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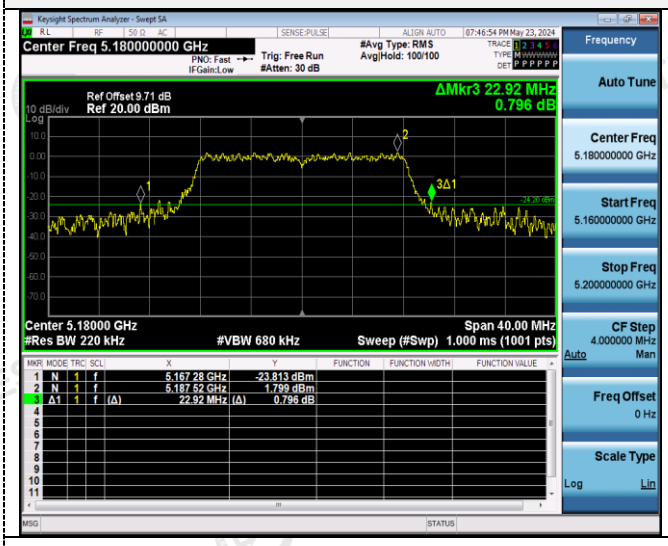
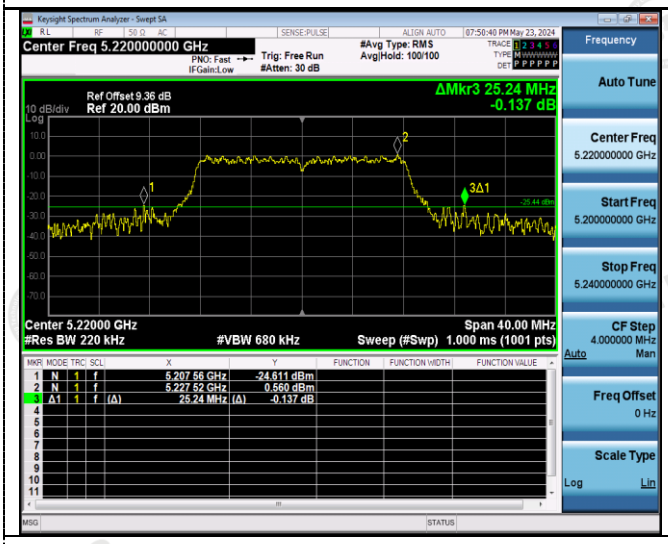
	
CH36	CH36
	
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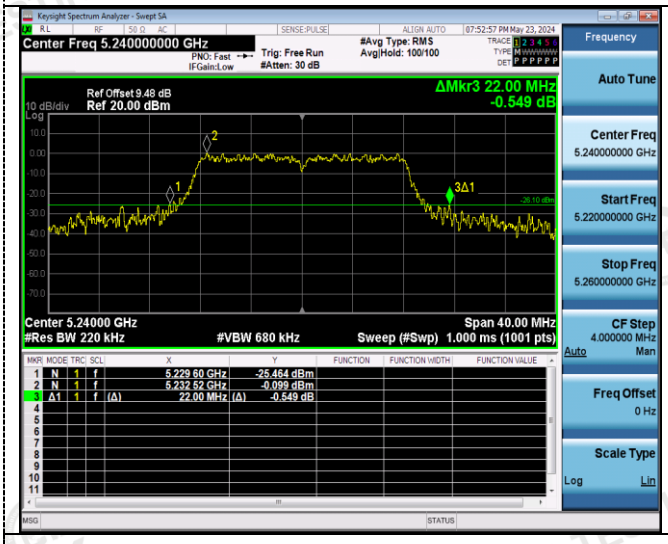
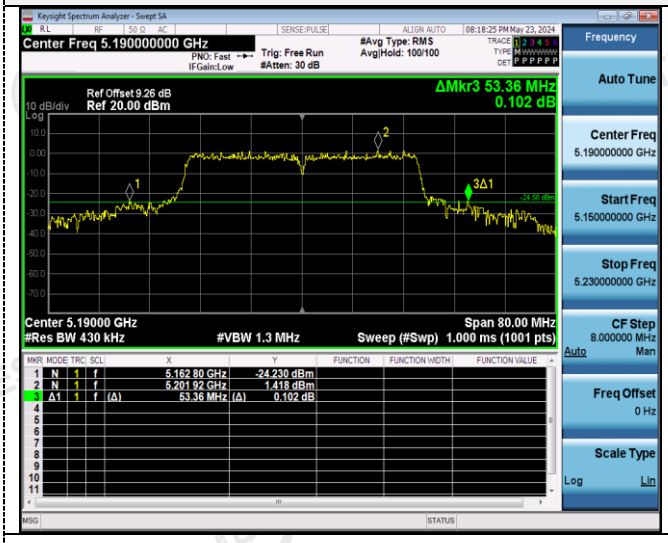
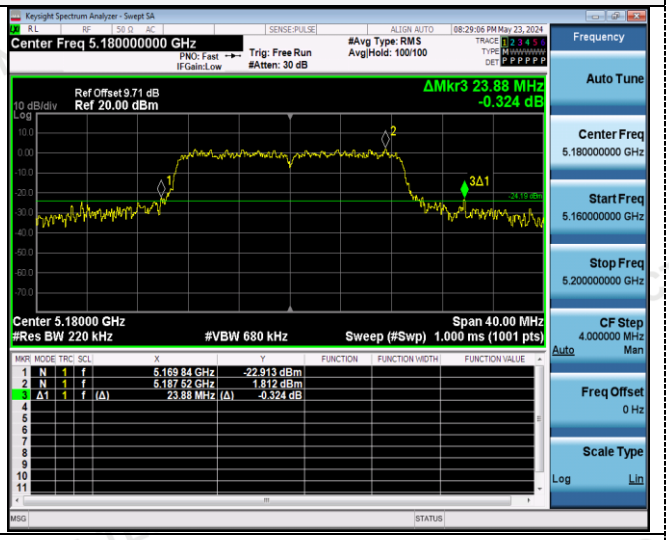
	
