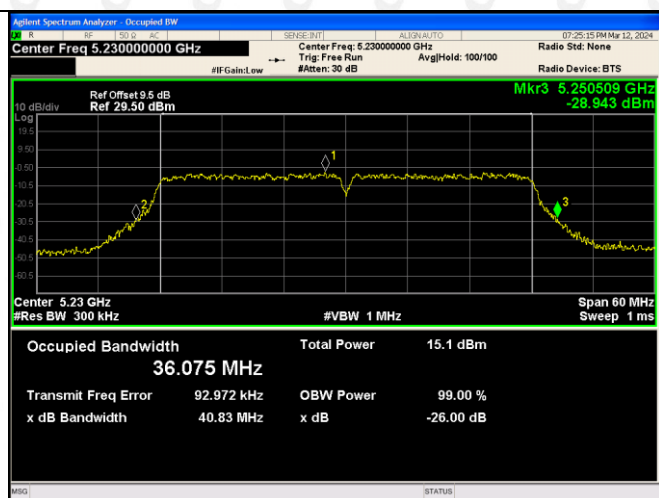
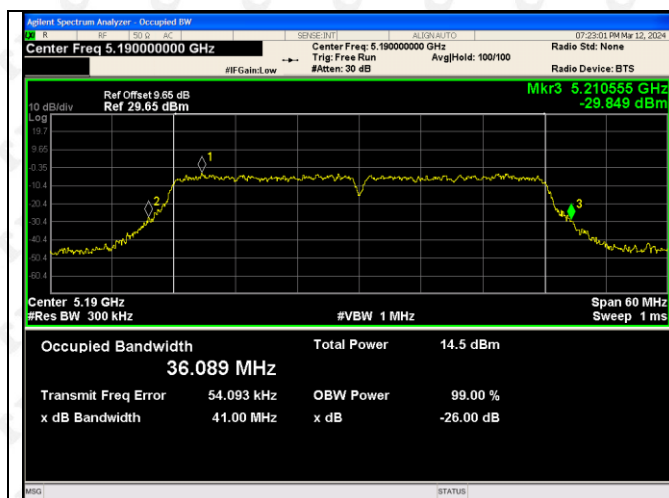
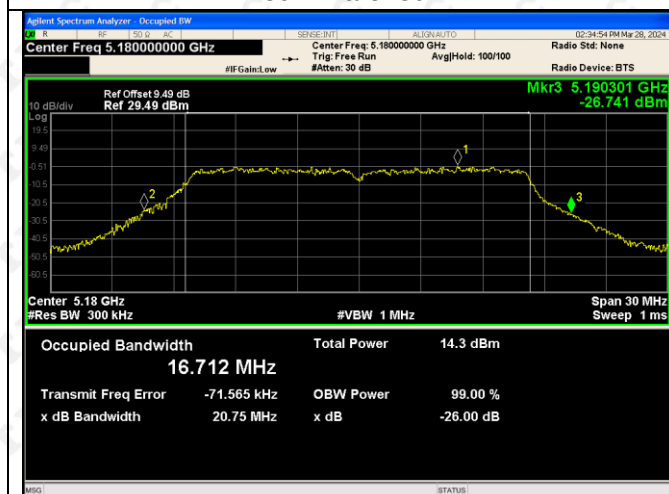


