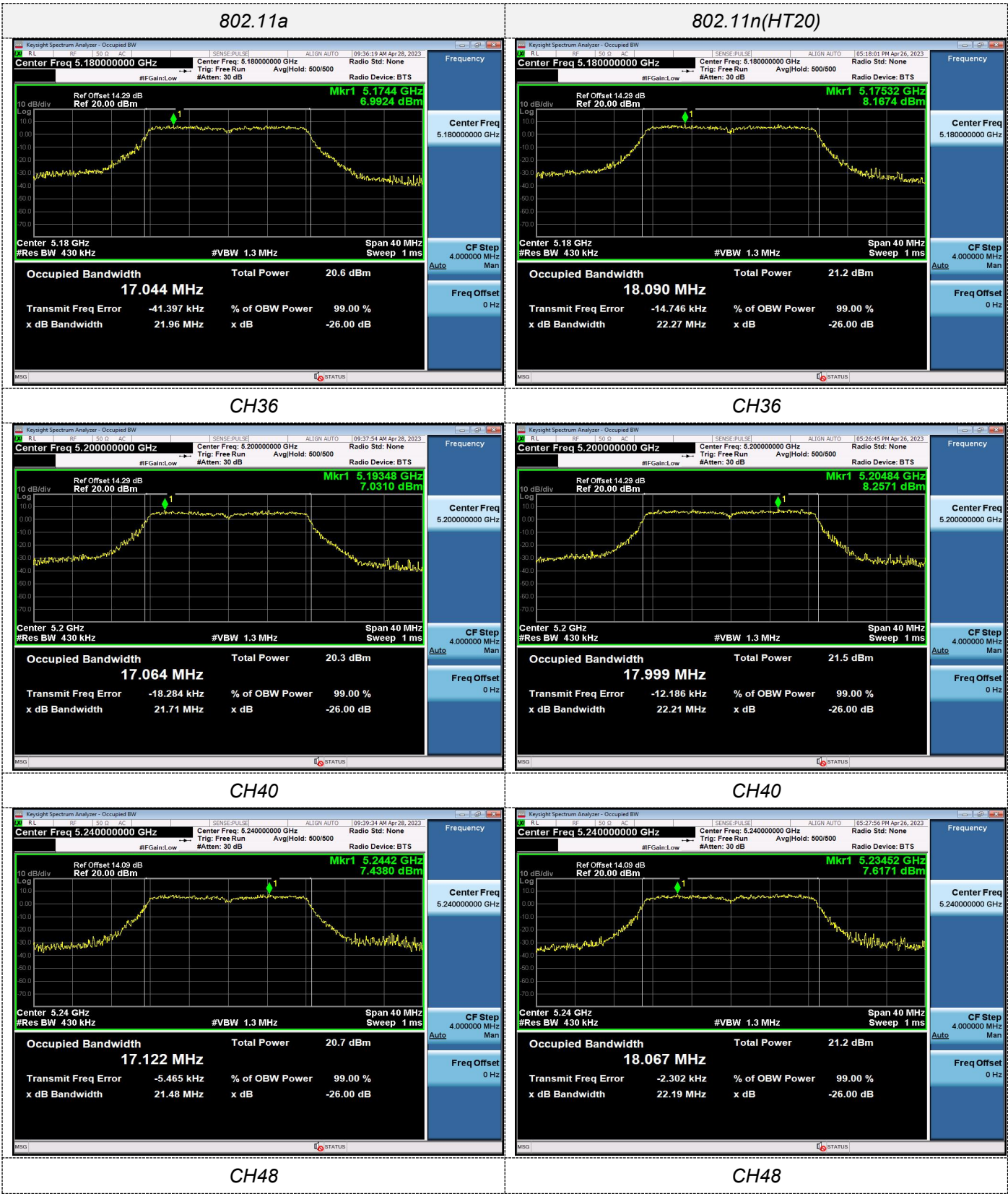
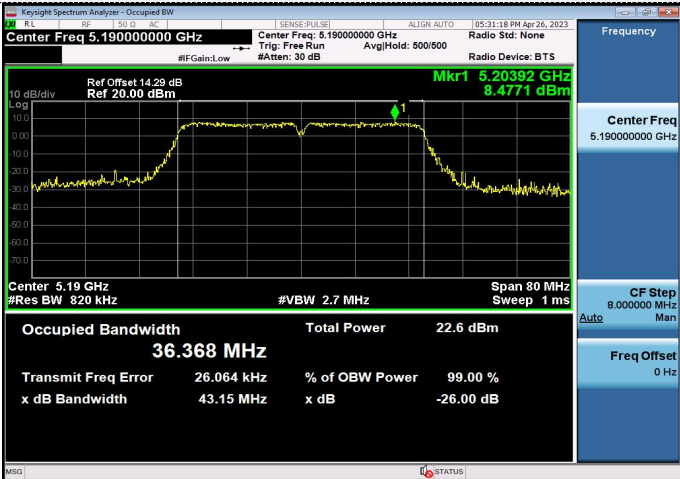


