



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.

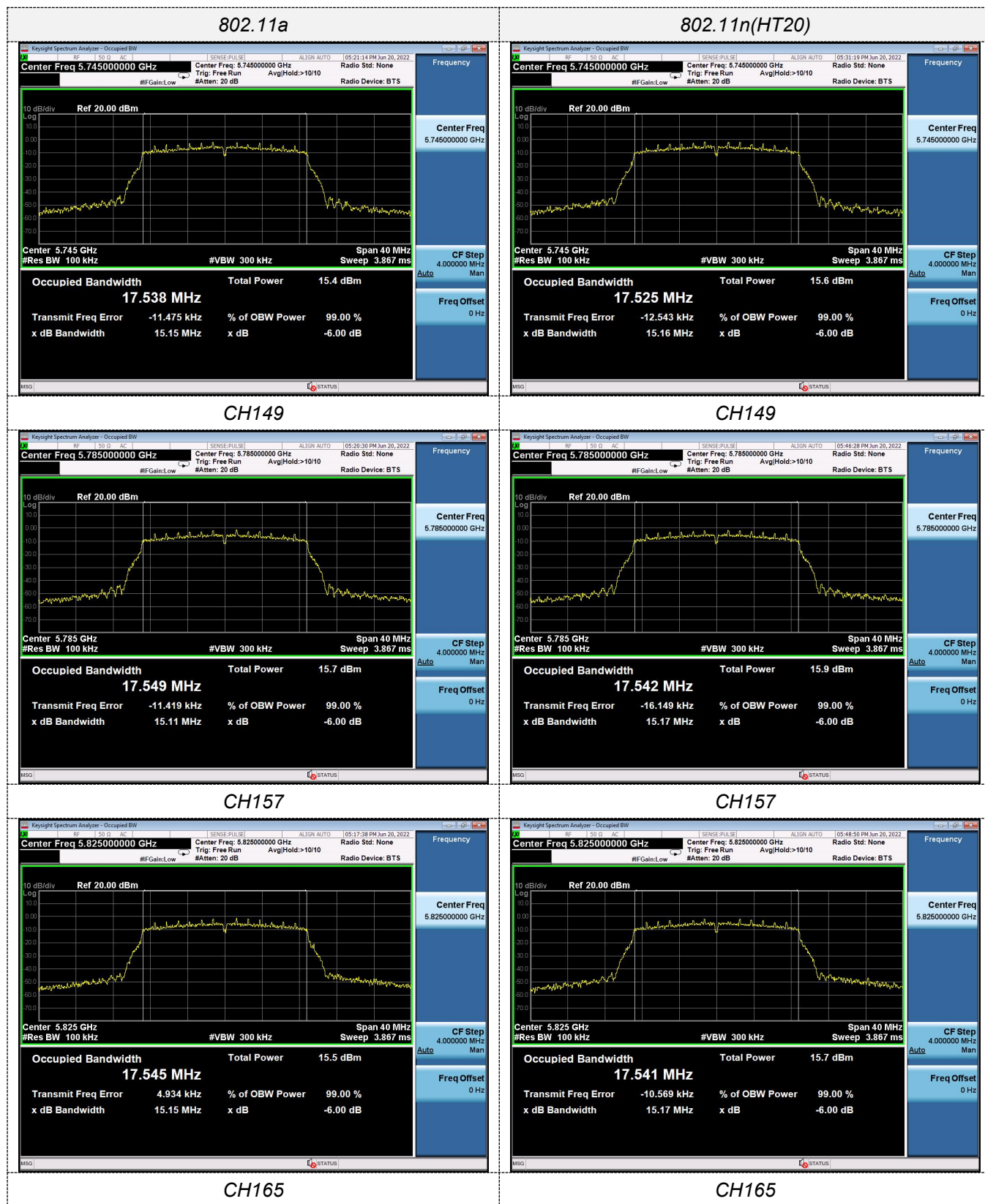
Test Configuration



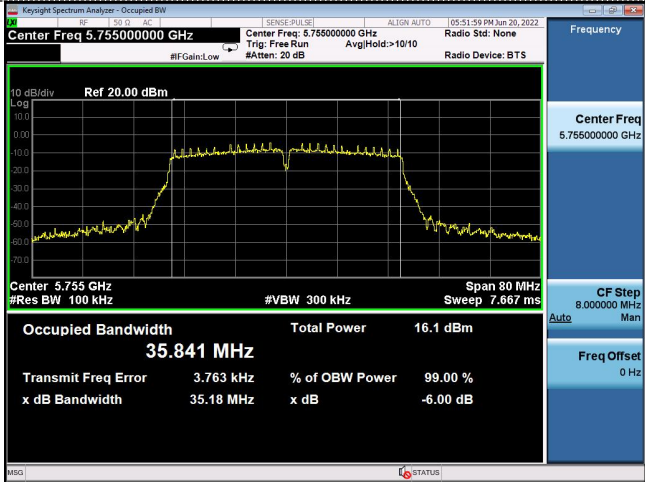
Test Results

Type	Bands	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	15.15	≥500KHz	Pass
		157	15.11		
		165	15.15		
802.11n(HT20)	U-NII 3	149	15.16		
		157	15.17		
		165	15.17		
