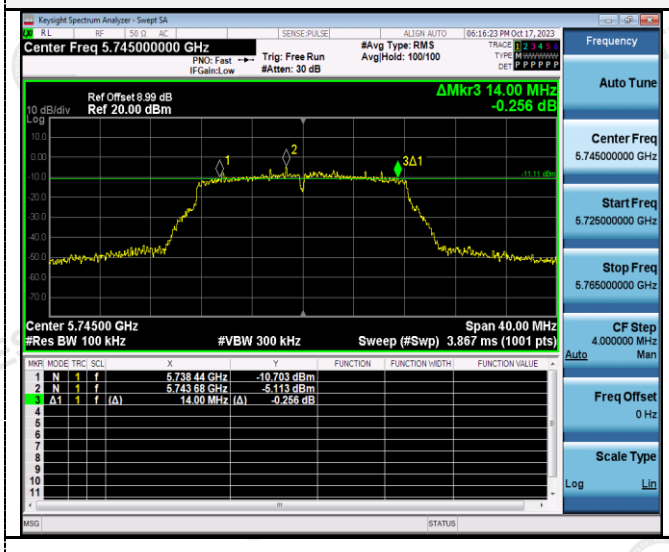
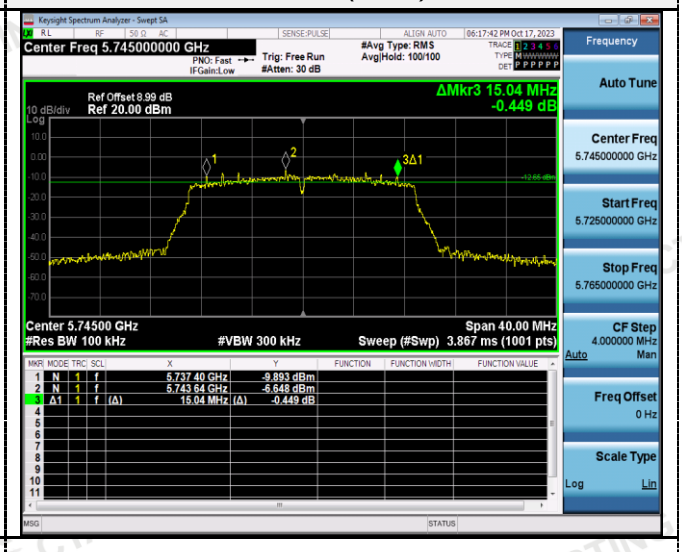
ANT 1:

802.11a

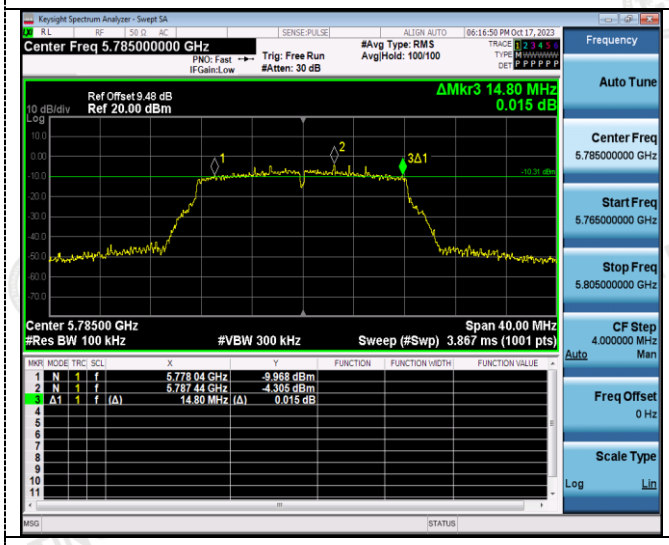


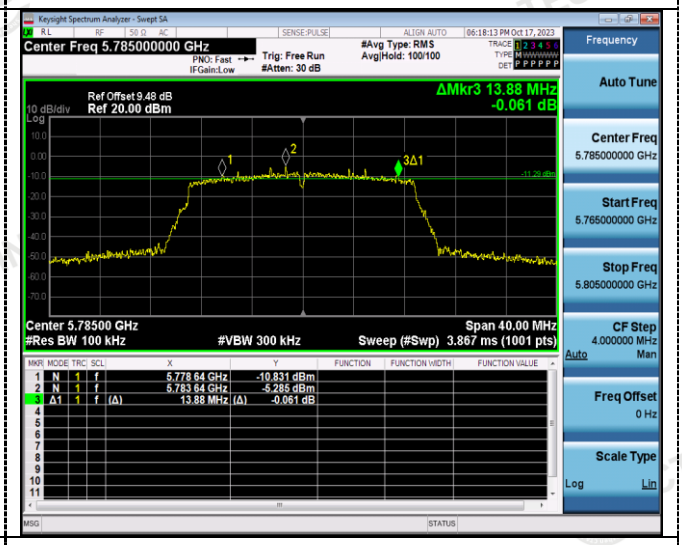
802.11n(HT20)



