Mode 3: IEEE 802.11ac 20MHz Continuous TX mode_ANT-1	
5745 MHz	
5785 MHz	
5825 MHz	

Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ANT-1	
5755 MHz	
5795 MHz	

Mode 5: IEEE 802.11ac 80MHz Continuous TX mode_ANT-1	
5775 MHz	

Beamforming on

Mode 3: IEEE 802.11ac 20MHz Continuous TX mode_ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	

Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ANT-0	
5755 MHz	
5795 MHz	

Mode 5: IEEE 802.11ac 80MHz Continuous TX mode_ANT-0	
5775 MHz	

Mode 3: IEEE 802.11ac 20MHz Continuous TX mode_ANT-1	
5745 MHz	
5785 MHz	
5825 MHz	

Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ANT-1	
5755 MHz	
5795 MHz	

Mode 5: IEEE 802.11ac 80MHz Continuous TX mode_ANT-1	
5775 MHz	

4.7. Peak Power Spectral Density Measurement

■ **Limit**

Conducted power spectral density

Frequency Range (MHz)	FCC Limit
	Client
5.150 ~ 5.250 GHz	11 dBm/MHz
5.725 ~ 5.850 GHz	30 dBm/500KHz

∗ SISO mode for ANT-0：Max. Gain = 2.74 dBi < 6dBi

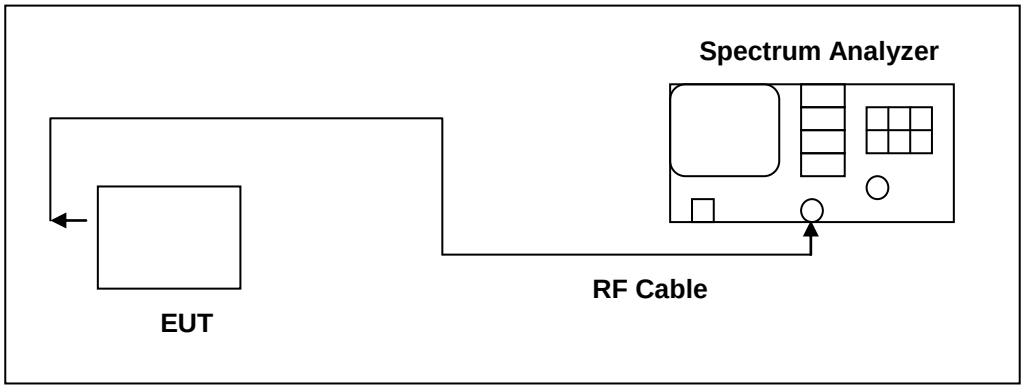
∗ CDD/BF mode：Directional Gain = G_{ANT} = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT}
= 5.91 dBi < 6dBi(5.150 ~ 5.250 GHz)

∗ CDD/BF mode：Directional Gain = G_{ANT} = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT}
= 6.11 dBi > 6dBi (5.725 ~ 5.850 GHz)

CDD/BF mode power limit shall be reduced = 11 - 0 = 11 dBm/MHz (5.150 ~ 5.250 GHz)

CDD/BF mode power limit shall be reduced = 30 - 0.11 = 29.89 dBm/500KHz (5.725 ~ 5.850 GHz)

■ **Test Setup**



■ **Test Instruments**

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ **Test Procedure**

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01r04, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1 MHz (5725 ~ 5850MHz use 100 kHz)
VBW	3 MHz (5725 ~ 5850MHz use 300 kHz)
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times
Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/100kHz) to the measured result.	

■ **Test Result**

Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	4.077	0.000	4.077	< 11
5200	4.667	0.000	4.667	
5240	4.505	0.000	4.505	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-5.11	0.000	1.88	< 30
5785	-4.19	0.000	2.80	
5825	-4.42	0.000	2.57	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)

Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	1.049	0.000	1.049	< 11
5200	0.639	0.000	0.639	
5240	0.574	0.000	0.574	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	1.300	0.000	1.300	< 11
5200	1.492	0.000	1.492	
5240	0.548	0.000	0.548	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5180	4.187			< 11
5200	4.097			
5240	3.571			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-8.07	0.000	-1.08	< 29.89
5785	-7.60	0.000	-0.61	
5825	-7.47	0.000	-0.48	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-5.75	0.000	1.24	< 29.89
5785	-5.92	0.000	1.07	
5825	-5.75	0.000	1.24	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/500KHz)
5745	3.25			< 29.89
5785	3.32			
5825	3.48			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)

Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-2.042	0.000	-2.042	< 11
5230	-2.142	0.000	-2.142	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-2.050	0.000	-2.050	< 11
5230	-1.946	0.000	-1.946	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5190	0.964			< 11
5230	0.967			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-10.85	0.000	-3.86	< 29.89
5795	-11.03	0.000	-4.04	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-8.45	0.000	-1.46	< 29.89
5795	-8.93	0.000	-1.94	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/500KHz)
5755	0.51			< 29.89
5795	0.15			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)

Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-2.884	0.000	-2.884	< 11
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-2.977	0.000	-2.977	< 11
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5210	0.080			< 11

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-13.10	0.000	-6.11	< 29.89
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-11.16	0.000	-4.17	< 29.89
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/MHz)
5775	-2.02			< 29.89

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)

Beamforming on

Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-1.845	0.000	-1.845	< 11
5200	-2.039	0.000	-2.039	
5240	-1.635	0.000	-1.635	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-1.234	0.000	-1.234	< 11
5200	-1.545	0.000	-1.545	
5240	-1.940	0.000	-1.940	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5180	1.482			< 11
5200	1.225			
5240	1.225			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-10.49	0.000	-3.50	< 29.89
5785	-10.05	0.000	-3.06	
5825	-10.12	0.000	-3.13	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-7.67	0.000	-0.68	< 29.89
5785	-7.85	0.000	-0.86	
5825	-7.57	0.000	-0.58	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/500KHz)
5745	1.15			< 29.89
5785	1.19			
5825	1.34			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)

Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-3.716	0.000	-3.716	< 11
5230	-4.031	0.000	-4.031	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-4.133	0.000	-4.133	< 11
5230	-4.386	0.000	-4.386	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5190	-0.909			< 11
5230	-1.195			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-13.02	0.000	-6.03	< 29.89
5795	-13.09	0.000	-6.10	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-10.48	0.000	-3.49	< 29.89
5795	-10.64	0.000	-3.65	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/500KHz)
5755	29.89			< 29.89
5795	29.89			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)

Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-4.605	0.000	-4.605	< 11
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-4.900	0.000	-4.900	< 11
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5210	-1.740			< 11

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

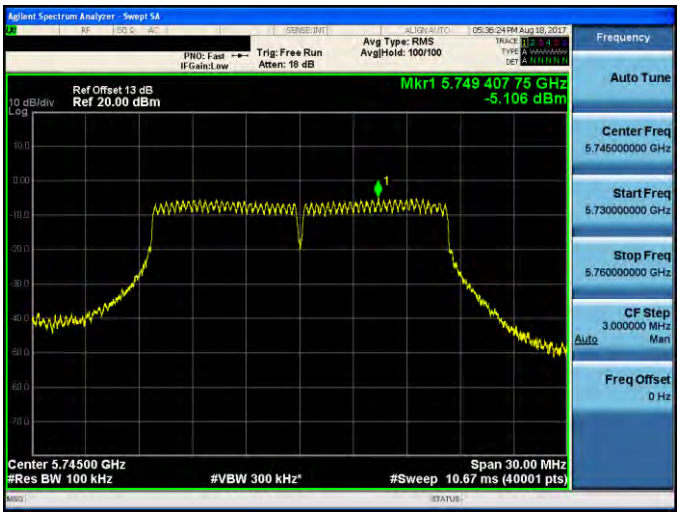
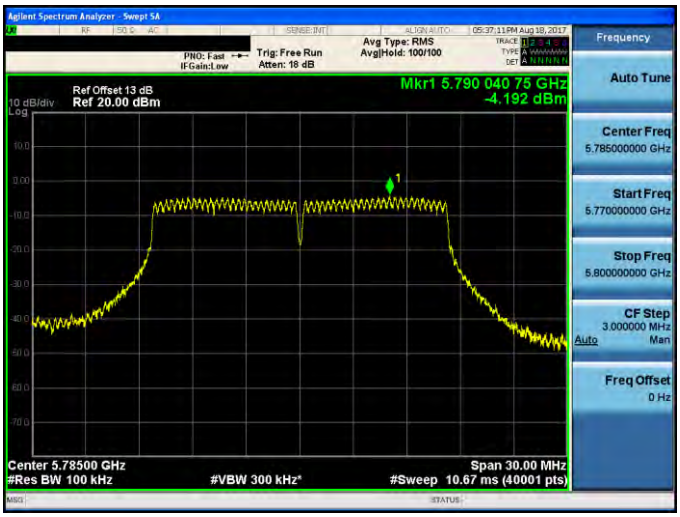
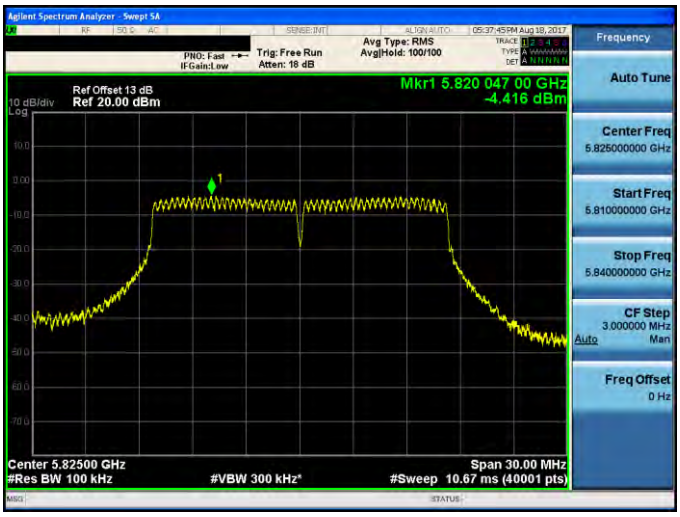
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-15.23	0.000	-8.24	< 29.89
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-13.09	0.000	-6.10	< 29.89
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/MHz)
5775	-4.03			< 29.89

