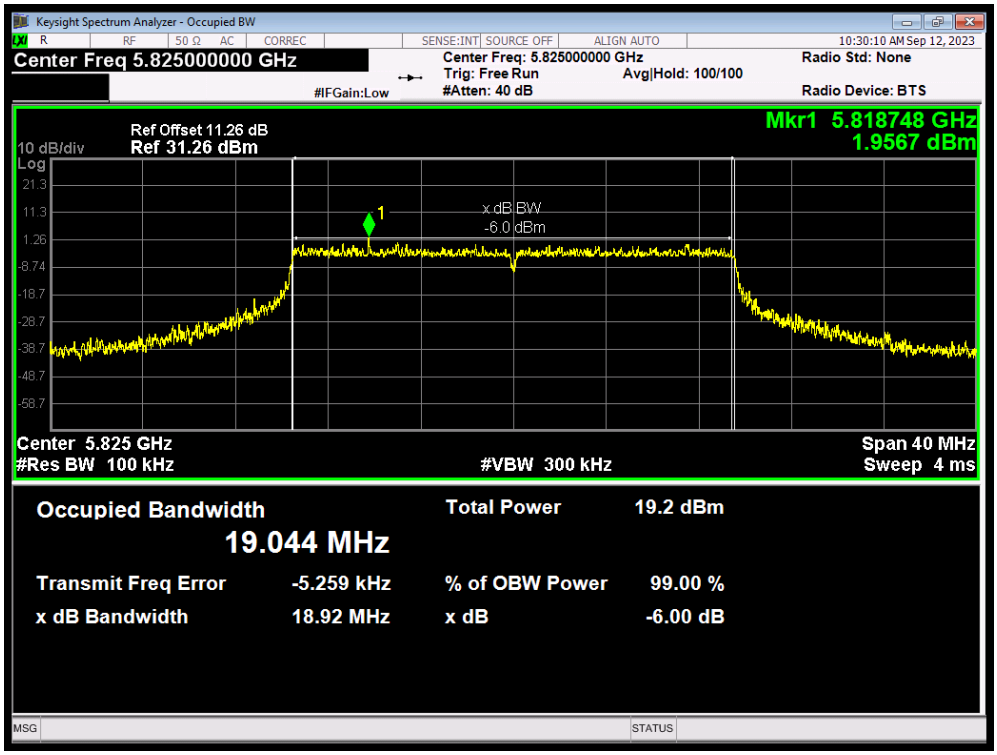
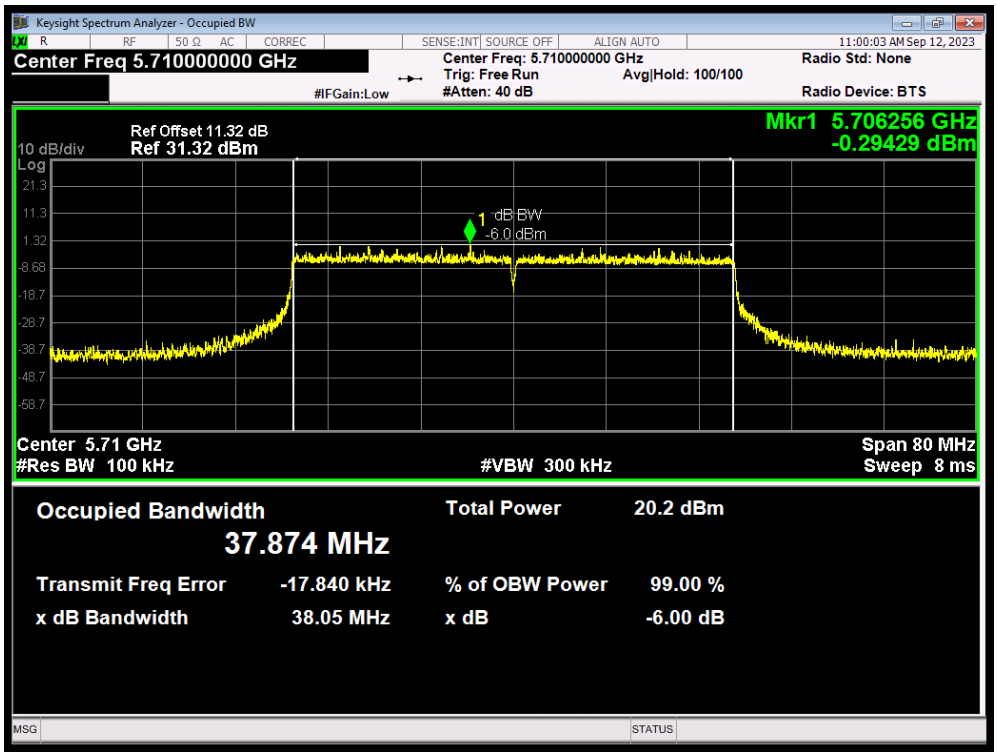
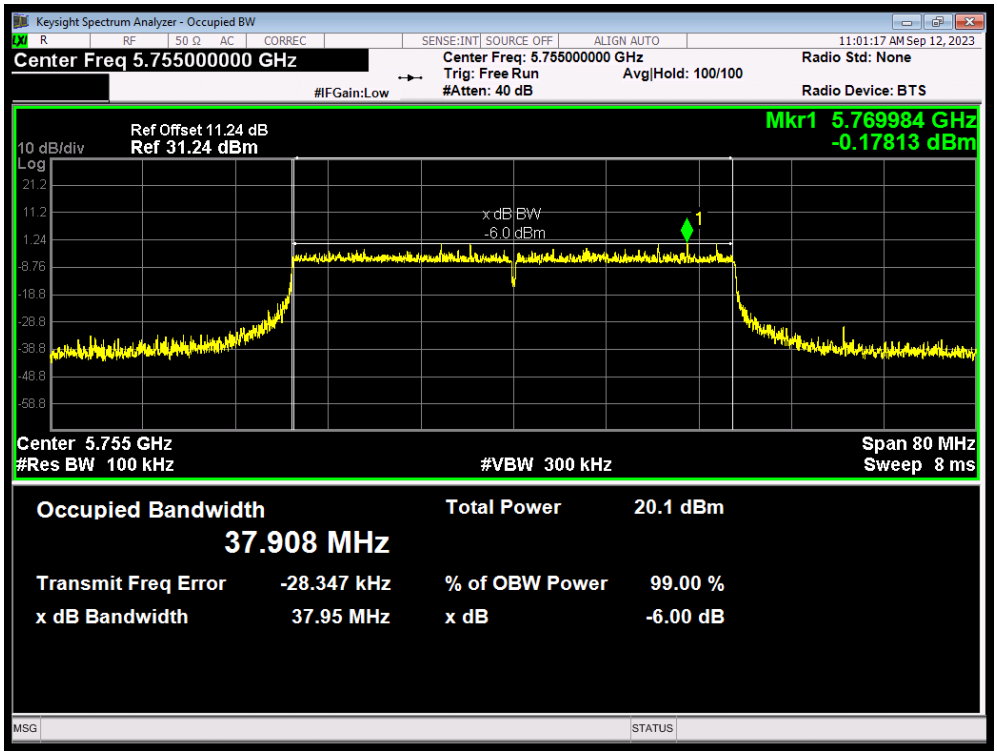
-6dB Bandwidth 802.11ax(HE20) 5825MHz



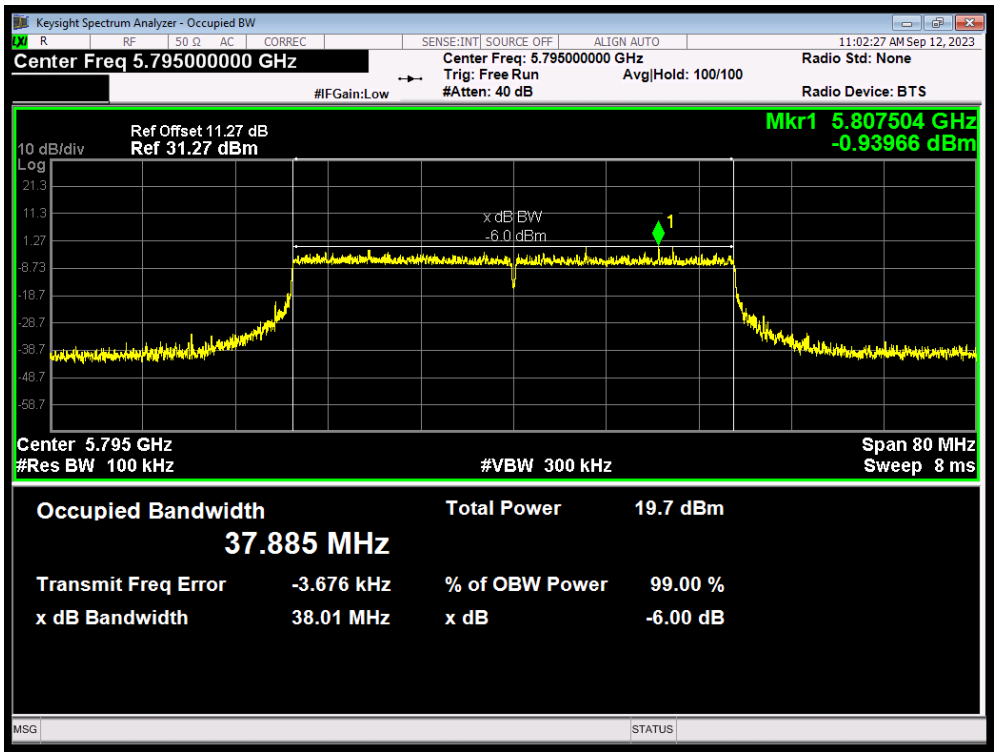
-6dB Bandwidth 802.11ax(HE40) 5710MHz



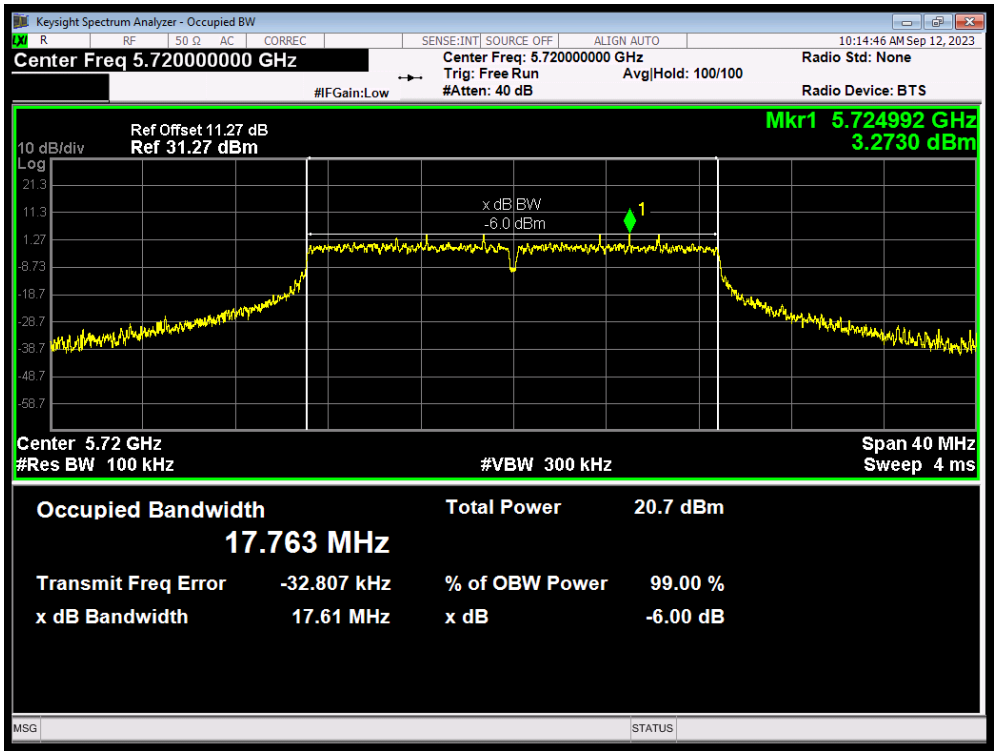
-6dB Bandwidth 802.11ax(HE40) 5755MHz



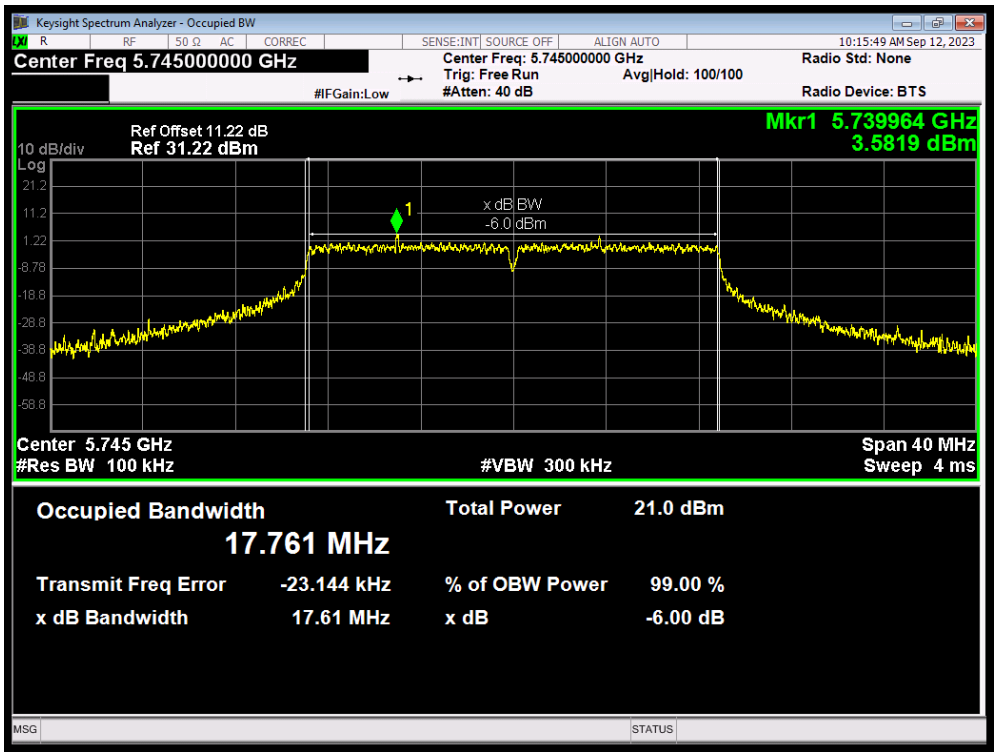
-6dB Bandwidth 802.11ax(HE40) 5795MHz



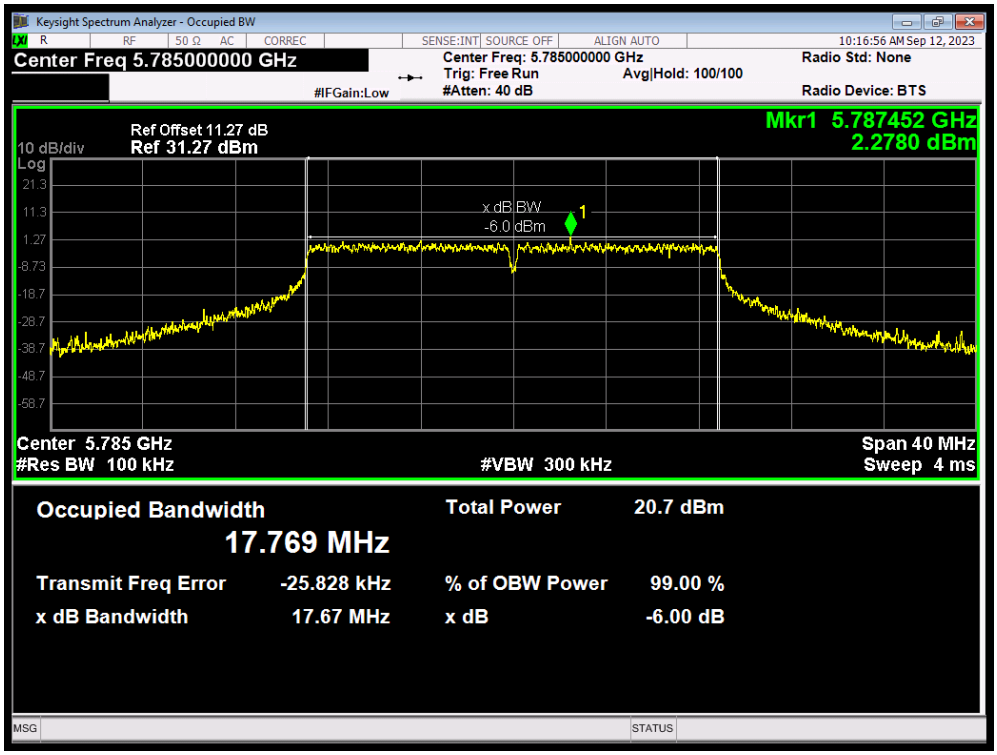
-6dB Bandwidth 802.11n(HT20) 5720MHz



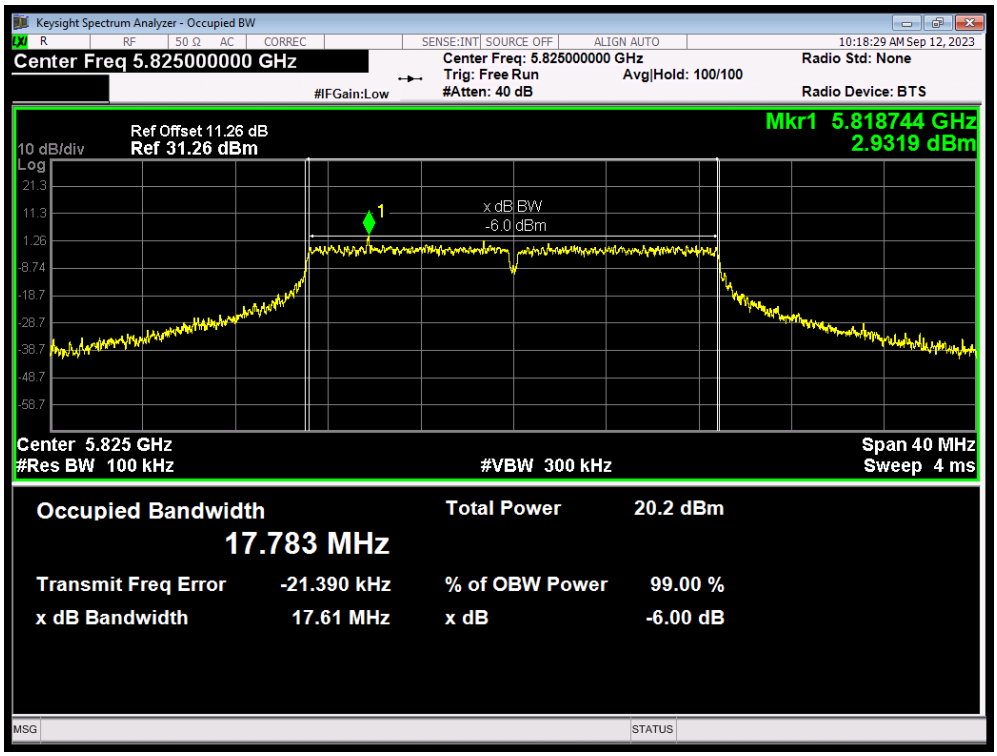
-6dB Bandwidth 802.11n(HT20) 5745MHz



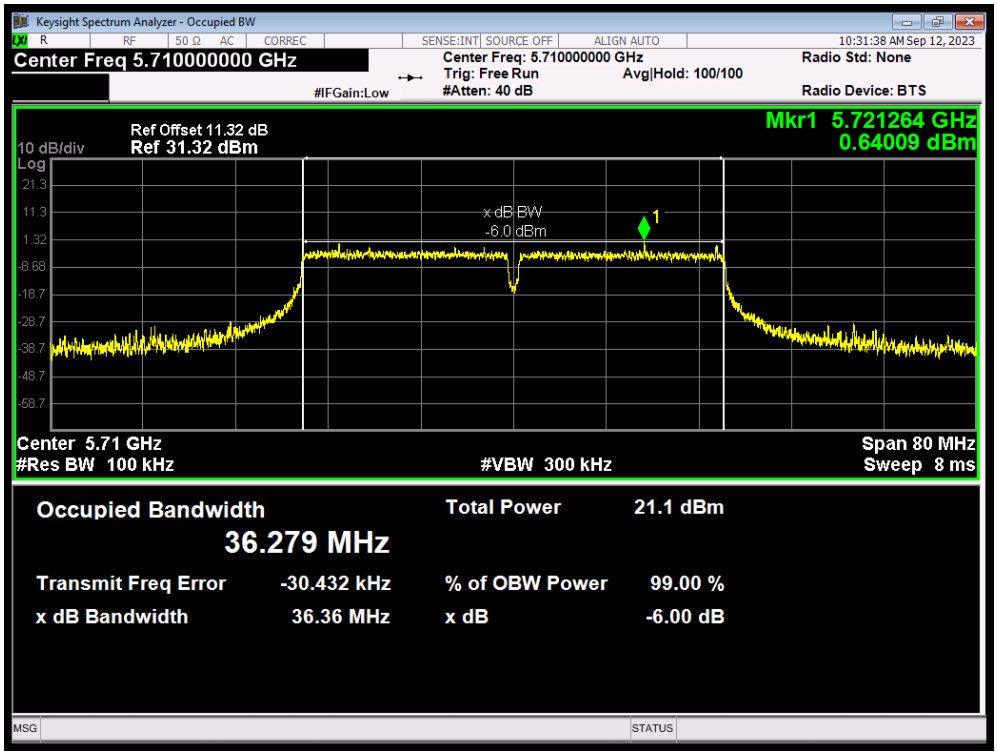
-6dB Bandwidth 802.11n(HT20) 5785MHz



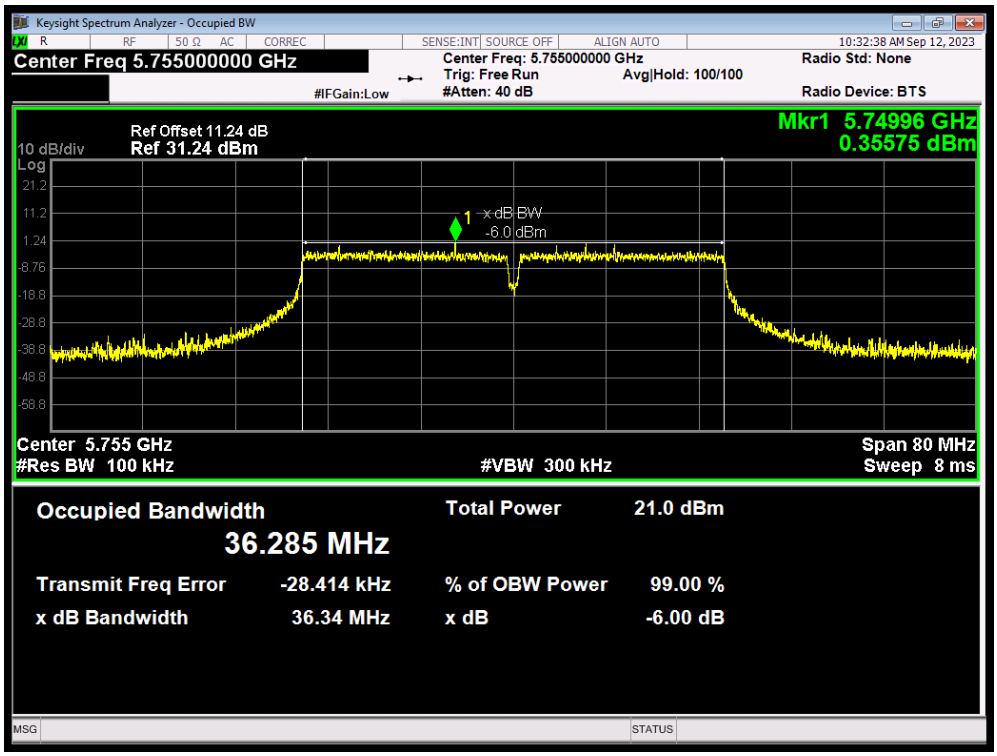
-6dB Bandwidth 802.11n(HT20) 5825MHz



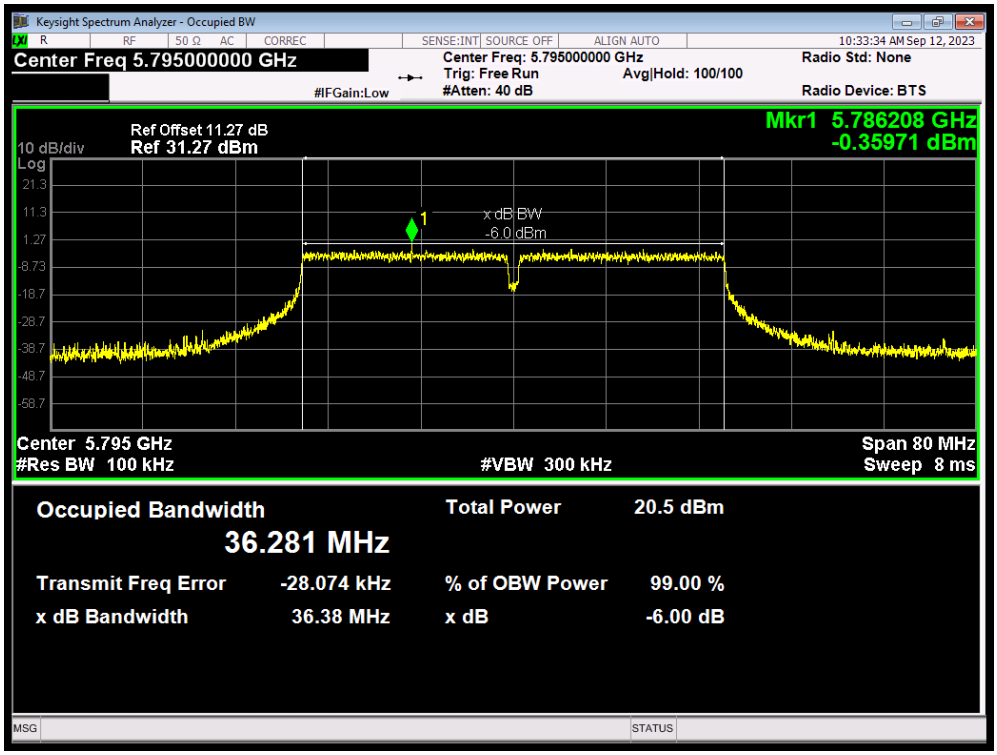
-6dB Bandwidth 802.11n(HT40) 5710MHz



-6dB Bandwidth 802.11n(HT40) 5755MHz



-6dB Bandwidth 802.11n(HT40) 5795MHz



5.2. Average Power Output

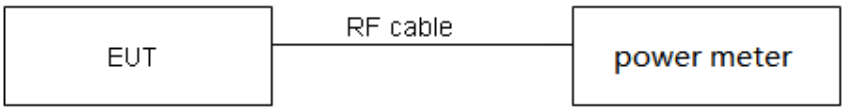
Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the average power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use Maximum average Conducted Output Power Level Method in KDB789033 for this test

Test Setup



Limits

Rule FCC Part 15.407(a)(1) / FCC Part 15.407(a) (2) / FCC Part 15.407(a) (3)
(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 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.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.44 dB.

Test Results

Mode	Duty cycle	Duty cycle correction Factor (dB)
802.11a	0.578	2.38
802.11n HT20	0.833	0.79
802.11n HT40	0.828	0.82
802.11ac VHT20	0.832	0.8
802.11ac VHT40	0.828	0.82
802.11ax HE20	0.791	1.02
802.11ax HE40	0.791	1.02
Note: when Duty cycle⩾0.98, Duty cycle correction Factor not required.		

Power Index								
Channel	802.11a	802.11n HT20	802.11ac VHT20	802.11ax HE20	Channel	802.11n HT40	802.11ac VHT40	802.11ax HE40
CH36	13	17	16	16	CH38	16	16	16
CH40	13	17	16	16	CH46	17	16	16
CH48	17	17	16	16	CH54	17	16	16
CH52	17	17	16	16	CH62	16	16	16
CH60	14	17	16	16	CH102	13	16	13
CH64	12	17	16	16	CH118	17	16	16
CH100	13	17	16	16	CH134	17	16	16
CH120	16	17	16	16	CH142	17	16	16
CH140	14	17	16	13	CH151	17	16	16
CH144	17	17	16	16	CH159	17	16	16
CH149	17	17	16	16	/	/	/	/
CH157	17	17	16	16	/	/	/	/
CH165	17	17	16	16	/	/	/	/

Test Mode		Channel/ Frequency (MHz)	B=26 dB bandwidth (MHz)	Limit 11 dBm + 10 log B (dBm)	Final Limit (dBm)
U-NII-2A	802.11a	52/5260	24.46	24.88>24	24
		60/5300	25.60	25.08>24	24
		64/5320	26.00	25.15>24	24
	802.11n HT20	52/5260	27.09	25.33>24	24
		60/5300	27.01	25.32>24	24
		64/5320	26.71	25.27>24	24
	802.11n HT40	54/5270	48.97	27.90>24	24
		62/5310	46.39	27.66>24	24
	802.11ac VHT20	52/5260	27.09	25.33>24	24
		60/5300	26.77	25.28>24	24
		64/5320	26.66	25.26>24	24
	802.11ac VHT40	54/5270	46.97	27.72>24	24
		62/5310	46.53	27.68>24	24
	802.11ax HE20	52/5260	25.51	25.07>24	24
		60/5300	24.24	24.84>24	24
		64/5320	25.38	25.05>24	24
	802.11ax HE40	54/5270	45.51	27.58>24	24
		62/5310	44.17	27.45>24	24
U-NII-2C	802.11a	100/5500	25.38	25.05>24	24
		120/5600	25.67	25.09>24	24
		140/5700	25.01	24.98>24	24
		144/5720	25.60	25.08>24	24
	802.11n HT20	100/5500	25.94	25.14>24	24
		120/5600	27.55	25.40>24	24
		140/5700	27.34	25.37>24	24
		144/5720	27.34	25.37>24	24
	802.11n HT40	102/5510	47.73	27.79>24	24
		118/5590	49.20	27.92>24	24
		134/5670	50.83	28.06>24	24
		142/5710	52.88	28.23>24	24
	802.11ac VHT20	100/5500	25.75	25.11>24	24
		120/5600	26.89	25.30>24	24
		140/5700	27.08	25.33>24	24
		144/5720	26.66	25.26>24	24
	802.11ac VHT40	102/5510	47.63	27.78>24	24
		118/5590	48.08	27.82>24	24
		134/5670	47.50	27.77>24	24
		142/5710	47.06	27.73>24	24
	802.11ax HE20	100/5500	26.33	25.20>24	24

		120/5600	26.55	25.24>24	24
		140/5700	25.87	25.13>24	24
		144/5720	25.59	25.08>24	24
	802.11ax HE40	102/5510	46.87	27.71>24	24
		118/5590	46.73	27.70>24	24
		134/5670	45.27	27.56>24	24
		142/5710	45.32	27.56>24	24
Note: 250mW=24dBm					

U-NII-1

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	10.14	12.52	24	PASS
	40/5200	10.36	12.74	24	PASS
	48/5240	14.20	16.58	24	PASS
802.11n HT20	36/5180	15.11	15.90	24	PASS
	40/5200	15.19	15.98	24	PASS
	48/5240	15.48	16.27	24	PASS
802.11n HT40	38/5190	14.67	15.49	24	PASS
	46/5230	15.30	16.12	24	PASS
802.11ac VHT20	36/5180	13.95	14.75	24	PASS
	40/5200	14.36	15.16	24	PASS
	48/5240	14.44	15.24	24	PASS
802.11ac VHT40	38/5190	14.00	14.82	24	PASS
	46/5230	14.30	15.12	24	PASS
802.11ax HE20	36/5180	13.49	14.51	24	PASS
	40/5200	14.37	15.39	24	PASS
	48/5240	14.48	15.50	24	PASS
802.11ax HE40	38/5190	13.91	14.93	24	PASS
	46/5230	14.16	15.18	24	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2A

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	52/5260	14.43	16.81	24	PASS
	60/5300	12.23	14.61	24	PASS
	64/5320	10.45	12.83	24	PASS
802.11n HT20	52/5260	15.58	16.37	24	PASS
	60/5300	16.28	17.07	24	PASS
	64/5320	15.86	16.65	24	PASS
802.11n HT40	54/5270	15.70	16.52	24	PASS
	62/5310	15.51	16.33	24	PASS
802.11ac VHT20	52/5260	14.69	15.49	24	PASS
	60/5300	15.16	15.96	24	PASS
	64/5320	15.07	15.87	24	PASS
802.11ac VHT40	54/5270	14.42	15.24	24	PASS
	62/5310	15.24	16.06	24	PASS
802.11ax HE20	52/5260	14.26	15.28	24	PASS
	60/5300	14.89	15.91	24	PASS
	64/5320	15.01	16.03	24	PASS
802.11ax HE40	54/5270	14.50	15.52	24	PASS
	62/5310	14.79	15.81	24	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2C

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	100/5500	10.49	12.87	24	PASS
	120/5600	13.35	15.73	24	PASS
	140/5700	11.28	13.66	24	PASS
	144/5720	12.17	14.55	24	PASS
802.11n HT20	100/5500	16.16	16.95	24	PASS
	120/5600	15.38	16.17	24	PASS
	140/5700	14.90	15.69	24	PASS
	144/5720	13.44	14.23	24	PASS
802.11n HT40	102/5510	11.89	12.71	24	PASS
	118/5590	15.45	16.27	24	PASS
	134/5670	15.63	16.45	24	PASS
	142/5710	14.12	14.94	24	PASS
802.11ac VHT20	100/5500	15.32	16.12	24	PASS
	120/5600	14.38	15.18	24	PASS
	140/5700	13.75	14.55	24	PASS
	144/5720	12.43	13.23	24	PASS
802.11ac VHT40	102/5510	15.46	16.28	24	PASS
	118/5590	14.44	15.26	24	PASS
	134/5670	13.97	14.79	24	PASS
	142/5710	13.07	13.89	24	PASS
802.11ax HE20	100/5500	15.14	16.16	24	PASS
	120/5600	14.19	15.21	24	PASS
	140/5700	11.37	12.39	24	PASS
	144/5720	12.26	13.28	24	PASS
802.11ax HE40	102/5510	11.87	12.89	24	PASS
	118/5590	14.31	15.33	24	PASS
	134/5670	13.62	14.64	24	PASS
	142/5710	12.98	14.00	24	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-3

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	144/5720	5.88	8.26	30	PASS
	149/5745	13.02	15.40	30	PASS
	157/5785	12.77	15.15	30	PASS
	165/5825	12.18	14.56	30	PASS
802.11n HT20	144/5720	7.39	8.18	30	PASS
	149/5745	13.05	13.84	30	PASS
	157/5785	14.29	15.08	30	PASS
	165/5825	13.64	14.43	30	PASS
802.11n HT40	142/5710	3.74	4.56	30	PASS
	151/5755	14.36	15.18	30	PASS
	159/5795	13.94	14.76	30	PASS
802.11ac VHT20	144/5720	6.48	7.28	30	PASS
	149/5745	13.79	14.59	30	PASS
	157/5785	13.28	14.08	30	PASS
	165/5825	12.67	13.47	30	PASS
802.11ac VHT40	142/5710	2.31	3.13	30	PASS
	151/5755	13.36	14.18	30	PASS
	159/5795	13.01	13.83	30	PASS
802.11ax HE20	144/5720	6.58	7.60	30	PASS
	149/5745	13.30	14.32	30	PASS
	157/5785	12.90	13.92	30	PASS
	165/5825	12.32	13.34	30	PASS
802.11ax HE40	142/5710	2.93	3.95	30	PASS
	151/5755	13.31	14.33	30	PASS
	159/5795	12.71	13.73	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

5.3. Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

1. Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

g) Measure the frequency at each of frequencies specified in 5.6.

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more that 10°C, and allow the temperature inside the chamber to stabilize.

j) Repeat step f) through step i) down to the lowest specified temperature.

2. Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15°C to +25 °C). An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
c) Measure the frequency at each of the frequencies specified in 5.6.
d) Repeat the above procedure at 85% and 115% of the nominal supply voltage.

