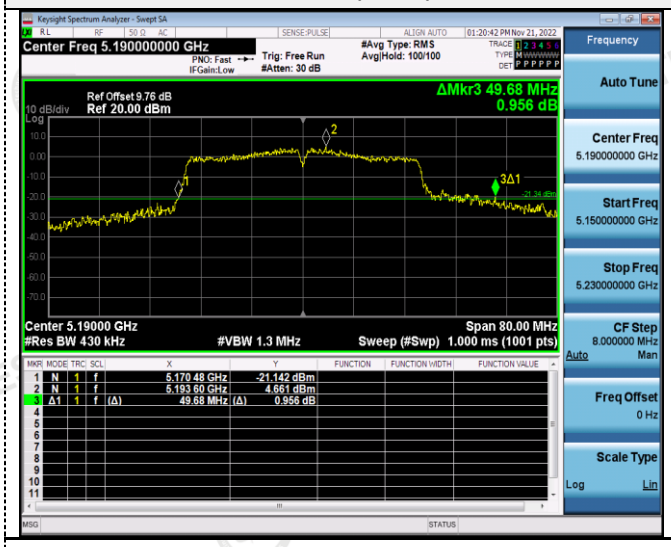
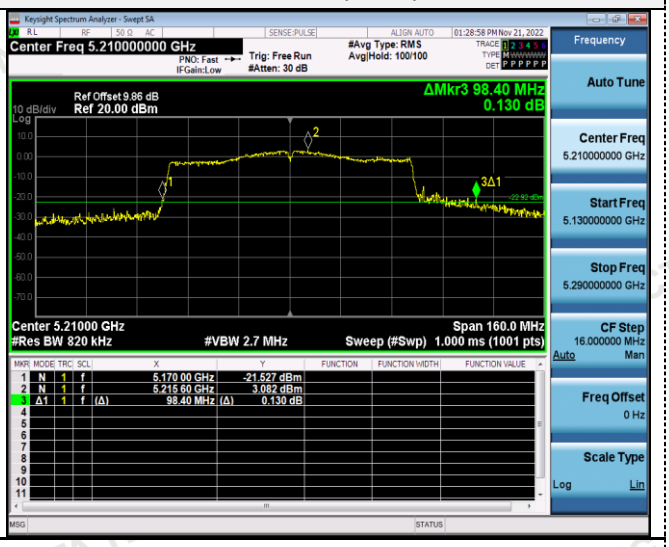
802.11ac(HT40)



CH38

802.11ac(HT80)



CH42

CH46

4.7 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.