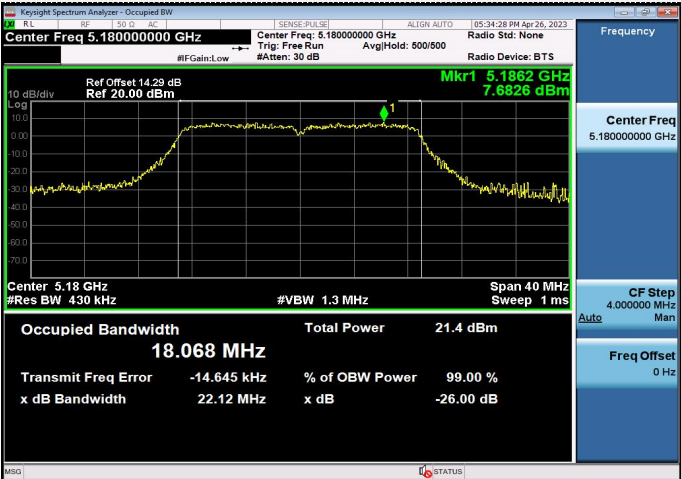
Test plot as follows:



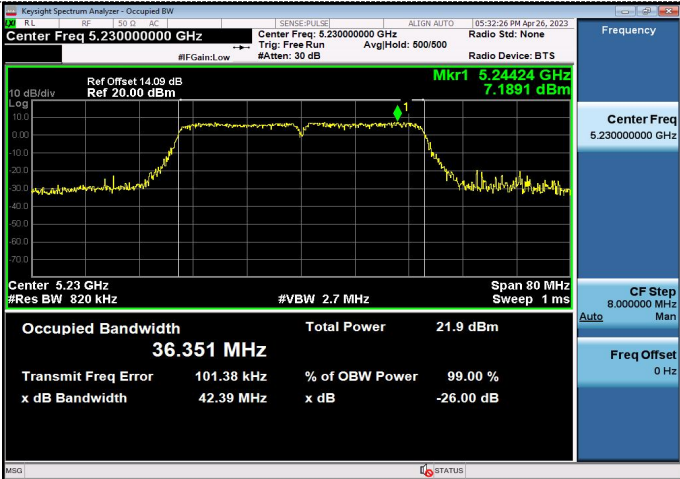
802.11n(HT40)



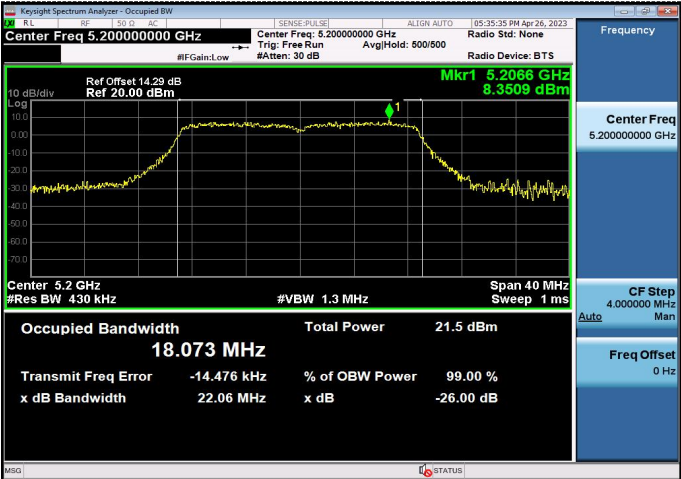
802.11ac(HT20)



