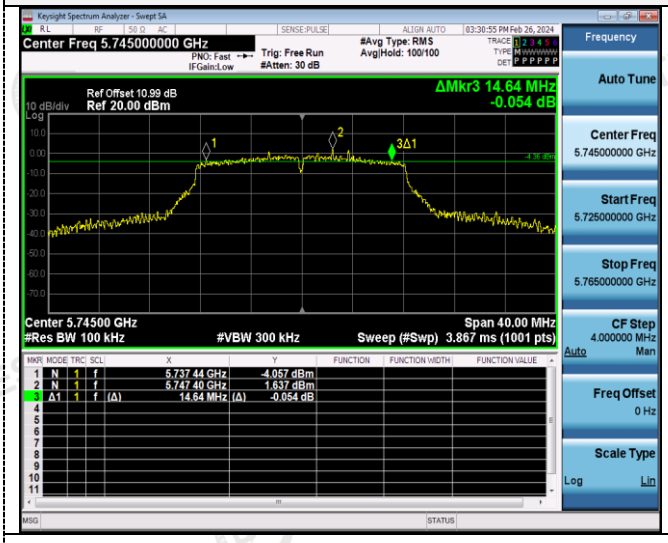
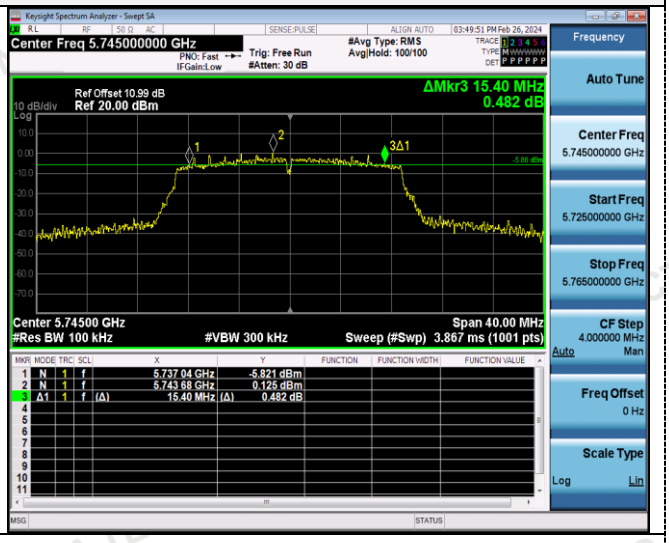
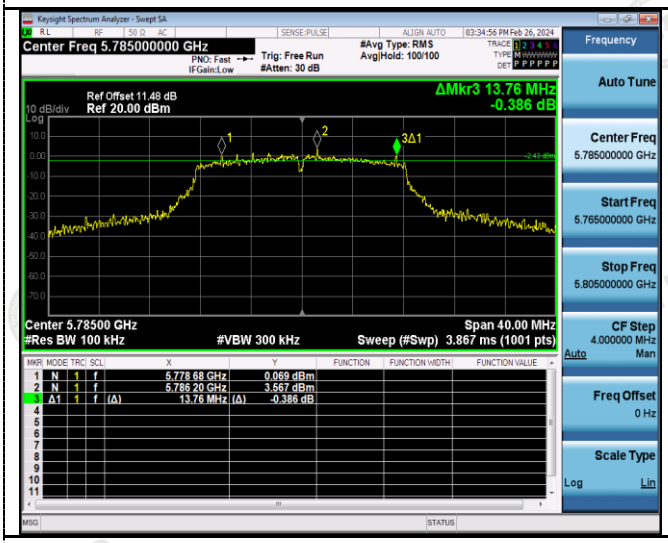
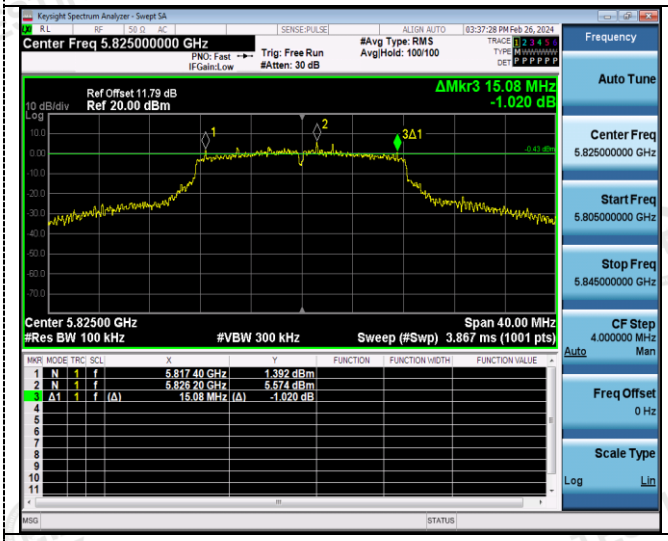
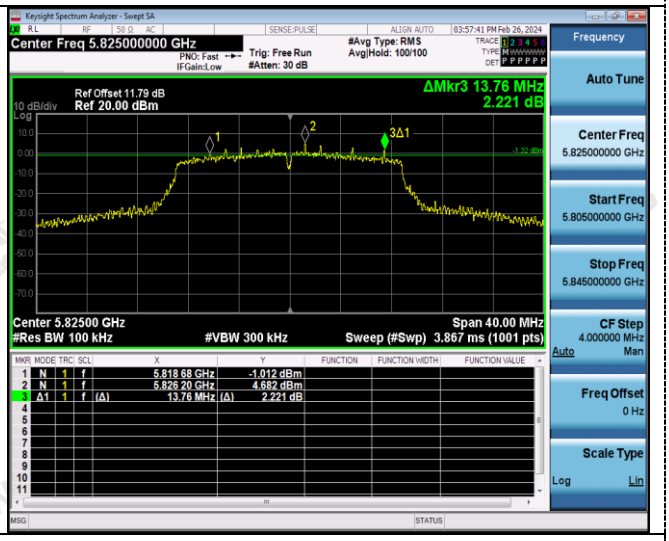
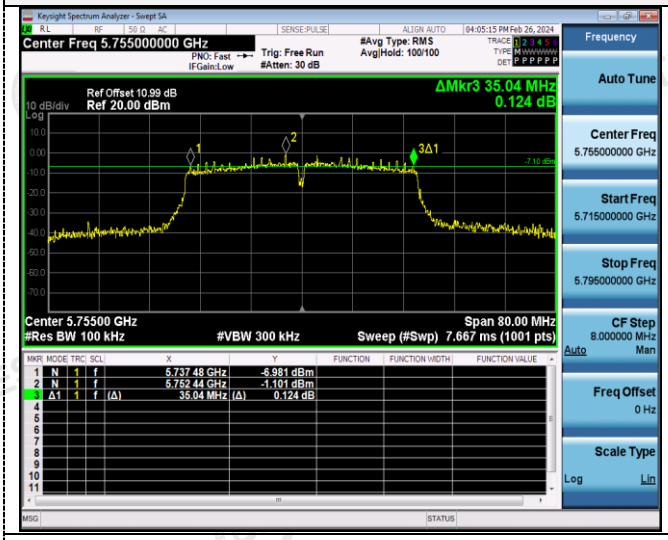
ANT 1