CH48	CH48

802.11n(HT40)



802.11ac(HT20)

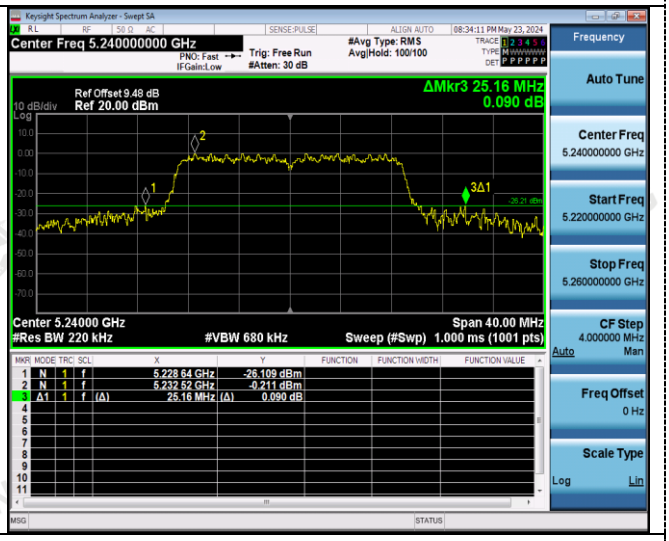


CH38

CH36

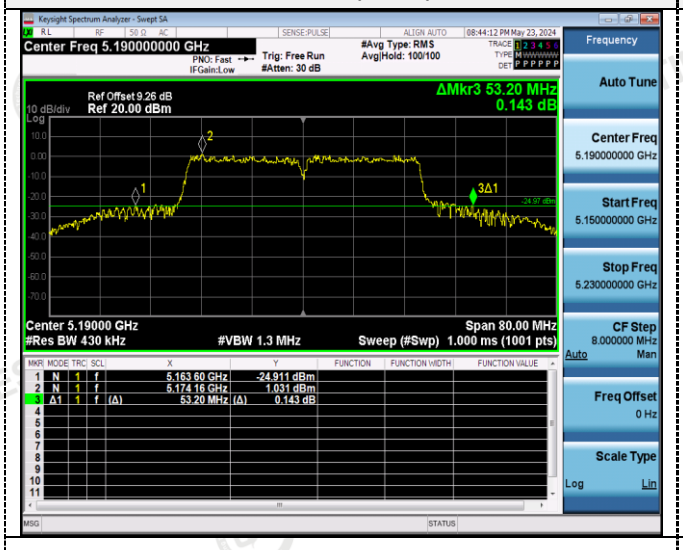
CH46

CH40



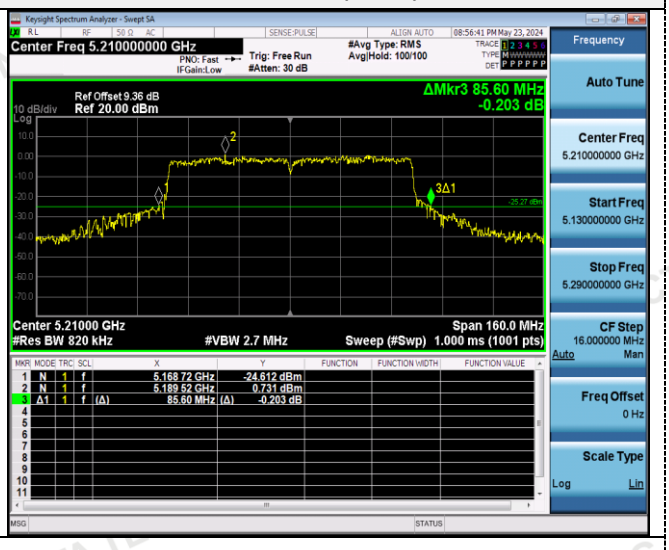
CH48

802.11ac(HT40)

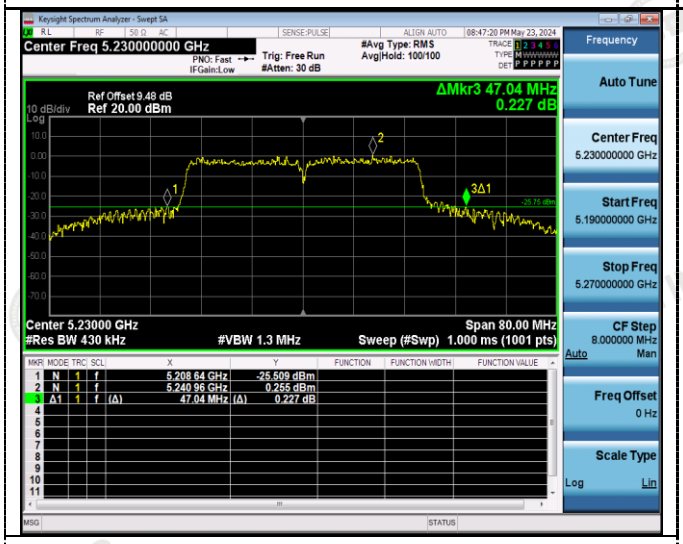


CH38

802.11ac(HT80)



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.

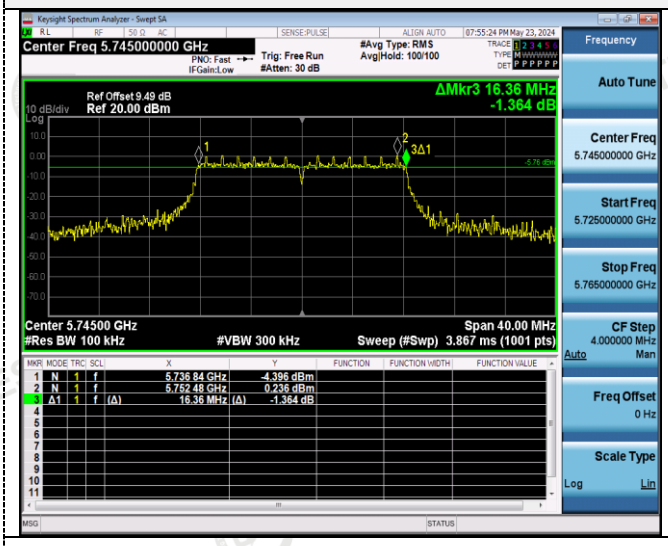
Test Configuration

Test Results

