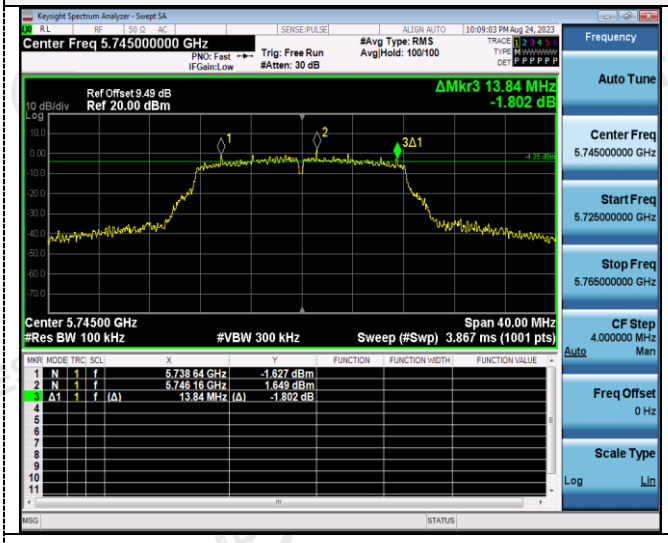
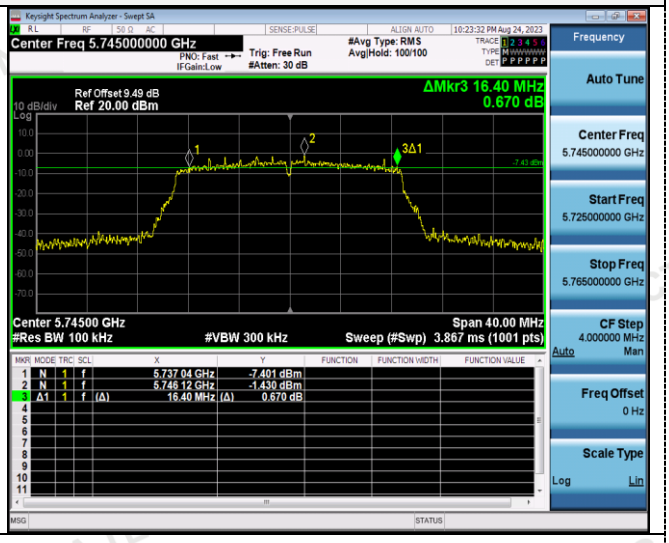
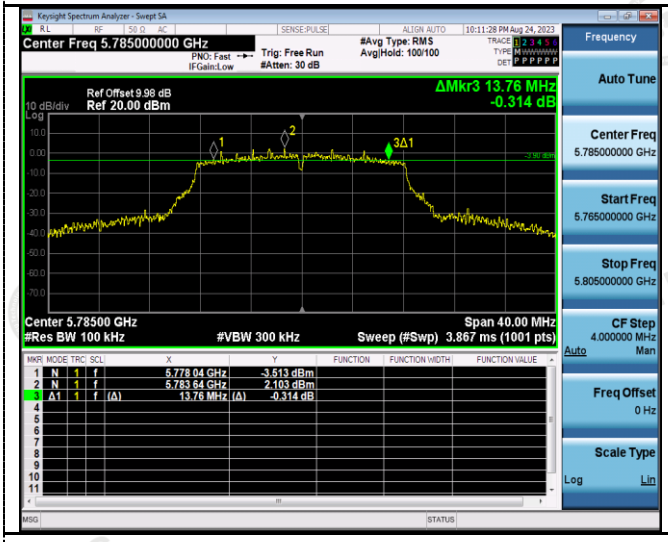
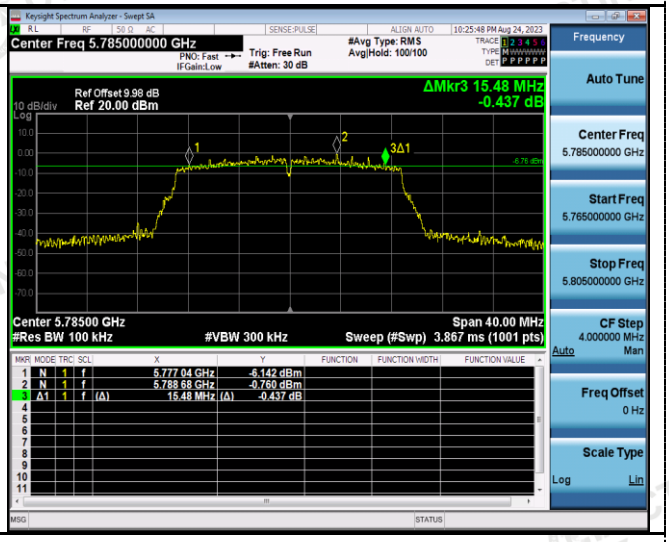
ANT 2