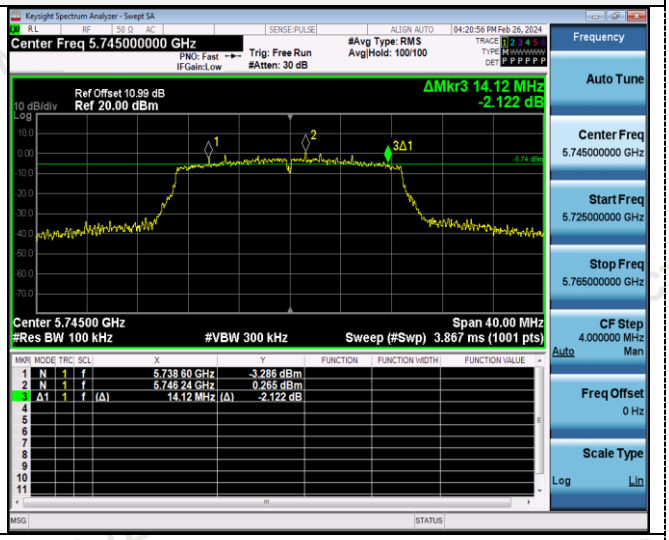
802.11a	802.11n(HT20)
	
CH149	CH149
	
CH157	CH157
	
CH165	CH165

802.11n(HT40)

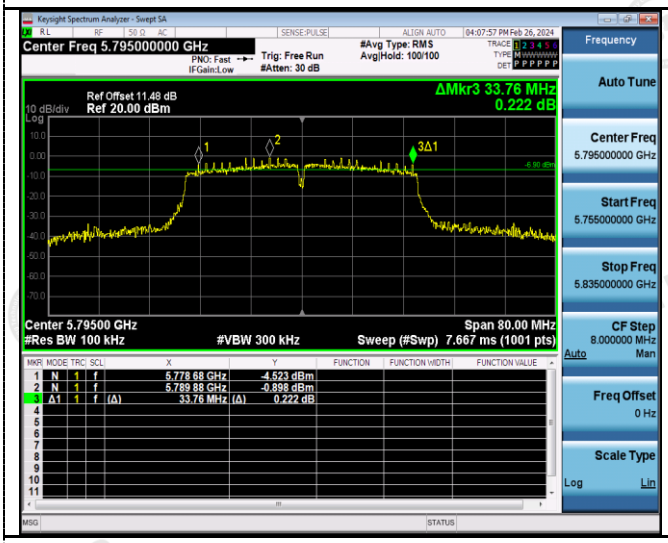


CH151

802.11ac(HT20)

