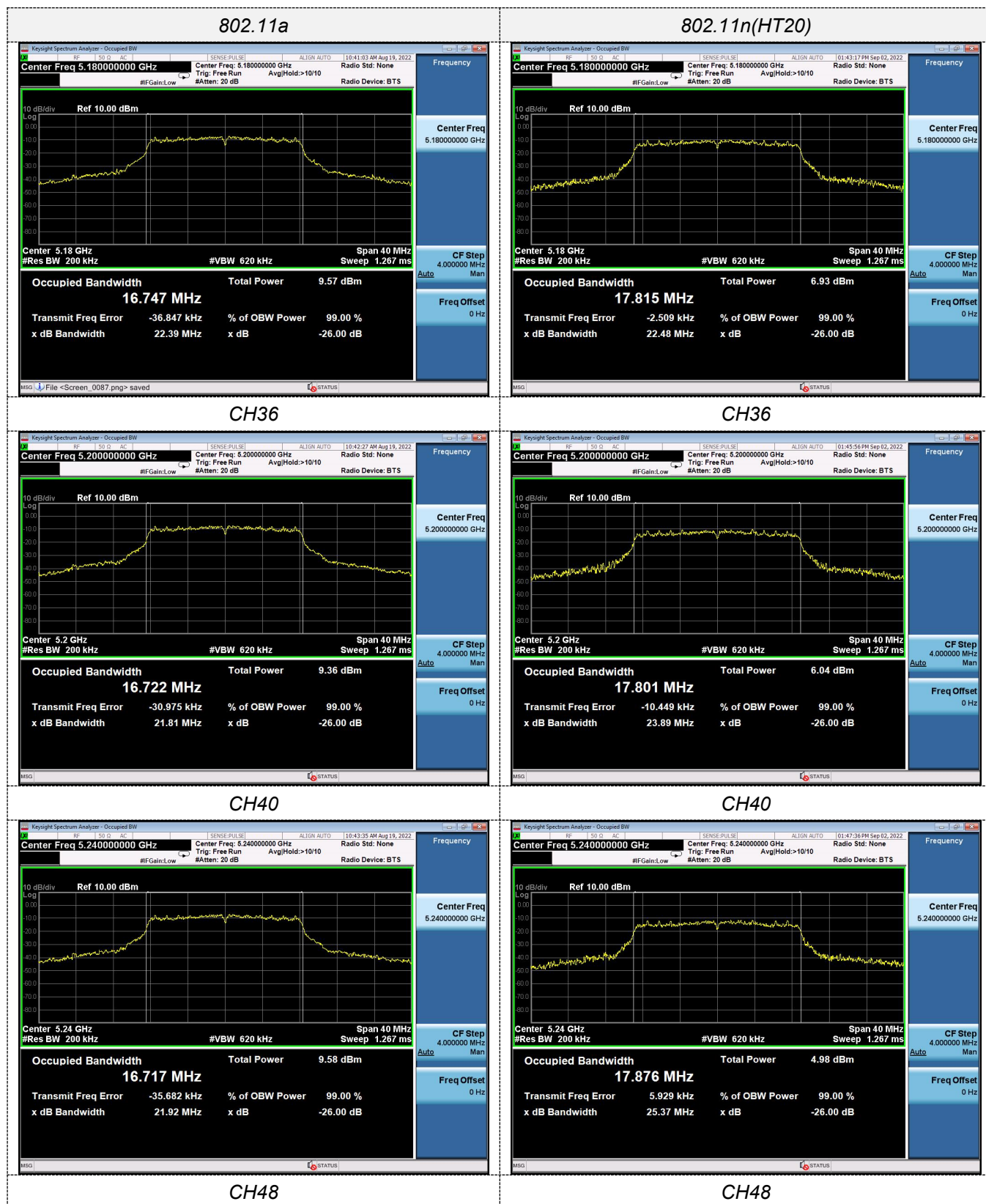
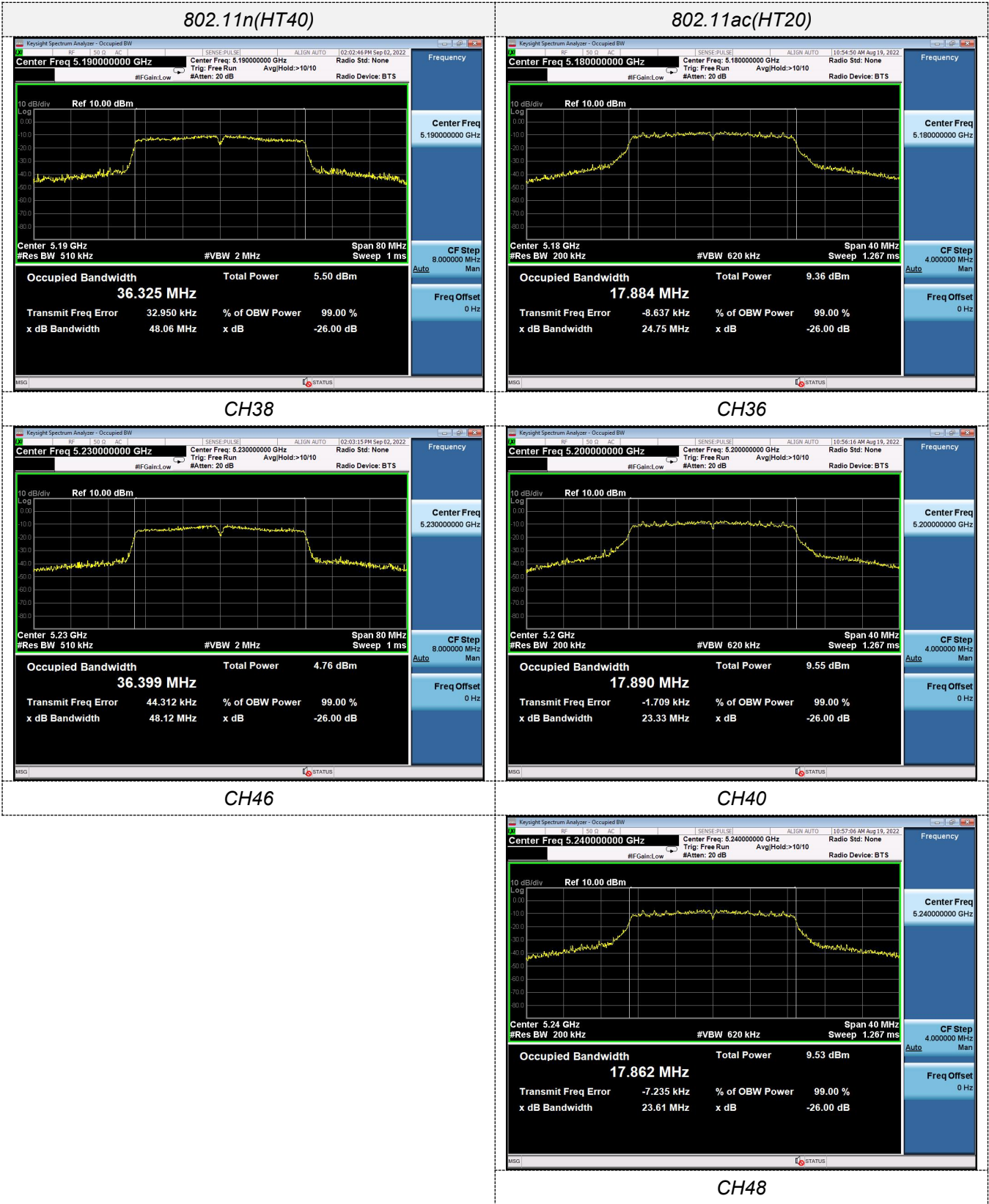
