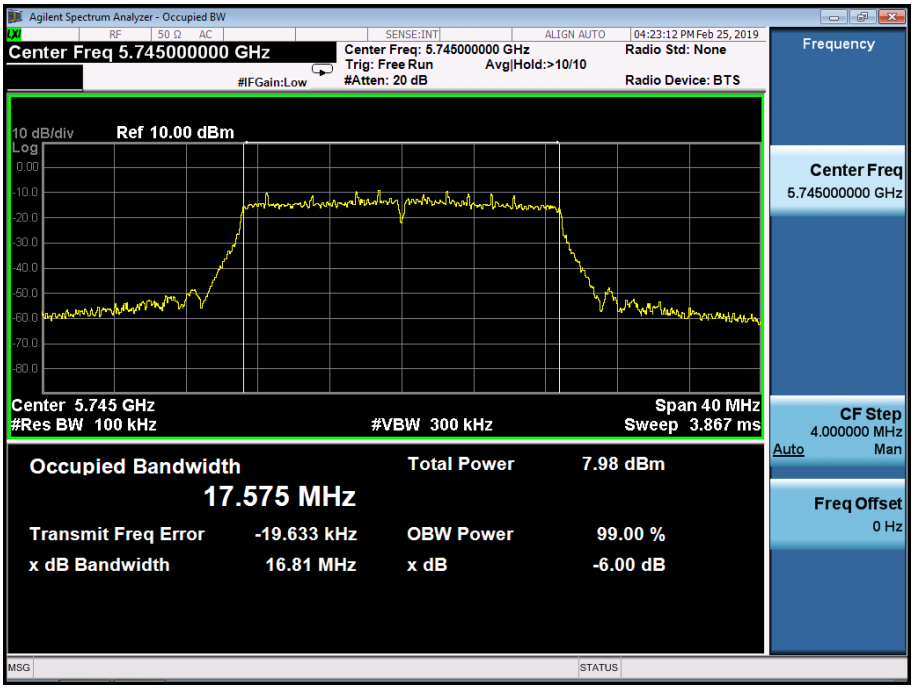
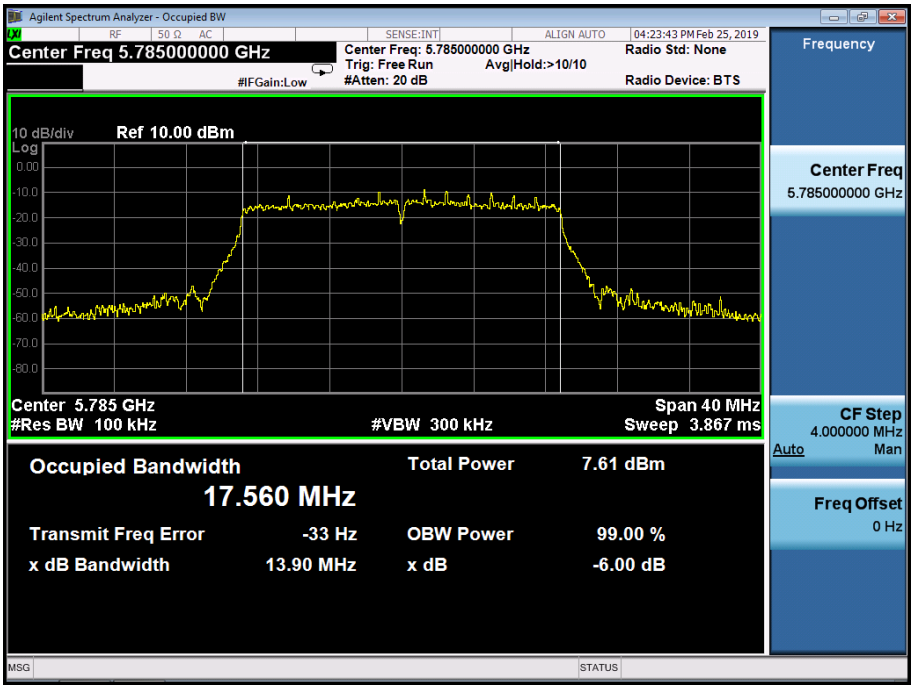
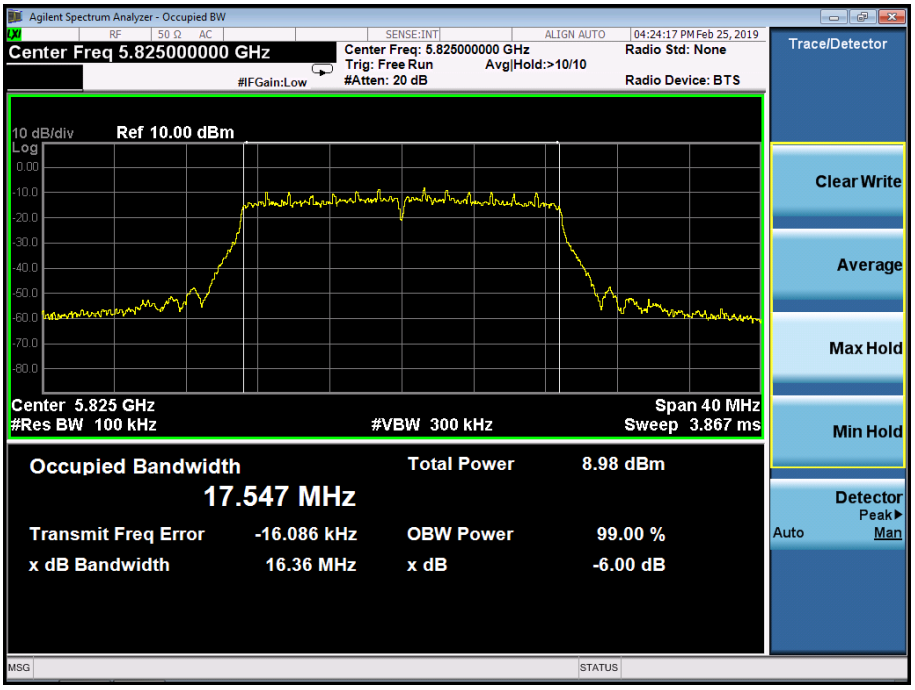
Minimum Emission Bandwidth		UNII Band III	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5745



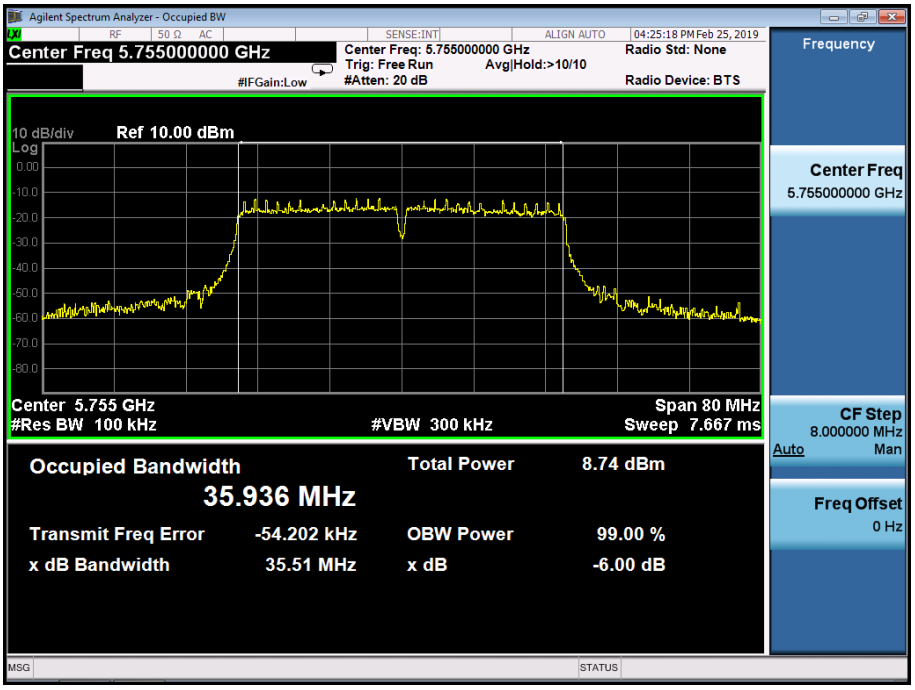
Minimum Emission Bandwidth		UNII Band III	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5785



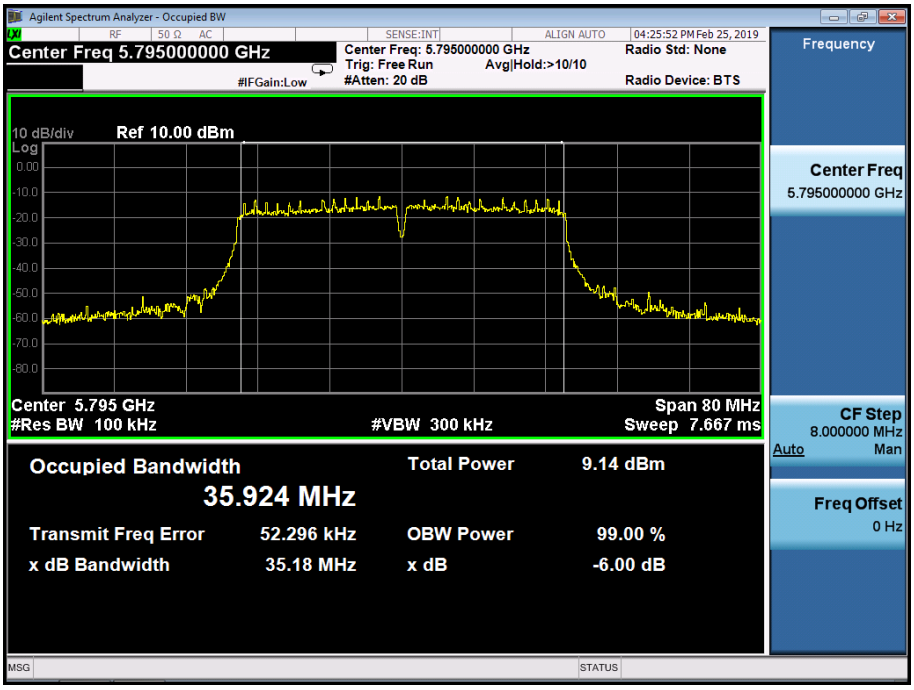
Minimum Emission Bandwidth		UNII Band III	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5825



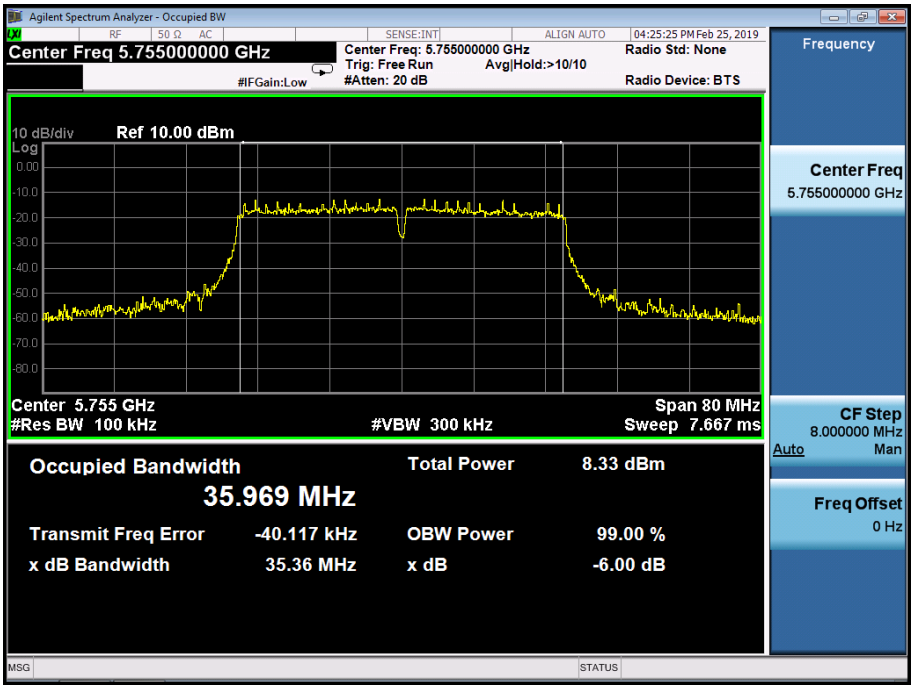
Minimum Emission Bandwidth		UNII Band III	
Test Model	802.11n(HT40) mode	Frequency(MHz)	5755



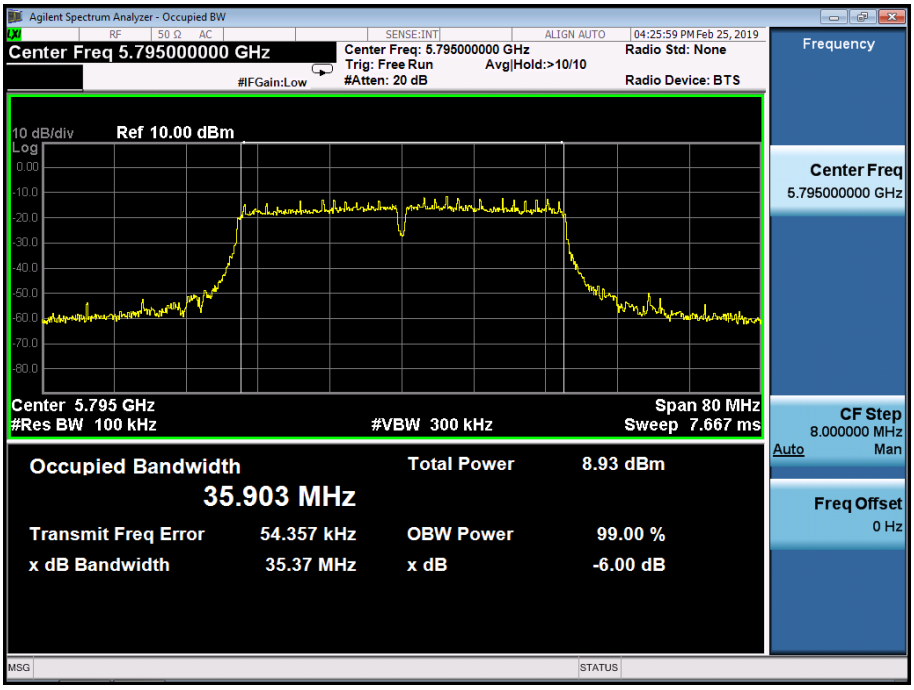
Minimum Emission Bandwidth		UNII Band III	
Test Model	802.11n(HT40) mode	Frequency(MHz)	5795



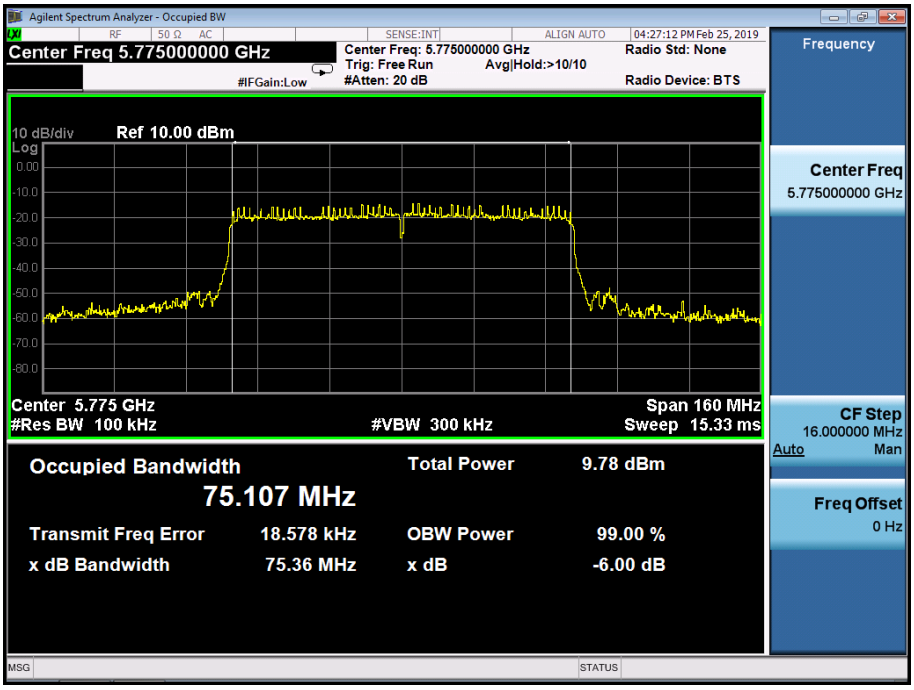
Minimum Emission Bandwidth		UNII Band III	
Test Model	802.11ac(VHT40) mode	Frequency(MHz)	5755



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. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. 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. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
  (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. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. 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 client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

- For the 5.25-5.35 GHz and 5.47-5.725 GHz bands

(a) (2) 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

(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 $\geqslant$ 3 MHz.
d. Number of points in sweep $\geqslant$ 2 $\times$ span / RBW. (This ensures that bin-to-bin spacing is $\leqslant$ 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

☒ 802.11a mode

Temperature : 28℃ Test By: King Kong
Humidity : 65 %

Band	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)		Limit (dBm)	Verdict
			Ant0	Ant1		
UNII Band I	CH36	5180	13.17	13.68	30.00	Pass
	CH40	5200	13.45	13.88	30.00	Pass
	CH48	5240	13.76	13.82	30.00	Pass
UNII Band III	CH149	5745	10.02	9.89	30.00	Pass
	CH157	5785	9.86	10.07	30.00	Pass
	CH165	5825	10.14	10.17	30.00	Pass
Note: N/A (Not Applicable)						

☒ 802.11n(HT20) mode

Temperature : 28℃ 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	11.80	11.80	14.810	27.99	Pass
	CH40	5200	11.75	11.97	14.872	27.99	Pass
	CH48	5240	11.57	11.96	14.780	27.99	Pass
UNII Band III	CH149	5745	8.14	8.11	11.135	27.99	Pass
	CH157	5785	8.02	8.02	11.030	27.99	Pass
	CH165	5825	7.67	8.09	10.895	27.99	Pass

☒ 802.11ac(VHT20) mode

Temperature : 28℃ 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	11.74	11.65	14.706	27.99	Pass
	CH40	5200	11.38	11.96	14.690	27.99	Pass
	CH48	5240	11.34	11.97	14.677	27.99	Pass
UNII Band III	CH149	5745	8.86	8.06	11.489	27.99	Pass
	CH157	5785	9.05	8.78	11.927	27.99	Pass
	CH165	5825	8.88	8.24	11.582	27.99	Pass

☒ 802.11n(HT40) mode

Temperature : 28℃ 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	11.27	10.98	14.138	27.99	Pass
	CH46	5230	11.63	11.44	14.546	27.99	Pass
UNII Band III	CH151	5755	8.06	8.00	11.040	27.99	Pass
	CH159	5795	7.78	8.11	10.958	27.99	Pass

☒ 802.11ac(VHT40) mode

Temperature : 28℃ 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	11.38	11.97	14.695	27.99	Pass
	CH46	5230	11.70	11.63	14.675	27.99	Pass
UNII Band III	CH151	5755	8.75	8.66	11.716	27.99	Pass
	CH159	5795	7.02	9.08	11.181	27.99	Pass

☒ 802.11ac(VHT80) mode

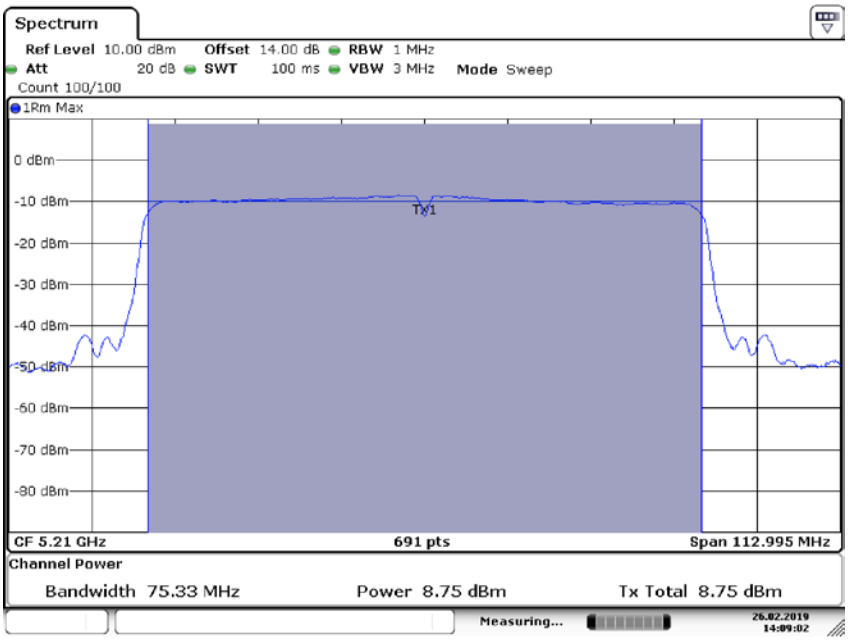
Temperature : 28℃ Test By: King Kong
Humidity : 65 %

