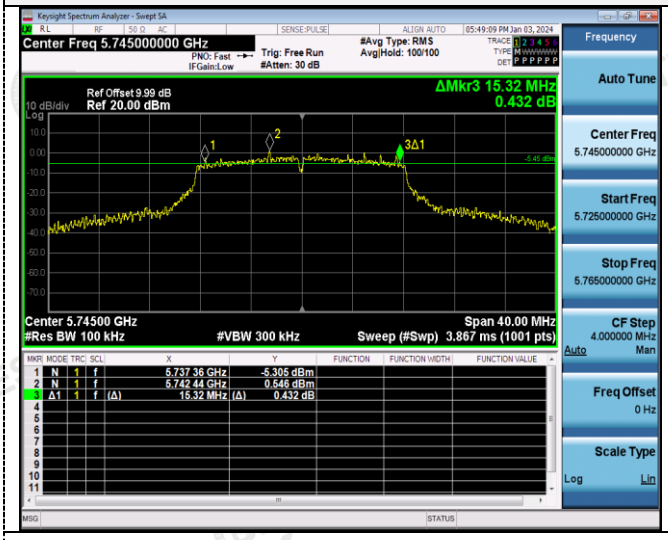
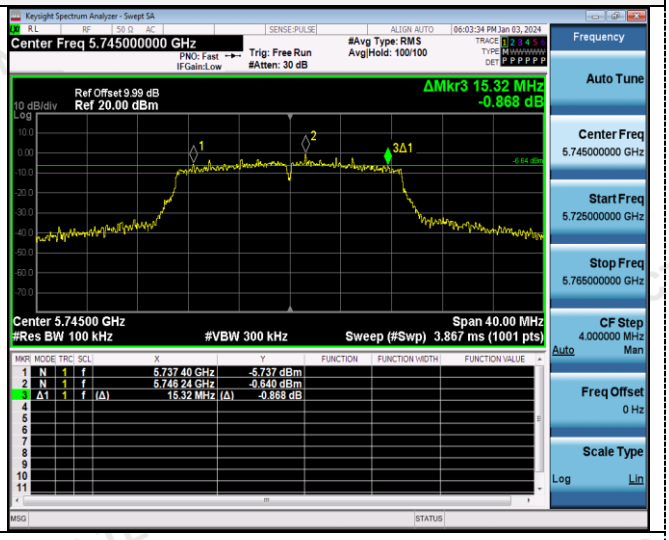
ANT 1

