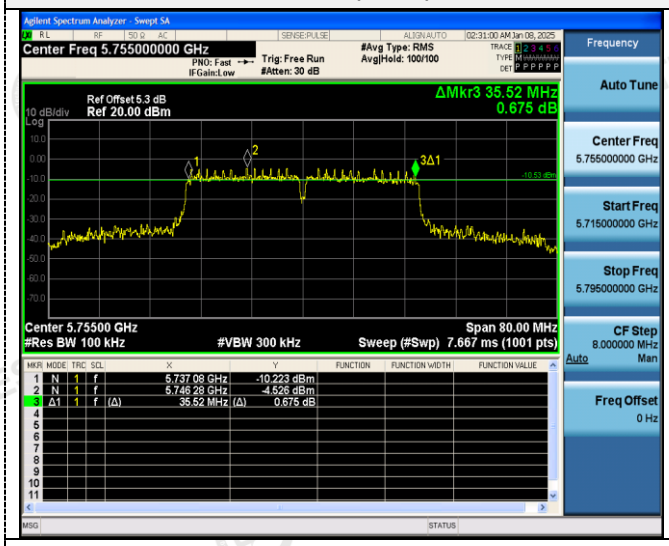
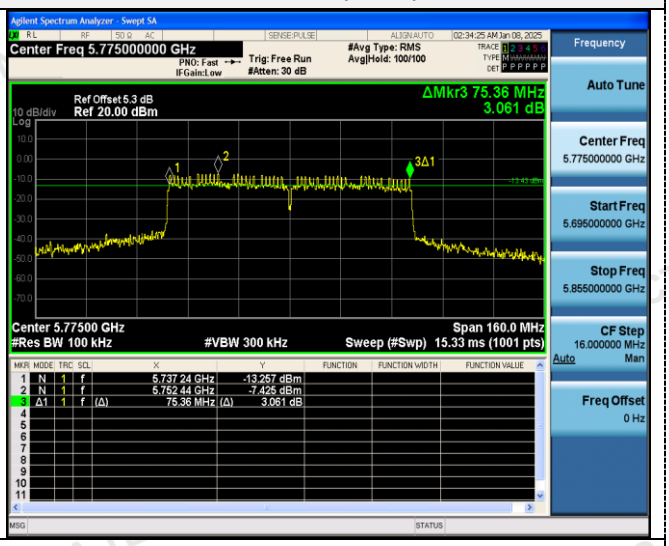
802.11ac(HT40)

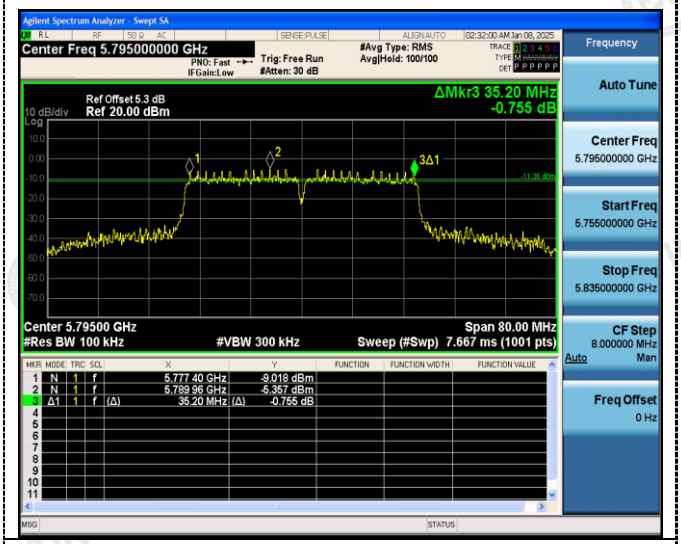


CH151

802.11ac(HT80)

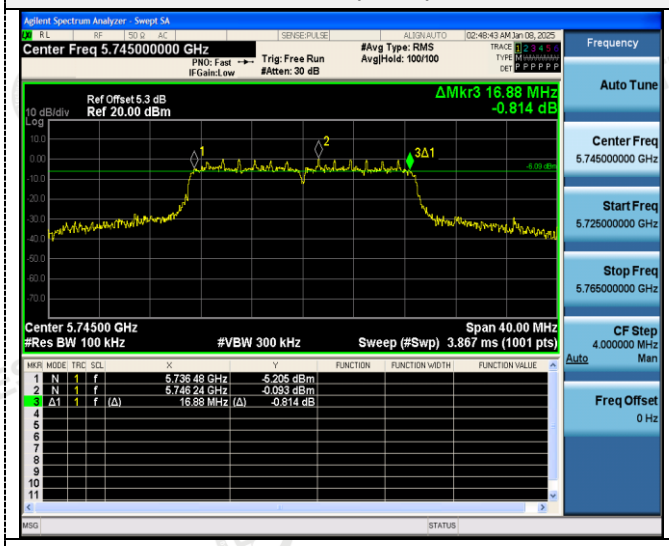


CH155



CH159

802.11ax(HT20)