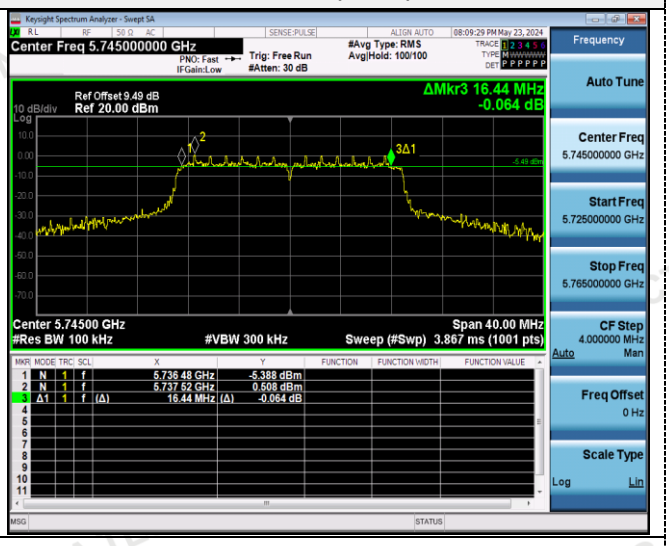
Type	Bands	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	16.360	≥500KHz	Pass
		157	16.280		
		165	16.320		
802.11n(HT20)	U-NII 3	149	16.440		
		157	17.200		
		165	16.760		
802.11n(HT40)	U-NII 3	151	36.400		
		159	35.680		
802.11ac(HT20)	U-NII 3	149	16.920		
		157	17.040		
		165	16.960		
802.11ac(HT40)	U-NII 3	151	36.000		
		159	35.920		
802.11ac(HT80)	U-NII 3	155	75.360		

