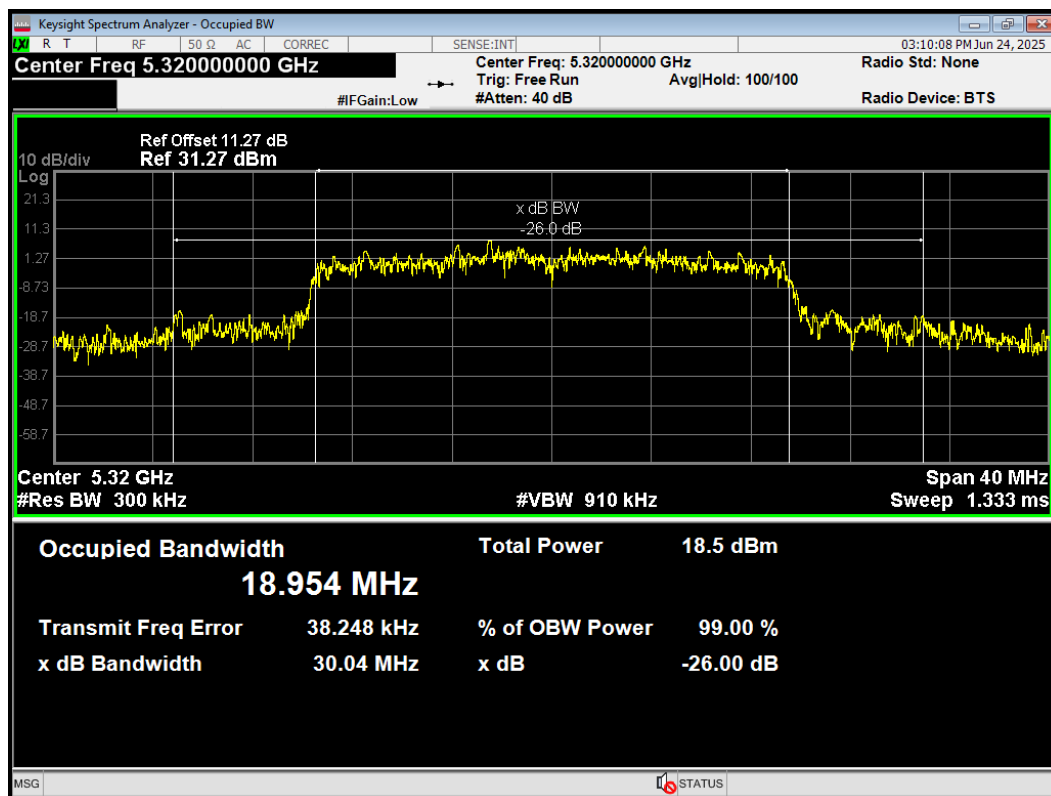
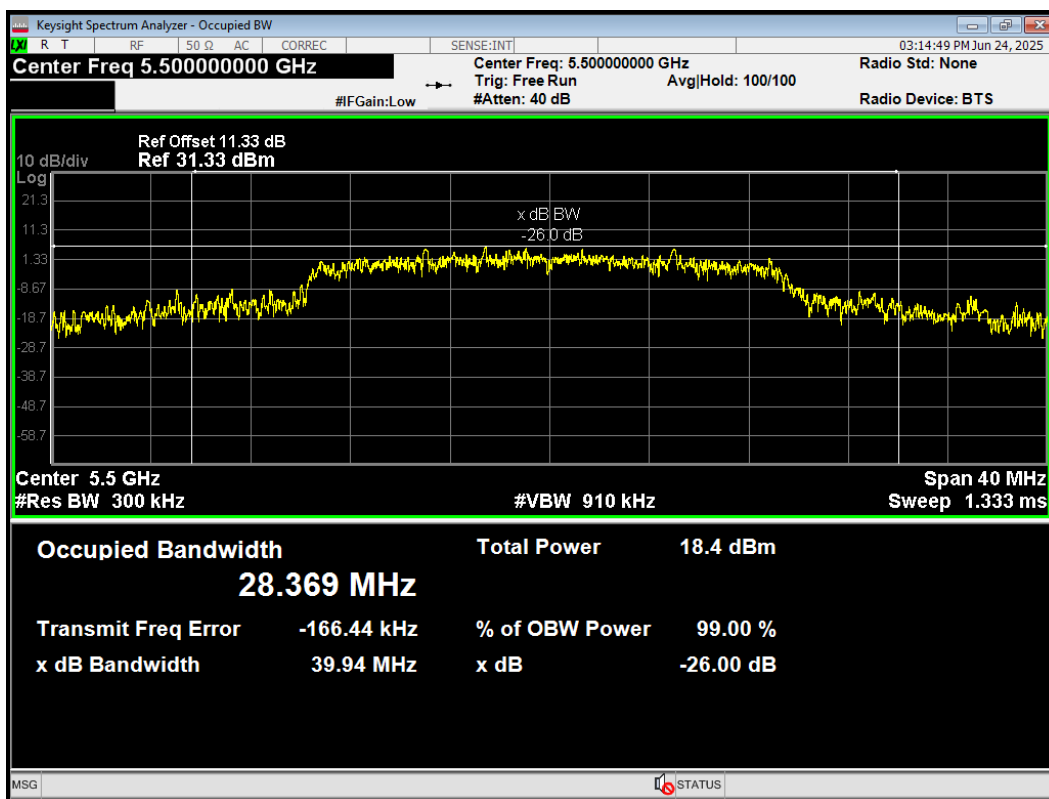


