

ANT 1

802.11a



802.11n(HT20)



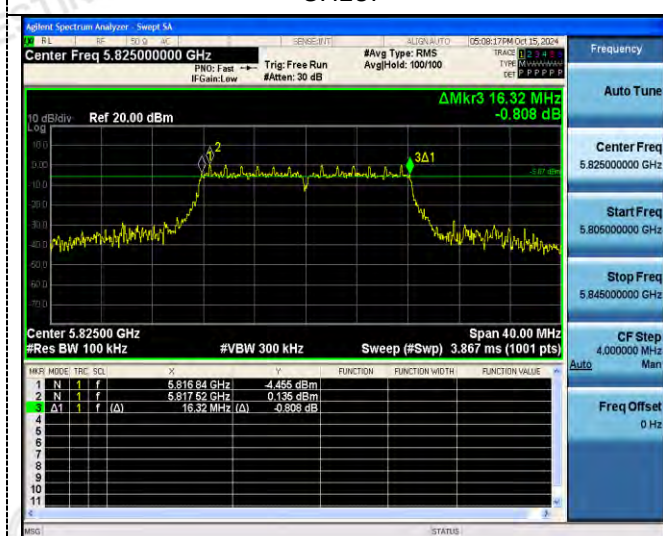
CH149



CH149



CH157



CH157



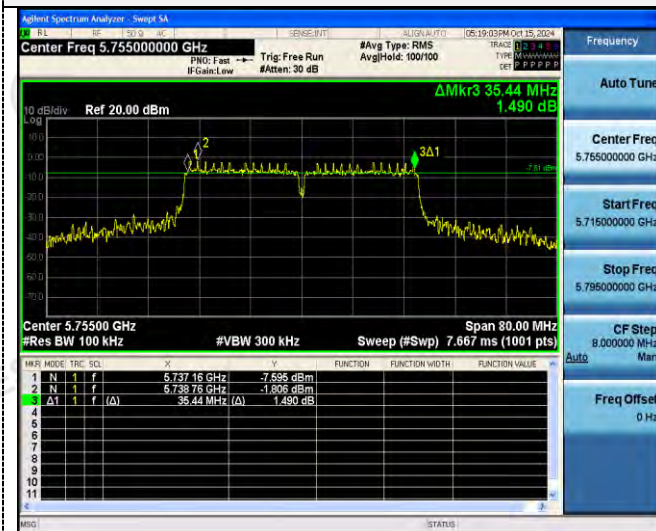
CH165



CH165

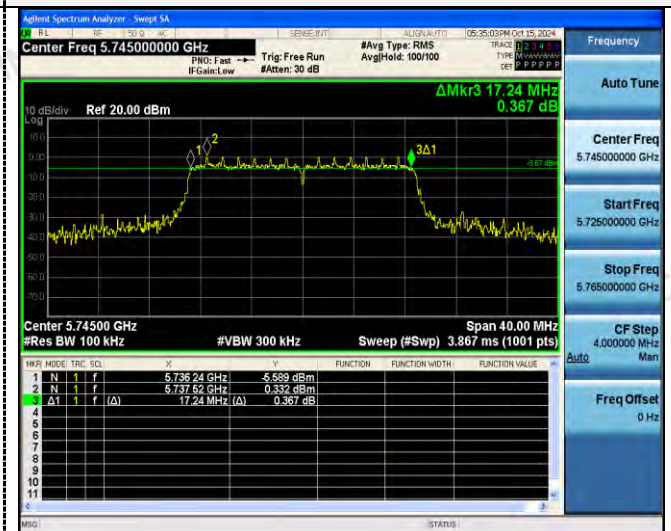


802.11n(HT40)