802.11a	*802.11n(HT20)*
	
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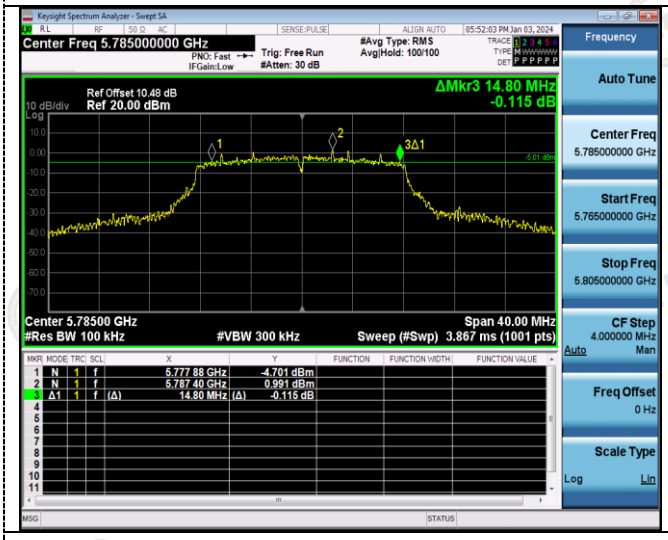	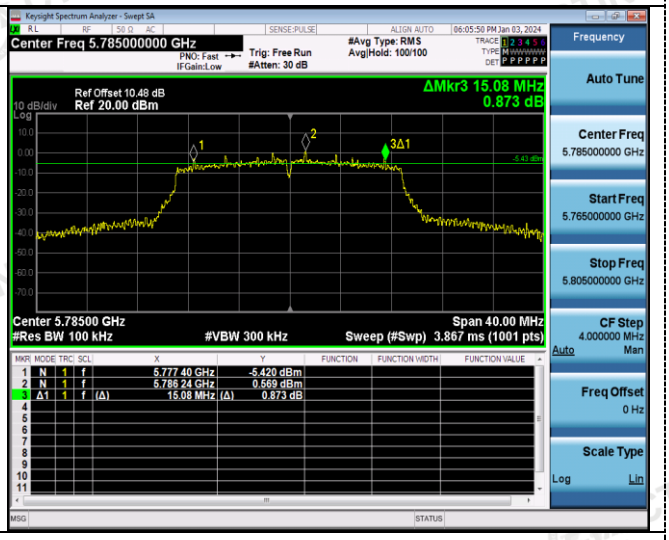
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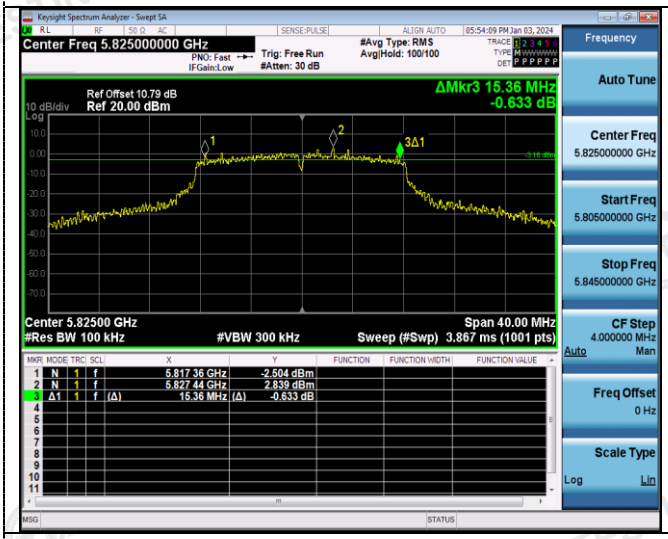
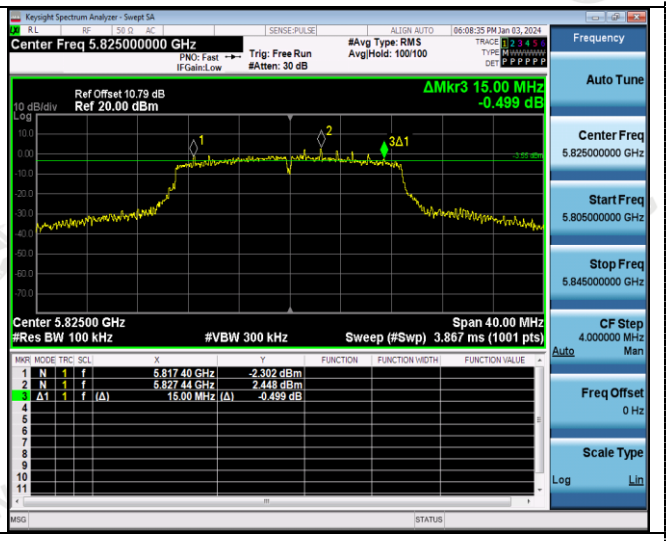
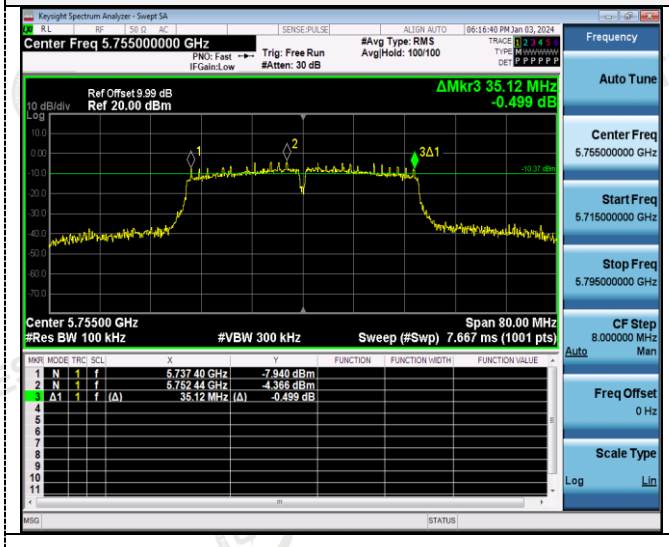
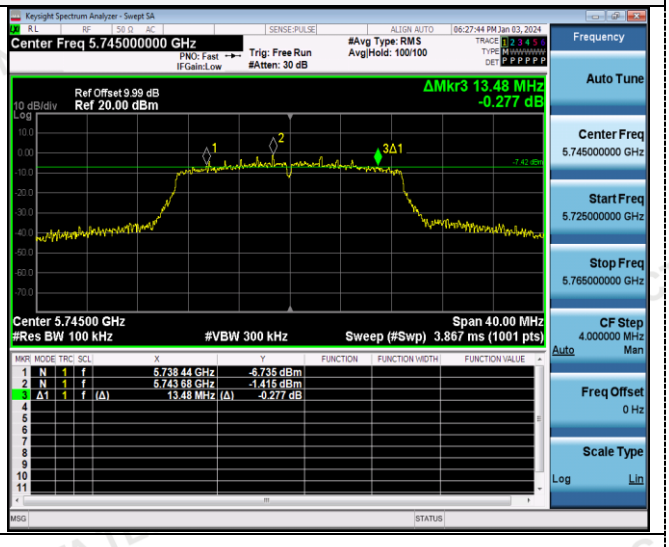
	
