

802.11n(HT40)



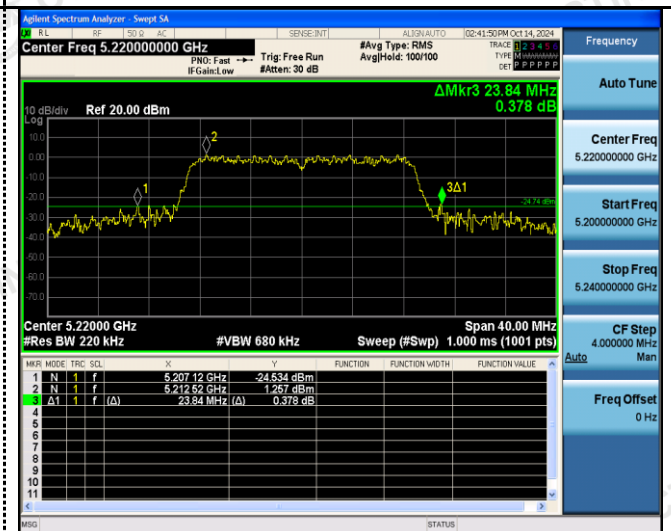
802.11ac(HT20)



CH38



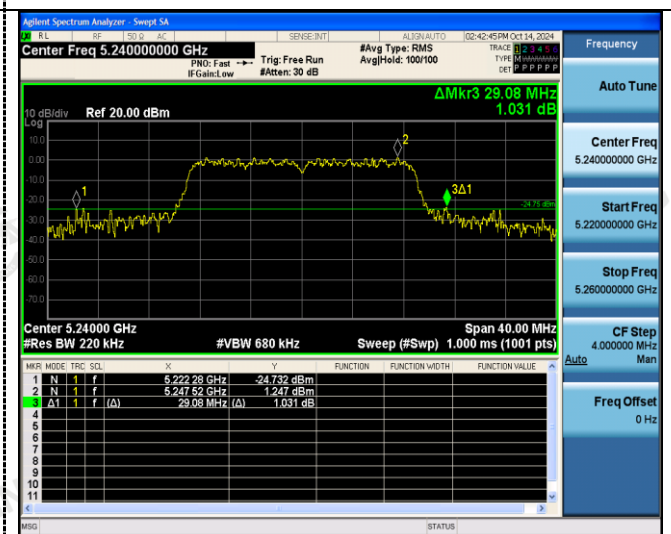
CH36



CH46

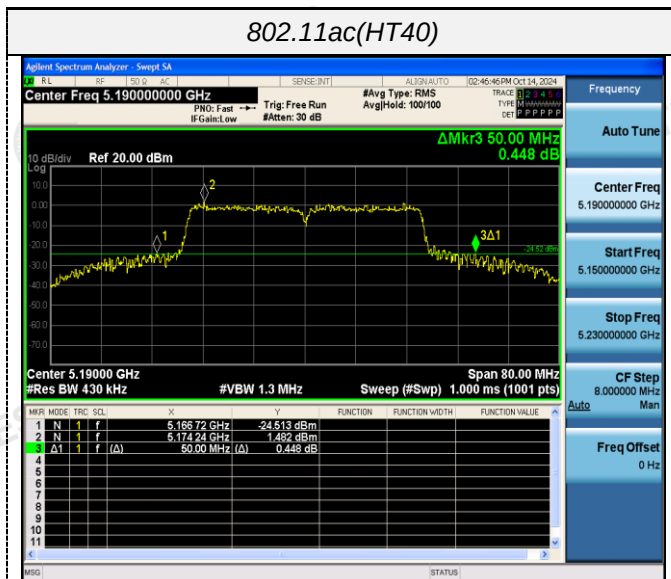


CH40



CH48

802.11ac(HT40)