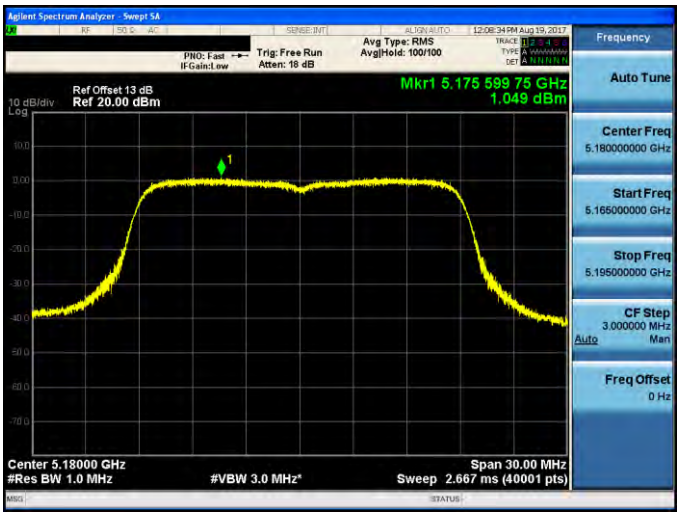
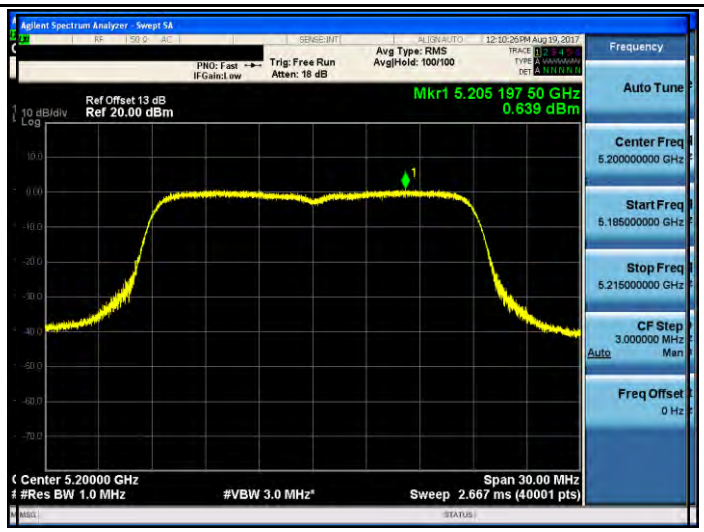
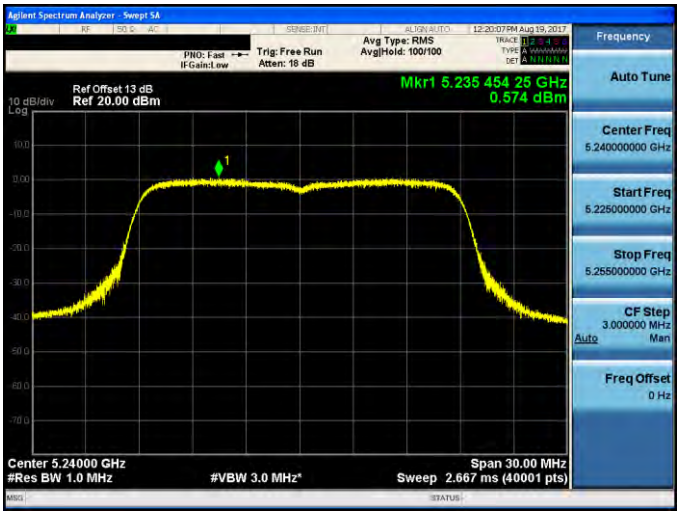
Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

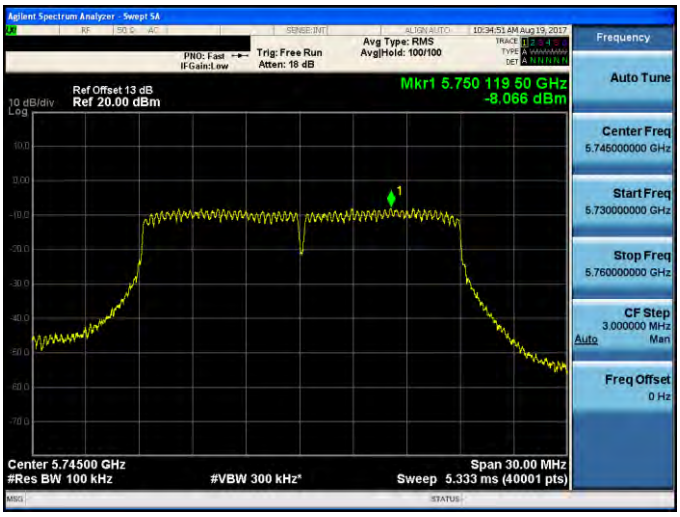
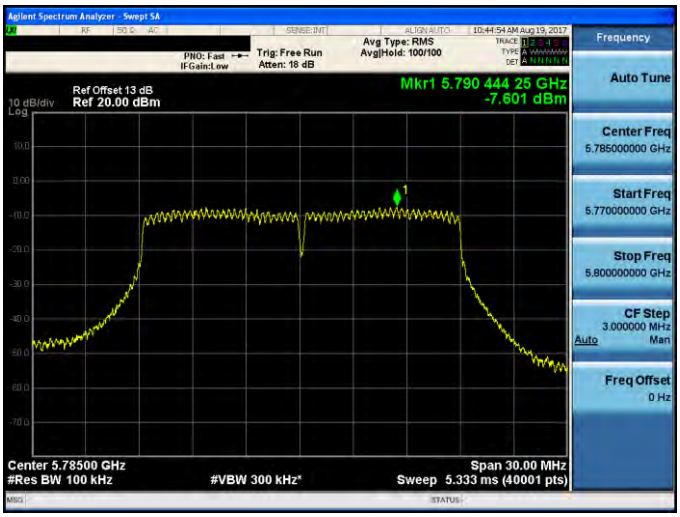
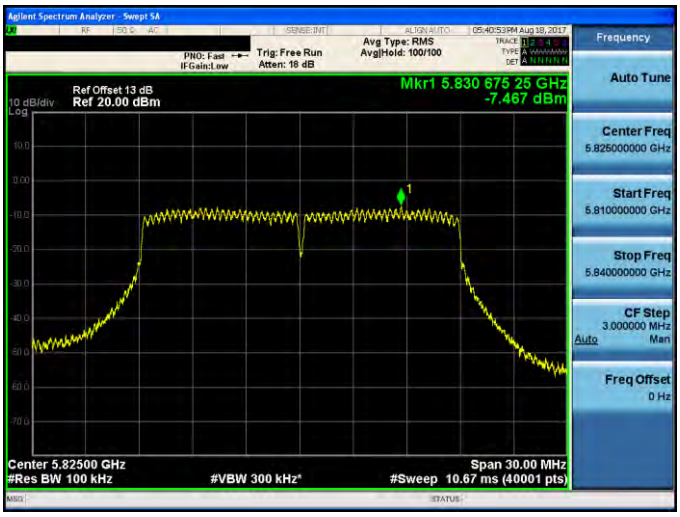
Conversion ratio = 10*Log(500k/100k)