OBW 802.11ax(HE20) 5320MHz

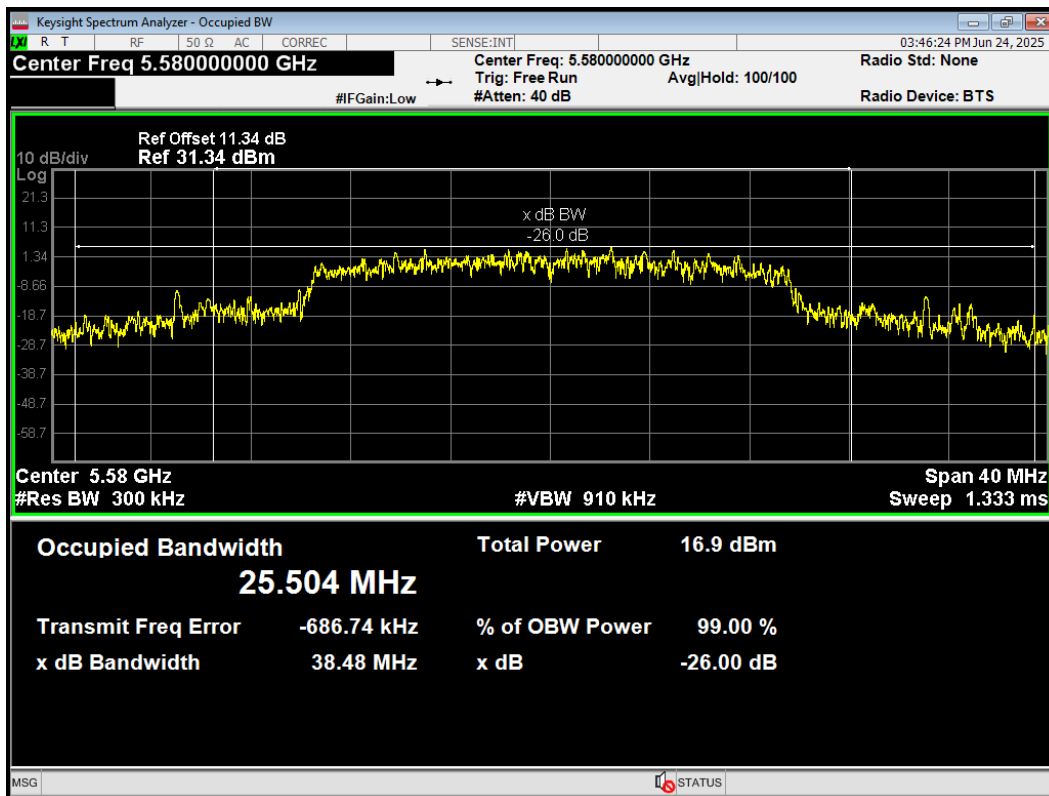


U-NII-2C

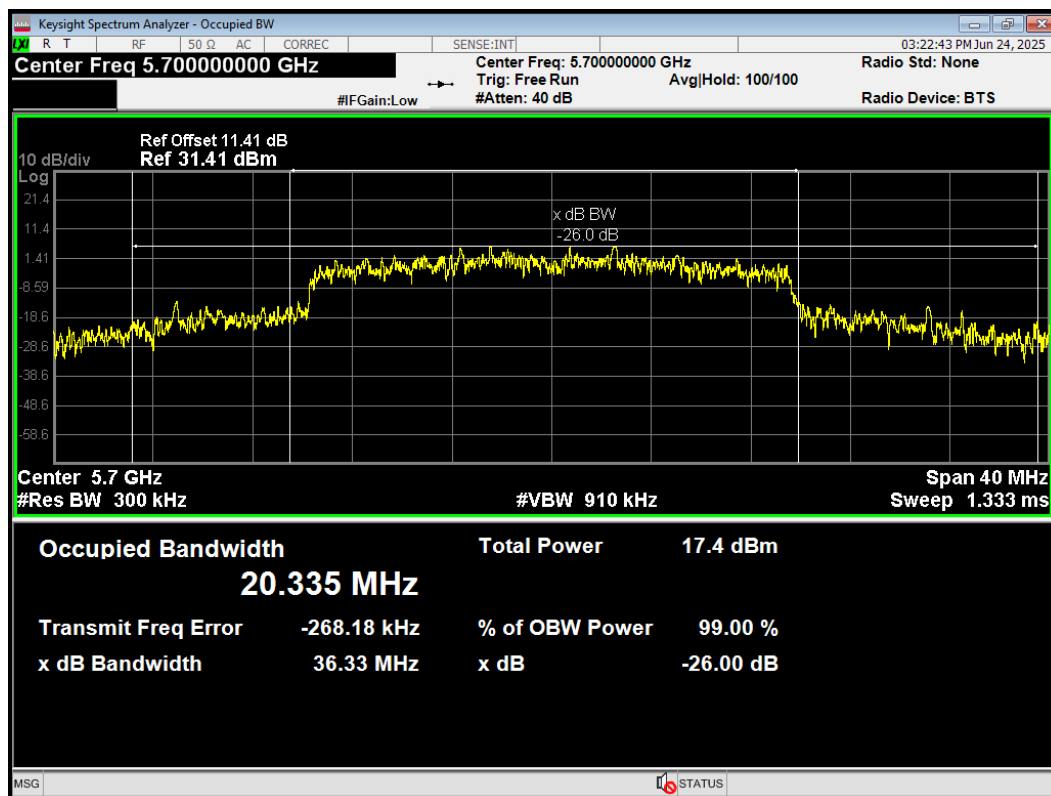
OBW 802.11ax(HE20) 5500MHz



OBW NVNT 802.11ax(HE20) 5580MHz Ant1

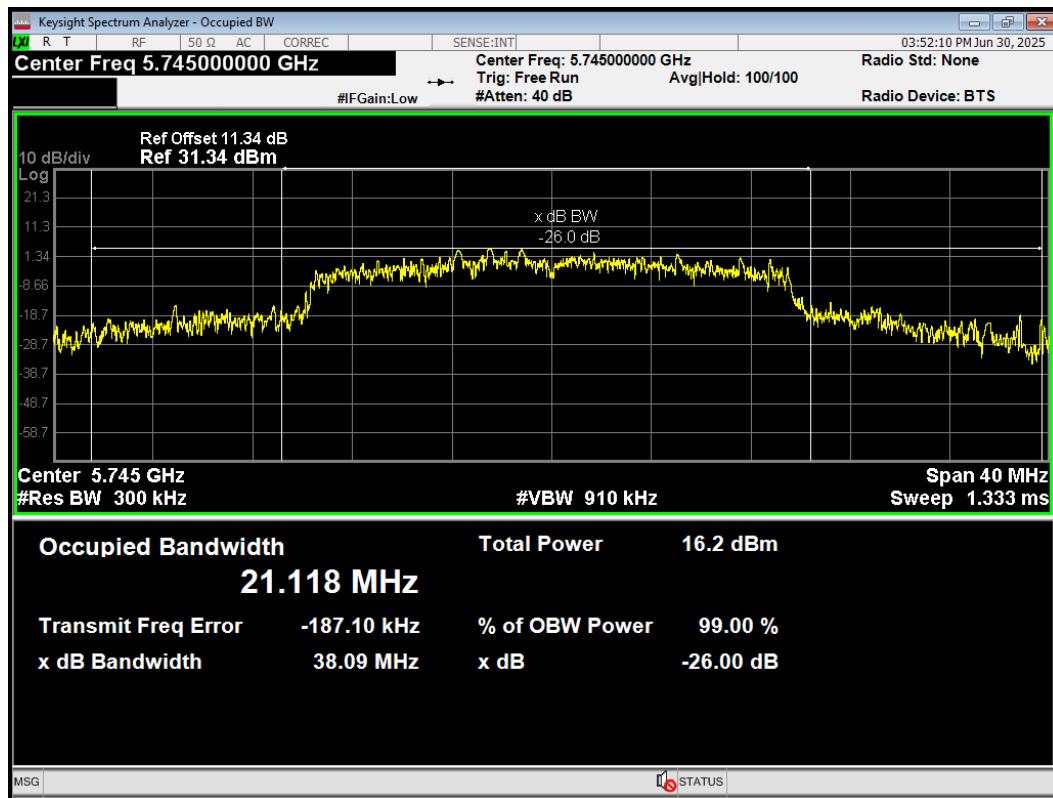


OBW 802.11ax(HE20) 5700MHz

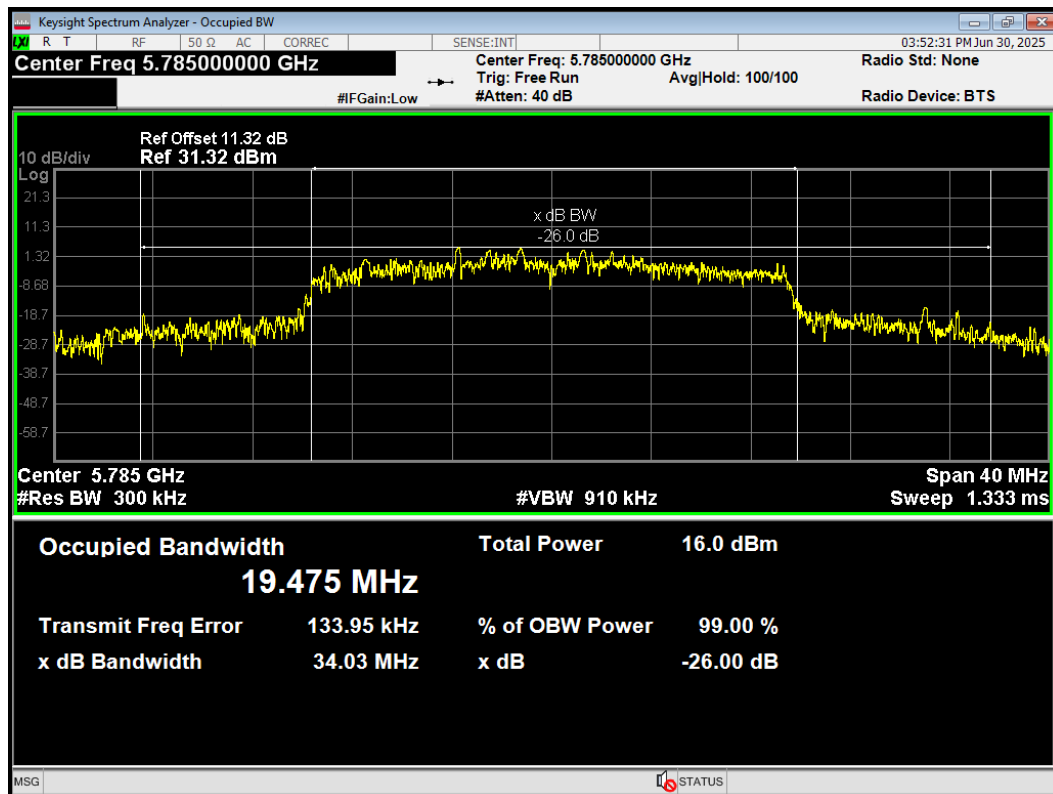


U-NII-3

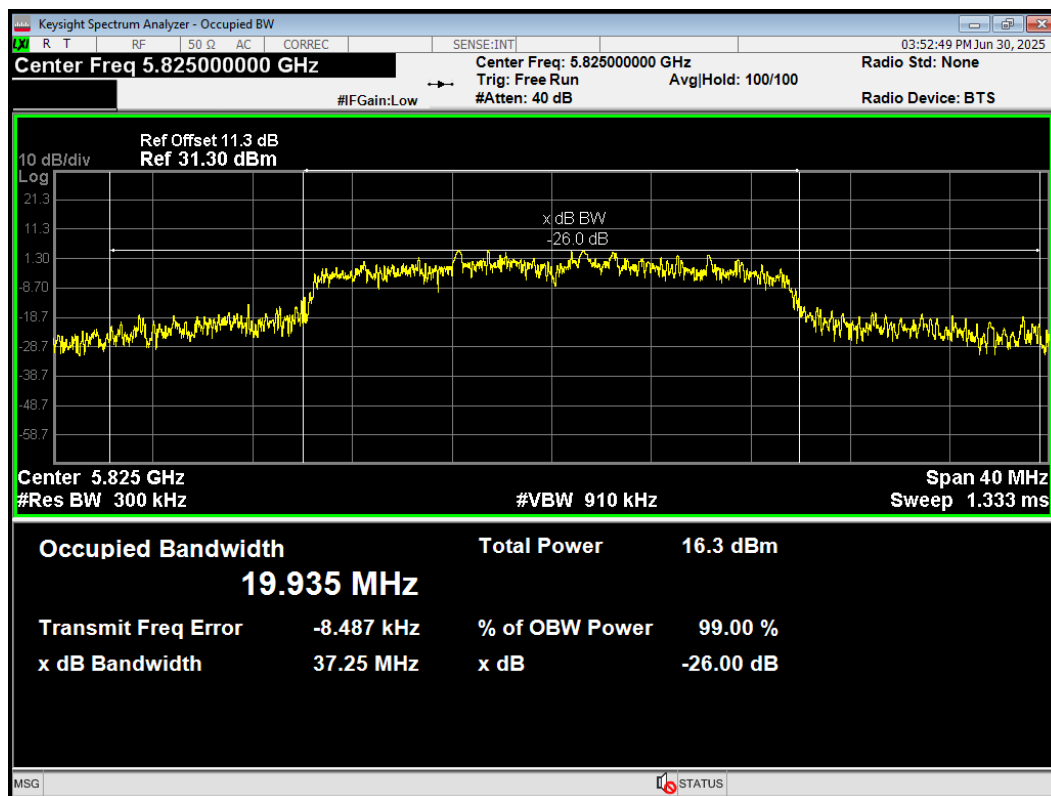
OBW 802.11ax(HE20) 5745MHz



OBW 802.11ax(HE20) 5785MHz



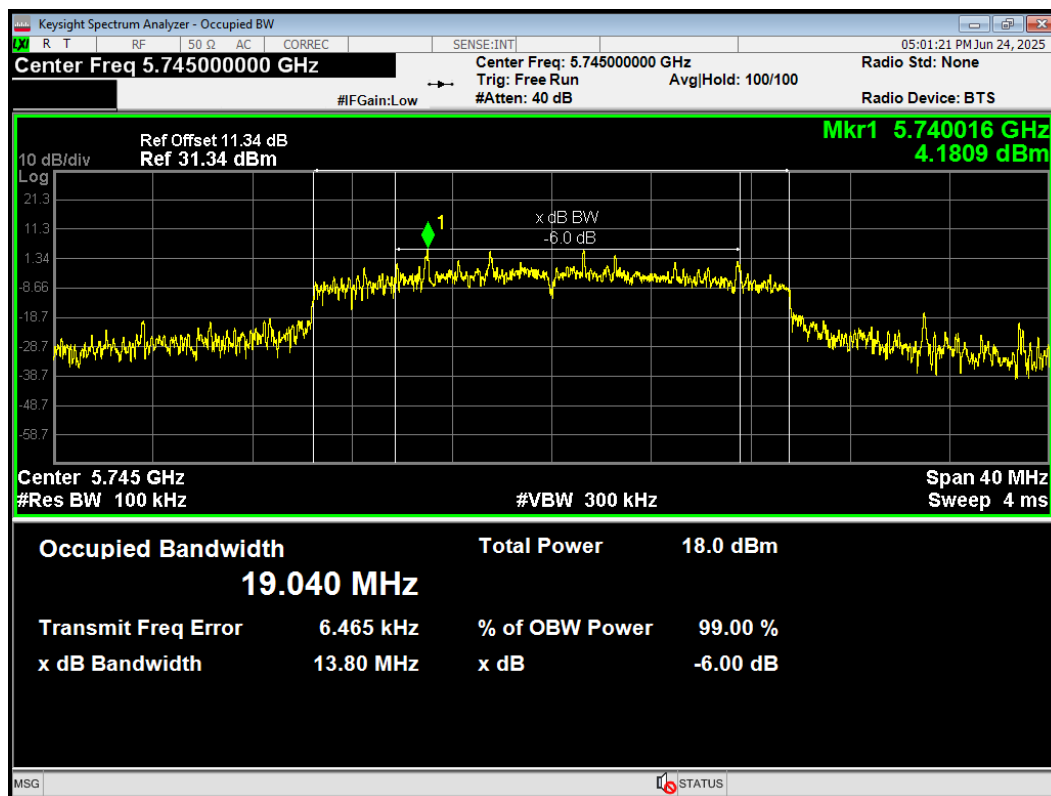
OBW 802.11ax(HE20) 5825MHz



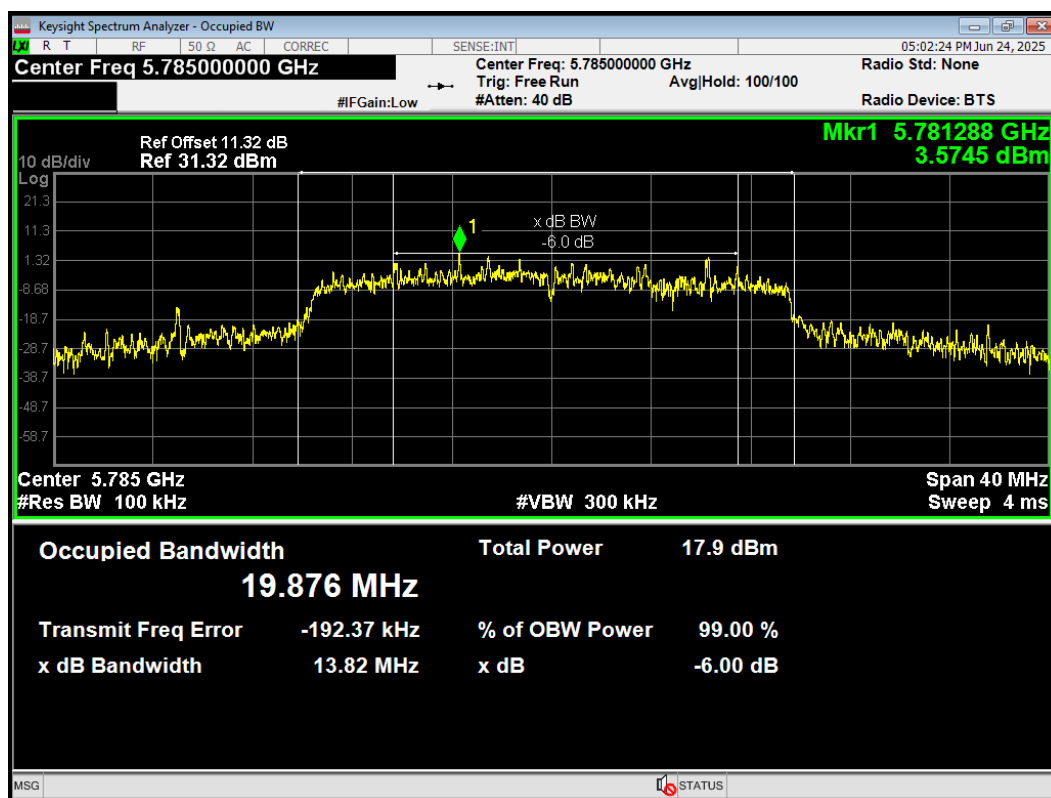
Minimum 6 dB bandwidth

U-NII-3

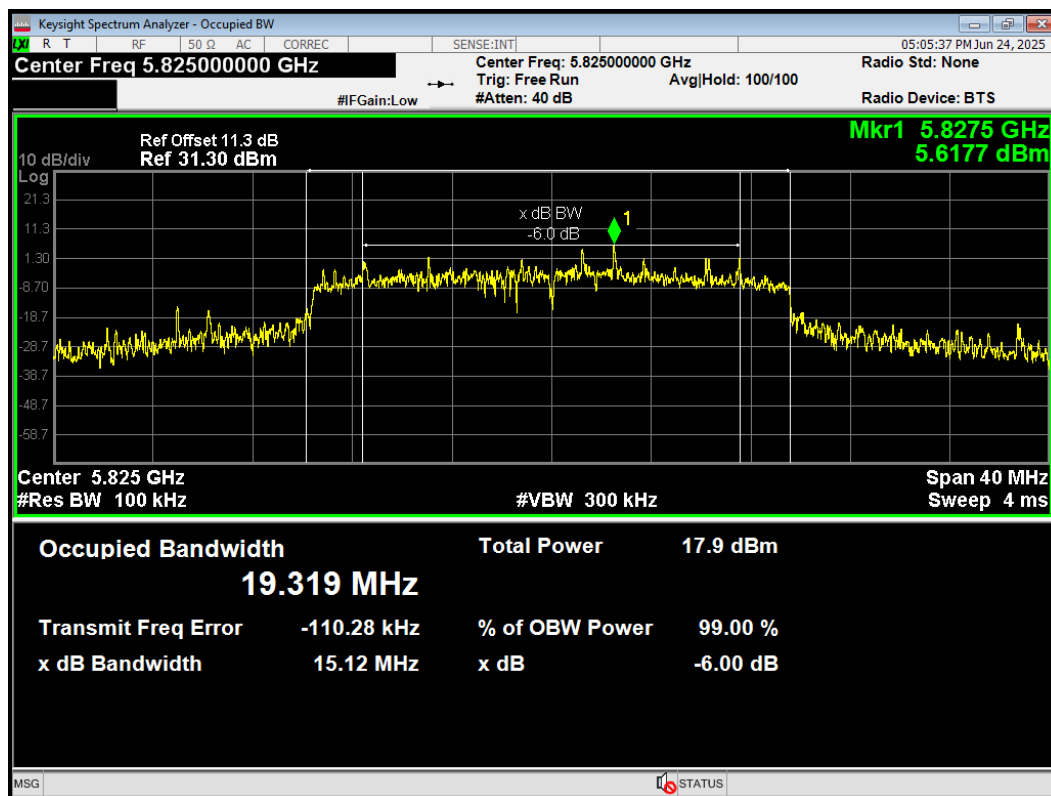
-6dB Bandwidth 802.11ax(HE20) 5745MHz



-6dB Bandwidth 802.11ax(HE20) 5785MHz



-6dB Bandwidth 802.11ax(HE20) 5825MHz



5.2. Average Power Output

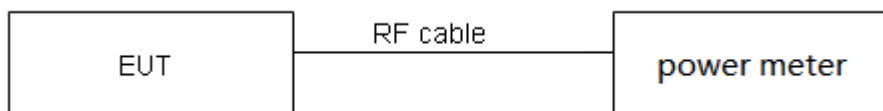
Ambient condition

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 $11 \text{ dBm} + 10 \log B$, 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.

Measurement Uncertainty

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

Test Results

SU Mode

Mode	Duty cycle	Duty cycle correction Factor (dB)
802.11a	0.120	9.22
802.11n HT20	0.130	8.87
802.11n HT40	0.125	9.04
802.11ac VHT20	0.132	8.78
802.11ac VHT40	0.131	8.81
802.11ax HE20	0.100	10.00
802.11ax HE40	0.099	10.10
Note: when Duty cycle ≥ 0.98 , Duty cycle correction Factor not required.		