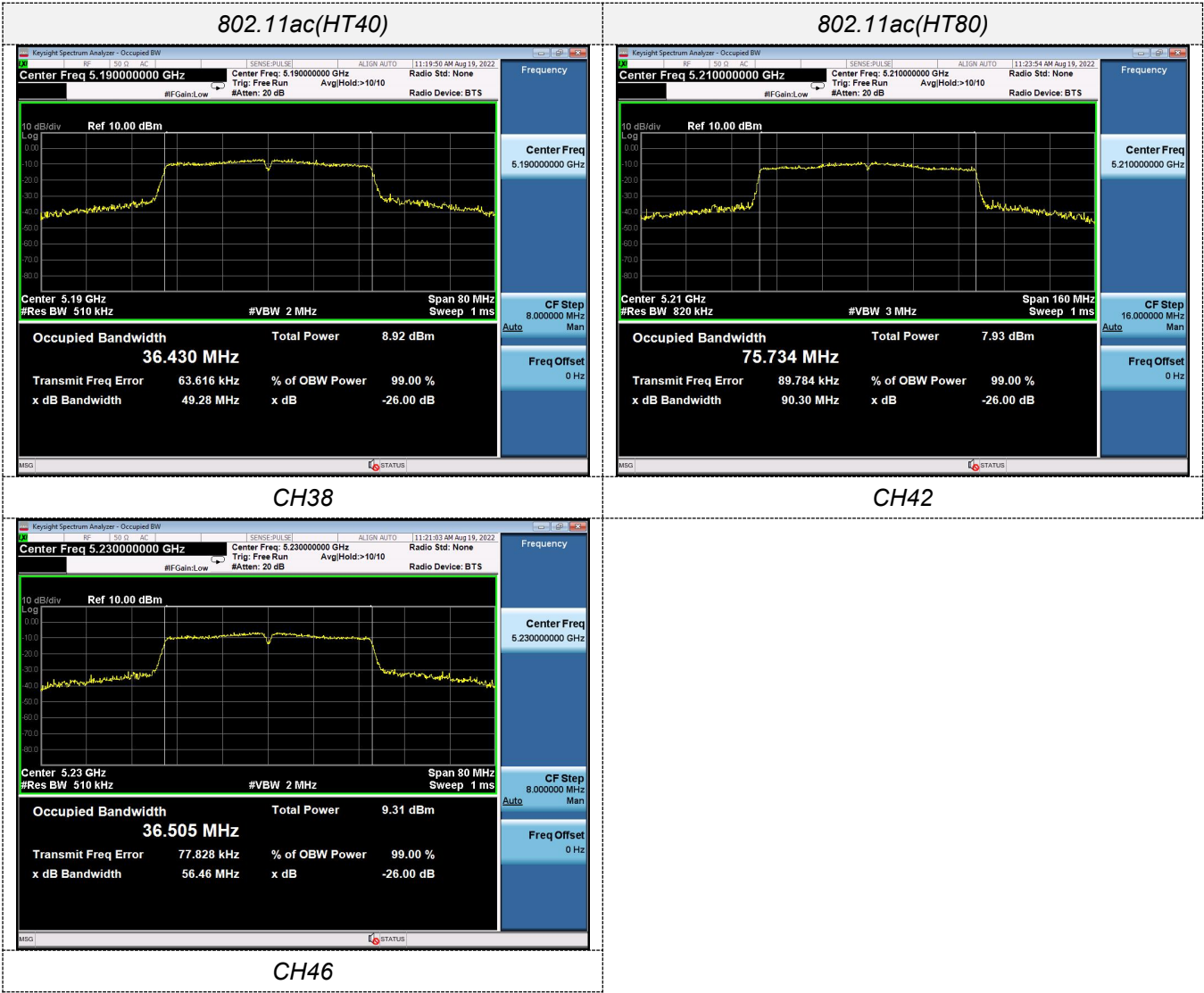


