

ANT 1

802.11a



802.11n(HT20)



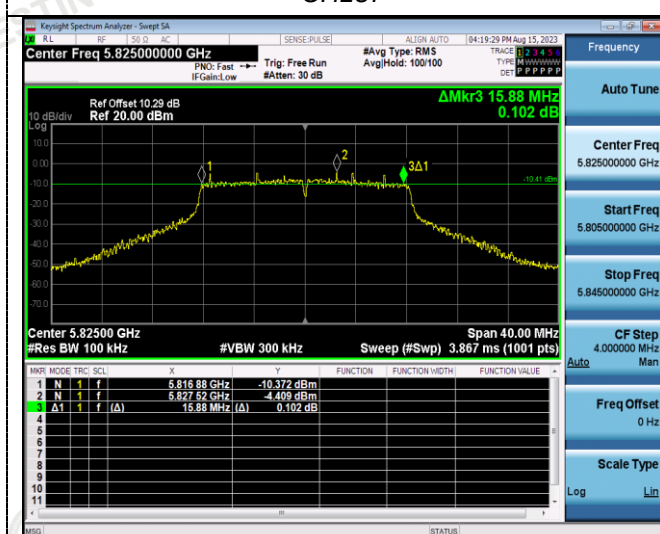
CH149



CH149



CH157



CH157



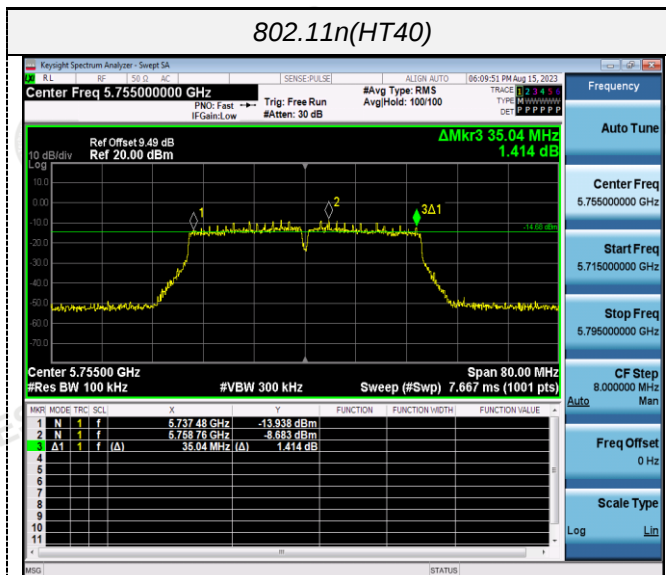
CH165



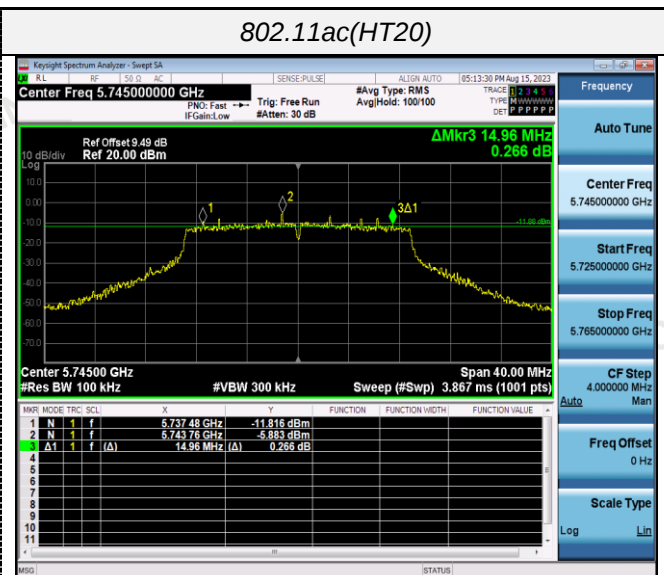
CH165



