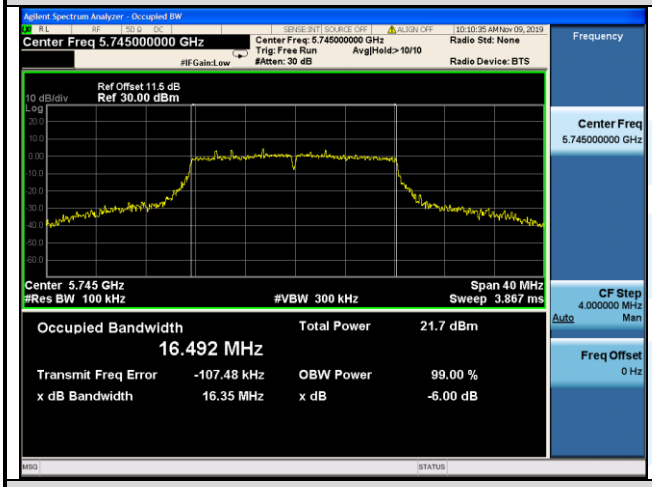
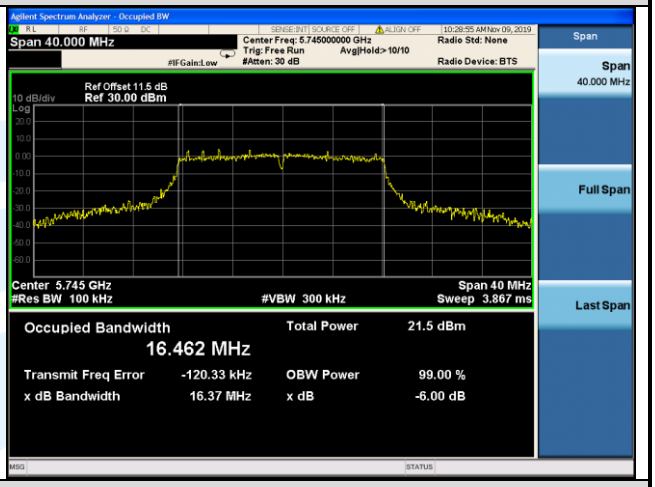
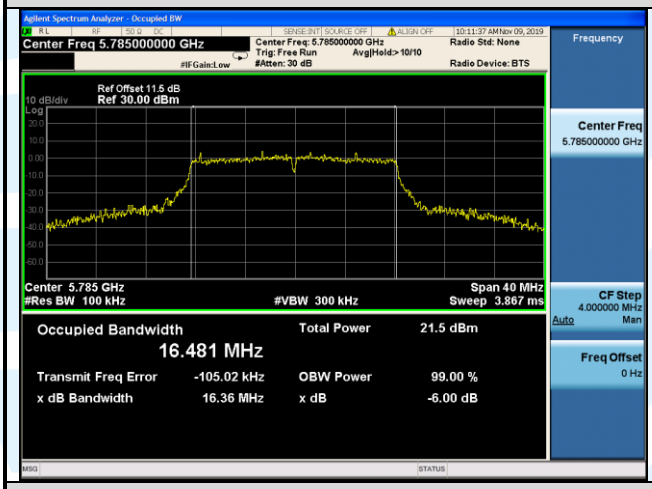
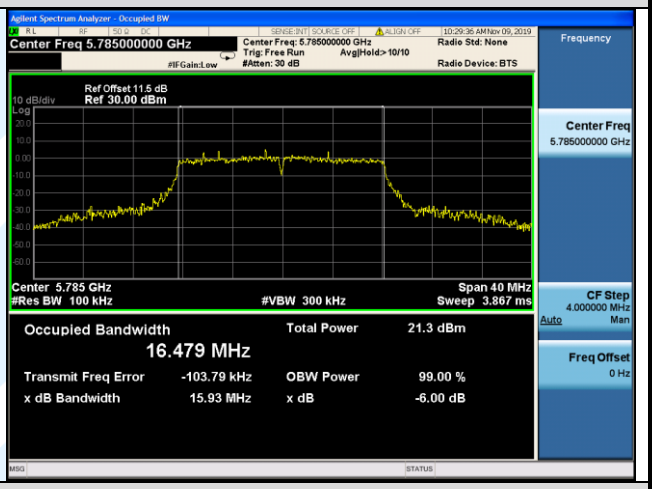
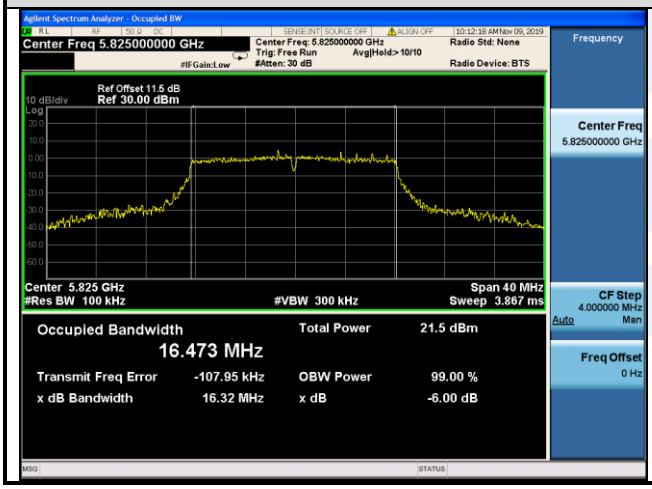
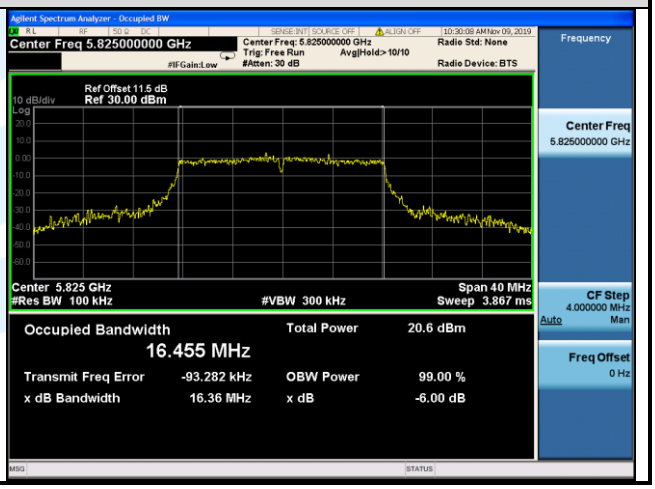
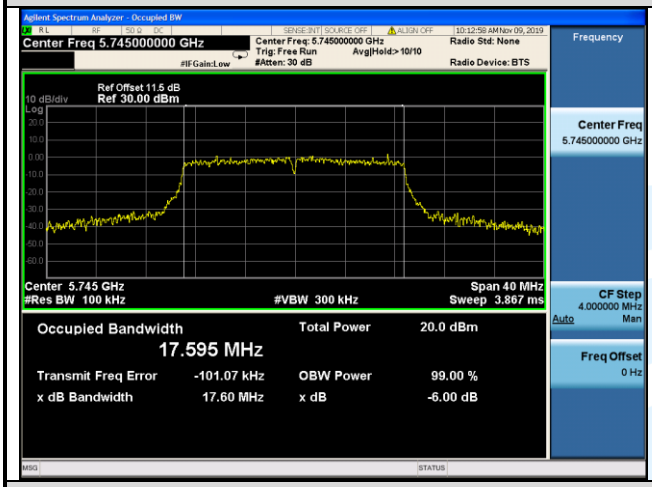
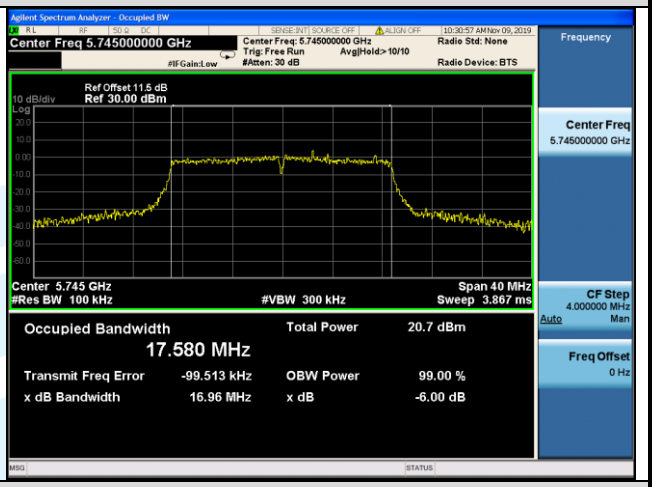
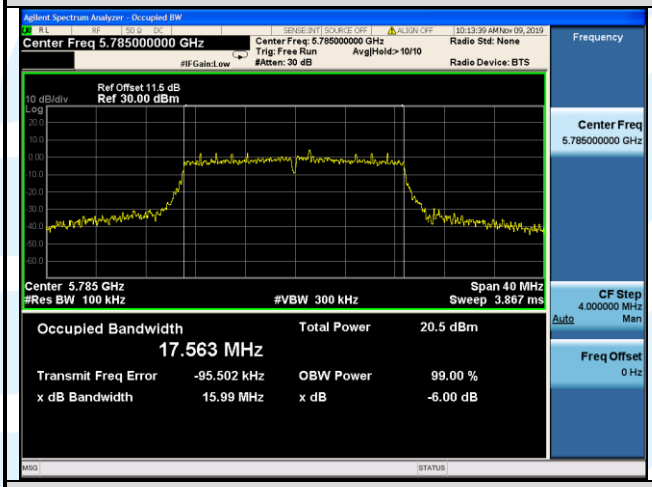