CH165	*CH165*

802.11n(HT40)

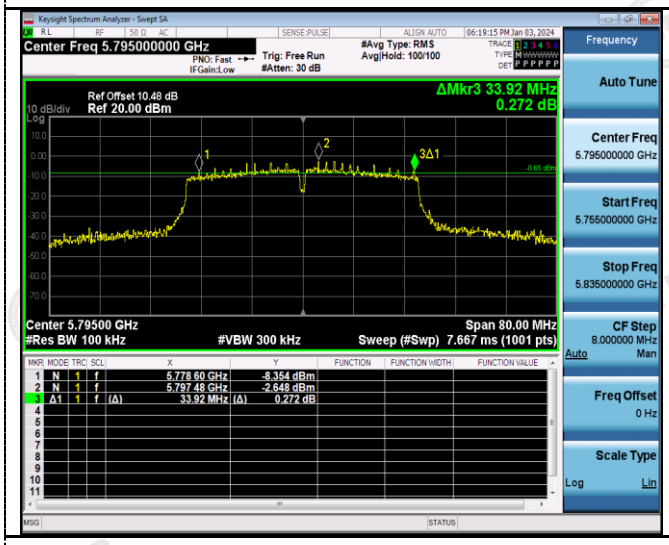


CH151

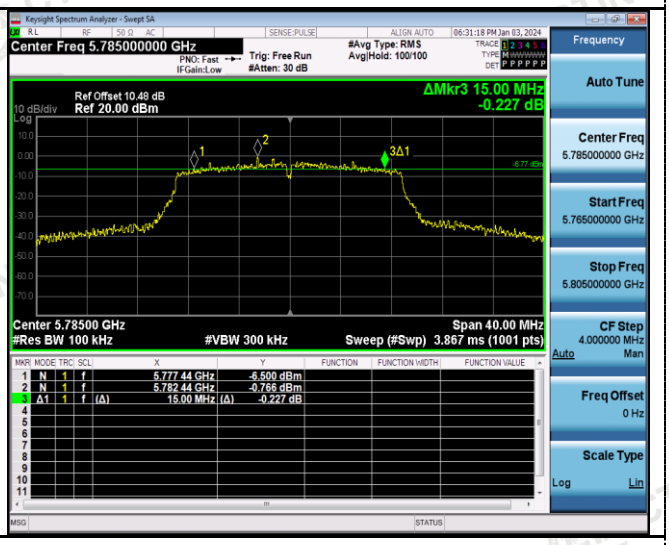
802.11ac(HT20)



