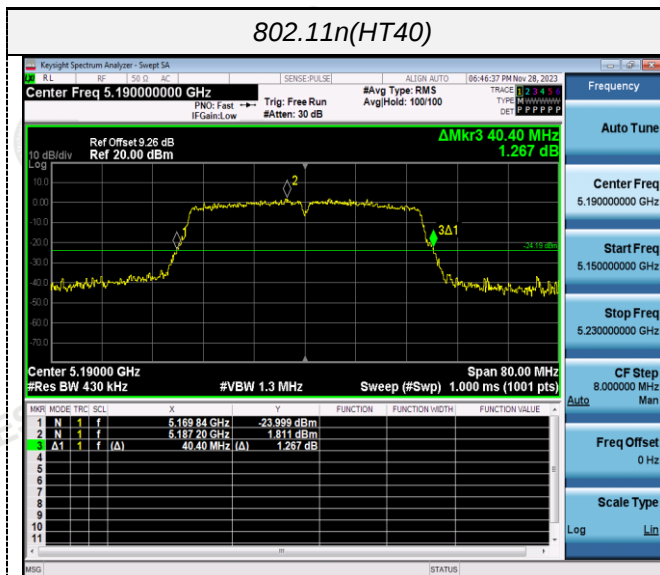
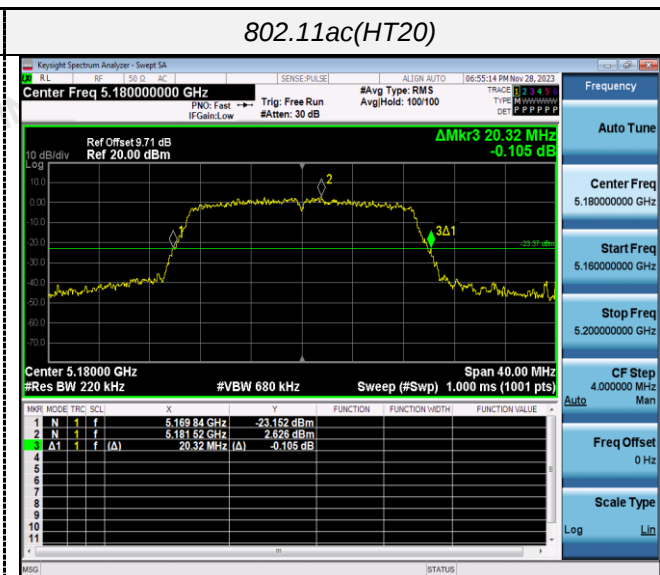


802.11n(HT40)



802.11ac(HT20)