Test plot as follows:







#### 4.6 Minimum Emission Bandwidth(6dB Bandwidth&99%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

###### 6dB Bandwidth

1. Set resolution bandwidth (RBW) = 100 kHz
2. Set the video bandwidth > 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.

###### 99%Bandwidth

1. Set resolution bandwidth (RBW) = approximately 1 % of the EBW
2. Set the video bandwidth 3 x RBW.
3. Detector = Peak.
4. Trace mode = Max hold.

##### Test Configuration

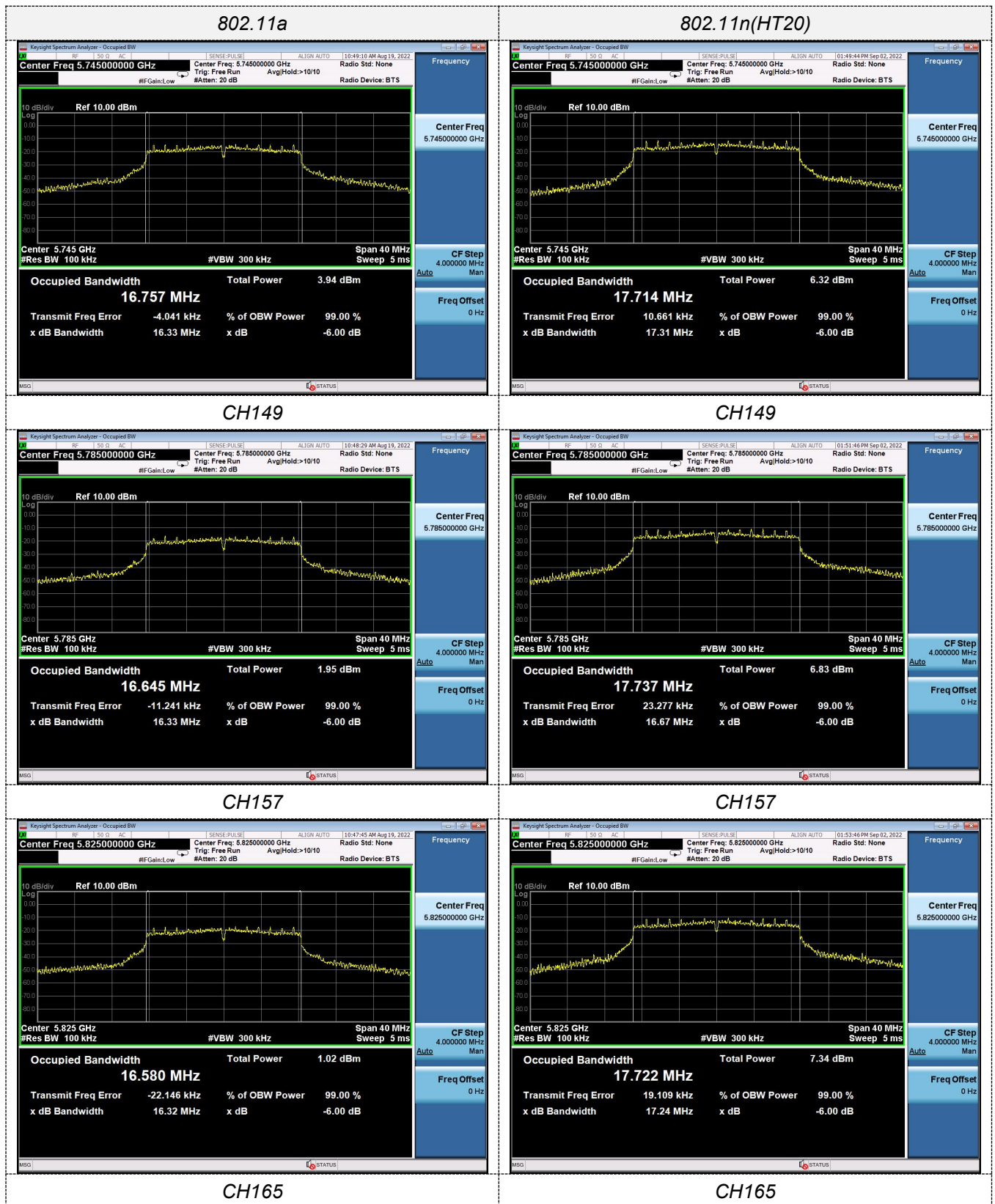


##### Test Results

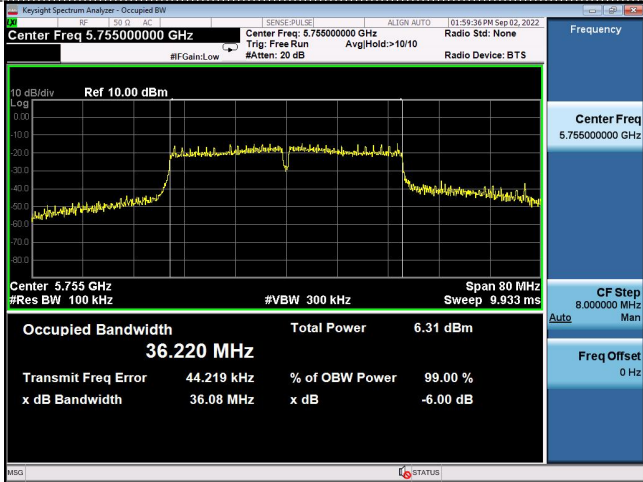
Type	Bands	Channel	6dB Bandwidth (MHz)	99%Bandwidth (MHz)	Limit (KHz)	Result