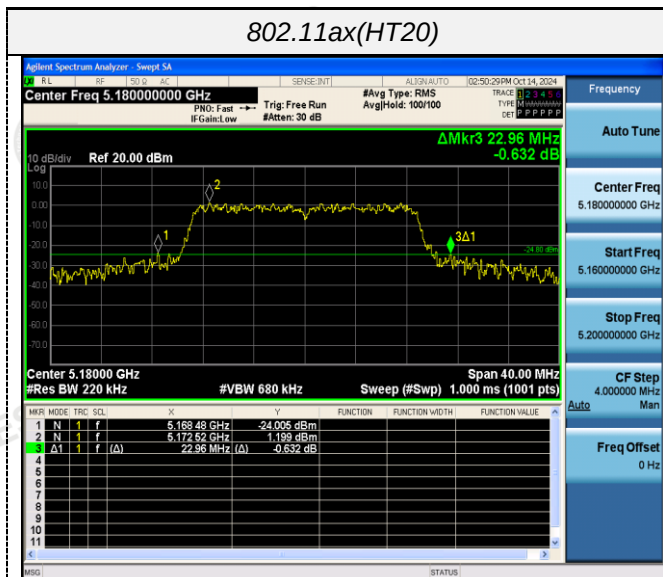


CH38

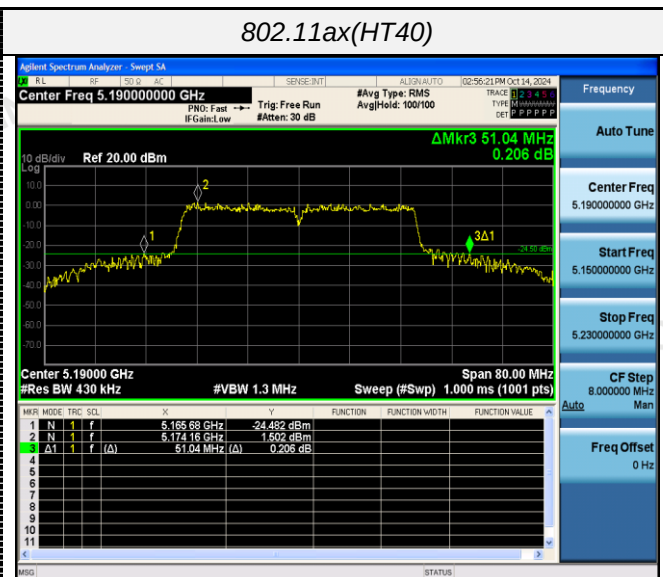


CH46

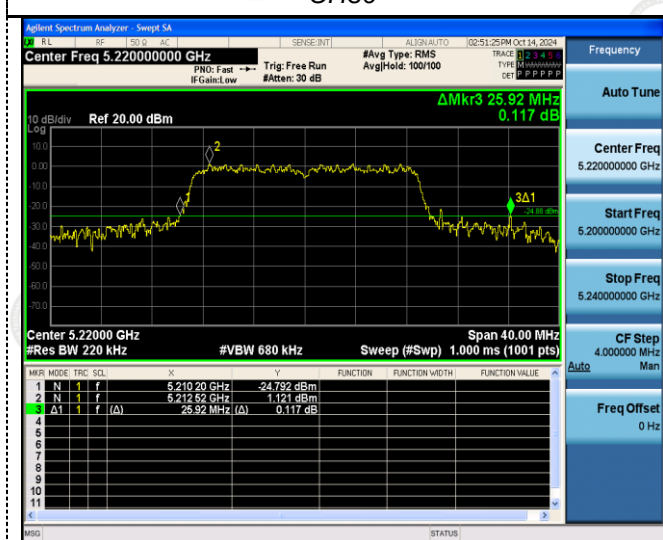
802.11ax(HT20)



802.11ax(HT40)