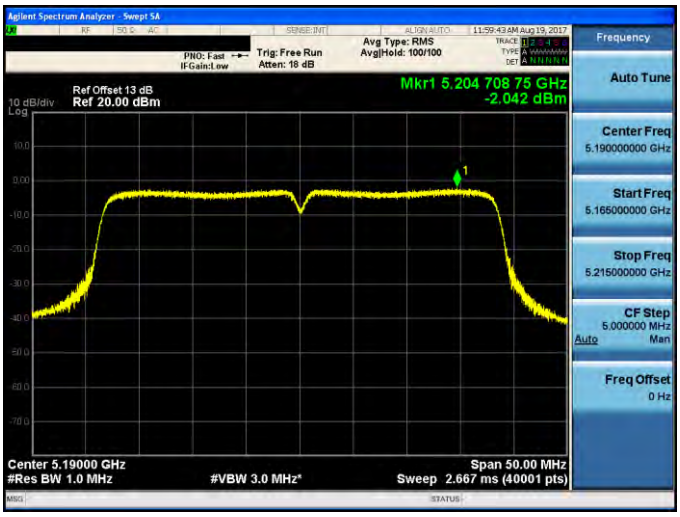
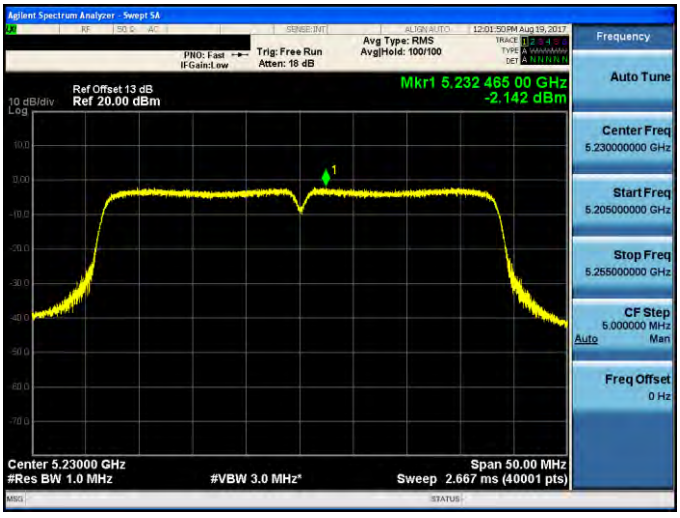
■ **Test Graphs**

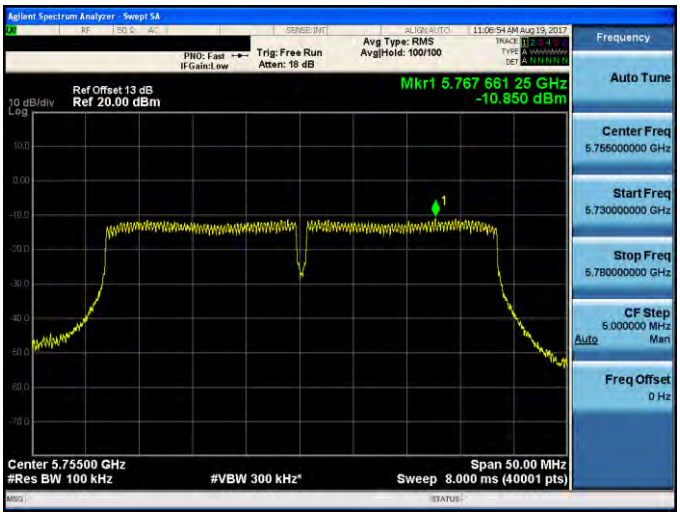
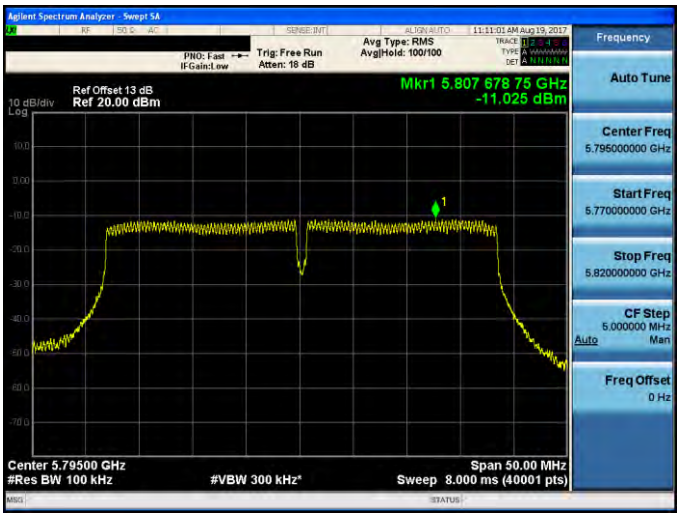
Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0	
5180 MHz	
5200 MHz	
5240 MHz	

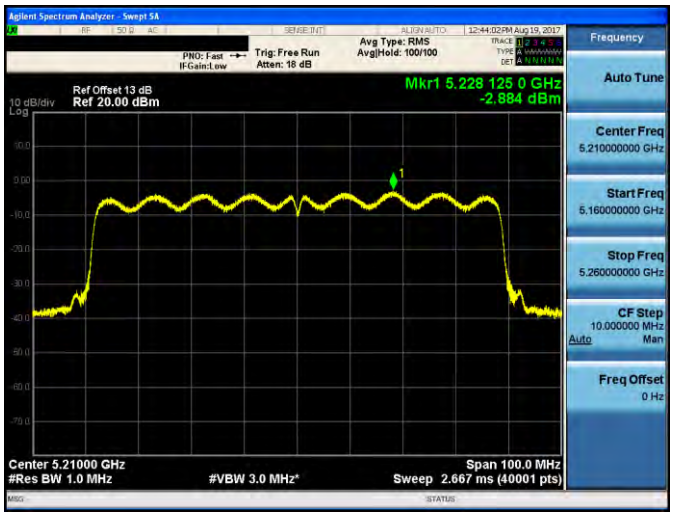
Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	

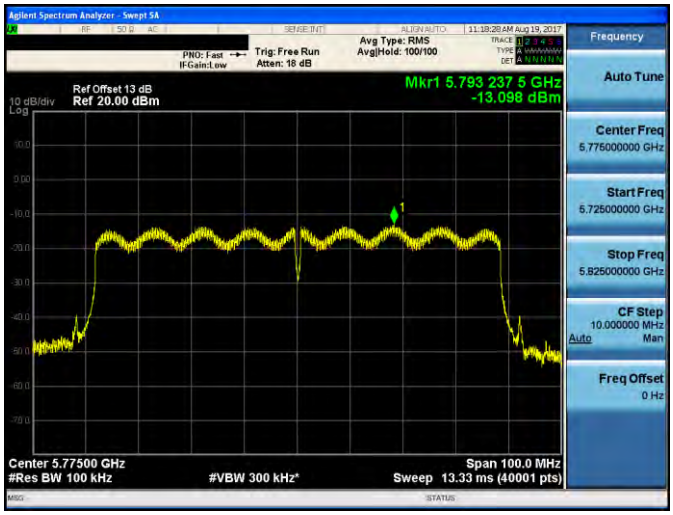
Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-0	
5180 MHz	
5200 MHz	
5240 MHz	

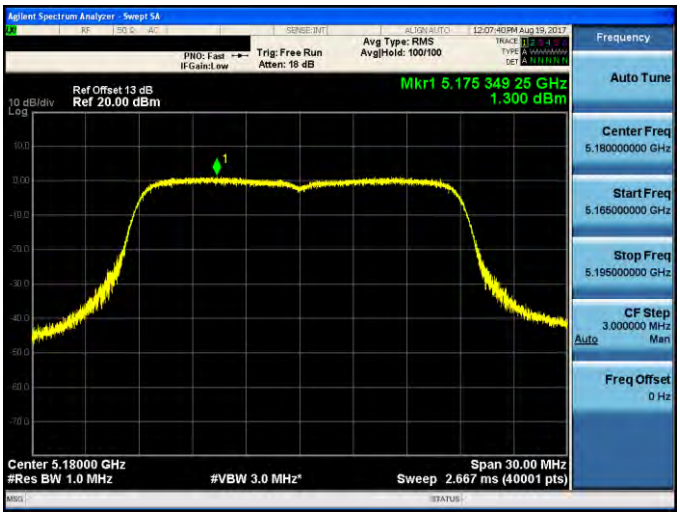
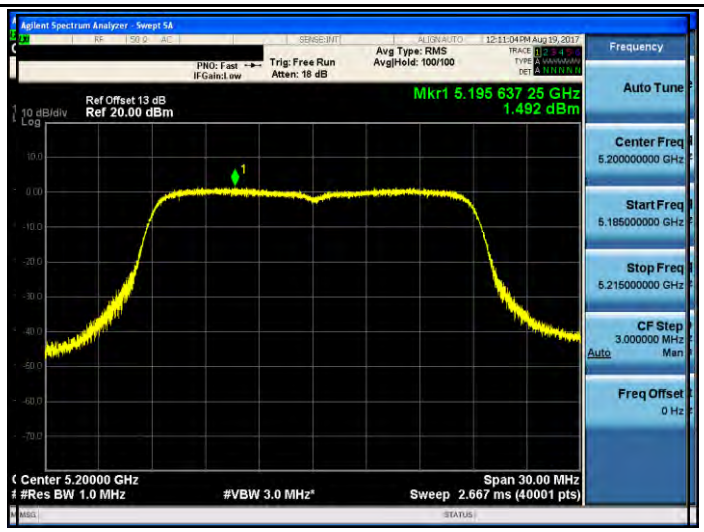
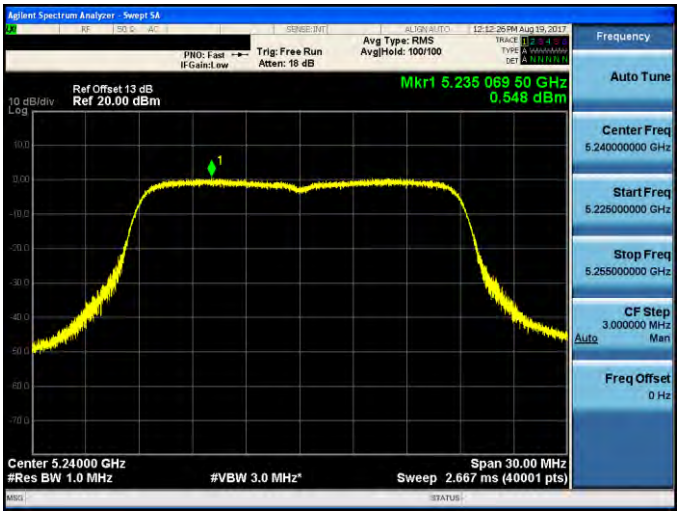
Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	