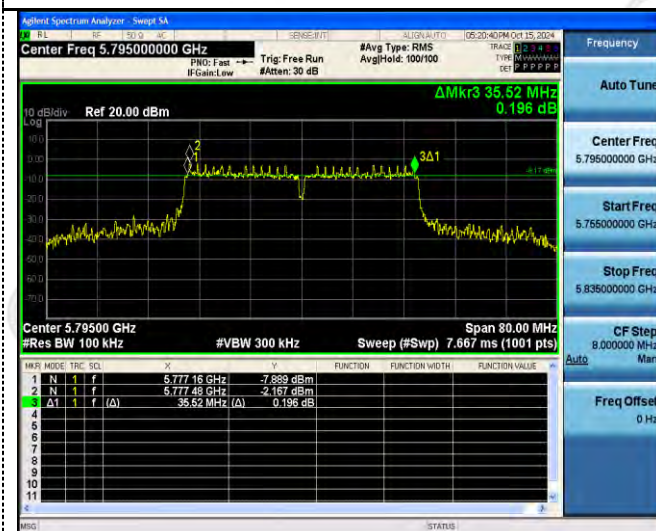


CH151

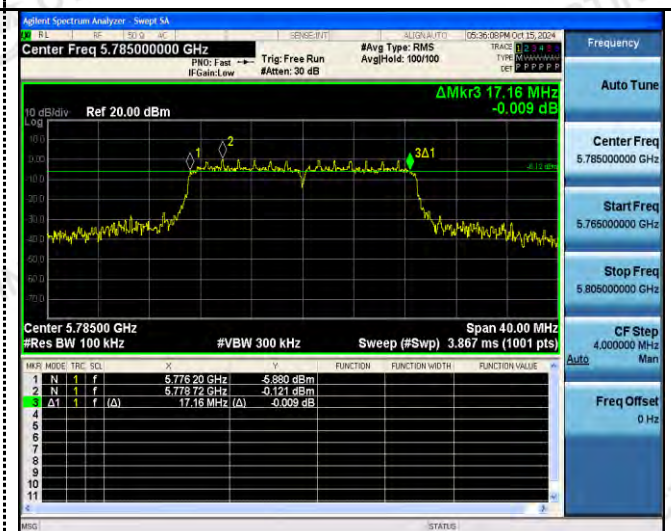
802.11ac(HT20)



CH149



CH159

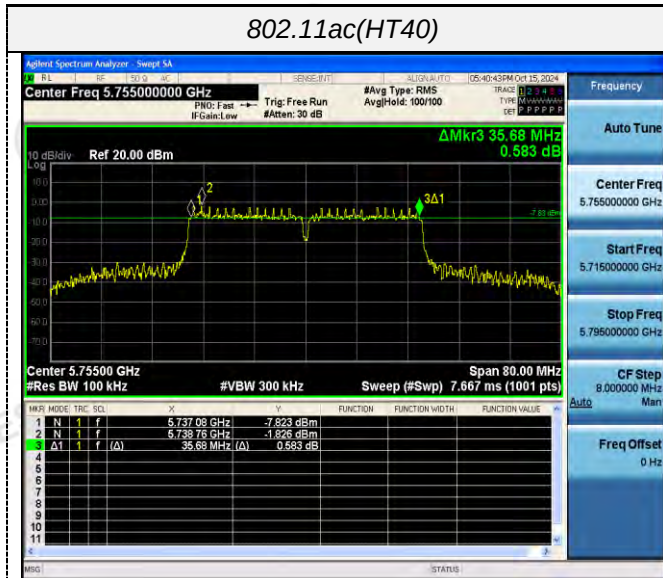


CH157



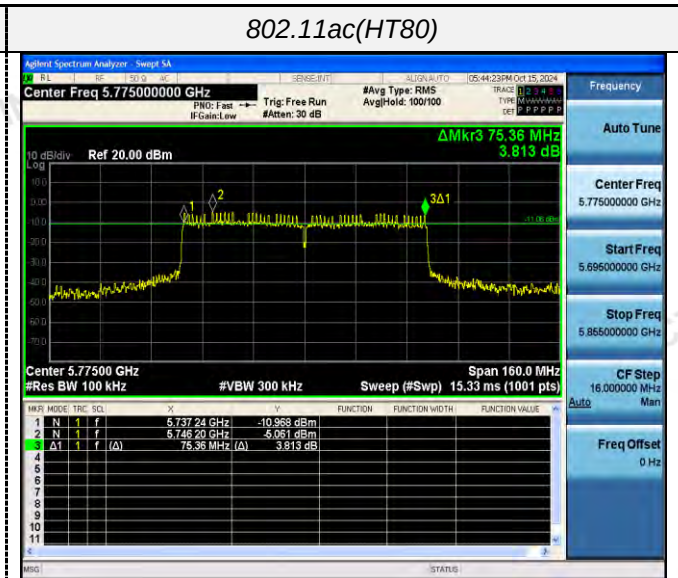
CH165

802.11ac(HT40)