Type	Bands	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	15.040	≥500KHz	Pass
		157	11.320		
		165	12.280		
802.11n(HT20)	U-NII 3	149	15.200		
		157	13.160		
		165	15.000		
802.11n(HT40)	U-NII 3	151	35.040		
		159	33.840		
802.11ac(HT20)	U-NII 3	149	15.360		
		157	13.800		
		165	15.000		
802.11ac(HT40)	U-NII 3	151	33.920		
		159	35.040		
802.11ac(HT80)	U-NII 3	155	75.040		

Test plot as follows:

ANT 1

802.11a	802.11n(HT20)
	
CH149	CH149
	
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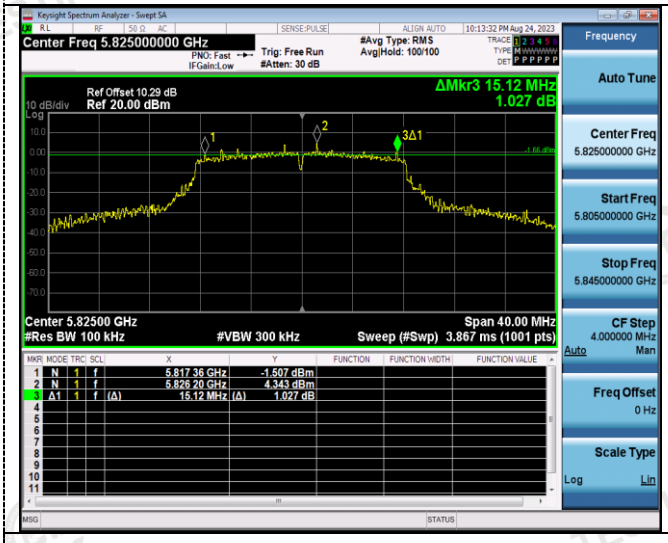
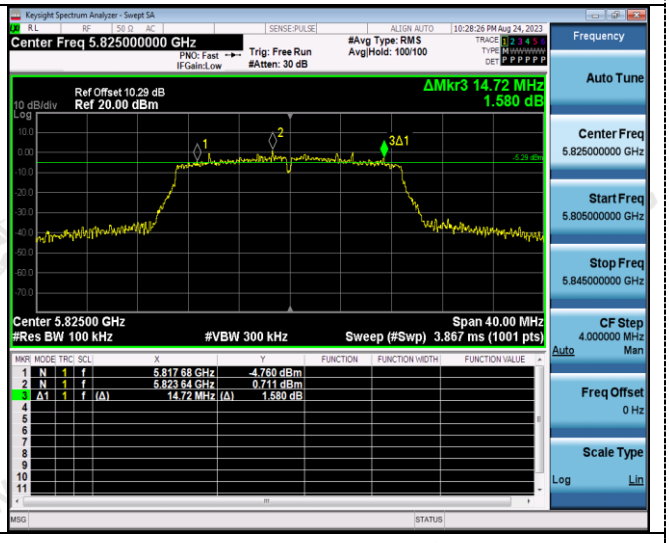
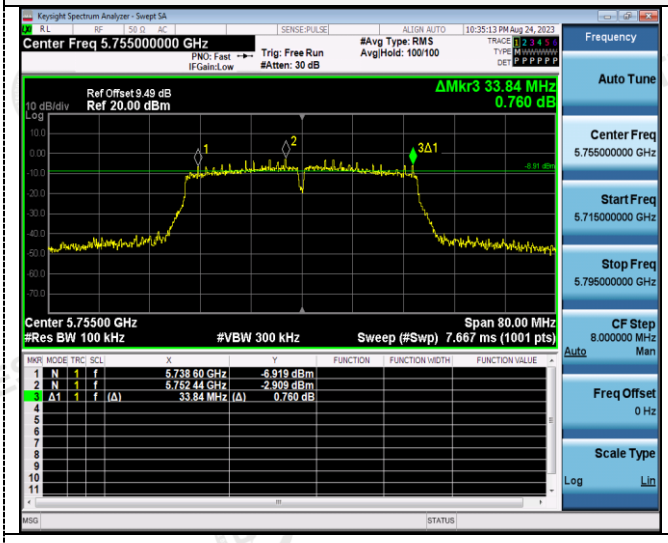
