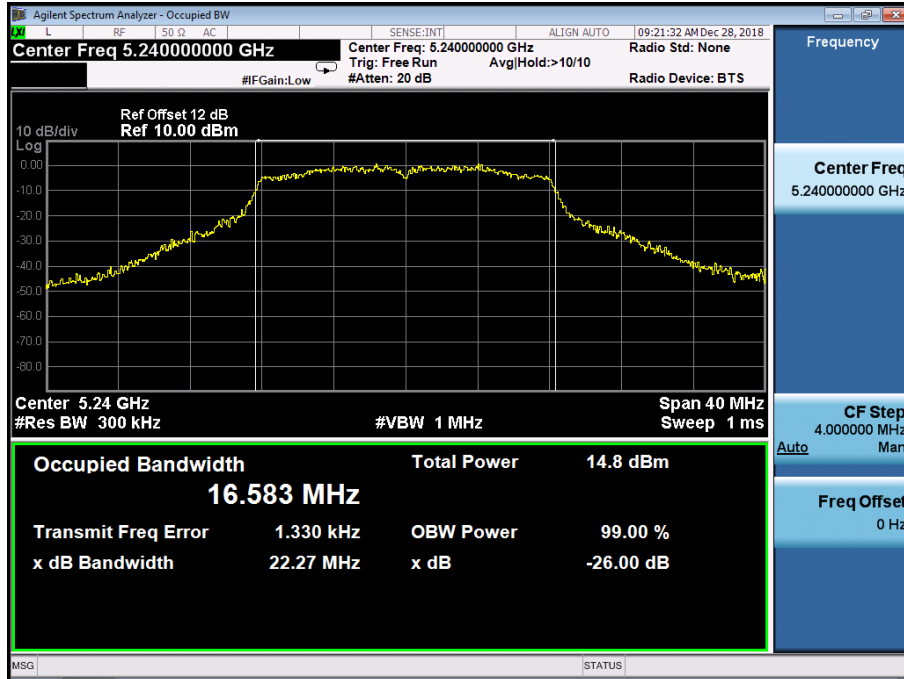
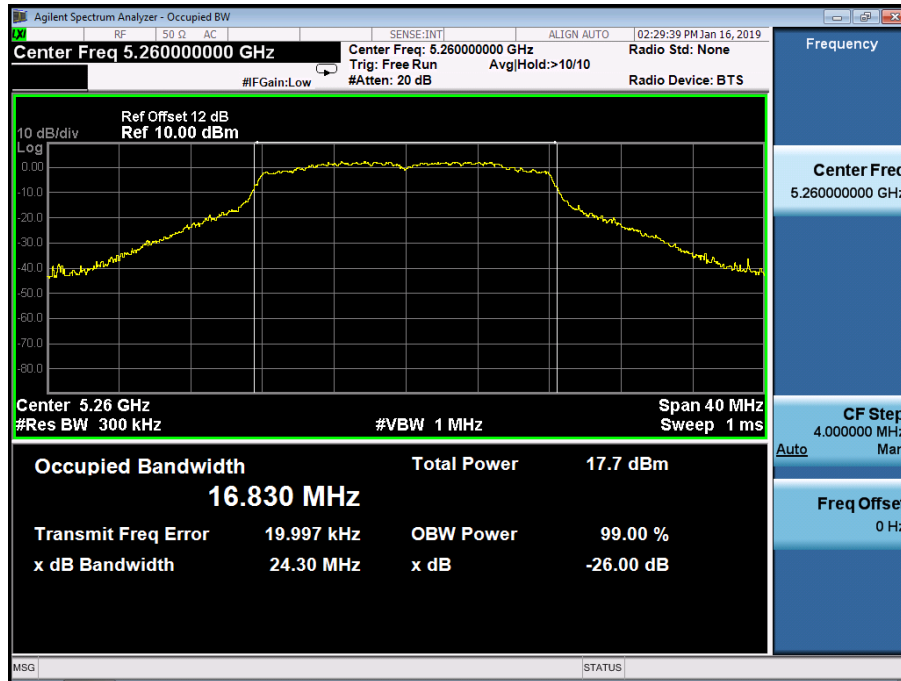


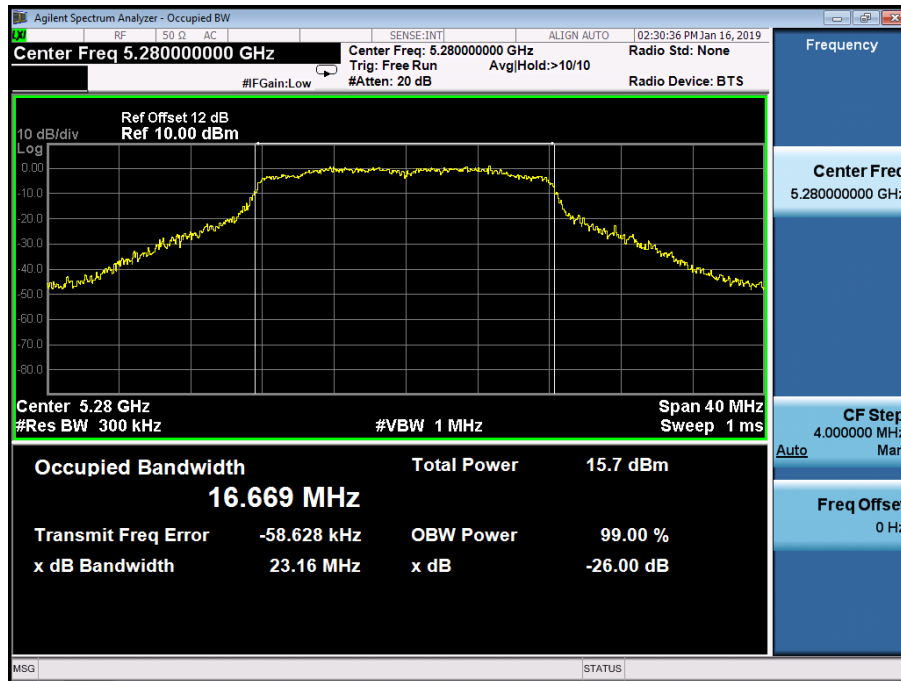
Emission Bandwidth & 99% Occupied Bandwidth UNII Band I
 Test Model 802.11a Frequency (MHz) 5240



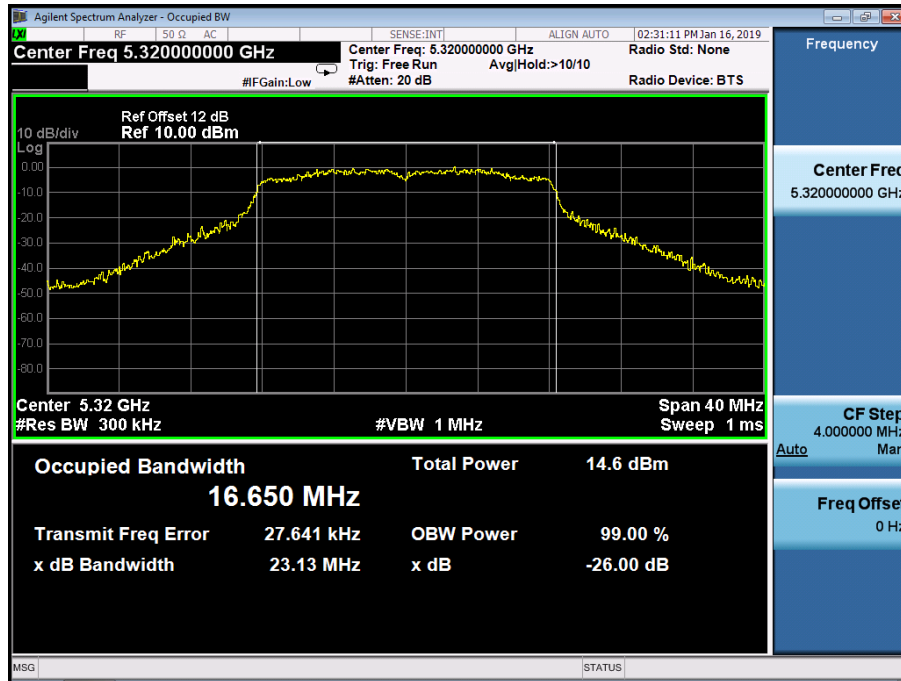
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11a Frequency(MHz) 5260



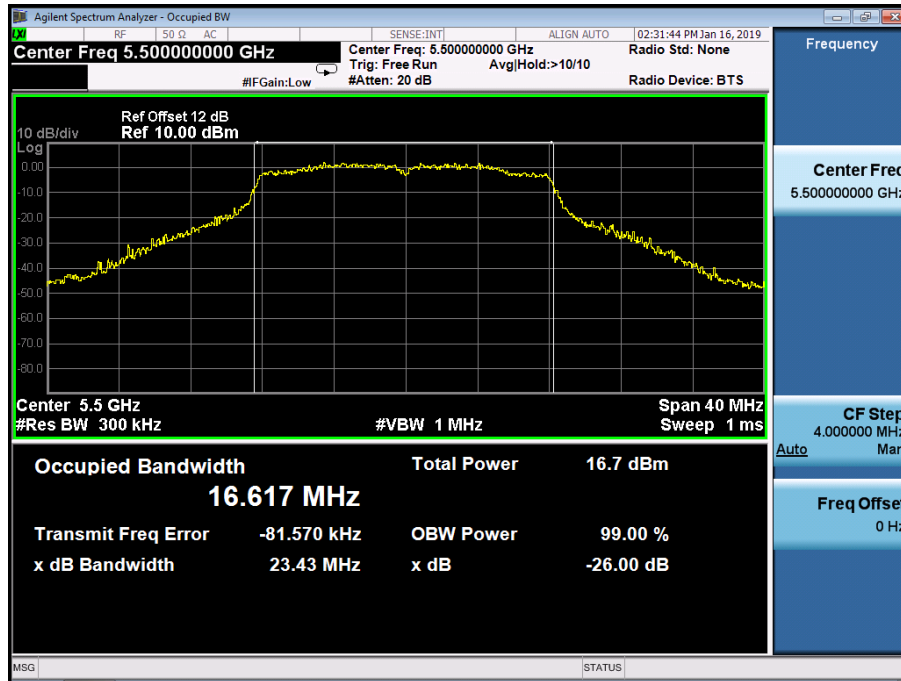
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11a Frequency(MHz) 5280



Emission Bandwidth & 99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11a Frequency (MHz) 5320



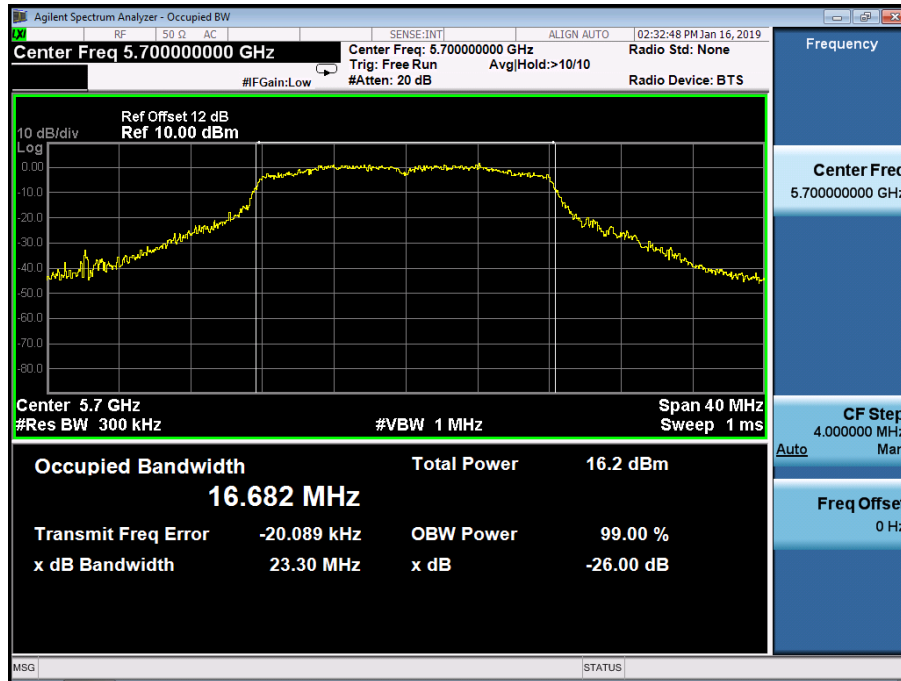
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11a Frequency(MHz) 5500



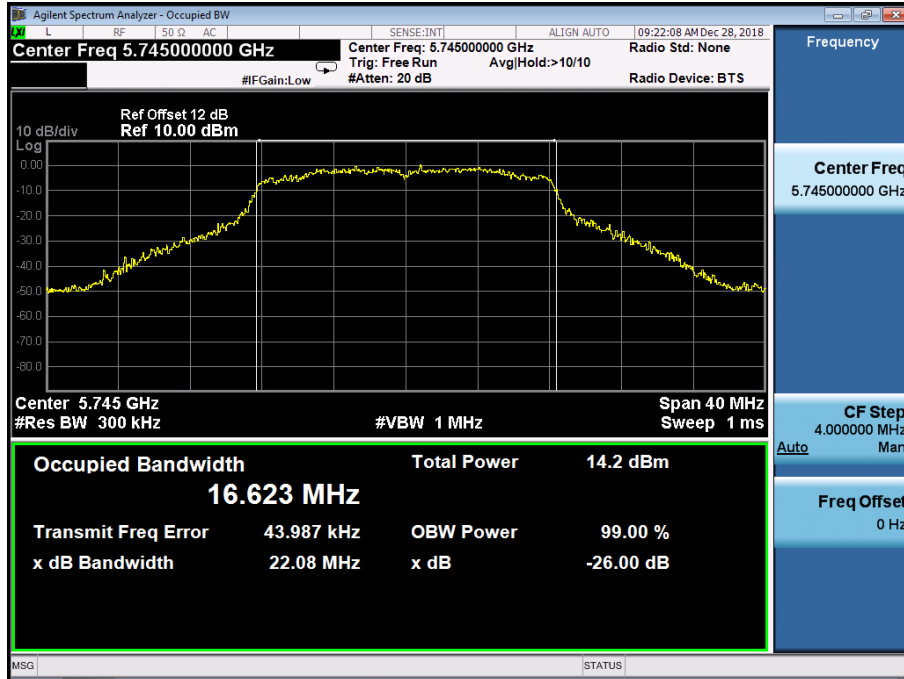
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11a Frequency(MHz) 5600



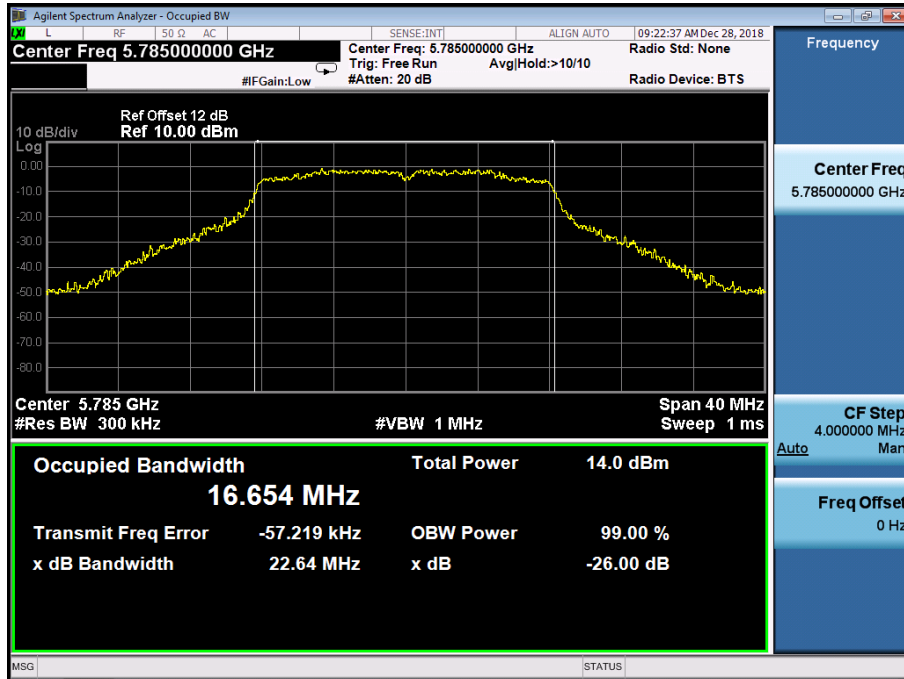
Emission Bandwidth & 99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11a Frequency (MHz) 5700



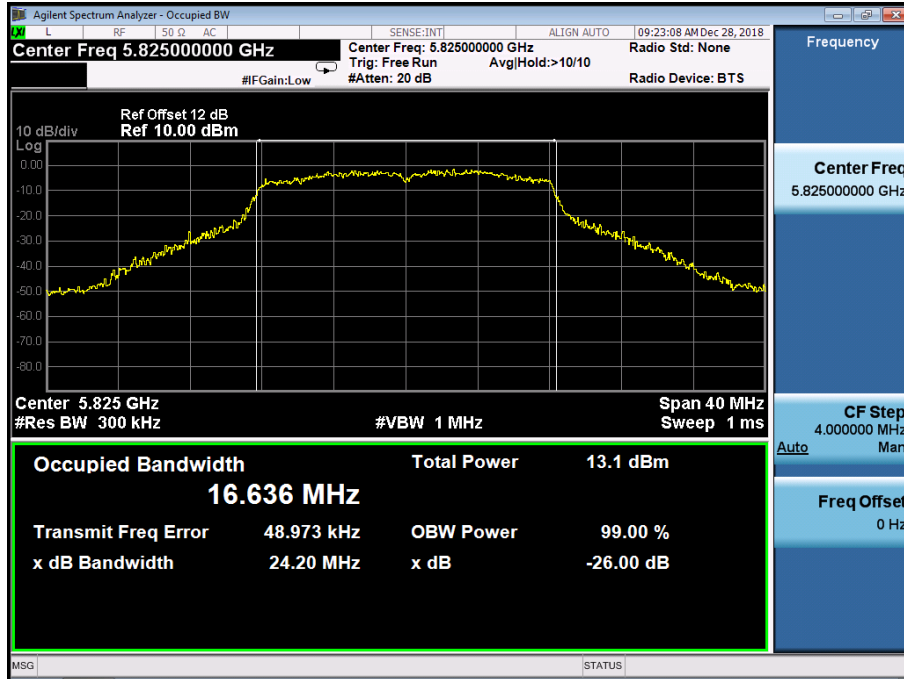
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11a Frequency(MHz) 5745



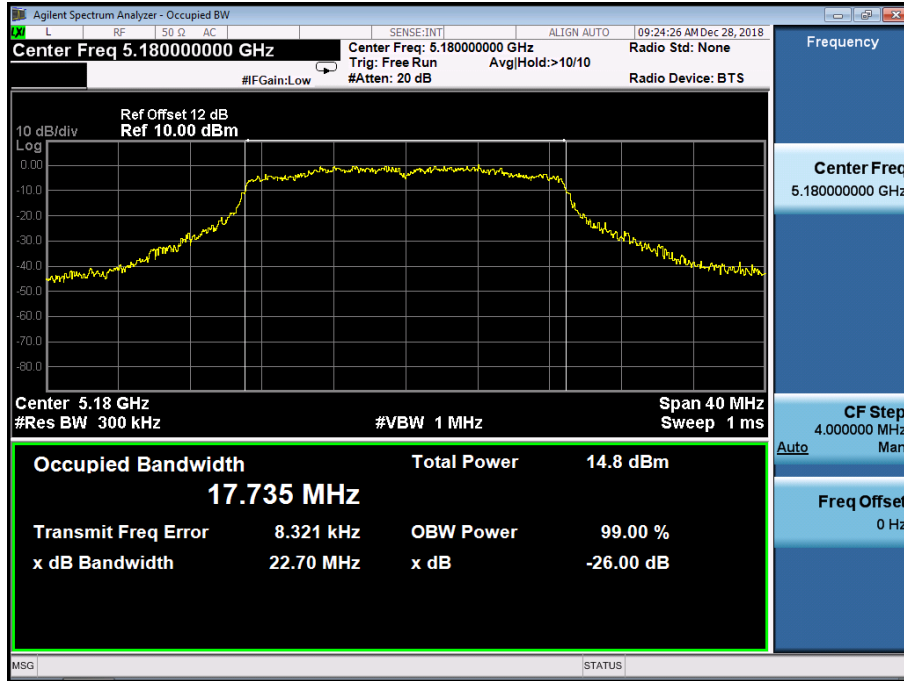
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11a Frequency(MHz) 5785



