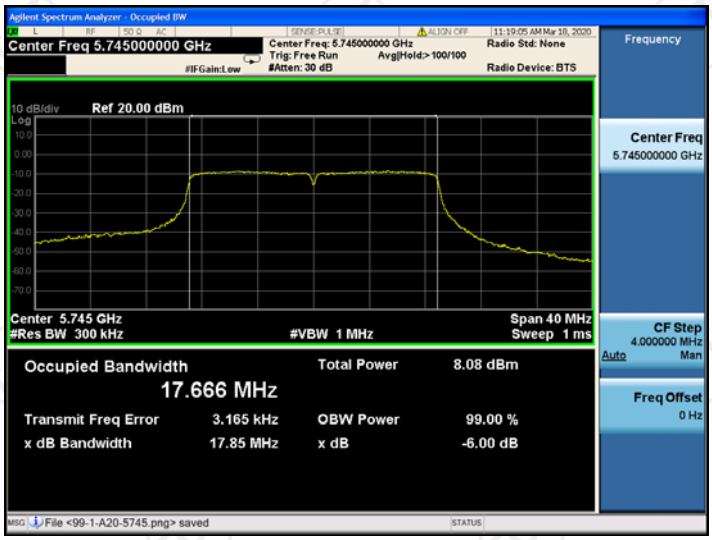
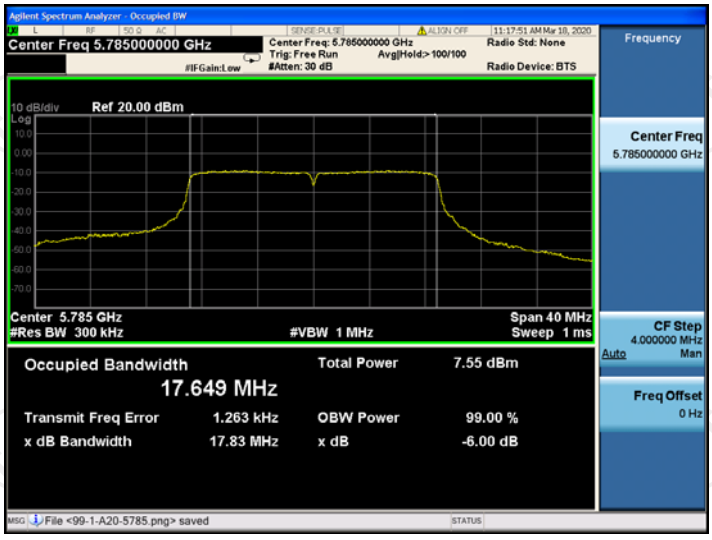
11n(HT20)

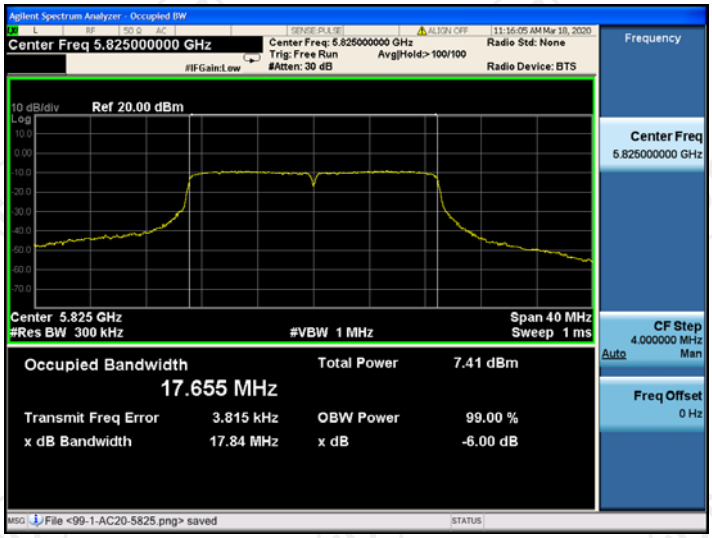
CH149



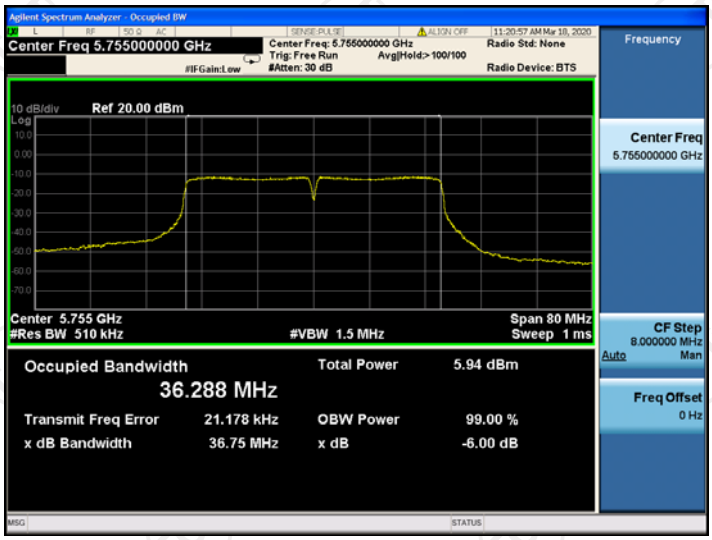
CH157



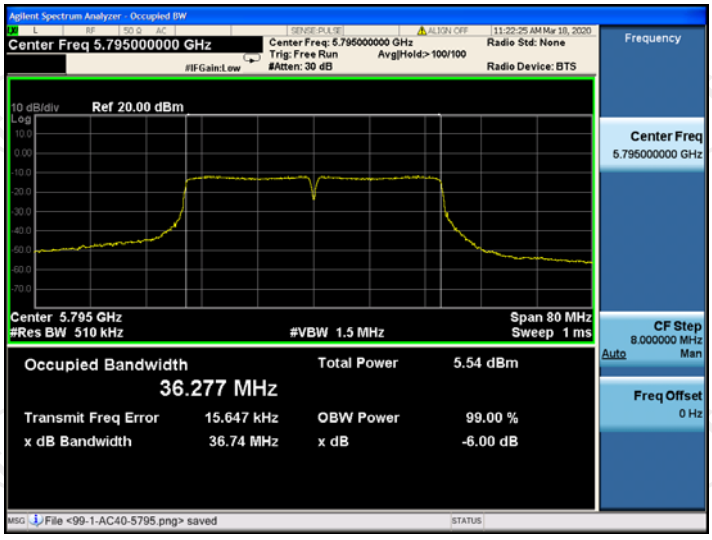
CH165



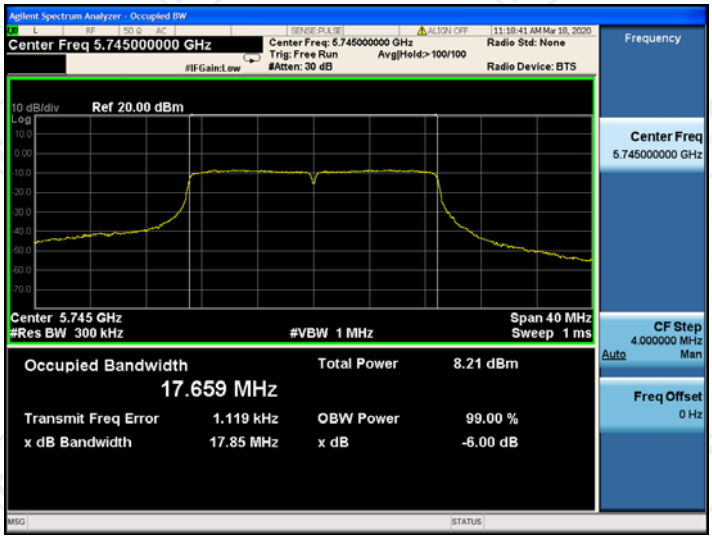
11n(HT40) CH151



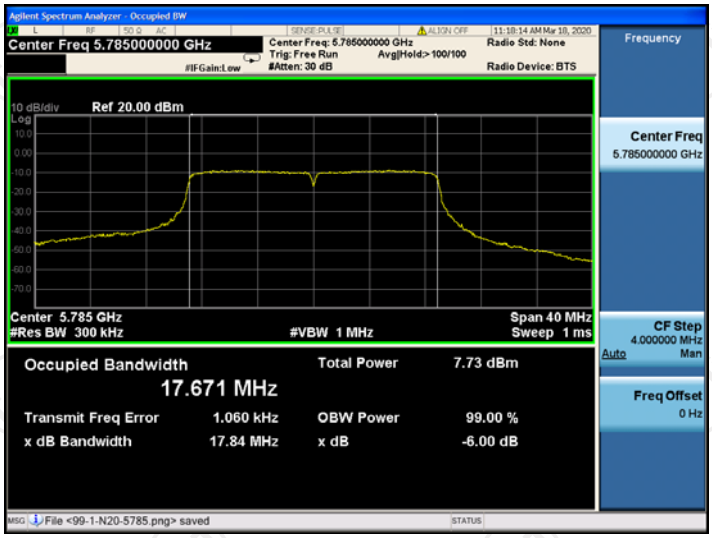
CH159



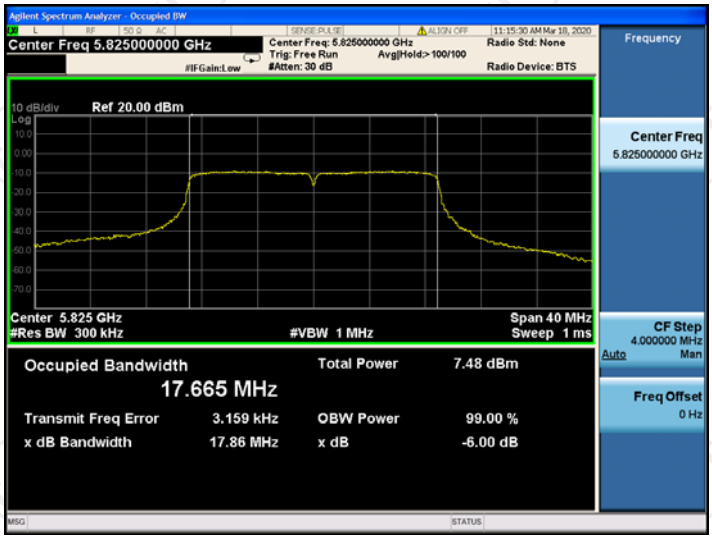
11ac(VHT20) CH149



CH157

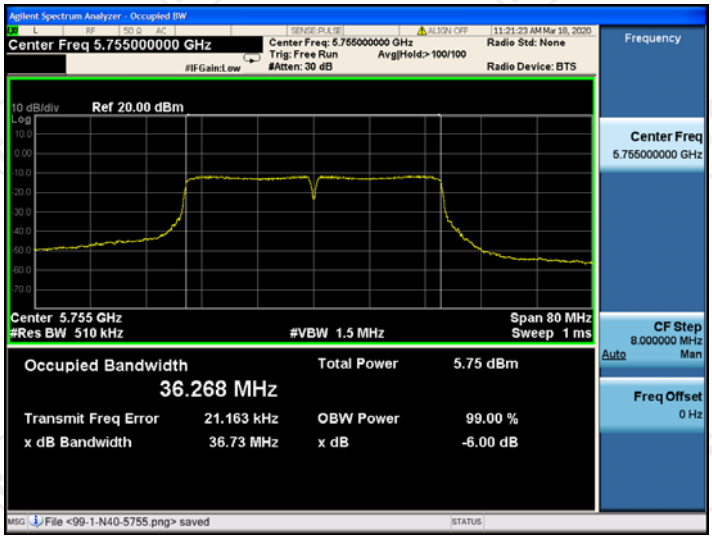


CH165

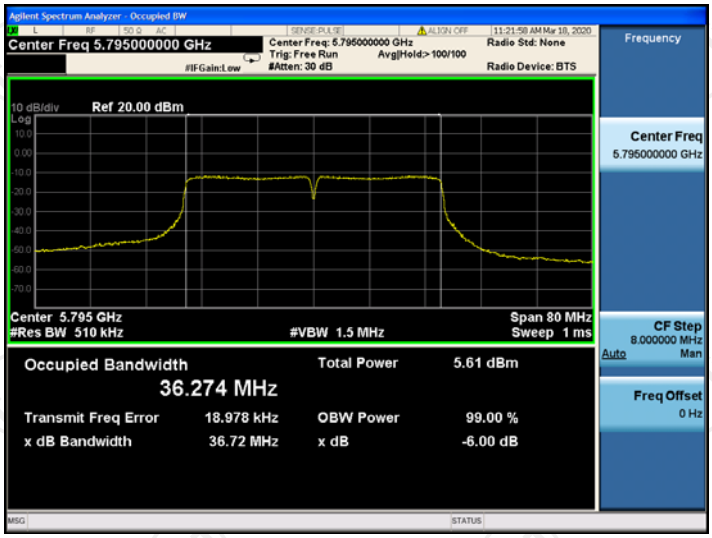


11ac(VHT40)

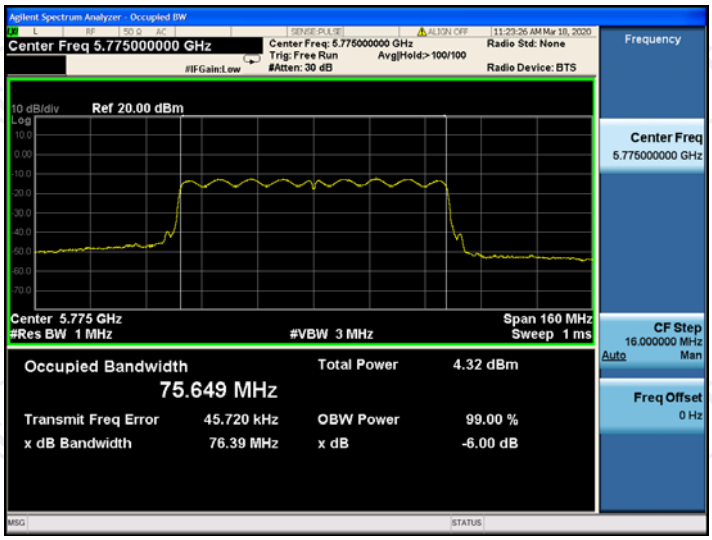
CH151



CH159



11ac(VHT80) CH155

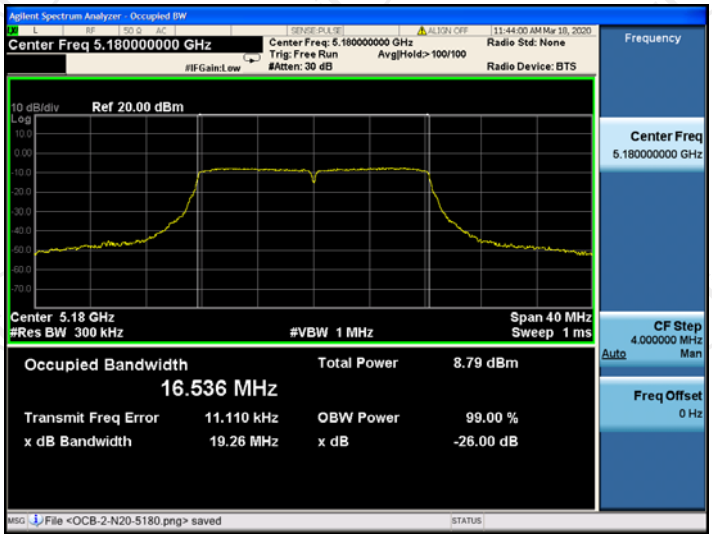


ANT 1

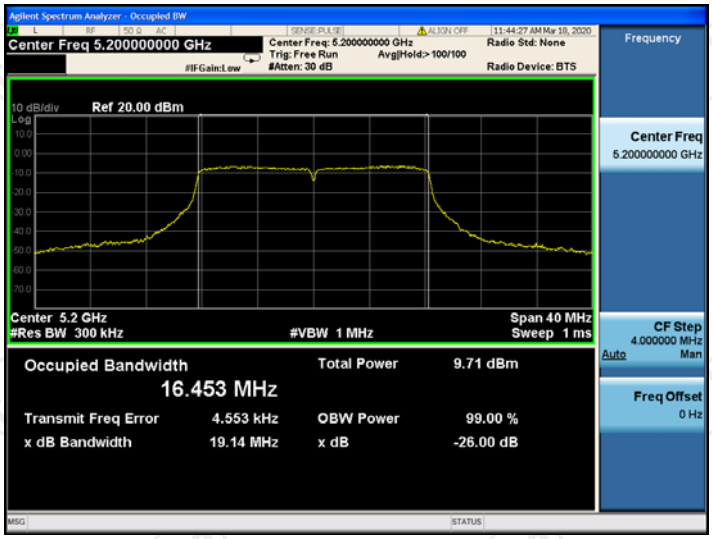
Band1 (5180-5240MHz)

11a

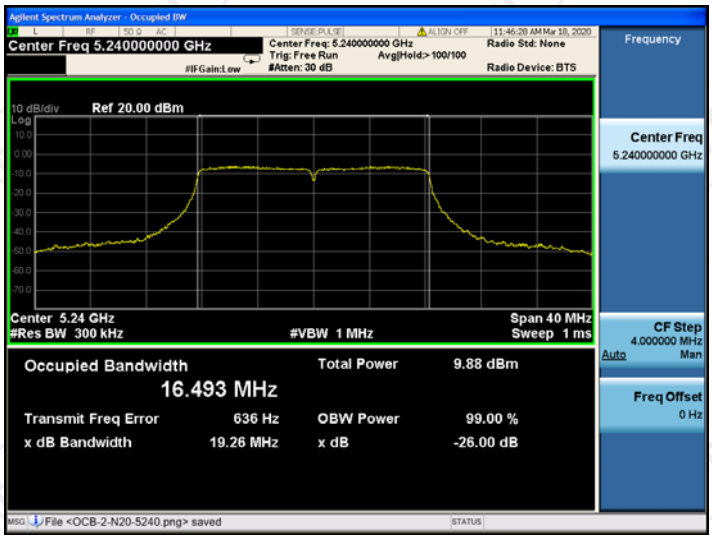
CH36



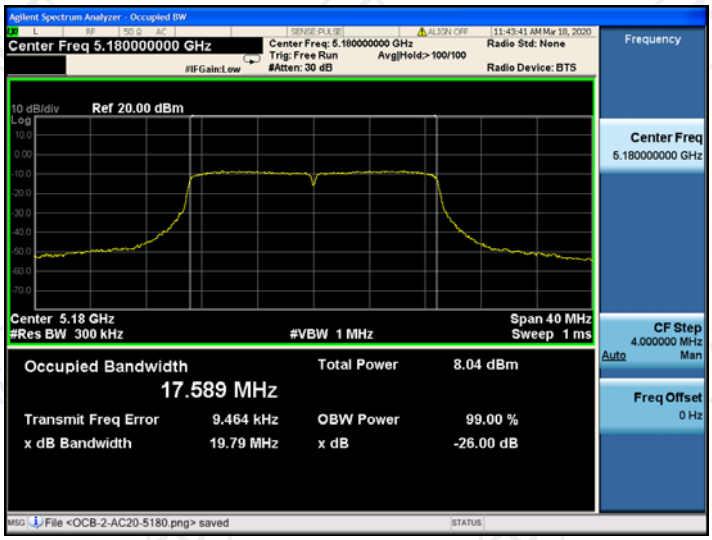
CH40



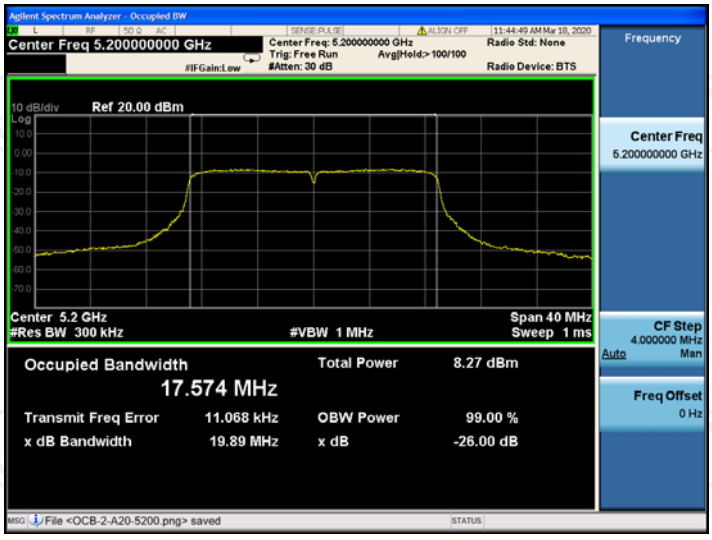
CH48



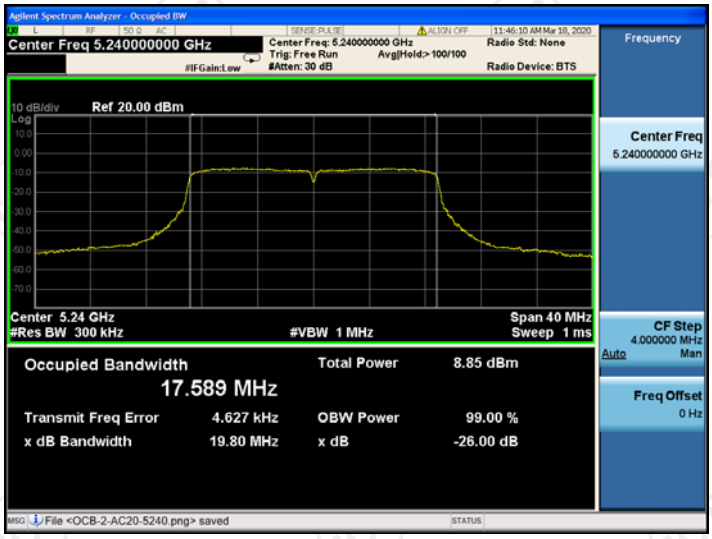
11n(HT20) CH36



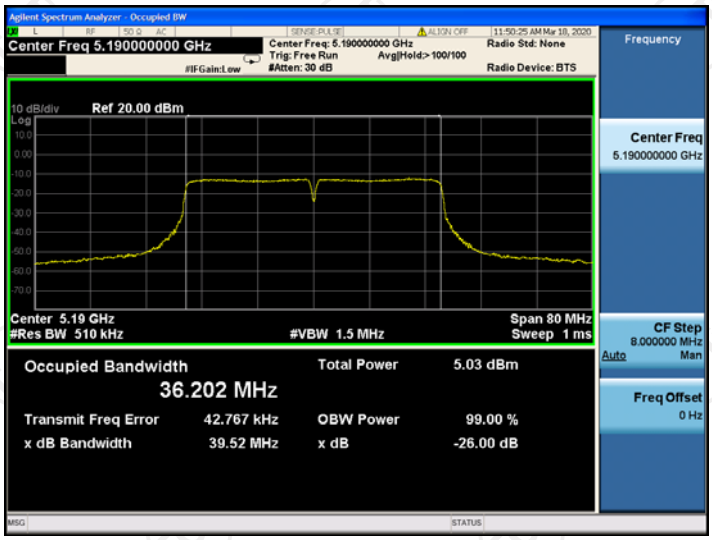
CH40



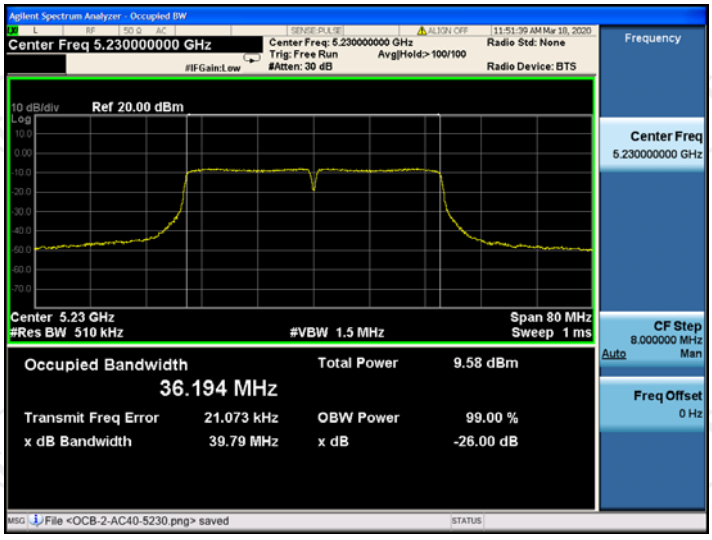
CH48



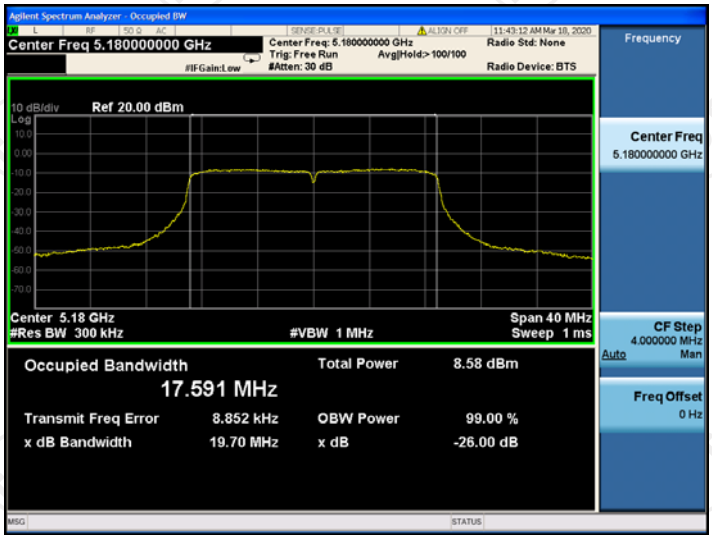
11n(HT40) CH38



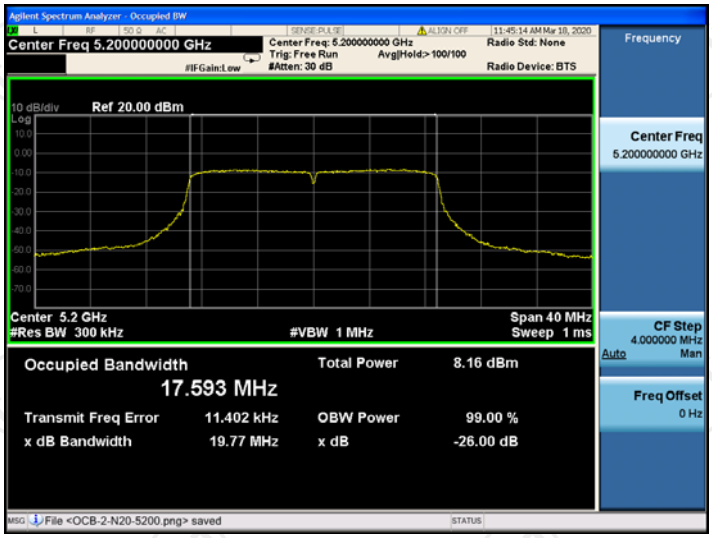
CH46



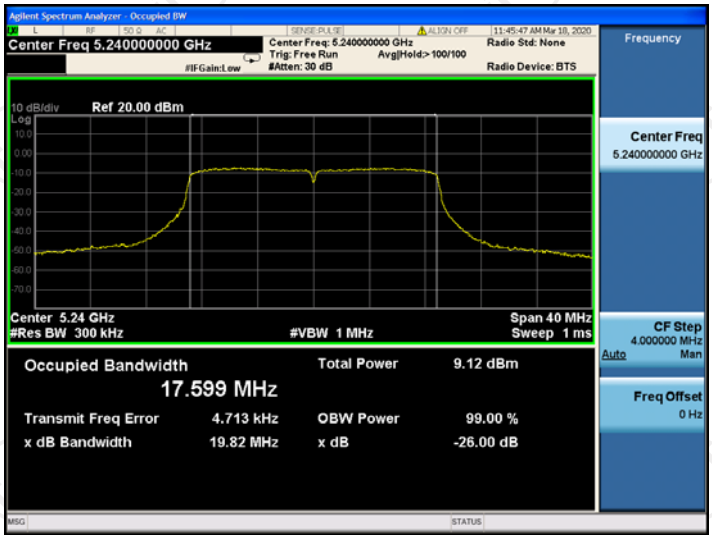
11ac(VHT20) CH36



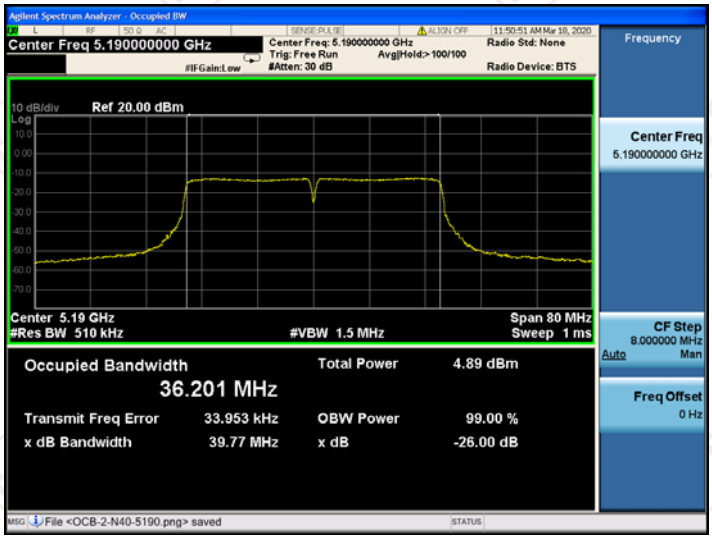
CH40



CH48

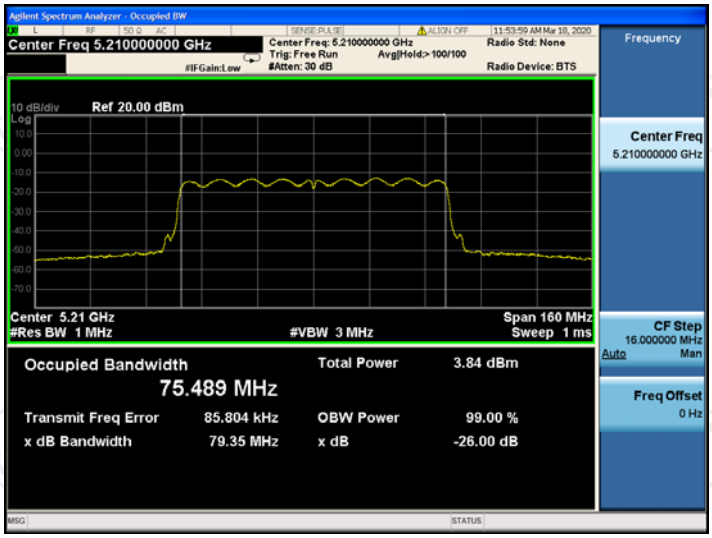


11ac(VHT40) CH38



CH46

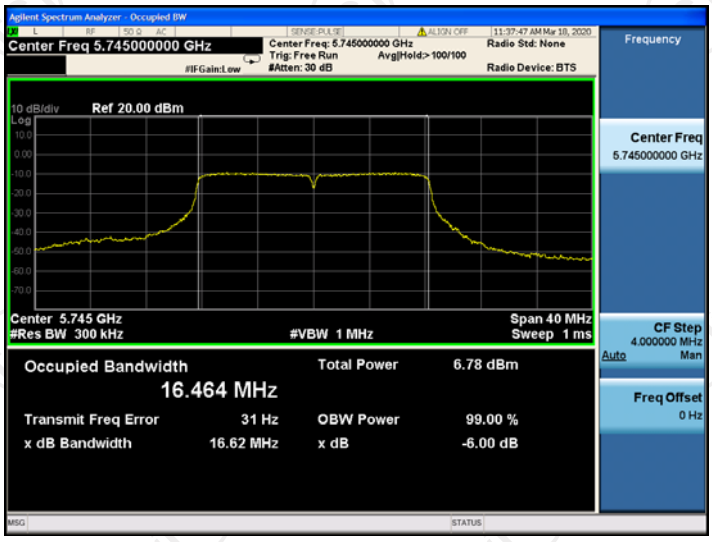
11ac(VHT80) CH42



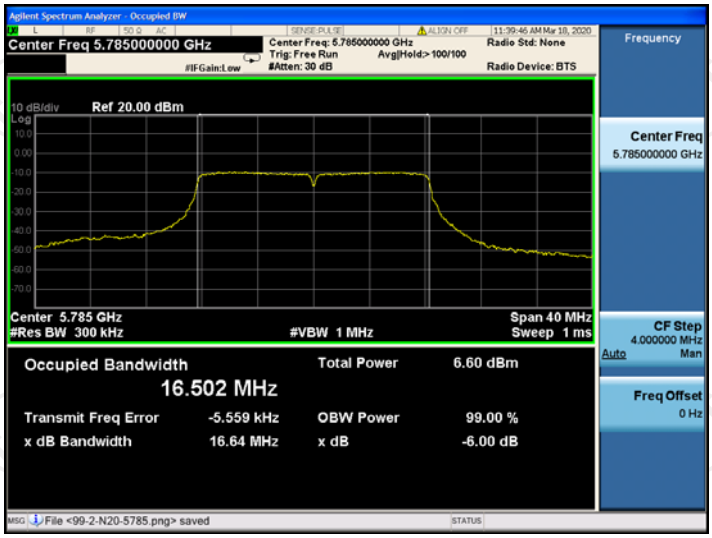
Band 3 (5745-5825MHz)

11a

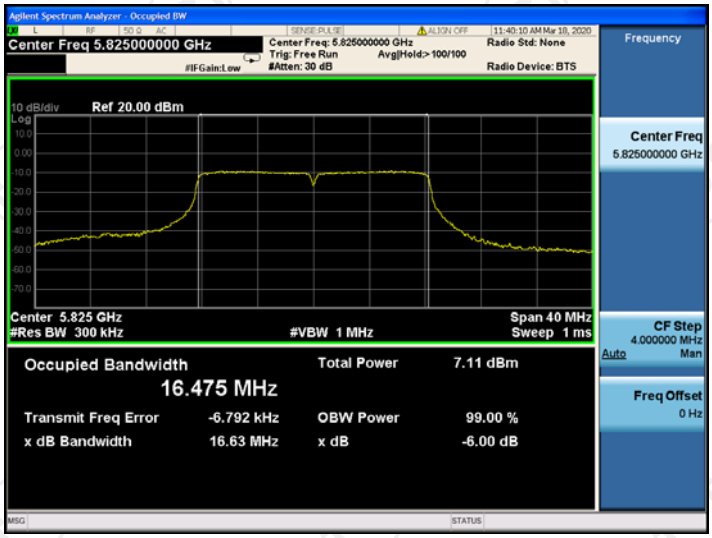
CH149



CH157

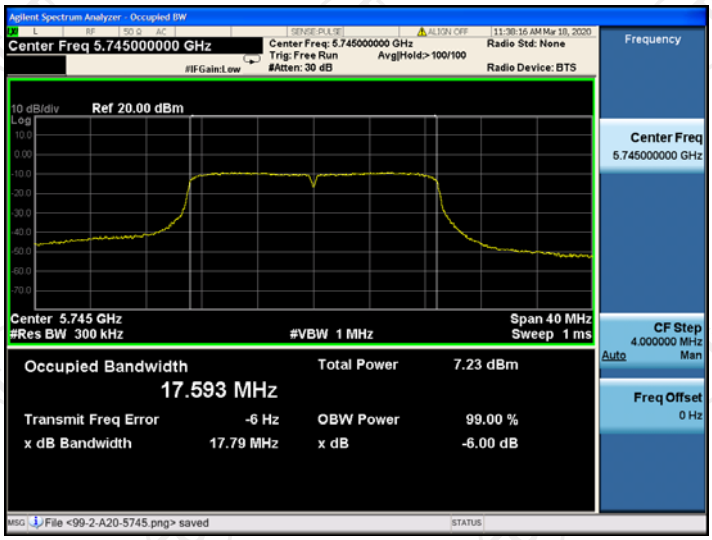


CH165

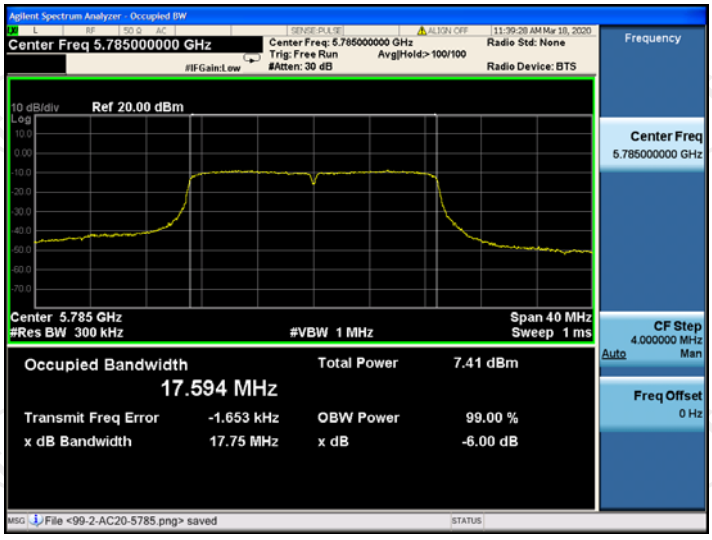


11n(HT20)

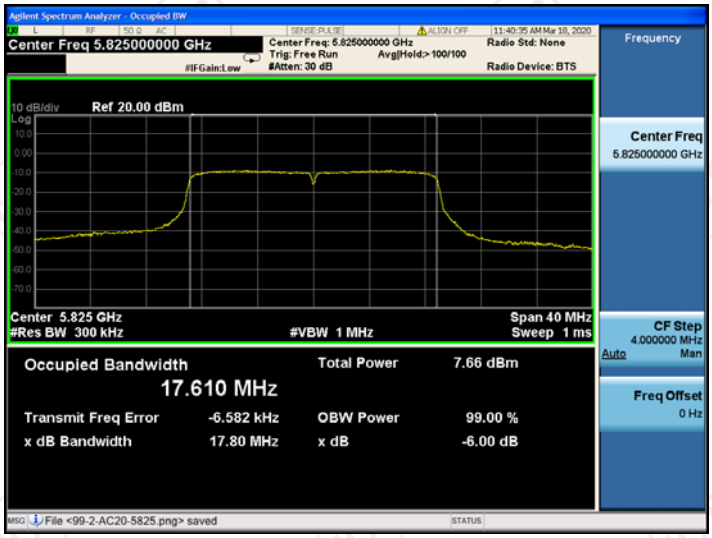
CH149



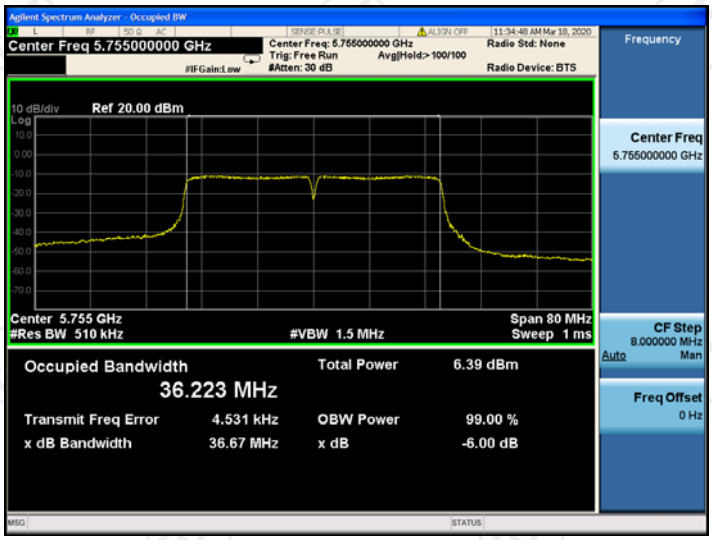
CH157



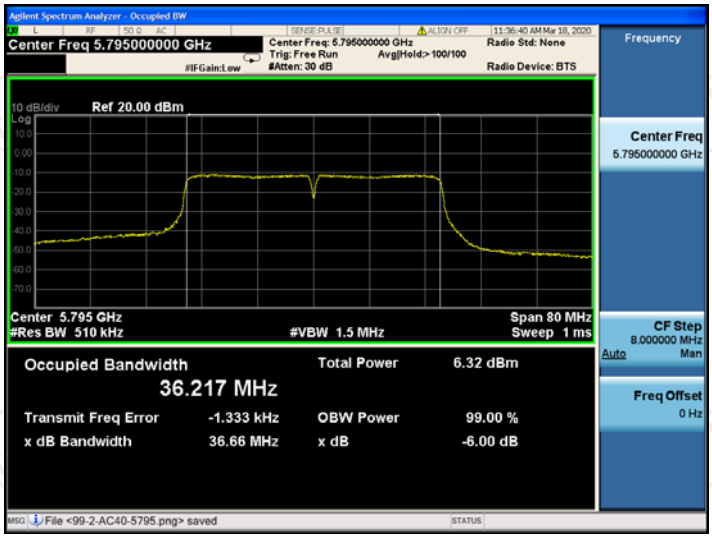
CH165



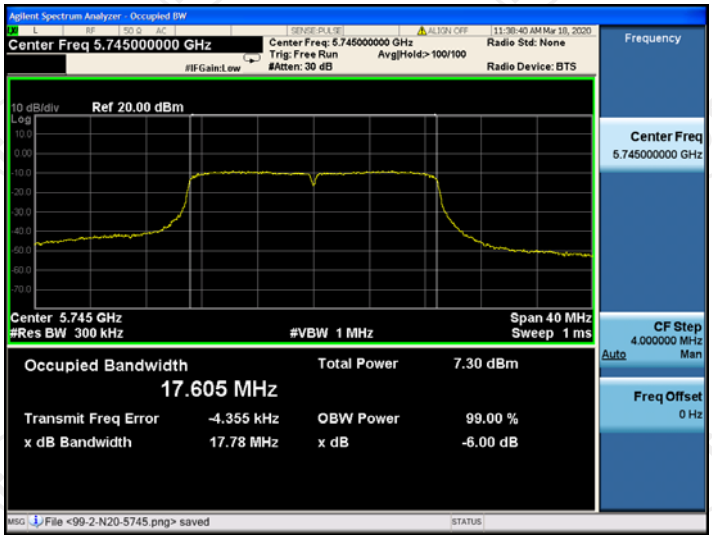
11n(HT40) CH151



CH159

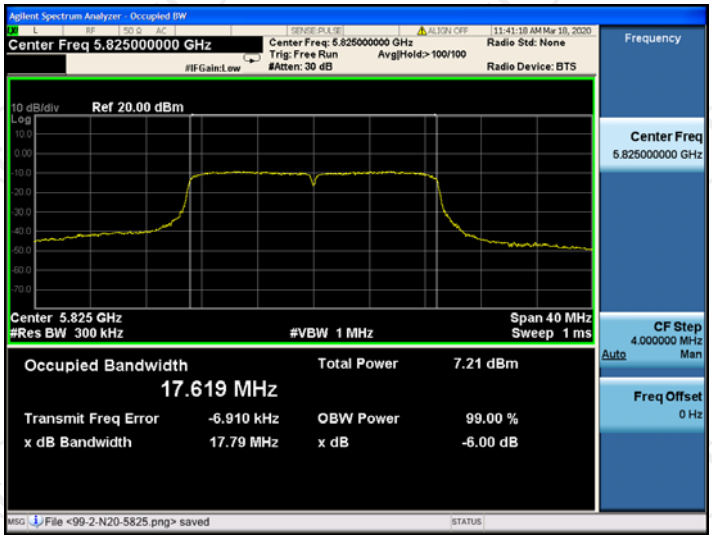


11ac(VHT20) CH149

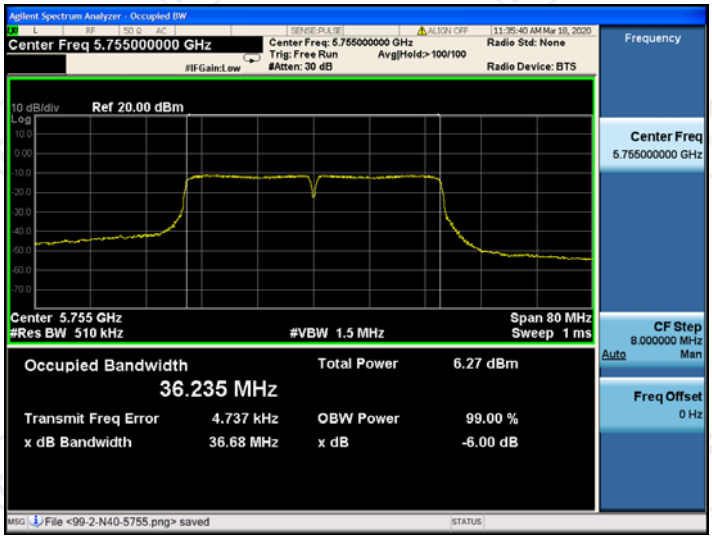


CH157

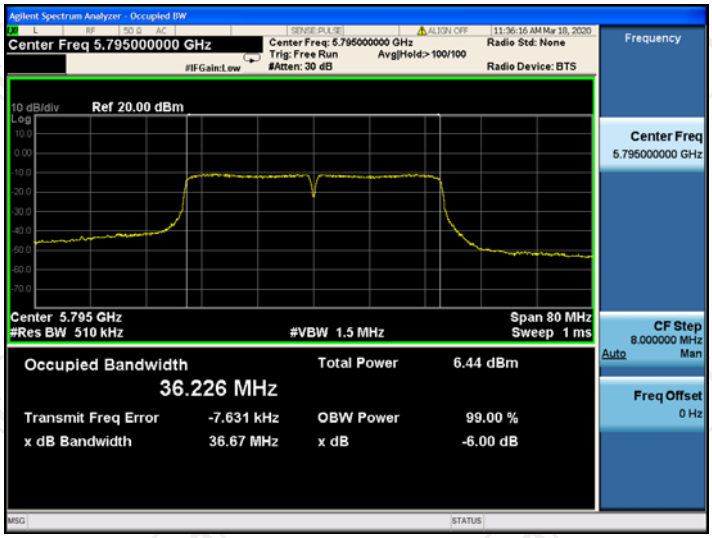
CH165



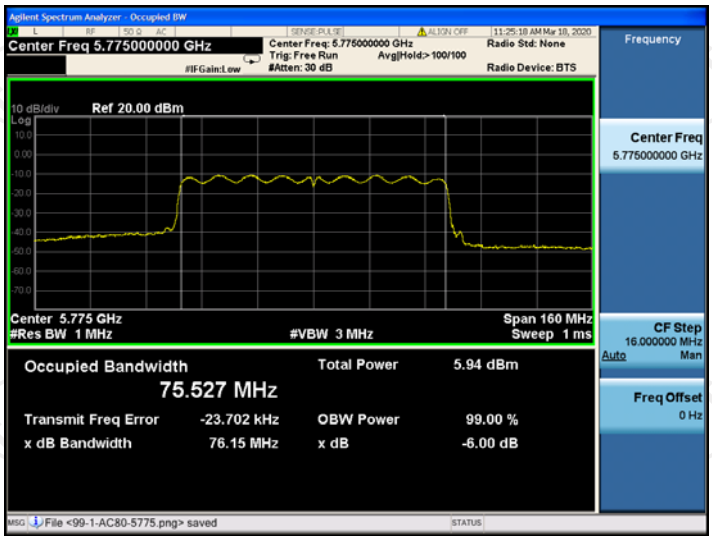
11ac(VHT40) CH151



CH159

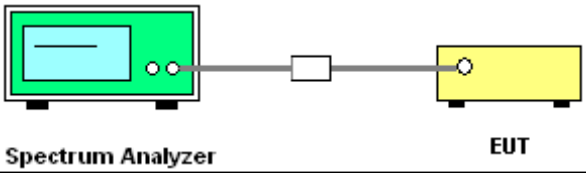


11ac(VHT80) CH155



6.6. Power Spectral Density

6.6.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407 (a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section F
Limit:	≤11.00dBm/MHz for Band 1 5150MHz-5250MHz(client device) ≤30.00dBm/500KHz for Band 3 5725MHz-5850MHz The e.i,r,p spectral density for Band 1 5150MHz – 5250 MHz should not exceed 10dBm/MHz
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth. 1. Set RBW = 510 kHz/1 MHz, VBW ≥ 3*RBW, Sweep time = Auto, Detector = RMS. 2. Allow the sweeps to continue until the trace stabilizes. 3. Use the peak marker function to determine the maximum amplitude level. 4. The E.I.R.P spectral density used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.
Test Result:	PASS

6.6.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2020
RF Cable (9KHz-40GHz)	TCT	RE-high-02	N/A	Sep. 08, 2020
Antenna Connector	TCT	RFC-03	N/A	Sep. 08, 2020

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

6.6.3. Test data

Configuration Band 1 (5180-5240 MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11a	CH36	-1.304	-1.833	/	11	PASS
11a	CH40	-1.315	-1.310	/	11	PASS
11a	CH48	-1.556	-1.026	/	11	PASS
11n(HT20)	CH36	-3.121	-3.072	-0.086	11	PASS
11n(HT20)	CH40	-2.758	-2.584	0.340	11	PASS
11n(HT20)	CH48	-2.945	-2.202	0.453	11	PASS
11n(HT40)	CH38	-8.471	-9.182	-5.802	11	PASS
11n(HT40)	CH46	-5.398	-4.729	-2.040	11	PASS
11ac(VHT20)	CH36	-2.629	-2.993	0.203	11	PASS
11ac(VHT20)	CH40	-2.435	-3.244	0.190	11	PASS
11ac(VHT20)	CH48	-2.858	-2.176	0.507	11	PASS
11ac(VHT40)	CH38	-8.652	-9.538	-6.062	11	PASS
11ac(VHT40)	CH46	-5.452	-4.614	-2.003	11	PASS
11ac(VHT80)	CH42	-13.475	-12.502	-9.951	11	PASS

Note: 1. All antennas have the same gain. G_{ANT} =2dBi, Array Gain=10log(N_{ANT})=3.01dBi

Directional Gain=G_{ANT} + Array Gain=5.01dBi, 5.01dBi <6dBi so limit=11dBm/MHz

2. The total PSD method used the sum spectra maxima across the outputs.

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Configuration Band 3(5745-5825MHz) / Antenna 0+Antenna 1							
Mode	Test channel	Power Spectral Density			Limit (dBm/500kHz)	Limit (dBm/510kHz)	Result
		Ant0	Ant1	Total			
11a	CH149	-5.972	-7.551	/	30	30.08	PASS
11a	CH157	-6.327	-6.310	/	30	30.08	PASS
11a	CH165	-6.505	-5.100	/	30	30.08	PASS
11n(HT20)	CH149	-5.405	-6.998	-3.119	30	30.08	PASS
11n(HT20)	CH157	-4.906	-5.589	-2.224	30	30.08	PASS
11n(HT20)	CH165	-4.993	-5.178	-2.074	30	30.08	PASS
11n(HT40)	CH151	-9.600	-10.762	-7.132	30	30.08	PASS
11n(HT40)	CH159	-10.003	-9.551	-6.761	30	30.08	PASS
11ac(VHT20)	CH149	-5.469	-6.754	-3.054	30	30.08	PASS
11ac(VHT20)	CH157	-4.410	-5.513	-1.916	30	30.08	PASS
11ac(VHT20)	CH165	-5.250	-4.922	-2.073	30	30.08	PASS
11ac(VHT40)	CH151	-10.062	-10.386	-7.211	30	30.08	PASS
11ac(VHT40)	CH159	-9.727	-9.426	-6.564	30	30.08	PASS
11ac(VHT80)	CH155	-12.715	-12.364	-9.526	30	30.08	PASS

Note: 1. All antennas have the same gain. G_{ANT} =2dBi, Array Gain=10log(N_{ANT})=3.01dBi

Directional Gain=G_{ANT} + Array Gain=5.01dBi, 5.01dBi <6dBi so limit=30dBm/500KHz

2. The total PSD method used the sum spectra maxima across the outputs.

3.RBW is 510K,so limit=30-(10log(500/510))=30.08dbm/510KHz.

Test plots as follows:

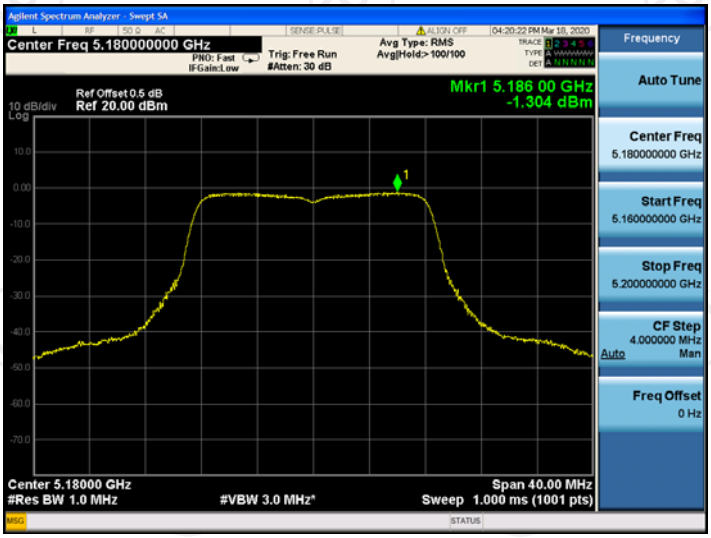
Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

ANT 0

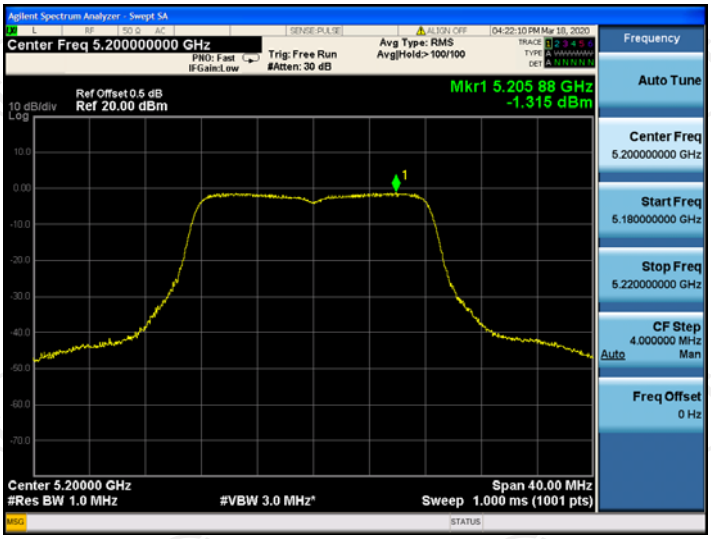
Band1 (5180-5240 MHz)

11a

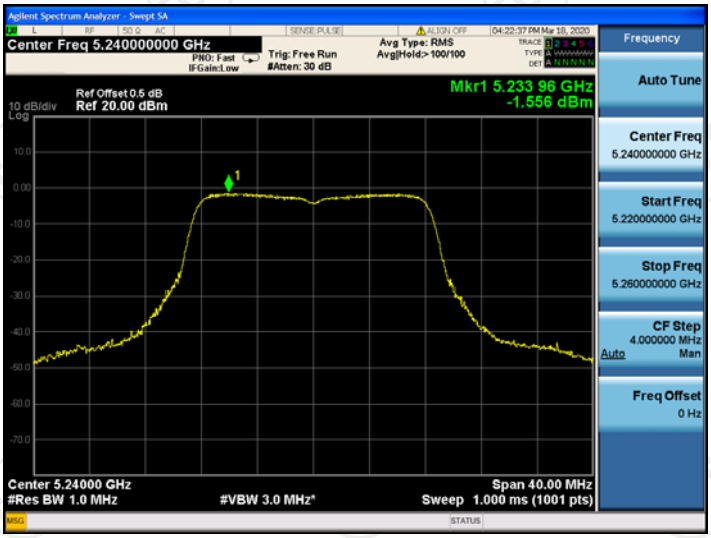
CH36



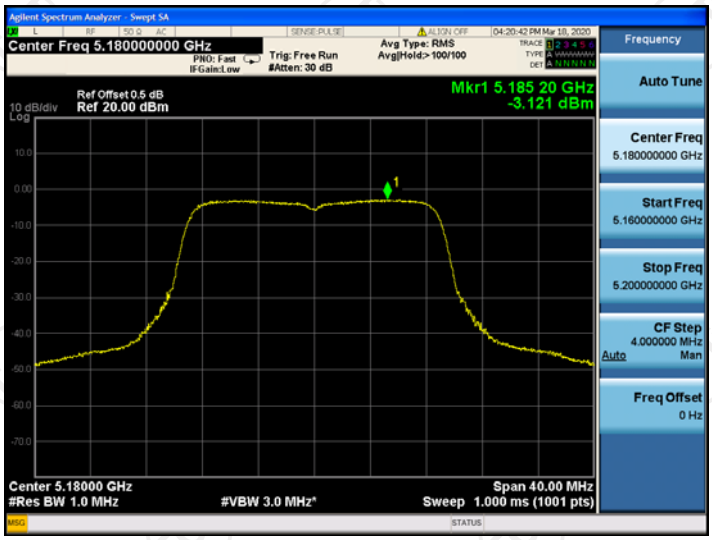
CH40



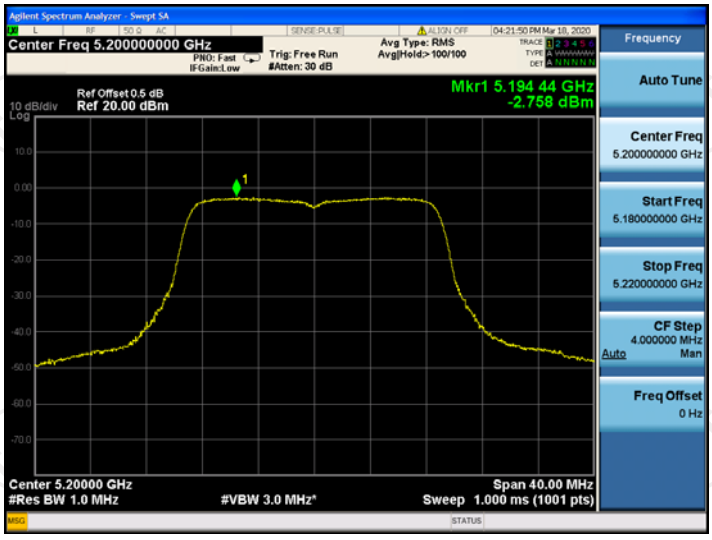
CH48



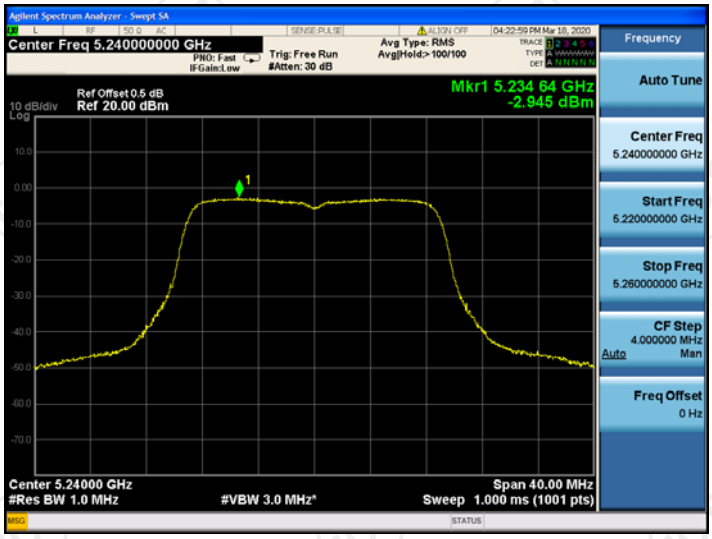
11n(HT20) CH36



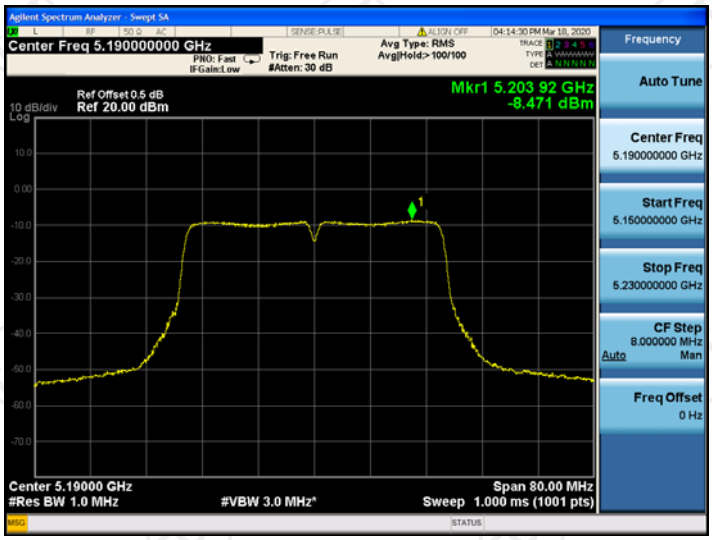
CH40



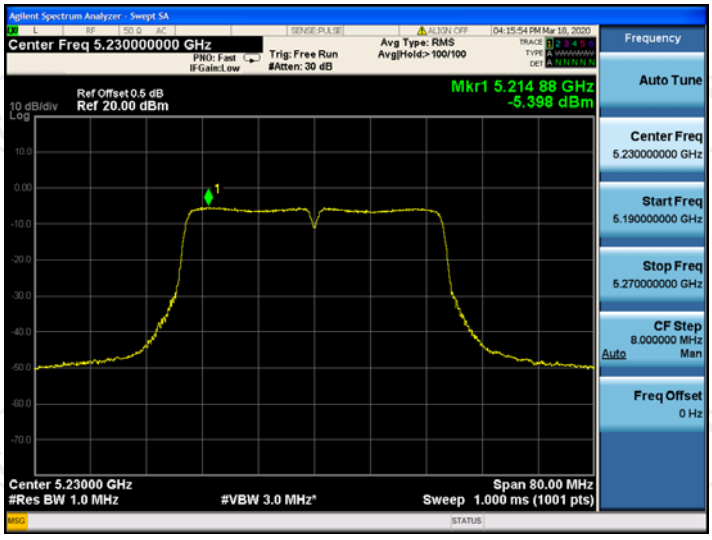
CH48



11n(HT40) CH38



CH46



11ac(VHT20) CH36