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.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 936Hz

Test Results

Voltage (Vac)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
120	-30	5200.000645	5199.993900	5199.989973	5199.984476
120	-20	5200.005710	5199.992184	5199.987739	5199.981485
120	-10	5200.013765	5199.986012	5199.979706	5199.975809
120	0	5200.005493	5199.990235	5199.983022	5199.980551
120	10	5200.002692	5199.986729	5199.973556	5199.977205
120	20	5200.000615	5199.980564	5199.969202	5199.968432
120	30	5199.995810	5199.979055	5199.961407	5199.964132
120	40	5199.992472	5199.970237	5199.954562	5199.956582
120	50	5199.983859	5199.960597	5199.949910	5199.950248
102	20	5199.977530	5199.958297	5199.948887	5199.948278
138	20	5199.971228	5199.951123	5199.948464	5199.946802
Max. ΔMHz		-0.028772	-0.048877	-0.051536	-0.053198
PPM		-5.533048	-9.399340	-9.910688	-10.230384

Voltage (Vac)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
120	-30	5300.007705	5300.003825	5299.998628	5299.998243
120	-20	5300.007229	5299.998843	5299.997966	5299.988927
120	-10	5300.001078	5299.997093	5299.991175	5299.979788
120	0	5299.997244	5299.997709	5299.995937	5299.985286
120	10	5299.996037	5299.995742	5299.992392	5299.984129
120	20	5299.994520	5299.989105	5299.992210	5299.982207
120	30	5299.991629	5299.988742	5299.983313	5299.978189
120	40	5299.985190	5299.984250	5299.976729	5299.977820
120	50	5299.975506	5299.982893	5299.973275	5299.971167
102	20	5299.967998	5299.982069	5299.969484	5299.969114
138	20	5299.959366	5299.981792	5299.962996	5299.964242
Max. ΔMHz		-0.040633	-0.018207	-0.037003	-0.035757
PPM		-7.666611	-3.435289	-6.981722	-6.746687

Voltage (Vac)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
120	-30	5580.001153	5579.991578	5579.990164	5579.983883
120	-20	5579.992717	5579.986995	5579.989897	5579.975525
120	-10	5579.990384	5579.986977	5579.981134	5579.970870
120	0	5579.982757	5579.984282	5579.987307	5579.973128
120	10	5579.980055	5579.975334	5579.984173	5579.970213
120	20	5579.972965	5579.972793	5579.976777	5579.968587
120	30	5579.965013	5579.964429	5579.968289	5579.966277
120	40	5579.956245	5579.960472	5579.967063	5579.964240
120	50	5579.955045	5579.956596	5579.964374	5579.957747
102	20	5579.950871	5579.949932	5579.955639	5579.952124
138	20	5579.948647	5579.941740	5579.953864	5579.947717
Max. ΔMHz		-0.051353	-0.058259	-0.046136	-0.052282
PPM		-9.203006	-10.440681	-8.268038	-9.369624

Voltage (Vac)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
120	-30	5784.995300	5784.993621	5784.989097	5784.980378
120	-20	5784.990016	5784.993241	5784.981225	5784.973321
120	-10	5784.982410	5784.985663	5784.976661	5784.967569
120	0	5784.987399	5784.990823	5784.978508	5784.964479
120	10	5784.980868	5784.981821	5784.968726	5784.963300
120	20	5784.980673	5784.977690	5784.959429	5784.956328
120	30	5784.971946	5784.976622	5784.956681	5784.949509
120	40	5784.969763	5784.970329	5784.947236	5784.946072
120	50	5784.961404	5784.969882	5784.944867	5784.944668
102	20	5784.955147	5784.966974	5784.936824	5784.941255
138	20	5784.949261	5784.959830	5784.936011	5784.941035
Max. ΔMHz		-0.050739	-0.040169	-0.063989	-0.058964
PPM		-8.770703	-6.943731	-11.061153	-10.192606

5.4. Power Spectral Density

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

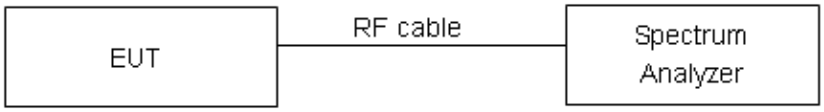
Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

Set RBW = 1MHz, VBW =3MHz for the band 5.150-5.250GHz, 5.250-5.350GHz, 5.470-5.725GHz.
Set RBW = 470kHz, VBW =1.5MHz for the band 5.725-5.850GHz

The conducted PSD is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test setup



Limits

Rule FCC Part 15.407(a)(1)/ FCC Part 15.407(a)(2) / FCC Part 15.407(a)(3)
For an indoor access point operating in the band 5.15-5.25 GHz, 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.
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.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, 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.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500kHz band. If transmittingantennas 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.

Frequency Bands/GHz	Limits
5.15-5.25	17/MHz
5.25-5.35 and 5.47-5.725	11dBm/MHz
5.725-5.85	30dBm/500kHz

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.75dB.

Test Results:

U-NII-1

Mode	Channel/ Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36/5180	-0.02	2.36	11	PASS
	40/5200	0.68	3.06	11	PASS
	48/5240	4.36	6.74	11	PASS
802.11n HT20	36/5180	4.65	5.44	11	PASS
	40/5200	4.90	5.69	11	PASS
	48/5240	4.87	5.66	11	PASS
802.11n HT40	38/5190	1.02	1.84	11	PASS
	46/5230	1.68	2.50	11	PASS
802.11ac VHT20	36/5180	3.52	4.32	11	PASS
	40/5200	3.93	4.73	11	PASS
	48/5240	4.32	5.12	11	PASS
802.11ac VHT40	38/5190	0.47	1.29	11	PASS
	46/5230	0.70	1.52	11	PASS
802.11ax HE20	36/5180	3.30	4.32	11	PASS
	40/5200	3.76	4.78	11	PASS
	48/5240	4.26	5.28	11	PASS
802.11ax HE40	38/5190	0.73	1.75	11	PASS
	46/5230	0.42	1.44	11	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

U-NII-2A

Mode	Channel /Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	52/5260	4.43	6.81	11	PASS
	60/5300	2.17	4.55	11	PASS
	64/5320	0.15	2.53	11	PASS
802.11n HT20	52/5260	5.41	6.20	11	PASS
	60/5300	5.45	6.24	11	PASS
	64/5320	5.49	6.28	11	PASS
802.11n HT40	54/5270	2.03	2.85	11	PASS
	62/5310	2.33	3.15	11	PASS
802.11ac VHT20	52/5260	4.01	4.81	11	PASS
	60/5300	4.47	5.27	11	PASS
	64/5320	4.46	5.26	11	PASS
802.11ac VHT40	54/5270	1.24	2.06	11	PASS
	62/5310	1.46	2.28	11	PASS
802.11ax HE20	52/5260	3.65	4.67	11	PASS
	60/5300	4.25	5.27	11	PASS
	64/5320	4.04	5.06	11	PASS
802.11ax HE40	54/5270	0.82	1.84	11	PASS
	62/5310	1.11	2.13	11	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

U-NII-2C

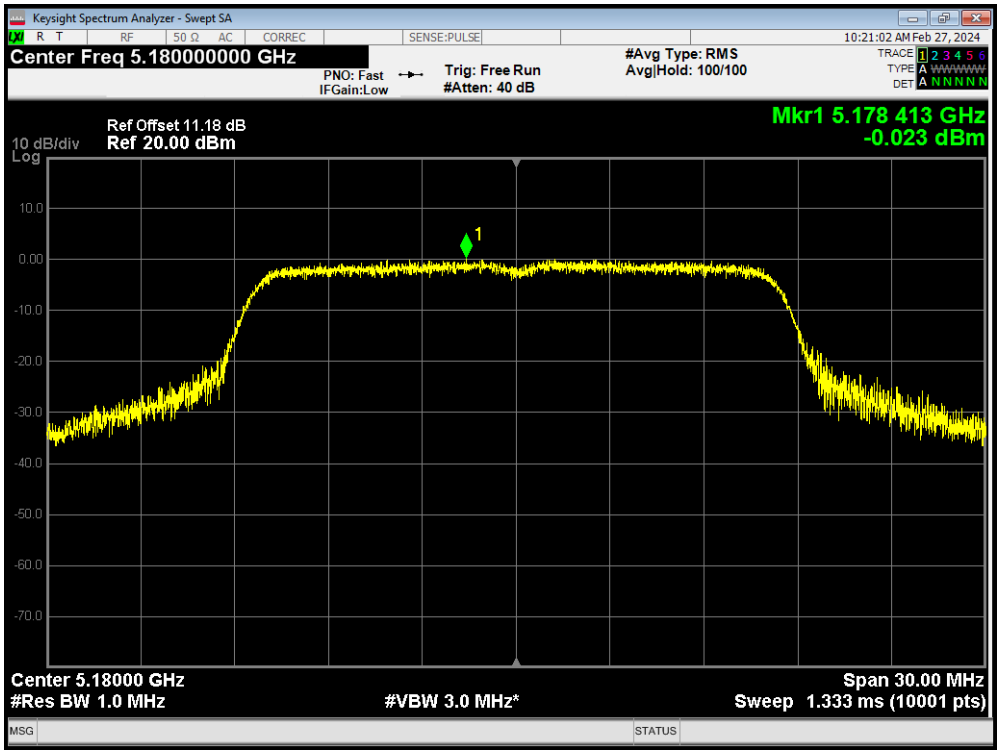
Mode	Channel /Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	100/5500	0.06	2.44	11	PASS
	120/5600	2.74	5.12	11	PASS
	140/5700	1.18	3.56	11	PASS
	144/5720	2.79	5.17	11	PASS
802.11n HT20	100/5500	5.13	5.92	11	PASS
	120/5600	4.40	5.19	11	PASS
	140/5700	2.19	2.98	11	PASS
	144/5720	3.92	4.71	11	PASS
802.11n HT40	102/5510	-1.66	-0.84	11	PASS
	118/5590	1.67	2.49	11	PASS
	134/5670	2.24	3.06	11	PASS
	142/5710	0.97	1.79	11	PASS
802.11ac VHT20	100/5500	4.47	5.27	11	PASS
	120/5600	3.45	4.25	11	PASS
	140/5700	3.20	4.00	11	PASS
	144/5720	2.87	3.67	11	PASS
802.11ac VHT40	102/5510	1.77	2.59	11	PASS
	118/5590	0.61	1.43	11	PASS
	134/5670	0.11	0.93	11	PASS
	142/5710	-0.25	0.57	11	PASS
802.11ax HE20	100/5500	4.37	5.39	11	PASS
	120/5600	3.32	4.34	11	PASS
	140/5700	0.48	1.50	11	PASS
	144/5720	2.28	3.30	11	PASS
802.11ax HE40	102/5510	-1.70	-0.68	11	PASS
	118/5590	0.07	1.09	11	PASS
	134/5670	0.56	1.58	11	PASS
	142/5710	-0.67	0.35	11	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

U-NII-3

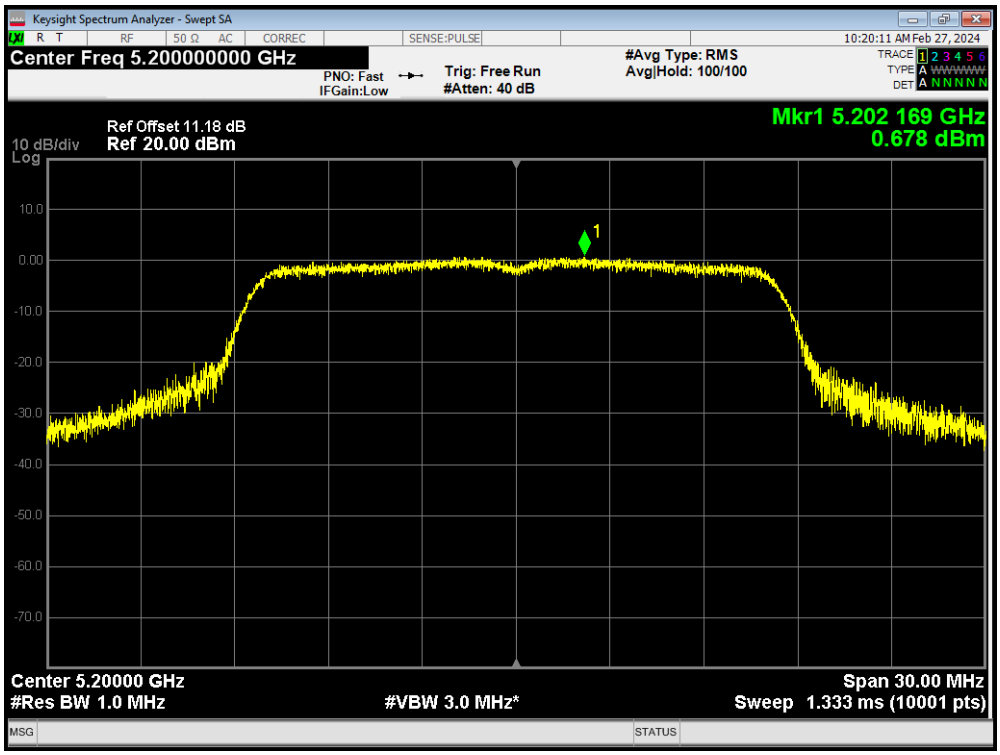
Mode	Channel /Frequency (MHz)	Read Value (dBm/470kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	144/5720	-0.74	1.91	30	PASS
	149/5745	-0.86	1.79	30	PASS
	157/5785	-0.77	1.88	30	PASS
	165/5825	-1.99	0.66	30	PASS
802.11n HT20	144/5720	-0.65	0.41	30	PASS
	149/5745	-0.52	0.54	30	PASS
	157/5785	0.08	1.14	30	PASS
	165/5825	-0.60	0.46	30	PASS
802.11n HT40	142/5710	-3.90	-2.81	30	PASS
	151/5755	-2.85	-1.76	30	PASS
	159/5795	-3.65	-2.56	30	PASS
802.11ac VHT20	144/5720	-1.25	-0.18	30	PASS
	149/5745	-0.93	0.14	30	PASS
	157/5785	-0.70	0.37	30	PASS
	165/5825	-1.53	-0.46	30	PASS
802.11ac VHT40	142/5710	-4.93	-3.84	30	PASS
	151/5755	-3.68	-2.59	30	PASS
	159/5795	-3.95	-2.86	30	PASS
802.11ax HE20	144/5720	-1.95	-0.66	30	PASS
	149/5745	-0.63	0.66	30	PASS
	157/5785	-1.46	-0.17	30	PASS
	165/5825	-1.87	-0.58	30	PASS
802.11ax HE40	142/5710	-4.70	-3.41	30	PASS
	151/5755	-3.76	-2.47	30	PASS
	159/5795	-4.40	-3.11	30	PASS
Note: PSD=Read Value+Duty cycle correction factor +10*log(500/470)					

U-NII-1

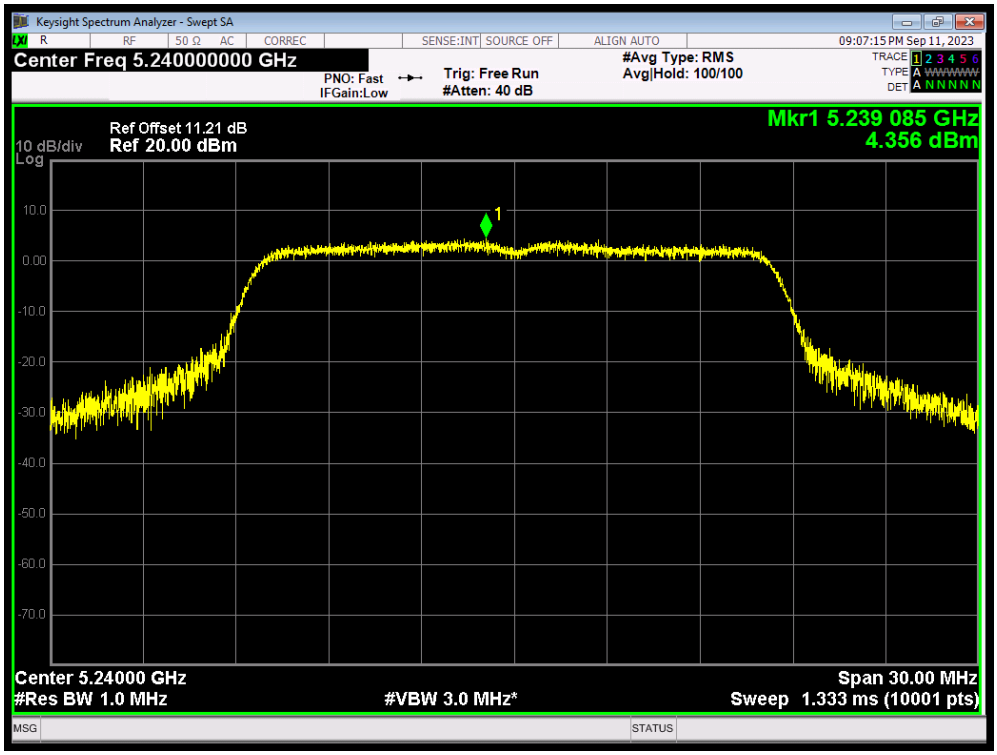
PSD 802.11a 5180MHz



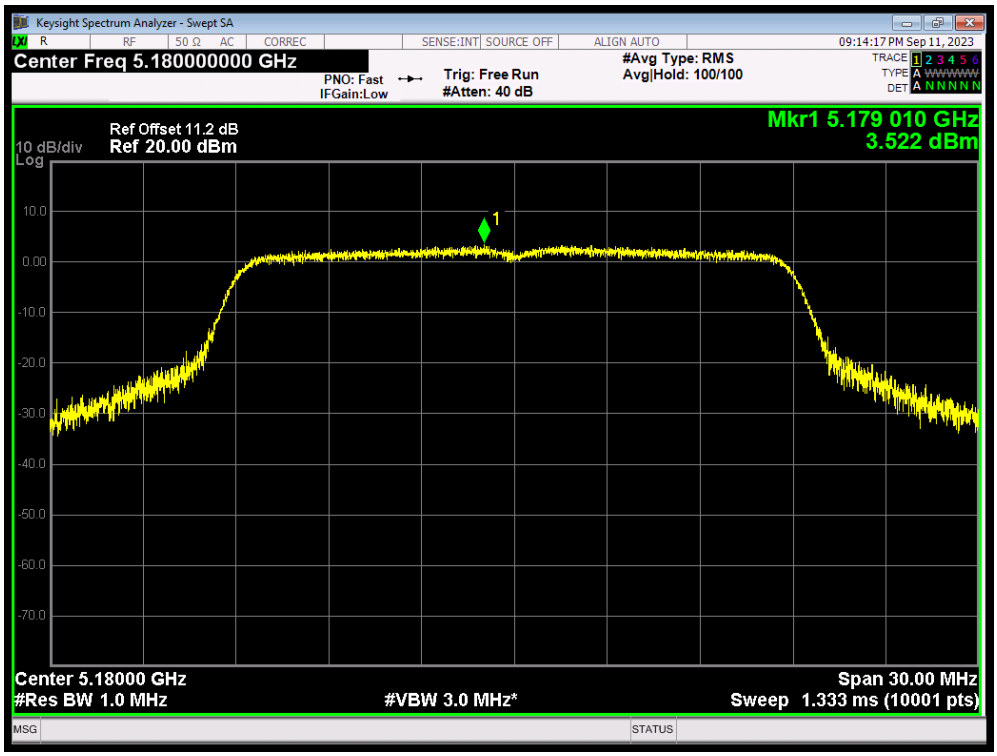
PSD 802.11a 5200MHz



PSD 802.11a 5240MHz



PSD 802.11ac(VHT20) 5180MHz



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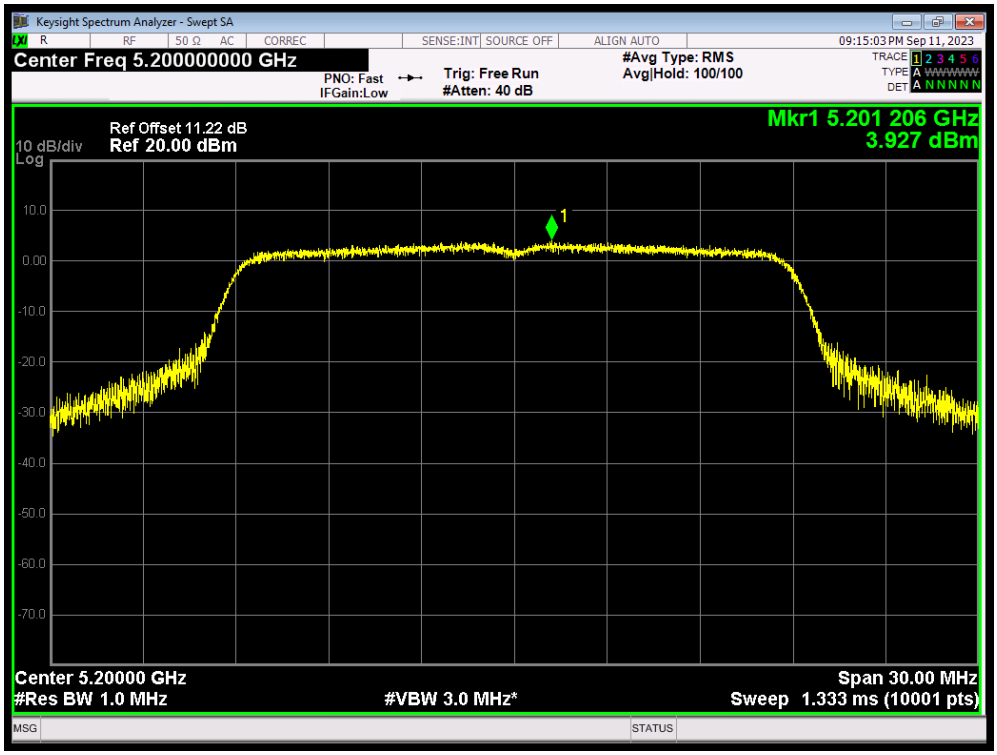

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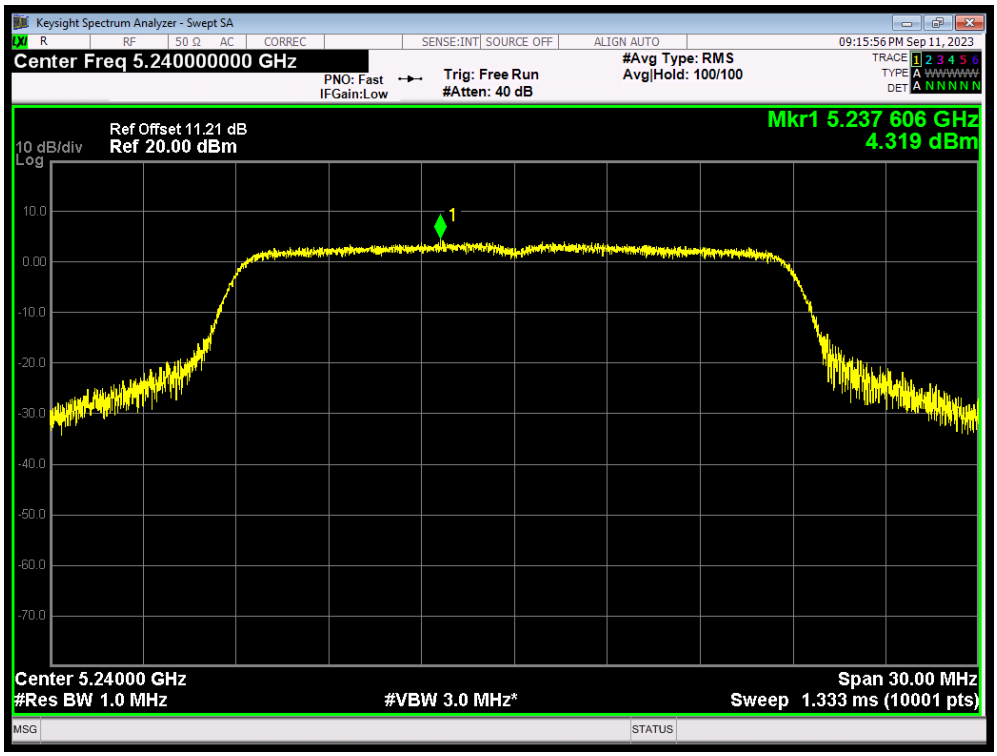
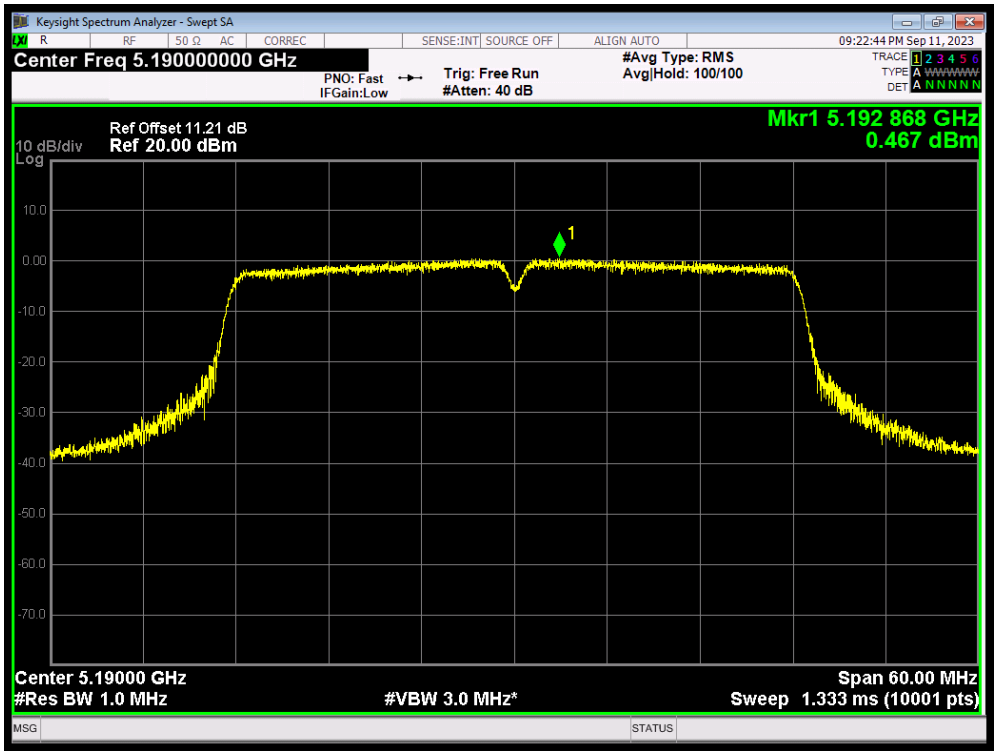
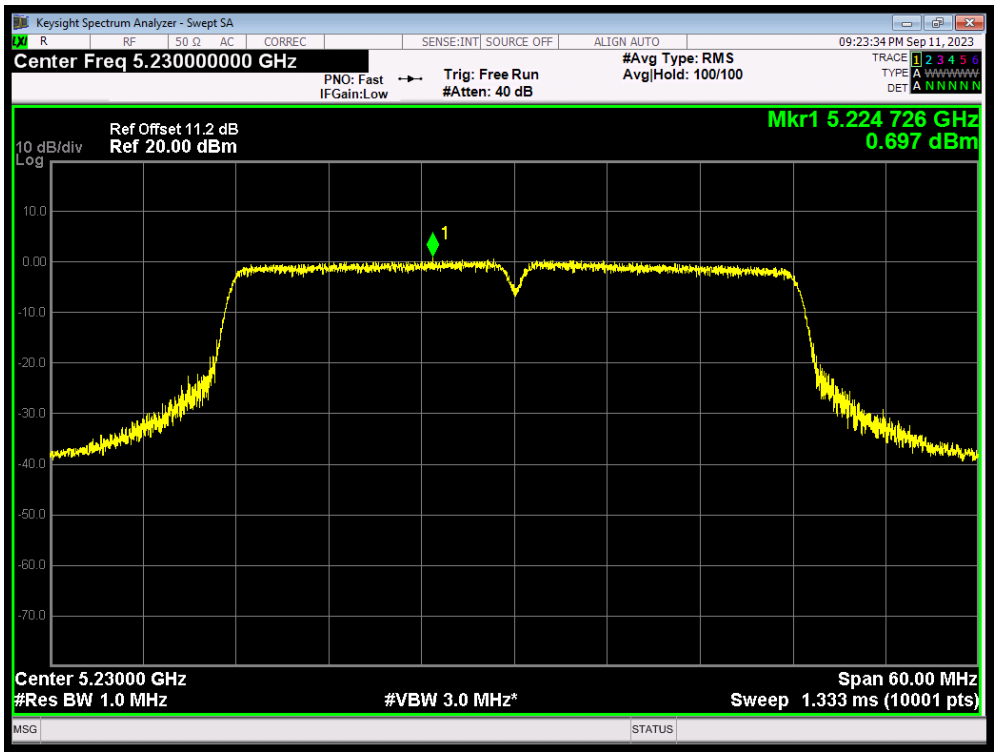


