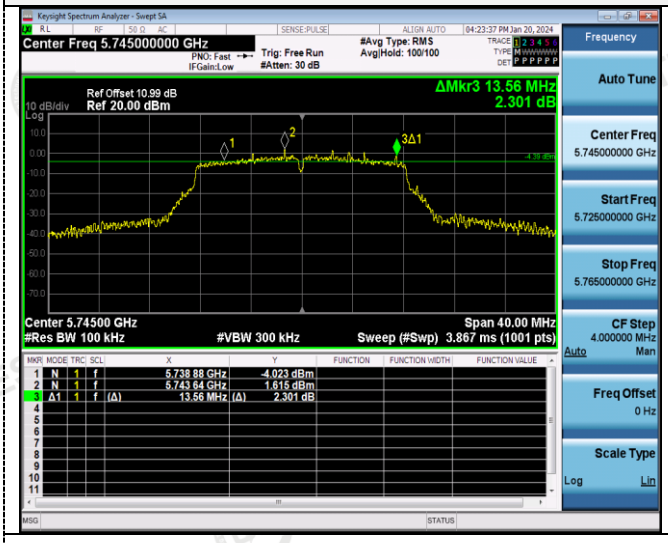
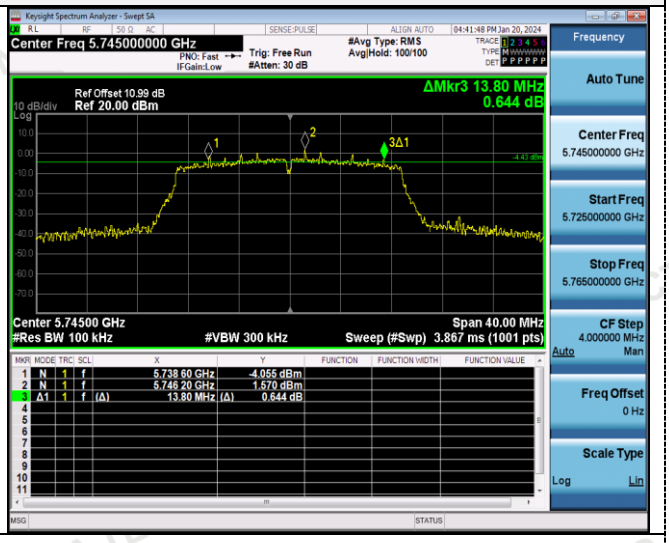
ANT 1

802.11a	802.11n(HT20)
	