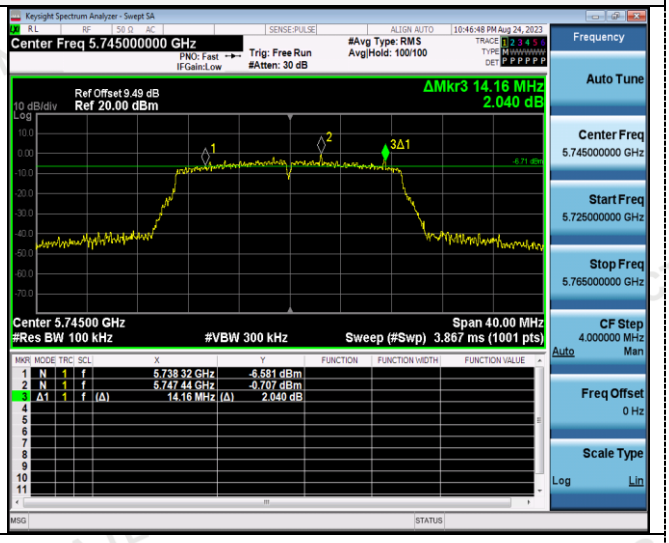
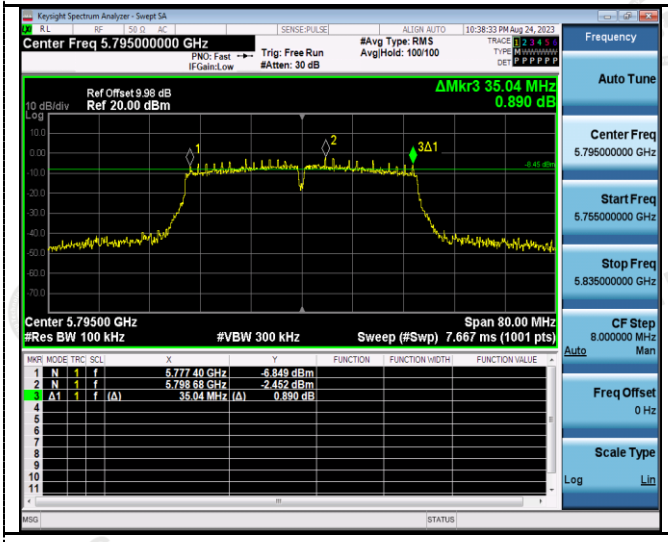
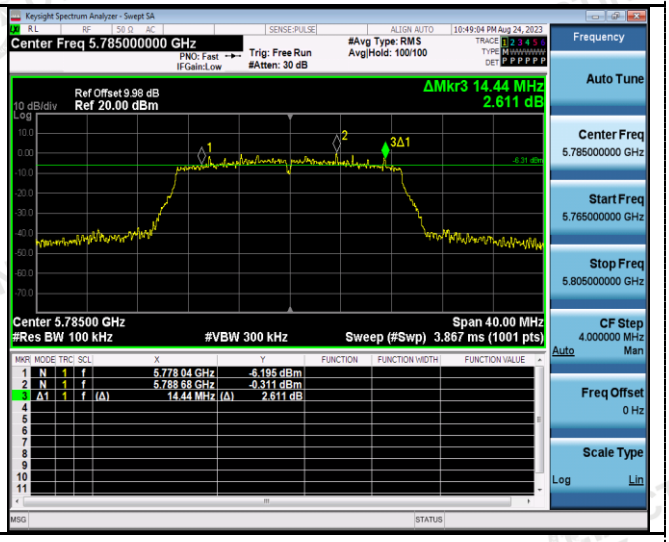
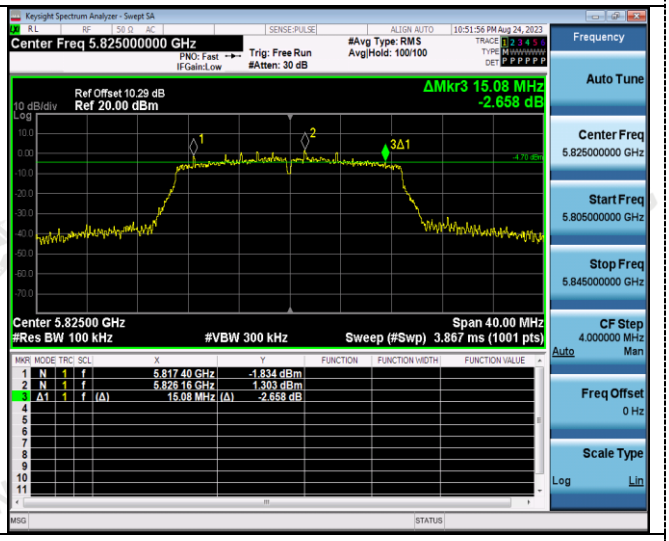
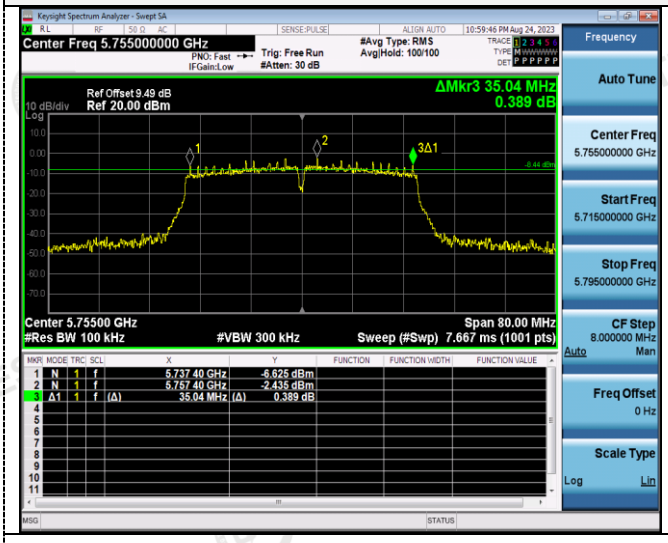
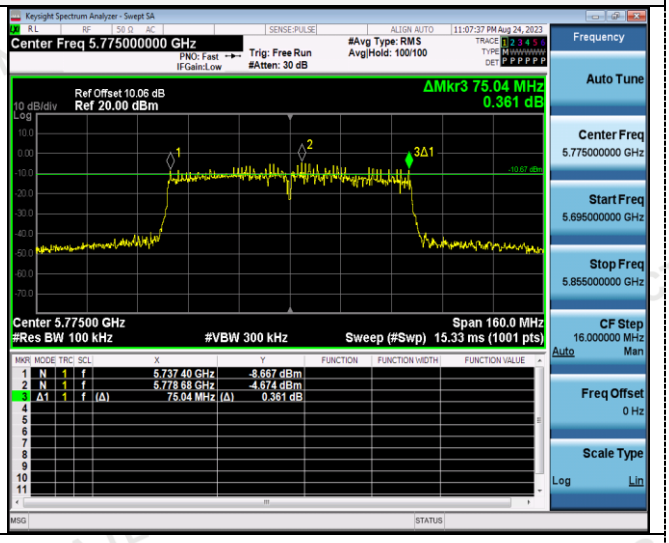
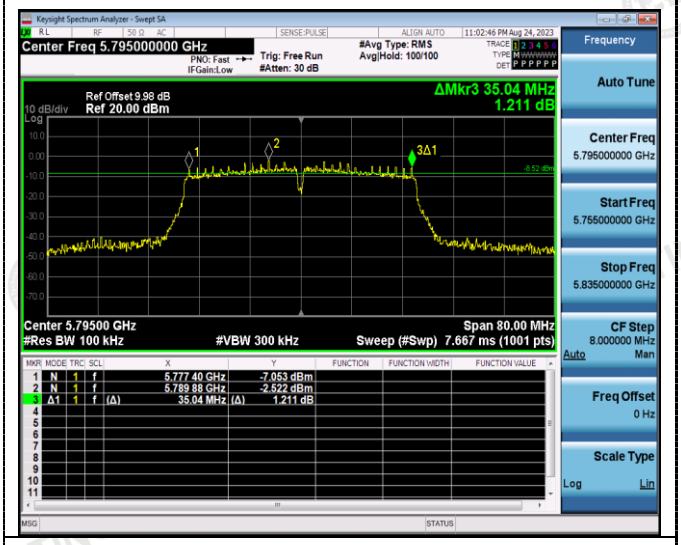
	