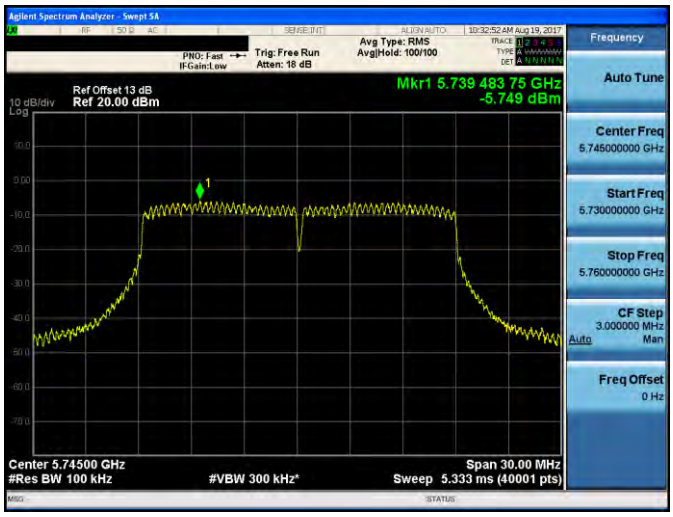
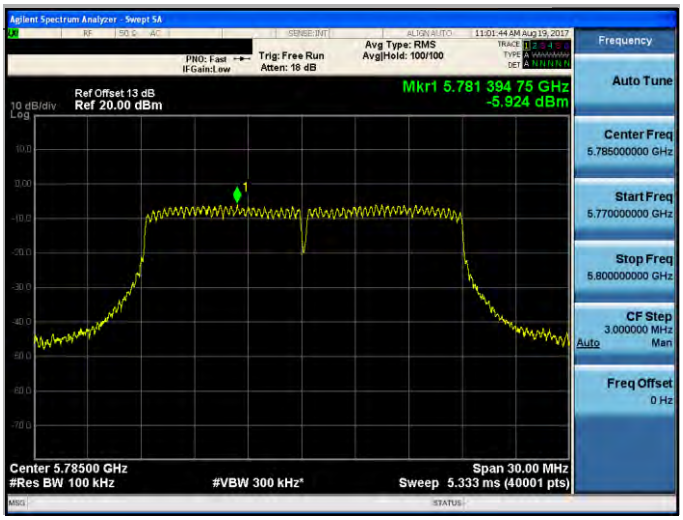
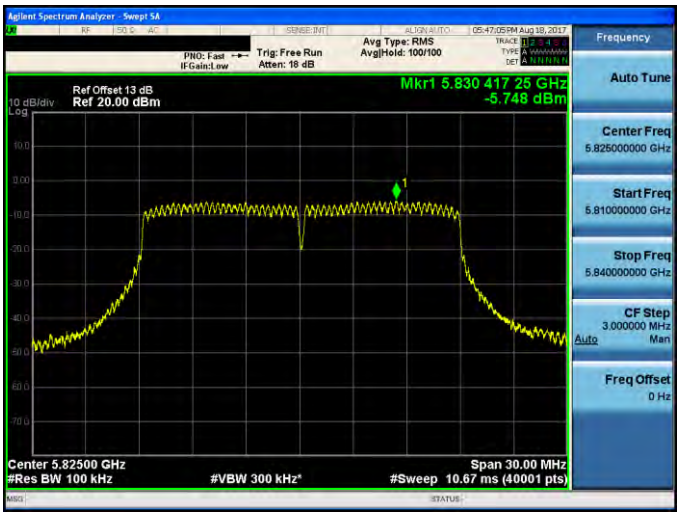
Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-0	
5190 MHz	
5230 MHz	

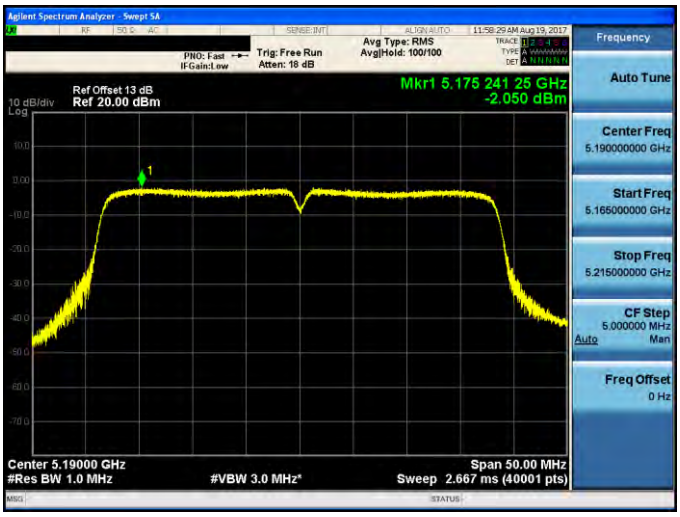
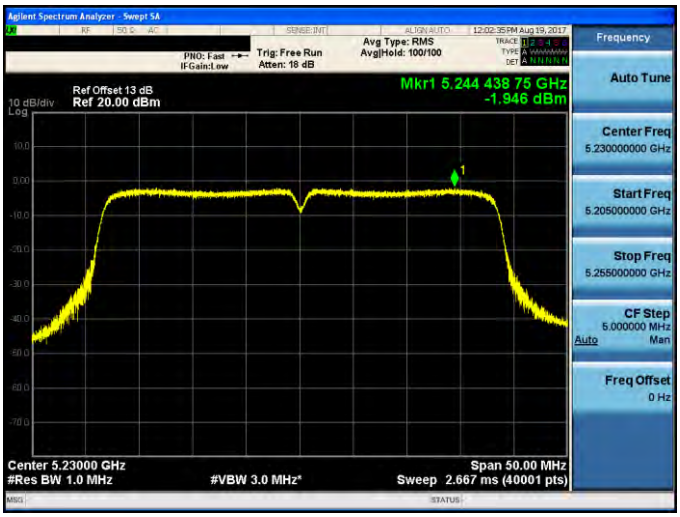
Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-0	
5755 MHz	
5795 MHz	

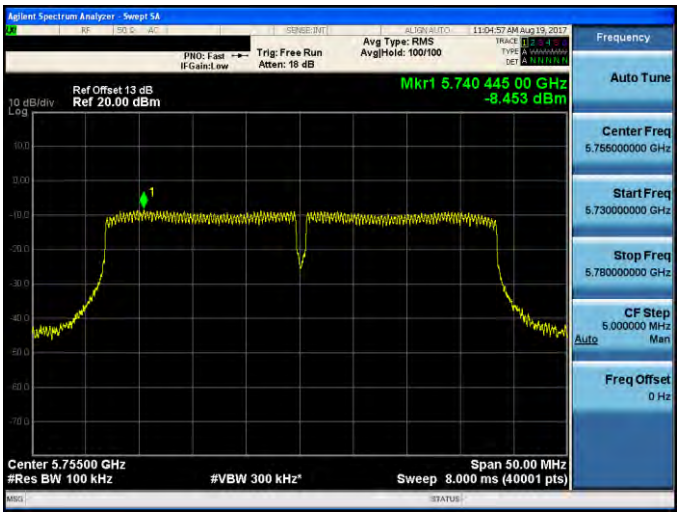
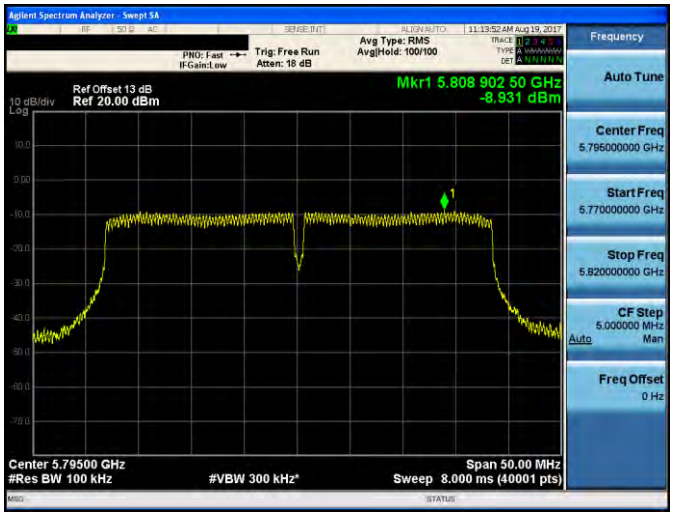
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ ANT-0	
5210 MHz	