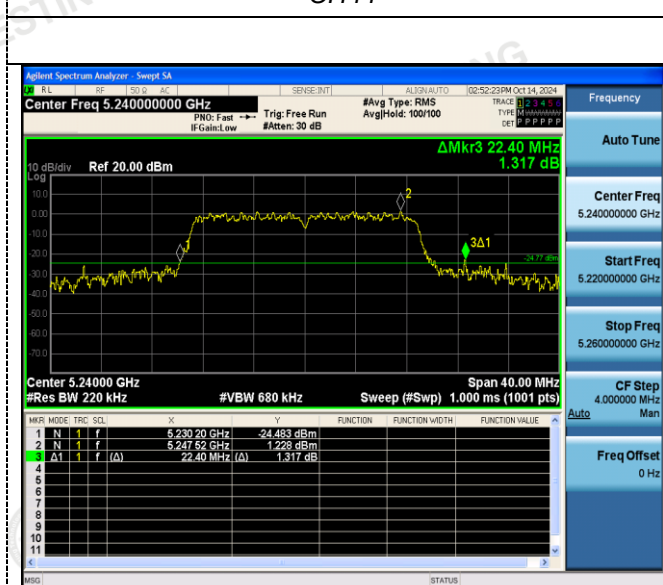
CH36



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CH44



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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

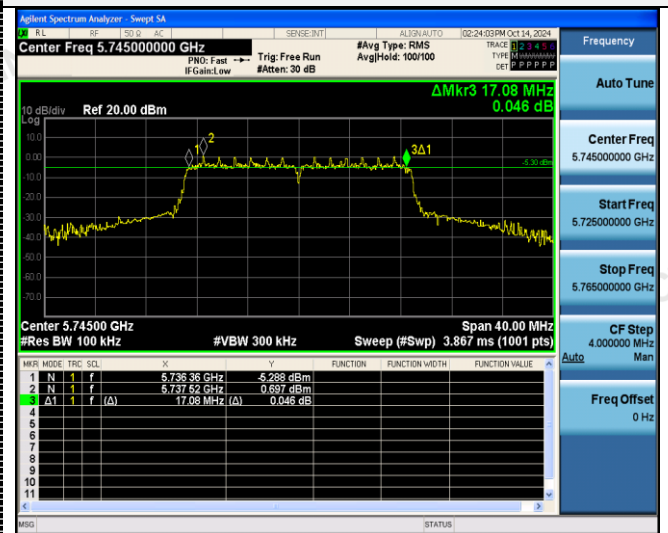
Type	Bands	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	16.320	≥500KHz	Pass
		157	16.320		
		165	16.320		
802.11n(HT20)	U-NII 3	149	17.080		
		157	17.040		
		165	16.960		
802.11n(HT40)	U-NII 3	151	35.760		
		159	36.000		
802.11ac(HT20)	U-NII 3	149	17.040		
		157	17.120		
		165	17.240		
802.11ac(HT40)	U-NII 3	151	35.600		
		159	36.000		
802.11ax(HT20)	U-NII 3	149	17.240		
		157	16.960		
		165	16.960		
802.11ax(HT40)	U-NII 3	151	35.440		
		159	35.680		

Test plot as follows:

802.11a



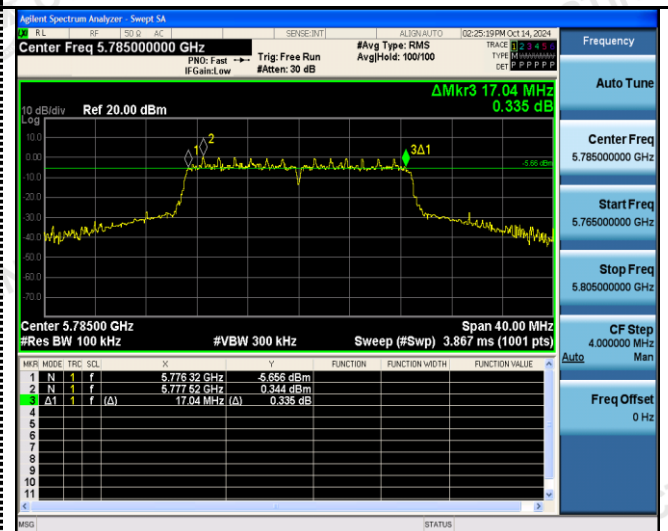
802.11n(HT20)