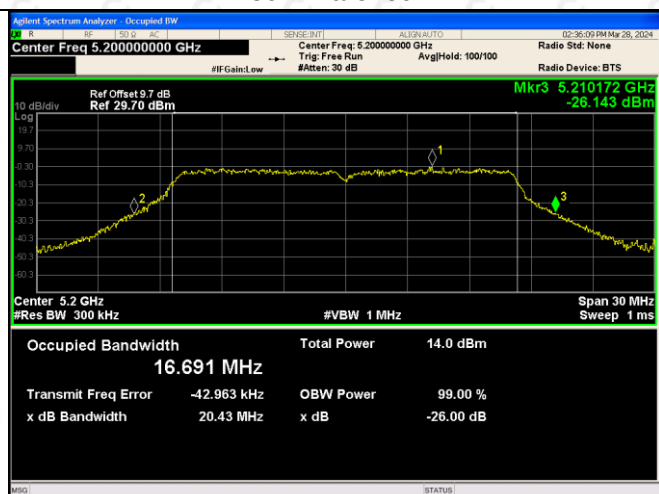


ANT2:
5180-5240MHz

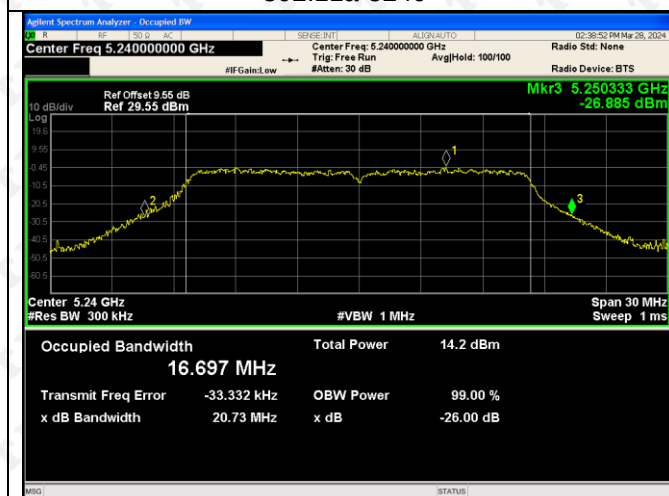
802.11a-5180



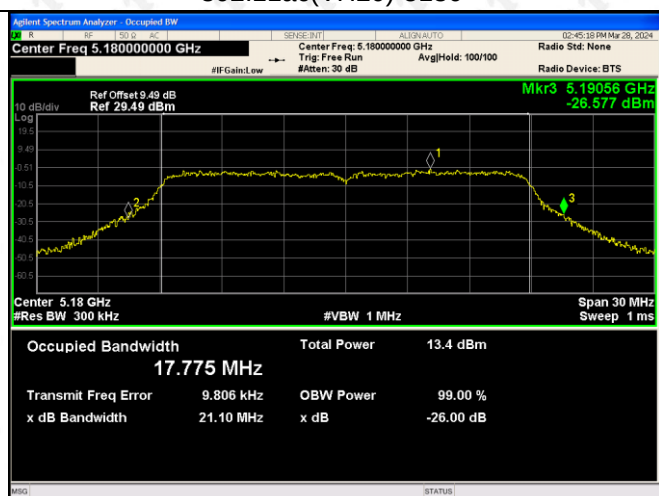
802.11a-5200



802.11a-5240

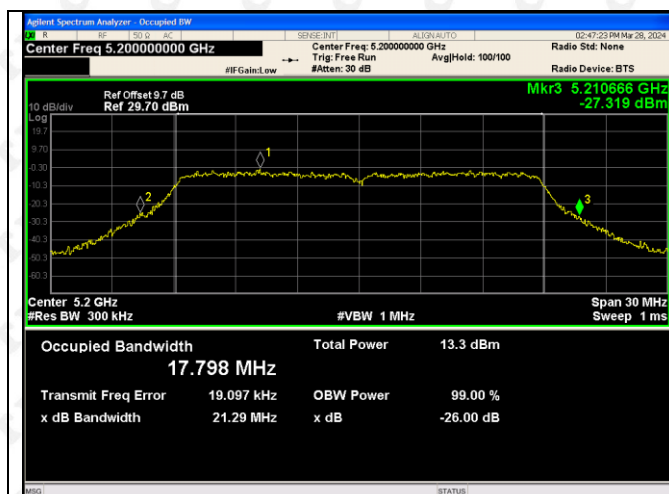


802.11ac(VH20)-5180

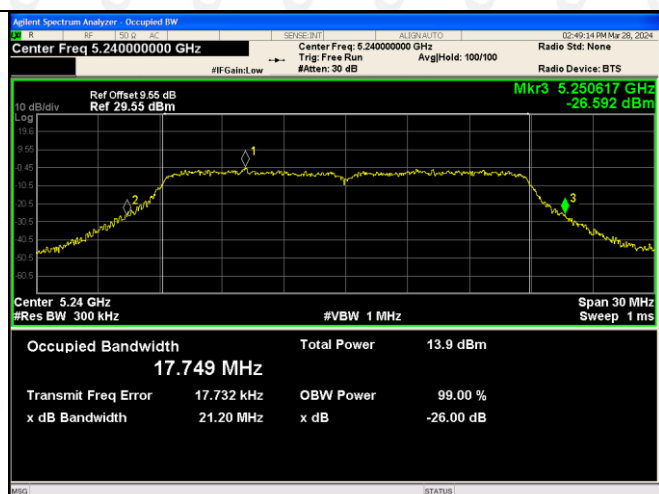


802.11ac(VH20)-5200

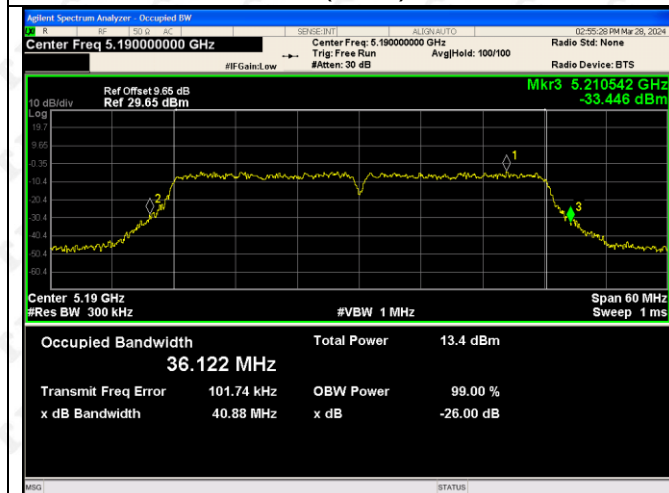
802.11ac(VH20)-5240



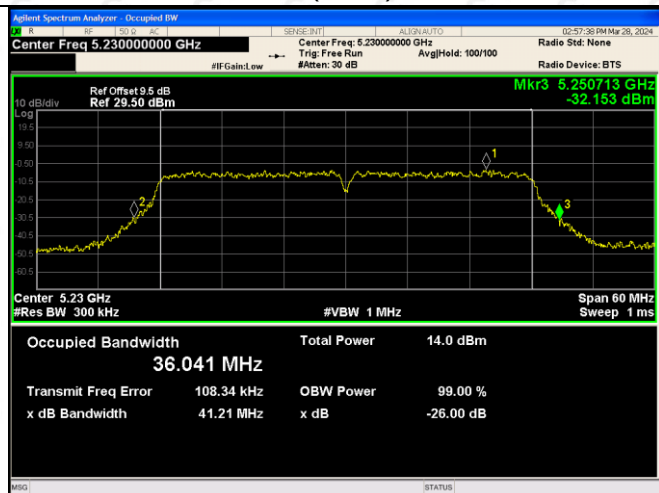
802.11ac(VH40)-5190



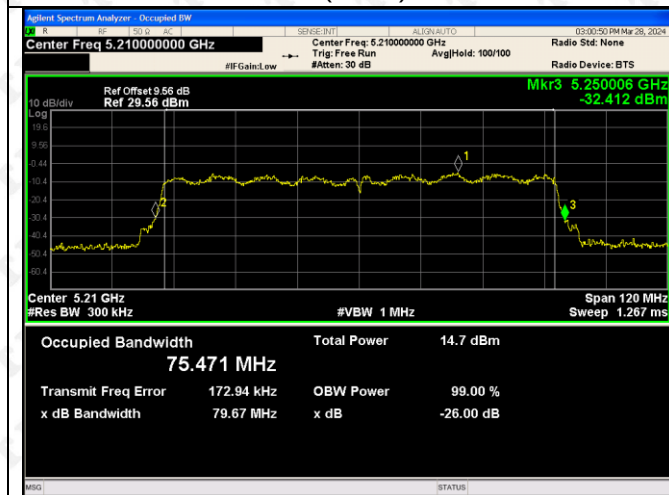
802.11ac(VH40)-5230



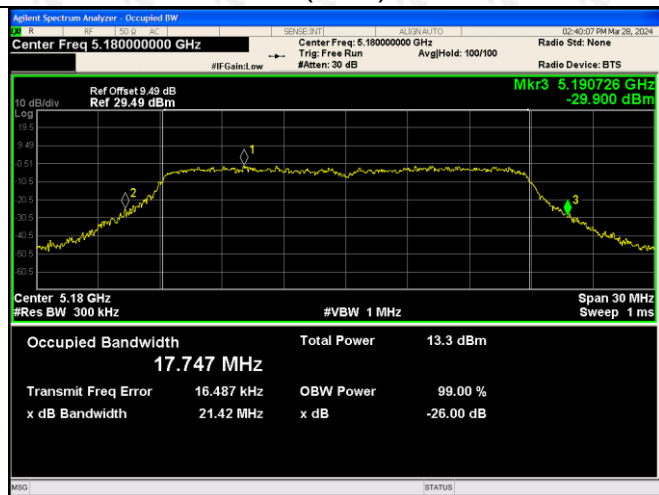
802.11ac(VH80)-5210



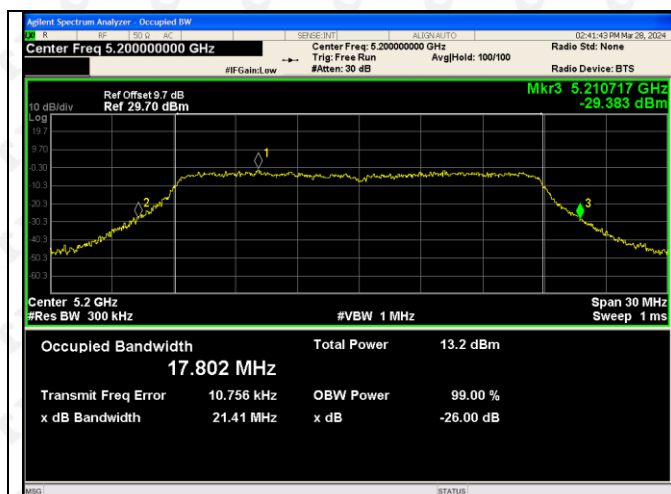
802.11n(HT20)-5180



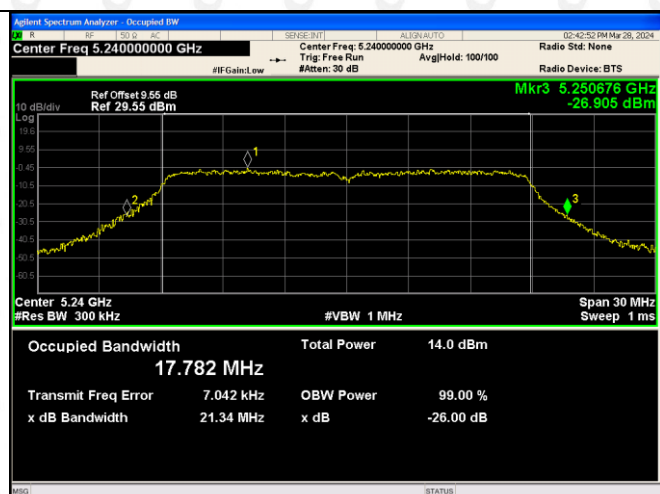
802.11n(HT20)-5200



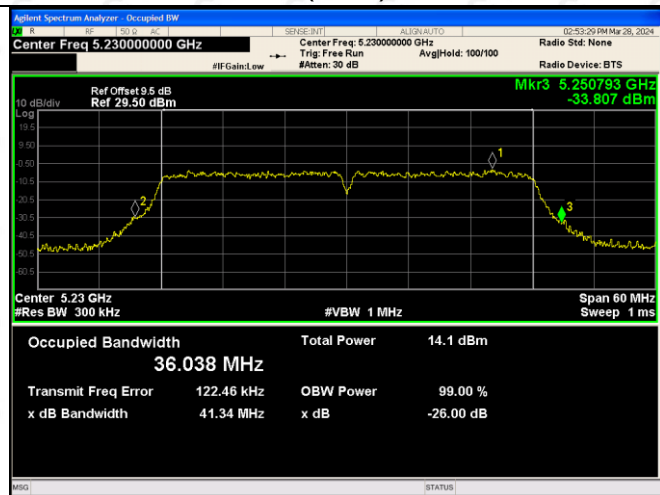
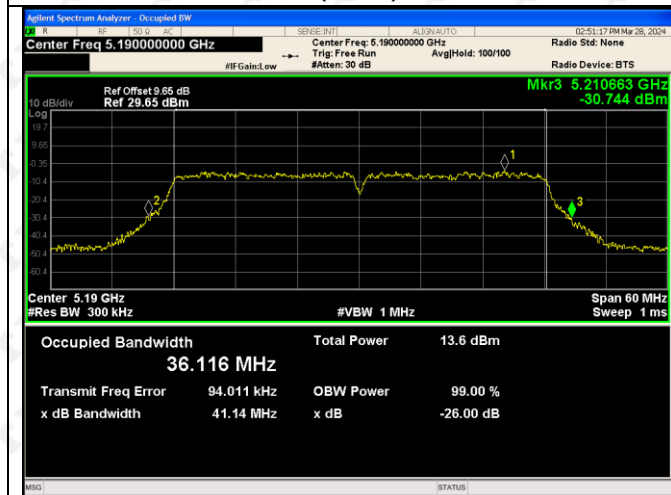
802.11n(HT20)-5240