802.11a	U-NII 3	149	16.33	16.916	≥500KHz	Pass
		157	16.33	16.896		
		165	16.32	17.090		
802.11n(HT20)	U-NII 3	149	17.31	17.880		
		157	16.67	17.903		
		165	17.24	17.916		
802.11n(HT40)	U-NII 3	151	36.08	36.733		
		159	36.05	36.672		
802.11ac(HT20)	U-NII 3	149	17.56	18.140		
		157	17.57	18.237		
		165	17.57	18.383		
802.11ac(HT40)	U-NII 3	151	35.85	37.291		
		159	36.34	37.966		
802.11ac(HT80)	U-NII 3	155	76.13	76.198		

**6dB Bandwidth**

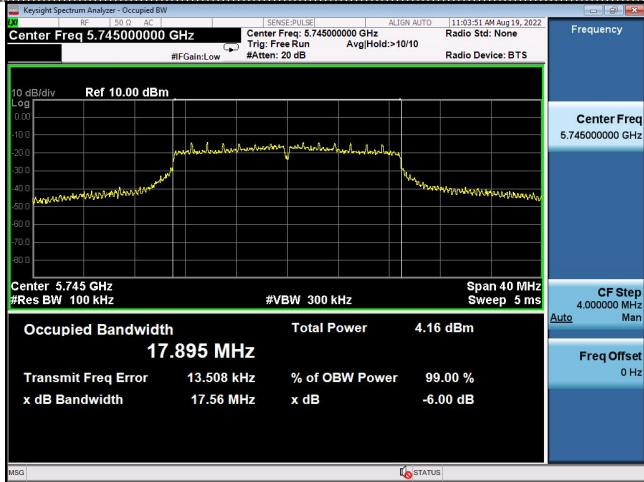
Test plot as follows:



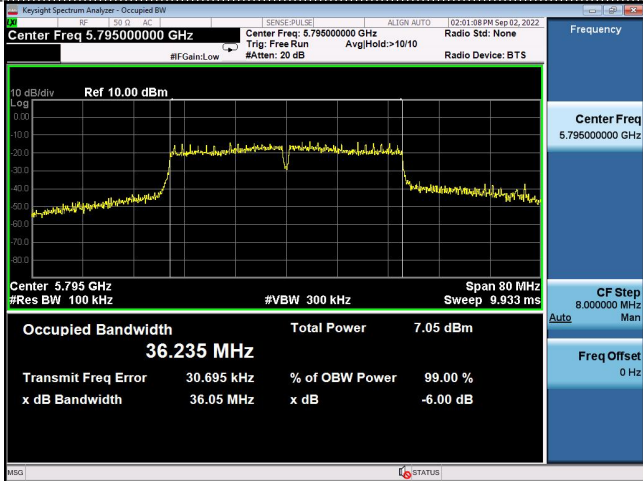
802.11n(HT40)



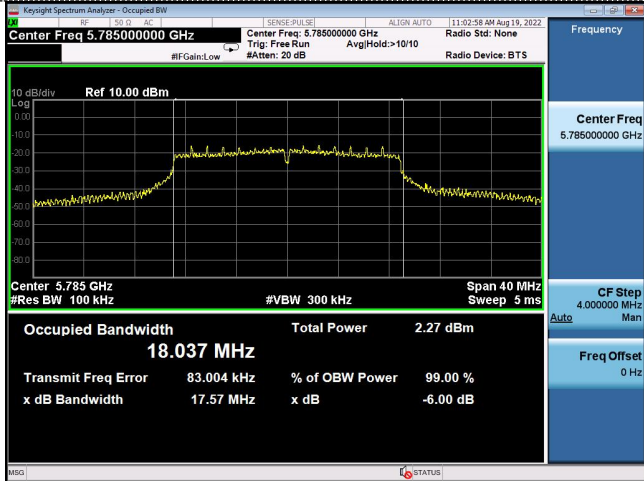
802.11ac(HT20)



