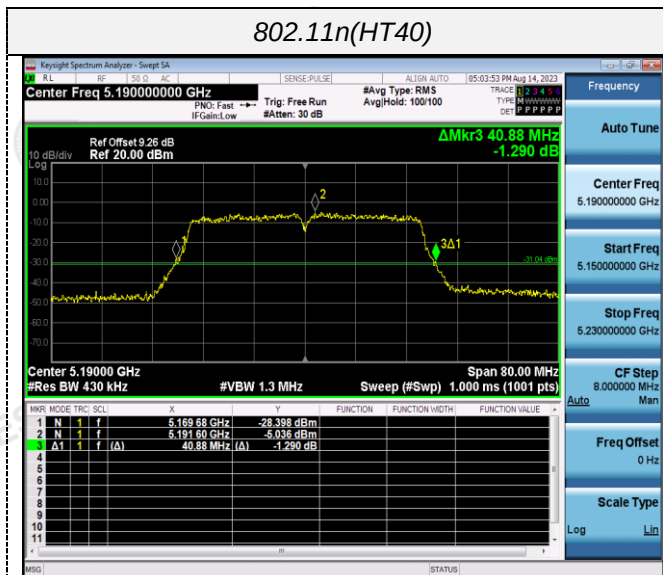
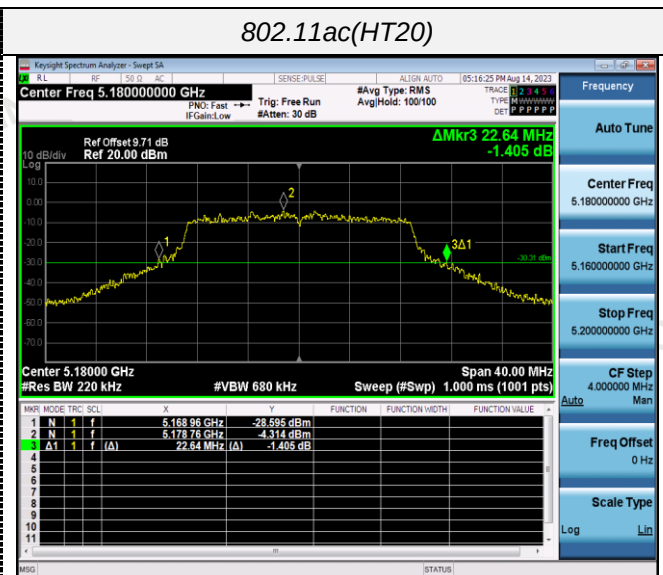


802.11n(HT40)



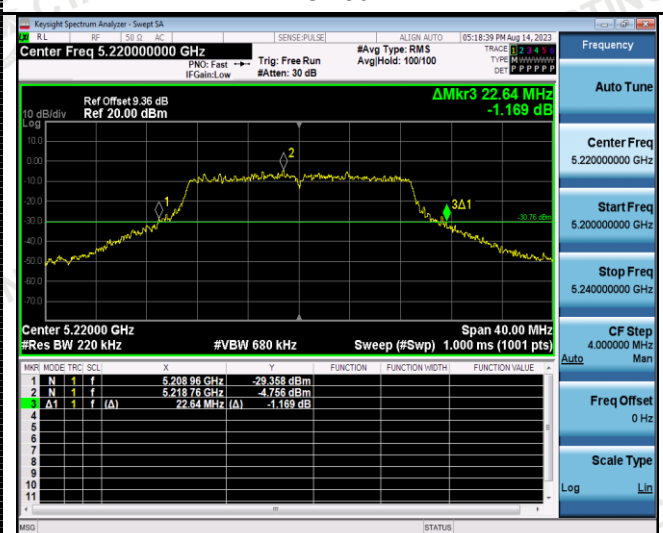
802.11ac(HT20)



