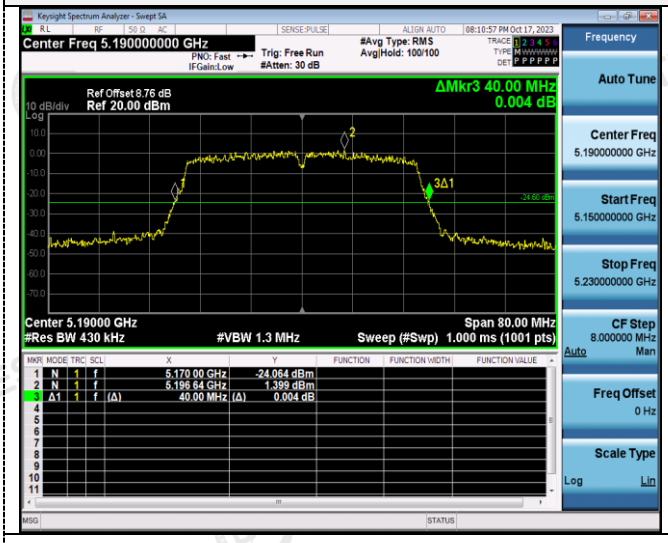
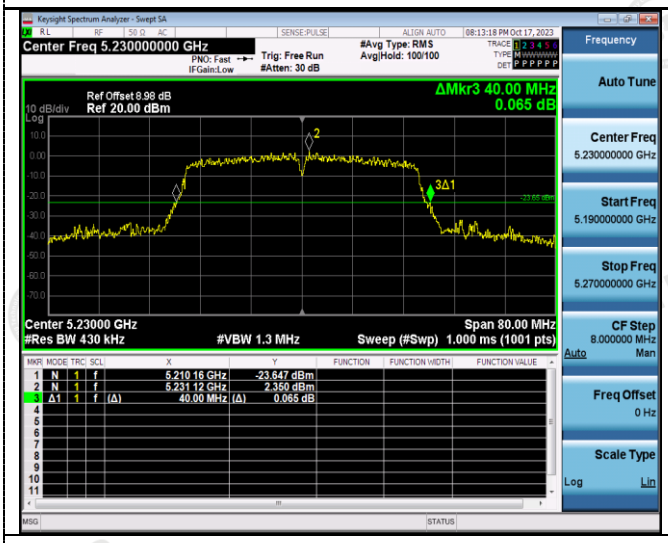
802.11ac(HT40)	802.11ac(HT80)
	
CH38	CH42
	
CH46	

4.6 Minimum Emission Bandwidth (6dB Bandwidth)

Limit

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

1. Set resolution bandwidth (RBW) = 100 kHz
2. Set the video bandwidth 3 x RBW.
3. Detector = Peak.
4. Trace mode = Max hold.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test Configuration