CH165	CH165

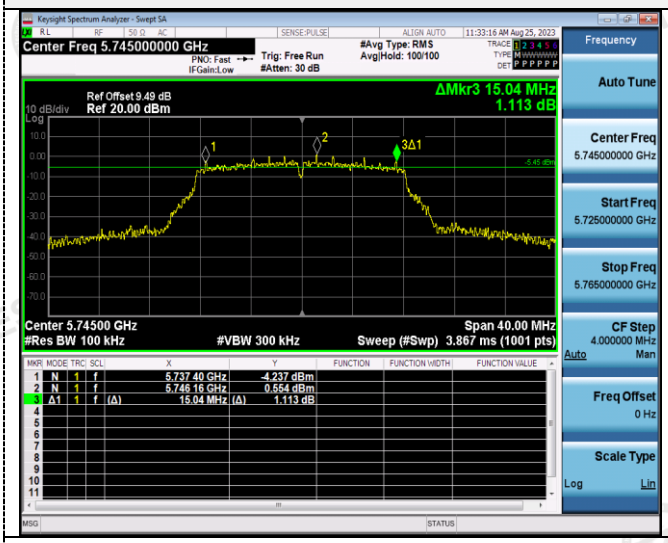
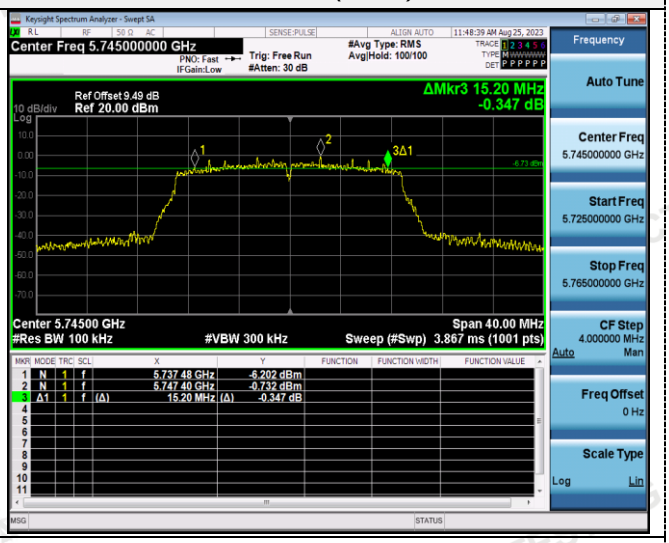
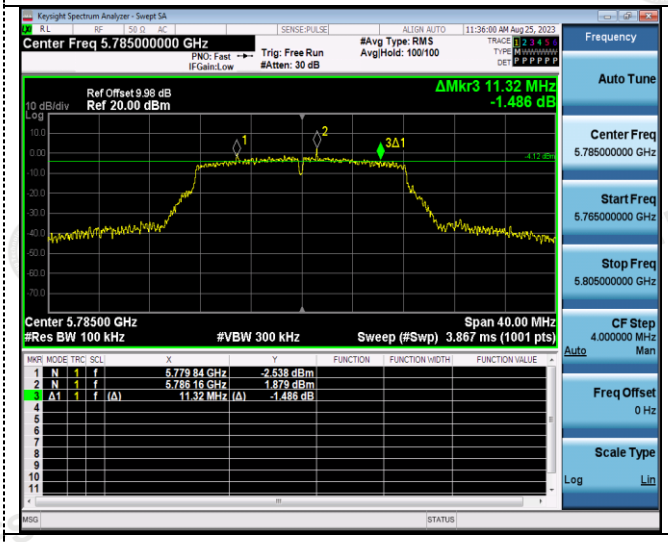
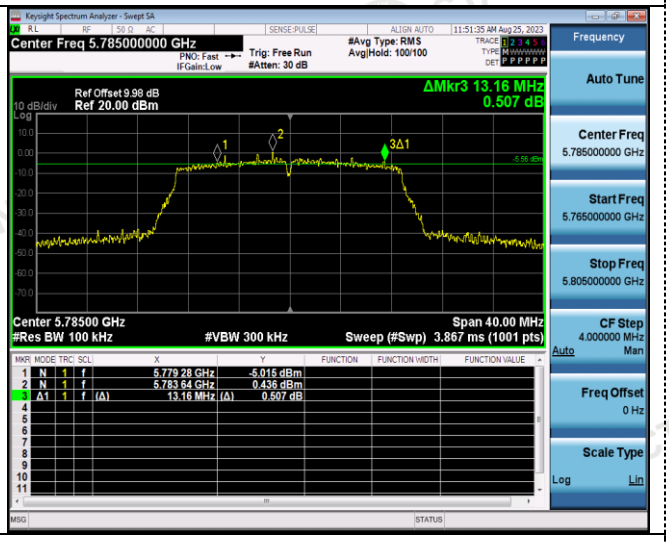
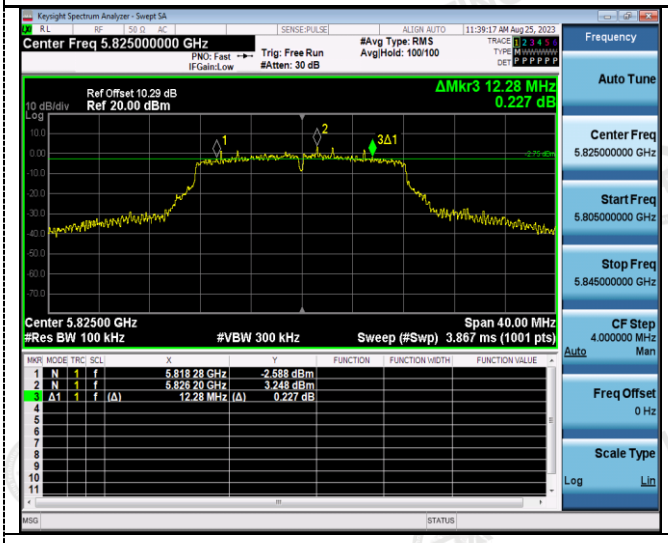
802.11n(HT40)	802.11ac(HT20)
	