802.11n(HT40)	U-NII 3	151	35.18		
		159	35.15		
802.11ac(HT20)	U-NII 3	149	15.13		
		157	15.14		
		165	15.16		
802.11ac(HT40)	U-NII 3	151	35.21		
		159	35.19		
802.11ac(HT80)	U-NII 3	155	75.42		

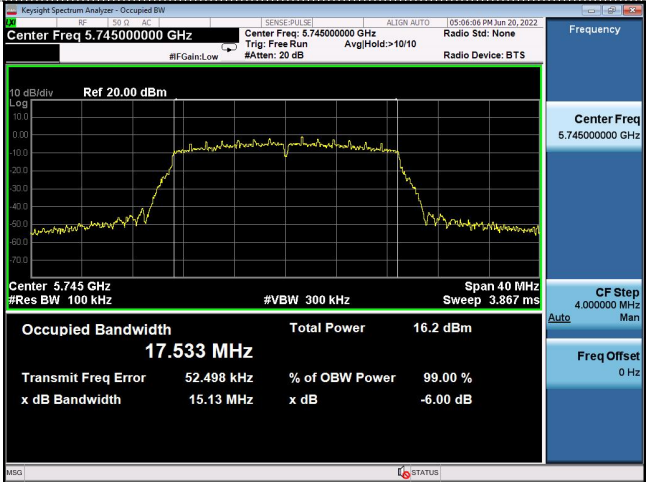
Test plot as follows:



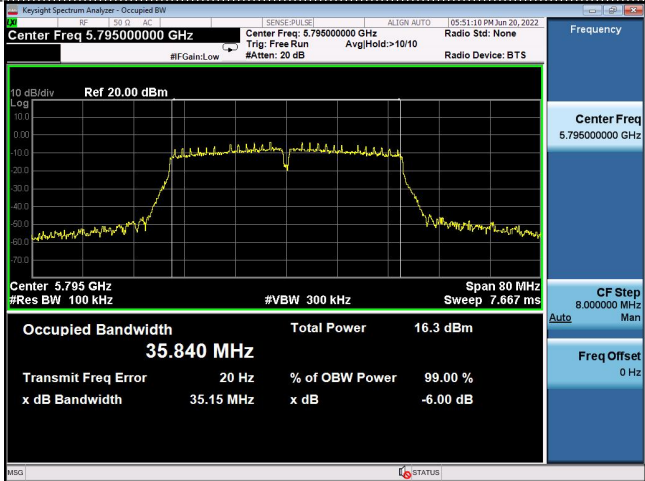
802.11n(HT40)



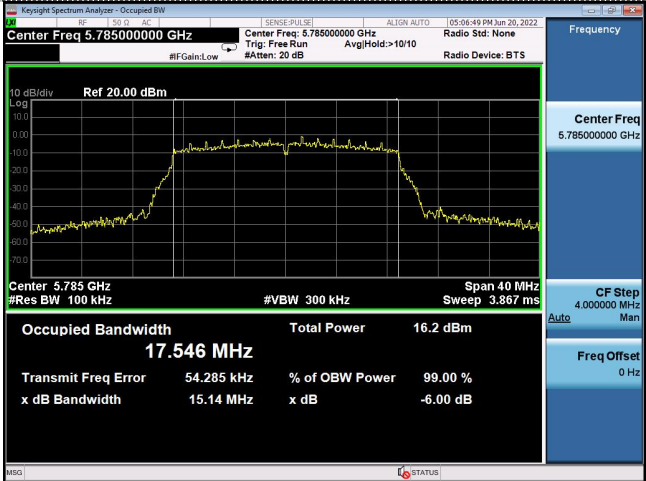
802.11ac(HT20)