CH149



CH159



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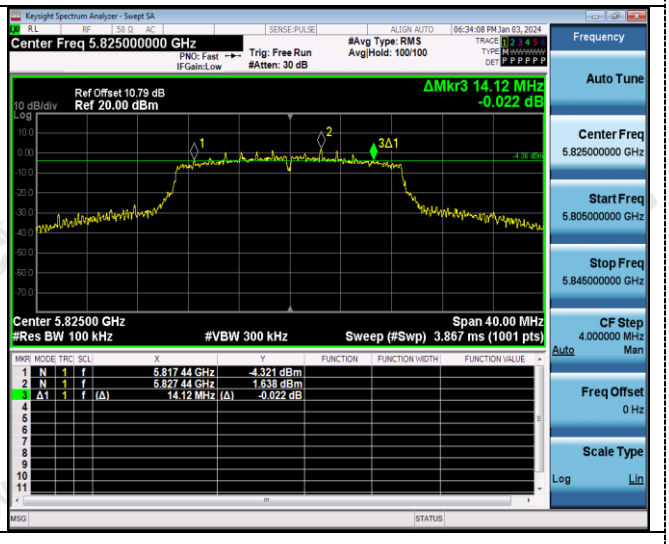
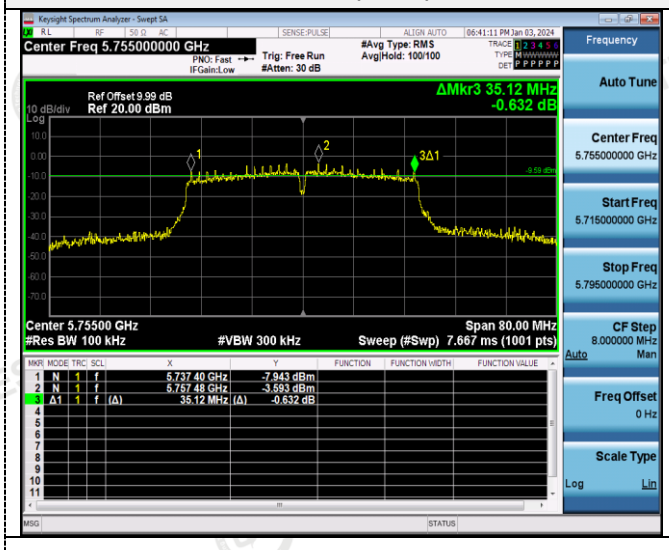


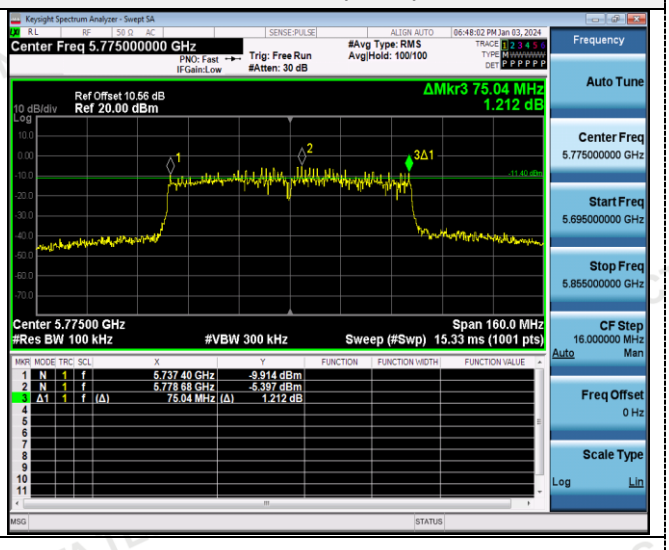
CH165

802.11ac(HT40)