802.11n(HT40)-5190

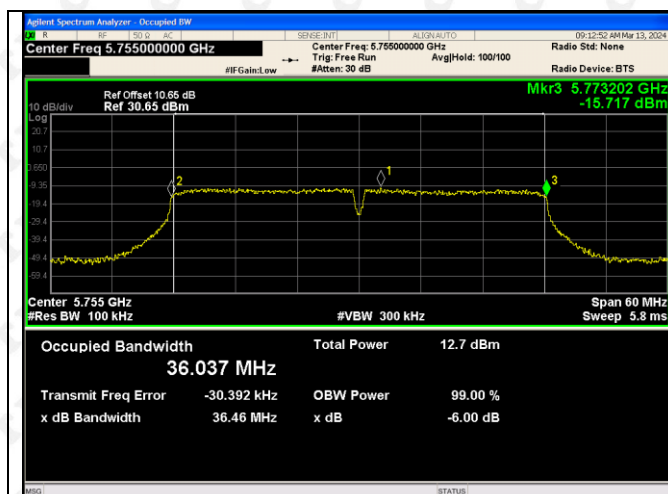


802.11n(HT40)-5230

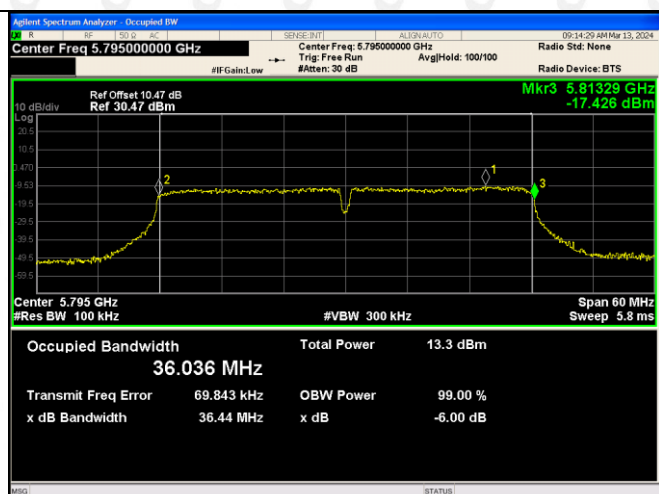


ANT1:
5745-5825MHz

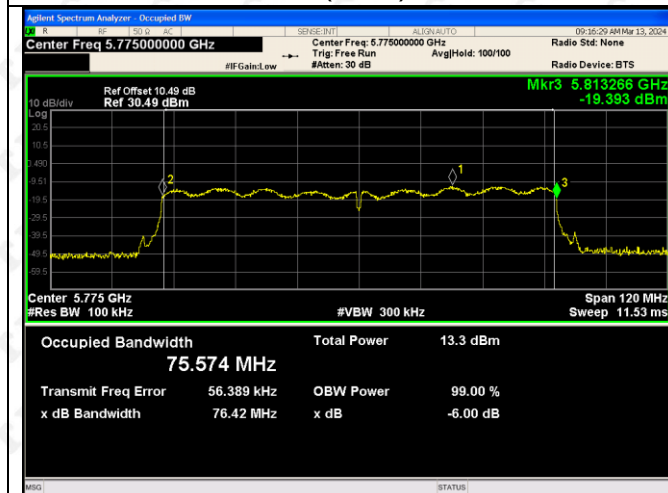




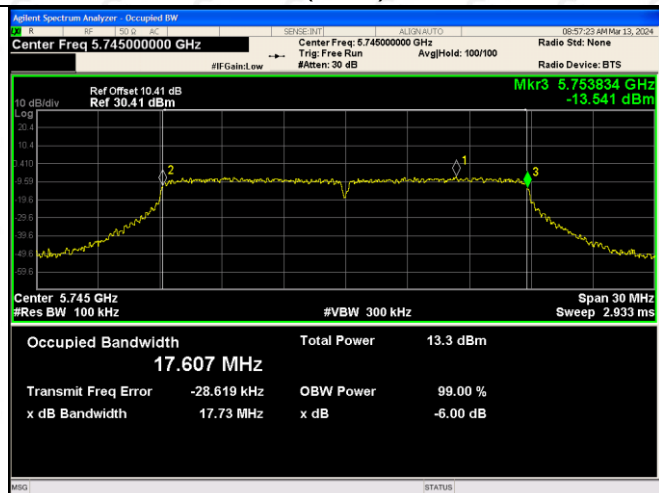
802.11ac(VH80)-5775



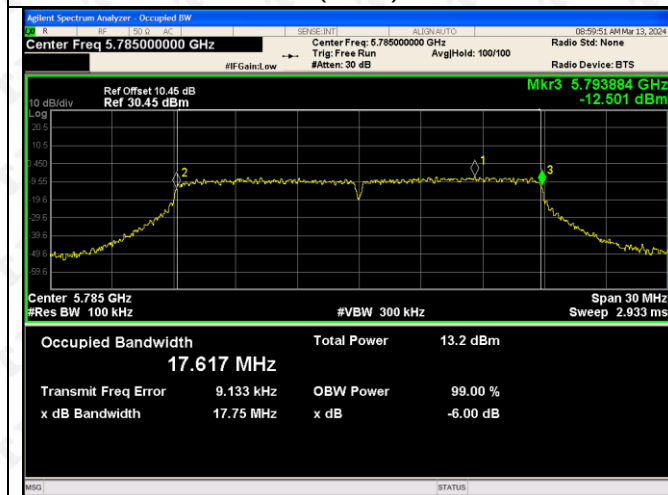
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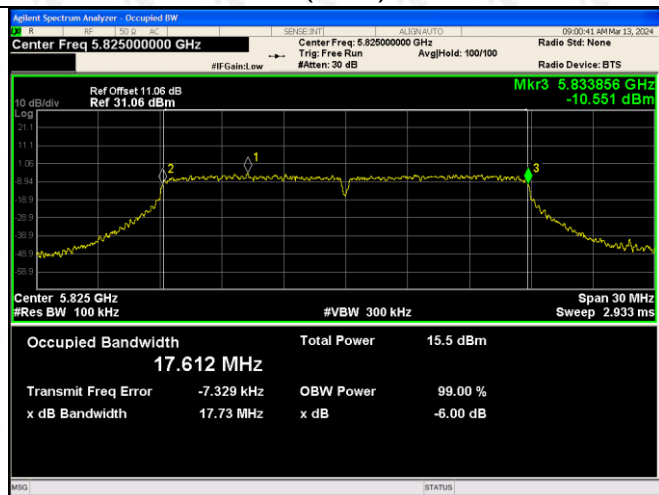
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802.11n(HT20)-5745