Band	Channel Number	Channel Freq. (MHz)	Conducted Output Power(dBm)			Limit (dBm)	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH42	5210	8.75	8.71	11.740	27.99	Pass
UNII Band III	CH155	5775	7.32	8.15	10.765	27.99	Pass

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

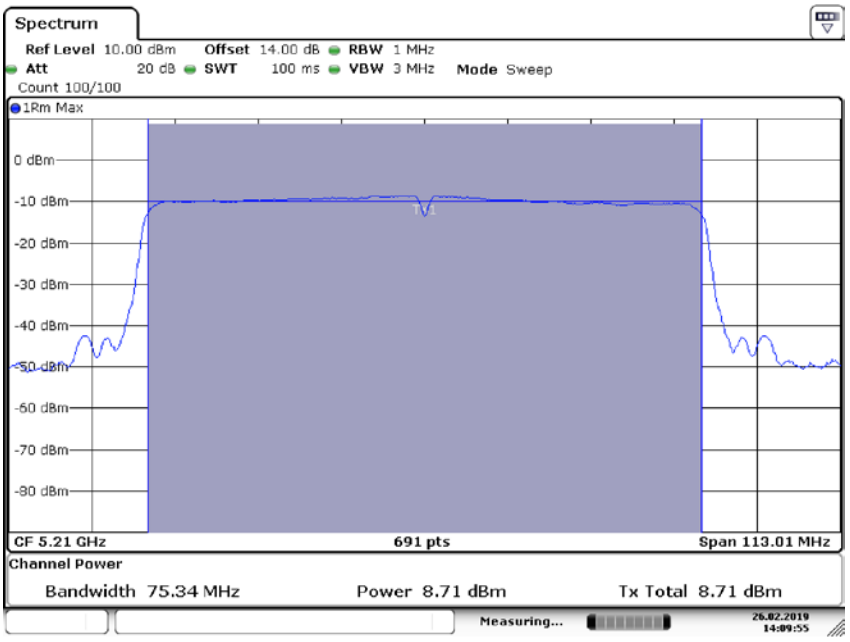
MAXIMUM CONDUCTED OUTPUT POWER		UNII Band I	
Test Model	802.11ac(VHT80) mode	Frequency(MHz)	5210

Ant0



Date: 26.FEB.2019 14:09:03

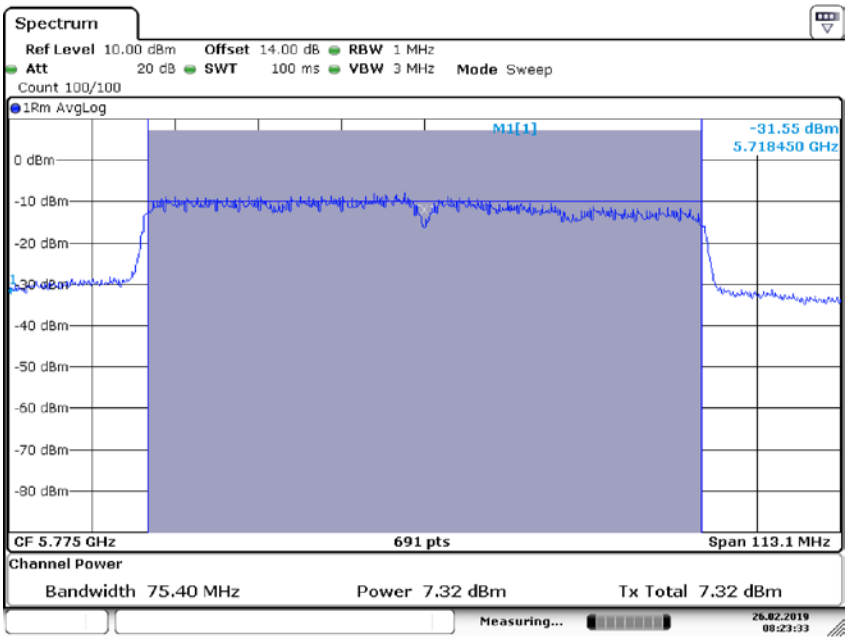
Ant1



Date: 26.FEB.2019 14:09:56

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

Ant0



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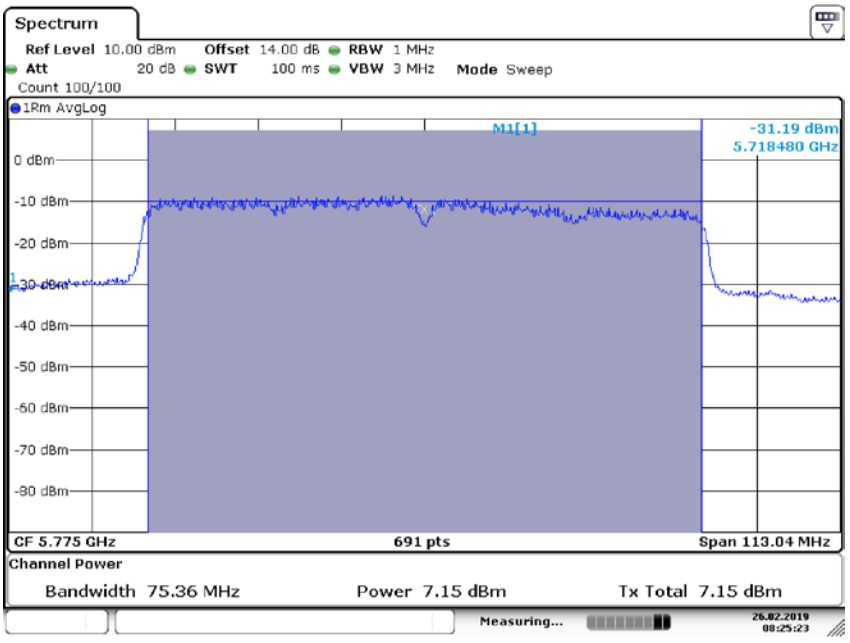


Date: 26.FEB.2019 08:25:23

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. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. 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. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(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. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. 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 client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

■ For the 5.25-5.35 GHz and 5.47-5.725 GHz bands

(b) (2) 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

(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℃ Test By: King Kong
Humidity : 65 %

Band	Channel Number	Channel Freq. (MHz)	Power Spectral Density		Limit	Verdict
			Ant0	Ant1		
UNII Band I	CH36	5180	-9.574	-9.736	≤17dBm/1MHz	Pass
	CH40	5200	-11.470	-9.977	≤17dBm/1MHz	Pass
	CH48	5240	-9.406	-9.324	≤17dBm/1MHz	Pass
UNII Band III	CH149	5745	-13.033	-12.323	≤30dBm/500KHz	Pass
	CH157	5785	-13.167	-12.569	≤30dBm/500KHz	Pass
	CH165	5825	-10.664	-10.884	≤30dBm/500KHz	Pass

☒ 802.11n(HT20) mode

Temperature : 28℃ 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	-9.943	-9.979	-6.951	≤14.99dBm/1MHz	Pass
	CH40	5200	-9.152	-9.341	-6.235	≤14.99dBm/1MHz	Pass
	CH48	5240	-9.742	-9.534	-6.626	≤14.99dBm/1MHz	Pass
UNII Band III	CH149	5745	-13.072	-13.044	-10.048	≤27.99dBm/500K Hz	Pass
	CH157	5785	-12.982	-13.193	-10.076	≤27.99dBm/500K Hz	Pass
	CH165	5825	-12.209	-12.446	-9.316	≤27.99dBm/500K Hz	Pass

☒ 802.11ac(VHT20) mode

Temperature : 28℃ 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	-9.939	-10.109	-7.013	≤14.99dBm/1MHz	Pass
	CH40	5200	-10.208	-10.248	-7.218	≤14.99dBm/1MHz	Pass
	CH48	5240	-9.702	-9.718	-6.700	≤14.99dBm/1MHz	Pass
UNII Band III	CH149	5745	-13.073	-13.158	-10.105	≤27.99dBm/500K Hz	Pass
	CH157	5785	-12.574	-12.952	-9.749	≤27.99dBm/500K Hz	Pass
	CH165	5825	-12.612	-11.761	-9.155	≤27.99dBm/500K Hz	Pass

☒ 802.11n(VHT40) mode

Temperature : 28℃ Test By: King Kong
Humidity : 65 %

Band	Channel Number	Channel Freq. (MHz)	Power Spectral Density			Limit	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH38	5190	-13.887	-13.507	-10.683	≤14.99dBm/1MHz	Pass
	CH46	5230	-13.143	-13.531	-10.322	≤14.99dBm/1MHz	Pass
UNII Band III	CH151	5755	-17.042	-16.952	-13.986	≤27.99dBm/500K Hz	Pass
	CH159	5795	-16.232	-15.556	-12.871	≤27.99dBm/500K Hz	Pass

☒ 802.11ac(VHT40) mode

Temperature : 28℃ Test By: King Kong
Humidity : 65 %

Band	Channel Number	Channel Freq. (MHz)	Power Spectral Density			Limit	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH38	5190	-13.347	-13.323	-10.325	≤14.99dBm/1MHz	Pass
	CH46	5230	-13.441	-13.221	-10.319	≤14.99dBm/1MHz	Pass
UNII Band III	CH151	5755	-17.208	-16.631	-13.900	≤27.99dBm/500K Hz	Pass
	CH159	5795	-16.306	-16.261	-13.273	≤27.99dBm/500K Hz	Pass

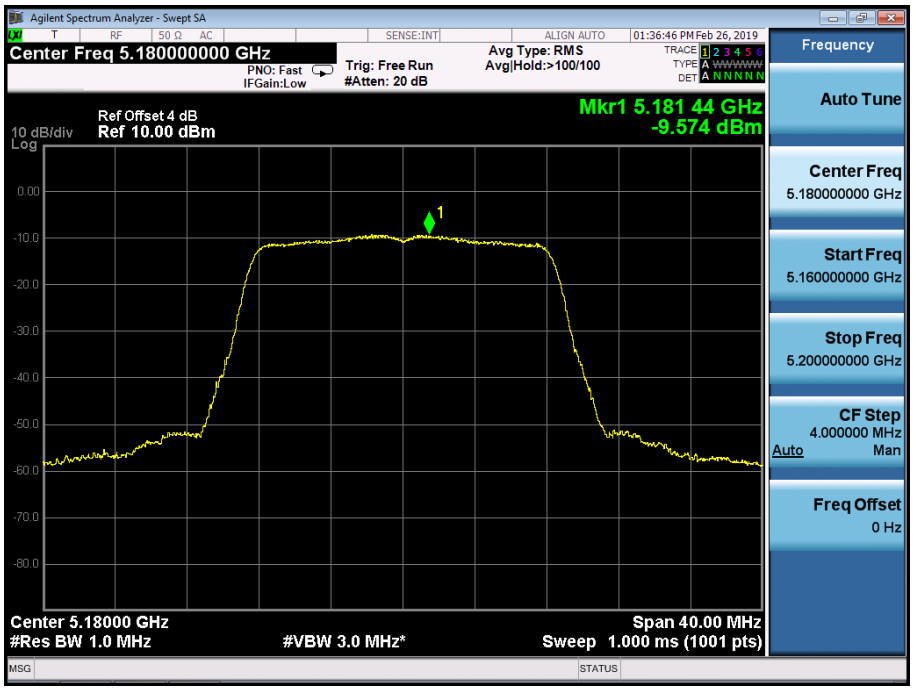
☒ 802.11ac(VHT80) mode

Temperature : 28℃ Test By: King Kong
Humidity : 65 %

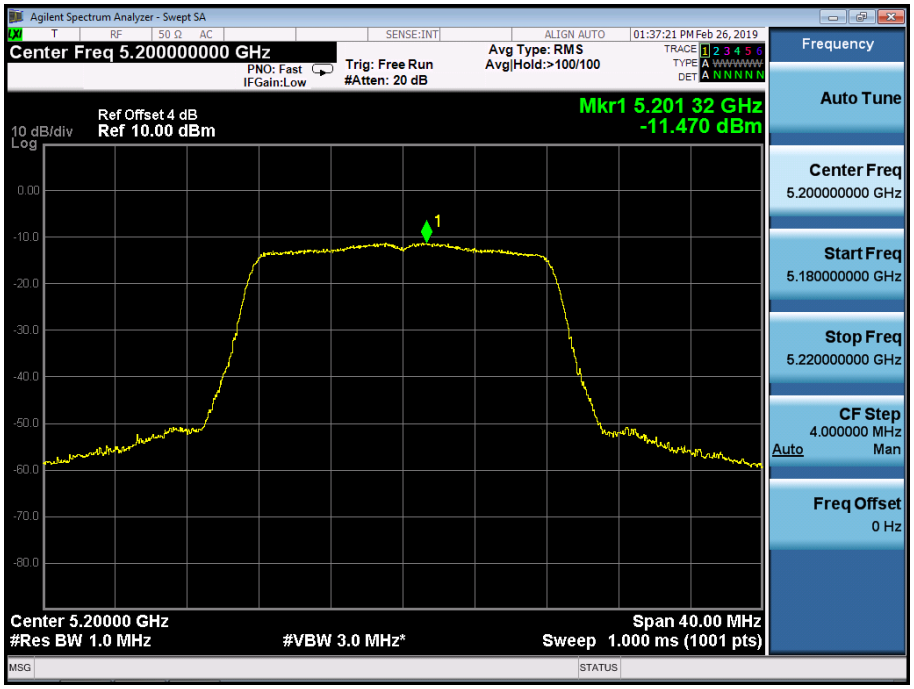
Band	Channel Number	Channel Freq. (MHz)	Power Spectral Density			Limit	Verdict
			Ant0	Ant1	Ant0+Ant1		
UNII Band I	CH42	5210	-17.047	-16.595	-13.805	≤14.99dBm/1MHz	Pass
UNII Band III	CH155	5775	-19.814	-20.312	-17.046	≤27.99dBm/500K Hz	Pass

A. Antenna 0

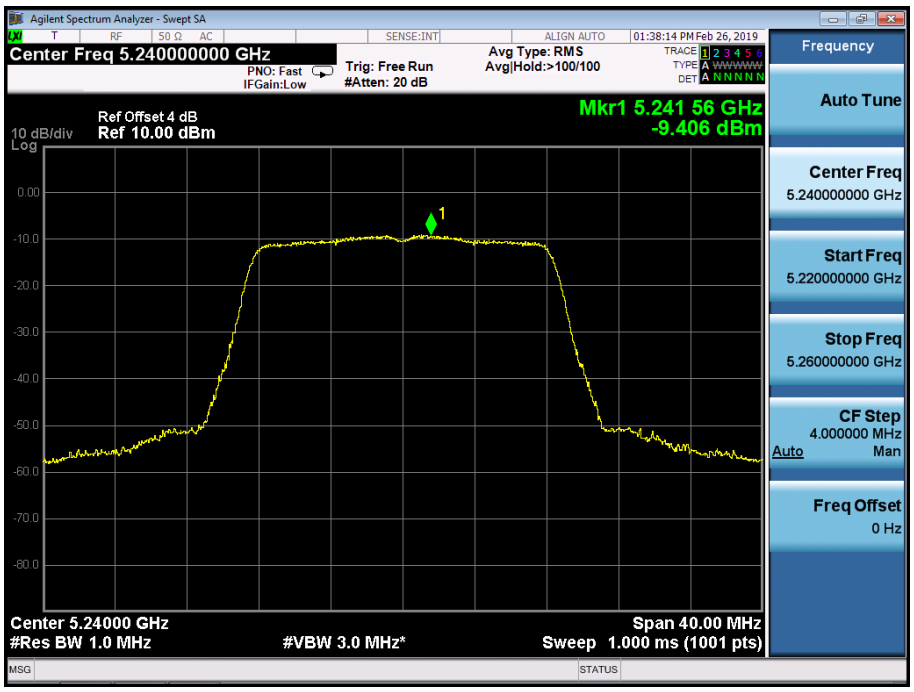
Power Spectral Density		UNII Band I	
Test Model	802.11a	Frequency(MHz)	5180



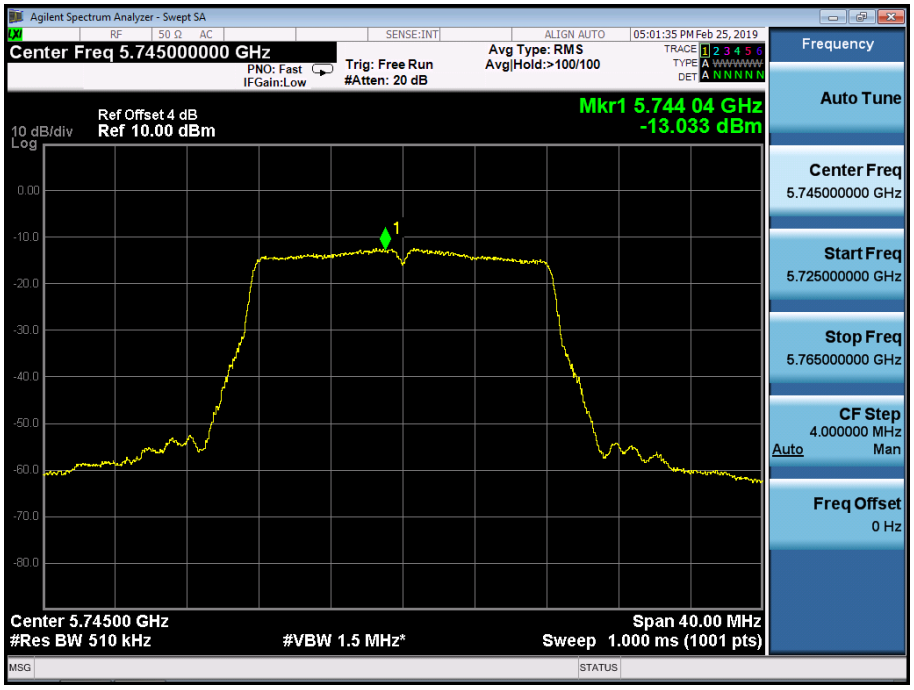
Power Spectral Density		UNII Band I	
Test Model	802.11a	Frequency(MHz)	5200



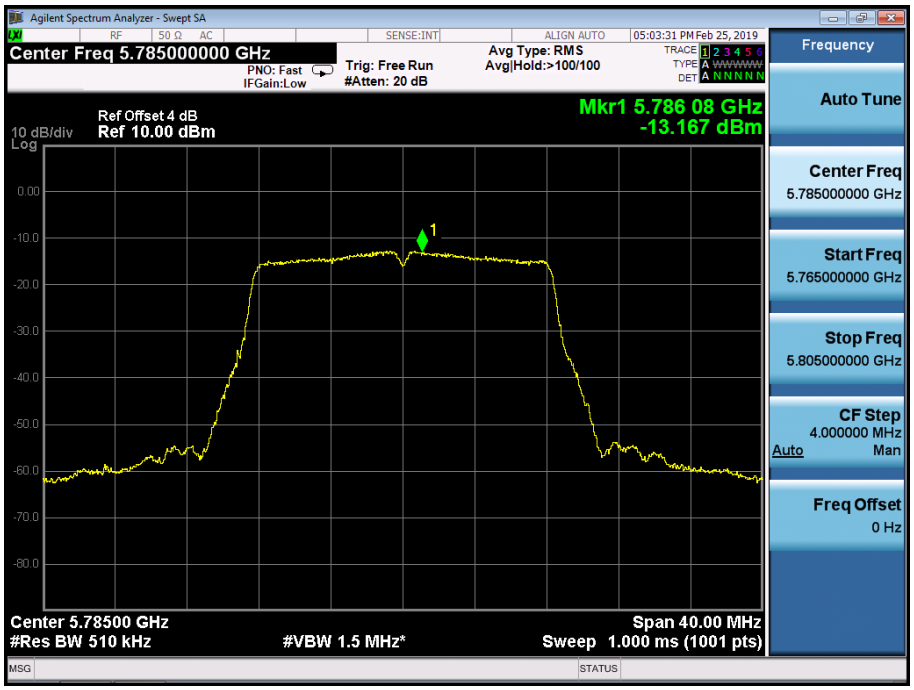
Power Spectral Density		UNII Band I	
Test Model	802.11a	Frequency(MHz)	5240