CH151

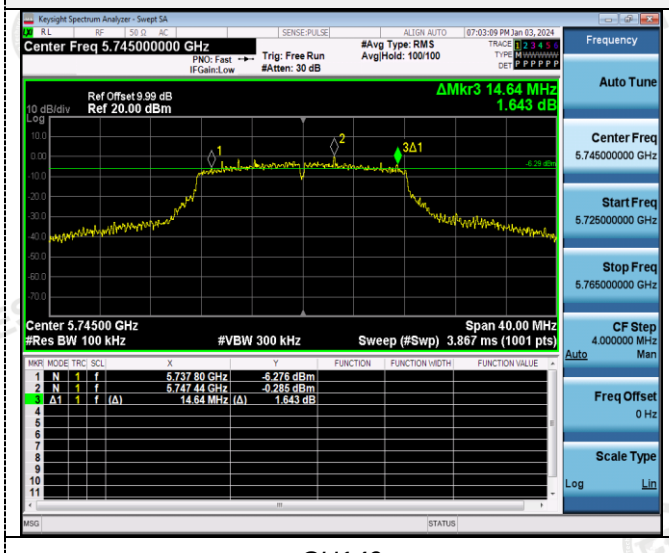
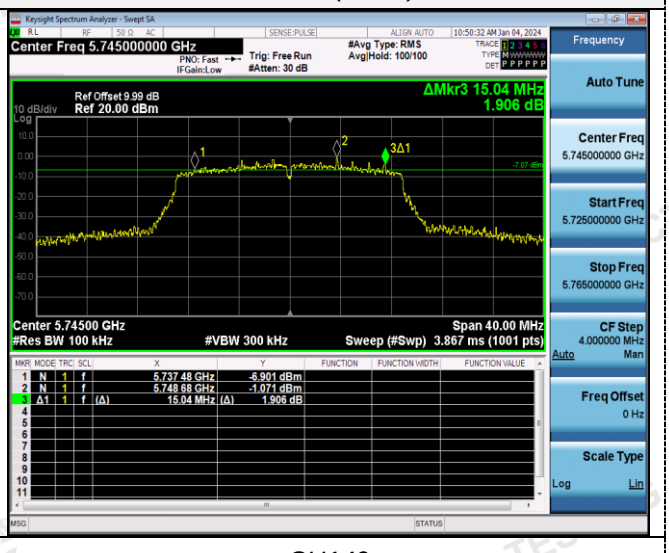
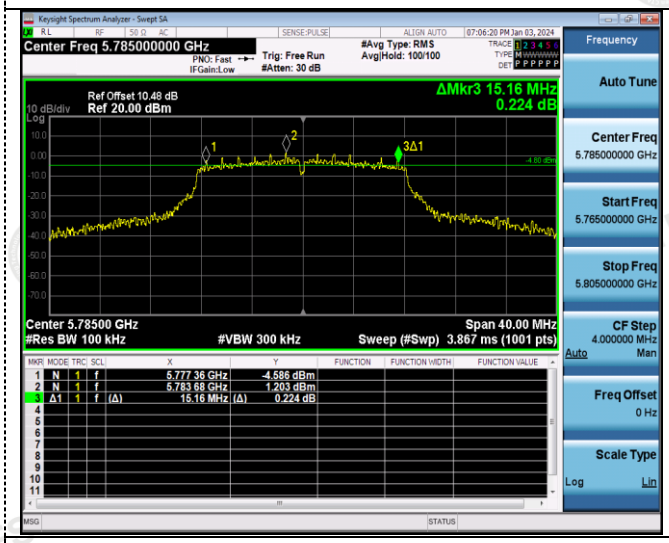
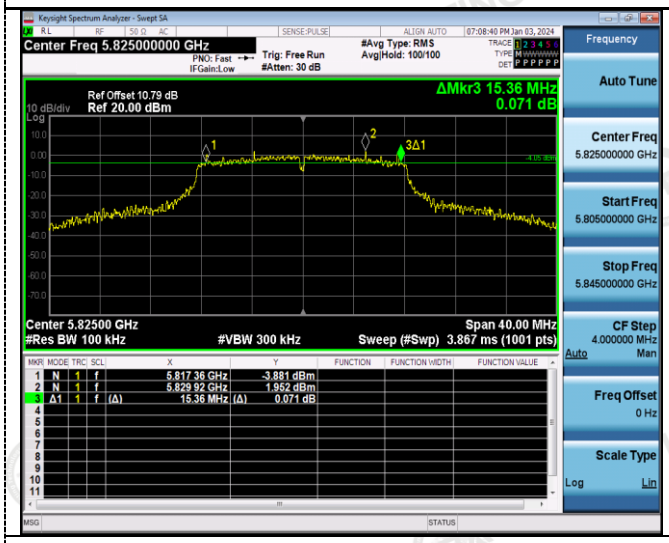
802.11ac(HT80)



