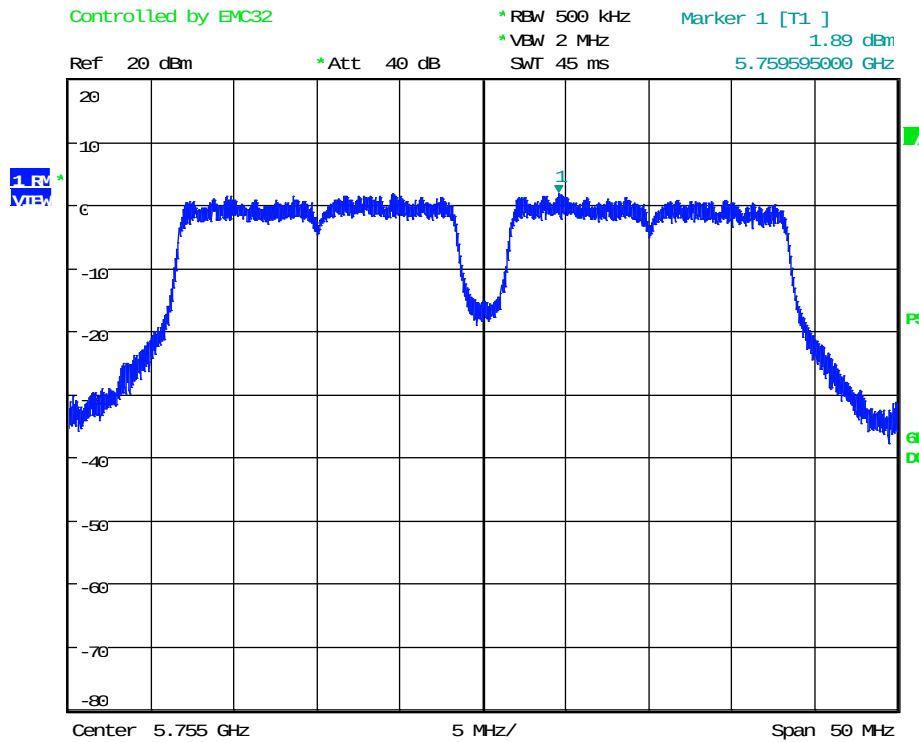
UNII 3, Port 1: HT20, High Channel



Date: 29.OCT.2020 15:38:35



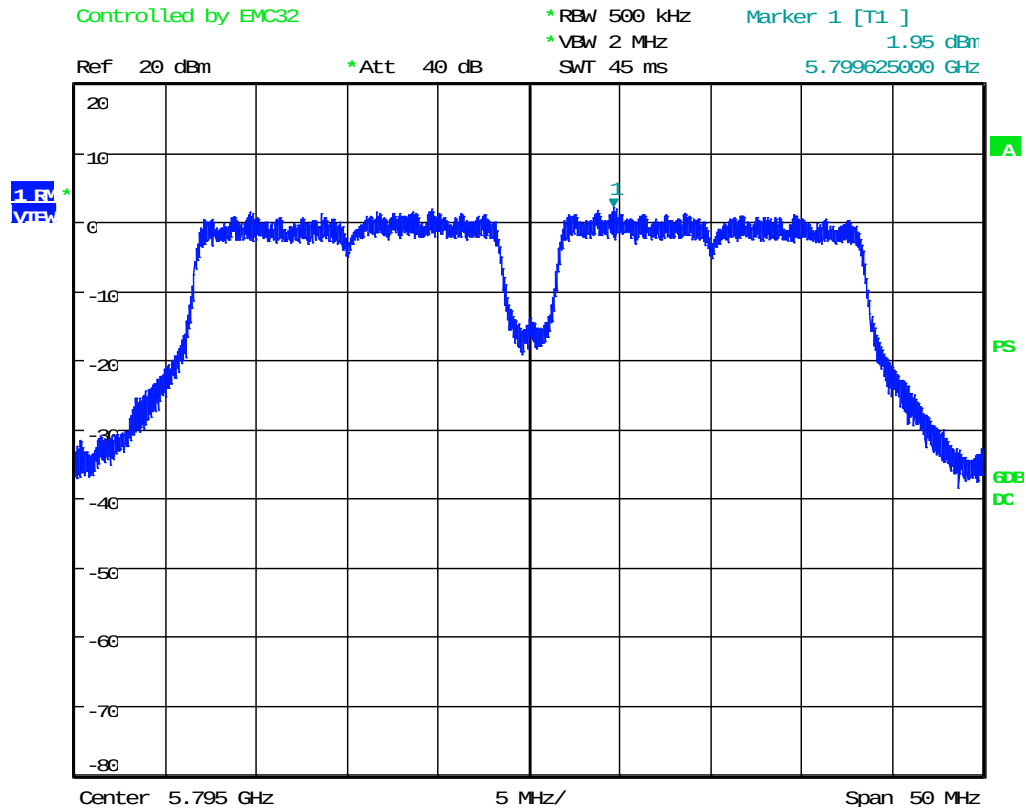
UNII 3, Port 1: non HT40, Low Channel



Date: 29.OCT.2020 15:40:54



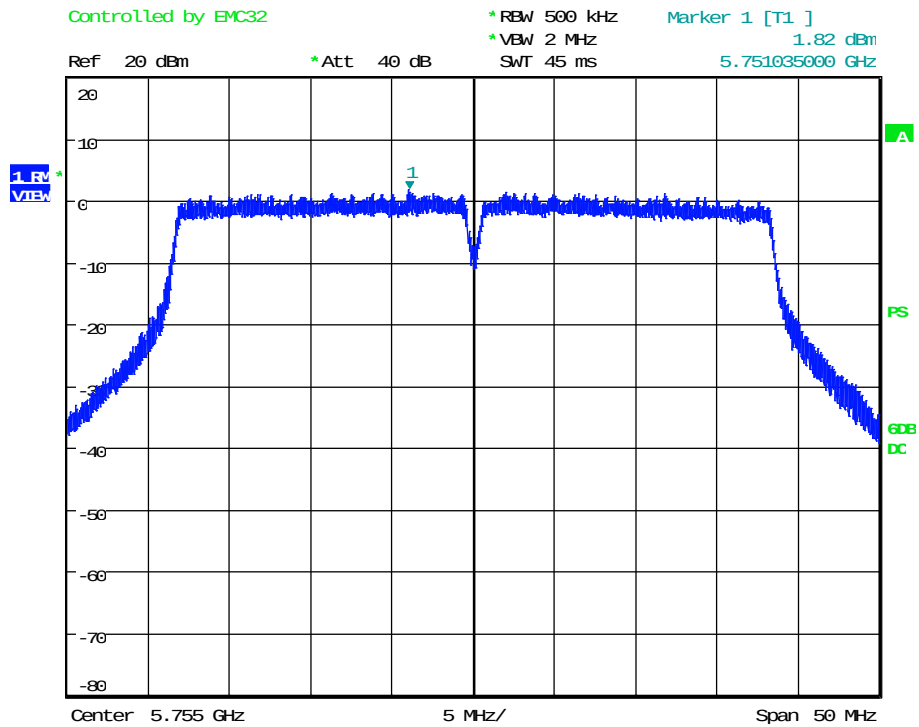
UNII 3, Port 1: non HT40, High Channel



Date: 29.OCT.2020 15:41:49



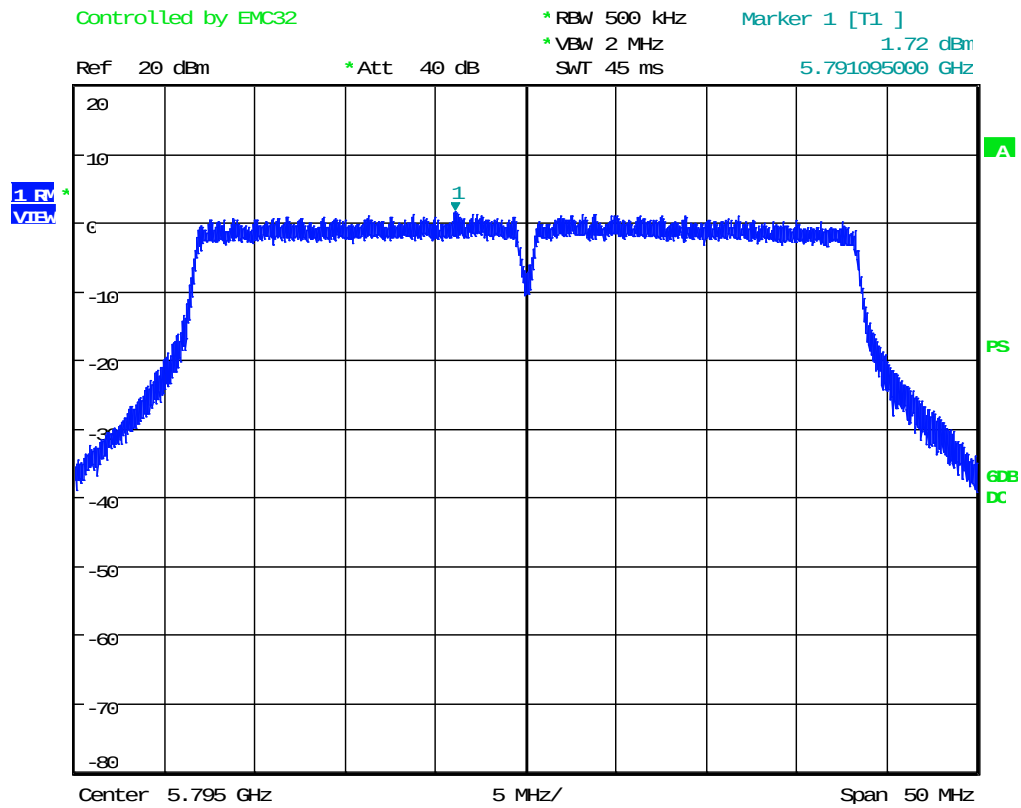
UNII 3, Port 1: HT40, Low Channel



Date: 29.OCT.2020 15:42:57



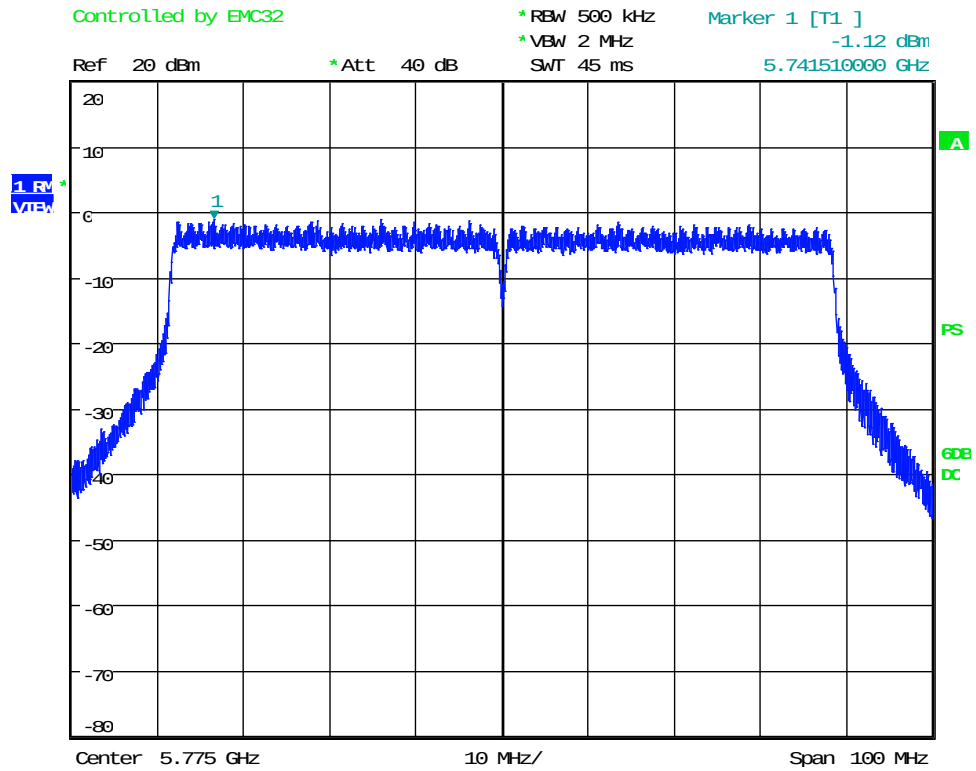
UNII 3, Port 1: HT40, High Channel



Date: 29.OCT.2020 15:44:21



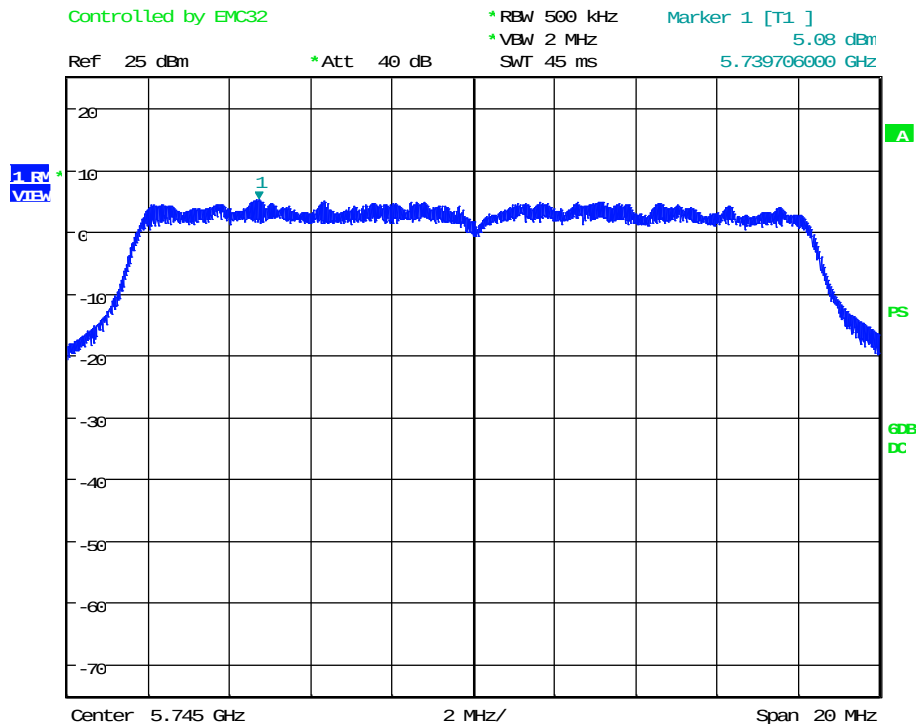
UNII 3, Port 1: HT80



Date: 29.OCT.2020 15:45:58



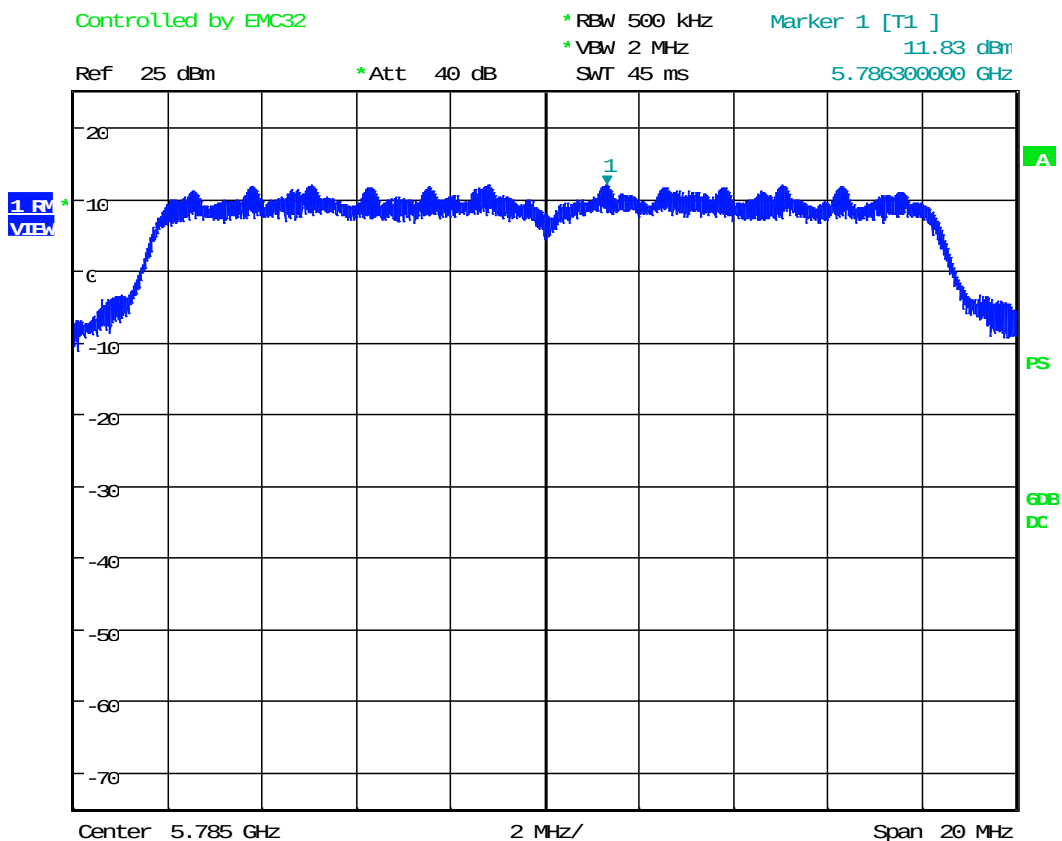
UNII 3, Port 2: OFDM, Low Channel



Date: 30.OCT.2020 15:21:53



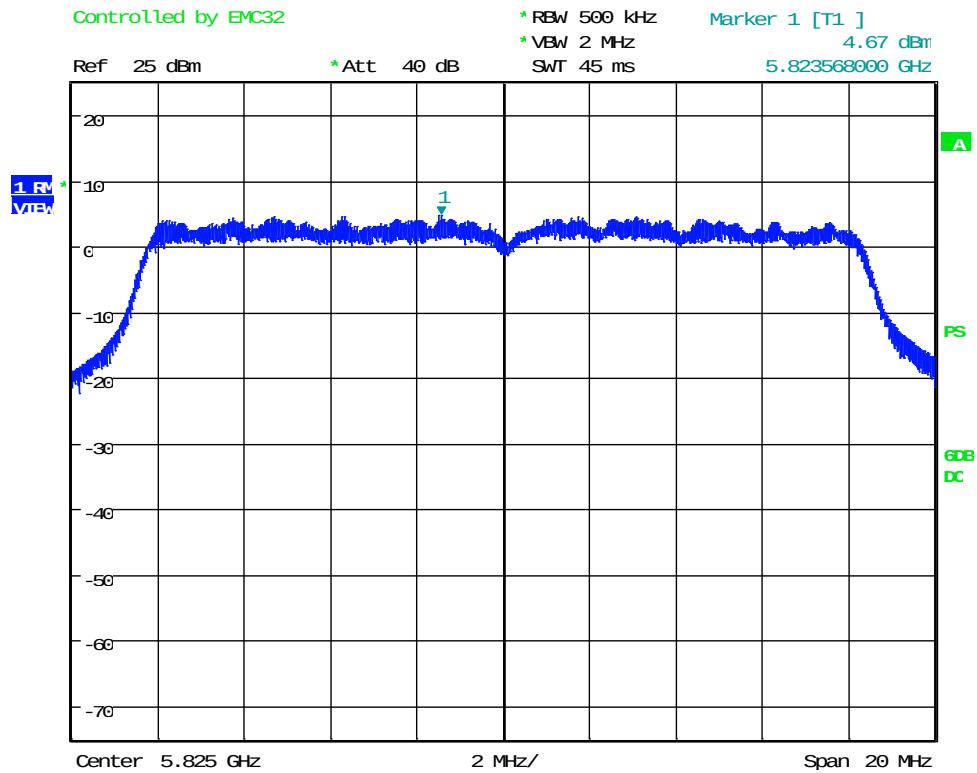
UNII 3, Port 2: OFDM, Mid Channel



Date: 30.OCT.2020 15:22:50



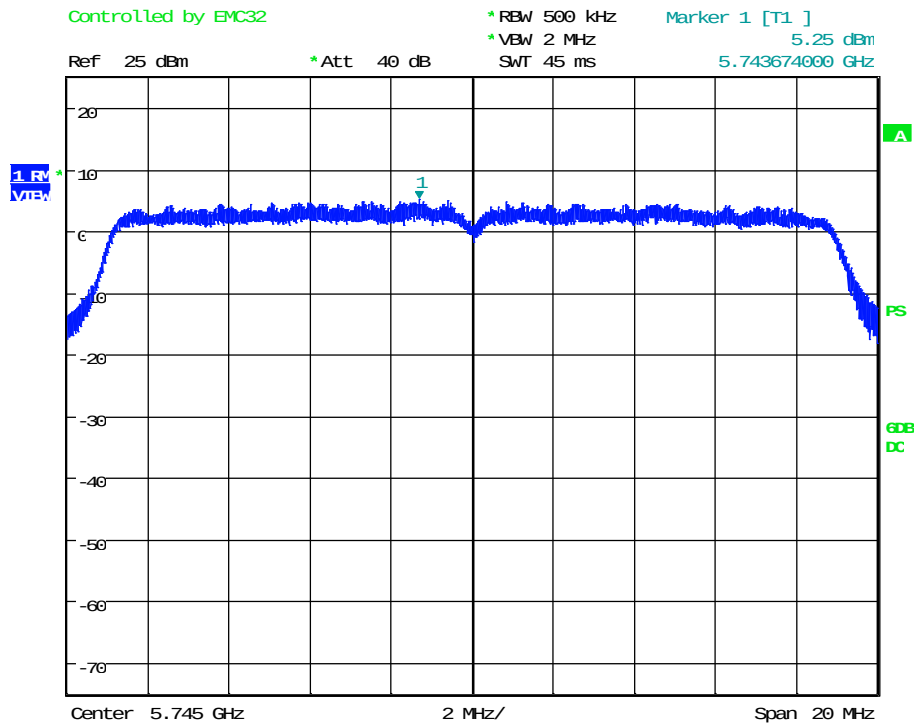
UNII 3, Port 2: OFDM, High Channel



Date: 30.OCT.2020 15:23:36



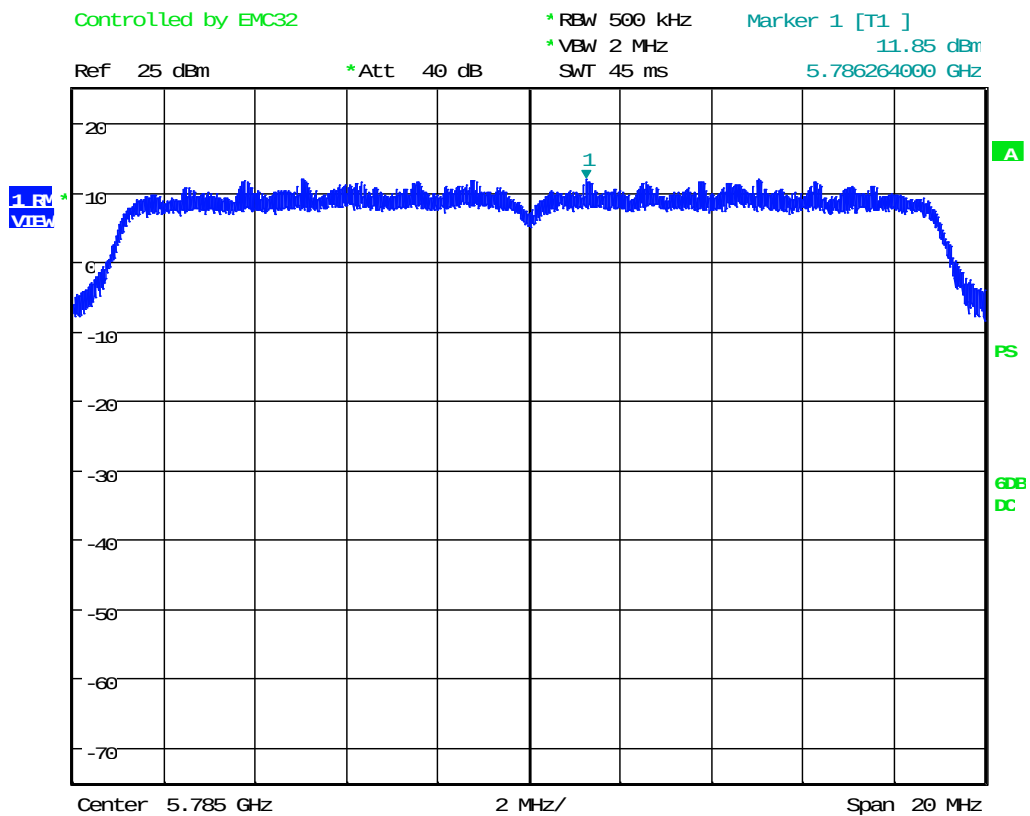
UNII 3, Port 2: HT20, Low Channel



Date: 30.OCT.2020 15:24:42



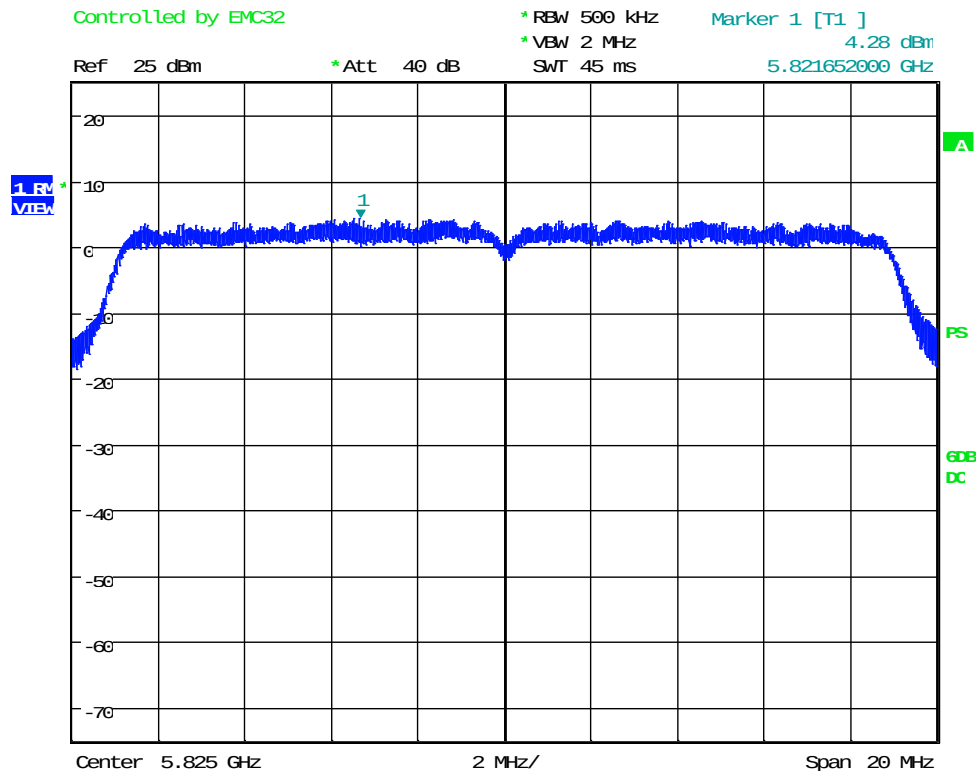
UNII 3, Port 2: HT20, Mid Channel



Date: 30.OCT.2020 15:25:21



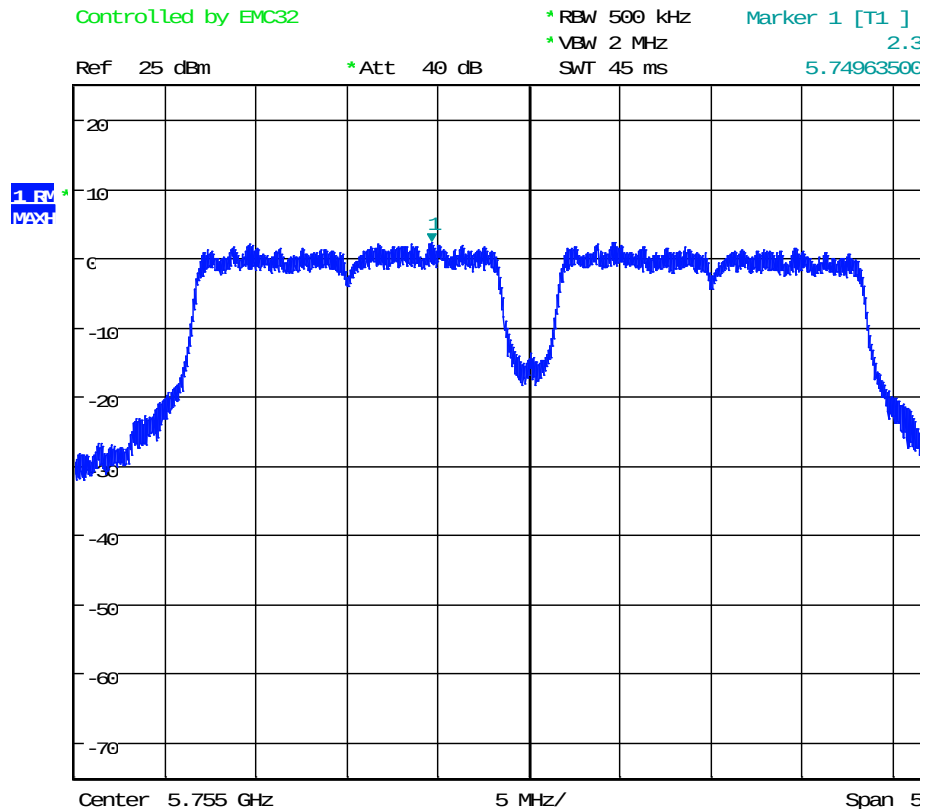
UNII 3, Port 2: HT20, High Channel



Date: 30.OCT.2020 15:25:56



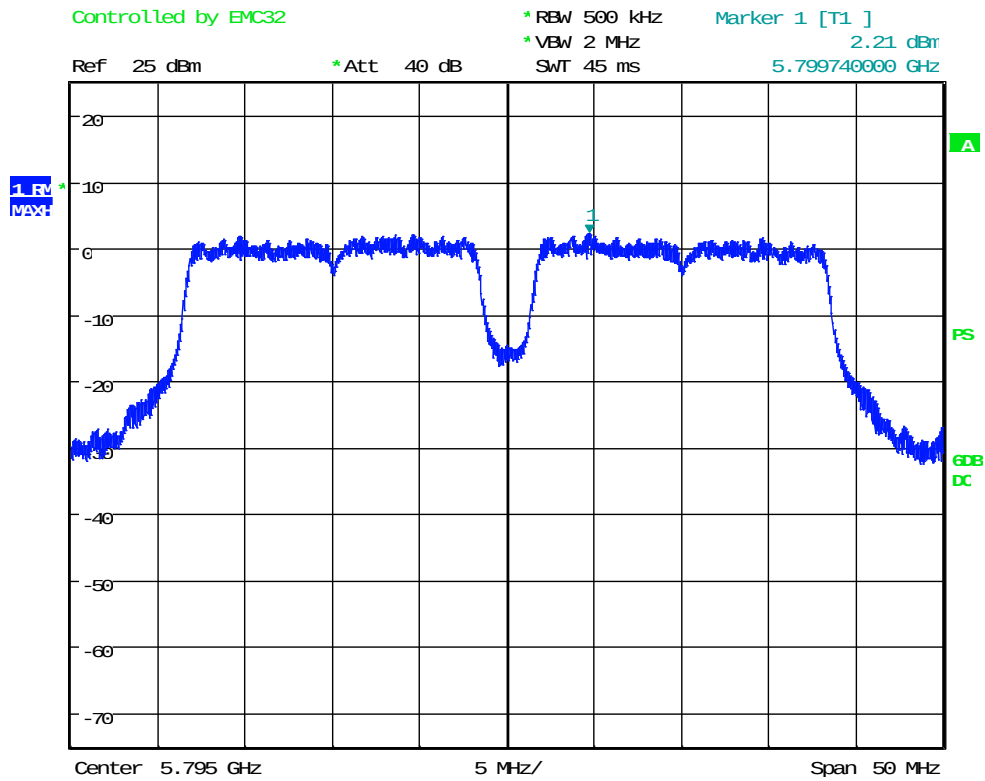
UNII 3, Port 2: non HT40, Low Channel



Date: 30.OCT.2020 15:27:38



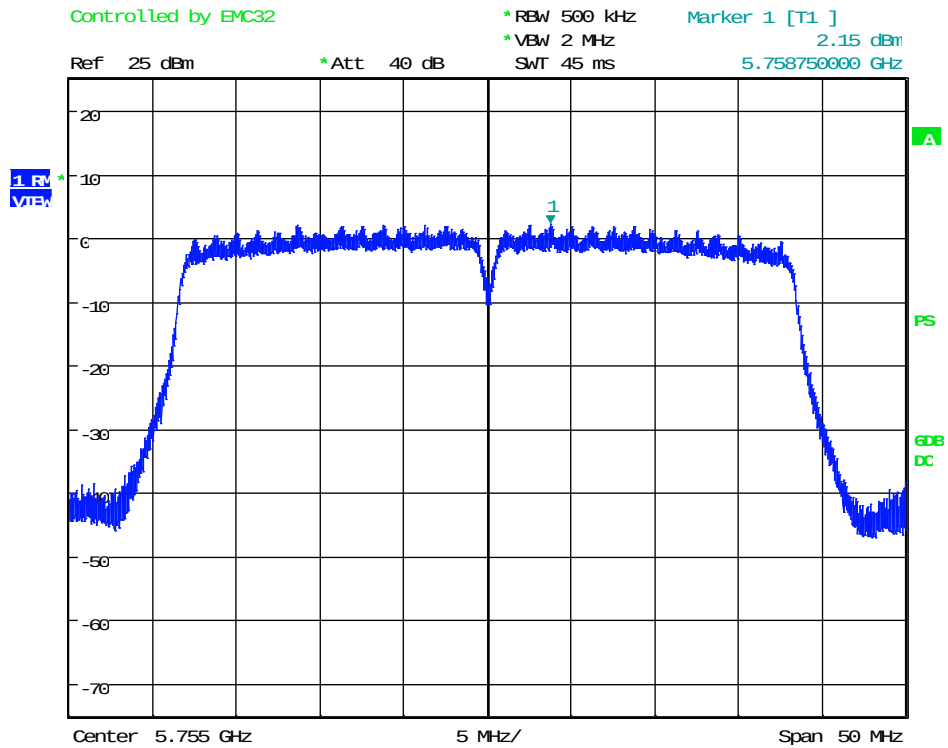
UNII 3, Port 2: non HT40, High Channel



Date: 30.OCT.2020 15:28:18



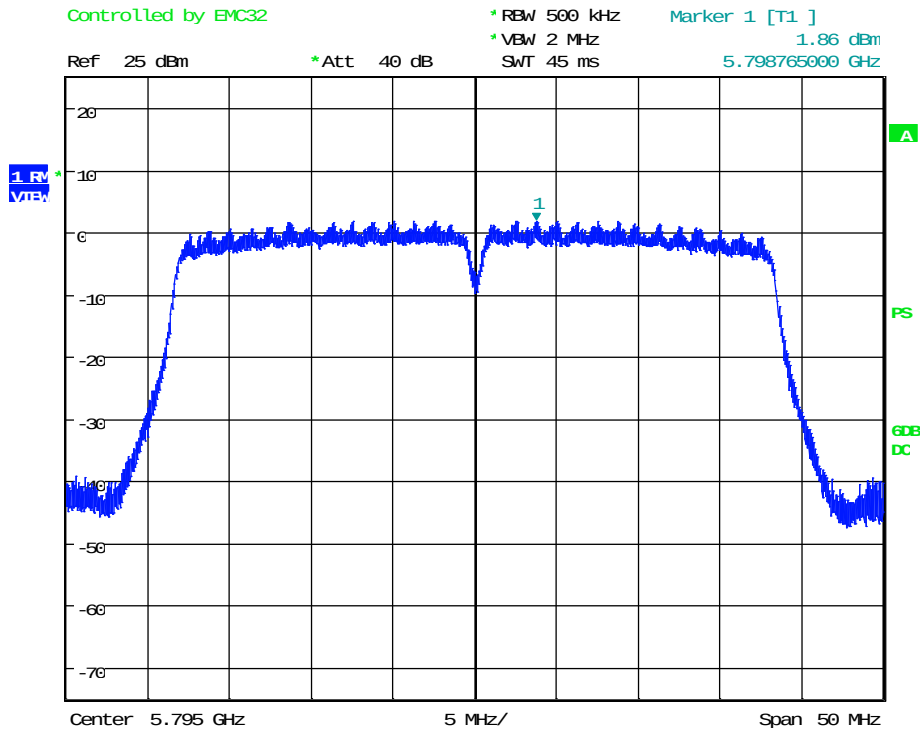
UNII 3, Port 2: HT40, Low Channel



Date: 30.OCT.2020 15:29:12



UNII 3, Port 2: HT40, High Channel



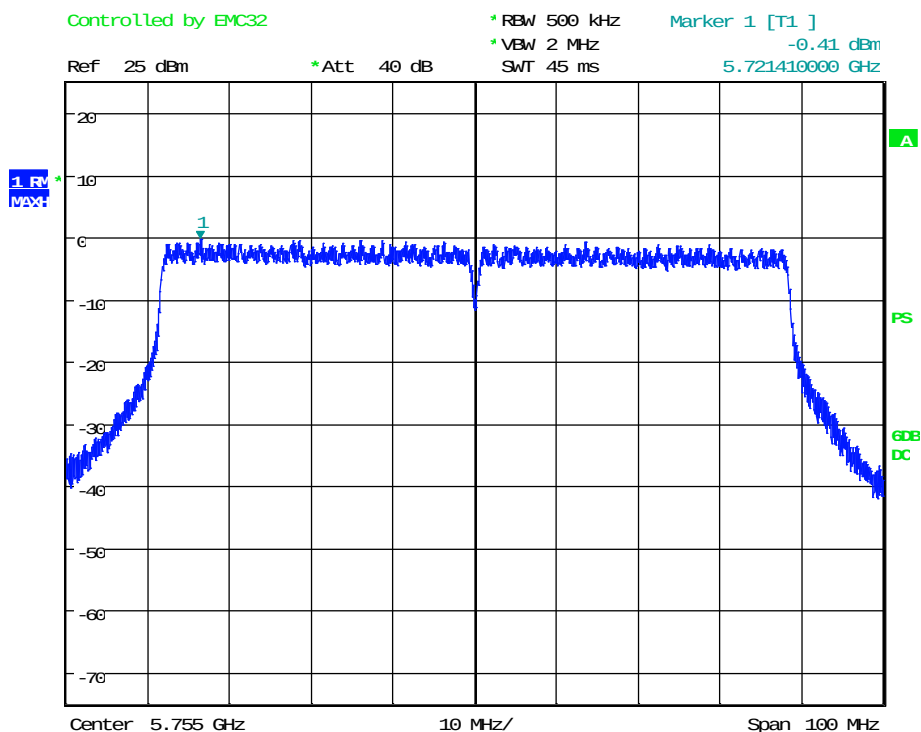
Date: 30.OCT.2020 15:29:50



Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

UNII 3, Port 2: Port 1: HT80



Date: 30.OCT.2020 15:31:36



10 RADIATED SPURIOUS EMISSION

The EUT antenna port was fitted with its integral/internal chip antenna. Radiated emissions were measured in a Semi-Anechoic Chamber. All emissions generated that fall in the restricted bands per FCC Part 15.205 were examined.

10.1 Requirements:

All emissions that fall in the restricted bands defined in FCC Part 15.205 shall not exceed the maximum field strength listed in FCC Part 15.209(a).

All other undesirable emission that do not fall under the provisions of Part 15.205, shall meet the following limits:

- (1) 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.*
- (2) 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.*
- (3) 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.*
- (4) 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.*



10.2 Radiated Spurious Emission Test Data

Test Date(s):	2020-10-23 to 2021-05-03	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.407; Part 15.209 / KDB789033	Air Temperature:	22.8°C
		Relative Humidity:	39%