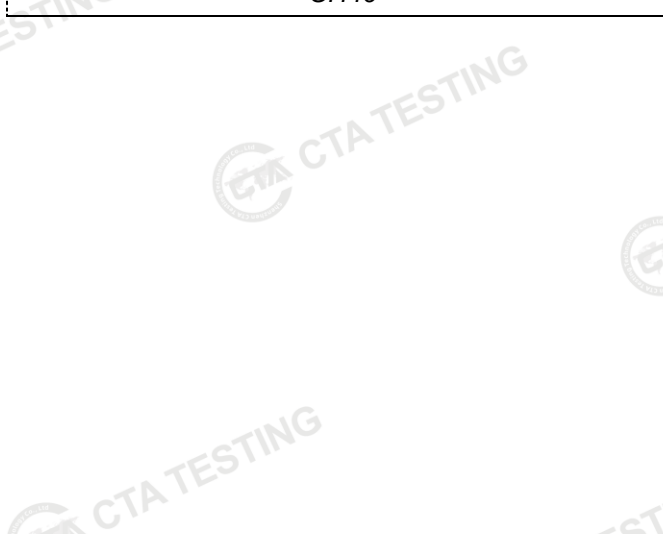
CH38



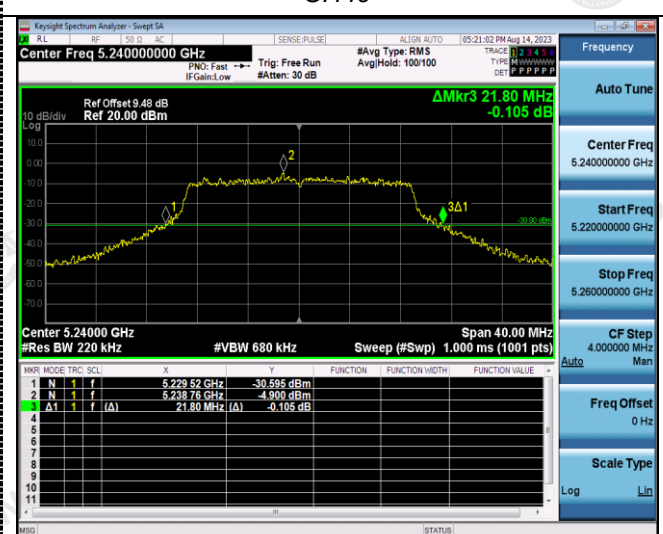
CH36



CH46



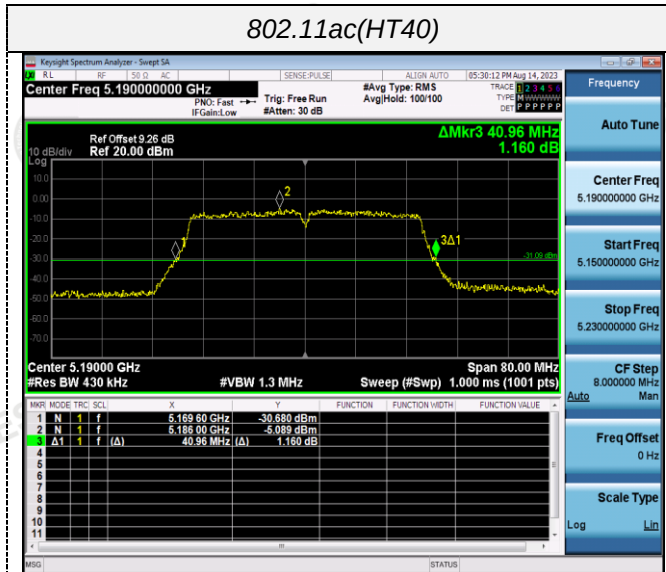
CH40



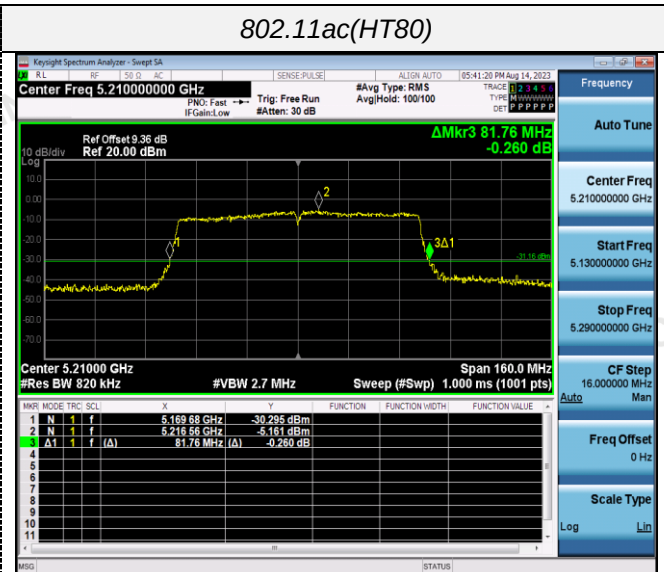
CH48



802.11ac(HT40)



802.11ac(HT80)



CH38



CH46

CH42



4.6 Minimum Emission Bandwidth (6dB Bandwidth)

Limit

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

1. Set resolution bandwidth (RBW) = 100 kHz
2. Set the video bandwidth 3 x RBW.
3. Detector = Peak.
4. Trace mode = Max hold.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test Configuration