Power Index		
Test Mode	Channel/ Frequency (MHz)	U-NII-1
802.11a	36/5180	Default
	40/5200	Default
	48/5240	Default
802.11n HT20	36/5180	Default
	40/5200	Default
	48/5240	Default
802.11n HT40	38/5190	Default
	46/5230	Default
802.11ac VHT20	36/5180	Default
	40/5200	Default
	48/5240	Default
802.11ac VHT40	38/5190	Default
	46/5230	Default
802.11ax HE20	36/5180	Default
	40/5200	Default
	48/5240	Default
802.11ax HE40	38/5190	Default
	46/5230	Default

Power Index		
Test Mode	Channel/ Frequency (MHz)	U-NII-2A
802.11a	52/5260	Default
	60/5300	Default
	64/5320	Default
802.11n HT20	52/5260	Default
	60/5300	Default
	64/5320	Default
802.11n HT40	54/5270	Default
	62/5310	Default
802.11ac VHT20	52/5260	Default
	60/5300	Default
	64/5320	Default
802.11ac VHT40	54/5270	Default
	62/5310	Default
802.11ax HE20	52/5260	Default
	60/5300	Default
	64/5320	Default
802.11ax HE40	54/5270	Default
	62/5310	Default

Power Index		
Test Mode	Channel/ Frequency (MHz)	U-NII-2C
802.11a	100/5500	Default
	116/5580	Default
	140/5700	Default
	144/5720	Default
802.11n HT20	100/5500	Default
	116/5580	Default
	140/5700	Default
	144/5720	Default
802.11n HT40	102/5510	Default
	110/5550	Default
	134/5670	Default
	142/5710	Default
802.11ac VHT20	100/5500	Default
	116/5580	Default
	140/5700	Default
	144/5720	Default

802.11ac VHT40	102/5510	Default
	110/5550	Default
	134/5670	Default
	142/5710	Default
802.11ax HE20	100/5500	Default
	116/5580	Default
	140/5700	Default
	144/5720	Default
802.11ax HE40	102/5510	Default
	110/5550	Default
	134/5670	Default
	142/5710	Default

Power Index		
Test Mode	Channel/ Frequency (MHz)	U-NII-3
802.11a	144/5720	Default
	149/5745	Default
	157/5785	Default
	165/5825	Default
802.11n HT20	144/5720	Default
	149/5745	Default
	157/5785	Default
	165/5825	Default
802.11n HT40	142/5710	Default
	151/5755	Default
	159/5795	Default
802.11ac VHT20	144/5720	Default
	149/5745	Default
	157/5785	Default
	165/5825	Default
802.11ac VHT40	142/5710	Default
	151/5755	Default
	159/5795	Default
802.11ax HE20	144/5720	Default
	149/5745	Default
	157/5785	Default
	165/5825	Default
802.11ax HE40	142/5710	Default
	151/5755	Default
	159/5795	Default

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	25.83	25.12	24.00
		60/5300	31.34	25.96	24.00
		64/5320	29.29	25.67	24.00
	802.11n HT20	52/5260	27.77	25.44	24.00
		60/5300	30.27	25.81	24.00
		64/5320	30.97	25.91	24.00
	802.11n HT40	54/5270	61.08	28.86	24.00
		62/5310	67.02	29.26	24.00
	802.11ac VHT20	52/5260	24.49	24.89	24.00
		60/5300	31.27	25.95	24.00
		64/5320	34.56	26.39	24.00
	802.11ac VHT40	54/5270	60.86	28.84	24.00
		62/5310	68.21	29.34	24.00
	802.11ax HE20	52/5260	21.94	24.41	24.00
		60/5300	33.72	26.28	24.00
		64/5320	34.48	26.38	24.00
	802.11ax HE40	54/5270	53.25	28.26	24.00
		62/5310	54.74	28.38	24.00
U-NII-2C	802.11a	100/5500	39.94	27.01	24.00
		116/5580	39.03	26.91	24.00
		140/5700	36.19	26.59	24.00
		144/5720	36.77	26.65	24.00
	802.11n HT20	100/5500	39.94	27.01	24.00
		116/5580	38.40	26.84	24.00
		140/5700	33.54	26.26	24.00
		144/5720	35.43	26.49	24.00
	802.11n HT40	102/5510	79.59	30.01	24.00
		110/5550	79.23	29.99	24.00
		134/5670	78.54	29.95	24.00
		142/5710	78.44	29.95	24.00
	802.11ac VHT20	100/5500	39.87	27.01	24.00
		116/5580	39.74	26.99	24.00
		140/5700	35.95	26.56	24.00
		144/5720	38.05	26.80	24.00
	802.11ac VHT40	102/5510	79.64	30.01	24.00
		110/5550	78.18	29.93	24.00

		134/5670	76.78	29.85	24.00
		142/5710	76.91	29.86	24.00
	802.11ax HE20	100/5500	39.90	27.01	24.00
		116/5580	39.78	27.00	24.00
		140/5700	36.10	26.58	24.00
		144/5720	39.29	26.94	24.00
	802.11ax HE40	102/5510	79.97	30.03	24.00
		110/5550	79.08	29.98	24.00
		134/5670	76.14	29.82	24.00
		142/5710	75.13	29.76	24.00

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	5.56	14.78	24	PASS
	40/5200	4.33	13.55	24	PASS
	48/5240	4.07	13.29	24	PASS
802.11n HT20	36/5180	4.98	13.85	24	PASS
	40/5200	4.49	13.36	24	PASS
	48/5240	3.58	12.45	24	PASS
802.11n HT40	38/5190	3.07	12.11	24	PASS
	46/5230	3.08	12.12	24	PASS
802.11ac VHT20	36/5180	4.90	13.68	24	PASS
	40/5200	4.34	13.12	24	PASS
	48/5240	3.90	12.68	24	PASS
802.11ac VHT40	38/5190	3.90	12.71	24	PASS
	46/5230	3.08	11.89	24	PASS
802.11ax HE20	36/5180	3.78	13.78	24	PASS
	40/5200	3.50	13.50	24	PASS
	48/5240	3.26	13.26	24	PASS
802.11ax HE40	38/5190	3.91	14.01	24	PASS
	46/5230	3.01	13.11	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	5.58	14.80	24.00	PASS
	60/5300	5.25	14.47	24.00	PASS
	64/5320	5.22	14.44	24.00	PASS
802.11n HT20	52/5260	5.18	14.05	24.00	PASS
	60/5300	5.41	14.28	24.00	PASS
	64/5320	5.18	14.05	24.00	PASS
802.11n HT40	54/5270	5.30	14.34	24.00	PASS
	62/5310	5.04	14.08	24.00	PASS
802.11ac VHT20	52/5260	4.94	13.72	24.00	PASS
	60/5300	5.45	14.23	24.00	PASS
	64/5320	5.15	13.93	24.00	PASS
802.11ac VHT40	54/5270	5.35	14.16	24.00	PASS
	62/5310	4.28	13.09	24.00	PASS
802.11ax HE20	52/5260	4.17	14.17	24.00	PASS
	60/5300	4.14	14.14	24.00	PASS
	64/5320	4.24	14.24	24.00	PASS
802.11ax HE40	54/5270	4.48	14.58	24.00	PASS
	62/5310	4.89	14.99	24.00	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	4.06	13.28	24.00	PASS
	116/5580	3.94	13.16	24.00	PASS
	140/5700	4.58	13.80	24.00	PASS
	144/5720	4.09	13.31	24.00	PASS
802.11n HT20	100/5500	4.71	13.58	24.00	PASS
	116/5580	4.03	12.90	24.00	PASS
	140/5700	4.04	12.91	24.00	PASS
	144/5720	3.22	12.09	24.00	PASS
802.11n HT40	102/5510	4.35	13.39	24.00	PASS
	110/5550	3.52	12.56	24.00	PASS
	134/5670	3.72	12.76	24.00	PASS
	142/5710	3.04	12.08	24.00	PASS
802.11ac VHT20	100/5500	4.96	13.74	24.00	PASS

	116/5580	4.35	13.13	24.00	PASS
	140/5700	4.37	13.15	24.00	PASS
	144/5720	3.87	12.65	24.00	PASS
802.11ac VHT40	102/5510	4.16	12.97	24.00	PASS
	110/5550	3.67	12.48	24.00	PASS
	134/5670	3.77	12.58	24.00	PASS
	142/5710	3.68	12.49	24.00	PASS
802.11ax HE20	100/5500	4.00	14.00	24.00	PASS
	116/5580	4.59	14.59	24.00	PASS
	140/5700	4.29	14.29	24.00	PASS
	144/5720	3.20	13.20	24.00	PASS
802.11ax HE40	102/5510	4.48	14.58	24.00	PASS
	110/5550	3.71	13.81	24.00	PASS
	134/5670	3.93	14.03	24.00	PASS
	142/5710	3.58	13.68	24.00	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	-4.34	4.88	30	PASS
	149/5745	4.87	14.09	30	PASS
	157/5785	4.49	13.71	30	PASS
	165/5825	4.53	13.75	30	PASS
802.11n HT20	144/5720	-3.41	5.46	30	PASS
	149/5745	4.06	12.93	30	PASS
	157/5785	4.46	13.33	30	PASS
	165/5825	4.75	13.62	30	PASS
802.11n HT40	142/5710	-8.43	0.61	30	PASS
	151/5755	3.90	12.94	30	PASS
	159/5795	4.29	13.33	30	PASS
802.11ac VHT20	144/5720	-3.03	5.76	30	PASS
	149/5745	4.38	13.16	30	PASS
	157/5785	4.42	13.20	30	PASS
	165/5825	4.40	13.18	30	PASS
802.11ac VHT40	142/5710	-8.20	0.61	30	PASS
	151/5755	3.89	12.70	30	PASS
	159/5795	4.17	12.98	30	PASS
802.11ax HE20	144/5720	-5.44	4.57	30	PASS

	149/5745	3.84	13.84	30	PASS
	157/5785	4.02	14.02	30	PASS
	165/5825	4.31	14.31	30	PASS
802.11ax HE40	142/5710	-8.29	1.81	30	PASS
	151/5755	4.06	14.16	30	PASS
	159/5795	4.14	14.24	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

ERSU Mode

Mode	Duty cycle	Duty cycle correction Factor (dB)
802.11ax HE20 242-Tones:RU Index 61	0.101	9.96
Note: when Duty cycle ≥ 0.98 , Duty cycle correction Factor not required.		

Power Index		
Test Mode	Channel/ Frequency (MHz)	U-NII-1
802.11ax HE20 242-Tones:RU Index 61	36/5180	Default
	40/5200	Default
	48/5240	Default

Power Index		
Test Mode	Channel/ Frequency (MHz)	U-NII-2A
802.11ax HE20 242-Tones:RU Index 61	52/5260	Default
	60/5300	Default
	64/5320	Default

Power Index		
Test Mode	Channel/ Frequency (MHz)	U-NII-2C
802.11ax HE20 242-Tones:RU Index 61	100/5500	Default
	116/5580	Default
	140/5700	Default

Power Index		
Test Mode	Channel/ Frequency (MHz)	U-NII-3
802.11ax HE20 242-Tones:RU Index 61	149/5745	Default
	157/5785	Default
	165/5825	Default

Test Mode		Channel/ Frequency (MHz)	B=26 dB bandwidth (MHz)	Limit 11 dBm + 10 log B (dBm)	Final Limit (dBm)
U-NII-2A	802.11ax HE20	52/5260	21.73	24.37	24.00
	242-Tones:RU	60/5300	30.86	25.89	24.00
	Index 61	64/5320	30.04	25.78	24.00
U-NII-2C	802.11ax HE20	100/5500	39.94	27.01	24.00
	242-Tones:RU	116/5580	38.482	26.85	24.00
	Index 61	140/5700	36.33	26.60	24.00
Note: 250mW=24dBm					

U-NII-1

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11ax HE20 242-Tones:RU Index 61	36/5180	4.42	14.38	24	PASS
	40/5200	4.06	14.02	24	PASS
	48/5240	3.88	13.84	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
802.11ax HE20 242-Tones:RU Index 61	52/5260	3.62	13.58	24.00	PASS
	60/5300	3.83	13.79	24.00	PASS
	64/5320	3.96	13.92	24.00	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
802.11ax HE20 242-Tones:RU Index 61	100/5500	3.91	13.87	24.00	PASS
	116/5580	3.39	13.35	24.00	PASS
	140/5700	3.36	13.32	24.00	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
802.11ax HE20 242-Tones:RU Index 61	149/5745	3.94	13.90	30	PASS
	157/5785	3.57	13.53	30	PASS
	165/5825	3.79	13.75	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 than 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 $k = 2$, $U = 936\text{Hz}$

Test Results

Voltage (V)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
120	-30	5199.991194	5199.990678	5199.989654	5199.983910
120	-20	5199.997617	5199.989445	5199.985687	5199.983792
120	-10	5199.994909	5199.981137	5199.983559	5199.978757
120	0	5199.990073	5199.981862	5199.978547	5199.976076
120	10	5199.982362	5199.977806	5199.970903	5199.974108
120	20	5199.977790	5199.970406	5199.966038	5199.969170
120	30	5199.971488	5199.961885	5199.959855	5199.960295
120	40	5199.967184	5199.955748	5199.951720	5199.959639
120	50	5199.959572	5199.948395	5199.949435	5199.957430
100	20	5199.956636	5199.944927	5199.940957	5199.947722
240	20	5199.950658	5199.935205	5199.938440	5199.941302
Max. ΔMHz		-0.049342	-0.064795	-0.061560	-0.058698
PPM		-9.488846	-12.460577	-11.838462	-11.288077

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
120	-30	5299.994194	5299.991366	5299.988497	5299.987285
120	-20	5299.987527	5299.984352	5299.981407	5299.985462
120	-10	5299.977539	5299.981971	5299.980592	5299.978305
120	0	5299.986969	5299.977037	5299.979870	5299.979870
120	10	5299.985081	5299.973024	5299.975471	5299.977323
120	20	5299.975860	5299.966741	5299.966395	5299.973373
120	30	5299.975092	5299.959477	5299.964767	5299.964470
120	40	5299.970984	5299.950046	5299.956231	5299.960638
120	50	5299.962496	5299.943359	5299.952415	5299.956269
100	20	5299.958561	5299.938908	5299.948803	5299.950895
240	20	5299.958047	5299.935478	5299.944960	5299.940913
Max. ΔMHz		-0.041953	-0.064522	-0.055040	-0.059087
PPM		-7.915660	-12.173962	-10.384906	-11.148491

Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
120	-30	5579.998832	5579.994372	5579.991769	5579.987080
120	-20	5579.992552	5579.990406	5579.987081	5579.981999
120	-10	5579.987303	5579.981334	5579.984469	5579.977492
120	0	5579.990923	5579.987516	5579.977295	5579.978056
120	10	5579.984233	5579.986709	5579.976497	5579.971913
120	20	5579.974273	5579.981665	5579.968658	5579.968871
120	30	5579.964432	5579.980574	5579.965358	5579.960056
120	40	5579.962509	5579.971246	5579.960374	5579.950467
120	50	5579.961903	5579.965936	5579.950826	5579.942935
100	20	5579.961519	5579.963385	5579.944254	5579.935839
240	20	5579.953896	5579.958473	5579.937973	5579.929079
Max. ΔMHz		-0.046104	-0.041527	-0.062027	-0.070921
PPM		-8.262366	-7.442115	-11.115950	-12.709857

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
120	-30	5784.993576	5784.984702	5784.975568	5784.973945
120	-20	5784.985559	5784.974840	5784.971447	5784.969426
120	-10	5784.985529	5784.971513	5784.963612	5784.960448
120	0	5784.975881	5784.968695	5784.965690	5784.962115
120	10	5784.966129	5784.968033	5784.957157	5784.960072
120	20	5784.958228	5784.967521	5784.947734	5784.950200
120	30	5784.956524	5784.965930	5784.940942	5784.949943
120	40	5784.954074	5784.963292	5784.933292	5784.946814
120	50	5784.944148	5784.955203	5784.933212	5784.941319
100	20	5784.941618	5784.953344	5784.928790	5784.937795
240	20	5784.935503	5784.953028	5784.926433	5784.929333
Max. ΔMHz		-0.064497	-0.046972	-0.073567	-0.070667
PPM		-11.149006	-8.119620	-12.716854	-12.215557

5.4. Power Spectral Density

Ambient condition

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

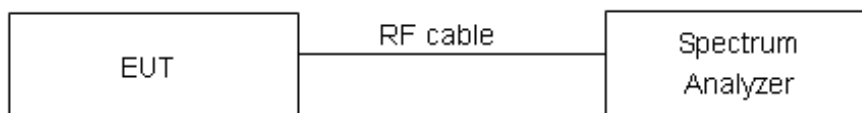
Method of Measurement

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 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.