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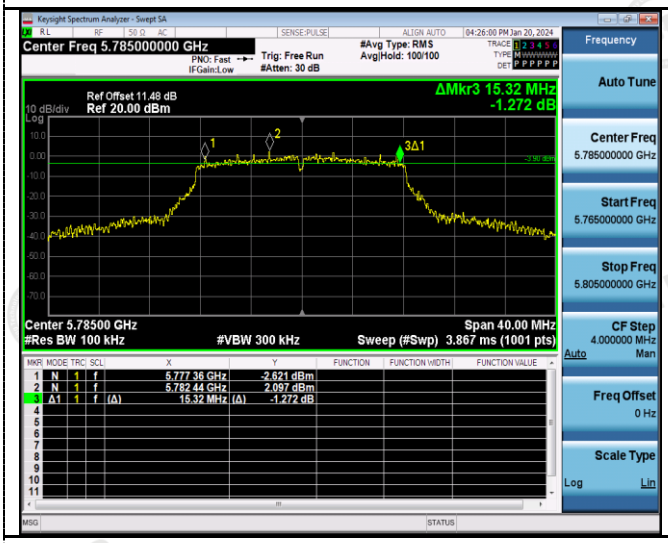	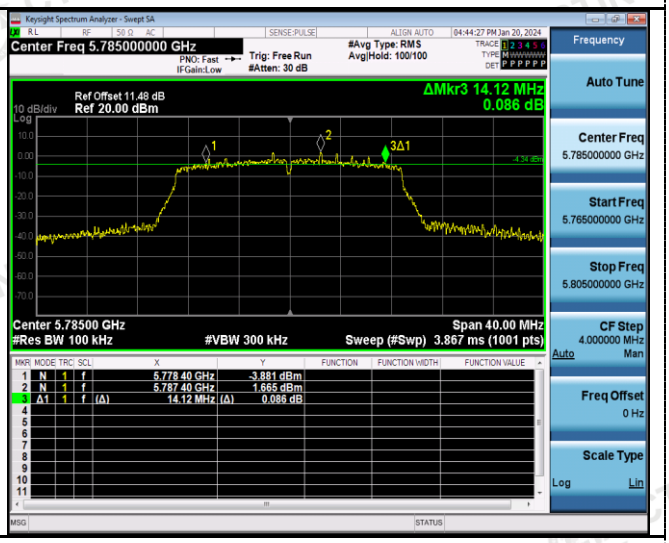
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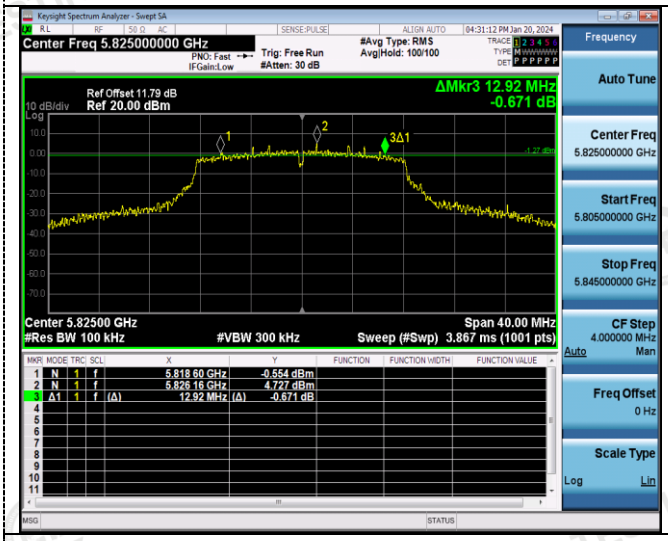
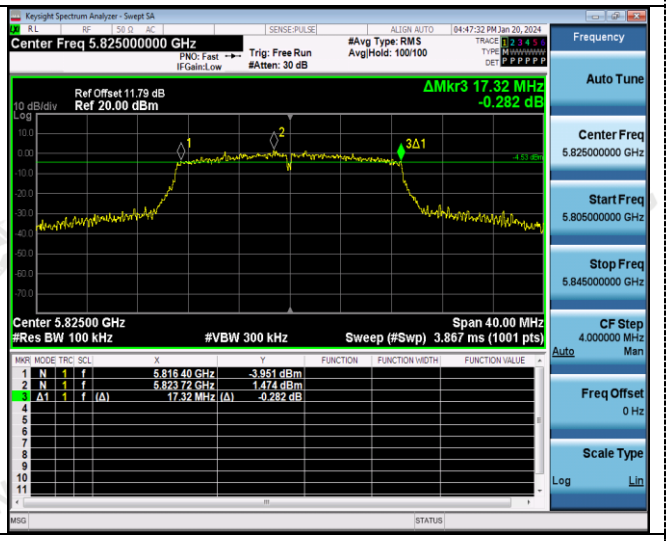
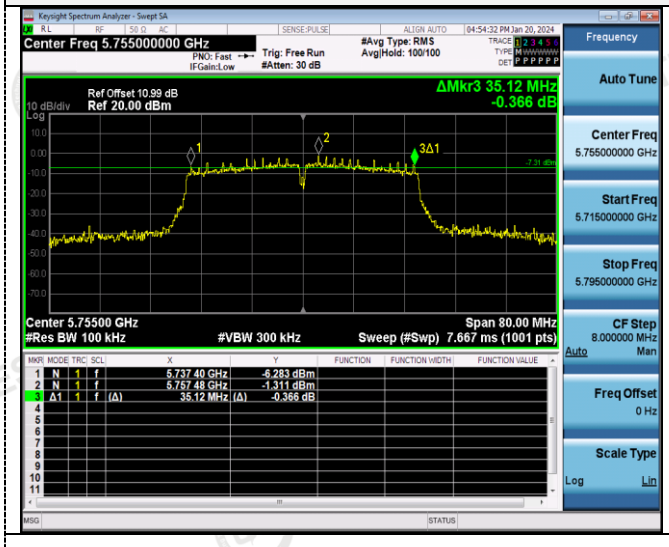
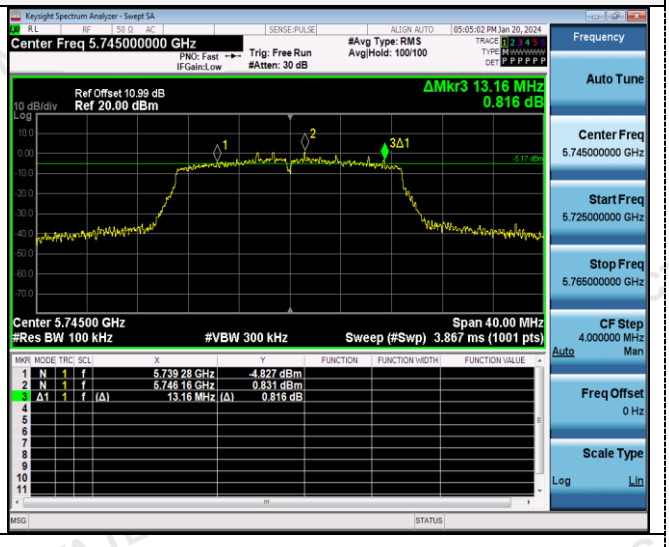
	