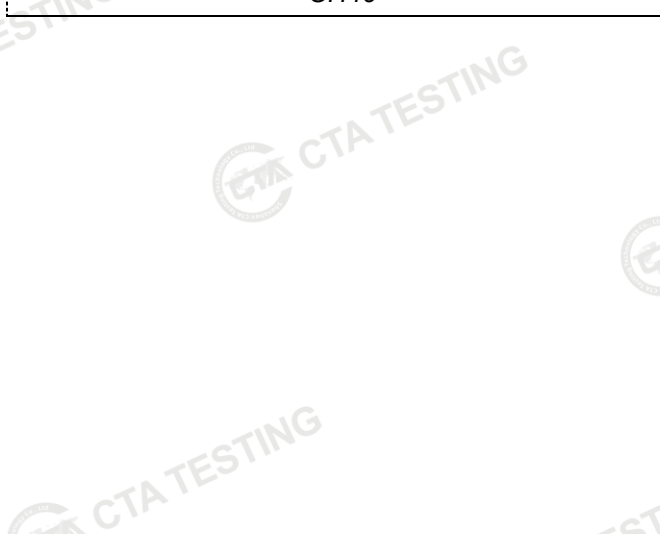
CH38



CH36



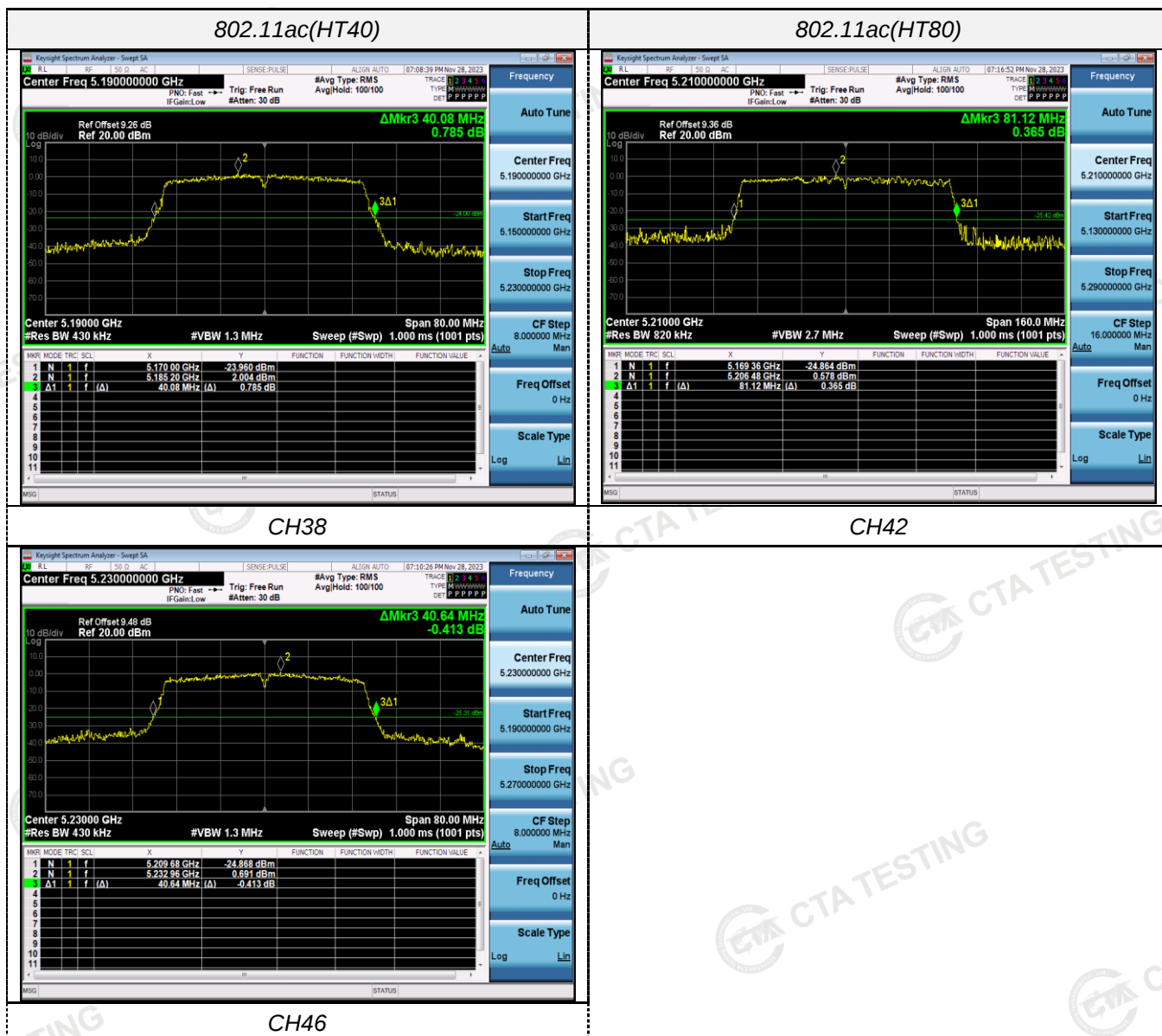
CH46



CH40



CH48



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

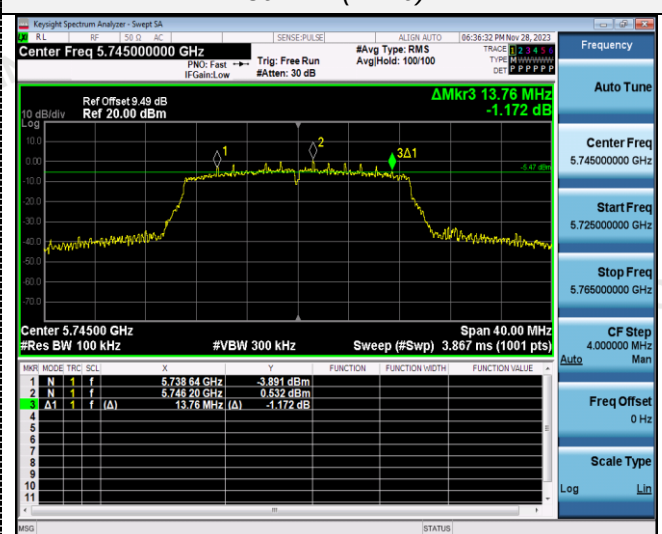
Type	Bands	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	15.120	≥500KHz	Pass
		157	13.880		
		165	14.040		