Frequency Bands/GHz	Limits
5.15-5.25	11dBm/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 $k = 2$, $U = 0.75\text{dB}$.

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	-1.63	7.59	11	PASS
	40/5200	-3.67	5.55	11	PASS
	48/5240	-3.21	6.01	11	PASS
802.11n HT20	36/5180	-3.22	5.65	11	PASS
	40/5200	-3.45	5.42	11	PASS
	48/5240	-3.74	5.13	11	PASS
802.11n HT40	38/5190	-6.88	2.16	11	PASS
	46/5230	-7.46	1.58	11	PASS
802.11ac VHT20	36/5180	-2.12	6.66	11	PASS
	40/5200	-3.73	5.05	11	PASS
	48/5240	-3.98	4.80	11	PASS
802.11ac VHT40	38/5190	-6.63	2.18	11	PASS
	46/5230	-7.73	1.08	11	PASS
802.11ax HE20	36/5180	-4.68	5.32	11	PASS
	40/5200	-5.16	4.84	11	PASS
	48/5240	-4.12	5.88	11	PASS
802.11ax HE40	38/5190	-7.57	2.53	11	PASS
	46/5230	-6.65	3.45	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	-2.85	6.37	11	PASS
	60/5300	-2.15	7.07	11	PASS
	64/5320	-2.43	6.79	11	PASS
802.11n HT20	52/5260	-2.74	6.13	11	PASS
	60/5300	-2.38	6.49	11	PASS
	64/5320	-2.24	6.63	11	PASS
802.11n HT40	54/5270	-4.96	4.08	11	PASS
	62/5310	-5.81	3.23	11	PASS
802.11ac VHT20	52/5260	-3	5.78	11	PASS
	60/5300	-2.29	6.49	11	PASS
	64/5320	-2.45	6.33	11	PASS
802.11ac VHT40	54/5270	-5.82	2.99	11	PASS
	62/5310	-5.45	3.36	11	PASS
802.11ax HE20	52/5260	-2.03	7.97	11	PASS
	60/5300	-2.75	7.25	11	PASS
	64/5320	-2.78	7.22	11	PASS
802.11ax HE40	54/5270	-6.48	3.62	11	PASS
	62/5310	-7.74	2.36	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	-4.66	4.56	11	PASS
	116/5580	-4.52	4.70	11	PASS
	140/5700	-3.57	5.65	11	PASS
	144/5720	-3.39	5.83	11	PASS
802.11n HT20	100/5500	-3.43	5.44	11	PASS
	116/5580	-4.1	4.77	11	PASS
	140/5700	-4.22	4.65	11	PASS
	144/5720	-5.25	3.62	11	PASS
802.11n HT40	102/5510	-7.98	1.06	11	PASS
	110/5550	-6.76	2.28	11	PASS
	134/5670	-8.42	0.62	11	PASS
	142/5710	-7.03	2.01	11	PASS
802.11ac VHT20	100/5500	-4.38	4.40	11	PASS
	116/5580	-3.9	4.88	11	PASS
	140/5700	-2.85	5.93	11	PASS
	144/5720	-3.48	5.30	11	PASS
802.11ac VHT40	102/5510	-5.75	3.06	11	PASS
	110/5550	-7.2	1.61	11	PASS
	134/5670	-7.02	1.79	11	PASS
	142/5710	-7.92	0.89	11	PASS
802.11ax HE20	100/5500	-3.43	6.57	11	PASS
	116/5580	-4.39	5.61	11	PASS
	140/5700	-4.74	5.26	11	PASS
	144/5720	-3.87	6.13	11	PASS
802.11ax HE40	102/5510	-7.43	2.67	11	PASS
	110/5550	-8.45	1.65	11	PASS
	134/5670	-7.65	2.45	11	PASS
	142/5710	-6.67	3.43	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	-9.45	-0.32	30	PASS
	149/5745	-7.54	1.59	30	PASS
	157/5785	-6.65	2.48	30	PASS
	165/5825	-5.49	3.64	30	PASS
802.11n HT20	144/5720	-8.36	0.42	30	PASS
	149/5745	-6.34	2.44	30	PASS
	157/5785	-7.18	1.60	30	PASS
	165/5825	-6.31	2.47	30	PASS
802.11n HT40	142/5710	-10.15	-1.20	30	PASS
	151/5755	-11.43	-2.48	30	PASS
	159/5795	-10.16	-1.21	30	PASS
802.11ac VHT20	144/5720	-8.93	-0.24	30	PASS
	149/5745	-7.13	1.56	30	PASS
	157/5785	-7.08	1.61	30	PASS
	165/5825	-6.56	2.13	30	PASS
802.11ac VHT40	142/5710	-13.26	-4.54	30	PASS
	151/5755	-10.37	-1.65	30	PASS
	159/5795	-9.08	-0.36	30	PASS
802.11ax HE20	144/5720	-10.02	-0.11	30	PASS
	149/5745	-5.64	4.27	30	PASS
	157/5785	-8.69	1.22	30	PASS
	165/5825	-7.26	2.65	30	PASS
802.11ax HE40	142/5710	-15.00	-4.99	30	PASS
	151/5755	-11.41	-1.40	30	PASS
	159/5795	-11.23	-1.22	30	PASS

Note: PSD=Read Value+Duty cycle correction factor +10*log(500/470)

ERSU Mode
U-NII-1

Mode	Channel/ Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11ax HE20 242-Tones:RU Index 61	36/5180	-3.29	6.67	11	PASS
	40/5200	-3.97	5.99	11	PASS
	48/5240	-5.05	4.91	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
802.11ax HE20 242-Tones:RU Index 61	52/5260	-4.37	5.59	11	PASS
	60/5300	-4.73	5.23	11	PASS
	64/5320	-3.42	6.54	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
802.11ax HE20 242-Tones:RU Index 61	100/5500	-4.09	5.87	11	PASS
	116/5580	-5.95	4.01	11	PASS
	140/5700	-5.41	4.55	11	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

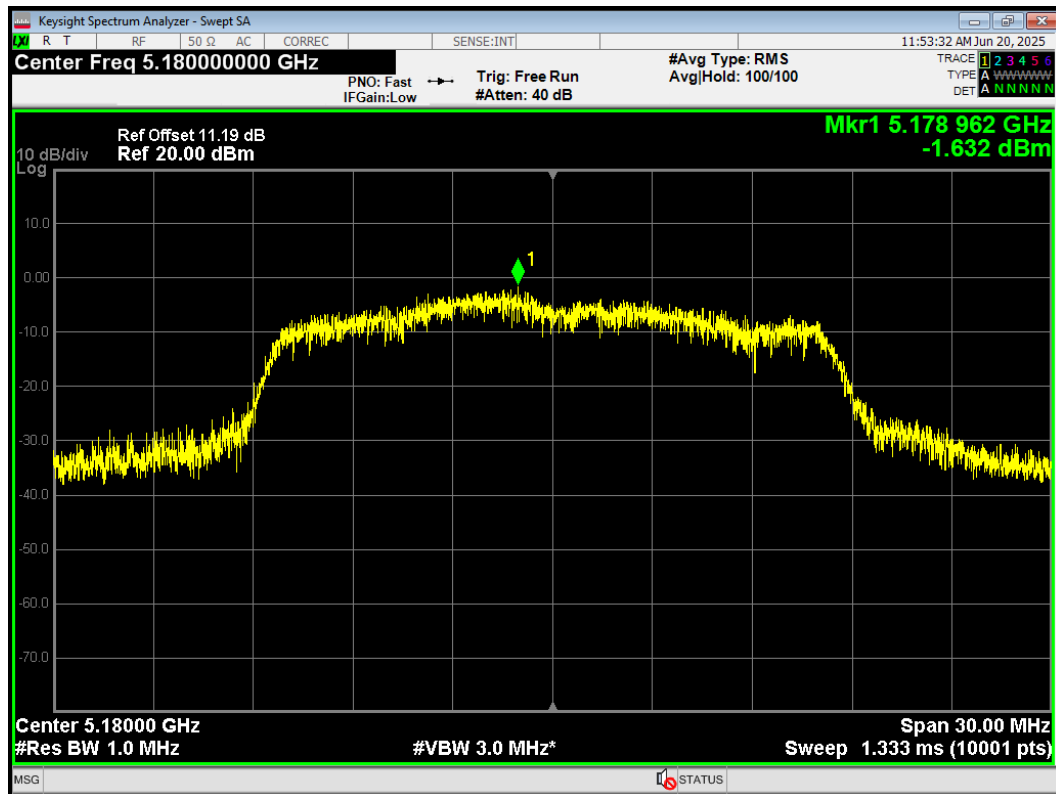
U-NII-3

Mode	Channel /Frequency (MHz)	Read Value (dBm/470kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11ax HE20 242-Tones:RU Index 61	149/5745	-8.55	1.68	30	PASS
	157/5785	-7.4	2.83	30	PASS
	165/5825	-5.31	4.92	30	PASS
Note: PSD=Read Value+Duty cycle correction factor +10*log(500/470)					