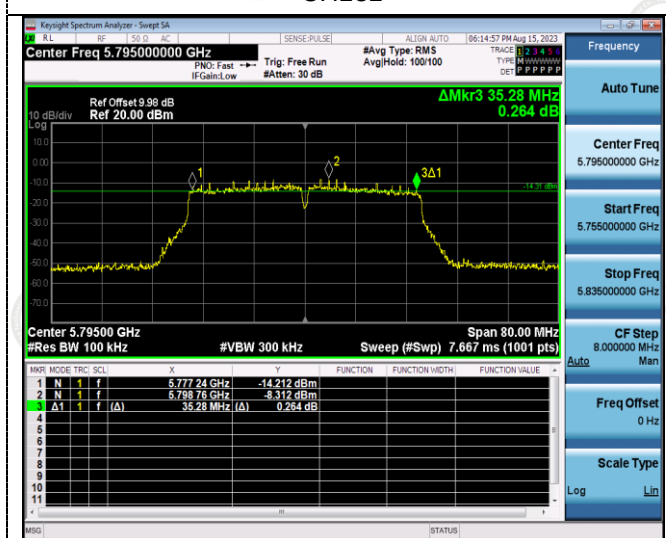
802.11n(HT40)



802.11ac(HT20)



CH151



CH149



CH159

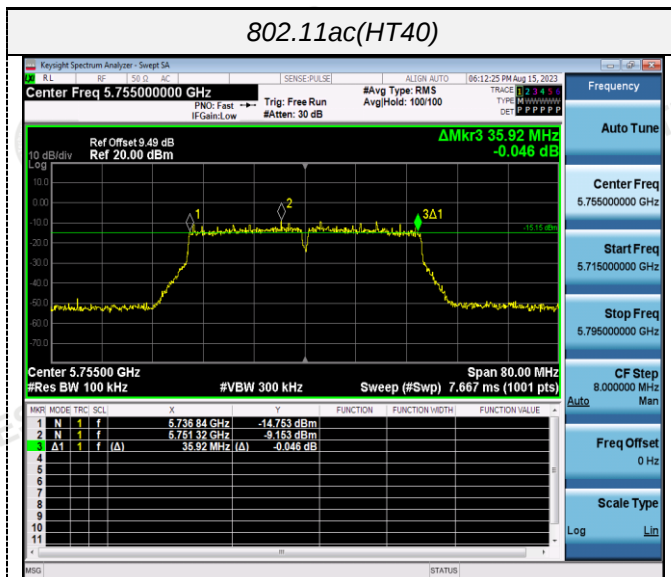


CH157



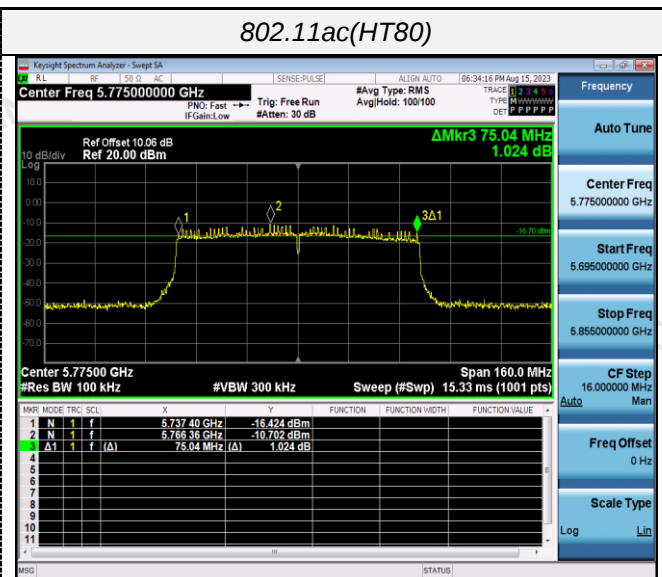
CH165

802.11ac(HT40)