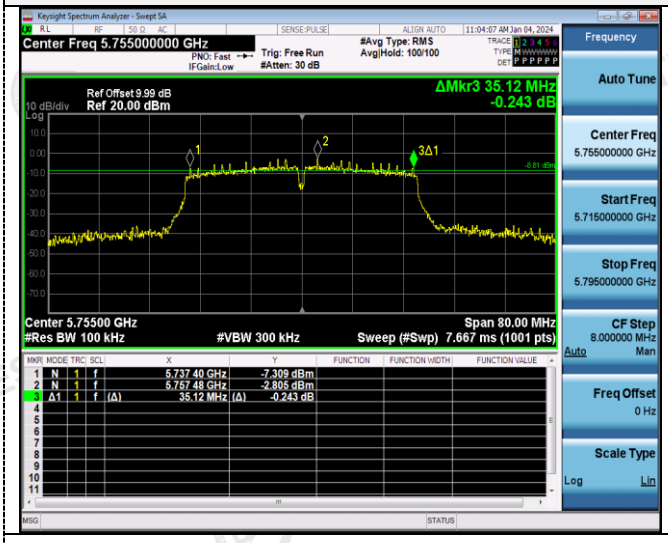
CH155

CH159

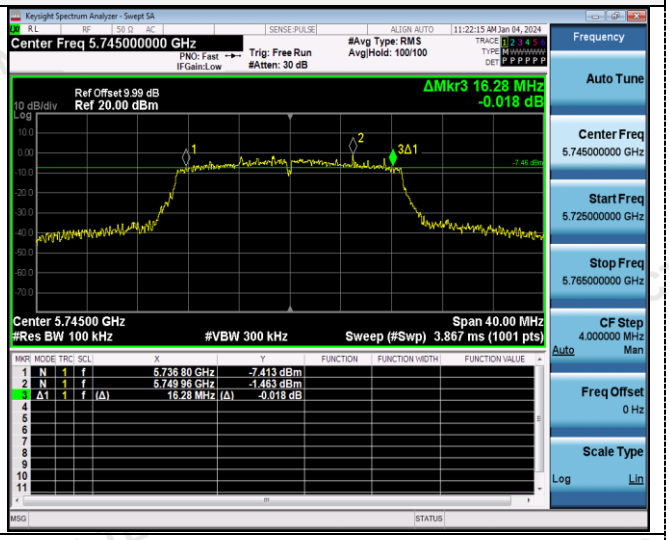
ANT 2

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

802.11n(HT40)

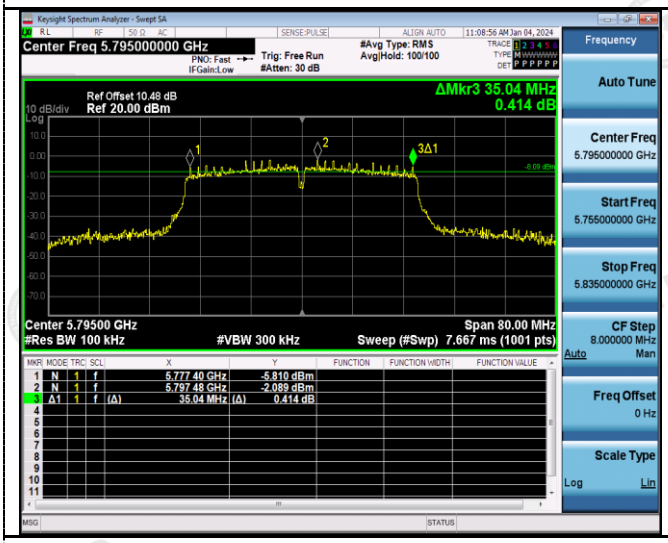


802.11ac(HT20)