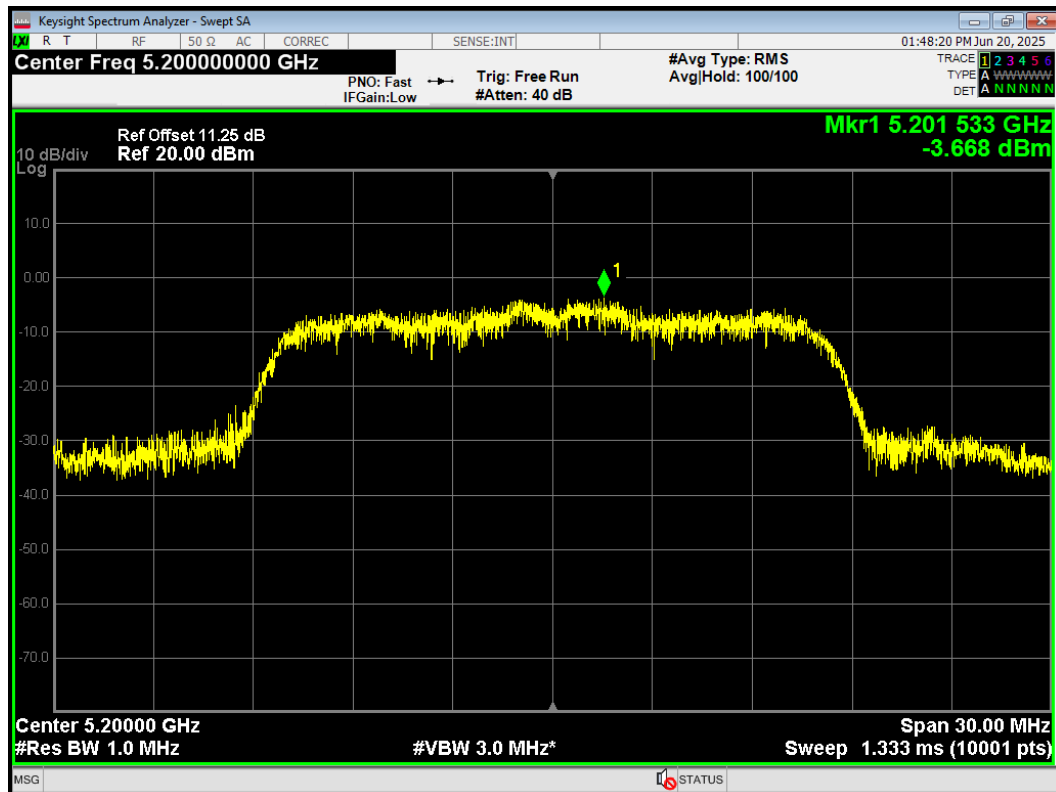
SU Mode

U-NII-1

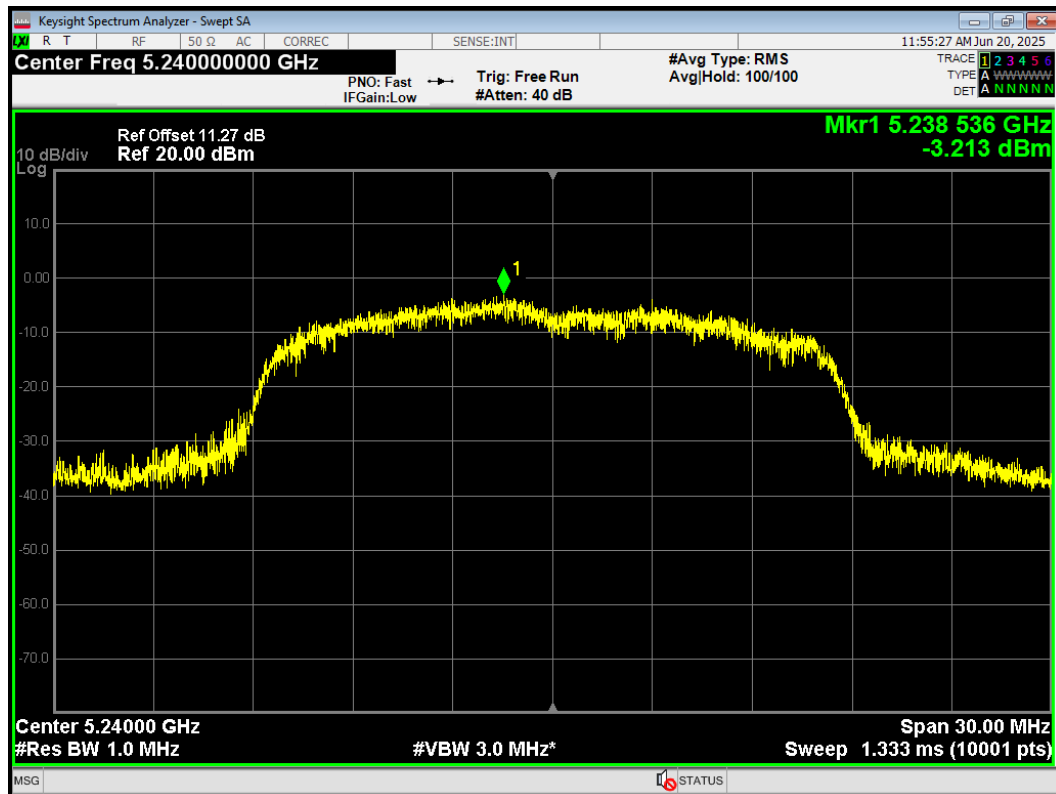
PSD 802.11a 5180MHz



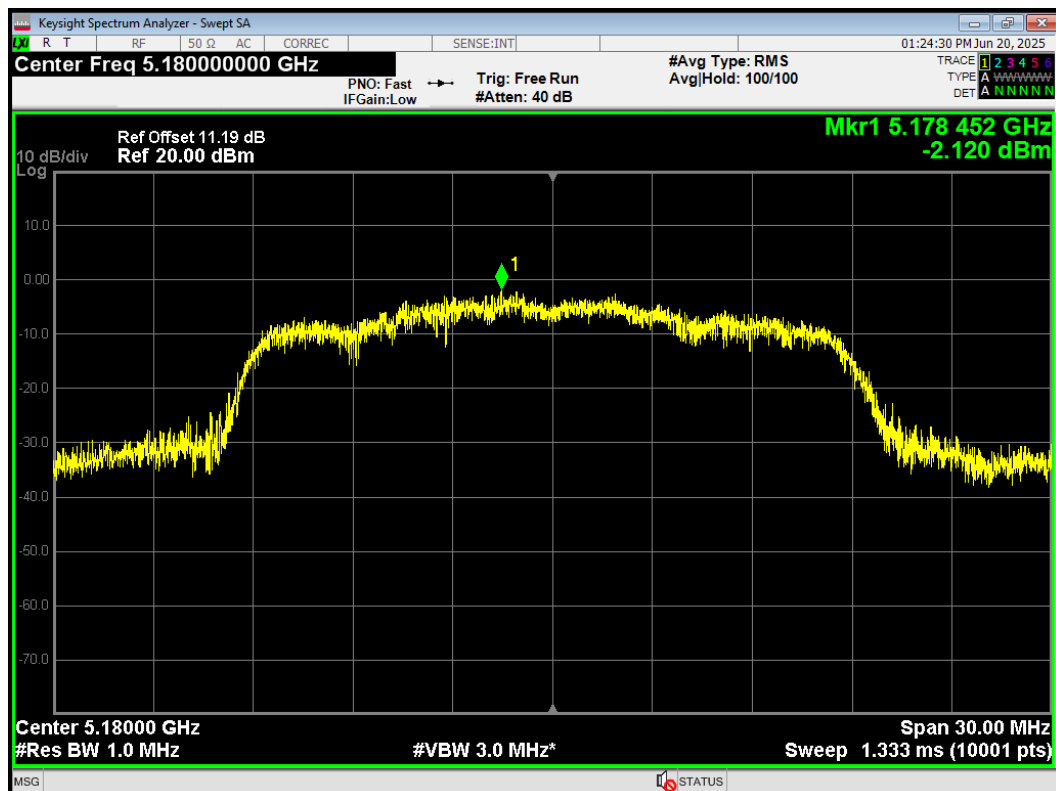
PSD 802.11a 5200MHz



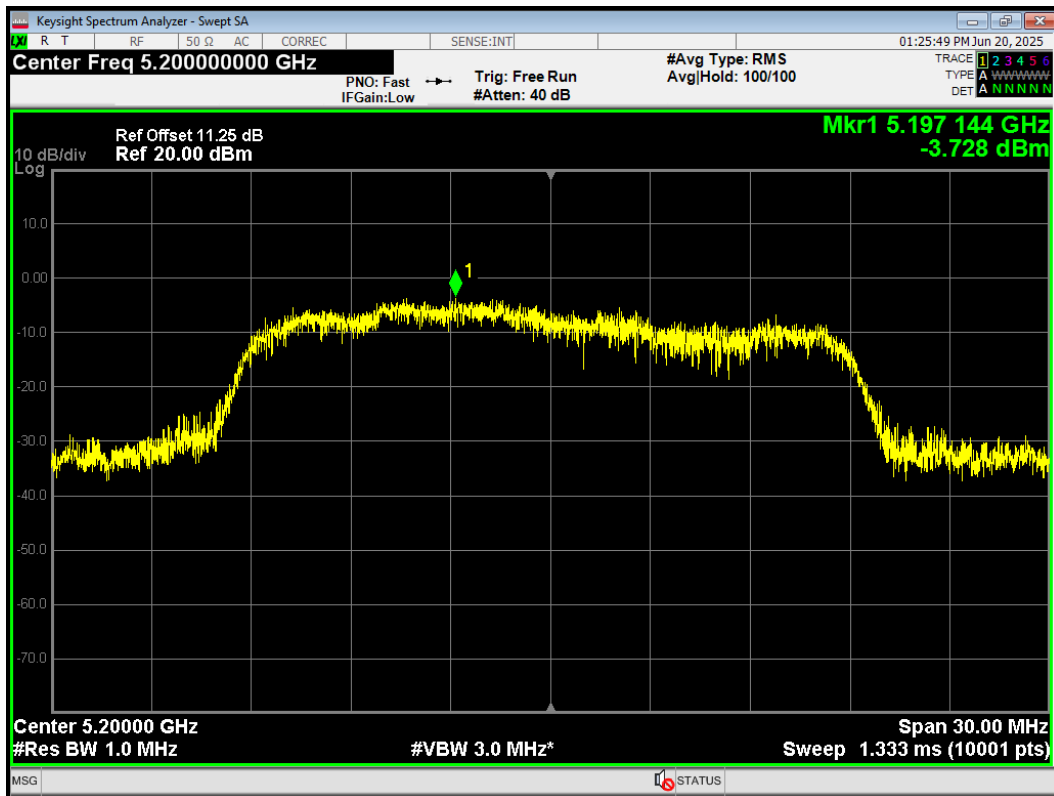
PSD 802.11a 5240MHz



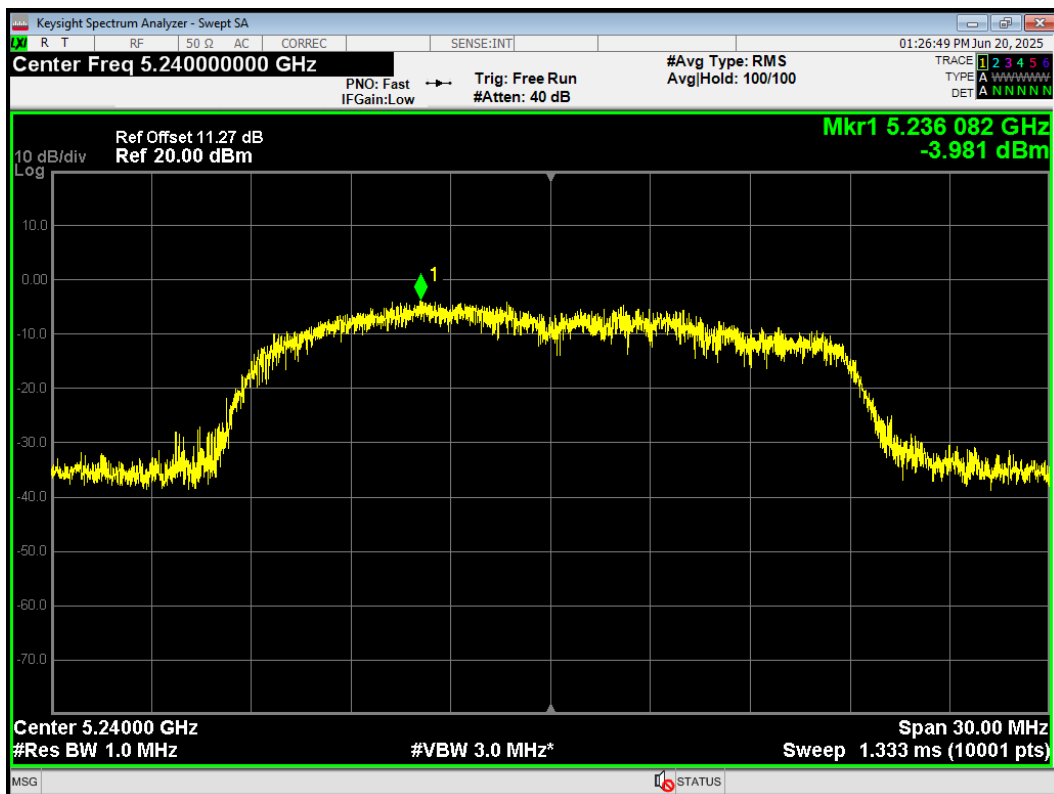
PSD 802.11ac(VHT20) 5180MHz



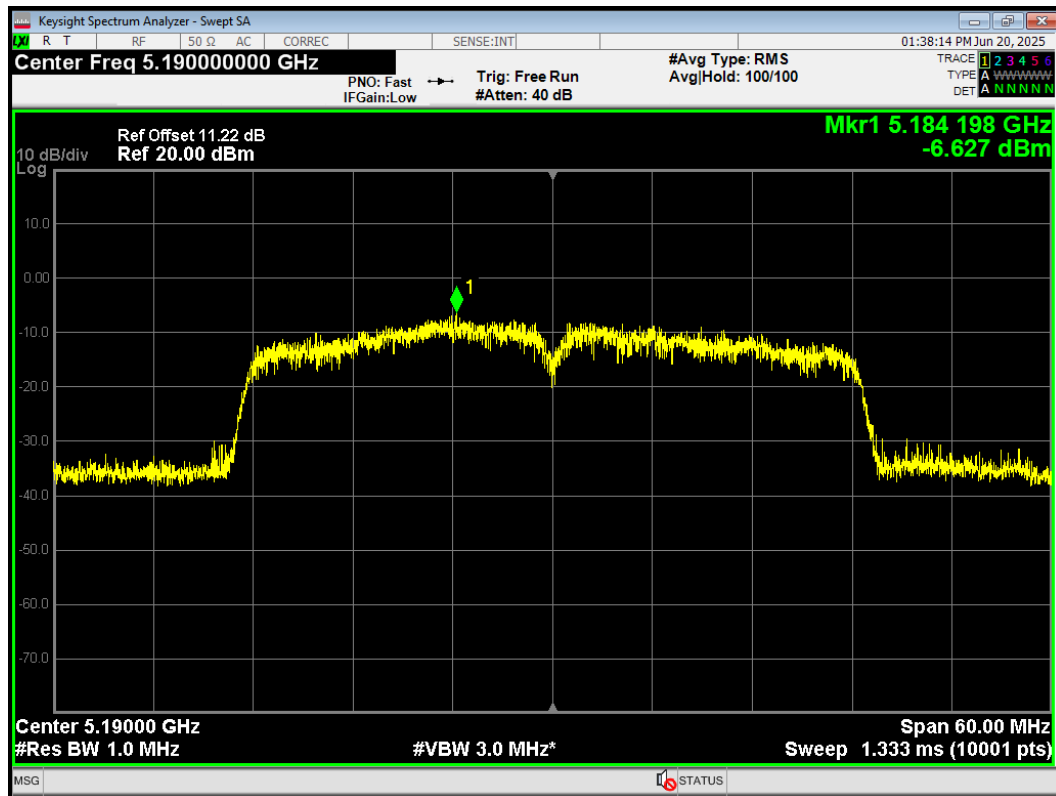
PSD 802.11ac(VHT20) 5200MHz