Notes: Plots are peak, max hold prescan data included only to determine what frequencies to investigate and measure. The EUT was initially placed in a semi-anechoic chamber, and rotated in all three orthogonal positions to maximize the emissions. The orthogonal position that showed the highest emissions was used. Characterization measurements were then performed to determine at which frequencies significant emissions occurred. These graphs are shown below.

The equipment was fully exercised with all cabling attached to the EUT and was positioned in a semi-anechoic chamber for maximum emissions. All antennas were mounted and all transmitters were on and transmitting at the same time to set worst-case Radiated Emissions and Beamforming due to MIMO configuration. While the equipment was energized, the receiving antenna was scanned from 1.0 meter to 4.0 meters in both vertical and horizontal polarities while the turntable was adjusted 360 degrees to determine the maximum field strength. The tables of measured results can be found below.

Some of the frequencies did not change with the EUT on or off. At those frequencies, the test distance was shortened to 1 meter and still no emissions from the EUT were visible or over the ambient or limit.

In the following plots, emissions to be found by the EUT were measured and listed in tables. The black lines are active scans while the green lines are the max peak scan of the unit during rotations. The plots are for reference only and the limit lines are not actual limit lines but merely a guide.

Limits are indicated as follows:

Solid Red = 15.407 Peak

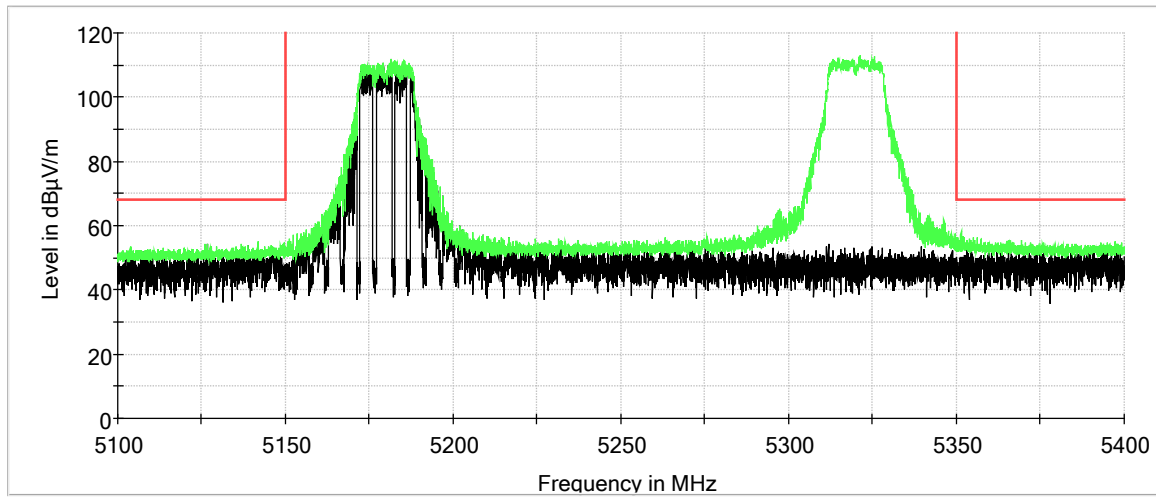
Green = Restricted Band Avg

Blue = Restricted Band Peak

In the UNII-1 (5.15-5.25 GHz) band, UNII-2A (5.25-5.35 GHz) band, and lower end of the UNII-2C (5.47-5.725 GHz) band, there are restricted bands that applies from 4.5-5.15 GHz, and from 5.35-5.46 GHz. In these restricted bands, the limits are 54 dBuV/m Avg and 74 dBuV/m Peak.



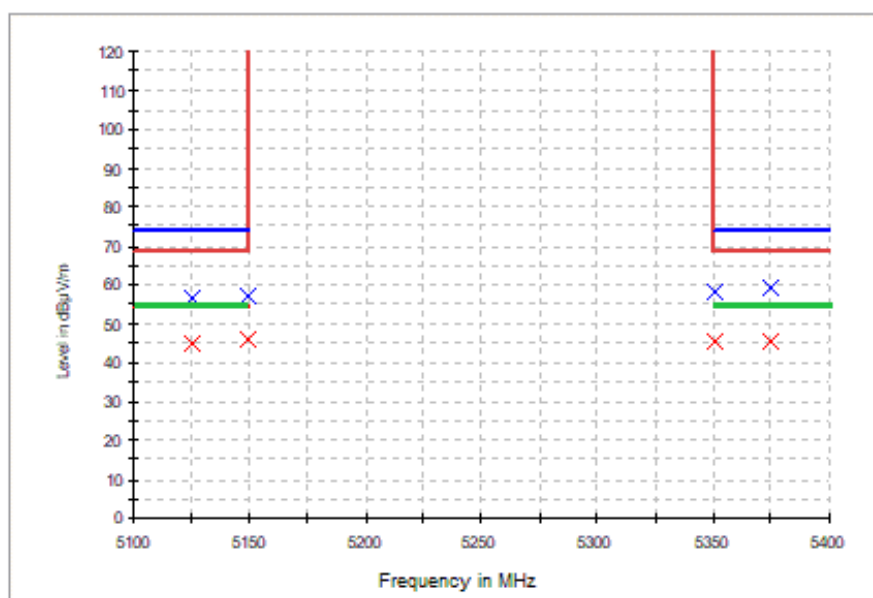
Radiated Band Edge: UNII 1 & 2A, HT20





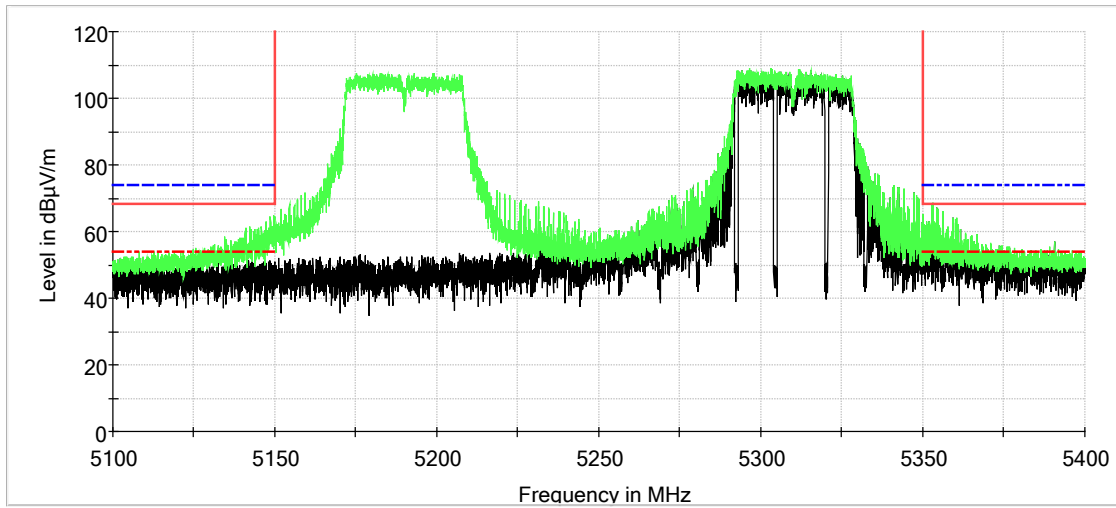
Radiated Band Edge: UNII 1 & 2A, HT20 - Measurements

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/)	Margin - PK (dB)	Limit - PK (dBμV/)
5125.000000	56.5	44.9	1000.000	H	18.2	9.1	54.0	17.5	74.0
5150.000000	57.2	46.3	1000.000	H	18.3	7.7	54.0	11.0	68.2
5350.000000	58.1	45.5	1000.000	H	18.9	8.5	54.0	10.1	68.2
5375.000000	59.2	45.6	1000.000	H	18.9	8.4	54.0	14.8	74.0





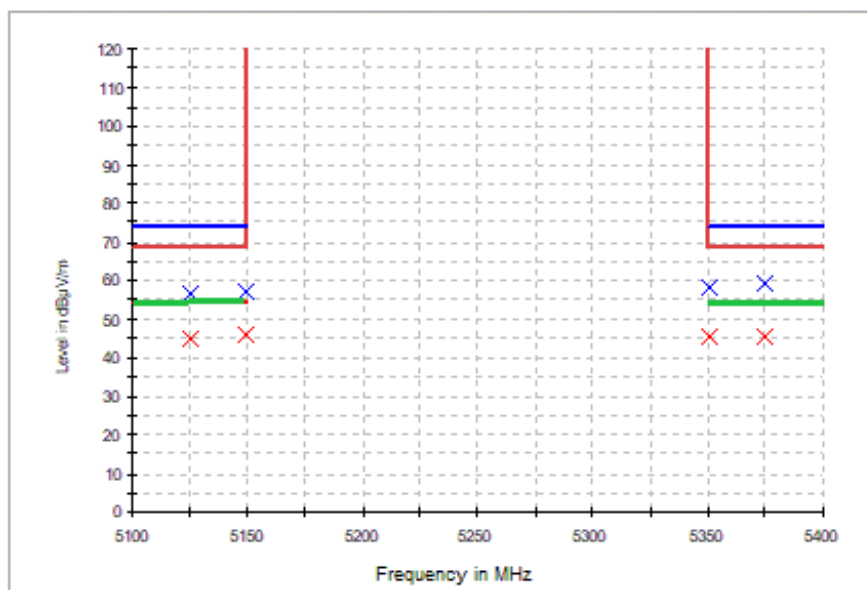
Radiated Band Edge: UNII 1 & 2A, HT40





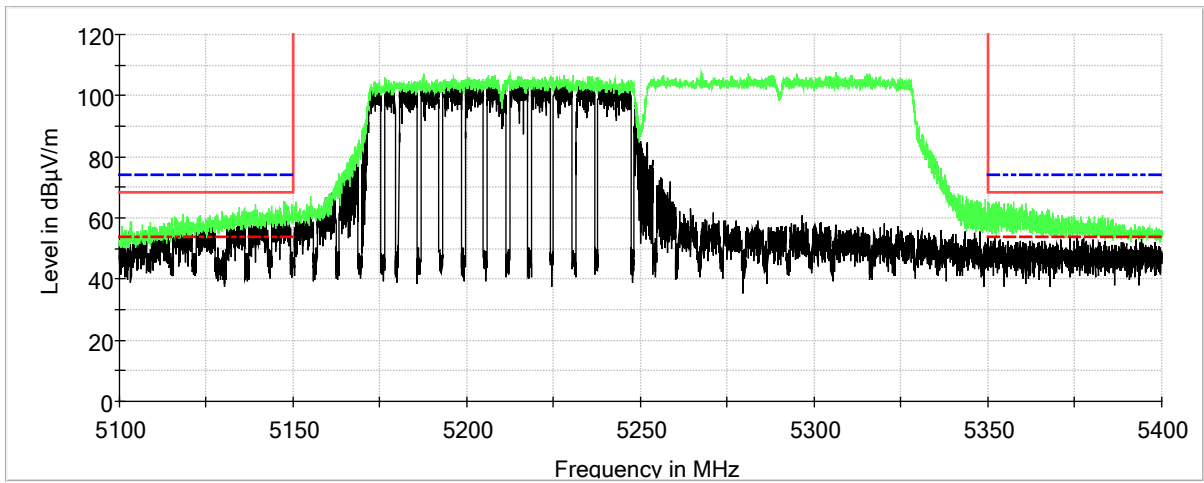
Radiated Band Edge: UNII 1 & 2A, HT40 - Measurements

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)	Limit - PK (dBμV/m)	Margin - PK
5125.000000	57.2	45.9	1000.000	H	18.2	8.1	54.0	74.0	16.8
5150.000000	65.8	51.0	1000.000	H	18.3	3.0	54.0	68.2	2.4
5350.000000	58.4	49.4	1000.000	H	18.9	4.6	54.0	68.2	9.8
5375.000000	61.0	46.9	1000.000	H	18.9	7.1	54.0	74.0	13.0