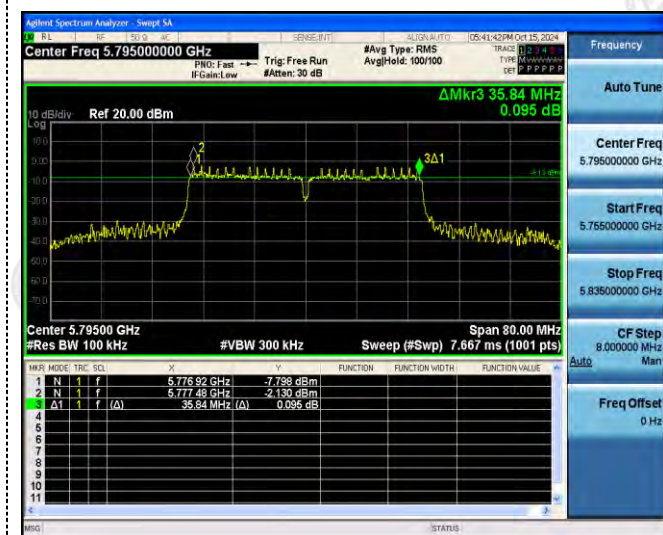


CH151

802.11ac(HT80)



CH155

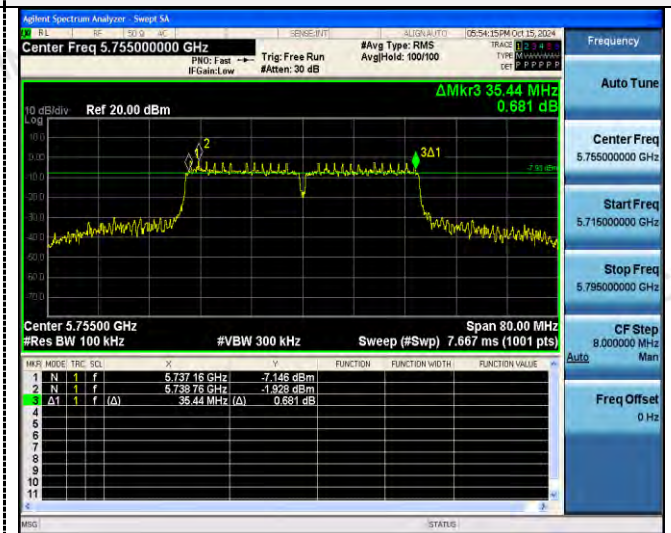


CH159

802.11ax(HT20)



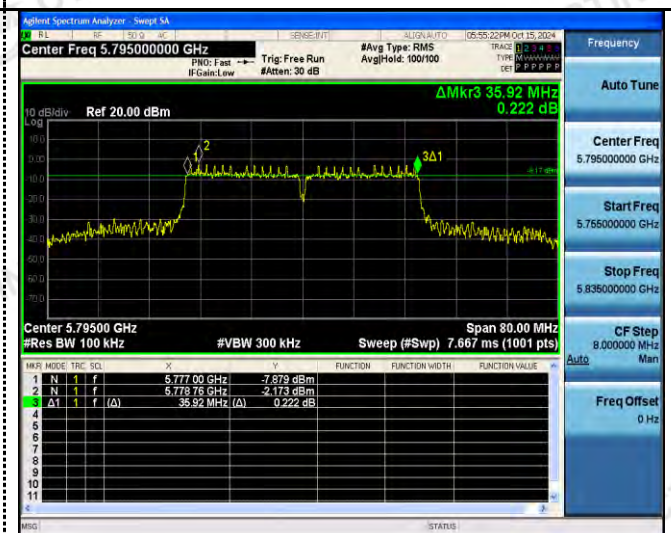
802.11ax(HT40)