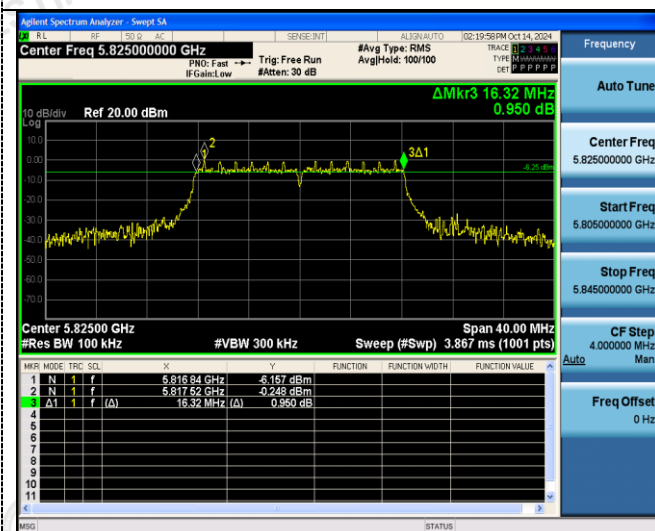
CH149



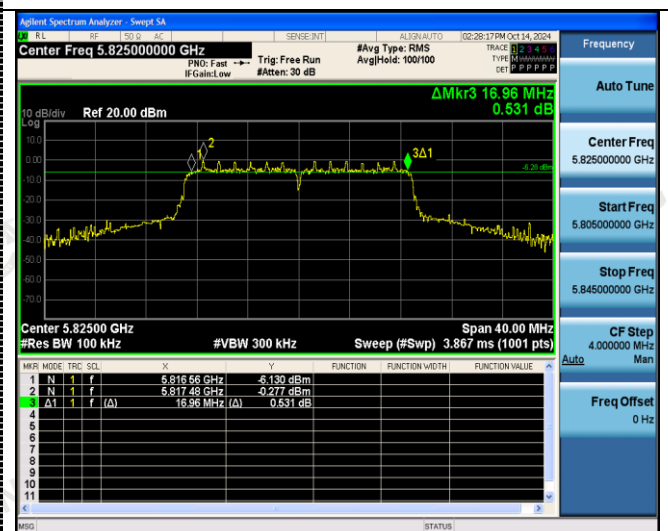
CH149



CH157



CH157



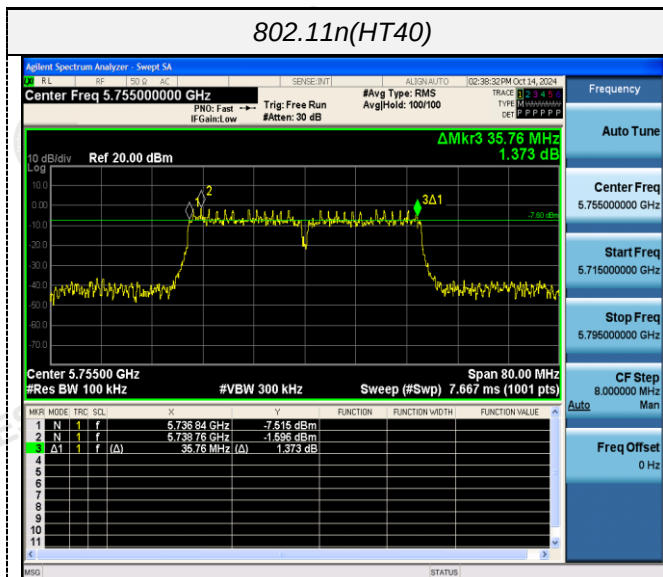
CH165