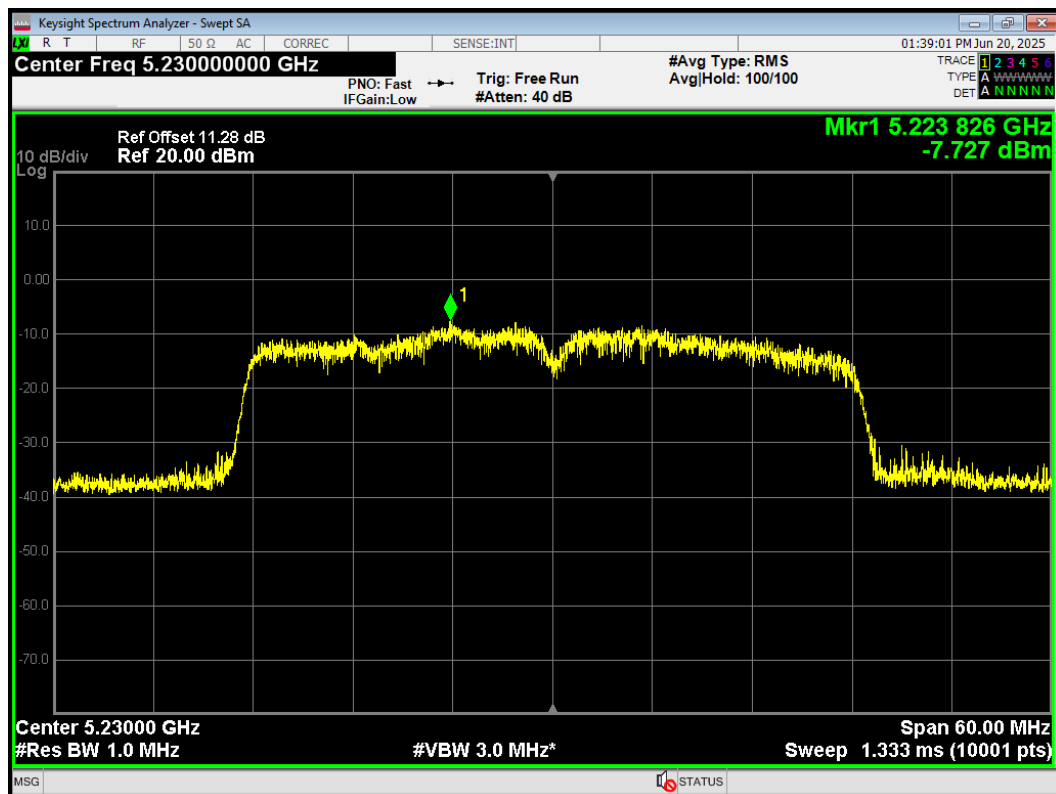
PSD 802.11ac(VHT20) 5240MHz



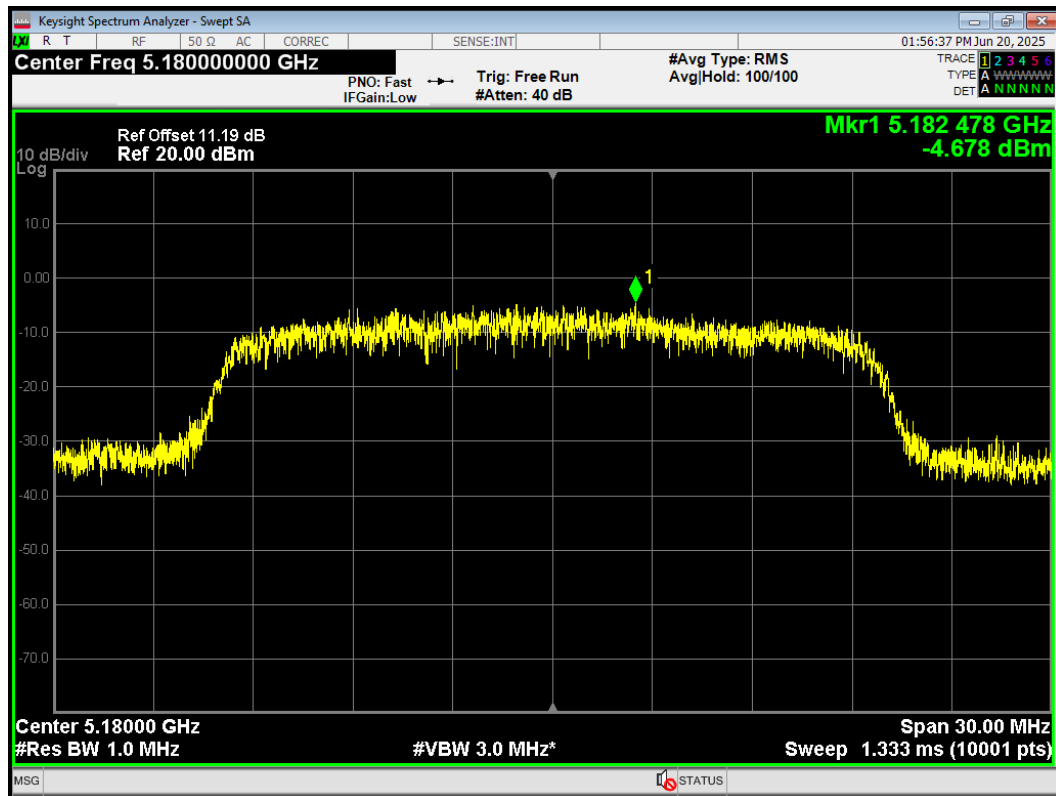
PSD 802.11ac(VHT40) 5190MHz



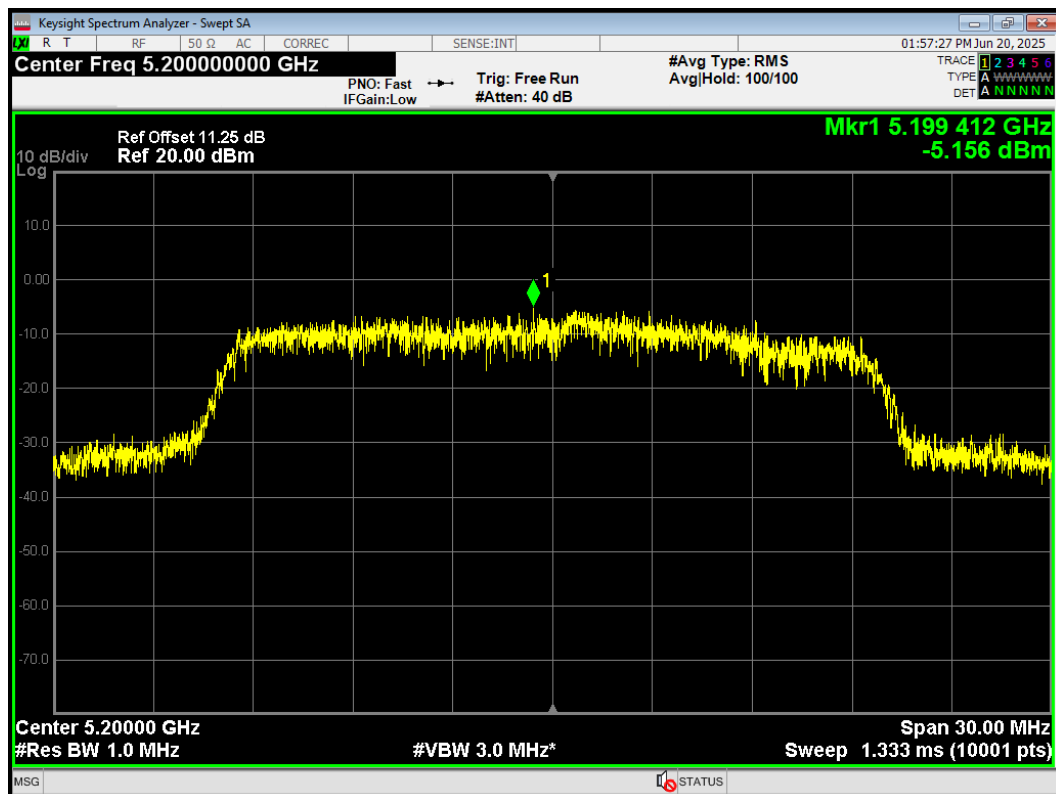
PSD 802.11ac(VHT40) 5230MHz



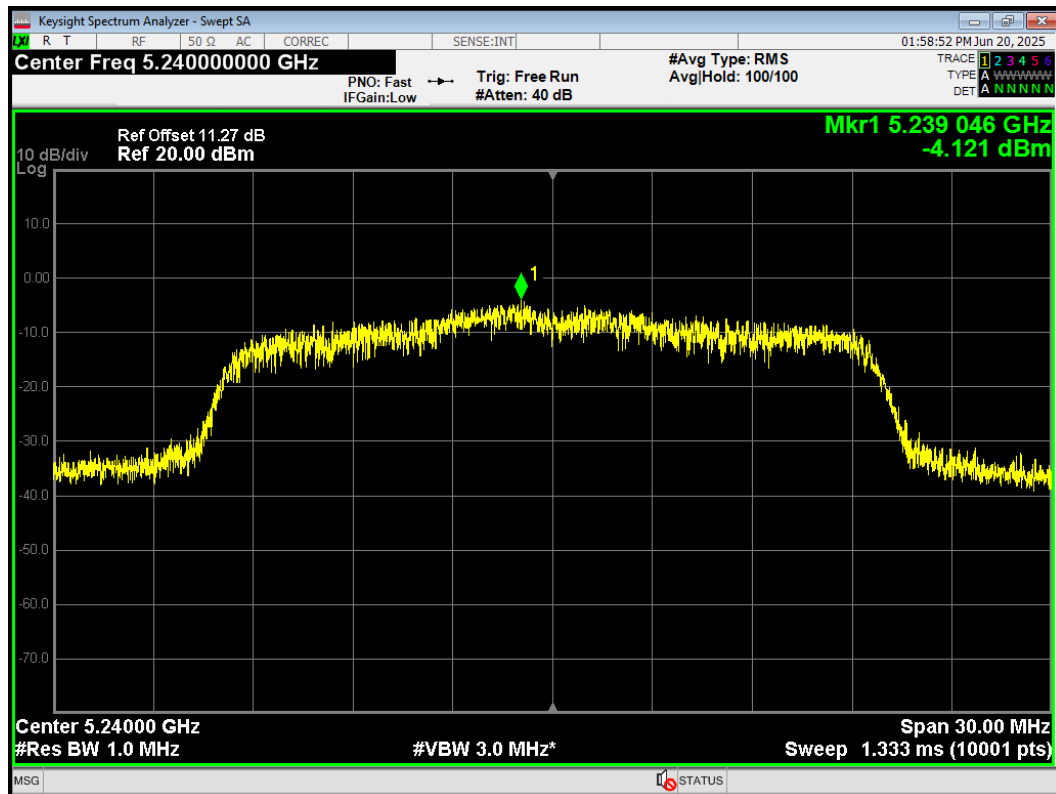
PSD 802.11ax(HE20) 5180MHz



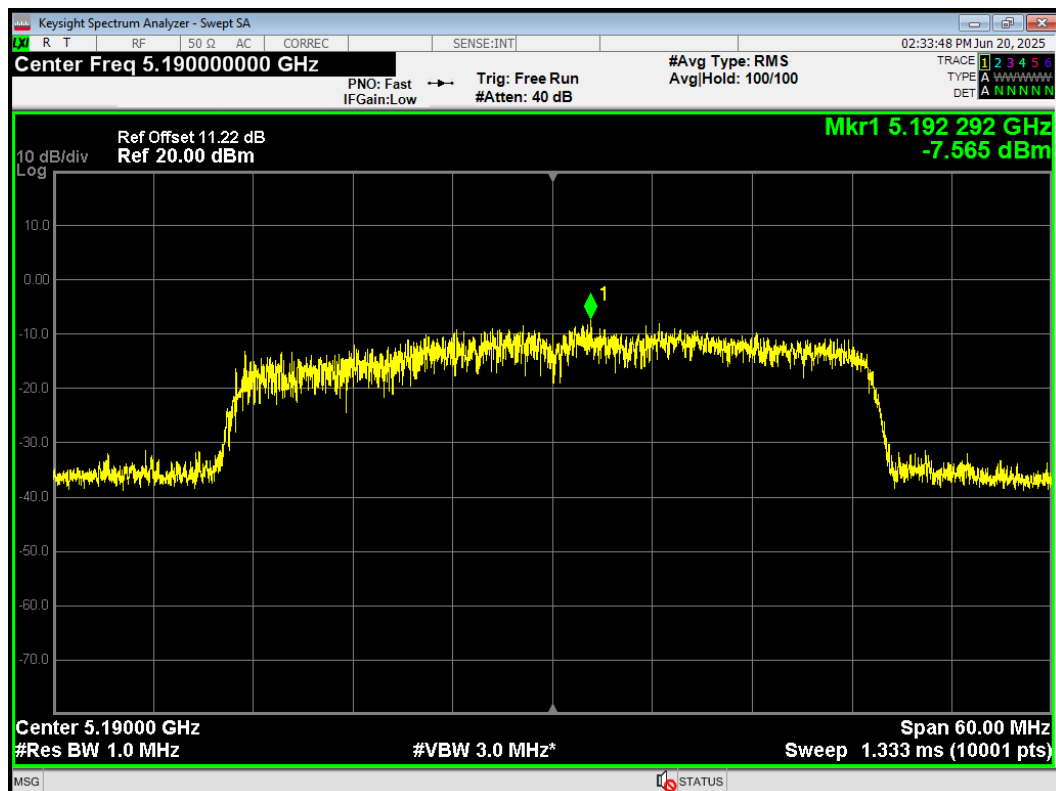
PSD 802.11ax(HE20) 5200MHz



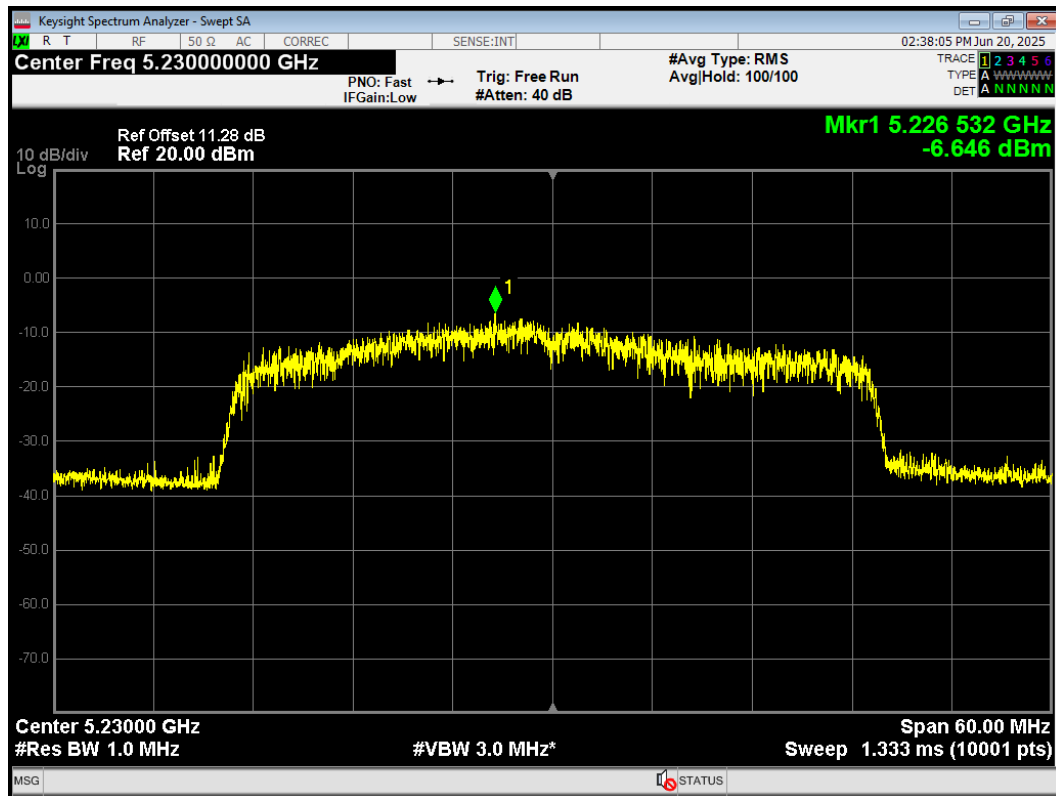
PSD 802.11ax(HE20) 5240MHz