802.11n(HT20)	U-NII 3	149	13.760		
		157	12.480		
		165	13.760		
802.11n(HT40)	U-NII 3	151	35.120		
		159	35.040		
802.11ac(HT20)	U-NII 3	149	15.400		
		157	14.440		
		165	15.040		
802.11ac(HT40)	U-NII 3	151	35.040		
		159	35.040		
802.11ac(HT80)	U-NII 3	155	70.080		

Test plot as follows:

802.11a



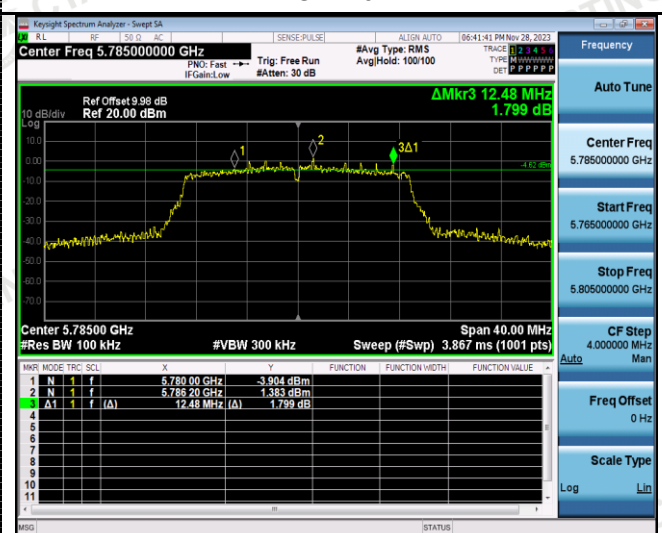
802.11n(HT20)