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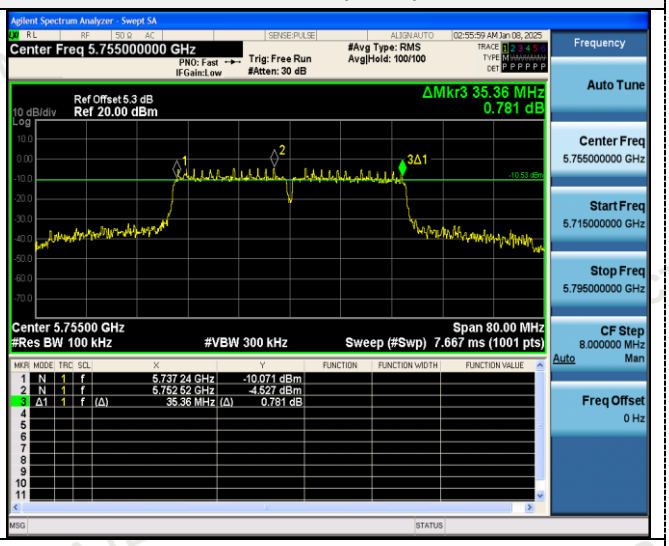
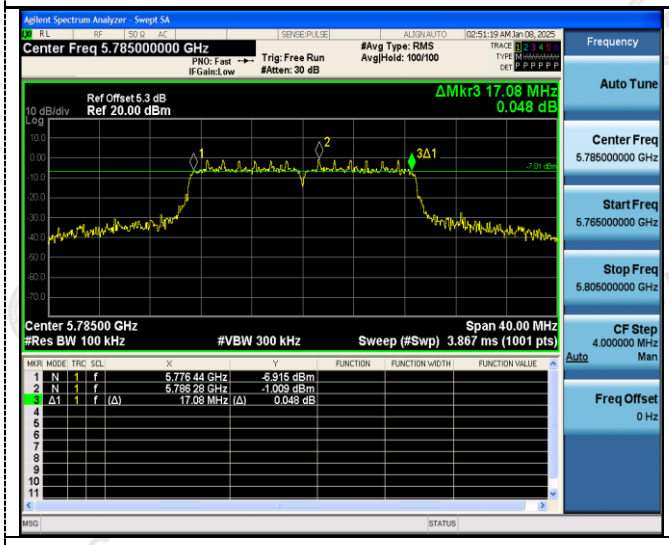
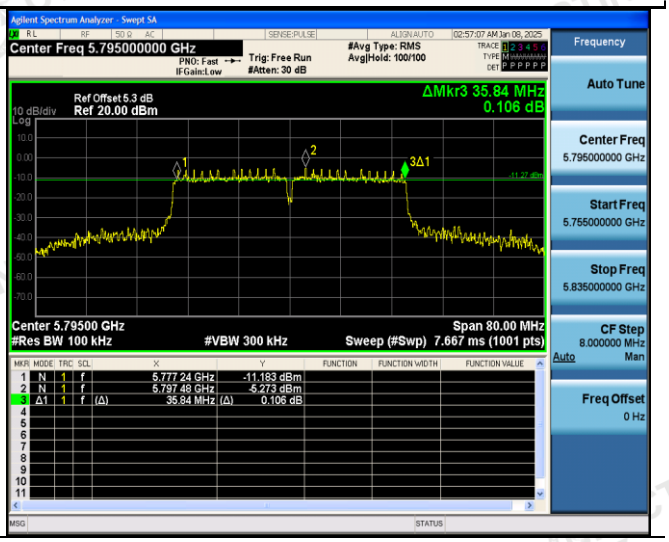