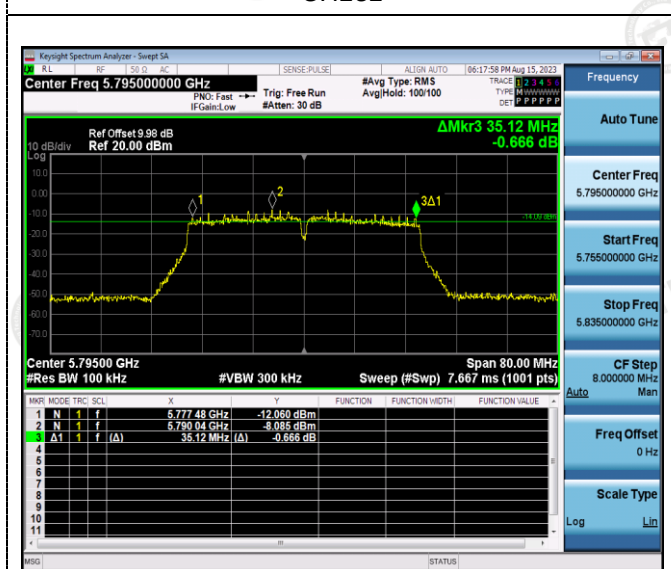


CH151

802.11ac(HT80)



CH155



CH159

ANT 2

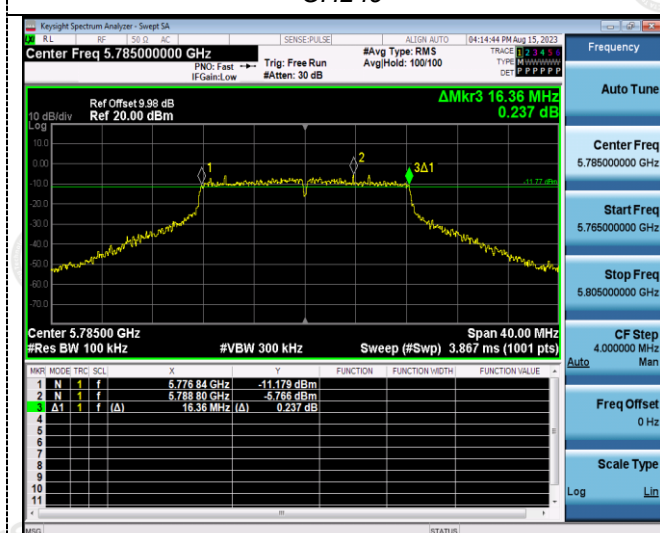
802.11a



802.11n(HT20)