Test plot as follows:

802.11a

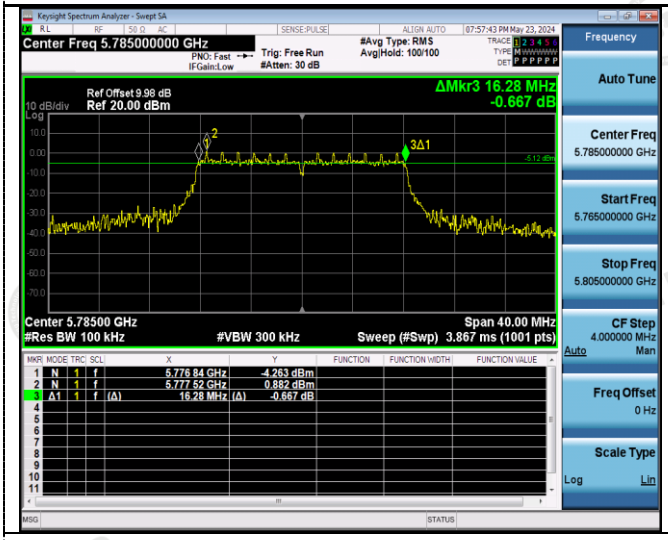


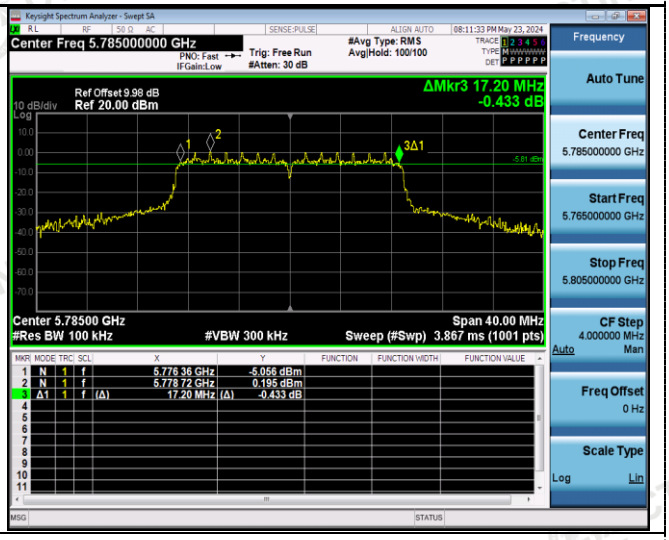
802.11n(HT20)