CH149

CH151

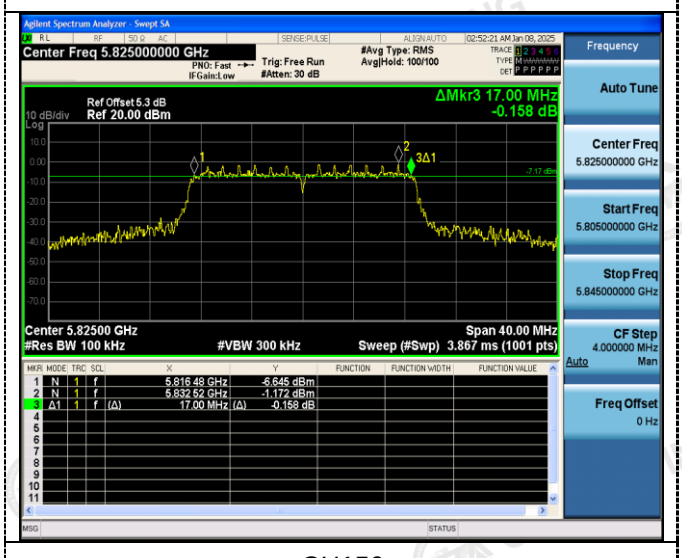


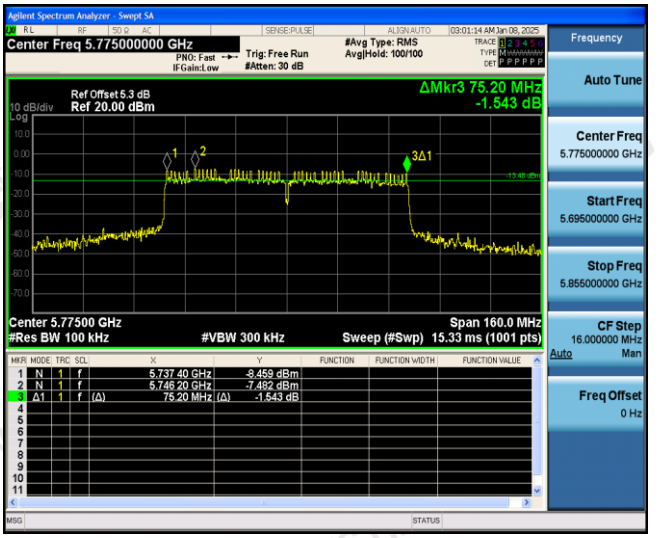


CH157

CH159

802.11ax(HT80)

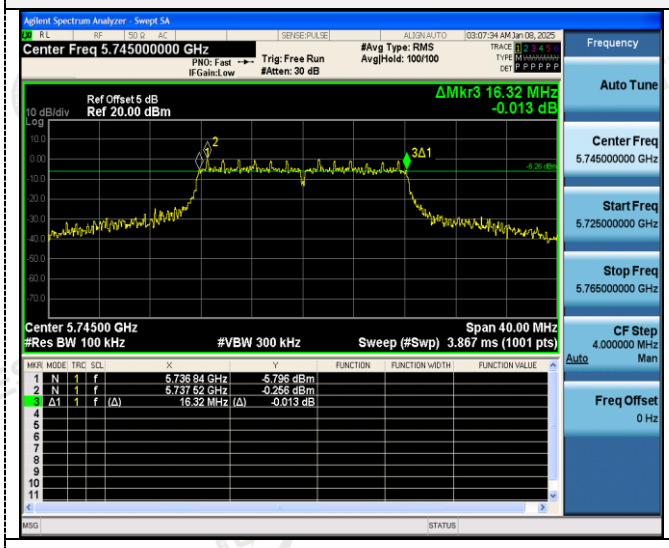
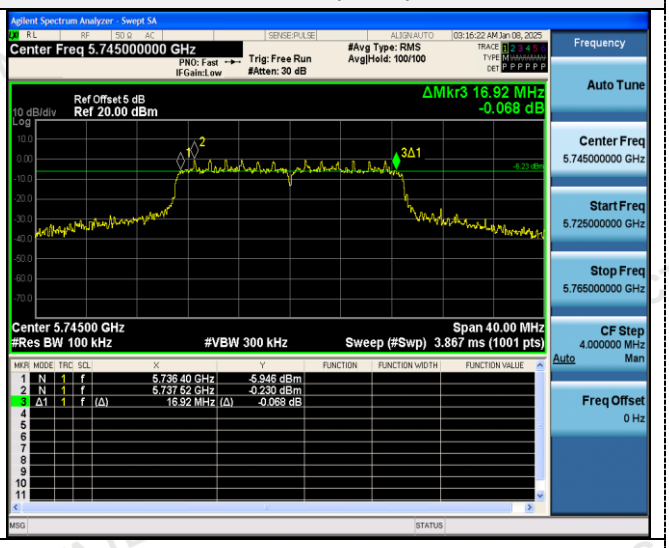




CH156

CH155

ANT 2

802.11a	802.11n(HT20)
	