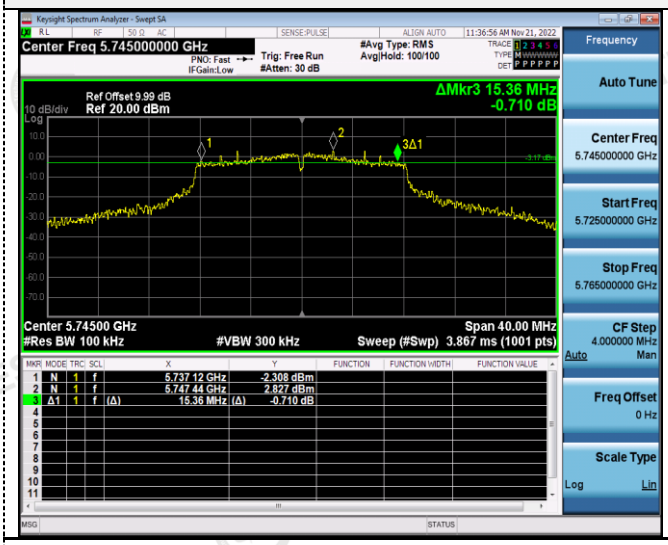
Test Configuration

Test Results

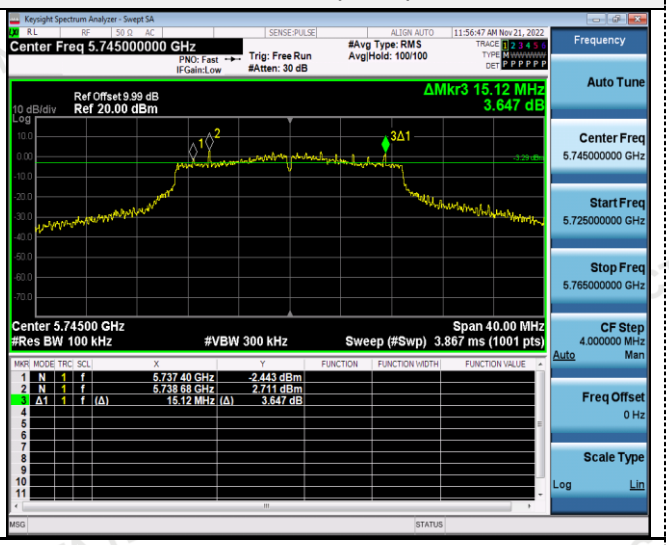
Type	Bands	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	15.360	≥500KHz	Pass
		157	15.760		
		165	15.760		
802.11n(HT20)	U-NII 3	149	15.120		
		157	16.560		
		165	15.120		
802.11n(HT40)	U-NII 3	151	35.280		
		159	35.120		
802.11ac(HT20)	U-NII 3	149	15.040		
		157	15.160		
		165	15.200		
802.11ac(HT40)	U-NII 3	151	34.480		
		159	35.120		
802.11ac(HT80)	U-NII 3	155	75.200		

Test plot as follows:

802.11a

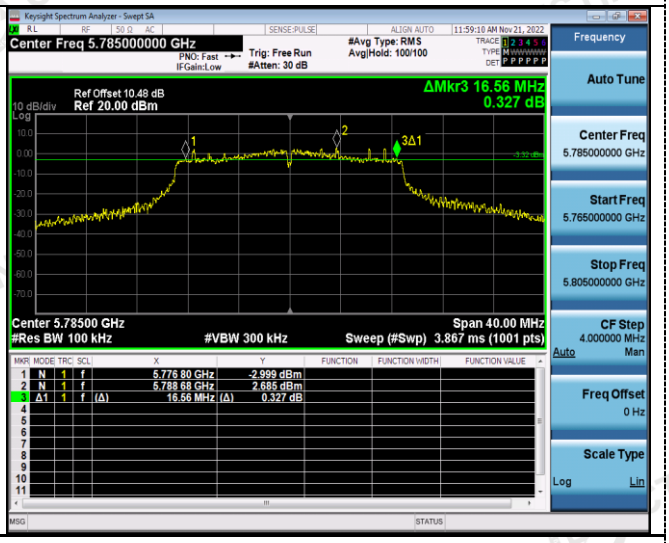


802.11n(HT20)