CH149

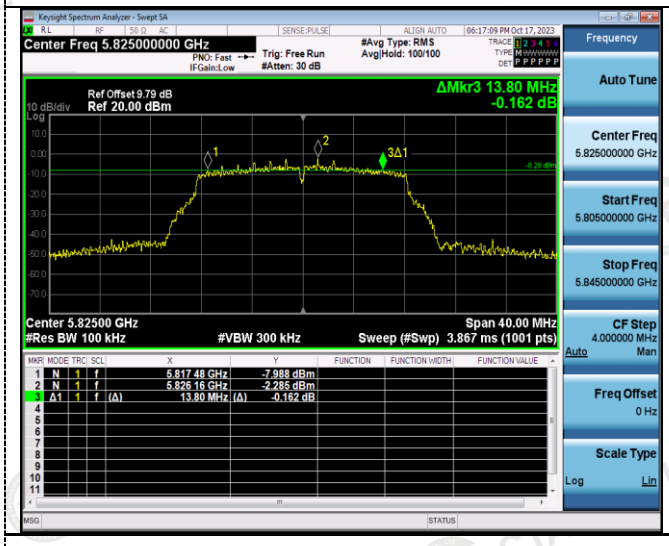
CH149

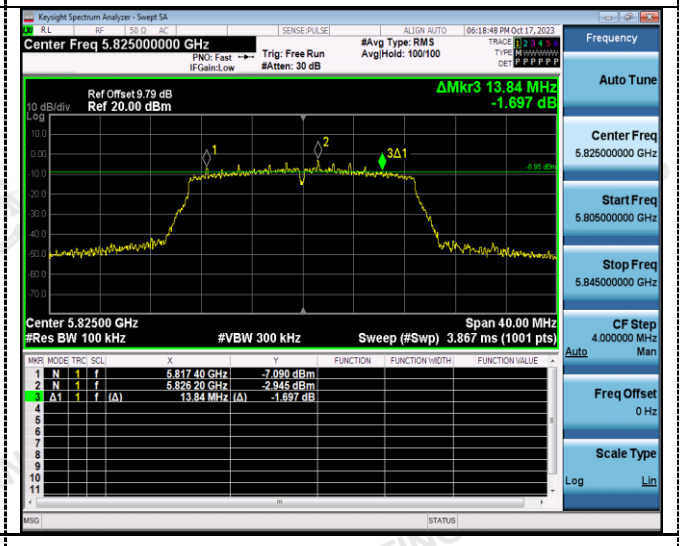




CH157

CH157

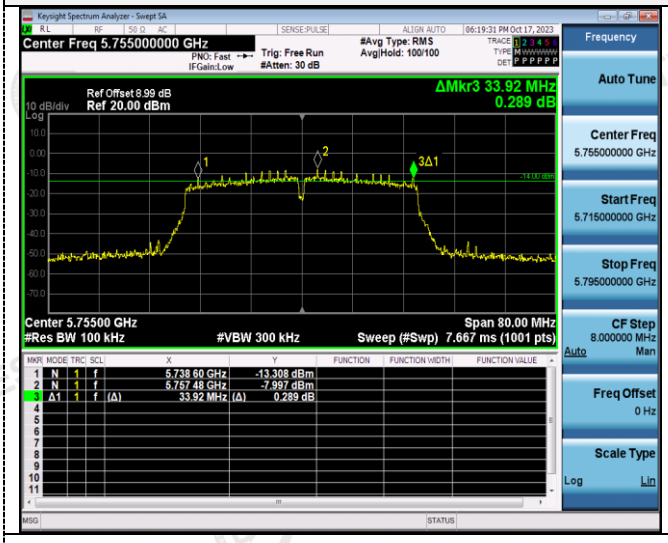




CH165

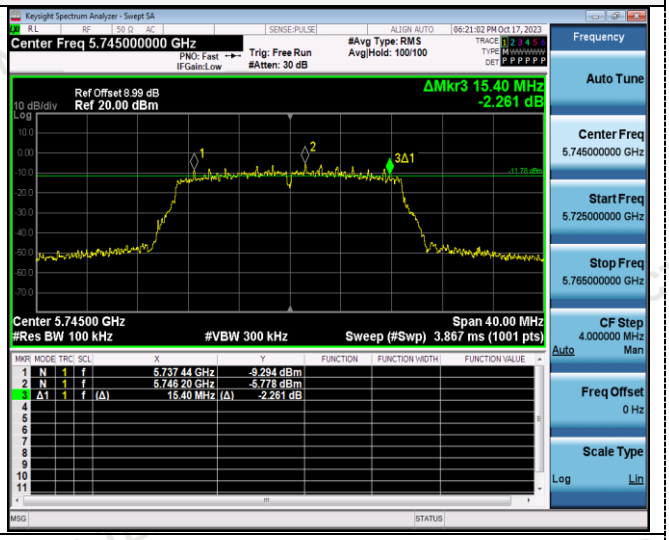
CH165

802.11n(HT40)

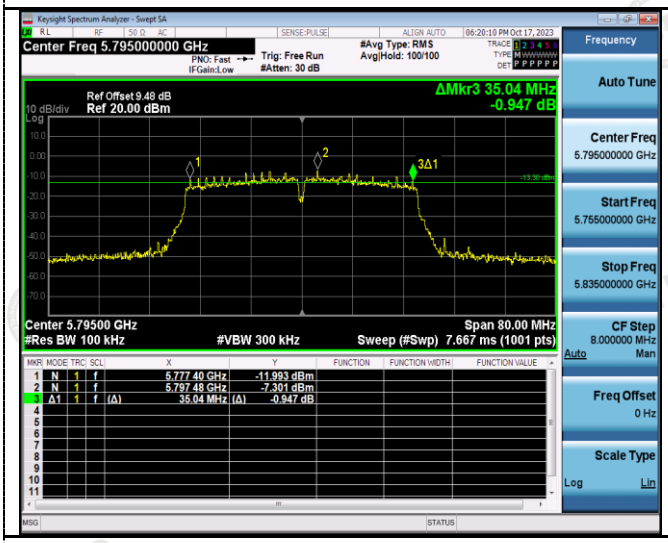


CH151

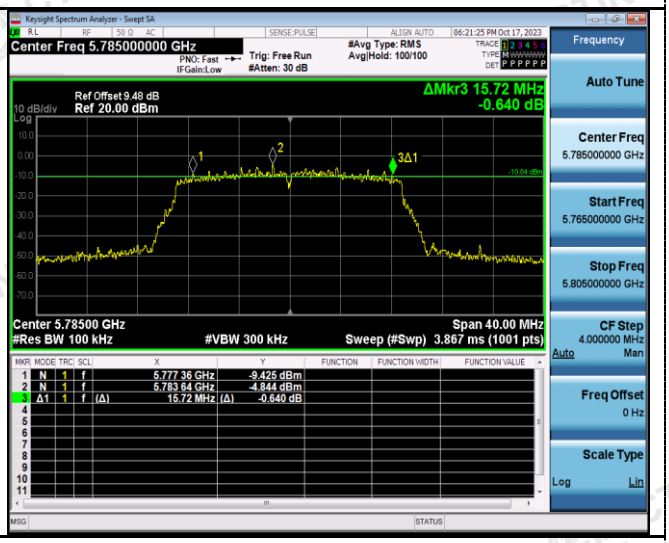
802.11ac(HT20)