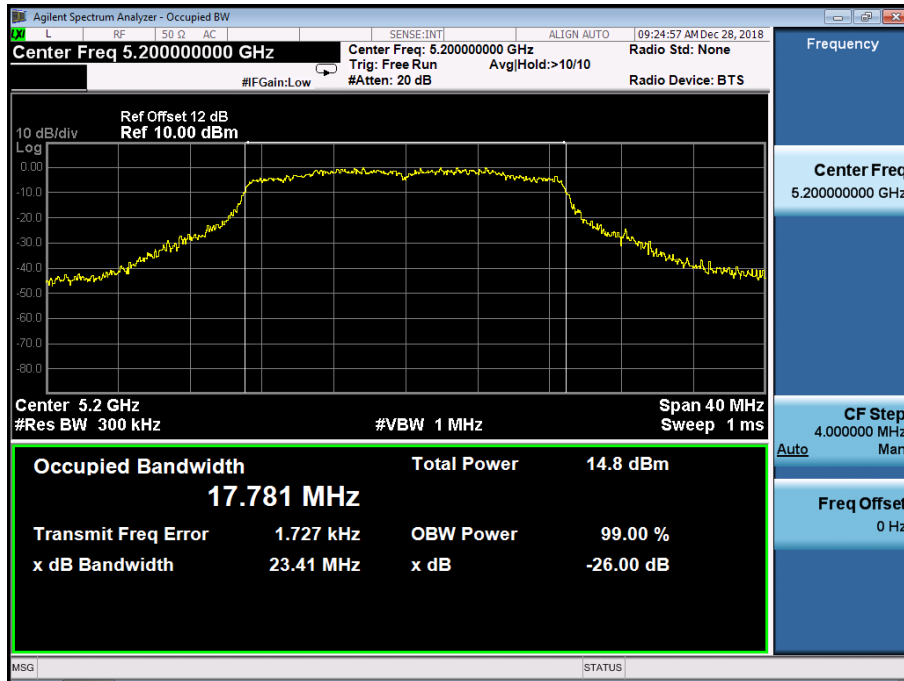
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11a Frequency(MHz) 5825



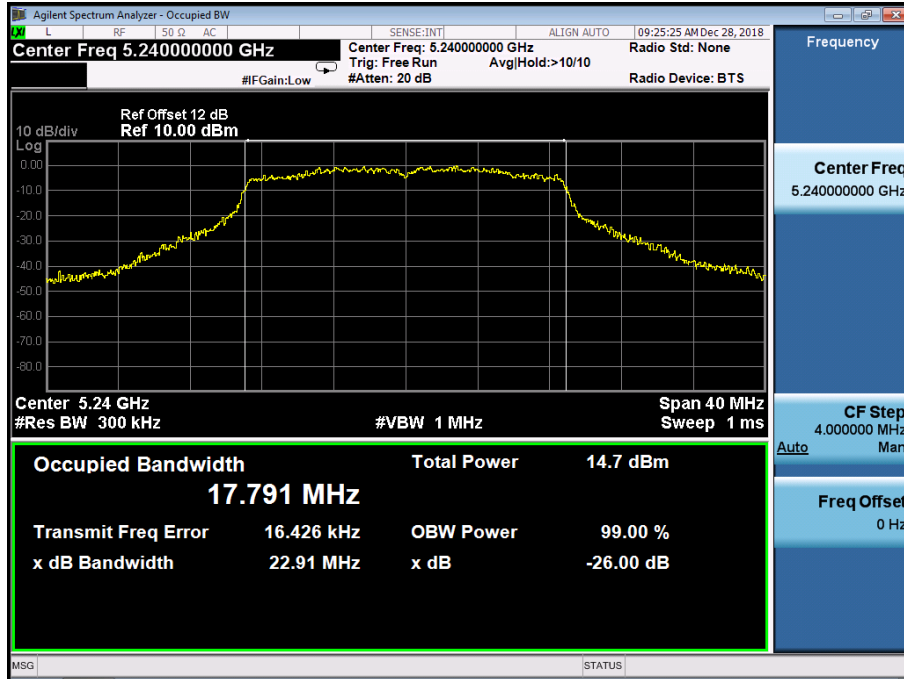
Emission Bandwidth&99% Occupied Bandwidth UNII Band I
 Test Model 802.11n(HT20) mode Frequency(MHz) 5180



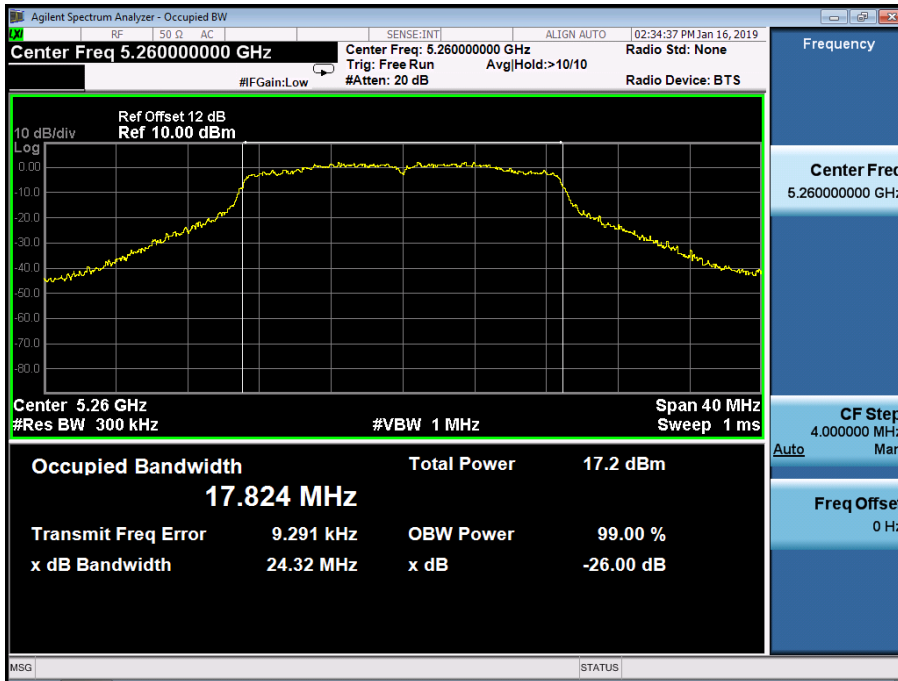
Emission Bandwidth&99% Occupied Bandwidth UNII Band I
 Test Model 802.11n(HT20) mode Frequency(MHz) 5200



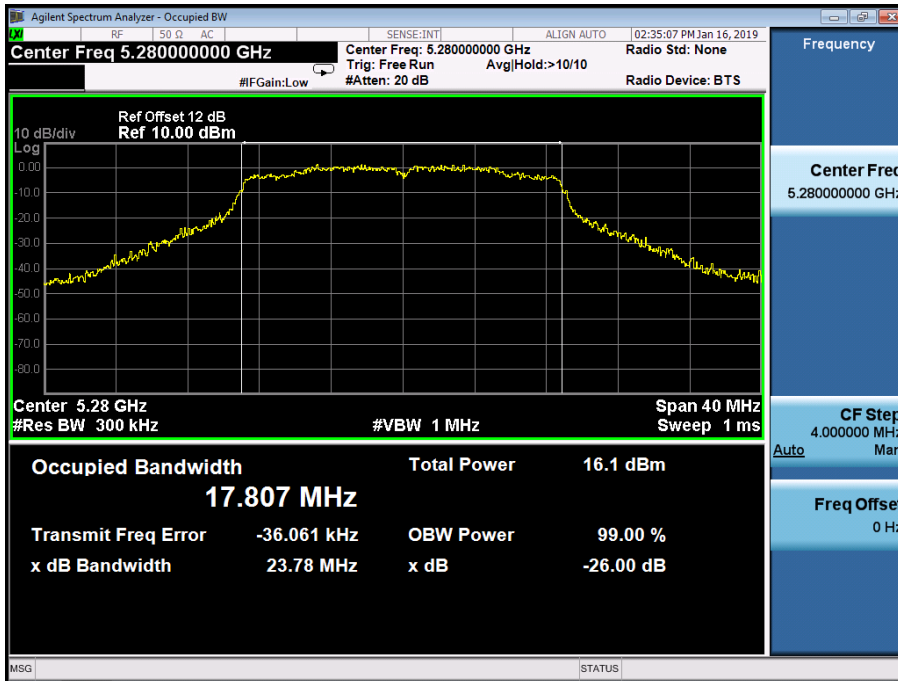
Emission Bandwidth & 99% Occupied Bandwidth UNII Band I
 Test Model 802.11n(HT20) mode Frequency(MHz) 5240



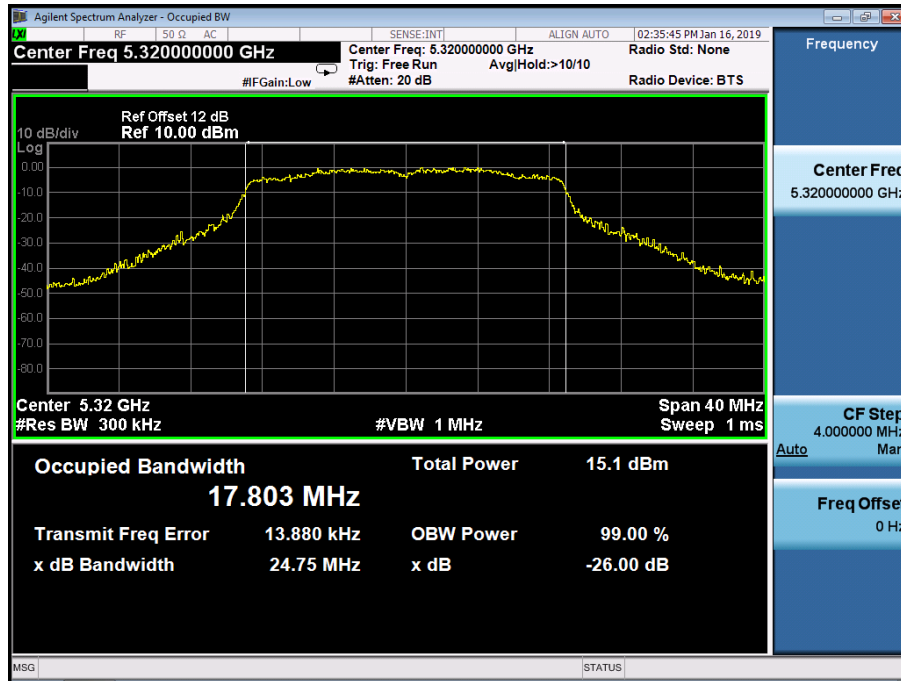
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11n(HT20) mode Frequency(MHz) 5260



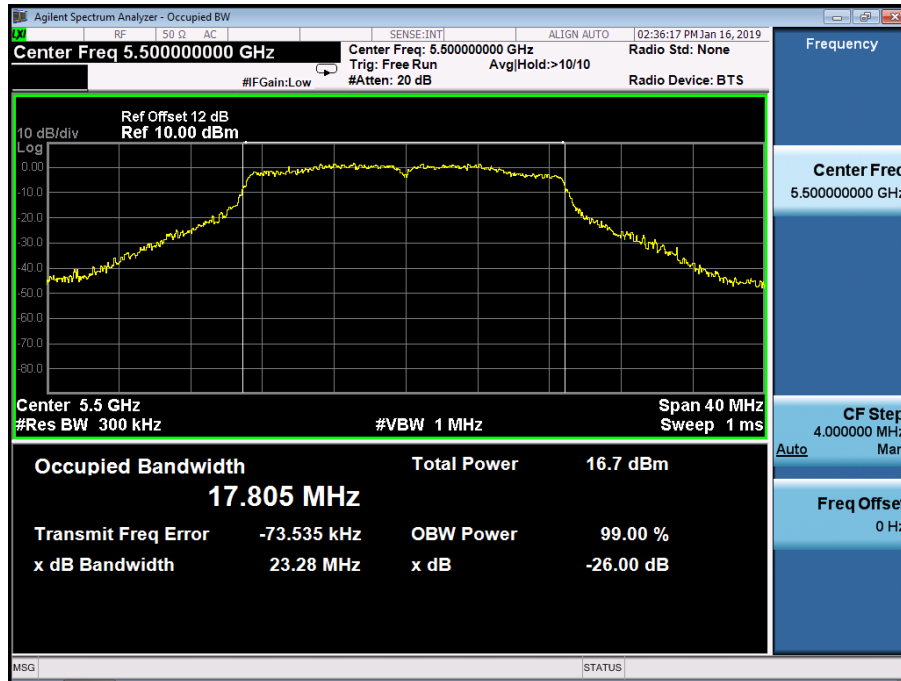
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11n(HT20) mode Frequency(MHz) 5280



Emission Bandwidth & 99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11n(HT20) mode Frequency(MHz) 5320



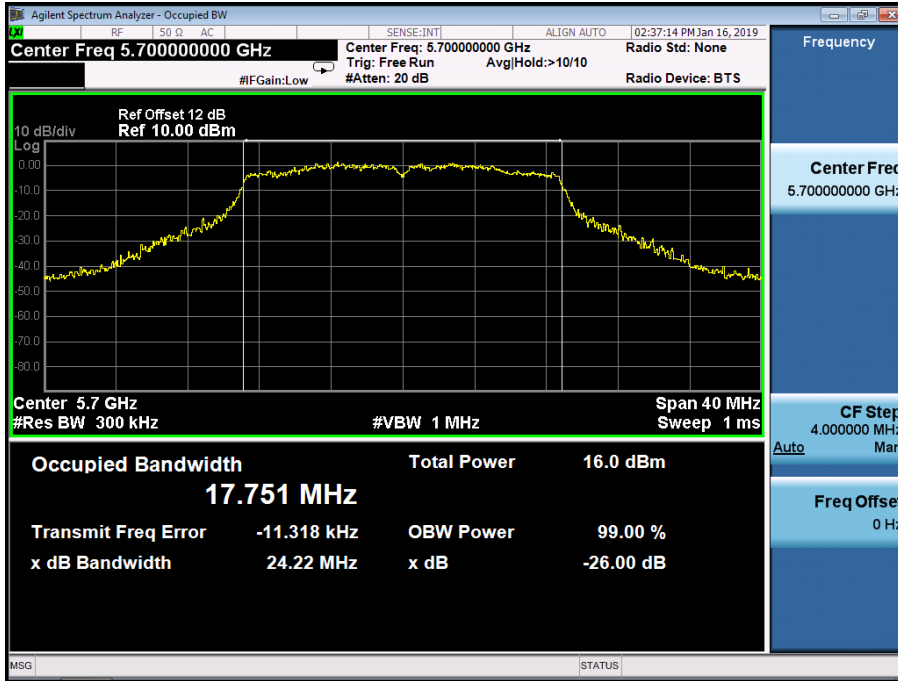
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11n(HT20) mode Frequency(MHz) 5500



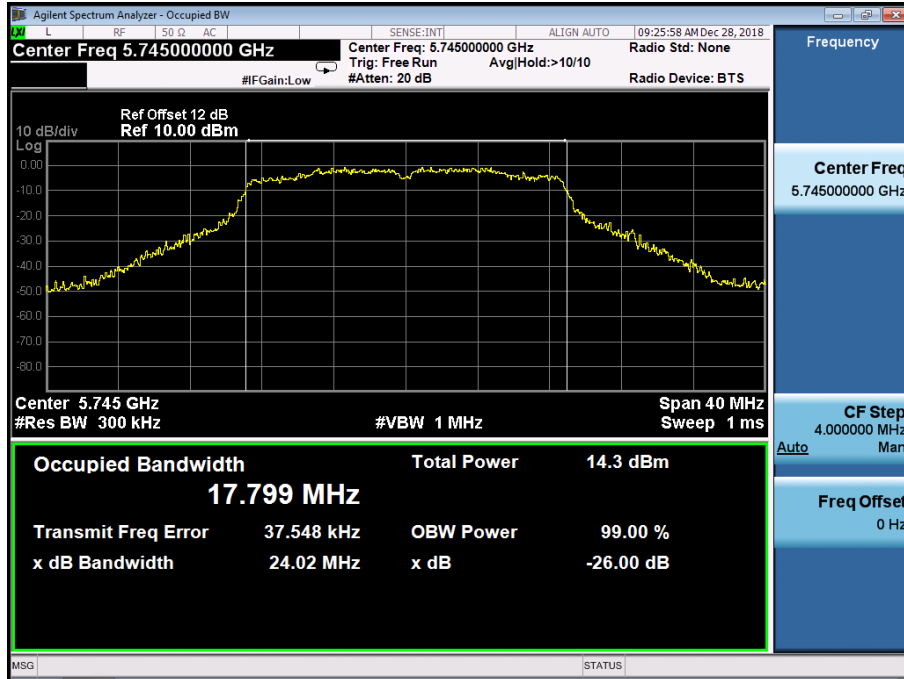
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11n(HT20) mode Frequency(MHz) 5600



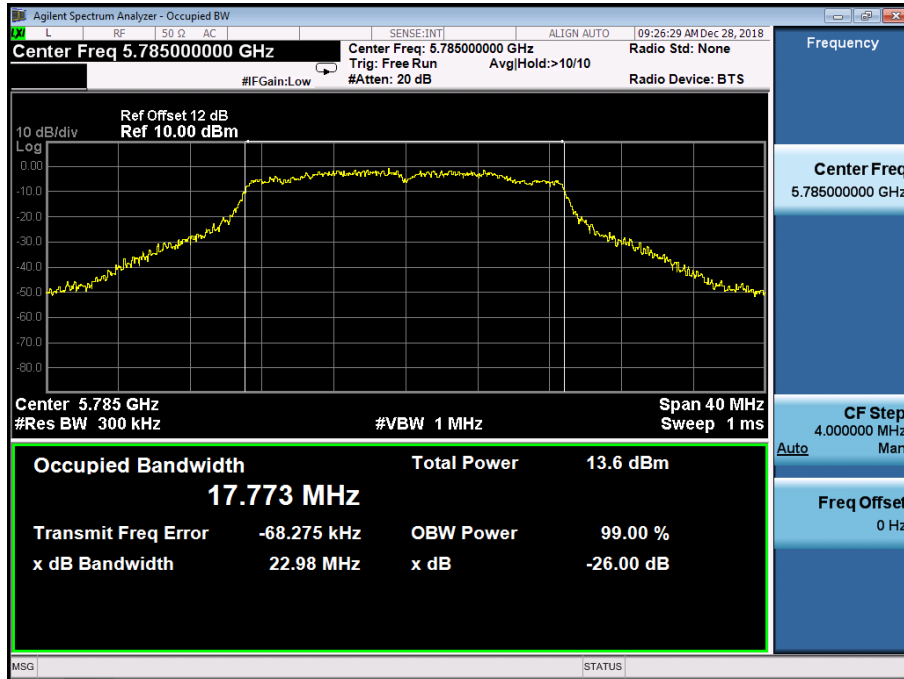
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11n(HT20) mode Frequency(MHz) 5700



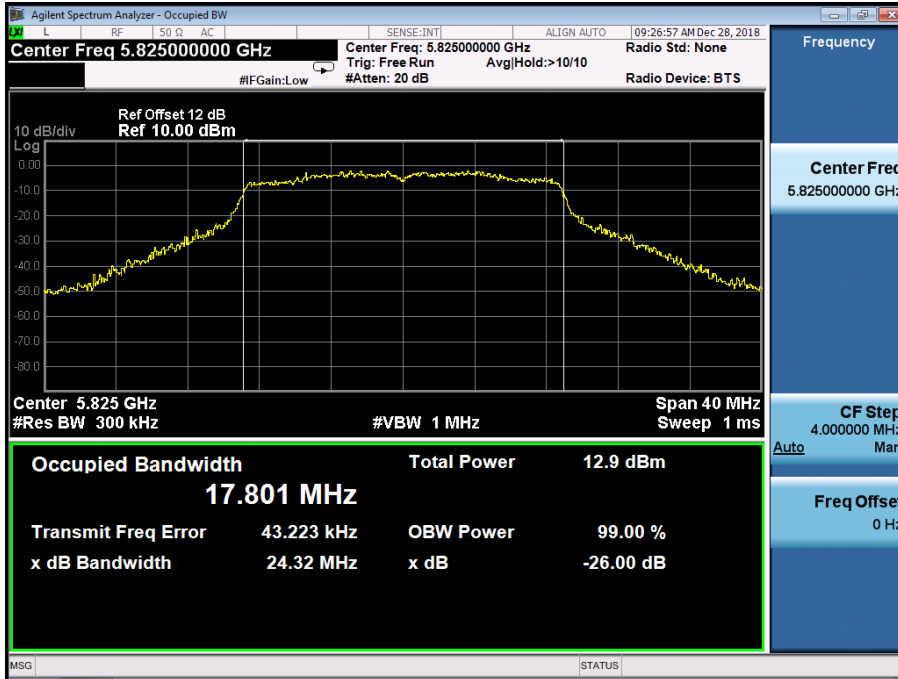
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11n(HT20) mode Frequency(MHz) 5745