CH165	CH165

802.11n(HT40)



CH151

802.11ac(HT20)



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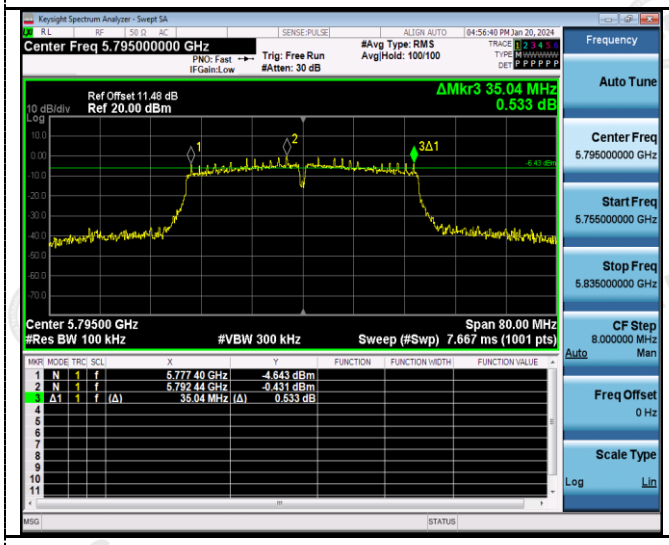

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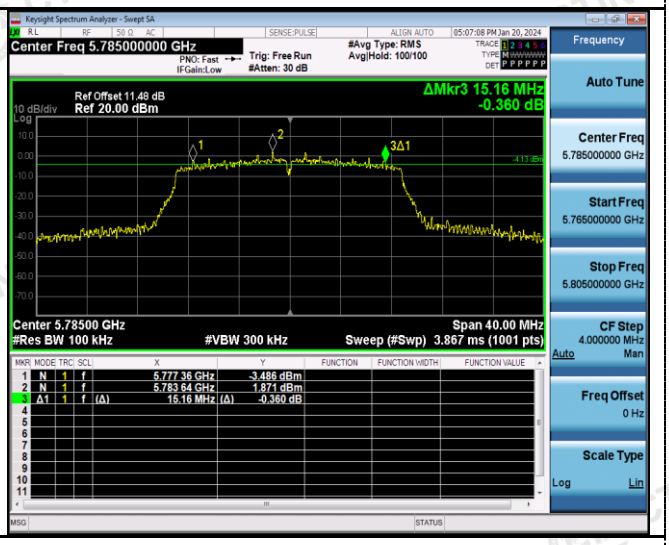

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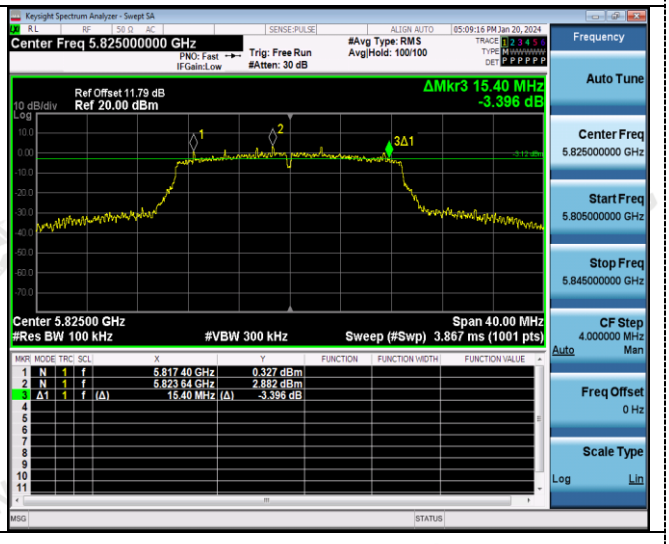
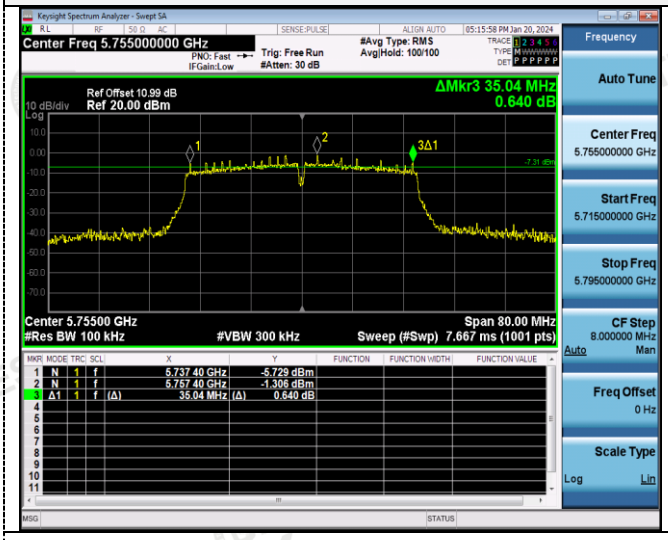