CH149



CH159



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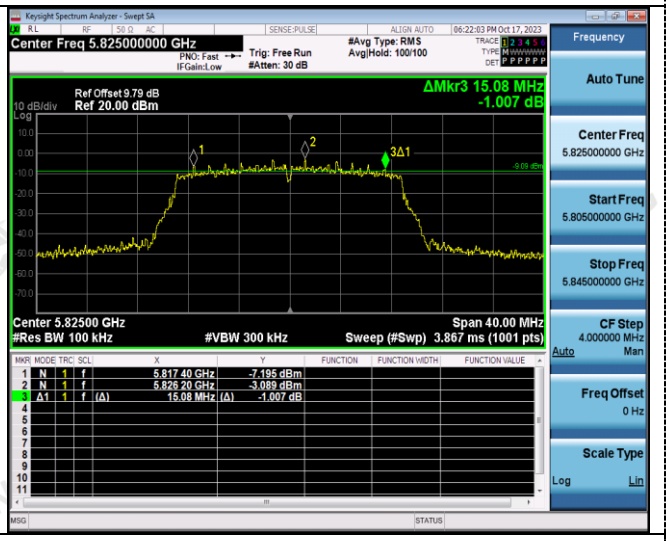
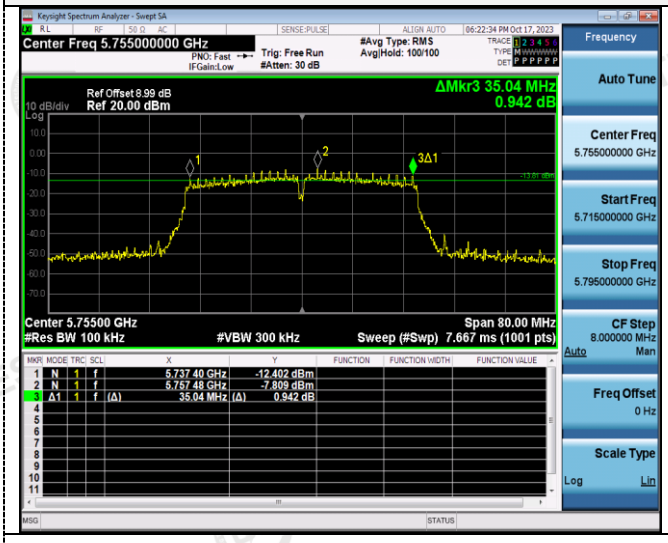


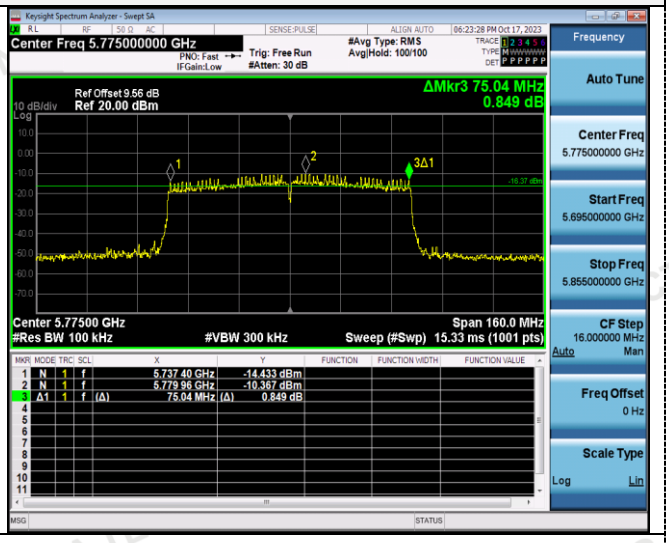
CH165

802.11ac(HT40)

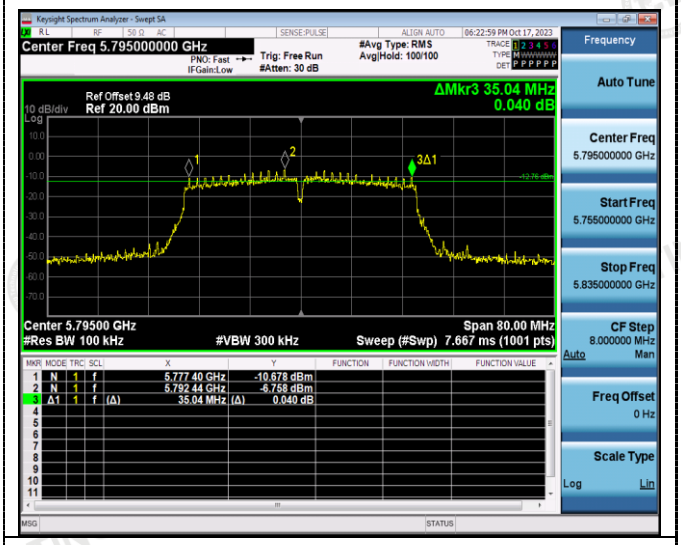


CH151

802.11ac(HT80)

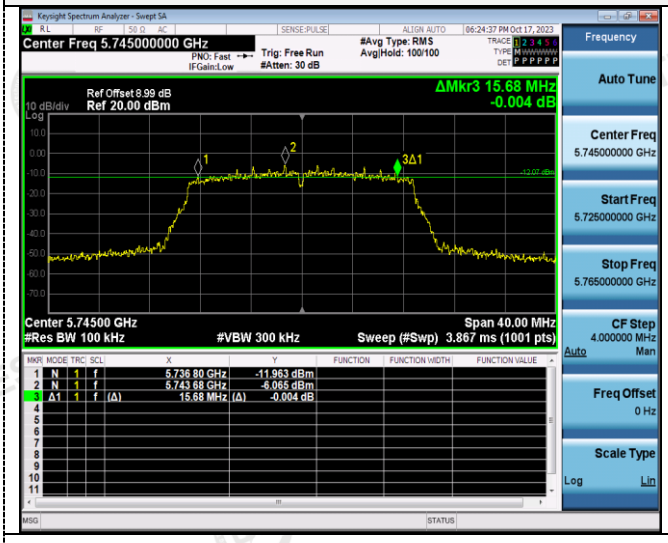


CH155



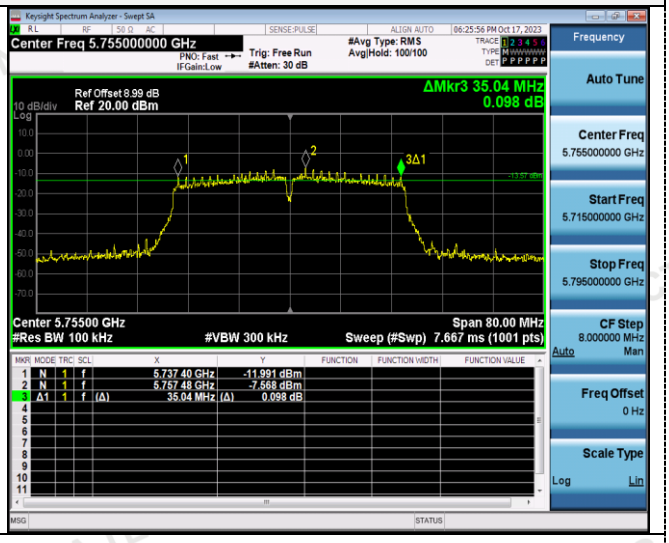
CH159

802.11ax(HT20)