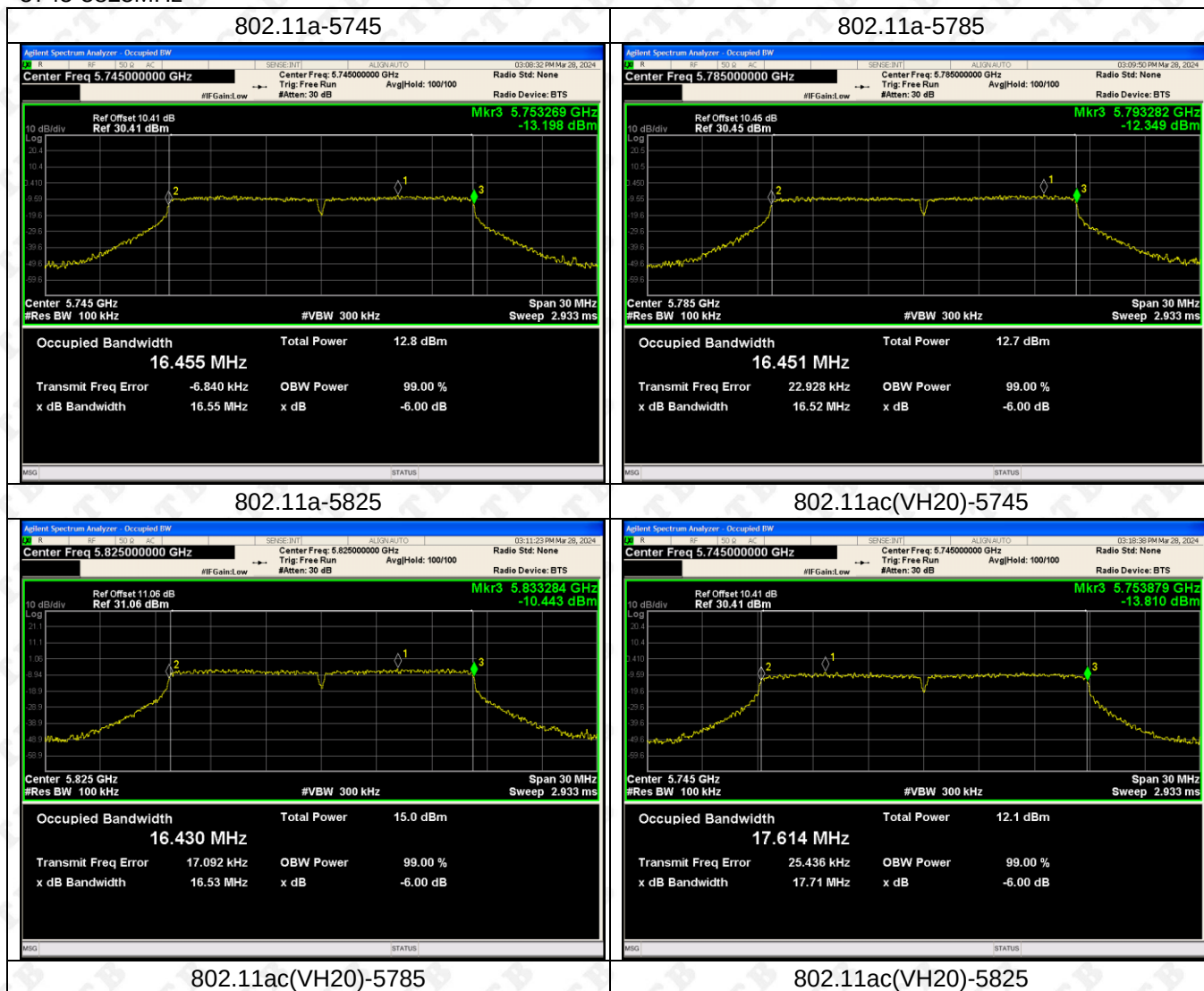
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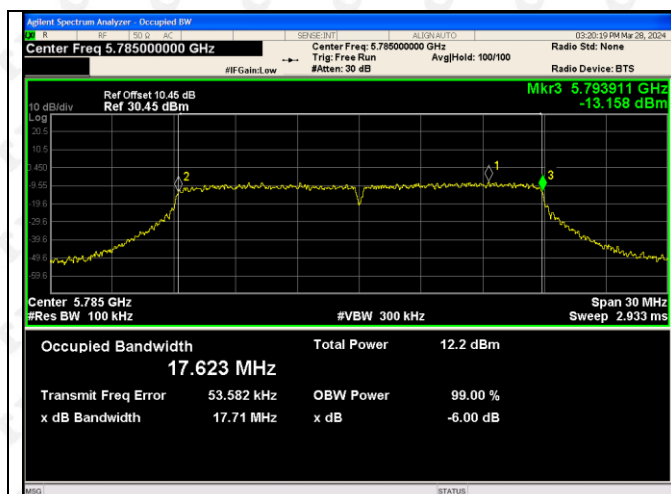