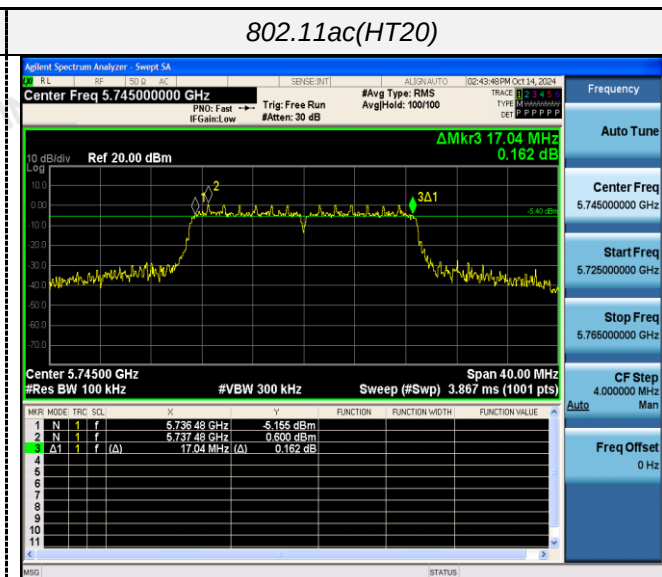
CH165



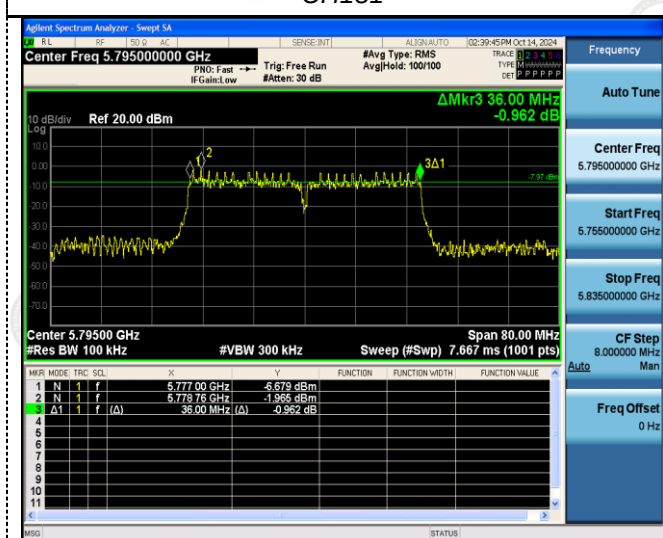
802.11n(HT40)



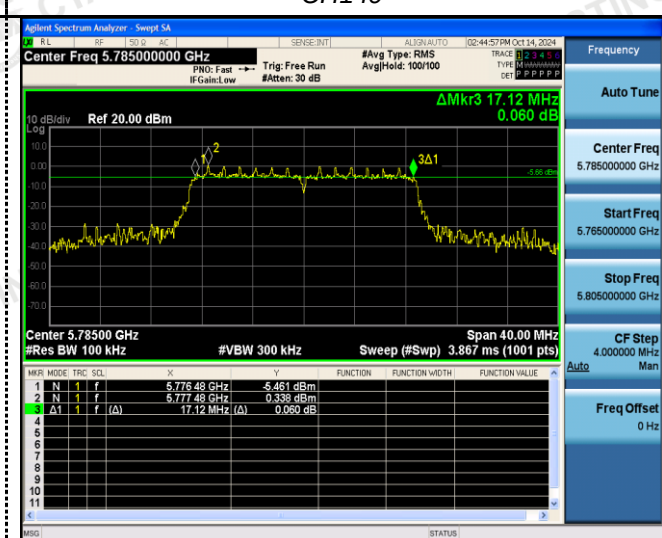
802.11ac(HT20)