CH149



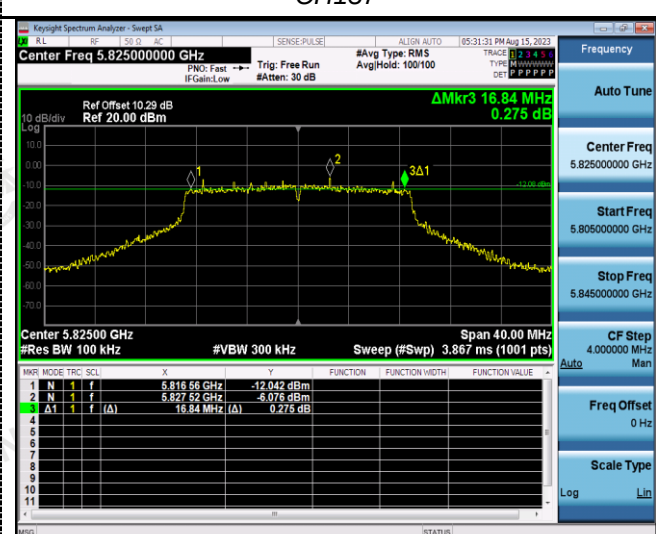
CH149



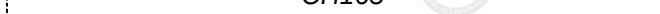
CH157



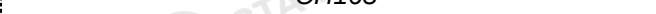
CH157



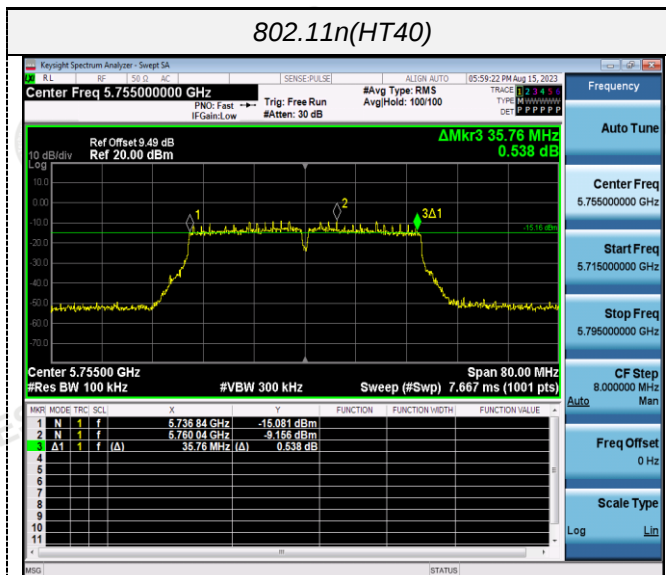
CH165



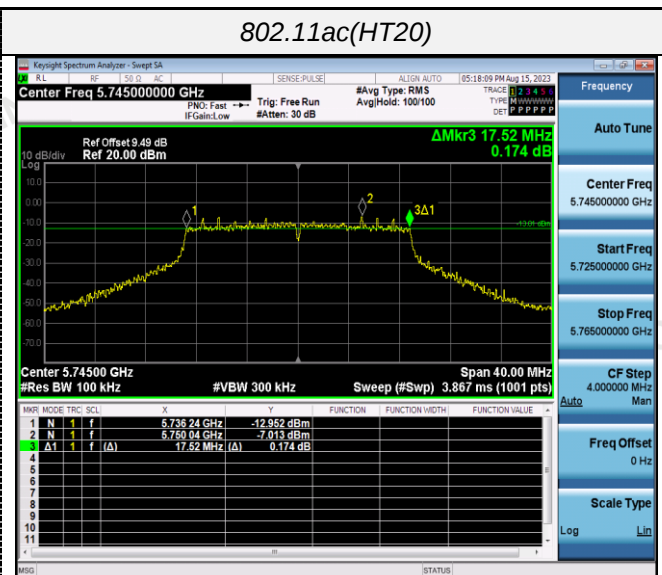
CH165



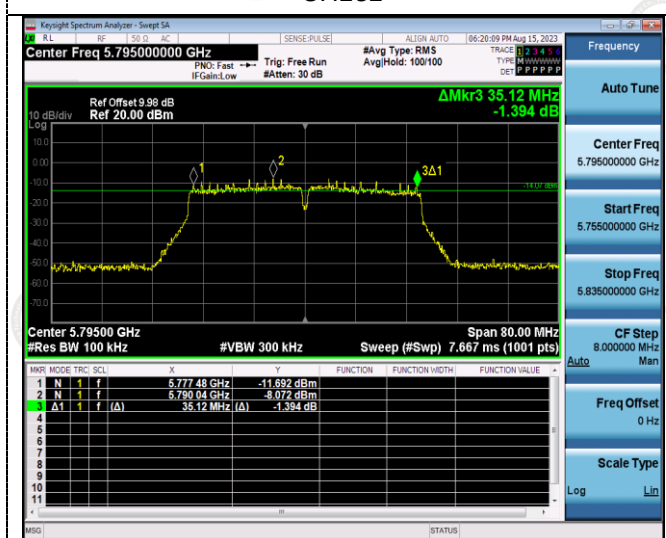
802.11n(HT40)



802.11ac(HT20)