802.11n(HT40)-5795

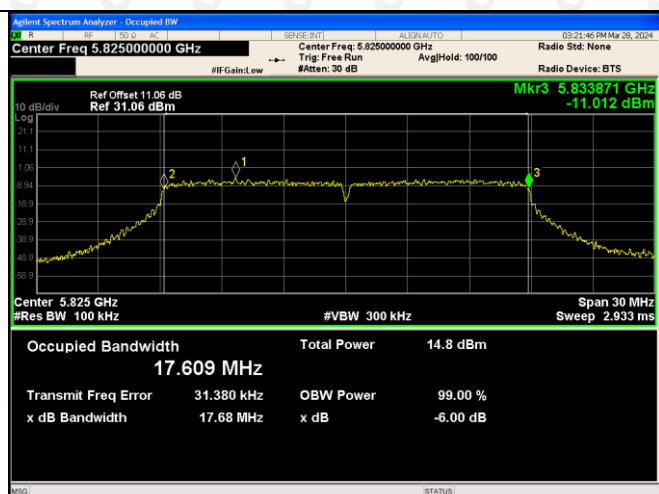


ANT2:
5745-5825MHz

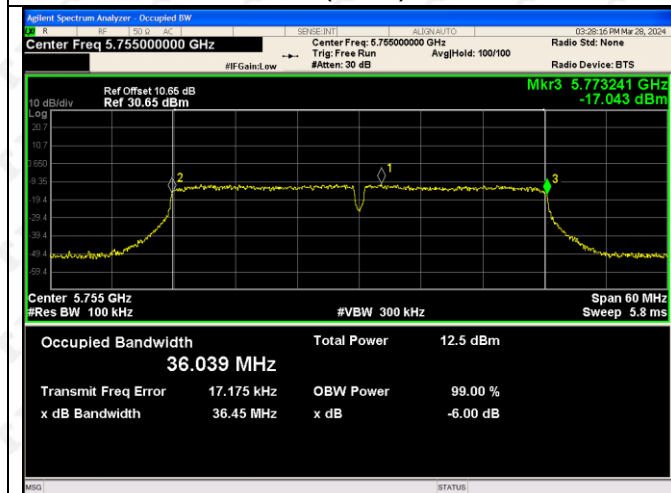




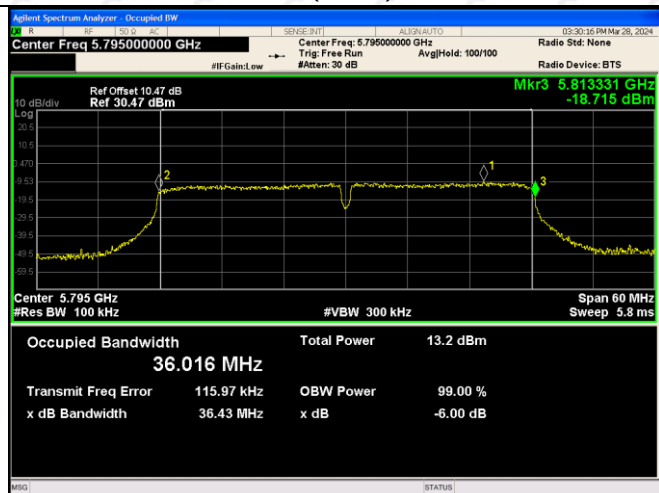
802.11ac(VH40)-5755



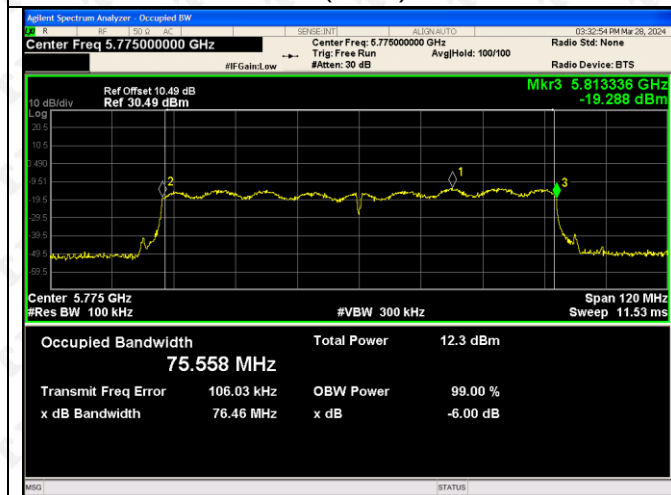
802.11ac(VH40)-5795



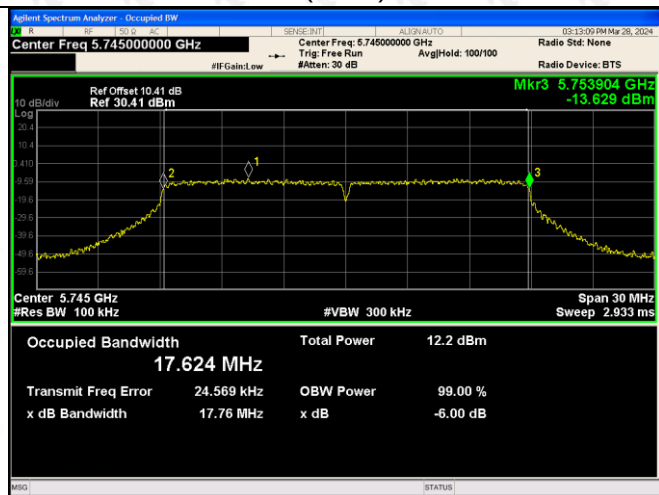
802.11ac(VH80)-5775



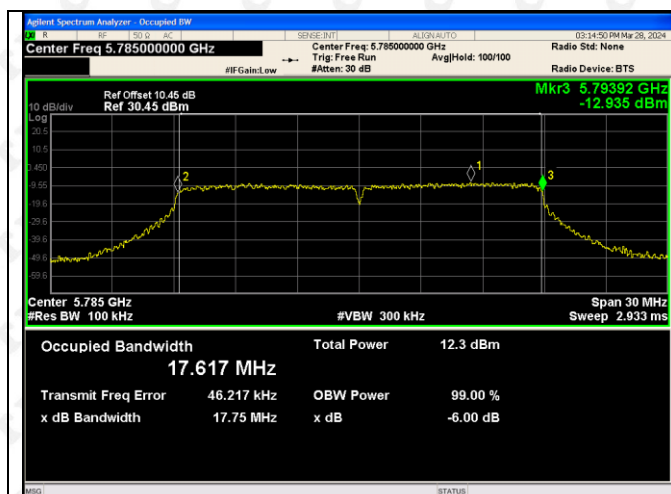
802.11ac(VH80)-5795



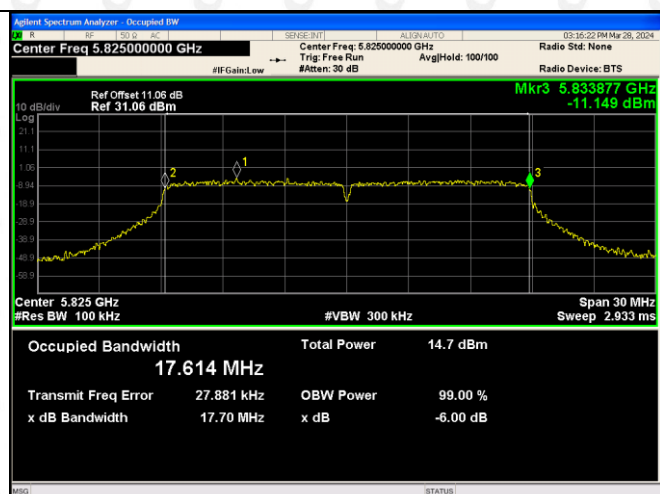
802.11n(HT20)-5745



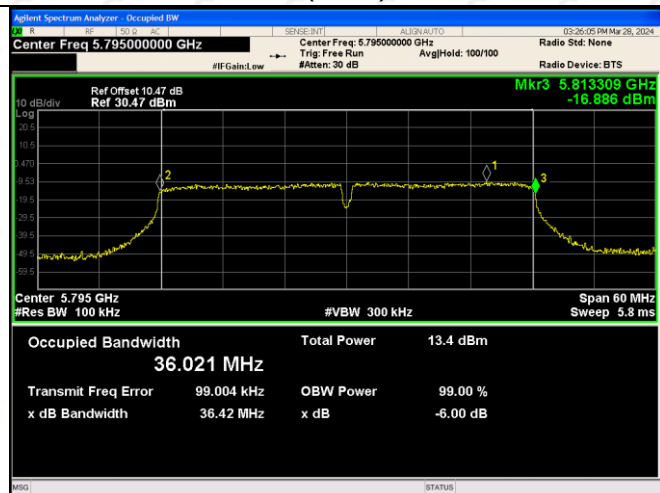
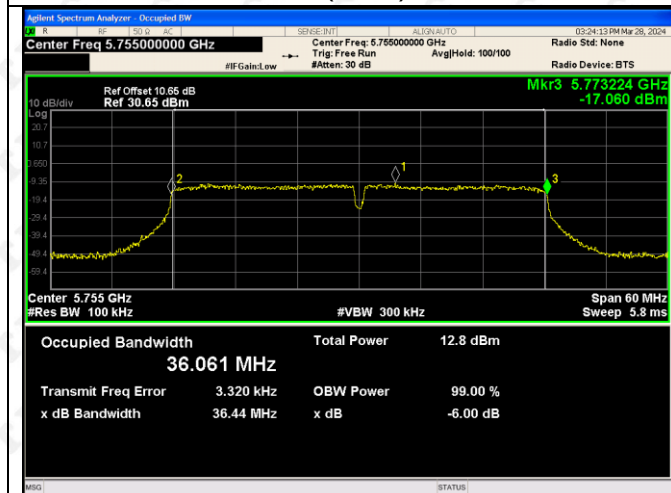
802.11n(HT20)-5785



5802.11n(HT40)-5755

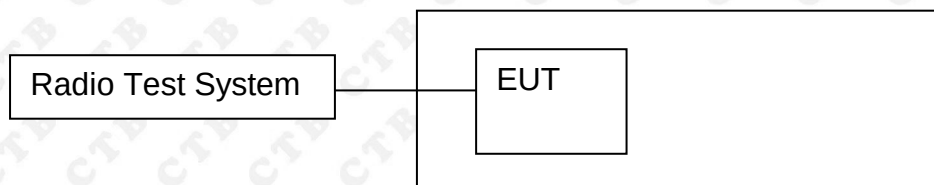


802.11n(HT40)-5795



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 $11 \text{ dBm} + 10 \log B$, 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 ($< 1 \text{ MHz}$, or $< 500 \text{ kHz}$) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

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

b) Set $\text{VBW} \geq 3 \text{ RBW}$.

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

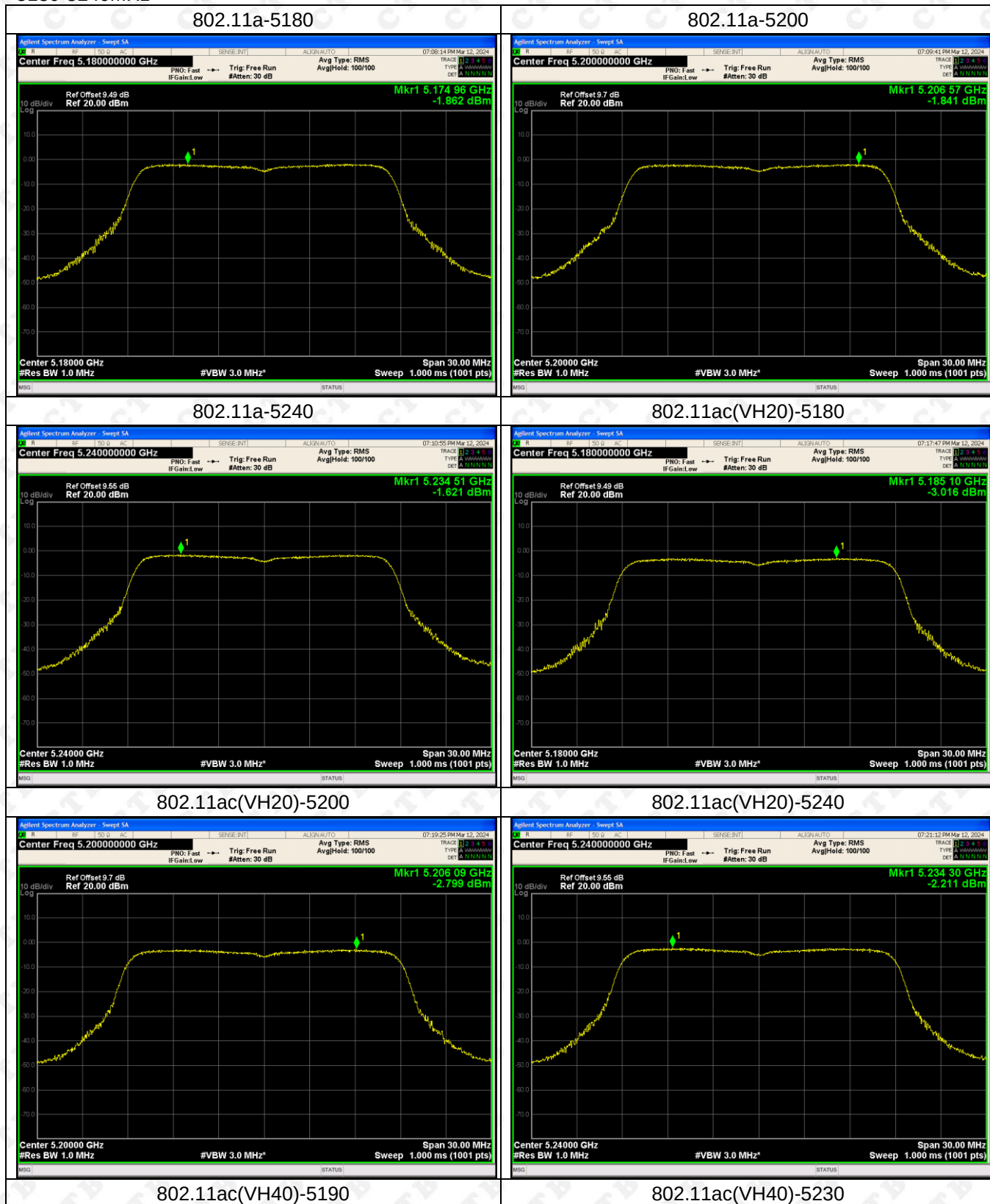
Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the II.F.5.c) and II.F.5.d), since RBW=100 kHz is available on nearly all spectrum analyzers.