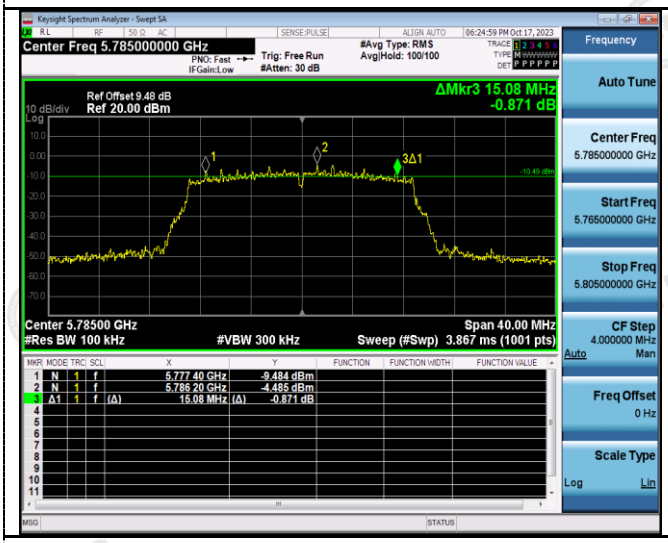


CH149

802.11ax(HT40)



CH151



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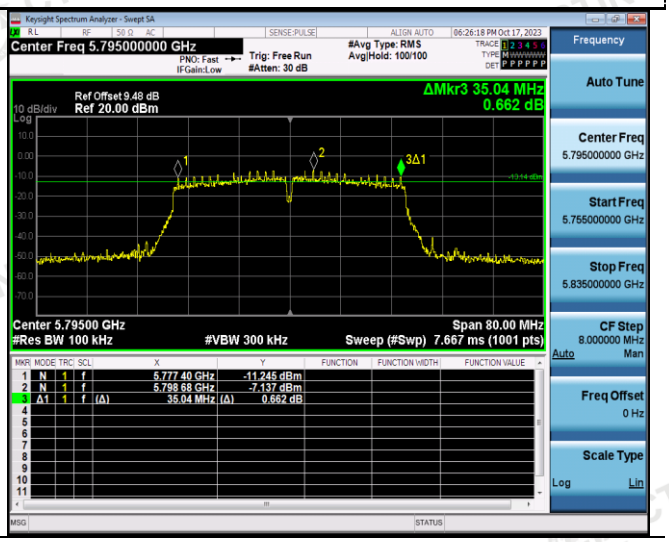
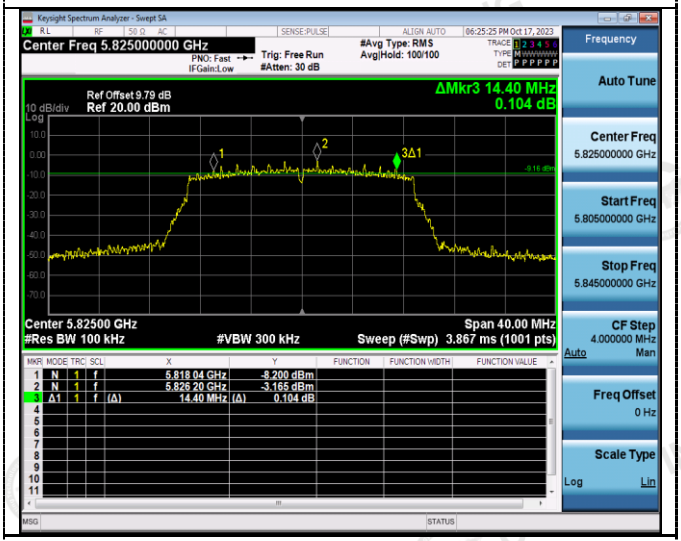
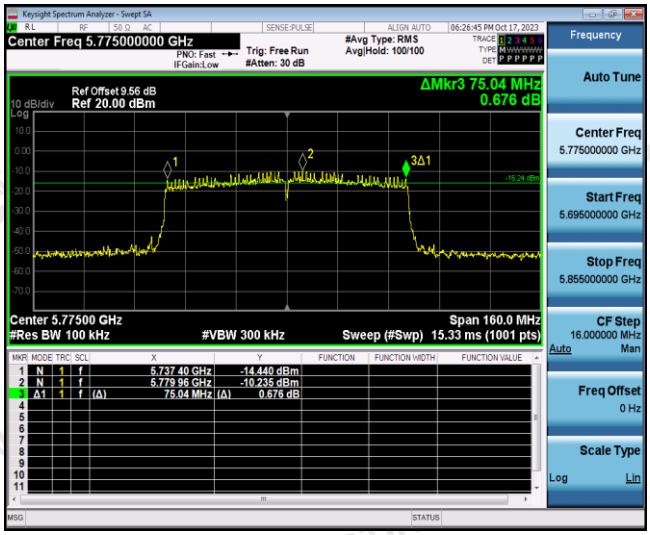


CH159

802.11ax(HT80)



CH156



CH155

ANT 2:

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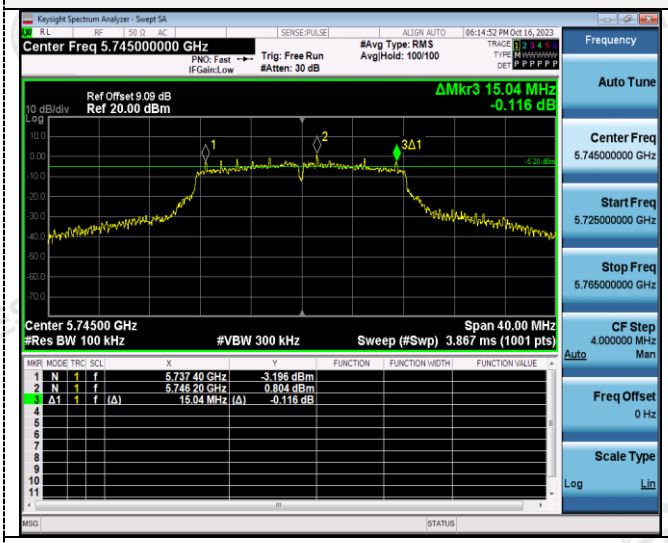
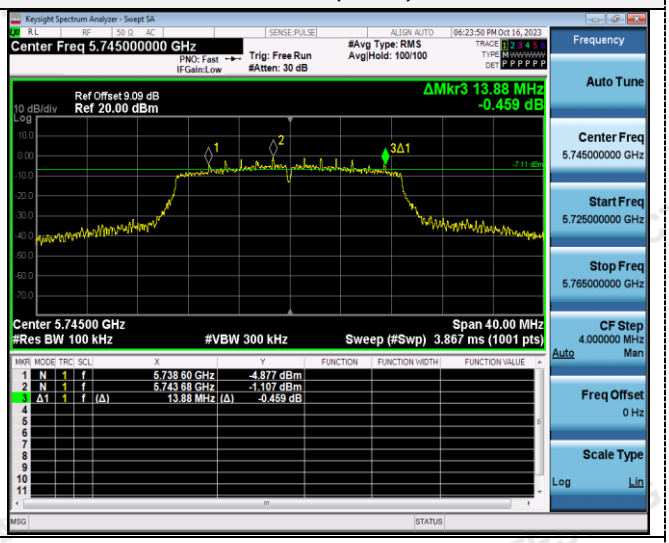
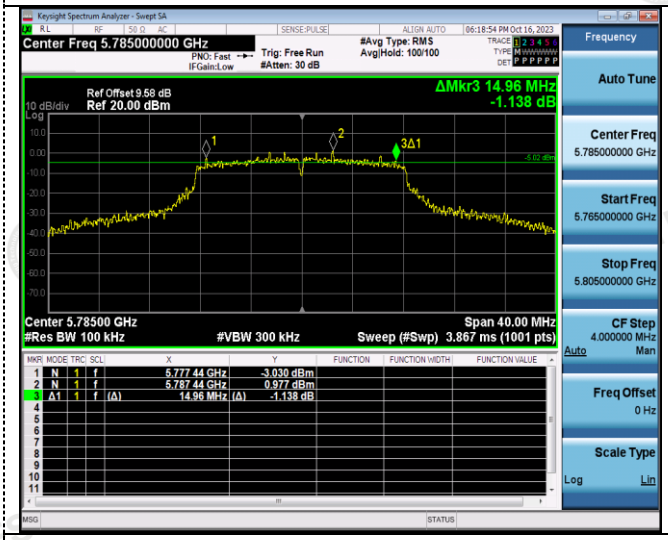
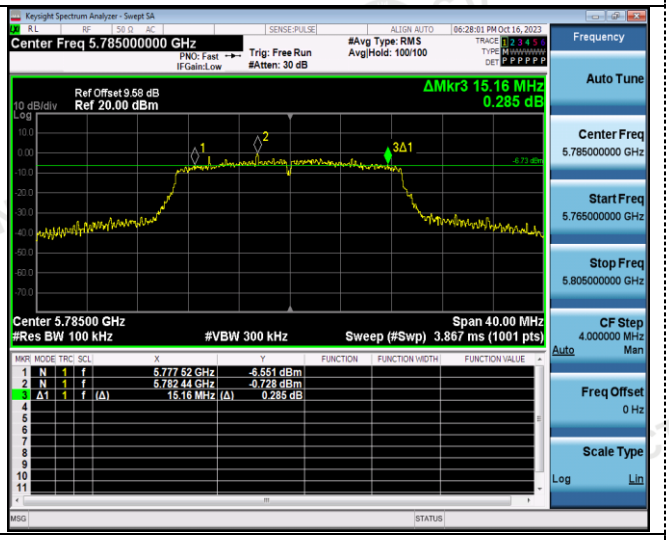
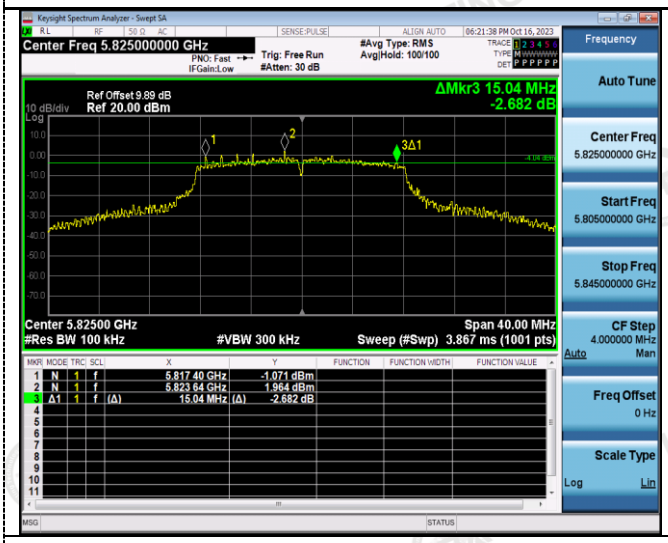
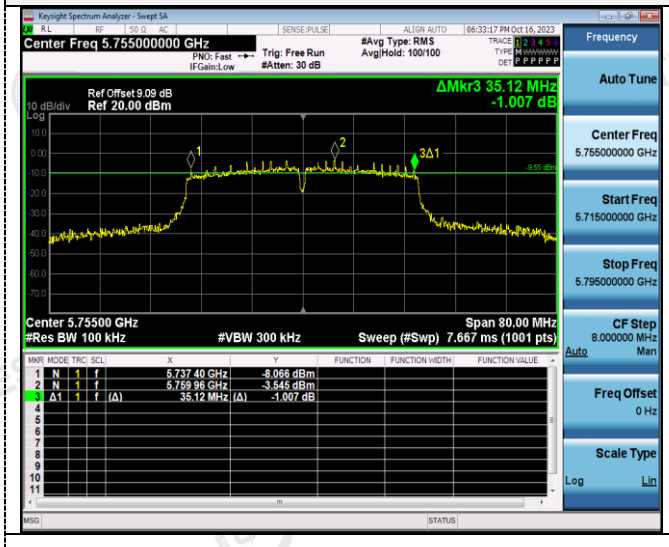
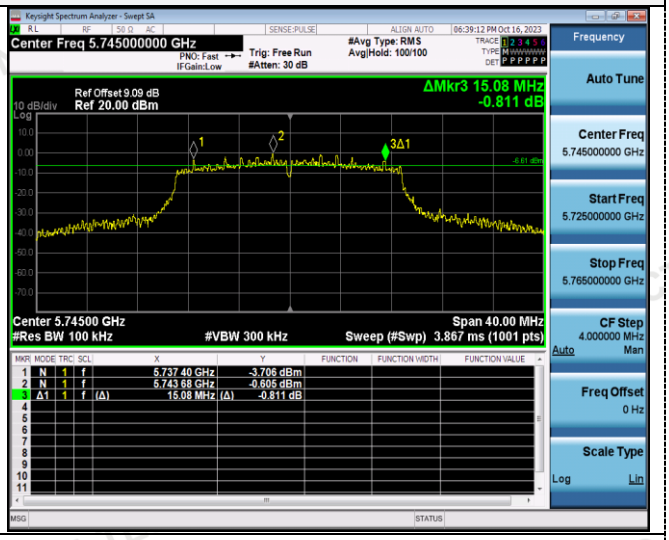
	
CH149	CH149
	
CH157	CH157
	
CH165	CH165

802.11n(HT40)