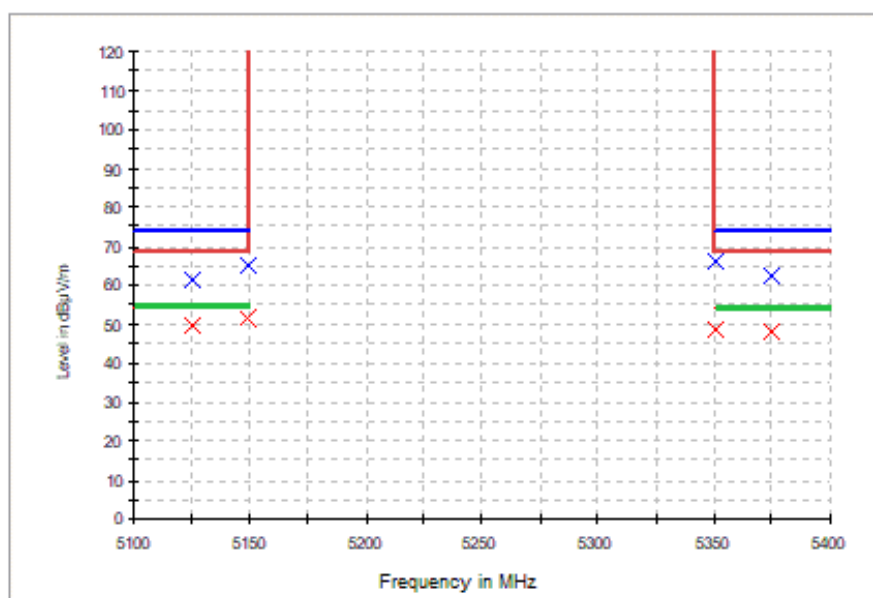
Radiated Band Edge: UNII 1 & 2A, HT80





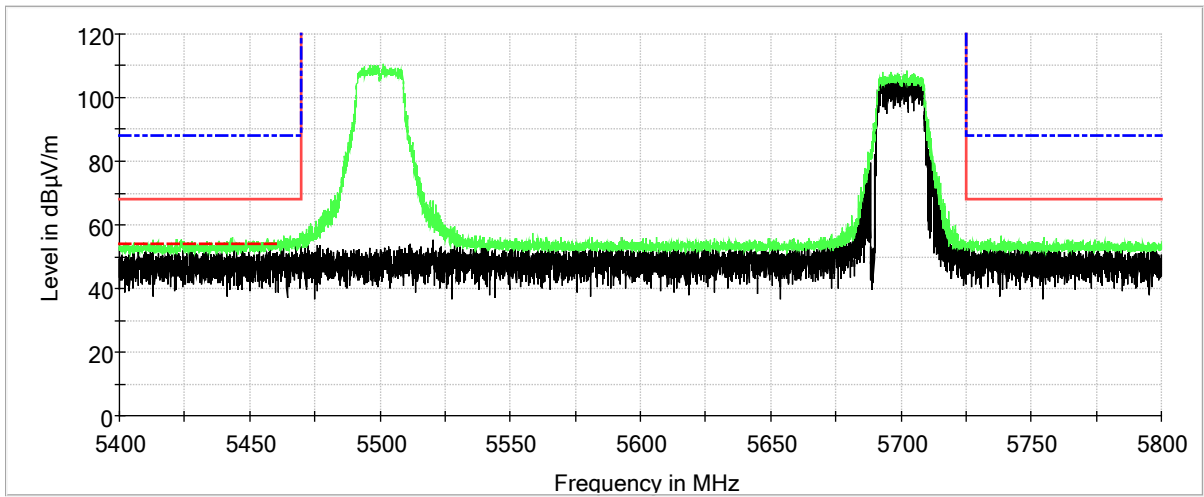
Radiated Band Edge: UNII 1 & 2A, HT80 - Measurements

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)	Limit - PK (dBμV/m)	Margin - PK
5125.000000	61.4	49.5	1000.000	H	18.2	4.5	54.0	74.0	12.6
5150.000000	65.0	51.3	1000.000	H	18.3	2.7	54.0	68.2	3.2
5350.000000	65.8	48.5	1000.000	H	18.9	5.5	54.0	68.2	2.4
5375.000000	62.2	47.8	1000.000	H	18.9	6.2	54.0	74.0	11.8





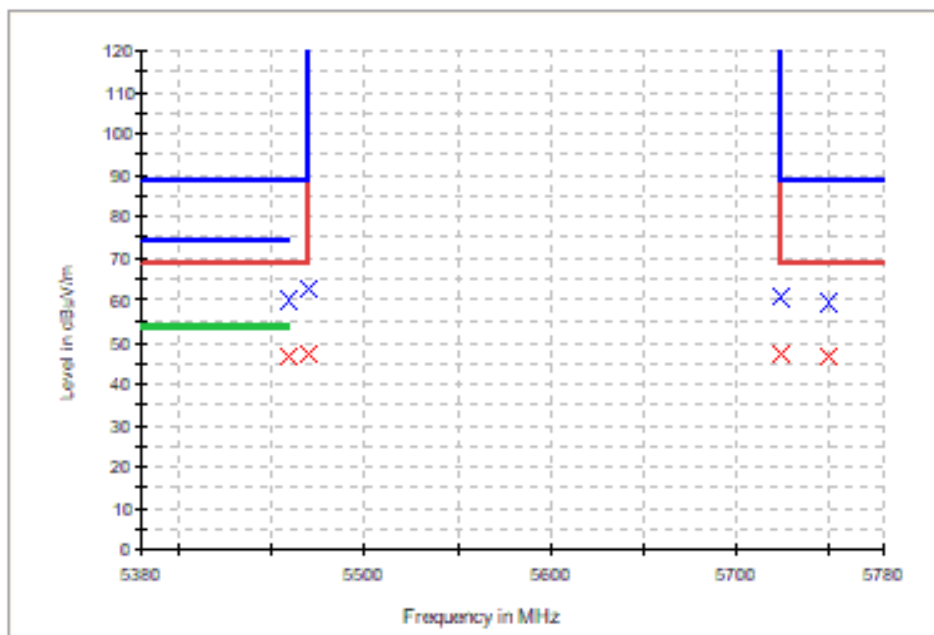
Radiated Band Edge: UNII 2C, HT20





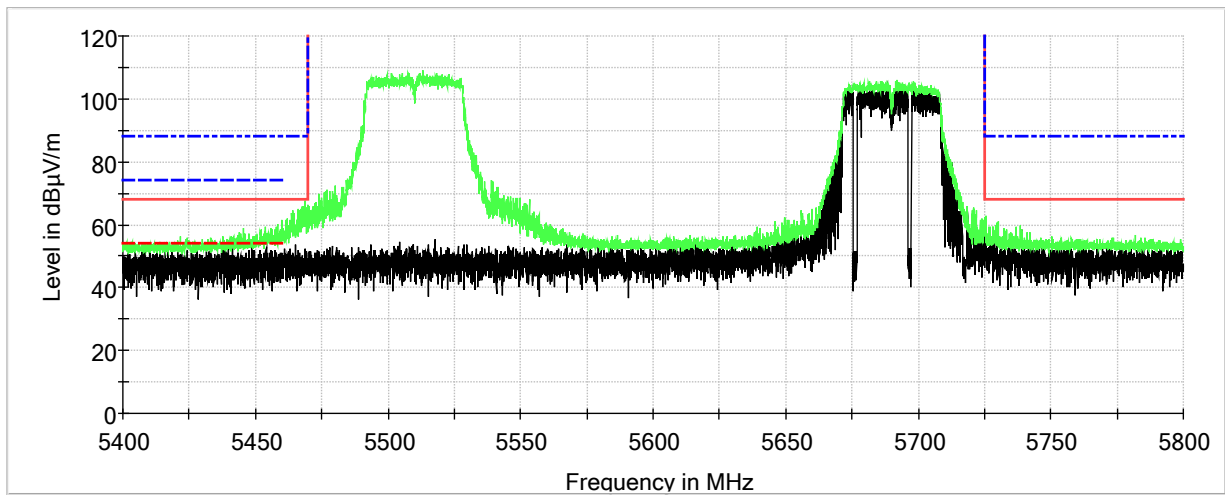
Radiated Band Edge: UNII 2C, HT20 - Measurements

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)	Limit - PK (dBμV/m)	Margin - PK
5460.000000	60.0	46.7	1000.000	H	19.1	7.3	54.0	74.0	12.6
5470.000000	62.2	47.6	1000.000	H	19.1	-----	-----	68.2	6.0
5725.000000	60.7	47.5	1000.000	H	19.3	-----	-----	68.2	7.5
5750.000000	59.6	46.9	1000.000	H	19.3	-----	-----	68.2	8.6





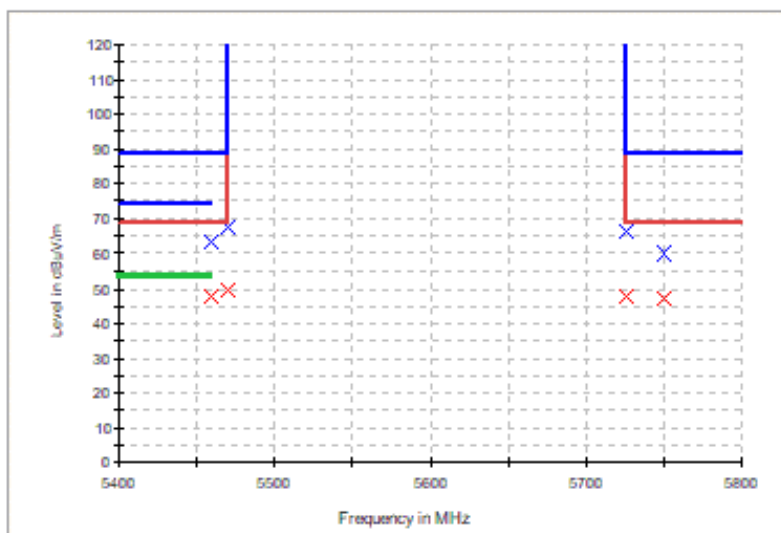
Radiated Band Edge: UNII 2C, HT40





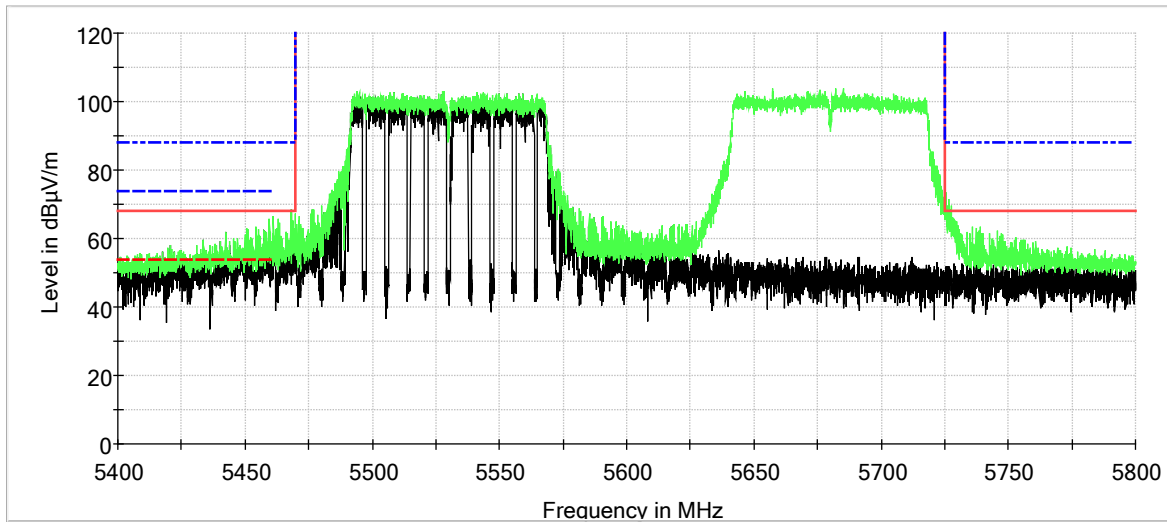
Radiated Band Edge: UNII 2C, HT40 - Measurements

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)	Limit - PK (dBμV/m)	Margin - PK
5460.000000	62.9	48.0	1000.000	H	19.1	6.0	54.0	74.0	12.6
5470.000000	67.0	49.6	1000.000	H	19.1	----	----	68.2	1.2
5725.000000	66.1	48.2	1000.000	H	19.3	----	----	68.2	2.1
5750.000000	59.8	47.0	1000.000	H	19.3	----	----	68.2	8.4





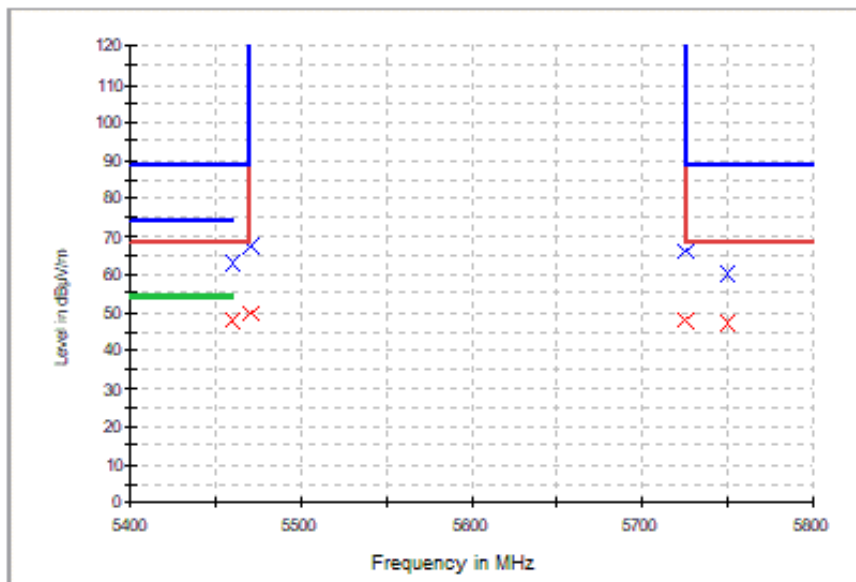
Radiated Band Edge: UNII 2C, HT80





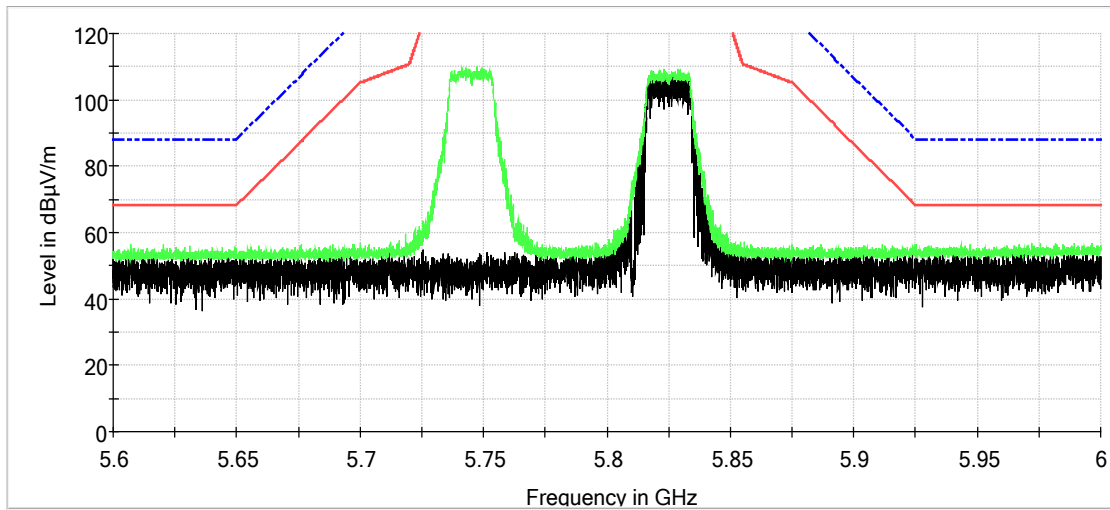
Radiated Band Edge: UNII 2C, HT80 - Measurements

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)	Limit - PK (dBμV/m)	Margin - PK
5460.000000	67.0	48.9	1000.000	H	19.1	5.1	54.0	74.0	7.0
5470.000000	67.3	49.0	1000.000	H	19.1	----	----	68.2	0.9
5725.000000	67.2	54.8	1000.000	H	19.3	----	----	68.2	1.0
5750.000000	63.5	48.1	1000.000	H	19.3	----	----	68.2	4.7





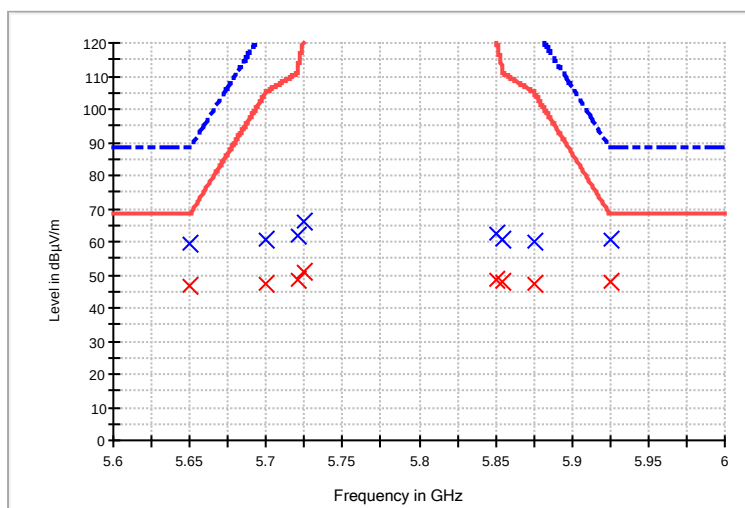
Radiated Band Edge: UNII 3, HT20





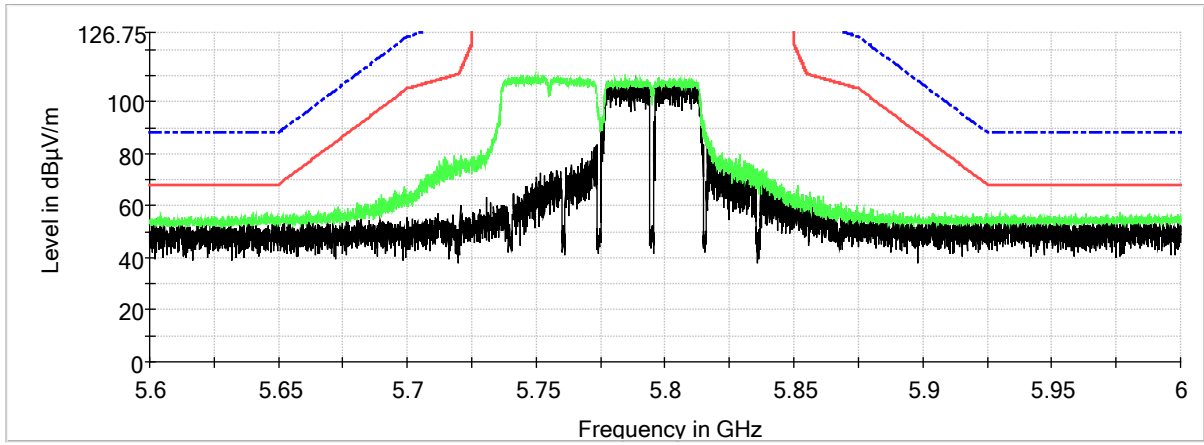
Radiated Band Edge: UNII 3, HT20 - Measurements

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK (dB)	Limit - PK (dBμV/m)
5650.000000	59.2	46.7	1000.000	H	19.3	9.0	68.2
5700.000000	60.6	47.5	1000.000	H	19.3	44.6	105.2
5720.000000	61.9	48.5	1000.000	H	19.3	48.9	110.8
5725.000000	65.9	51.0	1000.000	H	19.3	56.3	122.2
5850.000000	62.6	48.4	1000.000	H	19.4	59.6	122.2
5855.000000	60.8	48.0	1000.000	H	19.4	50.0	110.8
5875.000000	60.0	47.4	1000.000	H	19.5	45.2	105.2
5925.000000	60.4	47.7	1000.000	H	19.7	7.8	68.2





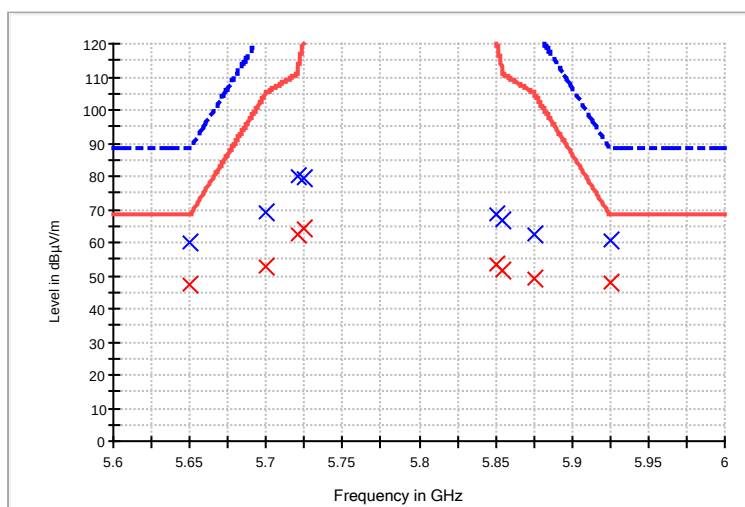
Radiated Band Edge: UNII 3, HT40





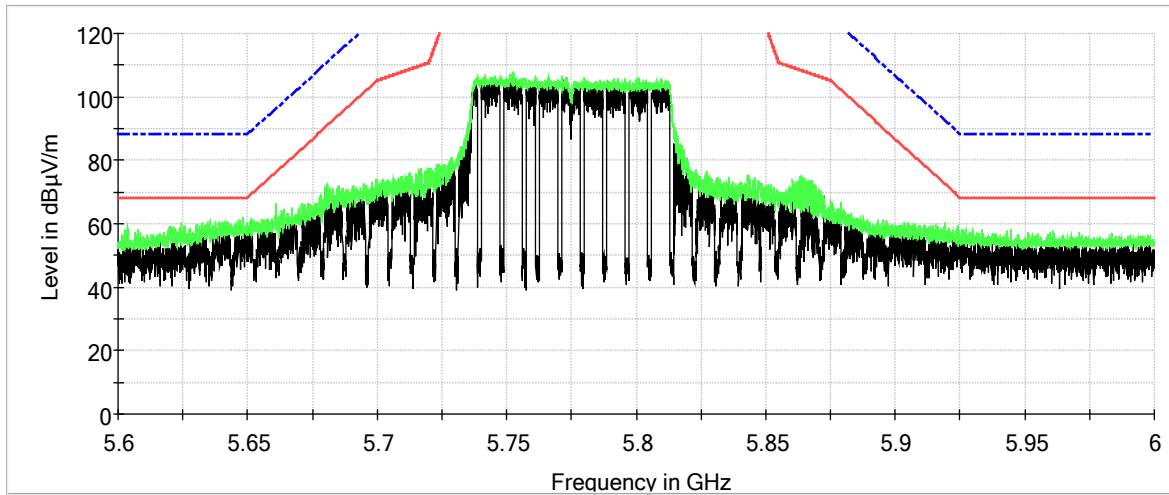
Radiated Band Edge: UNII 2C, HT40 - Measurements

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK (dB)	Limit - PK (dBμV/m)
5650.000000	60.0	47.5	1000.000	H	19.3	8.2	68.2
5700.000000	69.2	52.8	1000.000	H	19.3	36.0	105.2
5720.000000	80.2	62.6	1000.000	H	19.3	30.6	110.8
5725.000000	79.6	64.0	1000.000	H	19.3	42.6	122.2
5850.000000	68.2	53.1	1000.000	H	19.4	54.0	122.2
5855.000000	66.6	51.7	1000.000	H	19.4	44.2	110.8
5875.000000	62.4	48.8	1000.000	H	19.5	42.8	105.2
5925.000000	60.6	48.0	1000.000	H	19.7	7.6	68.2





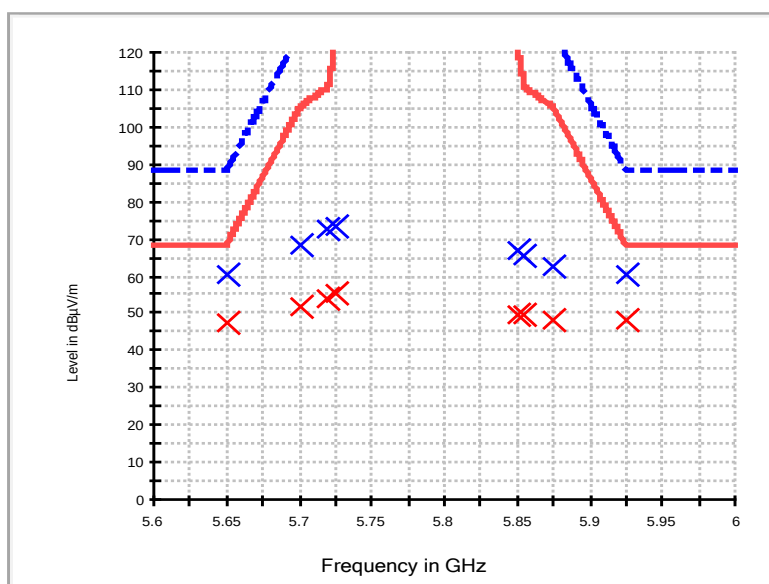
Radiated Band Edge: UNII 3, HT80





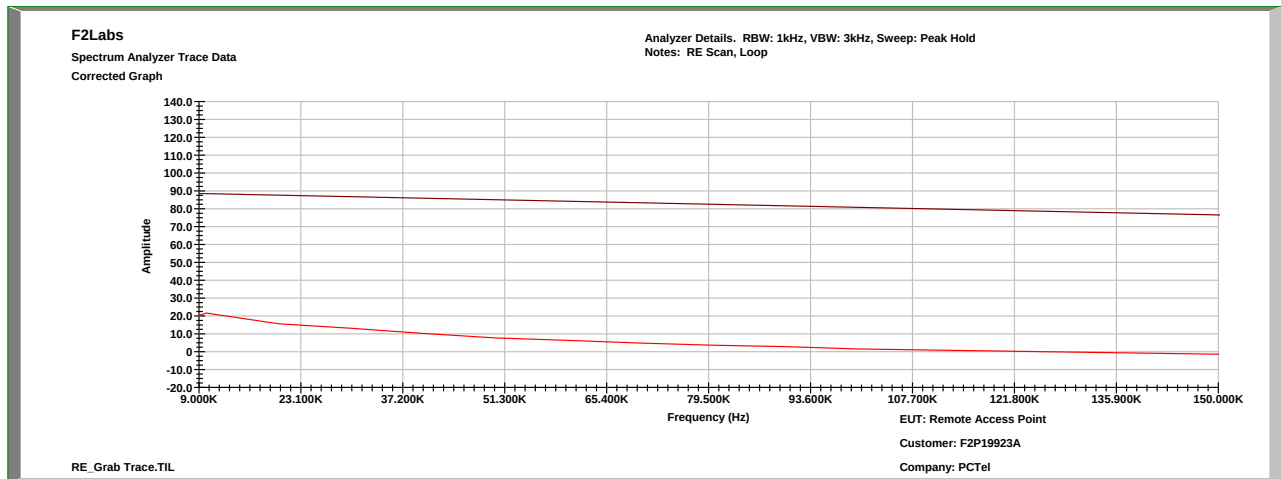
Radiated Band Edge: UNII 3, HT80 - Measurements

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK (dB)	Limit - PK (dBμV/m)
5650.000000	60.6	47.4	1000.000	H	19.3	7.6	68.2
5700.000000	68.2	51.9	1000.000	H	19.3	37.0	105.2
5720.000000	72.8	53.7	1000.000	H	19.3	38.0	110.8
5725.000000	73.1	55.5	1000.000	H	19.3	49.1	122.2
5850.000000	67.0	49.6	1000.000	H	19.4	55.2	122.2
5855.000000	65.4	49.4	1000.000	H	19.4	45.4	110.8
5875.000000	62.8	48.5	1000.000	H	19.5	42.4	105.2
5925.000000	60.6	47.8	1000.000	H	19.7	7.6	68.2