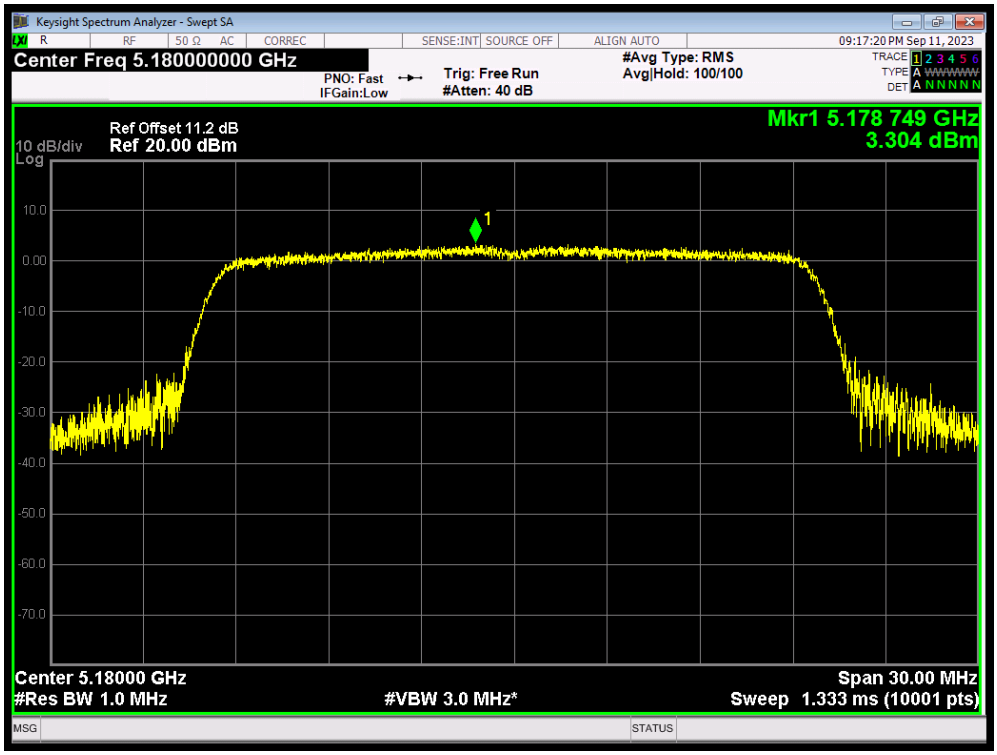
PSD 802.11ac(VHT40) 5190MHz



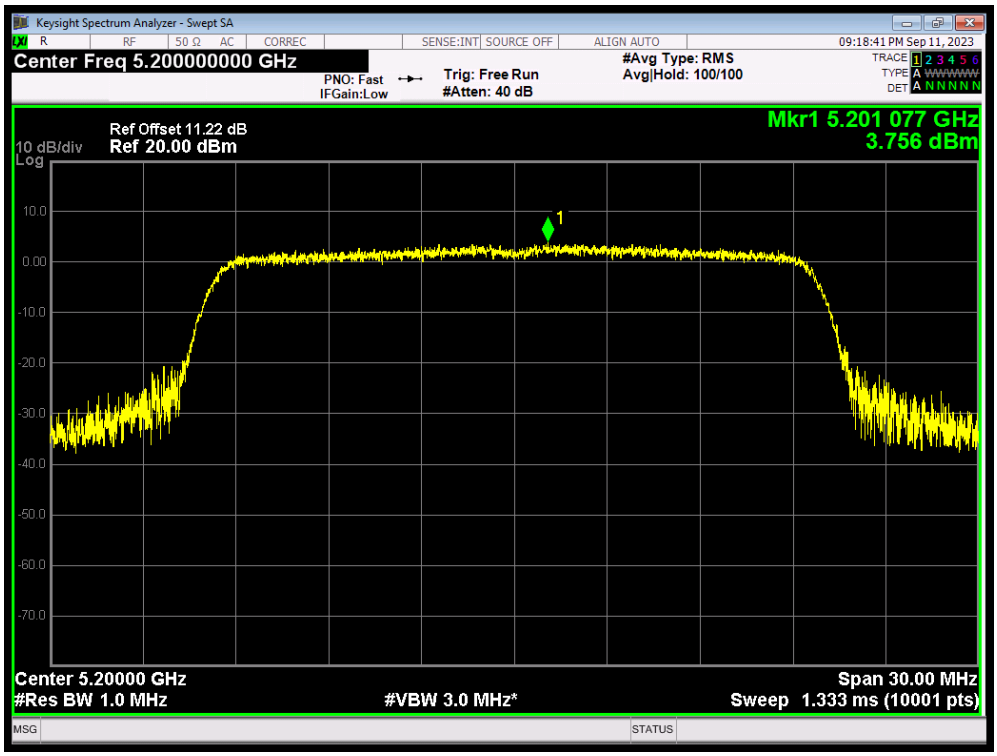
PSD 802.11ac(VHT40) 5230MHz



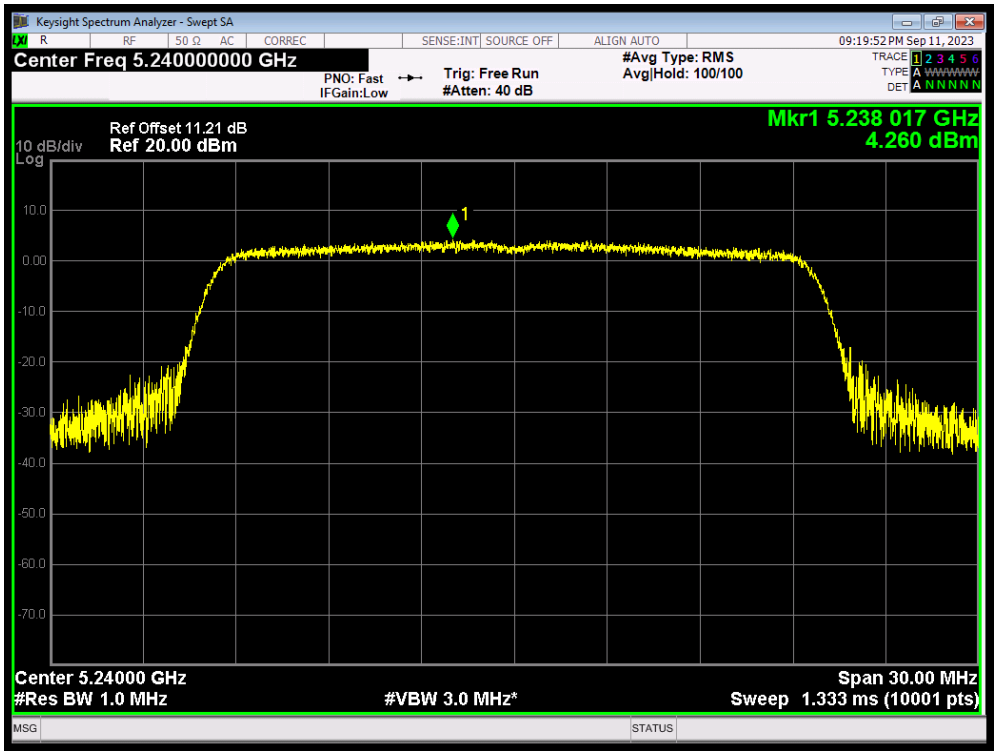
PSD 802.11ax(HE20) 5180MHz



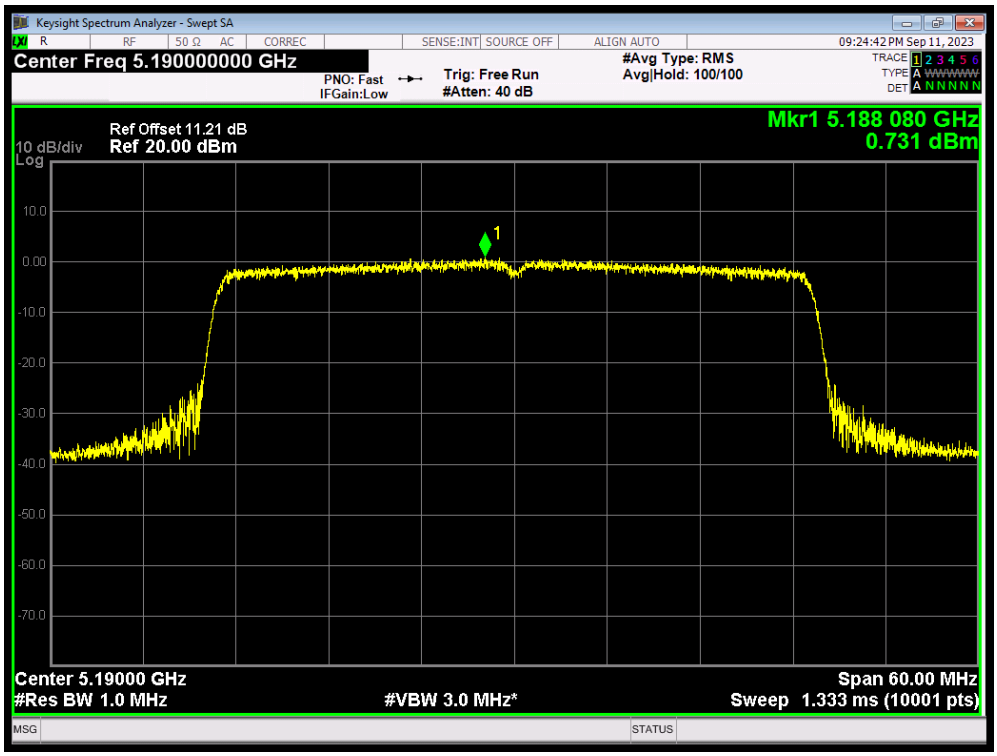
PSD 802.11ax(HE20) 5200MHz



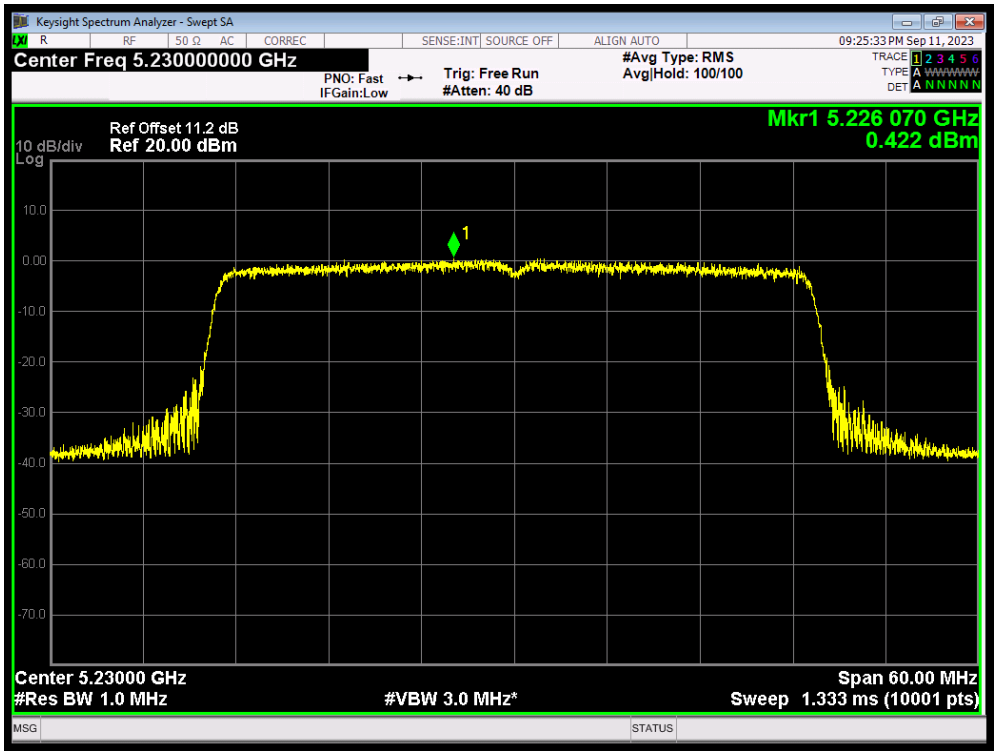
PSD 802.11ax(HE20) 5240MHz



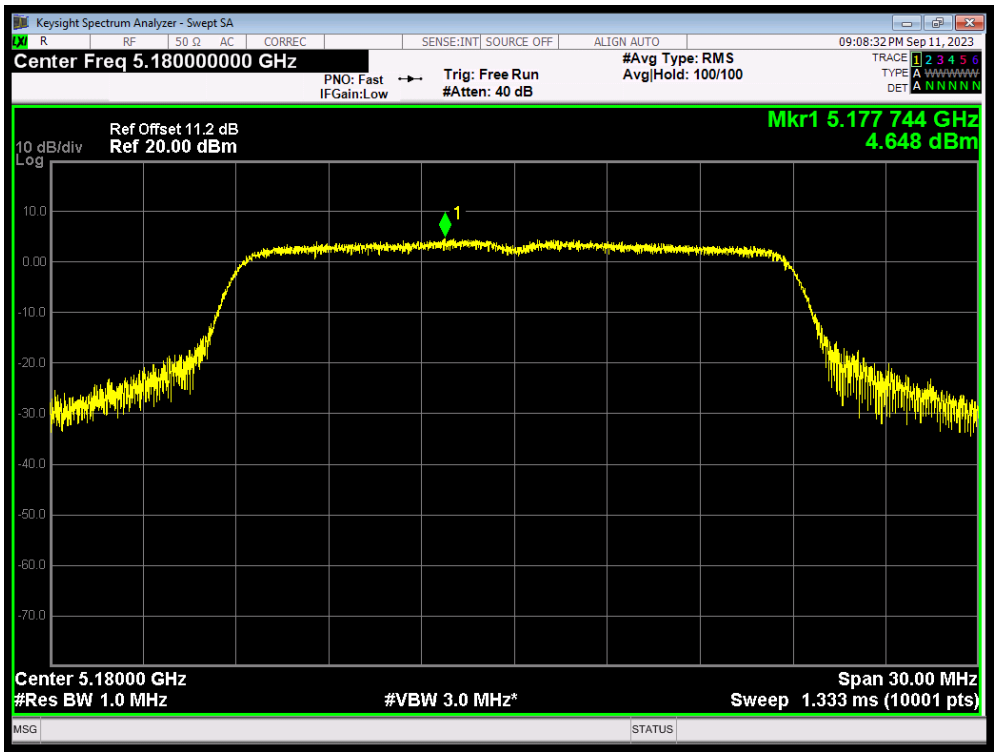
PSD 802.11ax(HE40) 5190MHz



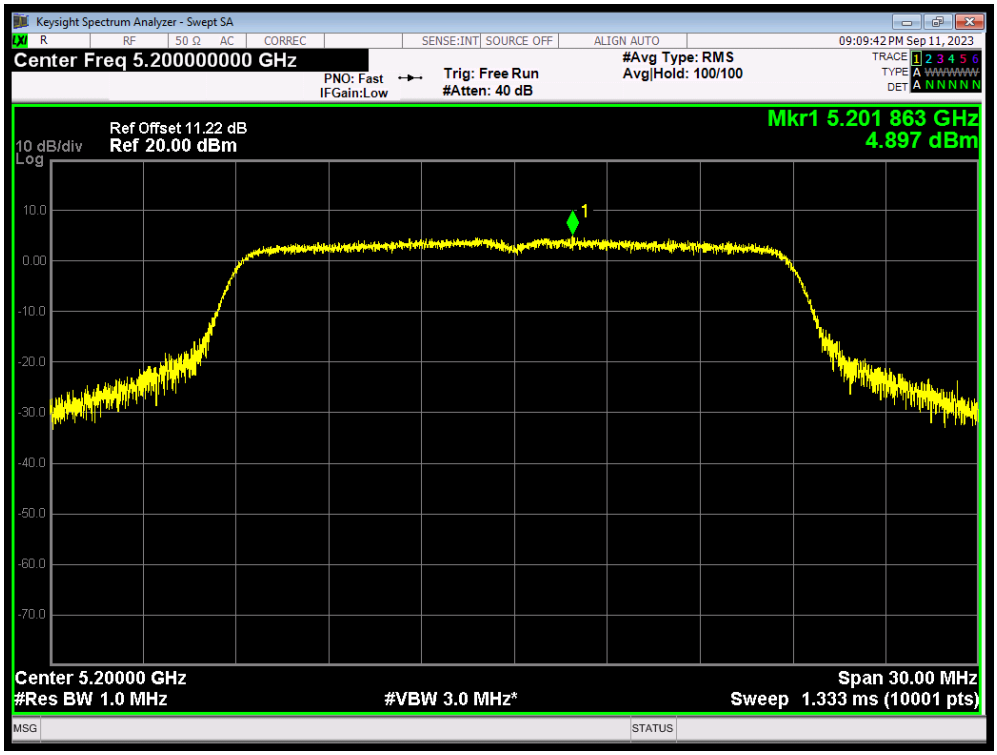
PSD 802.11ax(HE40) 5230MHz



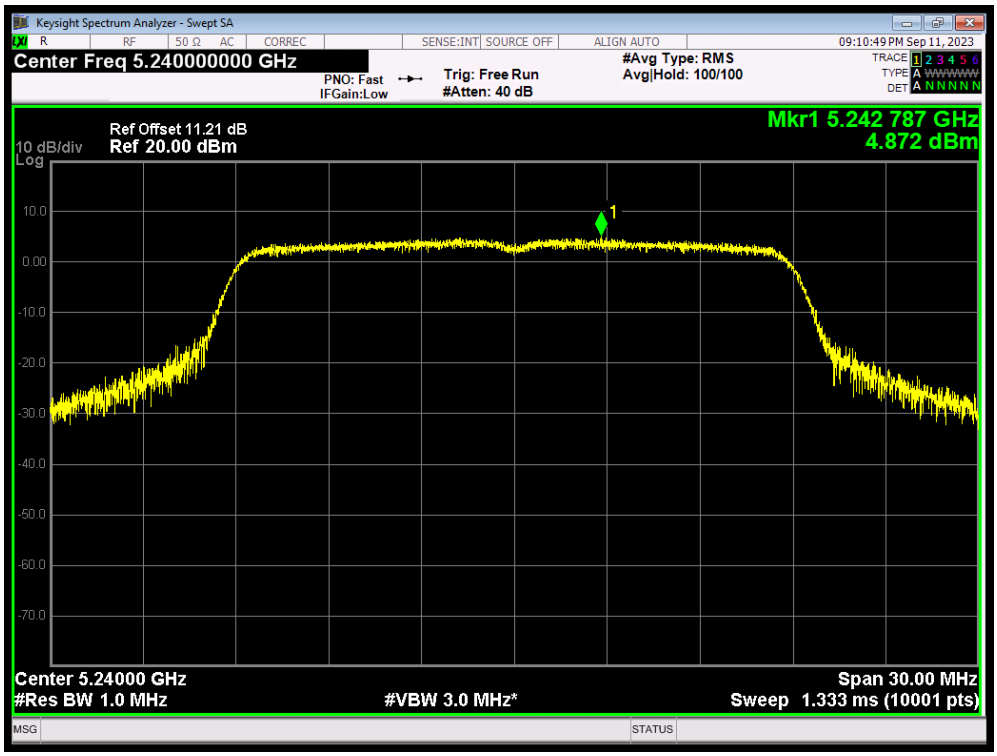
PSD 802.11n(HT20) 5180MHz



PSD 802.11n(HT20) 5200MHz



PSD 802.11n(HT20) 5240MHz



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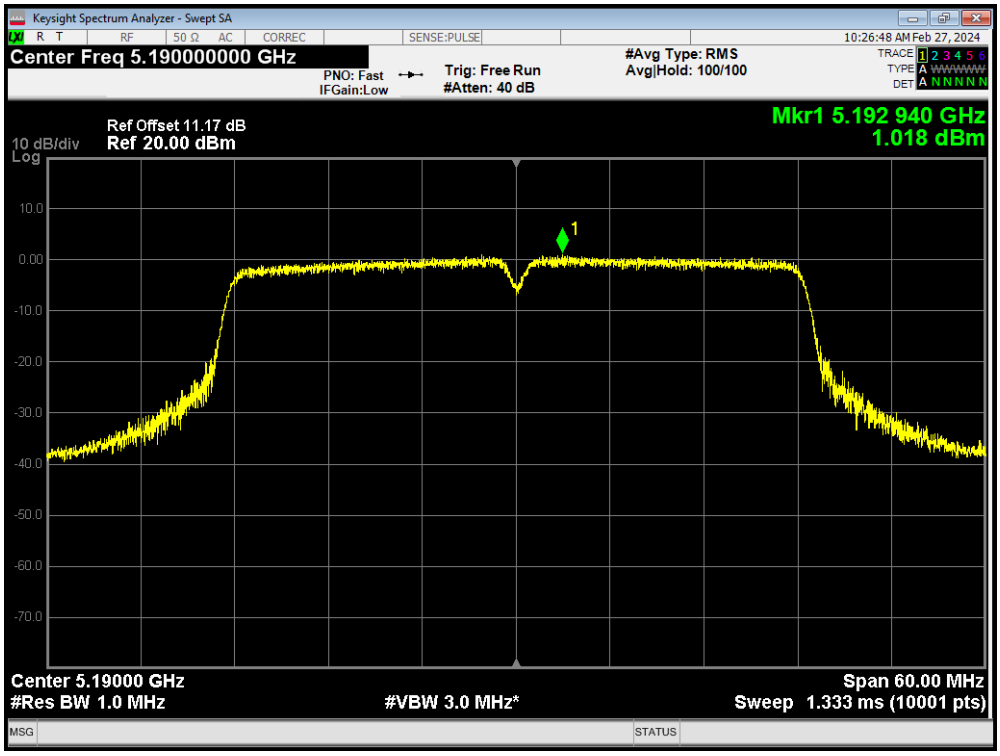

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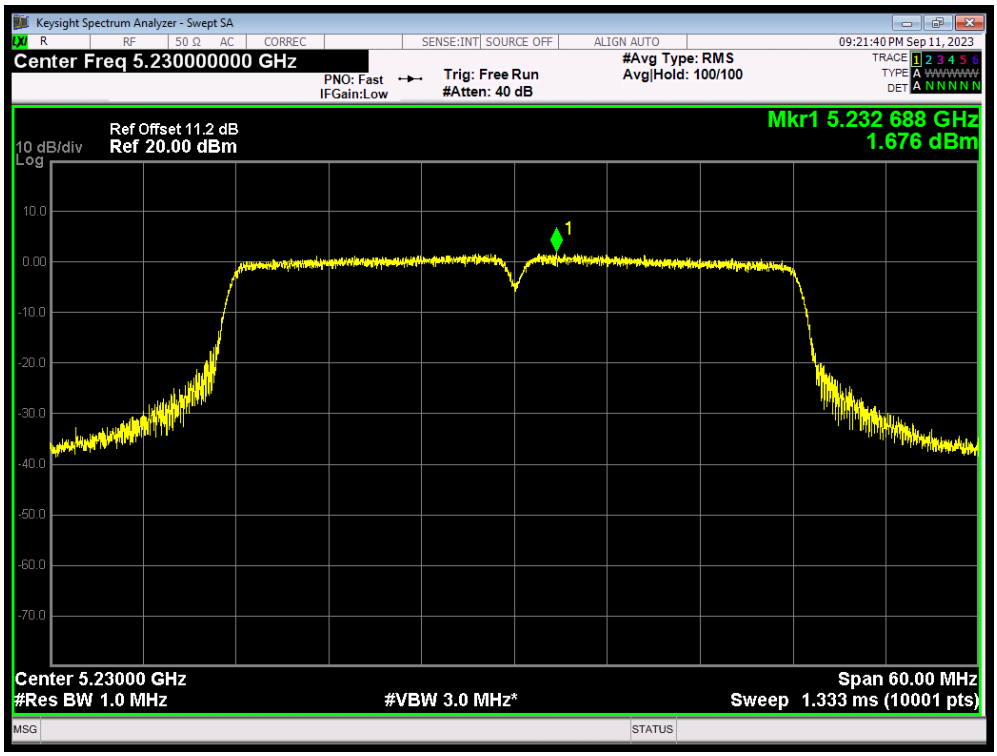
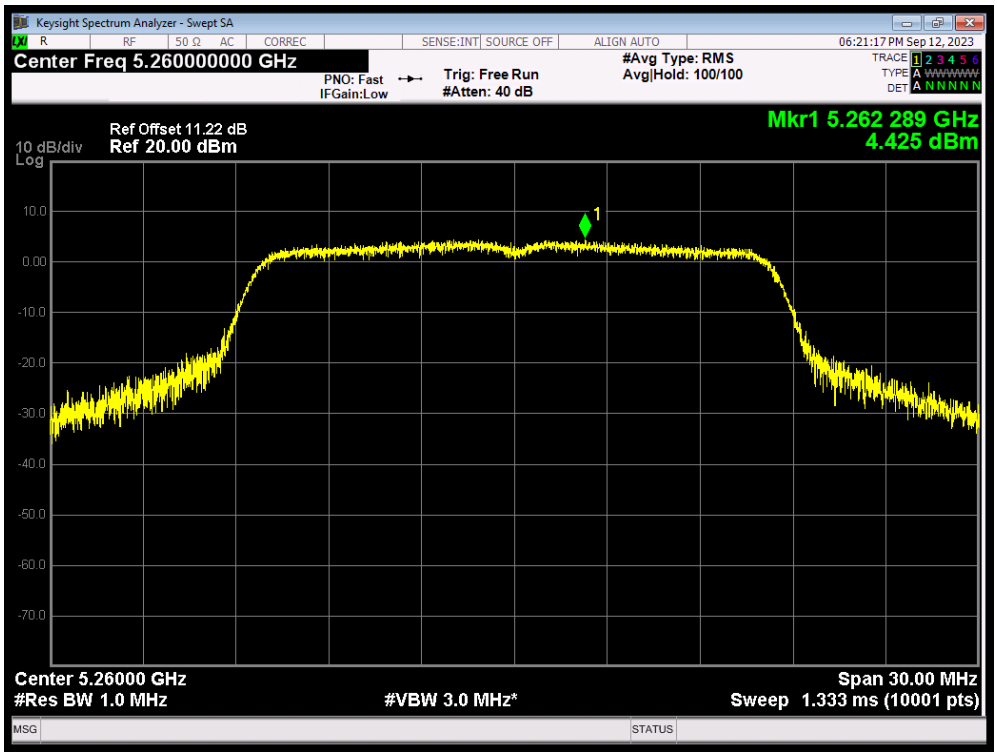
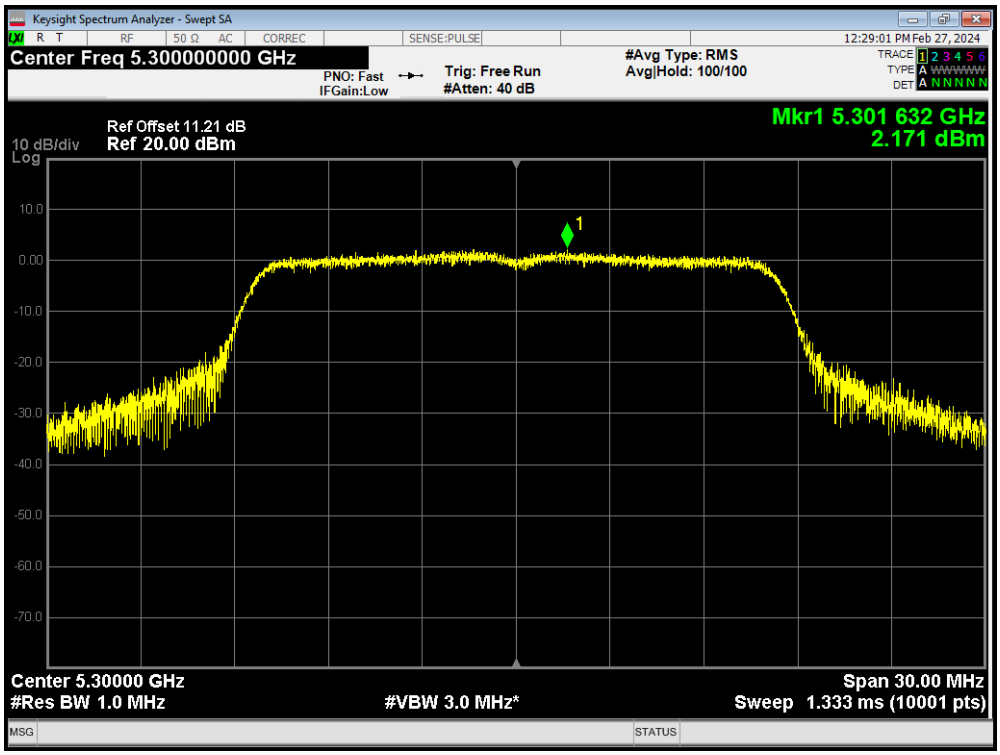