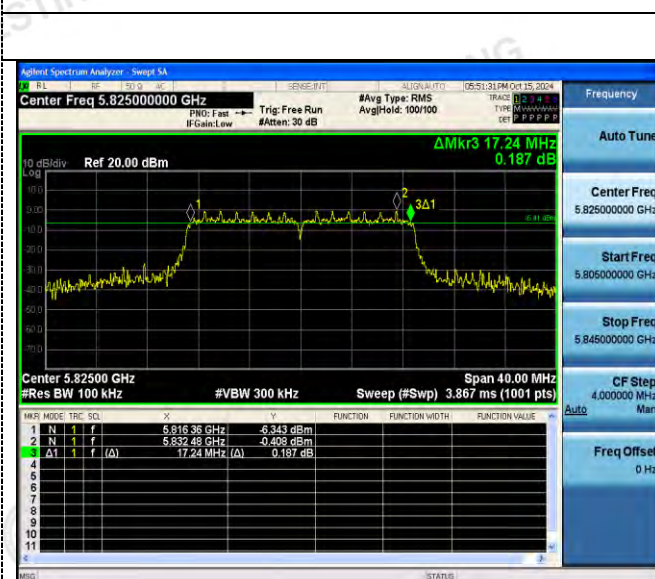
CH149



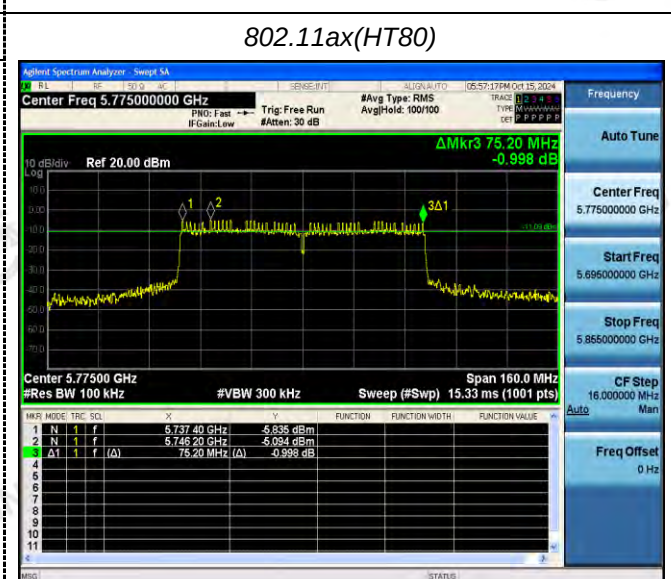
CH151



CH157



CH159

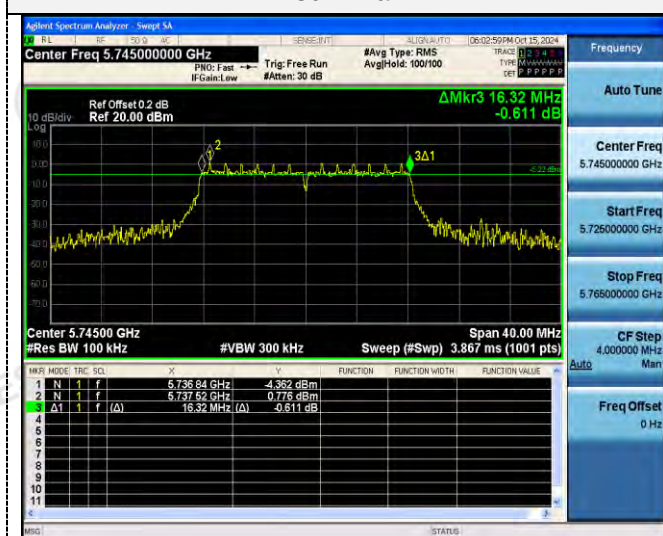


CH156

CH155

ANT 2

802.11a



802.11n(HT20)