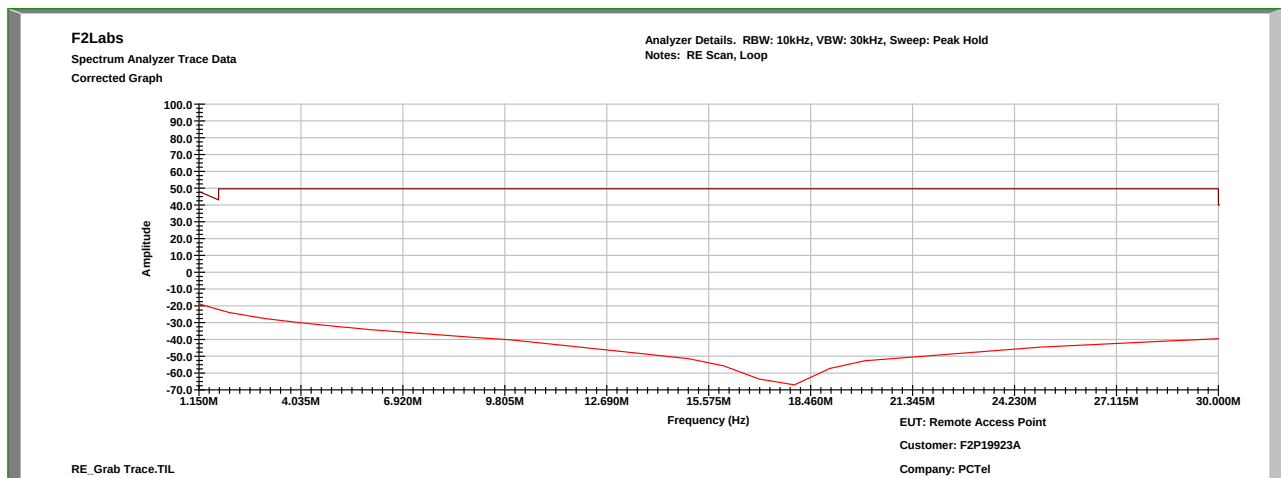




Radiated Spurious Emissions: 0.009 MHz to 0.15 MHz

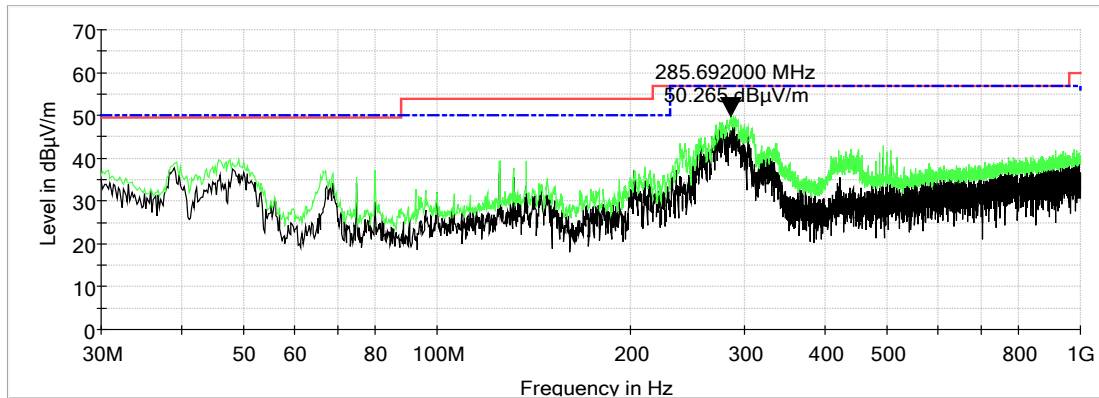


Radiated Spurious Emissions: 0.15MHz to 30.0 MHz

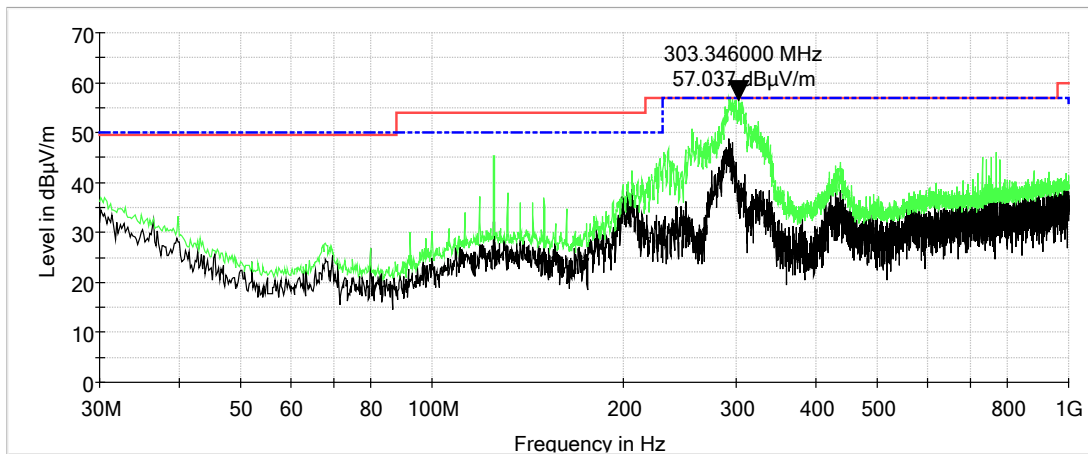




Radiated Spurious Emissions: 30 MHz to 1000 MHz, Vertical



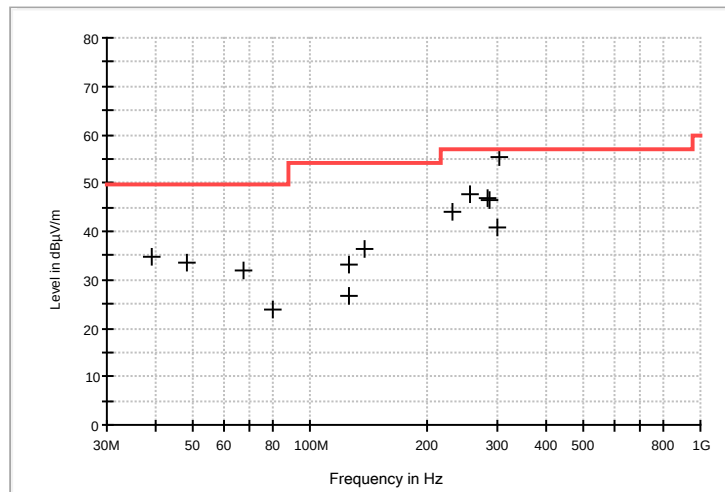
Radiated Spurious Emissions: 30 MHz to 1000 MHz, Horizontal





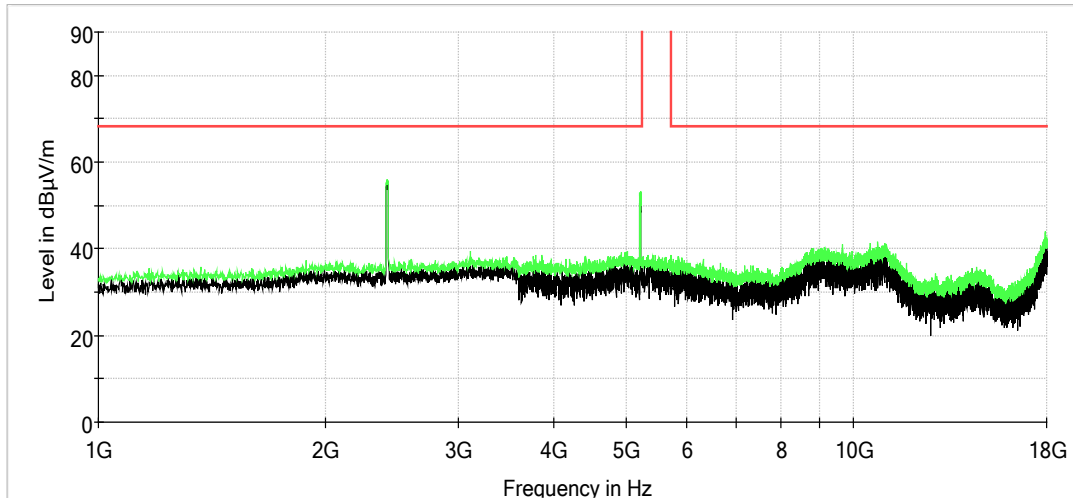
Measurements, 30 MHz to 1000 MHz

Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (degrees)	Reading (dBμV)	Correction Factors (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
38.920000	V	100.00	180.00	36.3	-1.6	34.70	49.6	-14.9
48.040000	V	100.00	51.00	41.1	-7.4	33.70	49.6	-15.9
67.050000	V	100.00	32.00	40.2	-8.3	31.90	49.6	-17.7
79.860000	V	100.00	335.00	32.5	-8.5	24.00	49.6	-25.6
124.870000	H	100.00	0.00	28.1	-1.6	26.50	54.0	-27.5
125.060000	V	100.00	22.00	34.6	-1.6	33.00	54.0	-21.0
137.480000	V	100.00	289.00	38.2	-1.9	36.30	54.0	-17.7
231.370000	H	100.00	253.00	47.2	-3.0	44.20	56.9	-12.7
256.200000	H	100.00	231.00	50.1	-2.3	47.80	56.9	-9.1
285.690000	V	100.00	12.00	47.2	-0.5	46.70	56.9	-10.2
288.800000	V	100.00	33.00	46.9	-0.5	46.40	56.9	-10.5
299.850000	V	100.00	25.00	41.4	-0.4	41.00	56.9	-15.9
303.350000	H	100.00	227.00	55.6	-0.2	55.40	56.9	-1.5

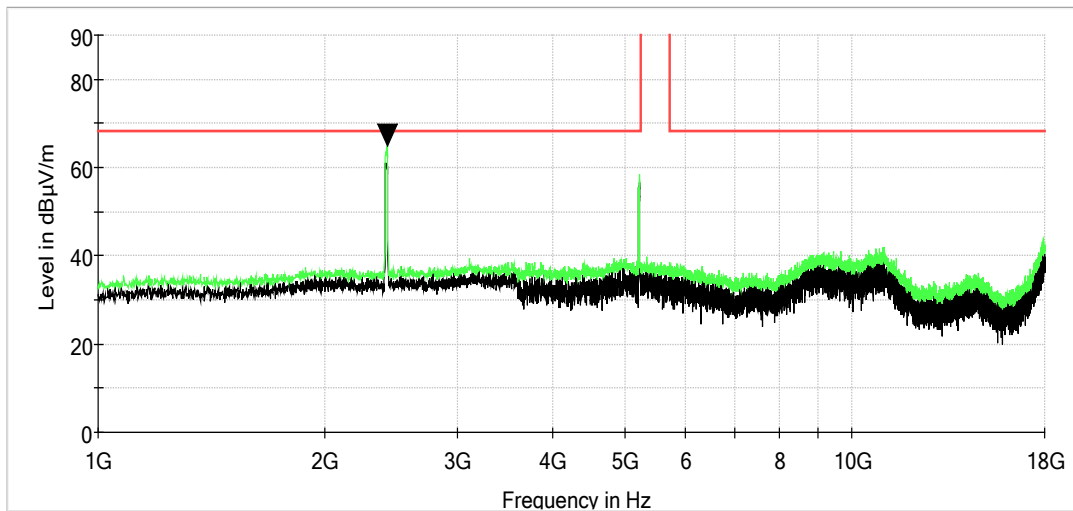




Radiated Spurious Emissions: 1 GHz to 18 GHz, Vertical

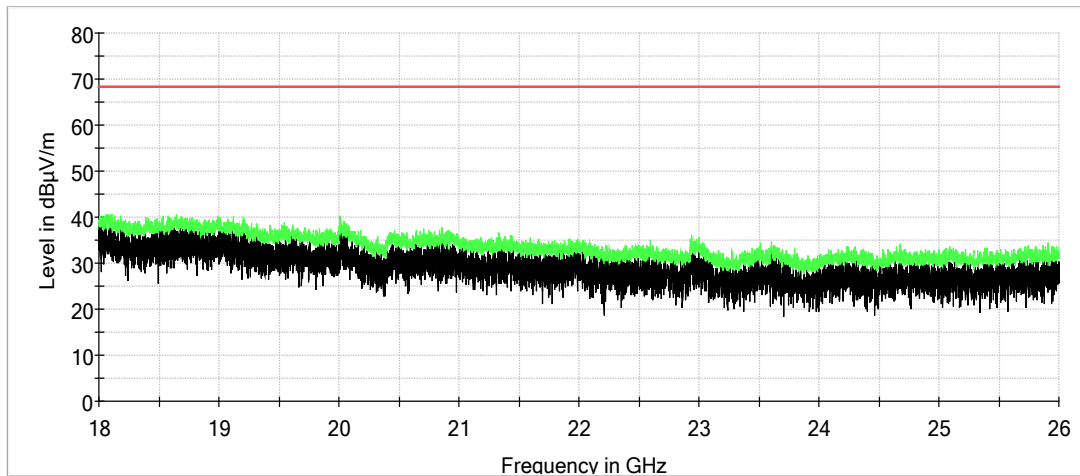


Radiated Spurious Emissions: 1 GHz to 18 GHz, Horizontal

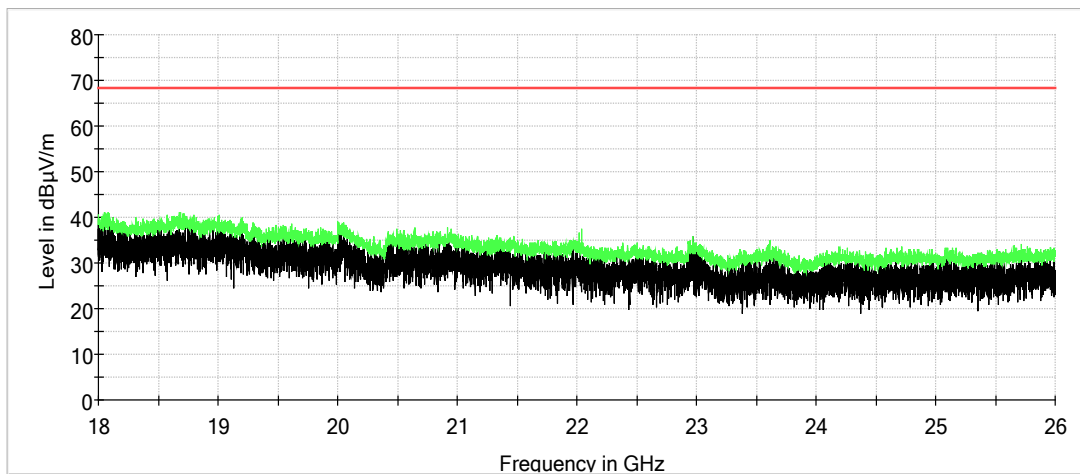




Radiated Spurious Emissions: 18 GHz to 26 GHz, Vertical

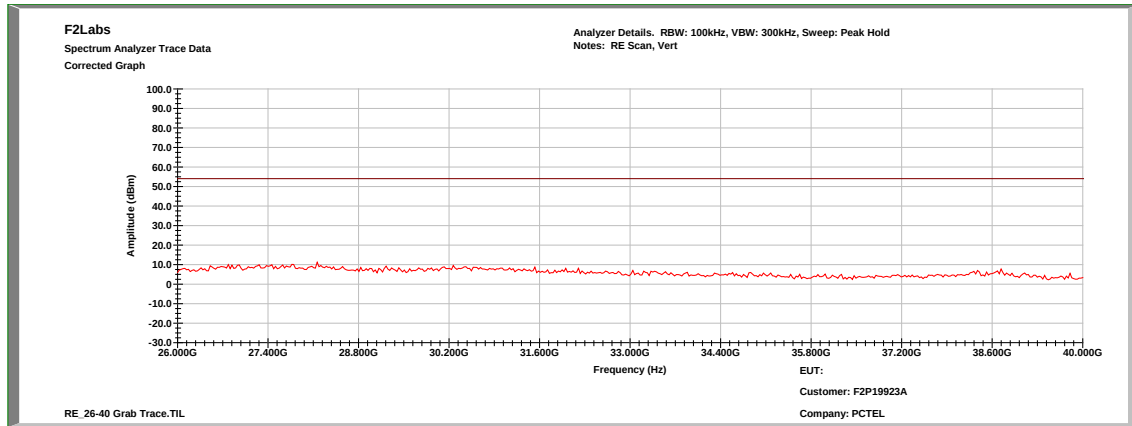


Radiated Spurious Emissions: 18 GHz to 26 GHz, Horizontal

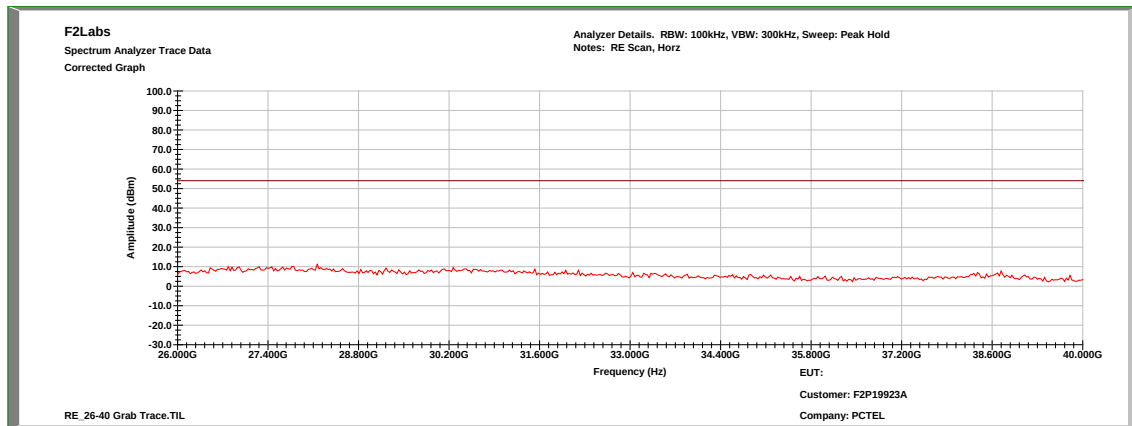




Radiated Spurious Emissions: 26 GHz to 40 GHz, Vertical



Radiated Spurious Emissions: 26 GHz to 40 GHz, Horizontal





11 CONDUCTED SPURIOUS EMISSIONS

The following tests were performed to demonstrate compliance.

RF Antenna Conducted Test

The EUT antenna ports were fitted with Type N connectors and directly connected to the input of the spectrum analyzer. Limit lines were adjusted to account for the 1dB over 6dBi gain of the antenna(s).

Test data presented is from Output Port 1, determined to be worst-case.

Summing and aggregation were not added to Conducted Spurious Emissions, as these were all more than 20dB below the limit and aggregation with antenna gain would only total 10dB to be added.

11.1 Requirements:

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.

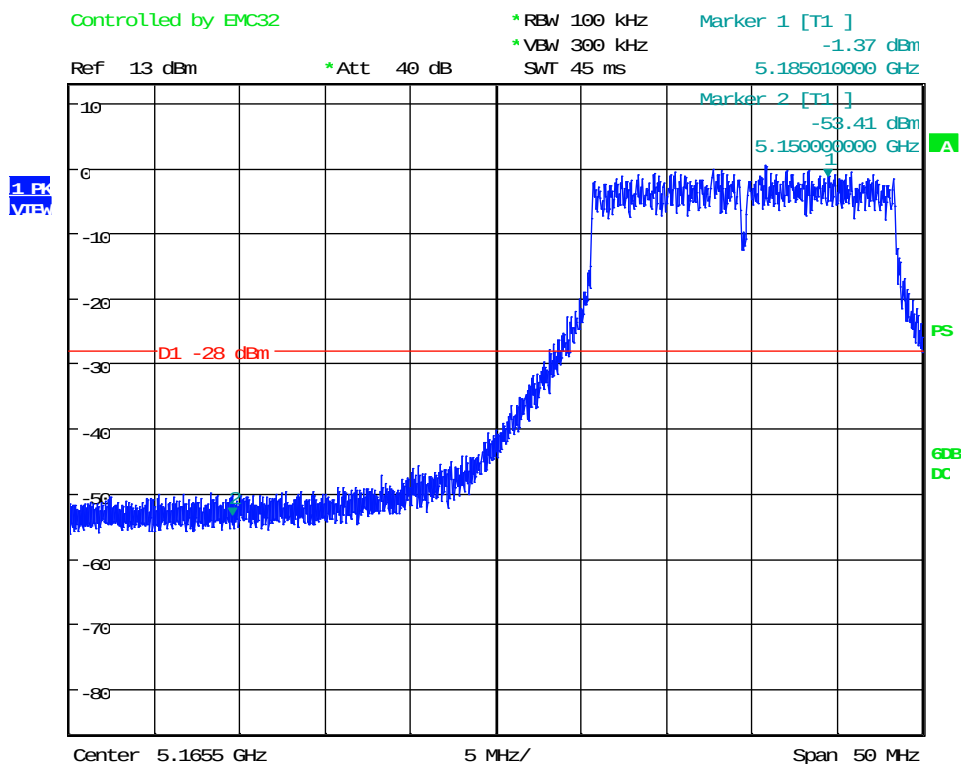
For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.



11.2 Conducted Spurious Emissions Test Data

Test Date(s):	2020-10-30, 2021-04-05	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.407(b)(1,4)	Air Temperature:	21.6°C
		Relative Humidity:	38%

UNII 1, HT20: Band Edge - Low

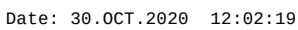


Date: 30.OCT.2020 11:51:50



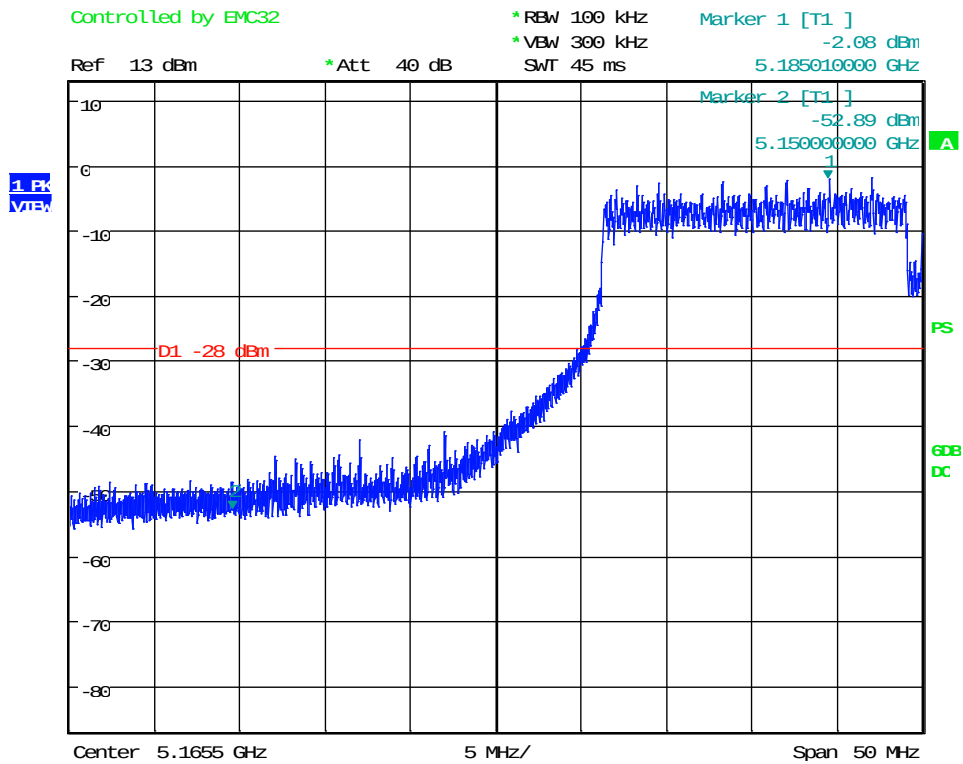
Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