CH151



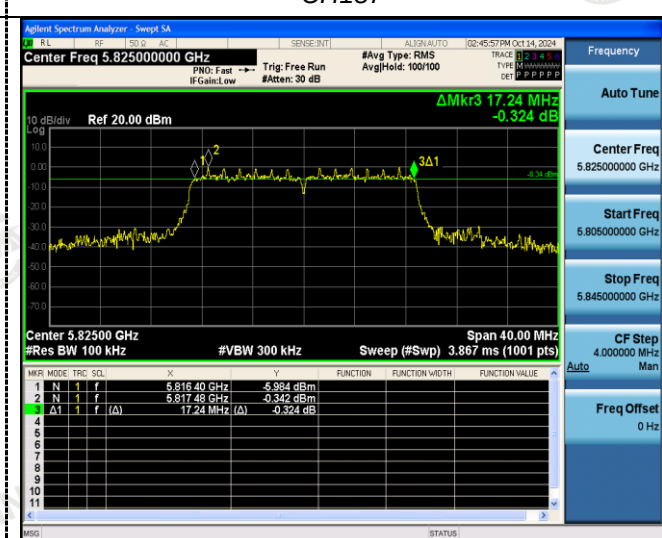
CH149



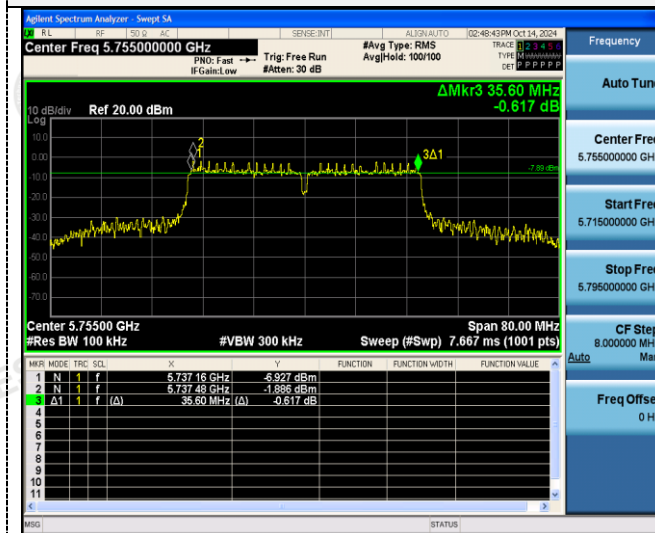
CH159



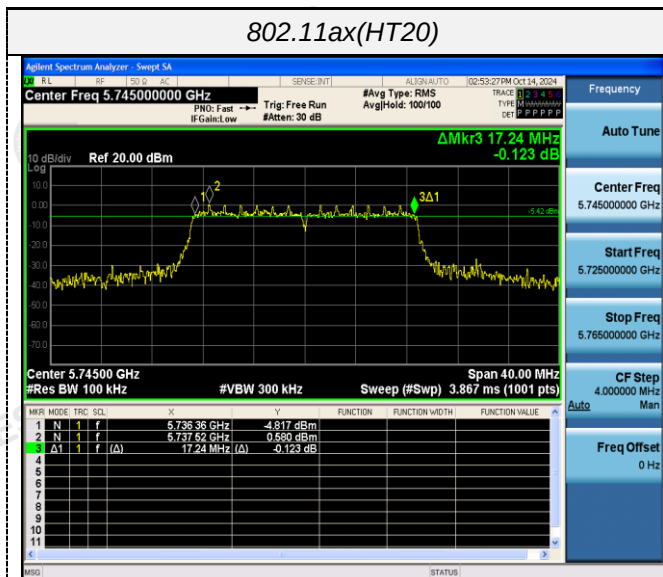
CH157