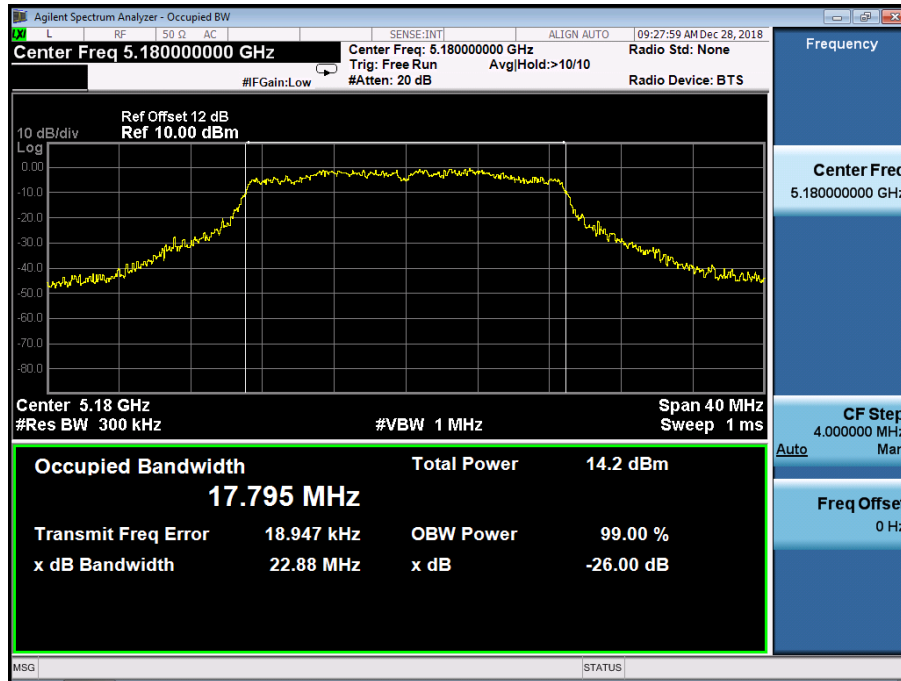
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11n(HT20) mode Frequency(MHz) 5785



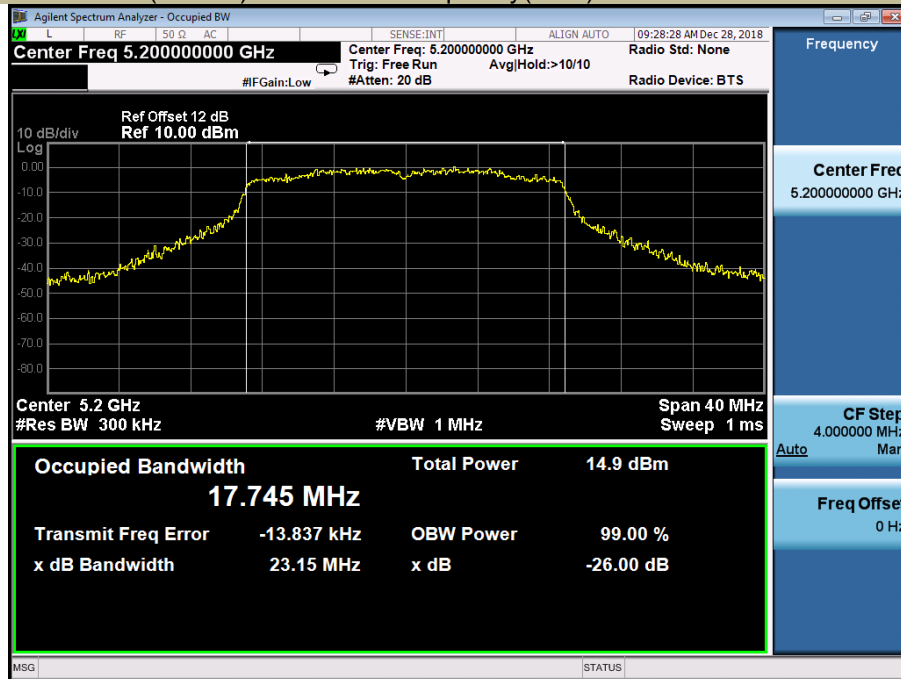
Emission Bandwidth & 99% Occupied Bandwidth UNII Band III
 Test Model 802.11n(HT20) mode Frequency(MHz) 5825



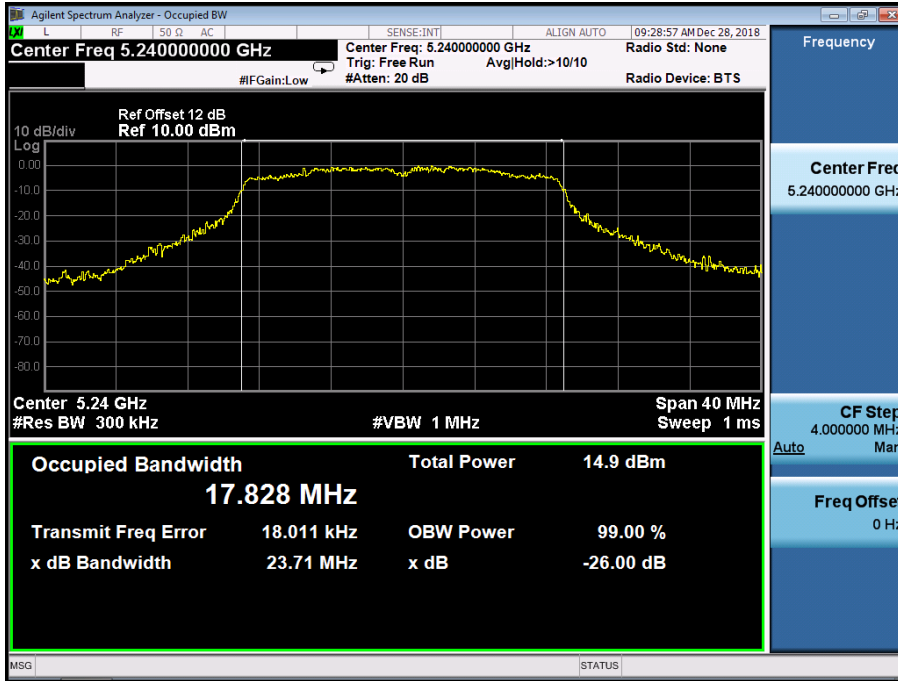
Emission Bandwidth&99% Occupied Bandwidth UNII Band I
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5180



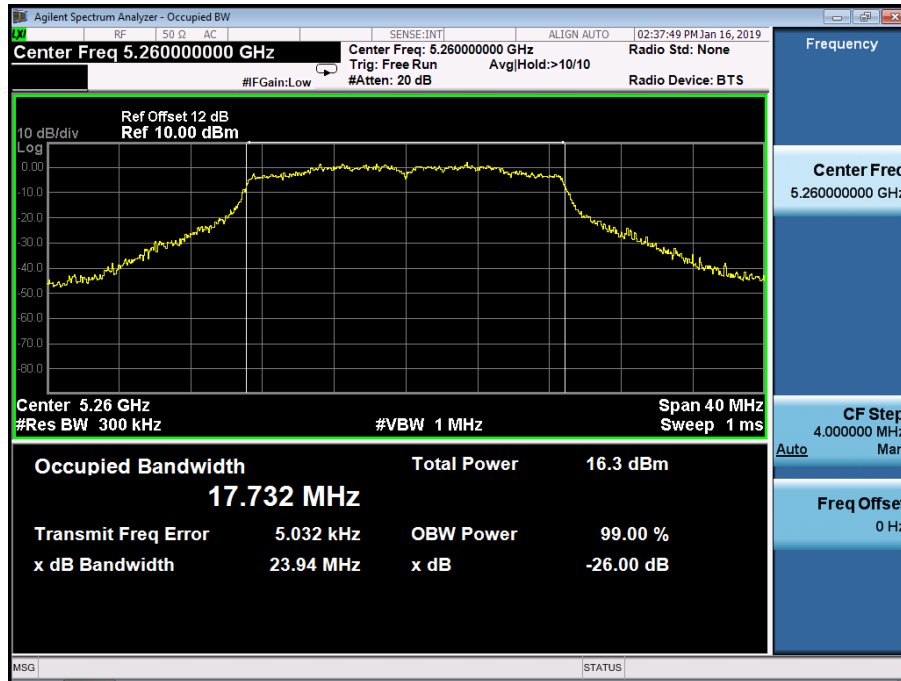
Emission Bandwidth&99% Occupied Bandwidth UNII Band I
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5200



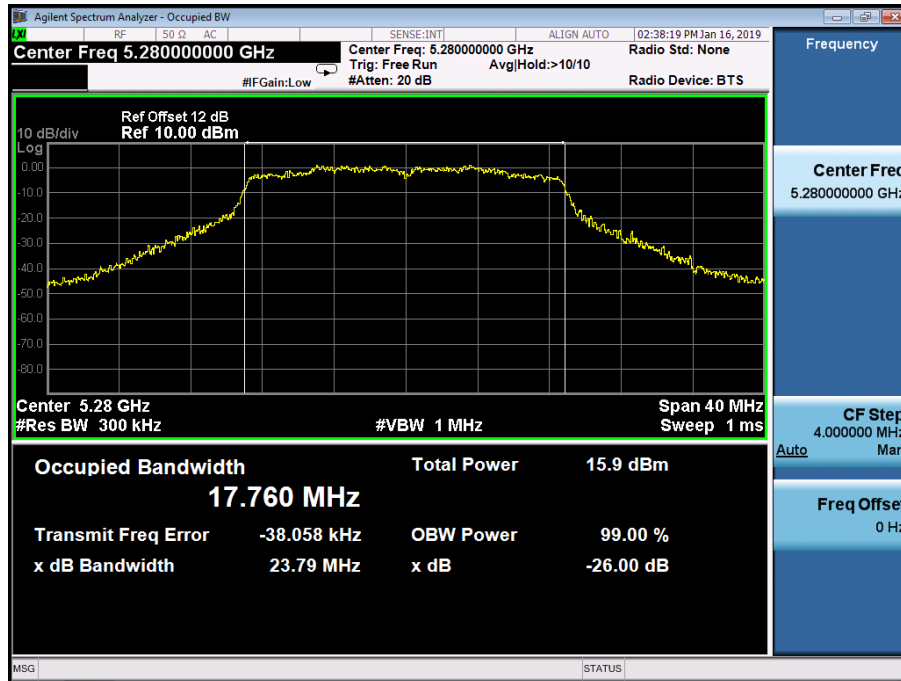
Emission Bandwidth & 99% Occupied Bandwidth UNII Band I
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5240



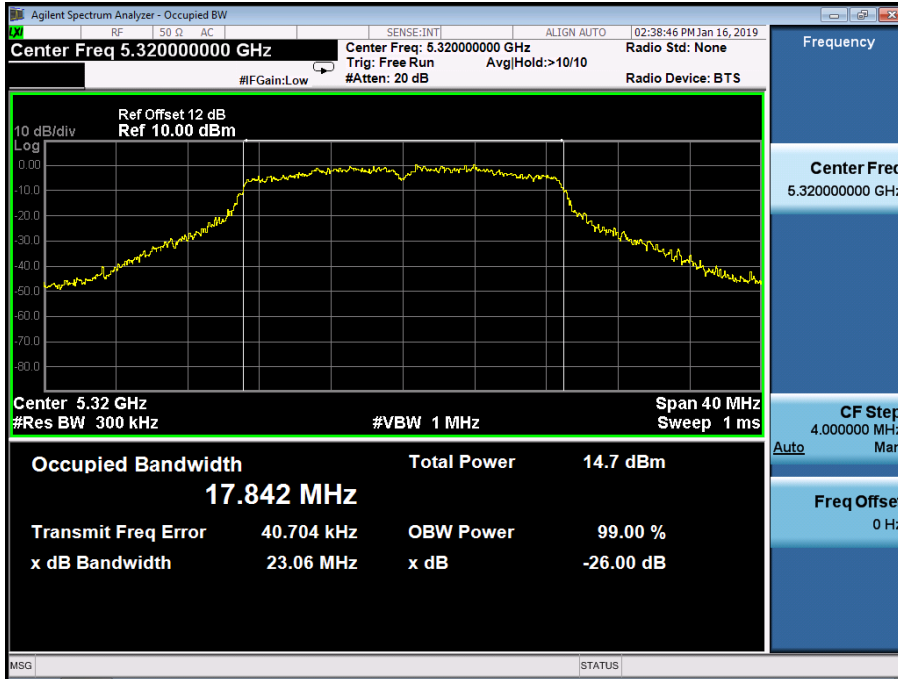
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5260



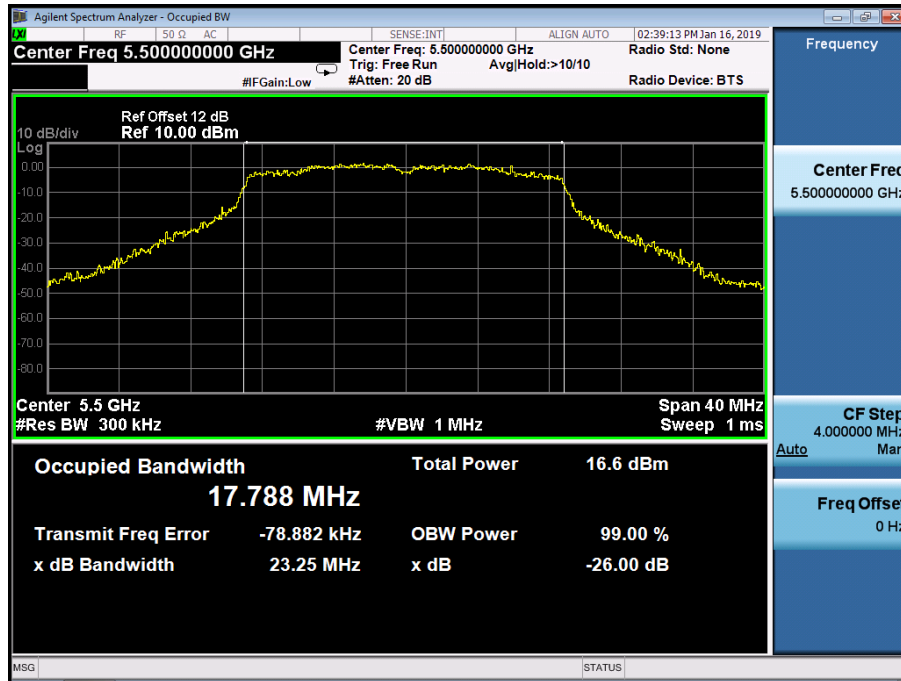
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5280



Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5320



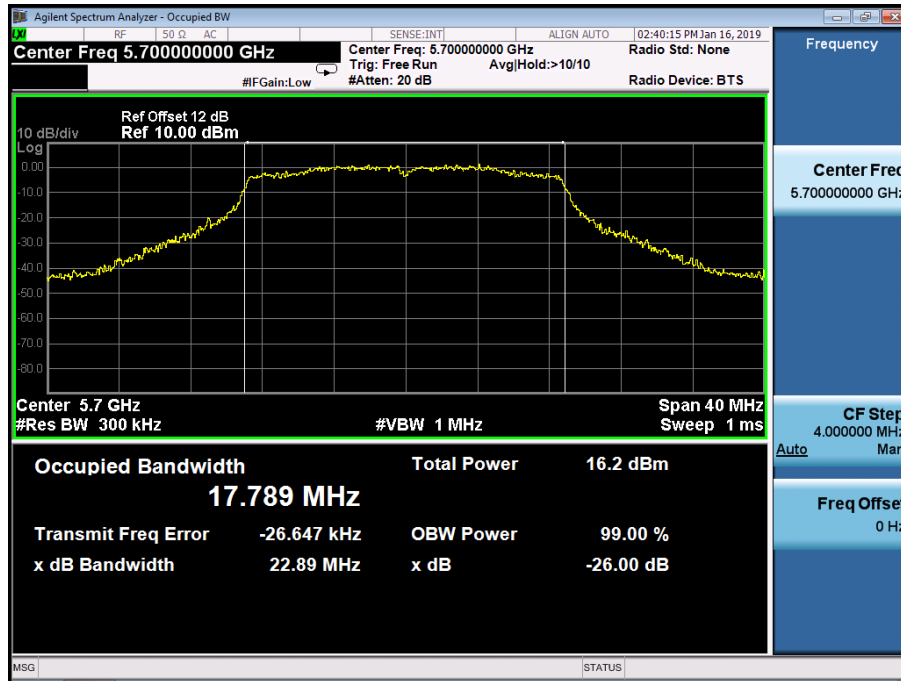
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5500



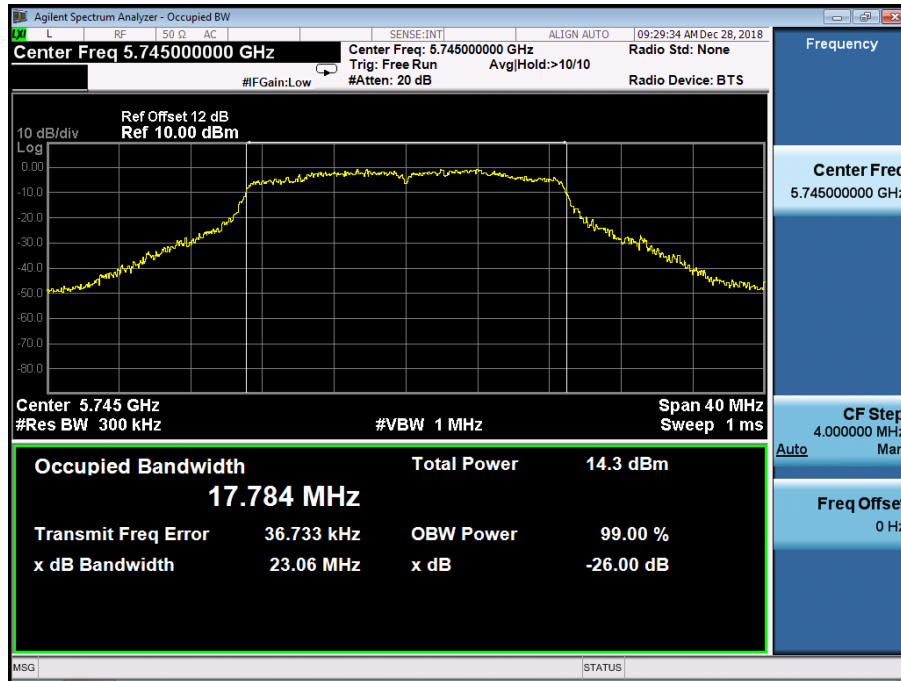
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5600



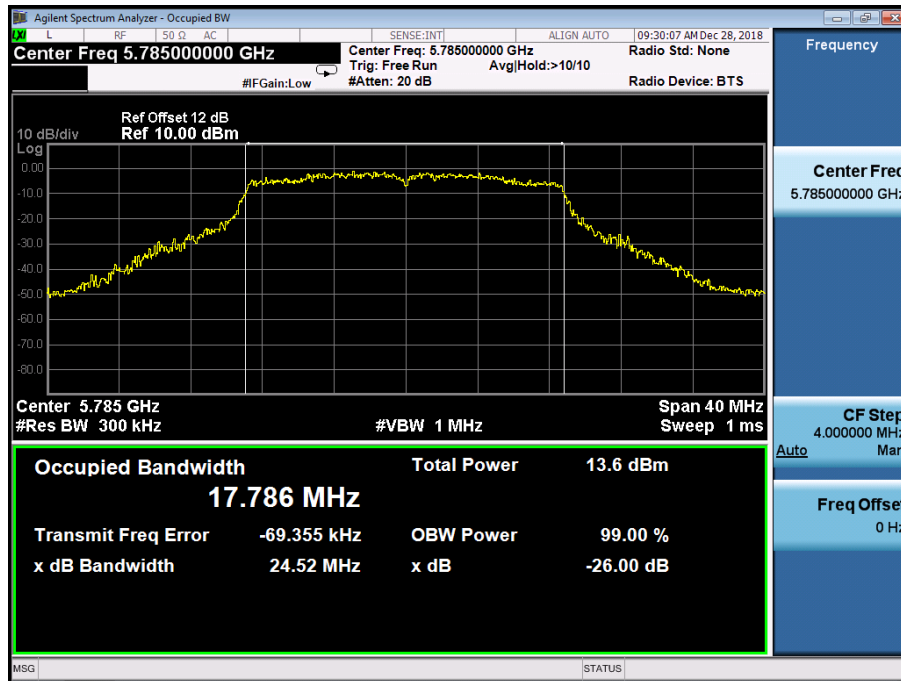
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5700