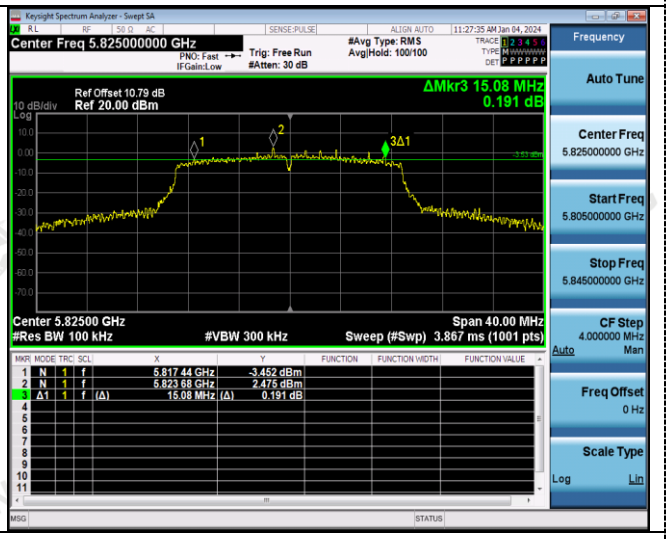
CH151

CH149



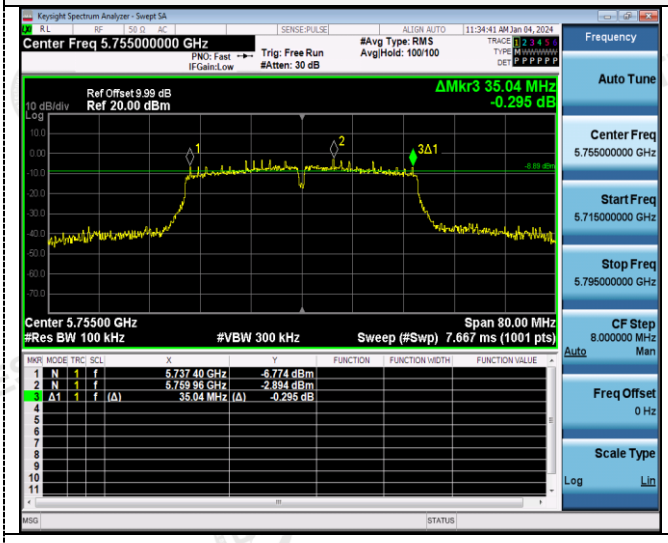
CH159

CH157



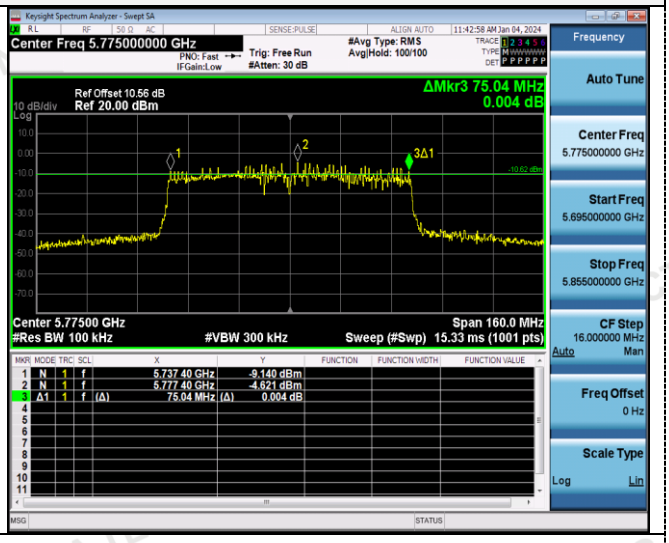
CH165

802.11ac(HT40)

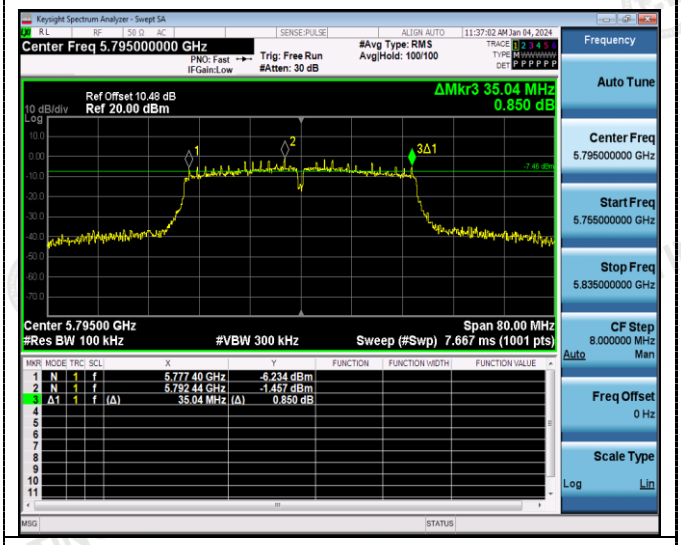


CH151

802.11ac(HT80)