U-NII-2A

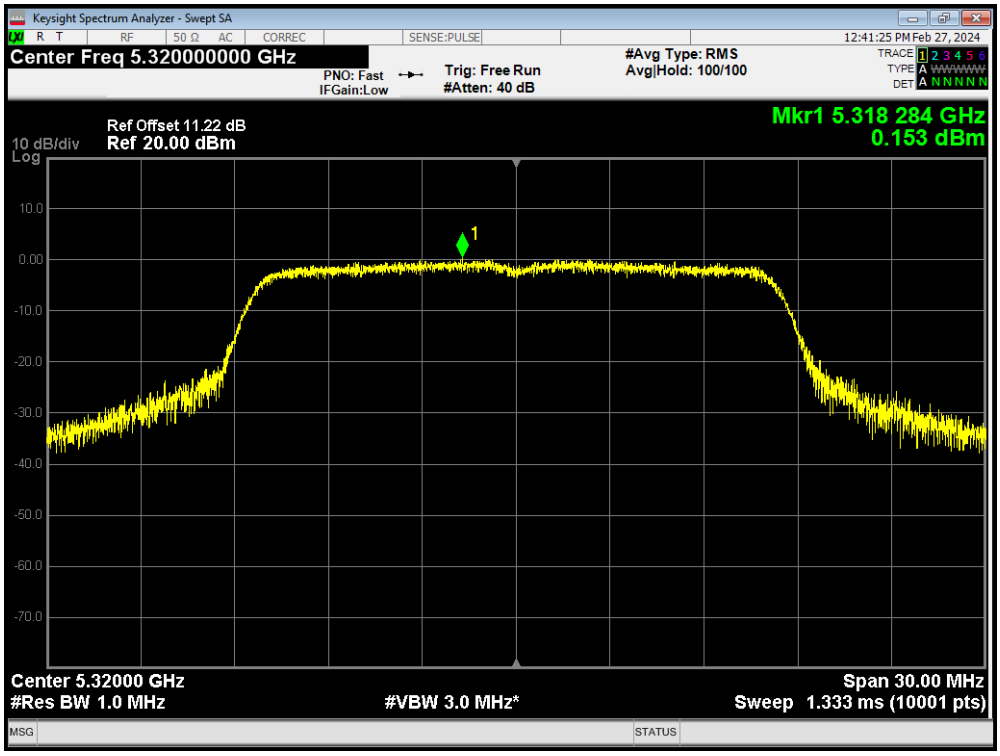
PSD 802.11a 5260MHz



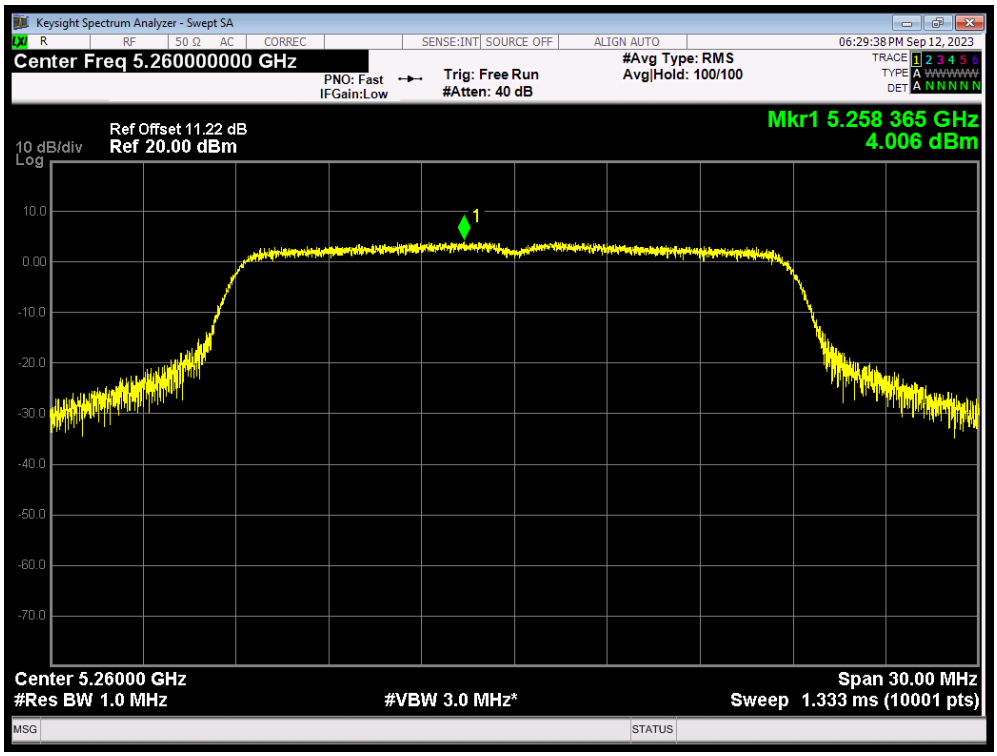
PSD 802.11a 5300MHz



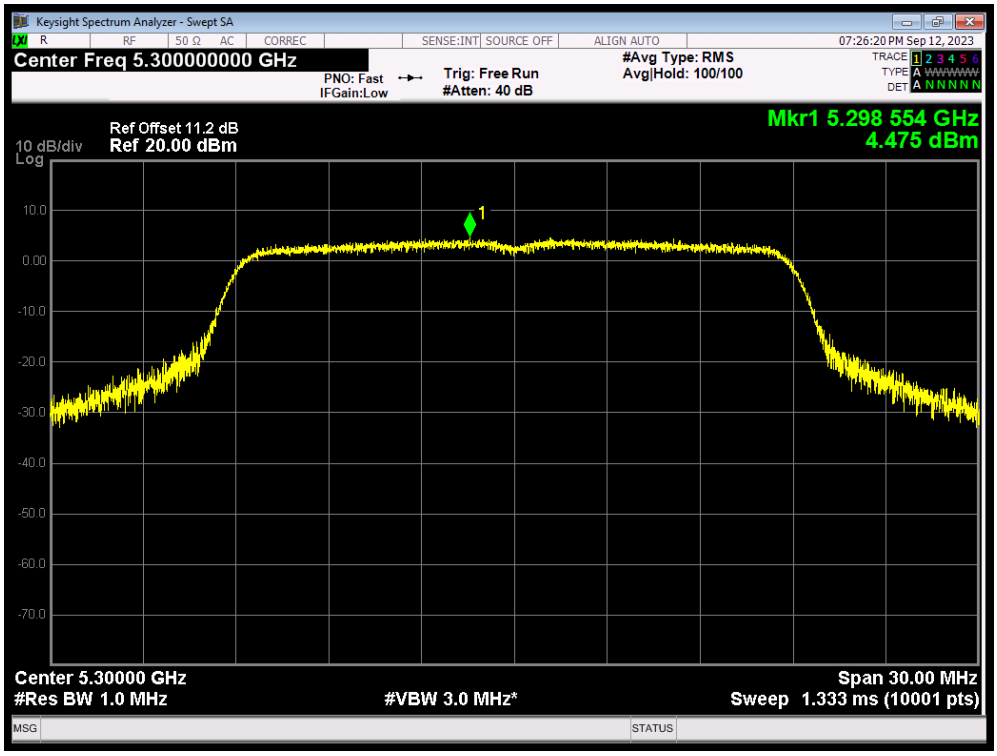
PSD 802.11a 5320MHz



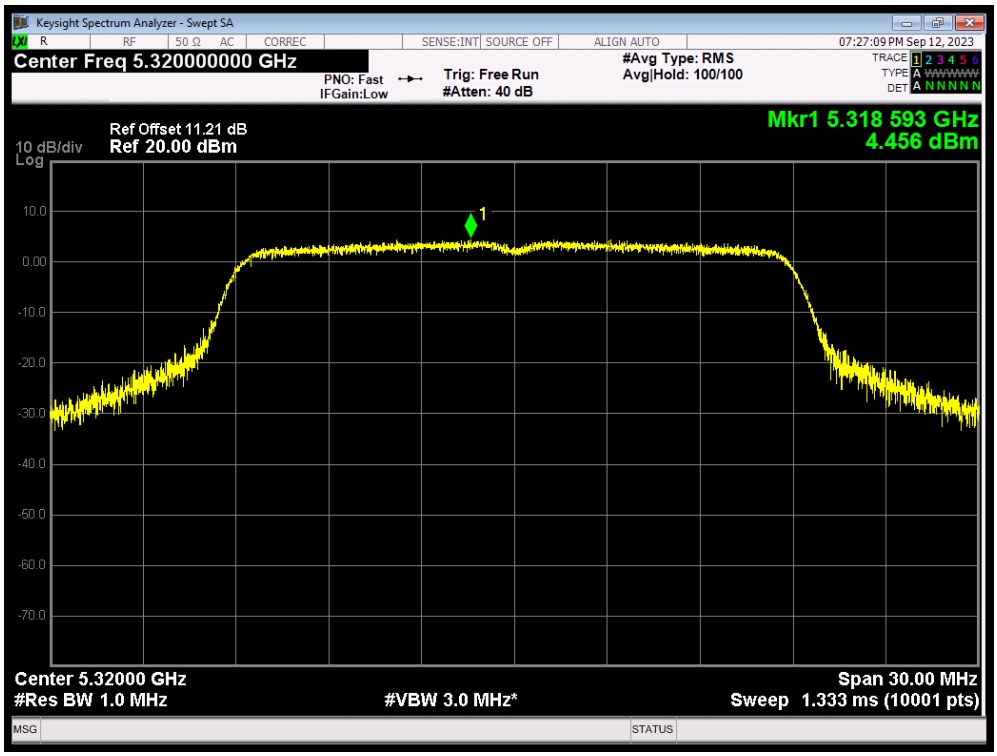
PSD 802.11ac(VHT20) 5260MHz



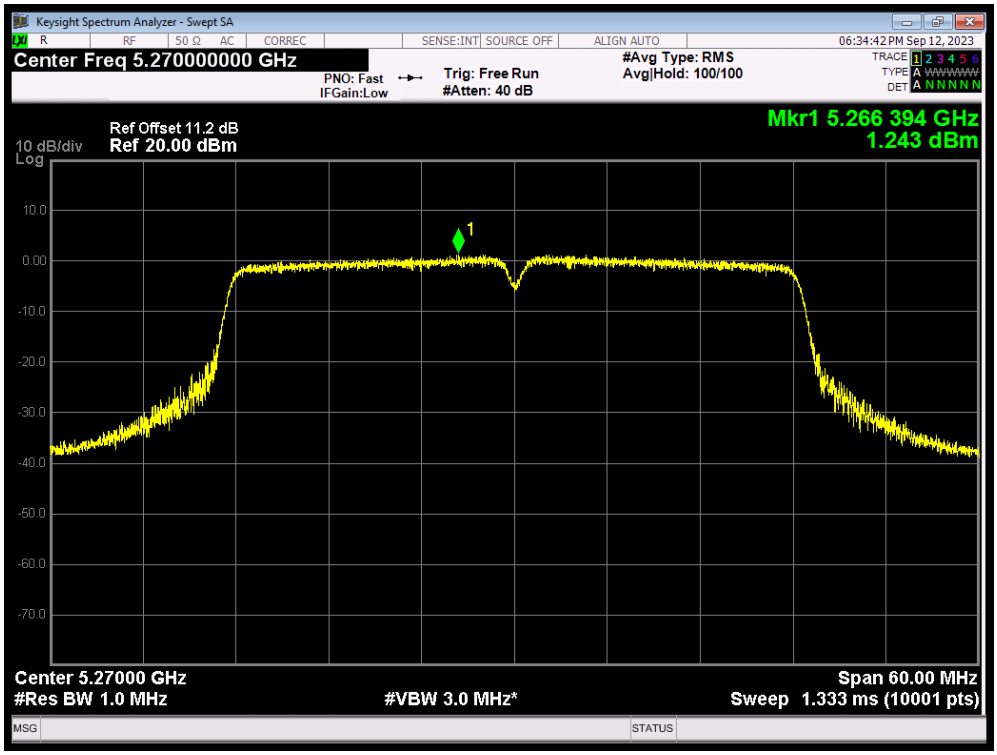
PSD 802.11ac(VHT20) 5300MHz



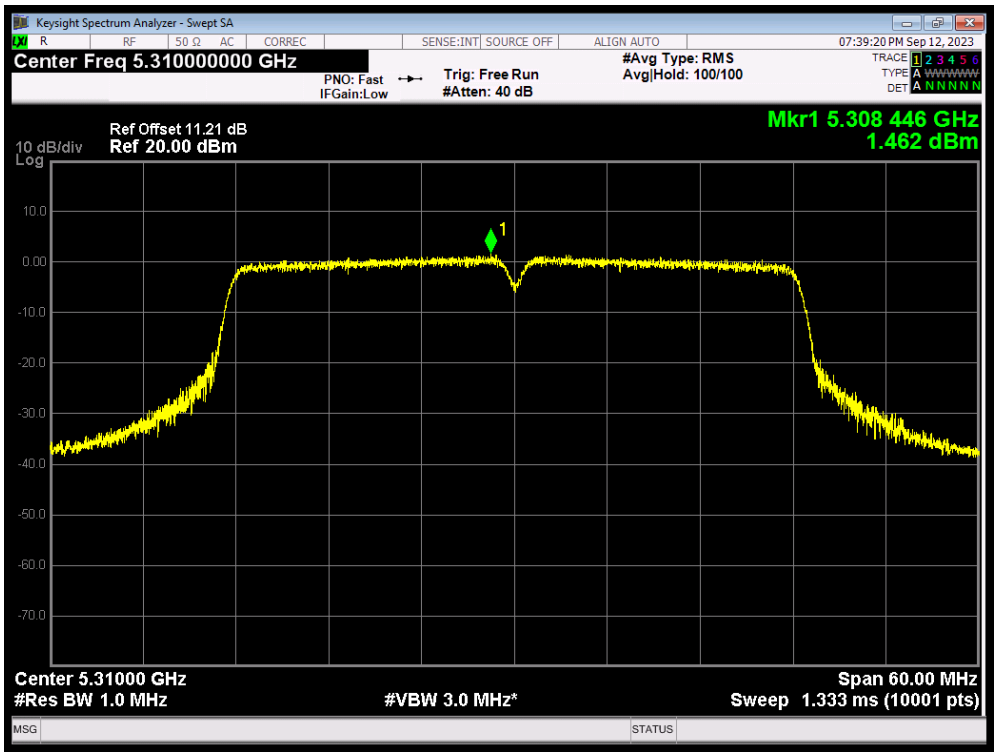
PSD 802.11ac(VHT20) 5320MHz



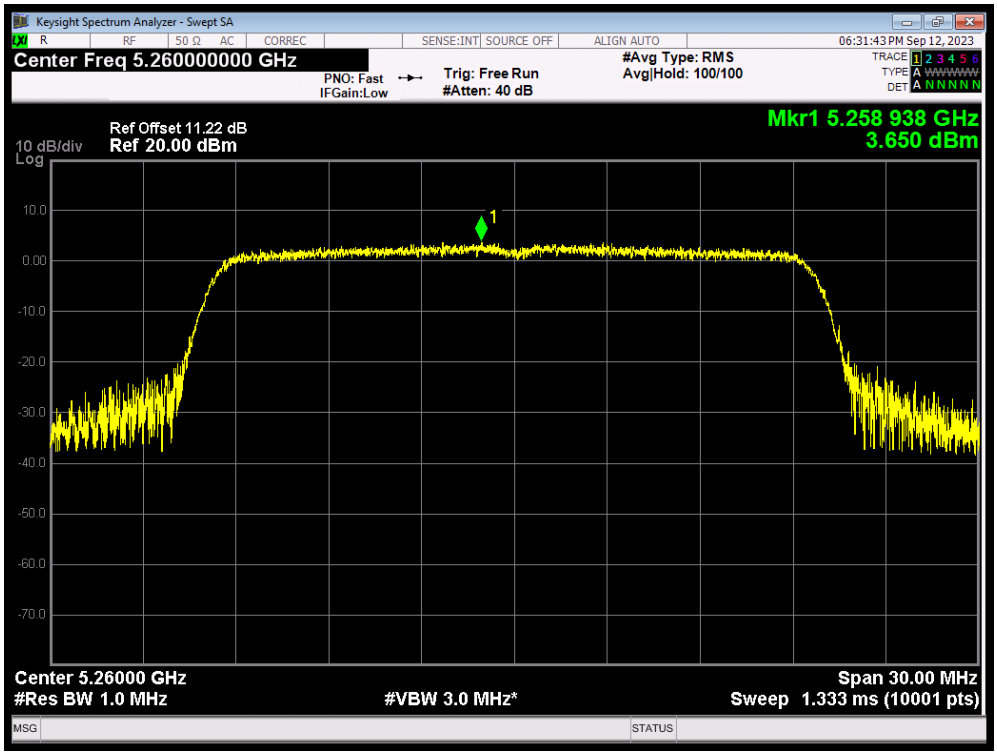
PSD 802.11ac(VHT40) 5270MHz



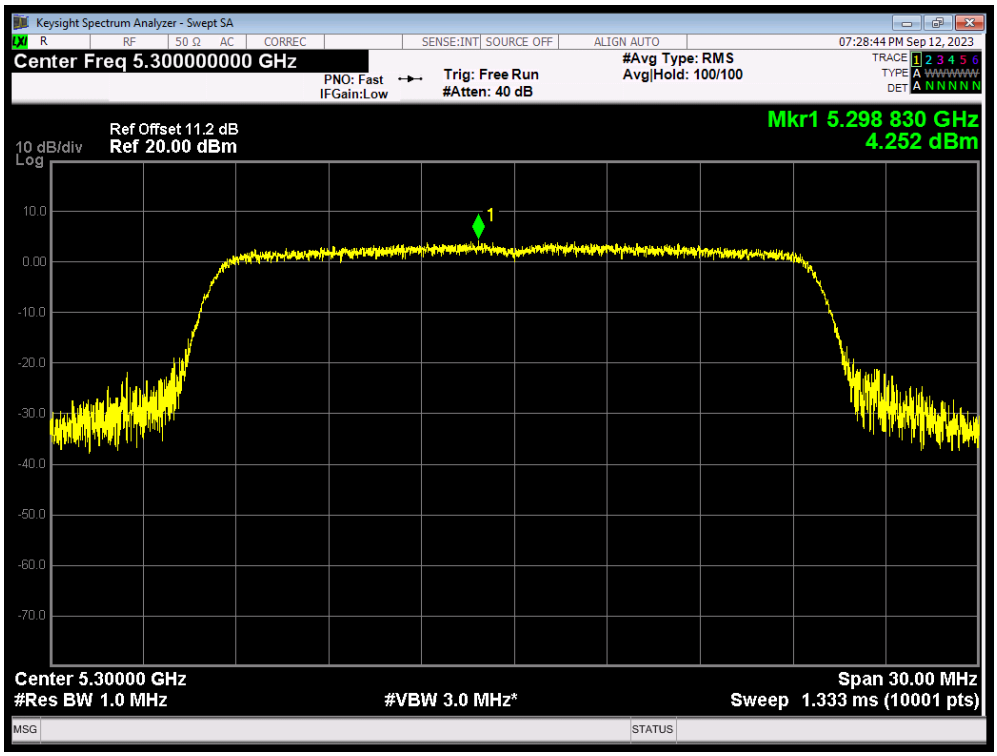
PSD 802.11ac(VHT40) 5310MHz



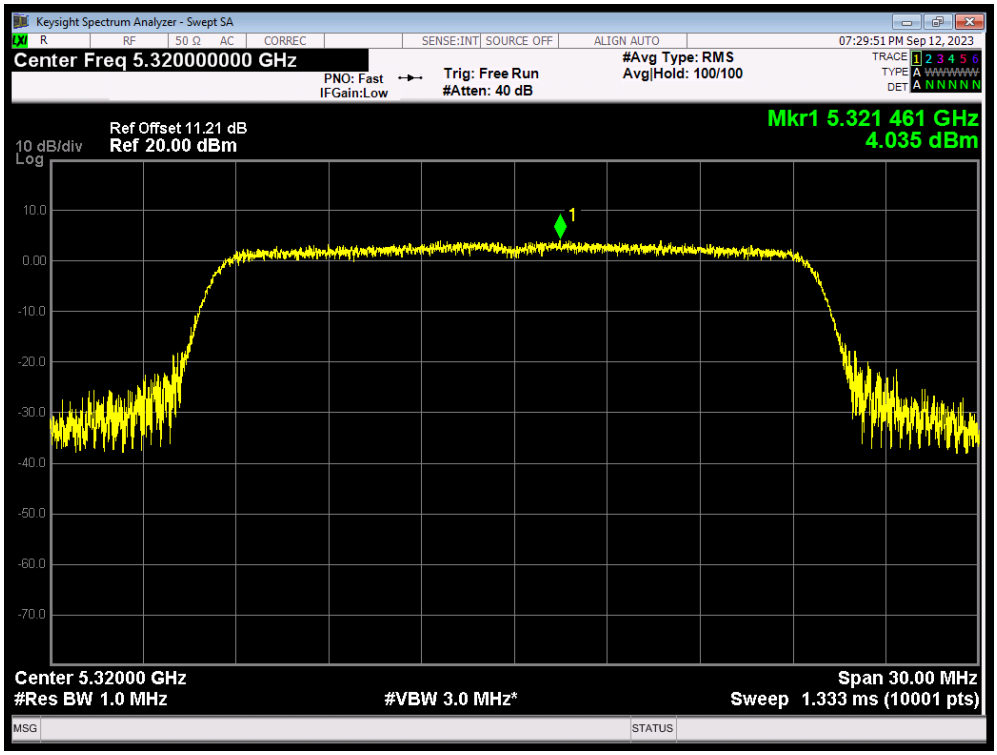
PSD 802.11ax(HE20) 5260MHz



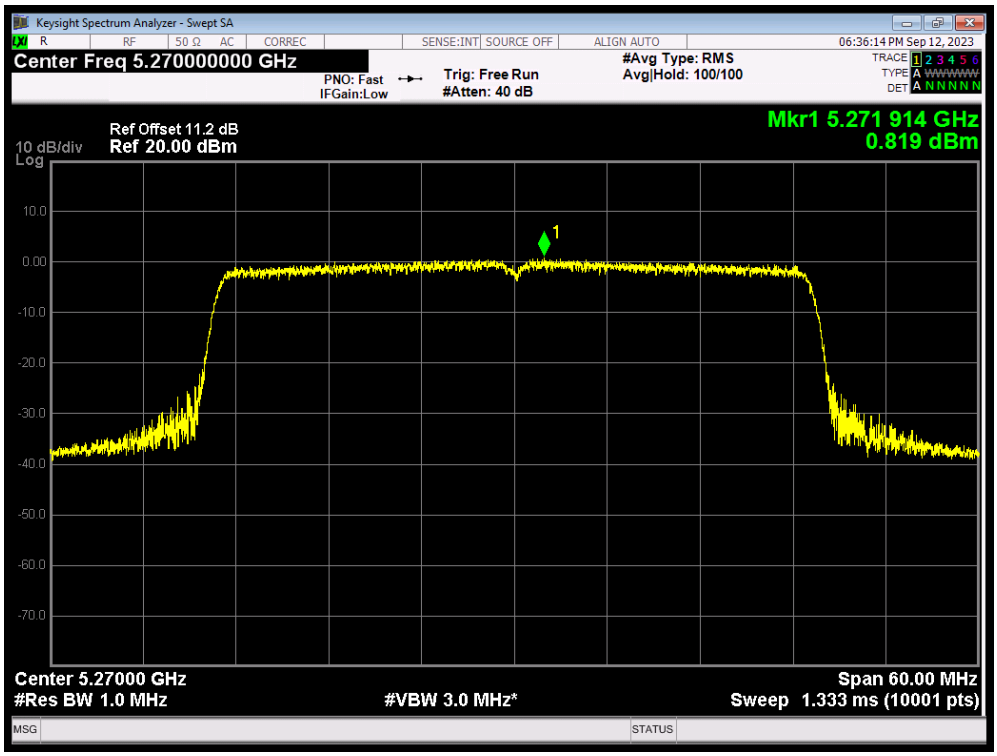
PSD 802.11ax(HE20) 5300MHz



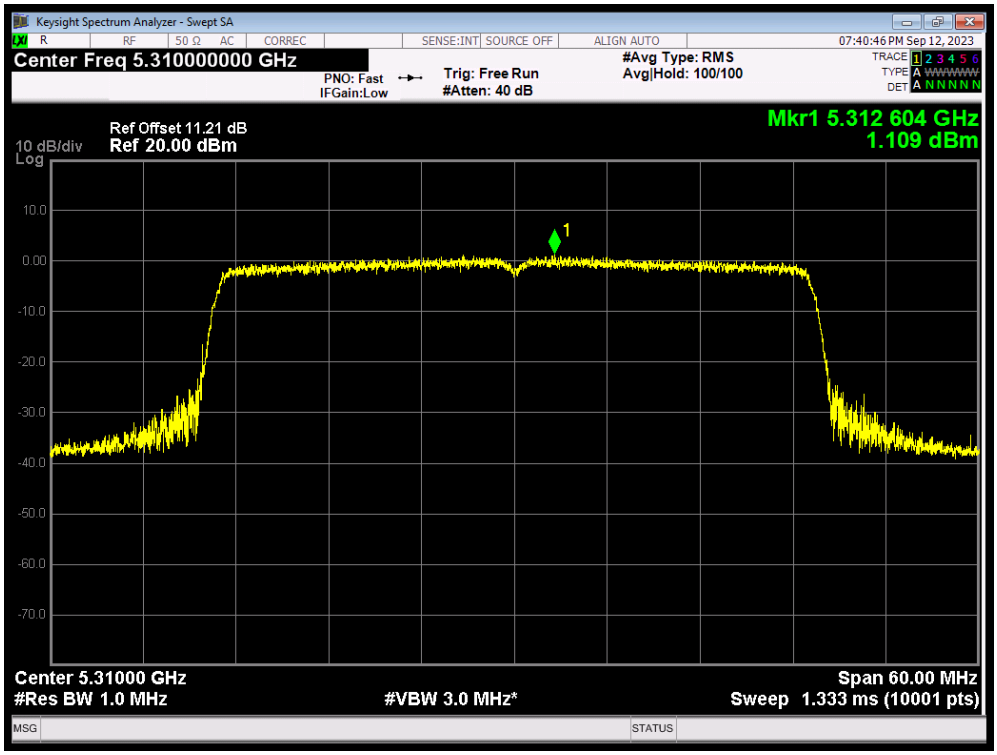
PSD 802.11ax(HE20) 5320MHz



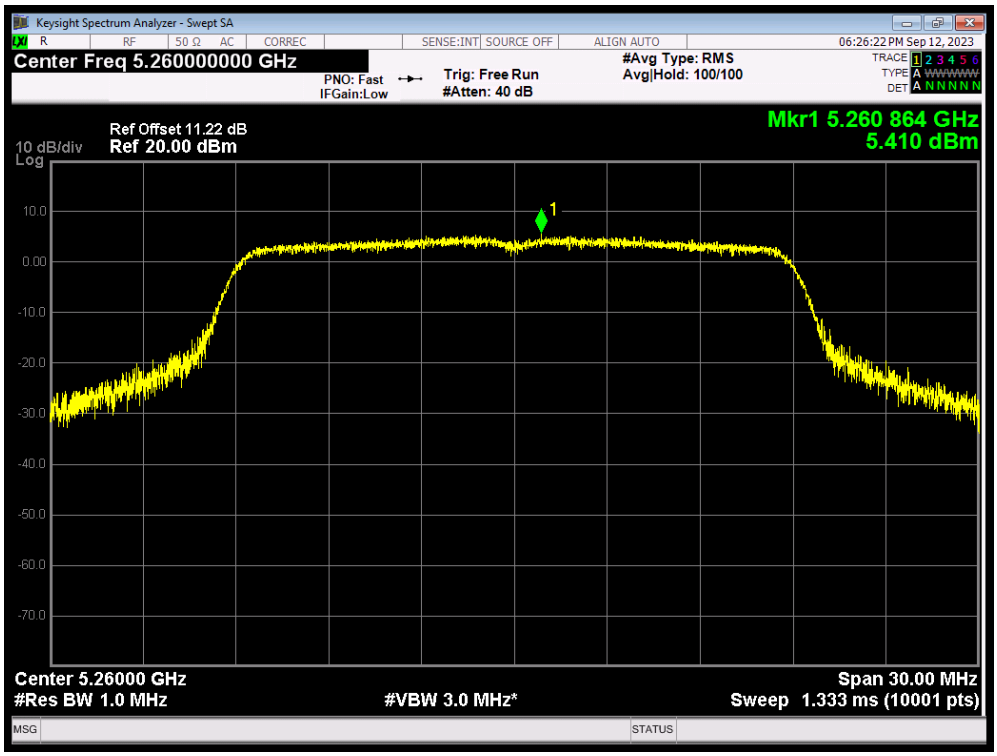
PSD 802.11ax(HE40) 5270MHz



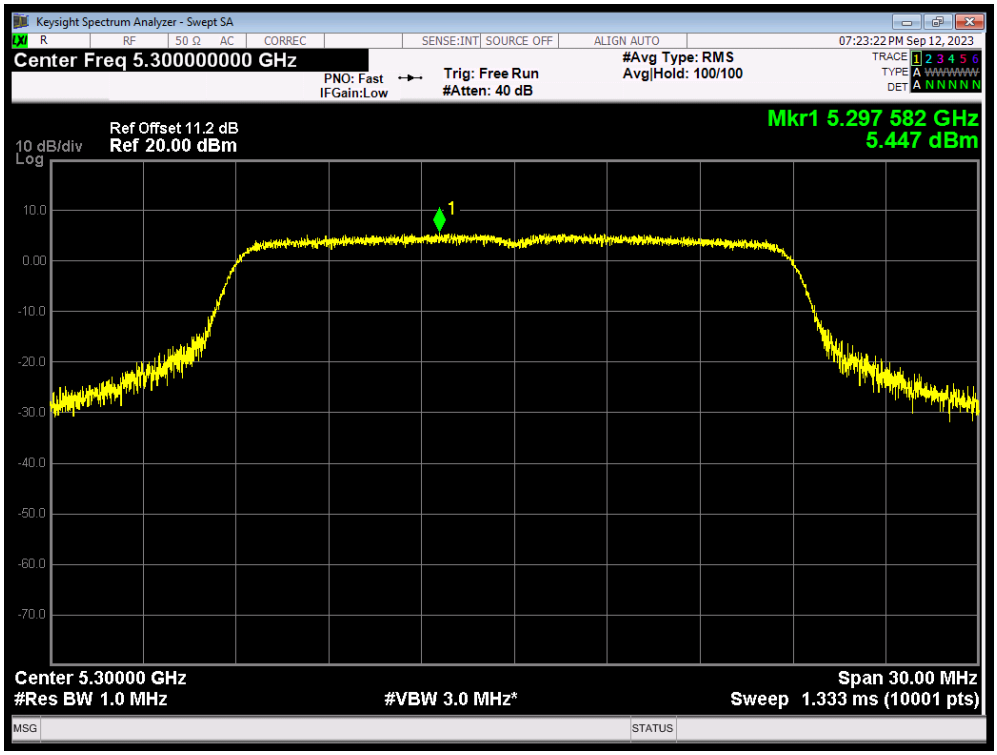
PSD 802.11ax(HE40) 5310MHz



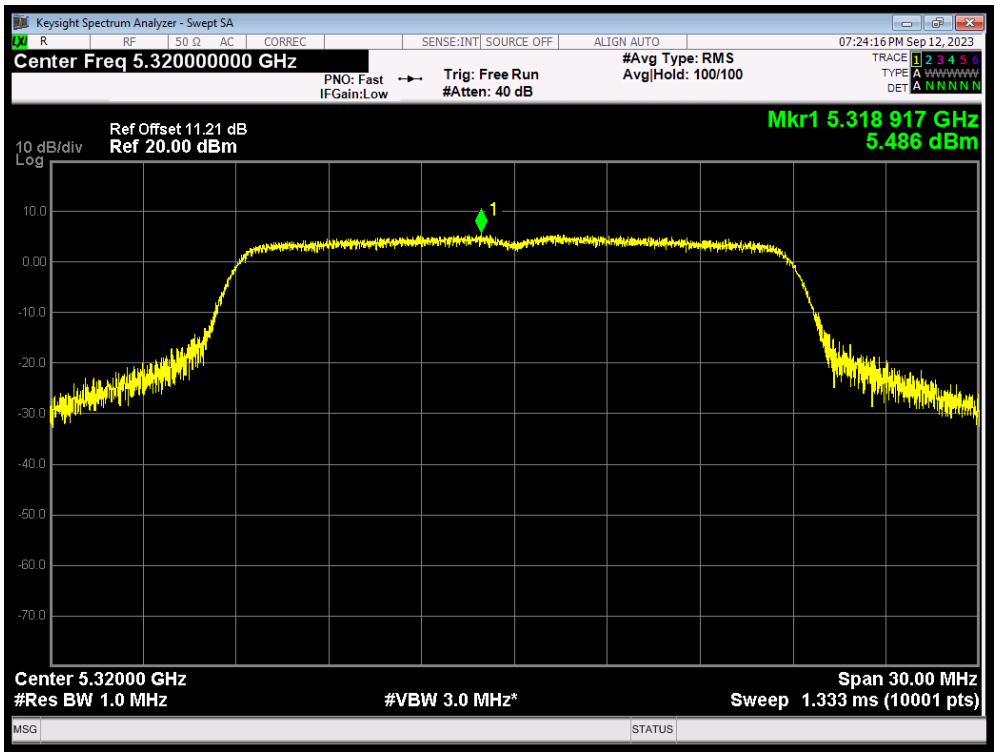
PSD 802.11n(HT20) 5260MHz



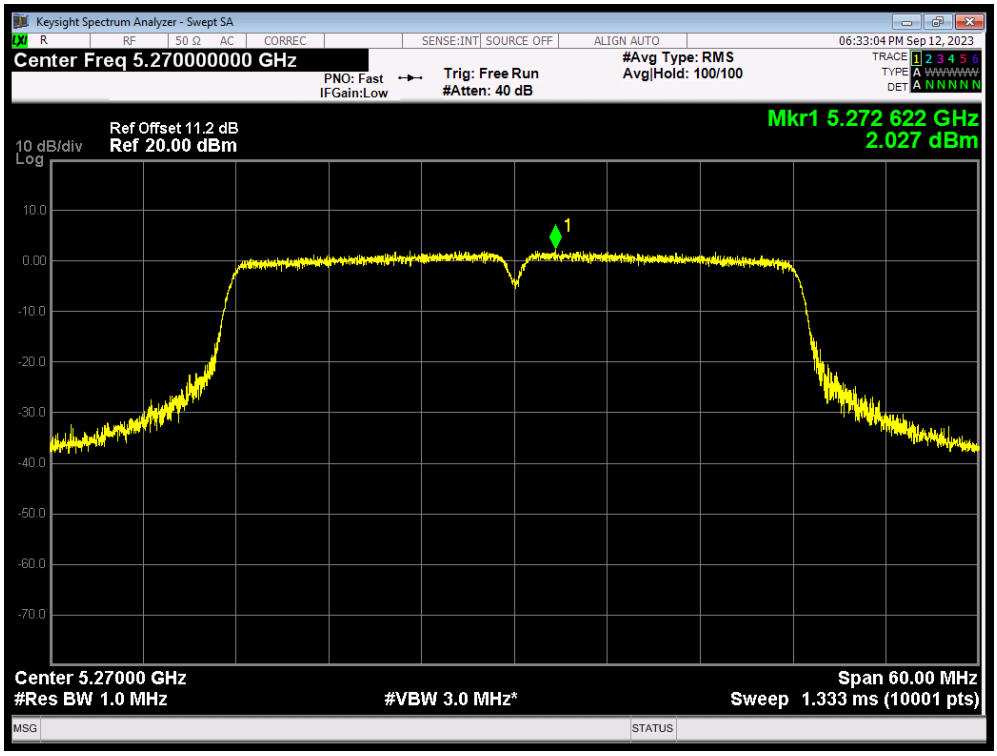
PSD 802.11n(HT20) 5300MHz



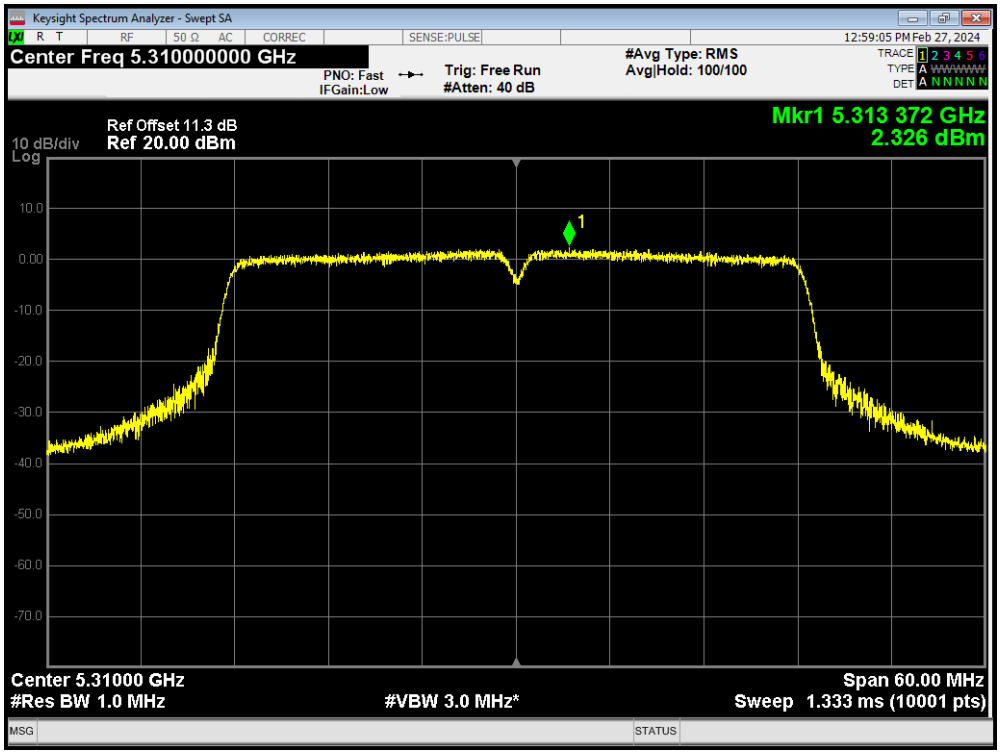
PSD 802.11n(HT20) 5320MHz



PSD 802.11n(HT40) 5270MHz

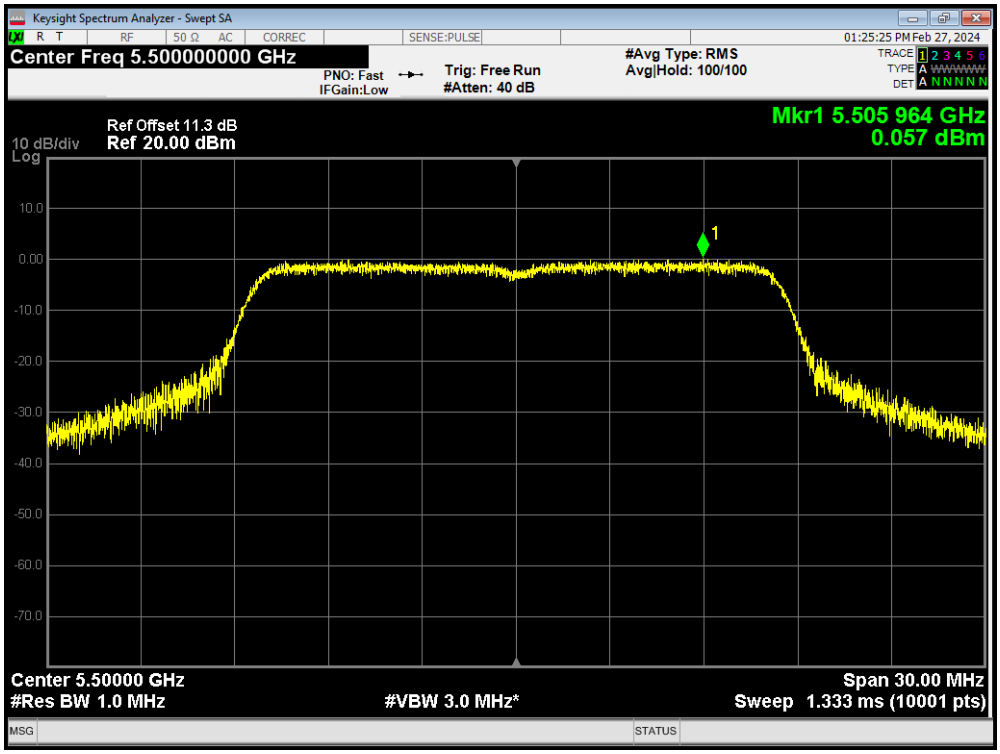


PSD 802.11n(HT40) 5310MHz

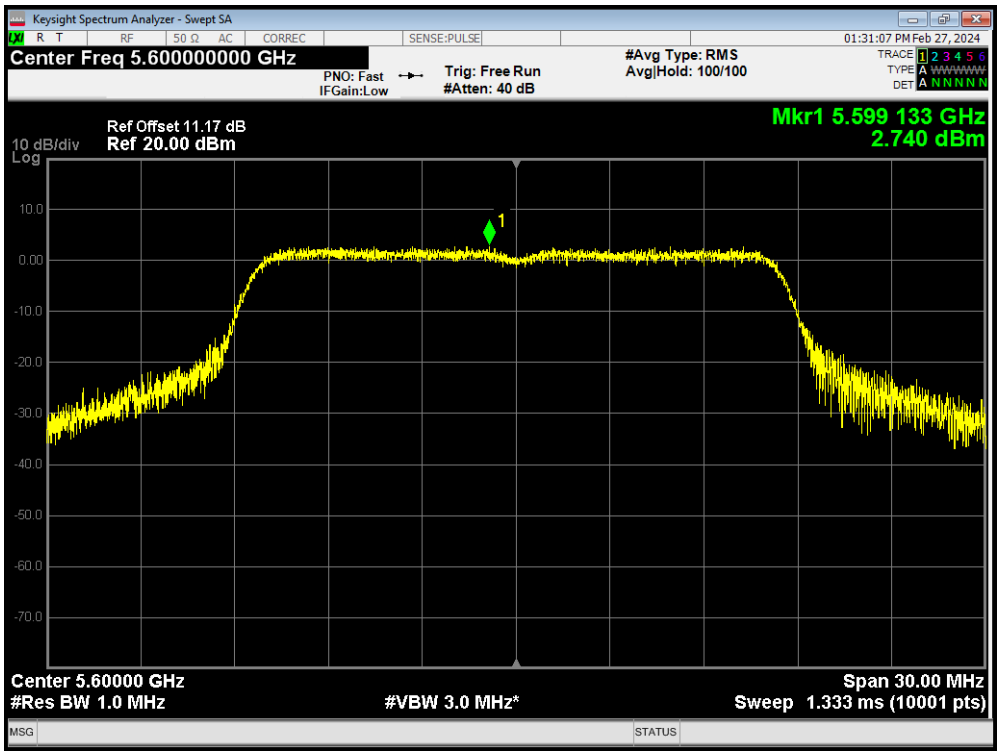


U-NII-2C

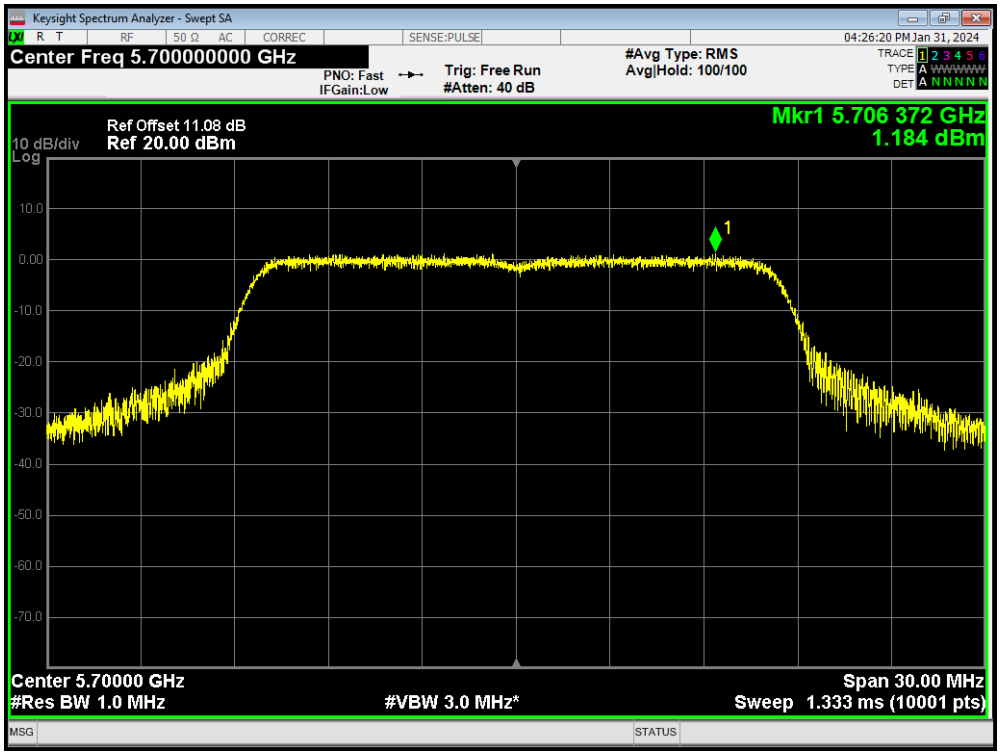
PSD 802.11a 5500MHz



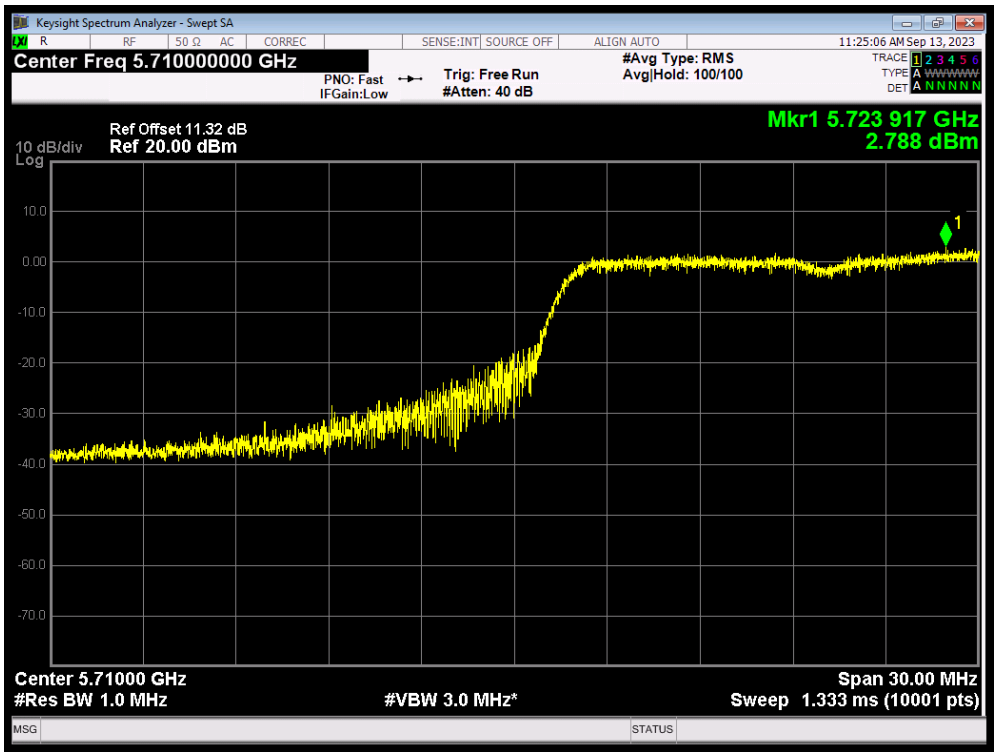
PSD 802.11a 5600MHz



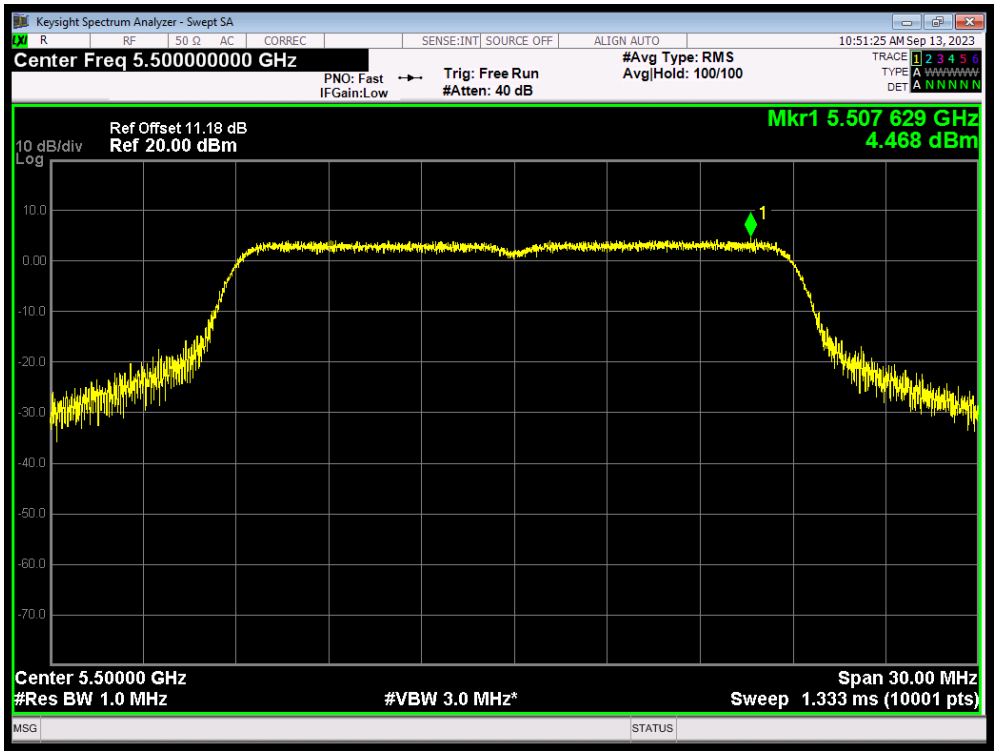
PSD 802.11a 5700MHz



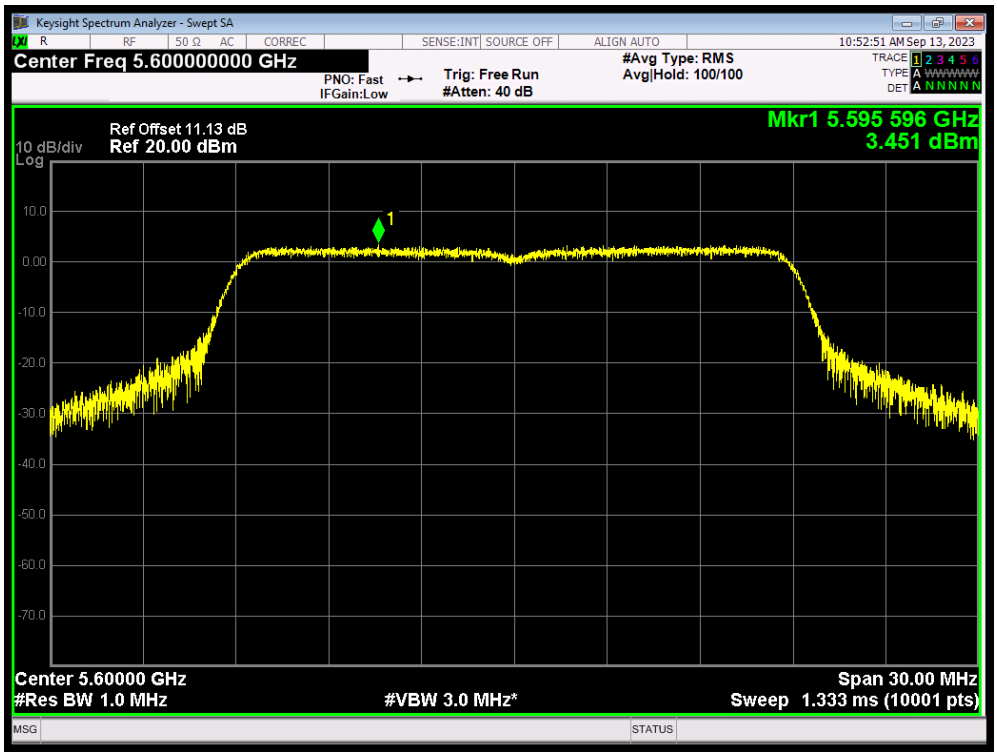
PSD 802.11a 5720MHz



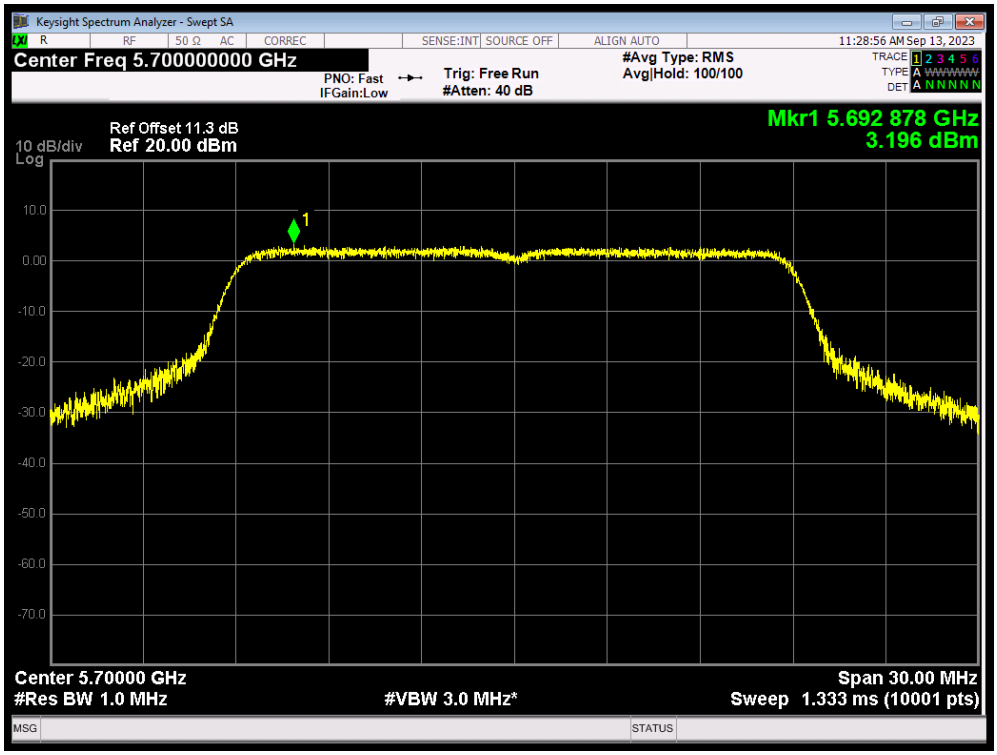
PSD 802.11ac(VHT20) 5500MHz



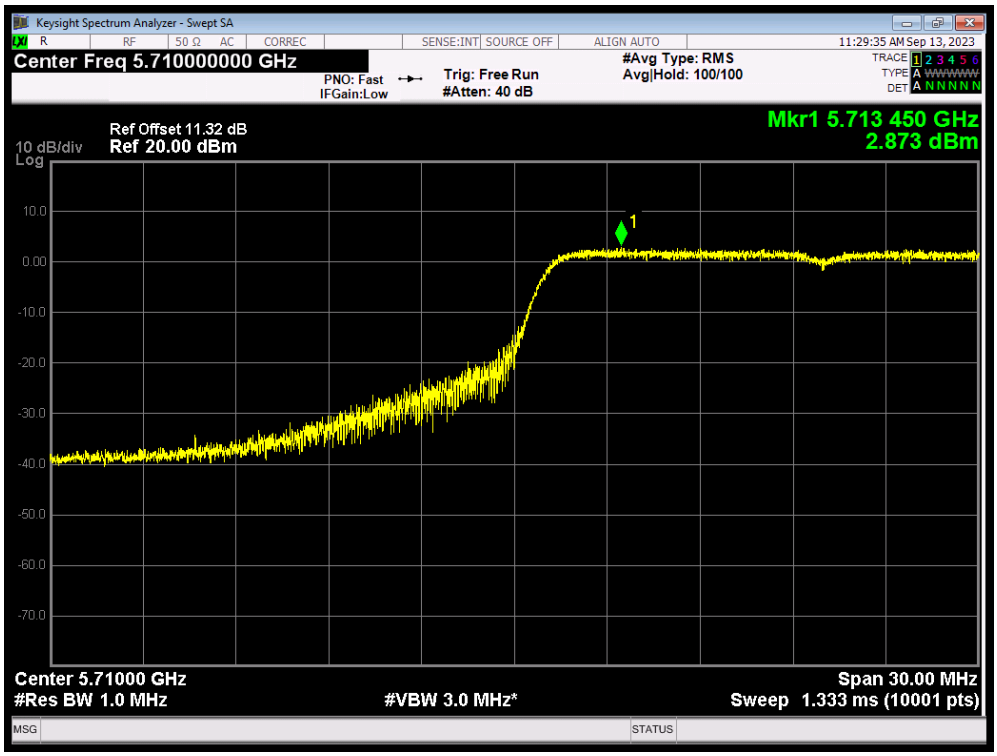
PSD 802.11ac(VHT20) 5600MHz



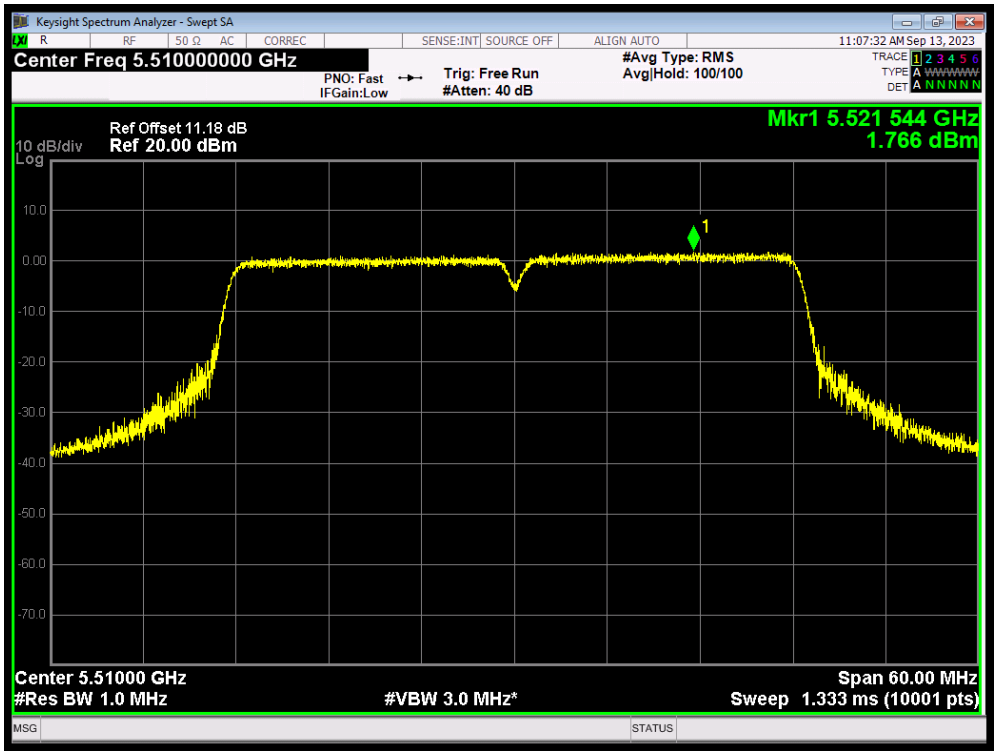
PSD 802.11ac(VHT20) 5700MHz



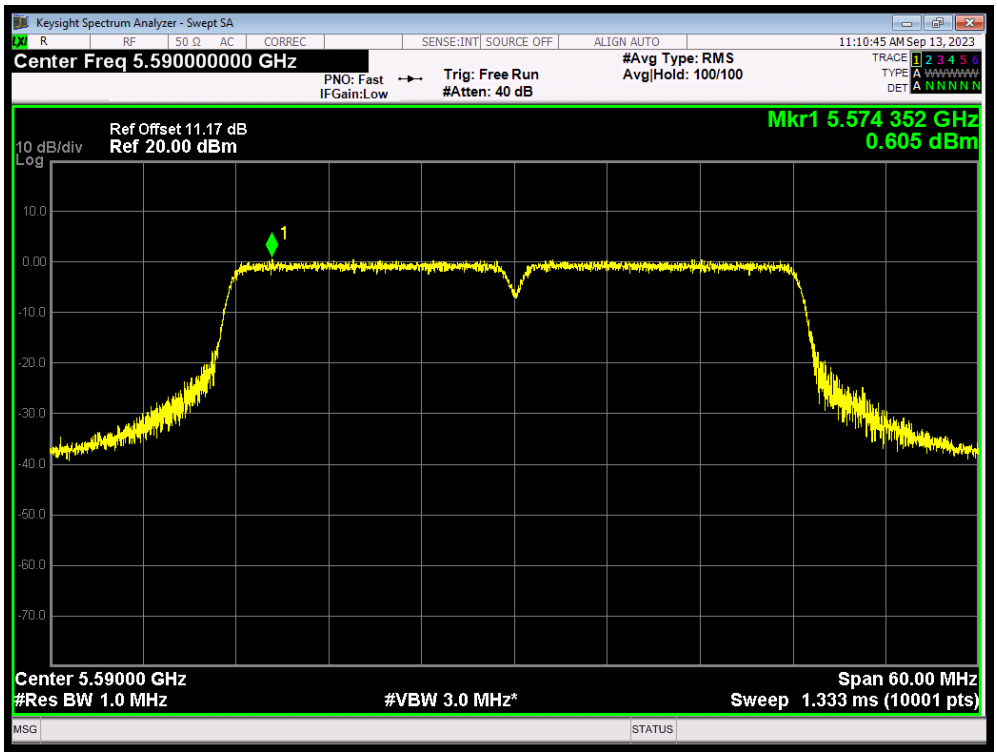
PSD 802.11ac(VHT20) 5720MHz



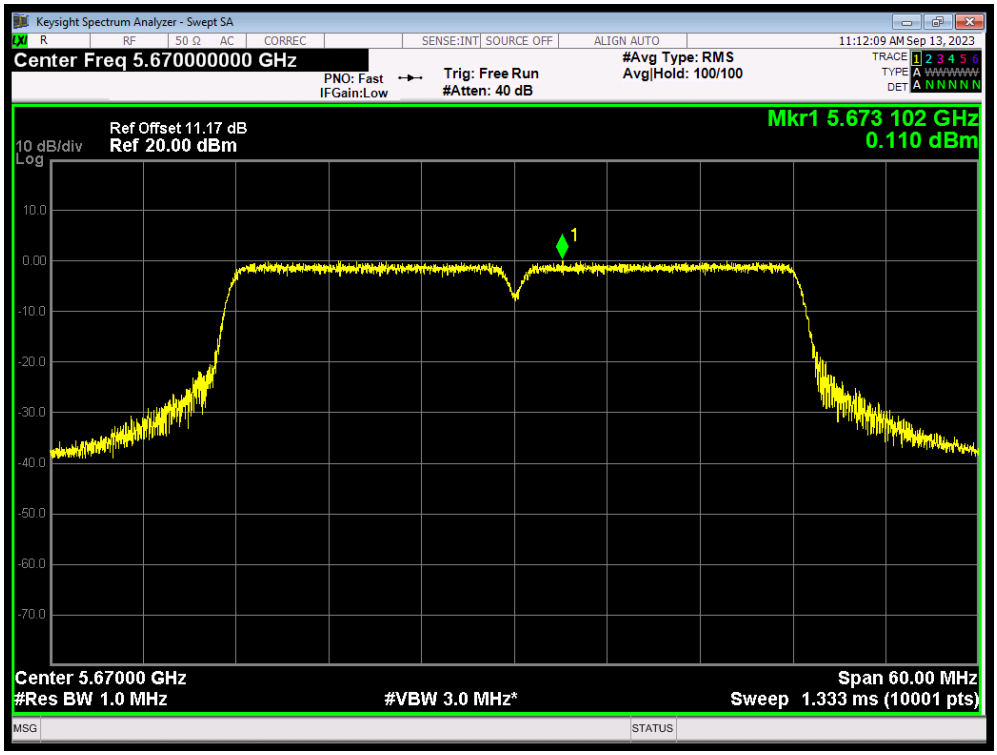
PSD 802.11ac(VHT40) 5510MHz