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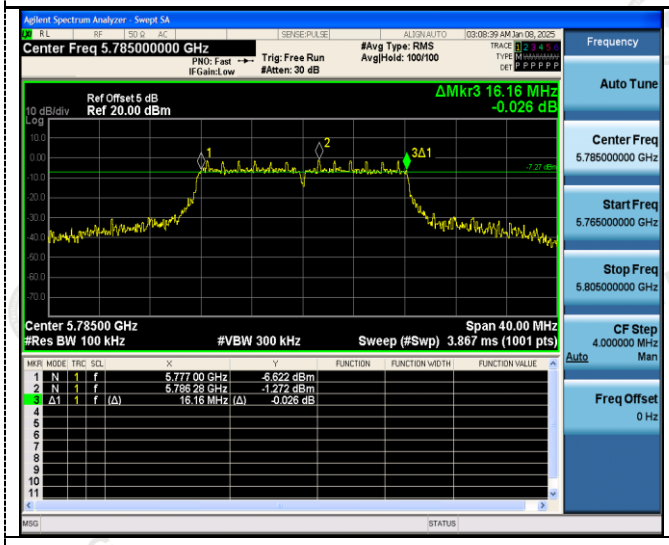	
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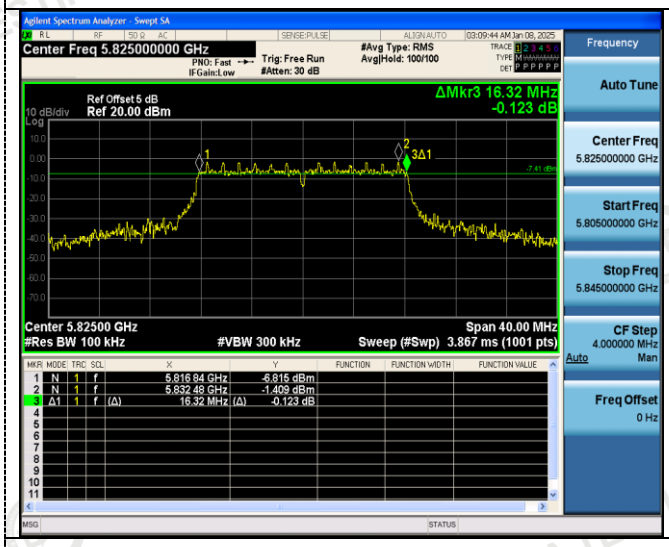
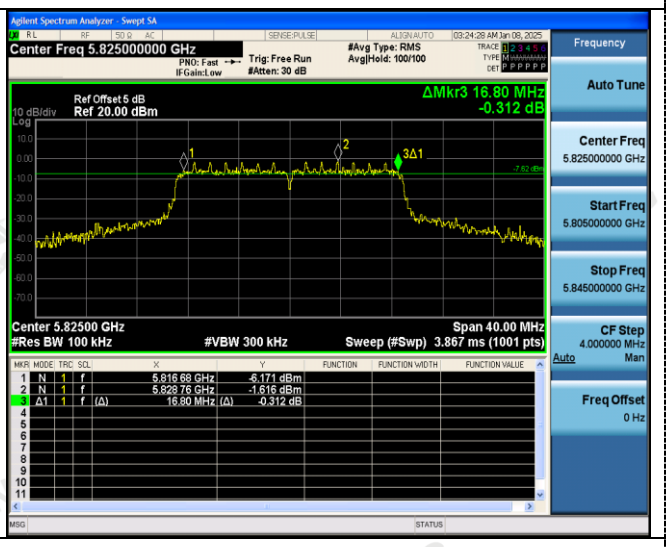
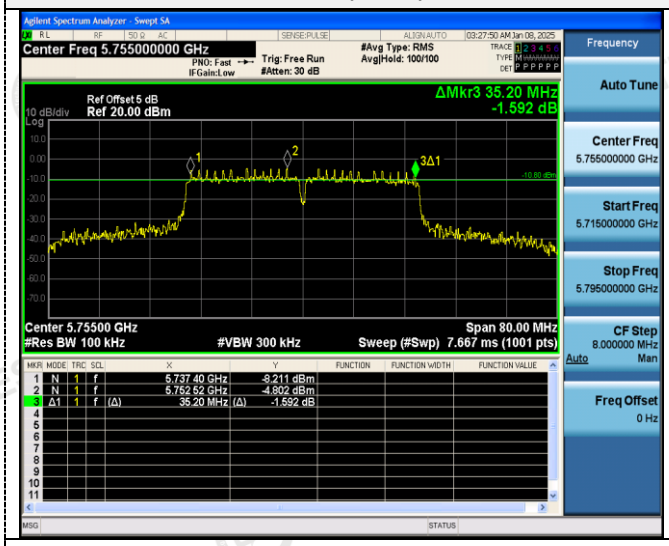
	
CH165	CH165

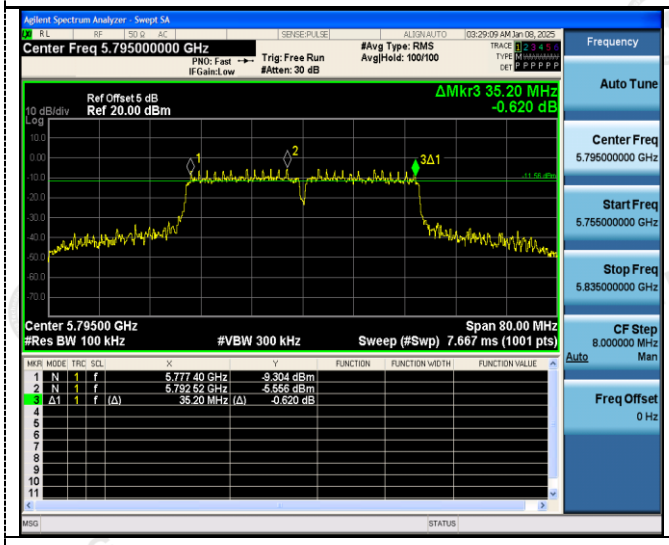
802.11n(HT40)