CH149

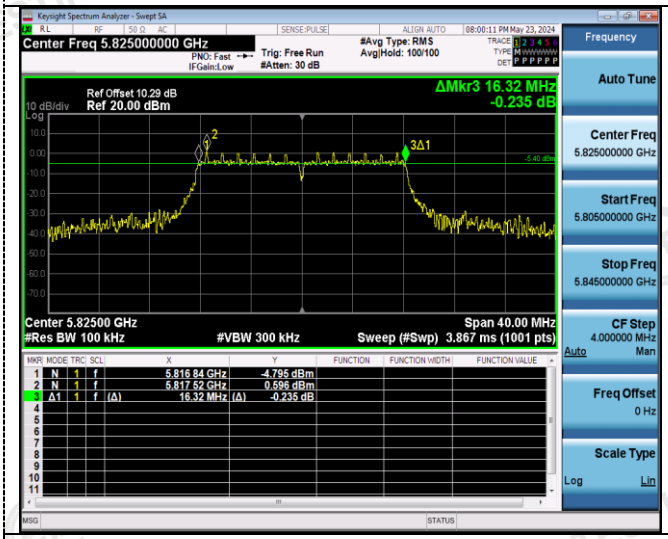
CH149

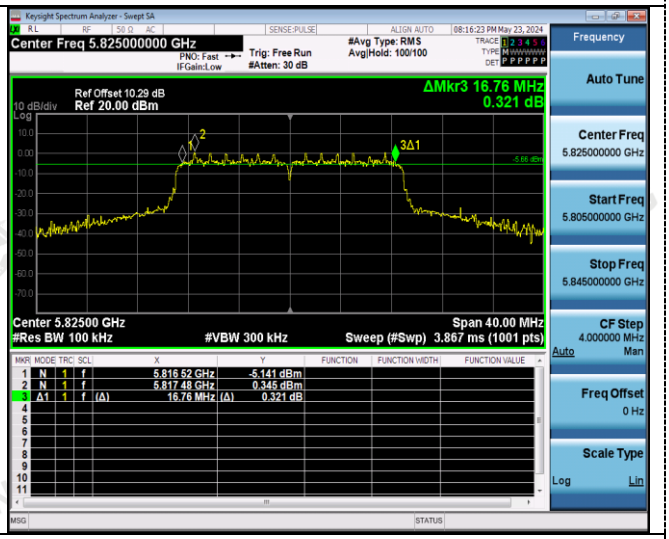




CH157

CH157

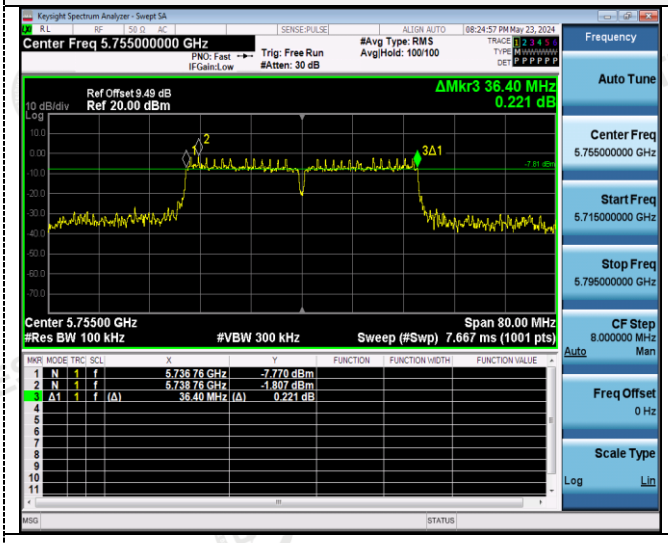




CH165

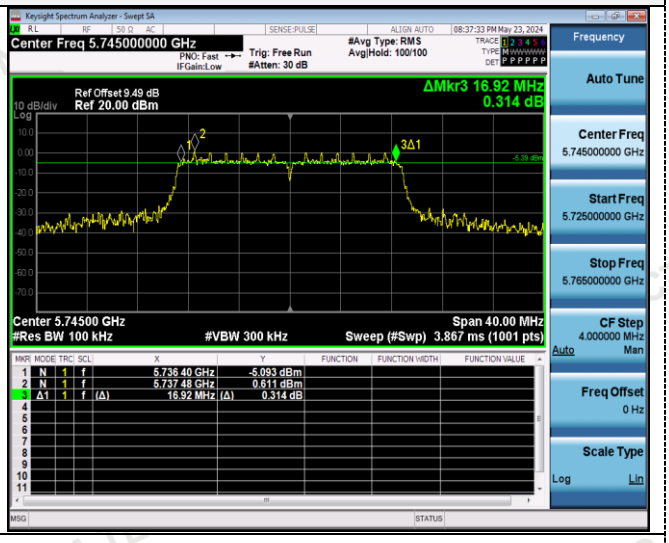
CH165

802.11n(HT40)



CH151

802.11ac(HT20)