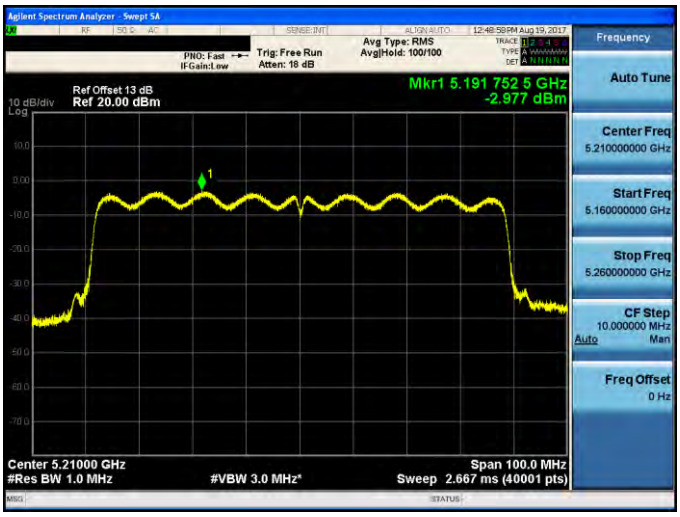
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ ANT-0	
5775 MHz	

Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-1	
5180 MHz	
5200 MHz	
5240 MHz	

Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-1	
5745 MHz	
5785 MHz	
5825 MHz	

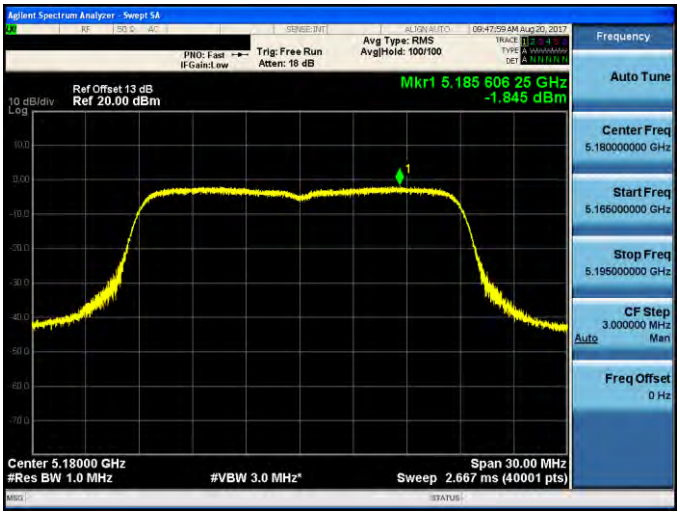
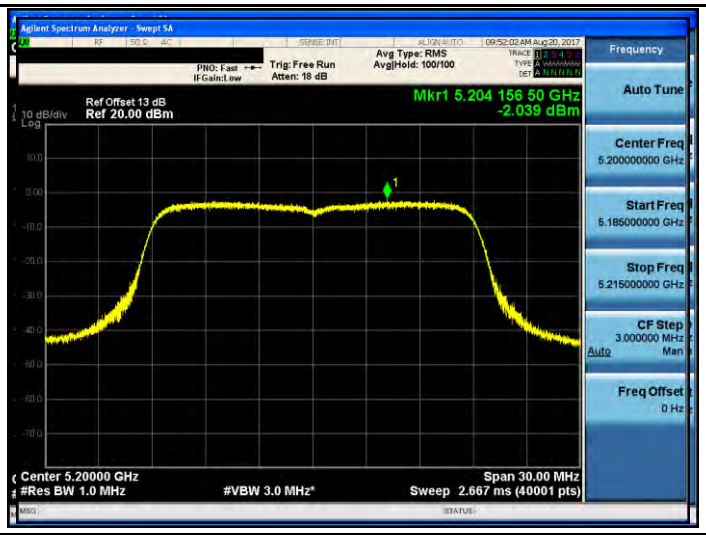
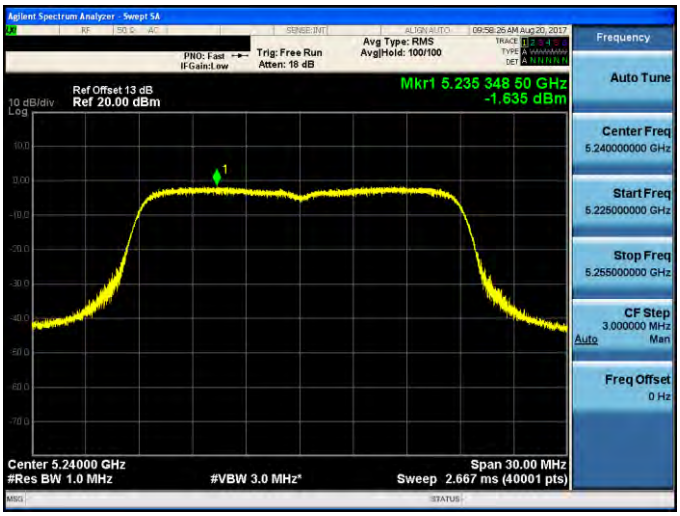
Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-1	
5190 MHz	
5230 MHz	

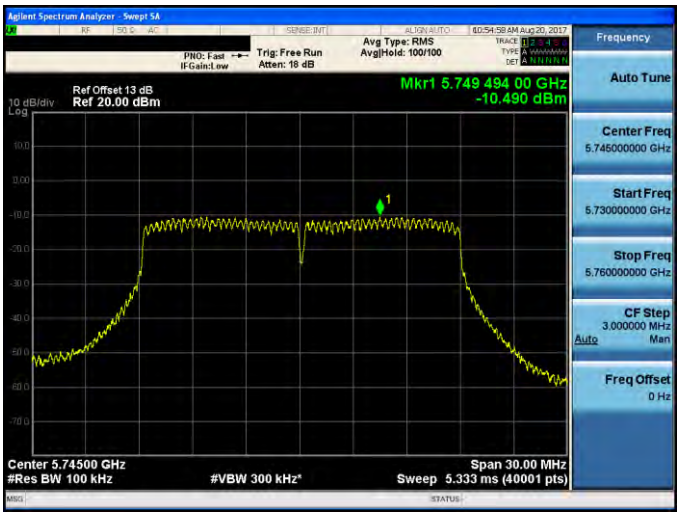
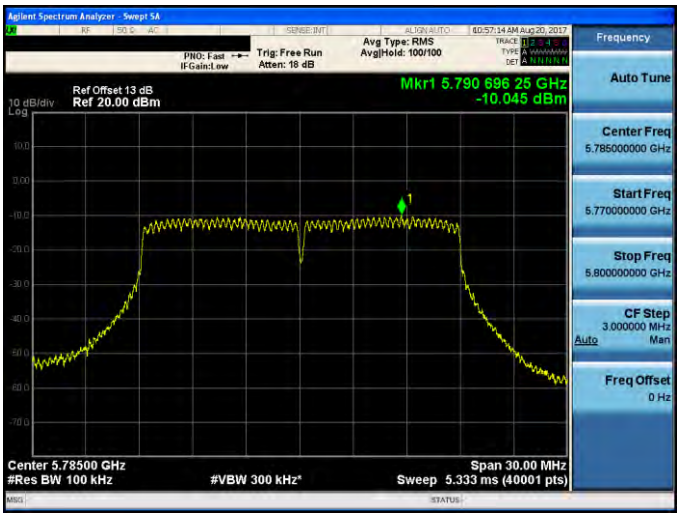
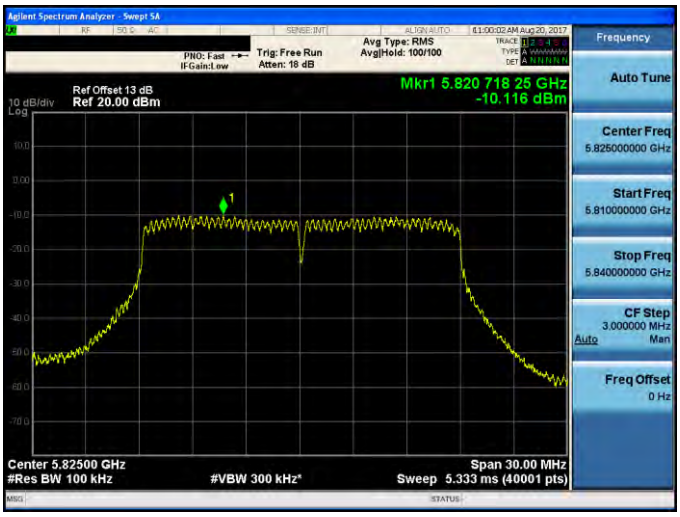
Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-1	
5755 MHz	
5795 MHz	