Test Results

ANT 1

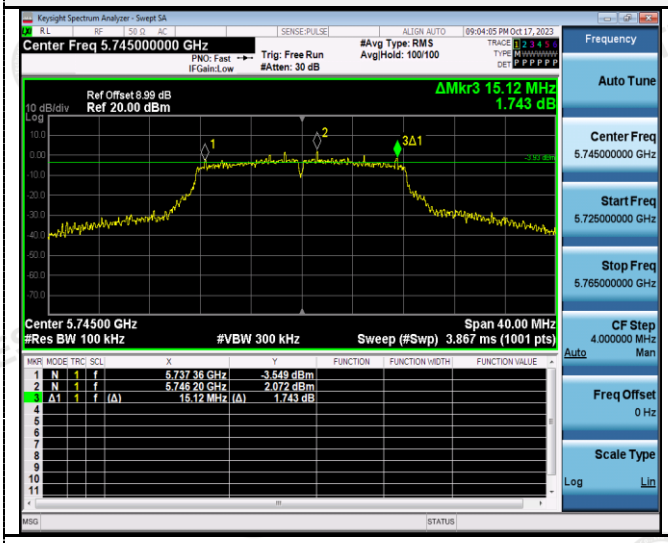
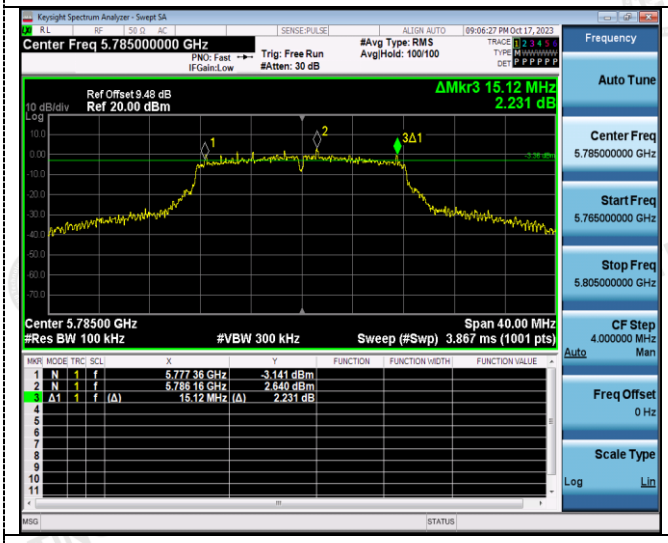
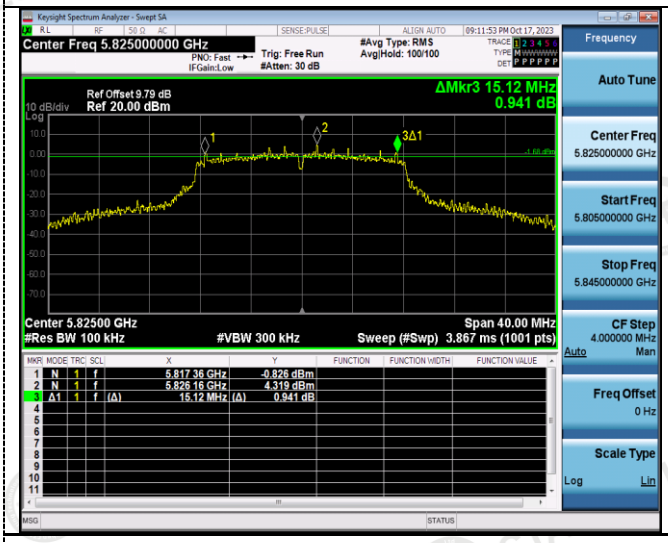
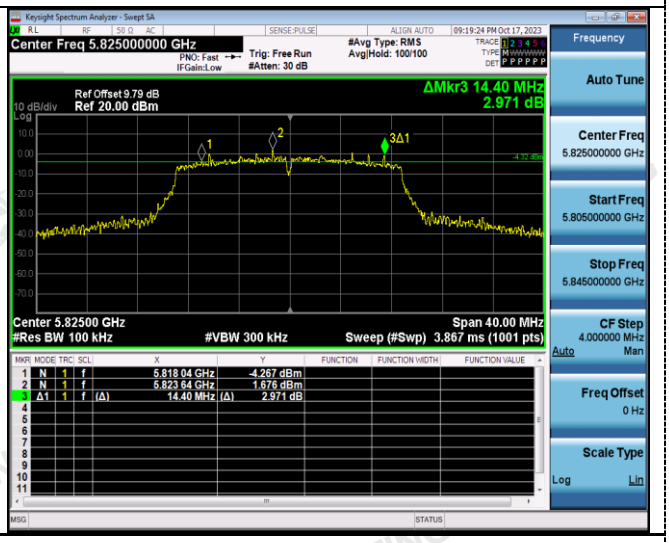
Type	Bands	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	15.120	≥500KHz	Pass
		157	15.120		
		165	15.120		
802.11n(HT20)	U-NII 3	149	15.040		
		157	12.600		
		165	14.400		
802.11n(HT40)	U-NII 3	151	35.040		
		159	34.960		
802.11ac(HT20)	U-NII 3	149	13.160		
		157	15.040		
		165	15.040		
802.11ac(HT40)	U-NII 3	151	35.120		
		159	35.120		
802.11ac(HT80)	U-NII 3	155	72.640		