CH149

CH149

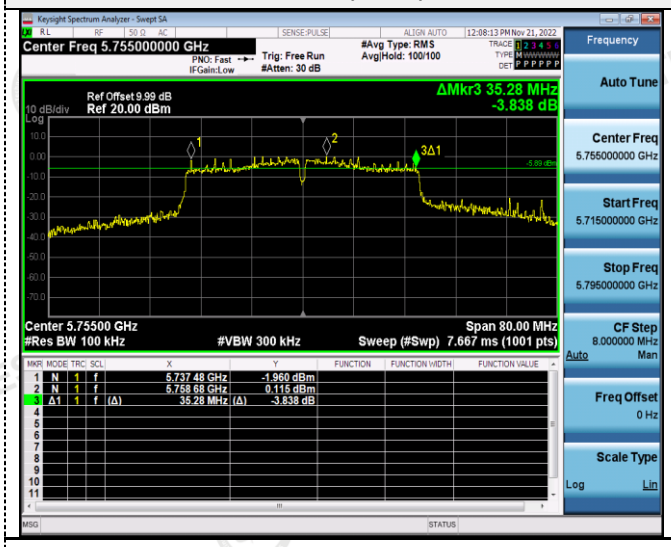


CH157

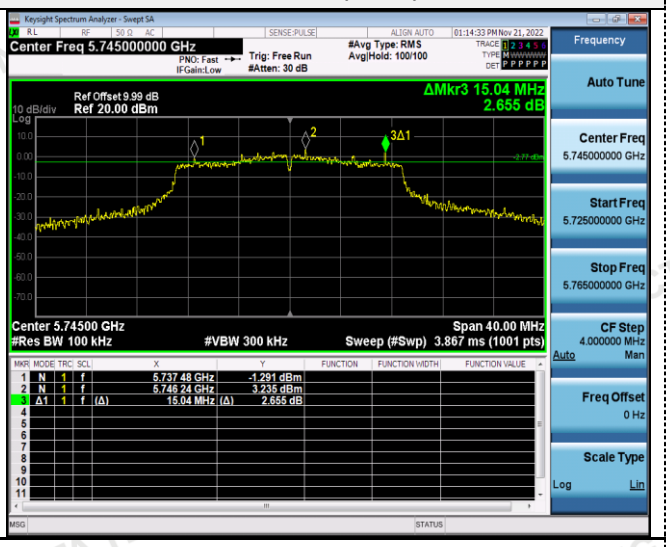
CH165

CH165

802.11n(HT40)

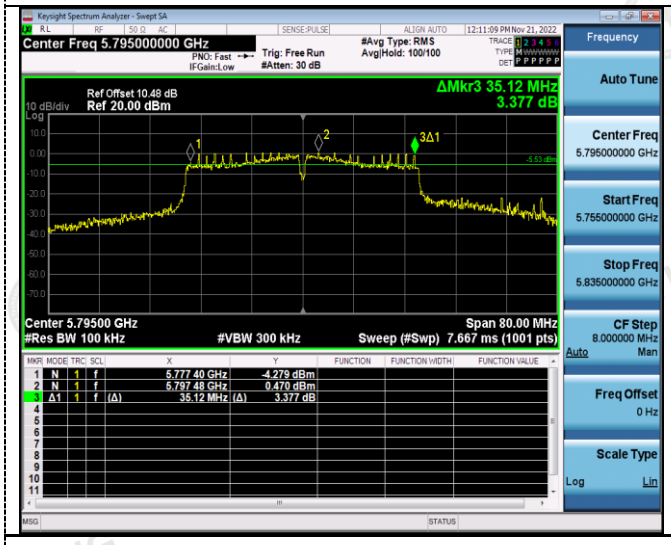


802.11ac(HT20)