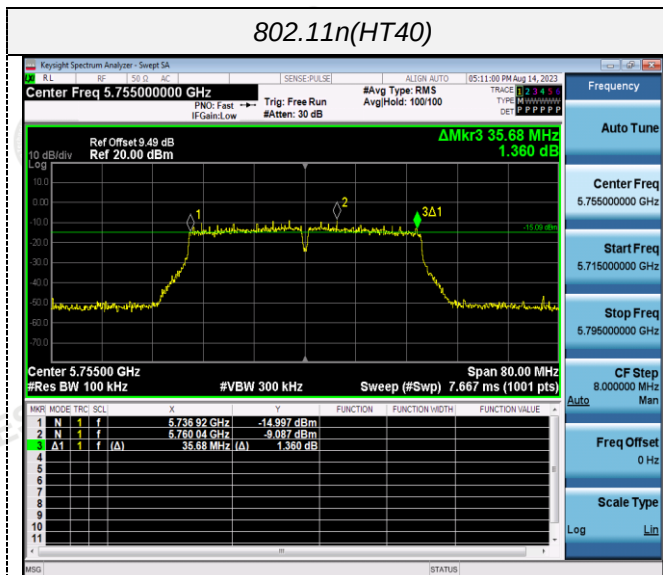


Test Results

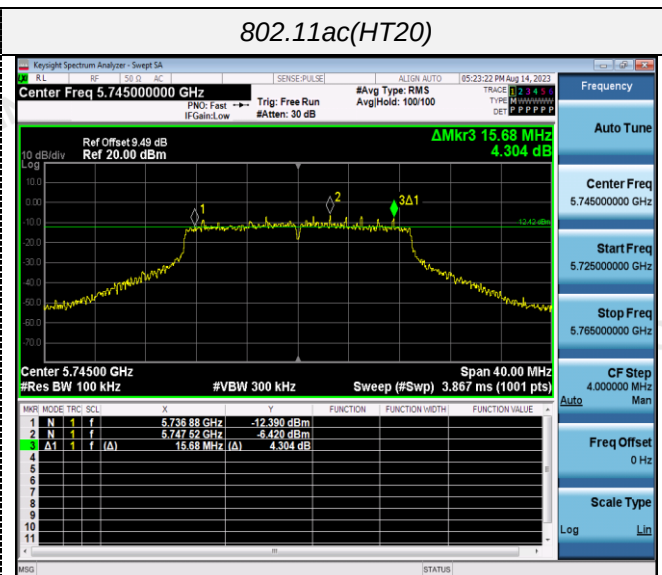
Type	Bands	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	16.320	≥500KHz	Pass
		157	15.600		
		165	16.080		
802.11n(HT20)	U-NII 3	149	17.280		
		157	15.440		
		165	16.920		
802.11n(HT40)	U-NII 3	151	35.680		
		159	35.680		
802.11ac(HT20)	U-NII 3	149	15.680		
		157	15.400		
		165	12.720		
802.11ac(HT40)	U-NII 3	151	35.600		
		159	35.600		
802.11ac(HT80)	U-NII 3	155	75.200		