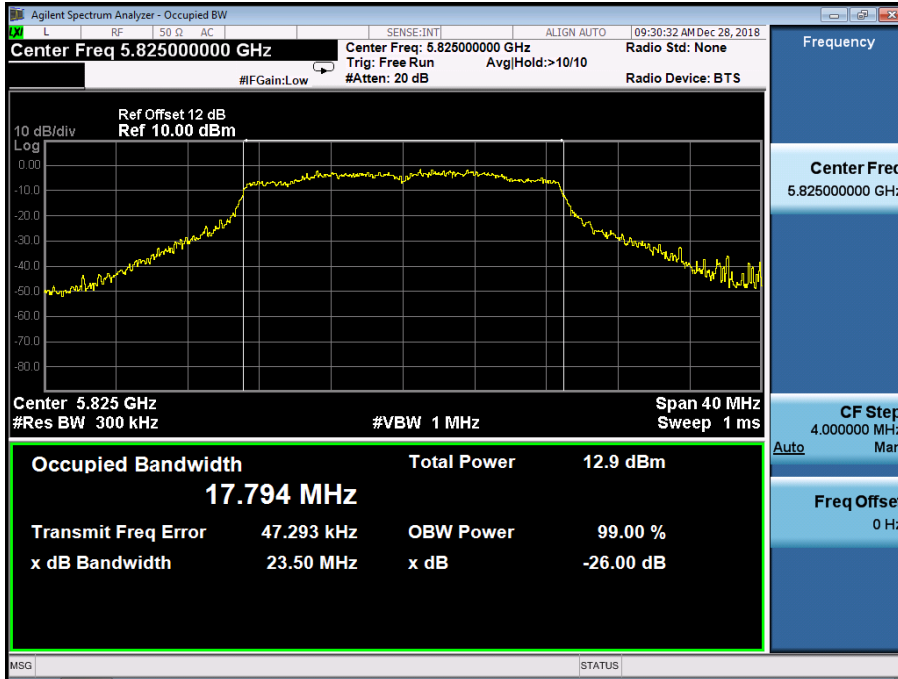
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5745



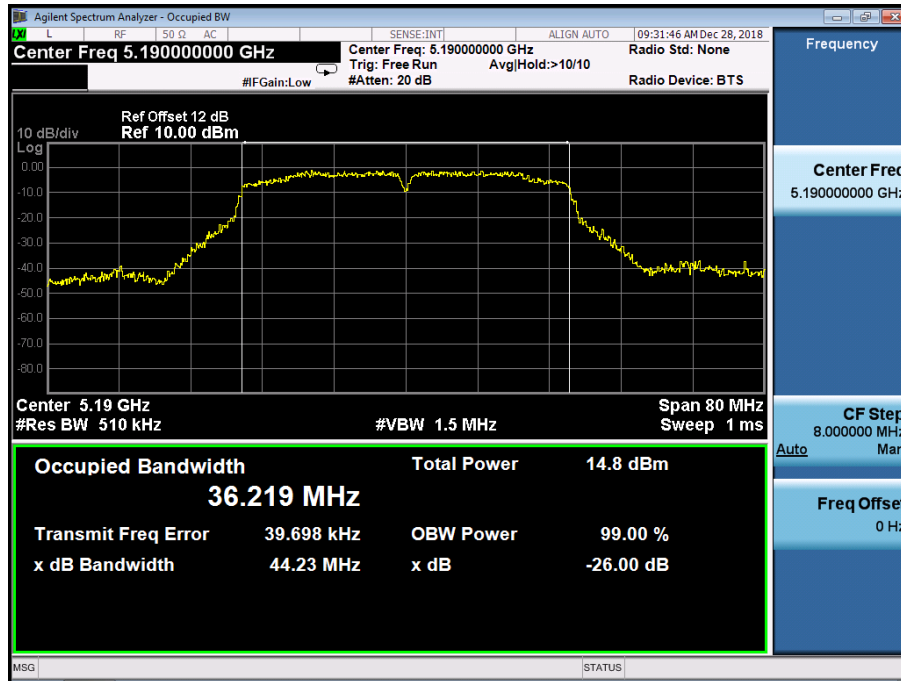
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5785



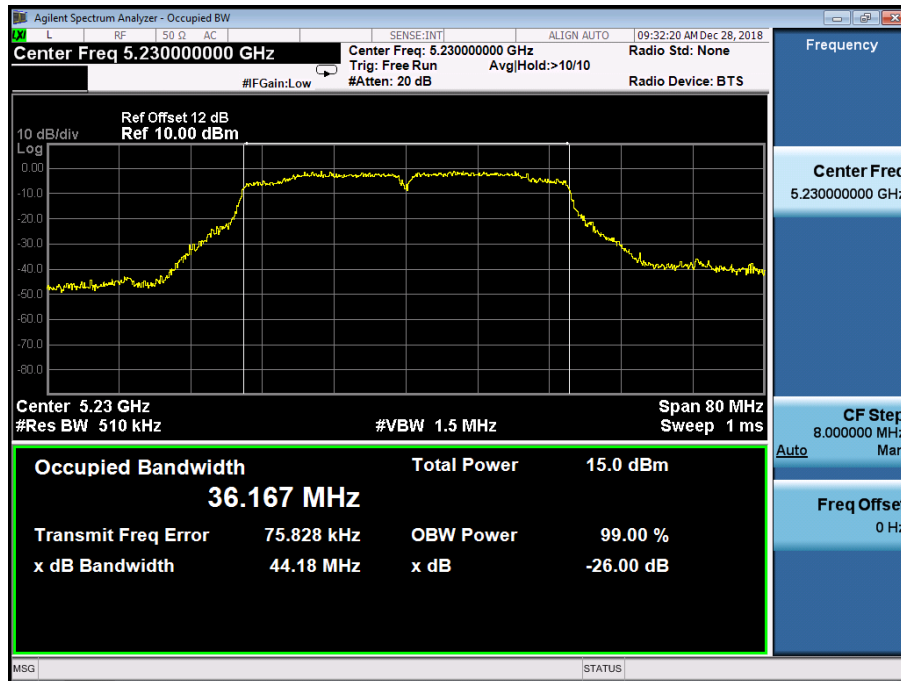
Emission Bandwidth & 99% Occupied Bandwidth UNII Band III
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5825



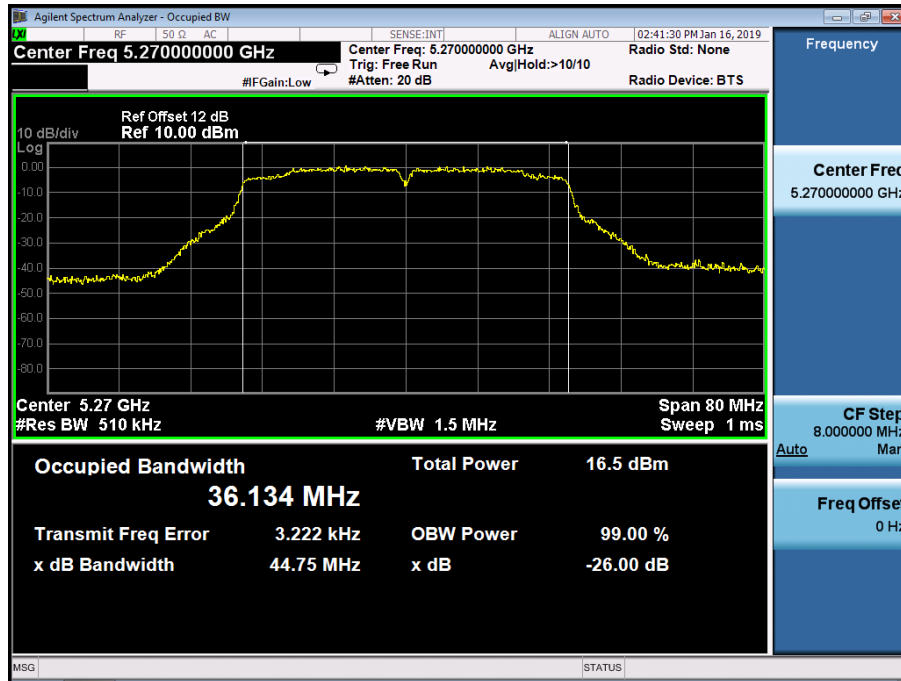
Emission Bandwidth&99% Occupied Bandwidth UNII Band I
 Test Model 802.11n(HT40) mode Frequency(MHz) 5190



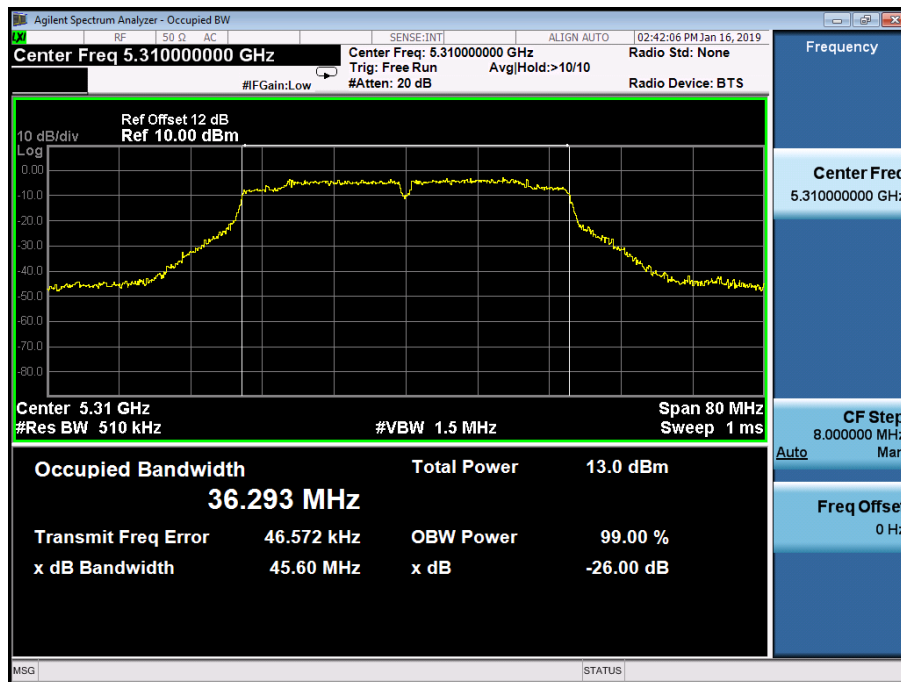
Emission Bandwidth&99% Occupied Bandwidth UNII Band I
 Test Model 802.11n(HT40) mode Frequency(MHz) 5230



Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11n(HT40) mode Frequency(MHz) 5270



Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11n(HT40) mode Frequency(MHz) 5310



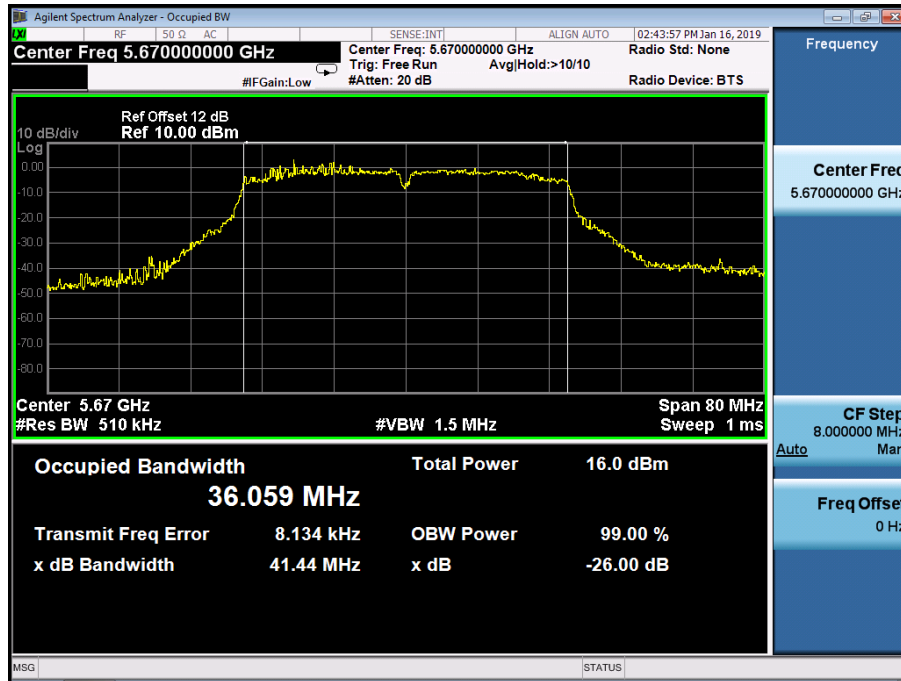
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11n(HT40) mode Frequency(MHz) 5510



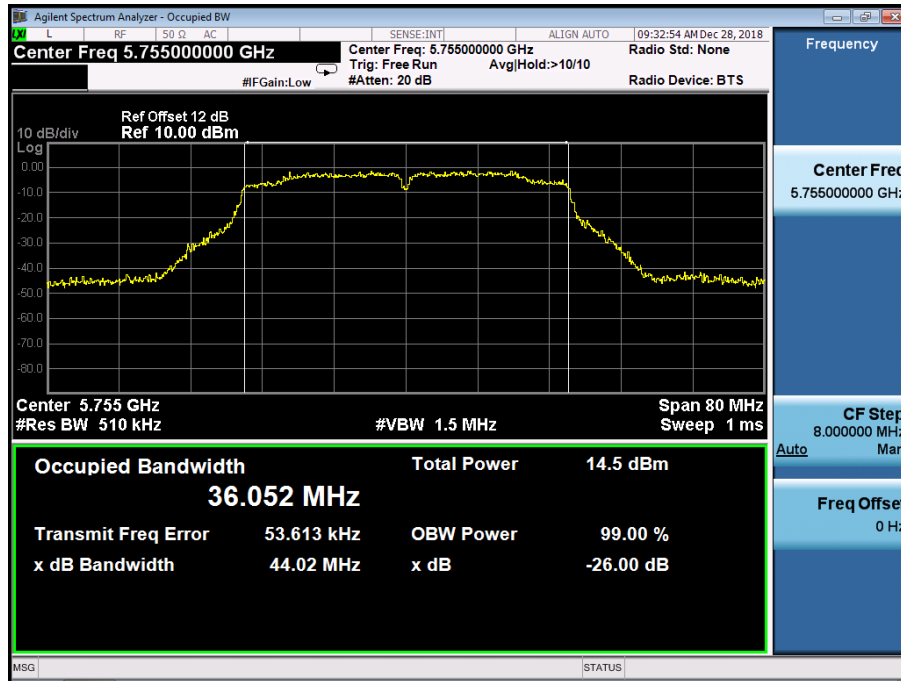
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11n(HT40) mode Frequency(MHz) 5590



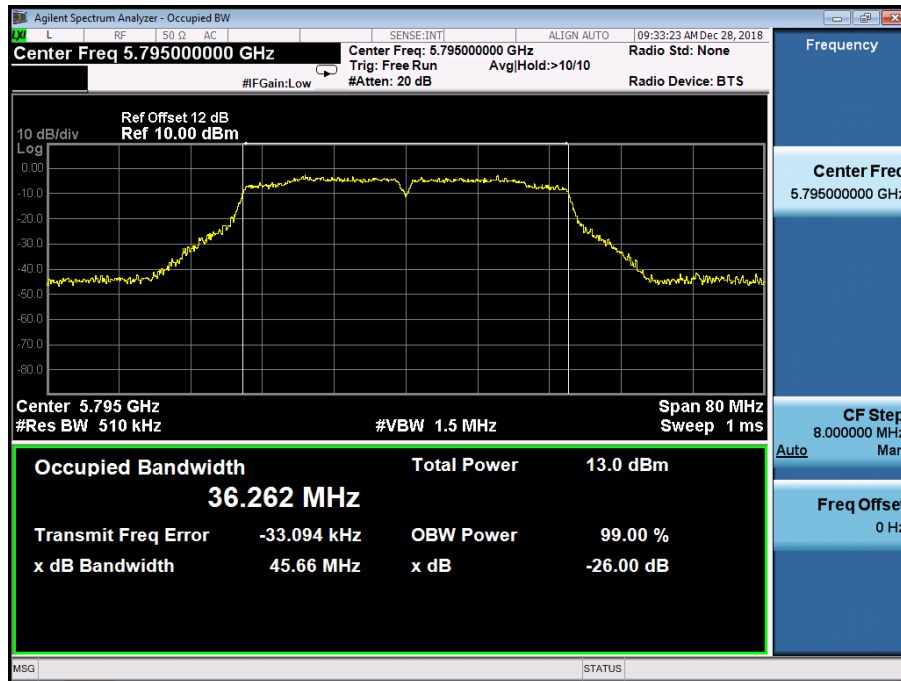
Emission Bandwidth & 99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11n(HT40) mode Frequency(MHz) 5670



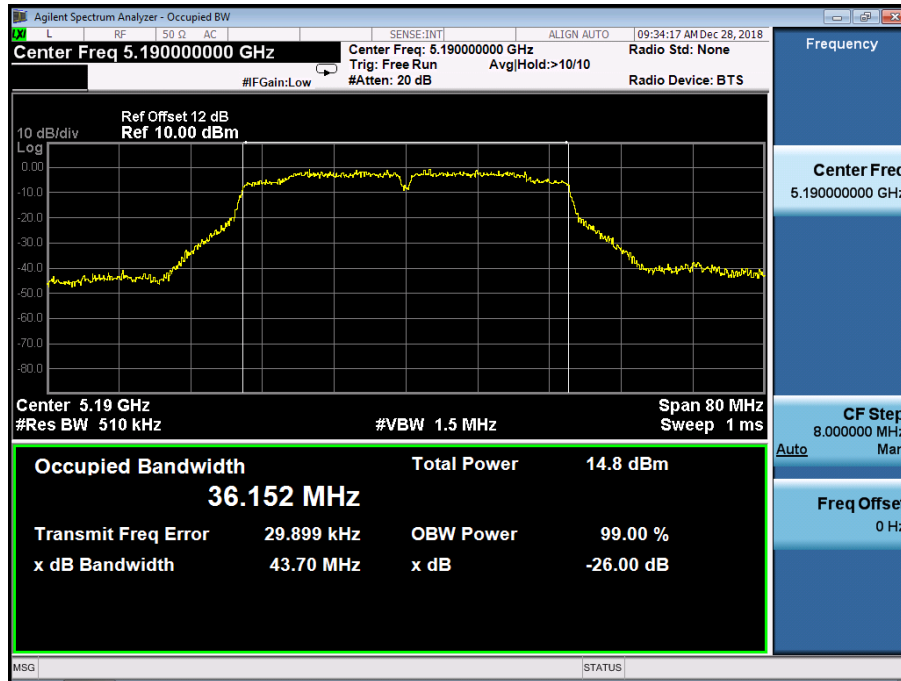
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11n(HT40) mode Frequency(MHz) 5755



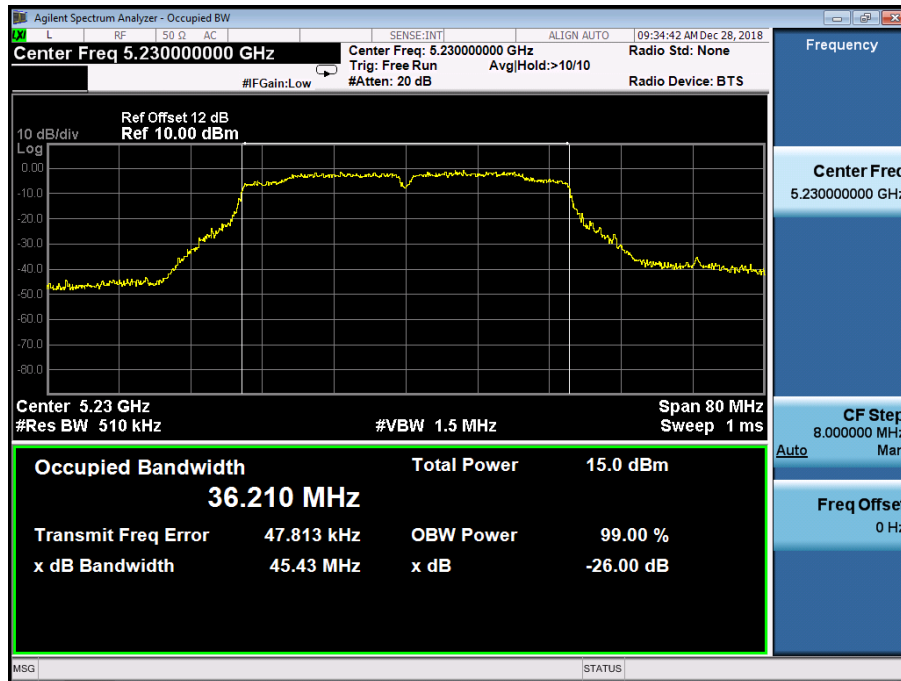
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11n(HT40) mode Frequency(MHz) 5795