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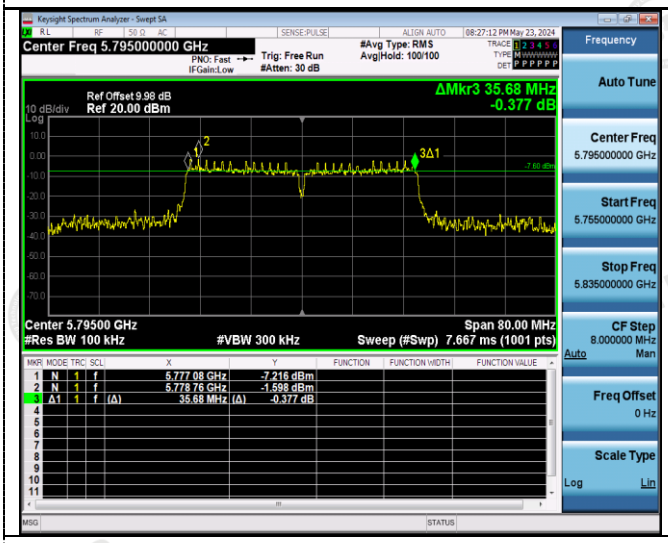
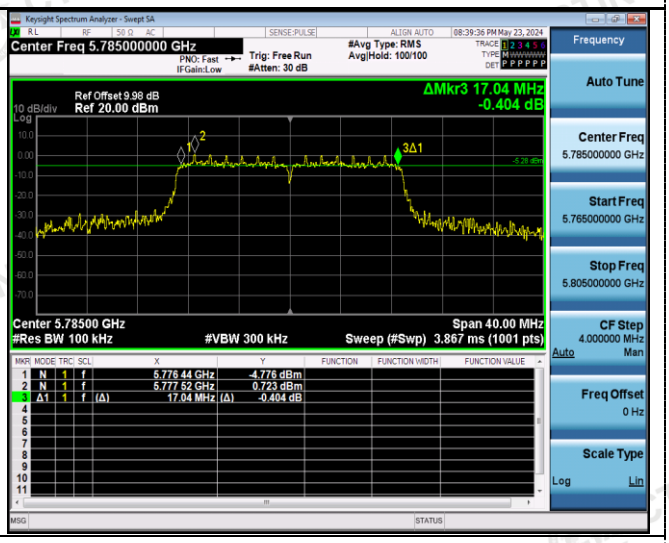
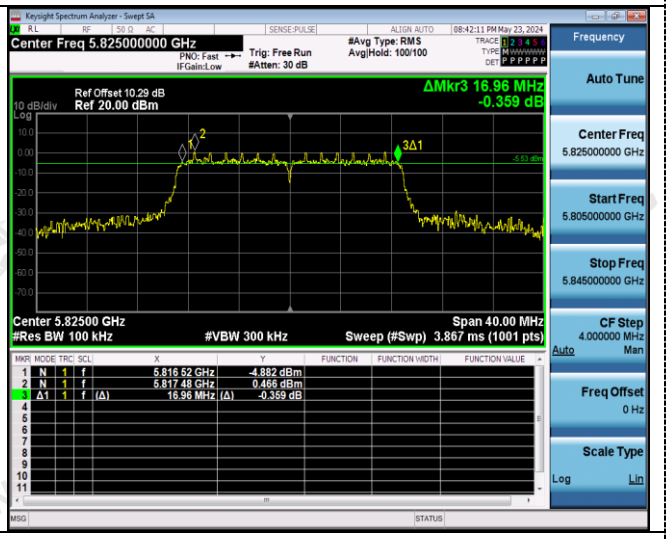


CH159

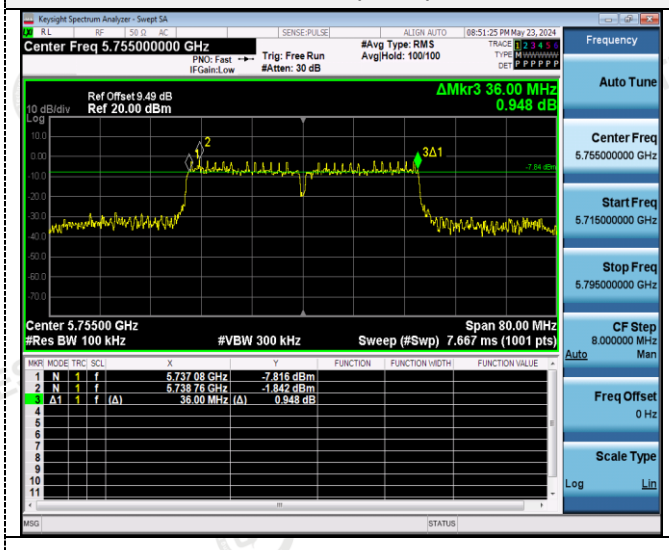


CH157



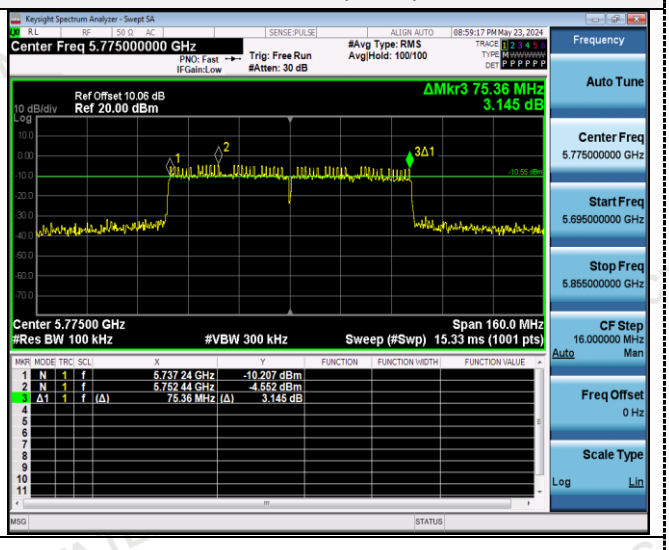
CH165

802.11ac(HT40)