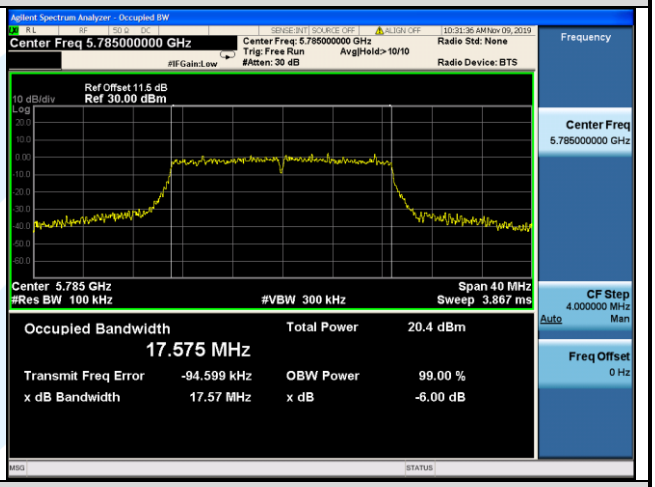
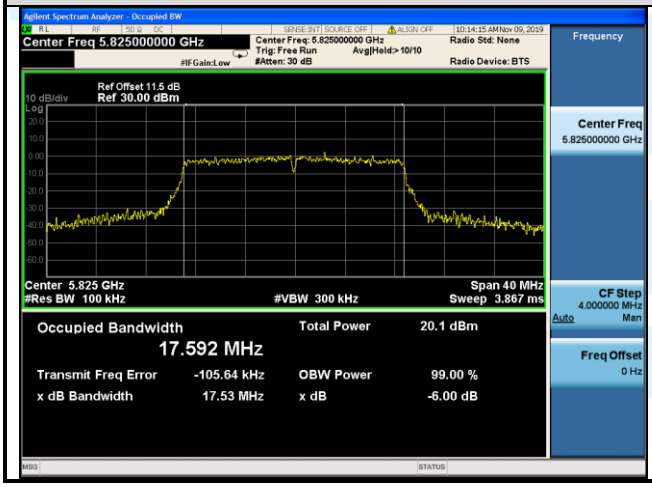
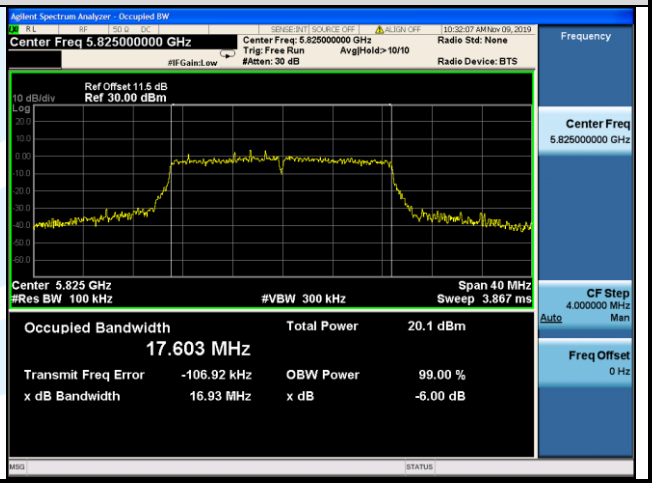
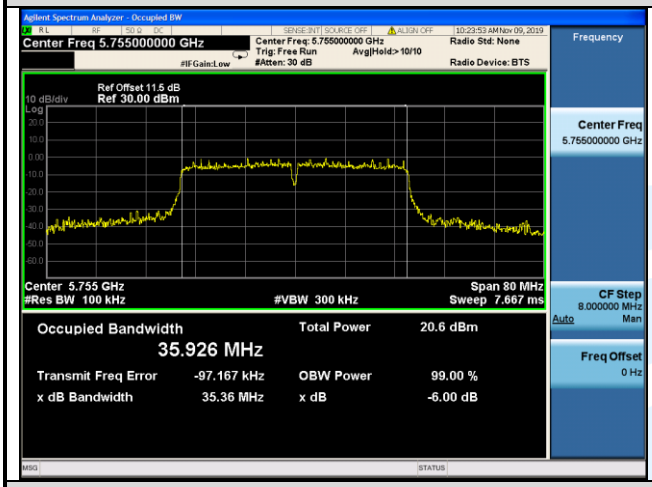
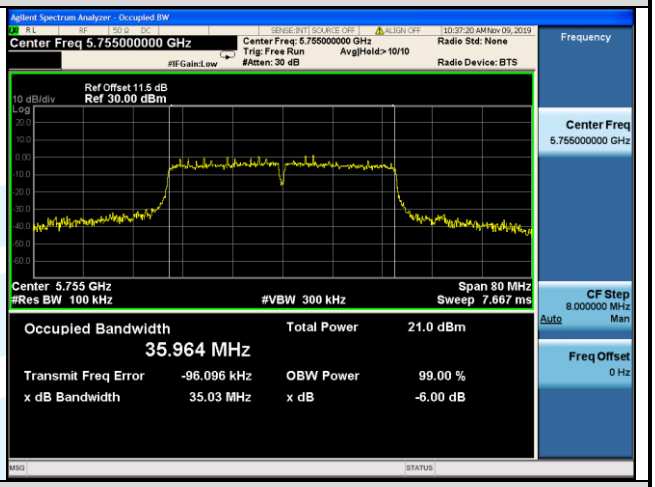
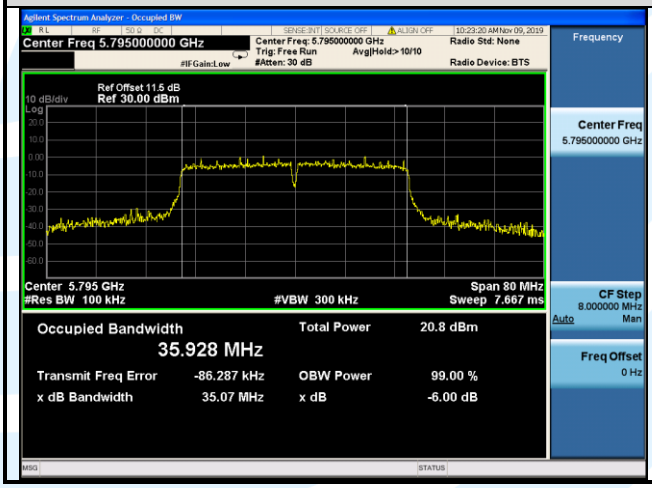
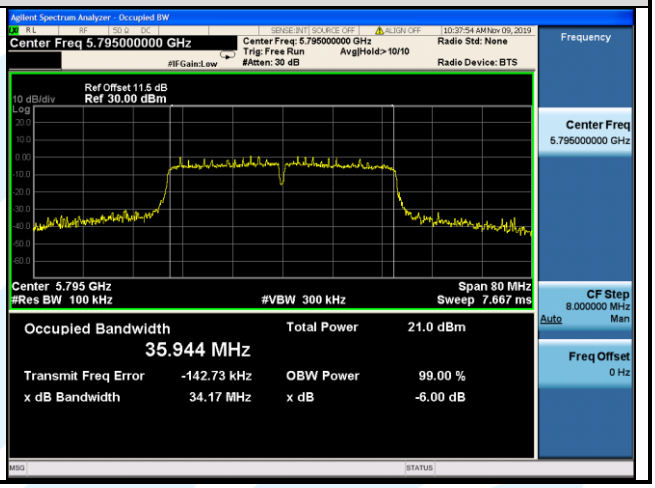
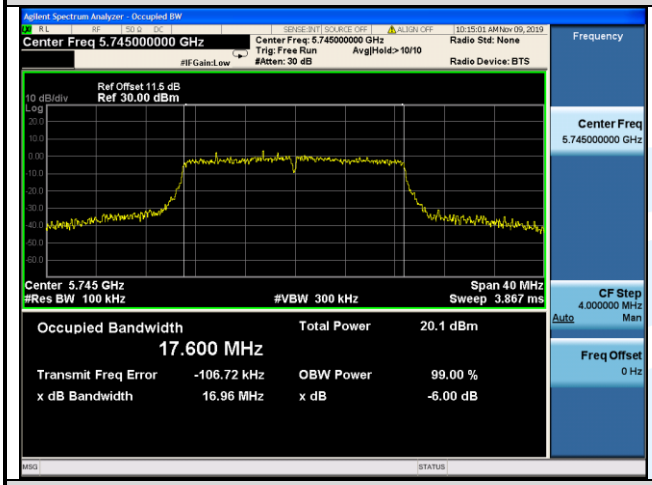
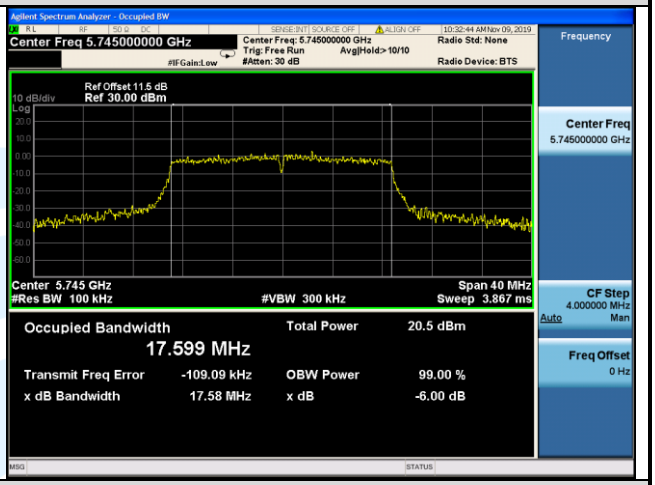