UNII 1, HT20: Band Edge - High





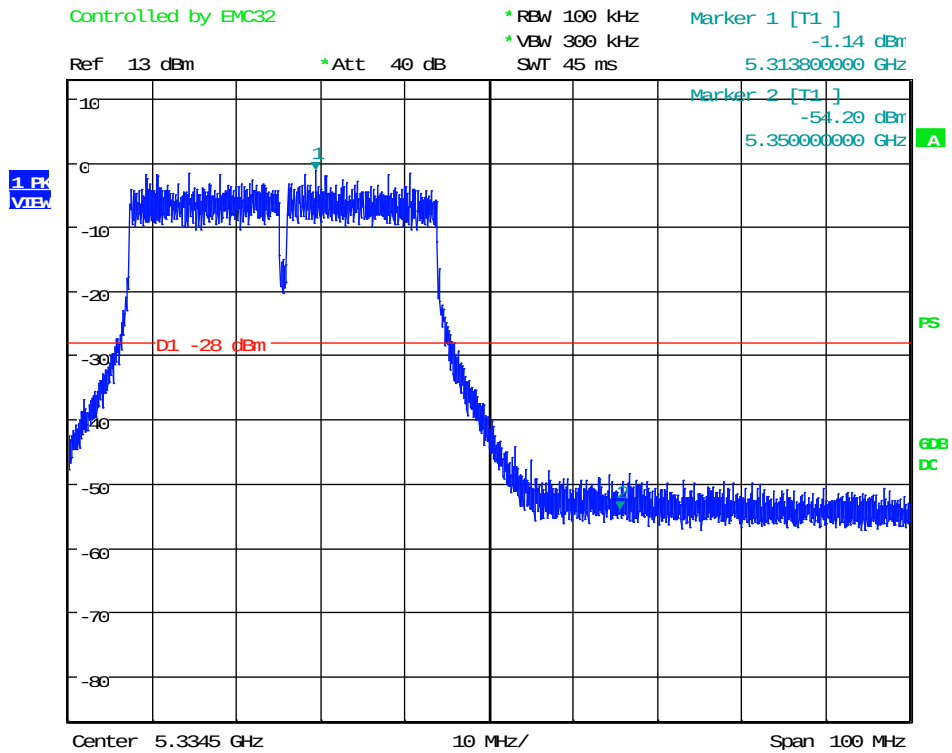
UNII 1, HT40: Band Edge - Low



Date: 30.OCT.2020 11:53:36



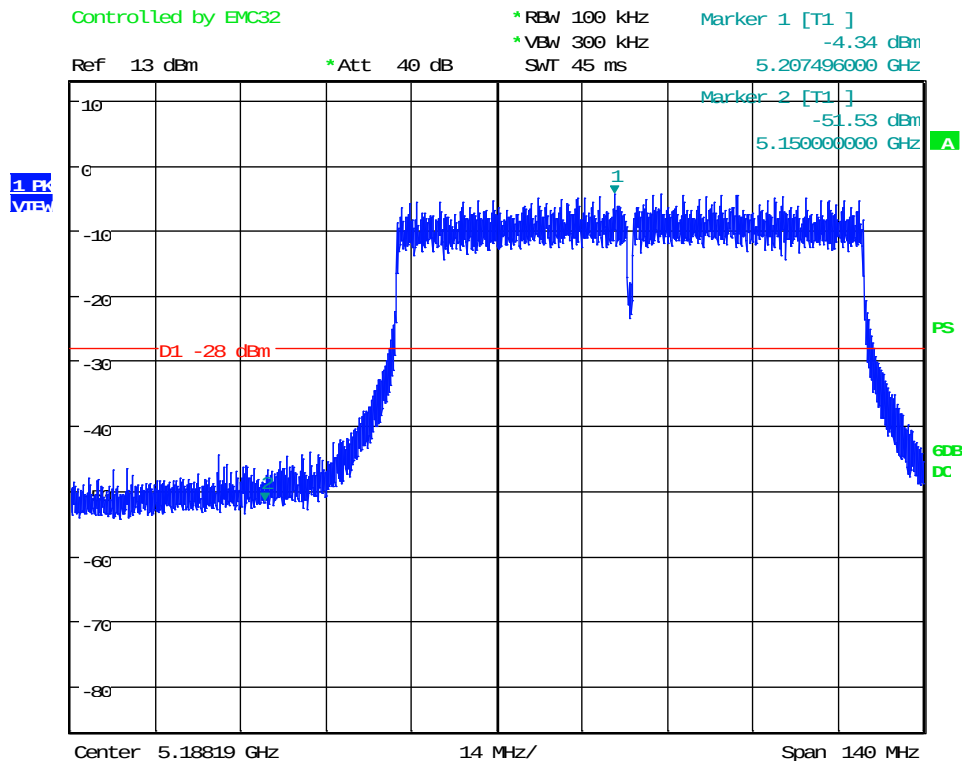
UNII 1, HT40: Band Edge - High



Date: 30.OCT.2020 12:03:56



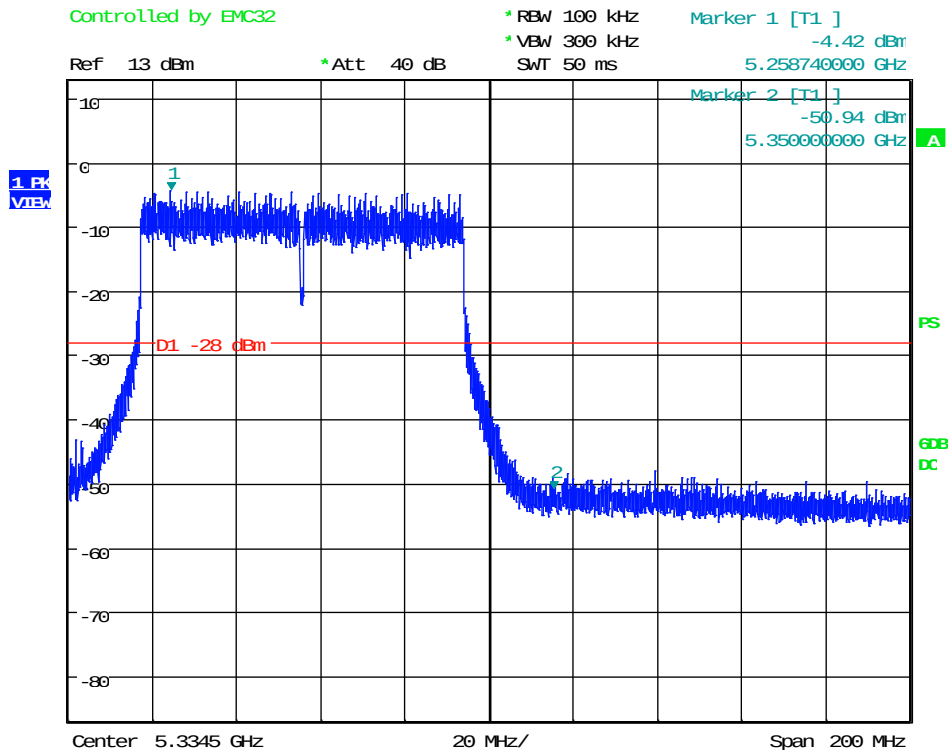
UNII 1, HT80: Band Edge - Low



Date: 30.OCT.2020 11:57:04



UNII 1, HT80: Band Edge - High



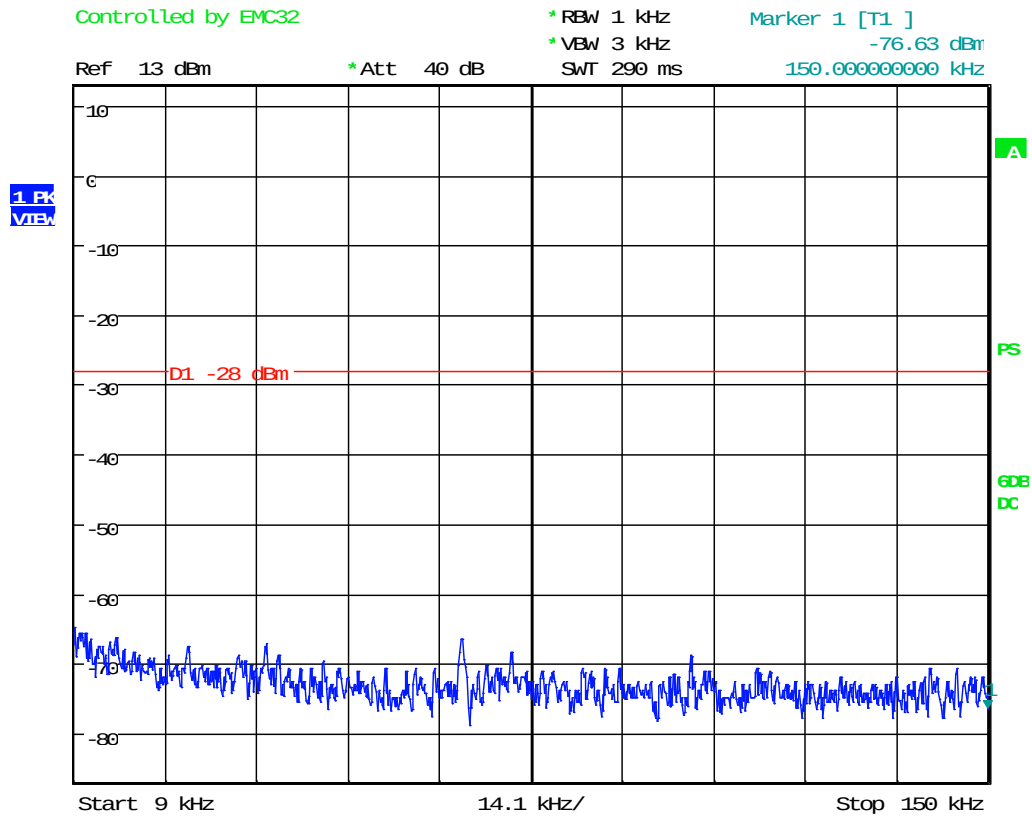
Date: 30.OCT.2020 12:05:55



Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

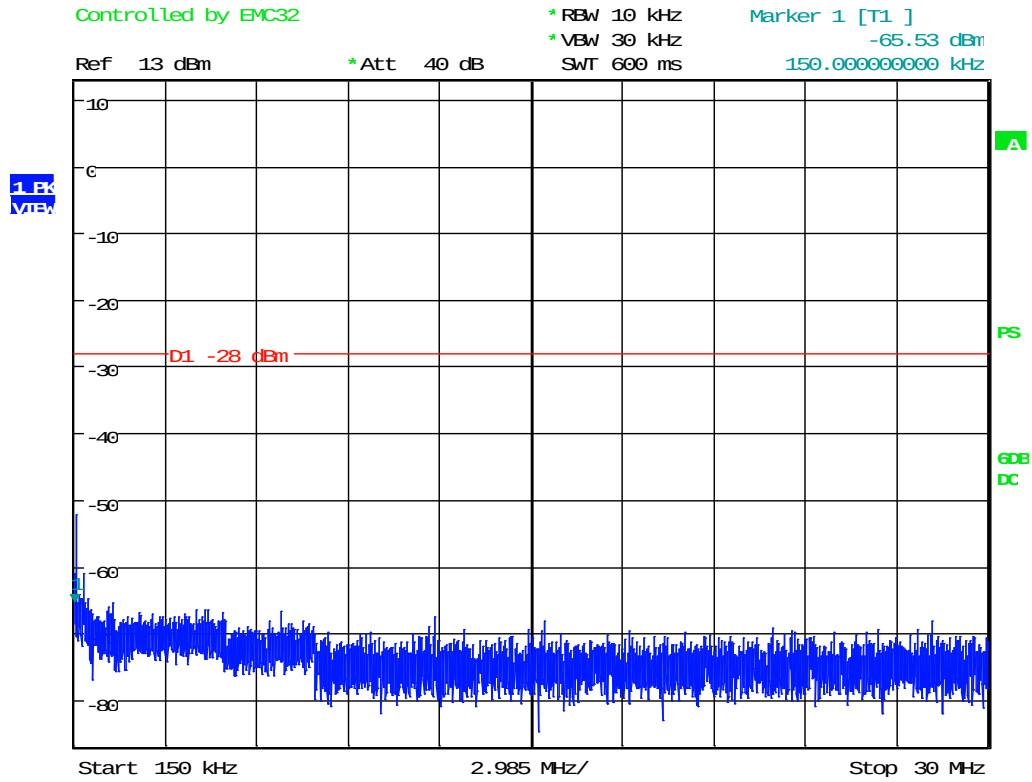
UNII 1: 0.009 MHz to 0.15 MHz



Date: 30.OCT.2020 11:00:40



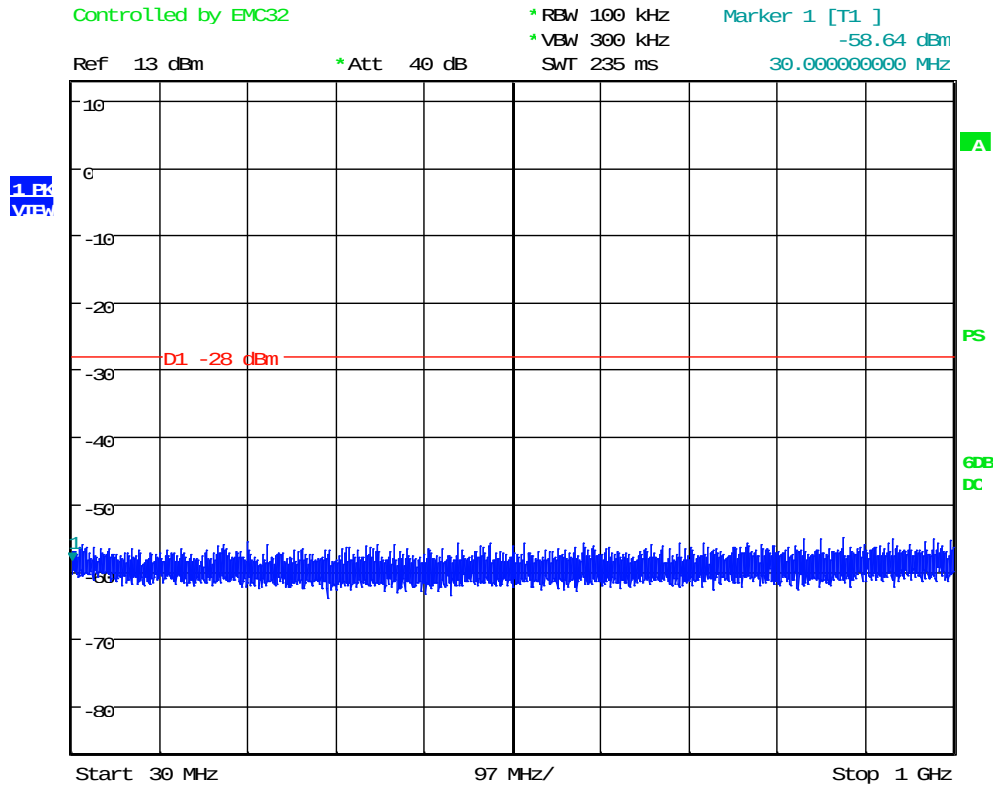
UNII 1: 0.15 MHz to 30 MHz



Date: 30.OCT.2020 11:01:42



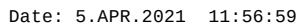
UNII 1: 30 MHz to 1000 MHz



Date: 30.OCT.2020 11:02:36

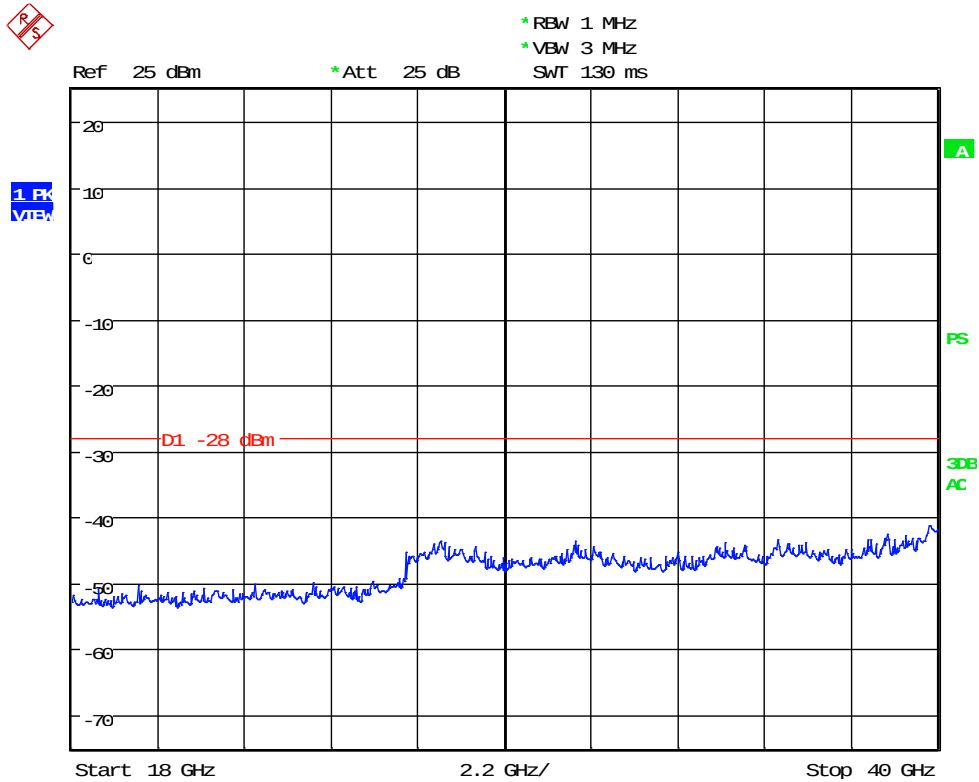


UNII 1: 1 GHz to 18 GHz





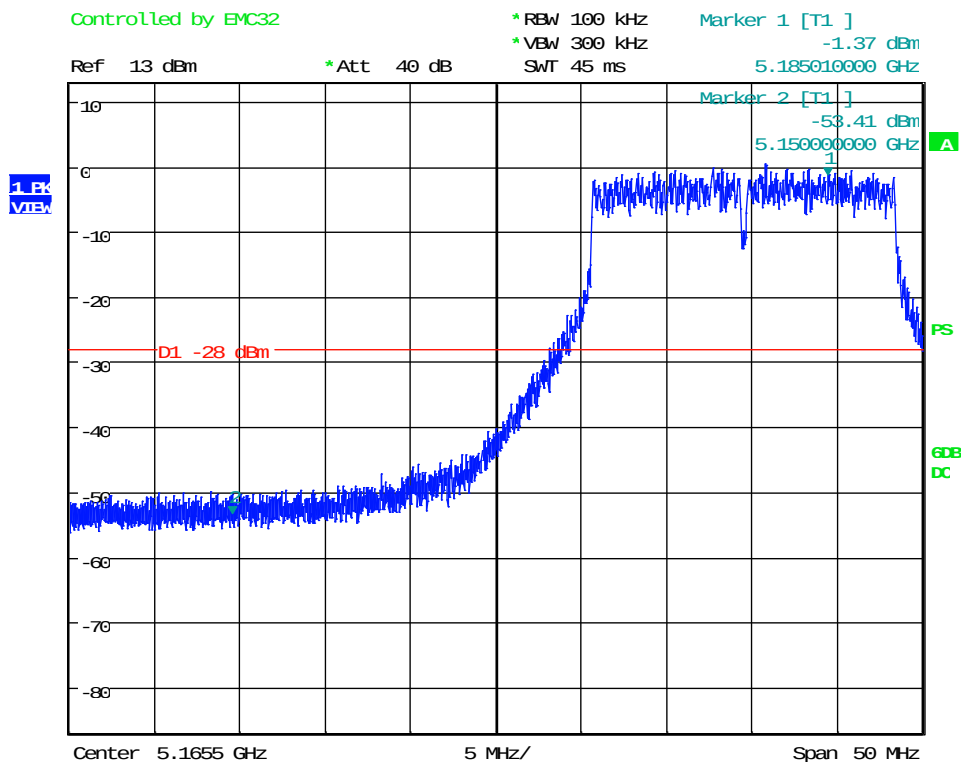
UNII 1: 18 GHz to 40 GHz



Date: 5.APR.2021 11:58:18



UNII 2A, HT20: Band Edge - Low

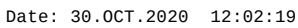


Date: 30.OCT.2020 11:51:50



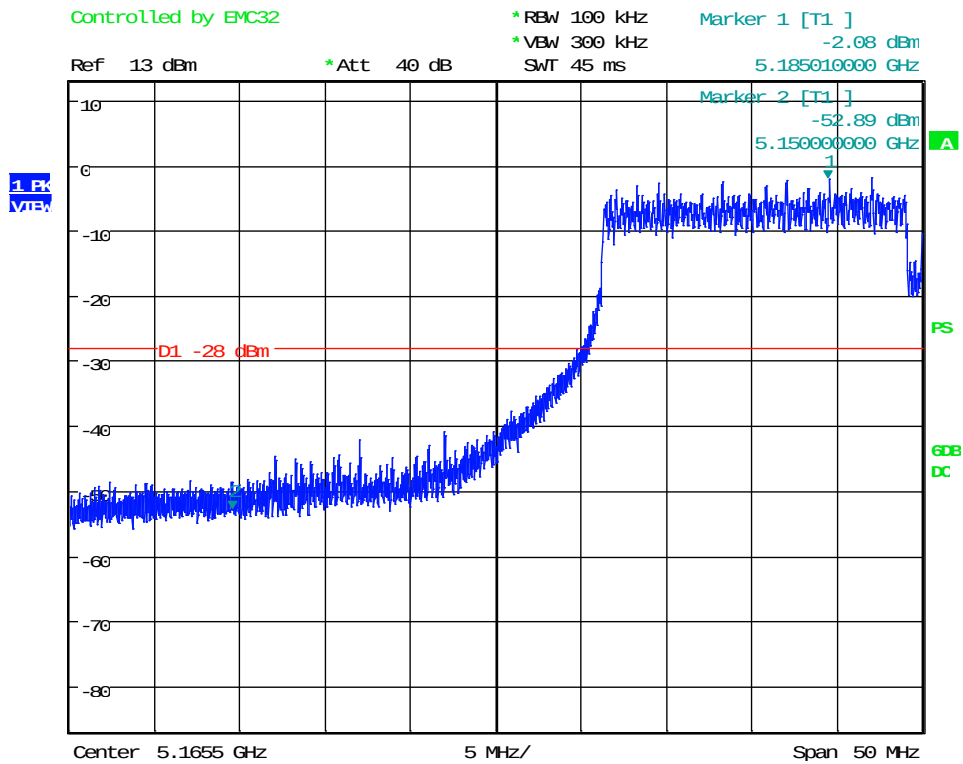
Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