CH149



CH149



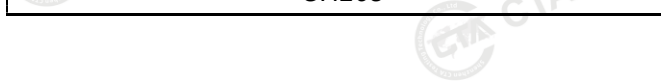
CH157



CH157



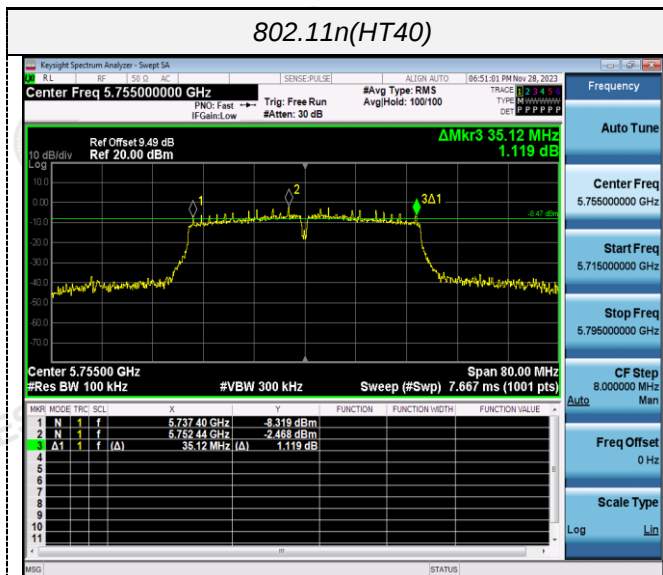
CH165



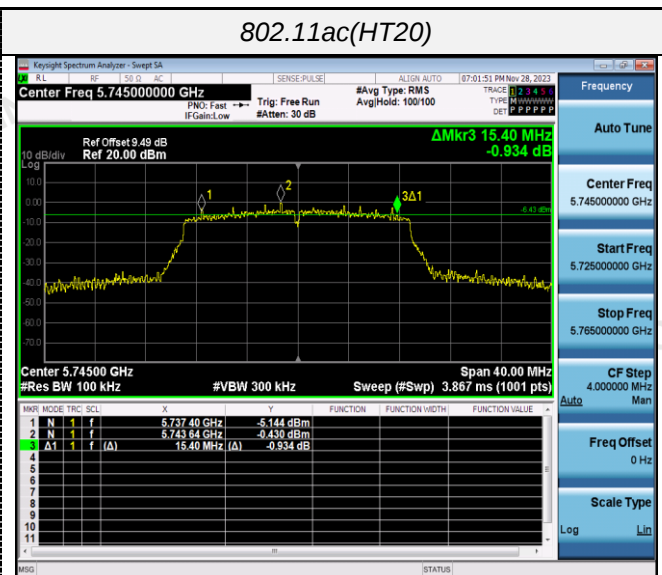
CH165



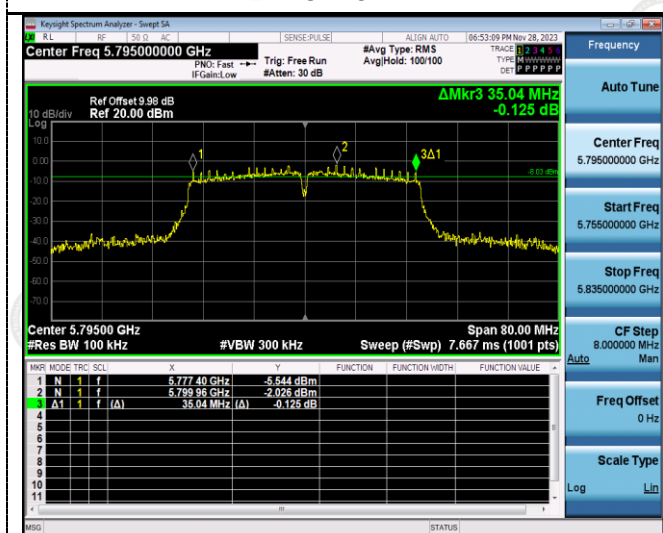
802.11n(HT40)



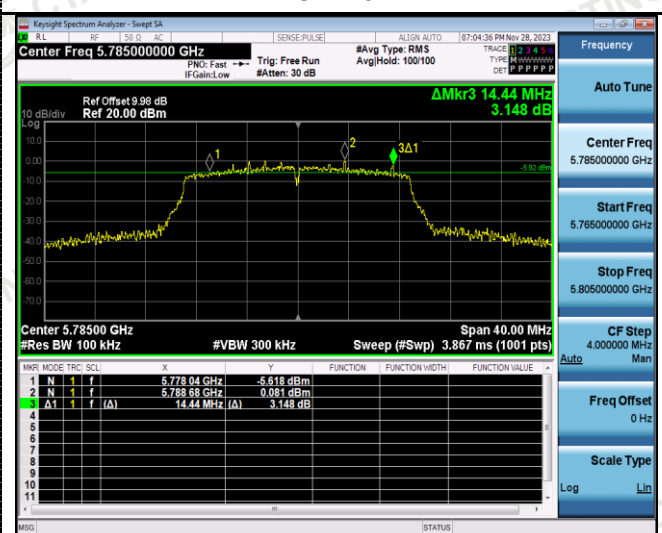
802.11ac(HT20)