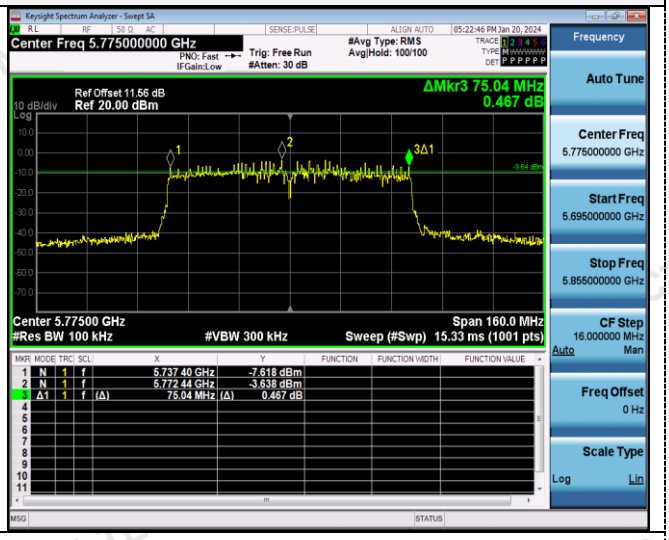
CH165

802.11ac(HT40)

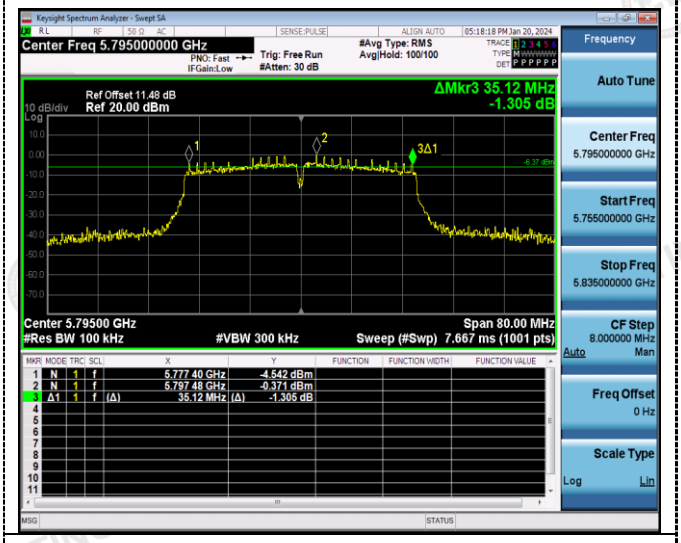


CH151

802.11ac(HT80)