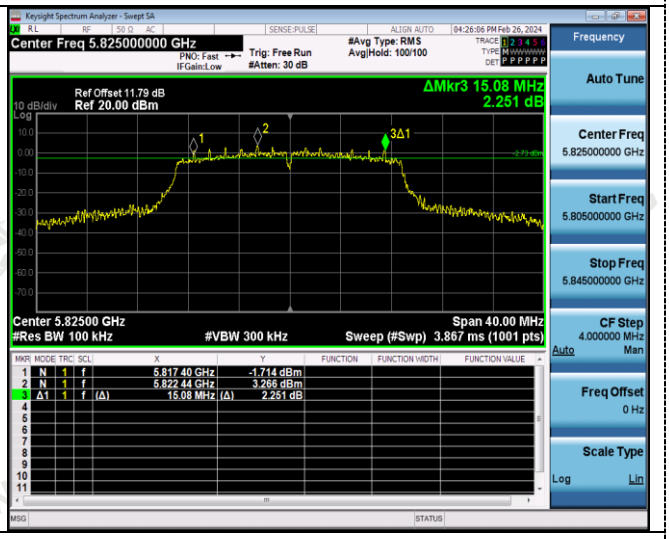


CH149



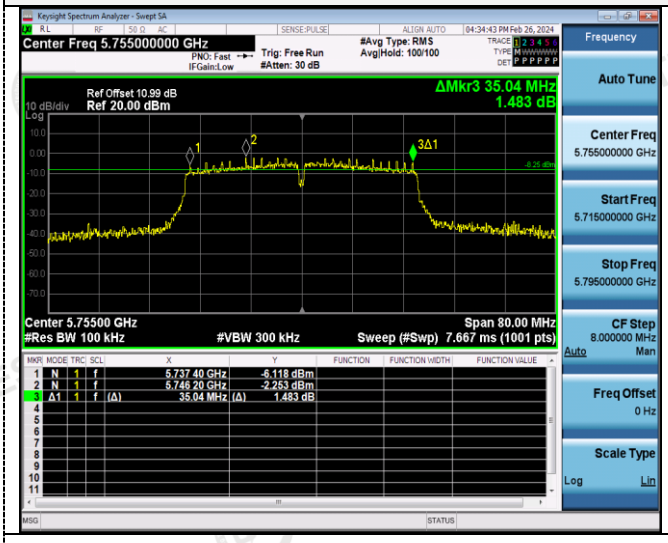
CH159

CH157



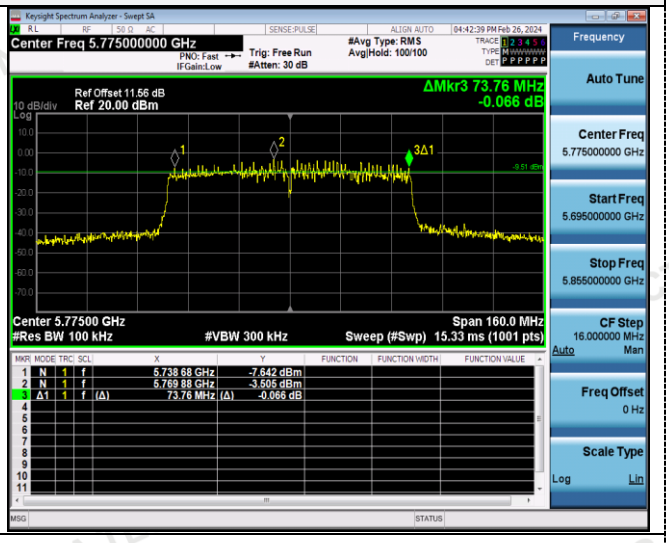
CH165

802.11ac(HT40)