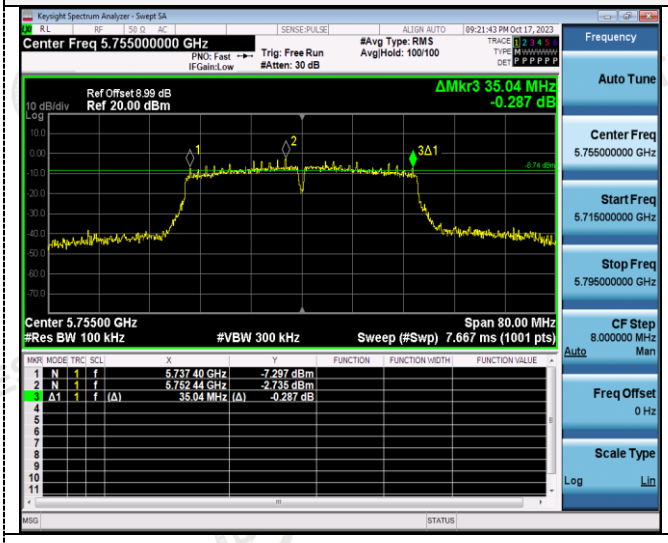
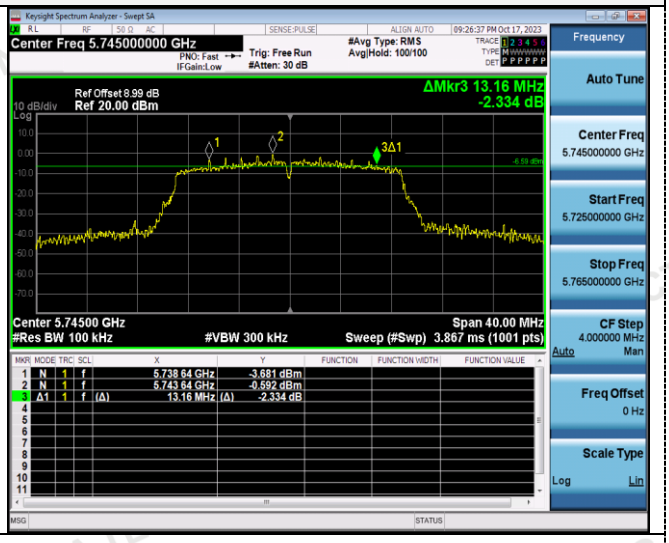
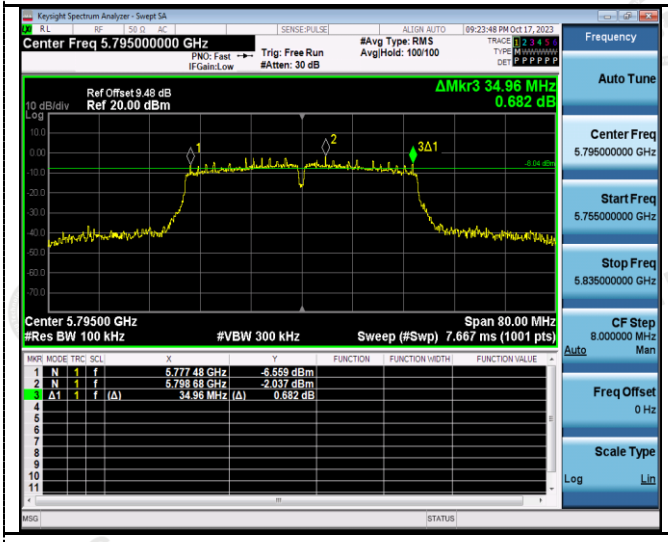
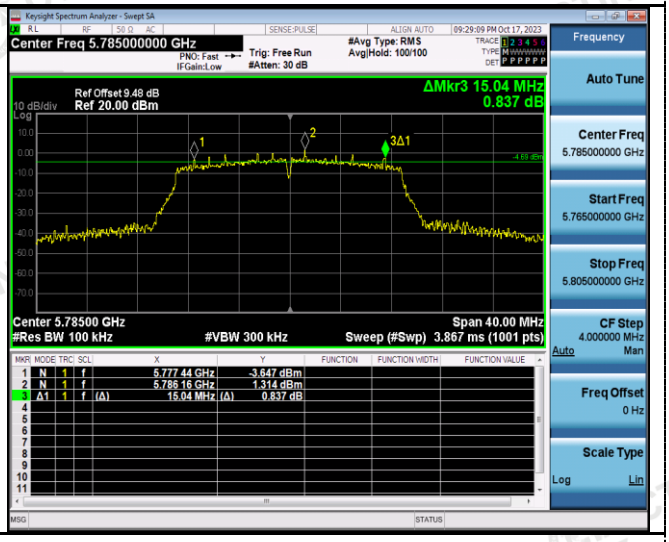
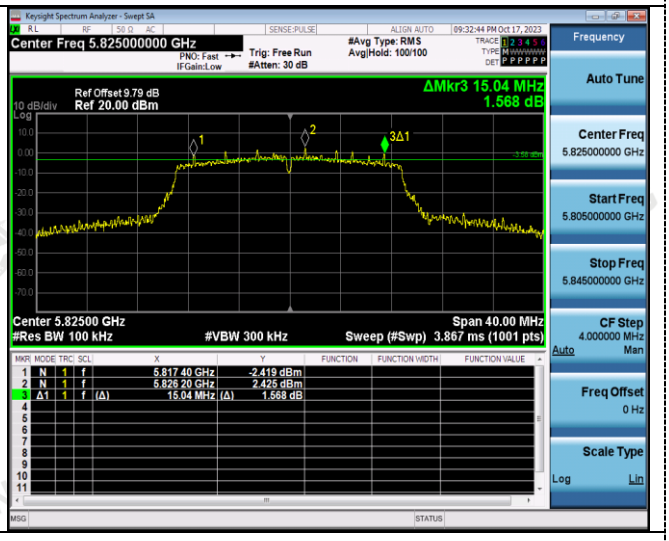
ANT 2