CH151



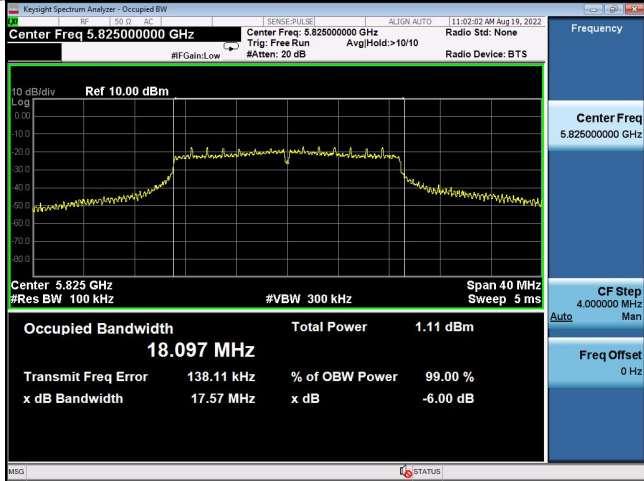
CH149



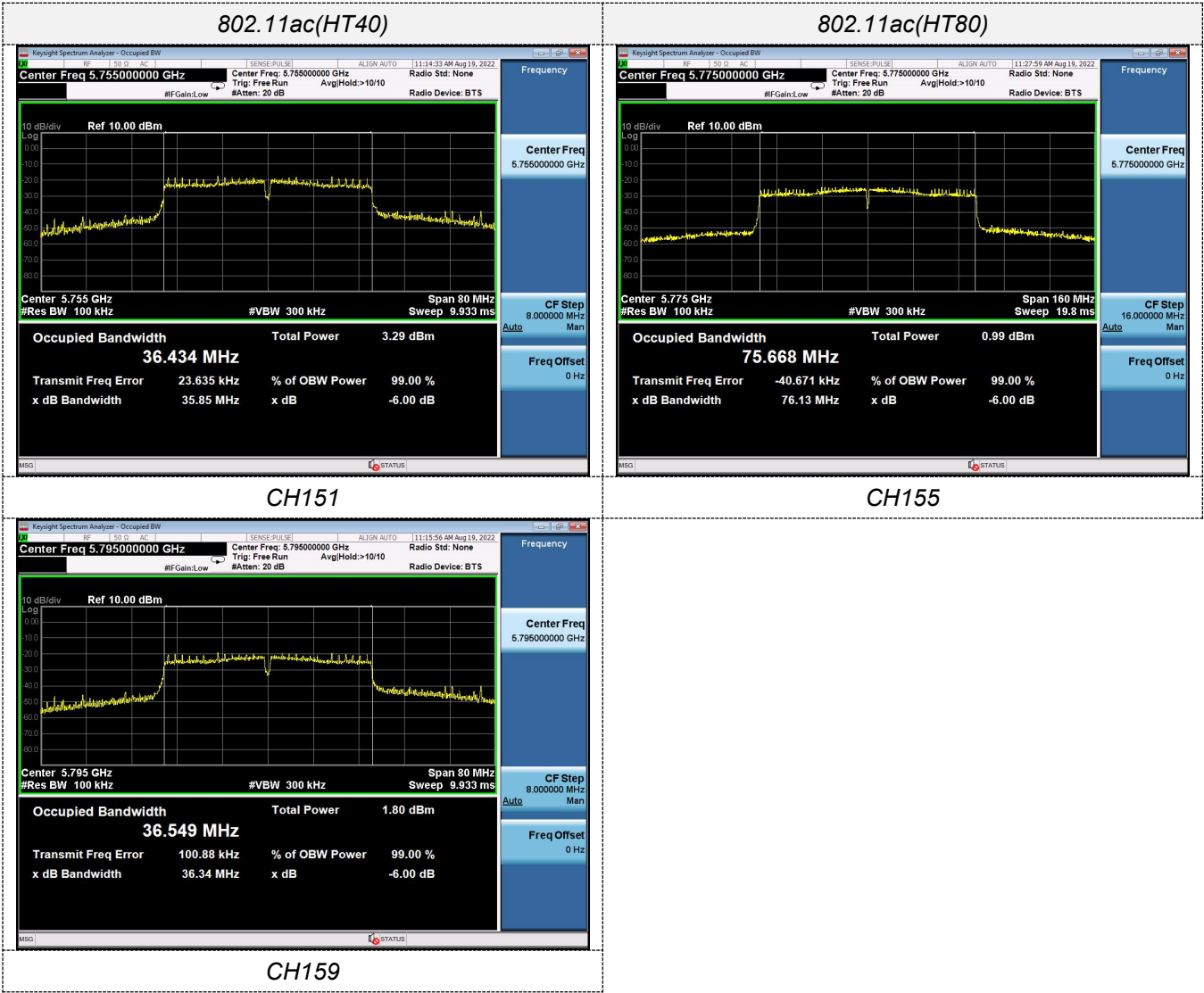