CH155



CH159

ANT 2

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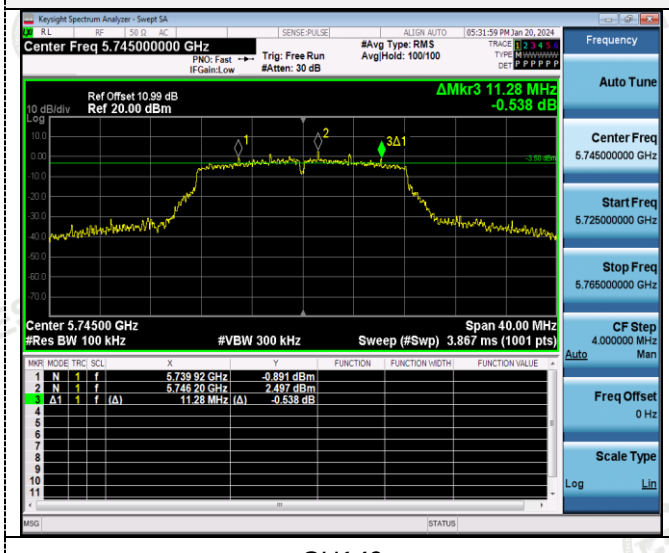
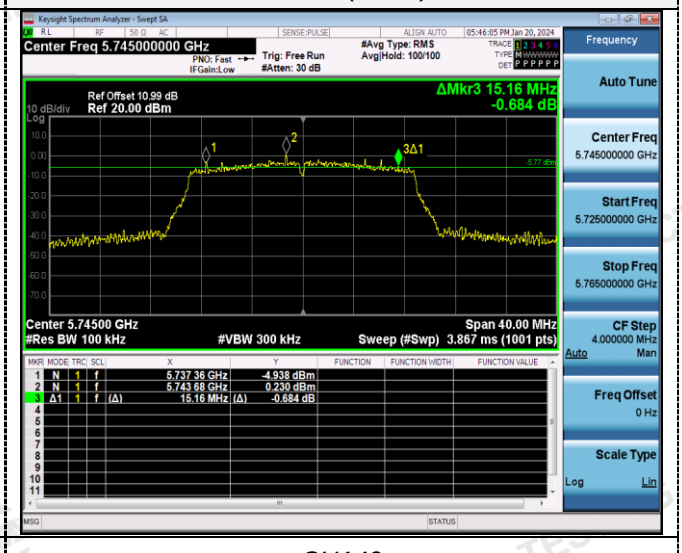
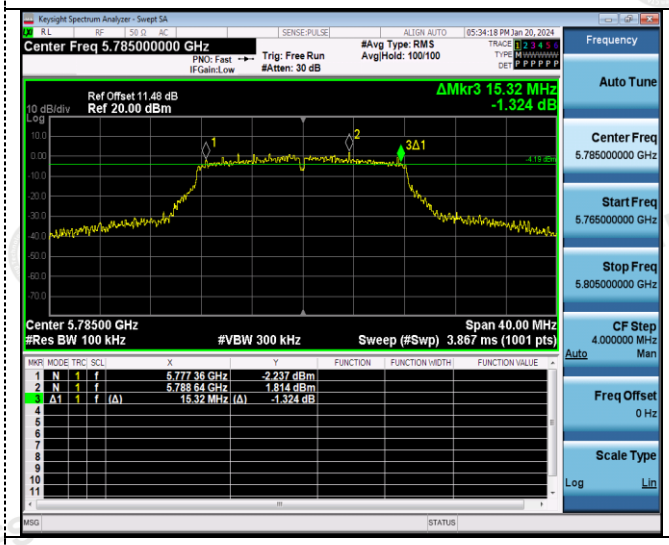
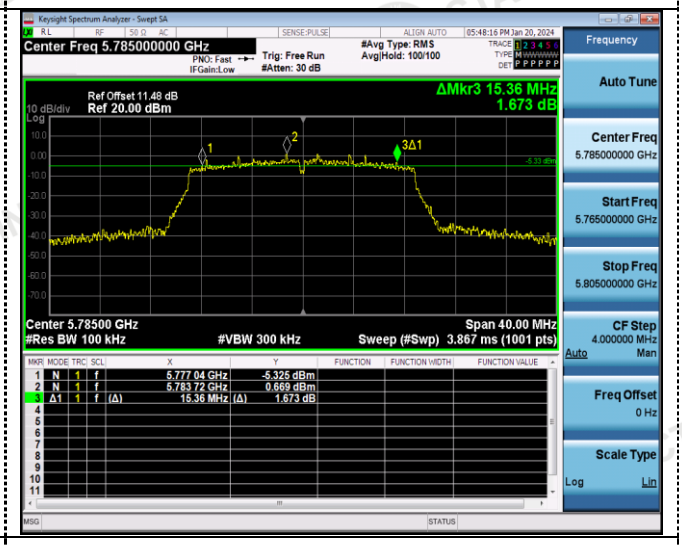
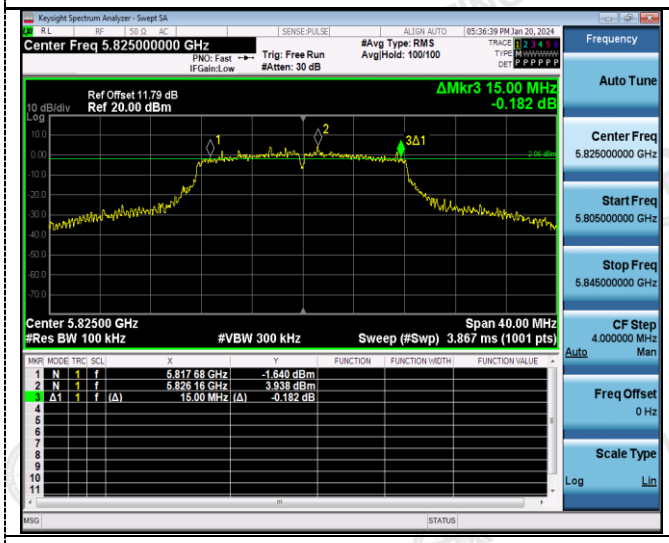
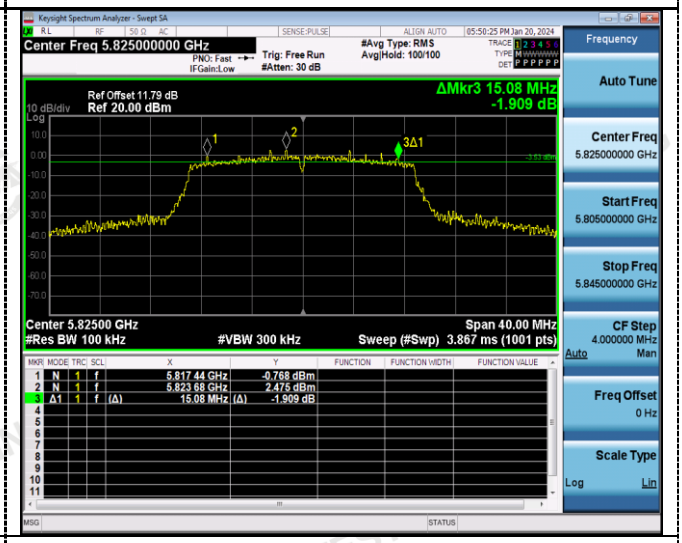
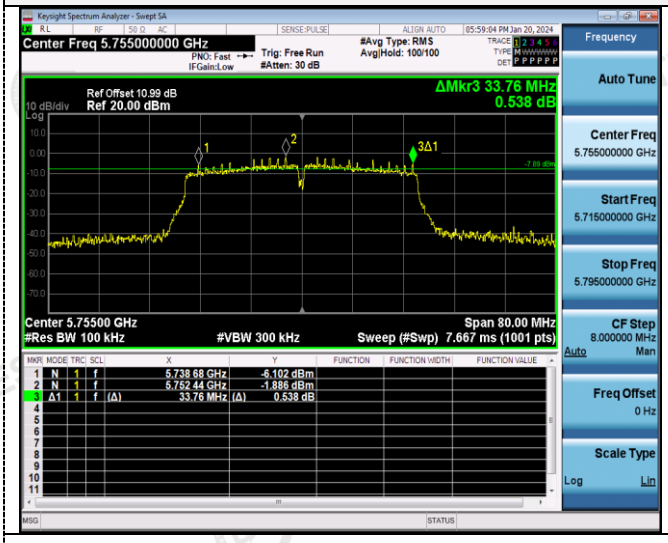
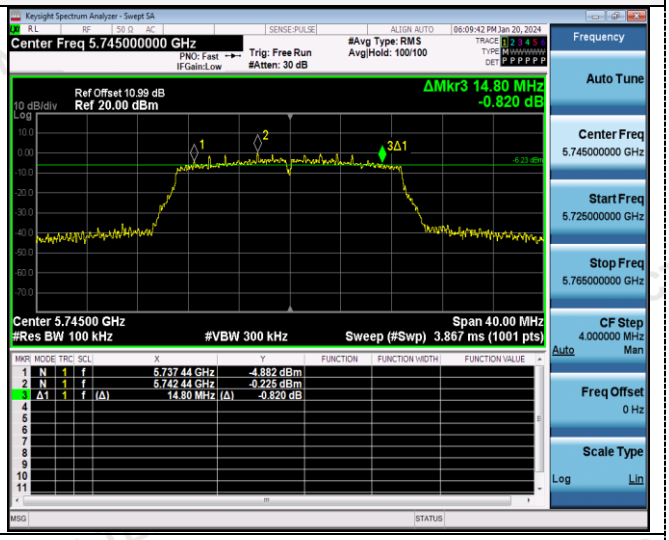
	