CH38



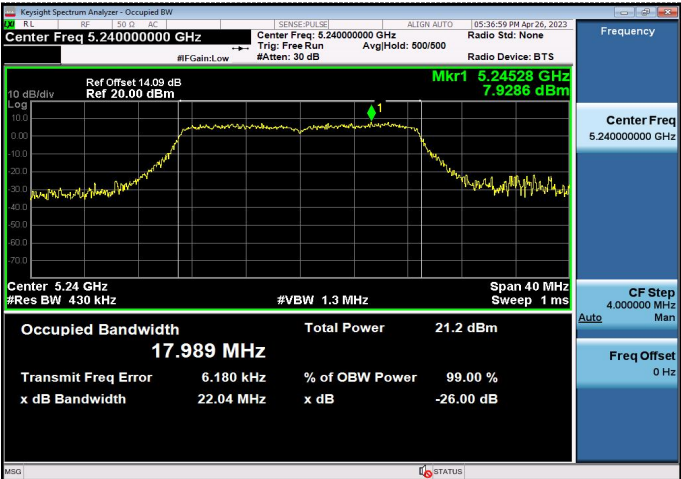
CH36



CH46

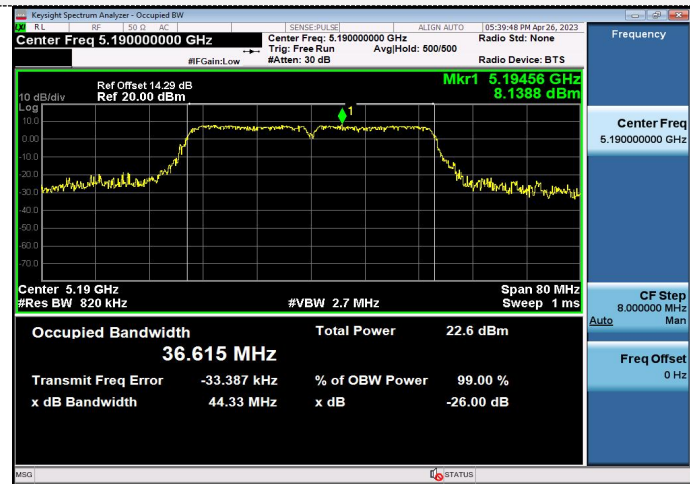


CH40

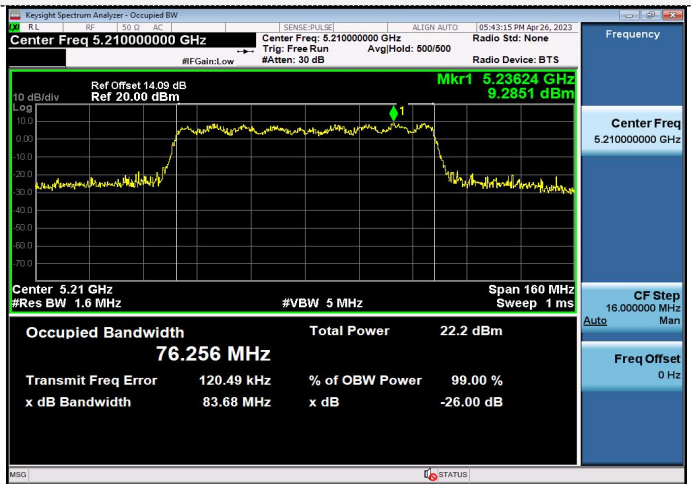


CH48

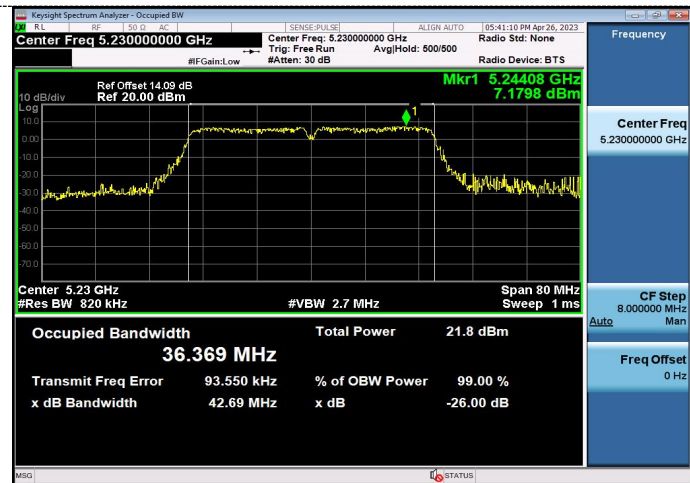
802.11ac(HT40)



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

Type	Bands	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	16.320	≥500KHz	Pass
		157	16.360		
		165	16.440		
802.11n(HT20)	U-NII 3	149	17.560		
		157	16.320		
		165	16.640		
802.11n(HT40)	U-NII 3	151	35.040		
		159	36.320		
802.11ac(HT20)	U-NII 3	149	17.280		
		157	17.520		
		165	17.680		
802.11ac(HT40)	U-NII 3	151	35.360		
		159	35.840		
802.11ac(HT80)	U-NII 3	155	73.440		

802.11a

802.11n(HT20)

CH149

CH149

CH157

CH157

CH165

CH165

Each screenshot displays a frequency spectrum plot with a peak at 5.745 GHz. The plot shows the power spectral density (PSD) in dBm/Hz. The right-hand panel contains the following controls and data:

- Frequency:** Center Freq, Start Freq, Stop Freq, CF Step, Freq Offset, Scale Type.
- Measurement Data Table:**

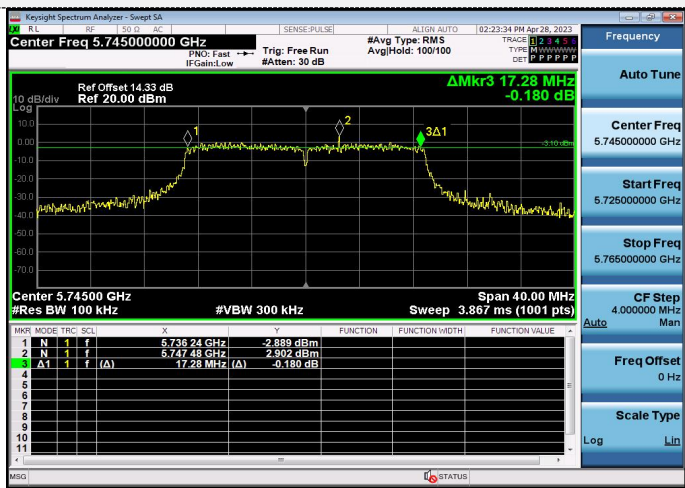
MNR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	5.736 84 GHz	-3.013 dBm			
2	N	1	f	5.752 52 GHz	-2.418 dBm			
3	A1	1	f (A)	16.32 MHz (A)	-0.533 dB			

The data table for 802.11a shows a peak at 5.745 GHz with a value of -0.533 dB. The data table for 802.11n(HT20) shows a peak at 5.745 GHz with a value of 0.165 dB. The data table for CH149 shows a peak at 5.745 GHz with a value of 1.053 dB. The data table for CH157 shows a peak at 5.745 GHz with a value of 0.350 dB. The data table for CH165 shows a peak at 5.745 GHz with a value of 0.234 dB.

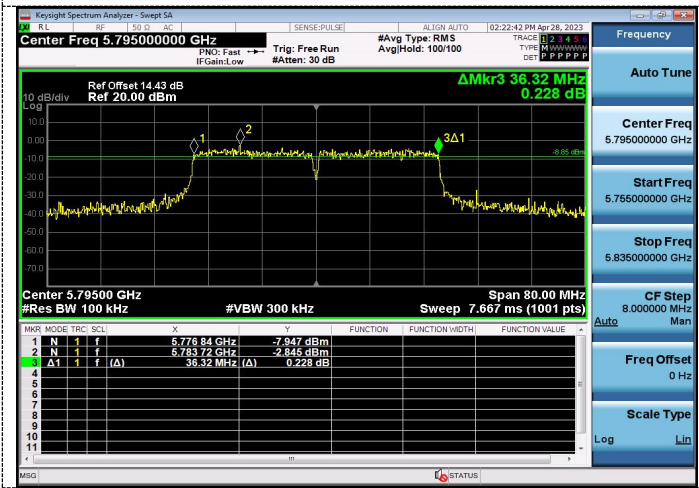
802.11n(HT40)