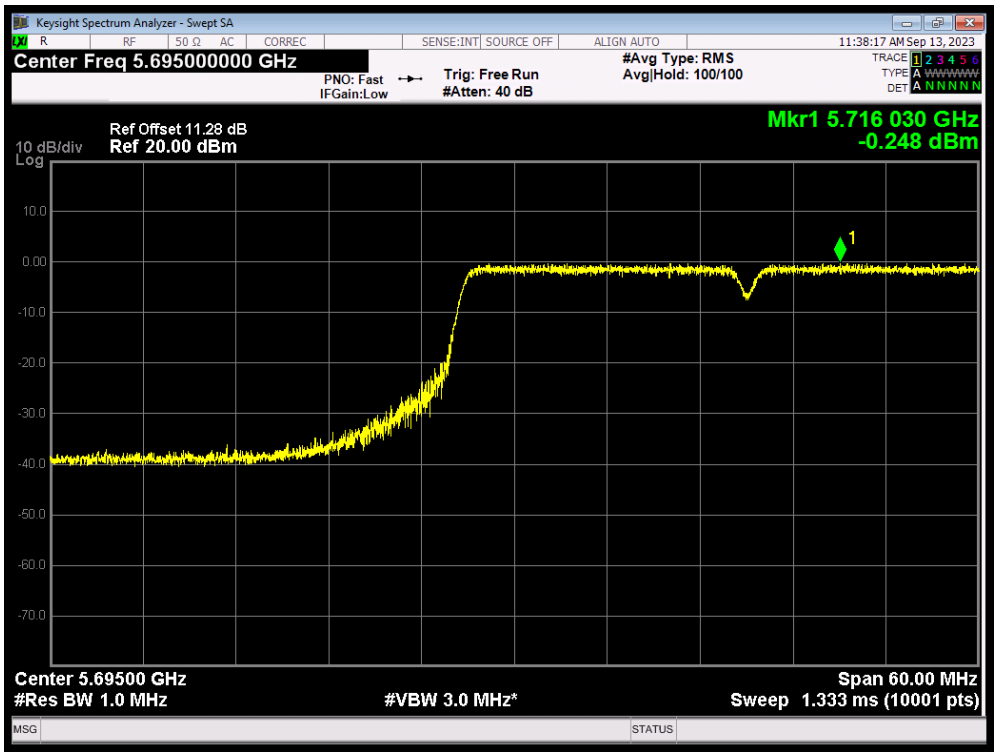
PSD 802.11ac(VHT40) 5590MHz



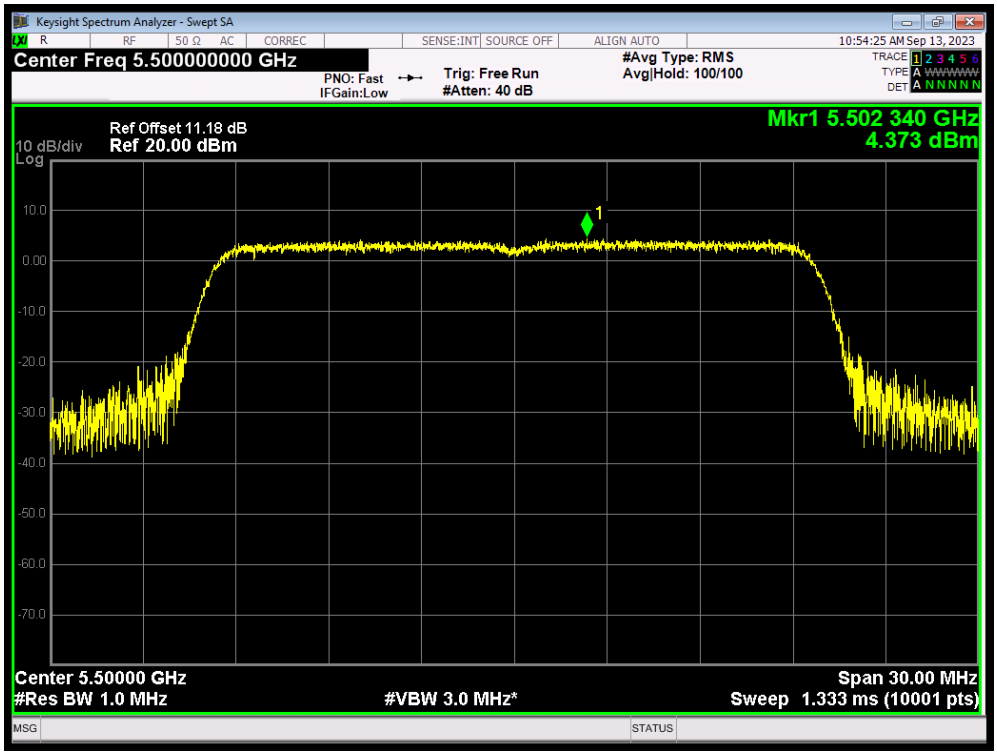
PSD 802.11ac(VHT40) 5670MHz



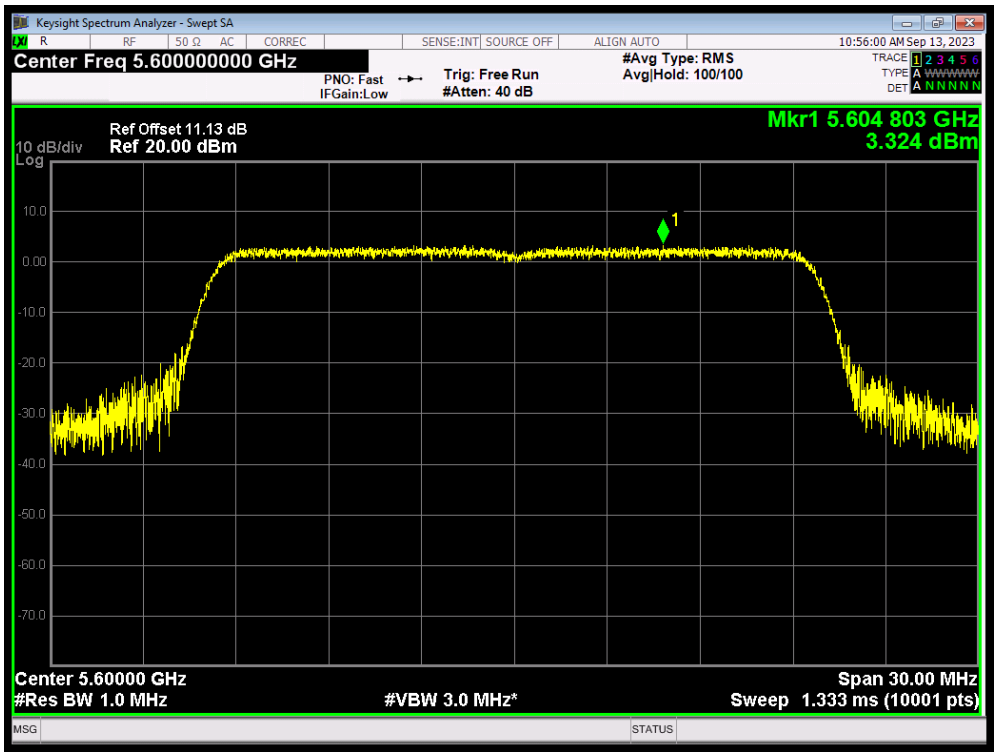
PSD 802.11ac(VHT40) 5710MHz



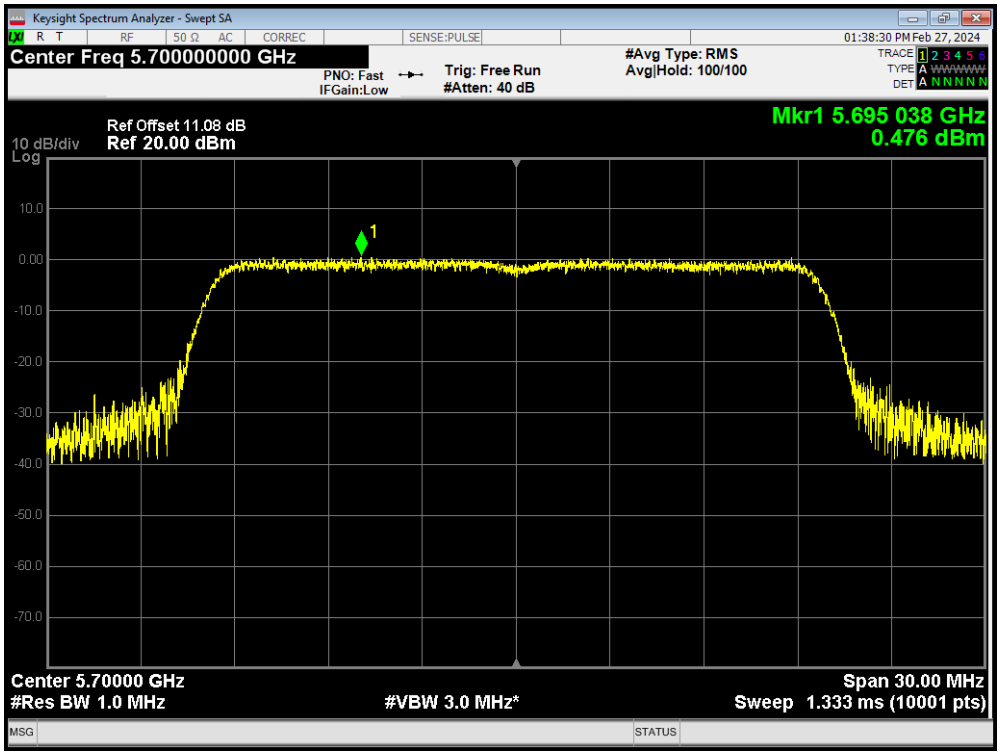
PSD 802.11ax(HE20) 5500MHz



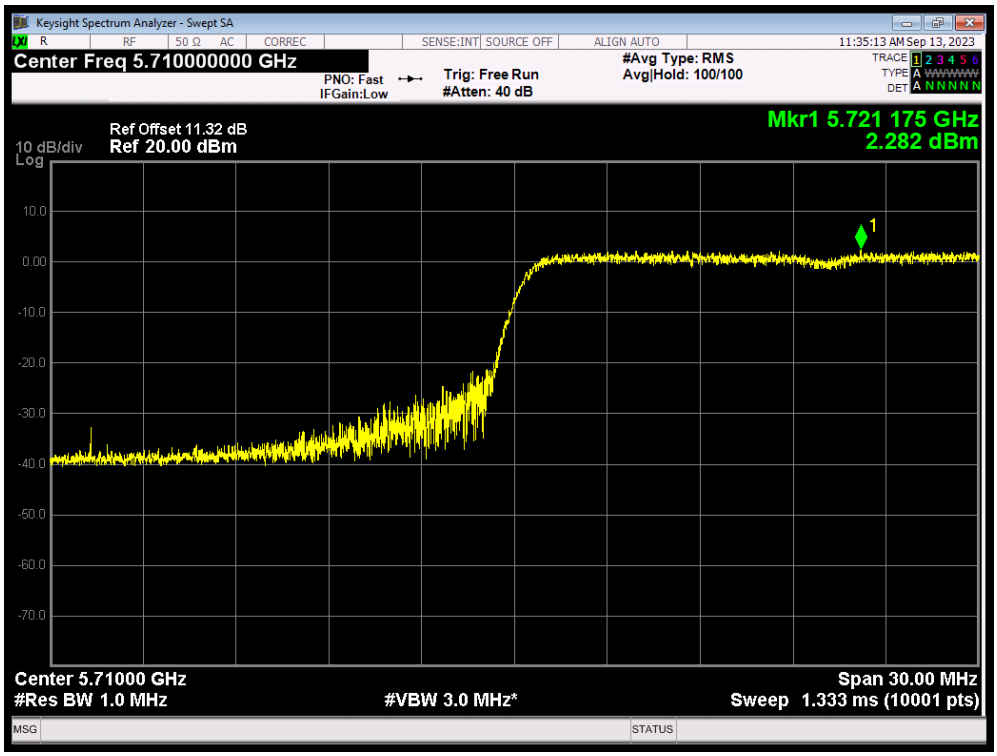
PSD 802.11ax(HE20) 5600MHz



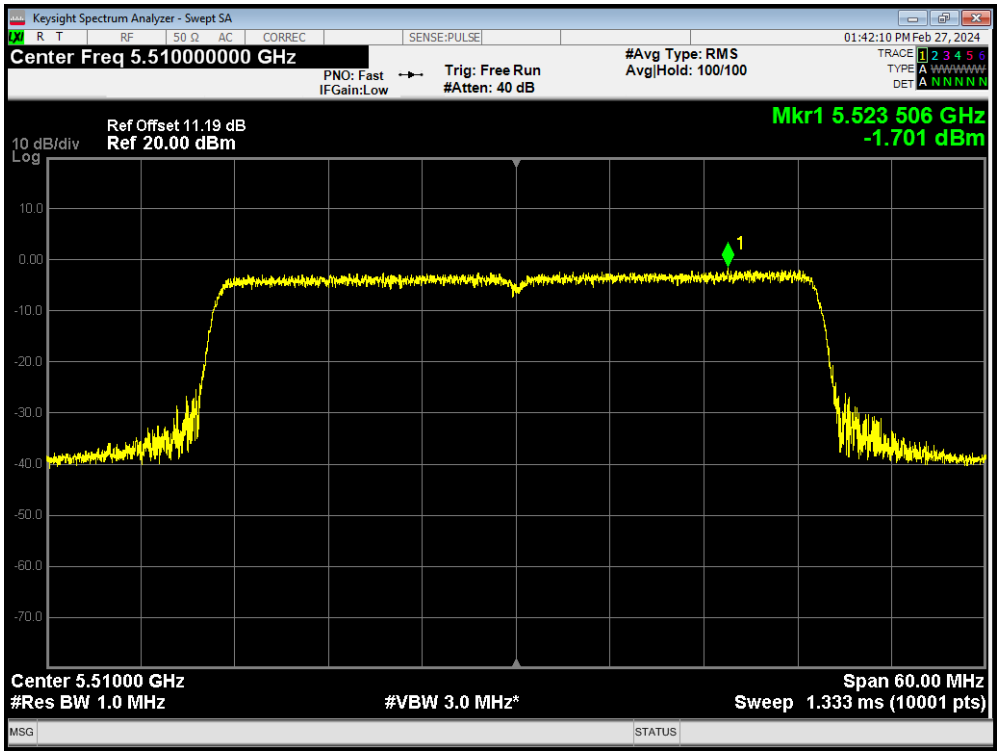
PSD 802.11ax(HE20) 5700MHz



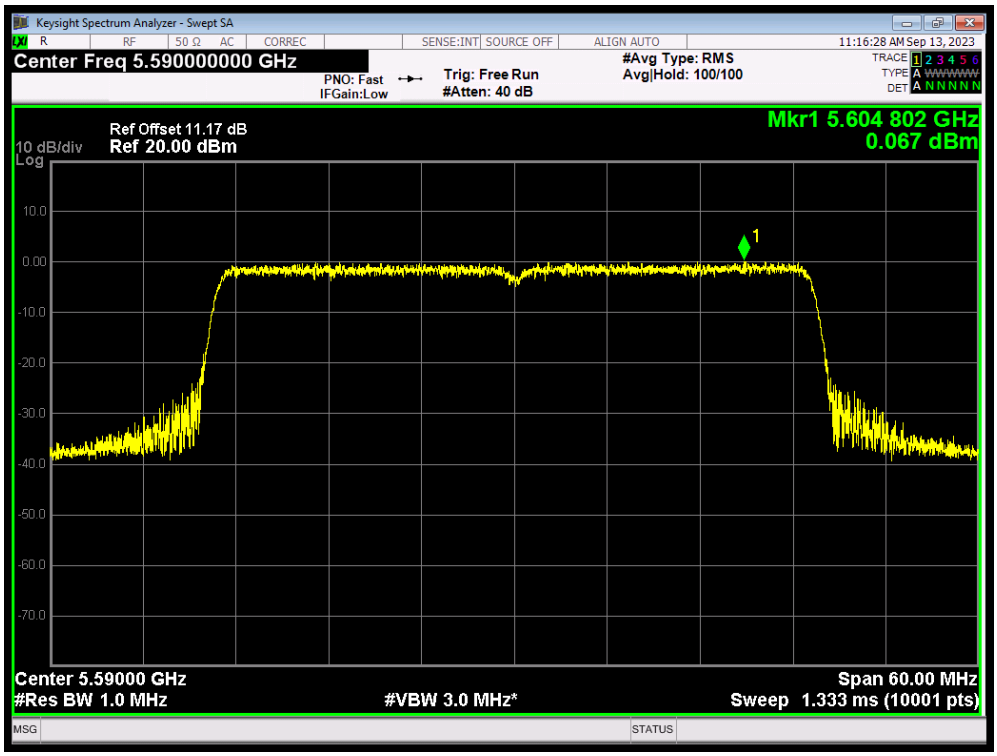
PSD 802.11ax(HE20) 5720MHz



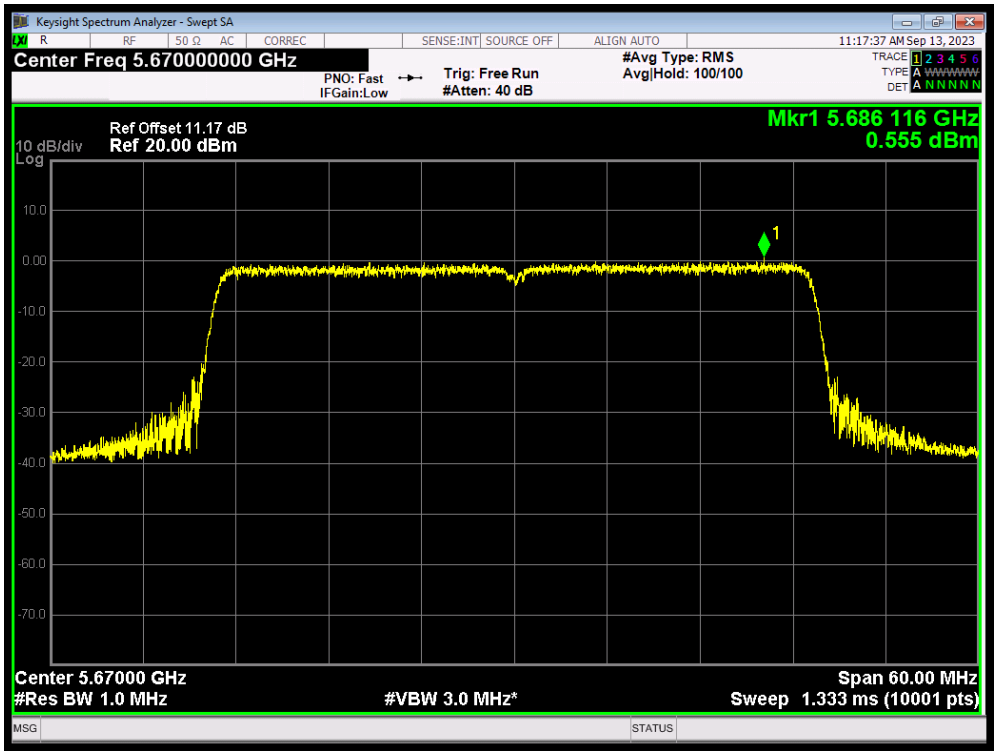
PSD 802.11ax(HE40) 5510MHz



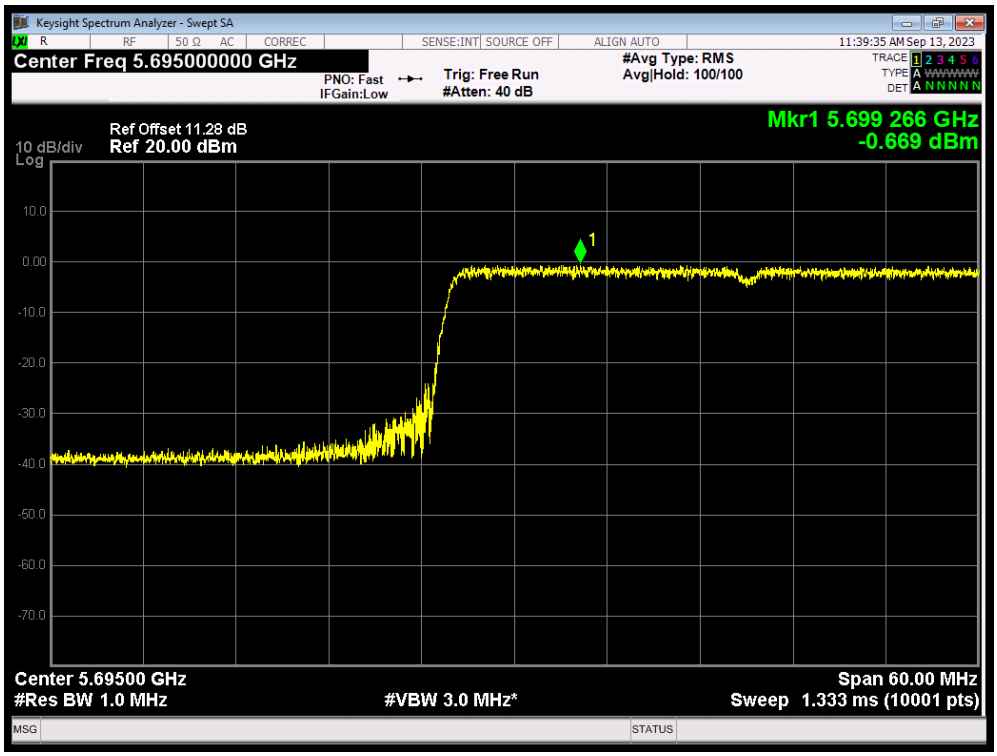
PSD 802.11ax(HE40) 5590MHz



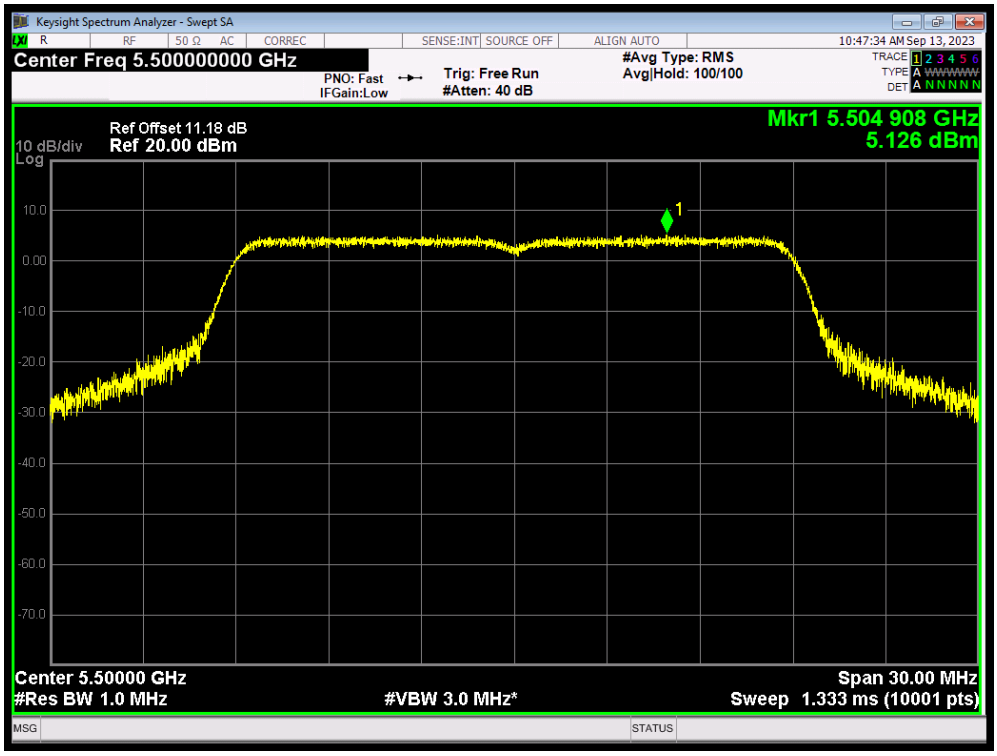
PSD 802.11ax(HE40) 5670MHz



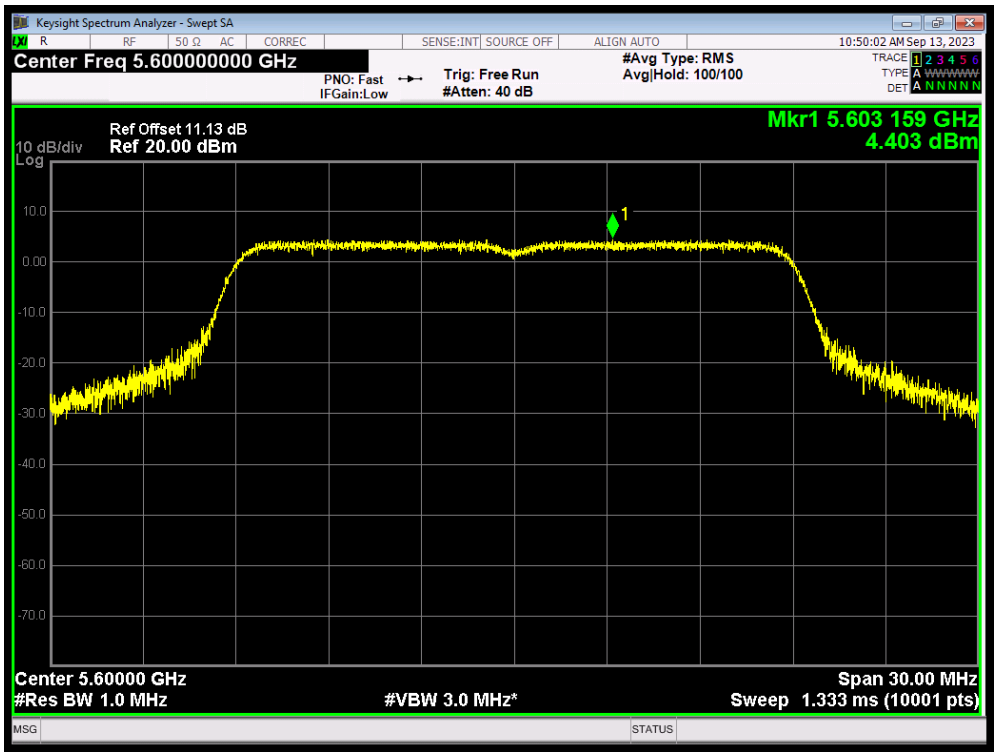
PSD 802.11ax(HE40) 5710MHz



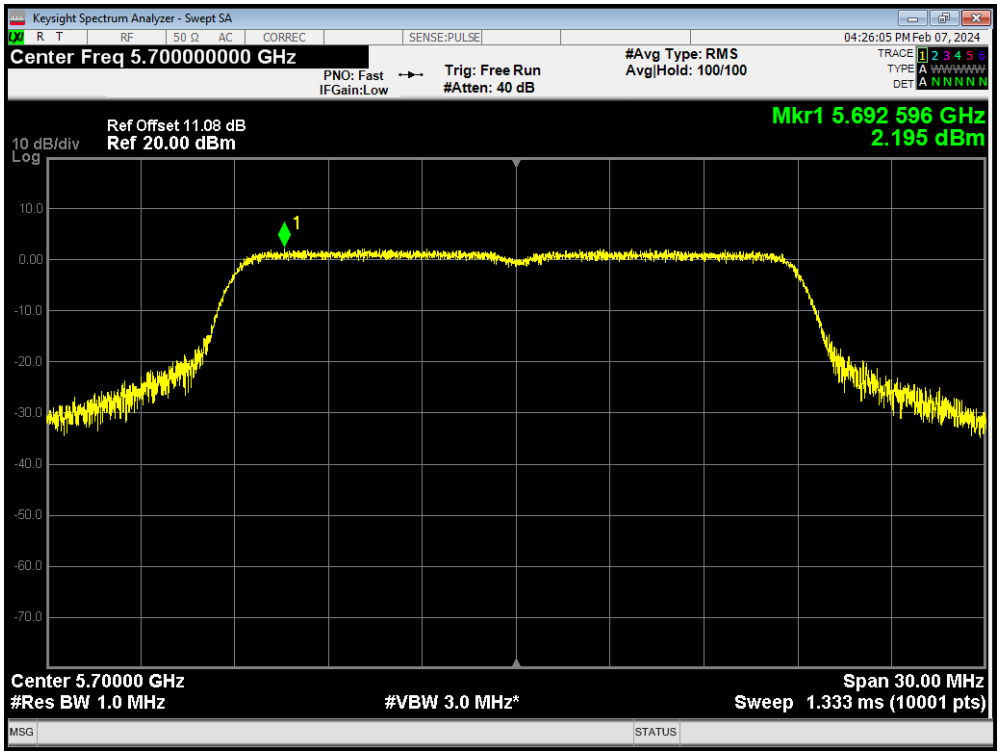
PSD 802.11n(HT20) 5500MHz



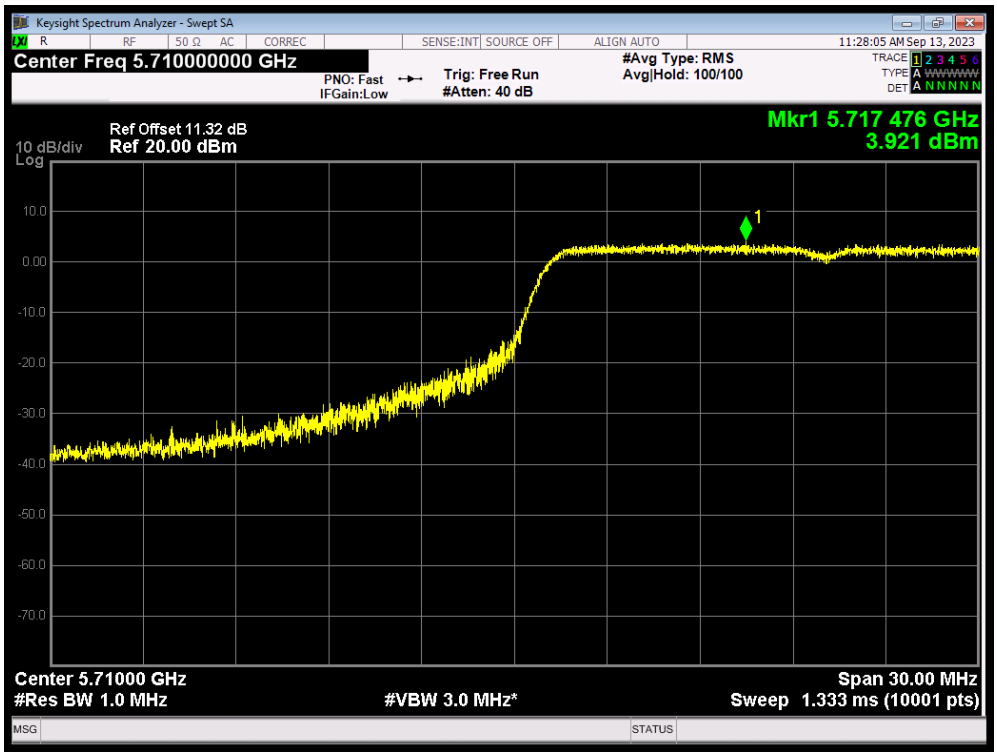
PSD 802.11n(HT20) 5600MHz



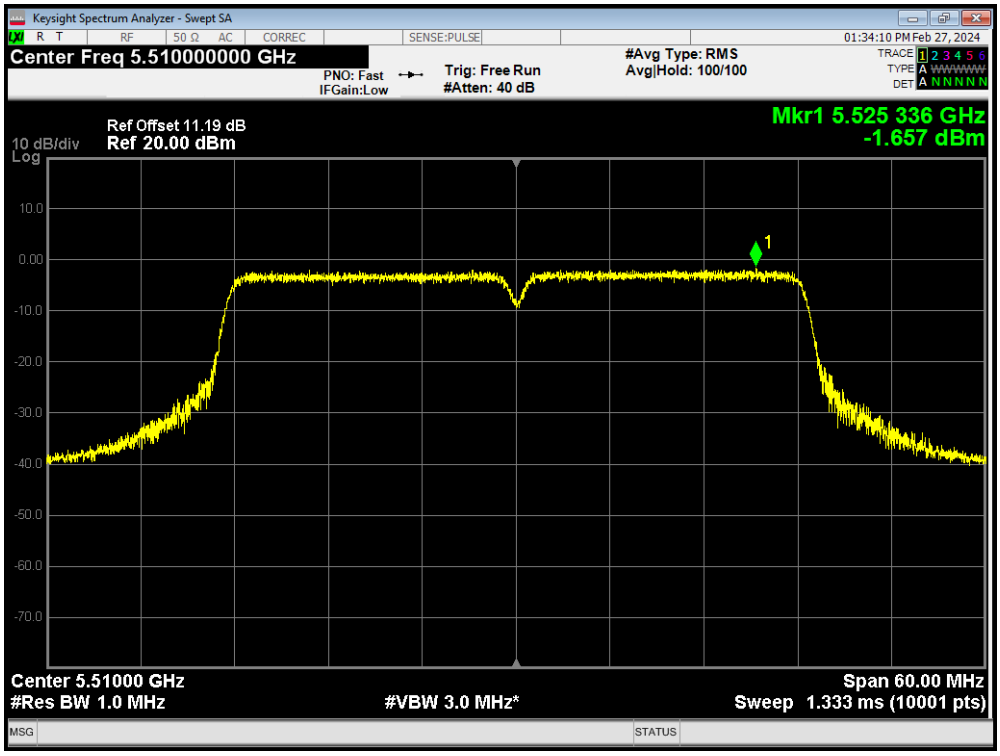
PSD 802.11n(HT20) 5700MHz



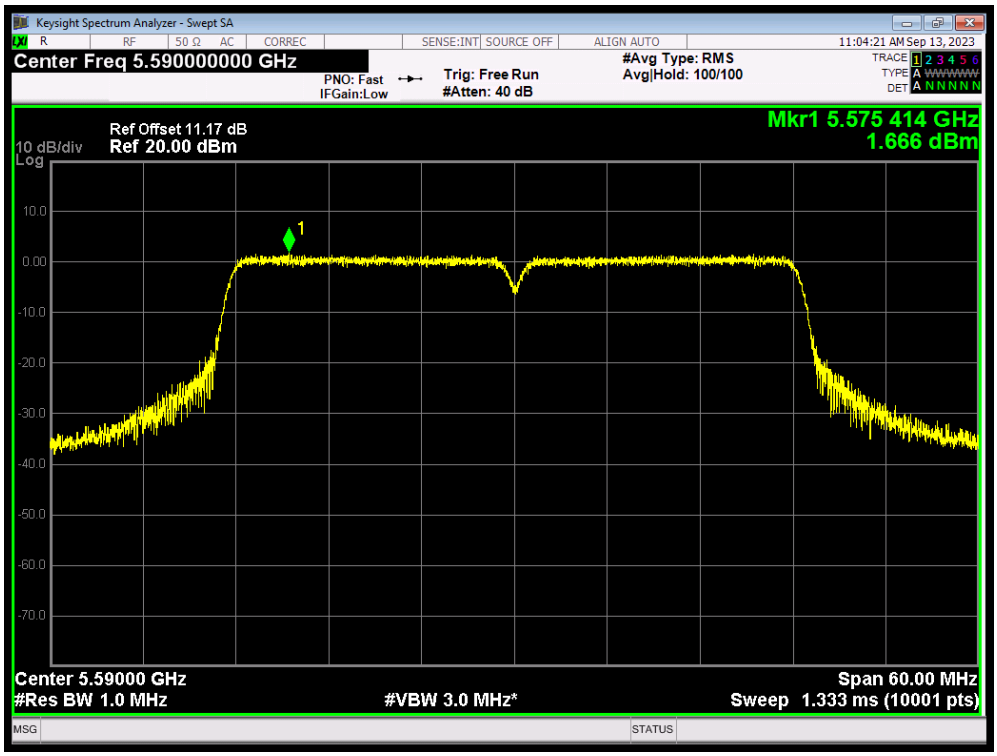
PSD 802.11n(HT20) 5720MHz



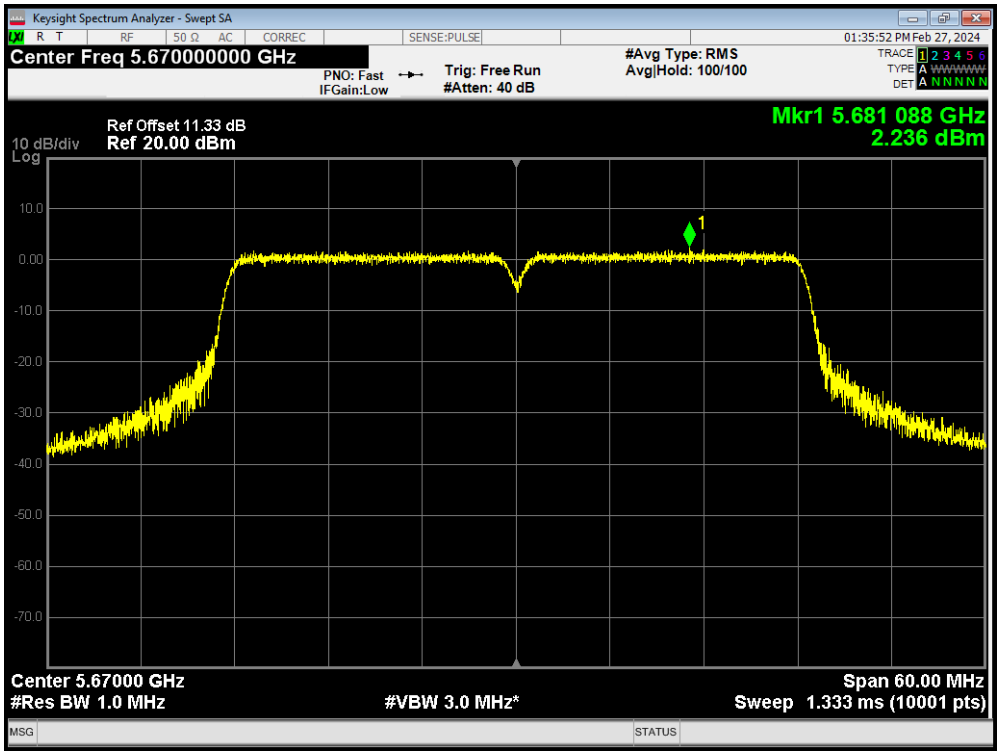
PSD 802.11n(HT40) 5510MHz



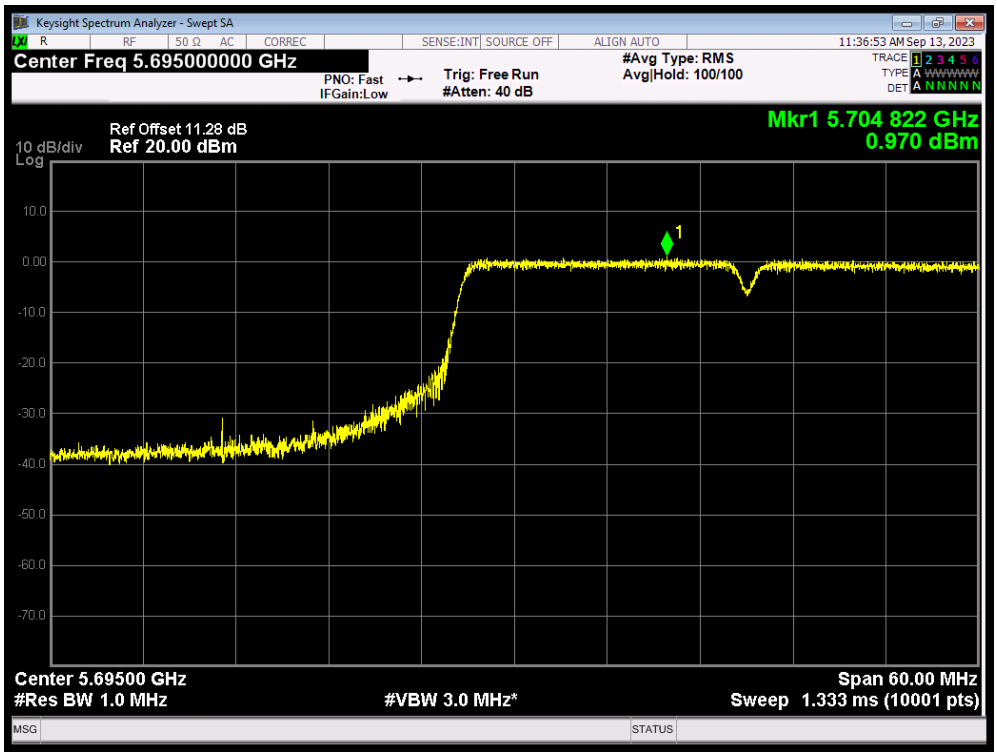
PSD 802.11n(HT40) 5590MHz



PSD 802.11n(HT40) 5670MHz

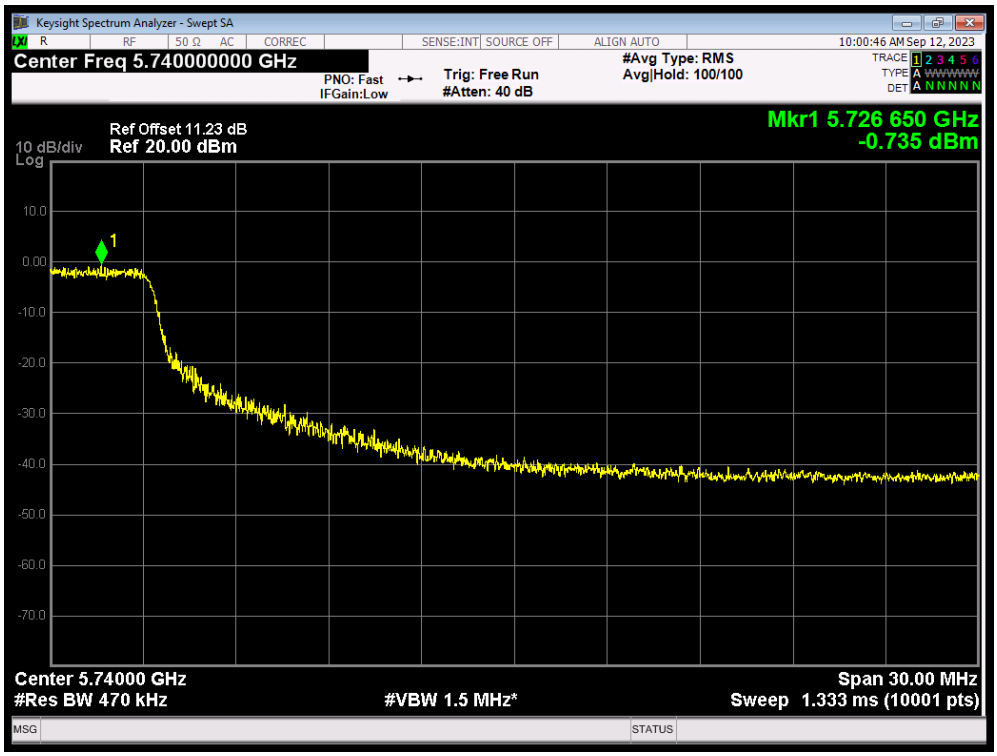


PSD 802.11n(HT40) 5710MHz

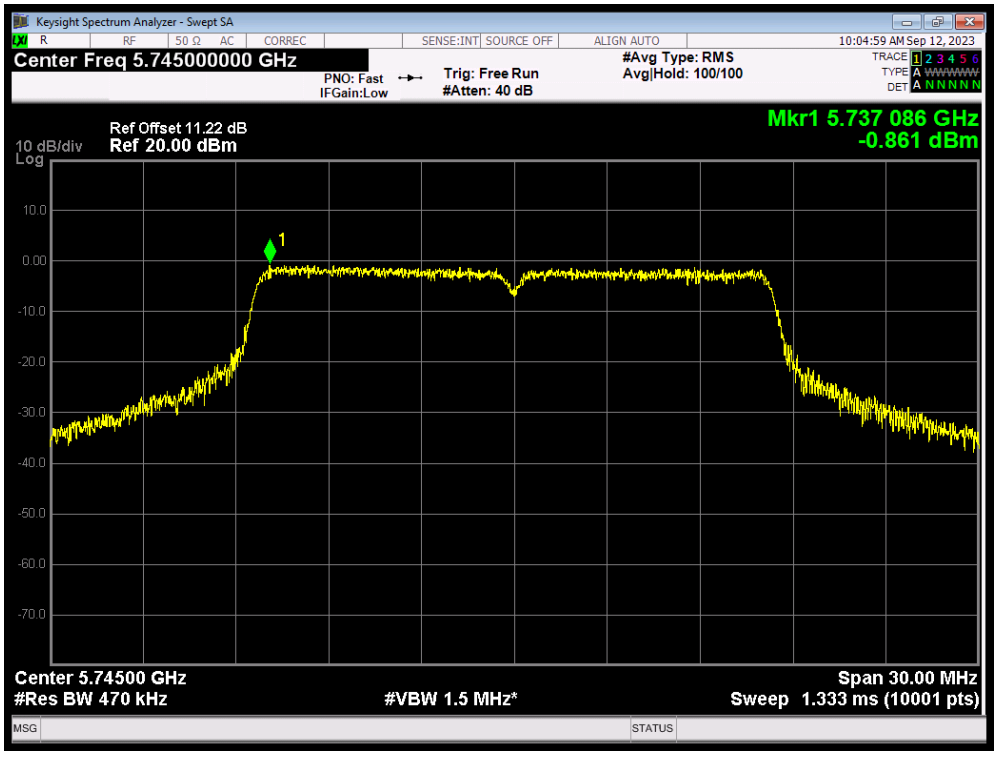


U-NII-3

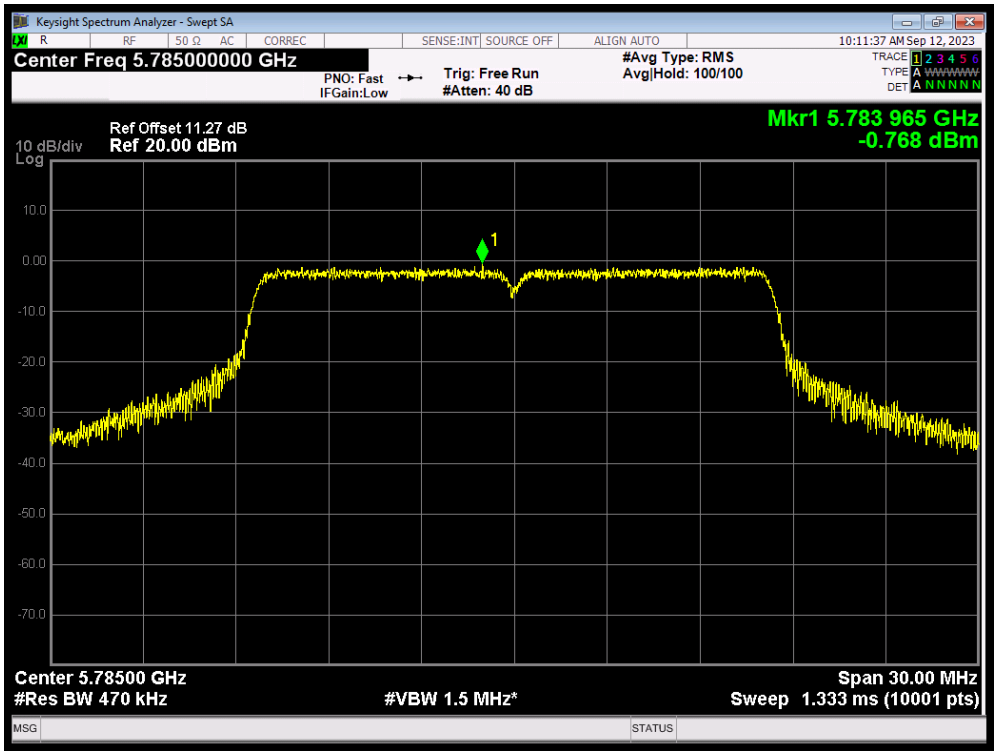
PSD 802.11a 5720MHz



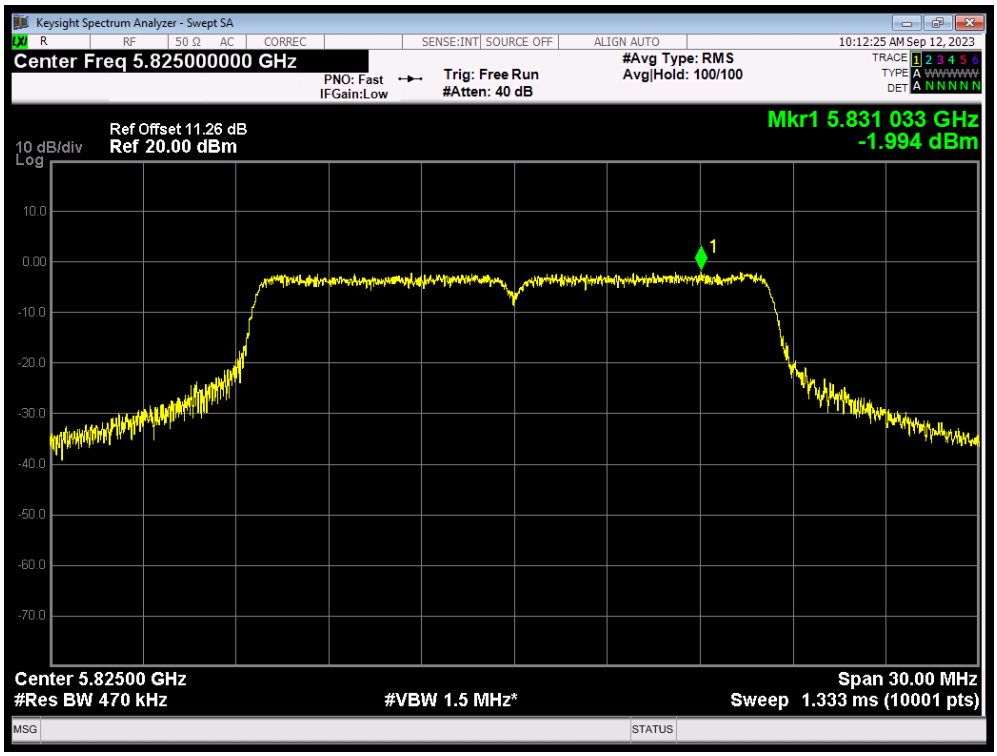
PSD 802.11a 5745MHz



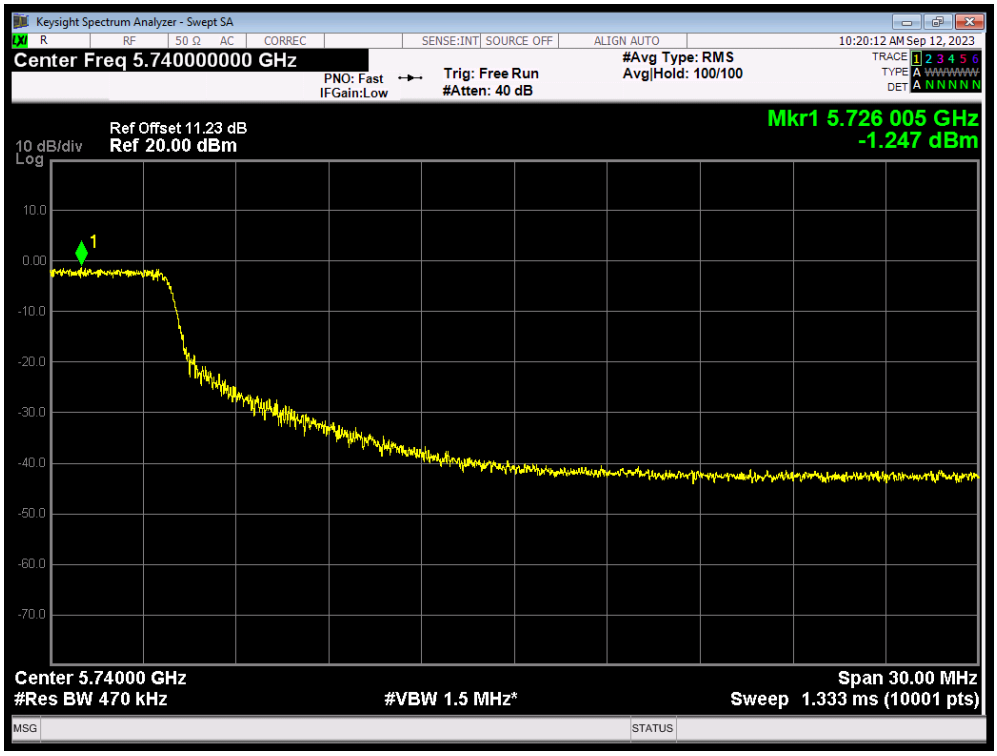
PSD 802.11a 5785MHz



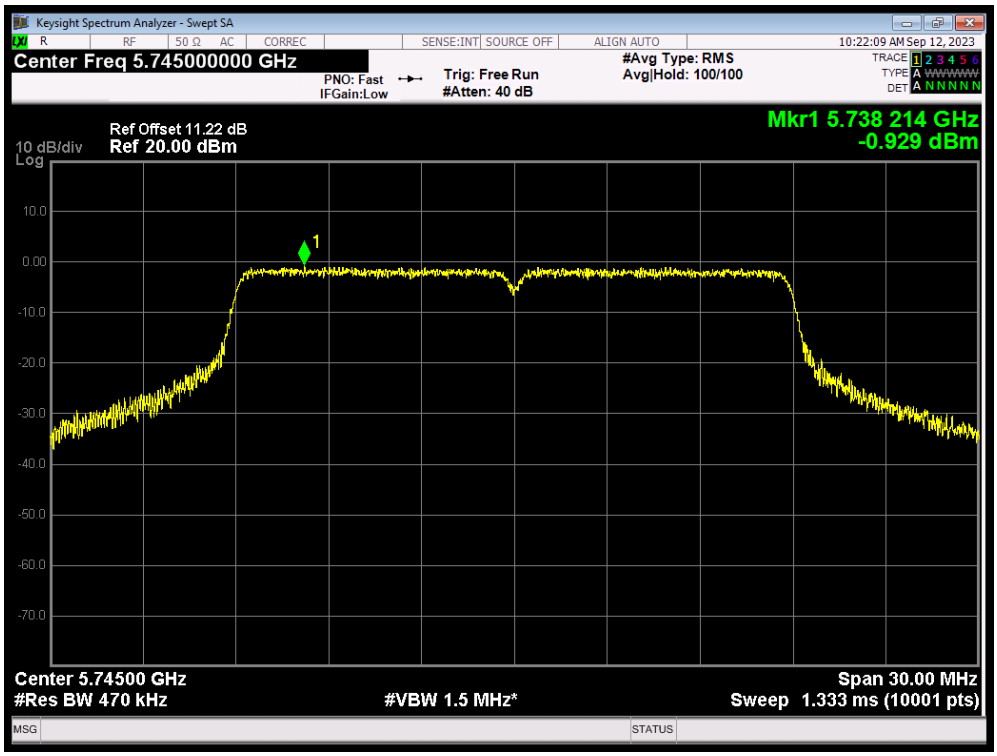
PSD 802.11a 5825MHz



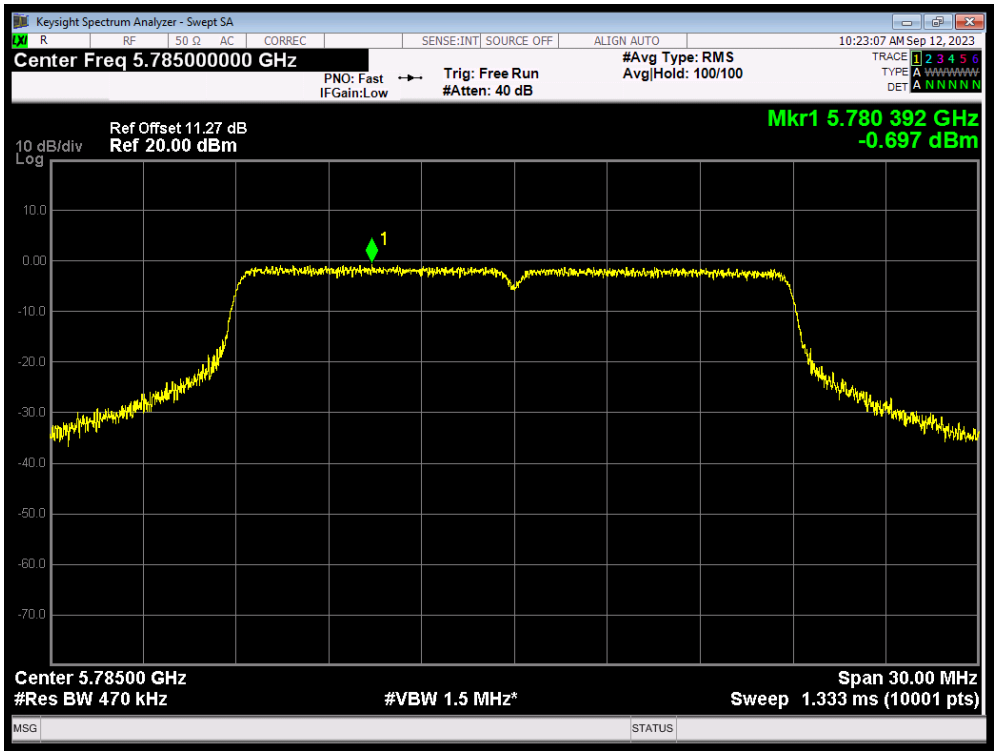
PSD 802.11ac(VHT20) 5720MHz



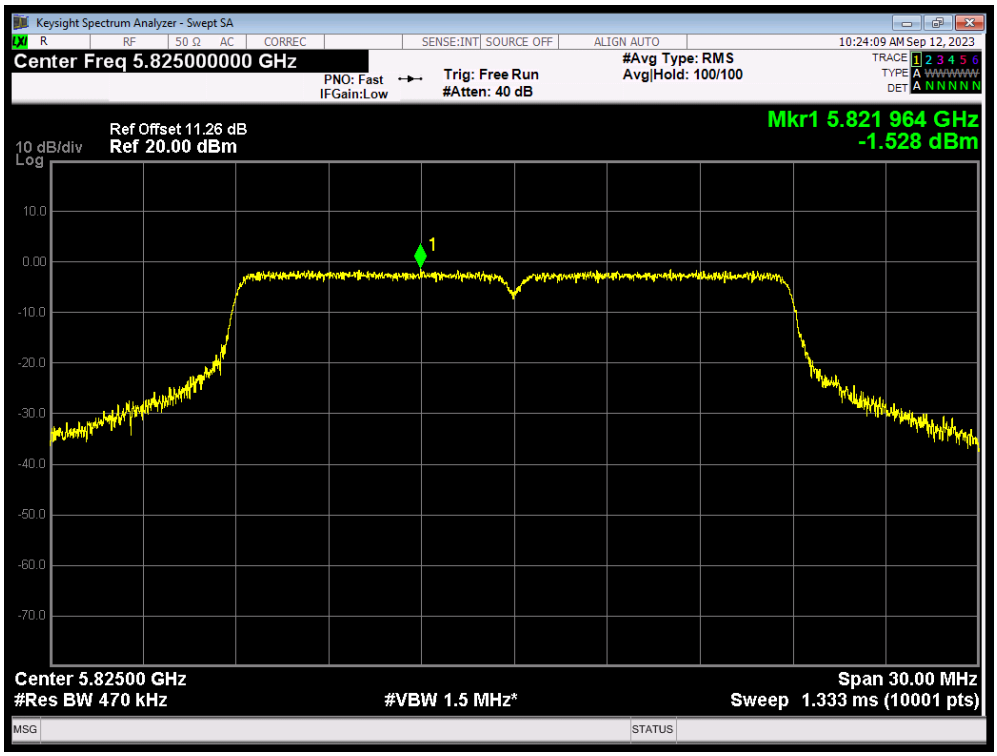
PSD 802.11ac(VHT20) 5745MHz



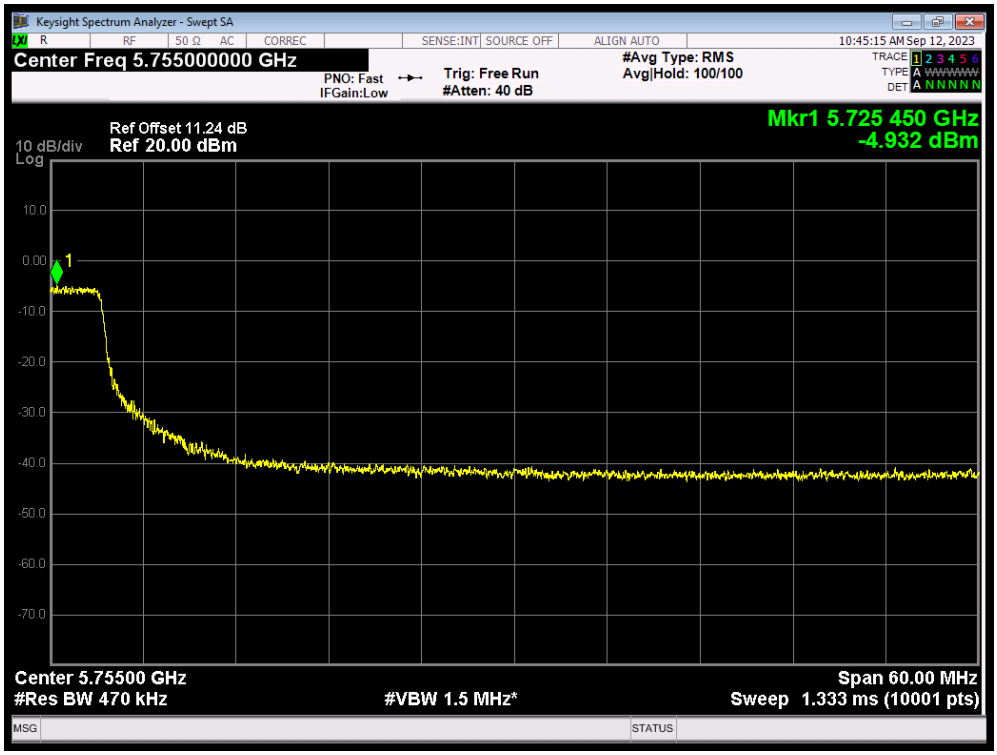
PSD 802.11ac(VHT20) 5785MHz



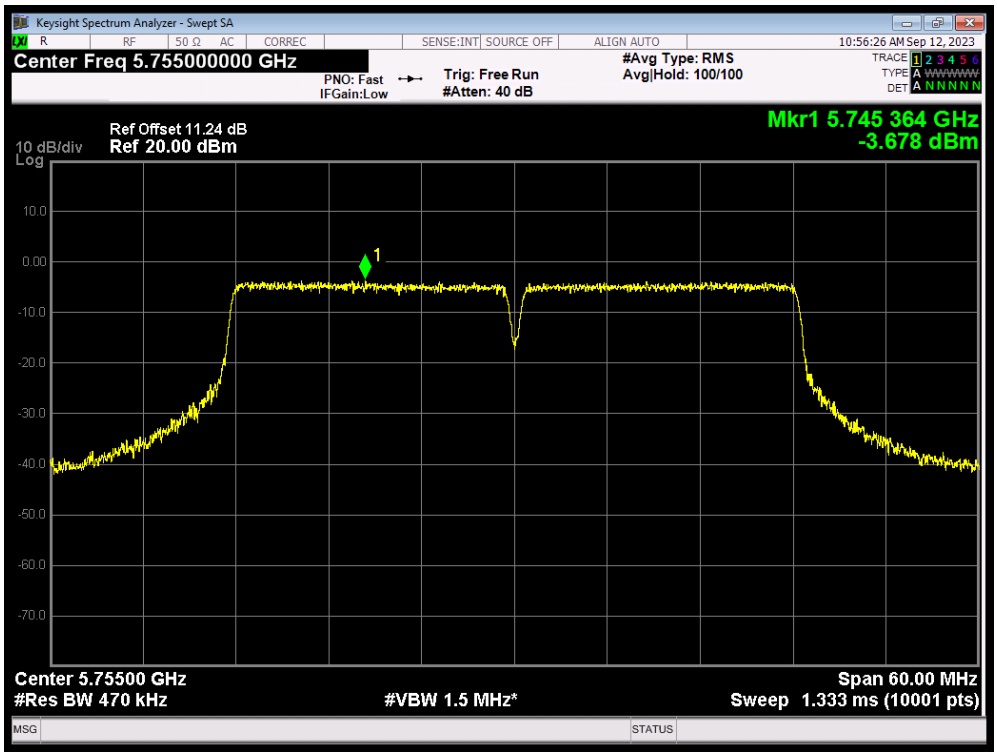
PSD 802.11ac(VHT20) 5825MHz