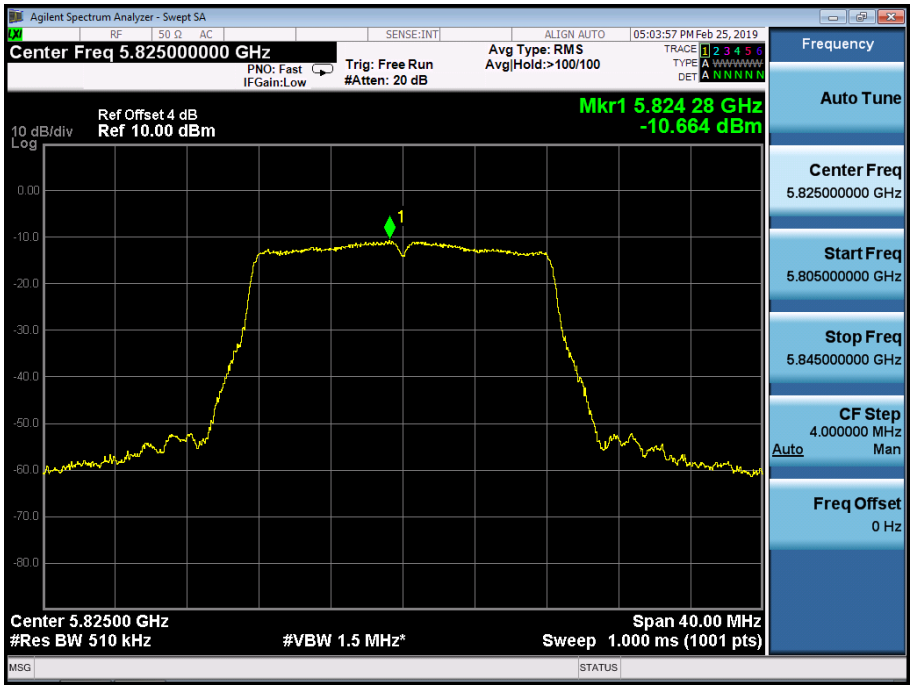
Power Spectral Density		UNII Band III	
Test Model	802.11a	Frequency(MHz)	5745



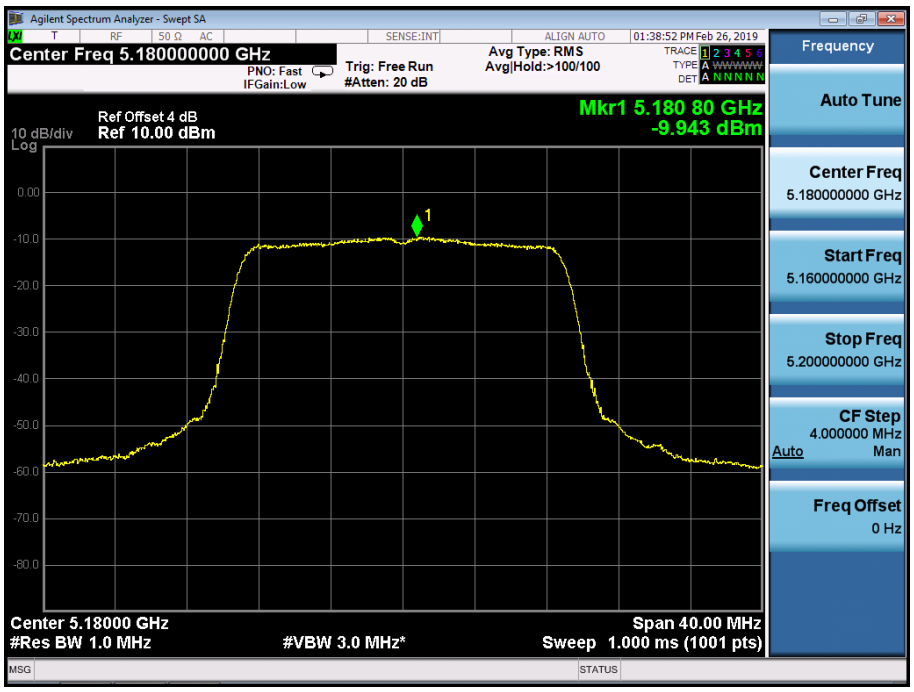
Power Spectral Density		UNII Band III	
Test Model	802.11a	Frequency(MHz)	5785



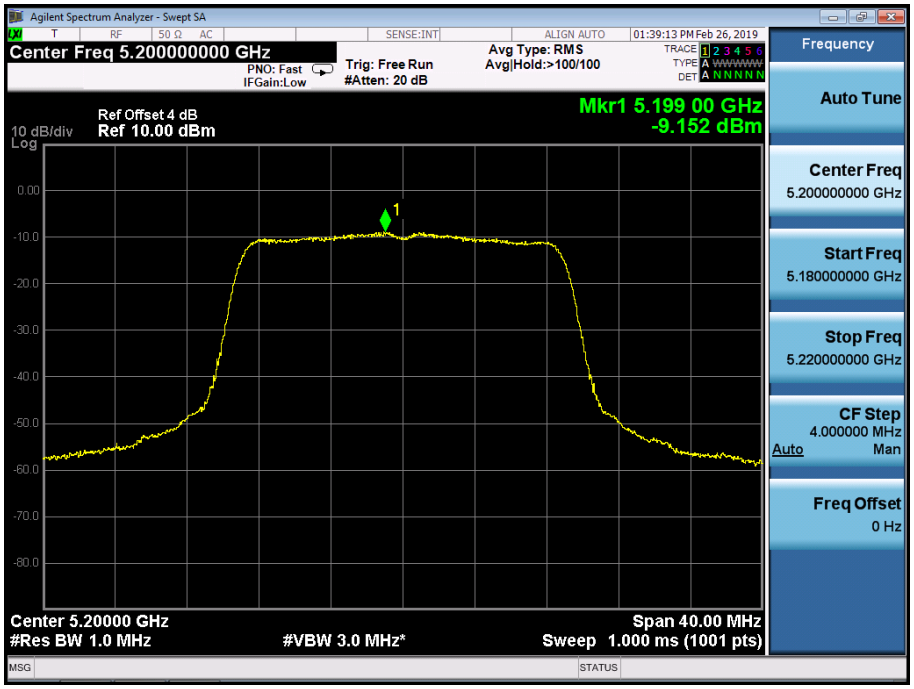
Power Spectral Density		UNII Band III	
Test Model	802.11a	Frequency(MHz)	5825



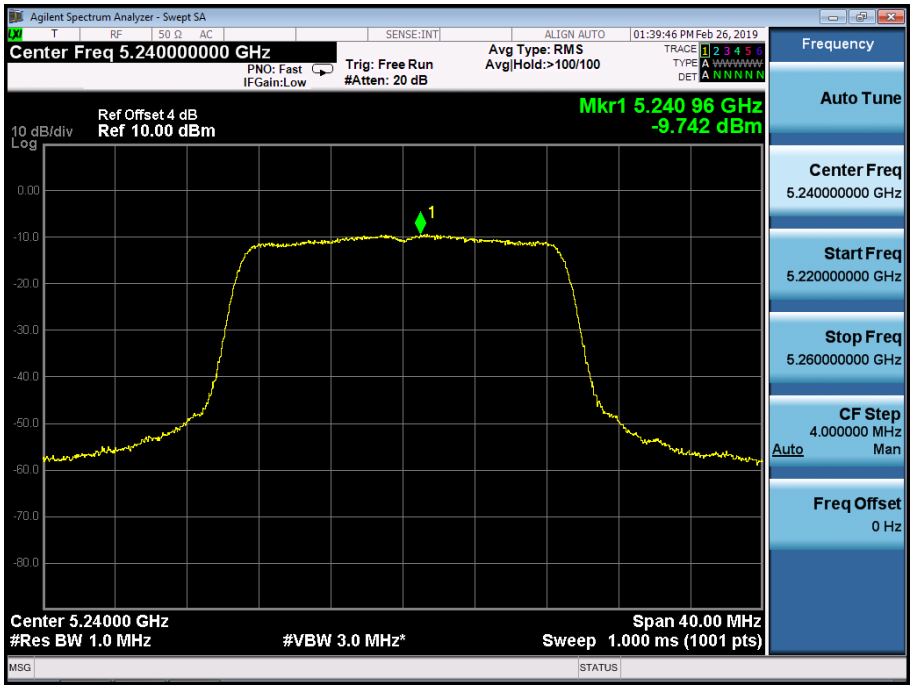
Power Spectral Density		UNII Band I	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5180



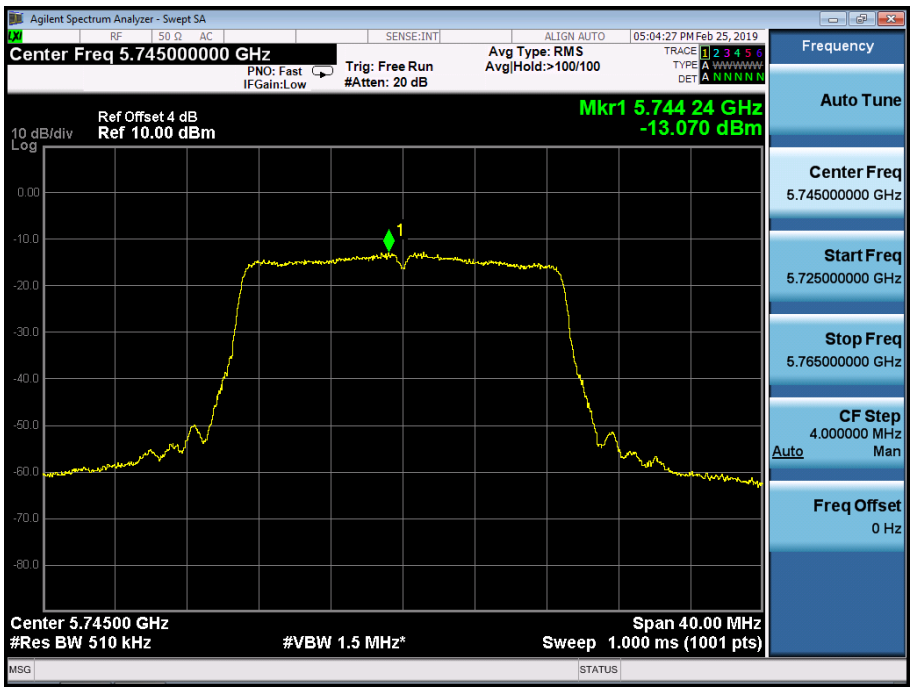
Power Spectral Density		UNII Band I	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5200



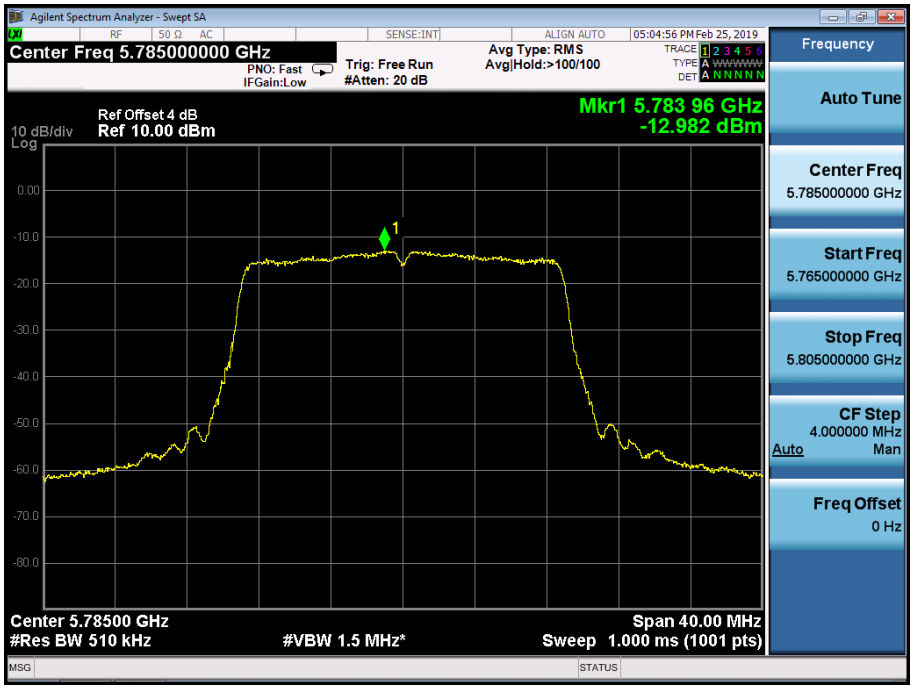
Power Spectral Density		UNII Band I	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5240



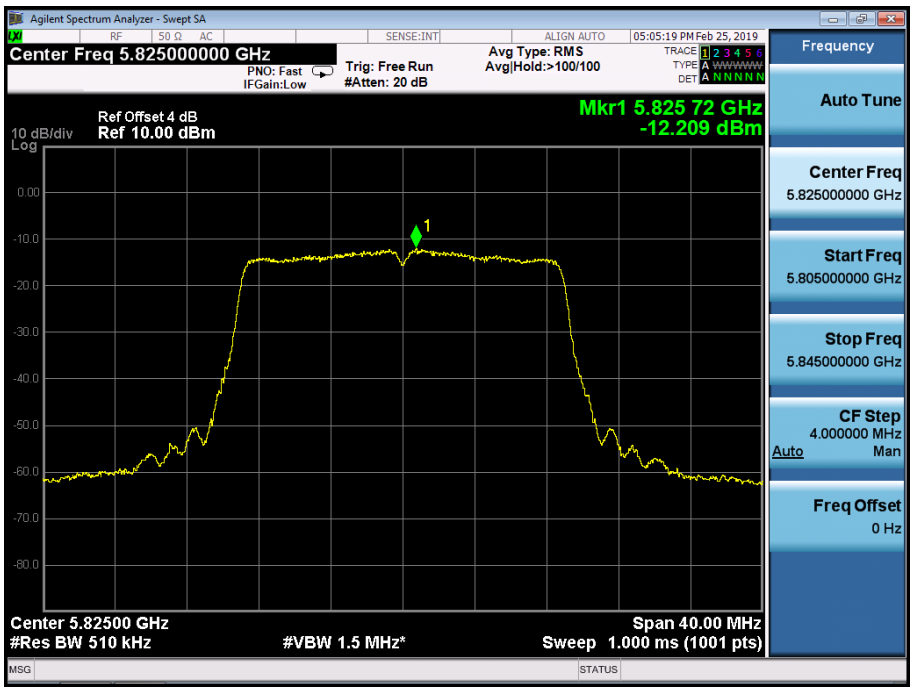
Power Spectral Density		UNII Band III	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5745



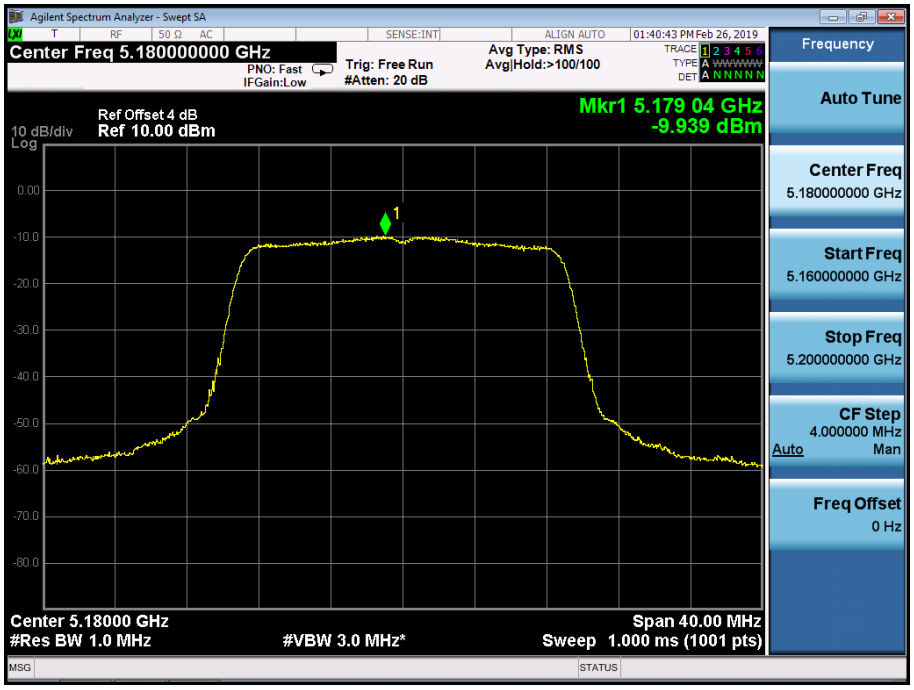
Power Spectral Density		UNII Band III	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5785



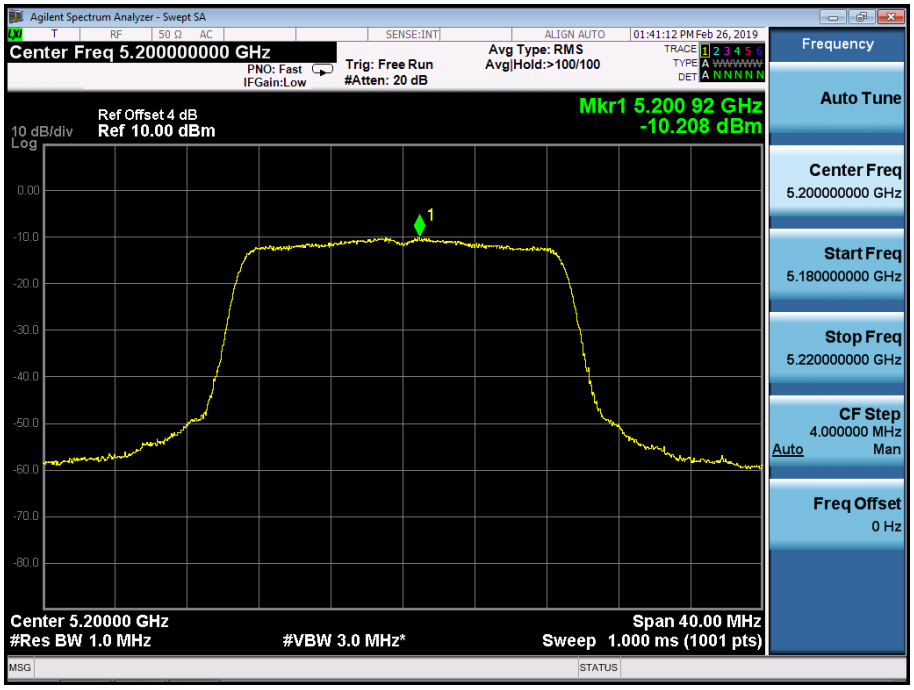
Power Spectral Density		UNII Band III	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5825



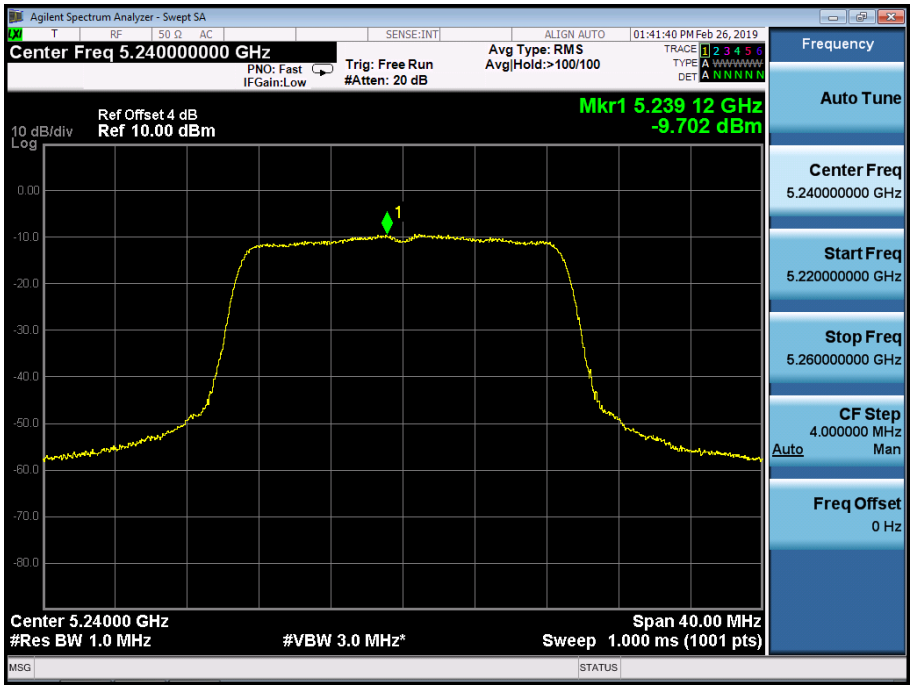
Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5180