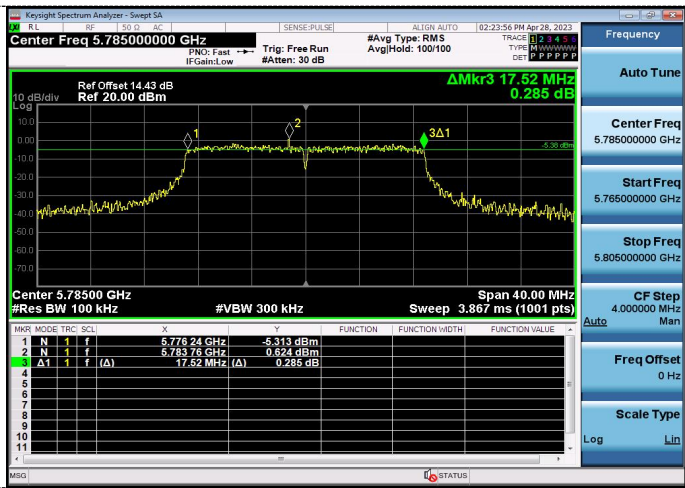
802.11ac(HT20)



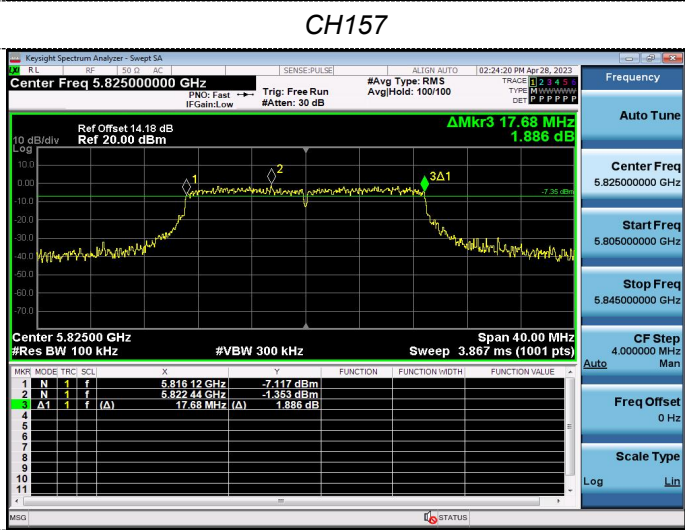
CH151



CH149

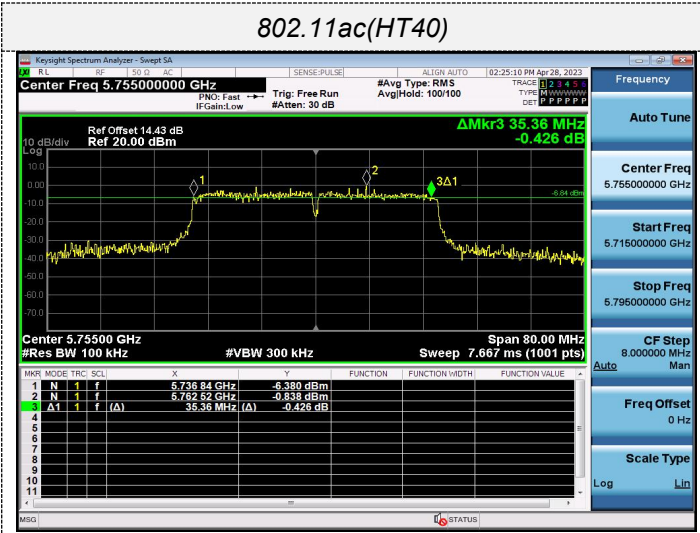


CH159

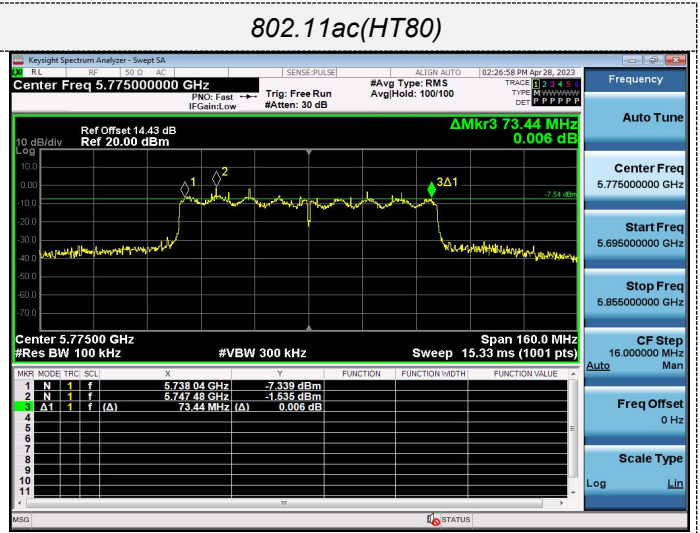


CH157