CH149	CH149
	
CH157	CH157
	
CH165	CH165

802.11n(HT40)

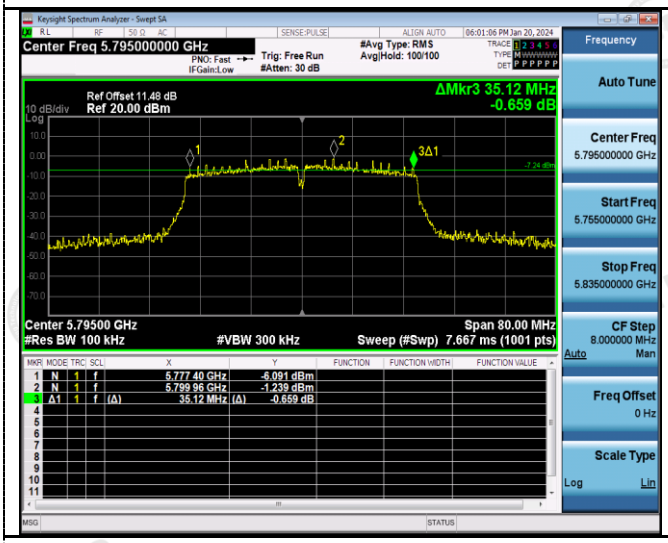


CH151

802.11ac(HT20)