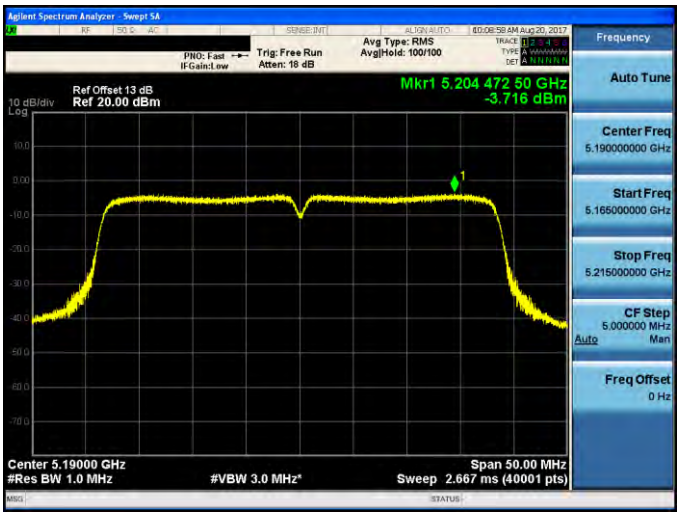
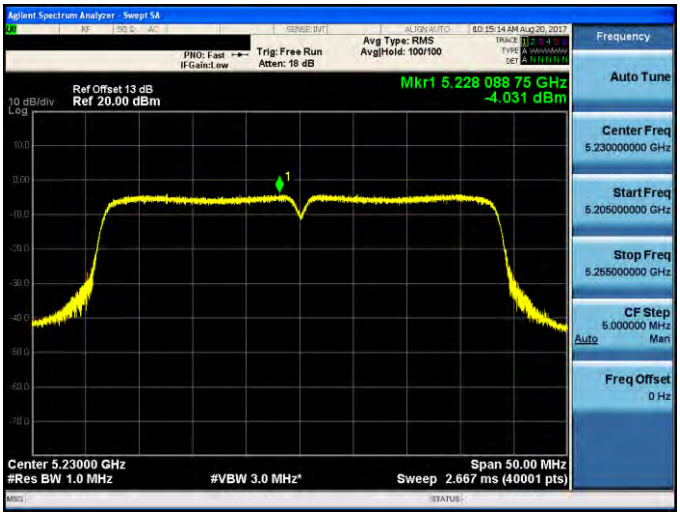
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ ANT-1	
5210 MHz	

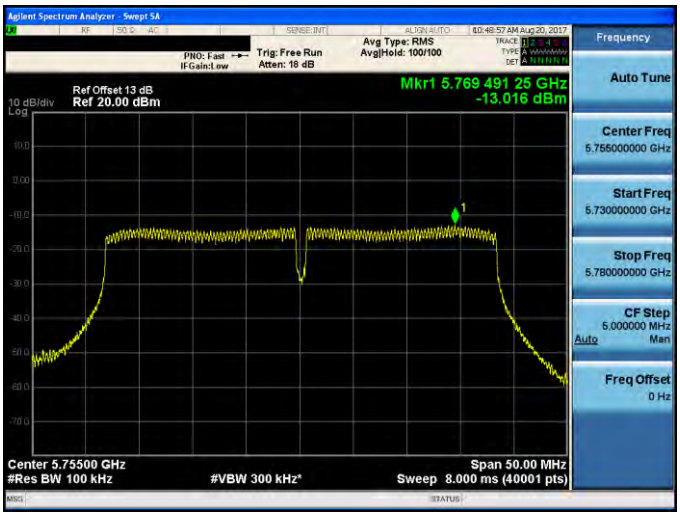
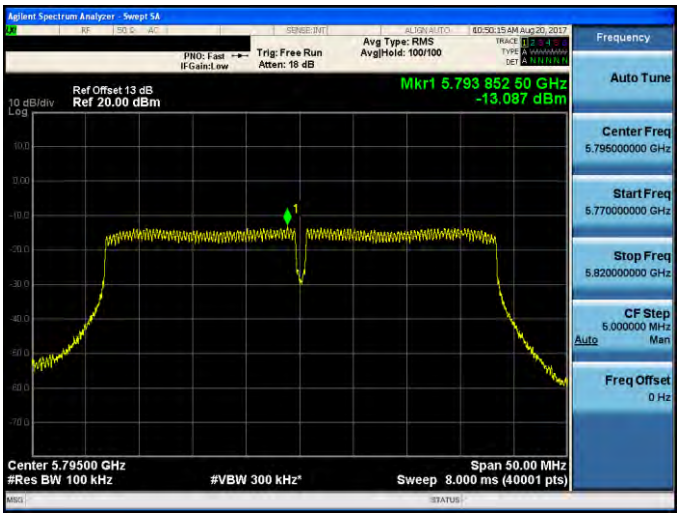
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ ANT-1	
5775 MHz	

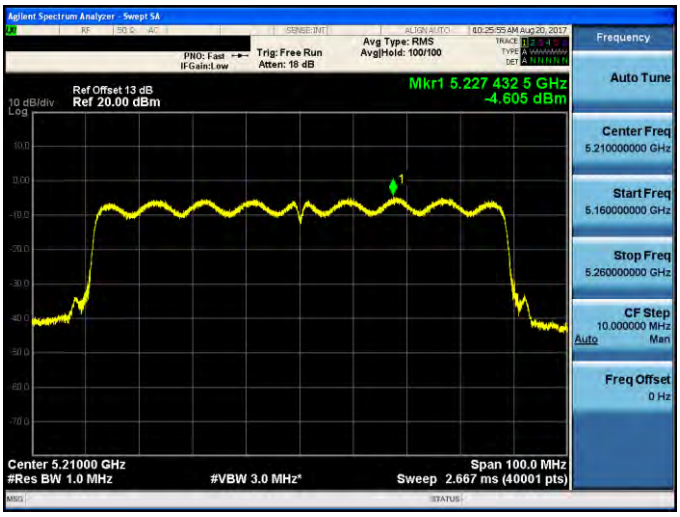
Beamforming on

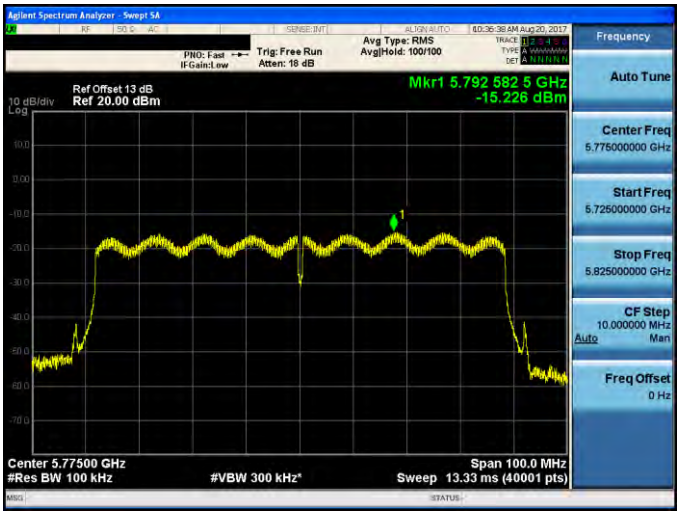
Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-0	
5180 MHz	
5200 MHz	
5240 MHz	