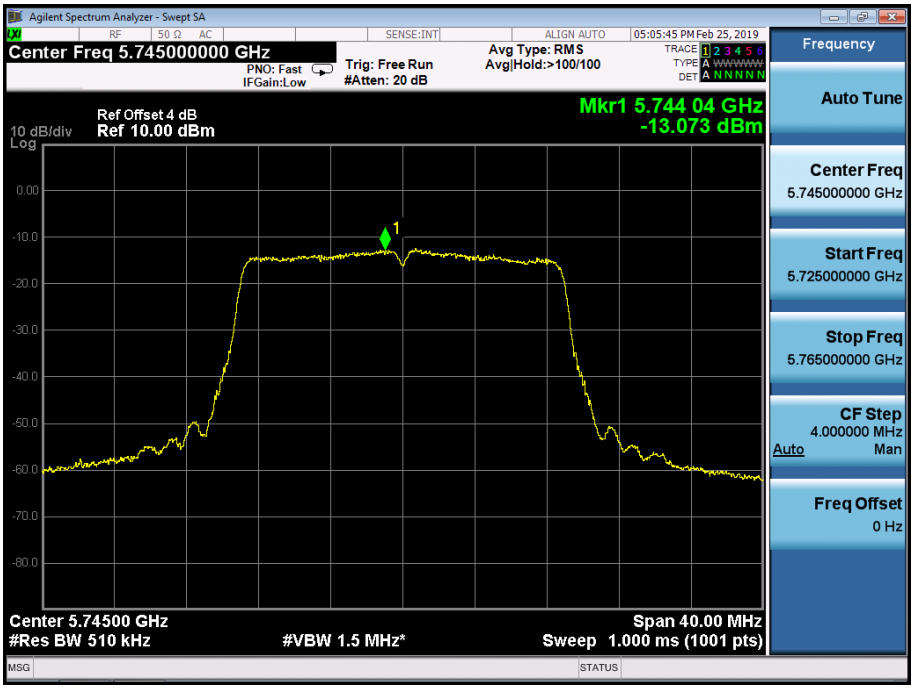
Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5200



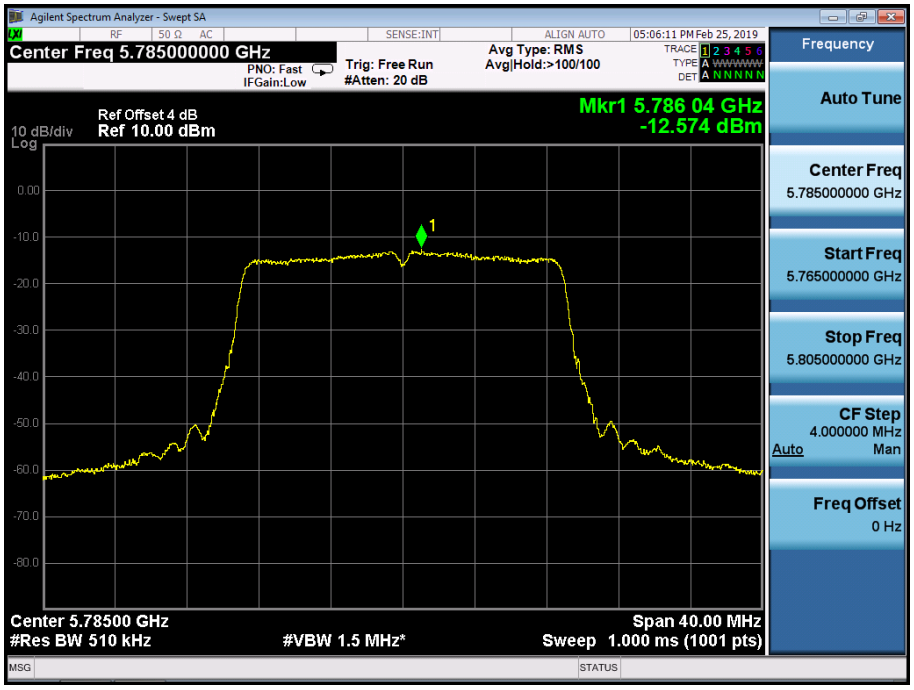
Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5240



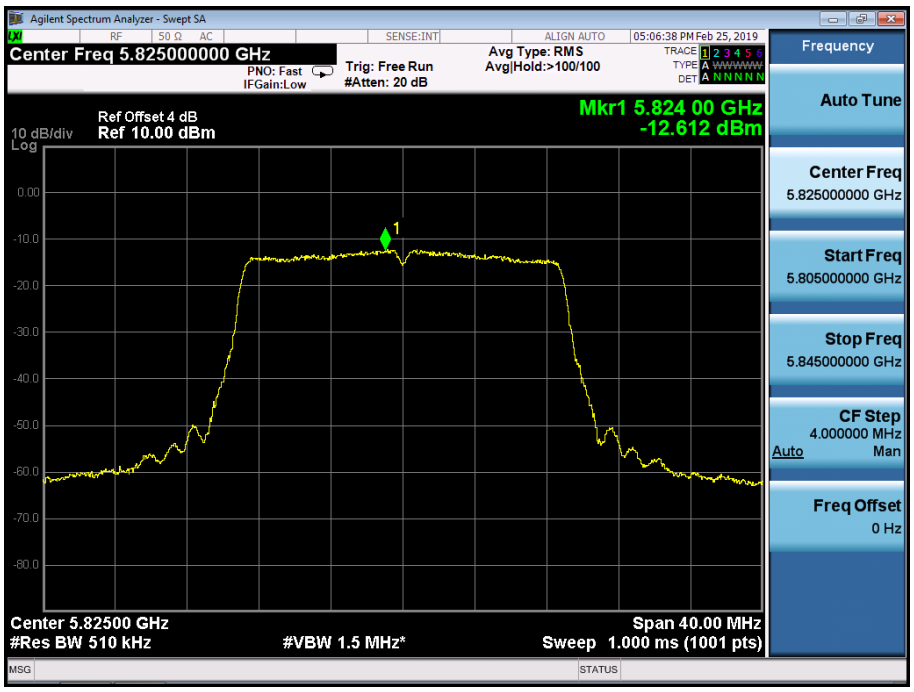
Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5745



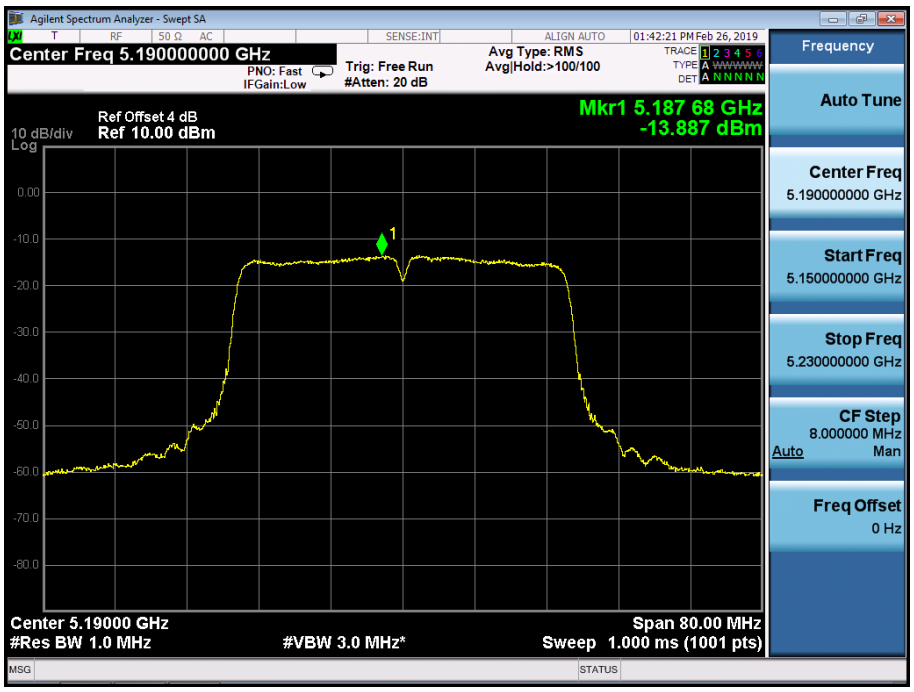
Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5785



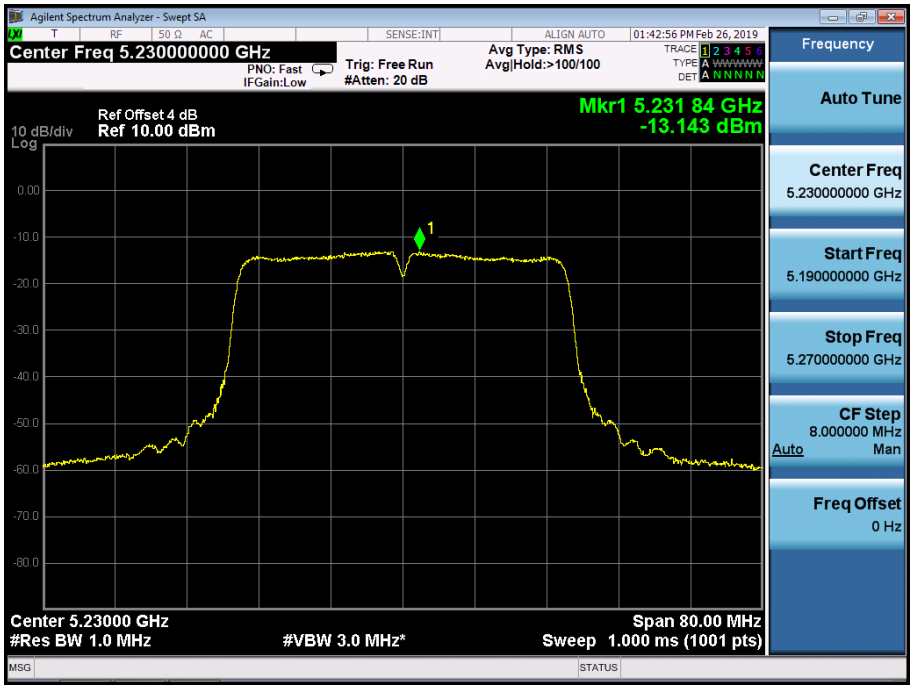
Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5825



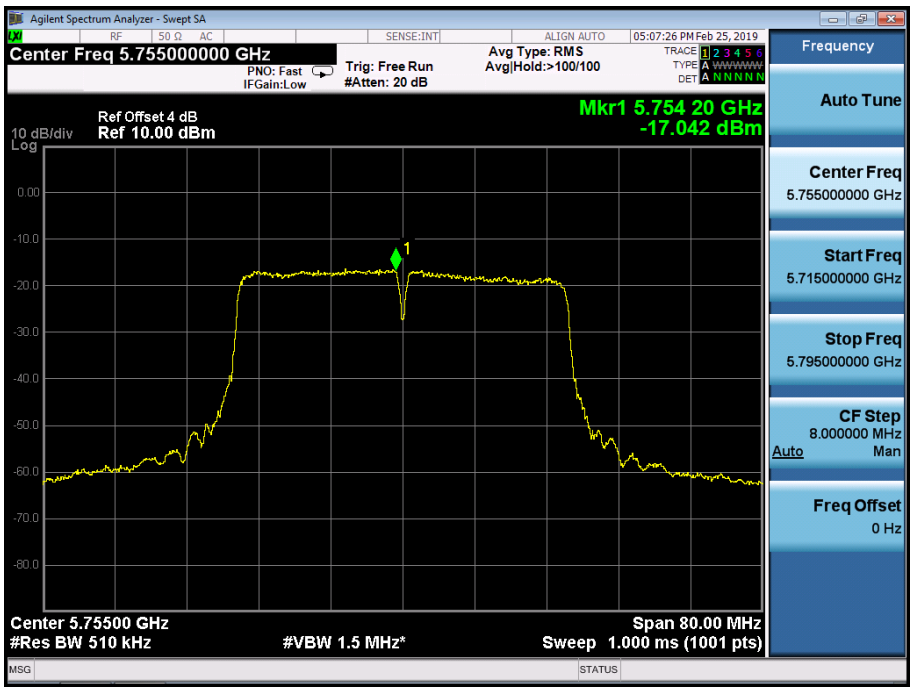
Power Spectral Density		UNII Band I	
Test Model	802.11n(HT40) mode	Frequency(MHz)	5190



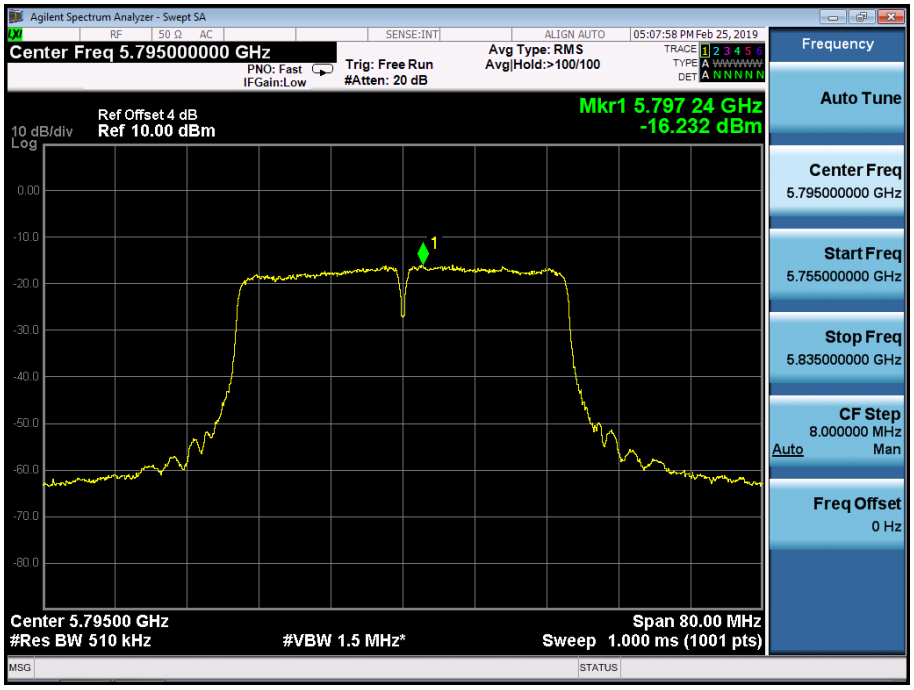
Power Spectral Density		UNII Band I	
Test Model	802.11n(HT40) mode	Frequency(MHz)	5230



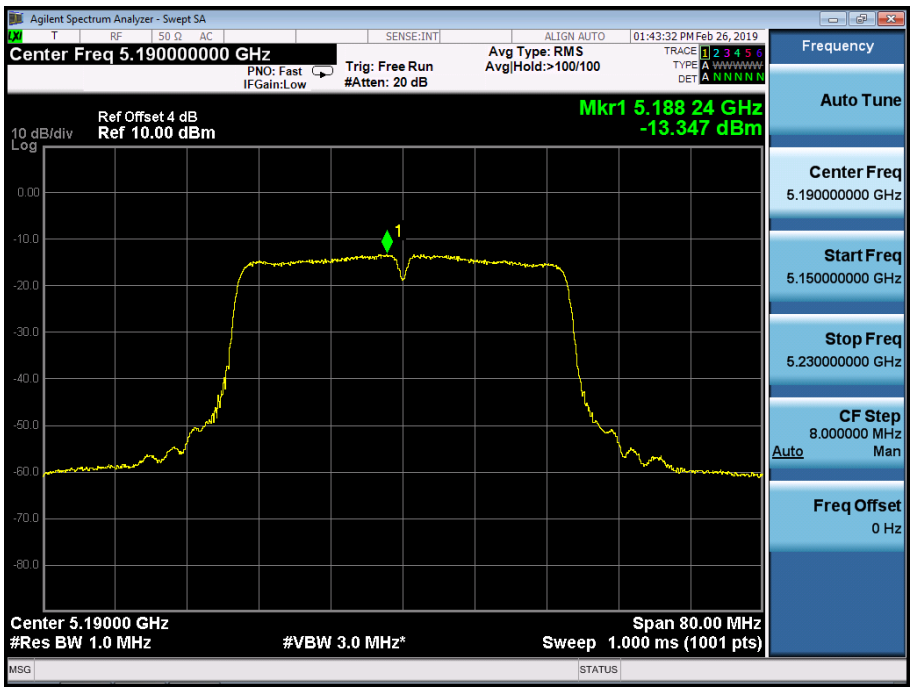
Power Spectral Density		UNII Band III	
Test Model	802.11n(HT40) mode	Frequency(MHz)	5755



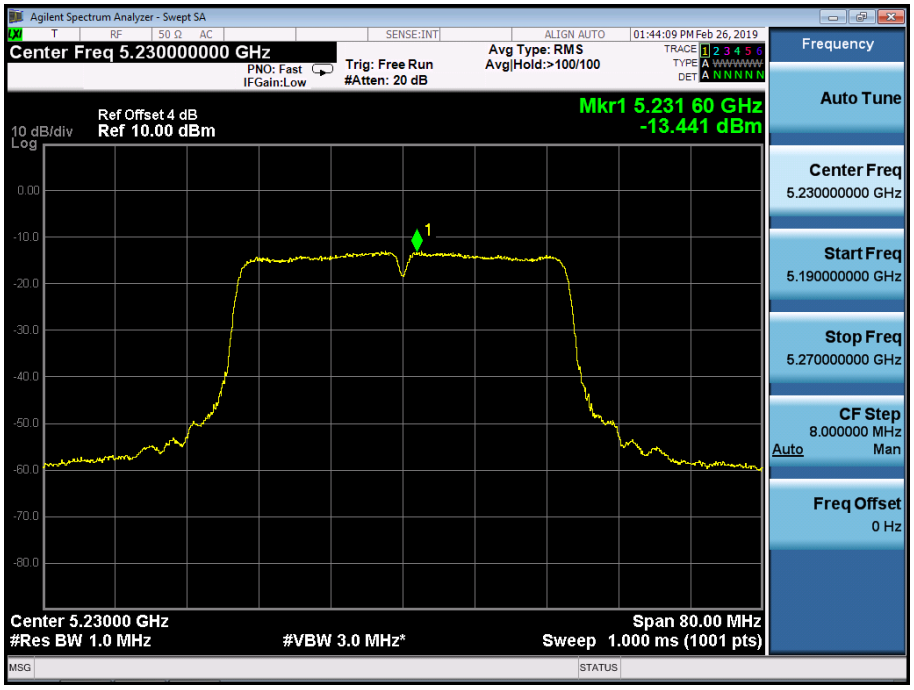
Power Spectral Density		UNII Band III	
Test Model	802.11n(HT40) mode	Frequency(MHz)	5795



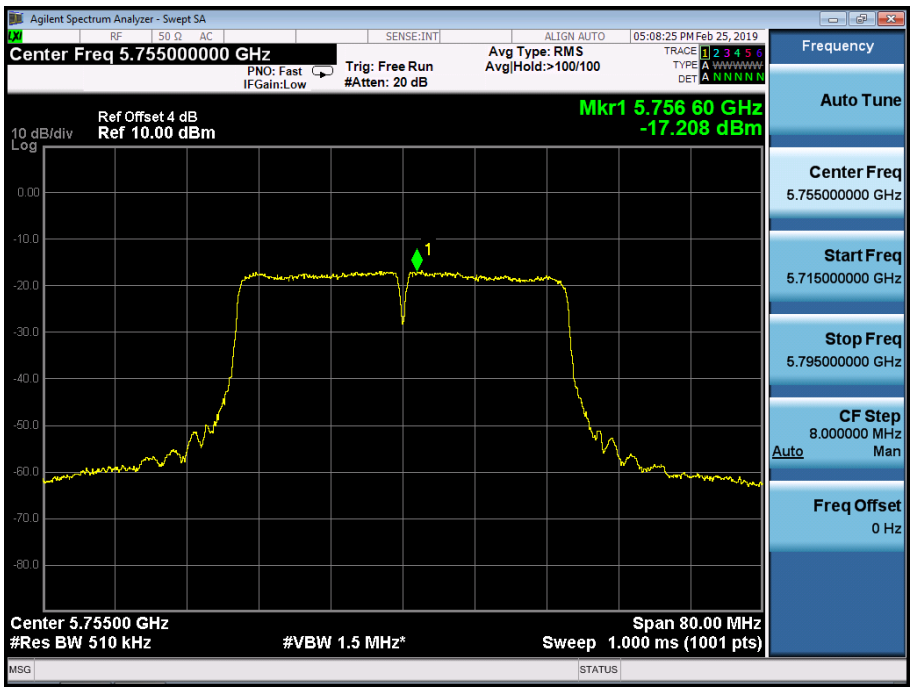
Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT40) mode	Frequency(MHz)	5190