UNII 2A, HT20: Band Edge - High





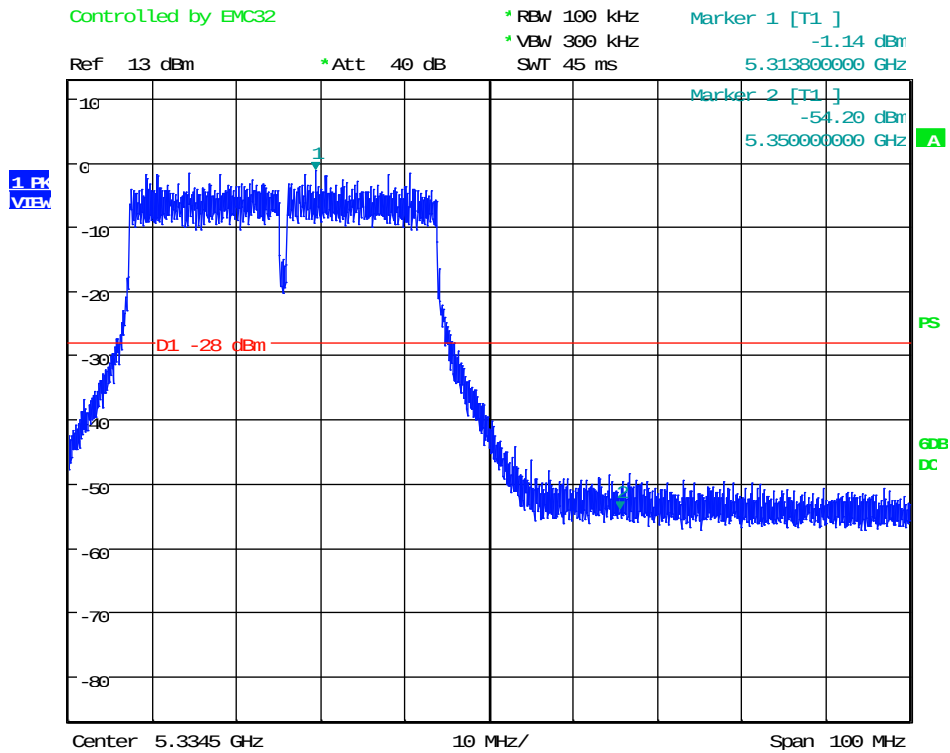
UNII 2A, HT40: Band Edge - Low



Date: 30.OCT.2020 11:53:36



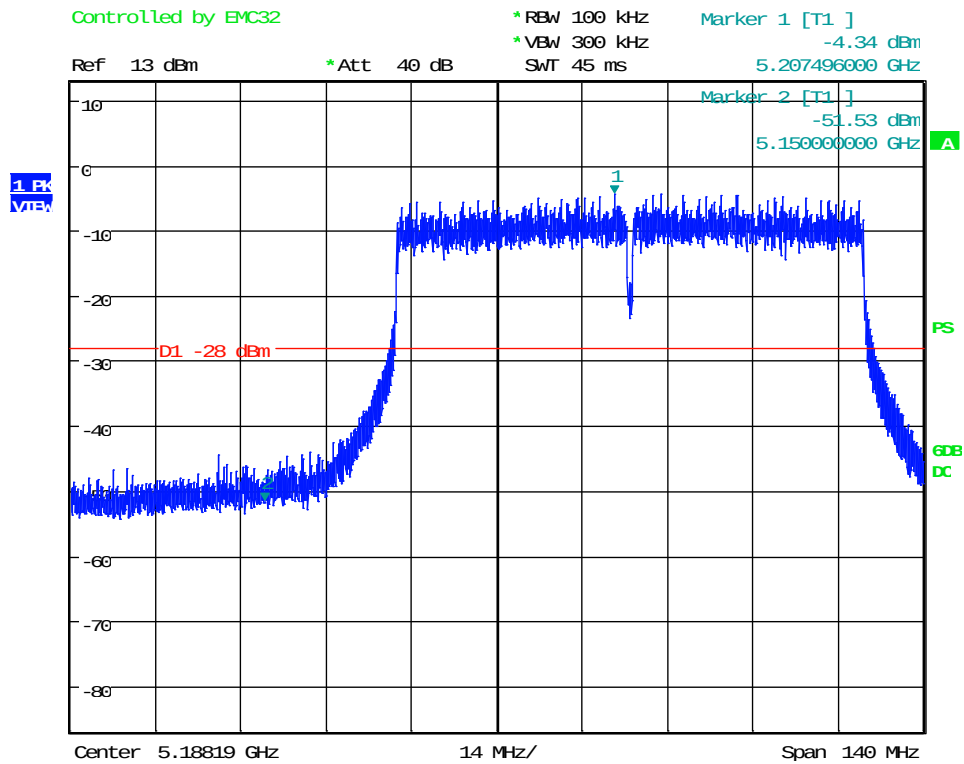
UNII 2A, HT40: Band Edge - High



Date: 30.OCT.2020 12:03:56



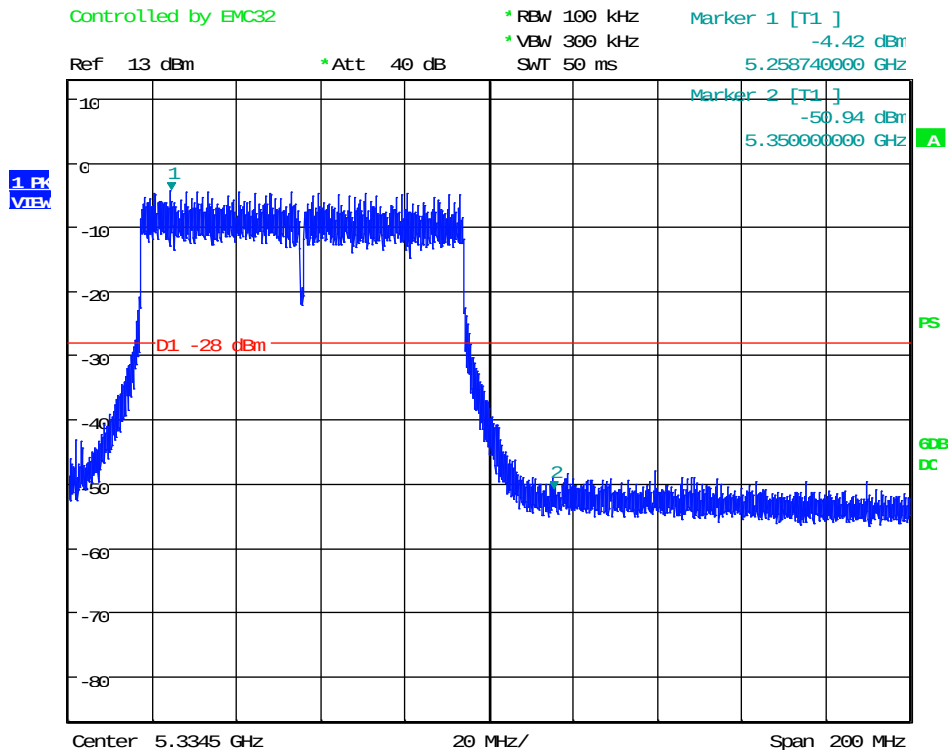
UNII 2A, HT80: Band Edge - Low



Date: 30.OCT.2020 11:57:04



UNII 2A, HT80: Band Edge - High



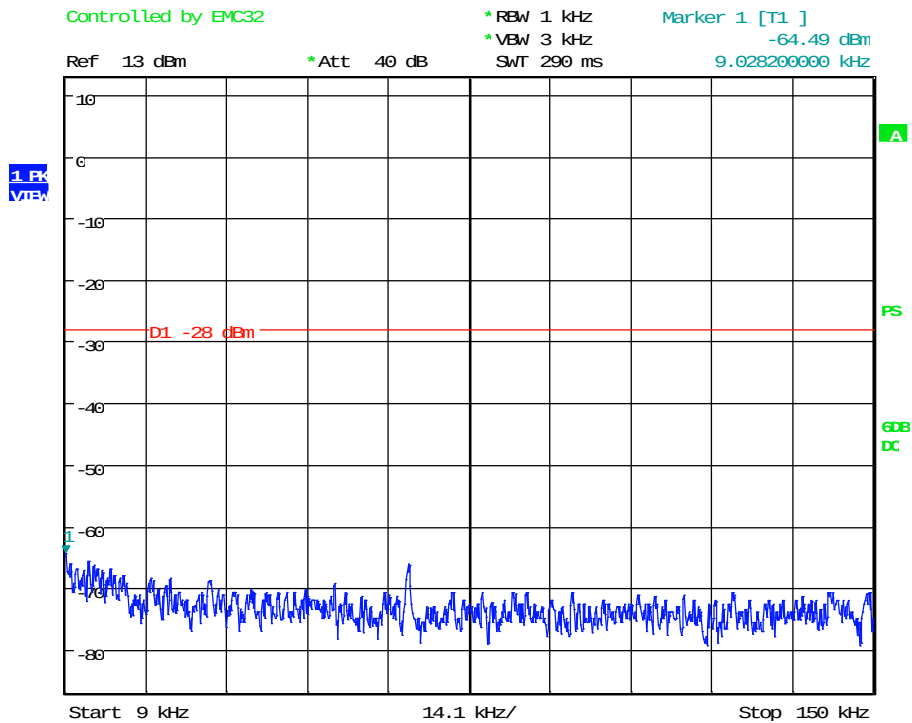
Date: 30.OCT.2020 12:05:55



Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

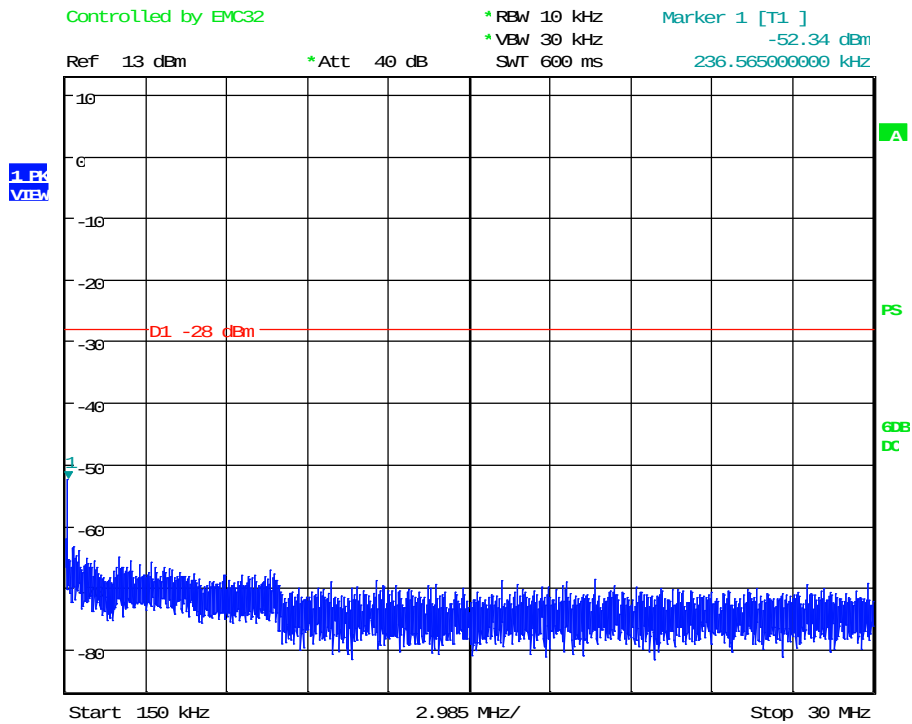
UNII 2A: 0.009 MHz to 0.15 MHz



Date: 30.OCT.2020 11:10:18



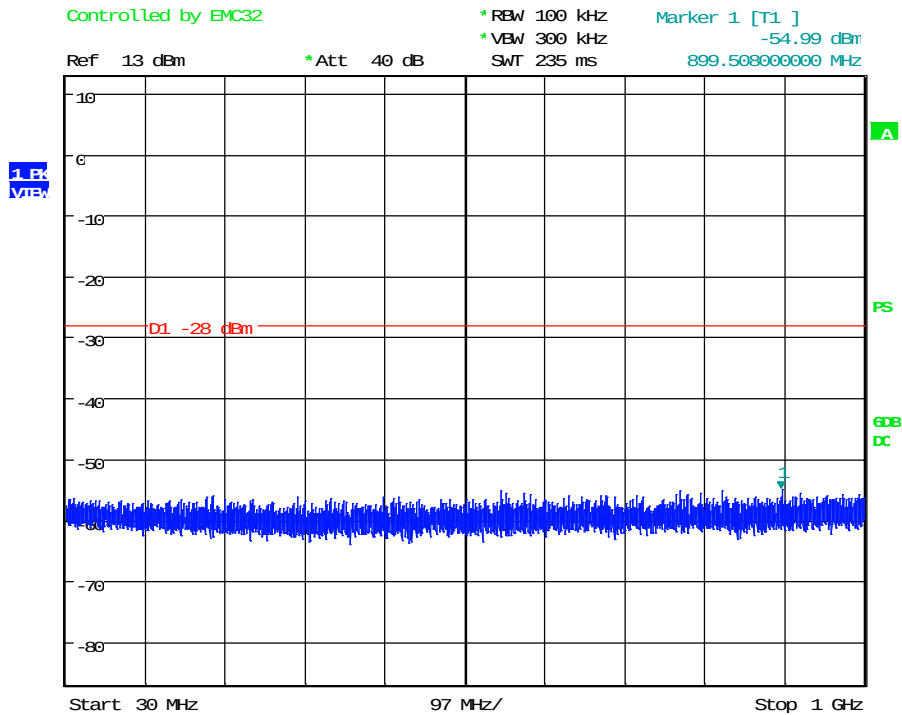
UNII 2A: 0.15 MHz to 30 MHz



Date: 30.OCT.2020 11:08:37



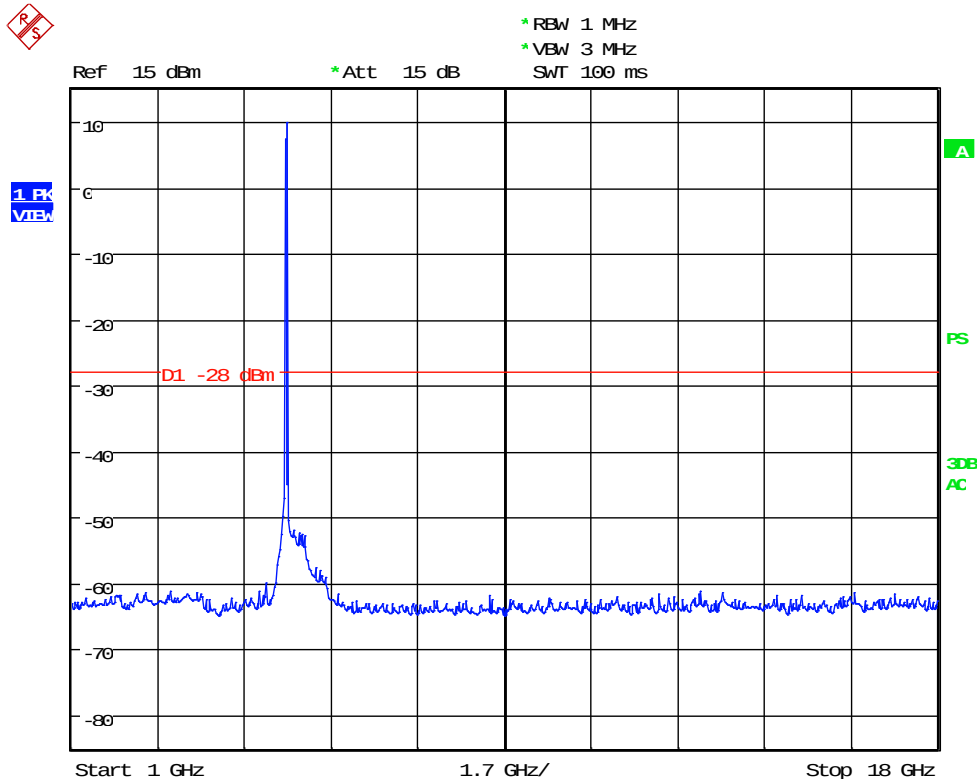
UNII 2A: 30 MHz to 1000 MHz



Date: 30.OCT.2020 11:07:49



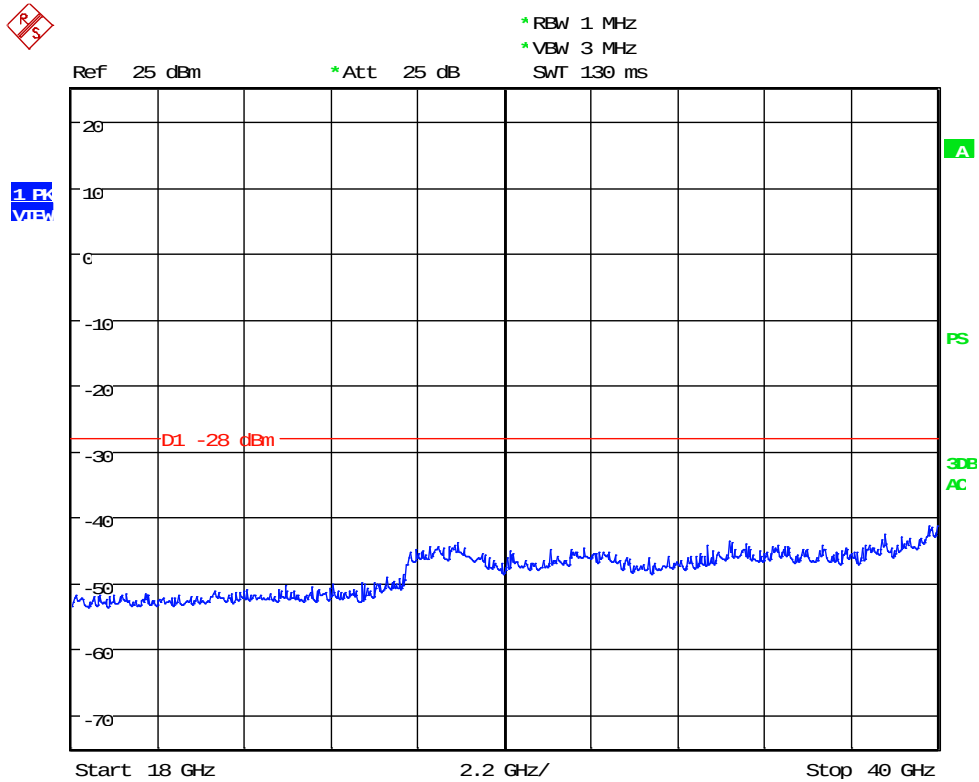
UNII 2A: 1 GHz to 18 GHz



Date: 5.APR.2021 12:01:44



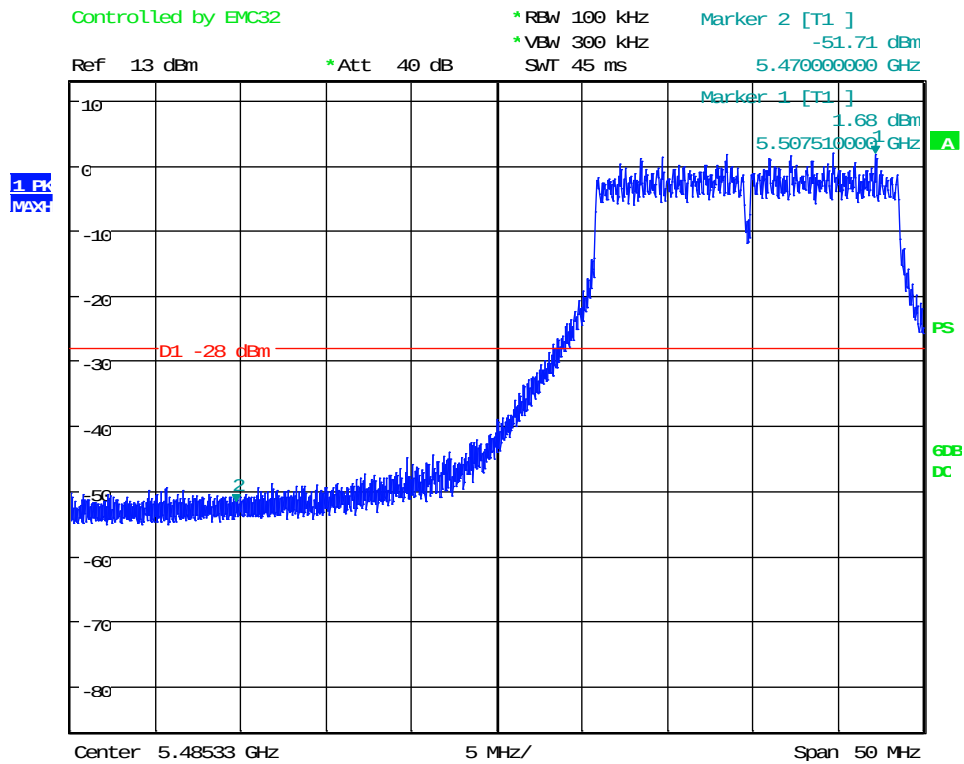
UNII 2A: 18 GHz to 40 GHz



Date: 5.APR.2021 11:59:30



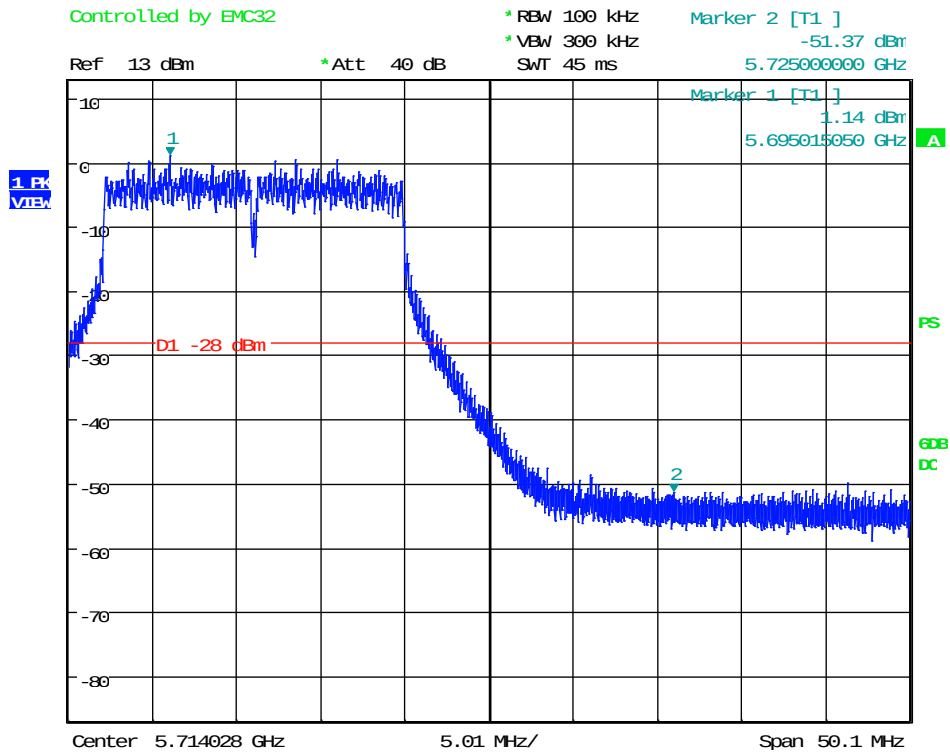
UNII 2C, HT20: Band Edge - Low



Date: 30.OCT.2020 12:12:11



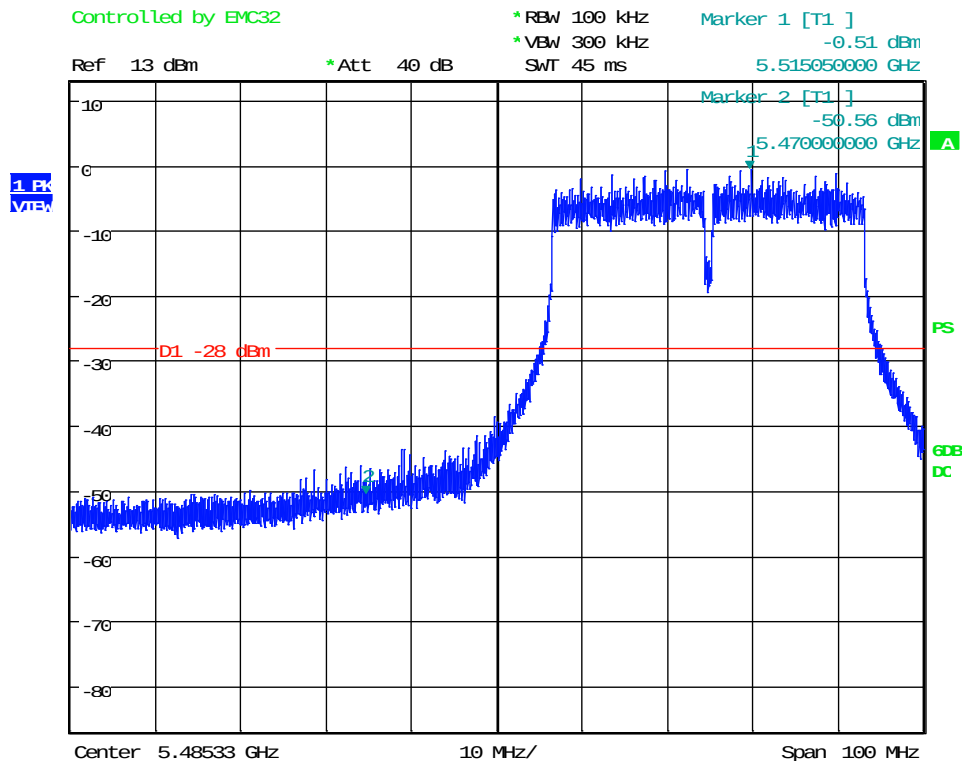
UNII 2C, HT20: Band Edge - High



Date: 30.OCT.2020 12:21:07



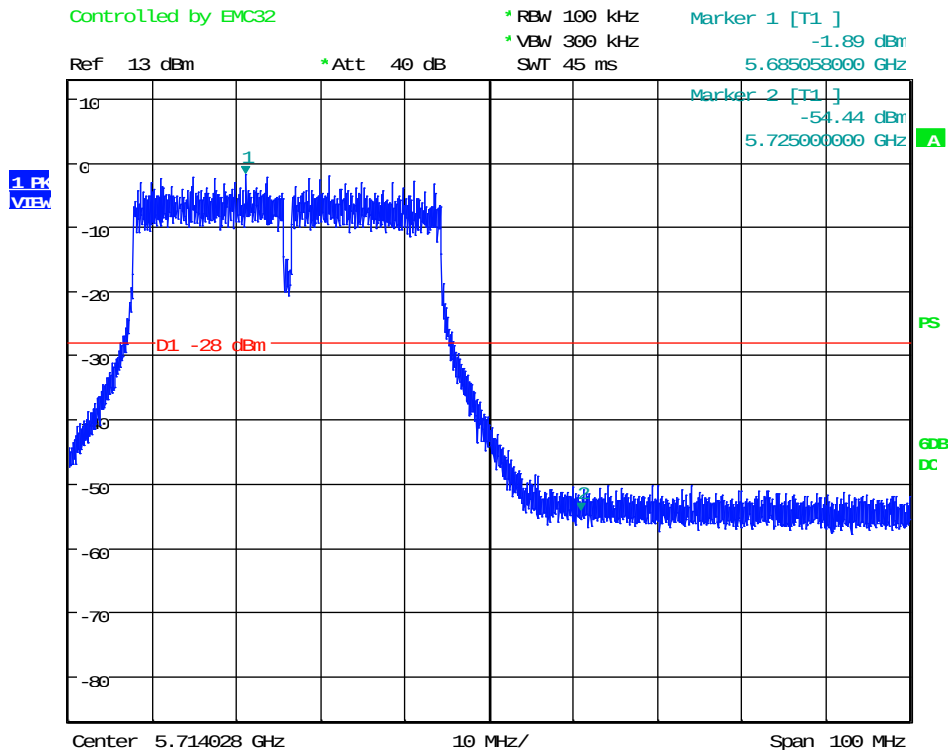
UNII 2C, HT40: Band Edge - Low



Date: 30.OCT.2020 12:14:44



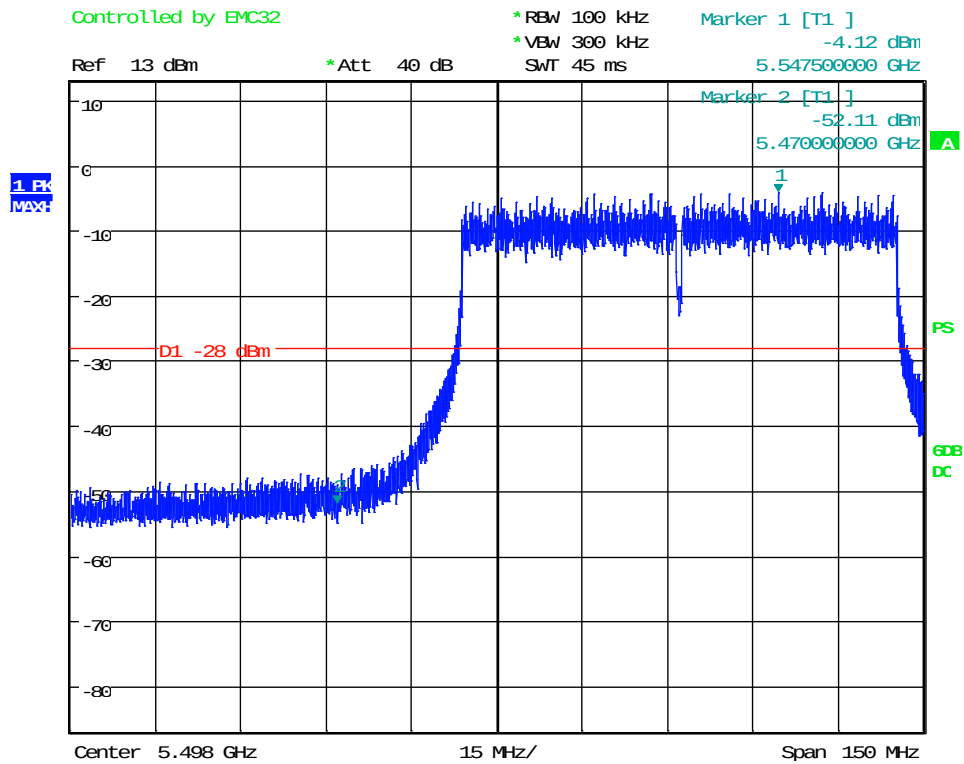
UNII 2C, HT40: Band Edge - High



Date: 30.OCT.2020 12:22:21



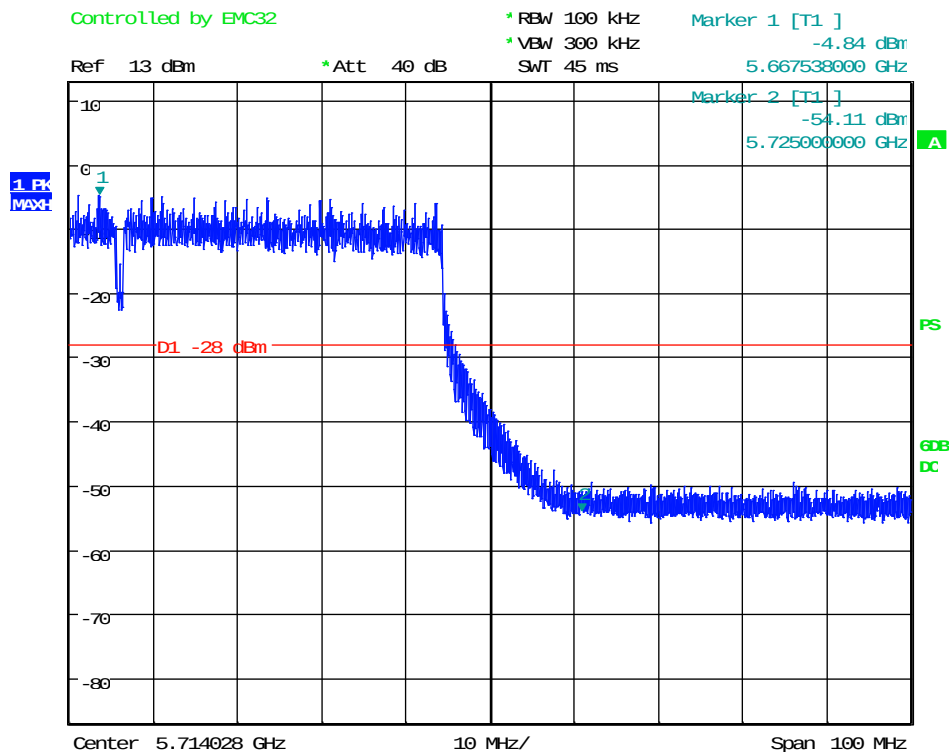
UNII 2C, HT80: Band Edge - Low



Date: 30.OCT.2020 12:18:32



UNII 2C, HT80: Band Edge - High



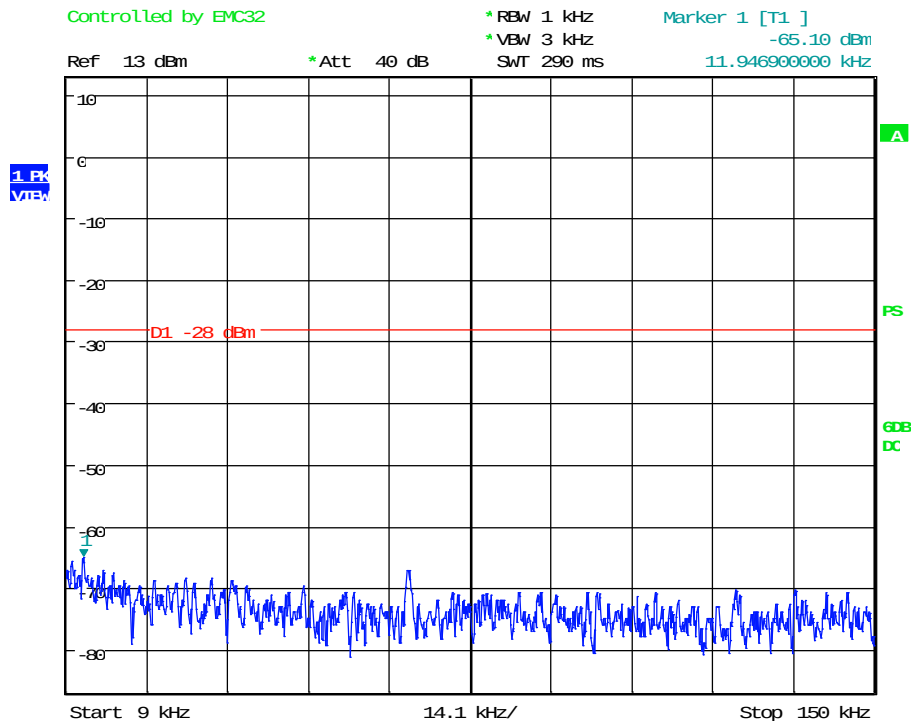
Date: 30.OCT.2020 12:27:49



Order Number: F2P19923A

Applicant: PCTEL, Inc
FCC ID: NYPWIFIAP1200

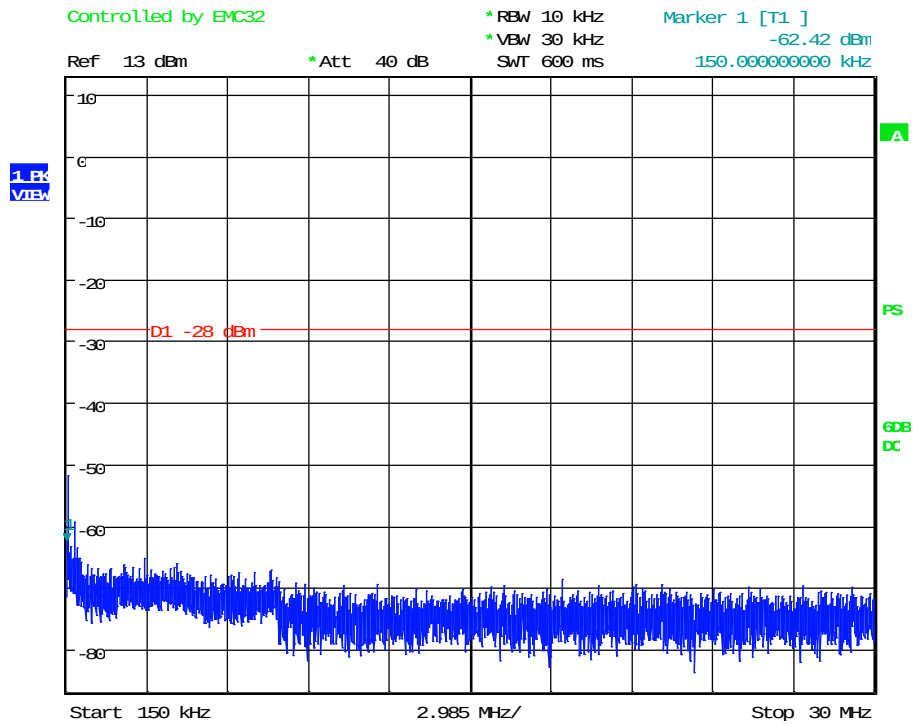
UNII 2C: 0.009 MHz to 0.15 MHz



Date: 30.OCT.2020 11:11:17



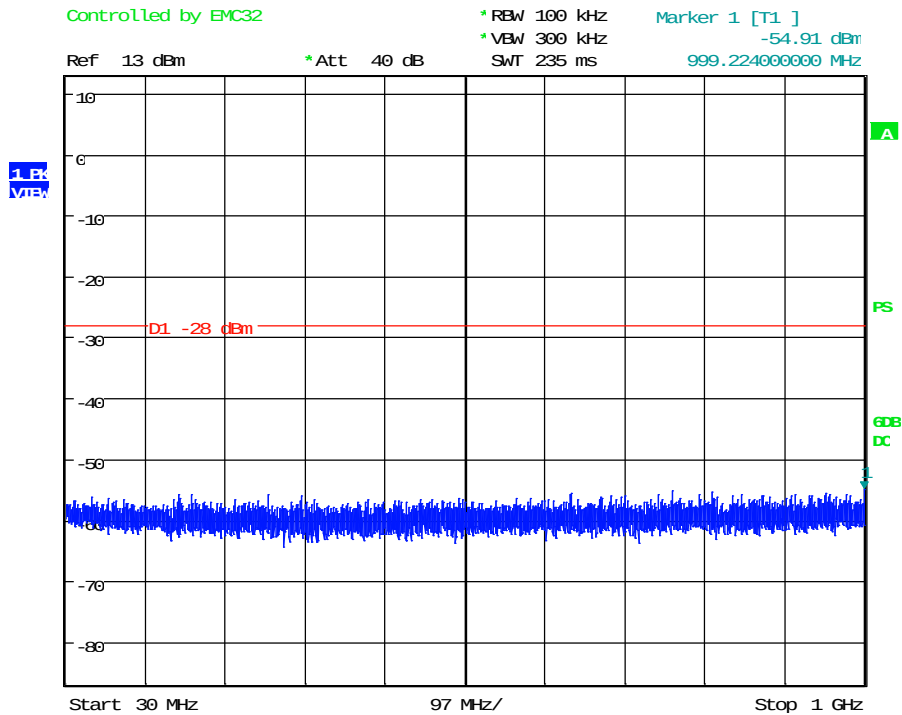
UNII 2C: 0.15 MHz to 30 MHz



Date: 30.OCT.2020 11:12:19



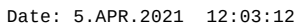
UNII 2C: 30 MHz to 1000 MHz



Date: 30.OCT.2020 11:13:14

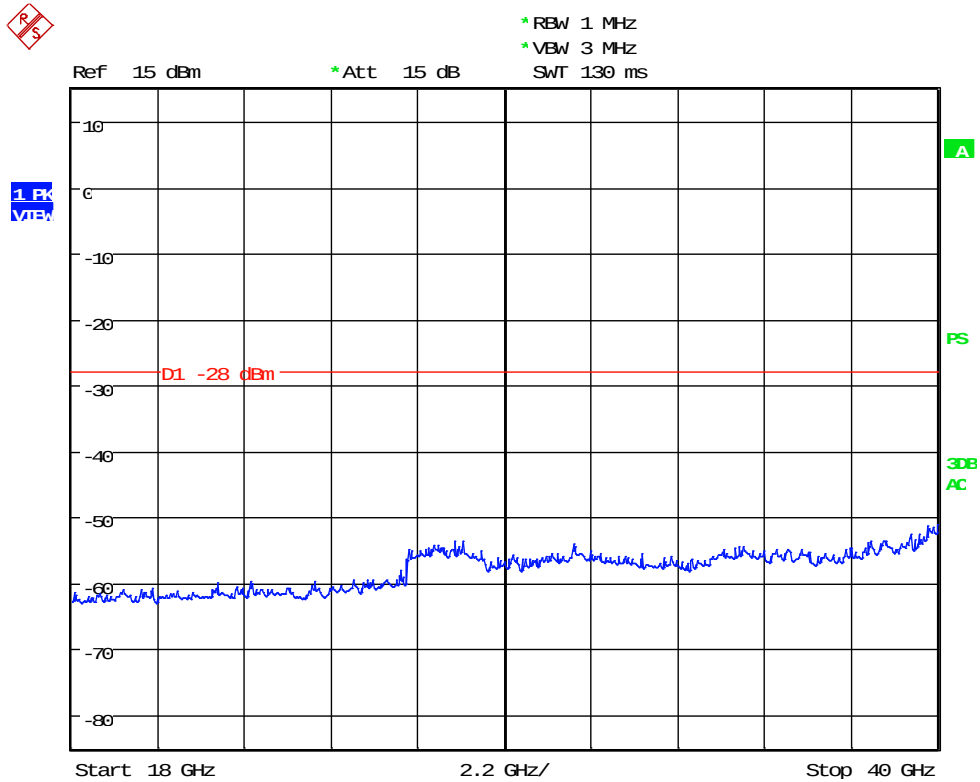


UNII 2C: 1 GHz to 18 GHz





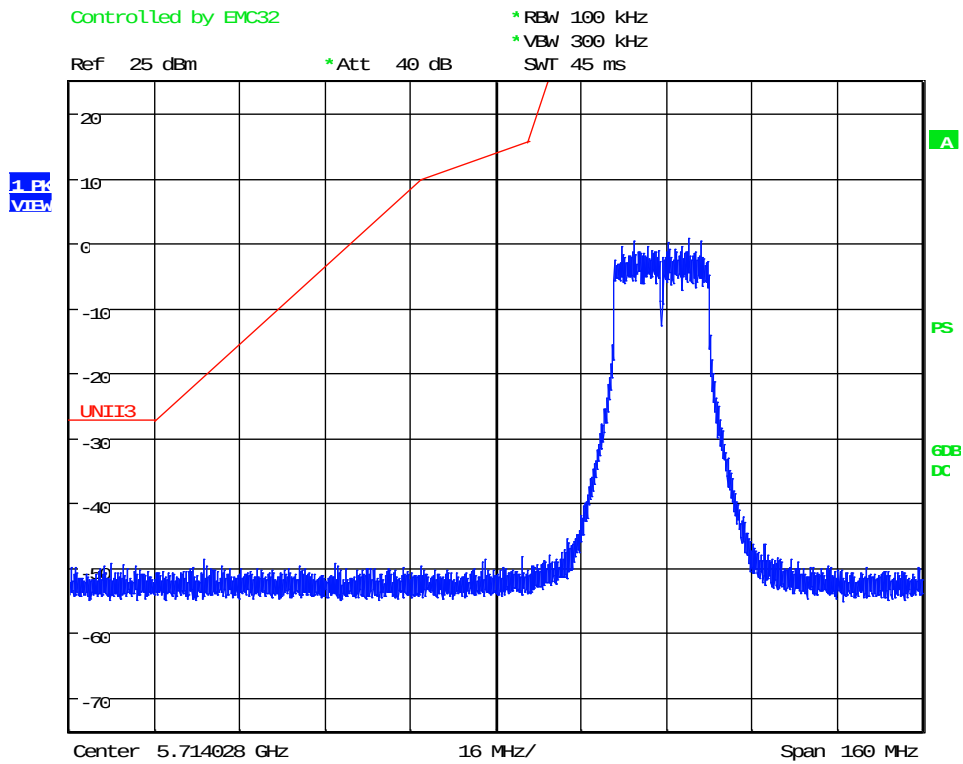
UNII 2C: 18 GHz to 40 GHz



Date: 5.APR.2021 12:04:10