CH159



CH157



CH165

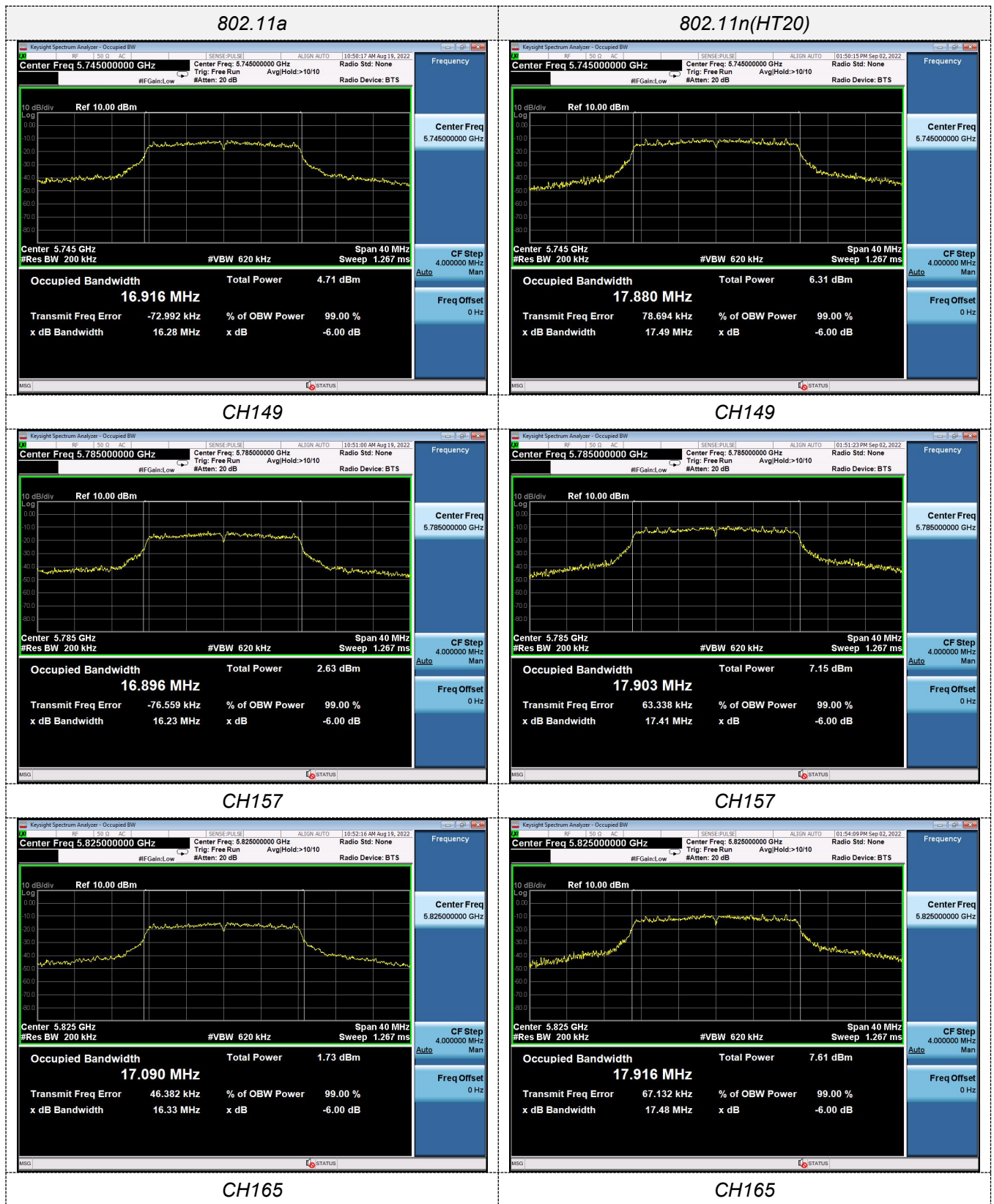


CH151

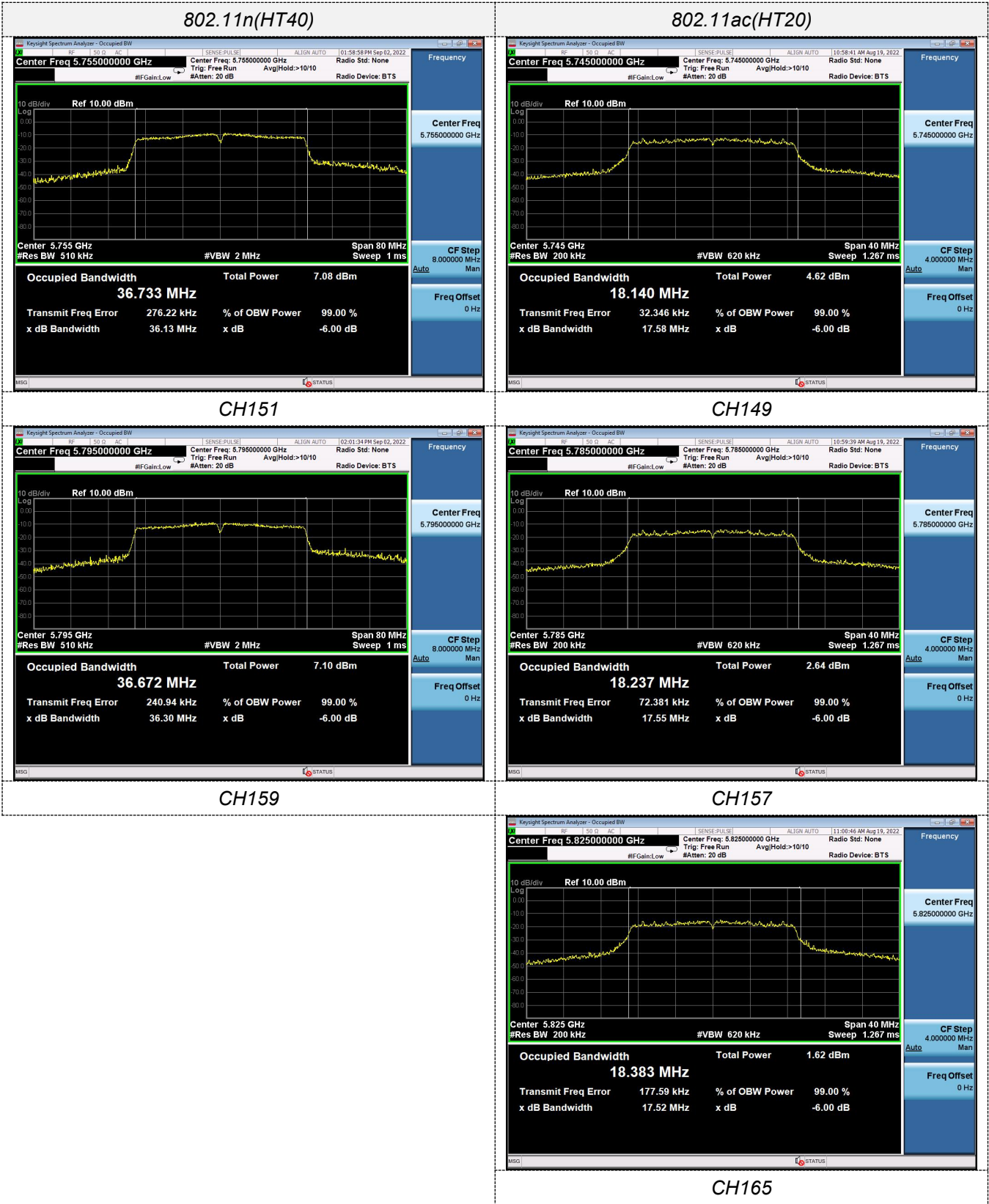