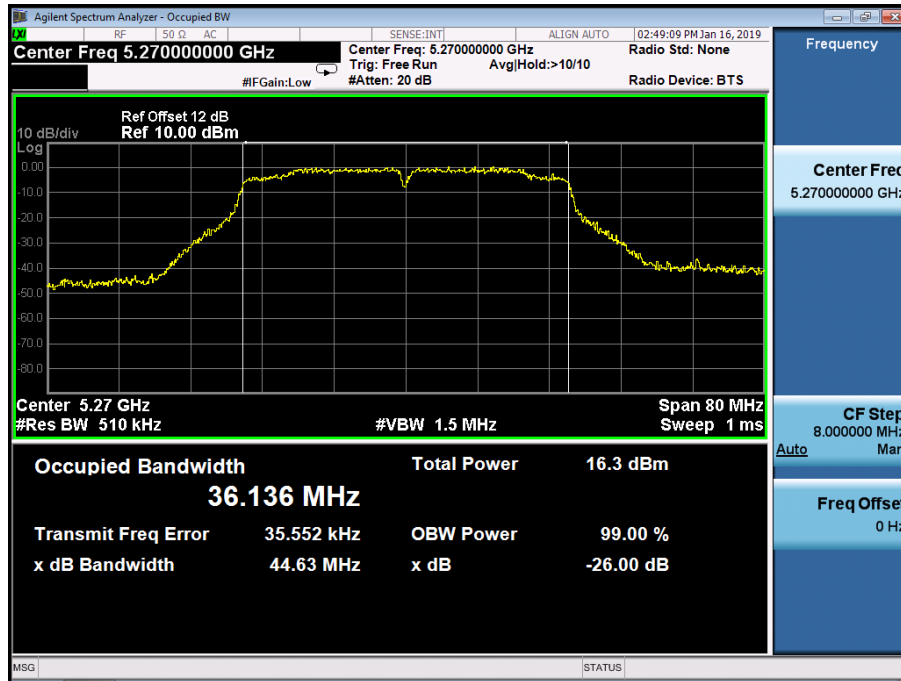
Emission Bandwidth&99% Occupied Bandwidth UNII Band I
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5190



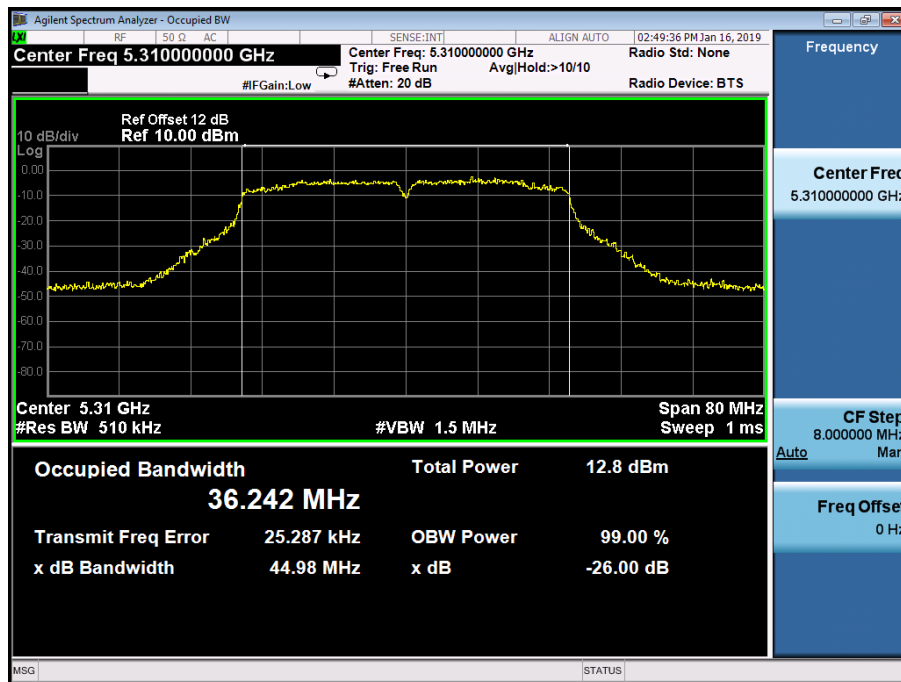
Emission Bandwidth&99% Occupied Bandwidth UNII Band I
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5230



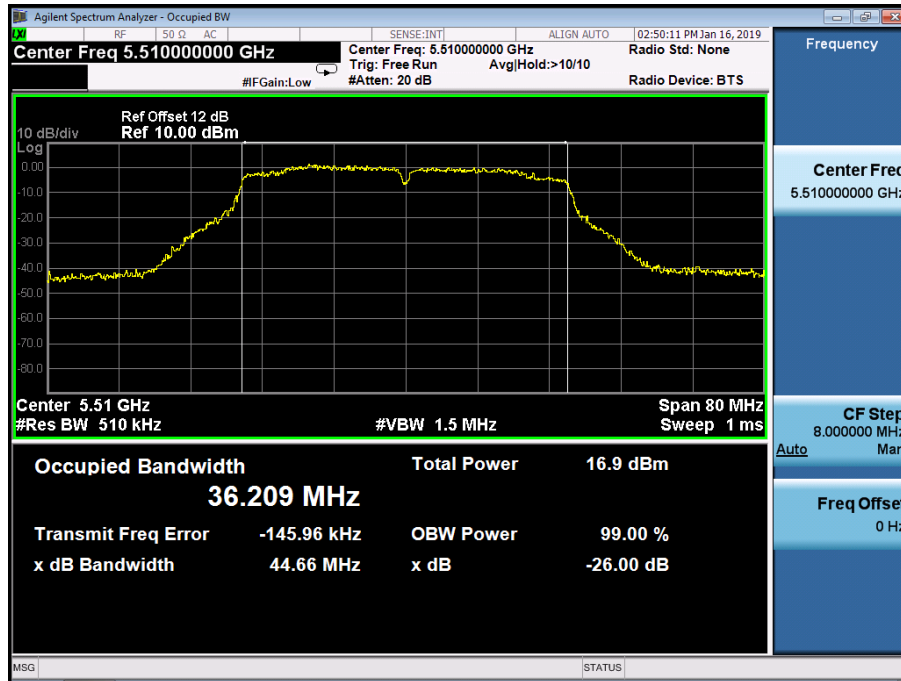
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5270



Emission Bandwidth&99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5310



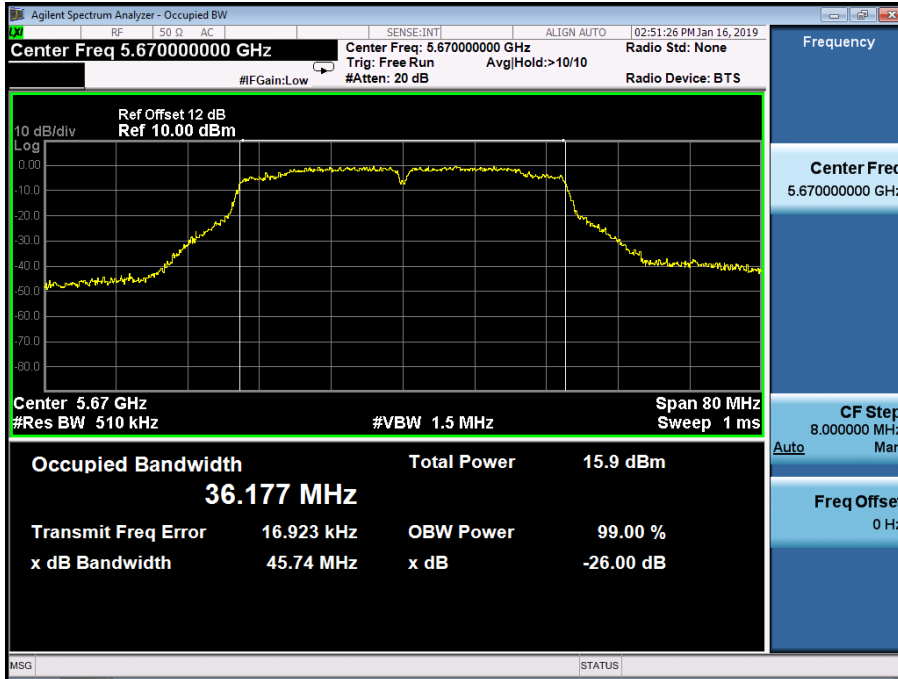
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5510



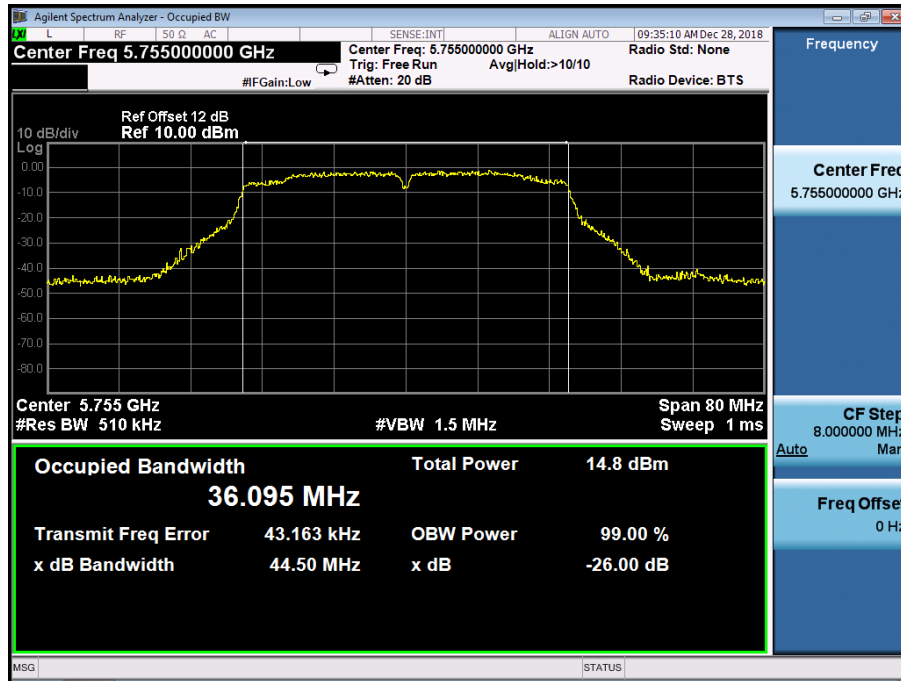
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5590



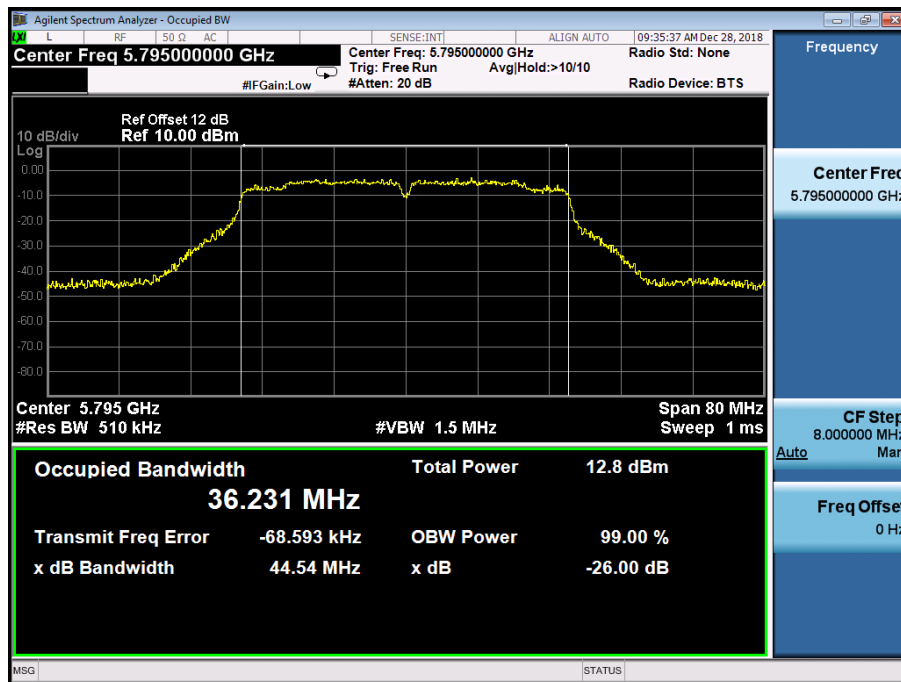
Emission Bandwidth & 99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5670



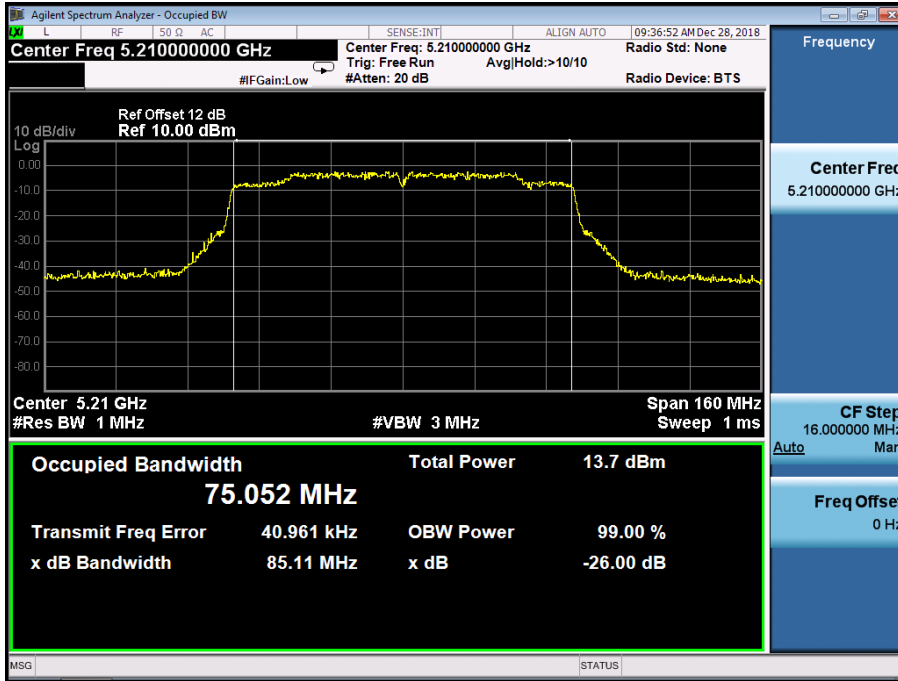
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5755



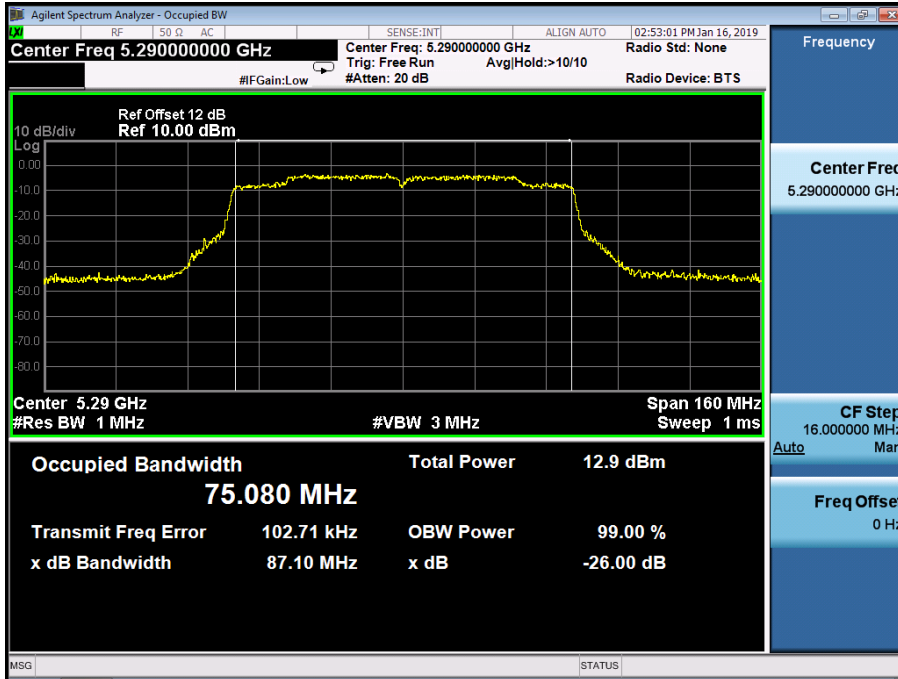
Emission Bandwidth&99% Occupied Bandwidth UNII Band III
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5795



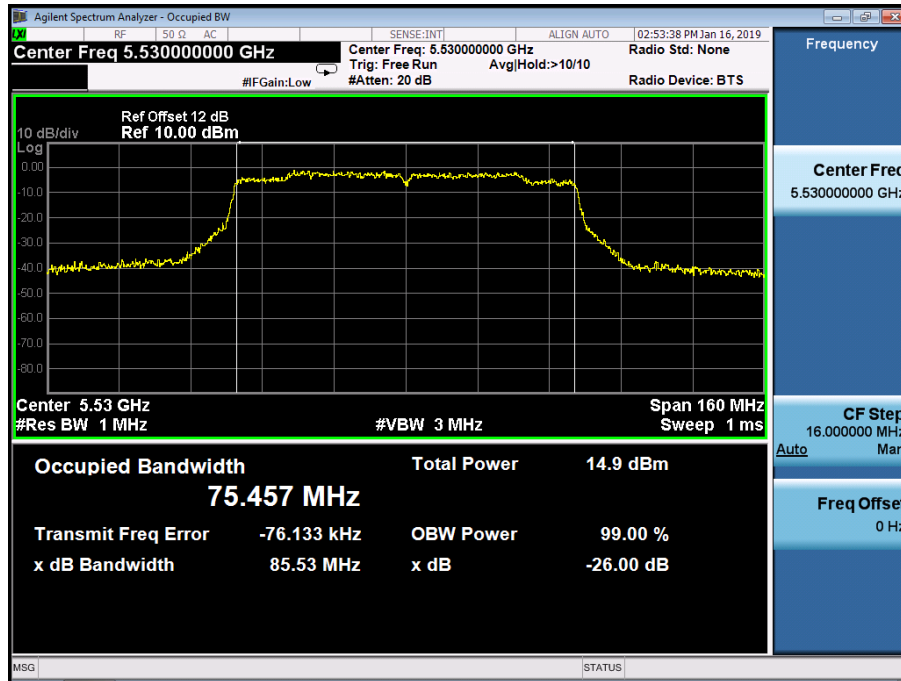
Emission Bandwidth&99% Occupied Bandwidth UNII Band I
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5210



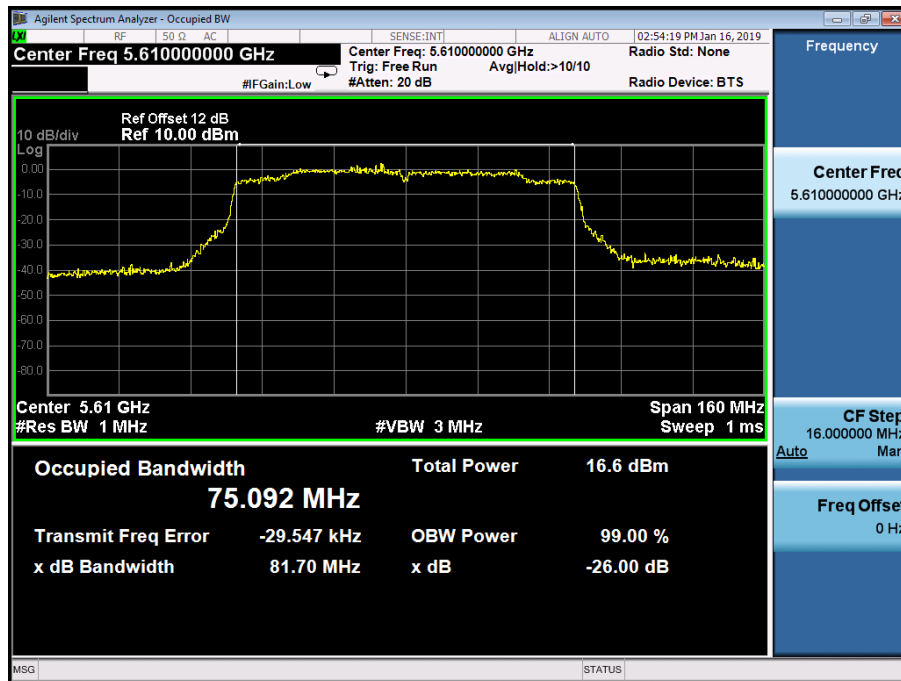
Emission Bandwidth & 99% Occupied Bandwidth UNII Band II-A
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5290