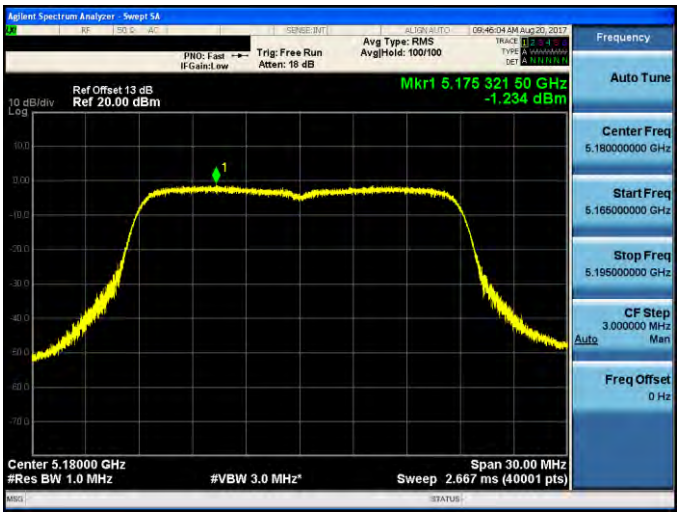
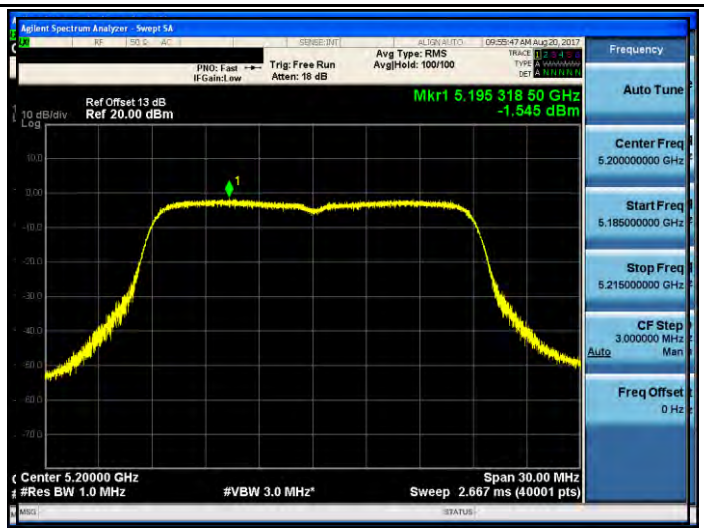
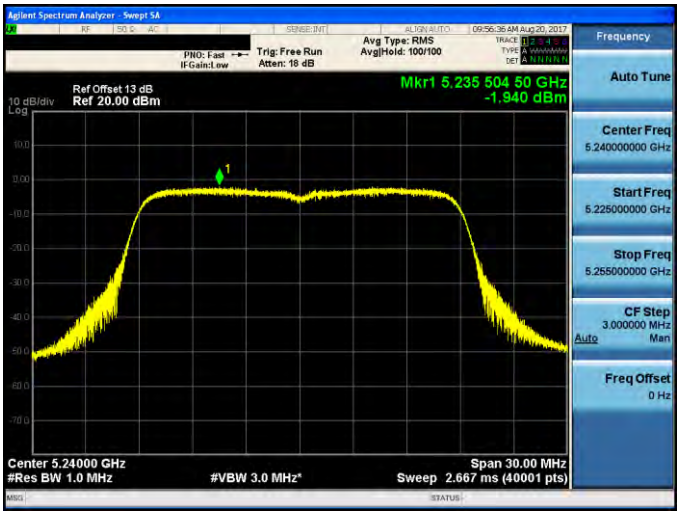
Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	

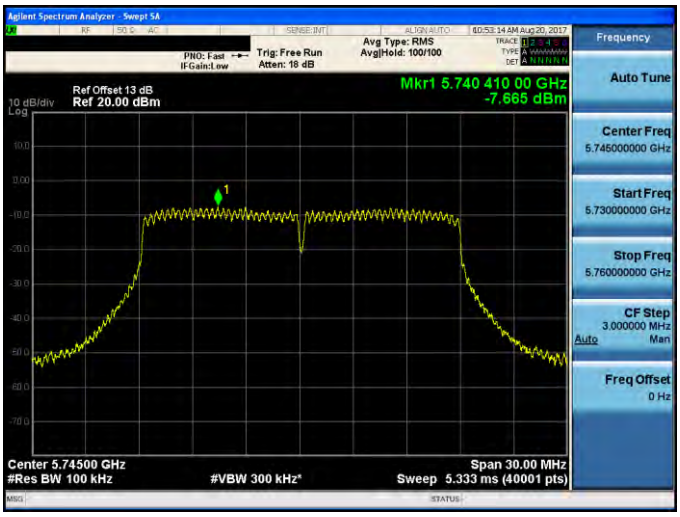
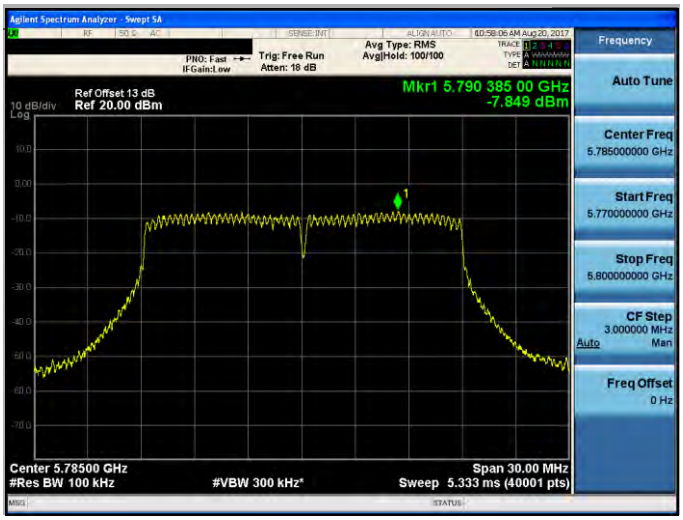
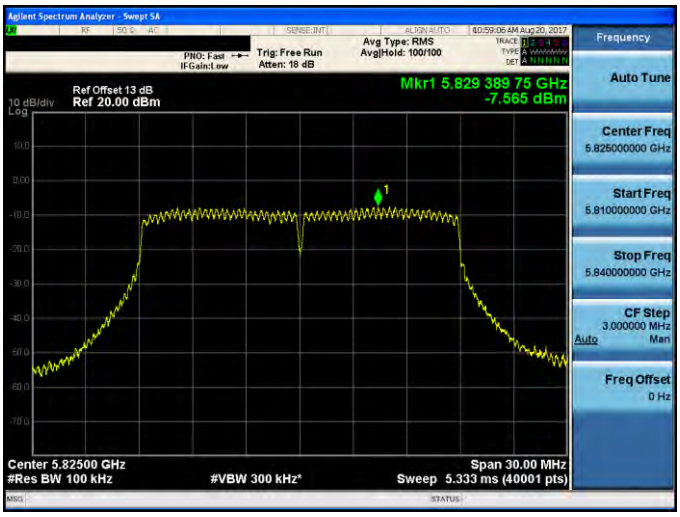
Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-0	
5190 MHz	
5230 MHz	

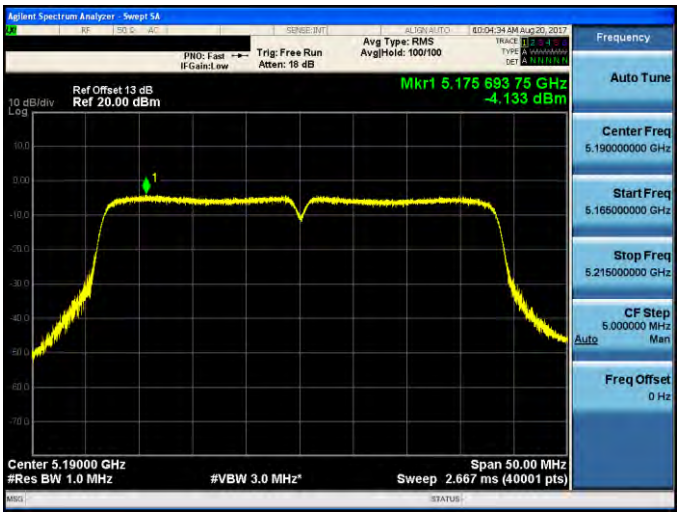
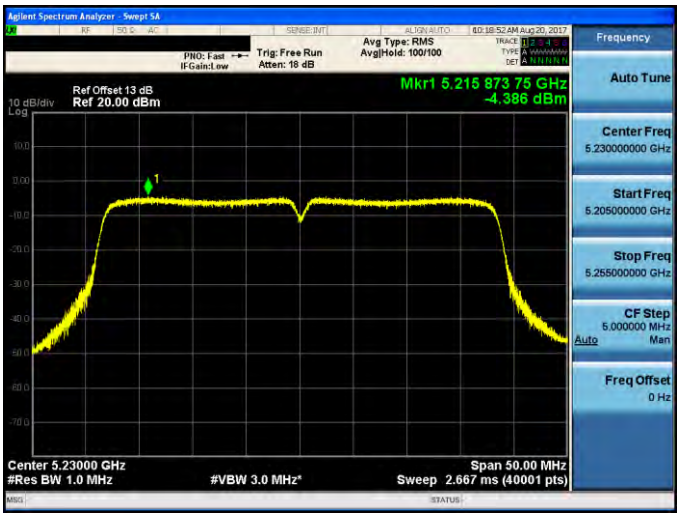
Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-0	
5755 MHz	
5795 MHz	