CH155

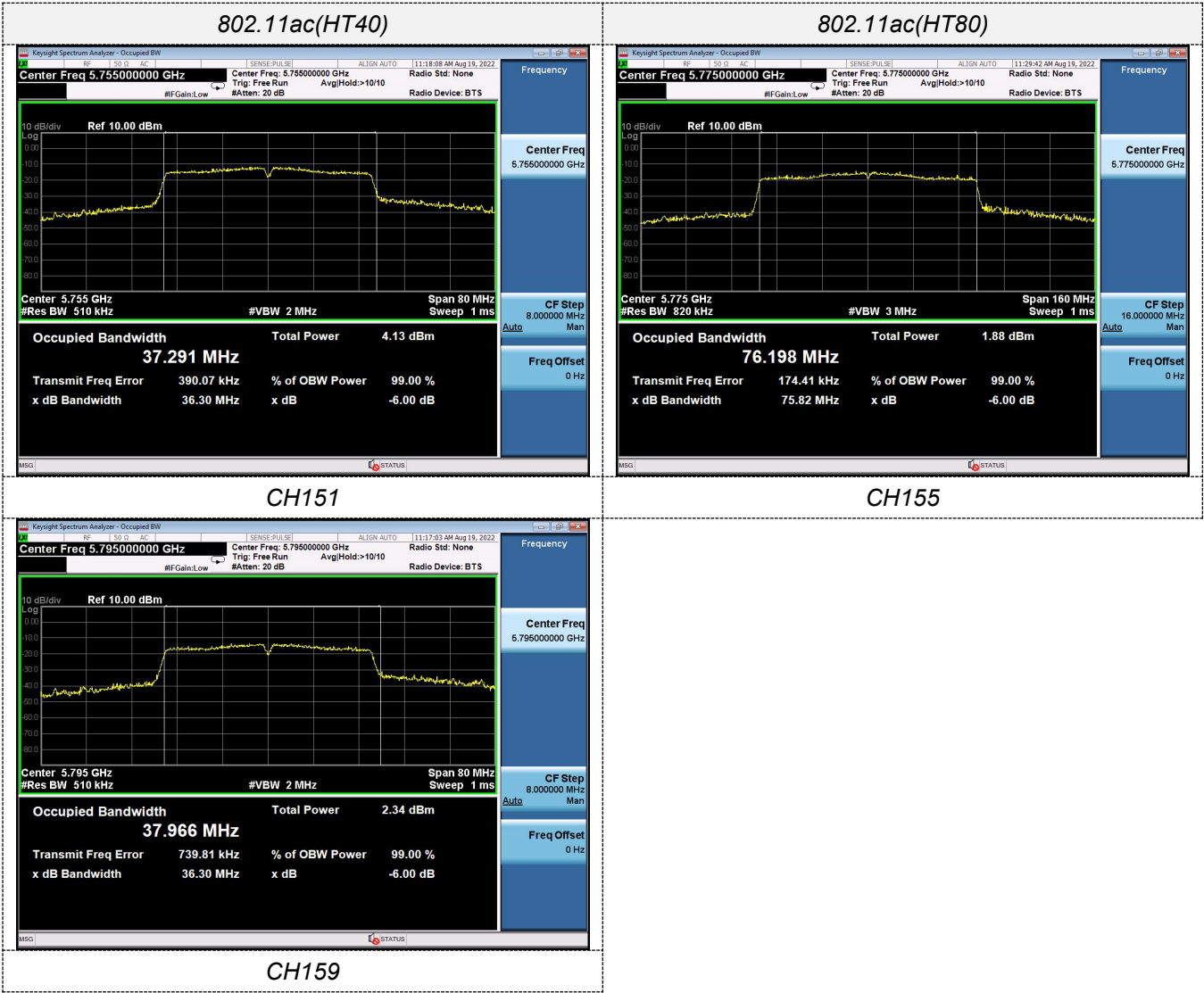


99% Bandwidth  
Test plot as follows:







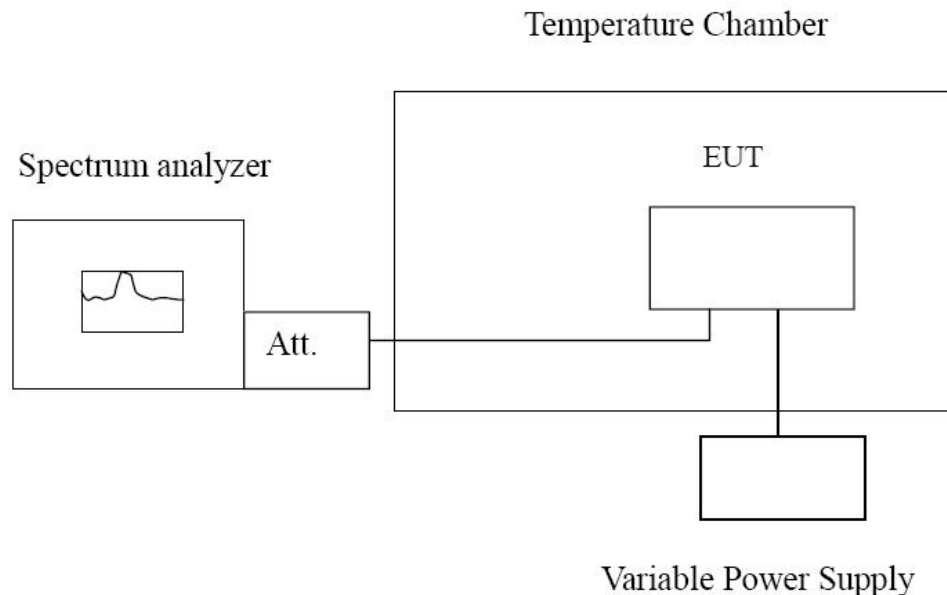


## 4.7 Frequency Stability

### 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.

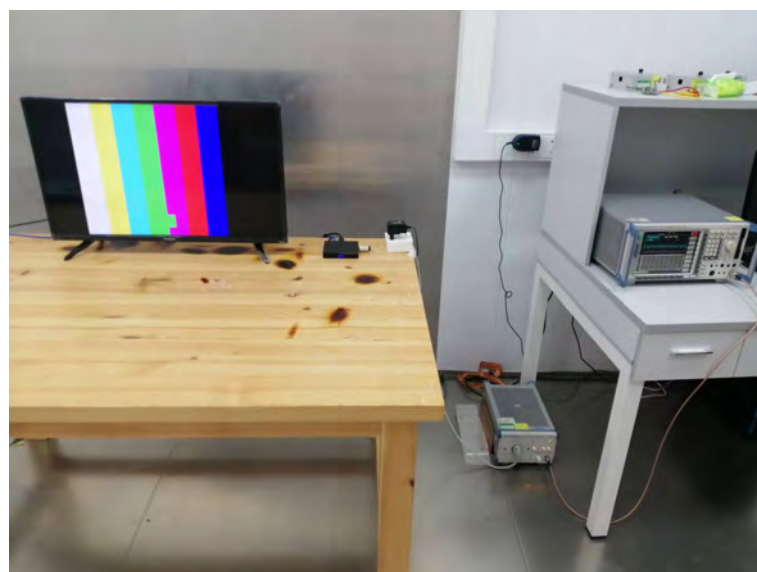
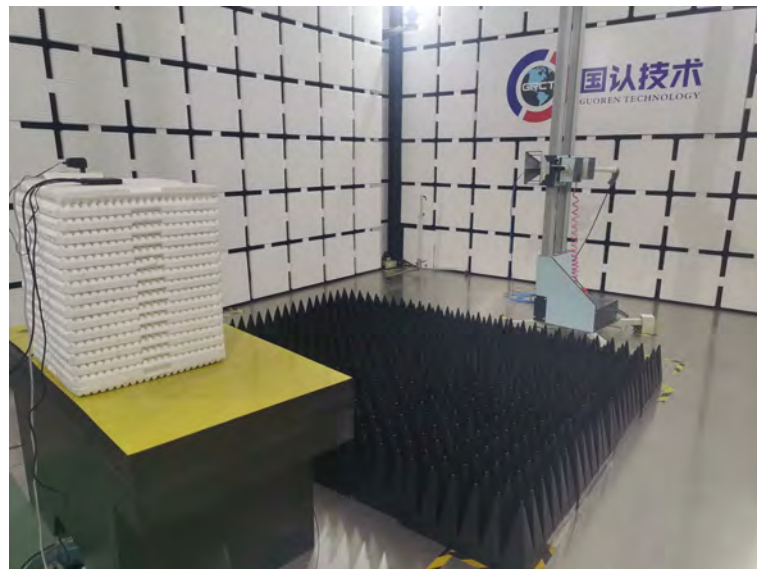
### TEST RESULTS

Record worst case as below:

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage ( V )	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
120	-30	135.73	0.0262	Within the band of operation	Pass
	-20	146.25	0.0282		
	-10	129.36	0.0250		
	0	125.84	0.0243		
	10	132.58	0.0256		
	20	116.74	0.0225		
	30	152.81	0.0295		
	40	116.94	0.0226		
	50	121.52	0.0235		
132	25	148.37	0.0286	Within the band of operation	Pass
108	25	146.92	0.0284		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage ( V )	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
120	-30	138.65	0.0241	Within the band of operation	Pass
	-20	151.28	0.0263		
	-10	133.04	0.0232		
	0	127.62	0.0222		
	10	129.06	0.0225		
	20	115.43	0.0201		
	30	119.52	0.0208		
	40	136.94	0.0238		
	50	154.82	0.0269		
132	25	147.35	0.0256	Within the band of operation	Pass
108	25	128.64	0.0224		

## 5 Test Setup Photos of the EUT



## **6 Photos of the EUT**

Reference to the test report No. GRCTR220802006-01.

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