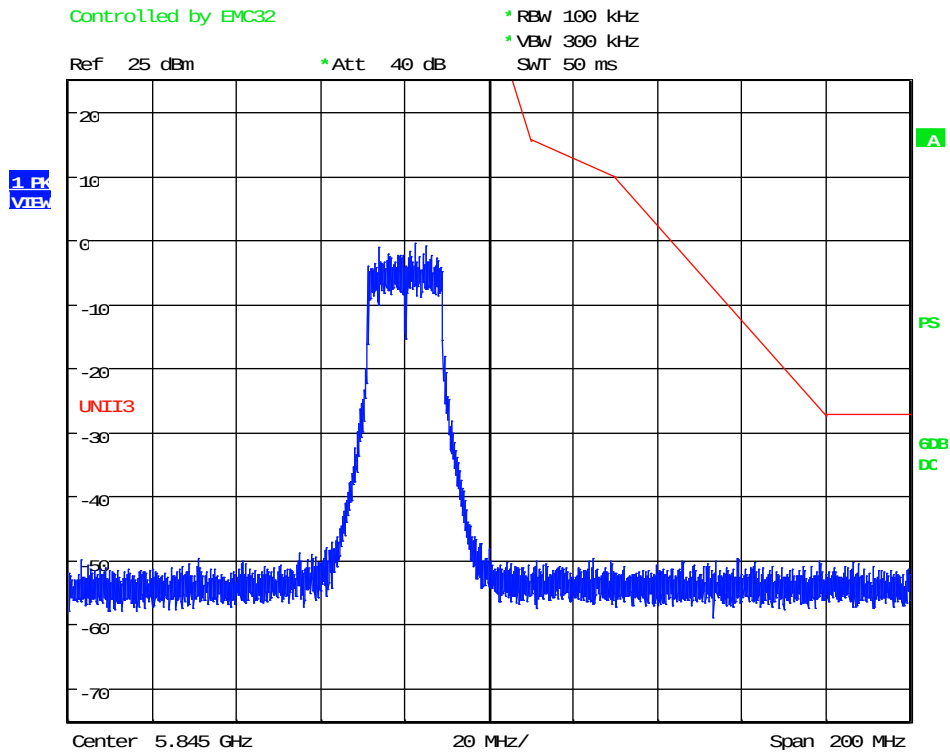
UNII 3, HT20: Band Edge - Low



Date: 30.OCT.2020 12:39:09



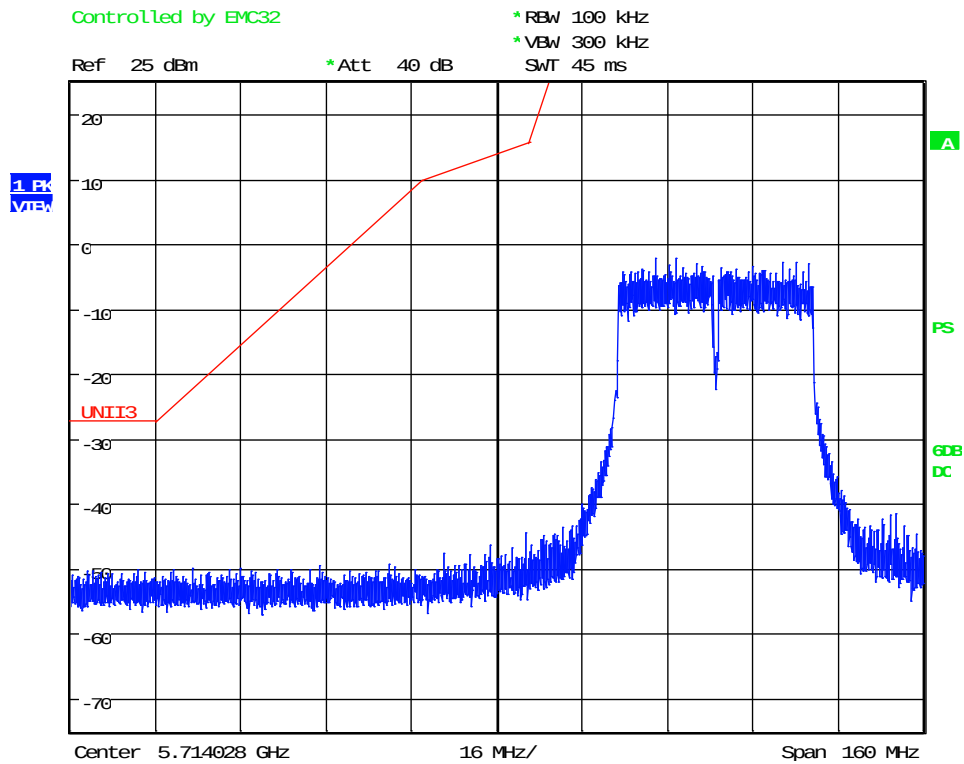
UNII 3, HT20: Band Edge - High



Date: 30.OCT.2020 12:45:29



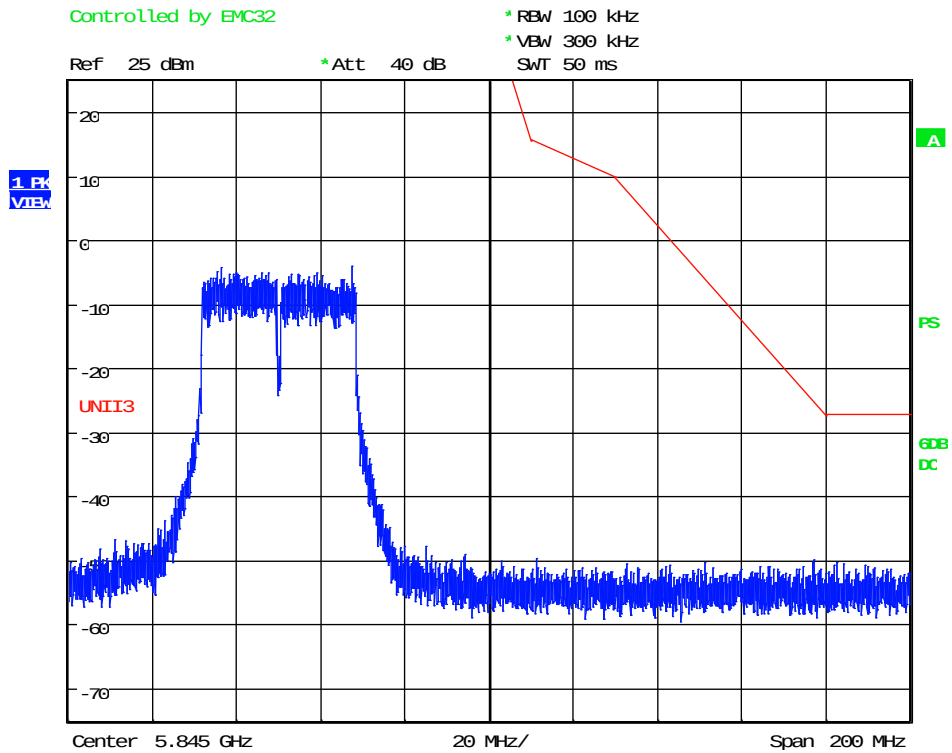
UNII 3, HT40: Band Edge - Low



Date: 30.OCT.2020 12:39:53



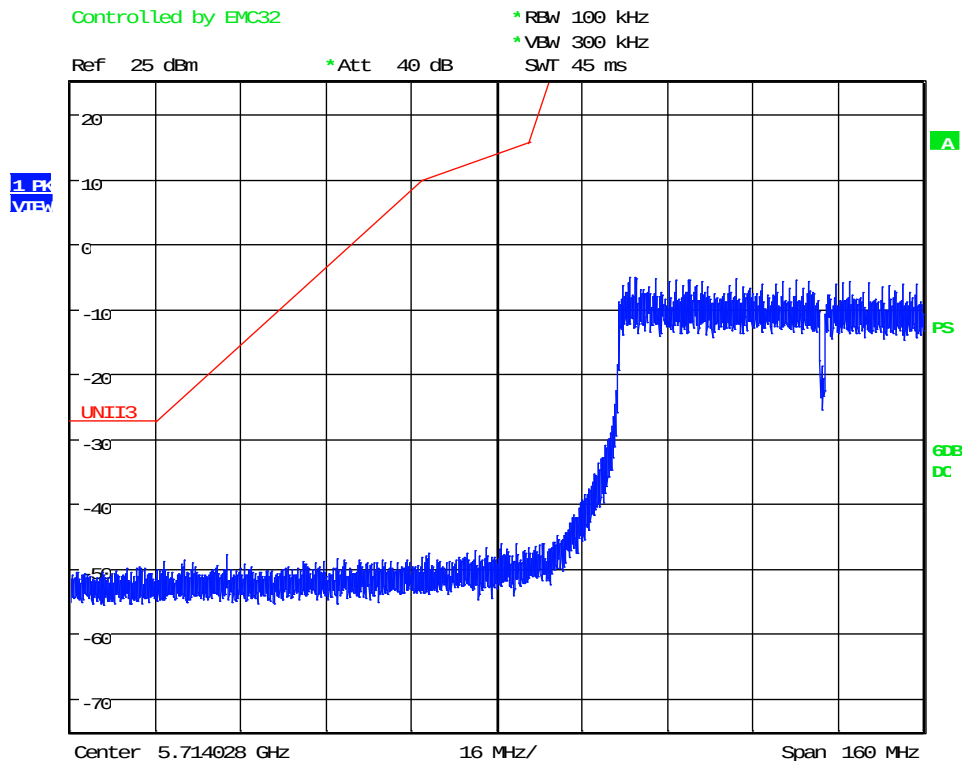
UNII 3, HT40: Band Edge - High



Date: 30.OCT.2020 12:44:31



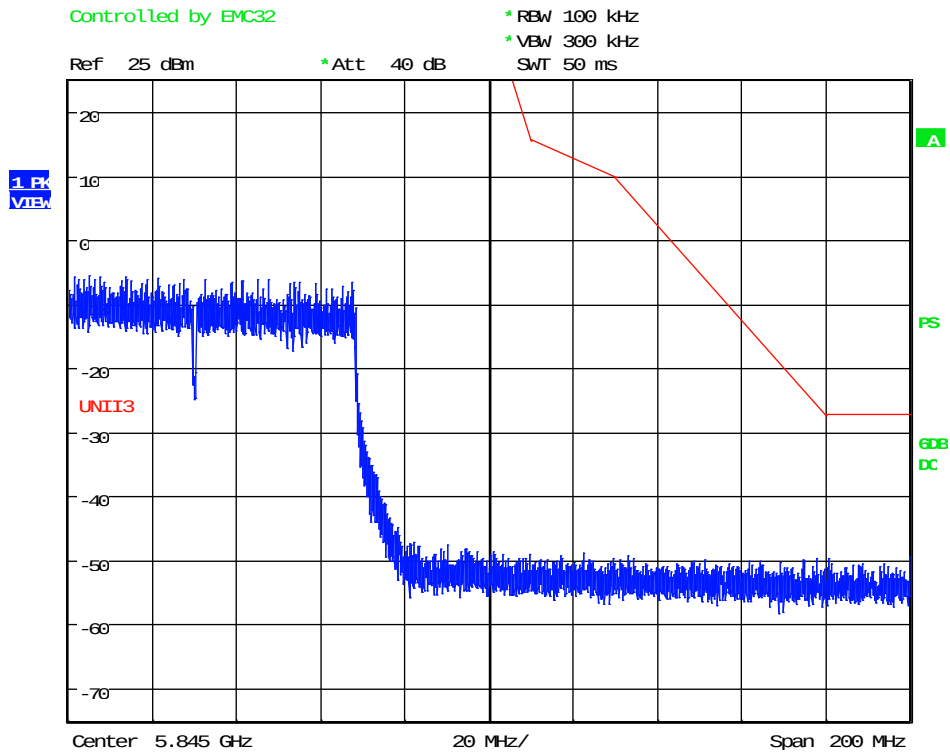
UNII 3, HT80: Band Edge - Low



Date: 30.OCT.2020 12:40:56



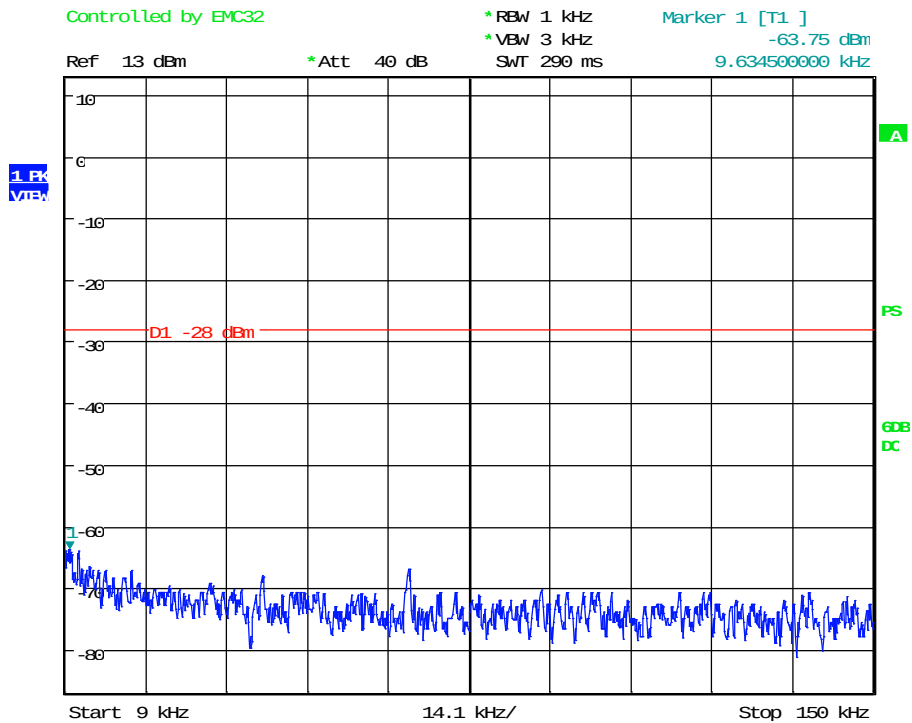
UNII 3, HT80: Band Edge - High



Date: 30.OCT.2020 12:43:28



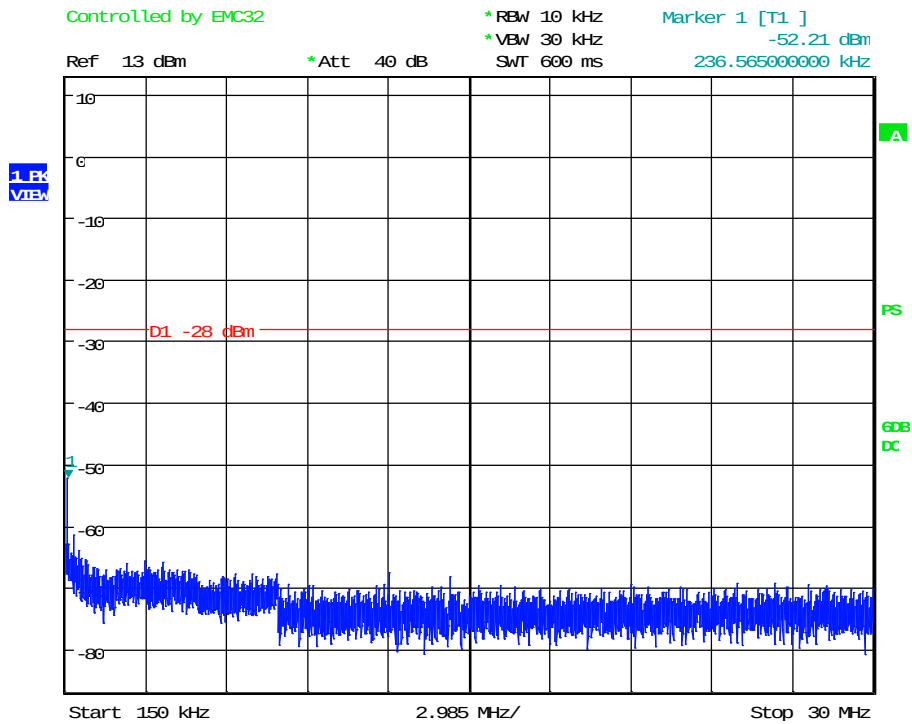
UNII 3: 0.009 MHz to 0.15 MHz



Date: 30.OCT.2020 11:20:13



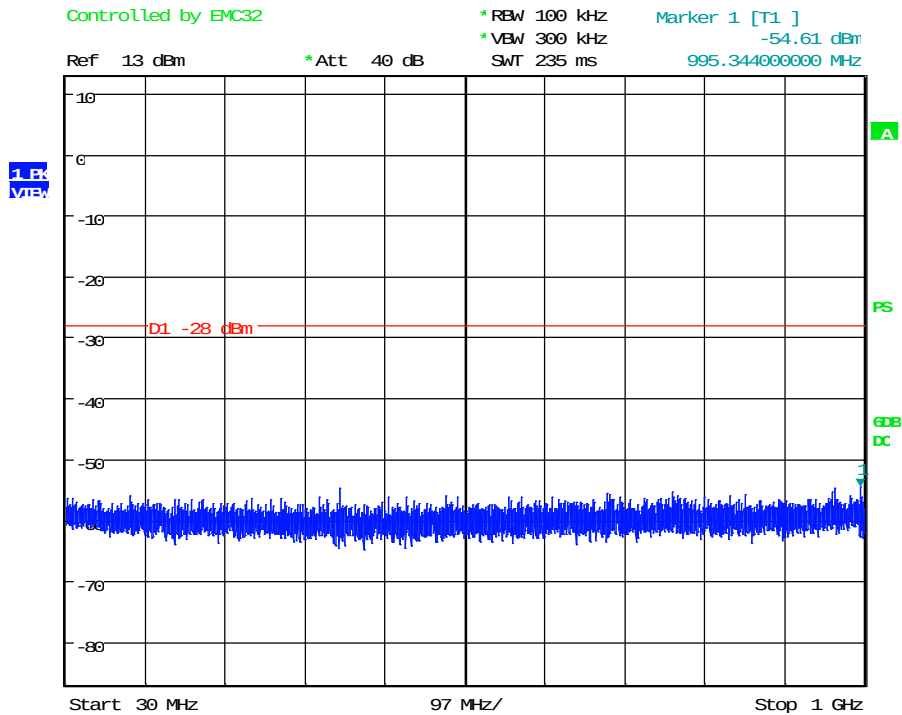
UNII 3: 0.15 MHz to 30 MHz



Date: 30.OCT.2020 11:19:24



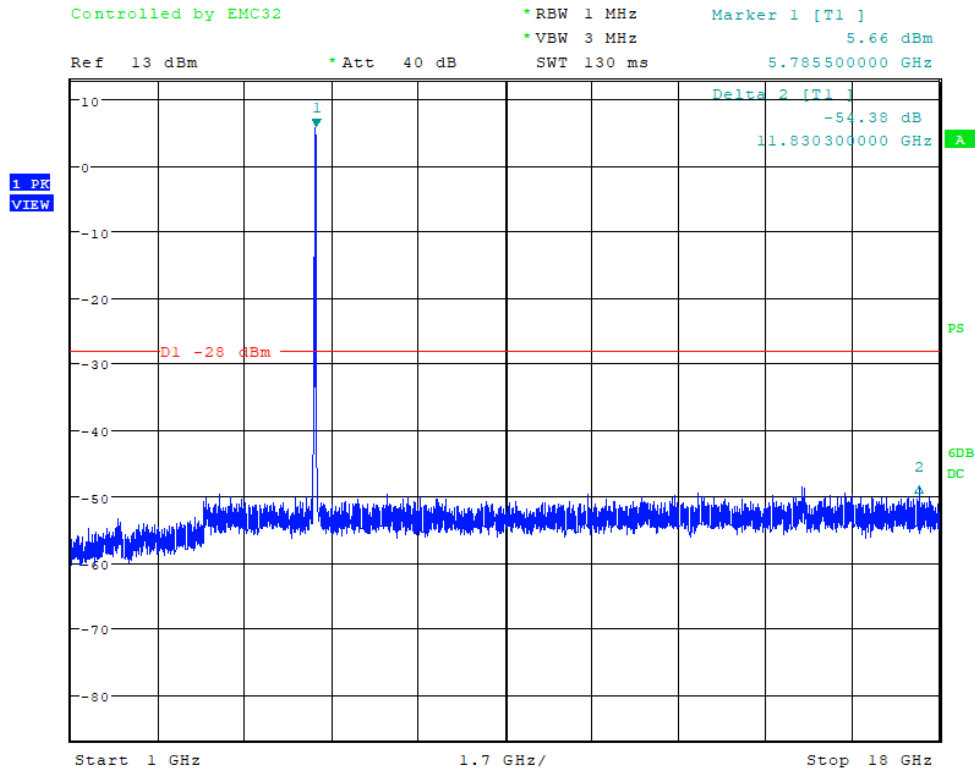
UNII 3: 30 MHz to 1000 MHz



Date: 30.OCT.2020 11:18:27



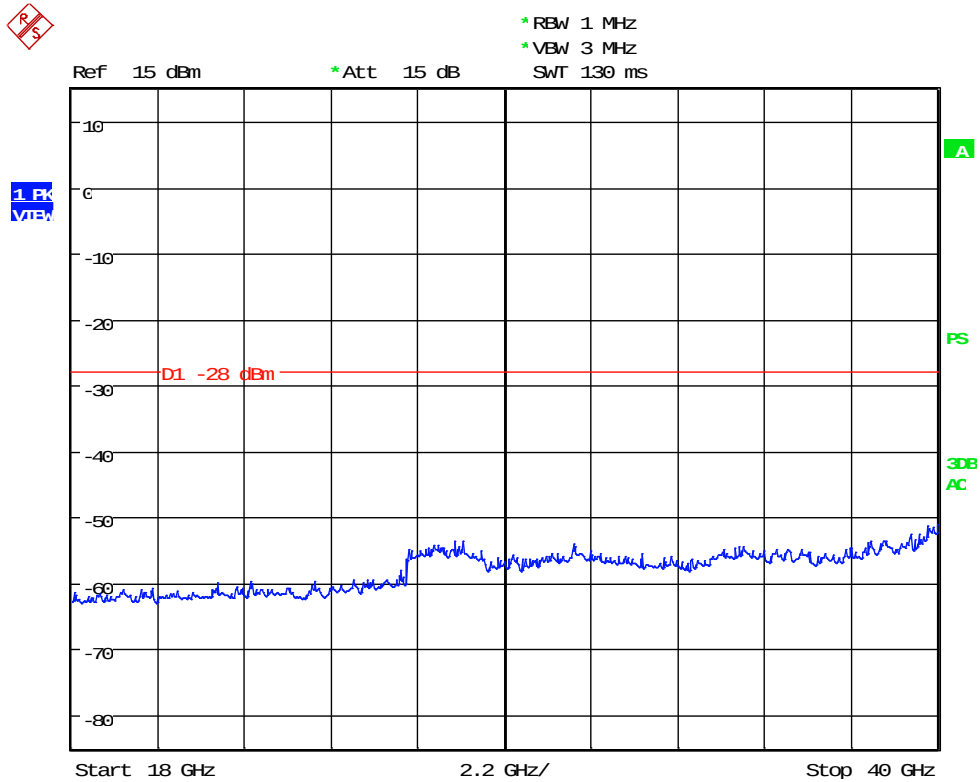
UNII 3: 1 GHz to 18 GHz



Date: 5.APR.2021 12:09:06



UNII 3: 18 GHz to 40 GHz



Date: 5.APR.2021 12:07:54



12 CONDUCTED EMISSIONS

12.1 Requirements

In accordance with FCC CFR 47 Part 15.207(a), "Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

12.2 Procedure

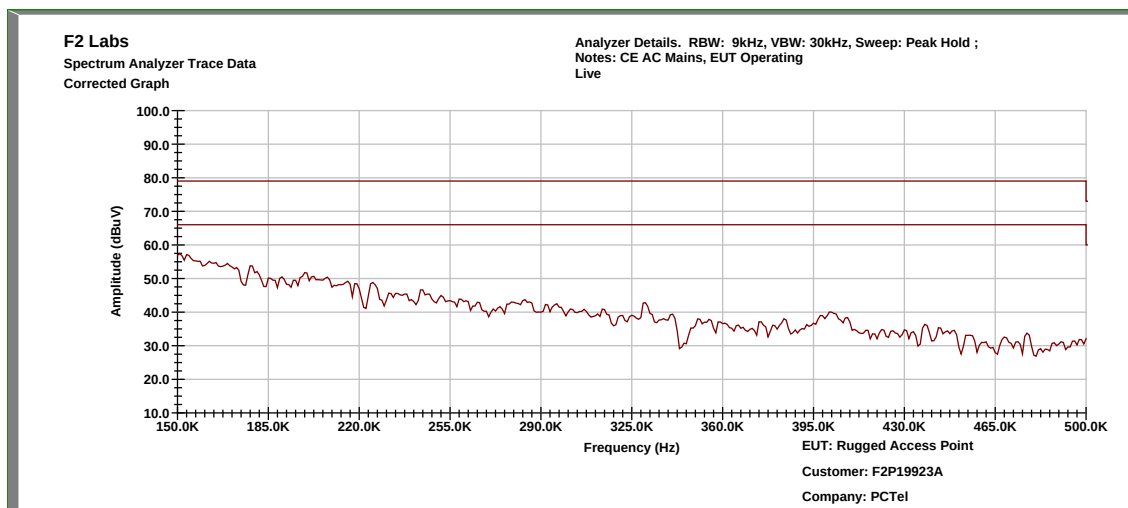
The EUT was placed on a 1.0 x 1.5 meter non-conductive table, 0.8 meter above a horizontal ground plane and 0.4 meter from a vertical ground plane. Power was provided to the EUT through a LISN bonded to a 3 x 2 meter ground plane. The LISN and peripherals were supplied power through a filtered AC power source. The output of the LISN was connected to the input of the receiver via a transient limiter, and emissions in the range 150 kHz to 30 MHz were measured. The measurements were recorded using the quasi-peak and average detectors as directed by the standard, and the resolution bandwidth during testing was 9 kHz. The raw measurements were corrected to allow for attenuation from the LISN, transient limiter and cables.



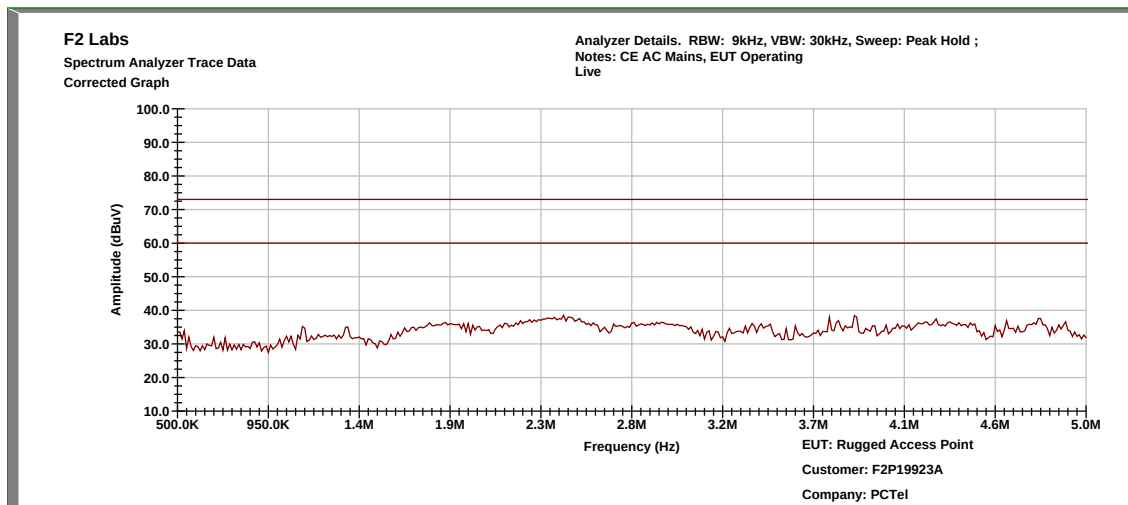
12.3 Conducted Emissions Test Data

Test Date(s):	2020-10-09	Test Engineer:	M. Toth
Rule:	15.207	Air Temperature:	21.9° C
Test Results:	Complies	Relative Humidity:	35%