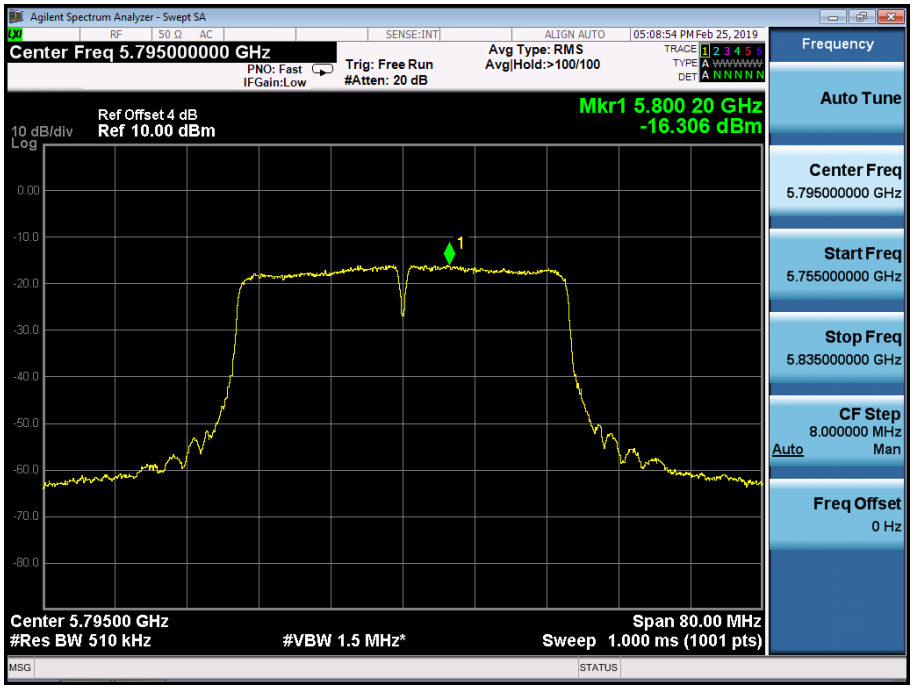
Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT40) mode	Frequency(MHz)	5230



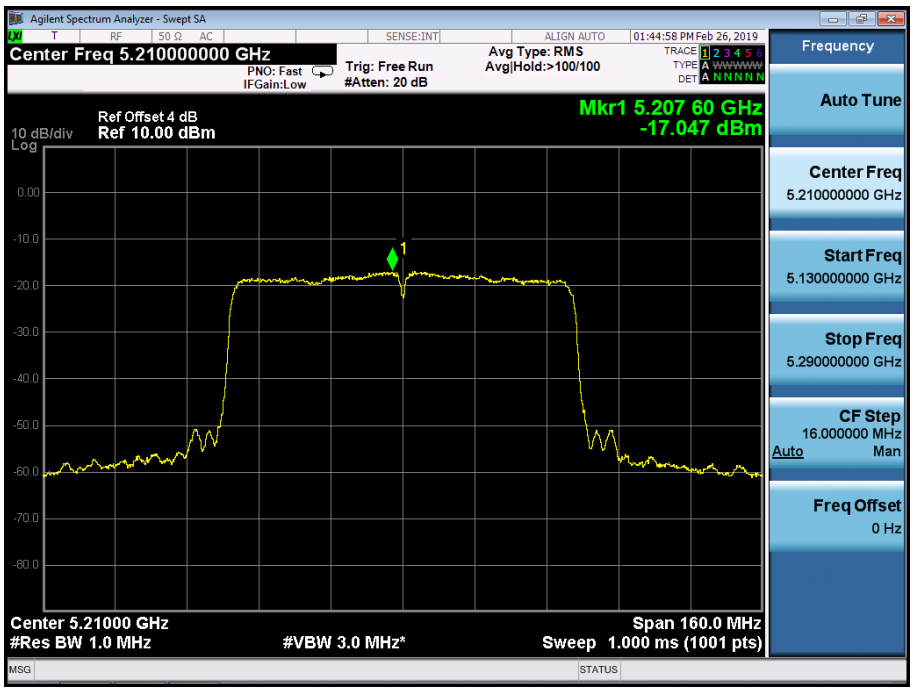
Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT40) mode	Frequency(MHz)	5755



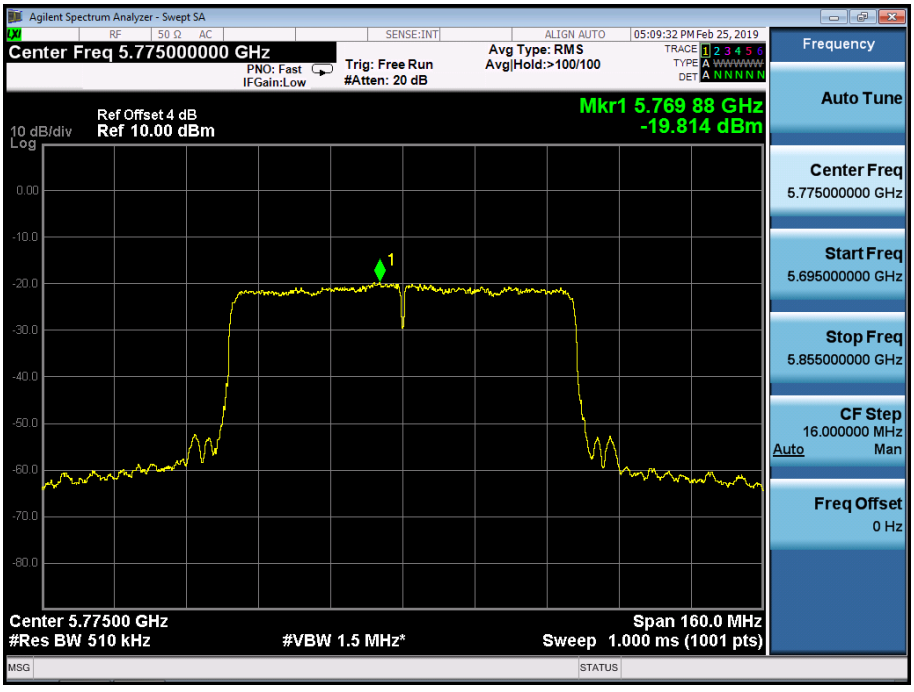
Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT40) mode	Frequency(MHz)	5795



Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT80) mode	Frequency(MHz)	5210

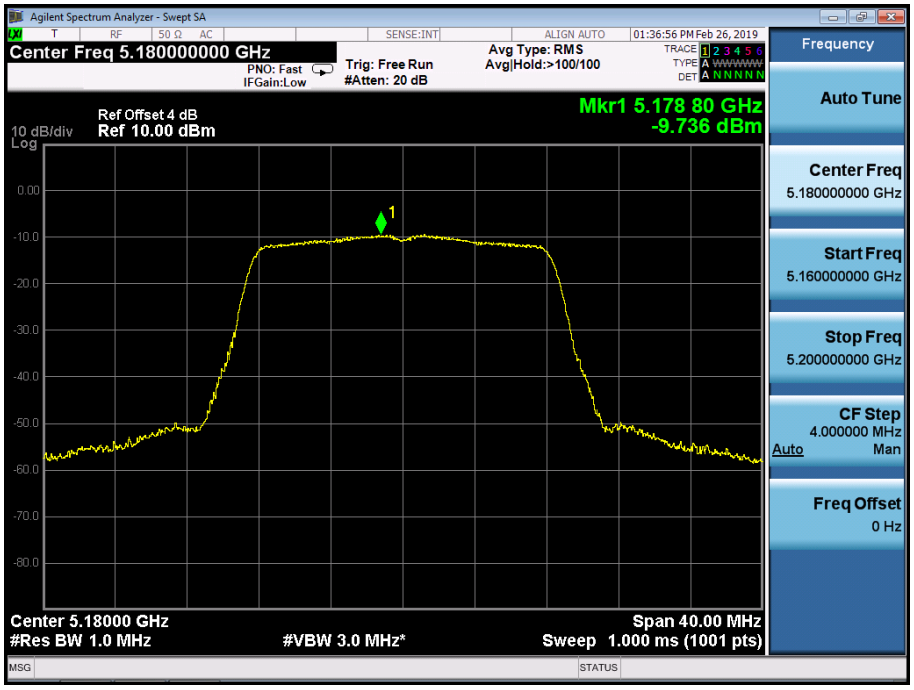


Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT80) mode	Frequency(MHz)	5775

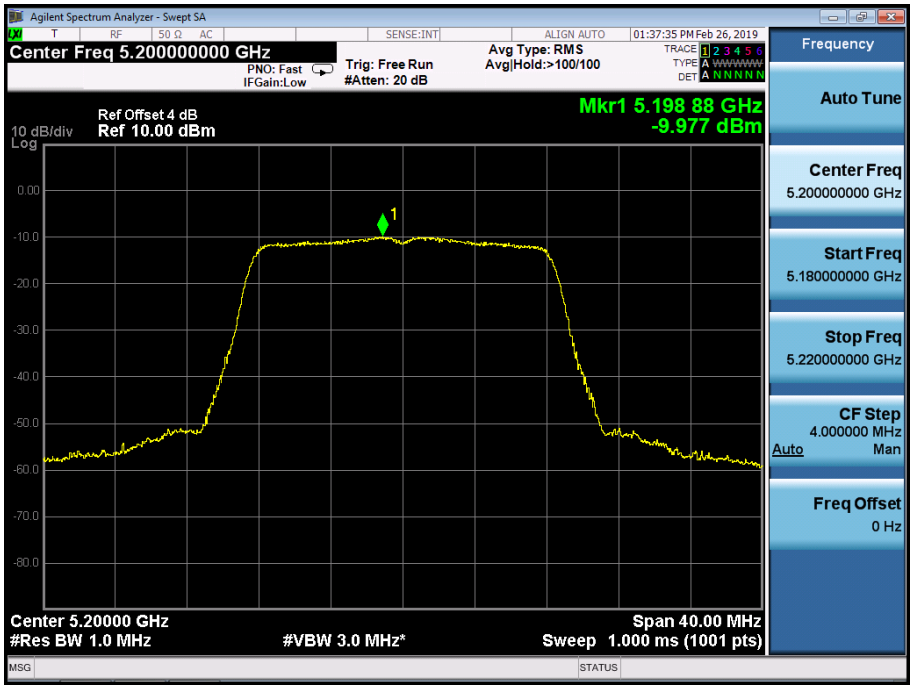


B. Antenna 1

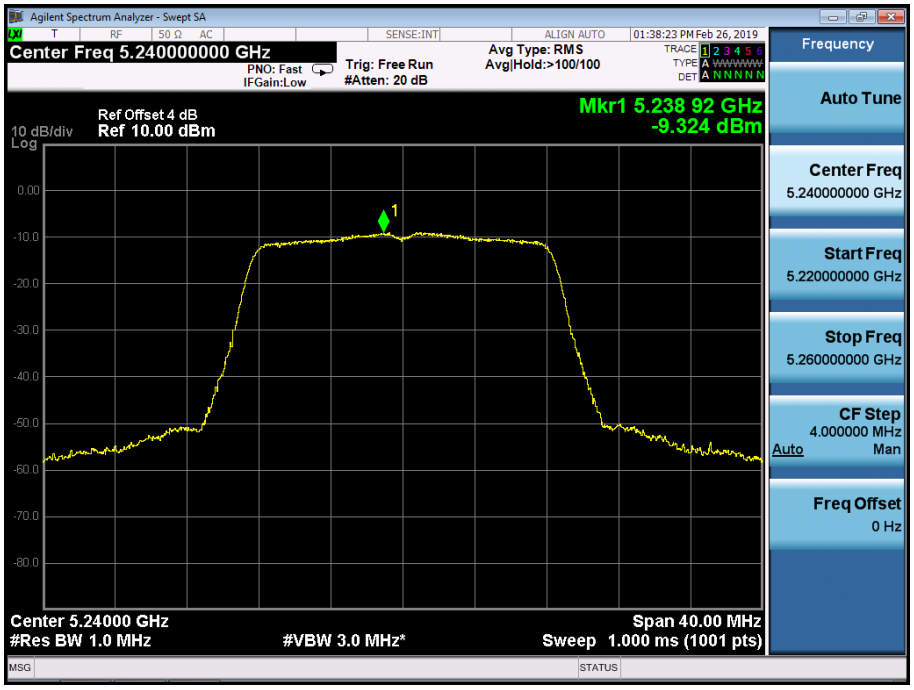
Power Spectral Density		UNII Band I	
Test Model	802.11a	Frequency(MHz)	5180



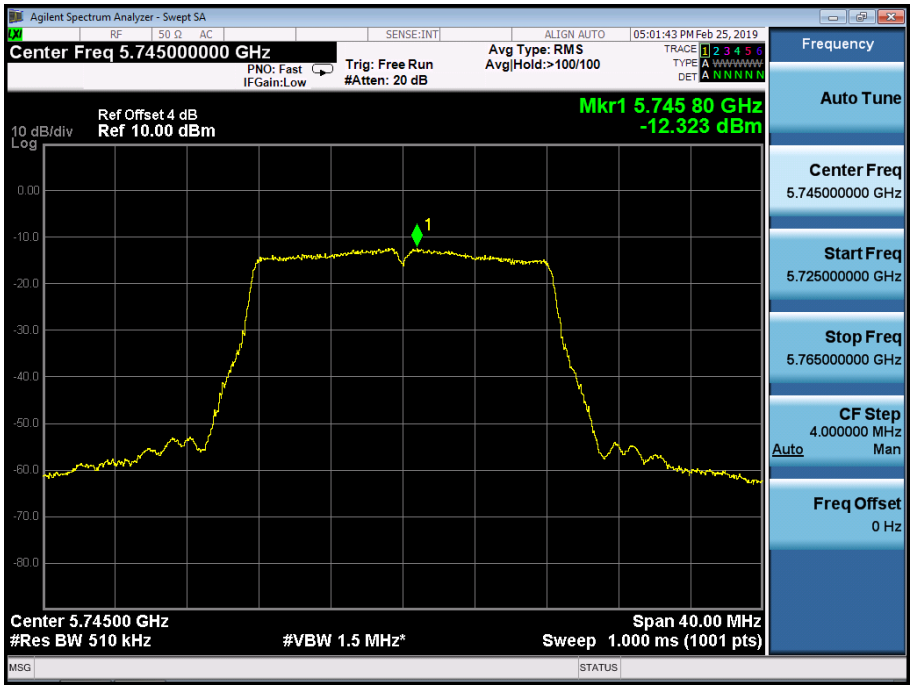
Power Spectral Density		UNII Band I	
Test Model	802.11a	Frequency(MHz)	5200



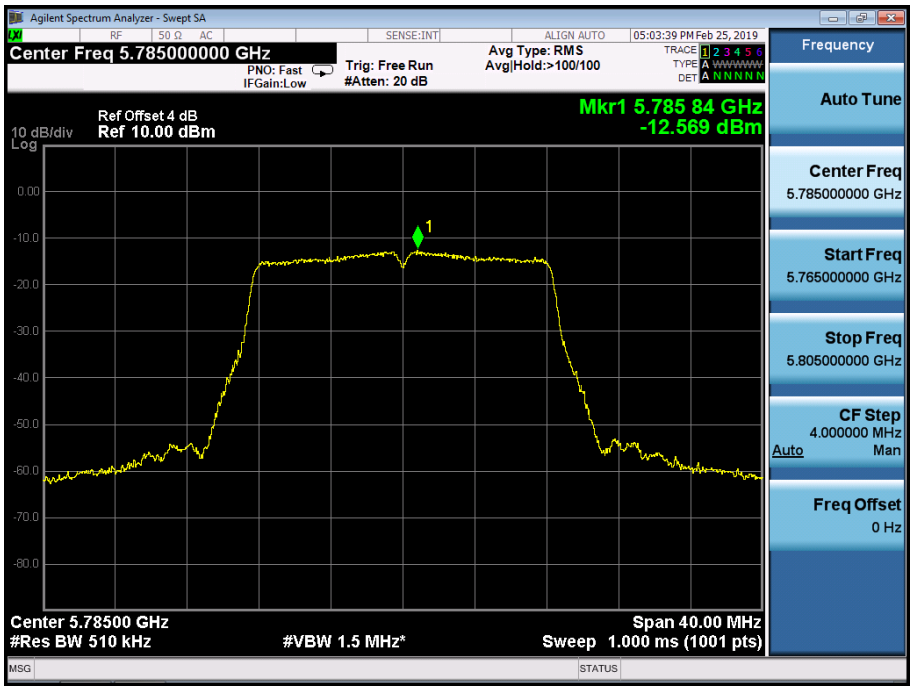
Power Spectral Density		UNII Band I	
Test Model	802.11a	Frequency(MHz)	5240



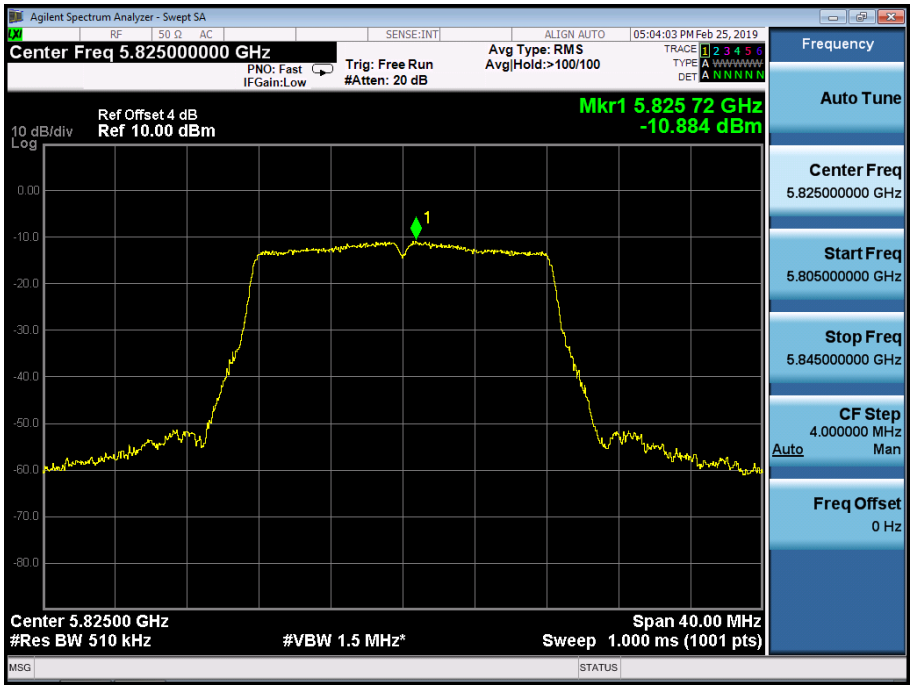
Power Spectral Density		UNII Band III	
Test Model	802.11a	Frequency(MHz)	5745



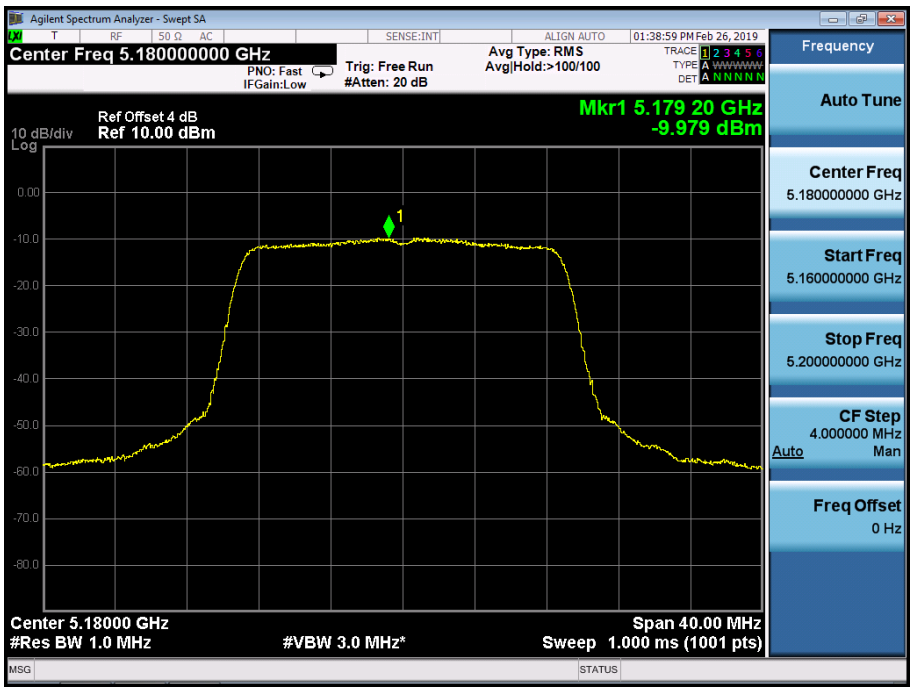
Power Spectral Density		UNII Band III	
Test Model	802.11a	Frequency(MHz)	5785