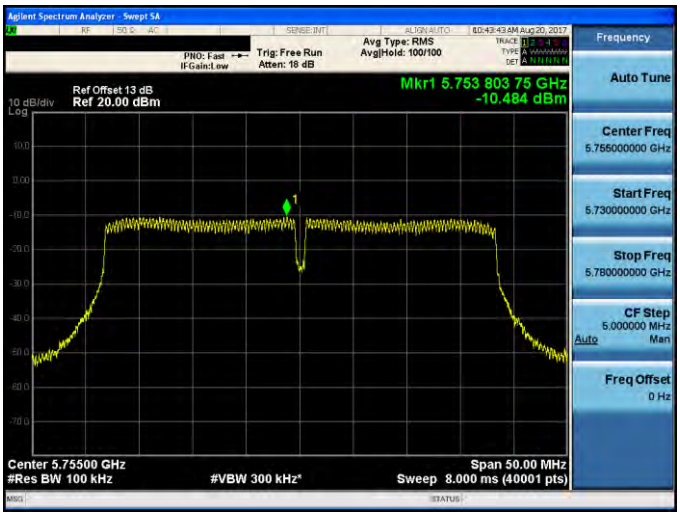
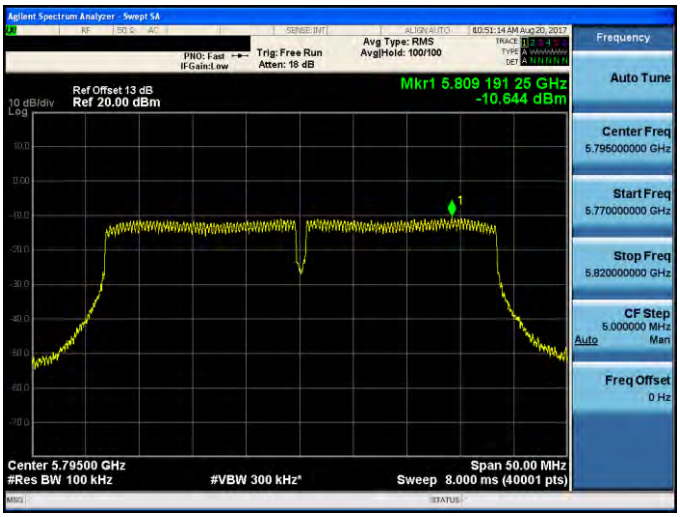
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ ANT-0	
5210 MHz	

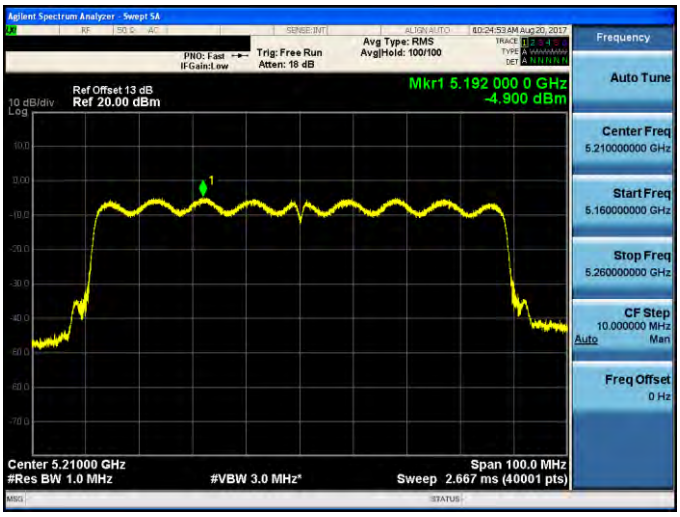
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ ANT-0	
5775 MHz	

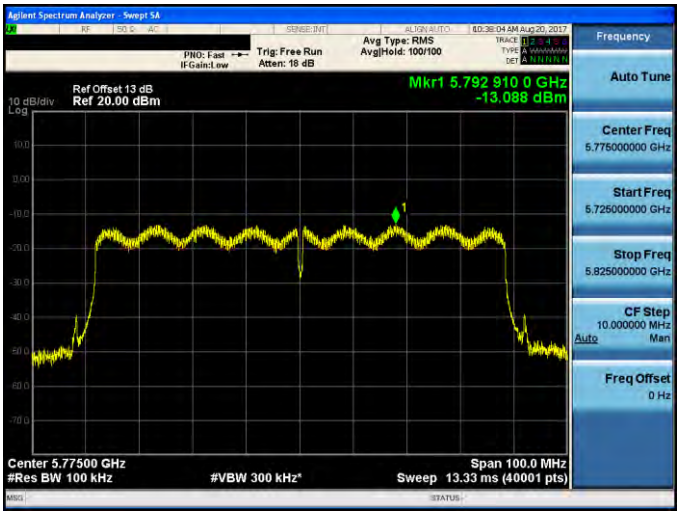
Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-1	
5180 MHz	
5200 MHz	
5240 MHz	

Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ ANT-1	
5745 MHz	
5785 MHz	
5825 MHz	

Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-1	
5190 MHz	
5230 MHz	

Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-1	
5755 MHz	
5795 MHz	

Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ ANT-1	
5210 MHz	

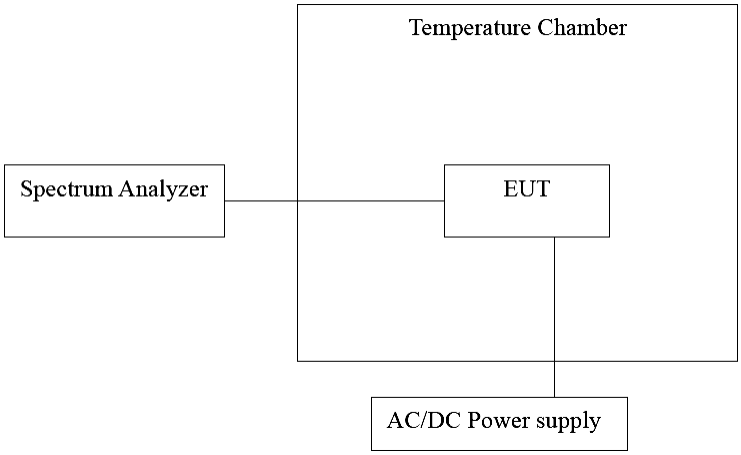
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ ANT-1	
5775 MHz	

4.8. Frequency Stability Measurement

■ **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.

■ **Test Setup**



■ **Test Instruments**

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	08/14/2017	1 year
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	04/17/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ **Test Procedure**

1. The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

■ **Test Result**

Temperature Variations

Test Item	Frequency Stability					
Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	0	120	5200.0133	13300	2.558	Pass
	10		5200.0278	27800	5.346	Pass
	20		5200.0384	38400	7.385	Pass
	30		5200.0455	45500	8.750	Pass
	40		5200.0604	60400	11.615	Pass
5785 MHz	0	120	5785.0211	21100	3.647	Pass
	10		5785.035	35000	6.050	Pass
	20		5785.0501	50100	8.660	Pass
	30		5785.0647	64700	11.184	Pass
	40		5785.0881	88100	15.229	Pass

Voltage Variations

Test Item	Frequency Stability					
Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	20	138.00	5200.0145	14500	2.788	Pass
		120.00	5200.0384	38400	7.385	Pass
		102.00	5200.0411	41100	7.904	Pass
5785 MHz	20	138.00	5785.0266	26600	4.598	Pass
		120.00	5785.0501	50100	8.660	Pass
		102.00	5785.0527	52700	9.110	Pass

Note: The manufacturer's frequency stability specification is better then 20ppm.

Beamforming on

Temperature Variations

Test Item	Frequency Stability					
Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	0	120	5200.0133	13300	2.558	Pass
	10		5200.0278	27800	5.346	Pass
	20		5200.0384	38400	7.385	Pass
	30		5200.0455	45500	8.750	Pass
	40		5200.0604	60400	11.615	Pass
5785 MHz	0	120	5785.0211	21100	3.647	Pass
	10		5785.035	35000	6.050	Pass
	20		5785.0501	50100	8.660	Pass
	30		5785.0647	64700	11.184	Pass
	40		5785.0881	88100	15.229	Pass

Voltage Variations

Test Item	Frequency Stability					
Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	20	138.00	5200.0145	14500	2.788	Pass
		120.00	5200.0384	38400	7.385	Pass
		102.00	5200.0411	41100	7.904	Pass
5785 MHz	20	138.00	5785.0266	26600	4.598	Pass
		120.00	5785.0501	50100	8.660	Pass
		102.00	5785.0527	52700	9.110	Pass

Note: The manufacturer's frequency stability specification is better then 20ppm.

4.9. Antenna Requirement

■ **Limit**

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And According to 15.407 (a), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

■ **Antenna Connector Construction**

See section 2 – antenna information.

■ **Directional Gain Calculated**

Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 5.91 dBi < 6dBi
(5.150 ~ 5.250 GHz)

Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.11 dBi > 6dBi
(5.725 ~ 5.850 GHz)

Operate Freq. Band		Directional Gain (dBi)
IEEE 802.11ac 20MHz	U-NII Band I	5.91
	U-NII Band III	6.11
IEEE 802.11ac 40MHz	U-NII Band I	5.91
	U-NII Band III	6.11
IEEE 802.11ac 80MHz	U-NII Band I	5.91
	U-NII Band III	6.11