CH151



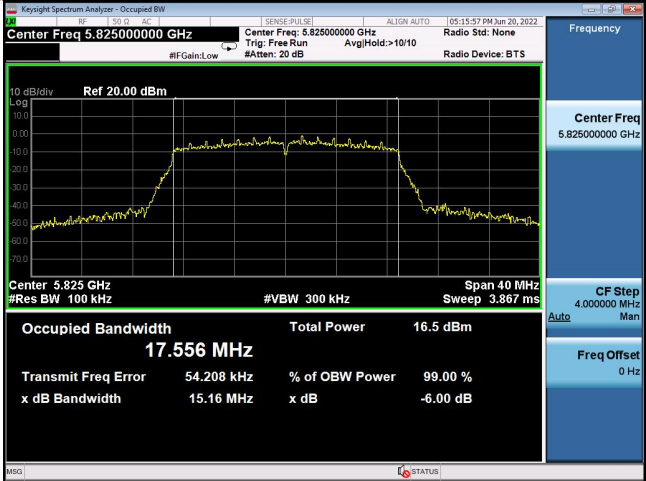
CH149



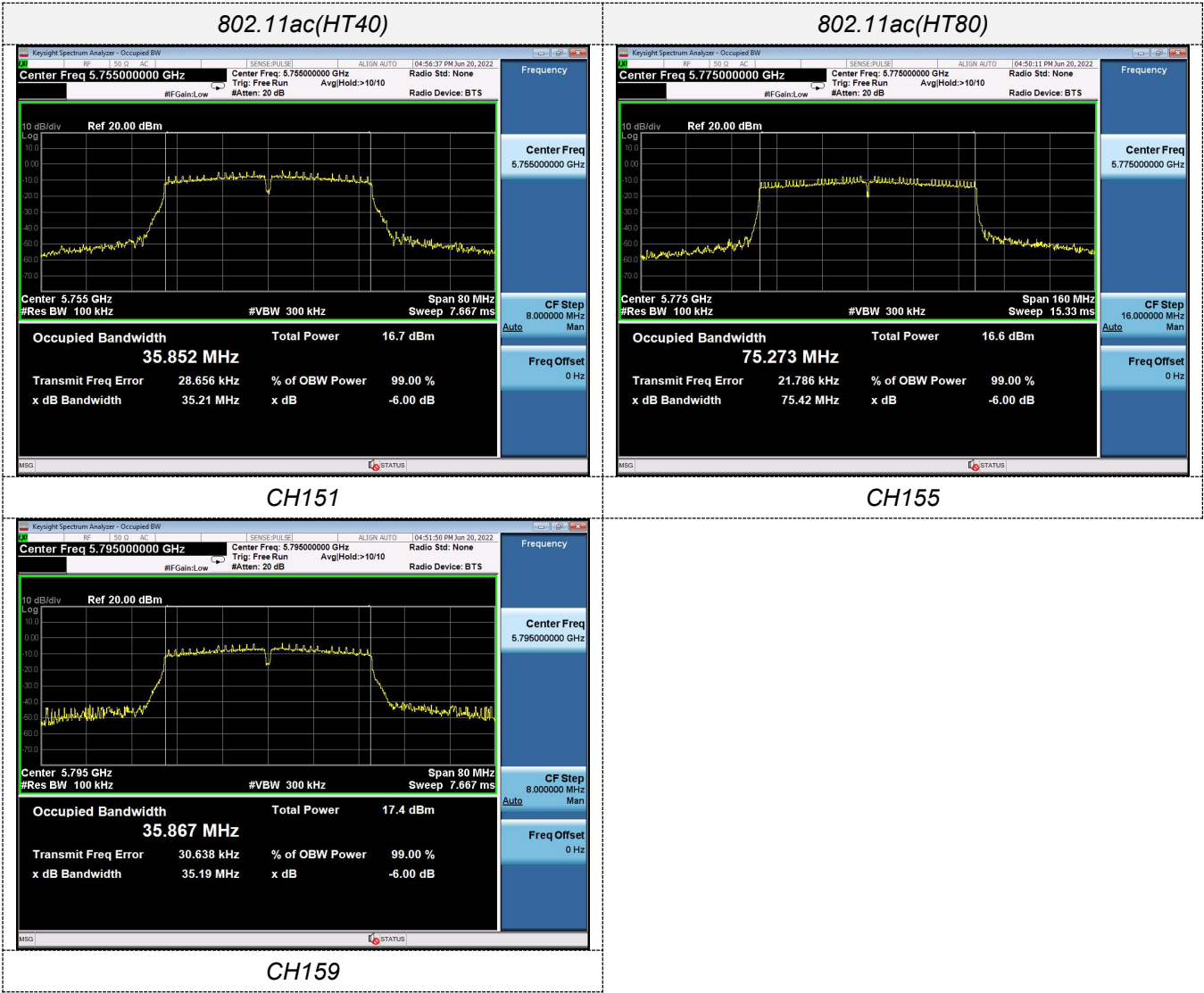
CH159



CH157



CH165

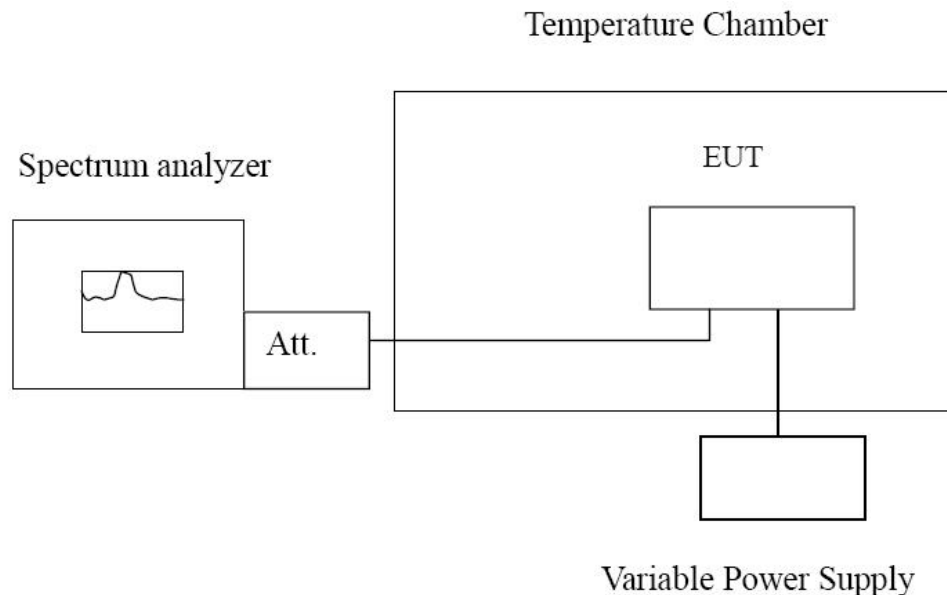


4.7 Frequency Stability

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.

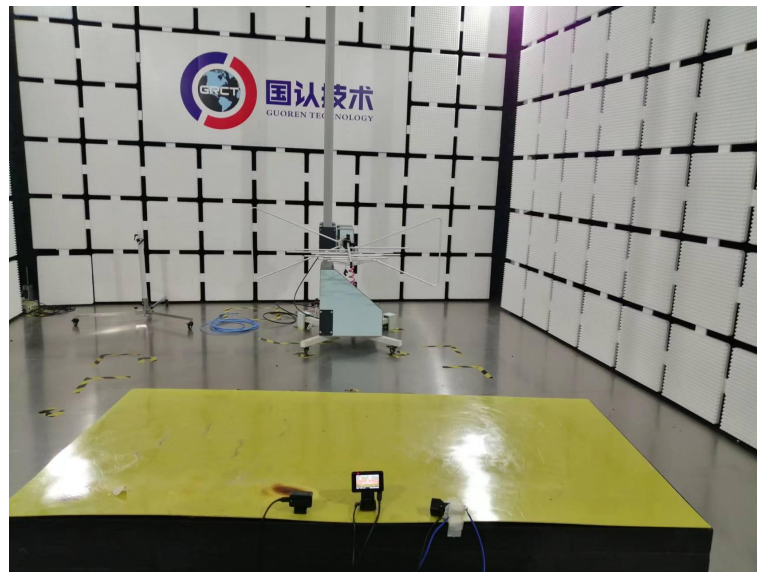
TEST RESULTS

Record worst case as below:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
12.00	-30	142.83	0.02757	Within the band of operation	Pass
	-20	124.27	0.02399		
	-10	117.25	0.02264		
	0	124.82	0.02410		
	10	106.42	0.02054		
	20	108.34	0.02092		
	30	142.17	0.02745		
	40	126.83	0.02448		
	50	120.41	0.02325		
13.2	25	156.27	0.03017	Within the band of operation	Pass
10.8	25	123.47	0.02384		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
12.00	-30	152.47	0.02654	Within the band of operation	Pass
	-20	118.53	0.02063		
	-10	147.26	0.02563		
	0	150.81	0.02625		
	10	142.37	0.02478		
	20	128.53	0.02237		
	30	116.47	0.02027		
	40	149.28	0.02598		
	50	124.75	0.02171		
13.2	25	139.46	0.02428	Within the band of operation	Pass
10.8	25	124.74	0.02171		

5 Test Setup Photos of the EUT



6 Photos of the EUT

Reference to the test report No. GRCTR220602007-01.

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