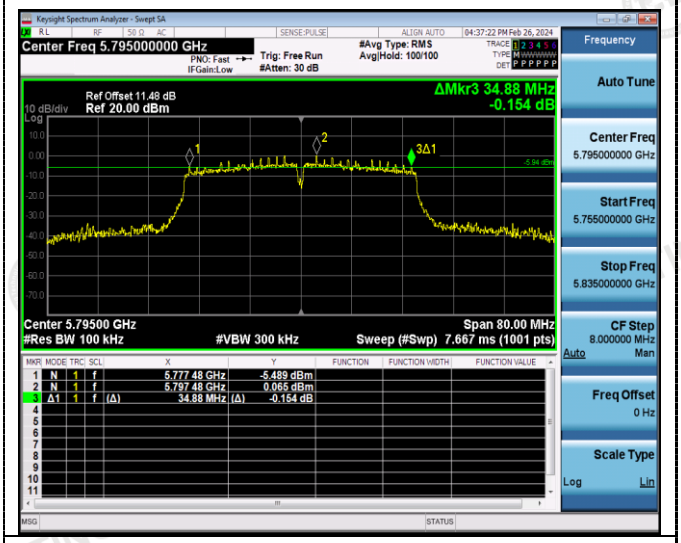


CH151

802.11ac(HT80)

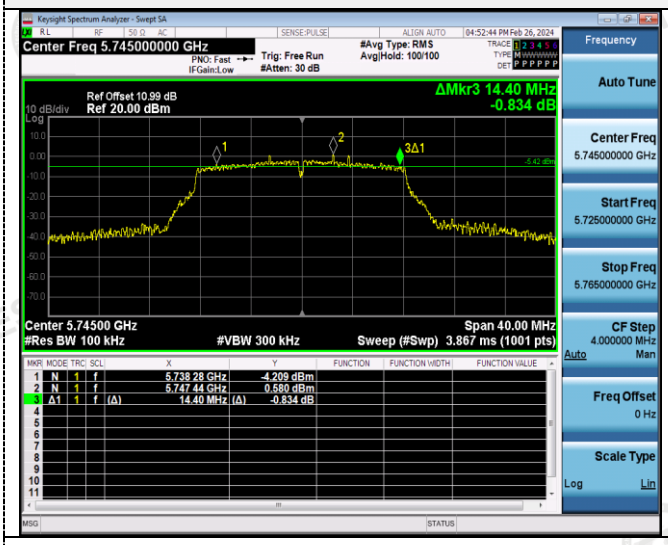
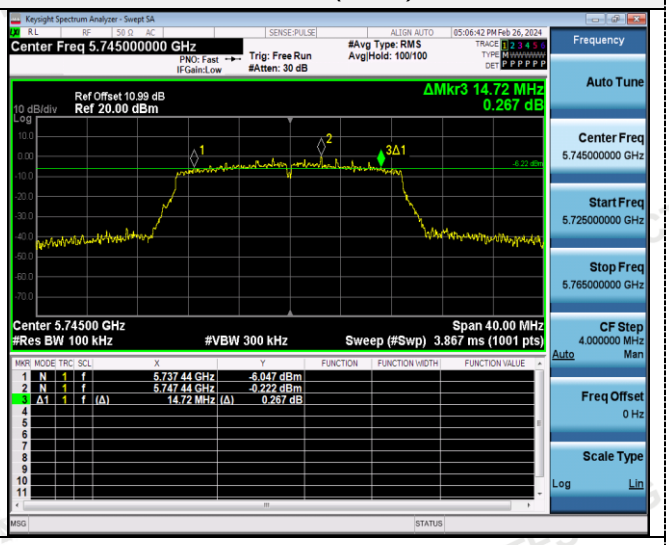