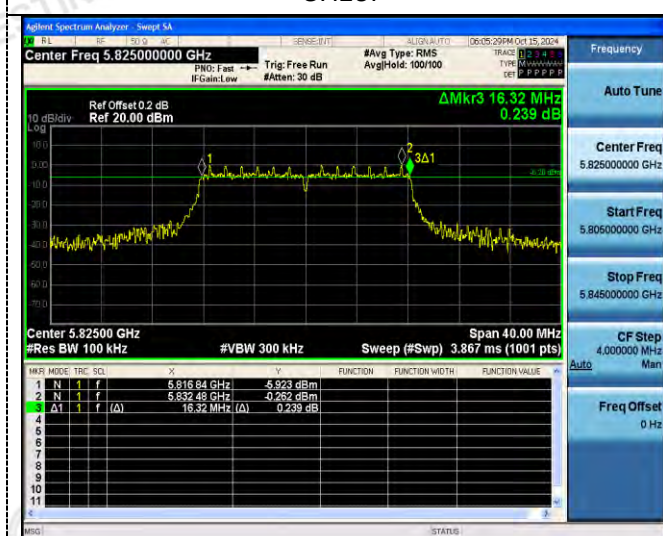
CH149



CH149



CH157



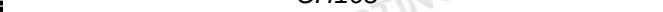
CH157



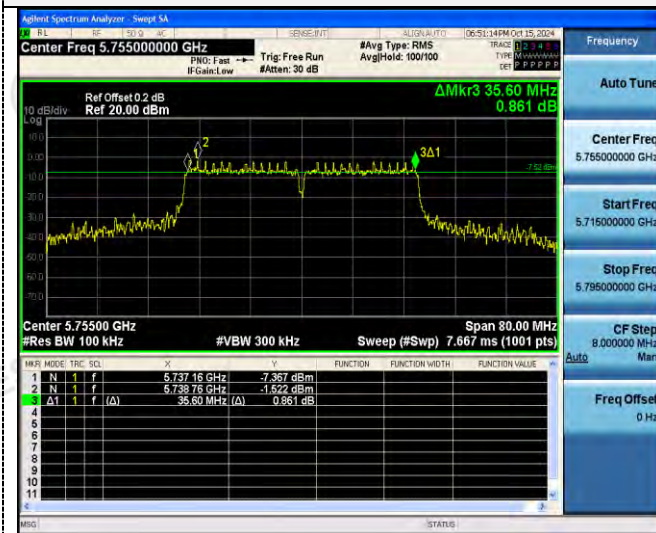
CH165



CH165



802.11n(HT40)

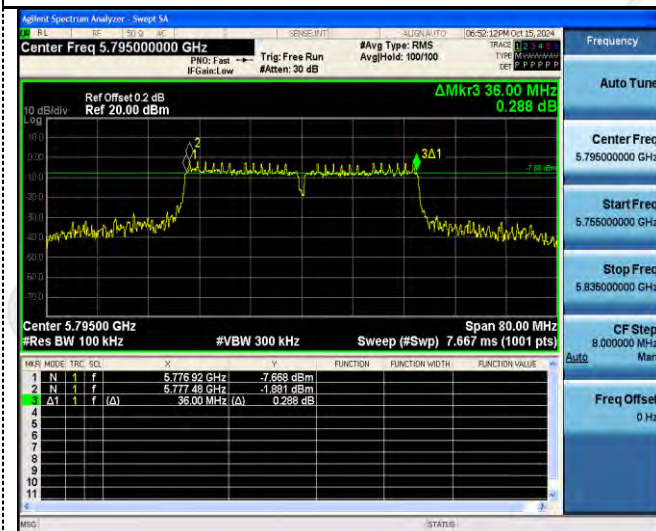


CH151

802.11ac(HT20)



CH149



CH159

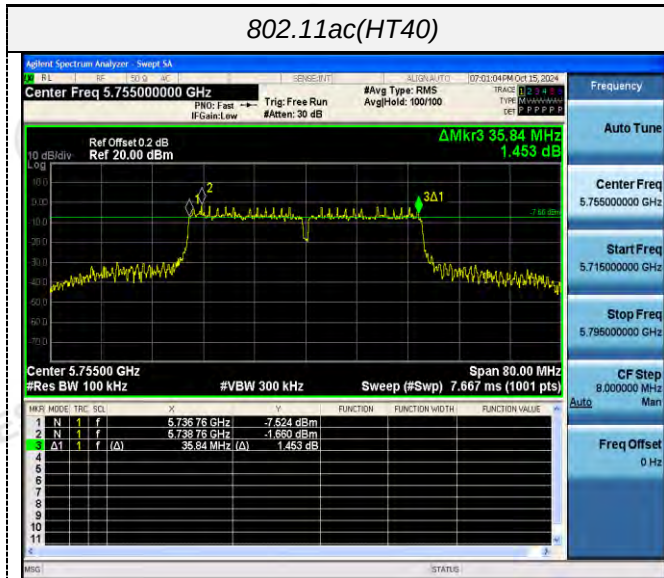


CH157



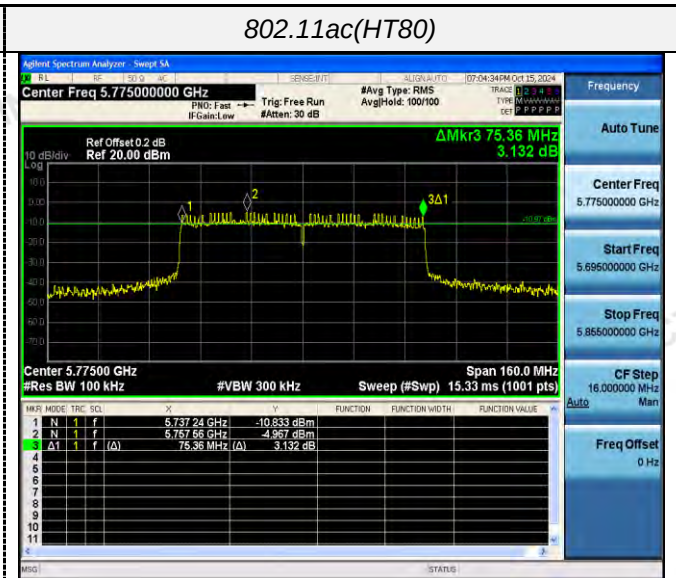
CH165

802.11ac(HT40)