CH151	CH149
	
CH159	CH157
	
	CH165

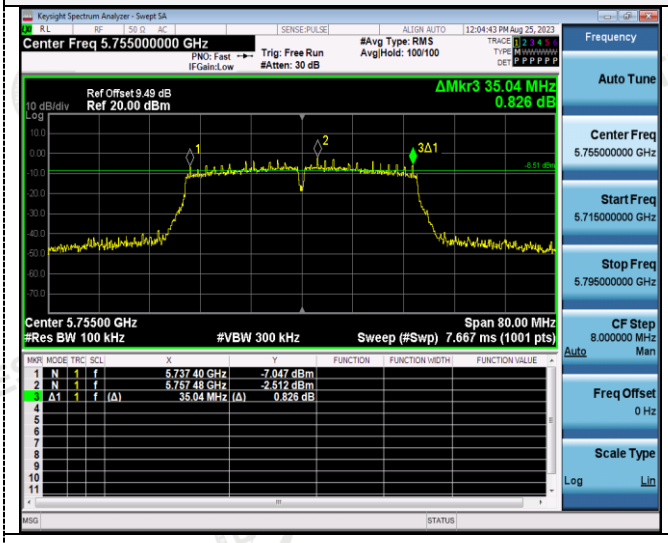
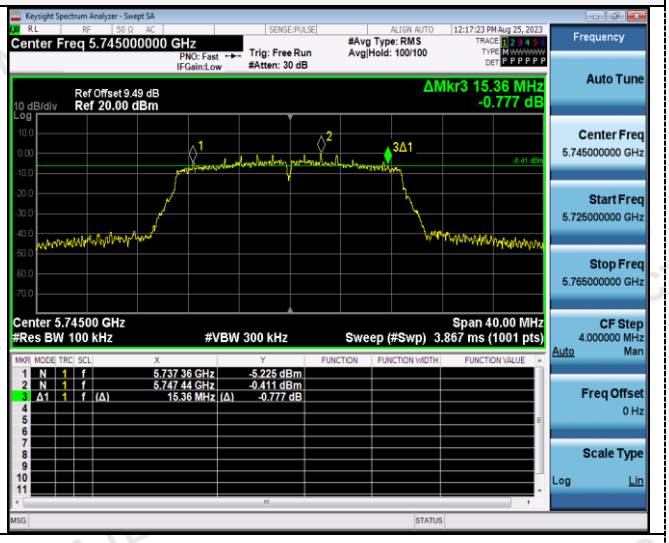
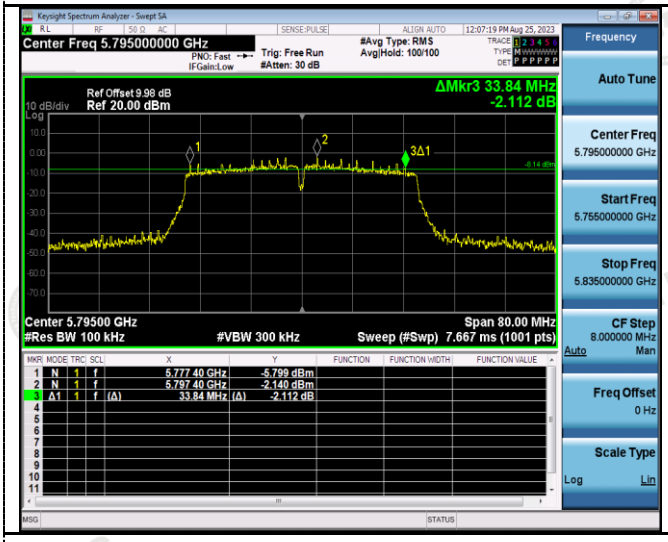
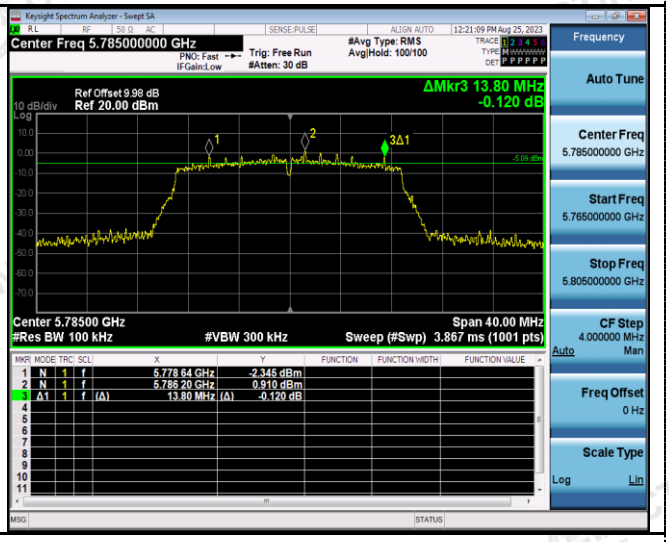
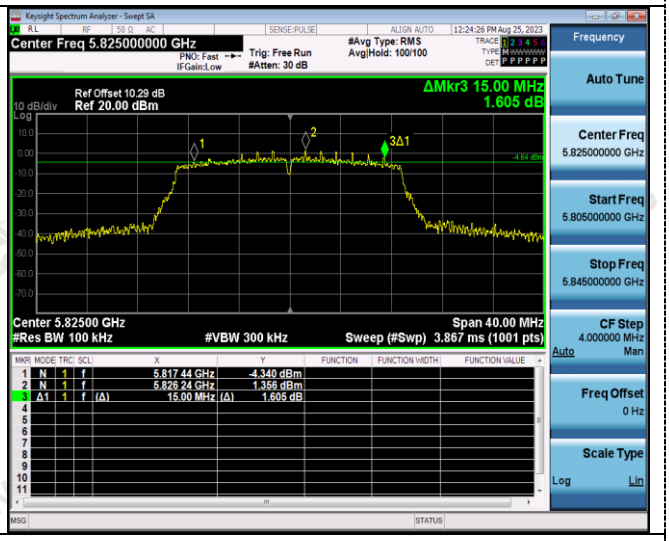
802.11ac(HT40)	802.11ac(HT80)
	