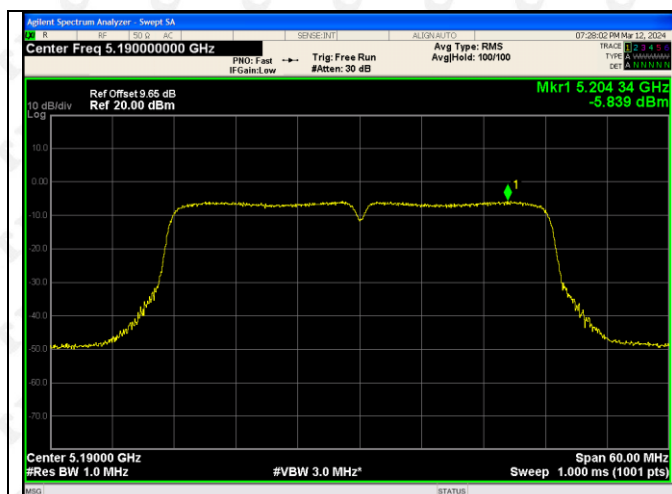
11.4 Test Result

Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm/MHz)	Result
802.11a	5180	-1.862	-2.668	/	11	Pass
	5200	-1.841	-2.941	/	11	Pass
	5240	-1.621	-2.076	/	11	Pass
802.11ac(VH20)	5180	-3.016	-3.606	-0.291	11	Pass
	5200	-2.799	-3.765	-0.245	11	Pass
	5240	-2.211	-3.132	0.363	11	Pass
802.11ac(VH40)	5190	-5.839	-6.82	-3.292	11	Pass
	5230	-5.124	-6.102	-2.575	11	Pass
802.11n(VH20)	5180	-7.329	-7.67	-4.486	11	Pass
	5200	-2.515	-3.548	0.009	11	Pass
	5240	-2.426	-3.637	0.021	11	Pass
802.11n(VH40)	5190	-1.963	-3.058	0.534	11	Pass
	5230	-5.84	-6.577	-3.183	11	Pass
802.11ac(VH80)	5230	-5.106	-5.976	-2.509	11	Pass

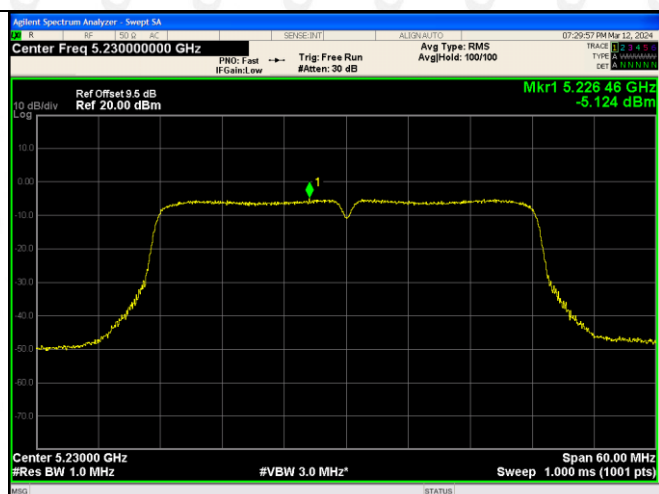
Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm)	Result
802.11a	5745	-5.043	-6.883	/	30	Pass
	5785	-5.258	-6.554	/	30	Pass
	5825	-3.509	-4.787	/	30	Pass
802.11ac(VH20)	5745	-6.841	-7.665	-4.223	30	Pass
	5785	-6.374	-7.131	-3.726	30	Pass
	5825	-4.574	-5.148	-1.841	30	Pass
802.11ac(VH40)	5755	-10.306	-10.496	-7.390	30	Pass
	5795	-9.495	-9.359	-6.416	30	Pass
802.11n(VH20)	5775	-11.644	-12.489	-9.036	30	Pass
	5745	-6.593	-7.655	-4.081	30	Pass
	5785	-6.274	-7.011	-3.617	30	Pass
802.11n(VH40)	5825	-4.464	-4.988	-1.708	30	Pass
	5755	-10.14	-10.211	-7.165	30	Pass
802.11ac(VH80)	5795	-9.301	-9.152	-6.216	30	Pass