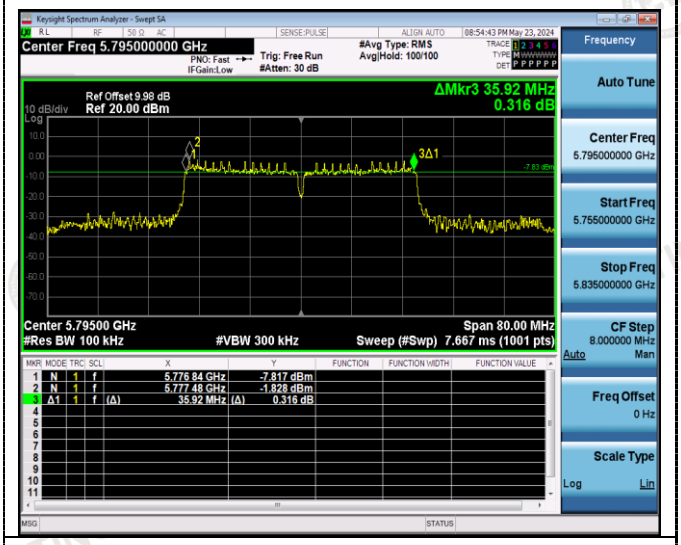


CH151

802.11ac(HT80)



CH155



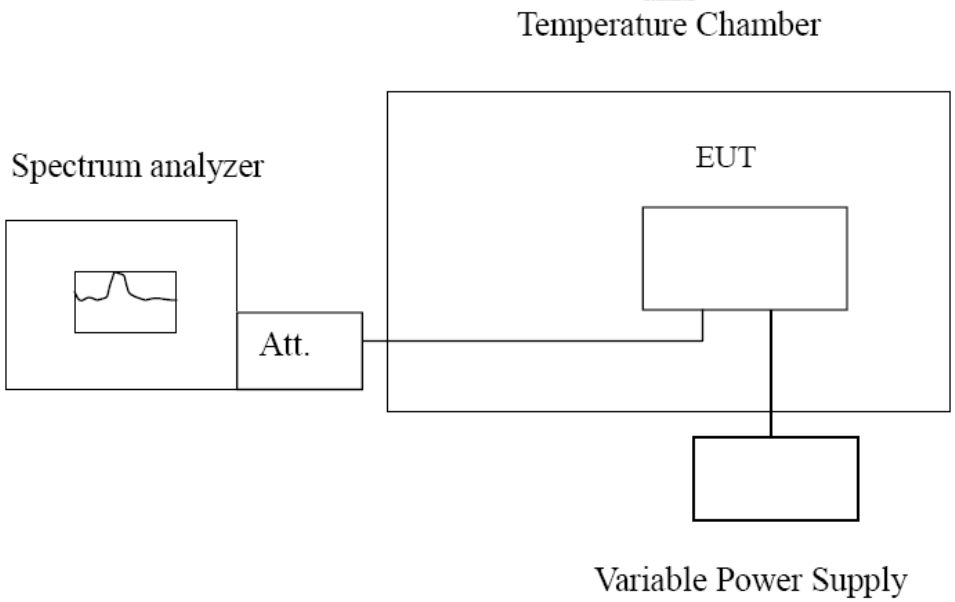
CH159

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.