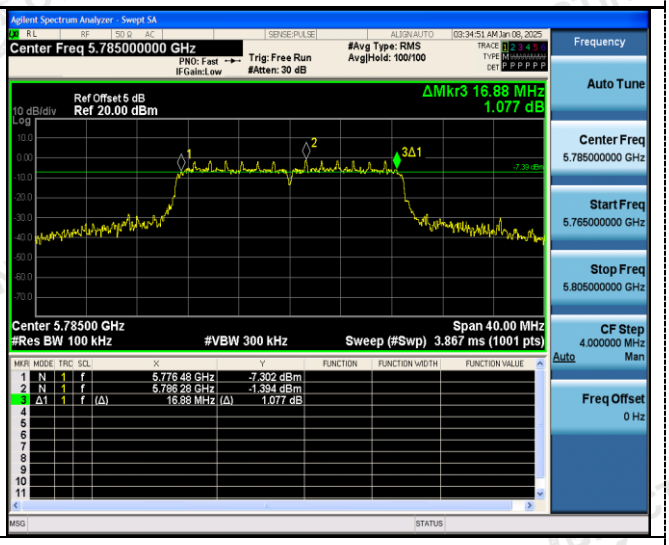


802.11ac(HT20)

CH151

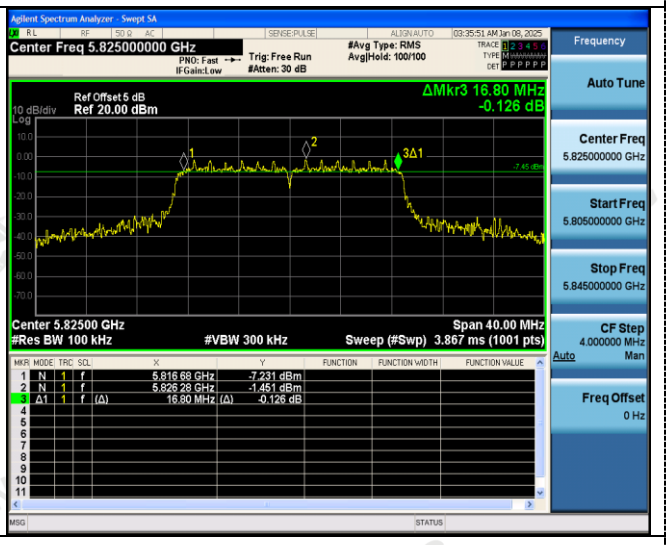
CH149





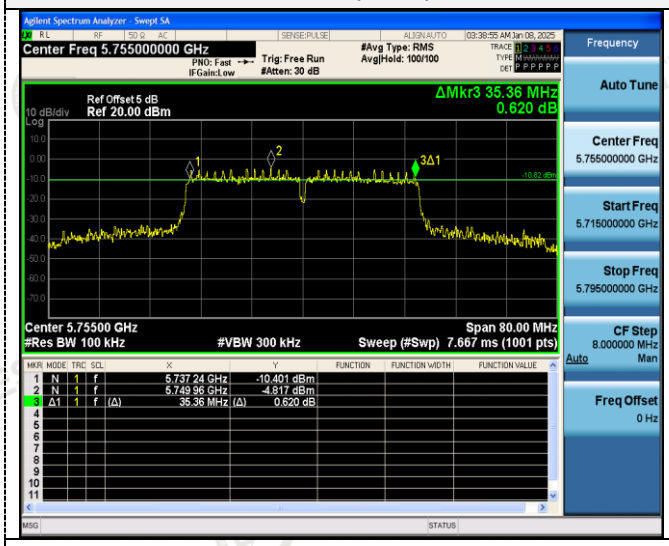
CH159

CH157



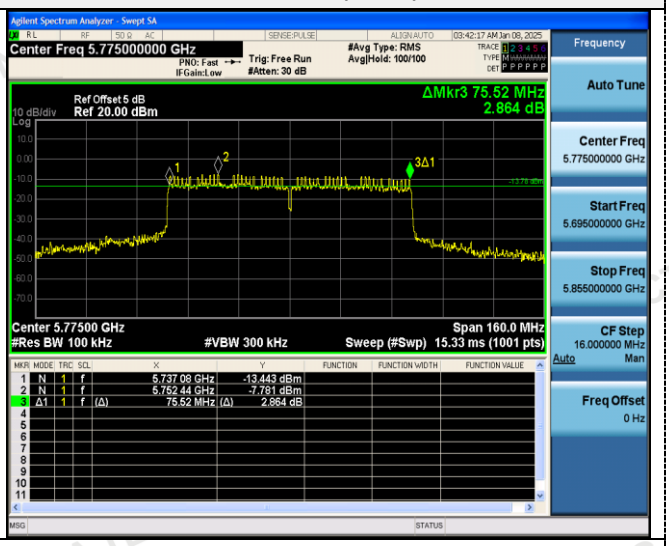
CH165

802.11ac(HT40)