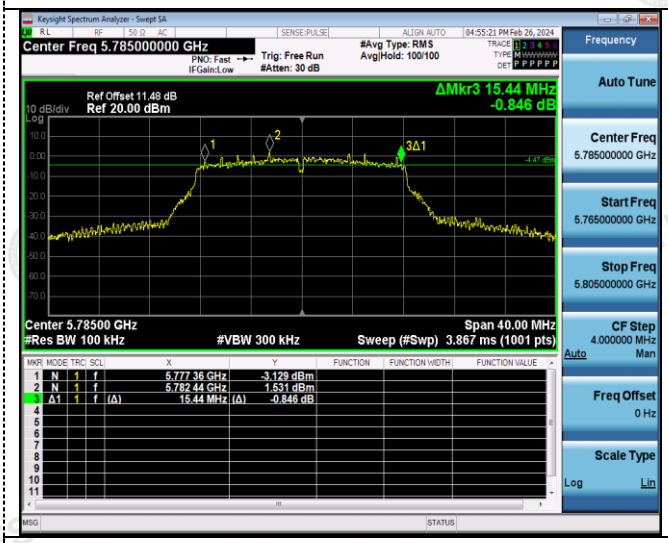
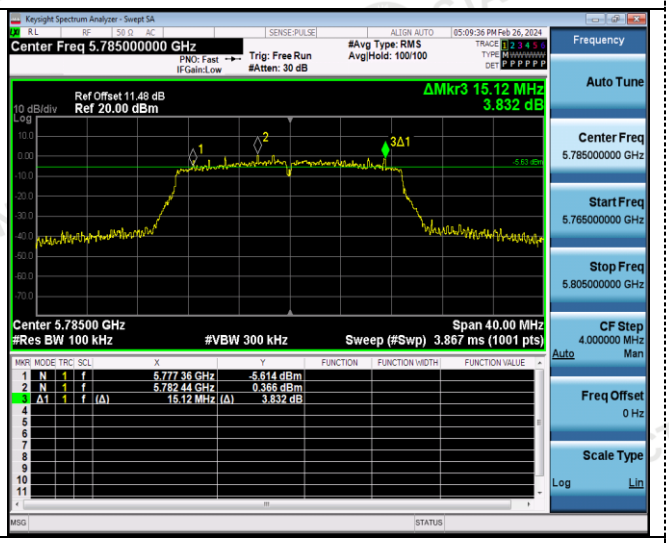
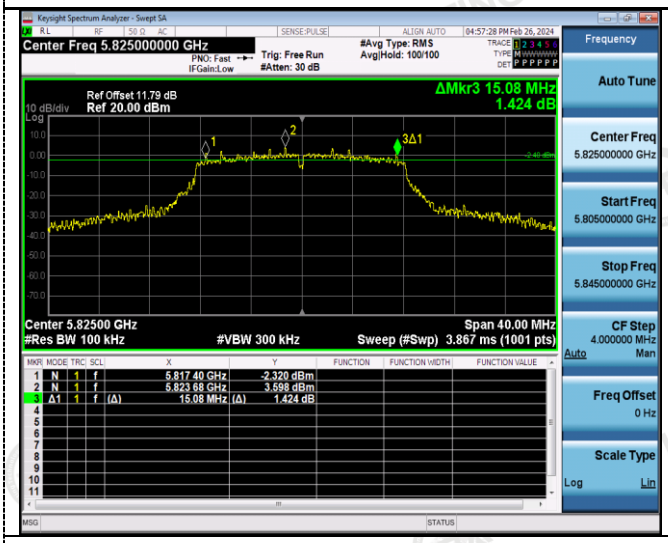
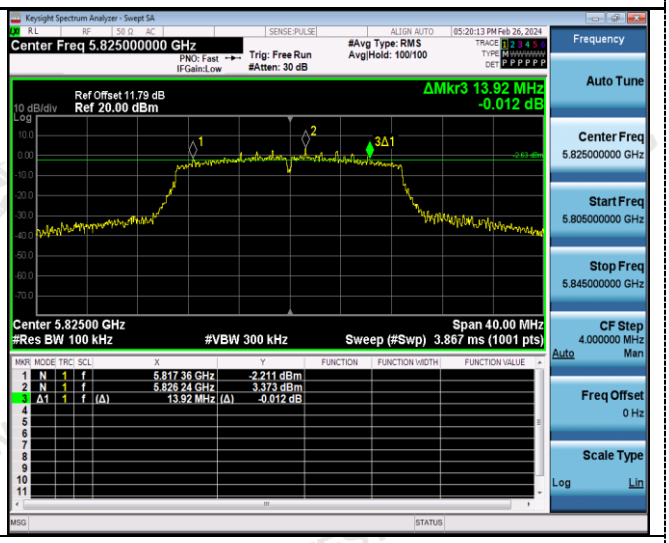