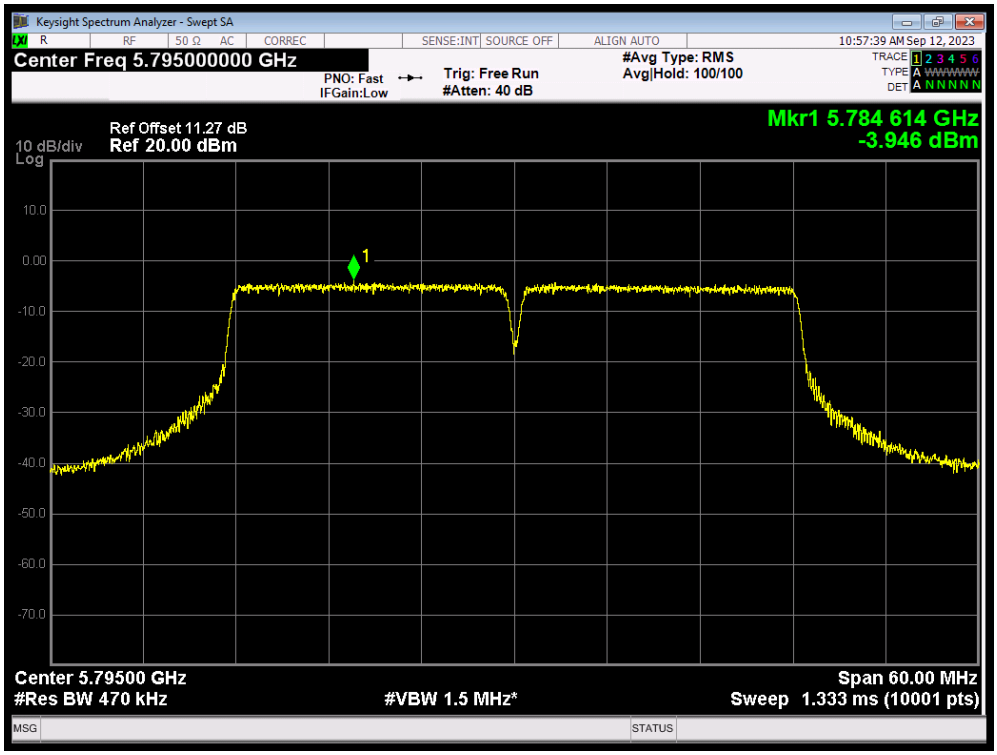
PSD 802.11ac(VHT40) 5710MHz



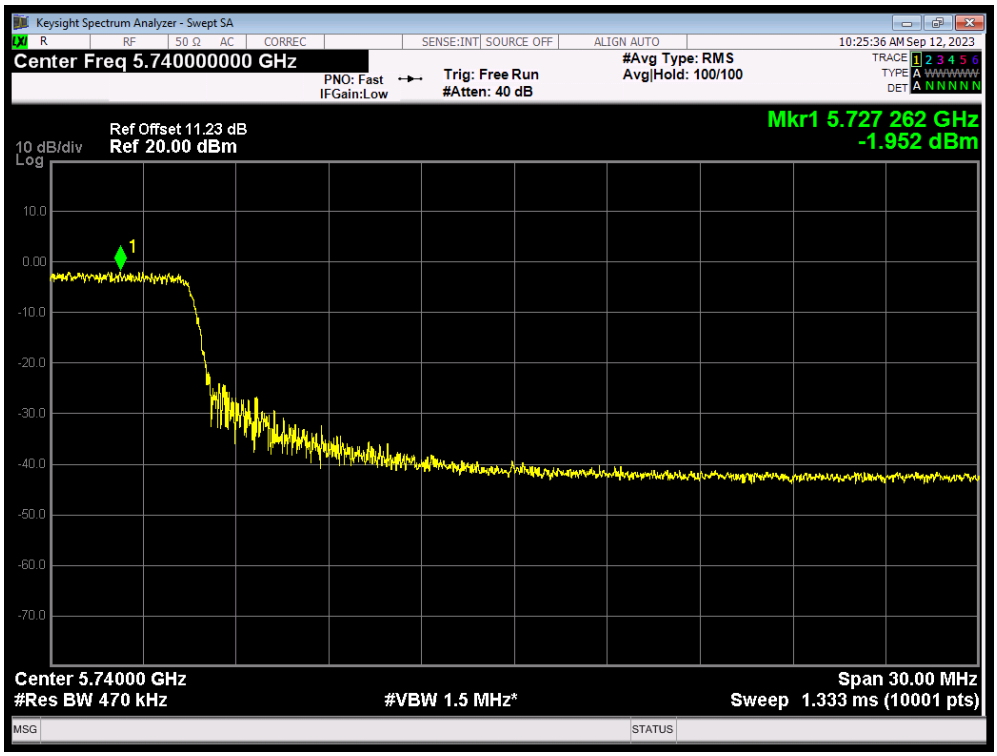
PSD 802.11ac(VHT40) 5755MHz



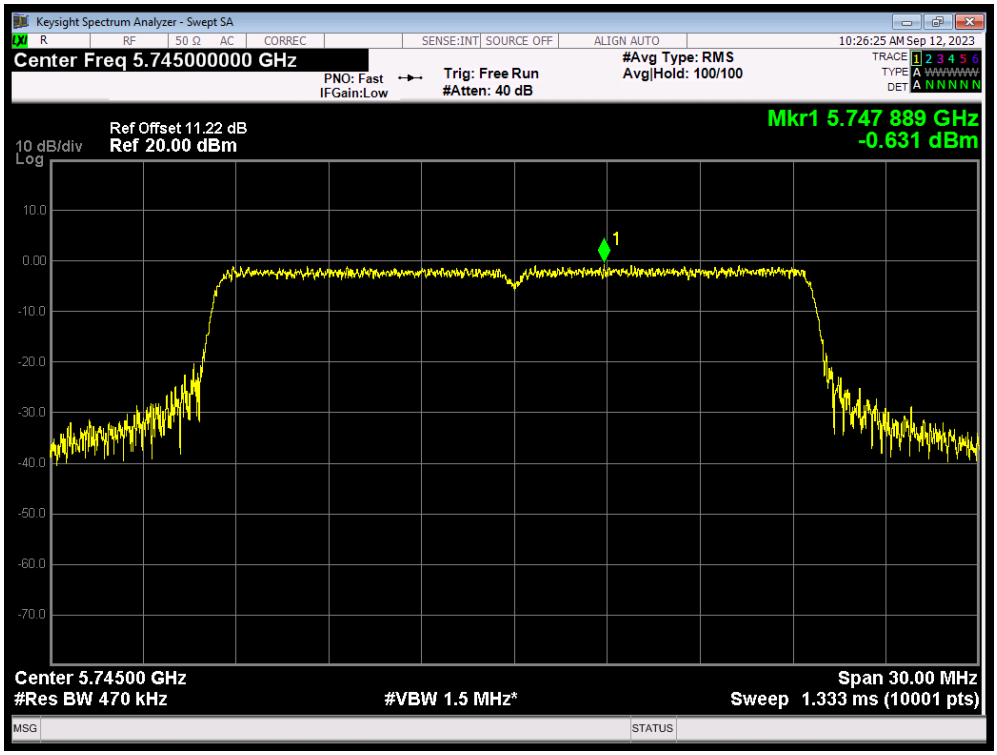
PSD 802.11ac(VHT40) 5795MHz



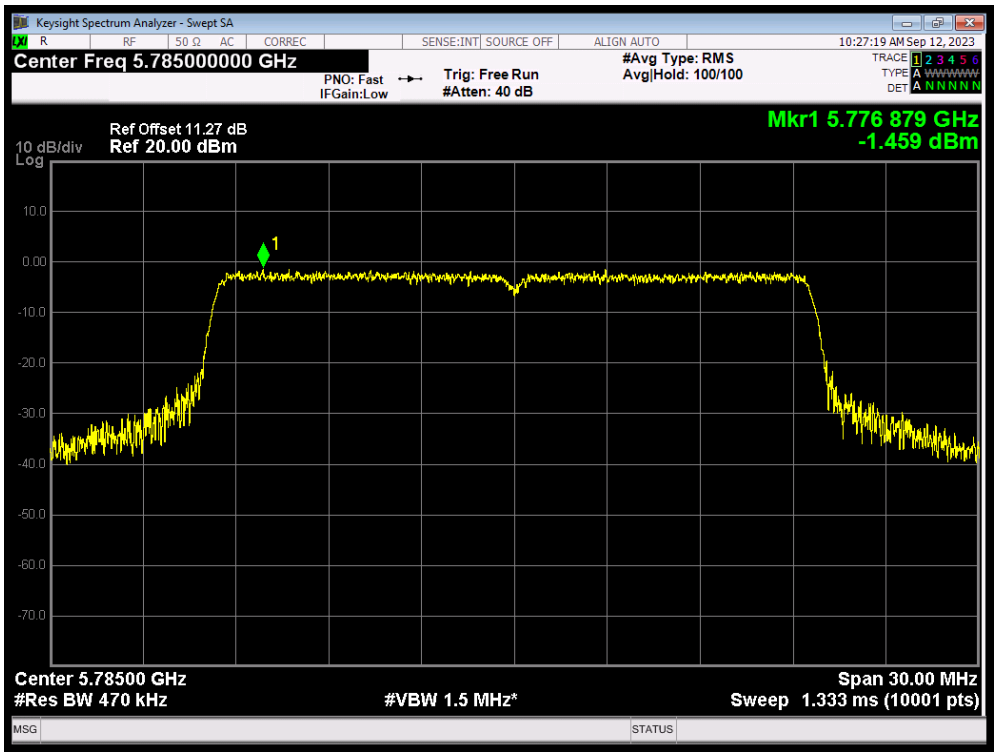
PSD 802.11ax(HE20) 5720MHz



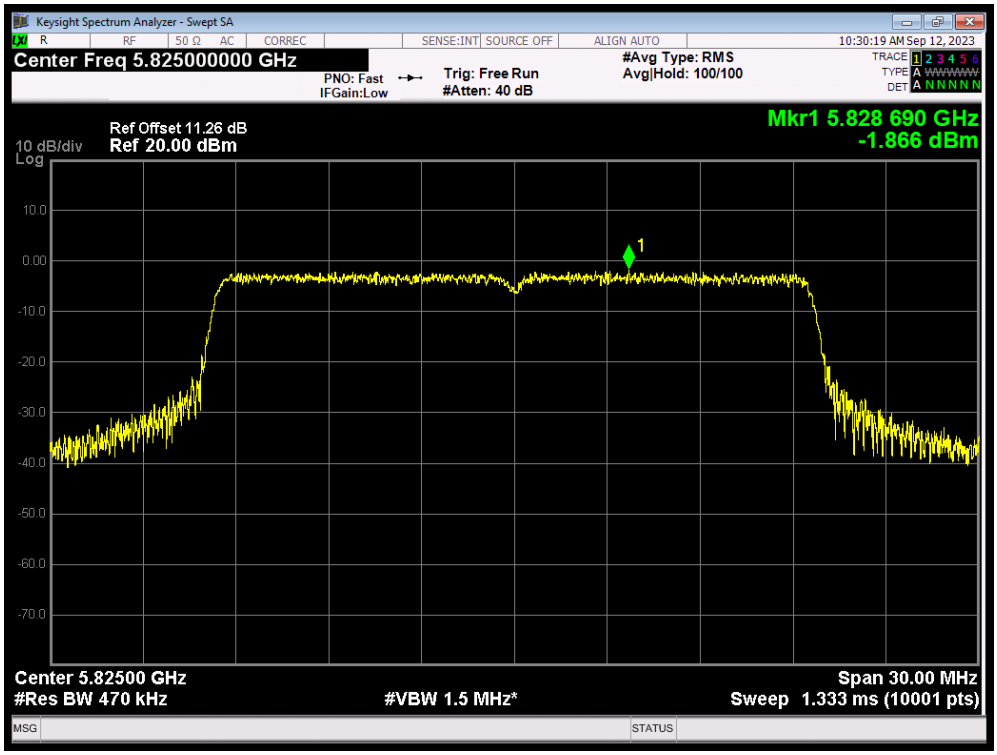
PSD 802.11ax(HE20) 5745MHz



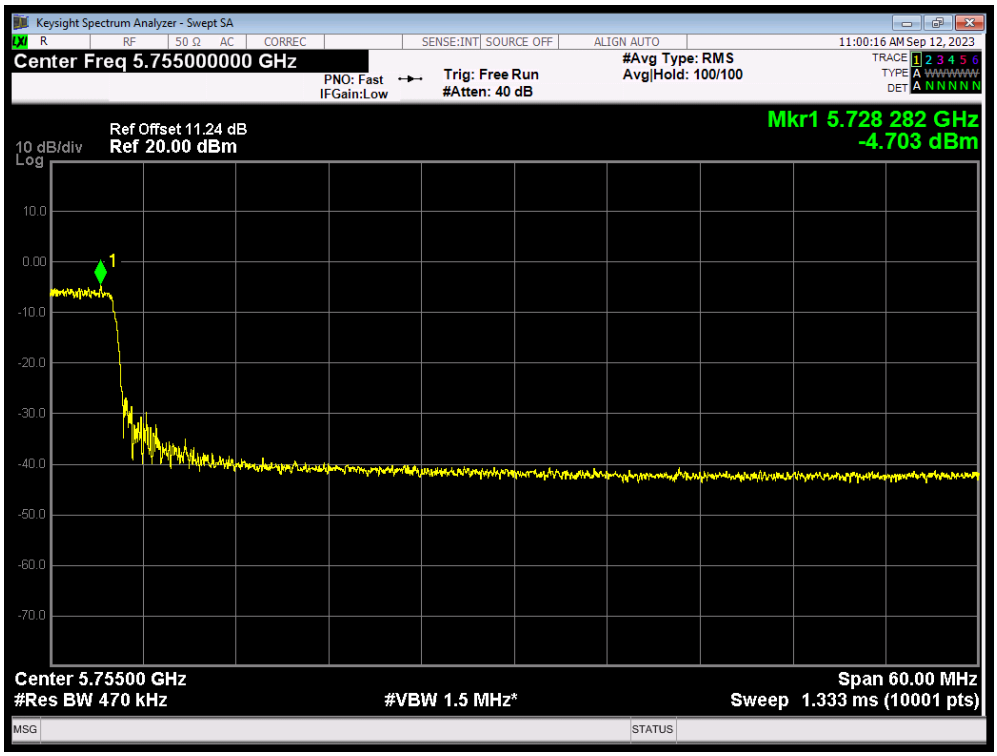
PSD 802.11ax(HE20) 5785MHz



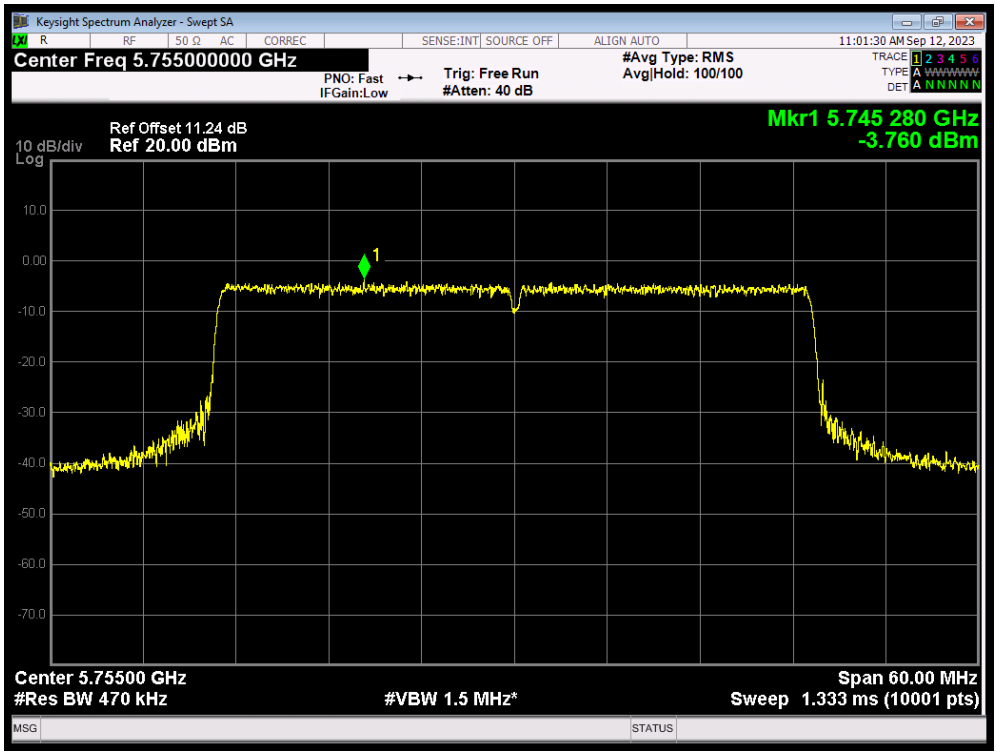
PSD 802.11ax(HE20) 5825MHz



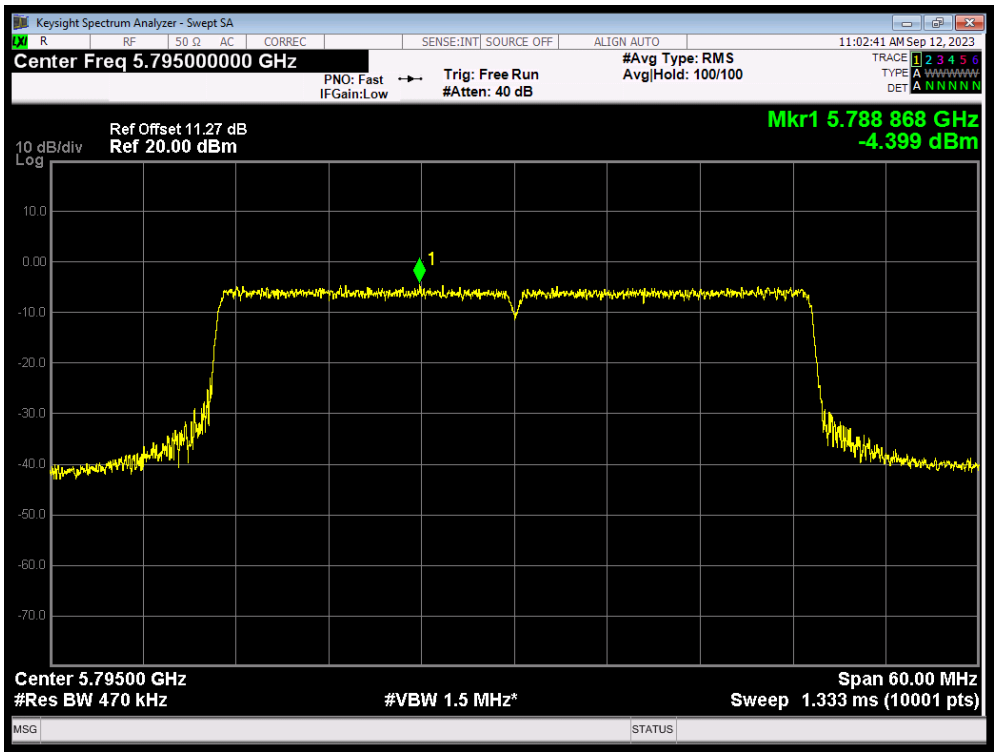
PSD 802.11ax(HE40) 5710MHz



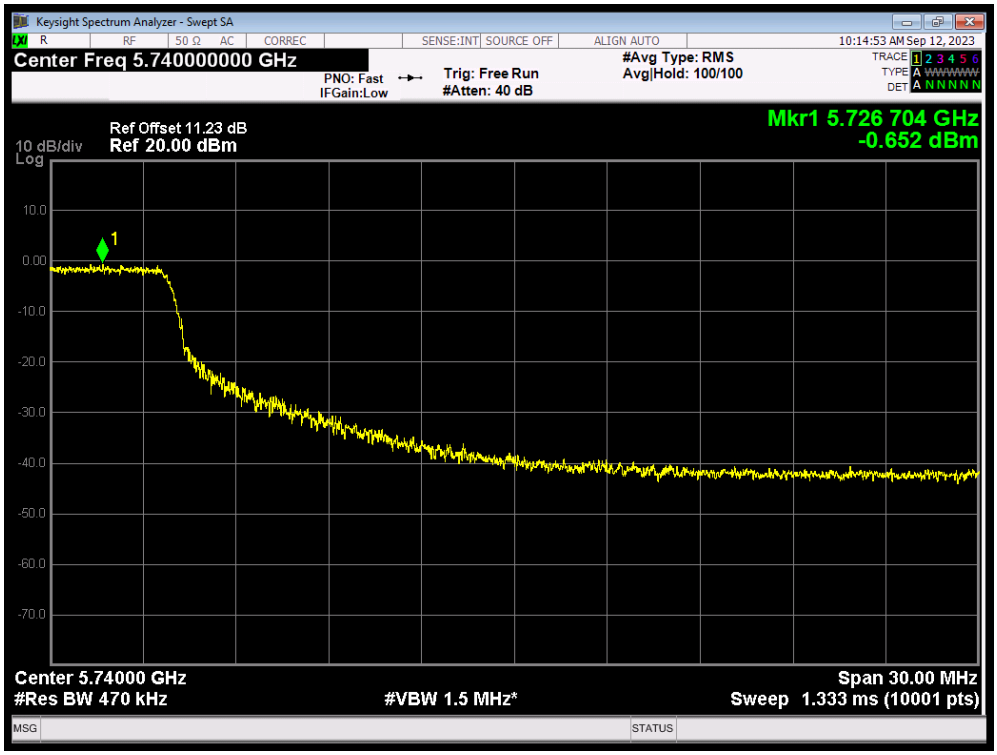
PSD 802.11ax(HE40) 5755MHz



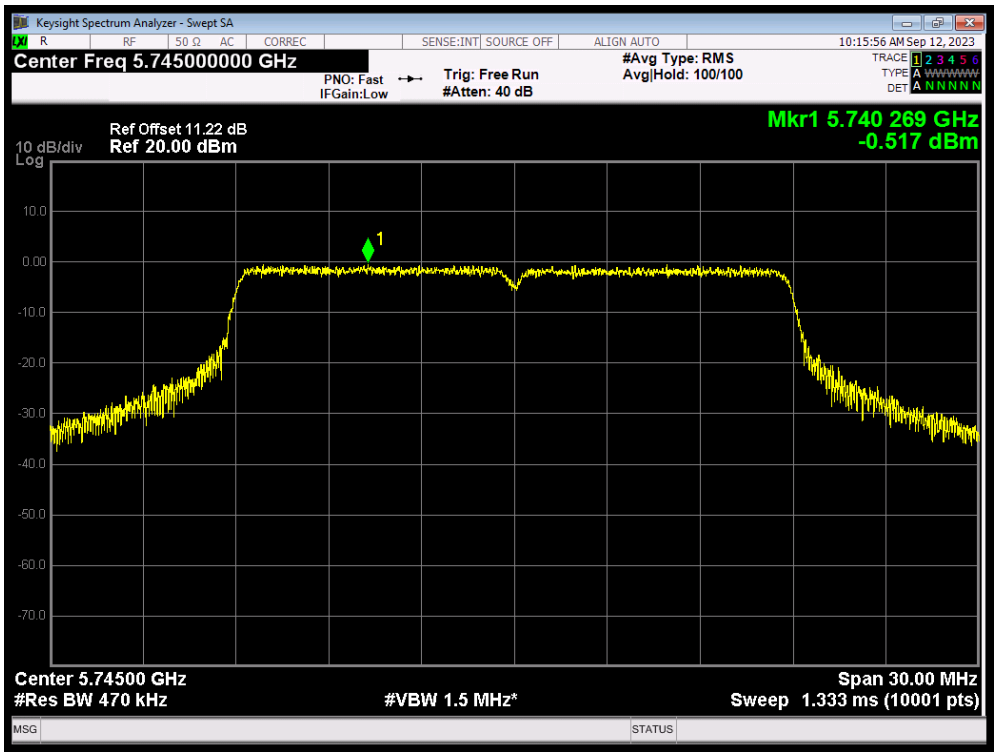
PSD 802.11ax(HE40) 5795MHz



PSD 802.11n(HT20) 5720MHz



PSD 802.11n(HT20) 5745MHz



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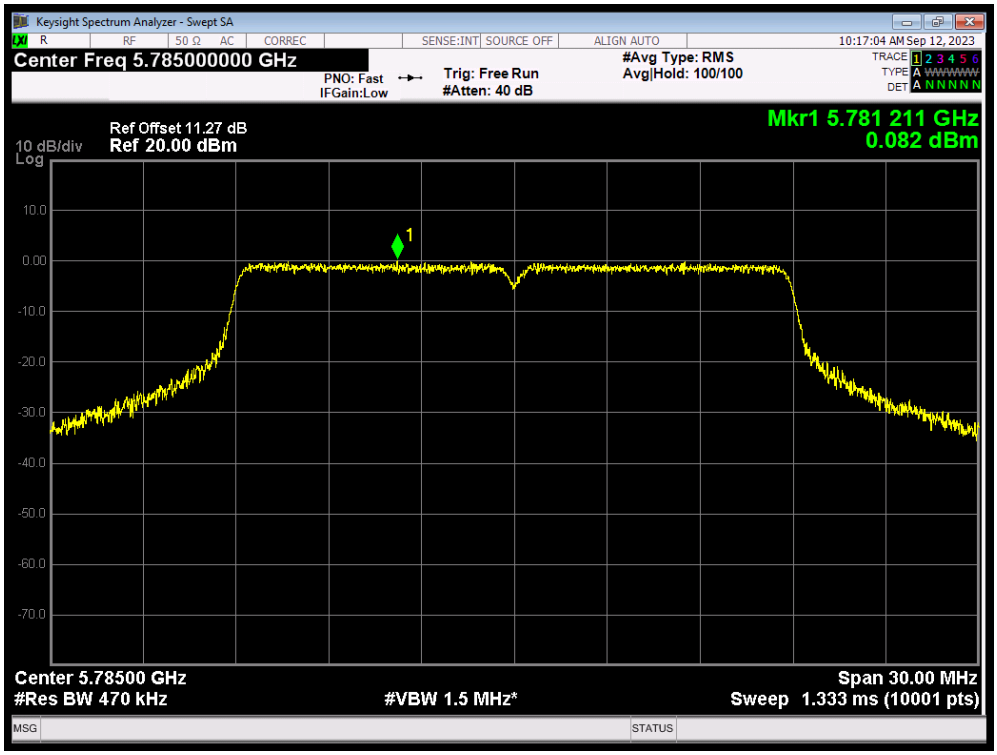

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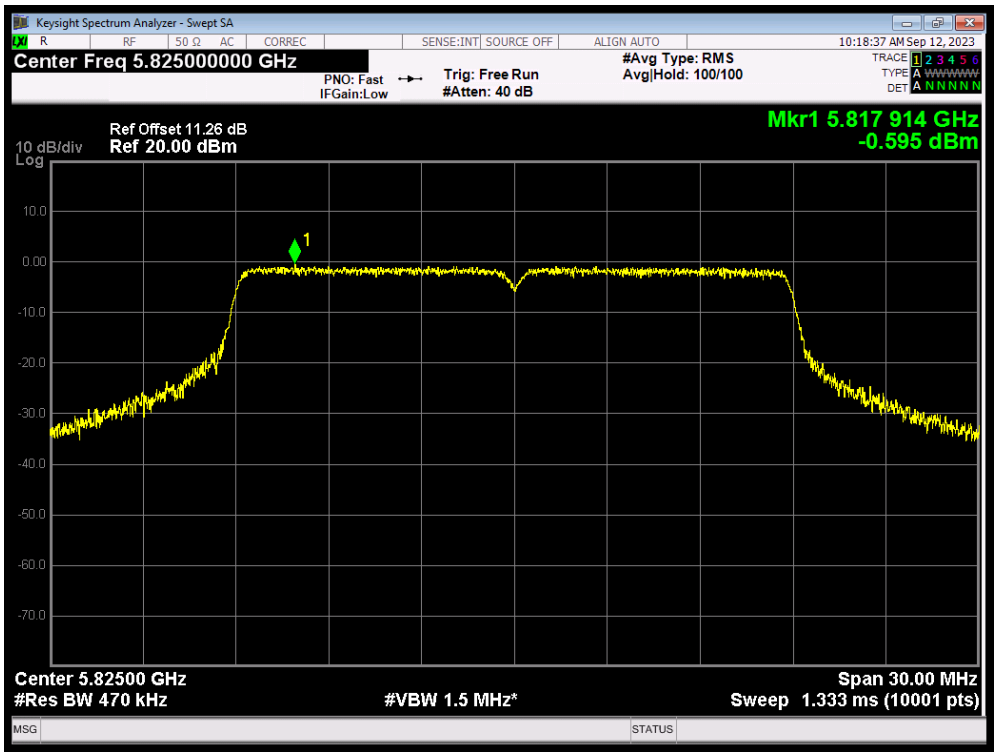
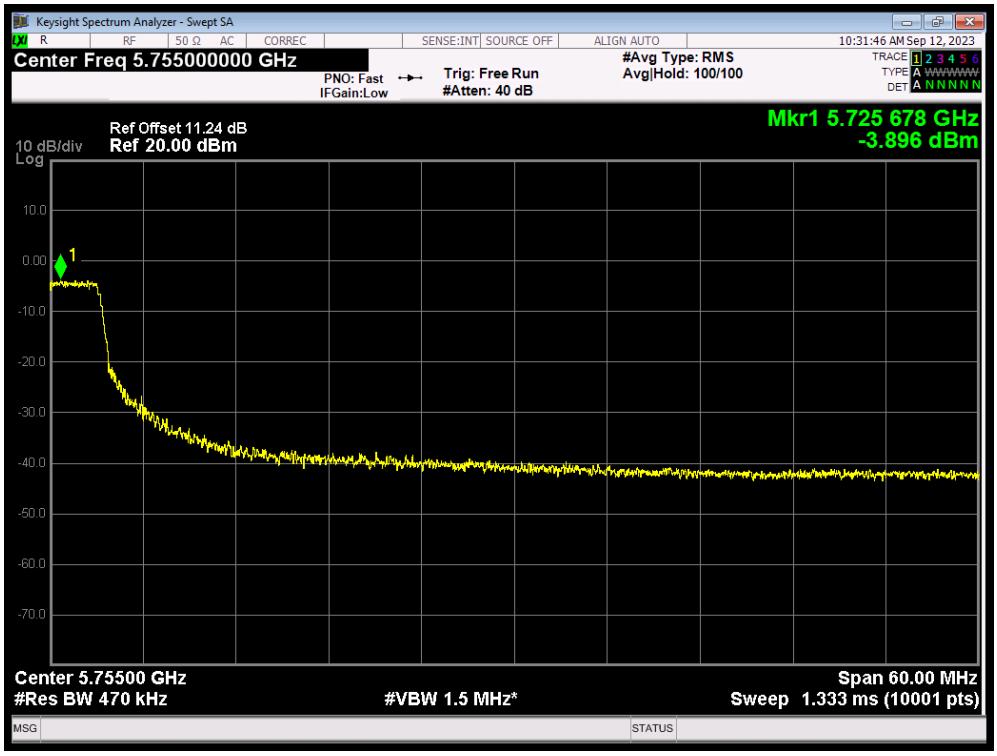
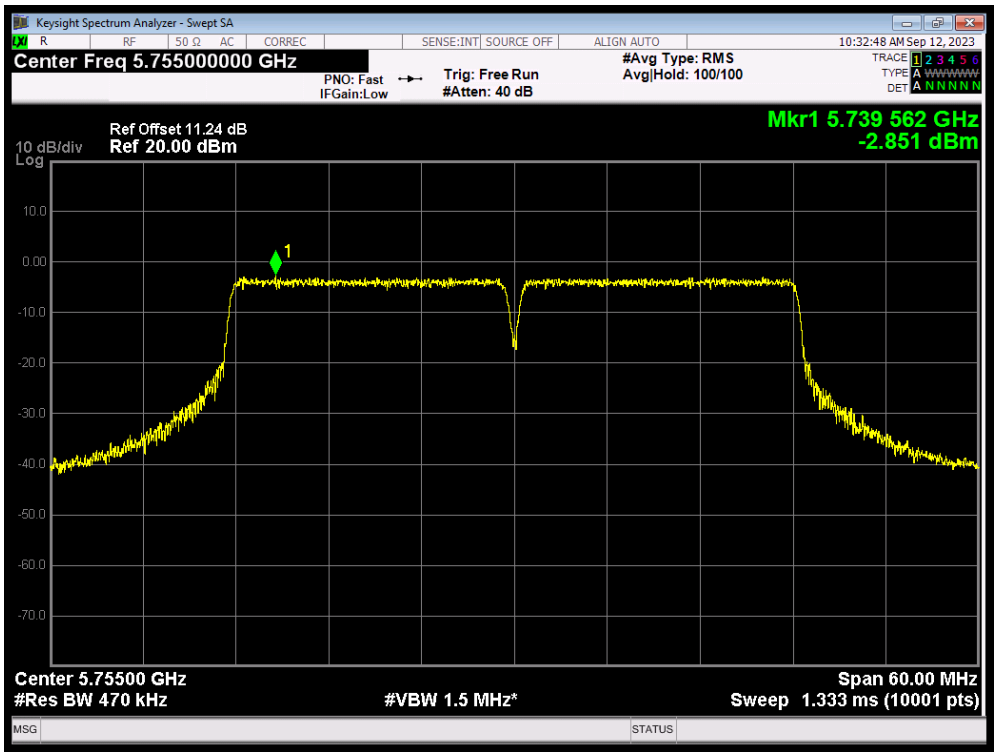


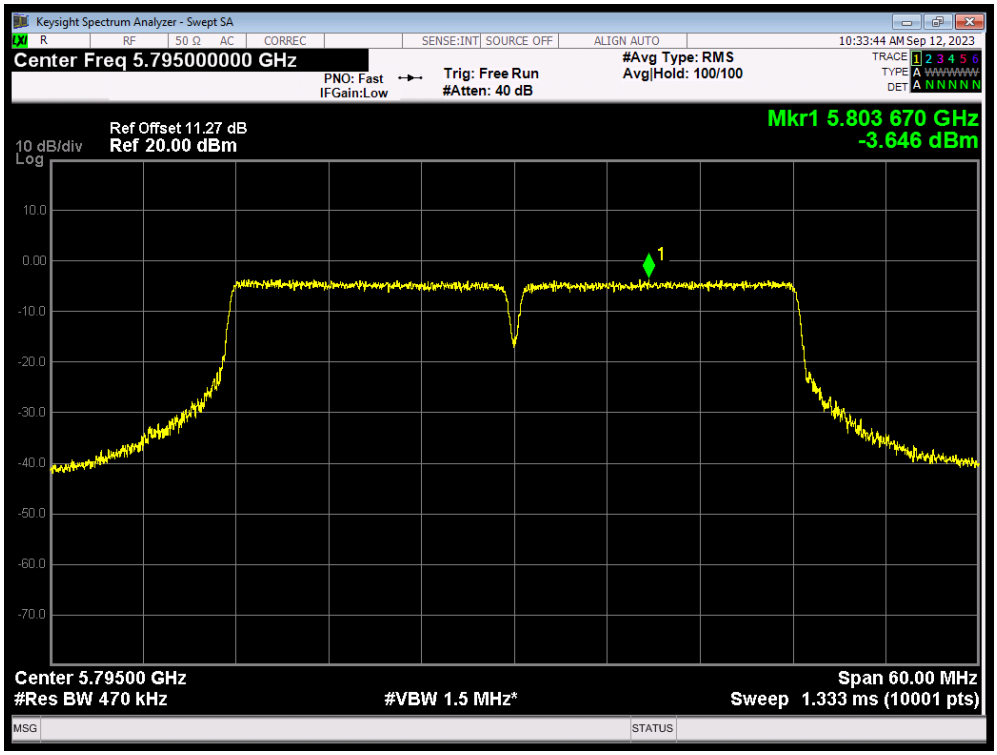
PSD 802.11n(HT40) 5710MHz



PSD 802.11n(HT40) 5755MHz



PSD 802.11n(HT40) 5795MHz



5.5. Unwanted Emission

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.
Sweep the whole frequency band range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.
Set the spectrum analyzer in the following:
9kHz~150 kHz
RBW=200Hz, VBW=1kHz/ Sweep=AUTO
150 kHz~30MHz
RBW=9KHz, VBW=30KHz,/ Sweep=AUTO
Below 1GHz
RBW=100kHz / VBW=300kHz / Sweep=AUTO
a) Peak emission levels are measured by setting the instrument as follows:
Above 1GHz
PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO
b) Average emission levels are measured by setting the instrument as follows:
Above 1GHz
AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO
c) Detector: The measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)