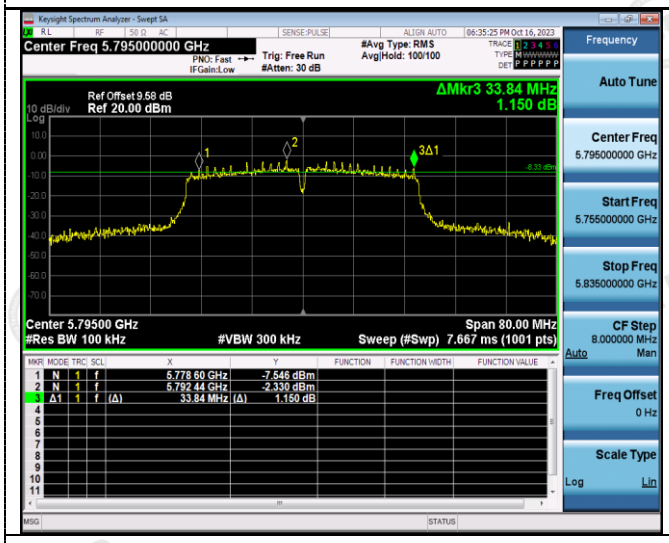


CH151

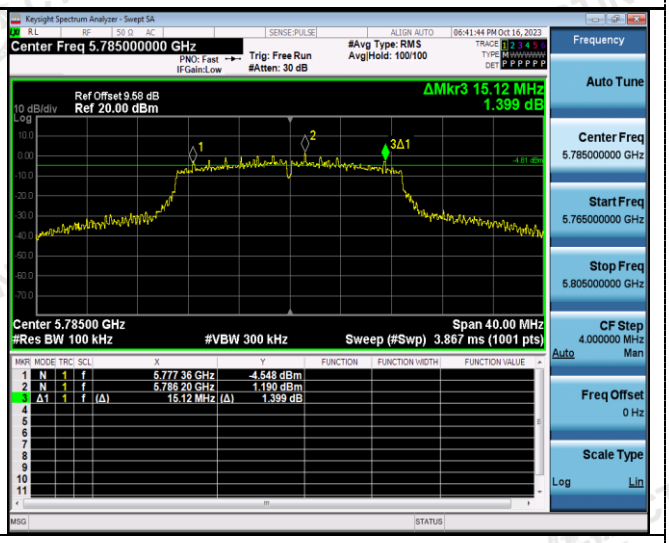
802.11ac(HT20)



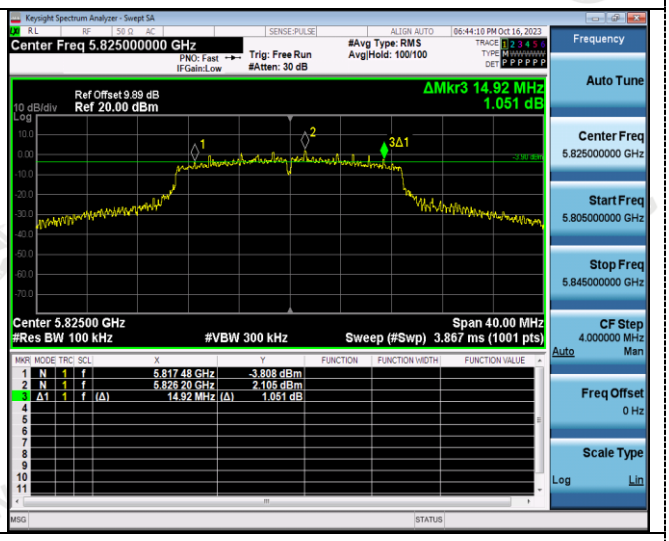
CH149



CH159

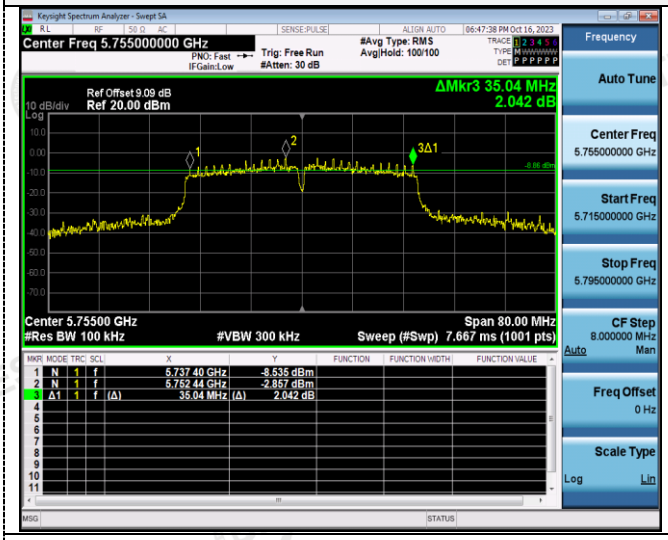


CH157



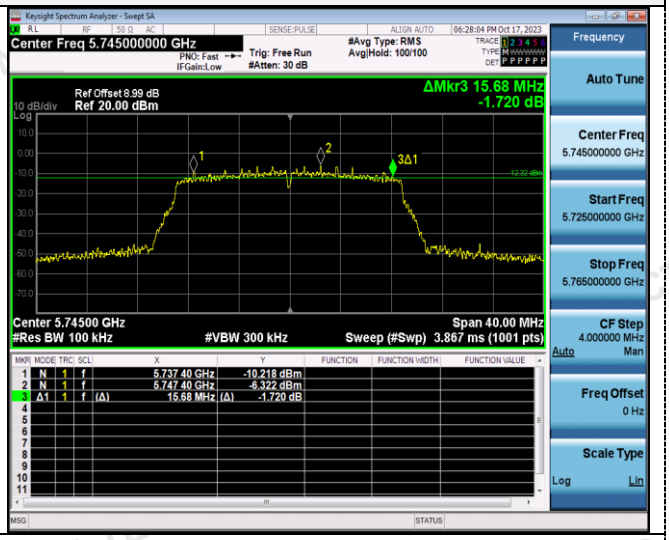
CH165

802.11ac(HT40)



CH151

802.11ax(HT20)