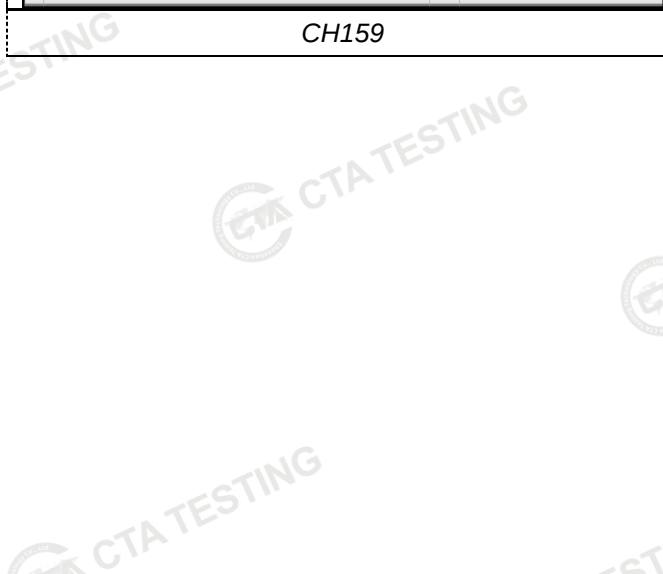
CH151



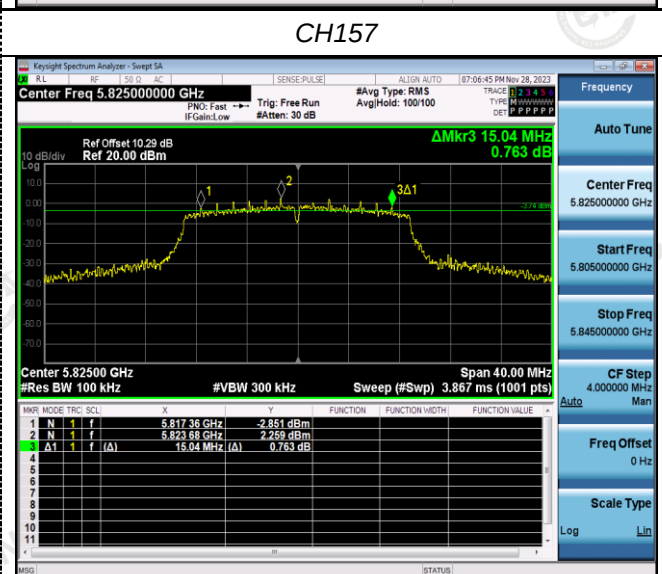
CH149



CH159

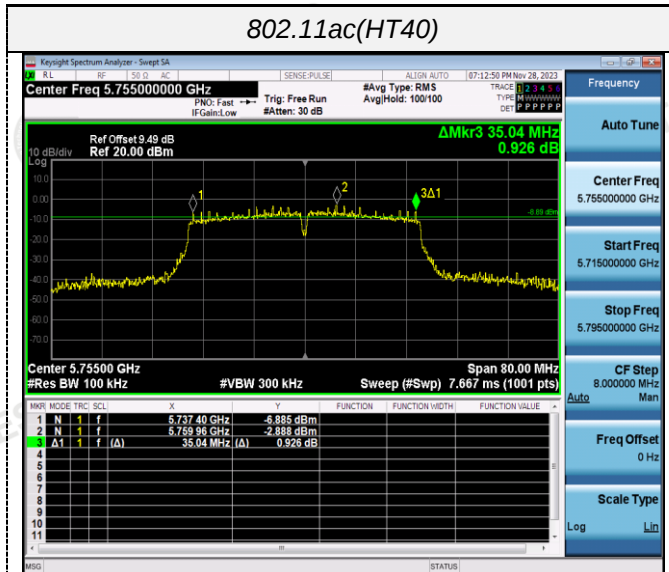


CH157



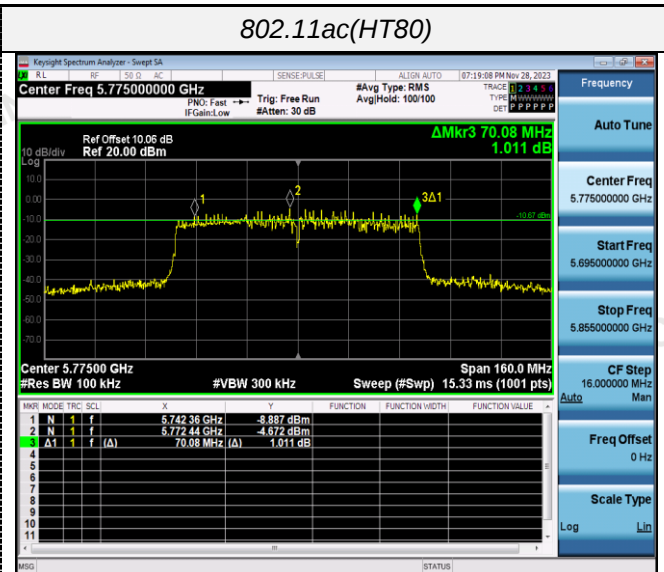
CH165

802.11ac(HT40)