CH155

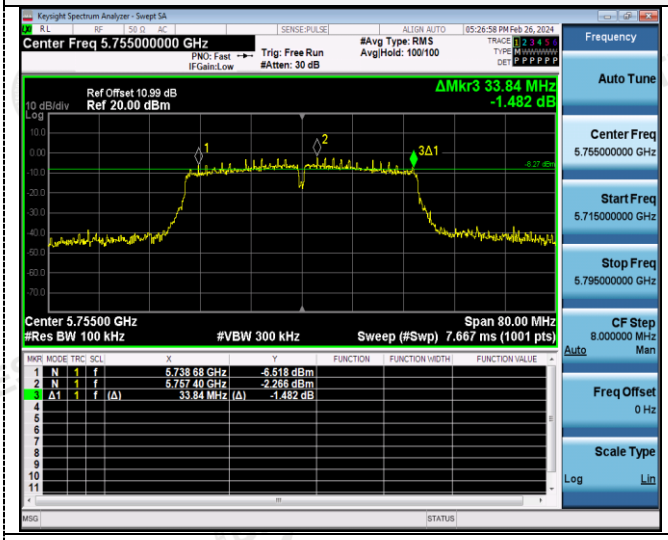


CH159

ANT 2

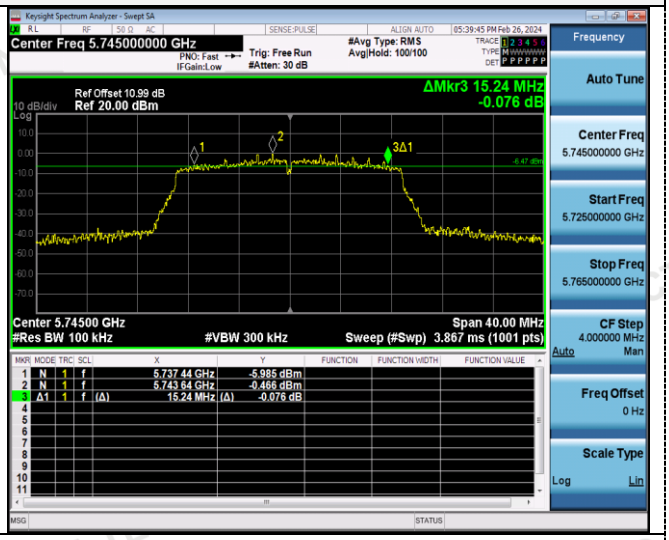
802.11a	802.11n(HT20)
	
CH149	CH149
	
CH157	CH157
	
CH165	CH165

802.11n(HT40)

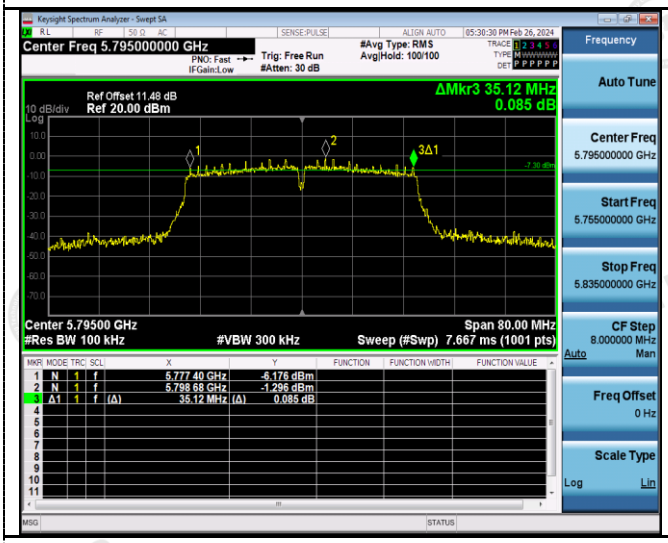


CH151

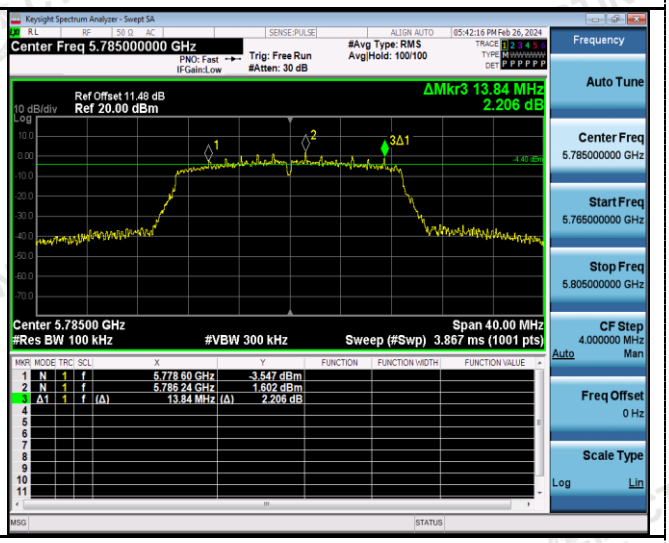
802.11ac(HT20)