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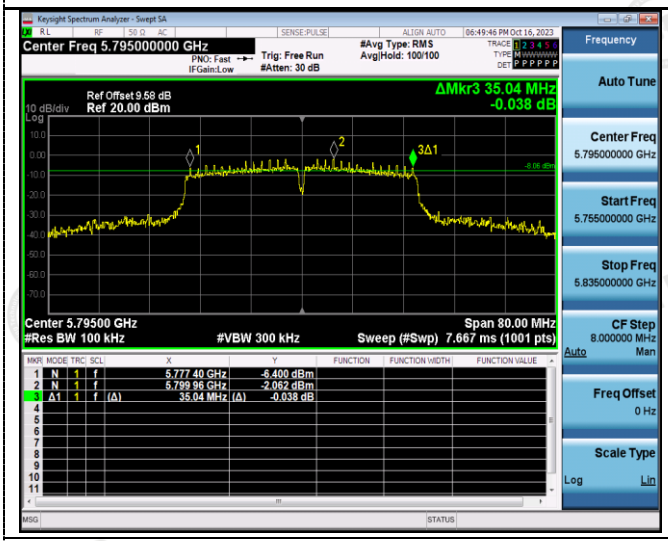

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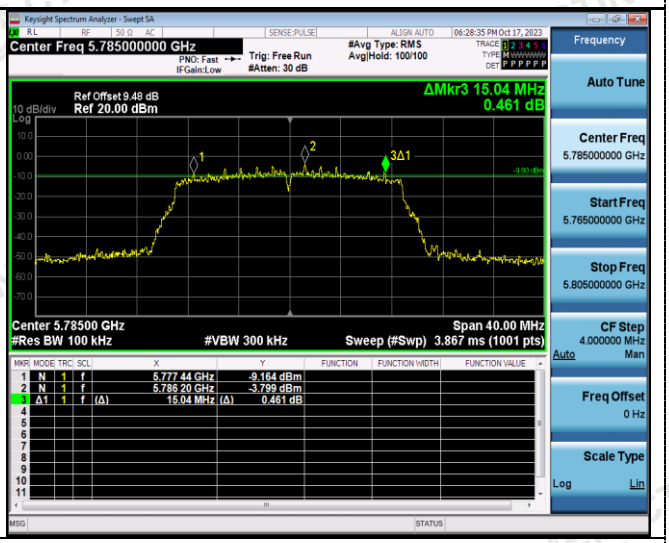
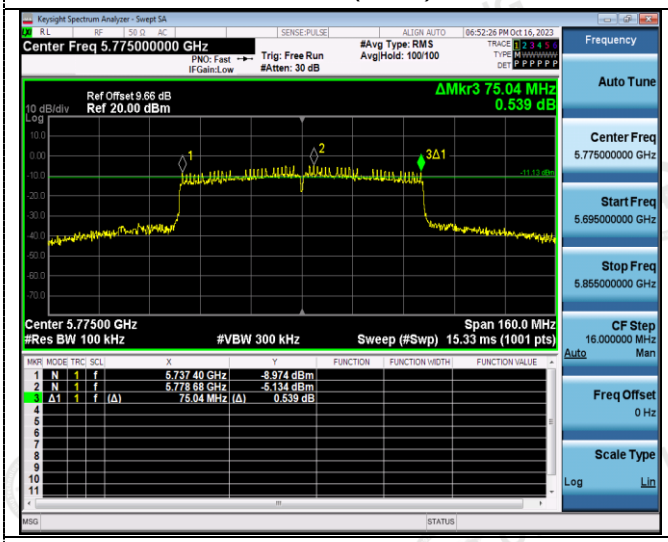
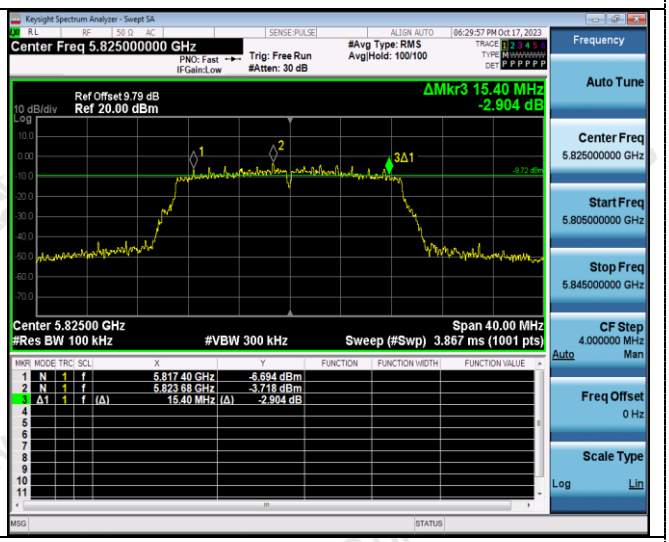


CH157

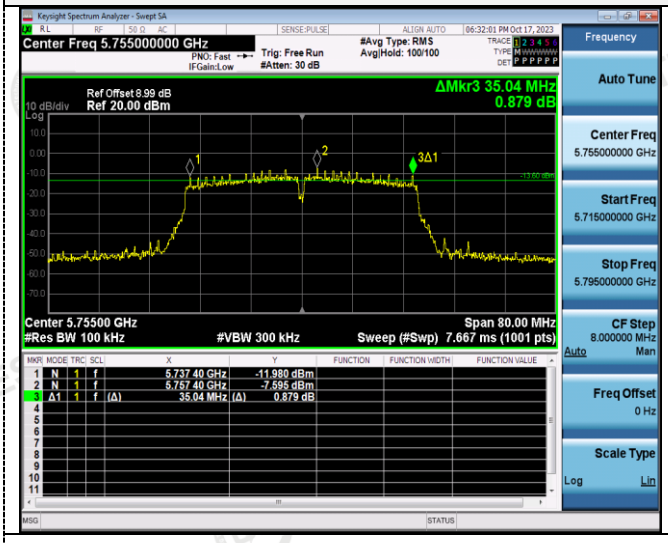
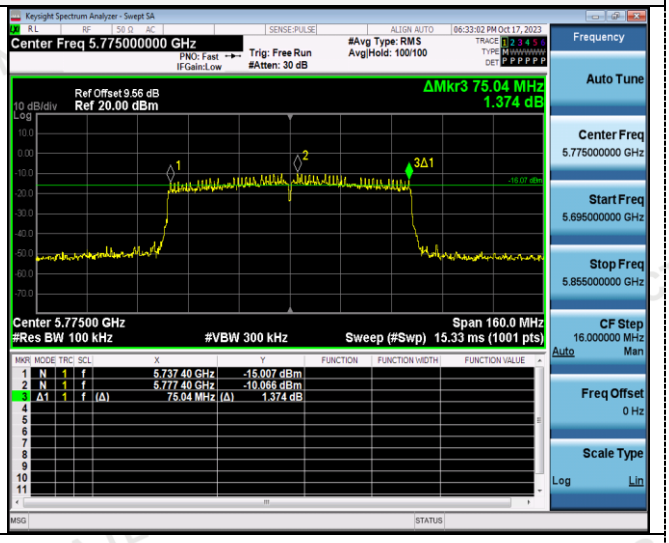
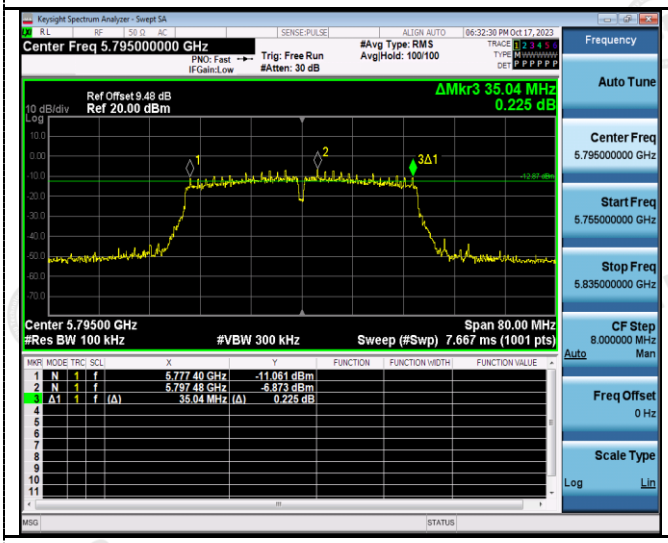
802.11ac(HT80)