ANT1:
5180-5240MHz

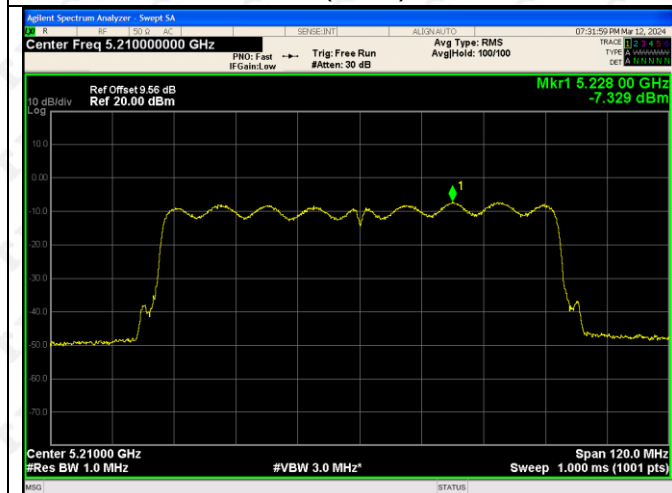




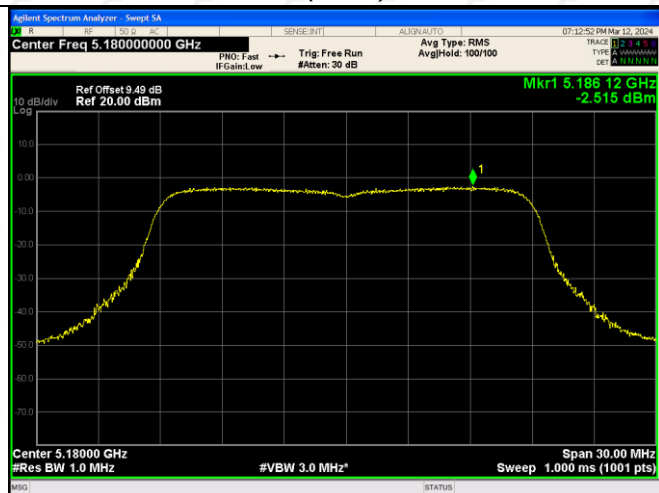
802.11ac(VH80)-5210



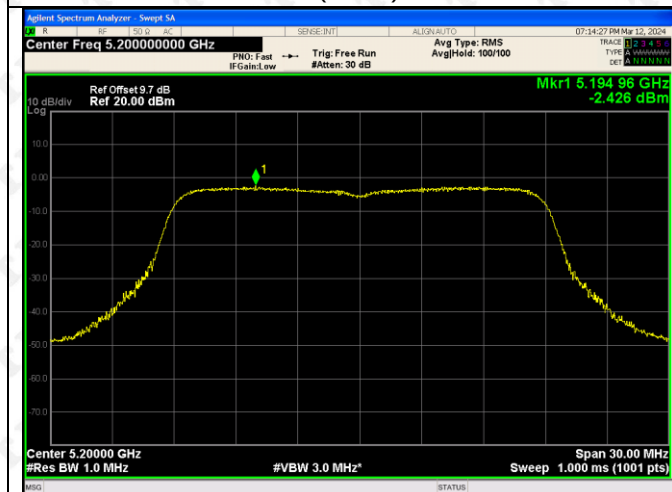
802.11n(HT20)-5180



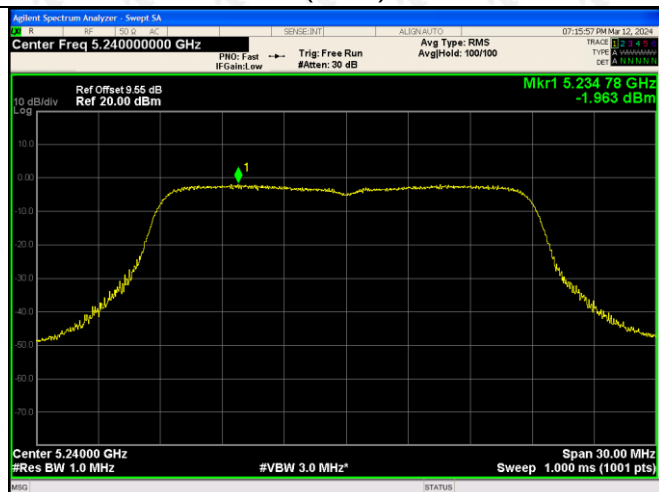
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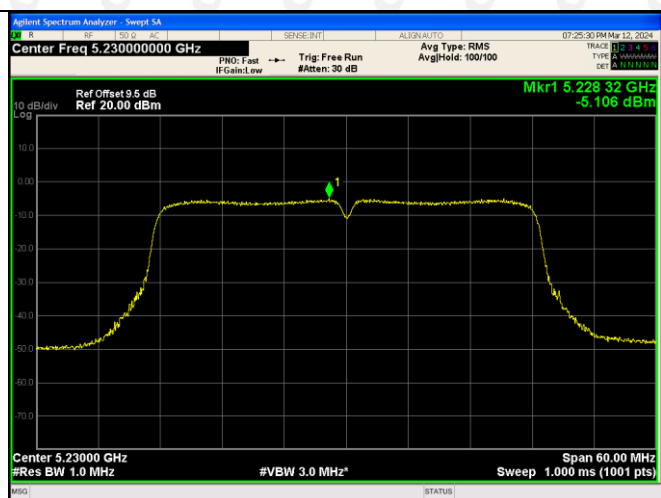
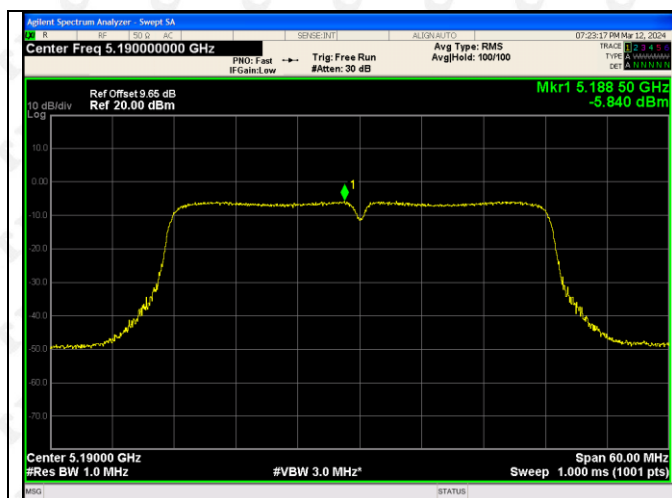
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802.11n(HT40)-5190



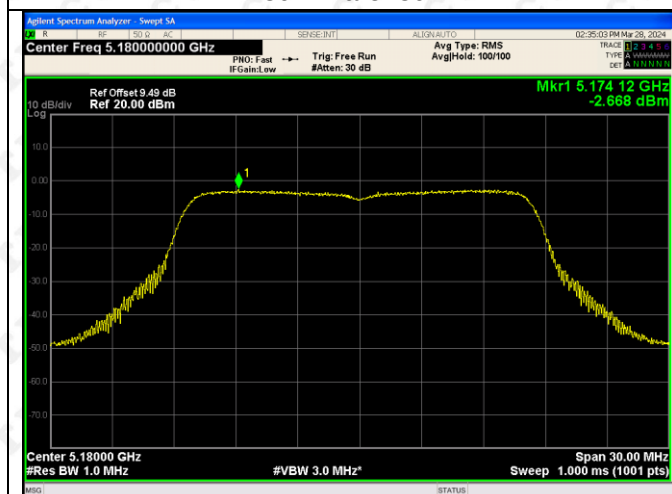
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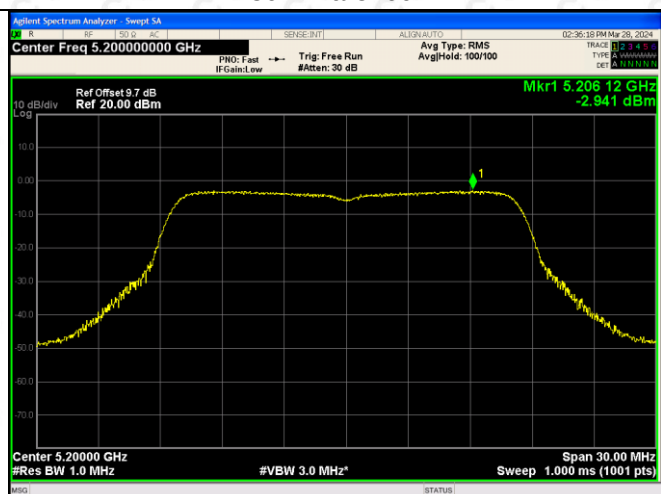
ANT2:

5180-5240MHz

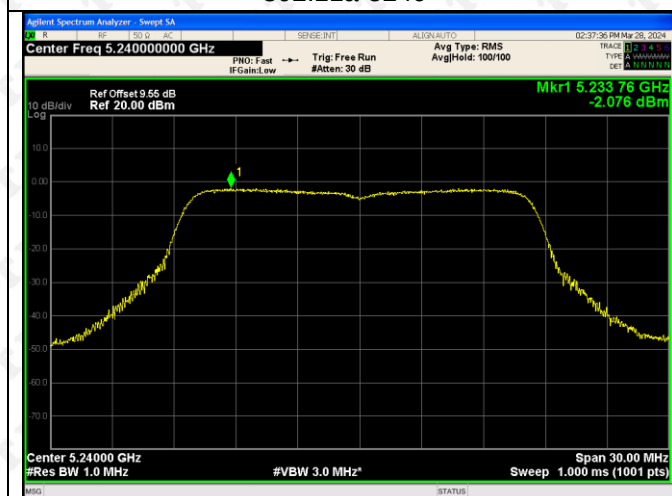
802.11a-5180



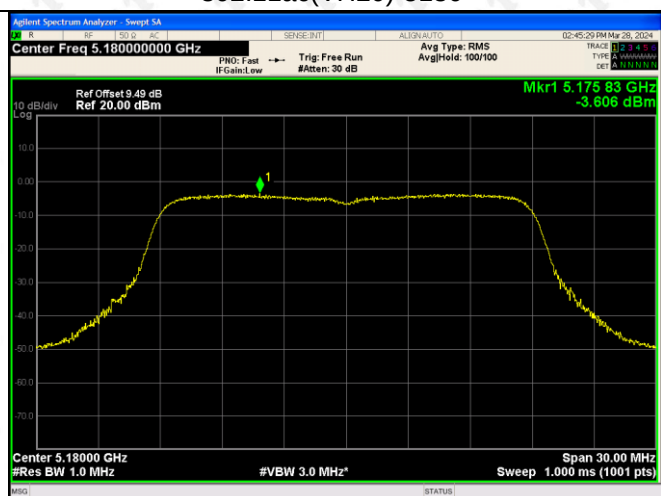
802.11a-5200



802.11a-5240

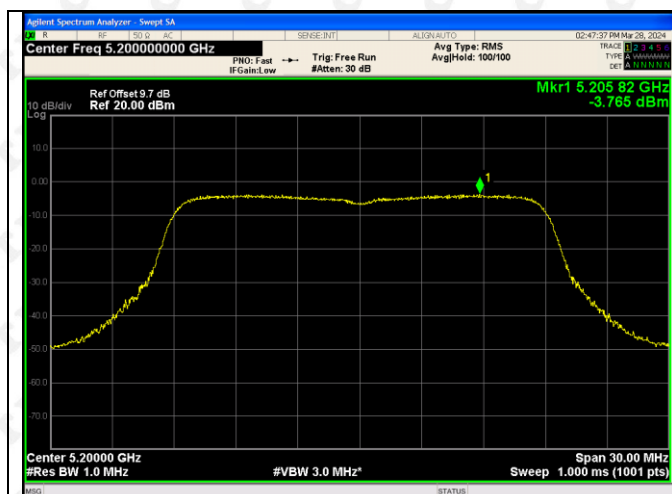


802.11ac(VH20)-5180

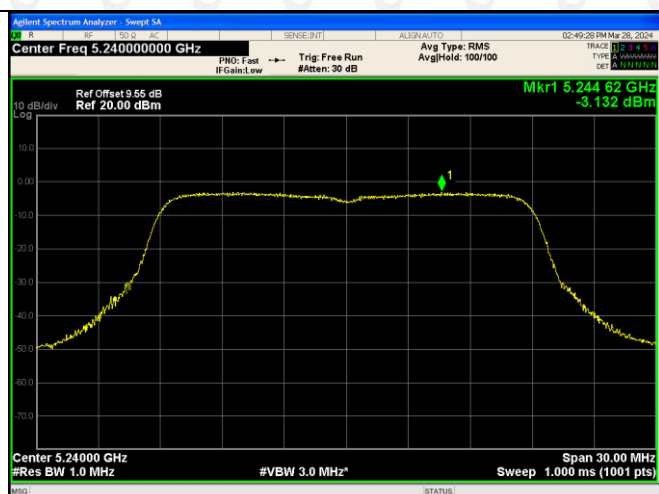


802.11ac(VH20)-5200

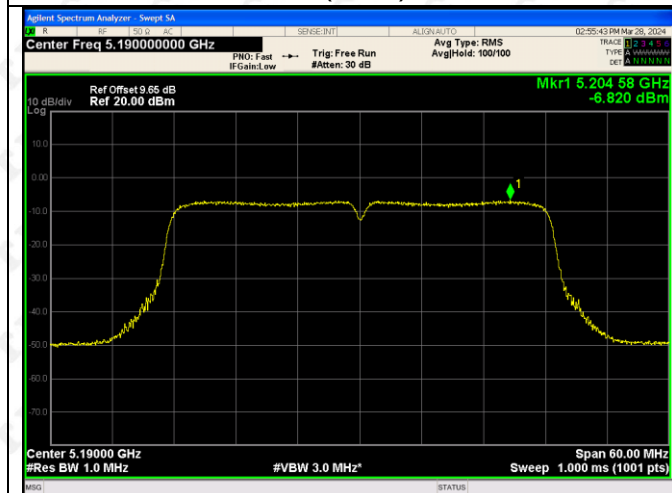
802.11ac(VH20)-5240



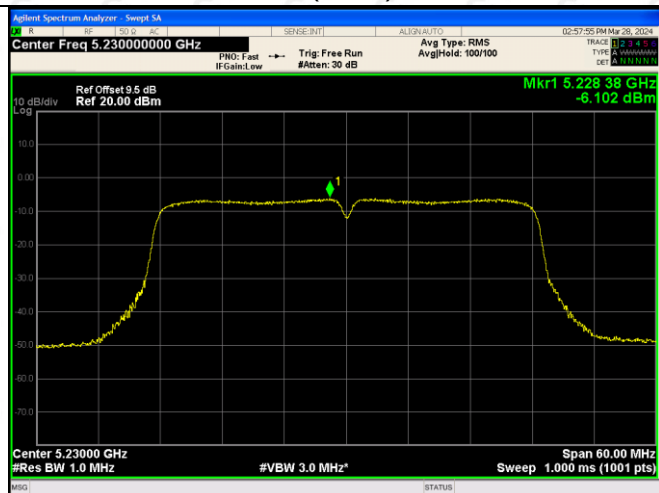
802.11ac(VH40)-5190



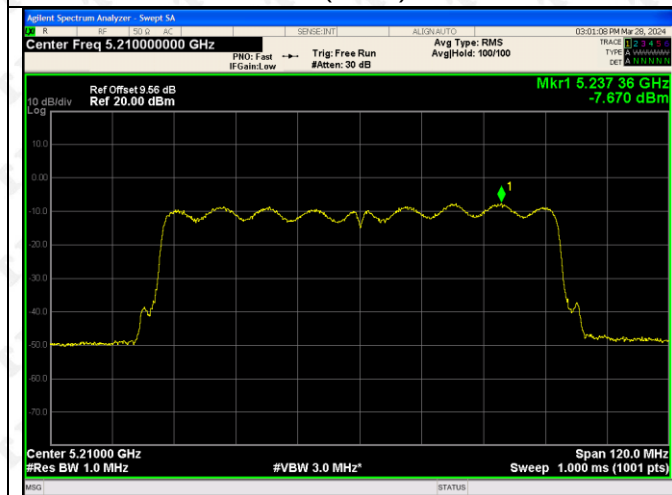
802.11ac(VH40)-5230



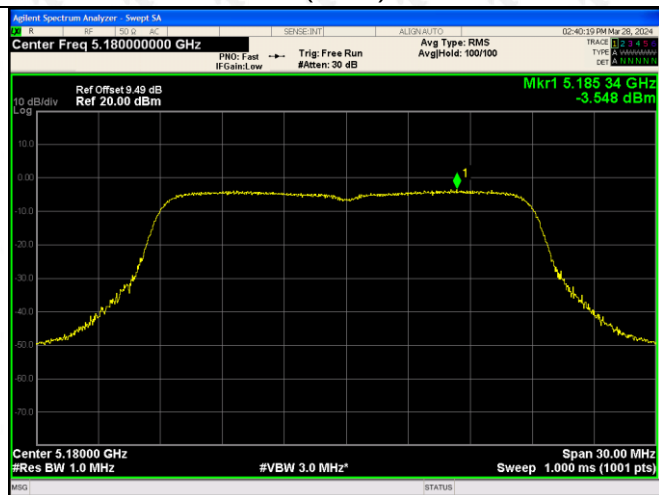
802.11ac(VH80)-5210



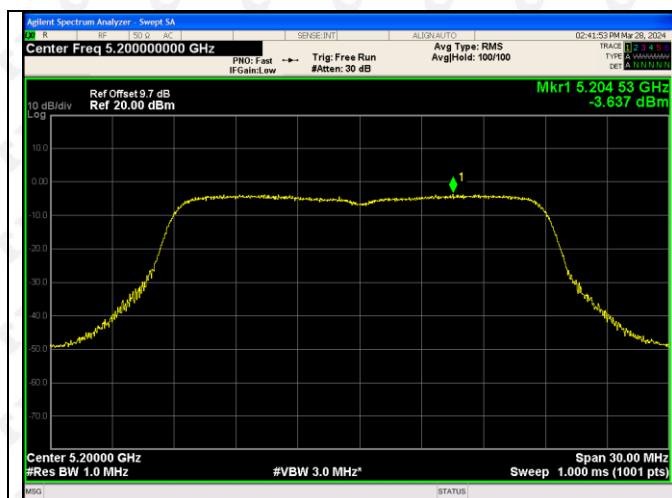
802.11n(HT20)-5180



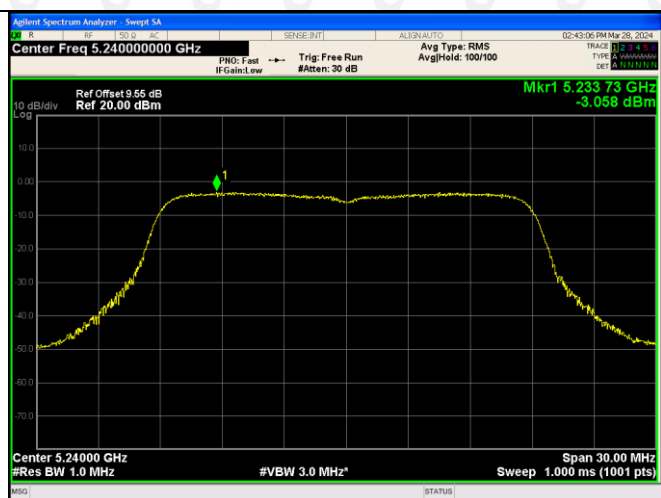
802.11n(HT20)-5200



802.11n(HT20)-5240



802.11n(HT40)-5190



802.11n(HT40)-5230