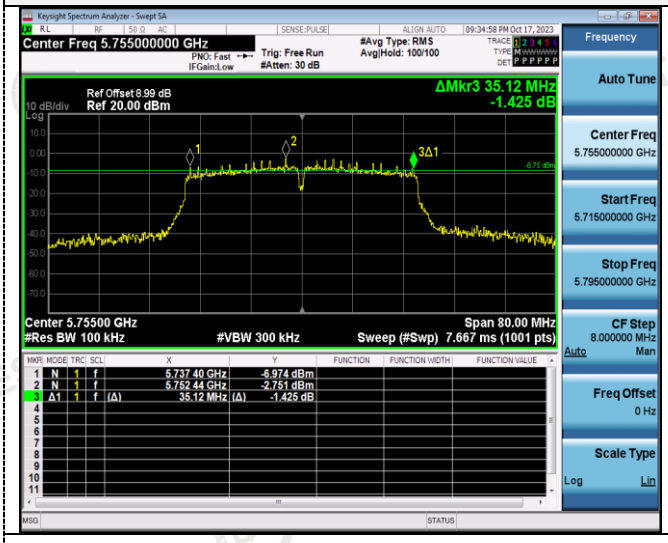
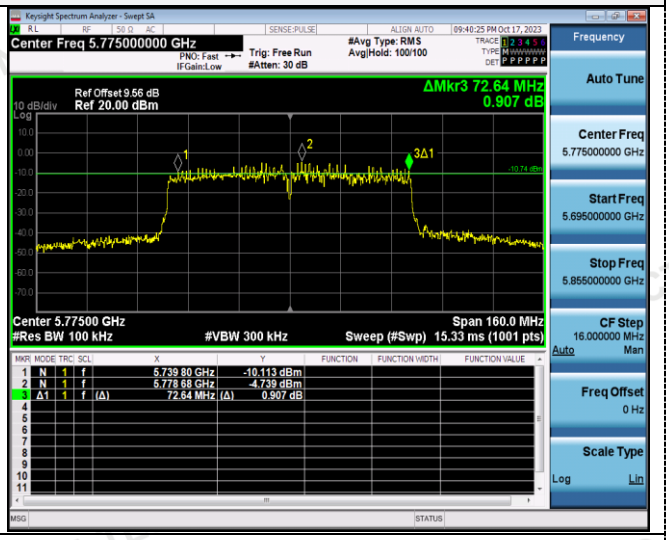
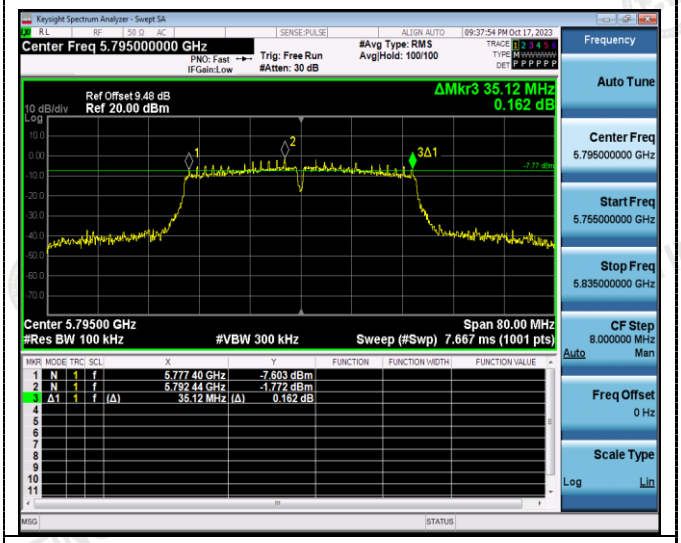
Type	Bands	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	13.840	≥500KHz	Pass
		157	15.280		
		165	14.680		
802.11n(HT20)	U-NII 3	149	15.120		
		157	15.120		
		165	14.840		
802.11n(HT40)	U-NII 3	151	32.560		
		159	35.040		
802.11ac(HT20)	U-NII 3	149	15.000		
		157	15.120		
		165	14.440		
802.11ac(HT40)	U-NII 3	151	35.040		
		159	35.040		
802.11ac(HT80)	U-NII 3	155	75.040		