CH151



CH149



CH159

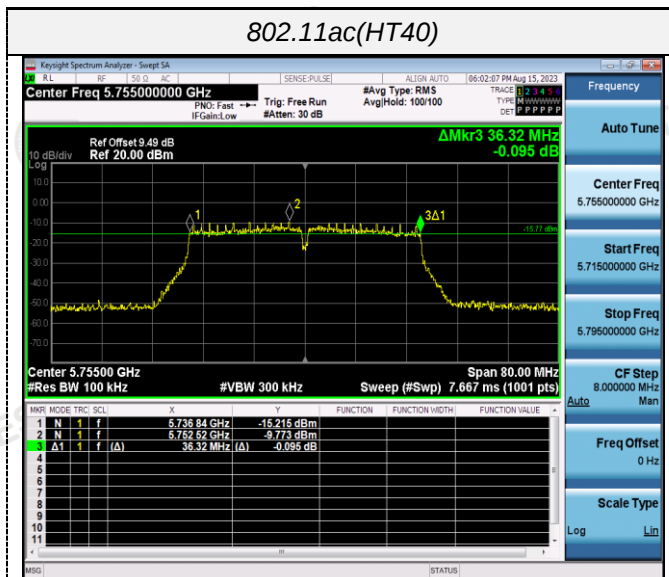


CH157



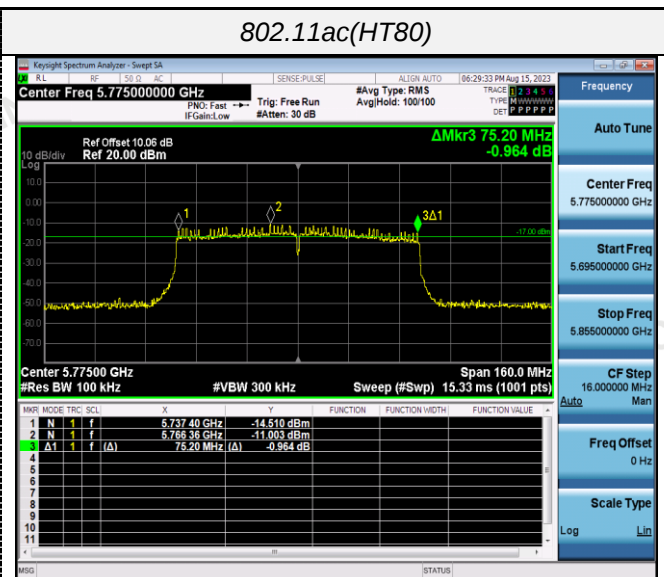
CH165

802.11ac(HT40)

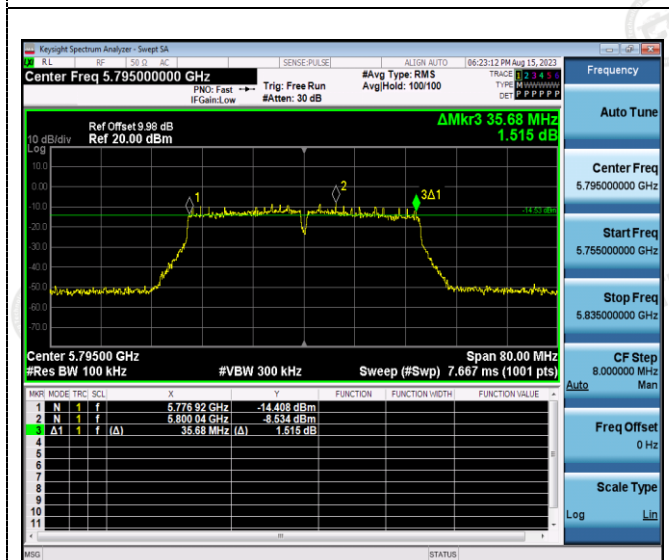


CH151

802.11ac(HT80)