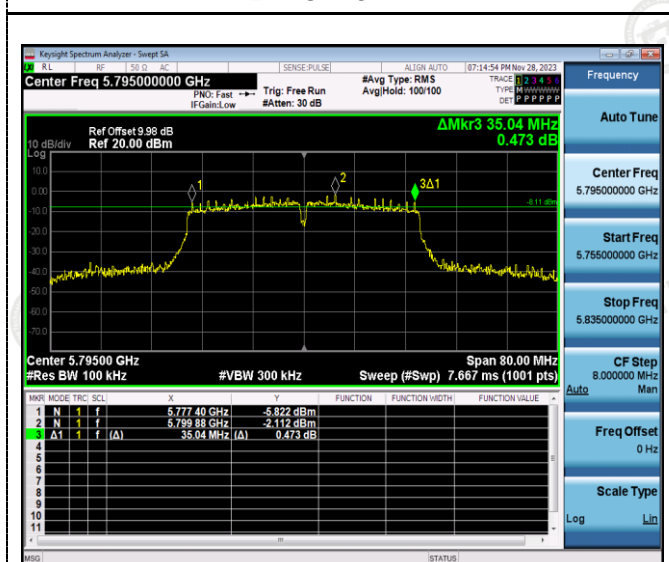


CH151

802.11ac(HT80)



CH155



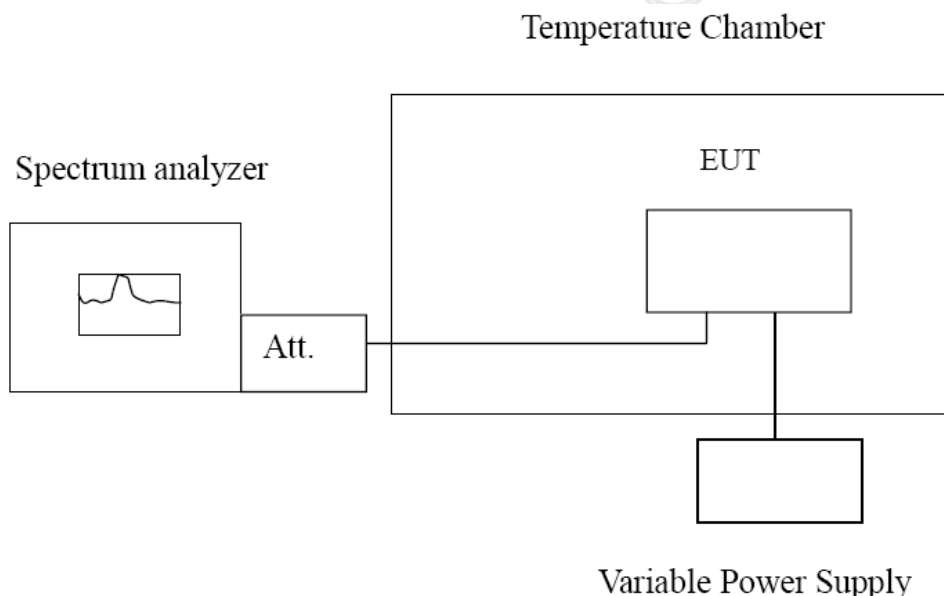
CH159

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°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Frequency Stability under Voltage Variations:

Set chamber temperature to 20°C. 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 ($\pm 15\%$) 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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120	-30	110.77	0.021384	Within the band of operation	Pass
	-20	174.55	0.033697		
	-10	145.35	0.028060		
	0	146.36	0.028255		
	10	146.00	0.028185		
	20	99.45	0.019199		
	30	167.11	0.032261		
	40	129.69	0.025037		
	50	128.34	0.024776		
AC 132	25	195.52	0.037745	Within the band of operation	Pass
AC 108	25	118.35	0.022847		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120	-30	135.46	0.023579	Within the band of operation	Pass
	-20	129.27	0.022501		
	-10	167.07	0.029081		
	0	169.79	0.029554		
	10	136.36	0.023735		
	20	145.02	0.025243		
	30	116.66	0.020306		
	40	168.40	0.029312		
	50	160.80	0.027990		
AC 132	25	150.64	0.026221	Within the band of operation	Pass
AC 108	25	129.59	0.022557		

5 Test Setup Photos of the EUT



6 Photos of the EUT

Reference to the test report No. CTA23112700901.

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