Test plot as follows:

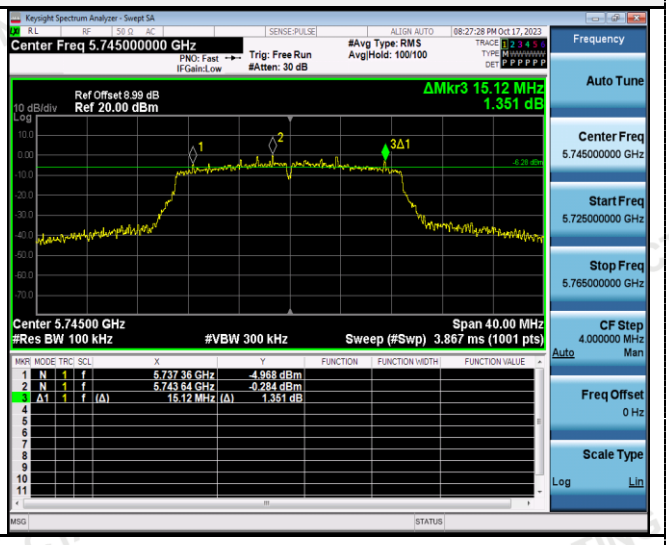
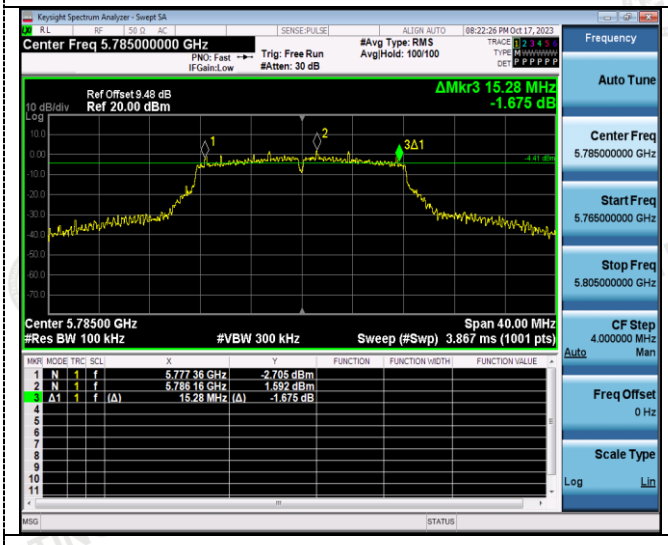
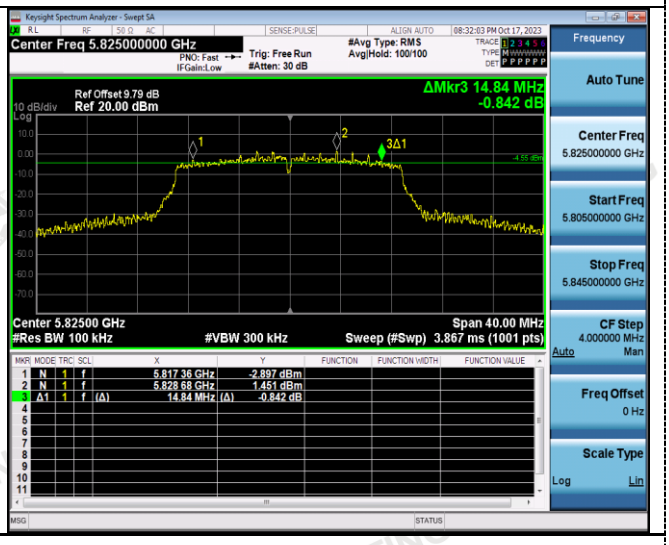
ANT 1