e) Sweep time = auto.
f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and

OFF with the transmit cycle, at least 100 traces shall be averaged.)

g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is [10 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is [20 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.

3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

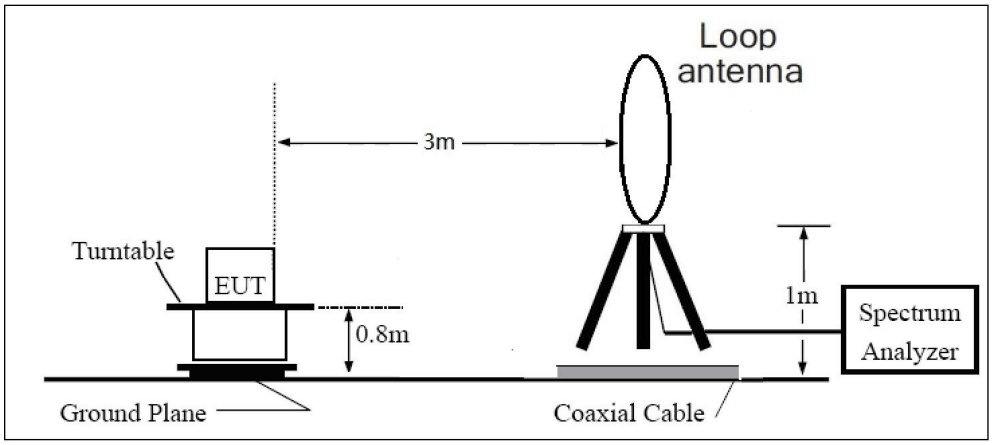
Reduce the video bandwidth until no significant variations in the displayed signal are observed in subsequent traces, provided the video bandwidth is no less than 1 Hz. For regulatory requirements that specify averaging only over the transmit duration (e.g., digital transmission system [DTS] and Unlicensed National Information Infrastructure [U-NII]), the video bandwidth shall be greater than [1 / (minimum transmitter on time)] and no less than 1 Hz.

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the loop antenna is vertical, others antenna are vertical and horizontal.

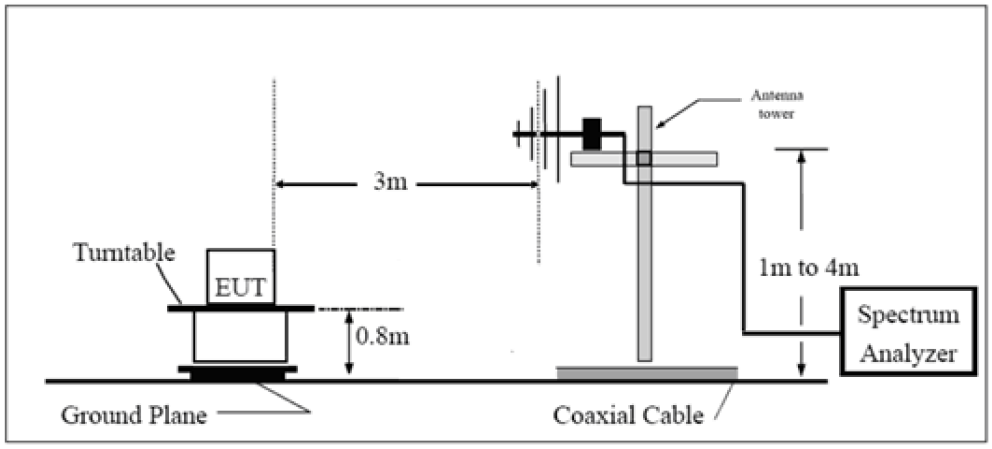
The test is in transmitting mode.

Test setup

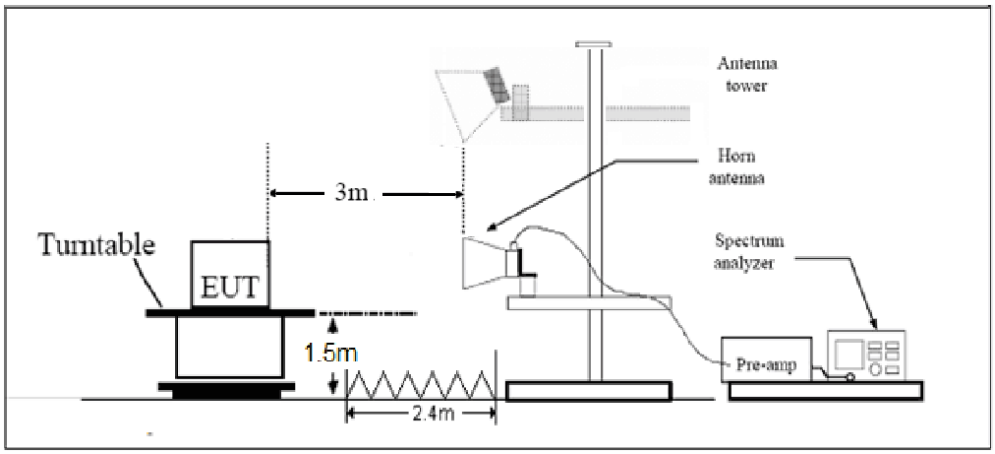
9KHz~ 30MHz



30MHz~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

(1) For transmitters operating in the 5725-5850 MHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(2) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz(68.2dBμV/m).

(3) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz(68.2dBμV/m).

(4) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz(68.2dBμV/m).

Note: the following formula is used to convert the EIRP to field strength

§1、E[dBμV/m] = EIRP[dBm] - 20 log(d[meters]) + 104.77, where E = field strength and

d = distance at which field strength limit is specified in the rules;

§2、E[dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters

(5) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table.