Test plot as follows:

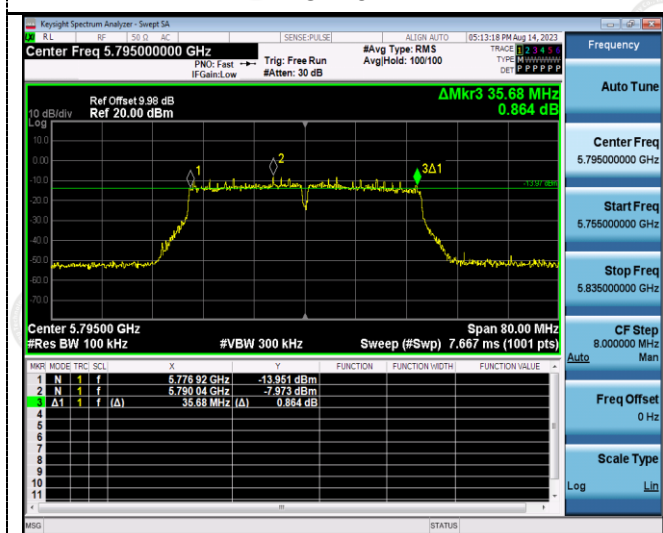
802.11n(HT40)



802.11ac(HT20)