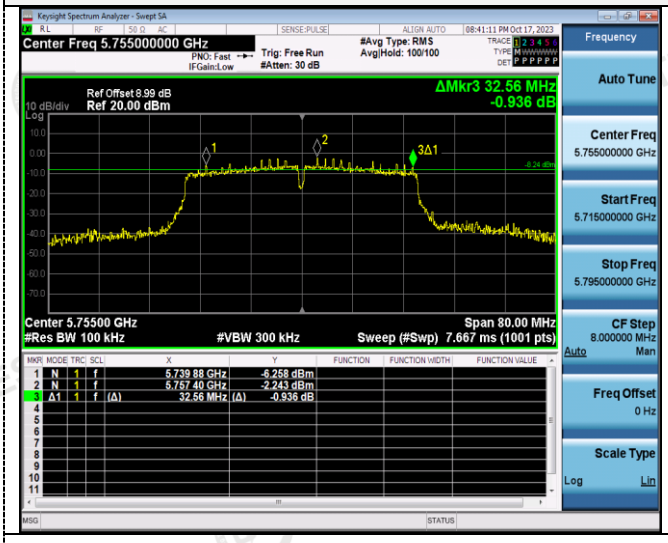
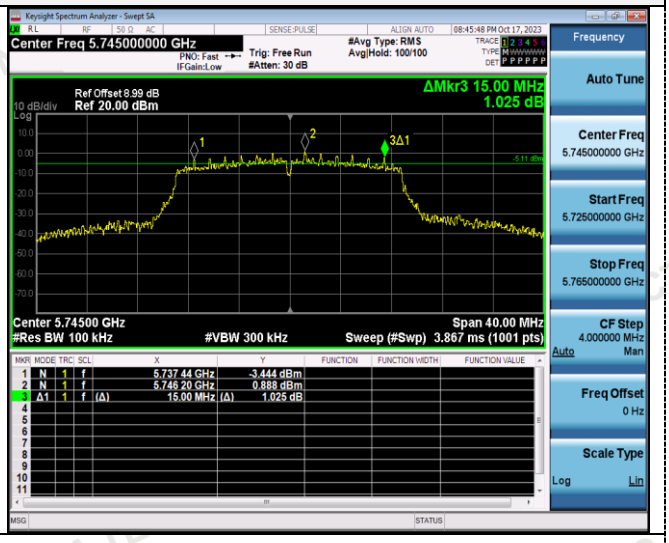
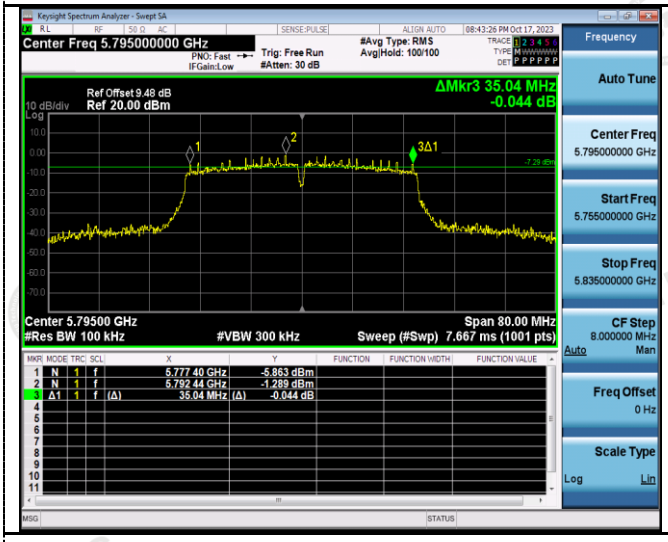
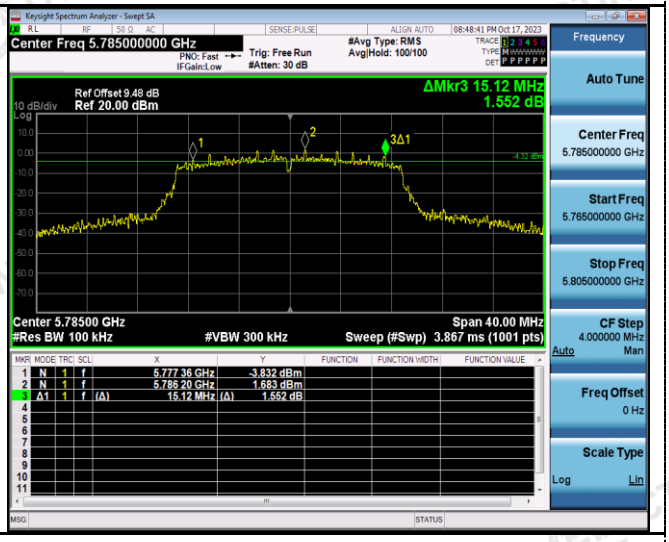
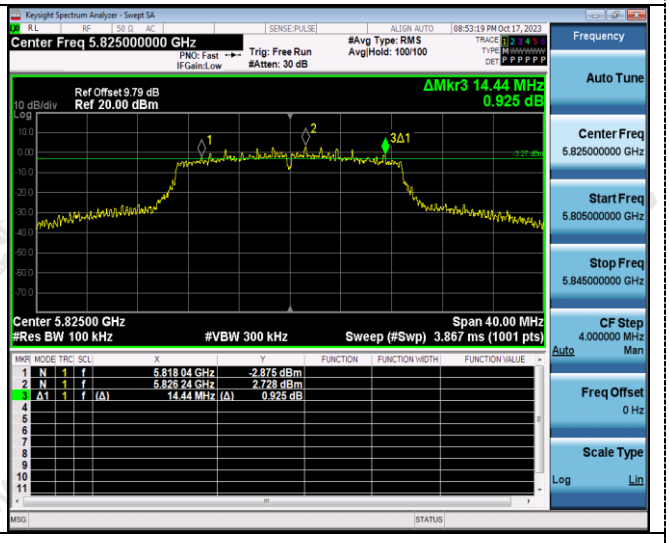
802.11a	802.11n(HT20)
	