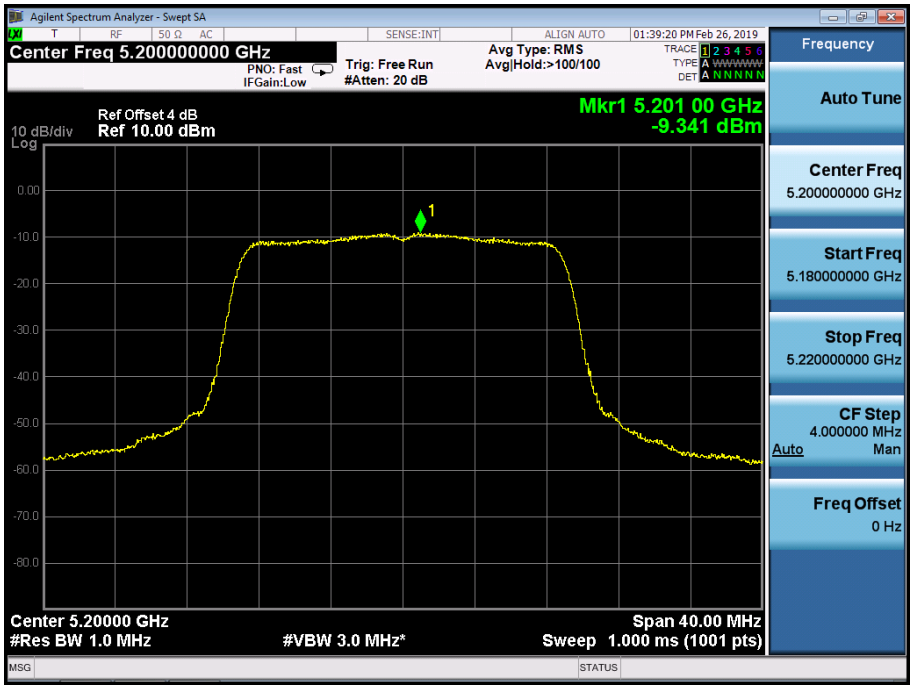
Power Spectral Density		UNII Band III	
Test Model	802.11a	Frequency(MHz)	5825



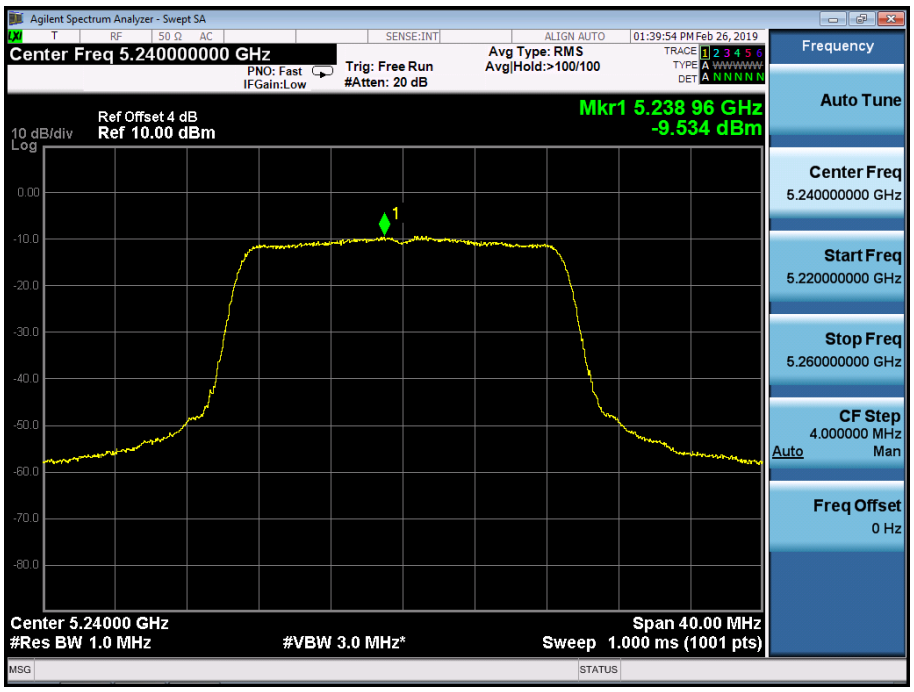
Power Spectral Density		UNII Band I	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5180



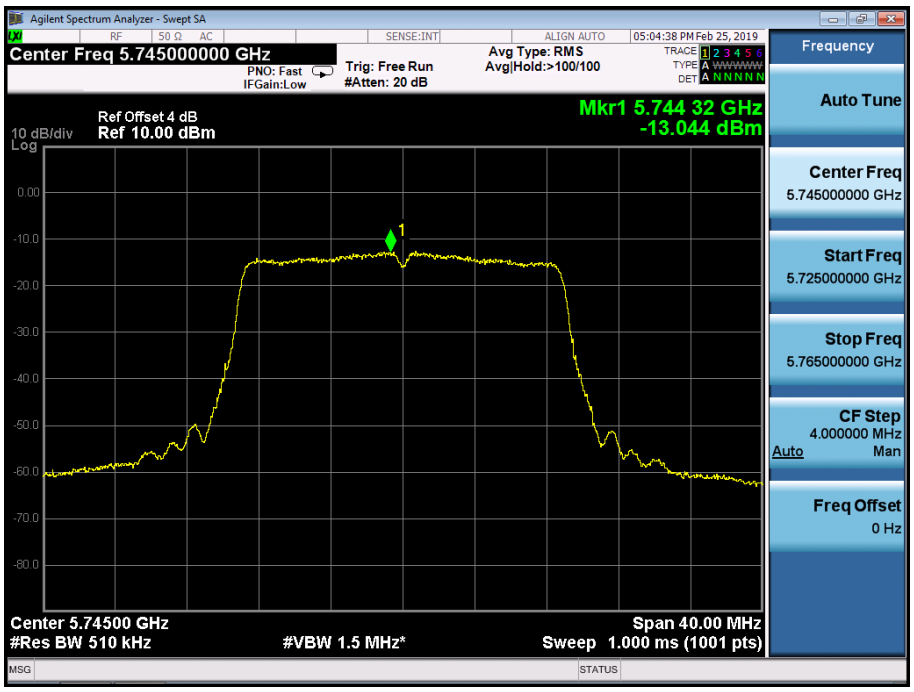
Power Spectral Density		UNII Band I	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5200



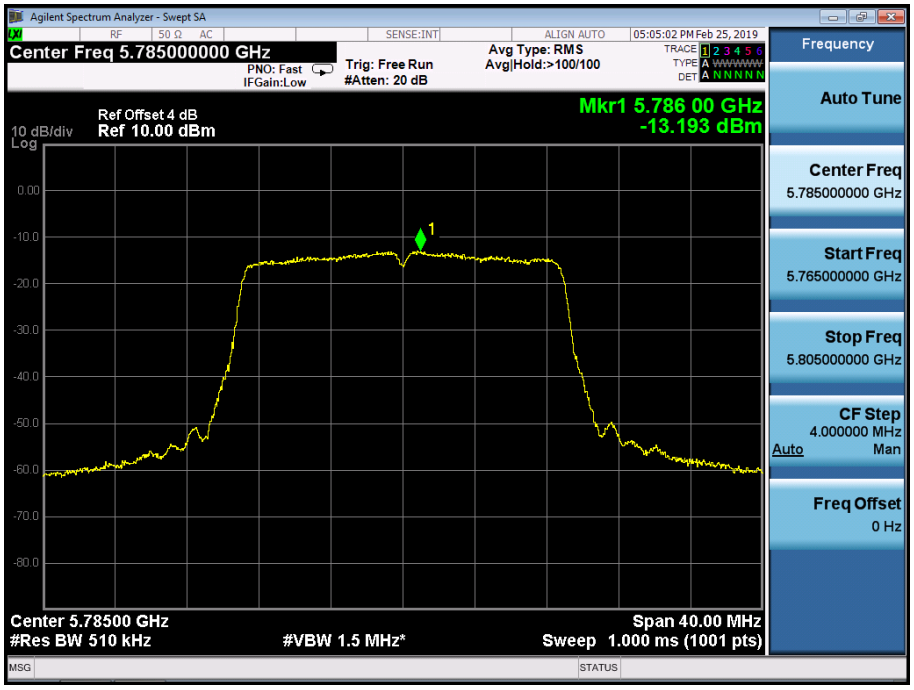
Power Spectral Density		UNII Band I	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5240



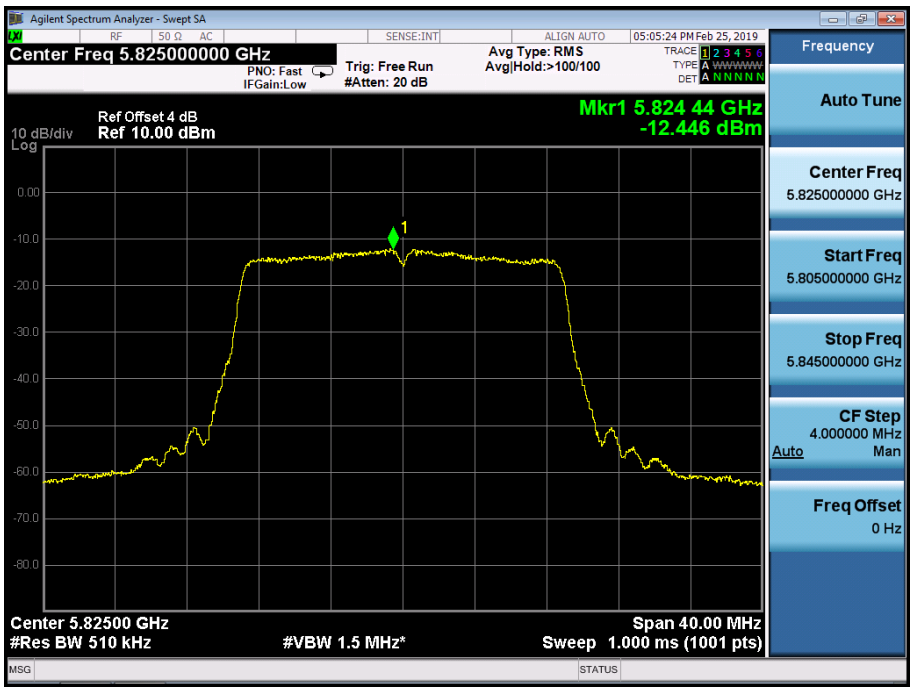
Power Spectral Density		UNII Band III	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5745



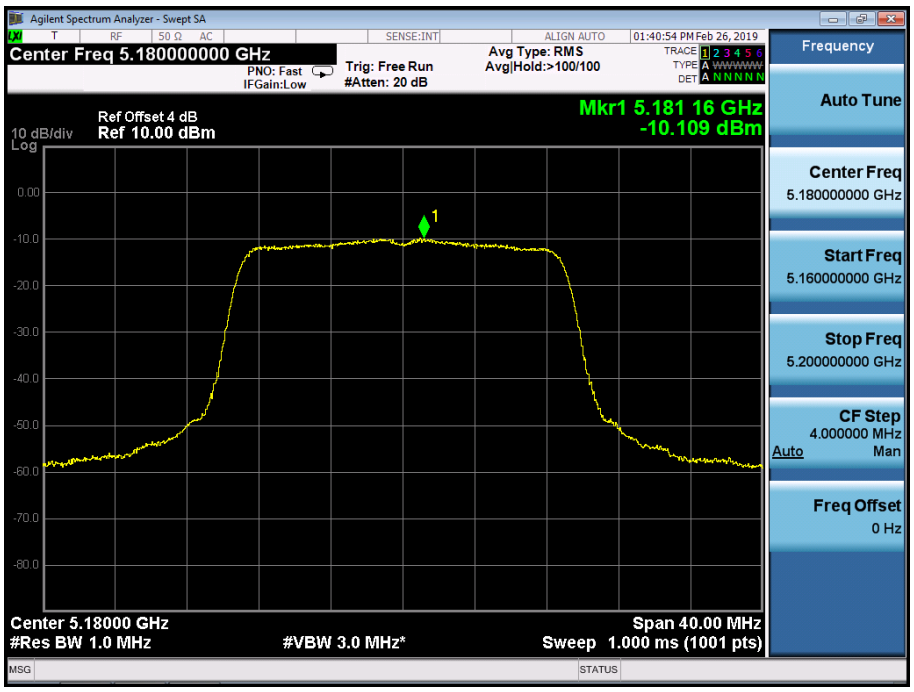
Power Spectral Density		UNII Band III	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5785



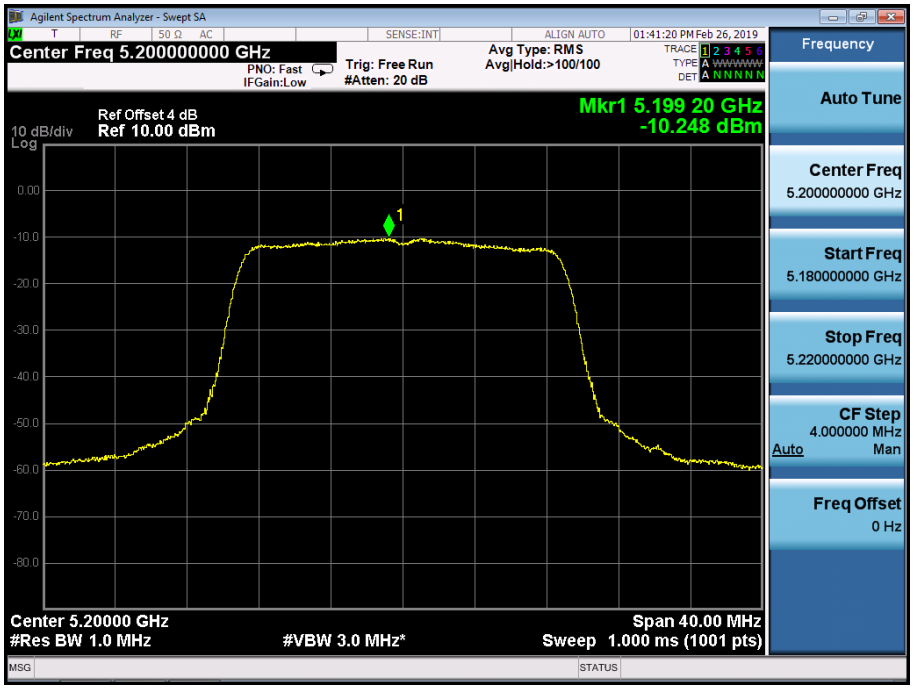
Power Spectral Density		UNII Band III	
Test Model	802.11n(HT20) mode	Frequency(MHz)	5825



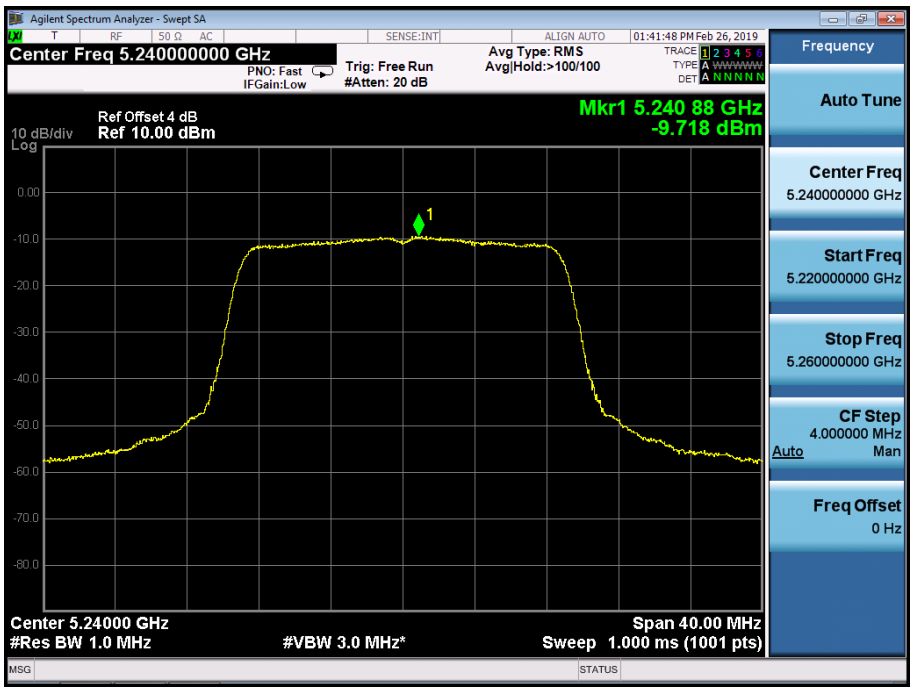
Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5180



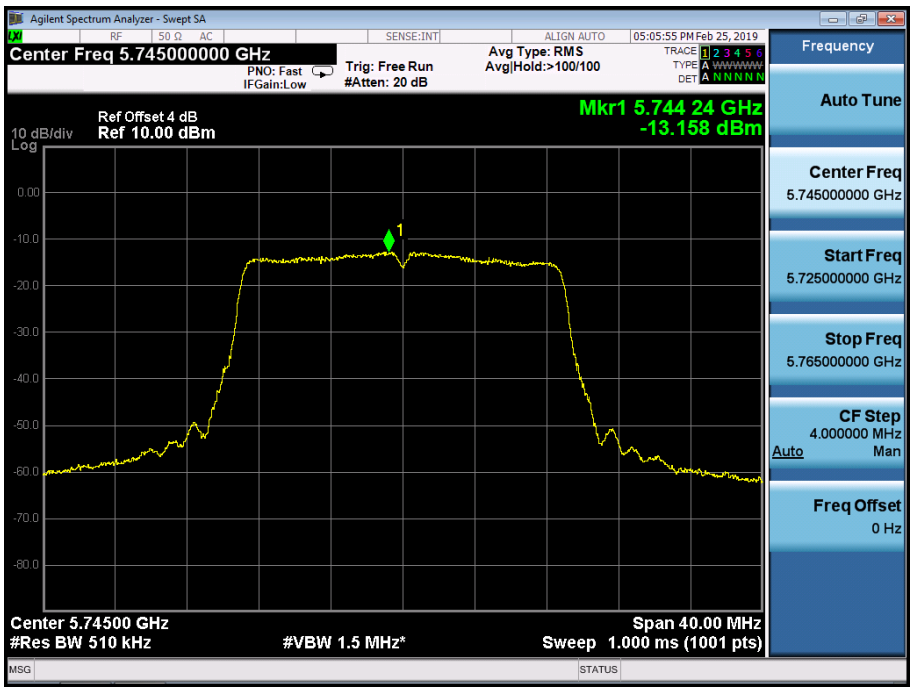
Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5200



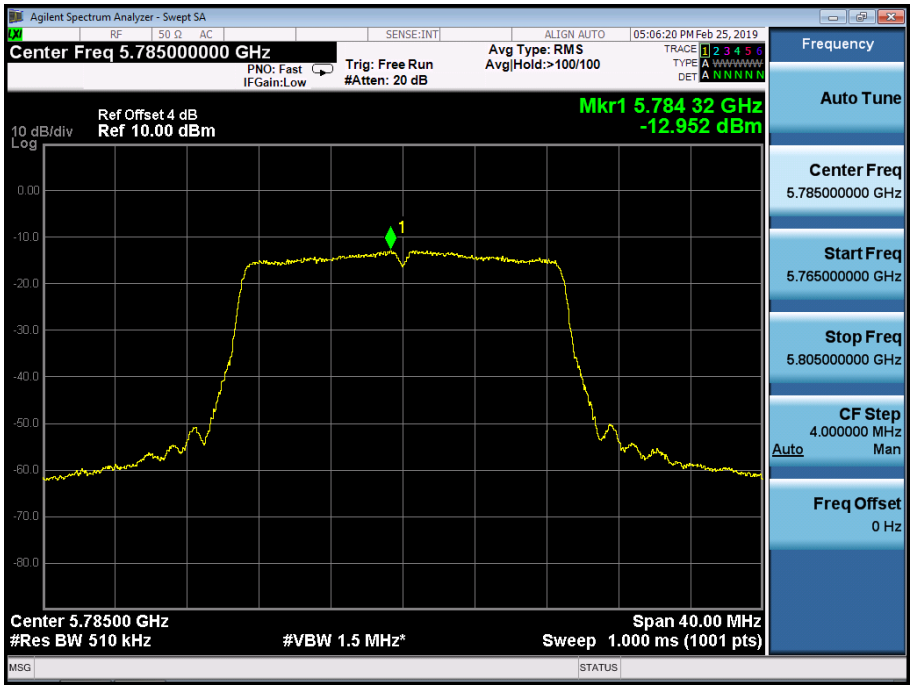
Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5240



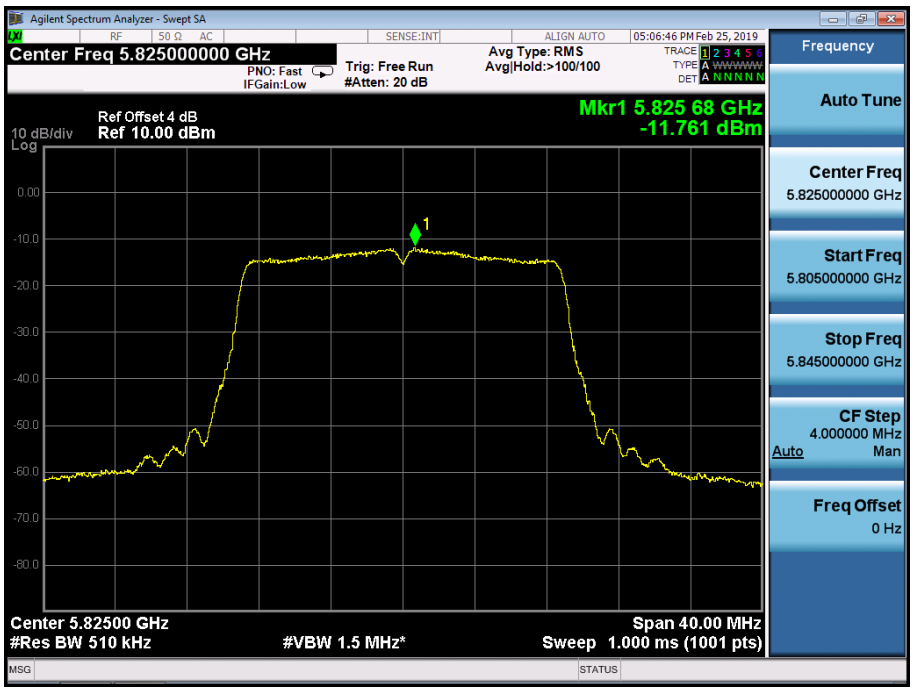
Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5745