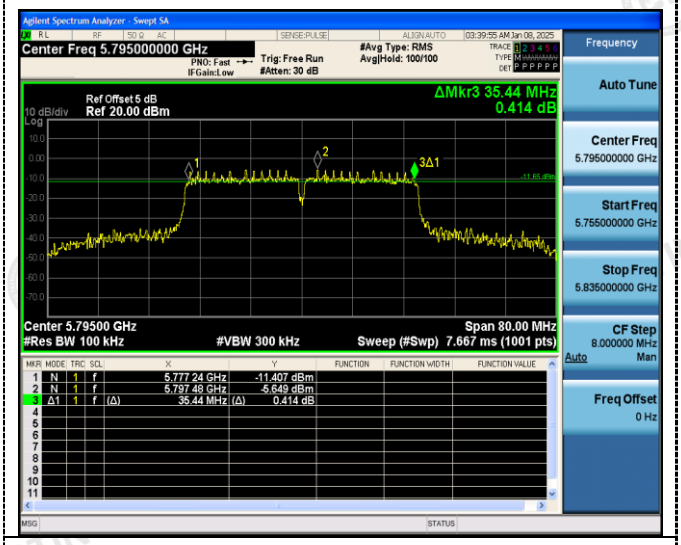


CH151

802.11ac(HT80)

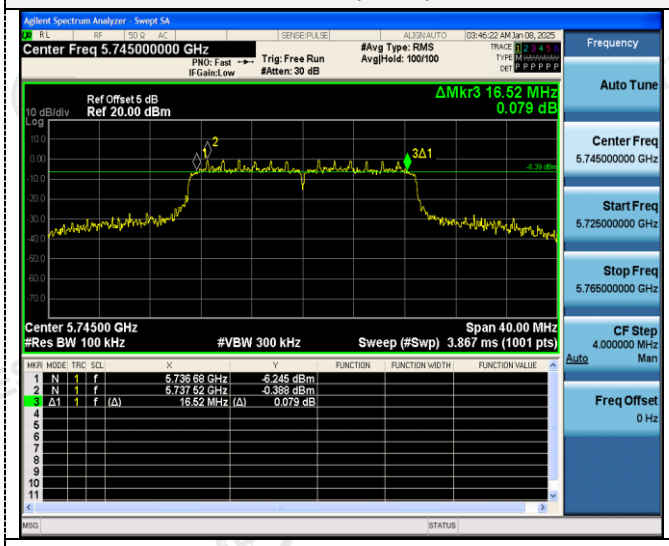


CH155



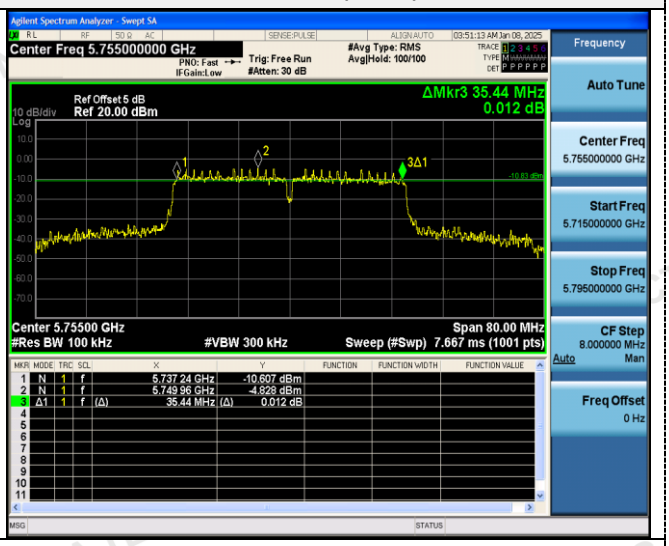
CH159

802.11ax(HT20)



CH149

802.11ax(HT40)