CH149	CH149
	
CH157	CH157
	
CH165	CH165

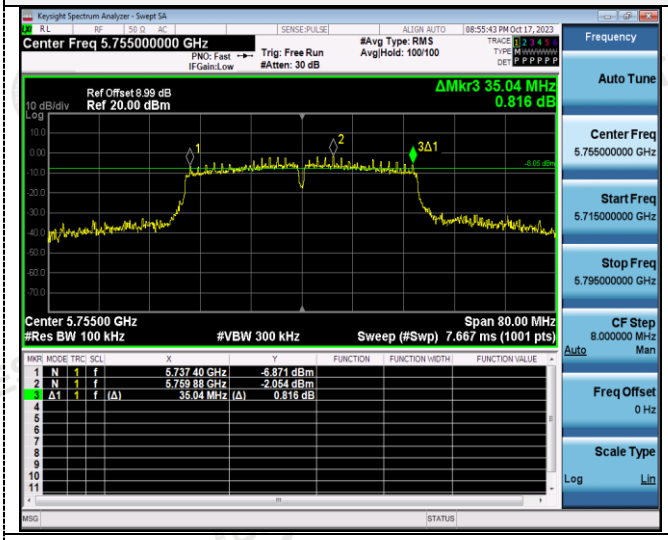
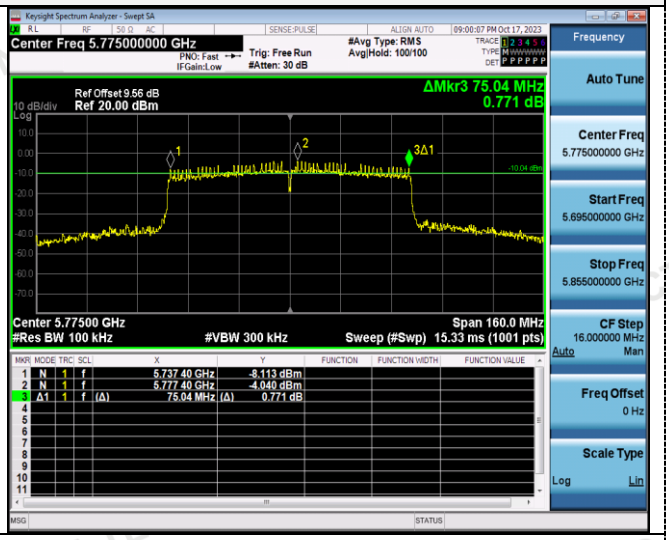
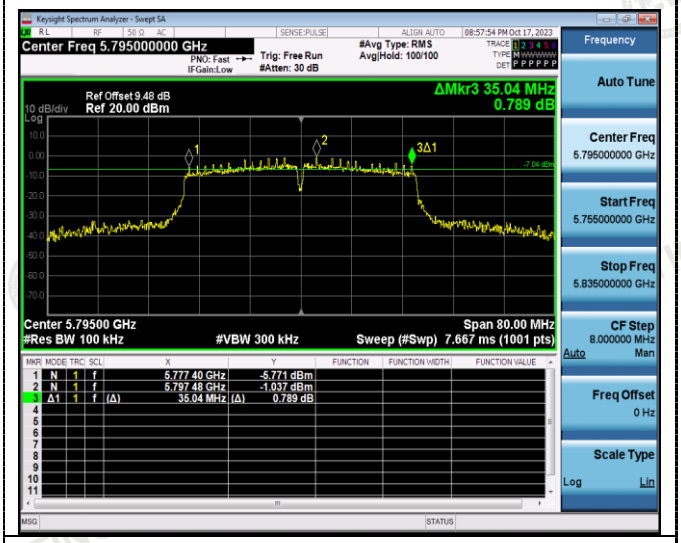
802.11n(HT40)	802.11ac(HT20)
	
CH151	CH149
	
CH159	CH157
	
	CH165

802.11ac(HT40)	802.11ac(HT80)
	