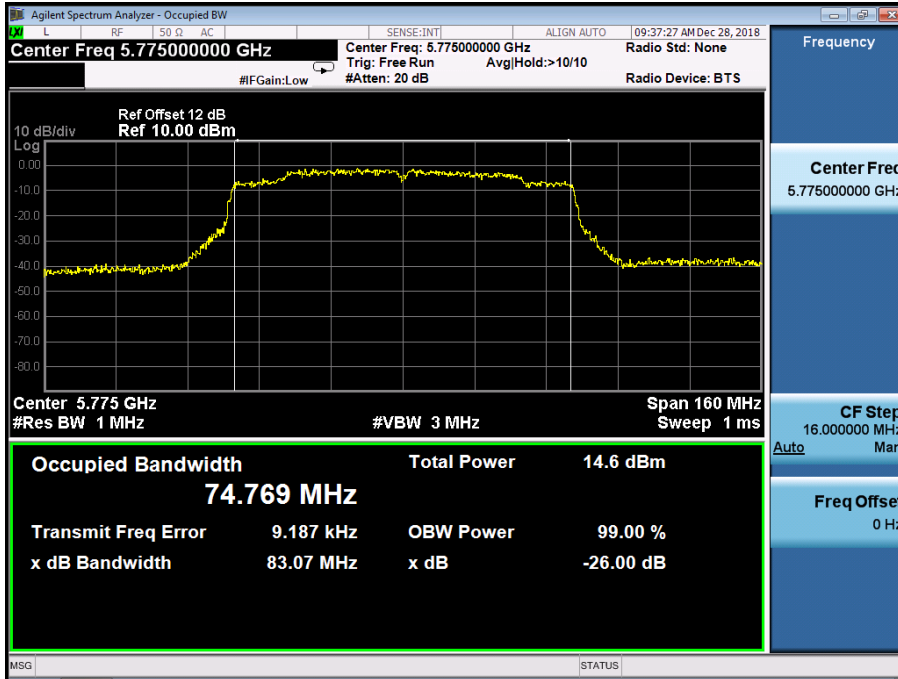
Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5530



Emission Bandwidth&99% Occupied Bandwidth UNII Band II-C
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5610

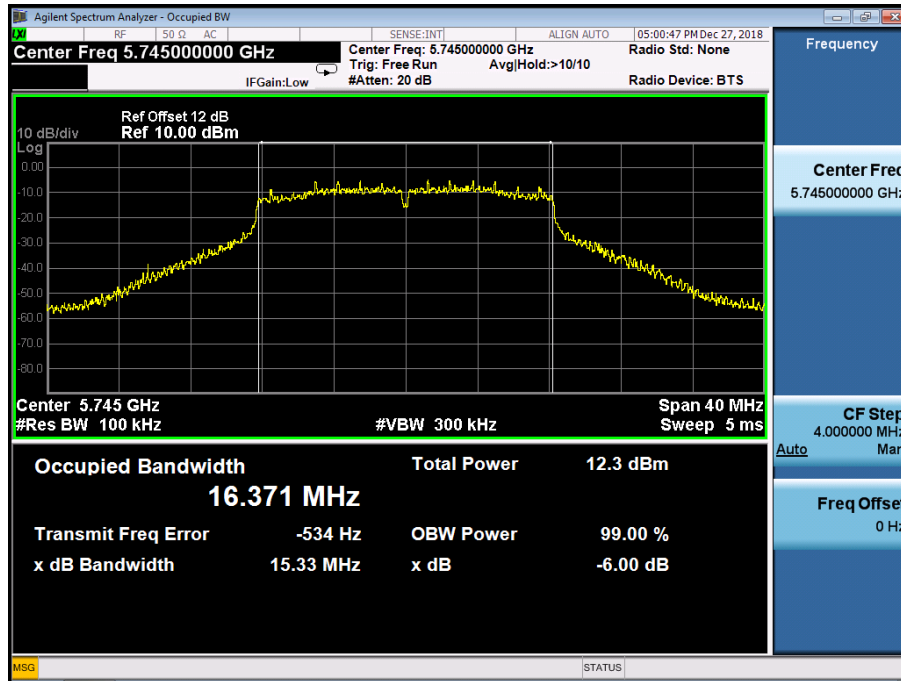


Emission Bandwidth & 99% Occupied Bandwidth UNII Band III
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5775



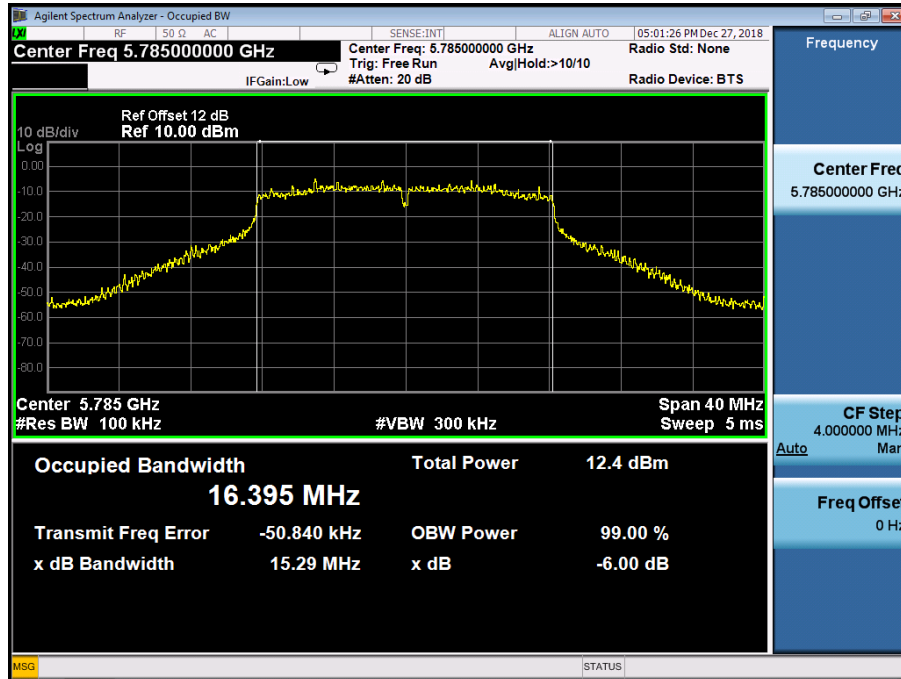
Minimum Emission Bandwidth
Test Model 802.11a mode

UNII Band III
Frequency(MHz) 5745

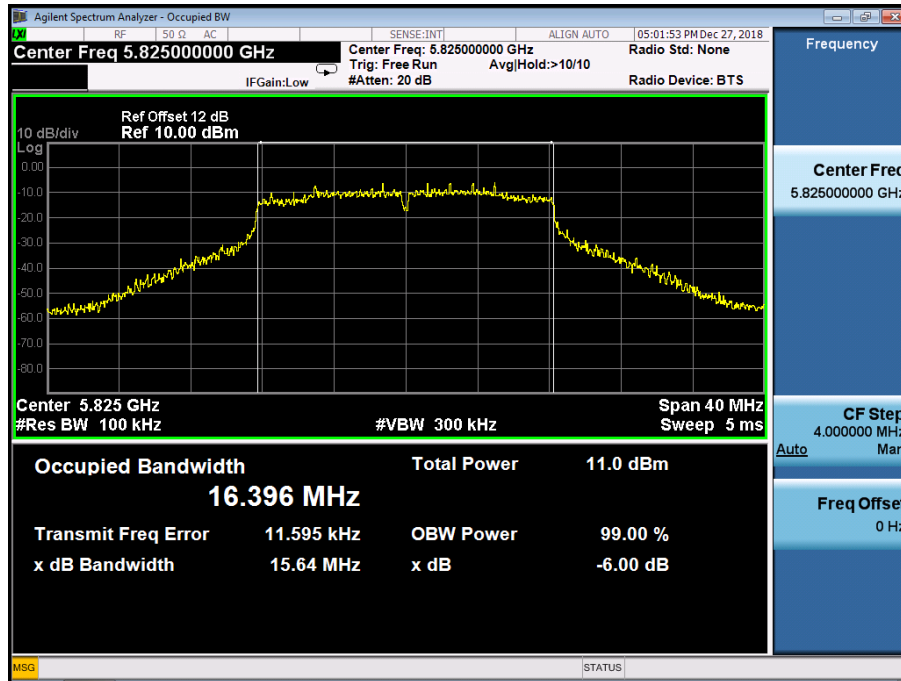


Minimum Emission Bandwidth
Test Model 802.11a mode

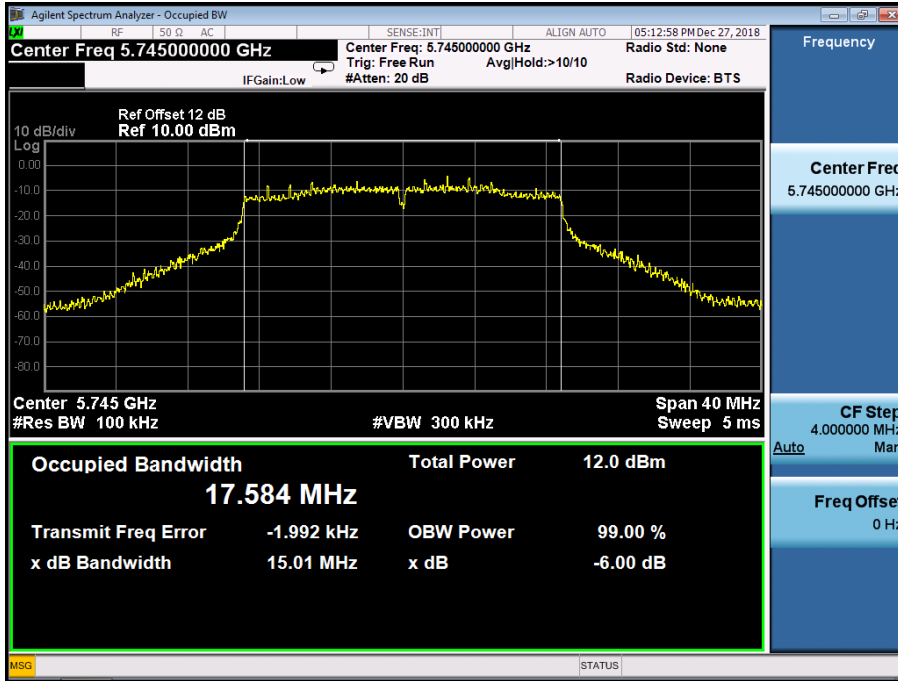
UNII Band III
Frequency(MHz) 5785



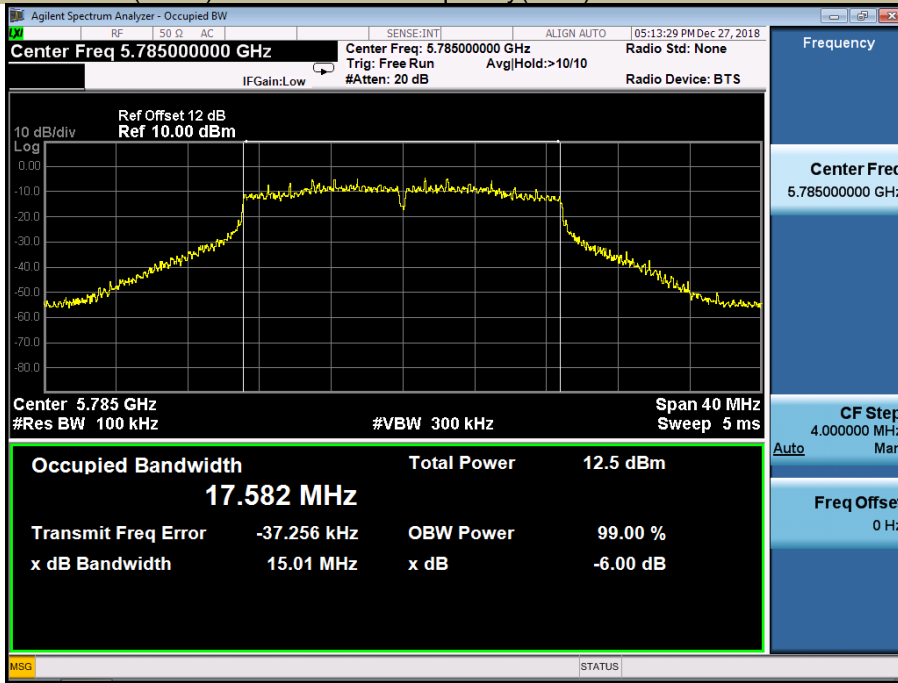
Minimum Emission Bandwidth UNII Band III
 Test Model 802.11a mode Frequency(MHz) 5825



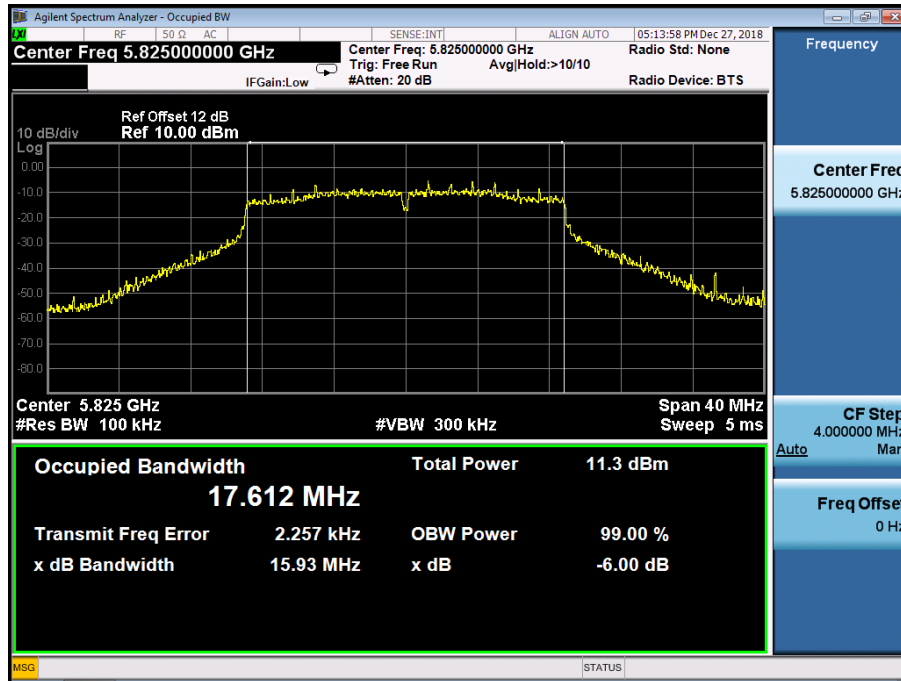
Minimum Emission Bandwidth UNII Band III
 Test Model 802.11n(HT20) mode Frequency(MHz) 5745



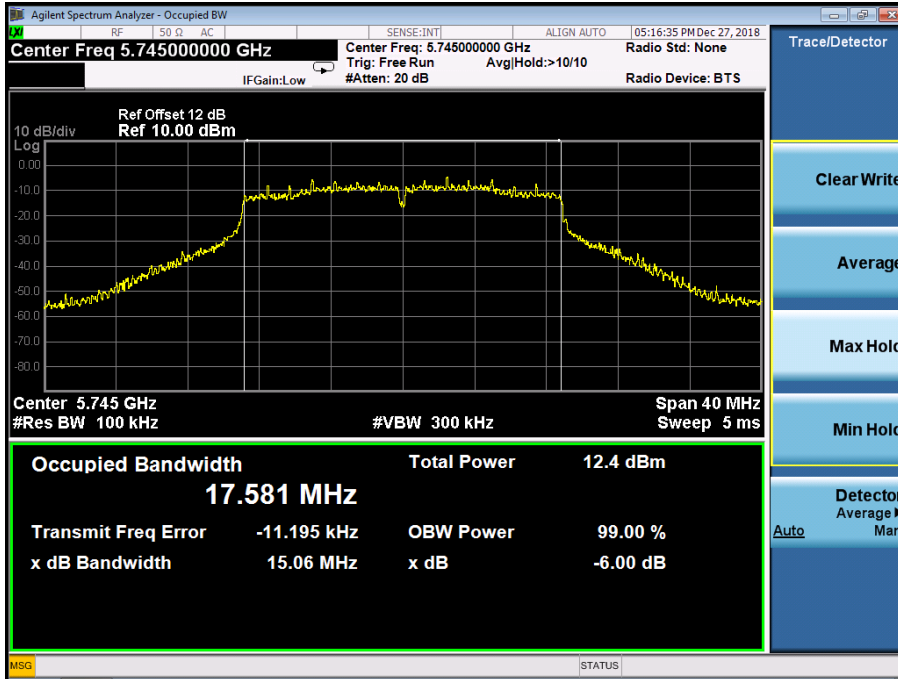
Minimum Emission Bandwidth UNII Band III
 Test Model 802.11n(HT20) mode Frequency(MHz) 5785



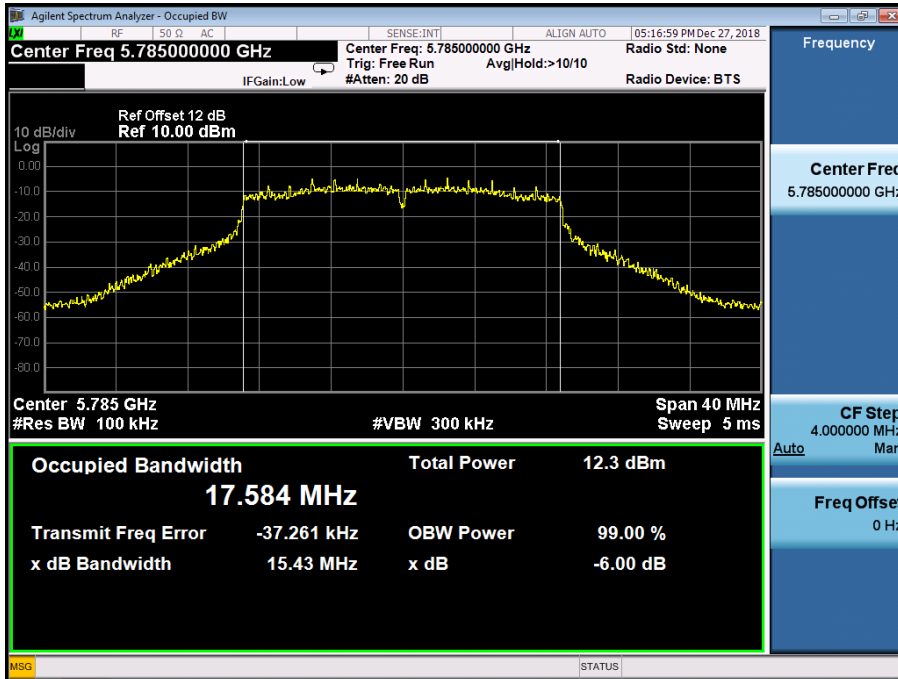
Minimum Emission Bandwidth UNII Band III
 Test Model 802.11n(VHT20) mode Frequency(MHz) 5825



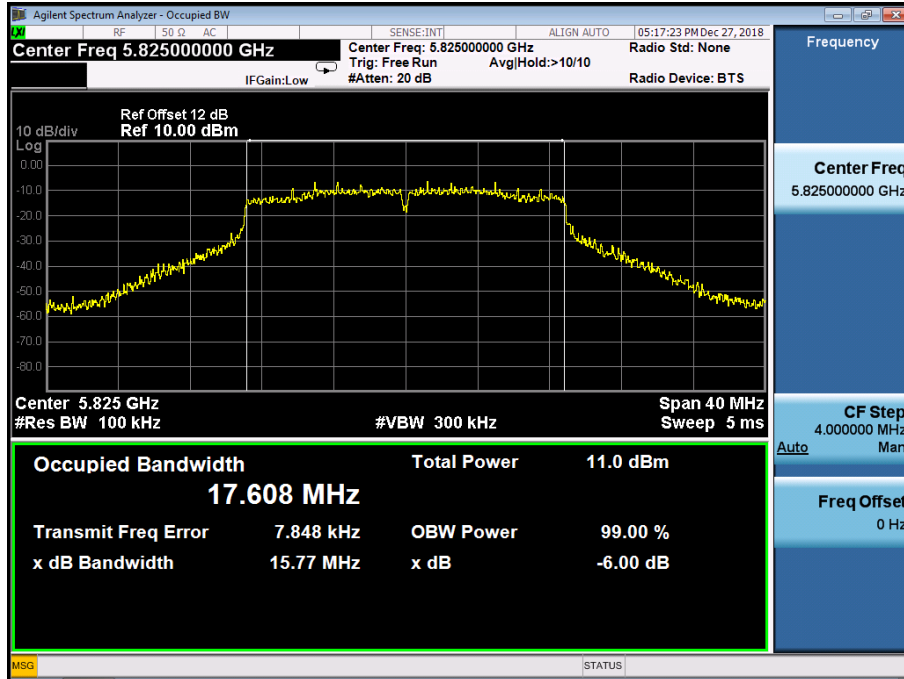
Minimum Emission Bandwidth UNII Band III
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5745