CH155



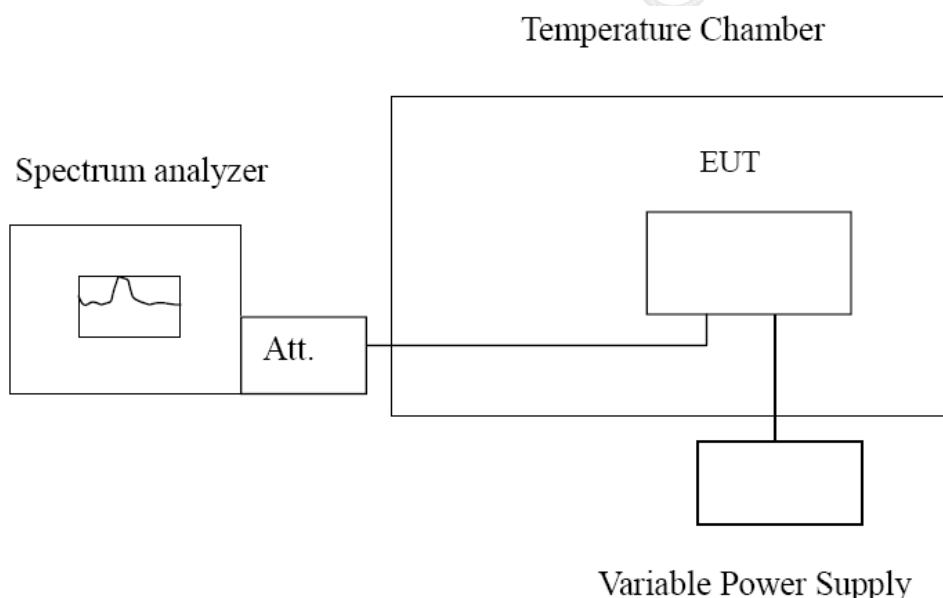
CH159

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°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 11.40	-30	110.55	0.021342	Within the band of operation	Pass
	-20	174.44	0.033676		
	-10	145.59	0.028106		
	0	146.62	0.028305		
	10	145.98	0.028181		
	20	99.45	0.019199		
	30	167.13	0.032264		
	40	129.68	0.025035		
	50	128.77	0.024859		
DC 12.54	25	195.53	0.037747	Within the band of operation	Pass
DC 10.26	25	118.73	0.022921		

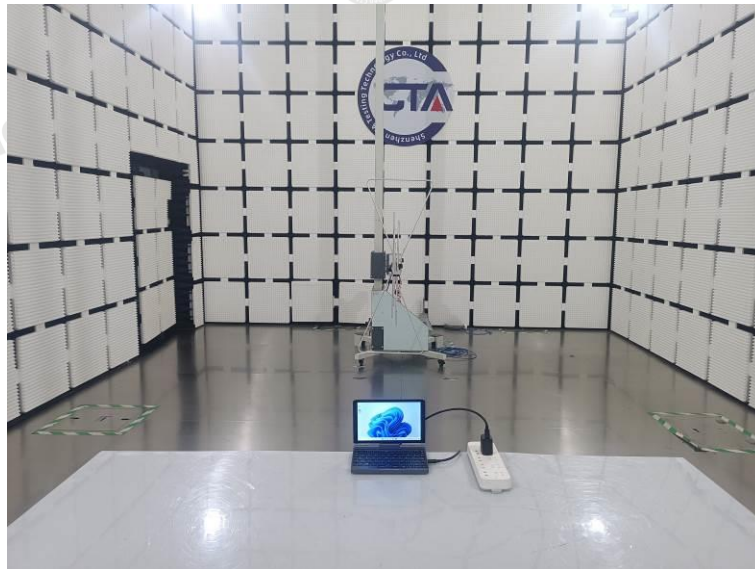
Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 11.40	-30	135.85	0.023647	Within the band of operation	Pass
	-20	129.36	0.022517		
	-10	167.25	0.029112		
	0	169.88	0.029570		
	10	136.33	0.023730		
	20	144.74	0.025194		
	30	116.76	0.020324		
	40	168.61	0.029349		
	50	160.85	0.027998		
DC 12.54	25	150.92	0.026270	Within the band of operation	Pass
DC 10.26	25	129.56	0.022552		

Ant2:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 11.40	-30	110.36	0.021305	Within the band of operation	Pass
	-20	174.46	0.033680		
	-10	145.20	0.028031		
	0	146.35	0.028253		
	10	146.06	0.028197		
	20	99.36	0.019181		
	30	167.24	0.032286		
	40	129.58	0.025015		
	50	128.44	0.024795		
DC 12.54	25	195.51	0.037743	Within the band of operation	Pass
DC 10.26	25	118.52	0.022880		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 11.40	-30	135.48	0.023582	Within the band of operation	Pass
	-20	129.39	0.022522		
	-10	167.28	0.029117		
	0	168.43	0.029318		
	10	136.34	0.023732		
	20	144.83	0.025210		
	30	116.52	0.020282		
	40	168.60	0.029347		
	50	160.88	0.028003		
DC 12.54	25	150.76	0.026242	Within the band of operation	Pass
DC 10.26	25	129.74	0.022583		

5 Test Setup Photos of the EUT



6 Photos of the EUT

Reference to the test report No. CTA23081400201

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