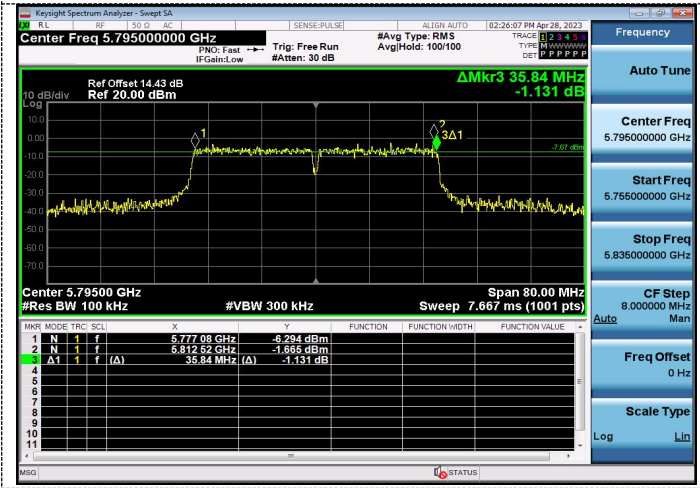
CH165



CH151



CH155



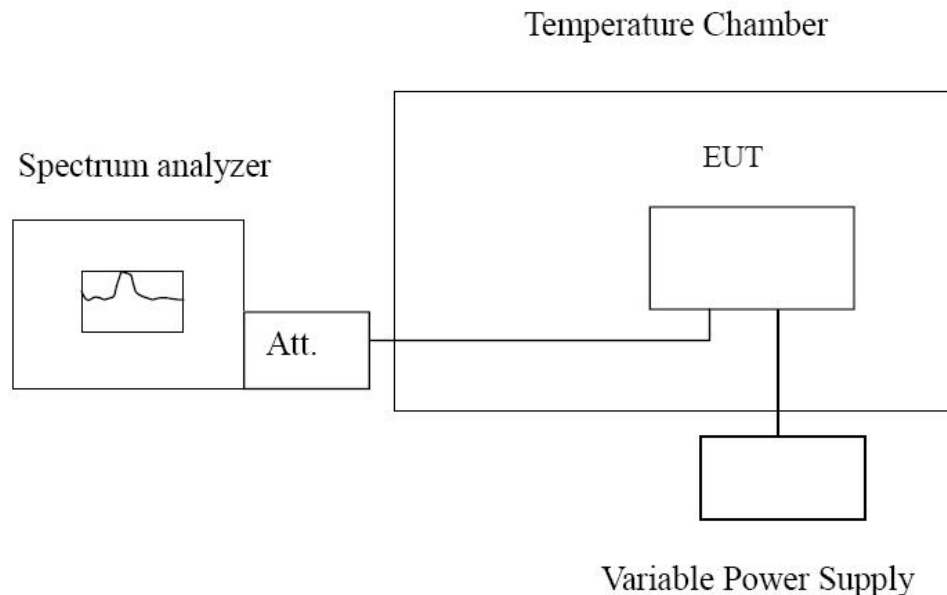
CH159

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°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.