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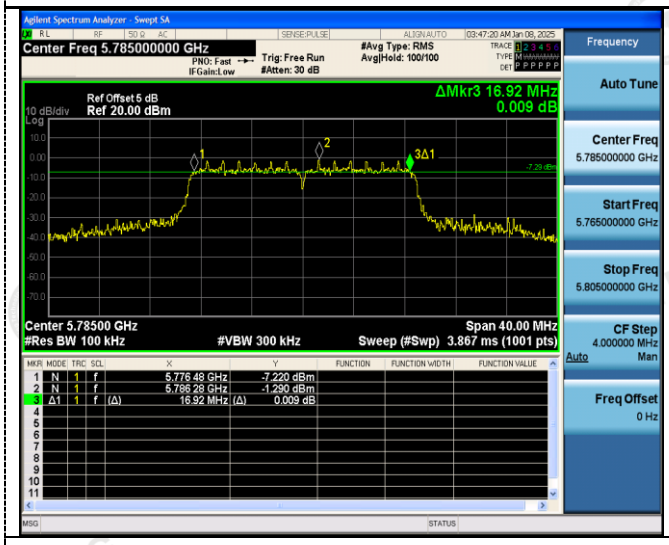
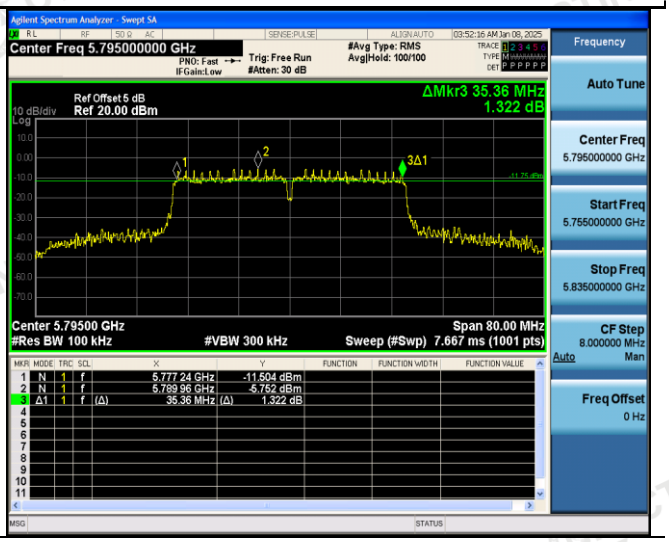
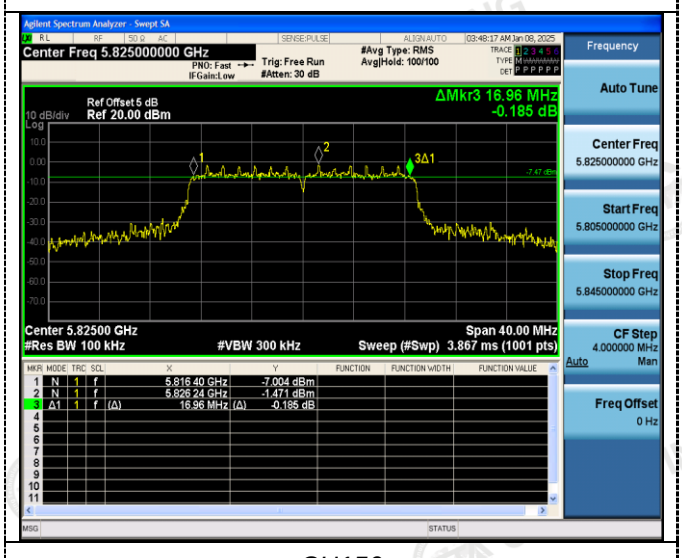


CH157

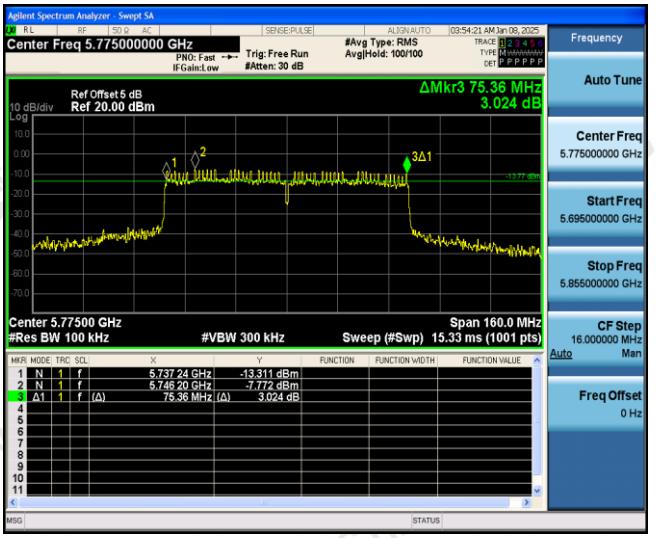


CH159

802.11ax(HT80)