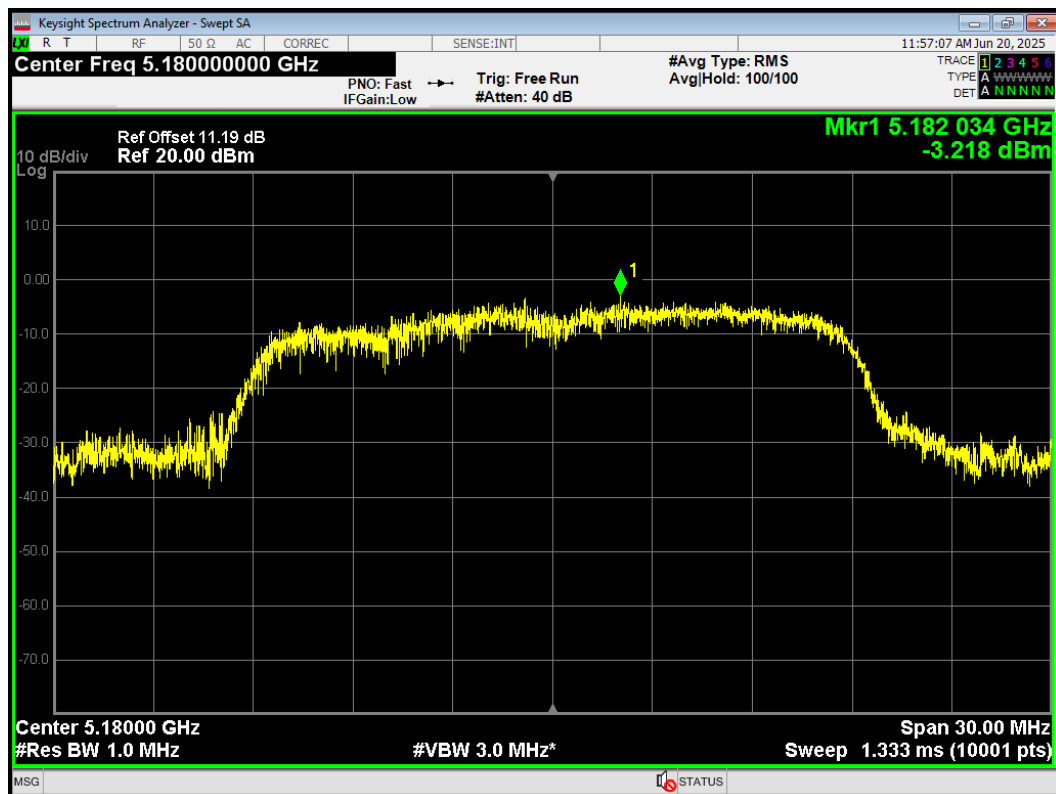
PSD 802.11ax(HE40) 5190MHz



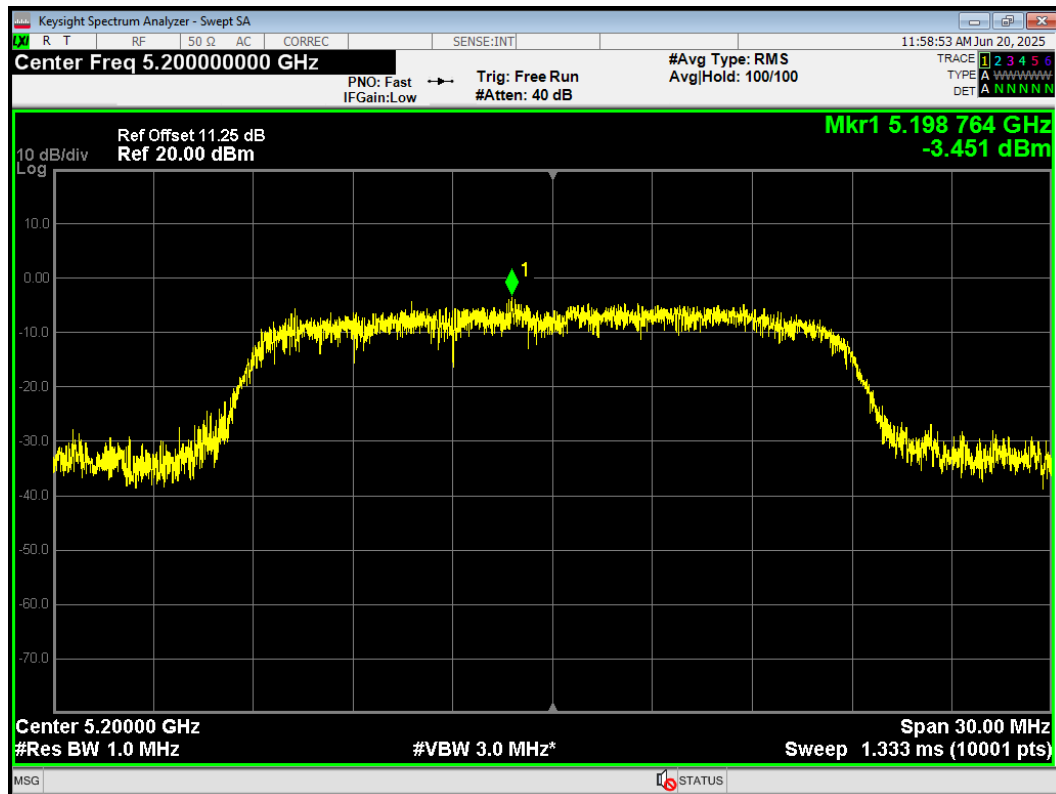
PSD 802.11ax(HE40) 5230MHz



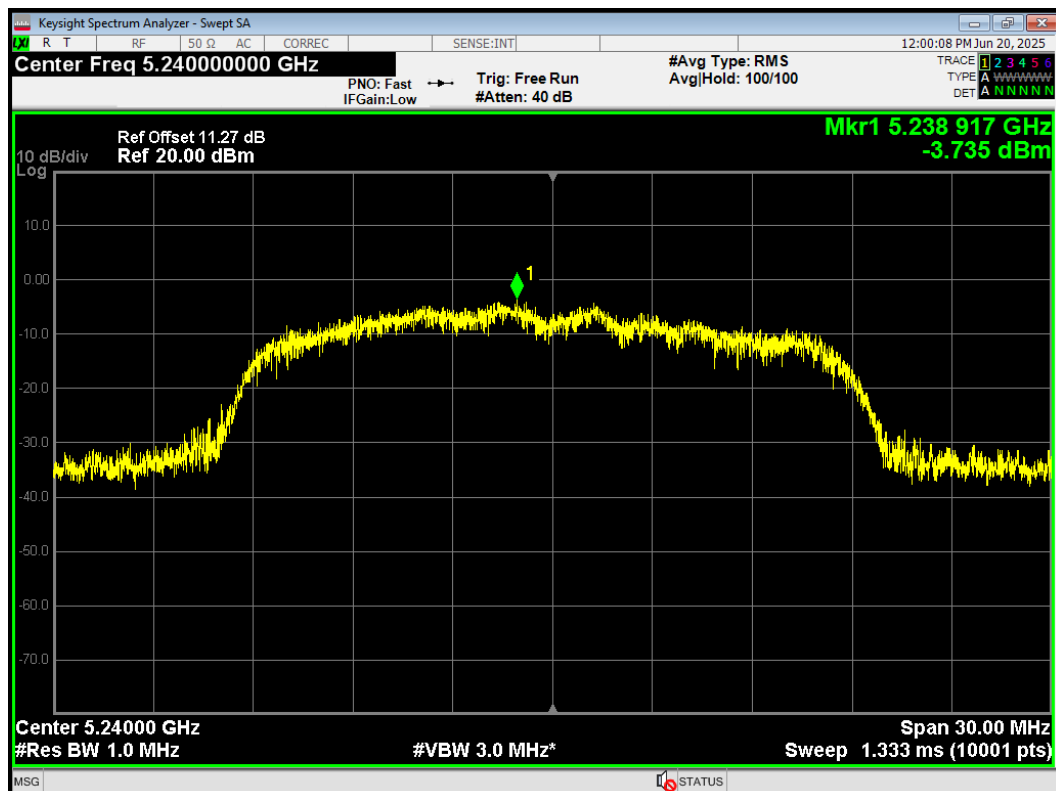
PSD 802.11n(HT20) 5180MHz



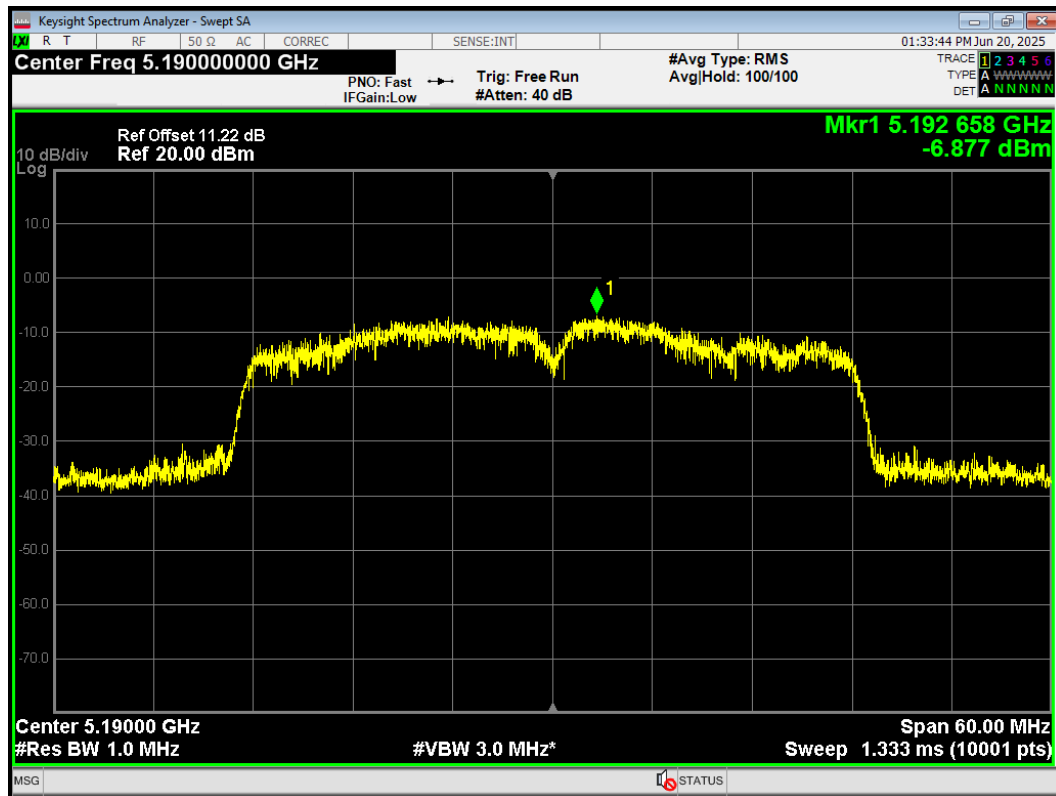
PSD 802.11n(HT20) 5200MHz



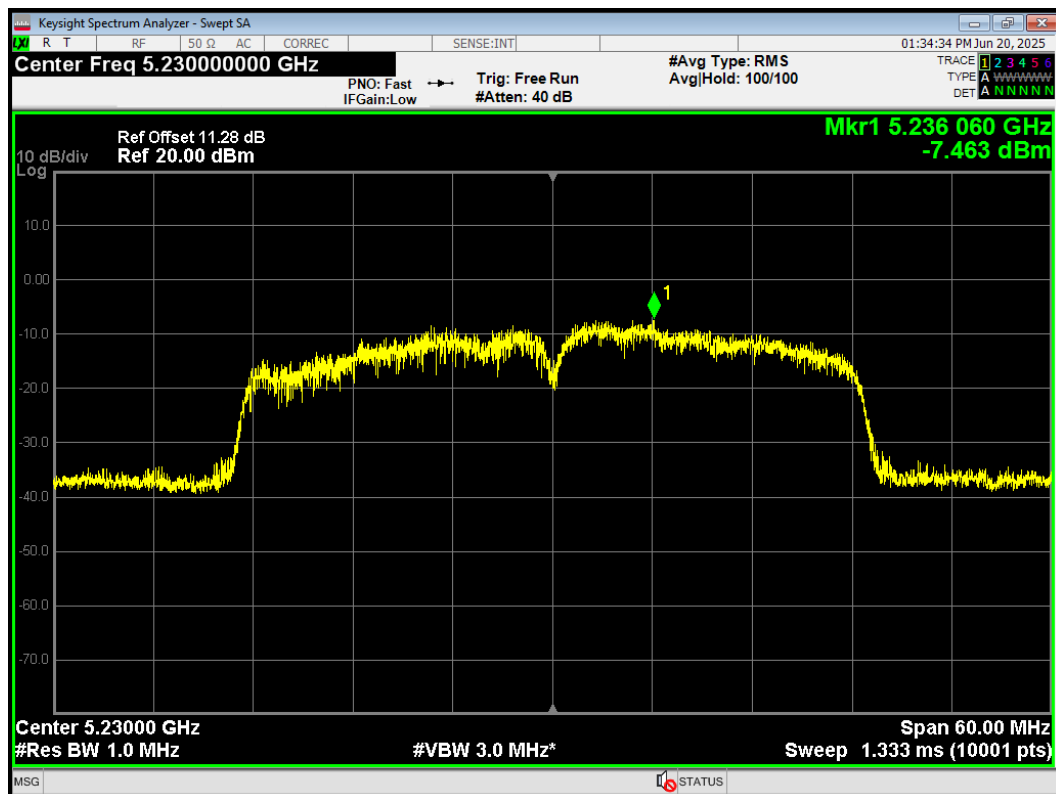
PSD 802.11n(HT20) 5240MHz



PSD 802.11n(HT40) 5190MHz

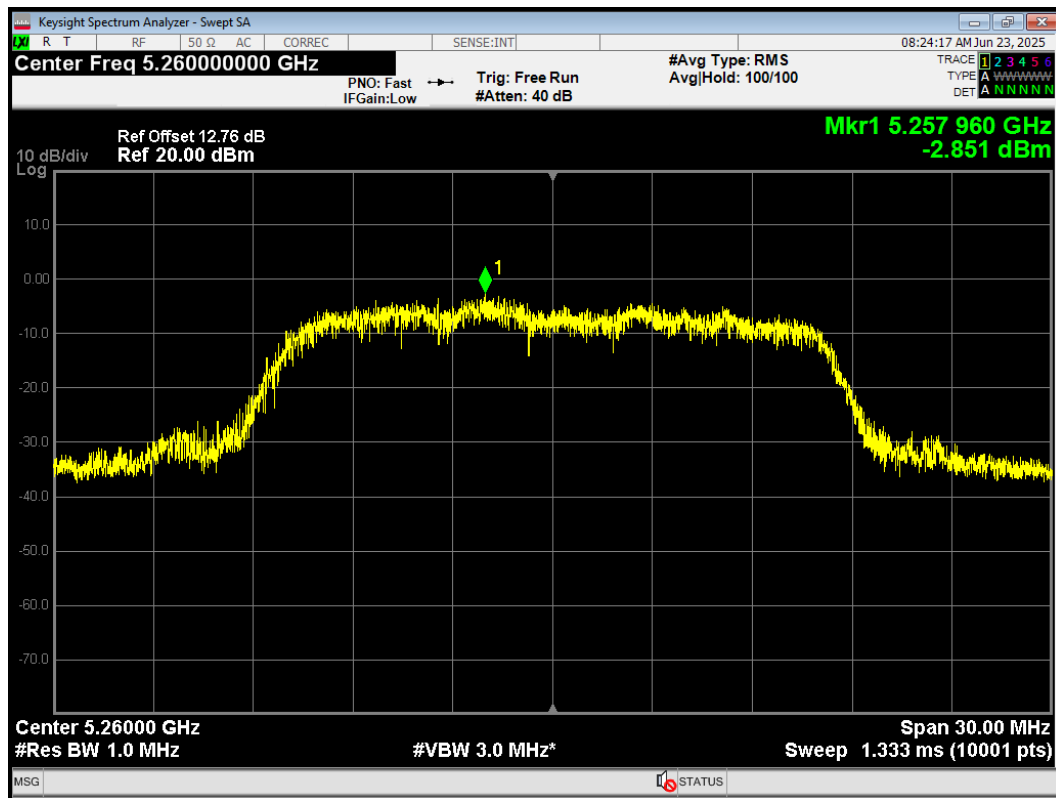