CH151	CH155

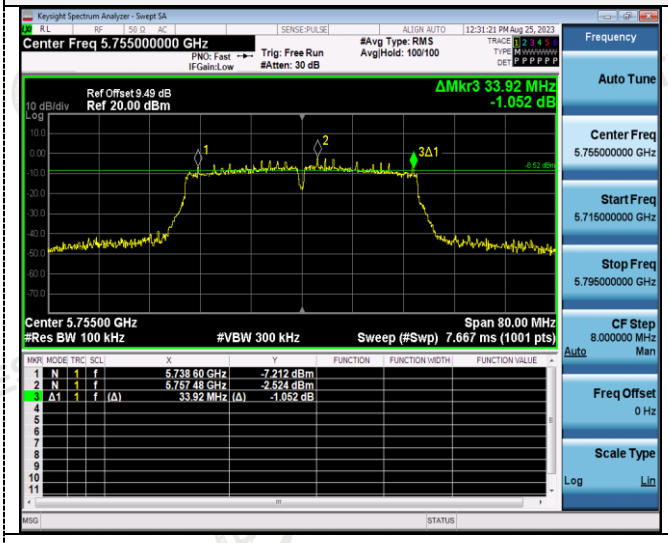
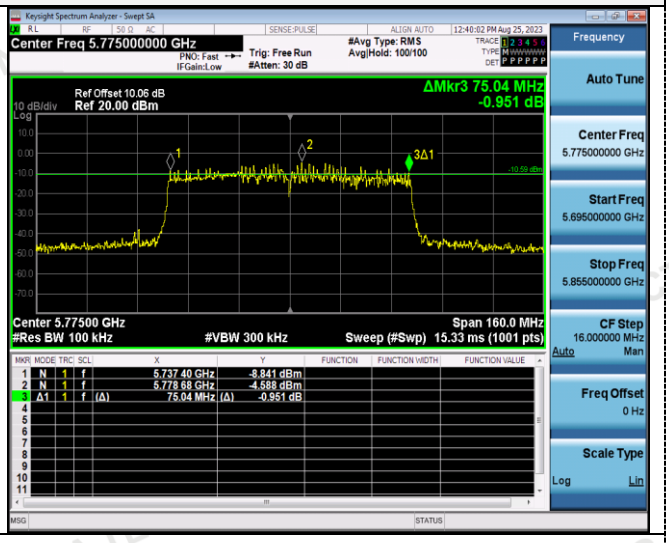


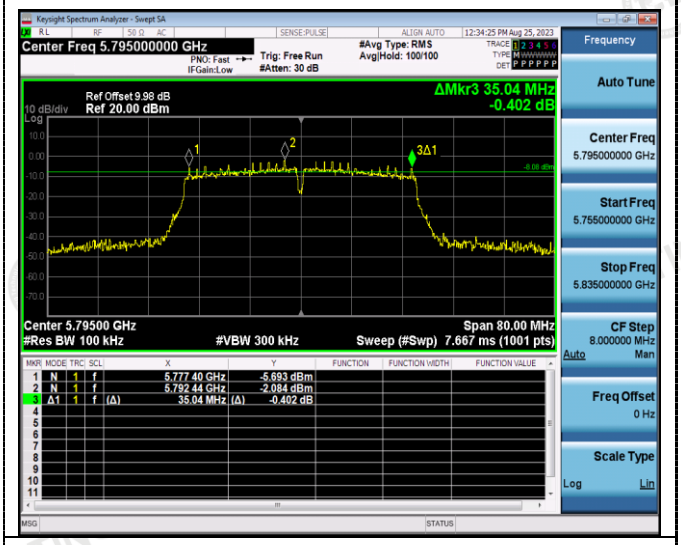
CH159

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)	802.11ac(HT80)
	
CH151	CH155



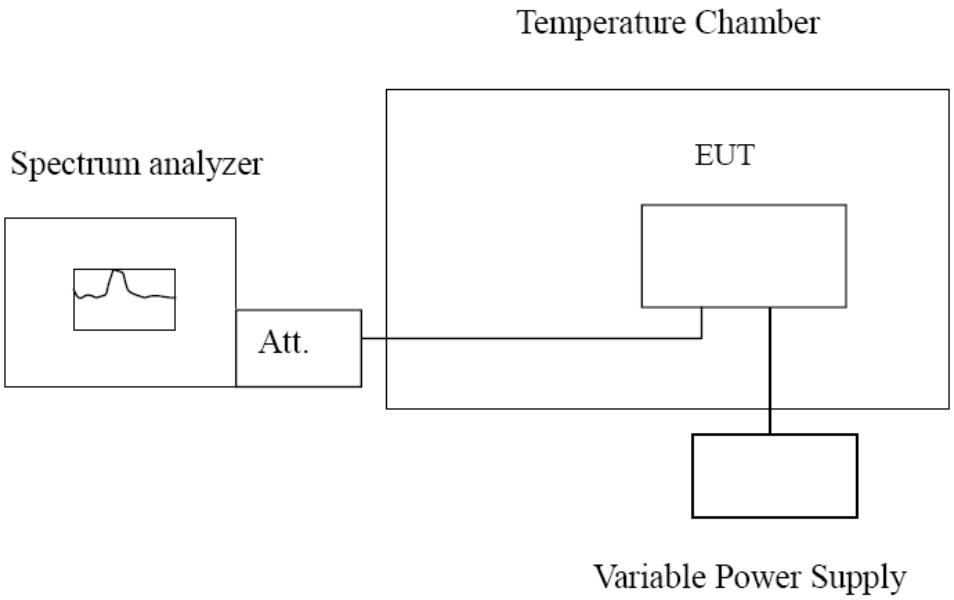
CH159

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:

Ant1:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 230	-30	110.28	0.021290	Within the band of operation	Pass
	-20	174.52	0.033691		
	-10	145.18	0.028027		
	0	146.55	0.028292		
	10	145.83	0.028153		
	20	99.43	0.019195		
	30	167.44	0.032324		
	40	129.58	0.025015		
	50	128.43	0.024793		
AC 240	25	195.29	0.037701		
AC 207	25	118.76	0.022927		

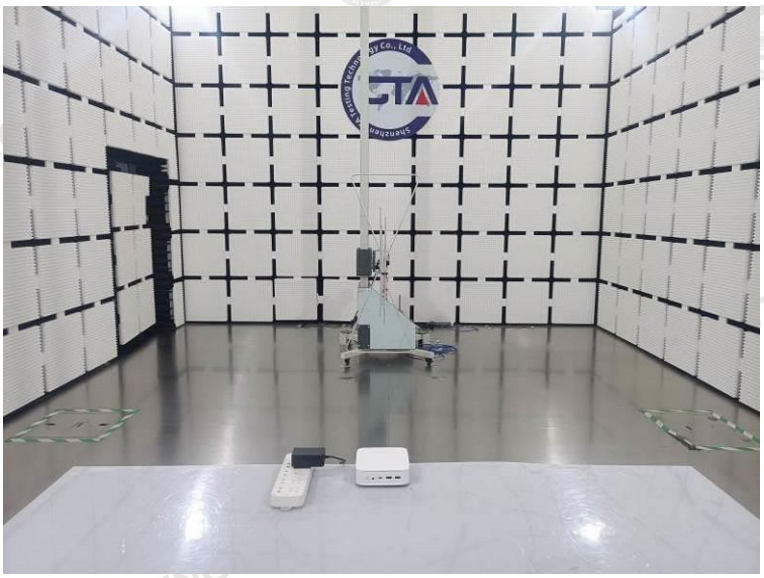
Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 230	-30	135.83	0.023643	Within the band of operation	Pass
	-20	129.28	0.022503		
	-10	167.32	0.029124		
	0	169.82	0.029560		
	10	136.73	0.023800		
	20	144.99	0.025238		
	30	116.43	0.020266		
	40	168.61	0.029349		
	50	160.58	0.027951		
AC 240	25	150.53	0.026202		
AC 207	25	129.80	0.022594		

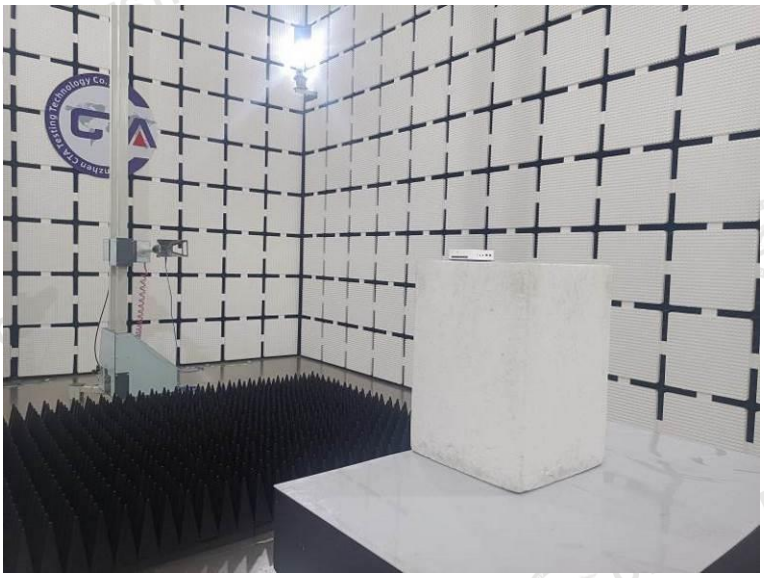
Ant2:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 230	-30	110.49	0.021330	Within the band of operation	Pass
	-20	174.62	0.033710		
	-10	145.57	0.028102		
	0	146.79	0.028338		
	10	146.16	0.028216		
	20	99.72	0.019251		
	30	167.13	0.032264		
	40	129.54	0.025008		
	50	128.78	0.024861		
AC 240	25	195.81	0.037801		
AC 207	25	118.83	0.022940		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
AC 230	-30	135.85	0.023647	Within the band of operation	Pass
	-20	129.39	0.022522		
	-10	167.49	0.029154		
	0	169.90	0.029574		
	10	136.42	0.023746		
	20	144.51	0.025154		
	30	116.46	0.020272		
	40	168.65	0.029356		
	50	160.64	0.027962		
AC 240	25	151.01	0.026285		
AC 207	25	129.79	0.022592		

5 Test Setup Photos of the EUT





6 Photos of the EUT

Reference to the test report No. **CTA23081600401**

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