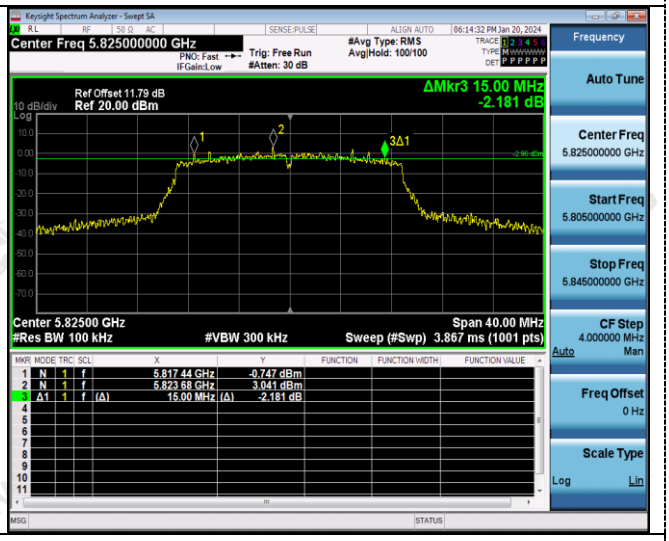


CH149



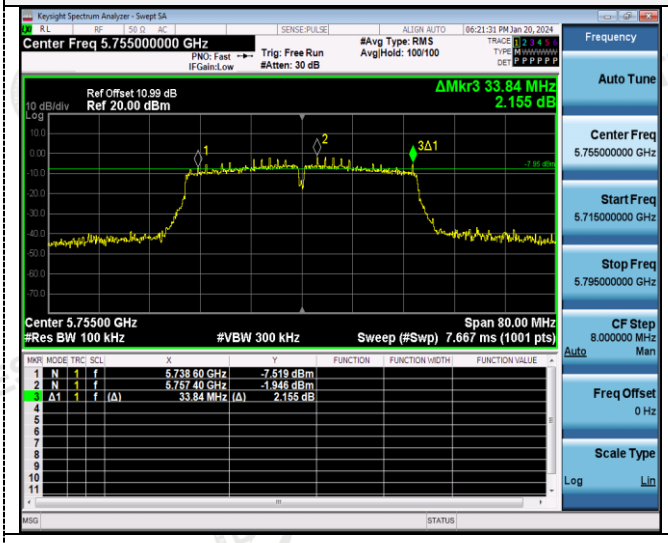
CH159

CH157



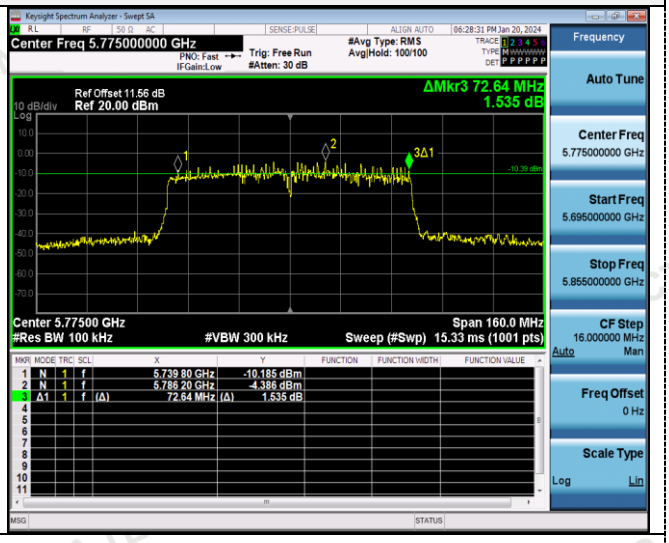
CH165

802.11ac(HT40)