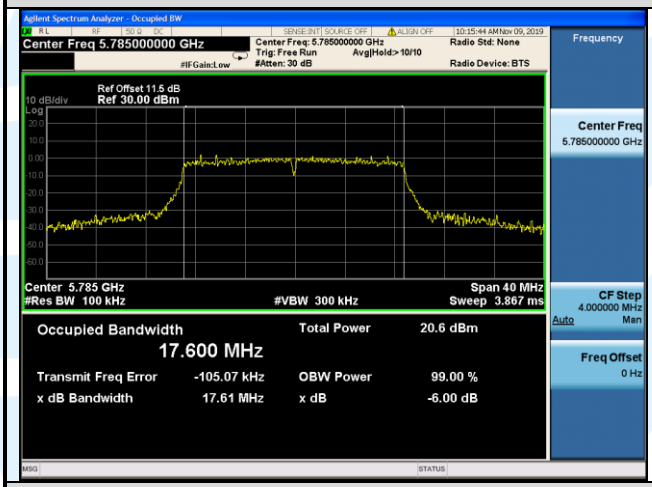
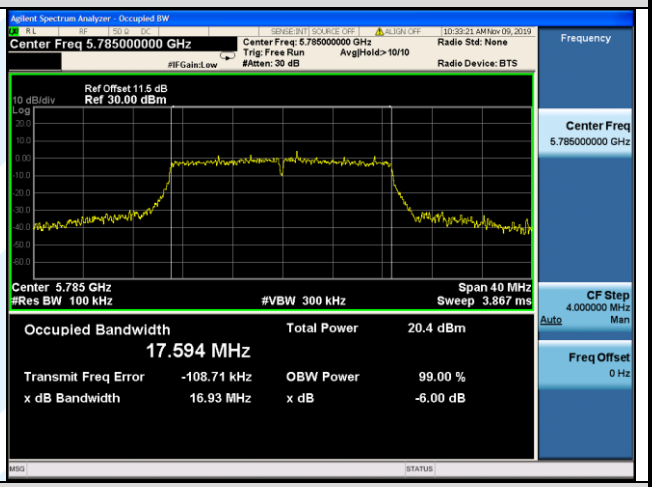
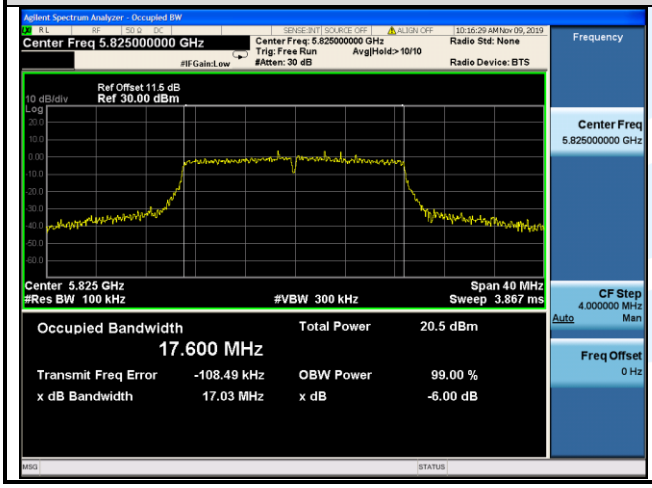
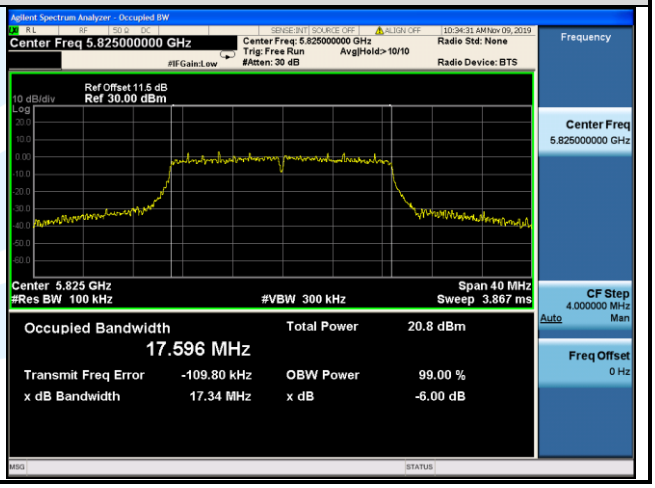
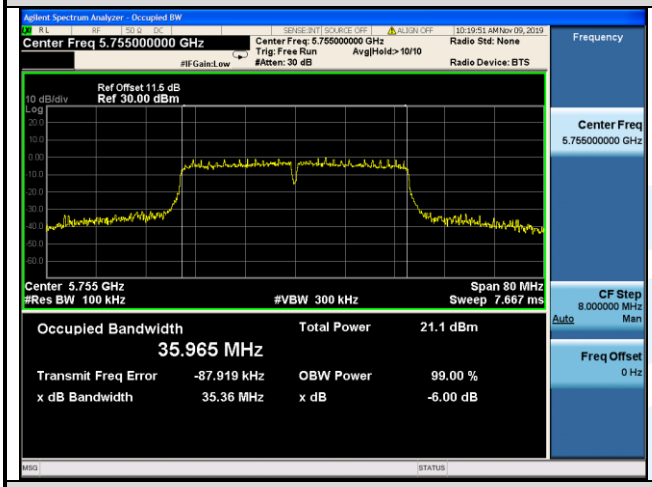
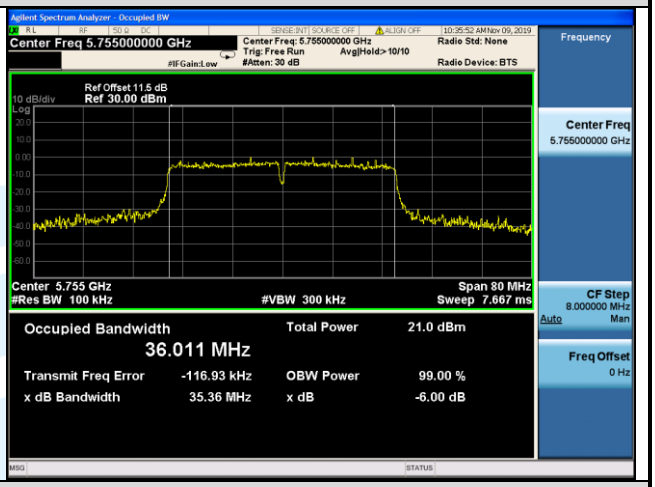
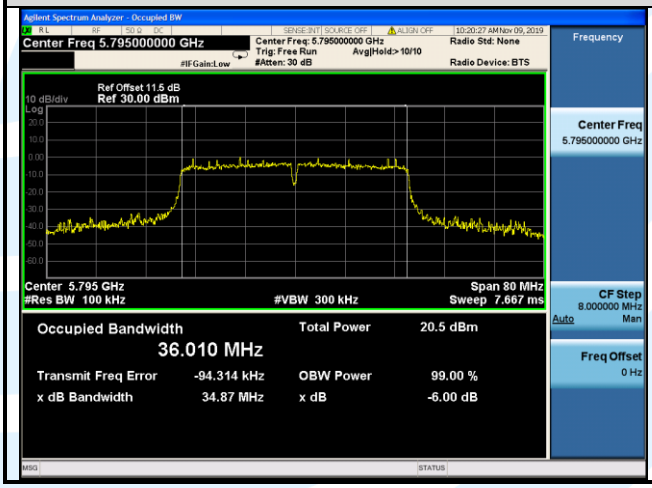
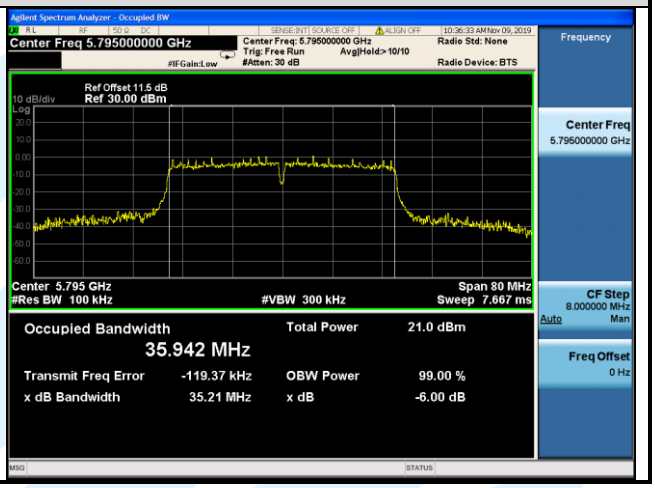
The test plots as follows:
6 dB Bandwidth

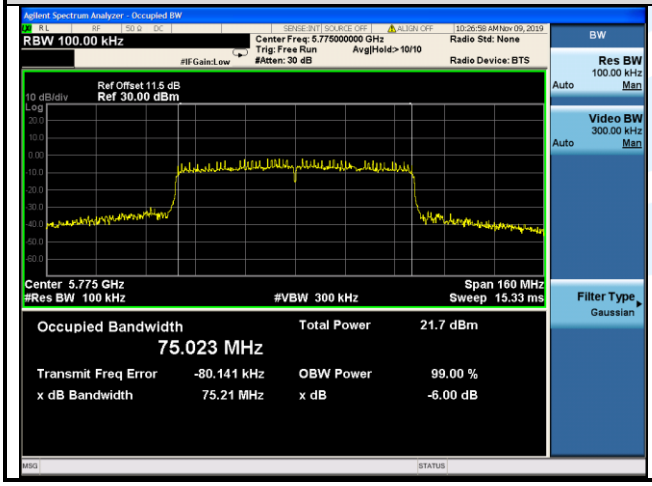
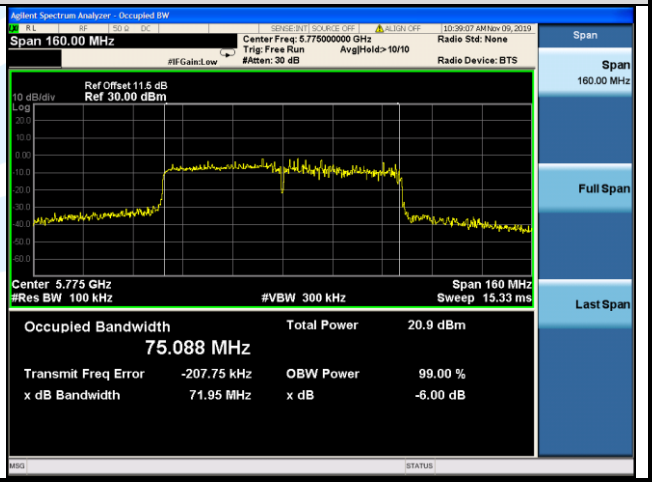
IEEE 802.11a	
Chain 0	Chain 1
Channel 149	
	
Channel 157	
	
Channel 165	
	

IEEE 802.11n-HT20	
Chain 0	Chain 1
Channel 149	
	
Channel 157	
	
Channel 165	
	

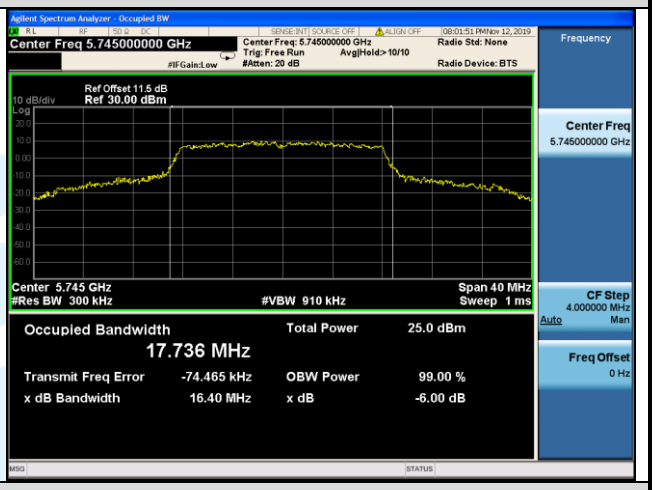
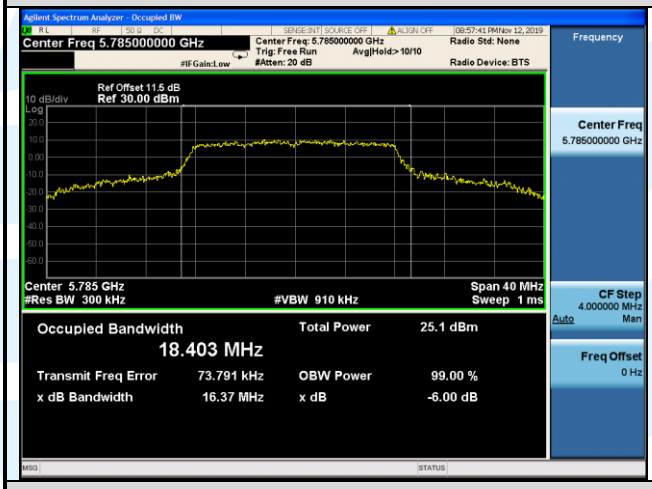
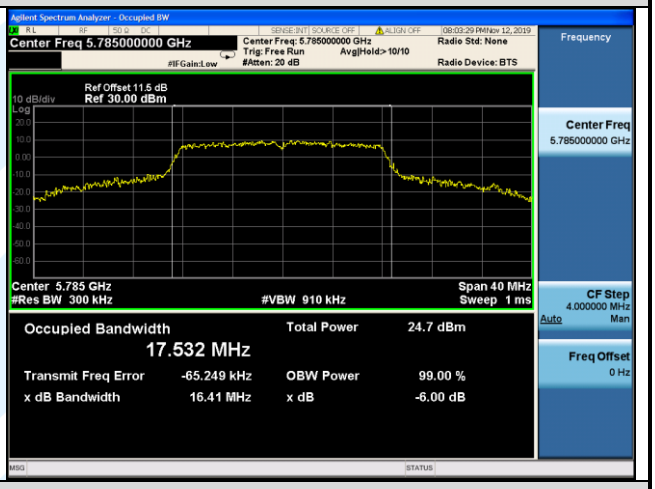
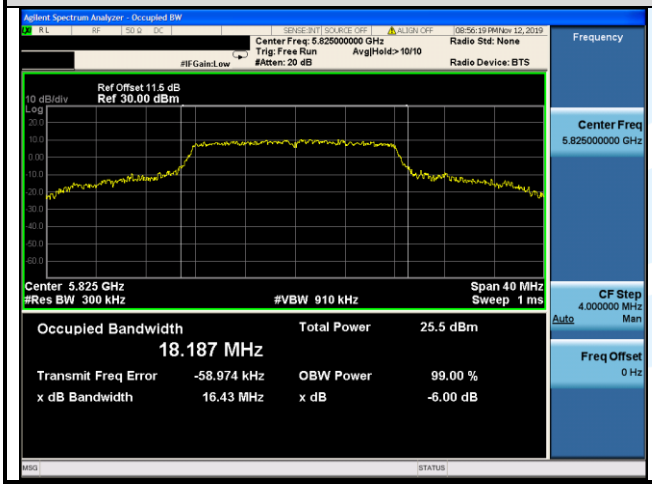
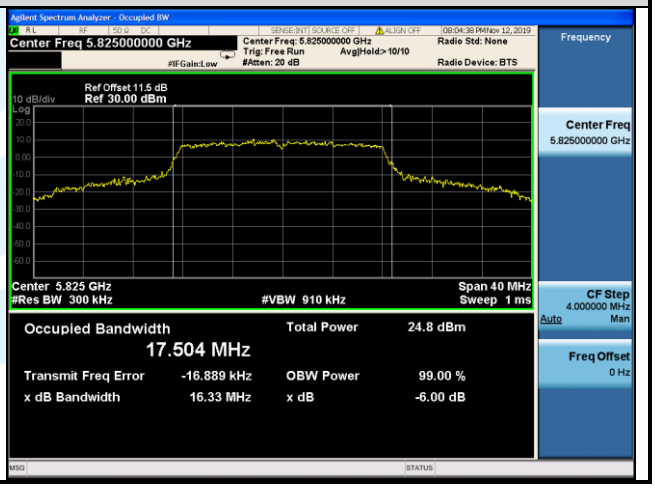
IEEE 802.11n-HT40	
Chain 0	Chain 1
Channel 151	
	
Channel 159	
	

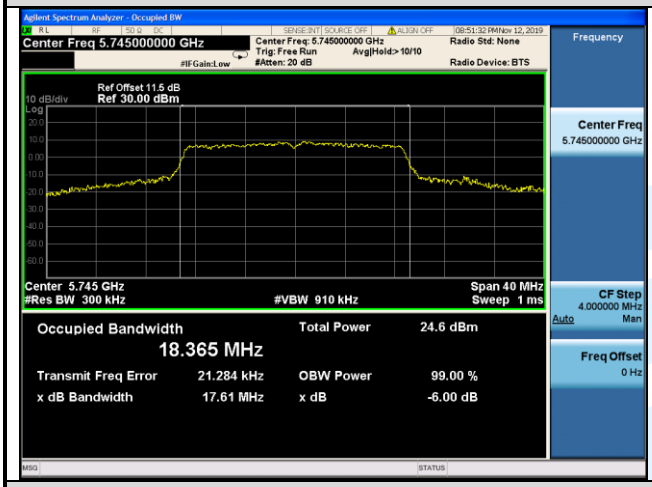
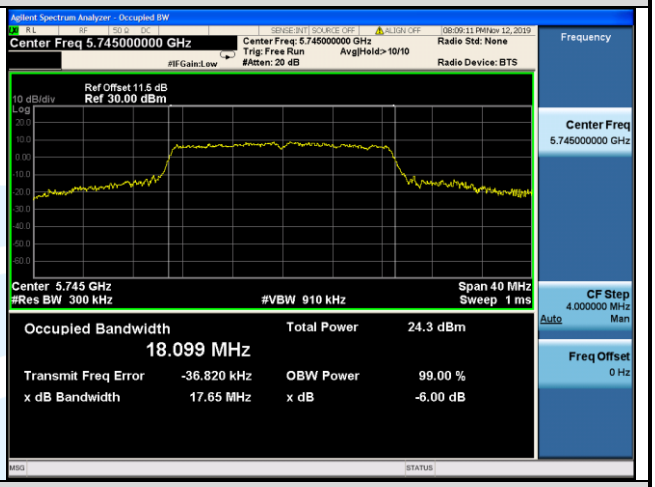
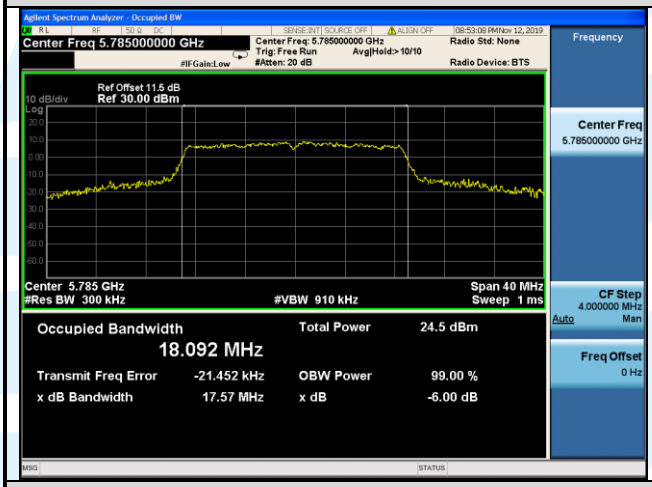
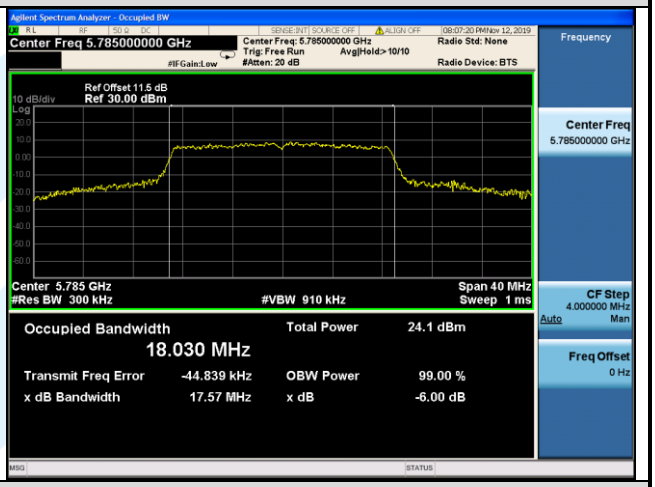
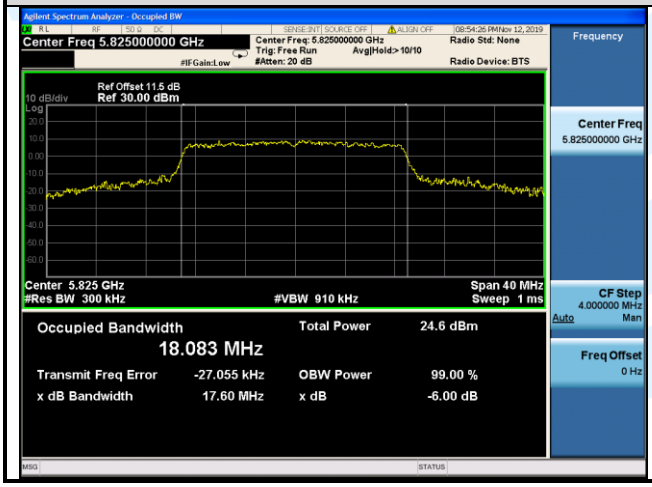
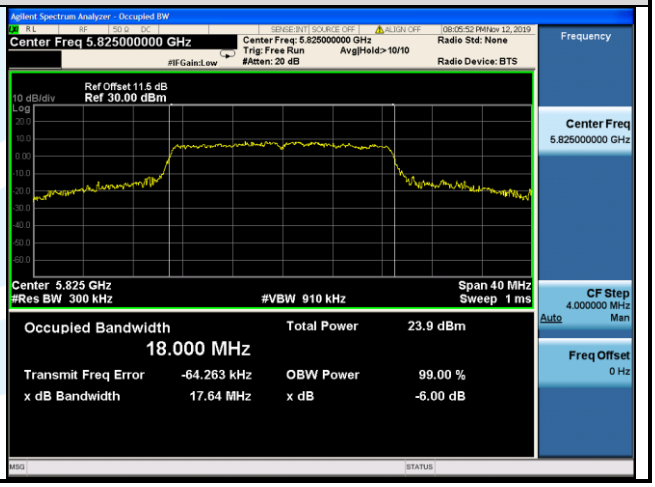
IEEE 802.11ac-VHT20	
Chain 0	Chain 1
Channel 149	
	
Channel 157	
	
Channel 165	
	

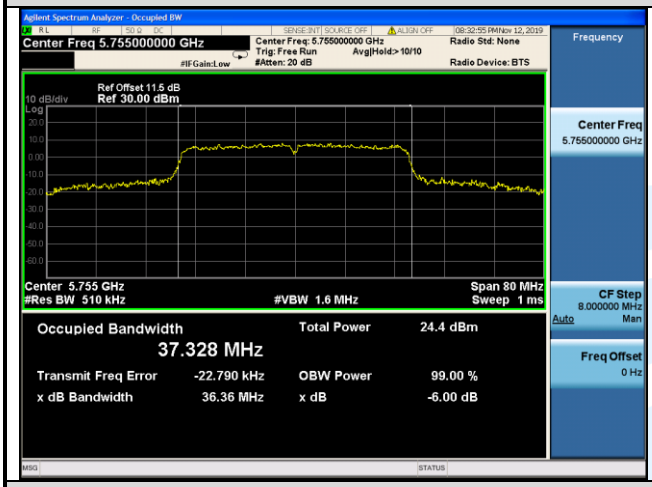
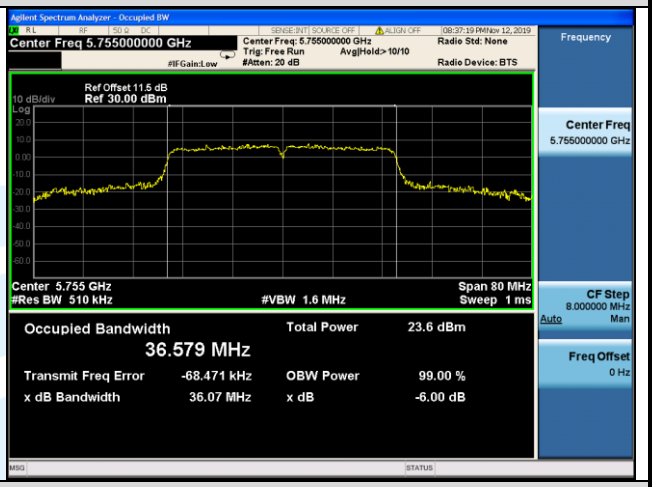
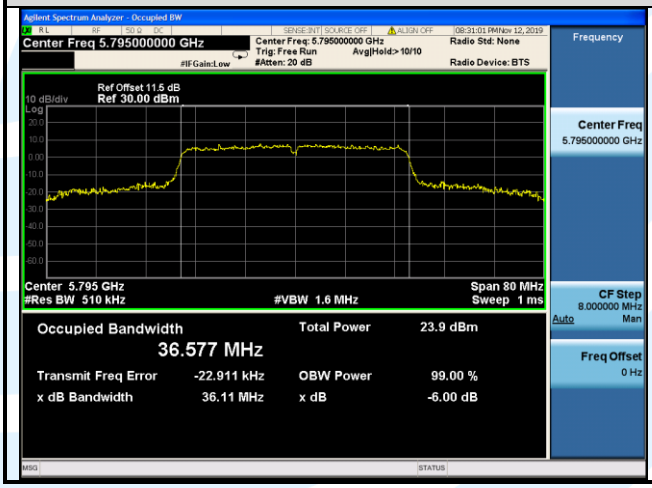
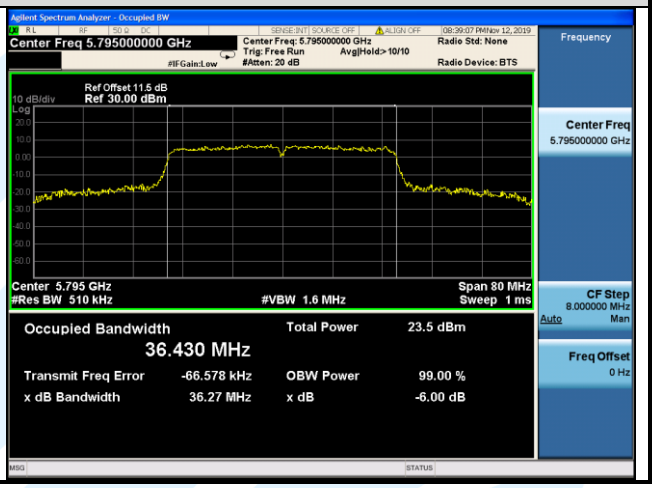
IEEE 802.11ac-VHT40	
Chain 0	Chain 1
Channel 151	
	
Channel 159	
	

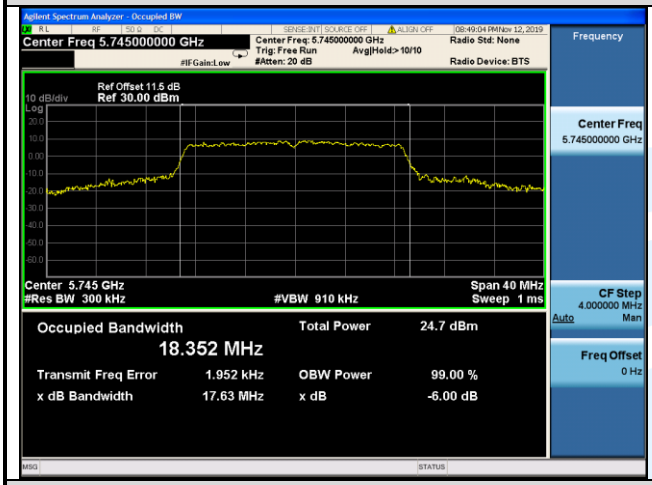
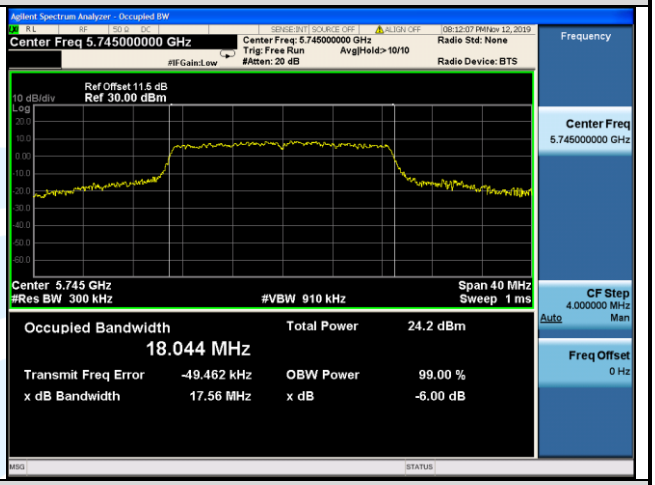
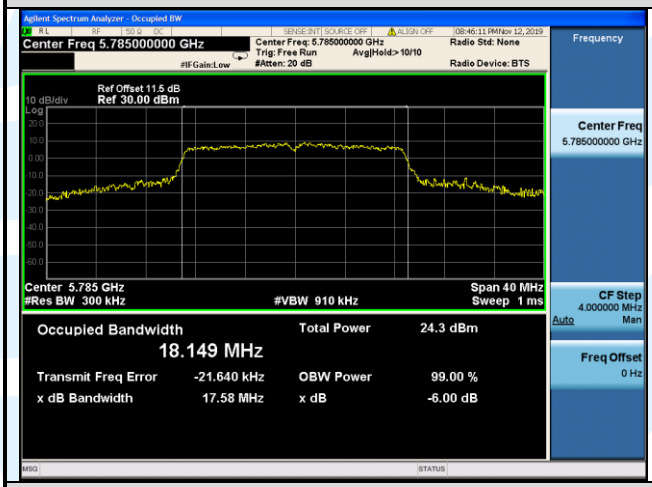
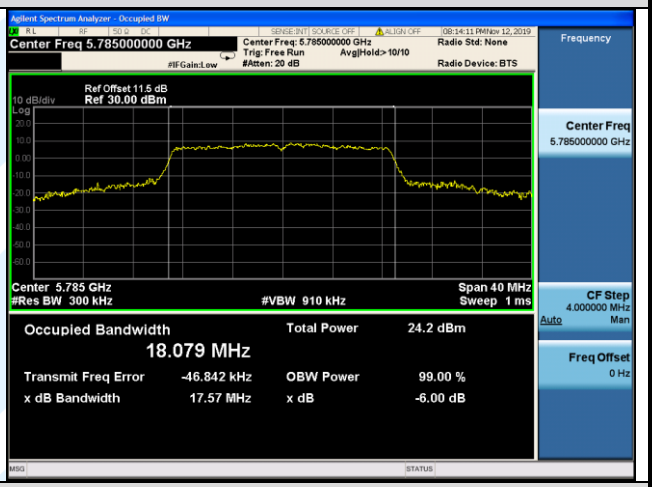
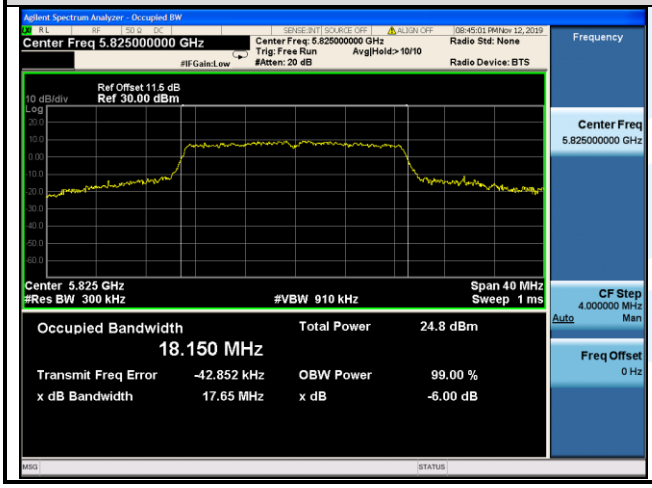
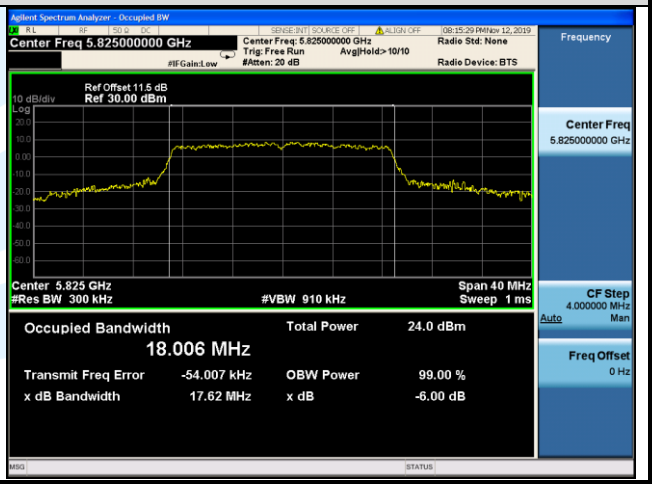
IEEE 802.11ac-VHT80	
Chain 0	Chain 1
Channel 151	
	

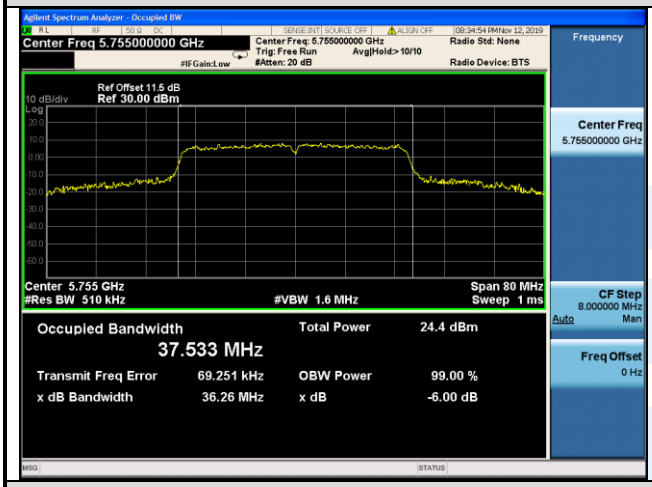
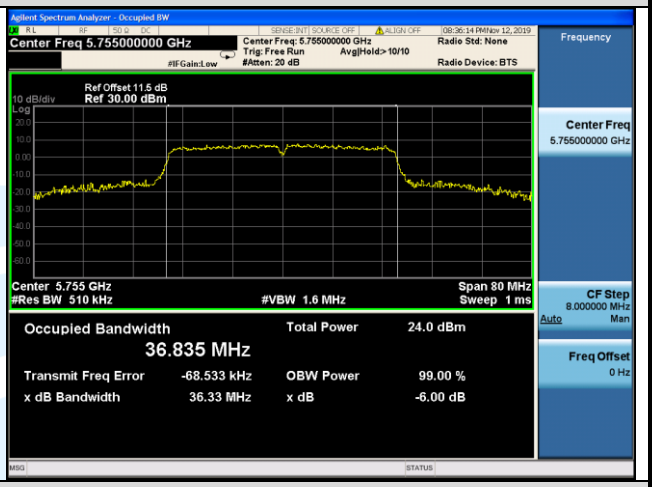
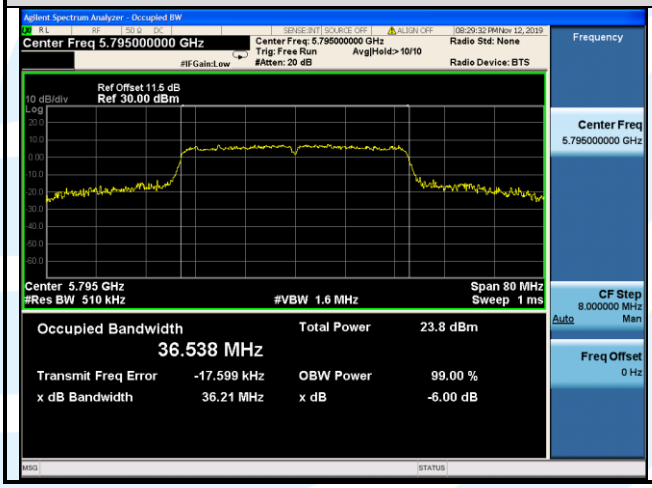
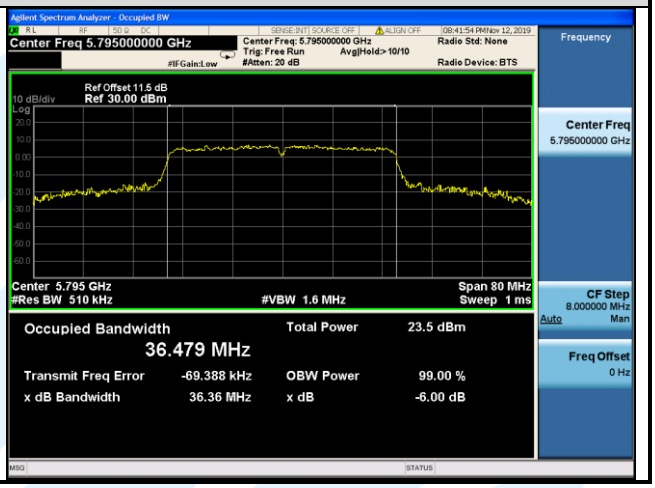
Occupied Bandwidth

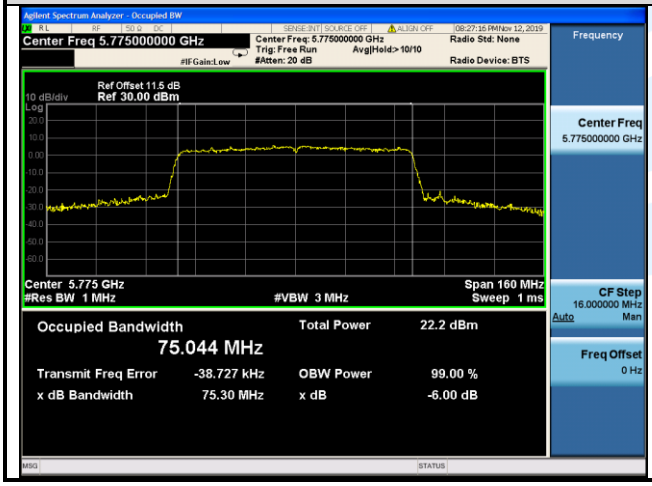
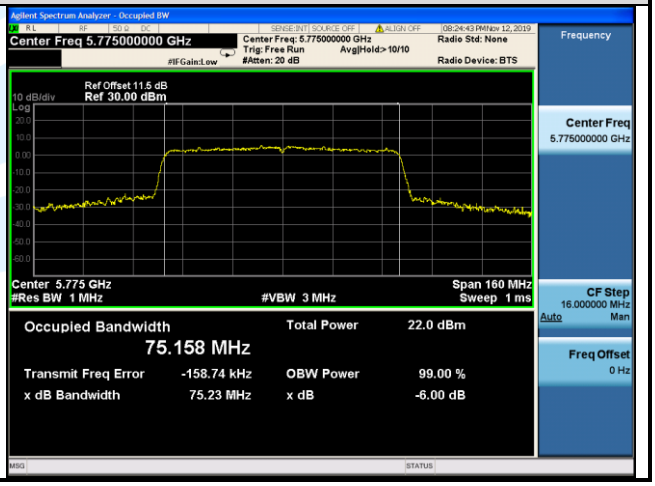
IEEE 802.11a	
Chain 0	Chain 1
Channel 149	
	
Channel 157	
	
Channel 165	
	

IEEE 802.11n-HT20	
Chain 0	Chain 1
Channel 149	
	
Channel 157	
	
Channel 165	
	

IEEE 802.11n-HT40	
Chain 0	Chain 1
Channel 151	
	
Channel 159	
	

IEEE 802.11ac-VHT20	
Chain 0	Chain 1
Channel 149	
	
Channel 157	
	
Channel 165	
	

IEEE 802.11ac-VHT40	
Chain 0	Chain 1
Channel 151	
	
Channel 159	
	

IEEE 802.11ac-VHT80	
Chain 0	Chain 1
Channel 151	
	

5.5 MAXIMUM CONDUCTED OUTPUT POWER OR E.I.R.P

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(3)
RSS-247 Issue 2 Section 6.2.1.1/6.2.4.1

Test Method: KDB 789033 D02 v02r01 Section E.3.a (Method PM)

Limits: FCC 47 CFR Part 15 Subpart E

1. For the band 5.15-5.25 GHz.
   (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

   (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

   (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

   (iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

2. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Limits: RSS-247 Issue 2

1. **Frequency band 5150-5250 MHz**
   For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or 1.76 + 10 $\log_{10}$B, dBm, whichever is less. Devices shall implement transmitter power control (TPC) in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

   For other devices, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 $\log_{10}$B, dBm, whichever

power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

2. **Frequency band 5725-5850 MHz**

The maximum conducted output power shall not exceed 1 W. The output power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint[3] systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

Test Procedure:

1. Connected the EUT's antenna port to measure device by 10dB attenuator.
2. Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of Tx on burst.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.5.3 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

Test Results: Pass

Test Data:

Directional gain and the maximum output power limit.
RSS-247 Issue 2

Frequency Band	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated chains directional gain (dBi)	Peak Power Limits (dBm)
U-NII-1	3.50	3.00	6.26	22.74
U-NII-3	3.50	3.00	6.26	29.74
Unequal antenna gains, with equal transmit powers. Directional gain is to be computed as follows:				
If transmit signals are correlated, then				
Directional gain = 10 log[(10^G1 /20 + 10^G2 /20 + … + 10^GN /20)^2 /NANT] dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]				

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Frequency Band	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated chains directional gain (dBi)	Peak Power Limits (dBm)
U-NII-1	3.50	3.00	6.26	29.74
U-NII-3	3.50	3.00	6.26	29.74
Unequal antenna gains, with equal transmit powers. Directional gain is to be computed as follows:				
If transmit signals are correlated, then				
Directional gain = 10 log[(10^G1 /20 + 10^G2 /20 + … + 10^GN /20)^2 /NANT] dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]				

Frequency band 5150-5250 MHz
RSS-247 Issue 2:
For IEEE 802.11 a, the minimum 99% emission bandwidth is 16.683MHz
10 dBm + $10\log_{10}$ (16.683) = 22.22 dBm < 23 dBm
So the 22.22 dB limit applicable

For IEEE 802.11 n-HT20, the minimum 99% emission bandwidth is 16.683 MHz
10 dBm + $10\log_{10}$ (16.683) = 22.22 dBm < 23 dBm
So the 22.22 dB limit applicable

For IEEE 802.11 n-HT40/ac-VHT80, the minimum 99% emission bandwidth is 36.020 MHz
10 dBm + $10\log_{10}$ (36.020) = 25.57 dBm > 23 dBm
So the 23 dB limit applicable

Mode	Channel/ Frequency (MHz)	Maximum e.i.r.p (dBm)		Total e.i.r.p MIMO_ Chain 0+1 (dBm)	Limit (dBm)	Pass / Fail
		SISO				
		Chain 0	Chain 1			
IEEE 802.11a	36 (5180)	16.77	16.56	19.68	22.22	Pass
	44 (5220)	16.65	16.37	19.52	22.22	Pass
	48 (5240)	17.50	17.03	20.28	22.22	Pass
IEEE 802.11n-HT20	36 (5180)	16.21	16.08	19.16	22.22	Pass
	44 (5220)	15.93	15.81	18.88	22.22	Pass
	48 (5240)	17.75	17.29	20.54	22.22	Pass
IEEE 802.11n-HT40	38 (5190)	15.62	15.82	18.73	22.74	Pass
	46 (5230)	18.20	17.90	21.06	22.74	Pass
IEEE 802.11ac-VHT20	36 (5180)	16.02	16.04	19.04	22.22	Pass
	44 (5220)	15.93	16.22	19.09	22.22	Pass
	48 (5240)	17.76	17.47	20.63	22.22	Pass
IEEE 802.11ac-VHT40	38 (5190)	15.78	15.66	18.73	22.74	Pass
	46 (5230)	18.16	17.72	20.95	22.74	Pass
IEEE 802.11ac-VHT80	42 (5210)	12.83	13.16	16.01	22.74	Pass

Remark:
1. Maximum e.i.r.p = Maximum conducted output power + Antenna Gain
2. Total e.i.r.p (Chain 0+1) = 10*log[($10^{\text{Chain 0/10}}$)+($10^{\text{Chain 1/10}}$)] + Directional gain