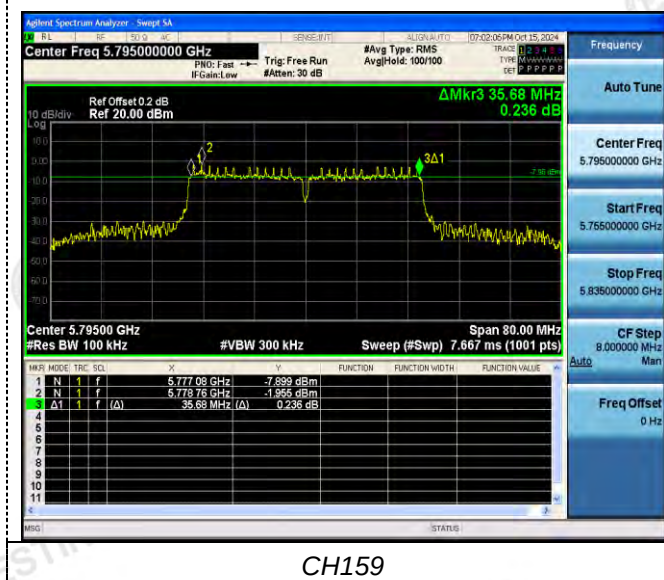


CH151

802.11ac(HT80)

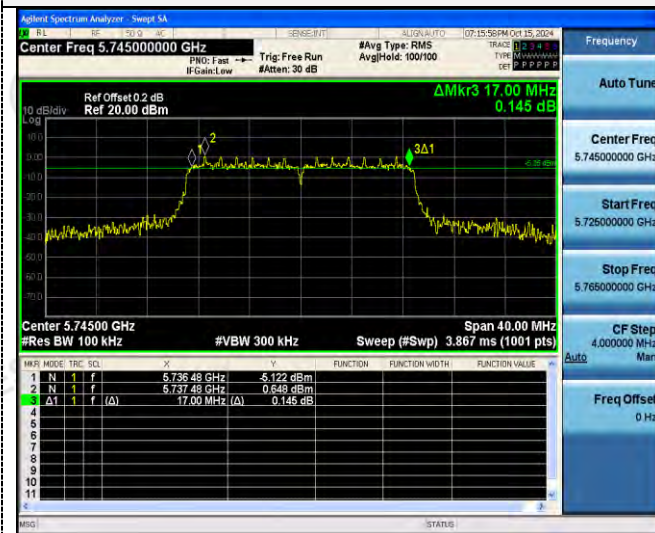


CH155

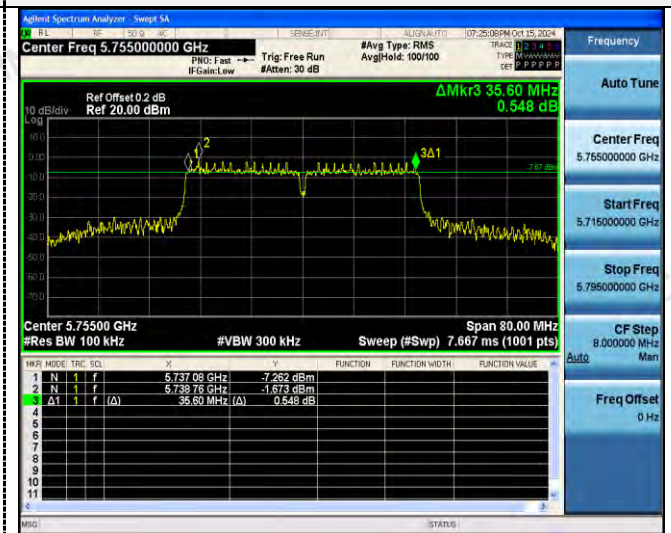


CH159

802.11ax(HT20)