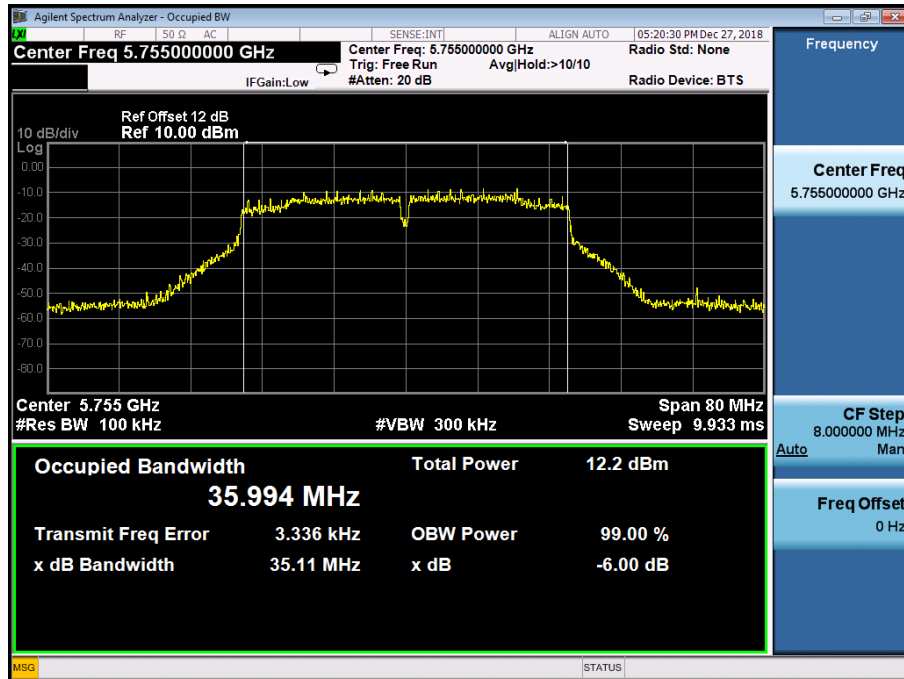
Minimum Emission Bandwidth UNII Band III
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5785



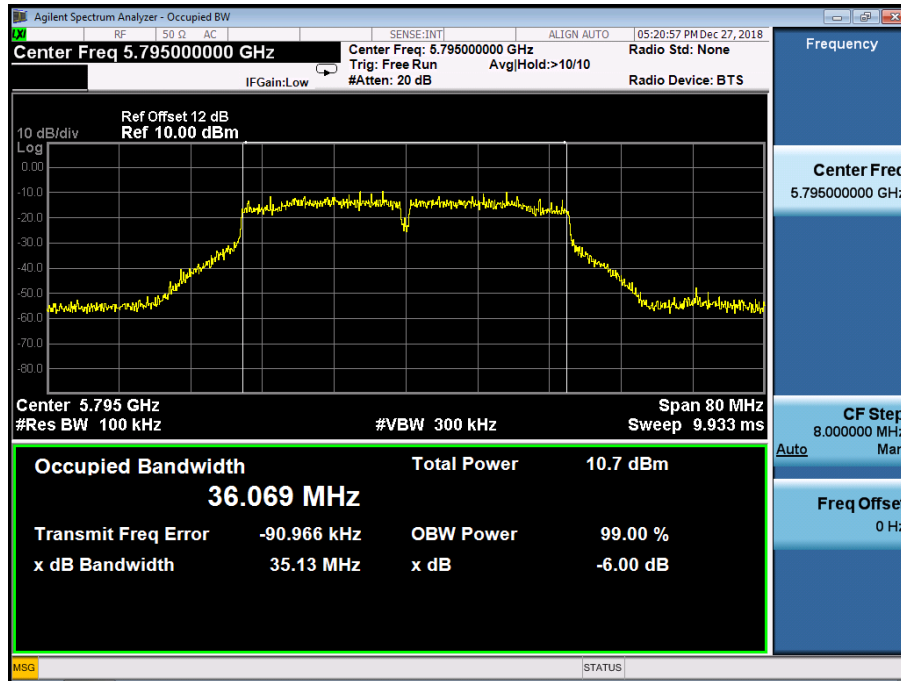
Minimum Emission Bandwidth UNII Band III
 Test Model 802.11ac(VHT20) mode Frequency(MHz) 5825



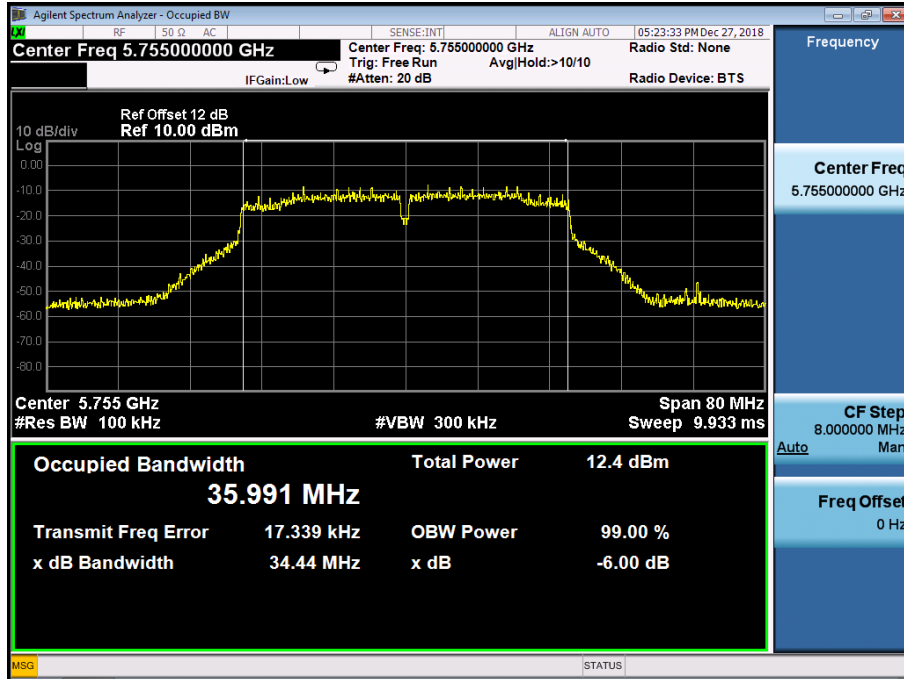
Minimum Emission Bandwidth UNII Band III
 Test Model 802.11n(HT40) mode Frequency(MHz) 5755



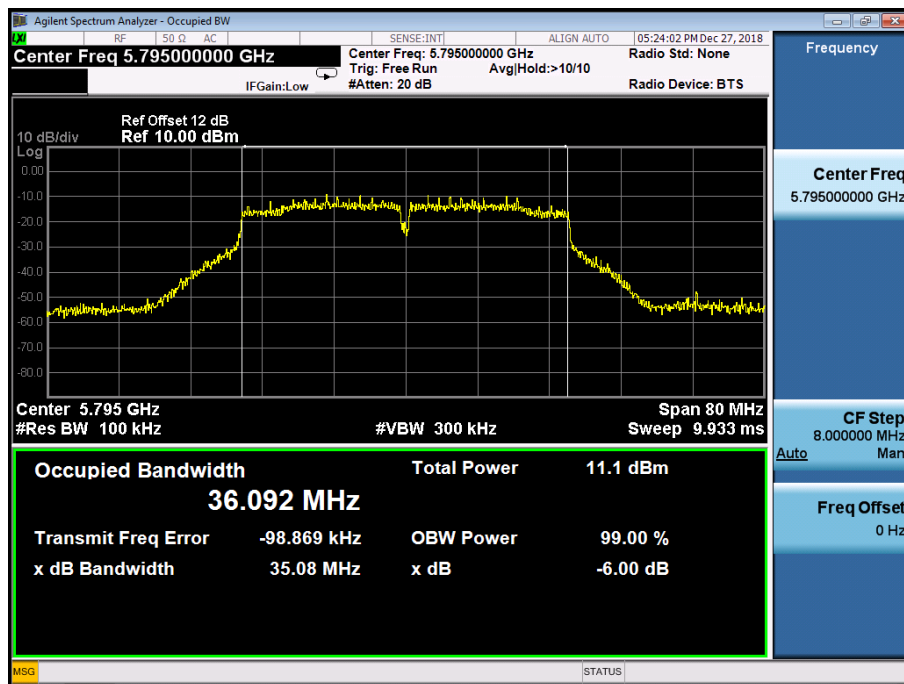
Minimum Emission Bandwidth UNII Band III
 Test Model 802.11n(HT40) mode Frequency(MHz) 5795



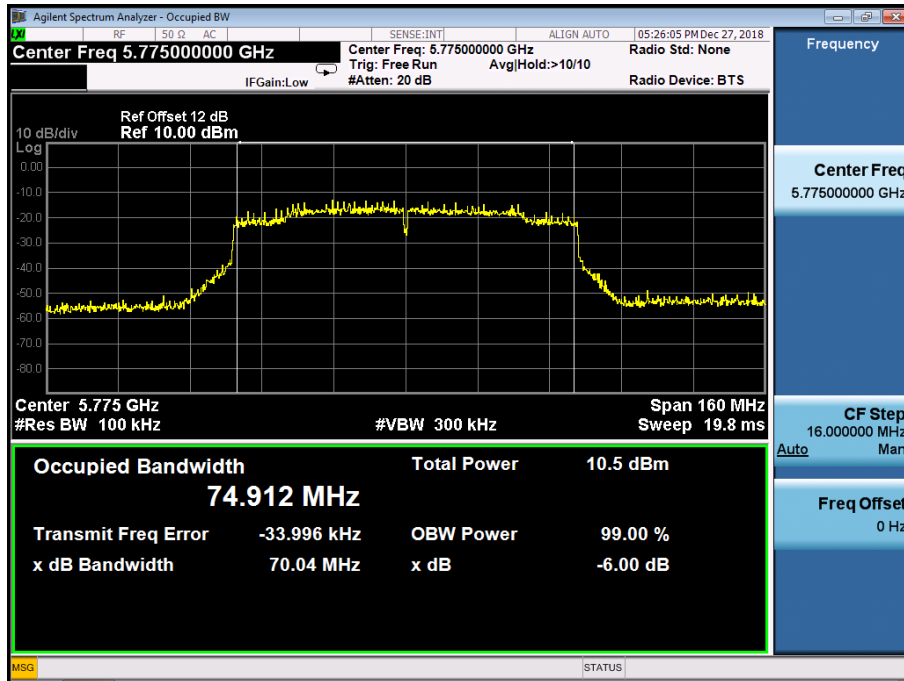
Minimum Emission Bandwidth UNII Band III
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5755



Minimum Emission Bandwidth UNII Band III
 Test Model 802.11ac(VHT40) mode Frequency(MHz) 5795



Minimum Emission Bandwidth UNII Band III
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5775



8.2 MAXIMUM CONDUCTED OUTPUT POWER

8.2.1 Applicable Standard

According to FCC Part 15.407(a)(1) for UNII Band I

According to FCC Part 15.407(a)(2) for UNII Band II-A and UNII Band II-C

According to FCC Part 15.407(a)(3) for UNII Band III

According to 789033 D02 Section II(E)

8.2.2 Conformance Limit

■ For the band 5.15-5.25 GHz,

(a) (1) (i) 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 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(a) (1) (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. 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.

(a) (1) (iii) For fixed point-to-point access points 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. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. 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.

(a) (1) (iv) 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. 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

(a) (2) 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

(a) (3) 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.

8.2.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

8.2.4 Test Procedure

Method 1 For Normal Bandwidth 20MHz, 40MHz

The maximum average conducted output power can be measured using Method PM-G (Measurement using an RF average power meter):

- a. The Transmitter output (antenna port) was connected to the power meter.
- b. Turn on the EUT and power meter and then record the power value.
- c. Repeat above procedures on all channels needed to be tested.

Method 2 For Normal Bandwidth 80MHz

Measurement of maximum conducted output power using a spectrum analyzer (Method SA-1 from KDB 789033)

- a. Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- b. Set RBW = 1 MHz.
- c. Set VBW \geq 3 MHz.
- d. Number of points in sweep $\geq 2 \times$ span / RBW. (This ensures that bin-to-bin spacing is \leq RBW/2, so that narrowband signals are not lost between frequency bins.)
- e. Sweep time = auto.
- f. Detector = power averaging (rms)
- g. Trace average at least 100 traces in power averaging (rms) mode.
- h. Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

8.2.5 Test Results

Temperature : 28°C		<input checked="" type="checkbox"/> 802.11a mode	
Humidity : 65 %		Test By: King Kong	

Band	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)		Limit (dBm)	Verdict
			Ant0	Ant1		
UNII Band I	CH36	5180	11.56	11.56	24.00	Pass
	CH40	5200	11.60	11.59	24.00	Pass
	CH48	5240	11.53	11.61	24.00	Pass
UNII Band II-A	CH52	5260	14.32	12.88	24.00	Pass
	CH56	5280	14.03	12.55	24.00	Pass
	CH64	5320	13.90	12.56	24.00	Pass
UNII Band II-C	CH100	5500	12.41	12.36	24.00	Pass
	CH120	5600	12.22	12.20	24.00	Pass
	CH140	5700	10.87	11.04	24.00	Pass
UNII Band III	CH149	5745	10.21	11.71	24.00	Pass
	CH157	5785	10.36	11.62	24.00	Pass
	CH165	5825	10.99	11.60	24.00	Pass

Note:
N/A (Not Applicable)

Temperature : 28°C		<input checked="" type="checkbox"/> 802.11n(HT20) mode	
Humidity : 65 %		Test By: King Kong	

Band	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)			Limit (dBm)	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH36	5180	11.62	11.61	14.625	24.00	Pass
	CH40	5200	11.61	11.62	14.625	24.00	Pass
	CH48	5240	11.61	11.60	14.615	24.00	Pass
UNII Band II-A	CH52	5260	12.82	12.61	15.727	24.00	Pass
	CH56	5280	12.67	12.61	15.650	24.00	Pass
	CH64	5320	12.54	12.49	15.525	24.00	Pass
UNII Band II-C	CH100	5500	11.88	12.49	15.206	24.00	Pass
	CH120	5600	11.99	12.07	15.040	24.00	Pass
	CH140	5700	11.60	11.52	14.570	24.00	Pass
UNII Band III	CH149	5745	8.95	9.34	12.160	24.00	Pass
	CH157	5785	9.35	9.43	12.400	24.00	Pass
	CH165	5825	8.94	9.03	11.996	24.00	Pass

802.11ac(VHT20) mode

Temperature : 28°C Test By: King Kong
Humidity : 65 %

Band	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)			Limit (dBm)	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH36	5180	11.63	10.99	14.332	24.00	Pass
	CH40	5200	11.66	10.11	13.964	24.00	Pass
	CH48	5240	11.60	10.90	14.274	24.00	Pass
UNII Band II-A	CH52	5260	12.60	12.58	15.600	24.00	Pass
	CH56	5280	12.56	12.55	15.565	24.00	Pass
	CH64	5320	12.52	12.48	15.510	24.00	Pass
UNII Band II-C	CH100	5500	11.83	11.79	14.820	24.00	Pass
	CH120	5600	11.84	11.88	14.870	24.00	Pass
	CH140	5700	11.56	11.56	14.570	24.00	Pass
UNII Band III	CH149	5745	8.91	8.92	11.925	24.00	Pass
	CH157	5785	9.10	9.10	12.110	24.00	Pass
	CH165	5825	8.90	8.92	11.920	24.00	Pass

 802.11n(HT40) mode

Temperature : 28°C Test By: King Kong
Humidity : 65 %

Band	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)			Limit (dBm)	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH38	5190	10.99	11.05	14.030	24.00	Pass
	CH46	5230	11.09	11.09	14.100	24.00	Pass
UNII Band II-A	CH54	5270	11.48	11.42	14.460	24.00	Pass
	CH62	5310	9.66	9.69	12.685	24.00	Pass
UNII Band II-C	CH102	5510	11.58	11.56	14.580	24.00	Pass
	CH118	5590	11.46	11.5	14.490	24.00	Pass
	CH134	5670	11.47	11.48	14.485	24.00	Pass
UNII Band III	CH151	5755	9.47	9.42	12.455	24.00	Pass
	CH159	5795	8.62	8.62	11.630	24.00	Pass

 802.11ac(VHT40) mode

Temperature : 28°C Test By: King Kong
Humidity : 65 %

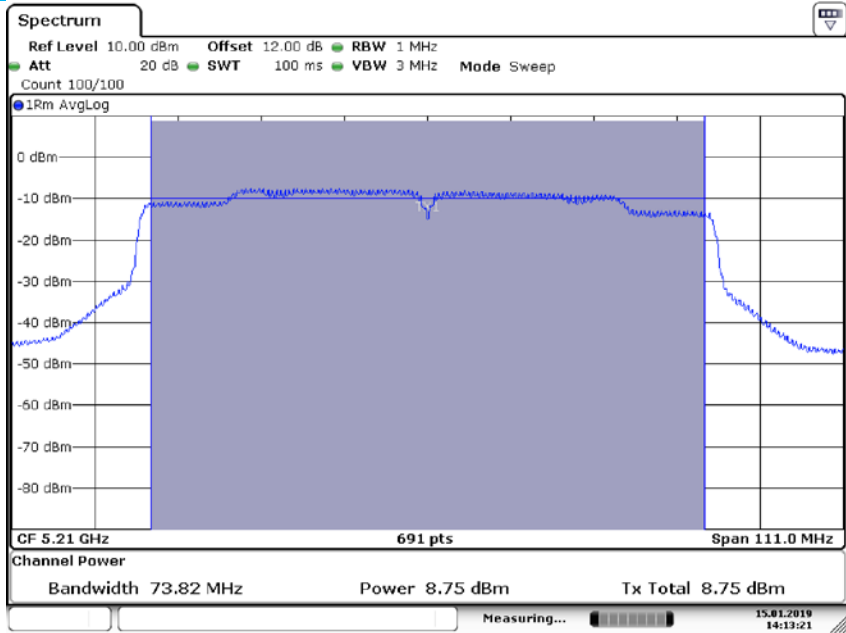
Band	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)			Limit (MHz)	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH38	5190	11.06	11.08	14.080	24.00	Pass
	CH46	5230	11.11	11.11	14.120	24.00	Pass
UNII Band II-A	CH54	5270	11.42	11.45	14.445	24.00	Pass
	CH62	5310	9.65	9.65	12.660	24.00	Pass
UNII Band II-C	CH102	5510	11.59	12.00	14.810	24.00	Pass
	CH118	5590	11.65	11.97	14.823	24.00	Pass
	CH134	5670	11.46	11.49	14.485	24.00	Pass
UNII Band III	CH151	5755	8.94	9.97	12.496	24.00	Pass
	CH159	5795	8.66	8.69	11.685	24.00	Pass

Temperature :	28°C	<input checked="" type="checkbox"/> 802.11ac(VHT80) mode	Test By:	King Kong
Humidity :	65 %			

Band	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)			Limit (dBm)	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH42	5210	8.75	7.38	11.129	24.00	Pass
UNII Band II-A	CH58	5290	6.92	6.83	9.886	24.00	Pass
UNII Band II-C	CH106	5530	9.06	9.21	12.146	24.00	Pass
	CH122	5610	10.35	10.42	13.395	24.00	Pass
UNII Band III	CH155	5775	8.69	7.01	10.941	24.00	Pass

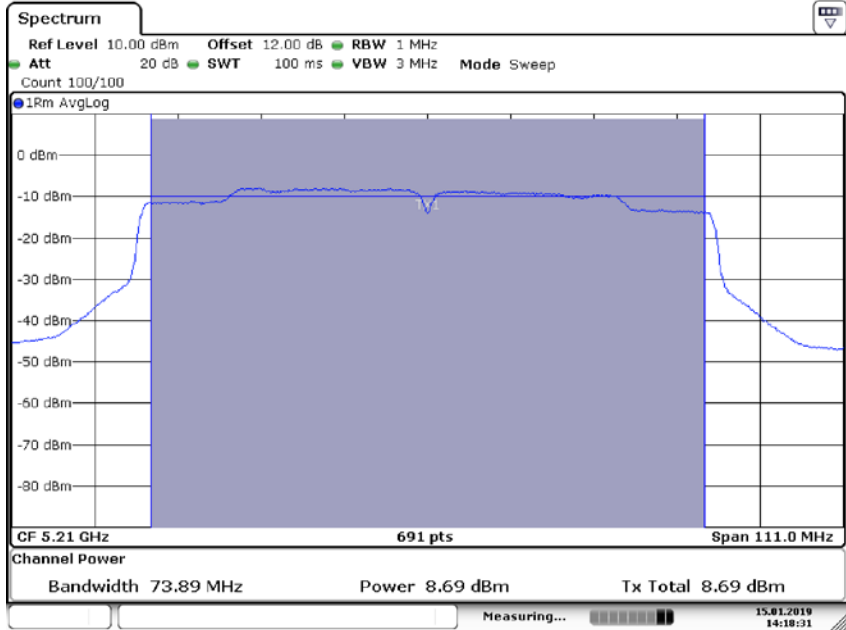
For 802.11ac (VHT80) Test Plots see the follow pages;

MAXIMUM CONDUCTED OUTPUT POWER UNII Band I
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5210
Ant0