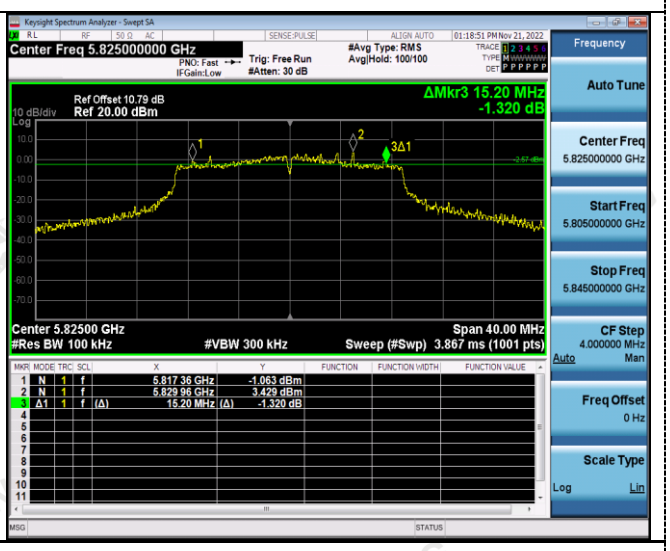
CH151

CH149



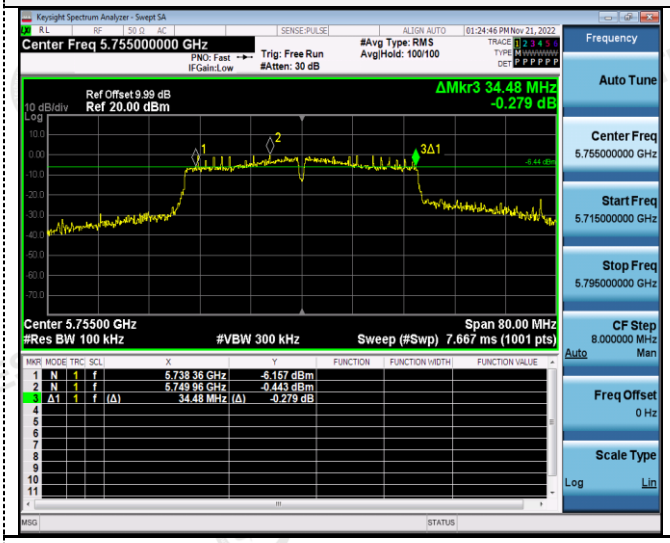
CH159

CH157



CH165

802.11ac(HT40)



CH151

802.11ac(HT80)

CH155

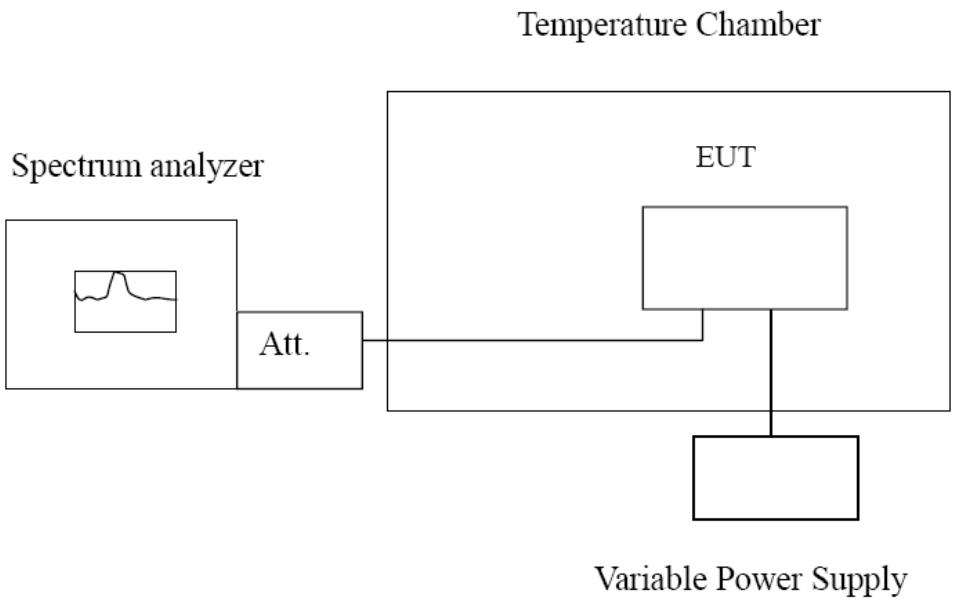
CH159

4.8 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.