CH155



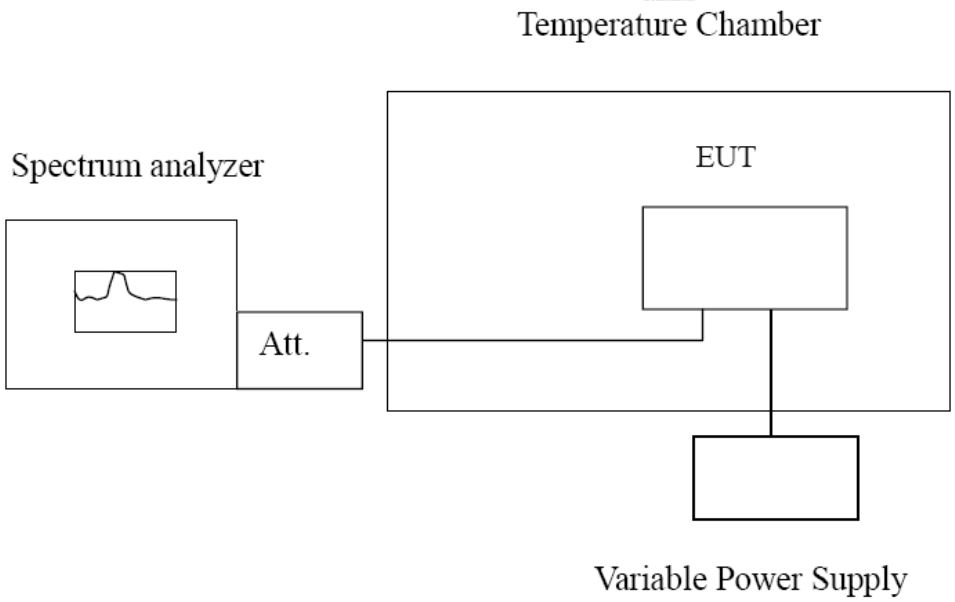
CH159

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℃ 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		
AC 120	-30	110.50	0.021332	Within the band of operation	Pass
	-20	174.35	0.033658		
	-10	145.29	0.028048		
	0	146.70	0.028320		
	10	146.26	0.028236		
	20	99.44	0.019197		
	30	167.13	0.032264		
	40	129.31	0.024963		
	50	128.70	0.024846		
AC 132	25	195.82	0.037803		
AC 108	25	118.81	0.022936		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120	-30	135.94	0.023662	Within the band of operation	Pass
	-20	129.56	0.022552		
	-10	167.47	0.029151		
	0	169.83	0.029561		
	10	136.61	0.023779		
	20	144.53	0.025158		
	30	116.82	0.020334		
	40	168.52	0.029333		
	50	160.49	0.027936		
AC 132	25	150.61	0.026216		
AC 108	25	129.84	0.022601		

Ant2:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120	-30	110.66	0.021363	Within the band of operation	Pass
	-20	174.44	0.033676		
	-10	145.55	0.028098		
	0	146.60	0.028301		
	10	146.22	0.028228		
	20	99.55	0.019218		
	30	167.47	0.032330		
	40	129.19	0.024940		
	50	128.33	0.024774		
AC 132	25	195.29	0.037701		
AC 108	25	118.56	0.022888		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120	-30	135.64	0.023610	Within the band of operation	Pass
	-20	129.50	0.022541		
	-10	167.21	0.029105		
	0	169.98	0.029587		
	10	136.65	0.023786		
	20	144.90	0.025222		
	30	116.50	0.020279		
	40	168.62	0.029351		
	50	160.85	0.027998		
AC 132	25	150.76	0.026242		
AC 108	25	129.52	0.022545		

5 Test Setup Photos of the EUT

6 Photos of the EUT

Reference to the test report No. **CTA23122700301.**

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