CH155



CH165

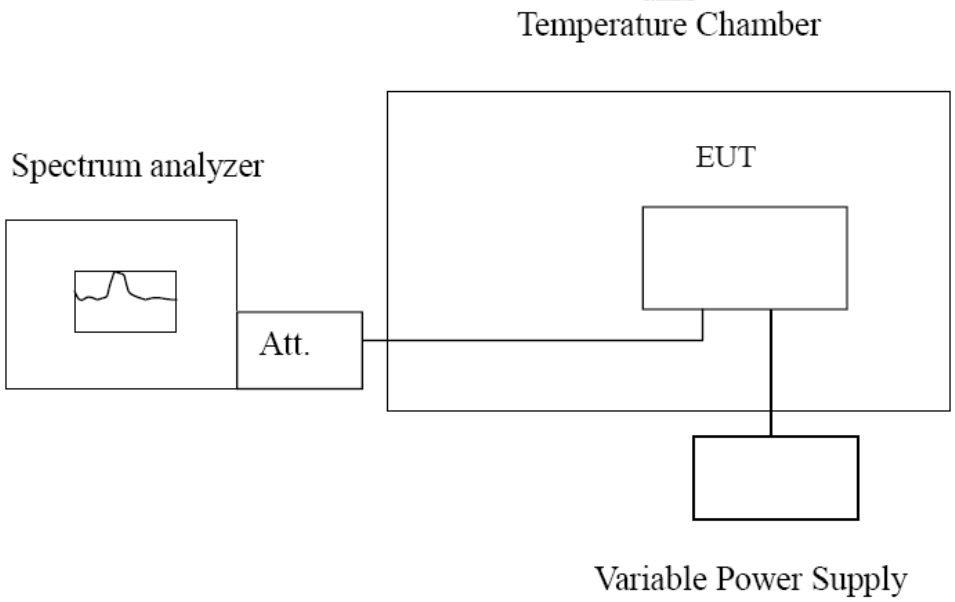
802.11ax(HT40)	802.11ax(HT80)
	
CH151	CH155
	
CH159	

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℃ 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:

Ant 1:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 11.55V	-30	110.67	0.021365	Within the band of operation	Pass
	-20	174.45	0.033678		
	-10	145.28	0.028046		
	0	146.38	0.028259		
	10	145.96	0.028178		
	20	99.44	0.019197		
	30	167.33	0.032303		
	40	129.37	0.024975		
	50	128.76	0.024857		
DC 13.28V	25	195.53	0.037747		
DC 9.82V	25	118.74	0.022923		

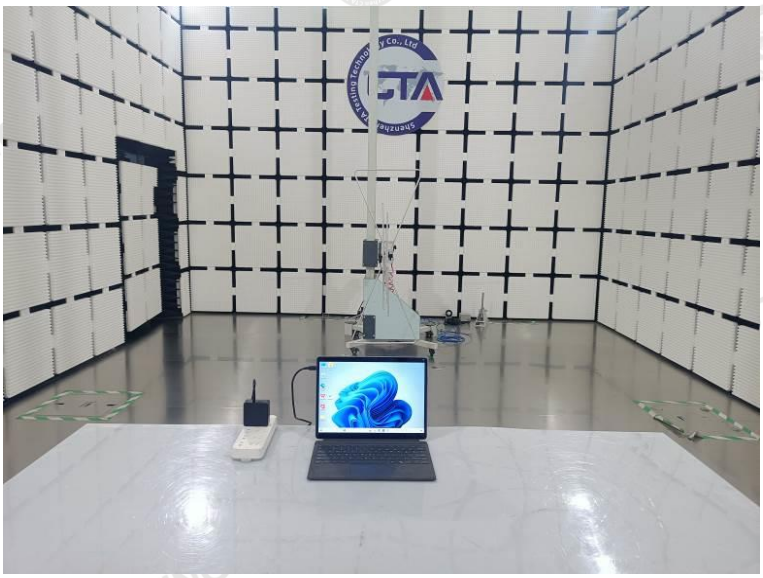
Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 11.55V	-30	135.64	0.023610	Within the band of operation	Pass
	-20	129.39	0.022522		
	-10	167.12	0.029090		
	0	169.53	0.029509		
	10	136.29	0.023723		
	20	144.56	0.025163		
	30	116.43	0.020266		
	40	168.29	0.029293		
	50	160.66	0.027965		
DC 13.28V	25	150.98	0.026280		
DC 9.82V	25	129.85	0.022602		

Ant 2:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 11.55V	-30	110.52	0.021336	Within the band of operation	Pass
	-20	174.48	0.033683		
	-10	145.65	0.028118		
	0	146.56	0.028293		
	10	146.03	0.028191		
	20	99.50	0.019208		
	30	167.47	0.032330		
	40	129.36	0.024973		
	50	128.44	0.024795		
DC 13.28V	25	195.57	0.037755		
DC 9.82V	25	118.69	0.022913		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 11.55V	-30	135.86	0.023648	Within the band of operation	Pass
	-20	129.81	0.022595		
	-10	167.45	0.029147		
	0	169.46	0.029497		
	10	136.44	0.023749		
	20	144.59	0.025168		
	30	116.53	0.020284		
	40	168.50	0.029330		
	50	160.64	0.027962		
DC 13.28V	25	150.64	0.026221		
DC 9.82V	25	129.45	0.022533		

5 Test Setup Photos of the EUT



6 Photos of the EUT

Reference to the test report **No. CTA23101300201.**

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