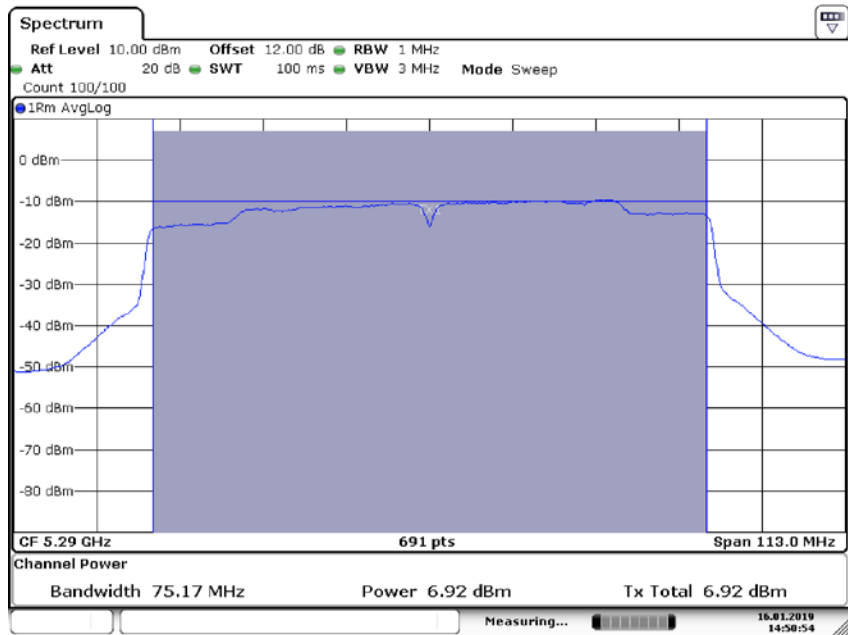
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Ant1



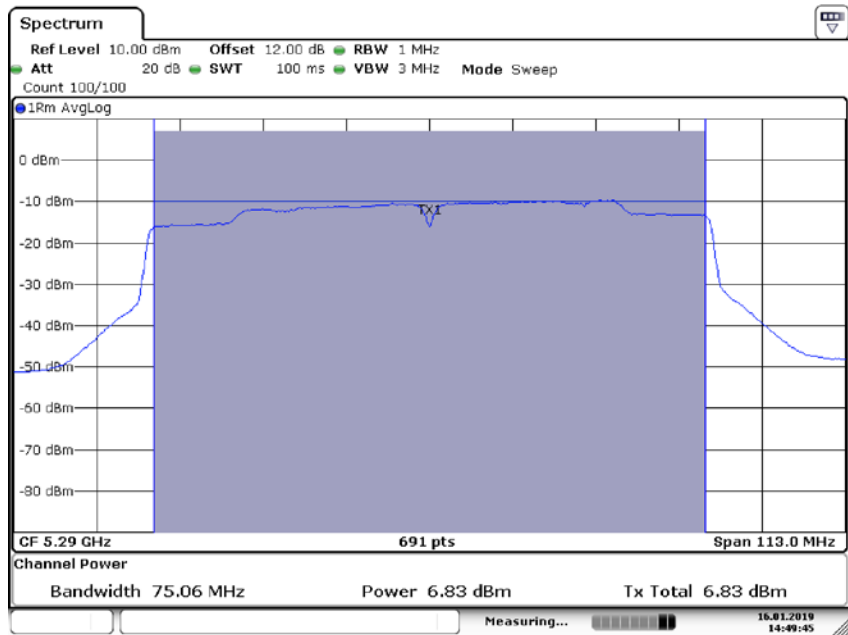
Date: 15 JAN 2019 14:18:31

MAXIMUM CONDUCTED OUTPUT POWER UNII Band II-A
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5290
Ant0



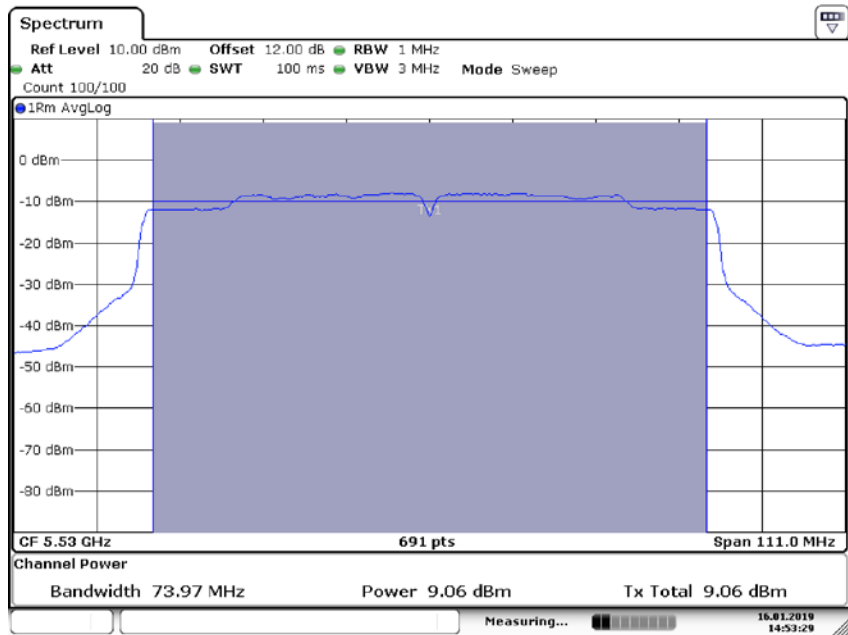
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Ant1



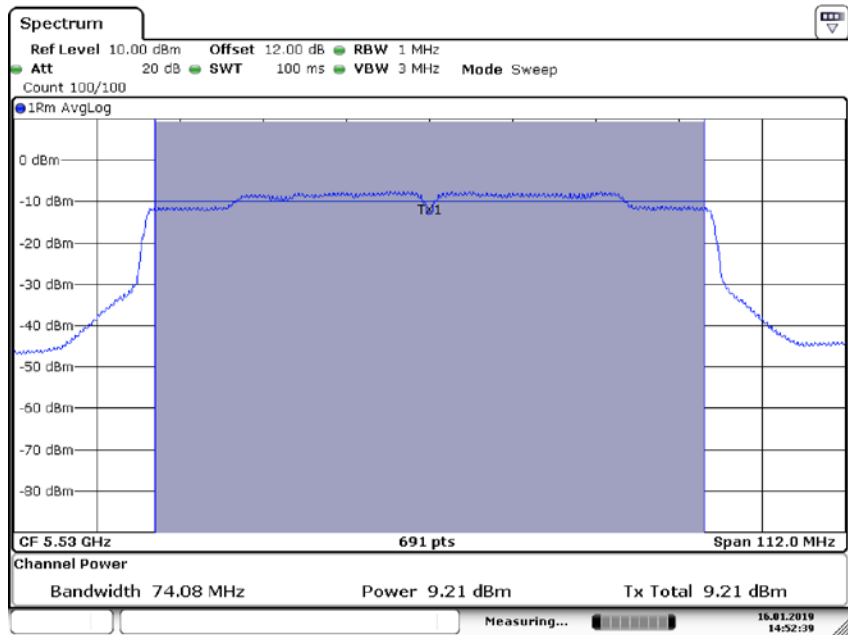
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MAXIMUM CONDUCTED OUTPUT POWER UNII Band II-C
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5530
Ant0



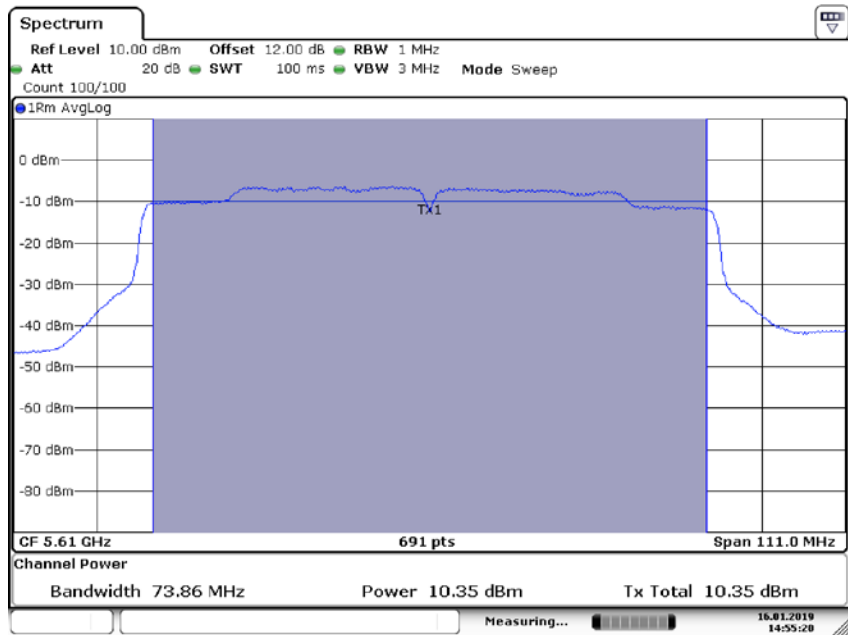
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Ant1



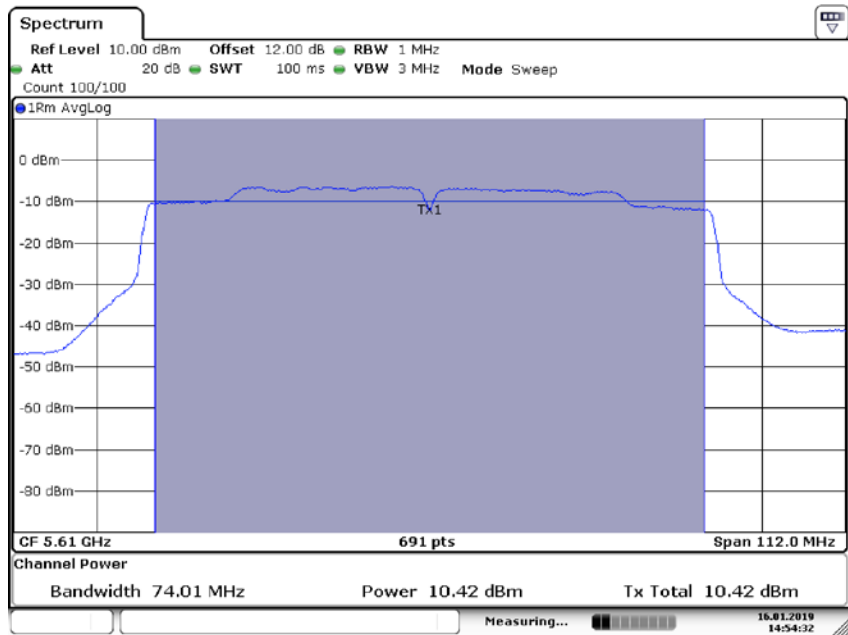
Date: 16 JAN 2019 14:52:39

MAXIMUM CONDUCTED OUTPUT POWER UNII Band II-C
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5610
Ant0



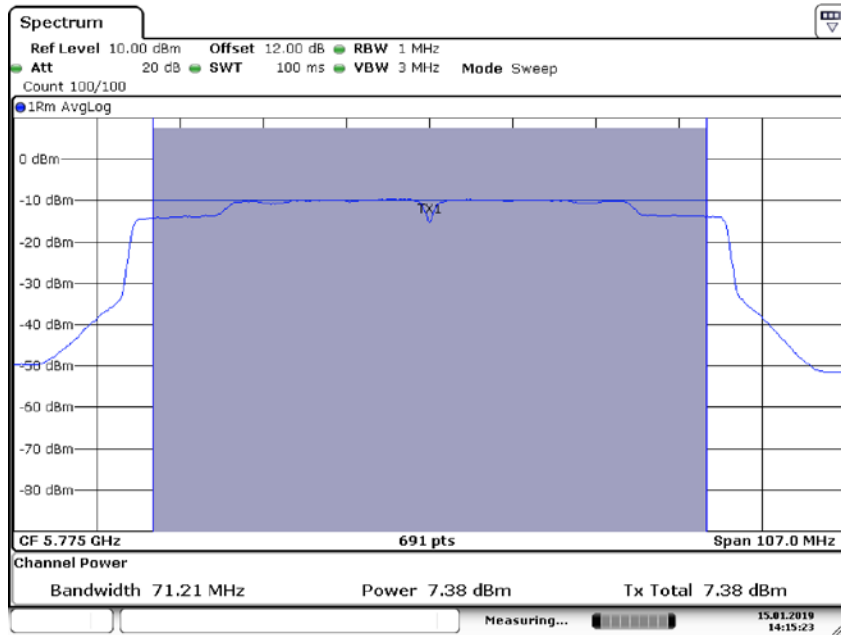
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Ant1



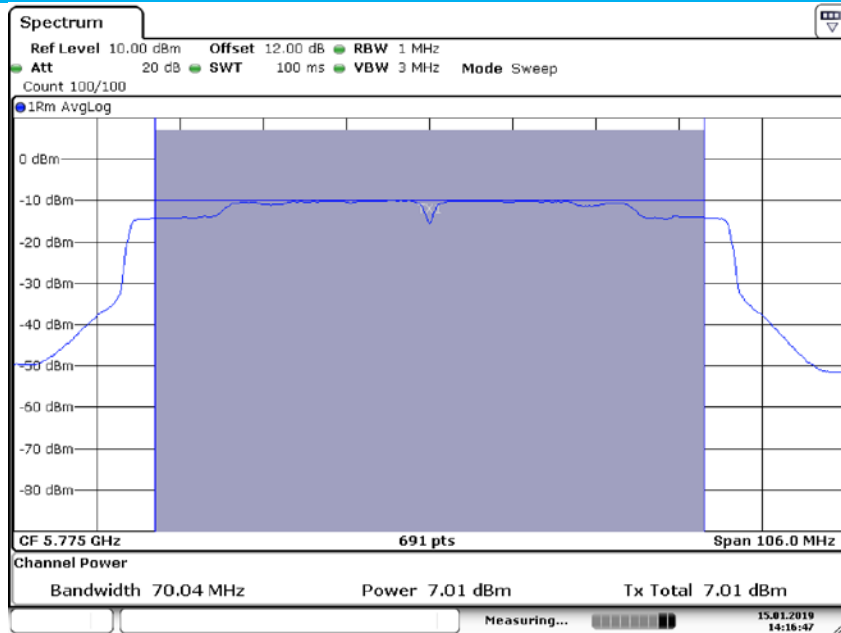
Date: 16 JAN 2019 14:54:31

MAXIMUM CONDUCTED OUTPUT POWER UNII Band III
 Test Model 802.11ac(VHT80) mode Frequency(MHz) 5775
Ant0



Date: 15 JAN 2019 14:15:24

Ant1



Date: 15 JAN 2019 14:16:48

8.3 MAXIMUM PEAK POWER DENSITY

8.3.1 Applicable Standard

According to FCC Part 15.407(a)(1) for UNII Band I
According to FCC Part 15.407(a)(2) for UNII Band II-A and UNII Band II-C
According to FCC Part 15.407(a)(3) for UNII Band III
According to 789033 D02 Section II(F)

8.3.2 Conformance Limit

■ For the band 5.15-5.25 GHz,

(a) (1) (i) 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 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(a) (1) (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. 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.

(a) (1) (iii) For fixed point-to-point access points 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. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. 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.

(a) (1) (iv) 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. 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

(b) (2) 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

(a) (3) 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.

8.3.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

8.3.4 Test Procedure

Methods refer to FCC KDB 789033

1) Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, "Compute power...".

2) Use the peak search function on the instrument to find the peak of the spectrum.

3) The result is the PPSD.

4) The above procedures make use of 500kHz resolution bandwidth to satisfy the 500kHz measurement bandwidth specified in the 15.407(a)(5). That rule section also permits use of resolution bandwidths less than 1 MHz "provided that the measured power is integrated to show the total power over the measurement bandwidth" (i.e., 1 MHz). If measurements are performed using a reduced resolution bandwidth and integrated over 500kHz bandwidth

Note: As a practical matter, it is recommended to use reduced RBW of 500 kHz for the sections 5.c) and 5.d) above, since RBW=500 kHz is available on nearly all spectrum analyzers.

8.3.5 Test Results

☒ 802.11a mode						
Temperature :		28°C		Test By:		King Kong
Humidity :		65 %				
Band	Channel Number	Channel Freq. (MHz)	Power Spectral Density		Limit	Verdict
			Ant0	Ant1		
UNII Band I	CH36	5180	-2.435	-2.157	≤11dBm/1MHz	Pass
	CH40	5200	-2.538	-2.401	≤11dBm/1MHz	Pass
	CH48	5240	-2.287	-2.629	≤11dBm/1MHz	Pass
UNII Band II-A	CH52	5260	-1.011	-1.370	≤11dBm/1MHz	Pass
	CH56	5280	-1.558	-1.315	≤11dBm/1MHz	Pass
	CH64	5320	-2.741	-2.247	≤11dBm/1MHz	Pass
UNII Band II-C	CH100	5500	-1.034	-1.115	≤11dBm/1MHz	Pass
	CH120	5600	-1.644	-1.740	≤11dBm/1MHz	Pass
	CH140	5700	-1.569	-1.578	≤11dBm/1MHz	Pass
UNII Band III	CH149	5745	-5.783	-5.929	≤30dBm/500KHz	Pass
	CH157	5785	-6.204	-6.124	≤30dBm/500KHz	Pass
	CH165	5825	-7.701	-7.200	≤30dBm/500KHz	Pass
Note: N/A (Not Applicable)						

☒ 802.11n(HT20) mode						
Temperature :		28°C		Test By:		King Kong
Humidity :		65 %				

Band	Channel Number	Channel Freq. (MHz)	Power Spectral Density			Limit	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH36	5180	-2.956	-2.728	0.170	≤11dBm/1MHz	Pass
	CH40	5200	-2.625	-2.843	0.278	≤11dBm/1MHz	Pass
	CH48	5240	-2.540	-2.805	0.340	≤11dBm/1MHz	Pass
UNII Band II-A	CH52	5260	-1.308	-2.043	-1.308	≤11dBm/1MHz	Pass
	CH56	5280	-1.433	-1.146	-1.433	≤11dBm/1MHz	Pass
	CH64	5320	-2.73	-3.149	-2.73	≤11dBm/1MHz	Pass
UNII Band II-C	CH100	5500	-0.698	-0.978	-0.698	≤11dBm/1MHz	Pass
	CH120	5600	-1.289	-1.477	-1.289	≤11dBm/1MHz	Pass
	CH140	5700	-1.708	-1.627	-1.708	≤11dBm/1MHz	Pass
UNII Band III	CH149	5745	-5.900	-6.072	-2.975	≤30dBm/500KHz	Pass
	CH157	5785	-6.356	-6.553	-3.443	≤30dBm/500KHz	Pass
	CH165	5825	-7.630	-7.769	-4.689	≤30dBm/500KHz	Pass

☒ 802.11ac(VHT20) mode

Temperature : 28°C
 Humidity : 65 %

Test By: King Kong

Band	Channel Number	Channel Freq. (MHz)	Power Spectral Density			Limit	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH36	5180	-2.794	-2.696	0.266	≤11dBm/1MHz	Pass
	CH40	5200	-2.664	-2.572	0.393	≤11dBm/1MHz	Pass
	CH48	5240	-2.839	-2.724	0.229	≤11dBm/1MHz	Pass
UNII Band II-A	CH52	5260	-1.455	-1.46	-1.455	≤11dBm/1MHz	Pass
	CH56	5280	-2.53	-1.617	-2.53	≤11dBm/1MHz	Pass
	CH64	5320	-3.625	-4.072	-3.625	≤11dBm/1MHz	Pass
UNII Band II-C	CH100	5500	-0.921	-0.637	-0.921	≤11dBm/1MHz	Pass
	CH120	5600	-1.68	-2.019	-1.68	≤11dBm/1MHz	Pass
	CH140	5700	-2.165	-1.783	-2.165	≤11dBm/1MHz	Pass
UNII Band III	CH149	5745	-5.806	-6.093	-2.937	≤30dBm/500KHz	Pass
	CH157	5785	-6.243	-6.382	-3.302	≤30dBm/500KHz	Pass
	CH165	5825	-6.836	-7.512	-4.151	≤30dBm/500KHz	Pass

☒ 802.11n(VHT40) mode

Temperature : 28°C
 Humidity : 65 %

Test By: King Kong

Band	Channel Number	Channel Freq. (MHz)	Power Spectral Density			Limit	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH38	5190	-6.328	-6.709	-3.504	≤11dBm/1MHz	Pass
	CH46	5230	-6.846	-6.553	-3.687	≤11dBm/1MHz	Pass
UNII Band II-A	CH54	5270	-5.391	-5.247	-5.391	≤11dBm/1MHz	Pass
	CH62	5310	-8.674	-8.72	-8.674	≤11dBm/1MHz	Pass
UNII Band II-C	CH102	5510	-4.517	-4.404	-4.517	≤11dBm/1MHz	Pass
	CH118	5590	-5.455	-5.079	-5.455	≤11dBm/1MHz	Pass
	CH134	5670	-5.711	-5.989	-5.711	≤11dBm/1MHz	Pass
UNII Band III	CH151	5755	-9.387	-9.248	-6.307	≤30dBm/500KHz	Pass
	CH159	5795	-11.739	-11.367	-8.539	≤30dBm/500KHz	Pass