Frequency of emission (MHz)	Field strength(μV/m)	Field strength(dBμV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41			

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96.

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.17 dB
200MHz-1GHz	4.84 dB
1-18GHz	4.35 dB
18-26.5GHz	5.90 dB
26.5GHz~40GHz	5.92 dB

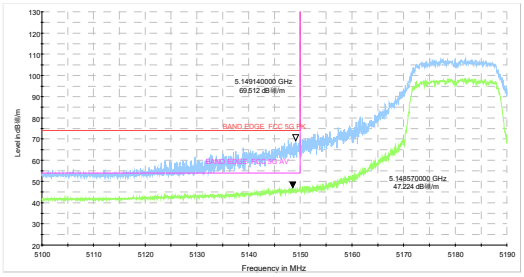
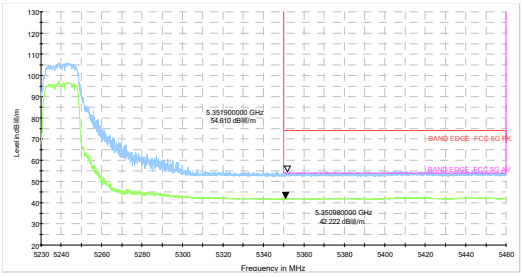
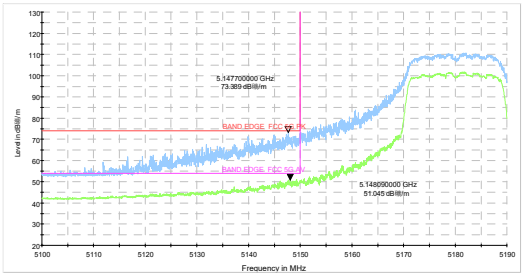
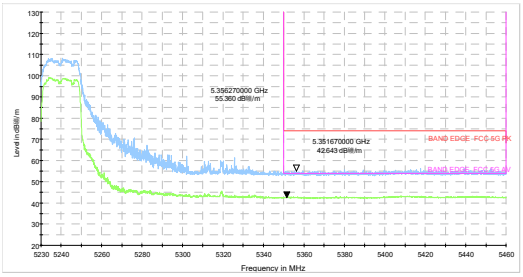
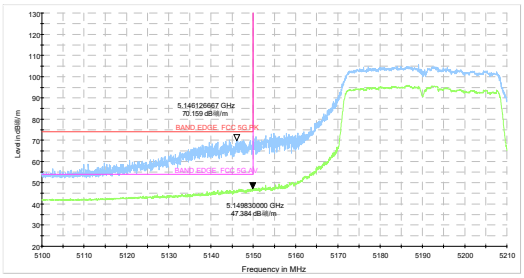
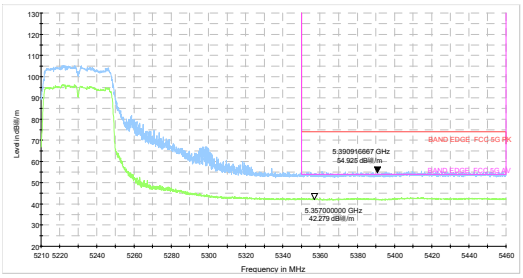
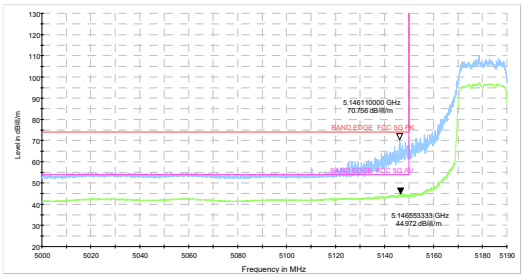
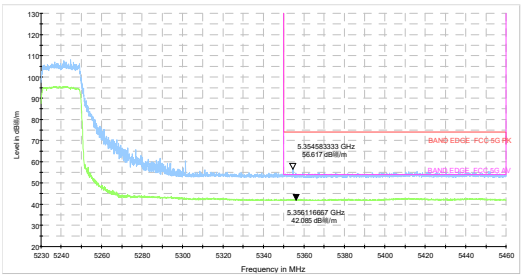
Test Results:

The following graphs display the maximum values of horizontal and vertical by software.
Blue trace uses the peak detection, Green trace uses the average detection.

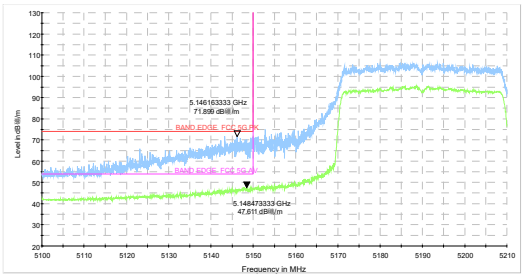
A symbol (dB礦/m) in the test plot below means (dBμV/m)

The signal beyond the limit is carrier.

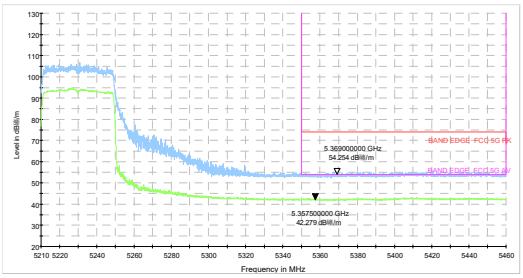
U-NII-1

802.11a-Channel 36: Peak + Average	802.11a-Channel 48: Peak + Average
	
802.11n HT20-Channel 36: Peak + Average	802.11n HT20-Channel 48: Peak + Average
	
802.11n HT40-Channel 38: Peak + Average	802.11n HT40-Channel 46: Peak + Average
	
802.11ax HE20 -Channel 36: Peak + Average	802.11ax HE20 -Channel 48: Peak + Average
	

802.11ax HE40-Channel 38: Peak + Average

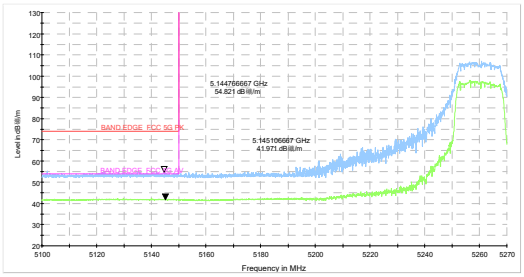


802.11ax HE40-Channel 46: Peak + Average

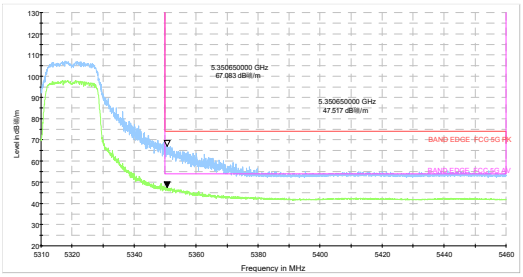


U-NII-2A

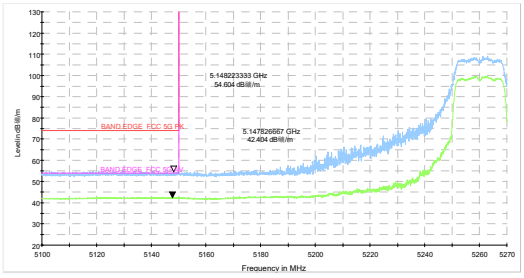
802.11a-Channel 52: Peak + Average



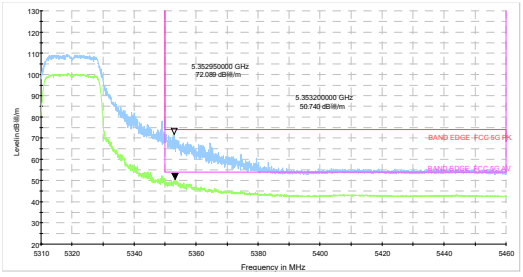
802.11a-Channel 64: Peak + Average



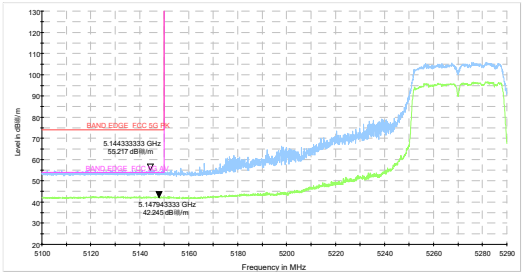
802.11n HT20-Channel 52: Peak + Average



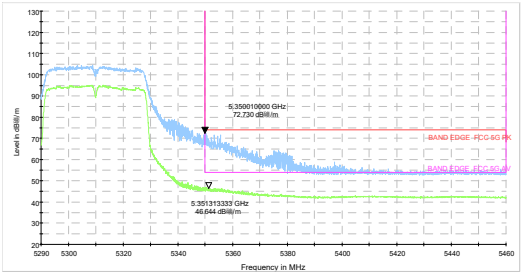
802.11n HT20-Channel 64: Peak + Average



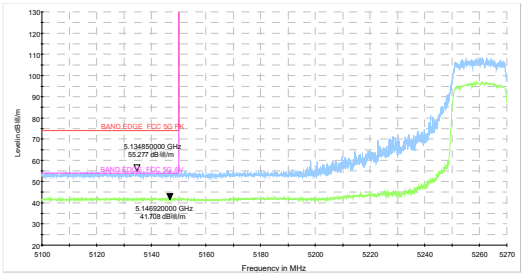
802.11n HT40-Channel 54: Peak + Average



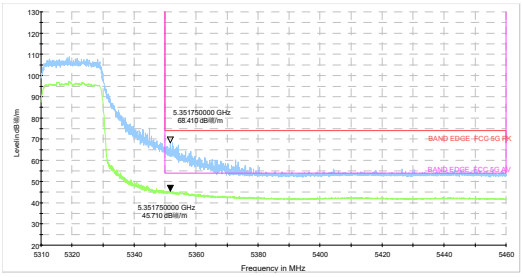
802.11n HT40-Channel 62: Peak + Average



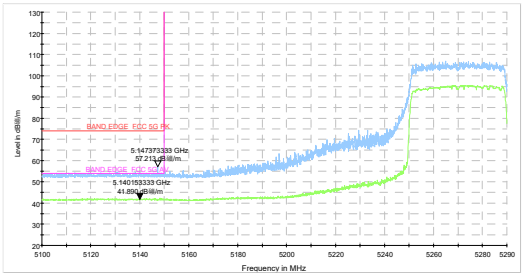
802.11ax HE20 -Channel 52: Peak + Average



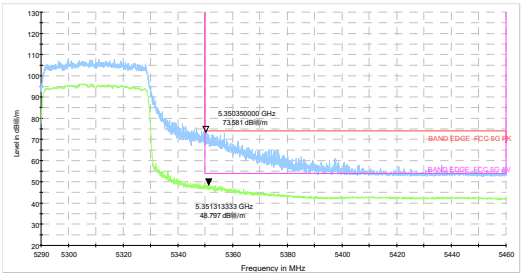
802.11ax HE20 -Channel 64: Peak + Average



802.11ax HE40-Channel 54: Peak + Average

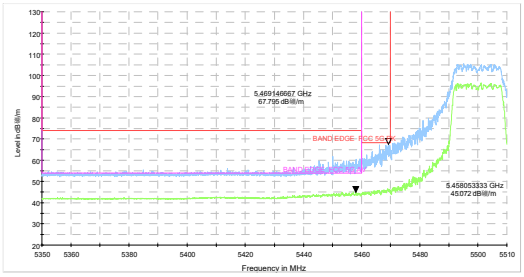


802.11ax HE40-Channel 62: Peak + Average

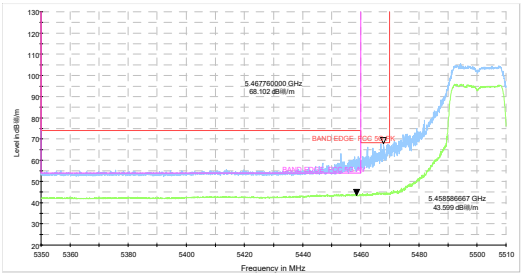


U-NII-2C

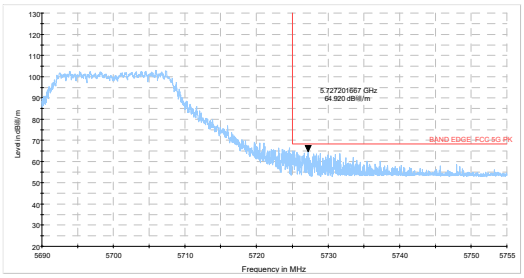
802.11a-Channel 100: Peak + Average



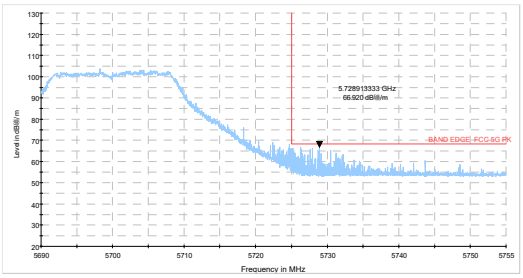
802.11n HT20-Channel 100: Peak + Average



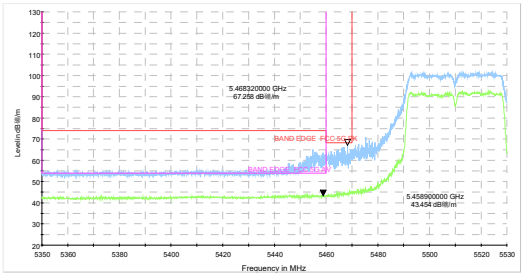
802.11a-Channel 140: Peak



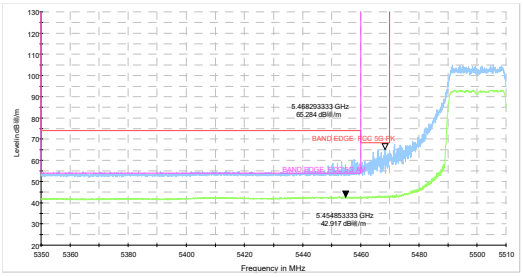
802.11n HT20-Channel 140: Peak



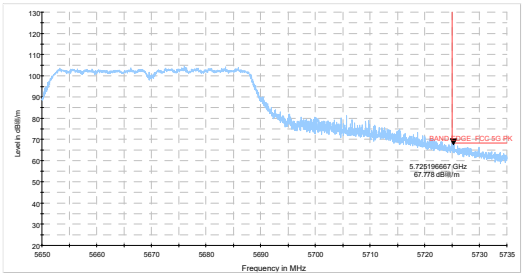
802.11n HT40-Channel 102: Peak + Average



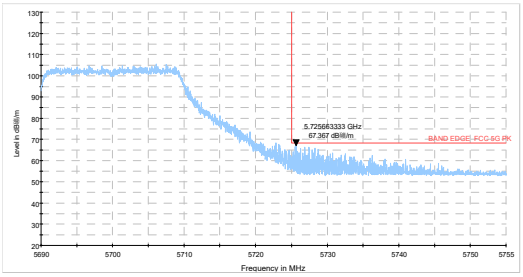
802.11ax HE20 -Channel 100: Peak + Average



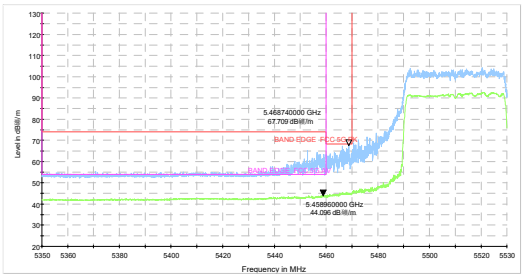
802.11n HT40-Channel 134: Peak



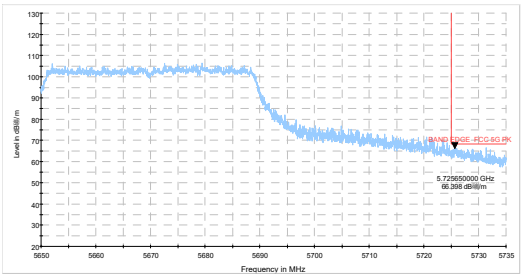
802.11ax HE20-Channel 140: Peak



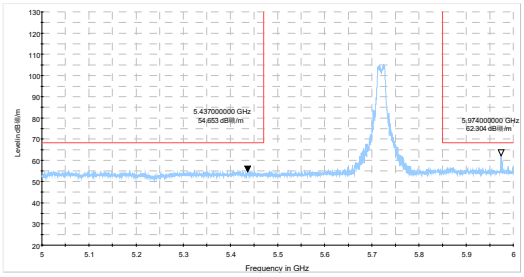
802.11ax HE40-Channel 102: Peak + Average



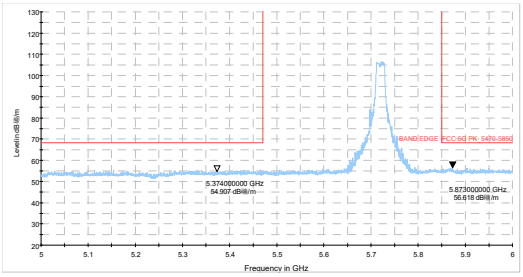
802.11ax HE40-Channel 134: Peak



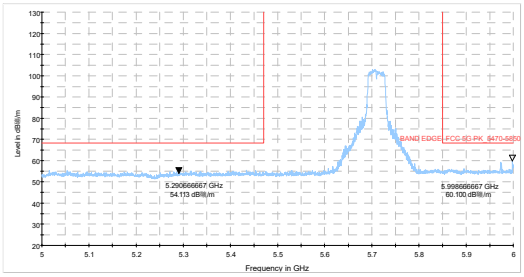
802.11a-Channel 144: Peak



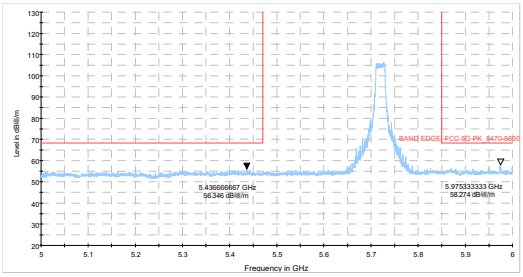
802.11n HT20-Channel 144: Peak



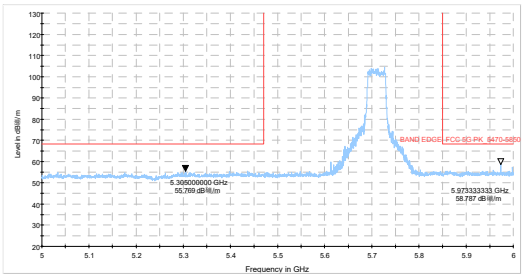
802.11n HT40-Channel 142: Peak



802.11ax HE20 -Channel 144: Peak + Average

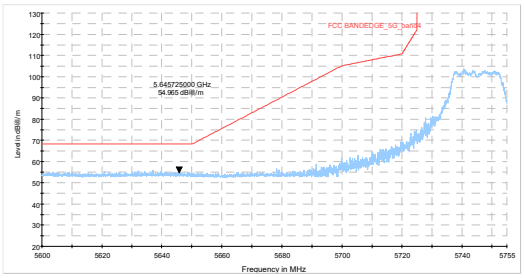


802.11ax HE40-Channel 142: Peak + Average

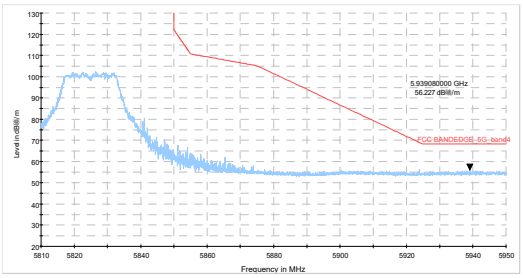


U-NII-3

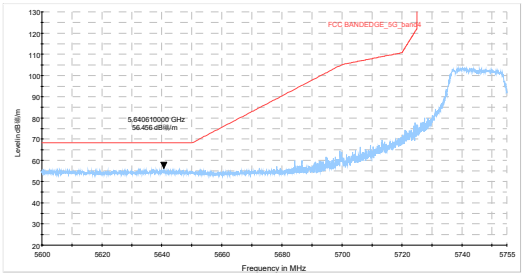
802.11a-Channel 149: Peak



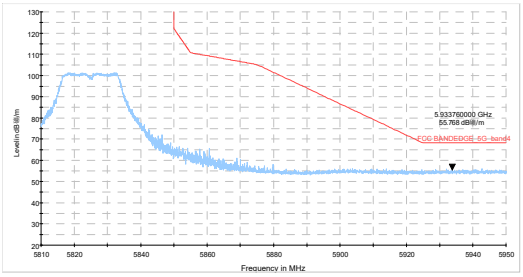
802.11a-Channel 165: Peak



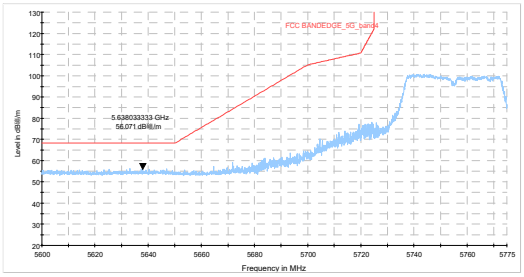
802.11n HT20-Channel 149: Peak



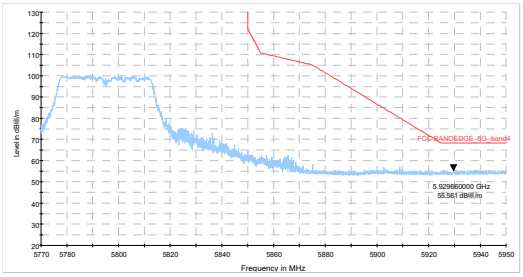
802.11n HT20-Channel 165: Peak



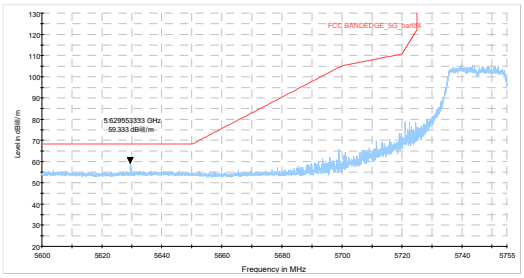
802.11n HT40-Channel 151: Peak



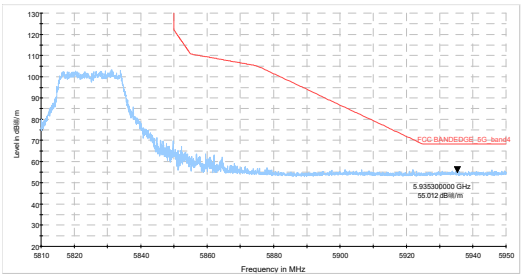
802.11n HT40-Channel 159: Peak



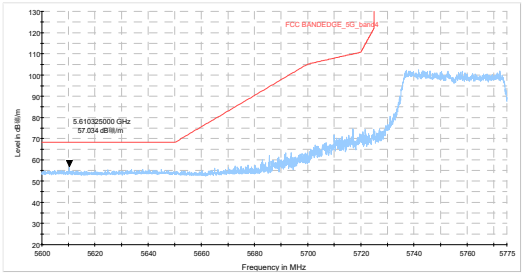
802.11ax HE20-Channel 149: Peak



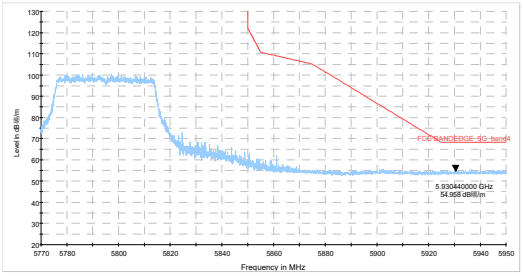
802.11ax HE20-Channel 165: Peak



802.11ax HE40-Channel 151: Peak



802.11ax HE40-Channel 159: Peak



Result of RE

Test result

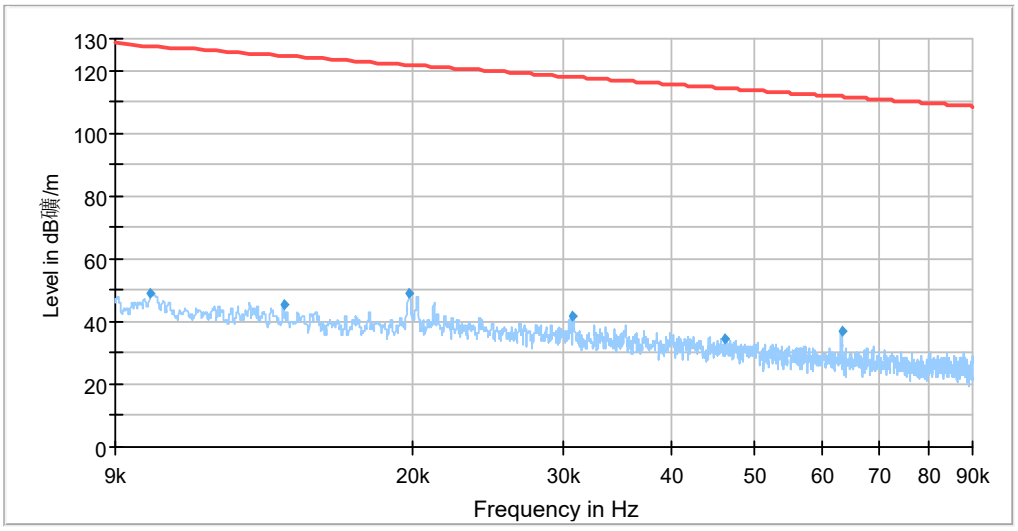
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier,

A symbol (dB礦/m) in the test plot below means (dBμV/m)

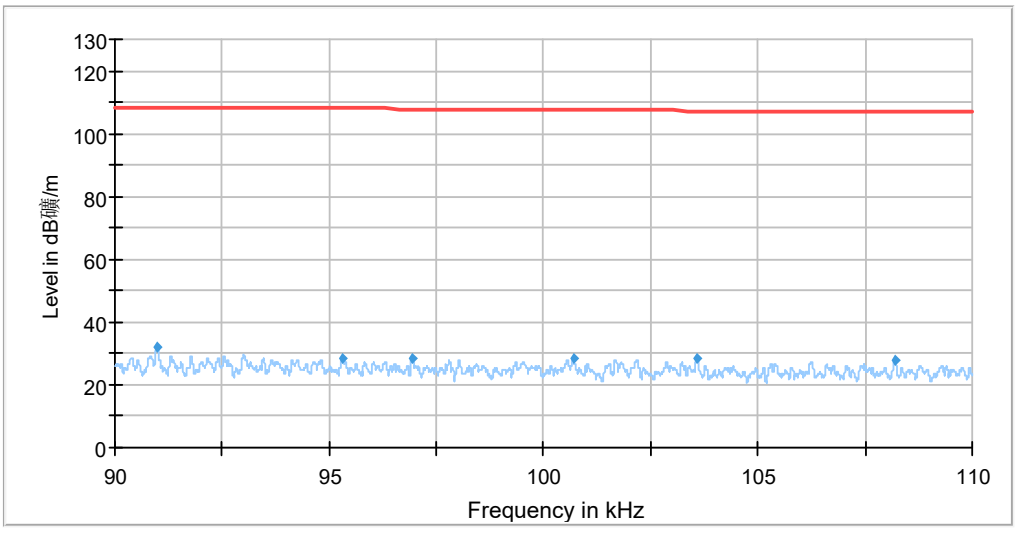
A symbol (dB μV) in the test plot below means (dBμV/m)

During the test, the Radiates Emission from 9KHz to 1GHz was performed in all modes with all channels, 802.11a, Channel 64 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

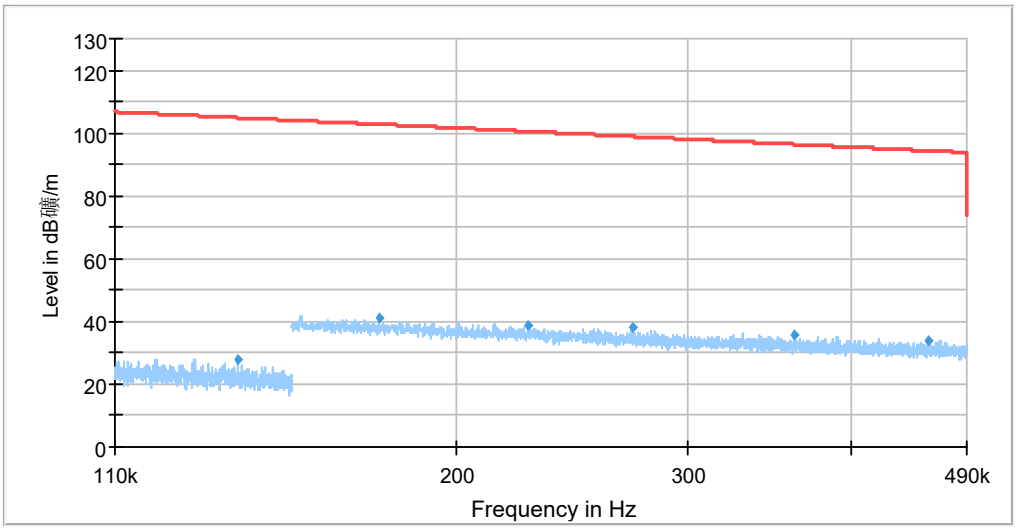
Continuous TX mode:



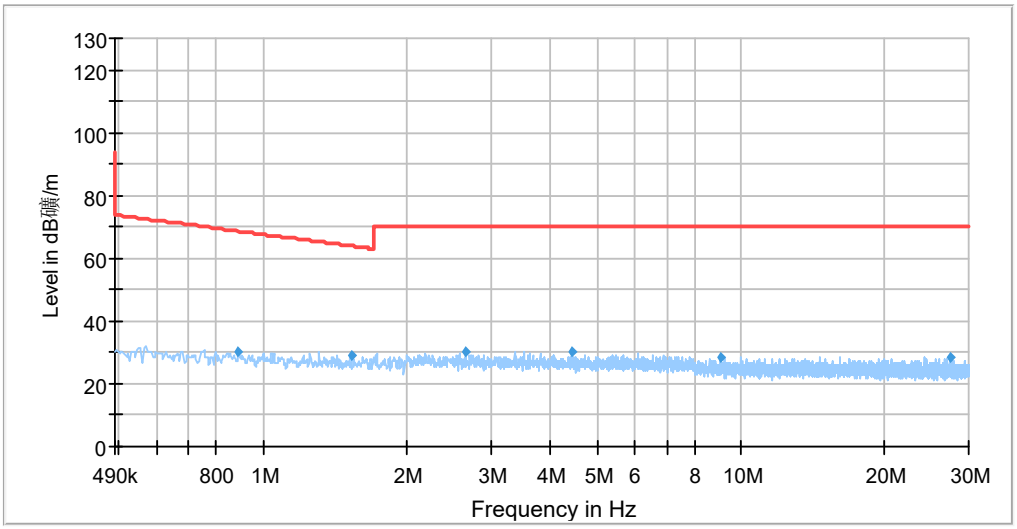
Radiates Emission from 9KHz to 90KHz



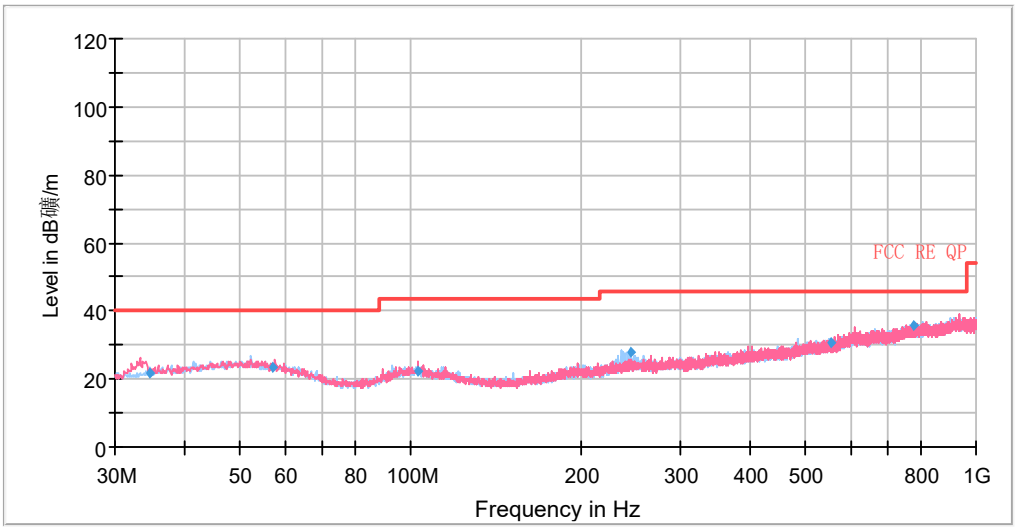
Radiates Emission from 90KHz to 110KHz



Radiates Emission from 110KHz to 490KHz



Radiates Emission from 490KHz to 30MHz

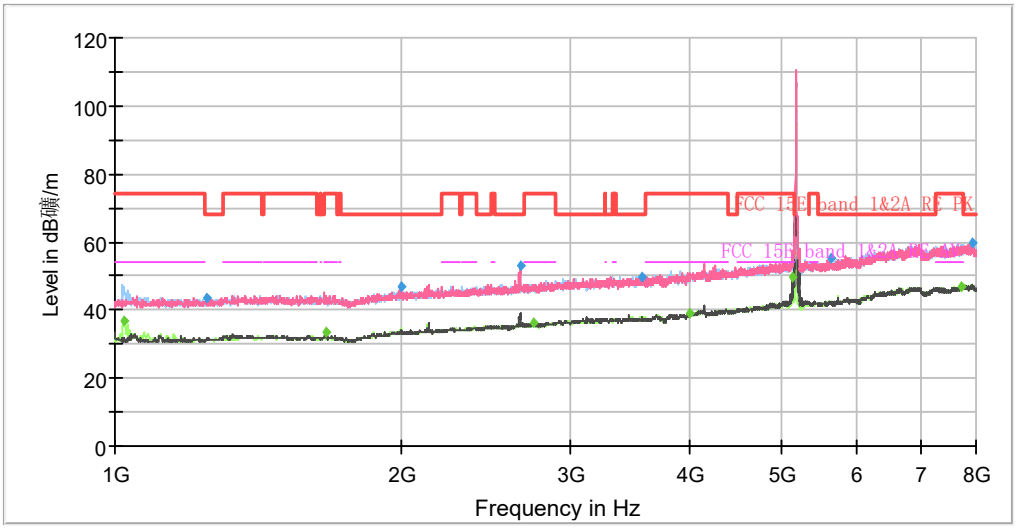


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
34.60	21.98	40.00	18.02	106.0	V	24.00	18
57.21	23.53	40.00	16.47	109.0	V	340.00	20
102.72	22.11	43.50	21.39	188.0	V	354.00	19
245.86	27.82	46.00	18.18	123.0	H	11.00	20
554.01	30.51	46.00	15.49	185.0	H	56.00	26
778.23	35.89	46.00	10.11	111.0	V	226.00	30

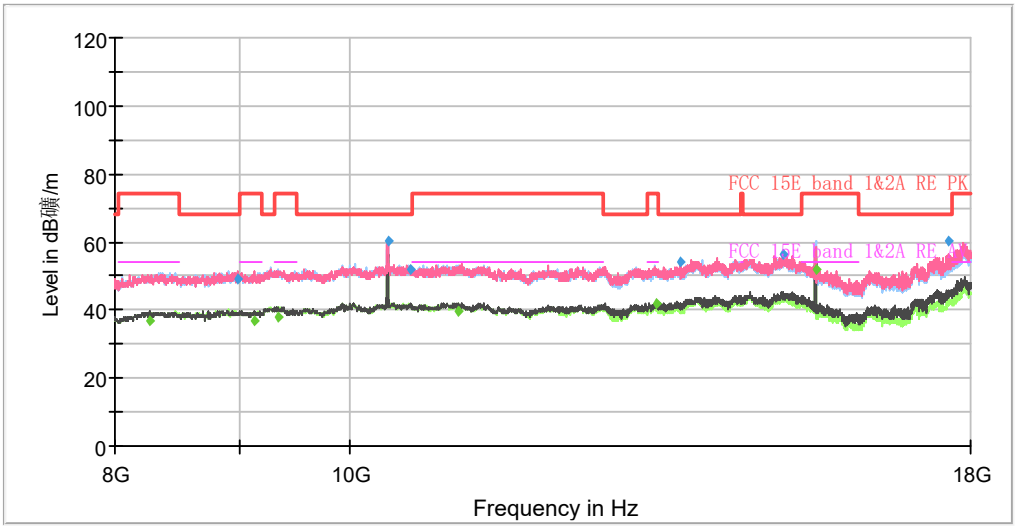
Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit – Quasi-Peak

802.11a CH36



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μV/m)	Average (dB μV/m)	Limit (dB μV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1021.88	---	36.67	54.00	17.33	1000.00	200.0	H	174.00	-3
1246.75	43.55	---	68.20	24.65	1000.00	100.0	V	29.00	-2
1664.13	---	33.63	54.00	20.37	1000.00	200.0	V	323.00	-1
1994.88	47.02	---	68.20	21.18	1000.00	100.0	V	163.00	1
2665.13	52.83	---	68.20	15.37	1000.00	100.0	V	101.00	4
2748.25	---	36.12	54.00	17.88	1000.00	100.0	H	342.00	4
3568.13	49.88	---	68.20	18.32	1000.00	100.0	H	83.00	5
3998.63	---	38.93	54.00	15.07	1000.00	200.0	H	330.00	6
5142.25	---	49.56	54.00	4.44	1000.00	100.0	V	20.00	10
5624.38	55.42	---	68.20	12.78	1000.00	100.0	H	62.00	11
7734.00	---	47.10	54.00	6.90	1000.00	100.0	V	0.00	17
7919.50	59.88	---	68.20	8.32	1000.00	100.0	V	204.00	17
15541.25	---	51.77	54.00	2.23	1000.00	107.0	H	25.00	5

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average