CH156



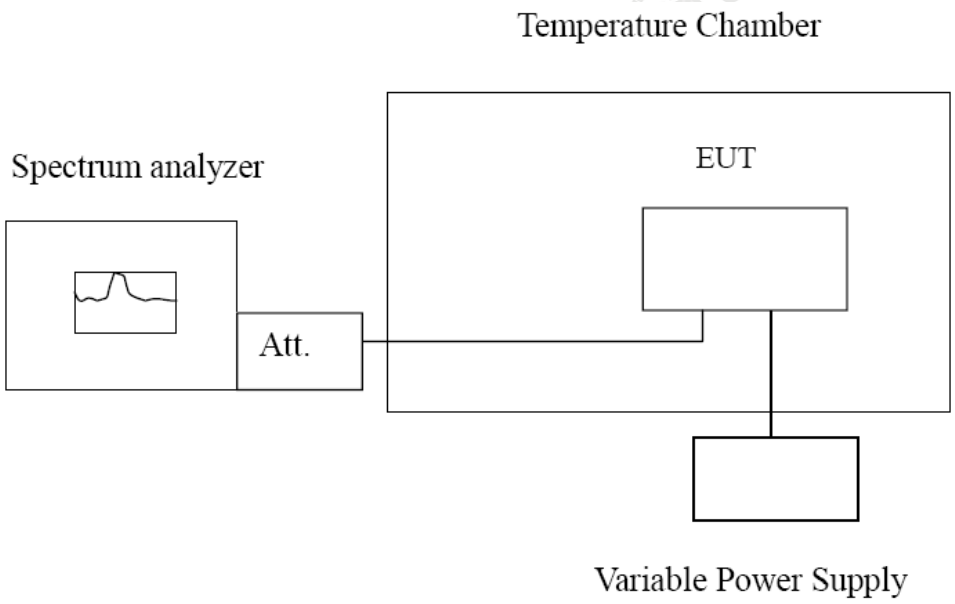
CH155

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	110.49	0.021330	Within the band of operation	Pass
	-20	174.77	0.033739		
	-10	145.31	0.028052		
	0	146.59	0.028299		
	10	146.08	0.028201		
	20	99.43	0.019195		
	30	167.42	0.032320		
	40	129.52	0.025004		
	50	128.51	0.024809		
AC 132	25	195.36	0.037714		
AC 108	25	118.81	0.022936		

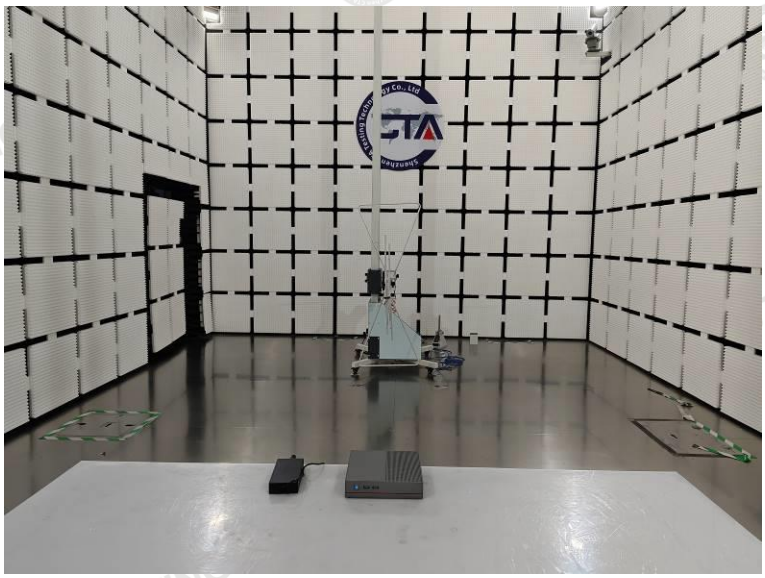
Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120	-30	135.94	0.023662	Within the band of operation	Pass
	-20	129.67	0.022571		
	-10	167.57	0.029168		
	0	169.62	0.029525		
	10	136.67	0.023789		
	20	144.79	0.025203		
	30	116.37	0.020256		
	40	168.64	0.029354		
	50	160.44	0.027927		
AC 132	25	150.49	0.026195		
AC 108	25	129.51	0.022543		

Ant 2:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120	-30	110.60	0.021351	Within the band of operation	Pass
	-20	174.58	0.033703		
	-10	145.52	0.028093		
	0	146.77	0.028334		
	10	146.19	0.028222		
	20	99.42	0.019193		
	30	167.32	0.032301		
	40	129.68	0.025035		
	50	128.48	0.024803		
AC 132	25	195.68	0.037776		
AC 108	25	118.79	0.022932		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 120	-30	135.82	0.023641	Within the band of operation	Pass
	-20	129.27	0.022501		
	-10	167.37	0.029133		
	0	169.97	0.029586		
	10	136.72	0.023798		
	20	144.68	0.025184		
	30	116.60	0.020296		
	40	168.67	0.029359		
	50	160.56	0.027948		
AC 132	25	150.75	0.026240		
AC 108	25	129.72	0.022580		

5 Test Setup Photos of the EUT



6 Photos of the EUT

Reference to the test report **No. CTA24123000601.**

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