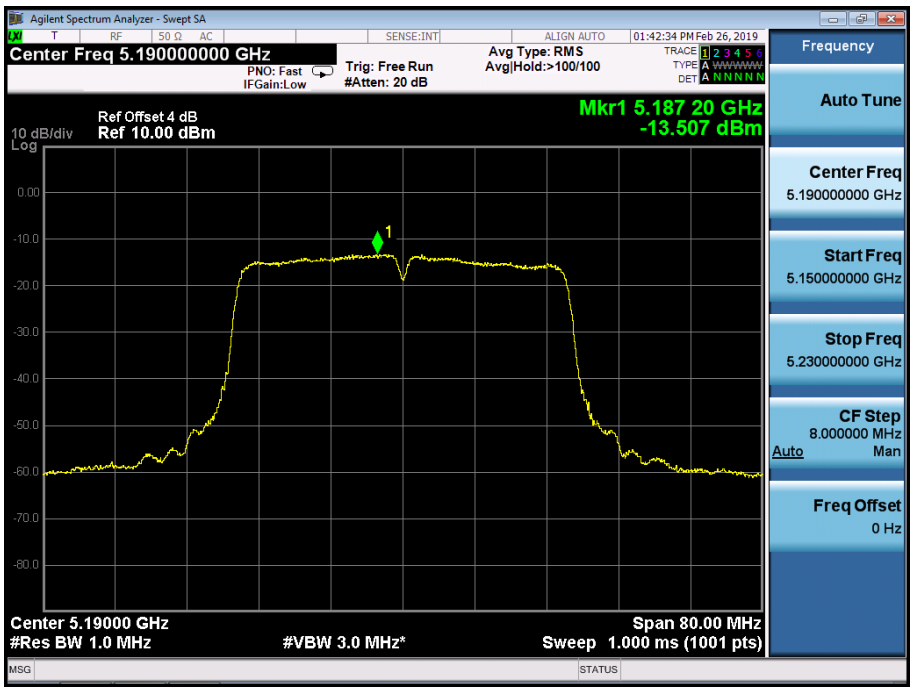
Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5785



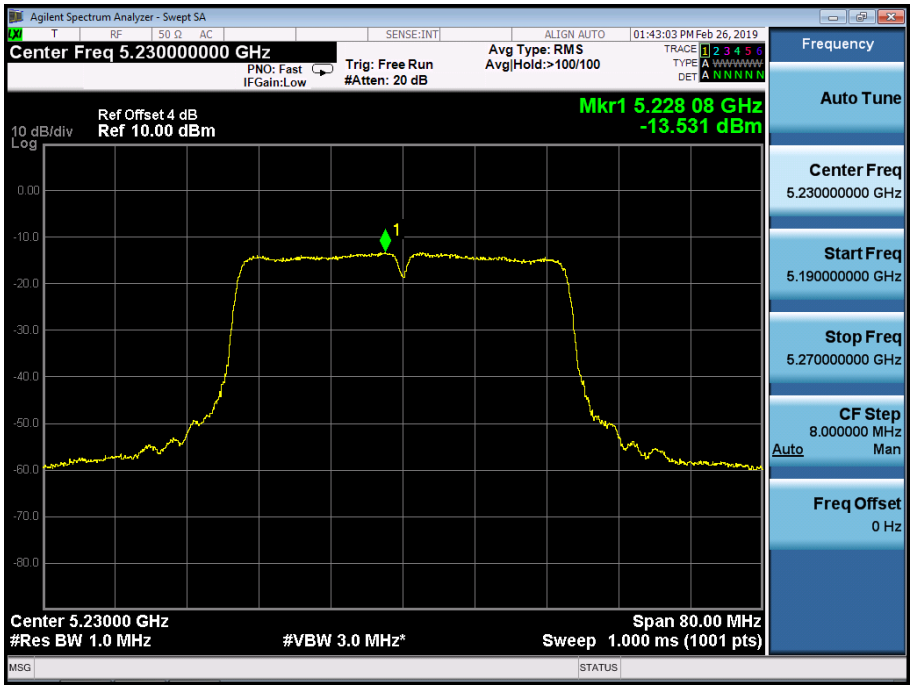
Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT20) mode	Frequency(MHz)	5825



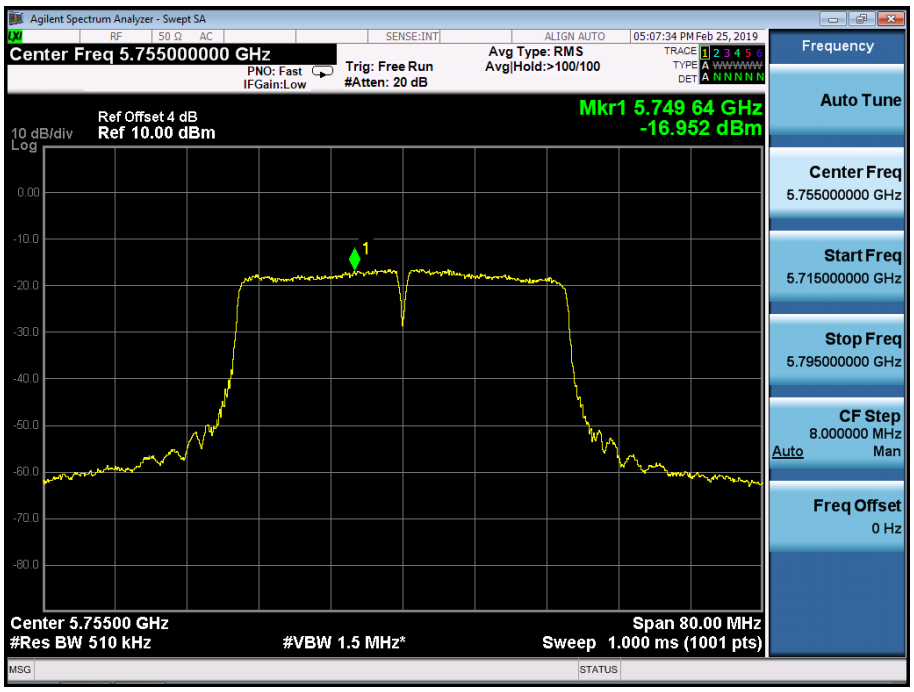
Power Spectral Density		UNII Band I	
Test Model	802.11n(HT40) mode	Frequency(MHz)	5190



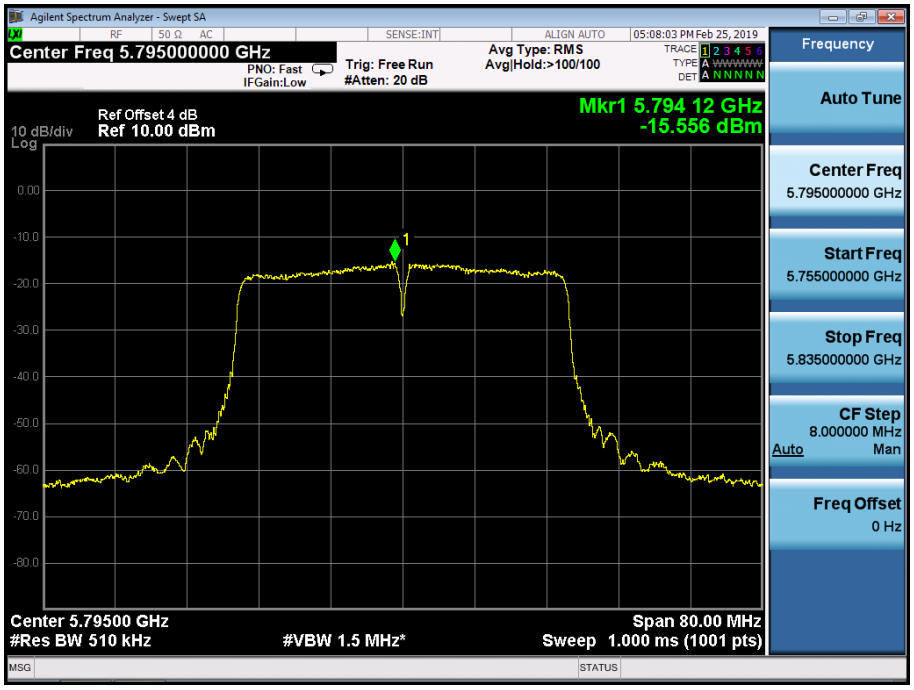
Power Spectral Density		UNII Band I	
Test Model	802.11n(HT40) mode	Frequency(MHz)	5230



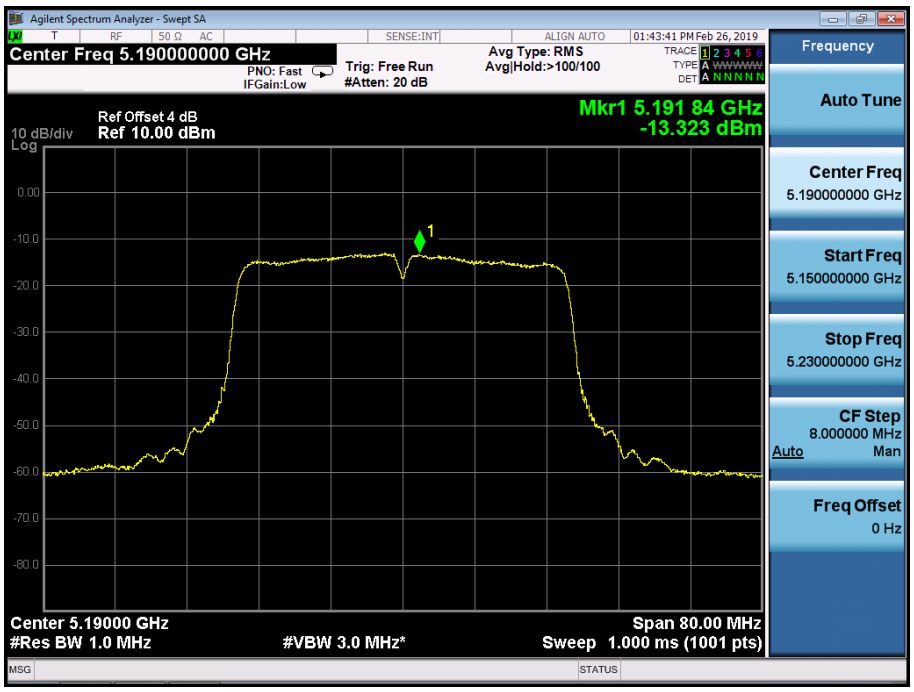
Power Spectral Density		UNII Band III	
Test Model	802.11n(HT40) mode	Frequency(MHz)	5755



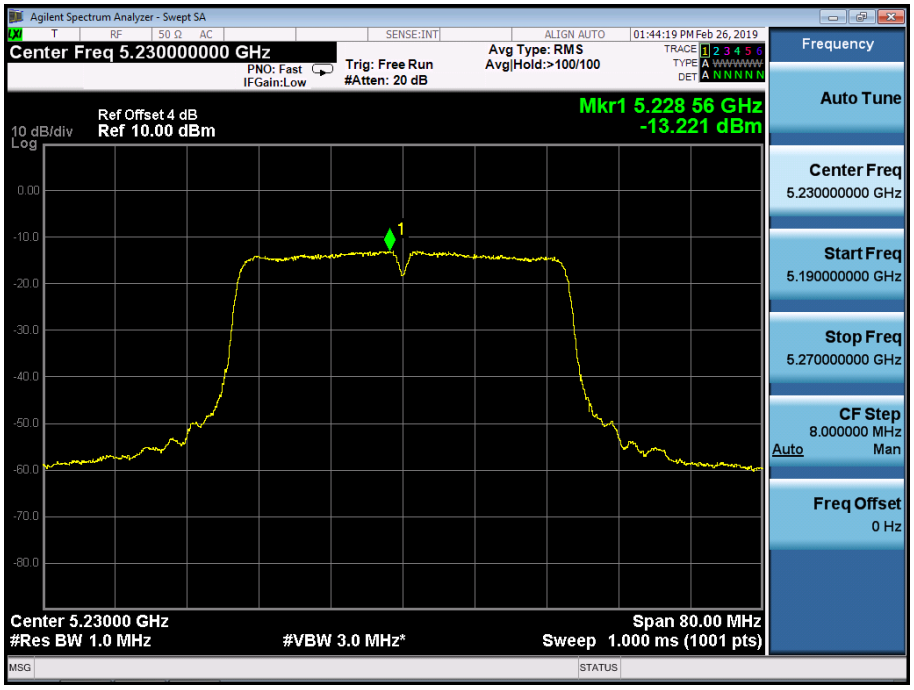
Power Spectral Density		UNII Band III	
Test Model	802.11n(HT40) mode	Frequency(MHz)	5795



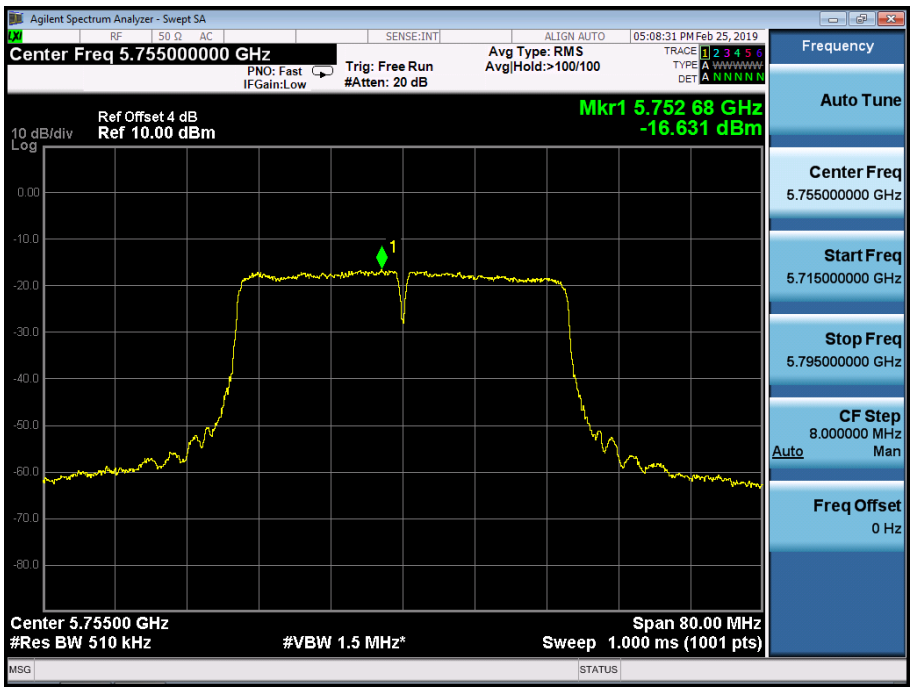
Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT40) mode	Frequency(MHz)	5190



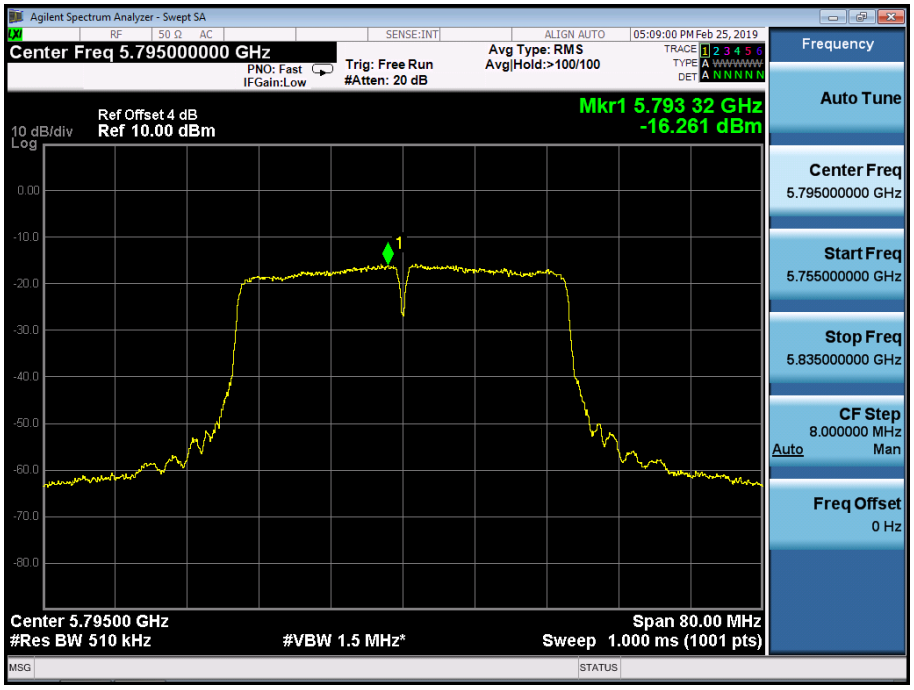
Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT40) mode	Frequency(MHz)	5230



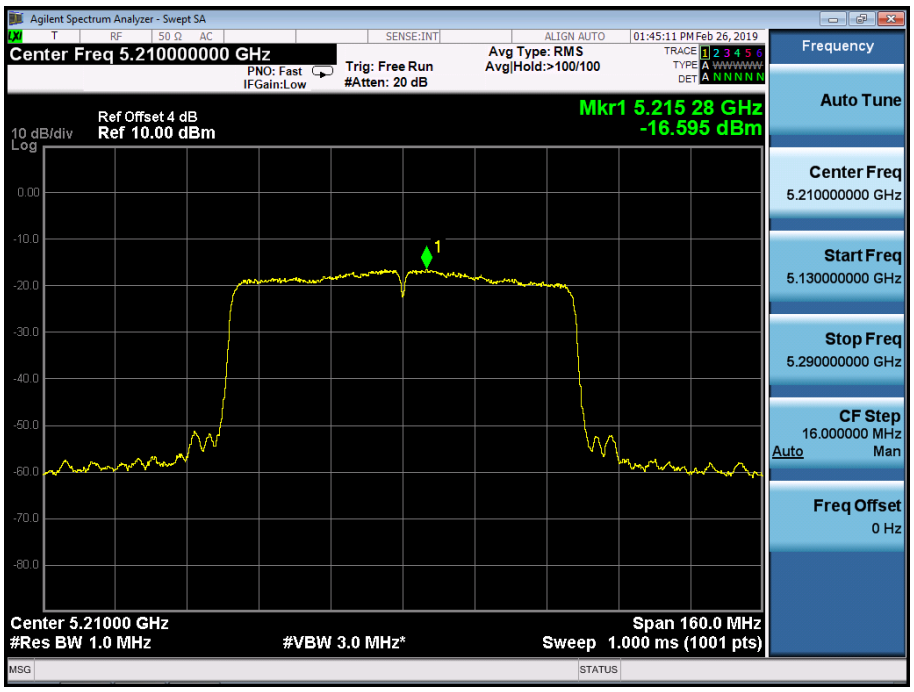
Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT40) mode	Frequency(MHz)	5755



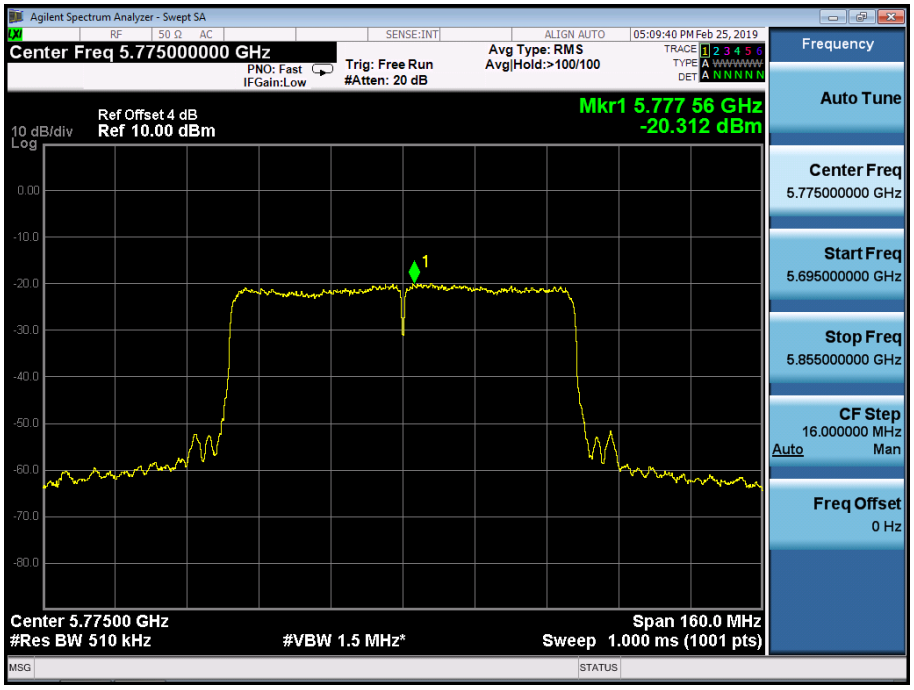
Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT40) mode	Frequency(MHz)	5795



Power Spectral Density		UNII Band I	
Test Model	802.11ac(VHT80) mode	Frequency(MHz)	5210



Power Spectral Density		UNII Band III	
Test Model	802.11ac(VHT80) mode	Frequency(MHz)	5775



8.4 FREQUENCY STABILITY

8.4.1 Applicable Standard

According to FCC Part 15.407(g)
ANSI C63.10 Section 6.8

8.4.2 Conformance Limit

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

8.4.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

8.4.4 Test Procedure

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
Set to the maximum power setting and enable the EUT transmit continuously
Set RBW = 10 kHz.
Set the video bandwidth (VBW) =30 kHz.
Set Span= Entire absence of modulation emissions bandwidth
Set Detector = Peak.
Set Trace mode = max hold.
Set Sweep = auto couple.
Allow the trace to stabilize.
The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
Beginning at each temperature level specified in user manual , the frequency shall be measured within one minute after application of primary power to the transmitter and at intervals of no more than one minute thereafter until ten minutes have elapsed or until sufficient measurements are obtained to indicate clearly that the frequency has stabilized within the applicable tolerance, whichever time period is greater. During each test, the ambient temperature shall not be allowed to rise more than 10° centigrade above the respective beginning ambient temperature level
Measure and record the results in the test report.