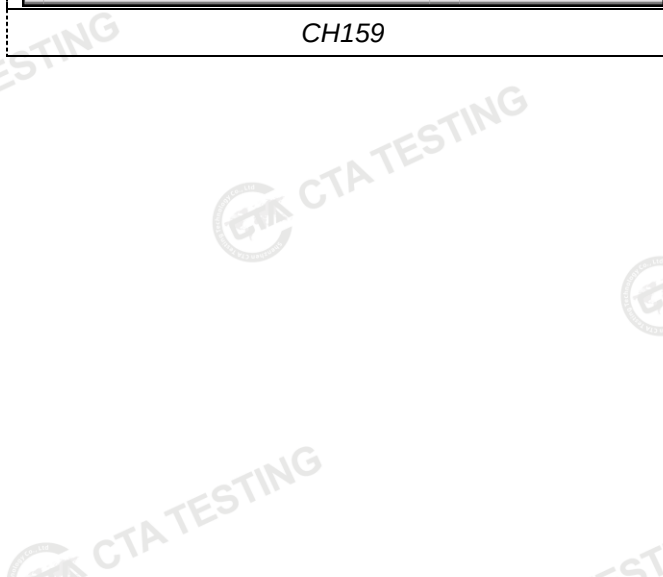
CH151



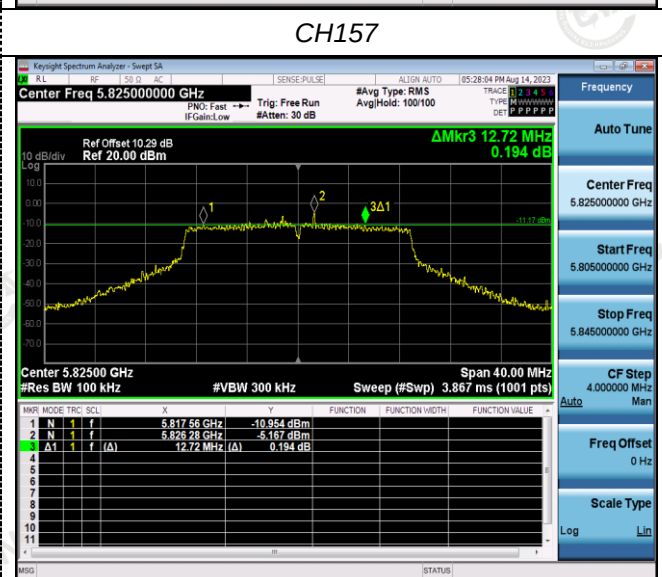
CH149



CH159

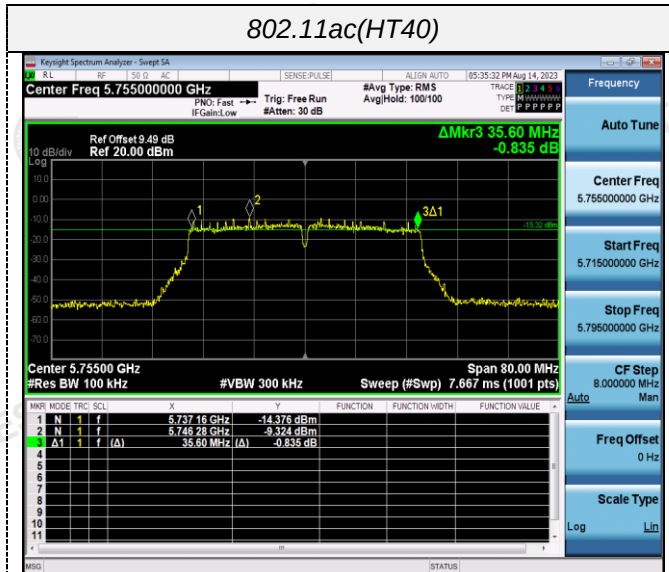


CH157



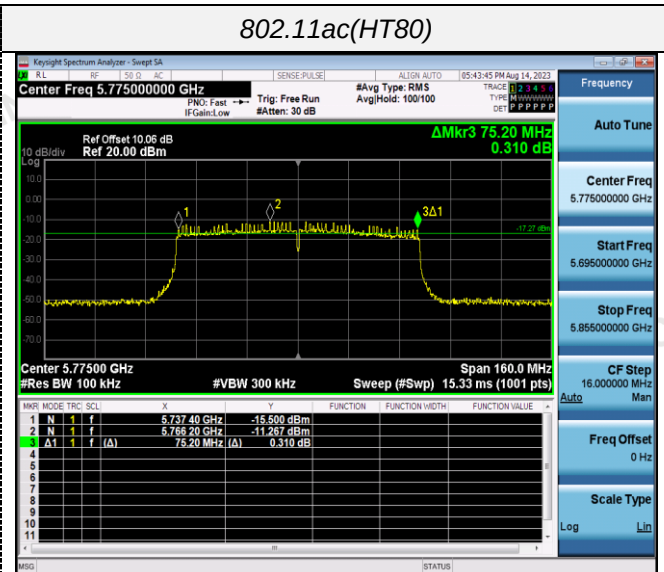
CH165

802.11ac(HT40)

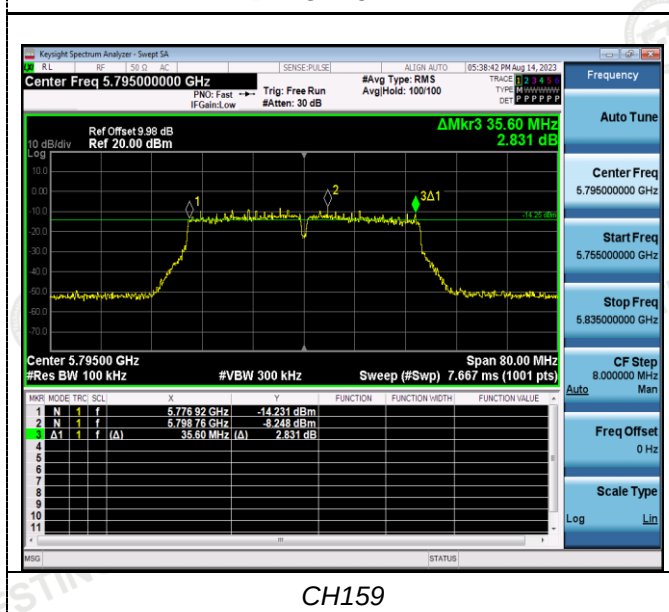


CH151

802.11ac(HT80)