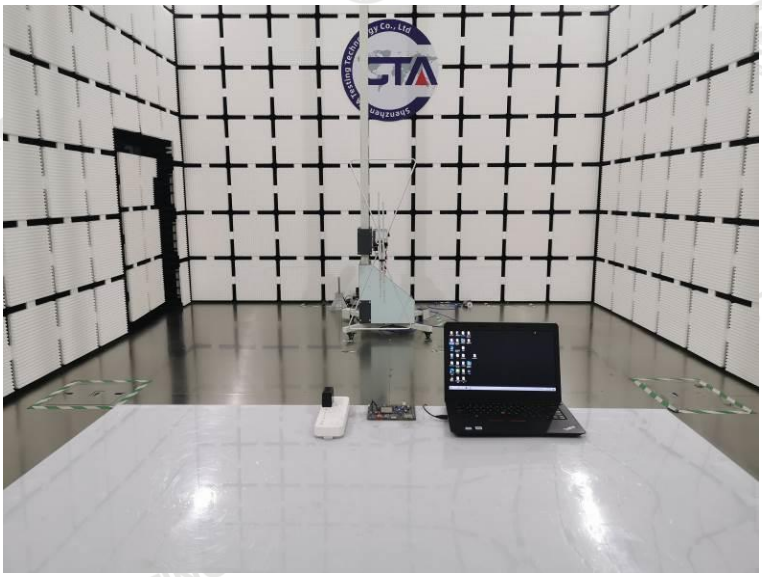
TEST RESULTS

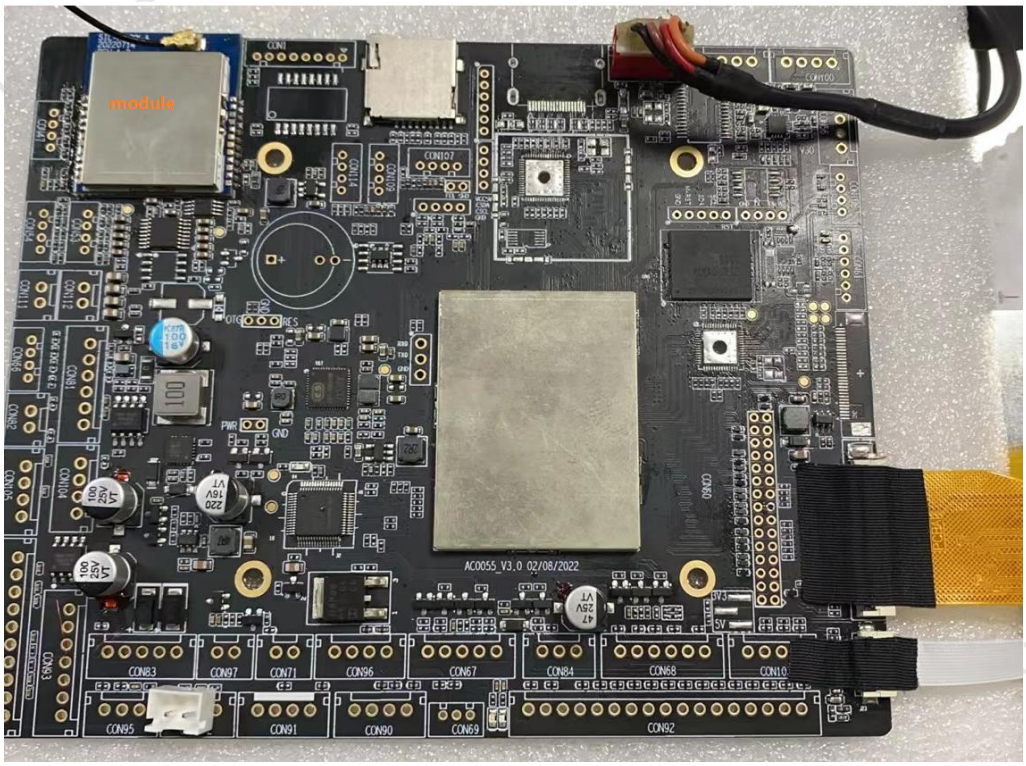
Record worst case as below:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 5.0	-30	109.13	0.021068	Within the band of operation	Pass
	-20	171.46	0.033100		
	-10	138.74	0.026784		
	0	111.68	0.021560		
	10	142.50	0.027510		
	20	97.35	0.018793		
	30	164.97	0.031847		
	40	127.63	0.024639		
	50	126.41	0.024403		
DC 5.5	25	192.84	0.037228		
DC 4.5	25	114.62	0.022127		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 5.0	-30	135.74	0.023628	Within the band of operation	Pass
	-20	127.65	0.022219		
	-10	165.32	0.028776		
	0	166.48	0.028978		
	10	133.53	0.023243		
	20	129.07	0.022466		
	30	112.46	0.019575		
	40	168.79	0.029380		
	50	157.18	0.027359		
DC 5.5	25	148.52	0.025852		
DC 4.5	25	117.90	0.020522		

5 Test Setup Photos of the EUT





6 Photos of the EUT

Reference to the test report No. **CTA22111600701**

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