8.4.5 Test Results

Antenna 0		5180	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5179.983	-17	Pass
	-10	5179.984	-16	Pass
	0	5179.978	-22	Pass
	10	5179.978	-22	Pass
	20	5179.981	-19	Pass
	30	5179.980	-20	Pass
	40	5179.978	-22	Pass
	50	5179.982	-18	Pass
85% Vnom	20	5179.982	-18	Pass
115% Vnom	20	5179.979	-21	Pass

Antenna 0		5200	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5199.960	-40	Pass
	-10	5199.966	-34	Pass
	0	5199.971	-29	Pass
	10	5199.969	-31	Pass
	20	5199.970	-30	Pass
	30	5199.967	-33	Pass
	40	5199.970	-30	Pass
	50	5199.970	-30	Pass
85% Vnom	20	5199.968	-32	Pass
115% Vnom	20	5199.971	-29	Pass

Antenna 0		5240	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5239.985	-15	Pass
	-10	5239.987	-13	Pass
	0	5239.987	-13	Pass
	10	5239.986	-14	Pass
	20	5239.983	-17	Pass
	30	5239.983	-17	Pass
	40	5239.986	-14	Pass
	50	5239.984	-16	Pass
85% Vnom	20	5239.984	-16	Pass
115% Vnom	20	5239.984	-16	Pass

Antenna 0		5745	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5744.972	-28	Pass
	-10	5744.971	-29	Pass
	0	5744.972	-28	Pass
	10	5744.972	-28	Pass
	20	5744.972	-28	Pass
	30	5744.975	-25	Pass
	40	5744.973	-27	Pass
	50	5744.973	-27	Pass
85% Vnom	20	5744.974	-26	Pass
115% Vnom	20	5744.971	-29	Pass

Antenna 0		5785	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5784.975	-25	Pass
	-10	5784.976	-24	Pass
	0	5784.975	-25	Pass
	10	5784.976	-24	Pass
	20	5784.976	-24	Pass
	30	5784.976	-24	Pass
	40	5784.976	-24	Pass
	50	5784.977	-23	Pass
85% Vnom	20	5784.978	-22	Pass
115% Vnom	20	5784.975	-25	Pass

Antenna 0		5825	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5824.972	-28	Pass
	-10	5824.971	-29	Pass
	0	5824.970	-30	Pass
	10	5824.970	-30	Pass
	20	5824.971	-29	Pass
	30	5824.971	-29	Pass
	40	5824.971	-29	Pass
	50	5824.972	-28	Pass
85% Vnom	20	5824.972	-28	Pass
115% Vnom	20	5824.968	-32	Pass

Antenna 0		5190	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5189.960	-40	Pass
	-10	5189.962	-38	Pass
	0	5189.960	-40	Pass
	10	5189.964	-36	Pass
	20	5189.962	-38	Pass
	30	5189.961	-39	Pass
	40	5189.963	-37	Pass
	50	5189.963	-37	Pass
85% Vnom	20	5189.961	-39	Pass
115% Vnom	20	5189.962	-38	Pass

Antenna 0		5230	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5229.958	-42	Pass
	-10	5229.959	-41	Pass
	0	5229.960	-40	Pass
	10	5229.959	-41	Pass
	20	5229.962	-38	Pass
	30	5229.959	-41	Pass
	40	5229.960	-40	Pass
	50	5229.958	-42	Pass
85% Vnom	20	5229.961	-39	Pass
115% Vnom	20	5229.961	-39	Pass

Antenna 0		5755	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5754.983	-17	Pass
	-10	5754.982	-18	Pass
	0	5754.984	-16	Pass
	10	5754.981	-19	Pass
	20	5754.982	-18	Pass
	30	5754.982	-18	Pass
	40	5754.982	-18	Pass
	50	5754.982	-18	Pass
85% Vnom	20	5754.984	-16	Pass
115% Vnom	20	5754.981	-19	Pass

Antenna 0		5795	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5794.975	-25	Pass
	-10	5794.974	-26	Pass
	0	5794.972	-28	Pass
	10	5794.972	-28	Pass
	20	5794.971	-29	Pass
	30	5794.973	-27	Pass
	40	5794.973	-27	Pass
	50	5794.971	-29	Pass
85% Vnom	20	5794.972	-28	Pass
115% Vnom	20	5794.972	-28	Pass

Antenna 0		5210	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5209.967	-33	Pass
	-10	5209.968	-32	Pass
	0	5209.965	-35	Pass
	10	5209.969	-31	Pass
	20	5209.969	-31	Pass
	30	5209.967	-33	Pass
	40	5209.968	-32	Pass
	50	5209.969	-31	Pass
85% Vnom	20	5209.969	-31	Pass
115% Vnom	20	5209.967	-33	Pass

Antenna 0		5775	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5774.976	-24	Pass
	-10	5774.977	-23	Pass
	0	5774.976	-24	Pass
	10	5774.980	-20	Pass
	20	5774.980	-20	Pass
	30	5774.977	-23	Pass
	40	5774.978	-22	Pass
	50	5774.980	-20	Pass
85% Vnom	20	5774.976	-24	Pass
115% Vnom	20	5774.976	-24	Pass

Antenna 1		5180	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5179.978	-22	Pass
	-10	5179.983	-17	Pass
	0	5179.980	-20	Pass
	10	5179.977	-23	Pass
	20	5179.982	-18	Pass
	30	5179.982	-18	Pass
	40	5179.977	-23	Pass
	50	5179.978	-22	Pass
85% Vnom	20	5179.976	-24	Pass
115% Vnom	20	5179.981	-19	Pass

Antenna 1		5200	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5199.957	-43	Pass
	-10	5199.968	-32	Pass
	0	5199.969	-31	Pass
	10	5199.967	-33	Pass
	20	5199.969	-31	Pass
	30	5199.967	-33	Pass
	40	5199.970	-30	Pass
	50	5199.968	-32	Pass
85% Vnom	20	5199.968	-32	Pass
115% Vnom	20	5199.966	-34	Pass

Antenna 1		5240	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5239.988	-12	Pass
	-10	5239.986	-14	Pass
	0	5239.985	-15	Pass
	10	5239.988	-12	Pass
	20	5239.987	-13	Pass
	30	5239.986	-14	Pass
	40	5239.985	-15	Pass
	50	5239.986	-14	Pass
85% Vnom	20	5239.986	-14	Pass
115% Vnom	20	5239.984	-16	Pass

Antenna 1		5745	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5744.972	-28	Pass
	-10	5744.972	-28	Pass
	0	5744.973	-27	Pass
	10	5744.973	-27	Pass
	20	5744.971	-29	Pass
	30	5744.975	-25	Pass
	40	5744.973	-27	Pass
	50	5744.975	-25	Pass
85% Vnom	20	5744.973	-27	Pass
115% Vnom	20	5744.970	-30	Pass

Antenna 1		5785	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5784.979	-21	Pass
	-10	5784.975	-25	Pass
	0	5784.978	-22	Pass
	10	5784.975	-25	Pass
	20	5784.975	-25	Pass
	30	5784.975	-25	Pass
	40	5784.975	-25	Pass
	50	5784.975	-25	Pass
85% Vnom	20	5784.978	-22	Pass
115% Vnom	20	5784.975	-25	Pass

Antenna 1		5825	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5824.969	-31	Pass
	-10	5824.968	-32	Pass
	0	5824.970	-30	Pass
	10	5824.968	-32	Pass
	20	5824.970	-30	Pass
	30	5824.971	-29	Pass
	40	5824.972	-28	Pass
	50	5824.972	-28	Pass
85% Vnom	20	5824.968	-32	Pass
115% Vnom	20	5824.968	-32	Pass

Antenna 1		5190	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5189.965	-35	Pass
	-10	5189.964	-36	Pass
	0	5189.963	-37	Pass
	10	5189.960	-40	Pass
	20	5189.963	-37	Pass
	30	5189.963	-37	Pass
	40	5189.965	-35	Pass
	50	5189.962	-38	Pass
85% Vnom	20	5189.962	-38	Pass
115% Vnom	20	5189.963	-37	Pass

Antenna 1		5230	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5229.962	-38	Pass
	-10	5229.962	-38	Pass
	0	5229.960	-40	Pass
	10	5229.962	-38	Pass
	20	5229.961	-39	Pass
	30	5229.959	-41	Pass
	40	5229.961	-39	Pass
	50	5229.959	-41	Pass
85% Vnom	20	5229.960	-40	Pass
115% Vnom	20	5229.959	-41	Pass

Antenna 1		5755	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5754.981	-19	Pass
	-10	5754.983	-17	Pass
	0	5754.983	-17	Pass
	10	5754.984	-16	Pass
	20	5754.983	-17	Pass
	30	5754.980	-20	Pass
	40	5754.982	-18	Pass
	50	5754.982	-18	Pass
85% Vnom	20	5754.983	-17	Pass
115% Vnom	20	5754.983	-17	Pass

Antenna 1		5795	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5794.974	-26	Pass
	-10	5794.970	-30	Pass
	0	5794.973	-27	Pass
	10	5794.971	-29	Pass
	20	5794.973	-27	Pass
	30	5794.974	-26	Pass
	40	5794.975	-25	Pass
	50	5794.972	-28	Pass
85% Vnom	20	5794.973	-27	Pass
115% Vnom	20	5794.973	-27	Pass

Antenna 1		5210	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5209.965	-35	Pass
	-10	5209.967	-33	Pass
	0	5209.968	-32	Pass
	10	5209.969	-31	Pass
	20	5209.965	-35	Pass
	30	5209.968	-32	Pass
	40	5209.969	-31	Pass
	50	5209.964	-36	Pass
85% Vnom	20	5209.967	-33	Pass
115% Vnom	20	5209.967	-33	Pass

Antenna 1		5775	
Temperature :	--	Test By:	King Kong
Humidity :	65 %		

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5774.980	-20	Pass
	-10	5774.976	-24	Pass
	0	5774.979	-21	Pass
	10	5774.980	-20	Pass
	20	5774.977	-23	Pass
	30	5774.977	-23	Pass
	40	5774.979	-21	Pass
	50	5774.977	-23	Pass
85% Vnom	20	5774.980	-20	Pass
115% Vnom	20	5774.979	-21	Pass

8.5 UNDESIRABLE RADIATED SPURIOUS EMISSION

8.5.1 Applicable Standard

According to FCC Part 15.407 (b)
According to 789033 D02 Section II(G)

8.5.2 Conformance Limit

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209
The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	2400/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

The provisions of §15.205 apply to intentional radiators operating under this section,15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

Remark: 1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

8.5.3 Test Configuration

Test according to clause 6.2 radio frequency test setup

8.5.4 Test Procedure

■ Unwanted Emissions Measurements below 1000 MHz

Compliance shall be demonstrated using CISPR quasi-peak detection; however, peak detection is permitted as an alternative to quasi-peak detection.
The EUT was placed on a turn table which is 0.8m above ground plane.
And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
Repeat above procedures until all frequency measured was complete.
We use software control the EUT, Let EUT hopping on and transmit with highest power, All the modes have been tested and the worst result was reported.
Use the following spectrum analyzer settings:
Set RBW=120kHz for f < 1 GHz(30MHz to 1GHz), 200Hz for f<150KHz(9KHz to 150KHz), 9KHz for <30MHz (150KHz to 30KHz).
Set the VBW > RBW.
Detector = Peak.
Trace mode = max hold.
Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.
Repeat above procedures until all frequency measured was complete.

■ Unwanted Maximum peak Emissions Measurements above 1000 MHz

Maximum emission levels are measured by setting the analyzer as follows:
RBW = 1 MHz.
VBW ≥ 3 MHz.
Detector = Peak.
Sweep time = auto.
Trace mode = max hold.
Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

■ Unwanted Average Emissions Measurements above 1000 MHz

Method VB (Averaging using reduced video bandwidth): Alternative method.
RBW = 1 MHz.
Video bandwidth. • If the EUT is configured to transmit with duty cycle ≥ 98 percent, set VBW ≤ RBW/100 (i.e., 10 kHz) but not less than 10 Hz.
• If the EUT duty cycle is < 98 percent, set VBW ≥ 1/T, where T is defined in section II.B.1.a).
Video bandwidth mode or display mode • The instrument shall be set to ensure that video filtering is applied in the power domain. Typically, this requires setting the detector mode to RMS and setting the Average-VBW Type to Power (RMS).
• As an alternative, the analyzer may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some analyzers require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode.
Detector = Peak.
Sweep time = auto.
Trace mode = max hold.
Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of 1/x, where x is the duty cycle. For example, use at least 200 traces if the duty cycle is 25 percent. (If a specific emission is demonstrated to be continuous—i.e., 100 percent duty cycle—rather than turning on and off with the transmit cycle, at least 50 traces shall be averaged.)

■ Band edge measurements.

Unwanted band-edge emissions may be measured using either of the special band-edge measurement techniques (the marker-delta or integration methods) described below. Note that the marker-delta method is primarily a radiated measurement technique that requires the 99% occupied bandwidth edge to be within 2 MHz of the authorized band edge, whereas the integration method can be used in either a radiated or conducted measurement without any special requirement with regards to the displacement of the unwanted emission(s) relative to the authorized bandwidth.

Marker-Delta Method.

The marker-delta method, as described in ANSI C63.10, can be used to perform measurements of the radiated unwanted emissions level of emissions provided that the 99% occupied bandwidth of the fundamental is within 2 MHz of the authorized band-edge.

8.5.5 Test Results

■ ☒For Undesirable radiated Spurious Emission in UNII Band I

- ☒Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

The 802.11a/n/ac siso and mimo modes has been tested and the worst case mode recorded as below:

Temperature :	28℃	Test By:	King Kong
Humidity :	65 %	Frequency(MHz):	5180
Test mode:	802.11a	Antenna	0

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
1888.25	V	36.66	-58.57	-27.00	-31.57
11755.05	V	50.38	-44.85	-27.00	-17.85
17981.30	V	54.10	-41.13	-27.00	-14.13
1865.30	H	38.69	-56.54	-27.00	-29.54
11087.80	H	51.92	-43.31	-27.00	-16.31
17886.95	H	53.92	-41.31	-27.00	-14.31

Freq.	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	PK	AV	PK	AV
1888.25	V	36.66	29.50	74.00	54.00	-37.34	-24.50
11755.05	V	50.38	35.40	74.00	54.00	-23.62	-18.60
17981.30	V	54.10	37.60	74.00	54.00	-19.90	-16.40
1865.30	H	38.69	30.50	74.00	54.00	-35.31	-23.50
11087.80	H	51.92	35.70	74.00	54.00	-22.08	-18.30
17886.95	H	53.92	36.50	74.00	54.00	-20.08	-17.50

Temperature :	28℃	Test By:	King Kong
Humidity :	65 %	Frequency(MHz):	5220
Test mode:	802.11a	Antenna	0

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
1899.30	V	37.59	-57.64	-27.00	-30.64
14263.40	V	53.04	-42.19	-27.00	-15.19
17976.20	V	54.03	-41.20	-27.00	-14.20
1896.75	H	40.50	-54.73	-27.00	-27.73
11882.55	H	53.31	-41.92	-27.00	-14.92
17942.20	H	36.30	-58.93	-27.00	-31.93

Freq.	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	PK	AV	PK	AV
1899.30	V	37.59	29.30	74.00	54.00	-36.41	-24.70
14263.40	V	53.04	36.50	74.00	54.00	-20.96	-17.50
17976.20	V	54.03	37.60	74.00	54.00	-19.97	-16.40
1896.75	H	40.50	31.50	74.00	54.00	-33.50	-22.50
11882.55	H	53.31	36.70	74.00	54.00	-20.69	-17.30
17942.20	H	36.30	36.30	74.00	54.00	-37.70	-17.70

Temperature :	28℃	Test By:	King Kong
Humidity :	65 %	Frequency(MHz):	5240
Test mode:	802.11a	Antenna	0

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
1861.90	V	38.82	-56.41	-27.00	-29.41
13155.00	V	52.52	-42.71	-27.00	-15.71
17965.15	V	54.29	-40.94	-27.00	-13.94
1858.50	H	37.69	-57.54	-27.00	-30.54
14305.05	H	52.77	-42.46	-27.00	-15.46
17920.10	H	53.78	-41.45	-27.00	-14.45

Freq.	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	PK	AV	PK	AV
1861.90	V	38.82	30.20	74.00	54.00	-35.18	-23.80
13155.00	V	52.52	36.40	74.00	54.00	-21.48	-17.60
17965.15	V	54.29	37.50	74.00	54.00	-19.71	-16.50
1858.50	H	37.69	28.60	74.00	54.00	-36.31	-25.40
14305.05	H	52.77	36.20	74.00	54.00	-21.23	-17.80
17920.10	H	53.78	36.90	74.00	54.00	-20.22	-17.10

Note: (1) All Readings are Peak Value (VBW=3MHz)
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

Temperature :	28℃	Test By:	King Kong
Humidity :	65 %	Frequency(MHz):	5190
Test mode:	802.11n(HT40)	Mode	MIMO

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
1865.30	V	36.55	-58.68	-27.00	-31.76
11743.10	V	50.21	-45.02	-27.00	-18.00
15123.69	V	53.69	-41.54	-27.00	-14.43
7918.64	H	38.62	-56.61	-27.00	-29.87
11287.15	H	51.84	-43.39	-27.00	-16.75
14310.66	H	53.61	-41.61	-27.00	-14.78

Freq.	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	PK	AV	PK	AV
1865.30	V	36.55	29.37	74.00	54.00	-37.45	-24.63
11743.10	V	50.21	35.28	74.00	54.00	-23.79	-18.72
15123.69	V	53.69	37.51	74.00	54.00	-20.31	-16.49
7918.64	H	38.62	29.45	74.00	54.00	-35.38	-24.55
11287.15	H	51.84	35.70	74.00	54.00	-22.16	-18.3
14310.66	H	53.61	36.47	74.00	54.00	-20.39	-17.53

Temperature :	28℃	Test By:	King Kong
Humidity :	65 %	Frequency(MHz):	5230
Test mode:	802.11n(HT40)	Mode	MIMO

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
1900.02	V	37.29	-57.94	-27.00	-30.94
11812.34	V	52.70	-42.53	-27.00	-15.53
18037.72	V	53.58	-41.65	-27.00	-14.65
1903.51	H	40.07	-55.16	-27.00	-28.16
11180.24	H	53.06	-42.17	-27.00	-15.17
17929.03	H	36.07	-59.16	-27.00	-32.16

Freq.	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	PK	AV	PK	AV
1900.02	V	37.29	29.23	74.00	54.00	-36.71	-24.77
11812.34	V	52.70	36.36	74.00	54.00	-21.30	-17.64
18037.72	V	53.58	37.47	74.00	54.00	-20.42	-16.53
1903.51	H	40.07	31.49	74.00	54.00	-33.93	-22.51
11180.24	H	53.06	36.66	74.00	54.00	-20.94	-17.34
17929.03	H	36.07	36.16	74.00	54.00	-37.93	-17.84

Note: (1) All Readings are Peak Value (VBW=3MHz)
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters