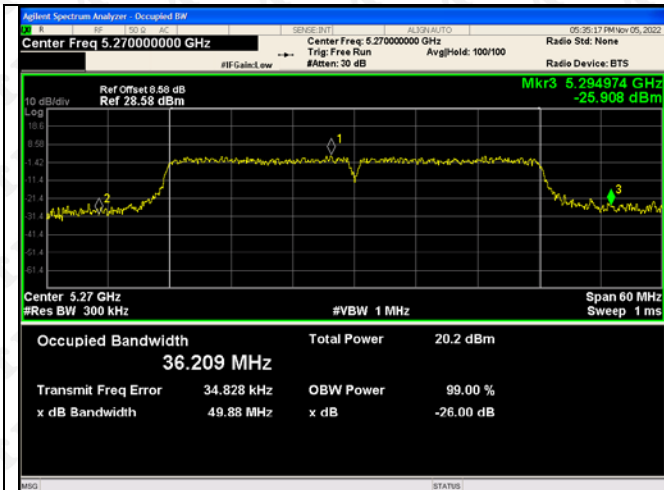
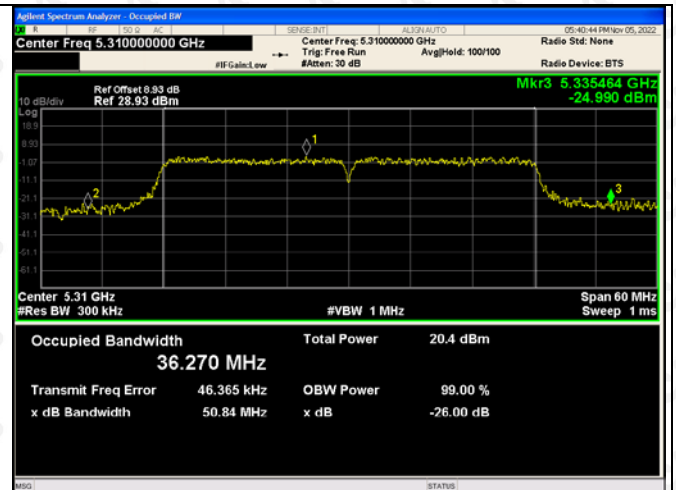


5260-5320MHz  
ANT1

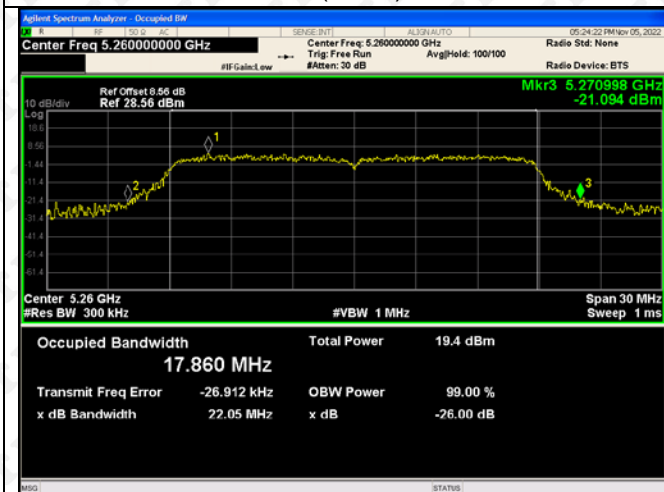




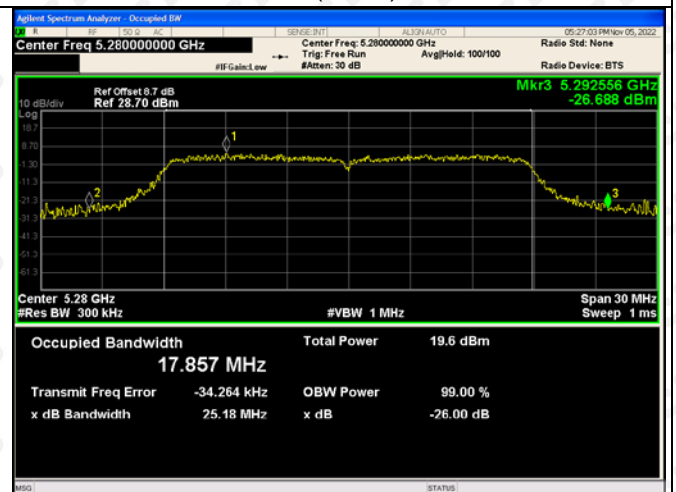
802.11ac(VH20)-5260



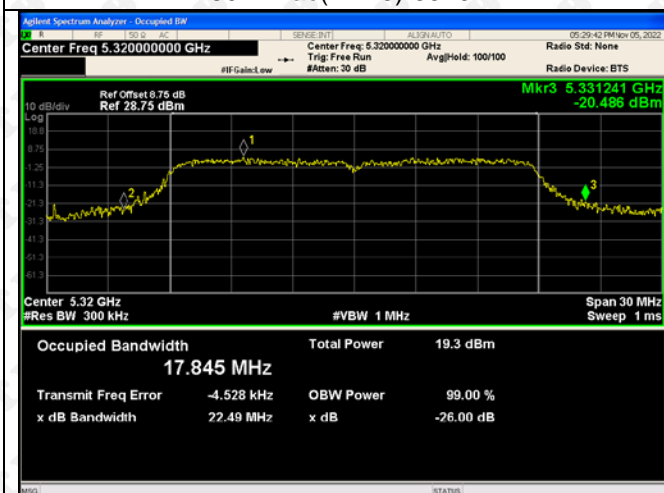
802.11ac(VH20)-5280



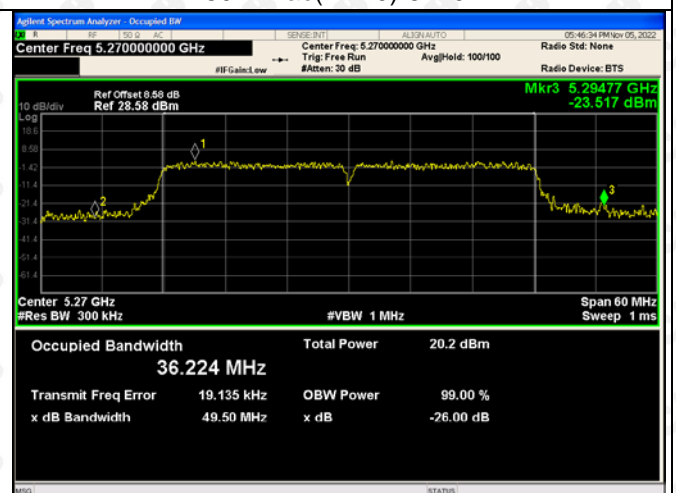
802.11ac(VH20)-5320



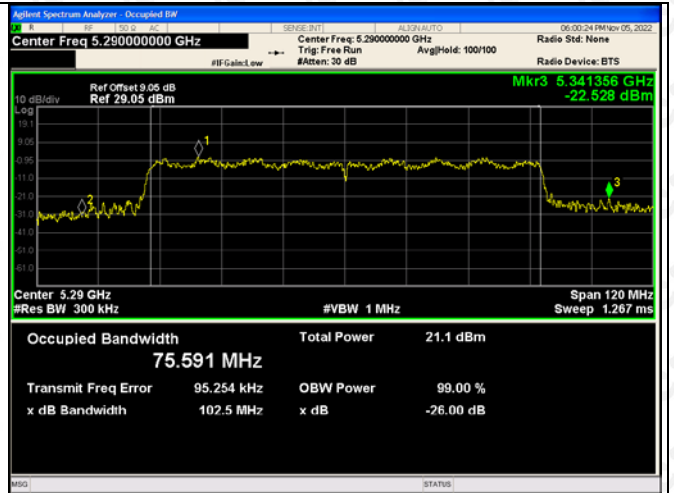
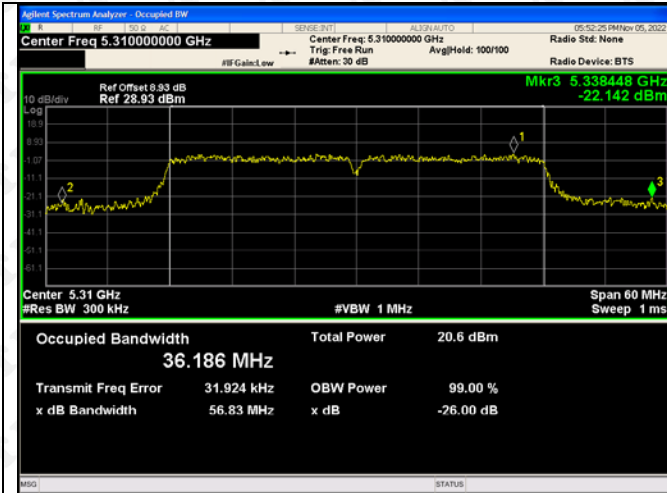
802.11ac(VH40)-5270



802.11ac(VH40)-5310

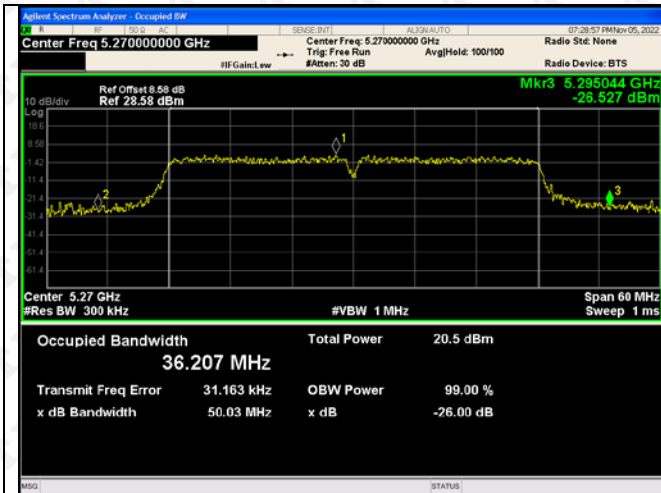


802.11ac(VH80)-5290

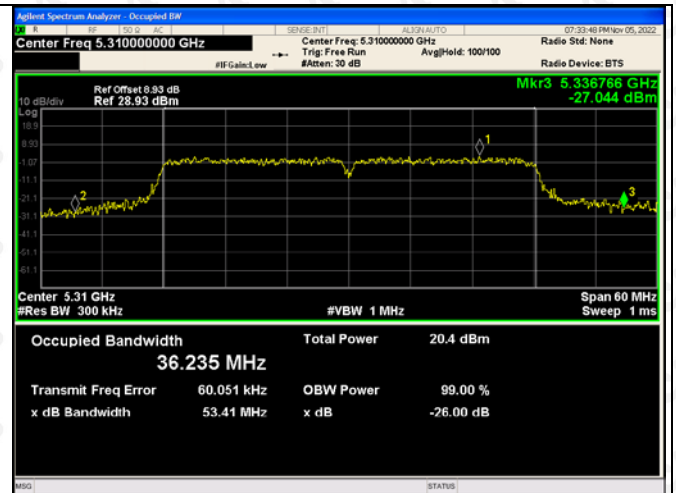


ANT2

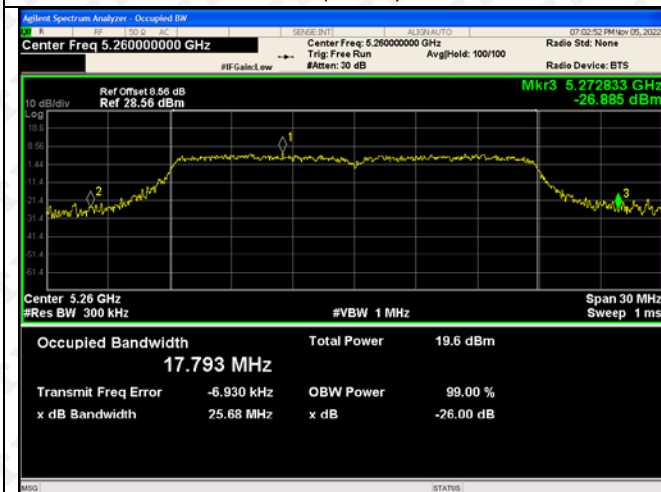




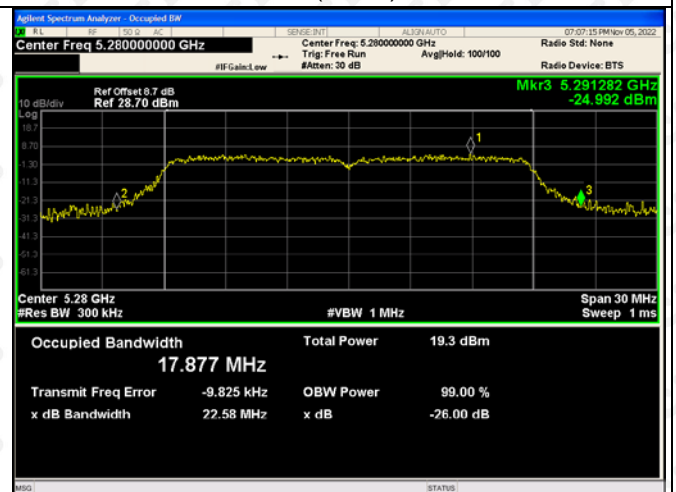
802.11ac(VH20)-5260



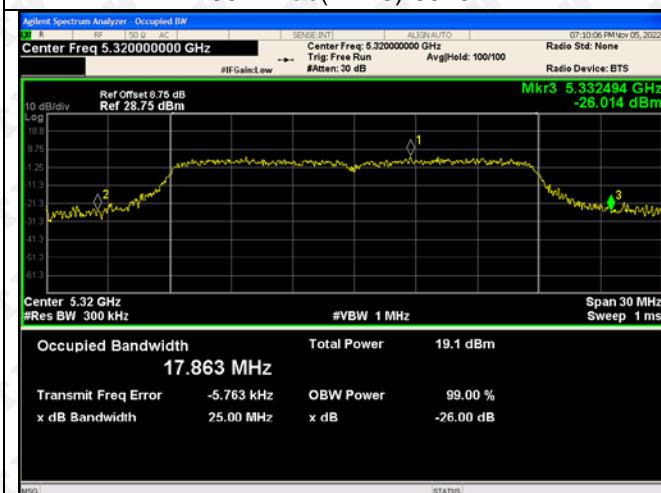
802.11ac(VH20)-5280



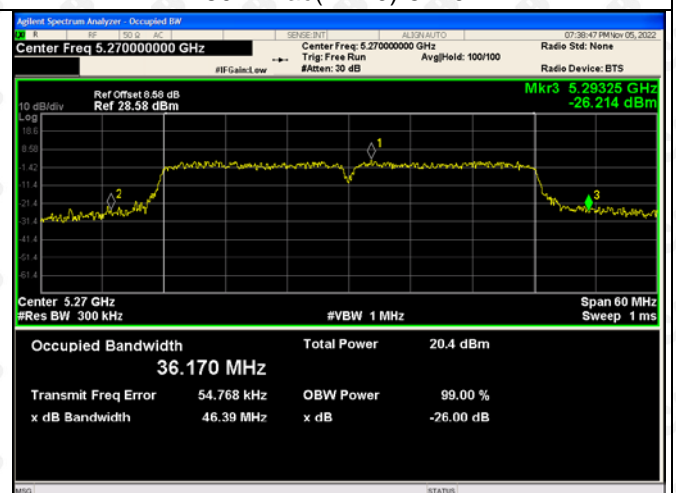
802.11ac(VH20)-5320



802.11ac(VH40)-5270



802.11ac(VH40)-5310



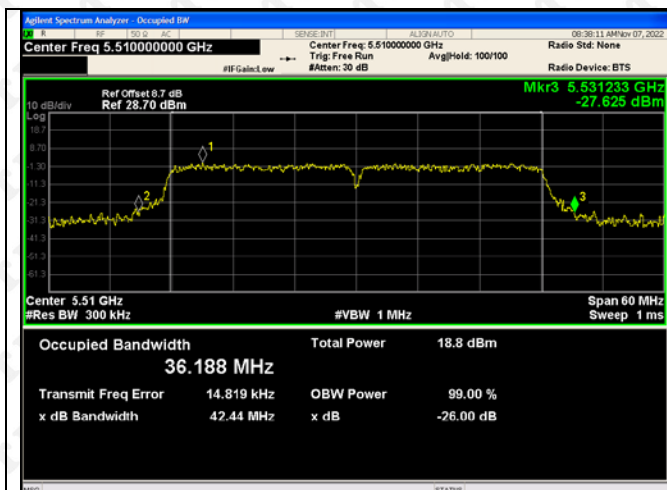
802.11ac(VH80)-5290



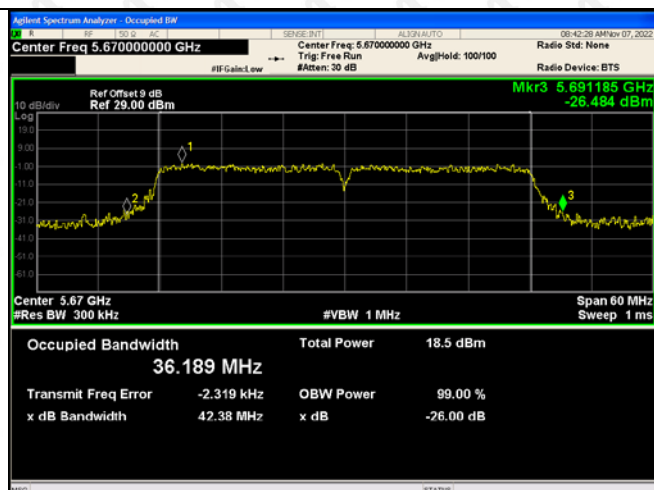
5500-5700MHz  
ANT1



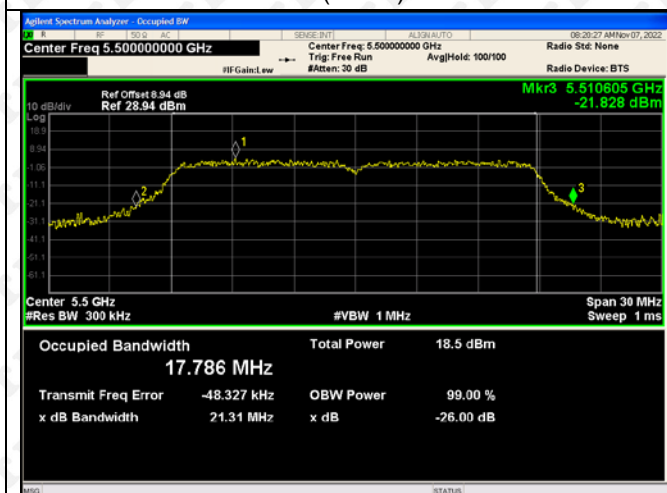




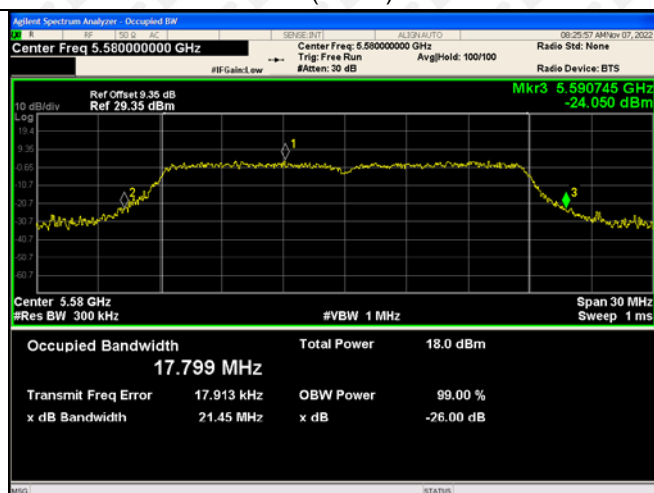
802.11ac(VH20)-5500



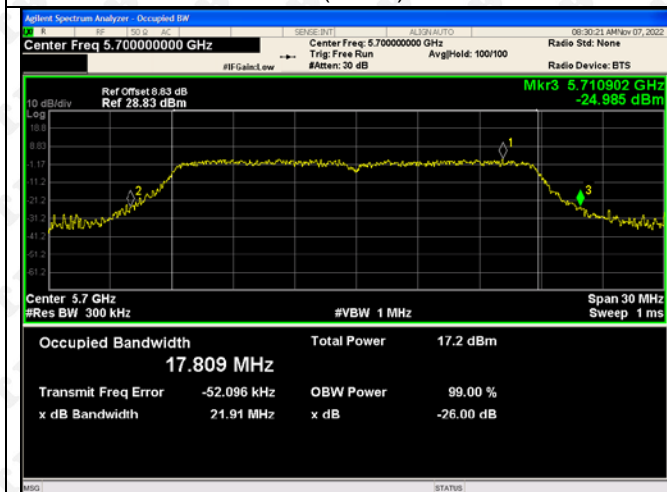
802.11ac(VH20)-5580



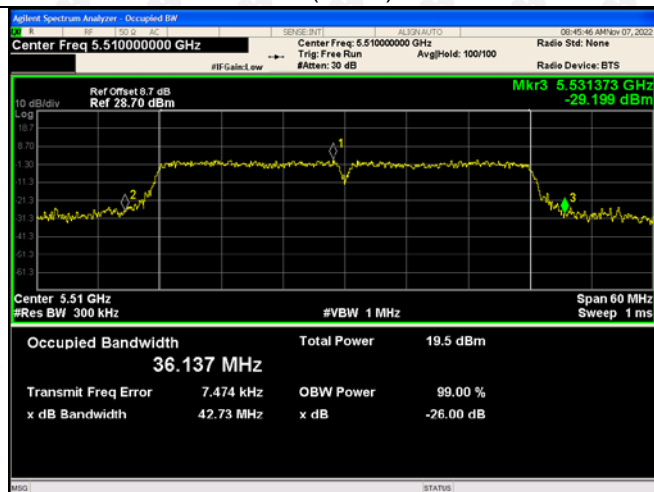
802.11ac(VH20)-5700



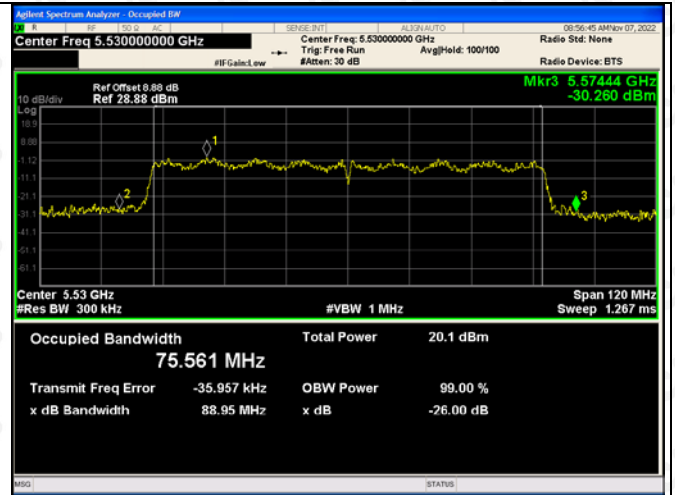
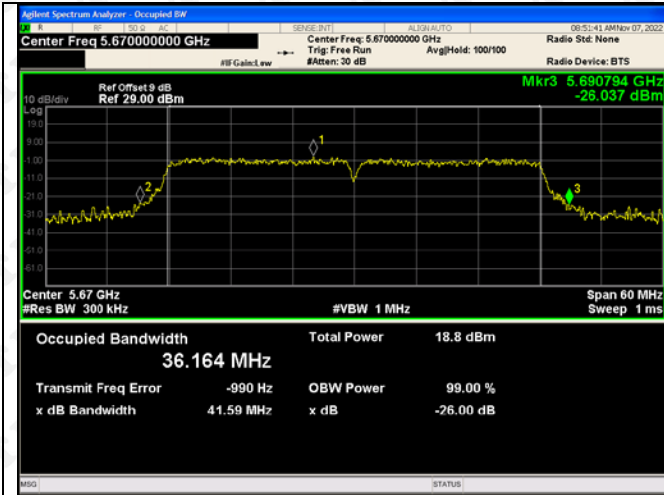
802.11ac(VH40)-5510



802.11ac(VH40)-5670

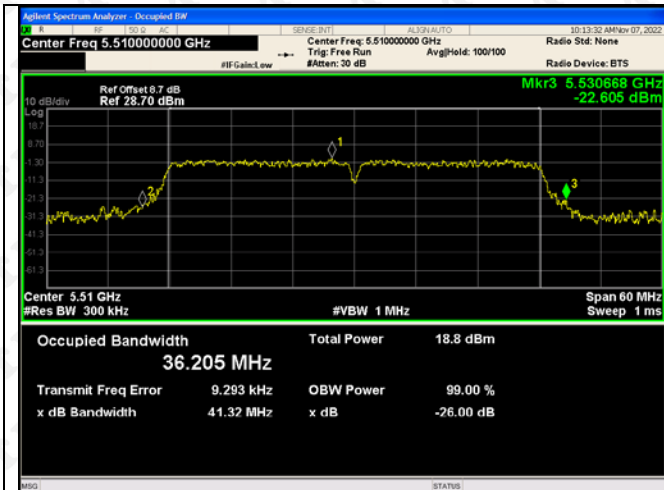


802.11ac(VH80)-5530

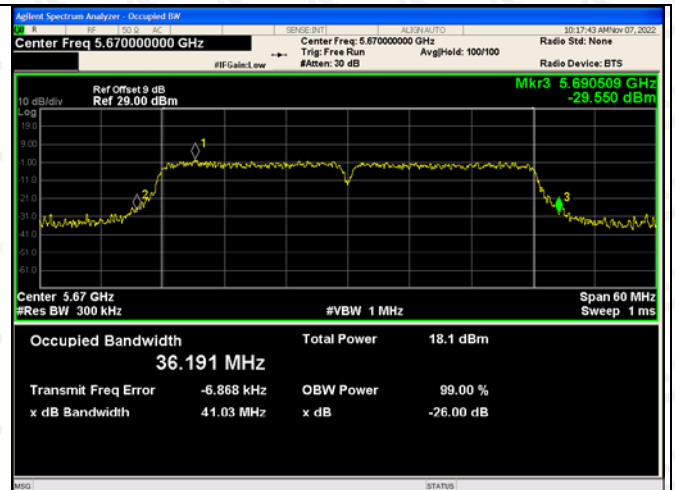


ANT2

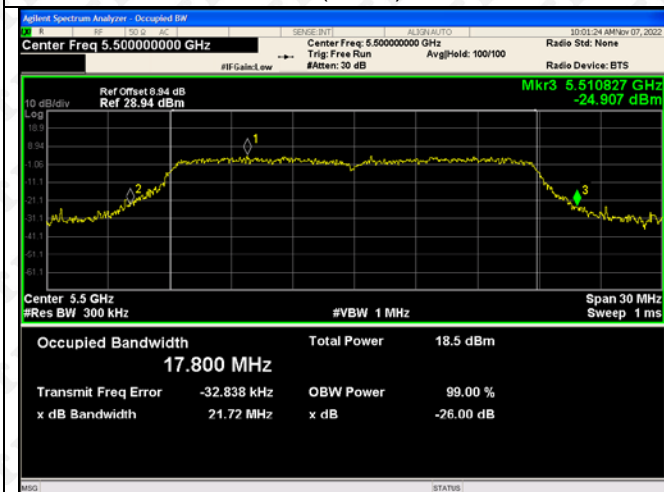




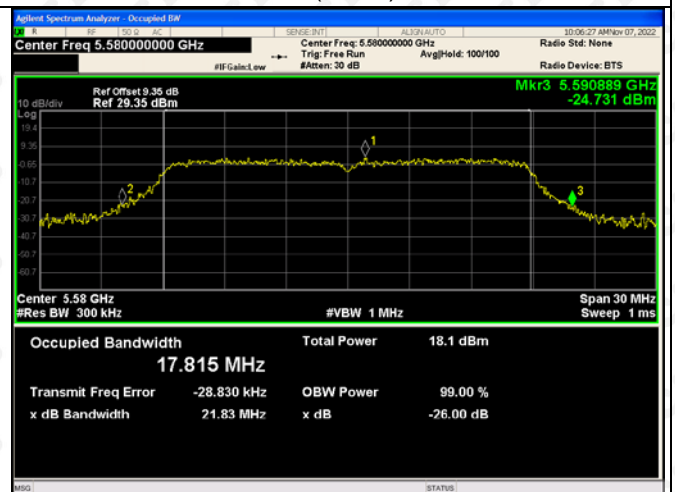
802.11ac(VH20)-5500



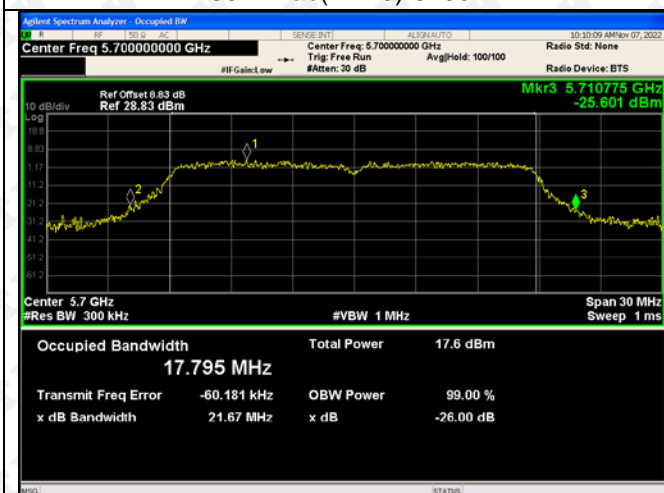
802.11ac(VH20)-5580



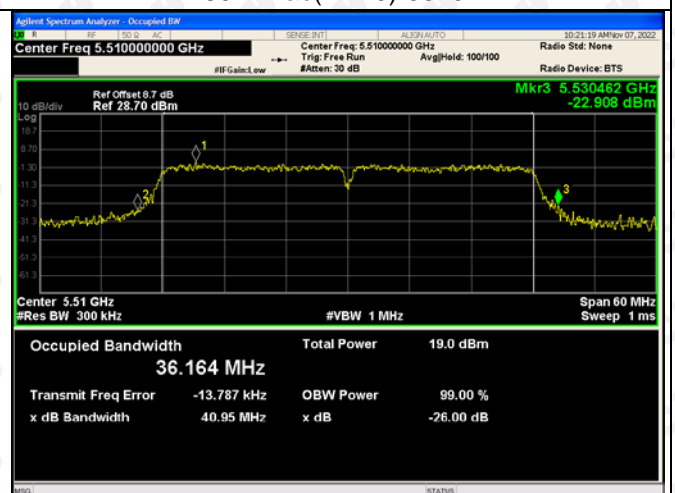
802.11ac(VH20)-5700



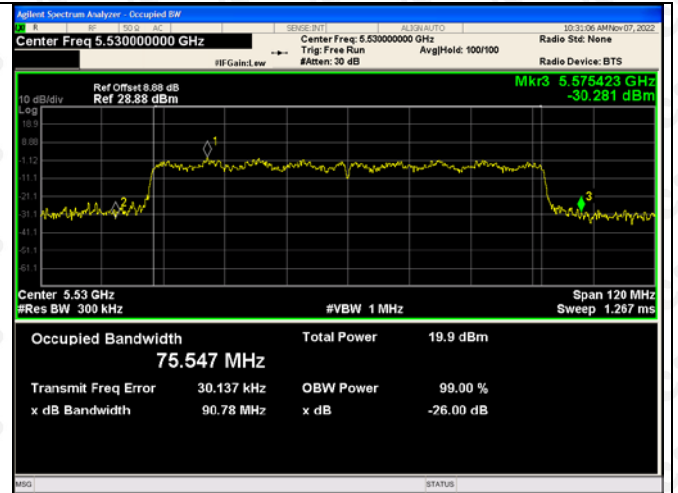
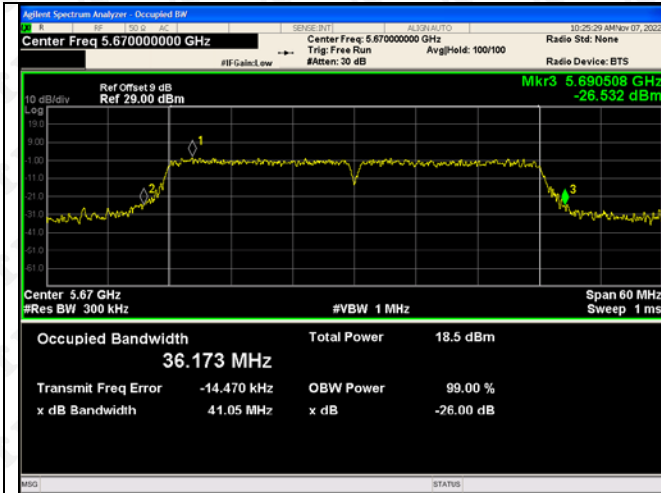
802.11ac(VH40)-5510



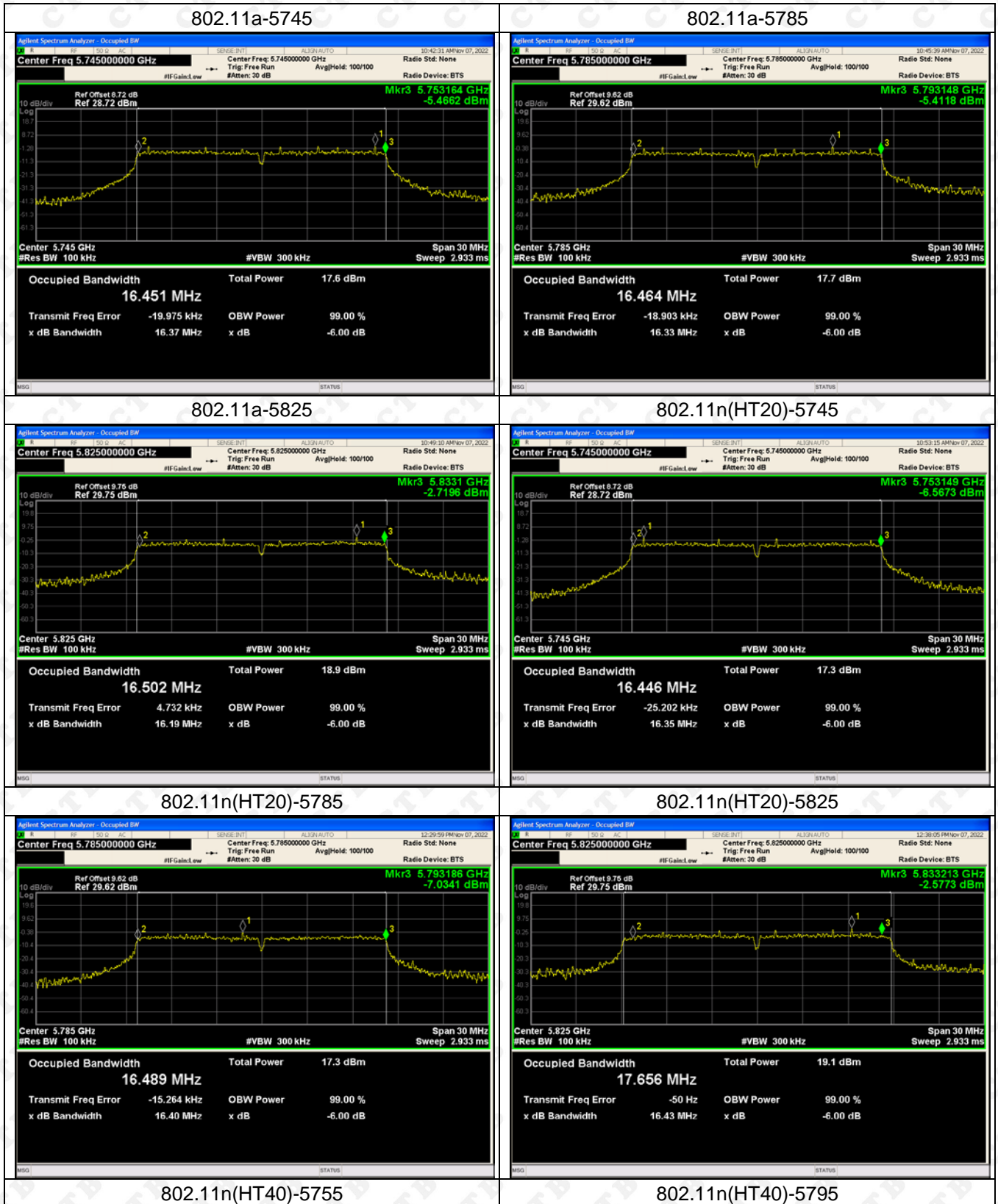
802.11ac(VH40)-5670

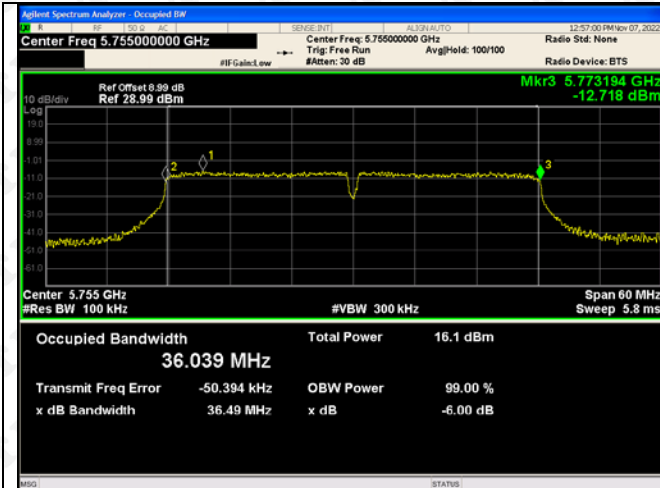


802.11ac(VH80)-5530

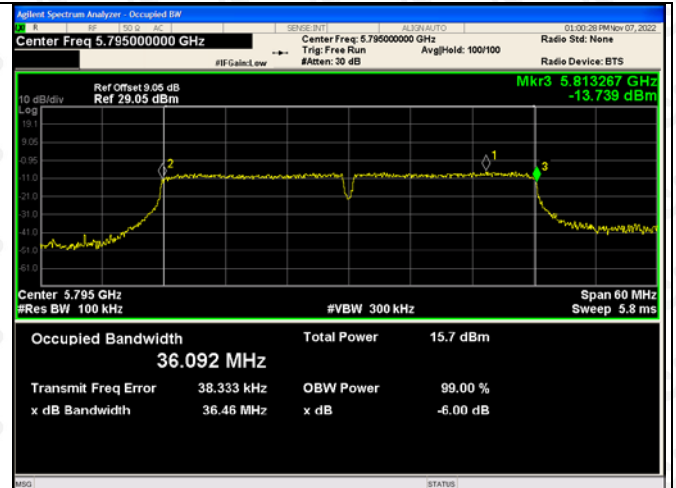


5745-5825MHz  
ANT1

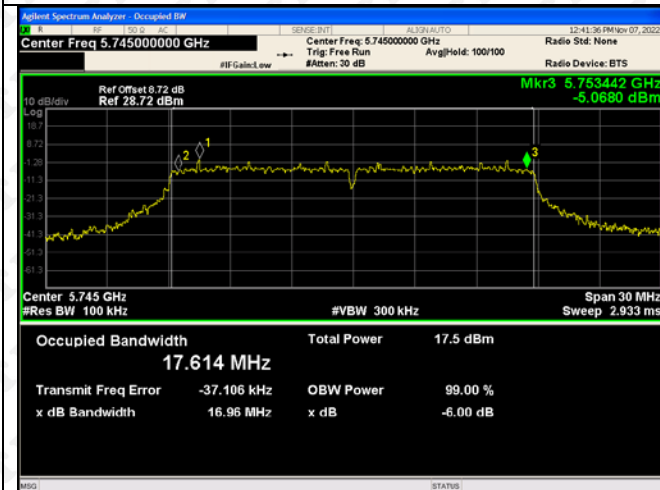




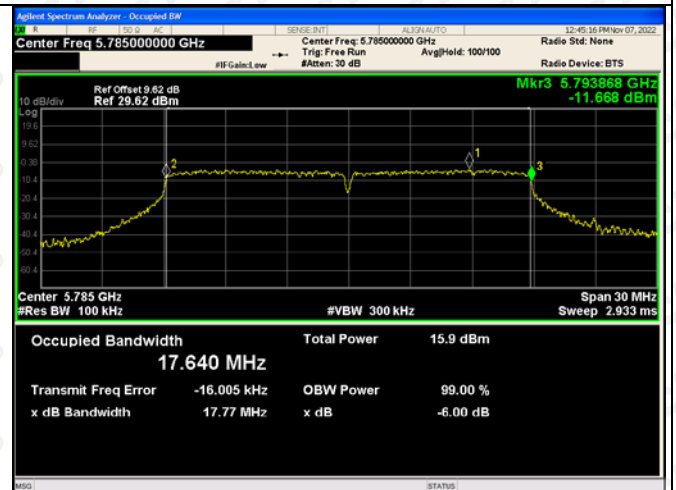
802.11ac(VH20)-5745



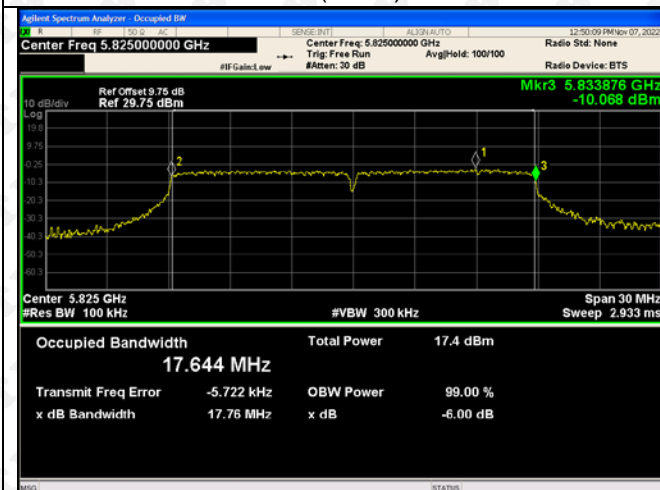
802.11ac(VH20)-5785



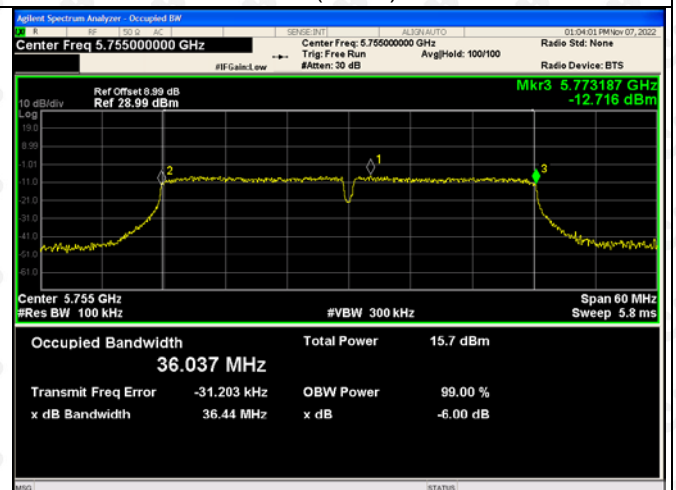
802.11ac(VH20)-5825



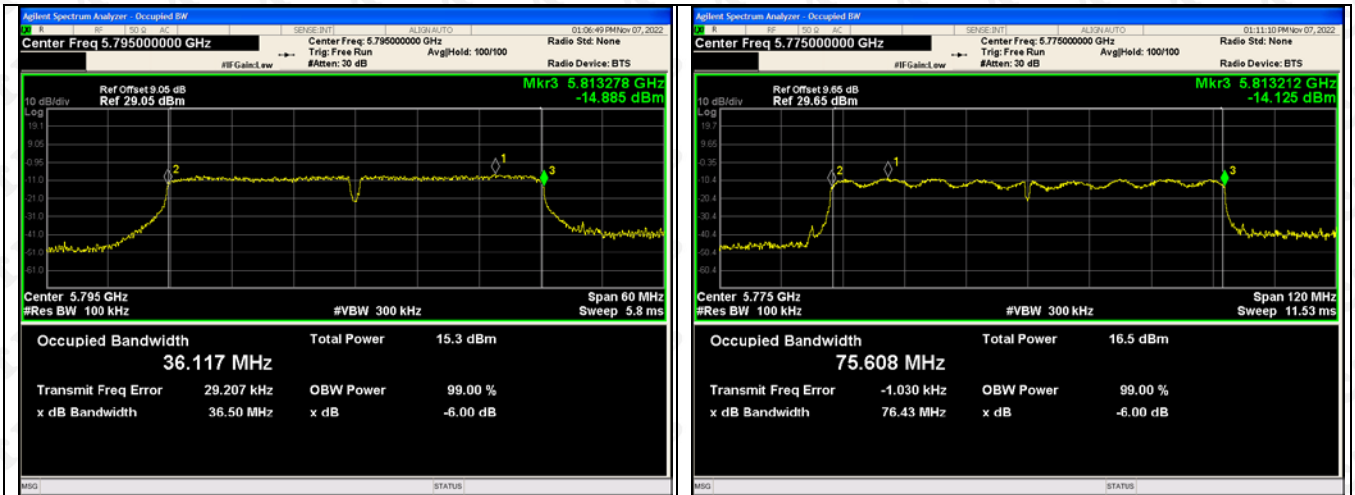
802.11ac(VH40)-5755



802.11ac(VH40)-5795



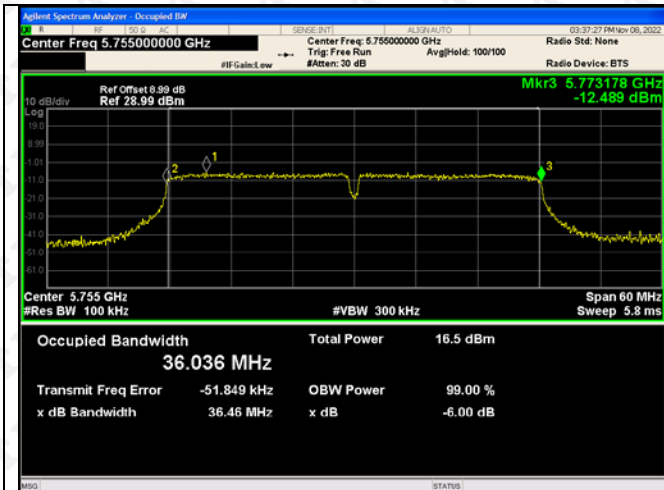
802.11ac(VH80)-5775



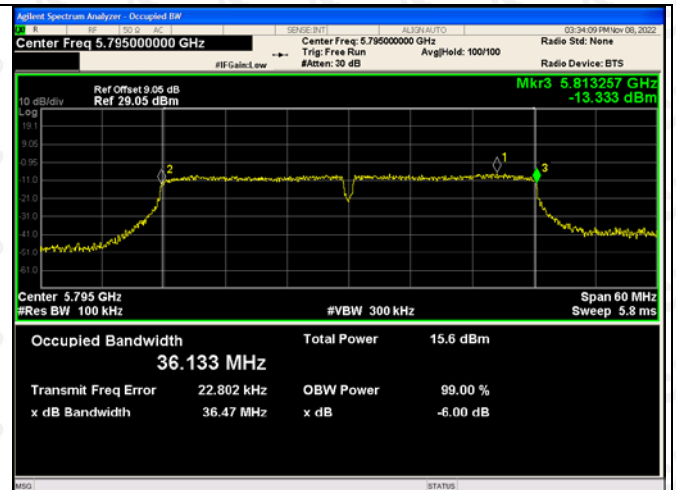


ANT2

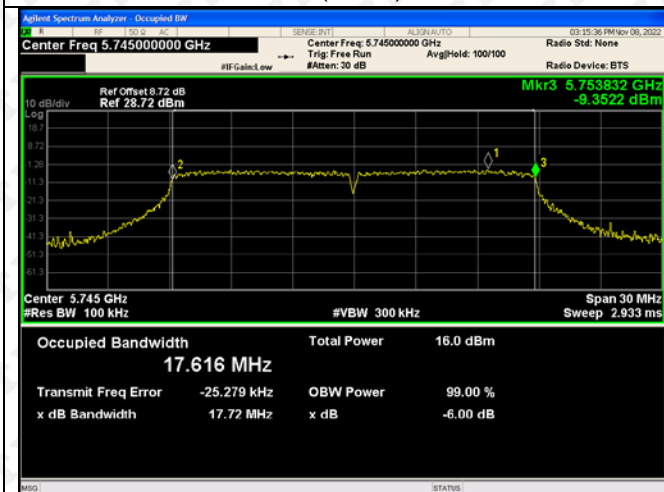




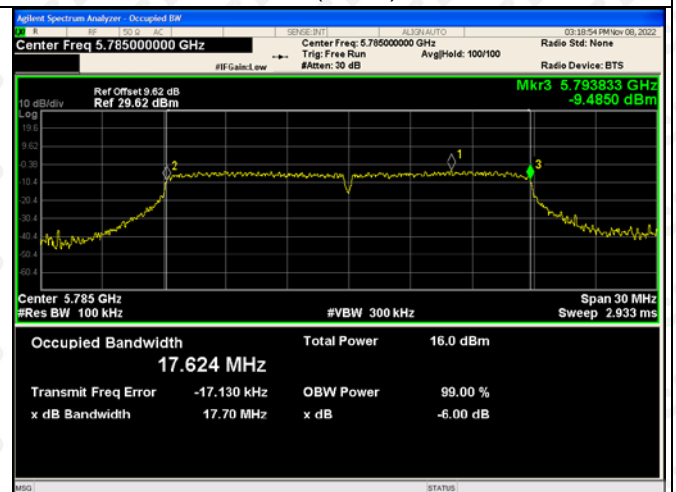
802.11ac(VH20)-5745



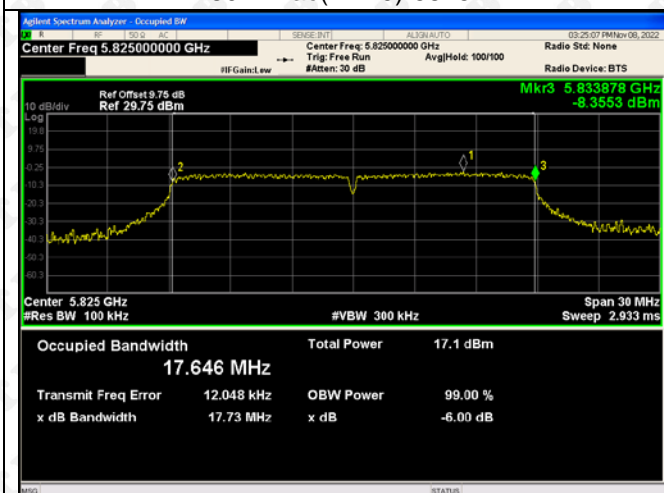
802.11ac(VH20)-5785



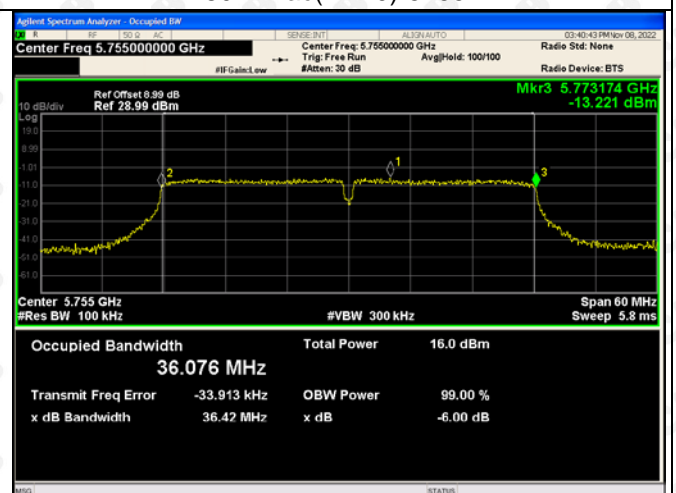
802.11ac(VH20)-5825



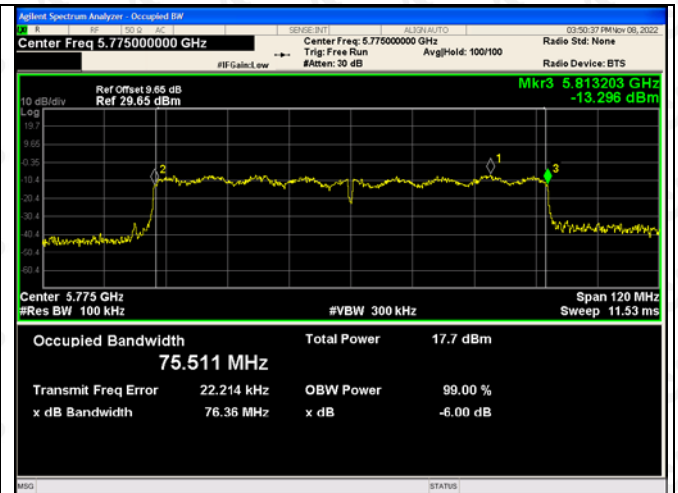
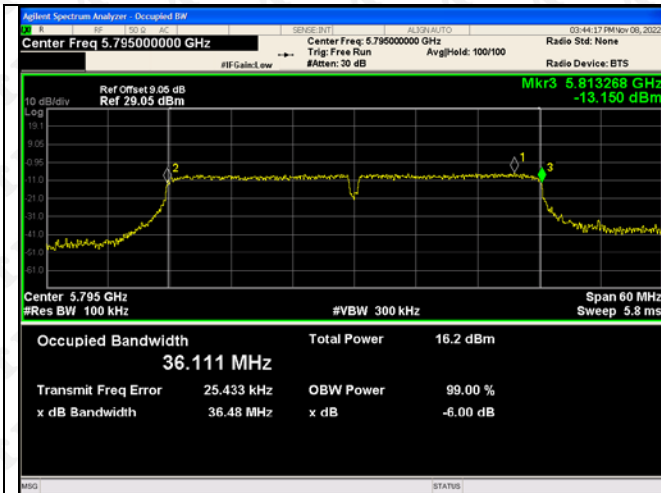
802.11ac(VH40)-5755



802.11ac(VH40)-5795

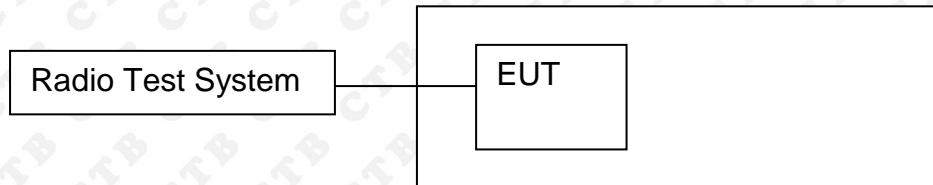


802.11ac(VH80)-5775



## 11. POWER SPECTRAL DENSITY

### 11.1 Block Diagram Of Test Setup



### 11.2 Limit

(1) For the band 5.15-5.25 GHz.

(iv) For mobile and portable 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 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. 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.

(3) 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.

### 11.3 Test procedure

According to KDB789033 D02v02r01 sectionE, the following is the measurement procedure.

For devices operating in the bands 5.15–5.25 GHz, 5.25–5.35 GHz, and 5.47–5.725 GHz, the preceding procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in Section 15.407(a)(5). For devices operating in the band 5.725–5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

a) Set  $RBW \geq 1/T$ , where  $T$  is defined in II.B.I.a).

b) Set  $VBW \geq 3 RBW$ .

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add  $10 \log(500 \text{ kHz}/RBW)$  to the measured result, whereas RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add  $10 \log(1\text{MHz}/\text{RBW})$  to the measured result, whereas  $\text{RBW} (< 1 \text{ MHz})$  is the reduced resolution bandwidth of spectrum analyzer set during measurement.

e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the II.F.5.c) and II.F.5.d), since  $\text{RBW}=100 \text{ kHz}$  is available on nearly all spectrum analyzers.

## 11.4 Test Result

5180-5240MHz

ANT1+ANT2

Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm)	Result
802.11a	5180	6.619	6.898	/	11	Pass
	5200	6.987	6.516	/	11	Pass
	5240	6.848	6.976	/	11	Pass
802.11n(HT20)	5180	6.353	6.219	9.771	11	Pass
	5200	6.56	6.704	9.768	11	Pass
	5240	7.037	7.217	9.923	11	Pass
802.11n(HT40)	5190	4.545	3.964	9.297	11	Pass
	5230	4.297	4.745	9.643	11	Pass
802.11ac(VH20)	5210	2.603	2.689	10.138	11	Pass
	5180	6.445	7.019	7.275	11	Pass
	5200	6.946	6.64	7.537	11	Pass
802.11ac(VH40)	5240	7.166	6.88	5.657	11	Pass
	5190	3.964	4.111	9.752	11	Pass
802.11ac(VH80)	5230	4.357	4.314	9.806	11	Pass

5260-5320MHz

ANT1+ANT2

Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm)	Result
802.11a	5260	7.111	7.265	/	10.86	Pass
	5280	7.037	6.68	/	10.86	Pass
	5320	7.453	6.727	/	10.86	Pass
802.11n(HT20)	5260	6.762	6.975	9.880	10.86	Pass
	5280	6.663	6.58	9.632	10.86	Pass
	5320	6.377	6.339	9.368	10.86	Pass
802.11n(HT40)	5270	3.735	4.157	6.961	10.86	Pass
	5310	4.298	4.248	7.283	10.86	Pass
802.11ac(VH20)	5260	2.775	2.691	5.744	10.86	Pass
	5280	6.692	6.705	9.709	10.86	Pass
	5320	6.735	6.71	9.733	10.86	Pass
802.11ac(VH40)	5270	6.517	6.688	9.614	10.86	Pass
	5310	6.418	3.856	10.199	10.86	Pass
802.11ac(VH80)	5290	4.384	4.672	9.872	10.86	Pass

5500-5700MHz  
 ANT1+ANT2

Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm)	Result
802.11a	5500	6.548	7.13	/	10.63	Pass
	5580	7.351	7.374	/	10.63	Pass
	5700	6.47	6.971	/	10.63	Pass
802.11n(HT20)	5500	6.795	6.834	9.825	10.63	Pass
	5580	6.694	6.366	9.543	10.63	Pass
	5700	5.958	6.005	8.992	10.63	Pass
802.11n(HT40)	5510	4.619	4.757	7.699	10.63	Pass
	5670	4.354	4.062	7.221	10.63	Pass
802.11ac(VH20)	5530	1.61	3.172	5.471	10.63	Pass
	5500	7.385	7.233	10.320	10.63	Pass
	5580	6.662	6.64	9.661	10.63	Pass
802.11ac(VH40)	5700	5.956	6.192	9.086	10.63	Pass
	5510	4.406	3.864	9.825	10.63	Pass
802.11ac(VH80)	5670	4.078	3.445	9.543	10.63	Pass

 5745-5825MHz  
 ANT1+ANT2

Test mode	Test Channel (MHz)	PSD [dBm/500kHz] ANT 1	PSD [dBm/500kHz] ANT 2	PSD [dBm/500kHz] Total	Limit (dBm/500kHz)	Result
802.11a	5745	4.088	1.436	/	29.85	Pass
	5785	3.827	1.629	/	29.85	Pass
	5825	4.742	3.954	/	29.85	Pass
802.11n(HT20)	5745	3.926	2.788	6.404	29.85	Pass
	5785	2.282	1.807	5.061	29.85	Pass
	5825	3.562	3.594	6.588	29.85	Pass
802.11n(HT40)	5755	-1.422	-1.165	1.719	29.85	Pass
	5795	-1.212	-0.272	2.294	29.85	Pass
802.11ac(VH20)	5745	-2.801	-1.273	1.040	29.85	Pass
	5785	3.355	1.829	5.669	29.85	Pass
	5825	3.645	2.139	5.967	29.85	Pass
802.11ac(VH40)	5755	4.847	3.897	7.408	29.85	Pass
	5795	-1.081	-0.19	6.404	29.85	Pass
802.11ac(VH80)	5775	-1.355	-1.429	5.061	29.85	Pass