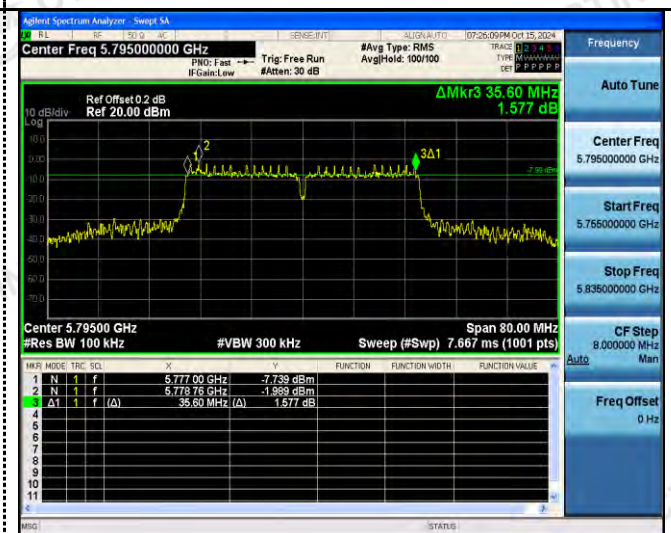
802.11ax(HT40)



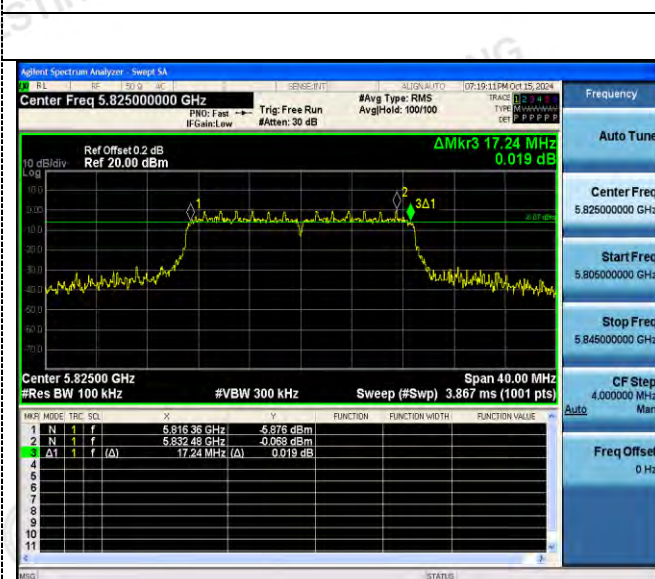
CH149



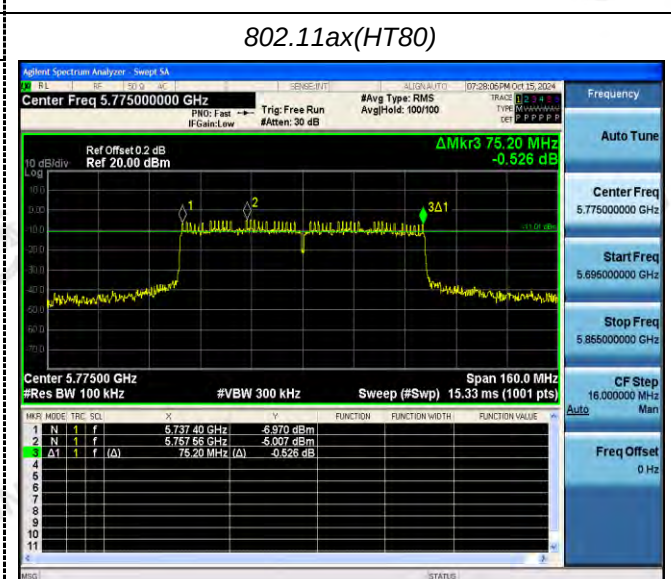
CH151



CH157



CH159



CH156

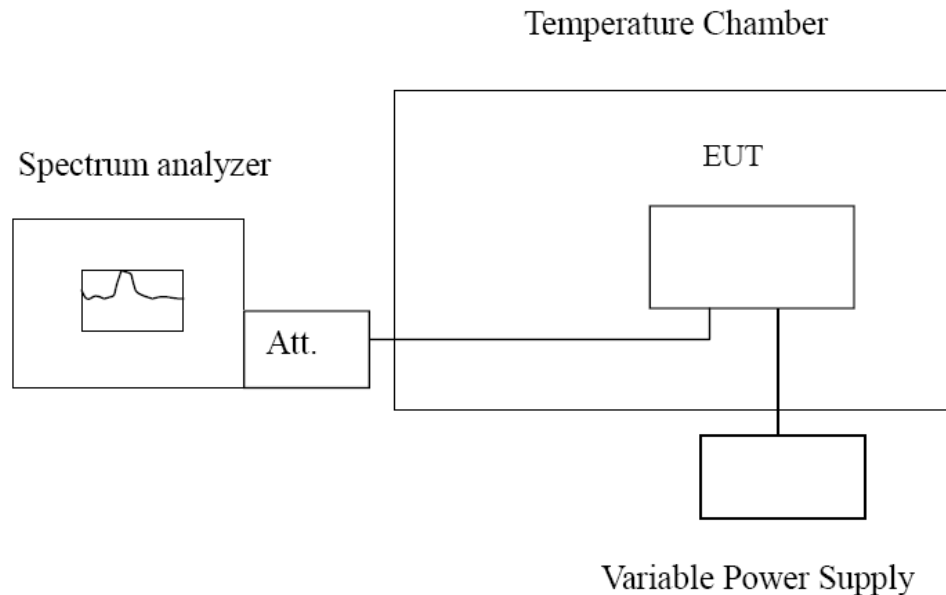
CH155

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°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Frequency Stability under Voltage Variations:

Set chamber temperature to 20°C. 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 ($\pm 15\%$) 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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 3.85V	-30	110.39	0.021311	Within the band of operation	Pass
	-20	174.36	0.033660		
	-10	145.52	0.028093		
	0	146.52	0.028286		
	10	146.17	0.028218		
	20	99.77	0.019261		
	30	167.47	0.032330		
	40	129.70	0.025039		
	50	128.73	0.024851		
DC 4.20V	25	195.58	0.037757	Within the band of operation	Pass
DC 3.40V	25	118.43	0.022863		

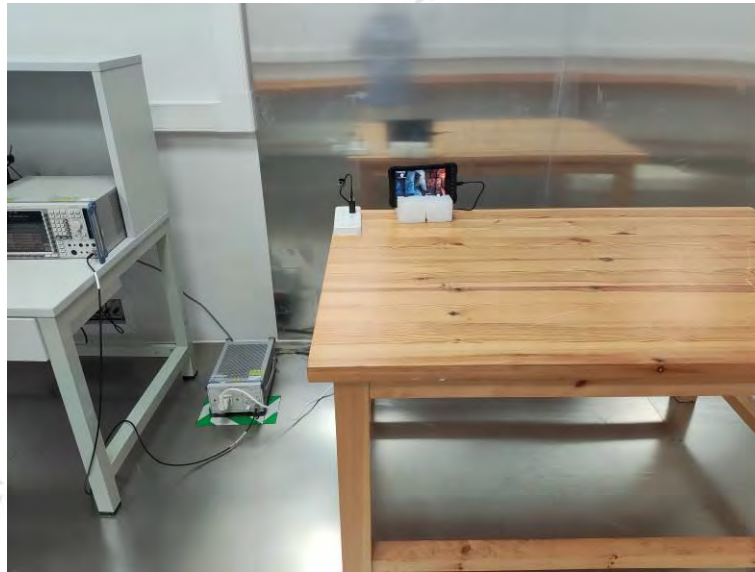
Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 3.85V	-30	135.62	0.023607	Within the band of operation	Pass
	-20	129.34	0.022513		
	-10	167.17	0.029098		
	0	169.81	0.029558		