Conducted Test – Line 1: 0.15 MHz to 0.5 MHz

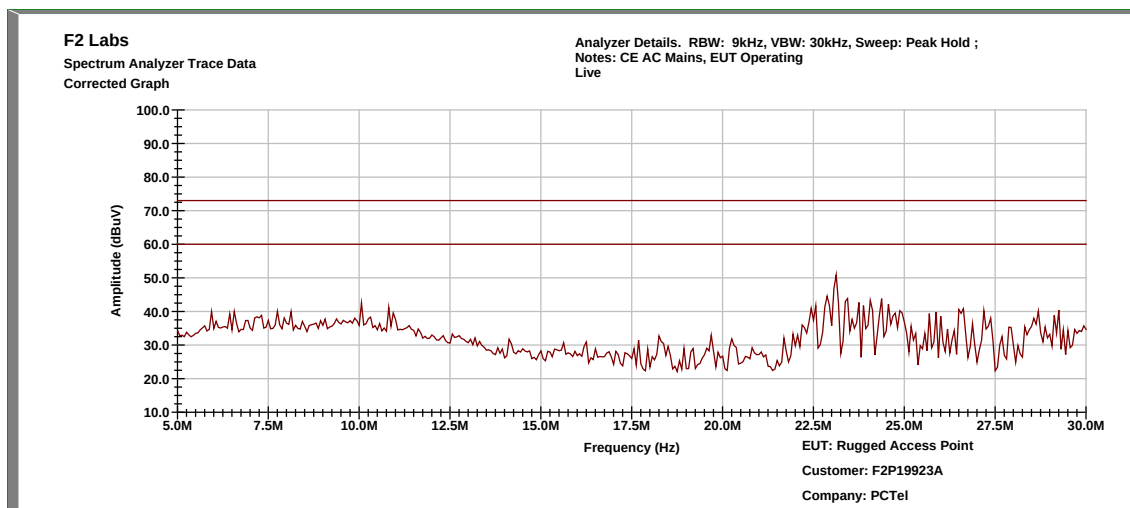


Conducted Test – Line 1: 0.5 MHz to 5.0 MHz





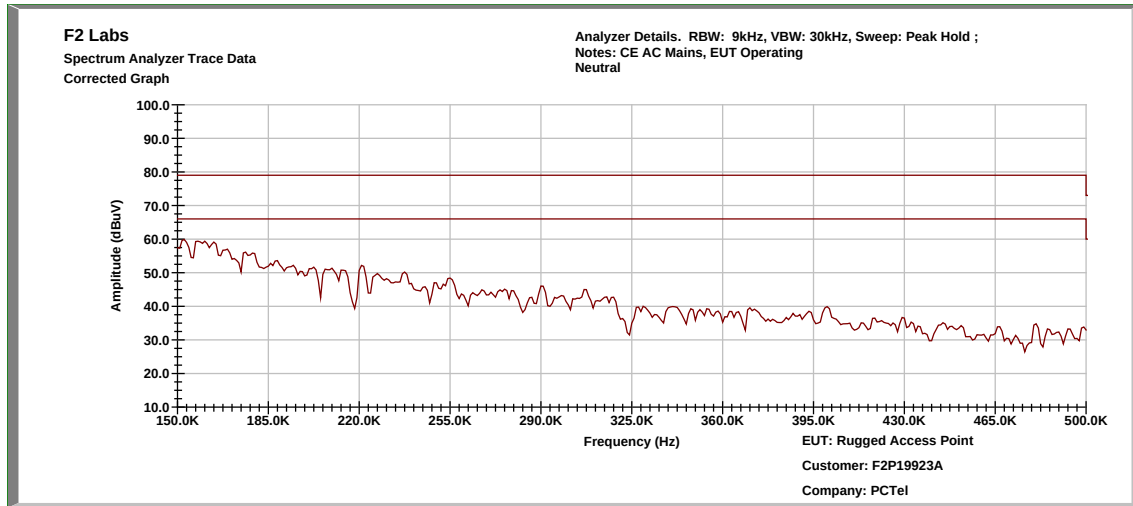
Conducted Test – Line 1: 5.0 MHz to 30.0 MHz



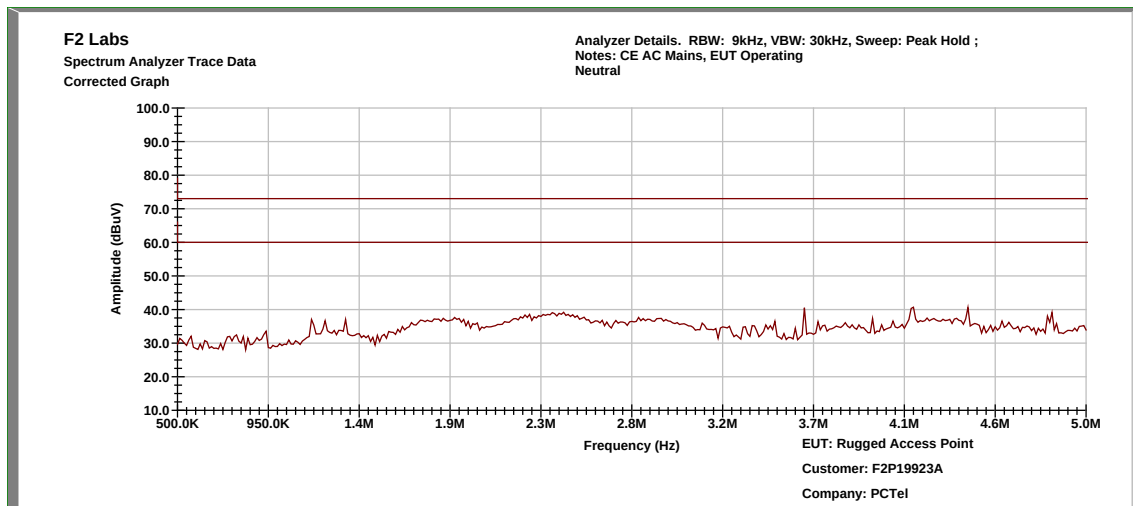
Top Discrete Measurements								
No.	Conductor	Frequency (MHz)	Detector	Level (dBμV)	Adjustment (dB)	Results (dBμV)	Limit (dBμV)	Margin (dB)
1	Line 1	0.154375	Quasi-Peak	38.50	11.0	49.50	65.72	-16.2
			Average	20.94	11.0	31.94	55.72	-23.8
2	Line 1	0.166625	Quasi-Peak	33.28	11.0	44.28	65.13	-20.9
			Average	13.72	11.0	24.72	55.13	-30.4
3	Line 1	0.180625	Quasi-Peak	35.85	11.0	46.85	64.46	-17.6
			Average	14.05	11.0	25.05	54.64	-29.6
4	Line 1	0.205	Quasi-Peak	32.71	11.0	43.71	63.41	-19.7
			Average	12.96	11.0	23.96	53.41	-29.5
5	Line 1	2.4125	Quasi-Peak	25.6	11.0	36.60	56.0	-19.4
			Average	18.99	11.0	29.99	46.0	-16.0
6	Line 1	23.125	Quasi-Peak	37.42	11.0	48.42	60.0	-11.6
			Average	36.64	11.0	47.64	50.0	-2.4



Conducted Test – Line 2: 0.15 MHz to 0.5 MHz

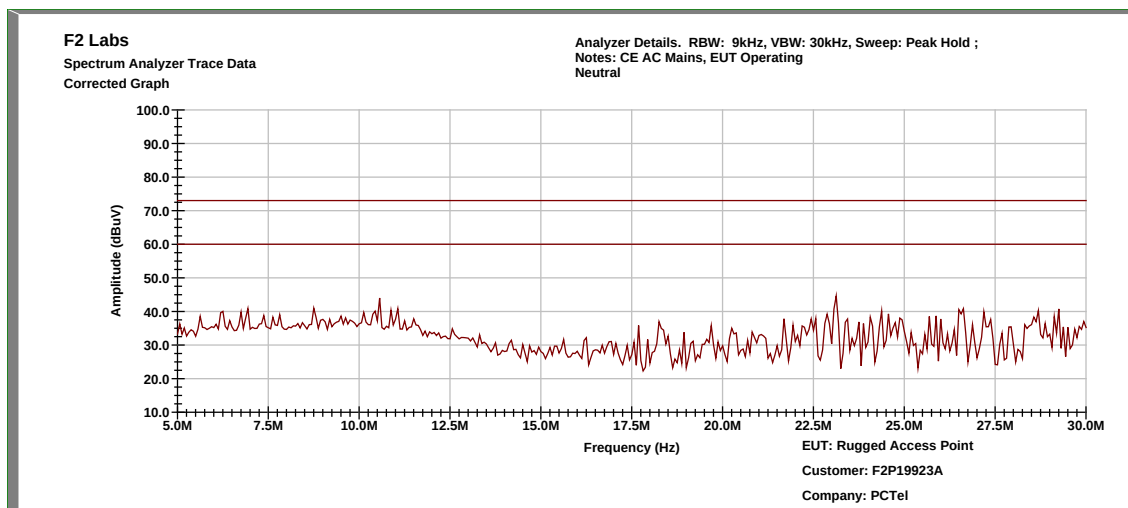


Conducted Test – Line 2: 0.5 MHz to 5.0 MHz





Conducted Test – Line 2: 5.0 MHz to 30.0 MHz

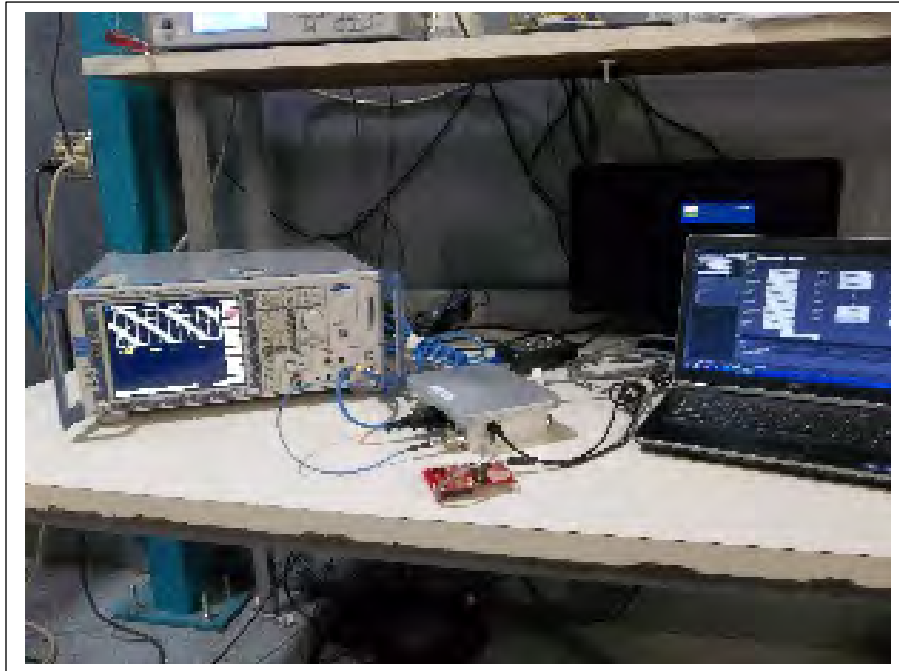


Top Discrete Measurements								
No.	Conductor	Frequency (MHz)	Detector	Level (dBμV)	Adjustment (dB)	Results (dBμV)	Limit (dBμV)	Margin (dB)
1	Line 2	0.157	Quasi-Peak	39.81	11.0	50.81	65.62	-14.8
			Average	22.85	11.0	33.85	55.62	-21.8
2	Line 2	153.5	Quasi-Peak	38.16	11.0	49.16	65.81	-16.7
			Average	19.76	11.0	30.76	55.81	-25.1
3	Line 2	176.25	Quasi-Peak	35.56	11.0	46.56	64.66	-18.1
			Average	14.74	11.0	25.74	54.66	-28.9
4	Line 2	193.75	Quasi-Peak	33.36	11.0	44.36	63.88	-19.5
			Average	13.93	11.0	24.93	53.88	-29.0
5	Line 2	4.145	Quasi-Peak	22.92	11.0	33.92	56.0	-22.1
			Average	16.00	11.0	27.00	46.0	-19.0
6	Line 2	10.8125	Quasi-Peak	21.31	11.0	32.31	60.0	-27.7
			Average	15.09	11.0	26.09	50.0	-23.9



13 TEST SETUP PHOTOGRAPHS

General Conducted Test Setup





Radiated Spurious Emissions, Less Than 30 MHz

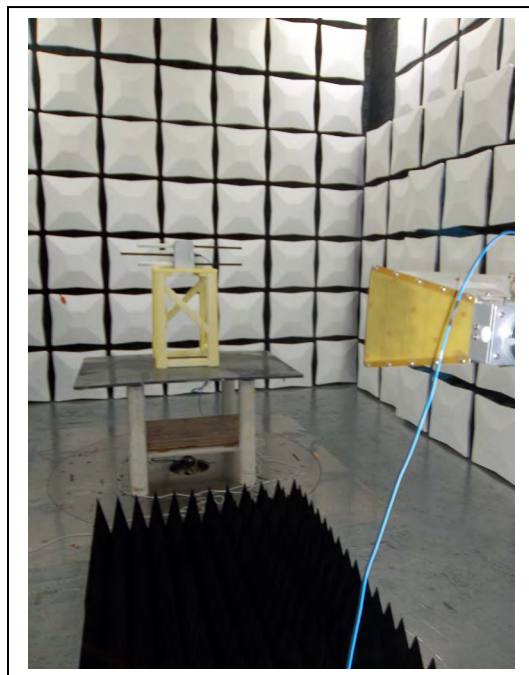




Radiated Spurious Emissions, 30 MHz to 1000 MHz



Radiated Spurious Emissions, Greater than 1 GHz





Conducted Emissions