CH151	CH155
	
CH159	

ANT 2

802.11a	802.11n(HT20)
	
CH149	CH149
	
CH157	CH157
	
CH165	CH165

802.11n(HT40)	802.11ac(HT20)
	
CH151	CH149
	
CH159	CH157
	
	CH165

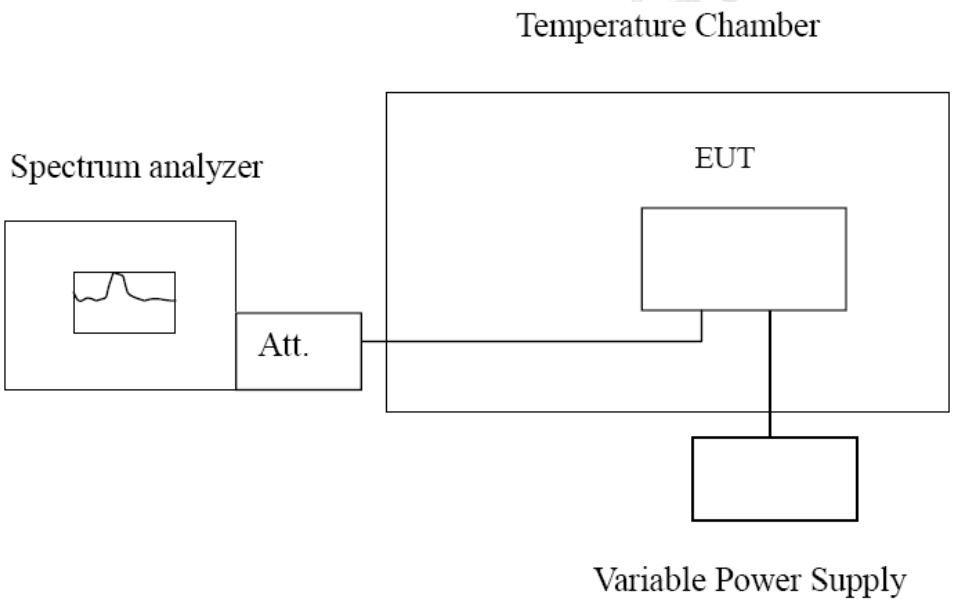
802.11ac(HT40)	802.11ac(HT80)
	
CH151	CH155
	
CH159	

4.7 Frequency Stability

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 CONFIGURATION



TEST PROCEDURE

Frequency Stability under Temperature Variations:
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20℃ operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.

Frequency Stability under Voltage Variations:
Set chamber temperature to 20℃. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

TEST RESULTS

Record worst case as below:

Ant1:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120V	-30	110.46	0.021324	Within the band of operation	Pass
	-20	174.74	0.033734		
	-10	145.56	0.028100		
	0	146.74	0.028328		
	10	145.87	0.028160		
	20	99.82	0.019270		
	30	167.61	0.032357		
	40	129.19	0.024940		
	50	128.64	0.024834		
AC 138V	25	195.54	0.037749		
AC 102V	25	118.45	0.022867		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120V	-30	135.41	0.023570	Within the band of operation	Pass
	-20	129.37	0.022519		
	-10	167.26	0.029114		
	0	169.85	0.029565		
	10	136.45	0.023751		
	20	144.79	0.025203		
	30	116.65	0.020305		
	40	168.66	0.029358		
	50	160.67	0.027967		
AC 138V	25	150.72	0.026235		
AC 102V	25	129.62	0.022562		

Ant2:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120V	-30	110.37	0.021307	Within the band of operation	Pass
	-20	174.48	0.033683		
	-10	145.23	0.028037		
	0	146.36	0.028255		
	10	145.90	0.028166		
	20	99.60	0.019228		
	30	167.30	0.032297		
	40	129.53	0.025006		
	50	128.60	0.024826		
AC 138V	25	195.69	0.037778		
AC 102V	25	118.83	0.022940		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120V	-30	135.54	0.023593	Within the band of operation	Pass
	-20	129.69	0.022574		
	-10	167.29	0.029119		
	0	169.62	0.029525		
	10	136.34	0.023732		
	20	144.76	0.025198		
	30	116.57	0.020291		
	40	168.57	0.029342		
	50	160.84	0.027997		
AC 138V	25	150.99	0.026282		
AC 102V	25	129.72	0.022580		

5 Test Setup Photos of the EUT

Please refer to separated files for Test Setup Photos of the EUT.

6 Photos of the EUT

Please refer to separated files for External & Internal Photos of the EUT.

********** End of Report **********