	10	136.47	0.023755		
	20	144.77	0.025199		
	30	116.63	0.020301		
	40	168.39	0.029311		
	50	160.46	0.027930		
DC 4.20V	25	150.93	0.026272	Within the band of operation	Pass
DC 3.40V	25	129.75	0.022585		

Ant 2:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 3.85V	-30	110.70	0.021371	Within the band of operation	Pass
	-20	174.71	0.033728		
	-10	145.69	0.028125		
	0	146.38	0.028259		
	10	146.00	0.028185		
	20	99.66	0.019239		
	30	167.23	0.032284		
	40	129.24	0.024950		
	50	128.79	0.024863		
DC 4.20V	25	195.52	0.037745	Within the band of operation	Pass
DC 3.40V	25	118.84	0.022942		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 3.85V	-30	135.59	0.023601	Within the band of operation	Pass
	-20	129.43	0.022529		
	-10	167.55	0.029164		
	0	169.64	0.029528		
	10	136.60	0.023777		
	20	144.98	0.025236		
	30	116.77	0.020326		
	40	168.41	0.029314		
	50	160.74	0.027979		
DC 4.20V	25	150.92	0.026270	Within the band of operation	Pass
DC 3.40V	25	129.43	0.022529		

5 Test Setup Photos of the EUT



6 Photos of the EUT

Reference to the test report No. CTA24100900401.

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