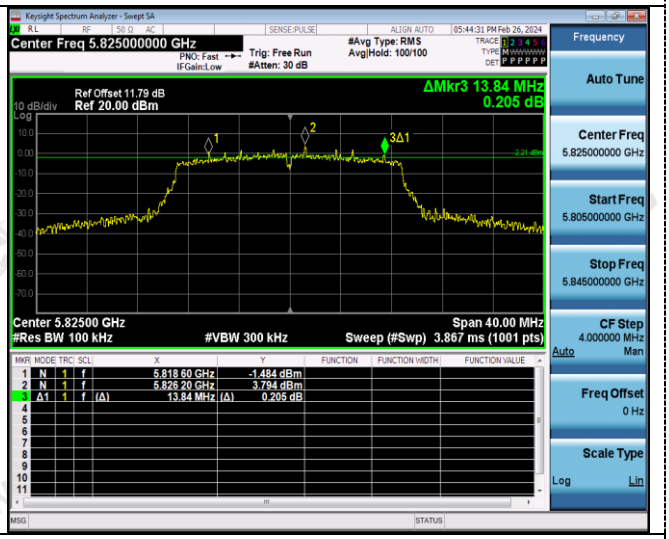
CH149



CH159

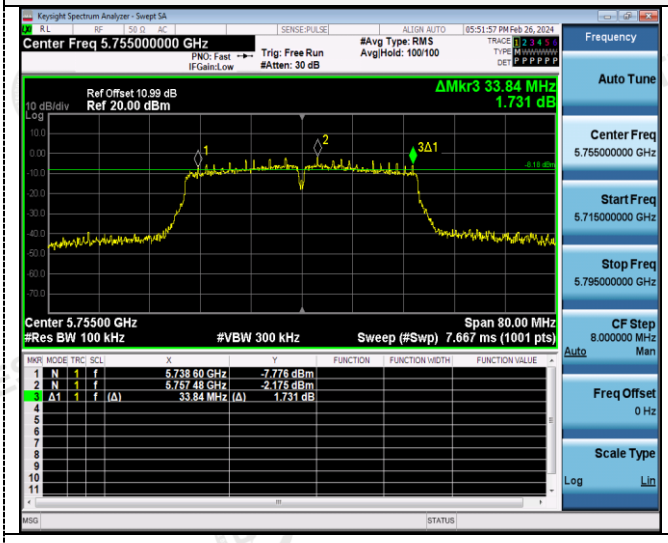


CH157



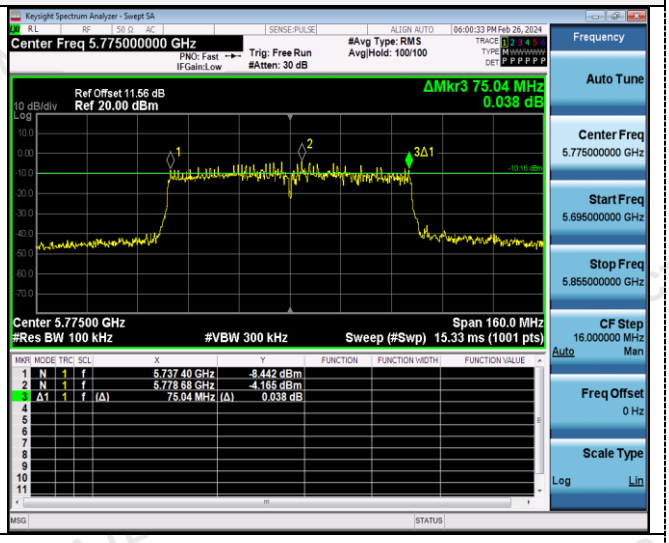
CH165

802.11ac(HT40)

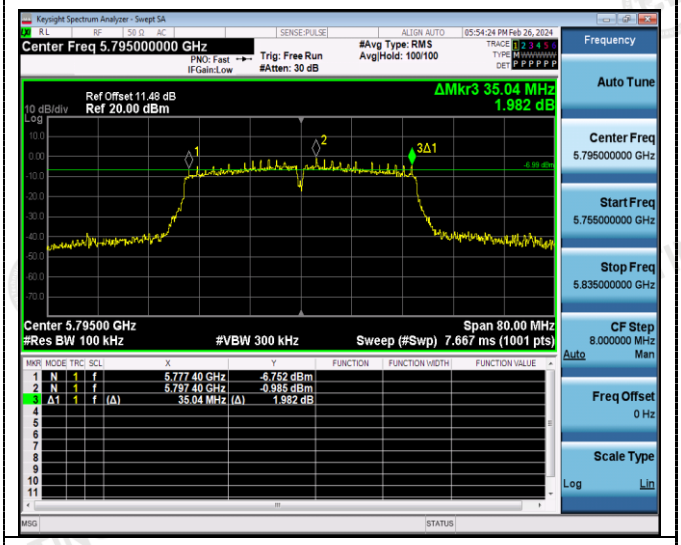


CH151

802.11ac(HT80)