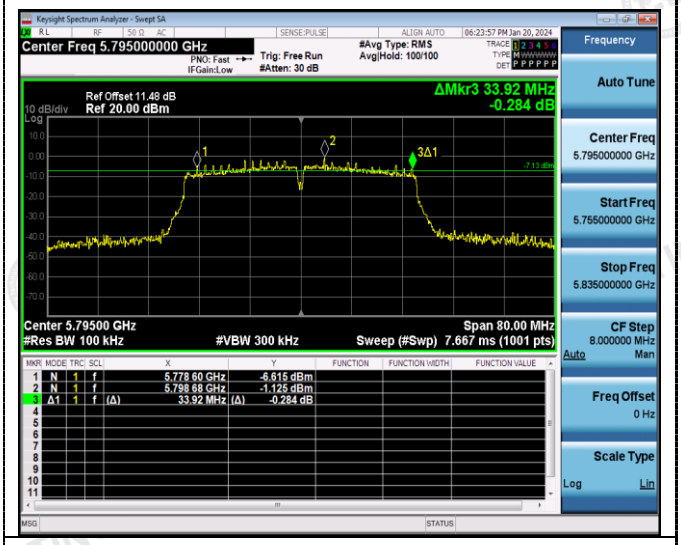


CH151

802.11ac(HT80)



CH155



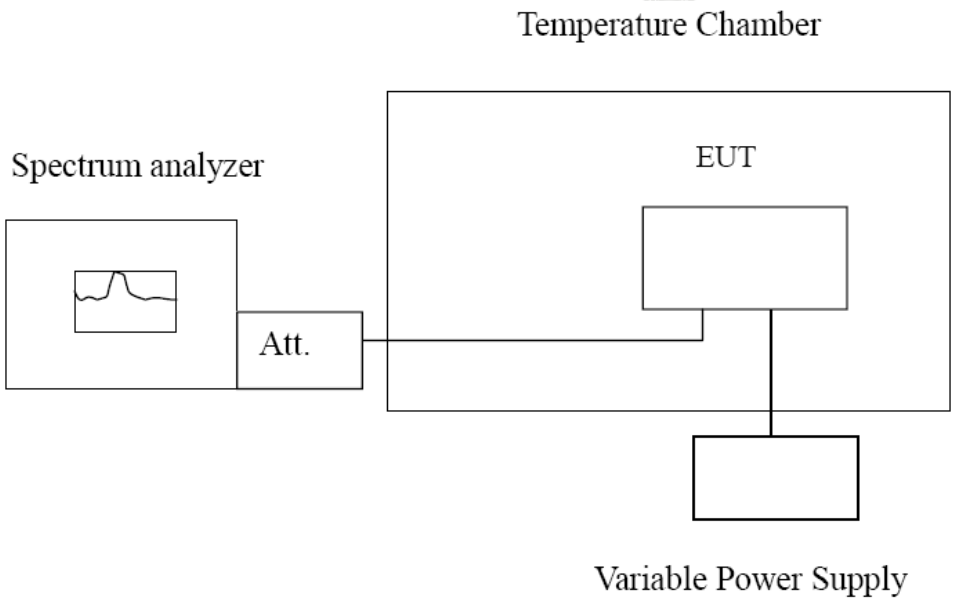
CH159

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 7.70V	-30	110.36	0.021305	Within the band of operation	Pass
	-20	174.35	0.033658		
	-10	145.47	0.028083		
	0	146.30	0.028243		
	10	145.78	0.028143		
	20	99.77	0.019261		
	30	167.40	0.032317		
	40	129.36	0.024973		
	50	128.75	0.024855		
DC 8.74V	25	195.73	0.037786		
DC 6.46V	25	118.45	0.022867		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 7.70V	-30	135.56	0.023596	Within the band of operation	Pass
	-20	129.72	0.022580		
	-10	167.09	0.029084		
	0	169.58	0.029518		
	10	136.48	0.023756		
	20	144.68	0.025184		
	30	116.37	0.020256		
	40	168.59	0.029346		
	50	160.54	0.027944		
DC 8.74V	25	151.01	0.026285		
DC 6.46V	25	129.88	0.022607		

Ant2:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 7.70V	-30	110.58	0.021347	Within the band of operation	Pass
	-20	174.52	0.033691		
	-10	145.43	0.028075		
	0	146.57	0.028295		
	10	146.02	0.028189		
	20	99.72	0.019251		
	30	167.33	0.032303		
	40	129.54	0.025008		
	50	128.41	0.024790		
DC 8.74V	25	195.30	0.037703		
DC 6.46V	25	118.70	0.022915		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 7.70V	-30	135.86	0.023648	Within the band of operation	Pass
	-20	129.60	0.022559		
	-10	167.50	0.029156		
	0	169.67	0.029534		
	10	136.46	0.023753		
	20	144.54	0.025159		
	30	116.37	0.020256		
	40	168.54	0.029337		
	50	160.81	0.027991		
DC 8.74V	25	150.70	0.026232		
DC 6.46V	25	129.89	0.022609		

5 Test Setup Photos of the EUT

6 Photos of the EUT

Reference to the test report No. **CTA24011900101.**

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