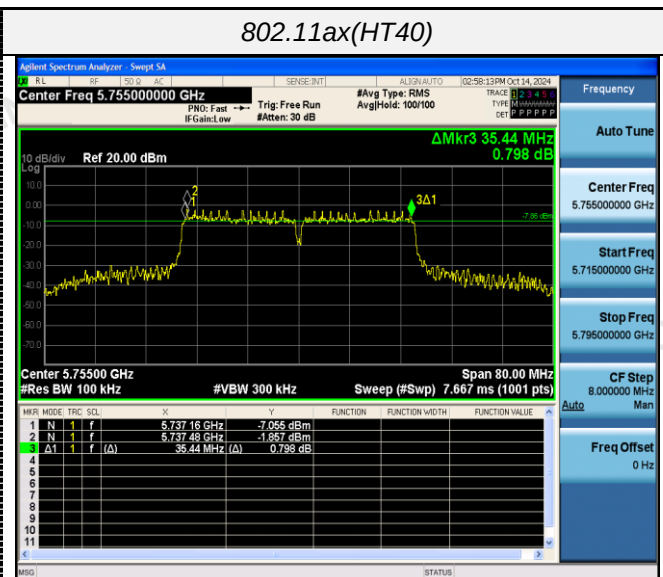
CH165



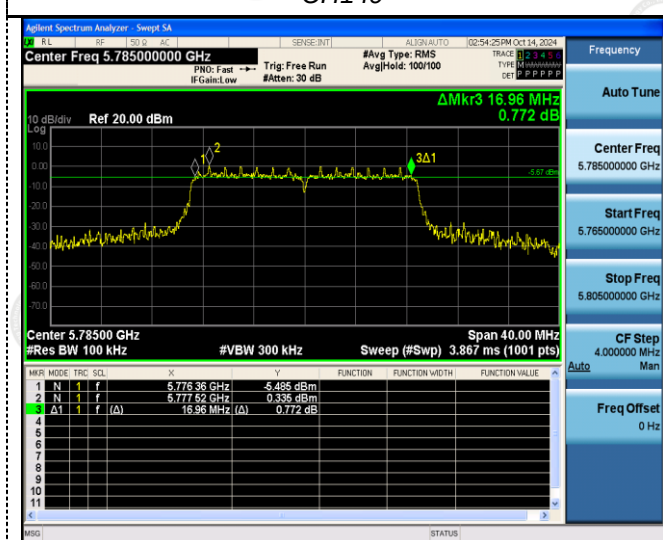
802.11ax(HT20)



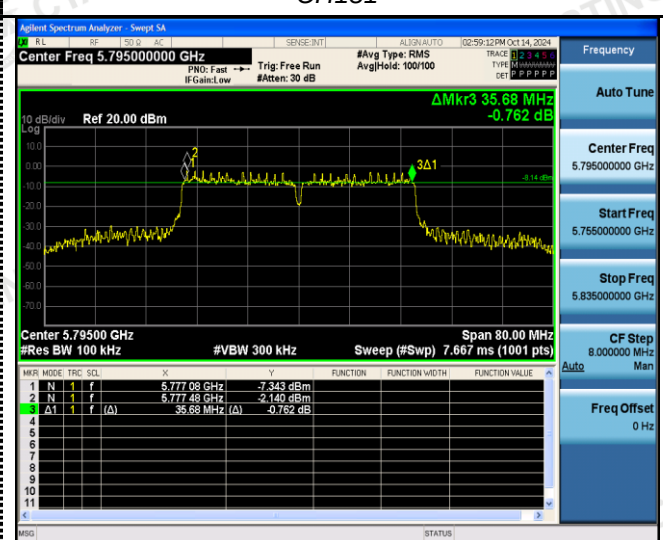
802.11ax(HT40)