CH155



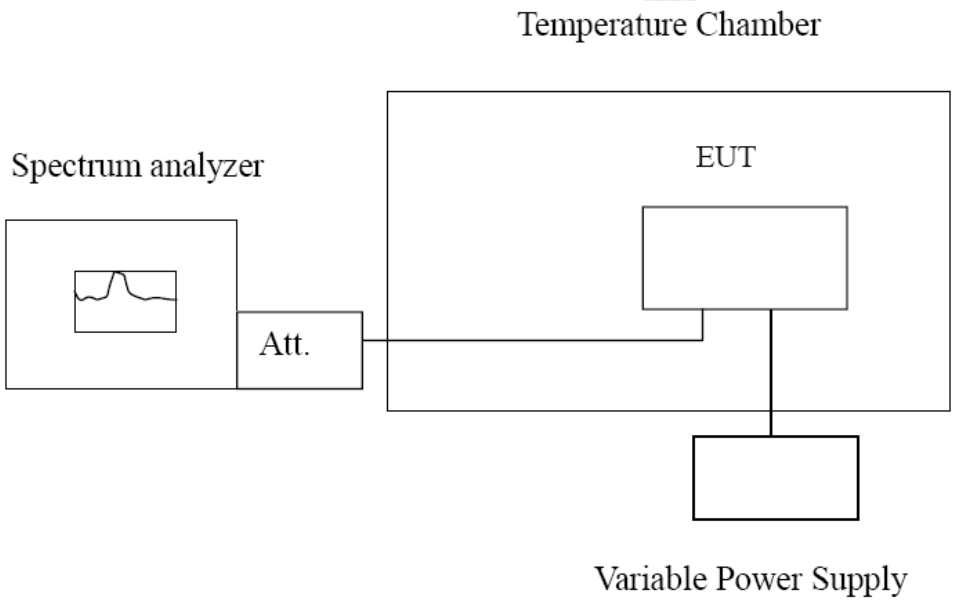
CH159

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℃ 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:

Ant1:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 7.70	-30	110.46	0.021324	Within the band of operation	Pass
	-20	174.51	0.033689		
	-10	145.57	0.028102		
	0	146.52	0.028286		
	10	145.79	0.028145		
	20	99.54	0.019216		
	30	167.48	0.032332		
	40	129.48	0.024996		
	50	128.32	0.024772		
DC 8.86	25	195.43	0.037728		
DC 6.55	25	118.85	0.022944		

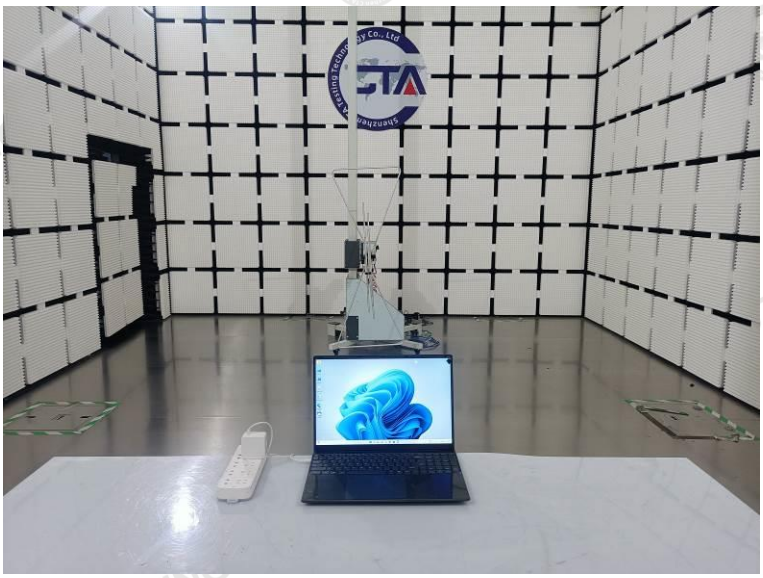
Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 7.70	-30	135.42	0.023572	Within the band of operation	Pass
	-20	129.73	0.022581		
	-10	167.05	0.029077		
	0	169.86	0.029567		
	10	136.37	0.023737		
	20	145.00	0.025239		
	30	116.68	0.020310		
	40	168.40	0.029312		
	50	160.37	0.027915		
DC 8.86	25	150.81	0.026251		
DC 6.55	25	129.74	0.022583		

Ant2:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 7.70	-30	110.71	0.021373	Within the band of operation	Pass
	-20	174.60	0.033707		
	-10	145.19	0.028029		
	0	146.44	0.028270		
	10	146.28	0.028239		
	20	99.37	0.019183		
	30	167.23	0.032284		
	40	129.58	0.025015		
	50	128.52	0.024811		
DC 8.86	25	195.73	0.037786		
DC 6.55	25	118.64	0.022903		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 7.70	-30	135.46	0.023579	Within the band of operation	Pass
	-20	129.73	0.022581		
	-10	167.41	0.029140		
	0	169.96	0.029584		
	10	136.70	0.023795		
	20	144.62	0.025173		
	30	116.77	0.020326		
	40	168.66	0.029358		
	50	160.82	0.027993		
DC 8.86	25	150.84	0.026256		
DC 6.55	25	129.97	0.022623		

5 Test Setup Photos of the EUT



6 Photos of the EUT

Reference to the test report No. **CTA24022202601.**

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