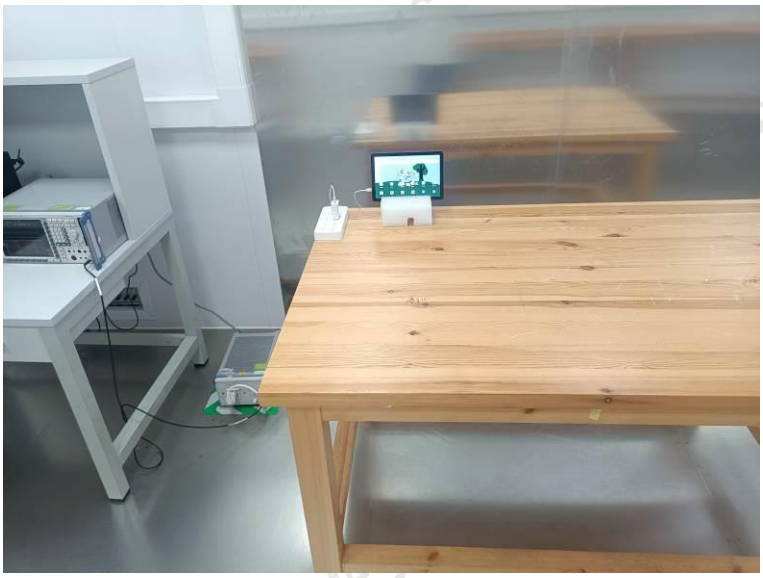
TEST RESULTS

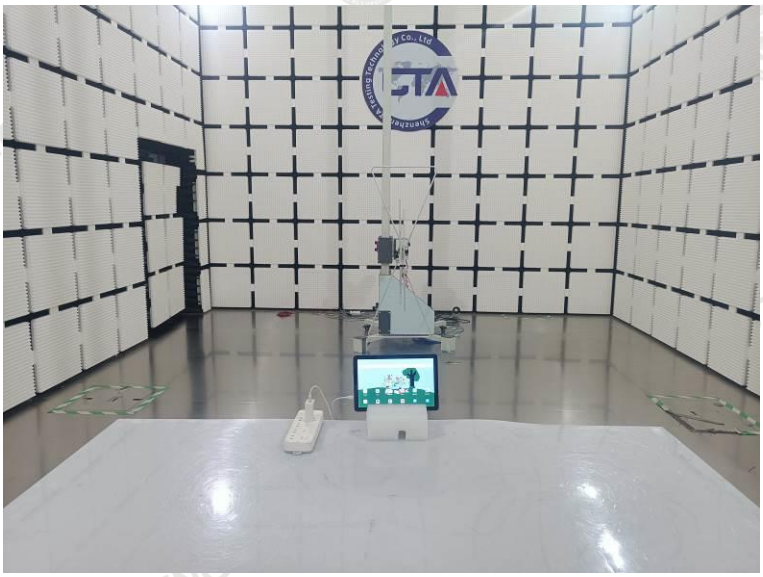
Record worst case as below:

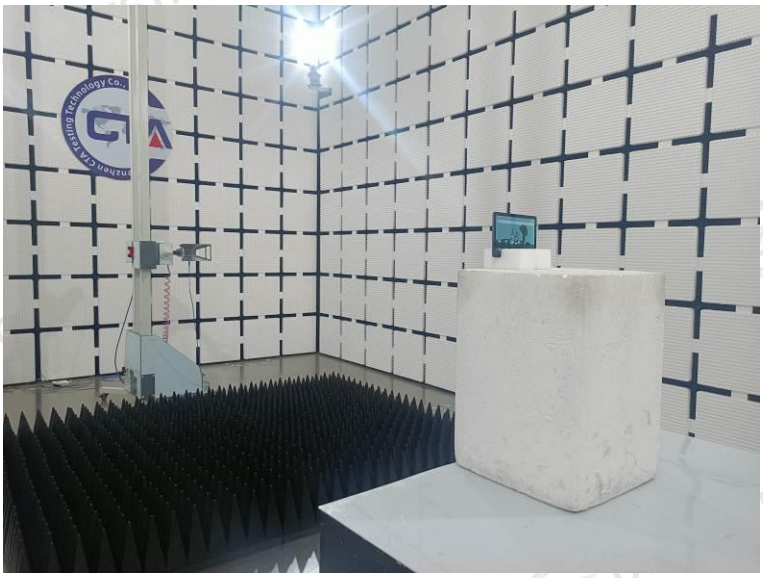
Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 3.70	-30	110.54	0.021340	Within the band of operation	Pass
	-20	174.58	0.033703		
	-10	145.37	0.028064		
	0	146.51	0.028284		
	10	145.91	0.028168		
	20	99.80	0.019266		
	30	167.49	0.032334		
	40	129.29	0.024959		
	50	128.64	0.024834		
DC 4.20	25	195.30	0.037703		
DC 3.40	25	118.61	0.022898		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 3.70	-30	135.82	0.023641	Within the band of operation	Pass
	-20	129.36	0.022517		
	-10	167.06	0.029079		
	0	169.73	0.029544		
	10	136.50	0.023760		
	20	144.82	0.025208		
	30	116.72	0.020317		
	40	168.64	0.029354		
	50	160.72	0.027976		
DC 4.20	25	150.61	0.026216		
DC 3.40	25	129.77	0.022588		

5 Test Setup Photos of the EUT







6 Photos of the EUT

Reference to the test report No. **CTA24052201901.**

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