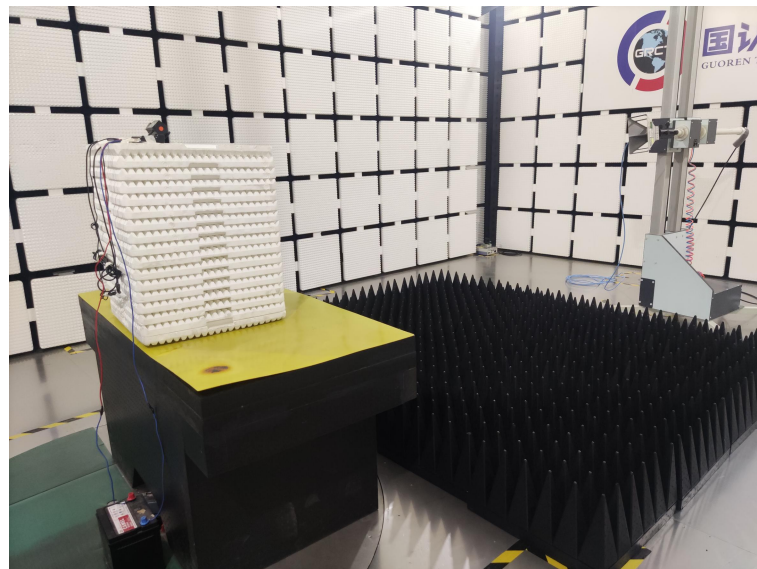
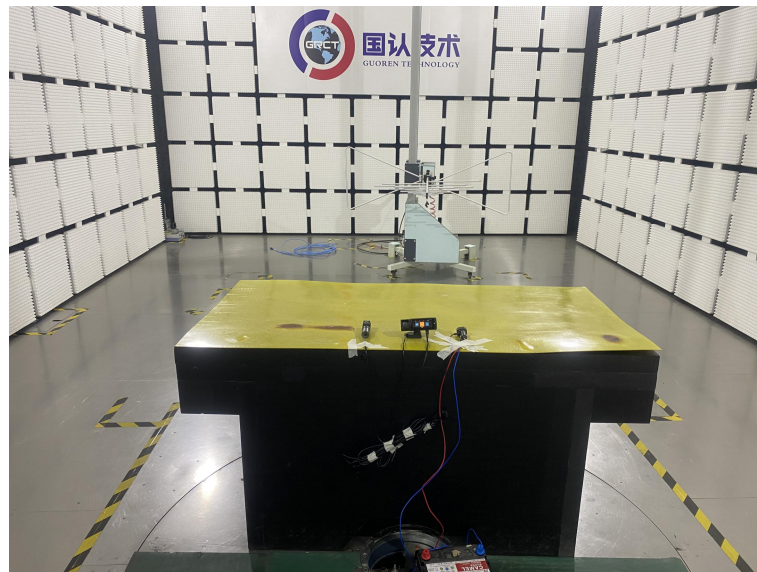
TEST RESULTS

Record worst case as below:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
12.00	-30	142.88	0.0276	Within the band of operation	Pass
	-20	137.64	0.0266		
	-10	140.93	0.0272		
	0	129.51	0.0250		
	10	125.86	0.0243		
	20	134.82	0.0260		
	30	121.75	0.0235		
	40	134.62	0.0260		
	50	120.75	0.0233		
13.2	25	146.34	0.0283	Within the band of operation	Pass
10.8	25	139.46	0.0269		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
12.00	-30	127.43	0.0222	Within the band of operation	Pass
	-20	146.28	0.0255		
	-10	135.17	0.0235		
	0	130.74	0.0228		
	10	144.38	0.0251		
	20	125.93	0.0219		
	30	120.46	0.0210		
	40	137.82	0.0240		
	50	140.63	0.0245		
13.2	25	137.87	0.0240	Within the band of operation	Pass
10.8	25	129.54	0.0225		

5 Test Setup Photos of the EUT



6 EXTERNAL Photos of the EUT

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

7 Internal Photos of the EUT

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

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