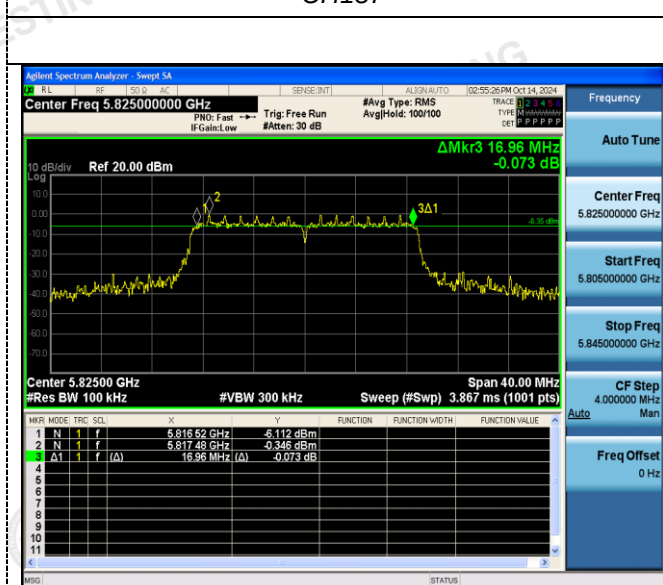
CH149



CH151



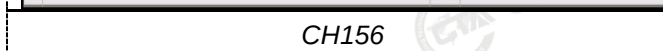
CH157



CH159



CH156

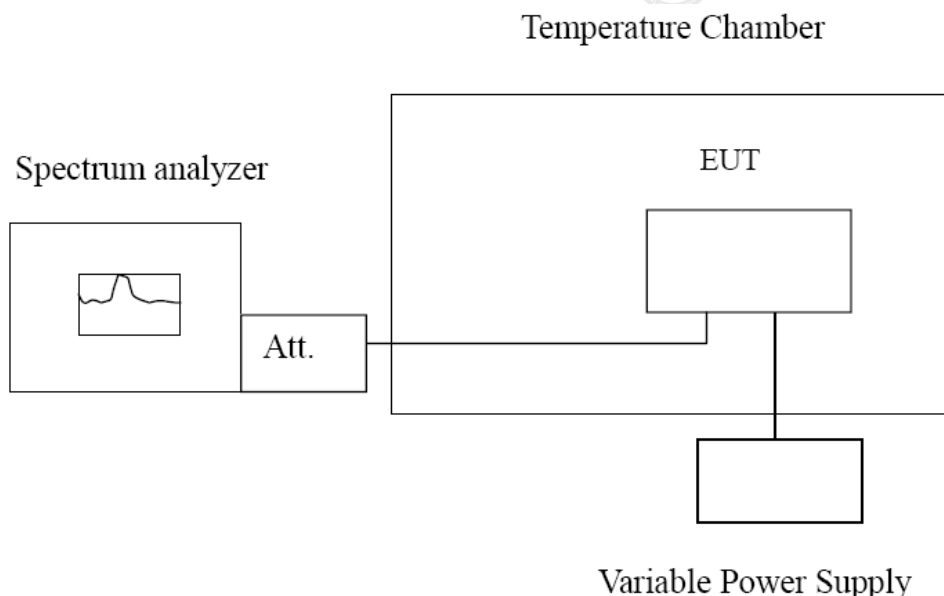


4.7 Frequency Stability

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.

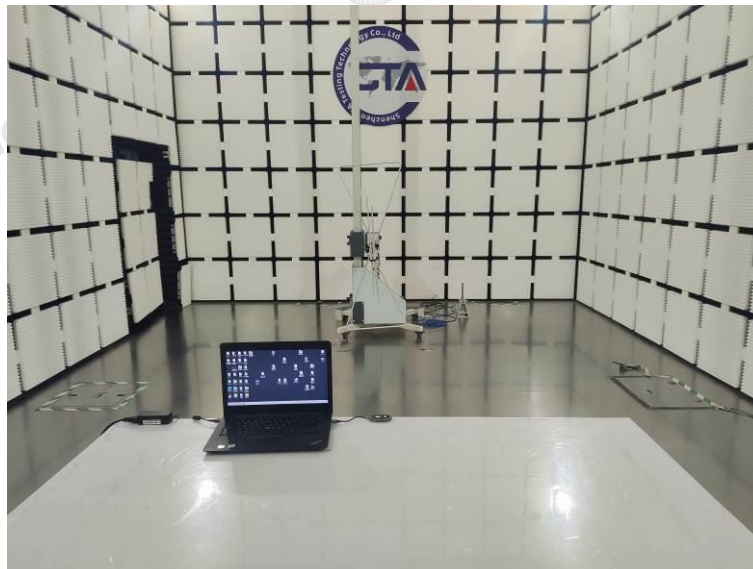
TEST RESULTS

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 120V	-30	110.42	0.021317	Within the band of operation	Pass
	-20	174.49	0.033685		
	-10	145.66	0.028120		
	0	146.42	0.028266		
	10	145.77	0.028141		
	20	99.68	0.019243		
	30	167.64	0.032363		
	40	129.49	0.024998		
	50	128.74	0.024853		
AC 138V	25	195.43	0.037728	Within the band of operation	Pass
AC 102V	25	118.61	0.022898		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120V	-30	135.44	0.023575	Within the band of operation	Pass
	-20	129.26	0.022500		
	-10	167.27	0.029116		
	0	169.79	0.029554		
	10	136.55	0.023768		
	20	144.52	0.025156		
	30	116.35	0.020252		
	40	168.40	0.029312		
	50	160.47	0.027932		
AC 138V	25	150.94	0.026273	Within the band of operation	Pass
AC 102V	25	129.51	0.022543		

5 Test Setup Photos of the EUT



6 Photos of the EUT

Reference to the test report No. CTA24100901401.

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