CH155



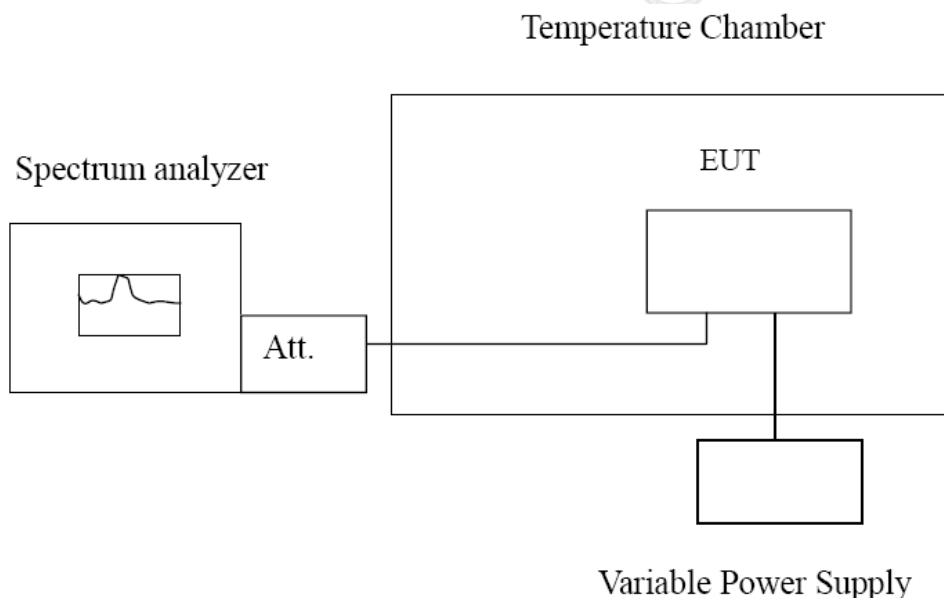
CH159

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.

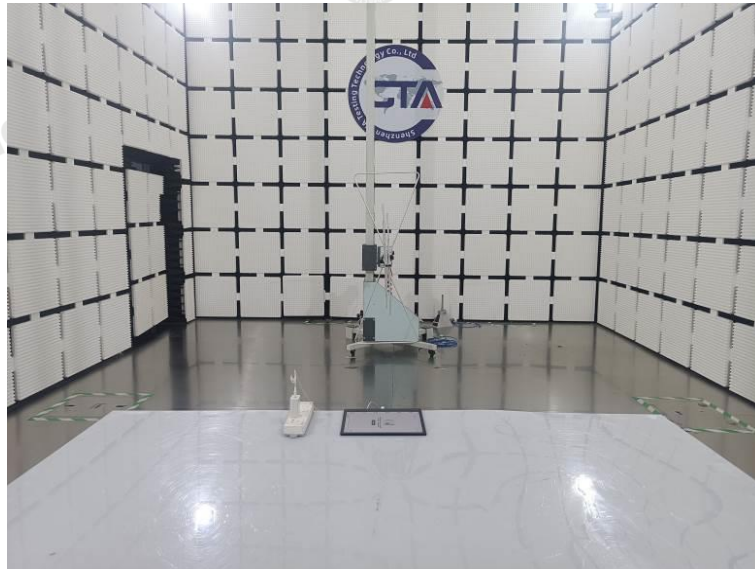
TEST RESULTS

Record worst case as below:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 3.87V	-30	110.68	0.021367	Within the band of operation	Pass
	-20	171.45	0.033098		
	-10	137.38	0.026521		
	0	112.15	0.021651		
	10	142.56	0.027521		
	20	98.45	0.019006		
	30	164.35	0.031728		
	40	127.45	0.024604		
	50	127.88	0.024687		
DC 4.20V	25	192.02	0.037069	Within the band of operation	Pass
DC 3.40V	25	114.76	0.022154		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
DC 3.87V	-30	134.63	0.023434	Within the band of operation	Pass
	-20	128.28	0.022329		
	-10	165.46	0.028801		
	0	166.19	0.028928		
	10	133.35	0.023211		
	20	129.24	0.022496		
	30	113.78	0.019805		
	40	168.16	0.029271		
	50	157.25	0.027372		
DC 4.20V	25	148.90	0.025918	Within the band of operation	Pass
DC 3.40V	25	116.08	0.020205		

5 Test Setup Photos of the EUT



6 Photos of the EUT

Reference to the test report No. **CTA23080800601**

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