PSD 802.11n(HT40) 5230MHz

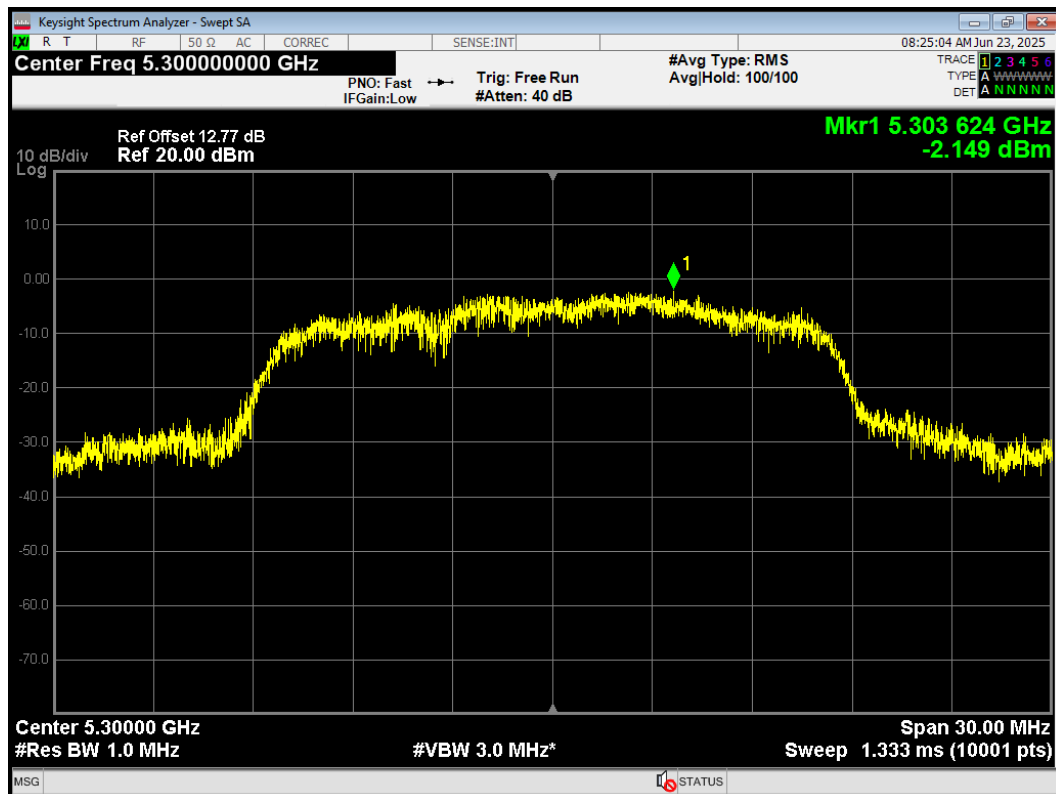


U-NII-2A

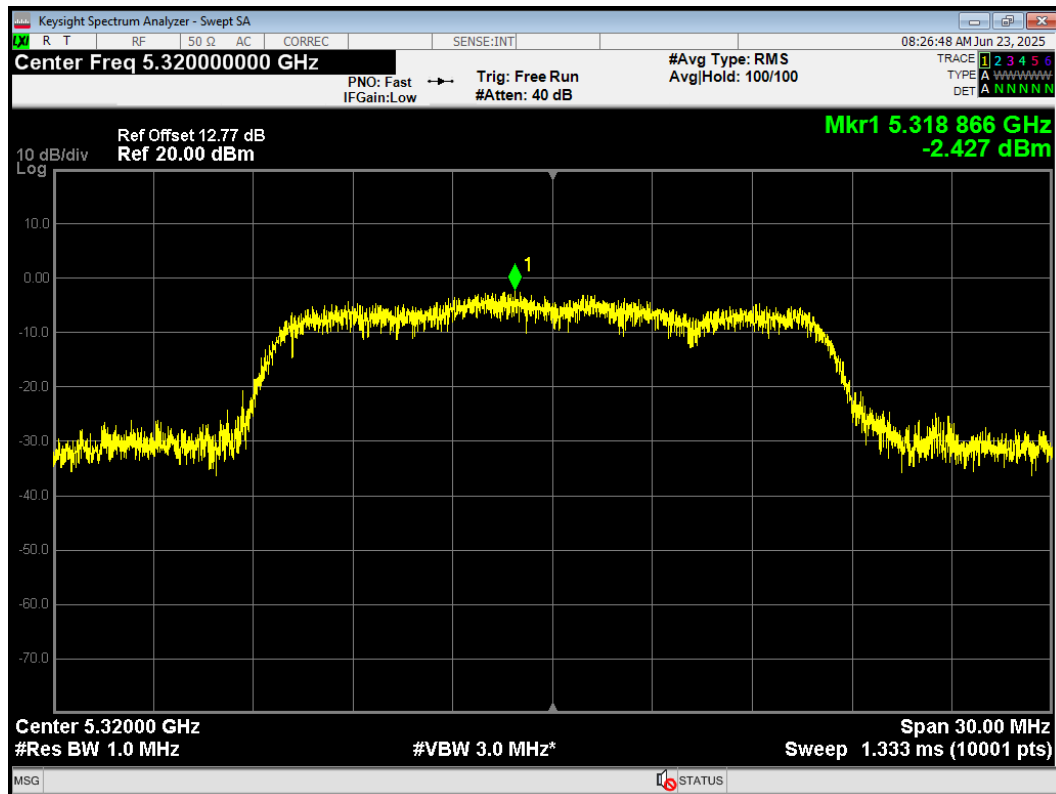
PSD 802.11a 5260MHz



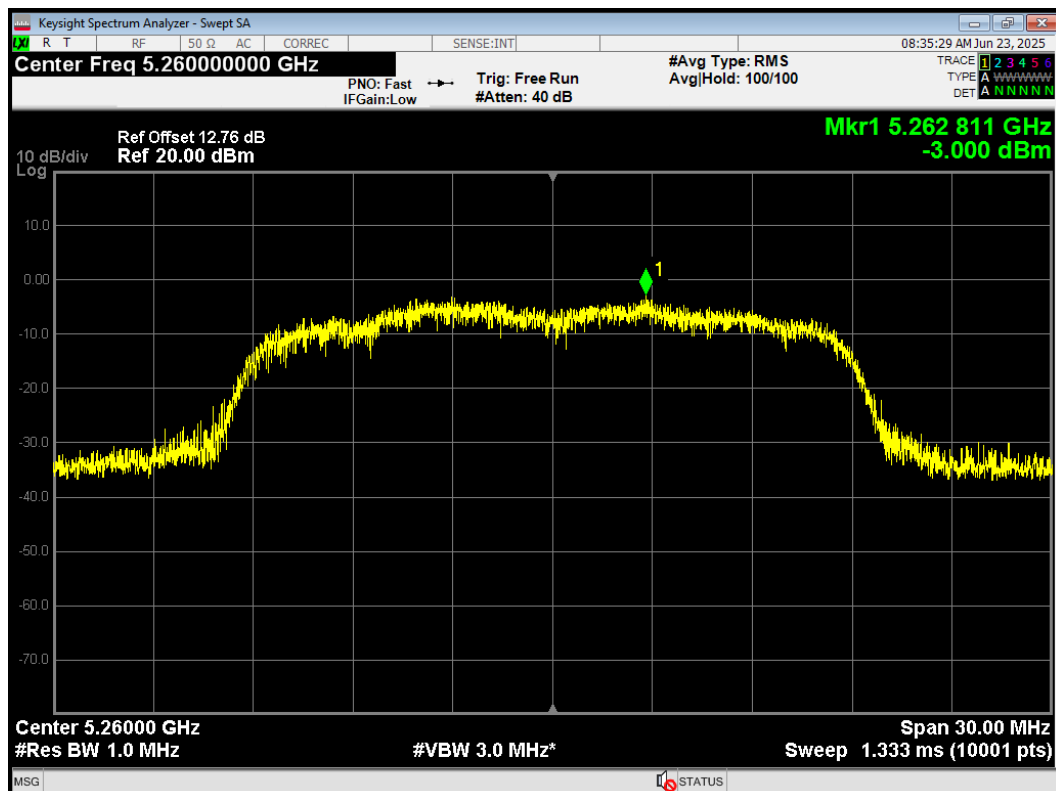
PSD 802.11a 5300MHz



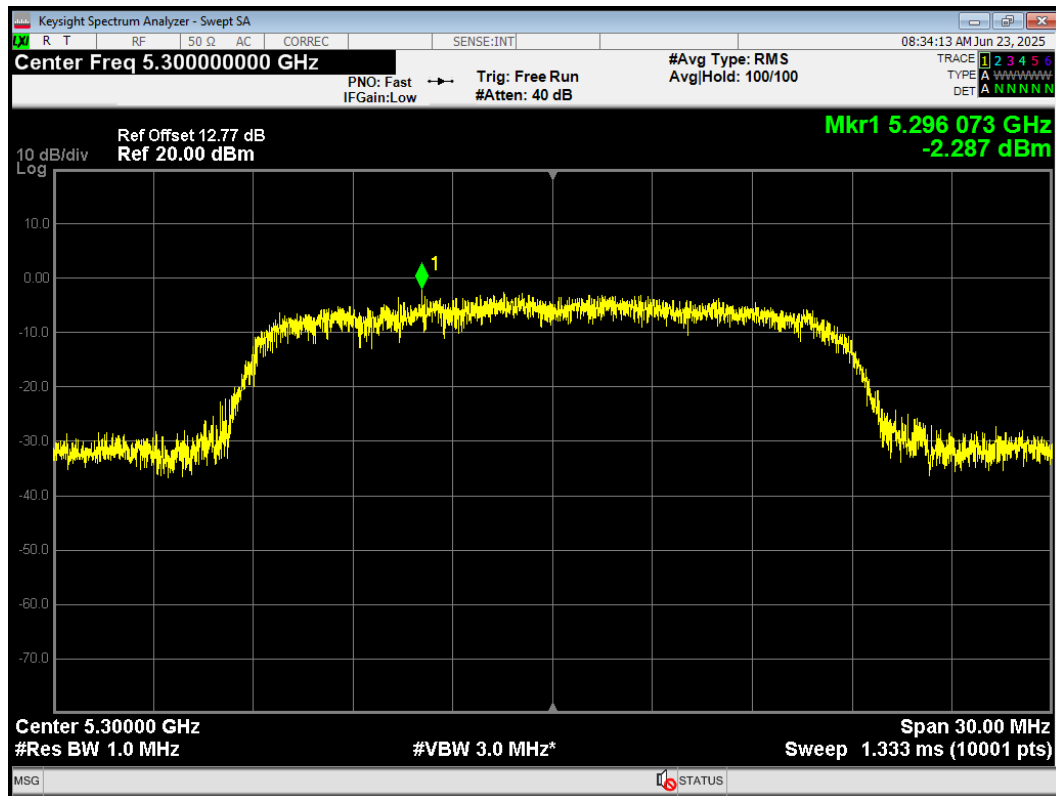
PSD 802.11a 5320MHz



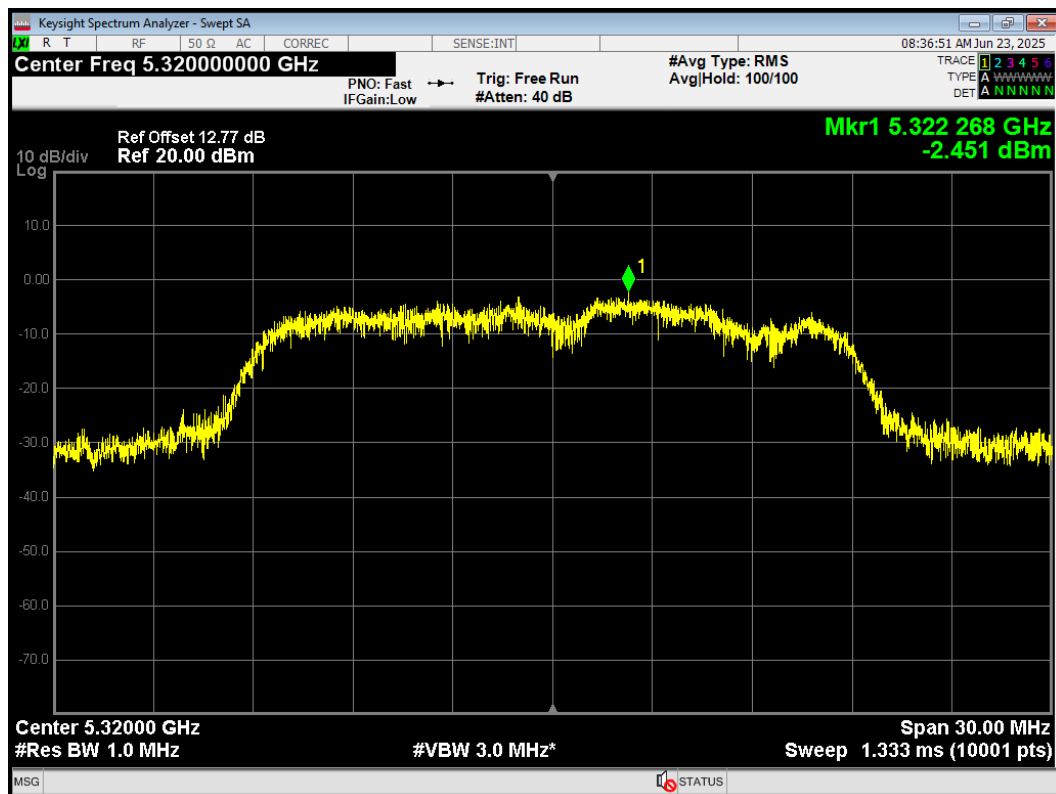
PSD 802.11ac(VHT20) 5260MHz



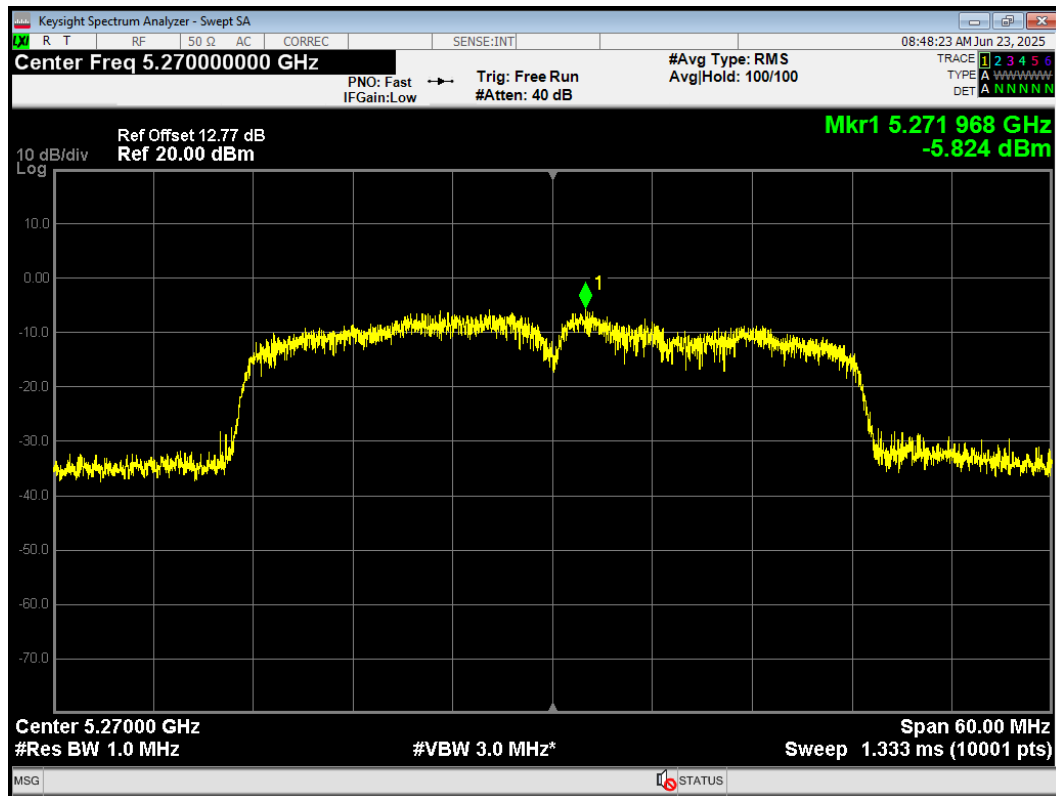
PSD 802.11ac(VHT20) 5300MHz



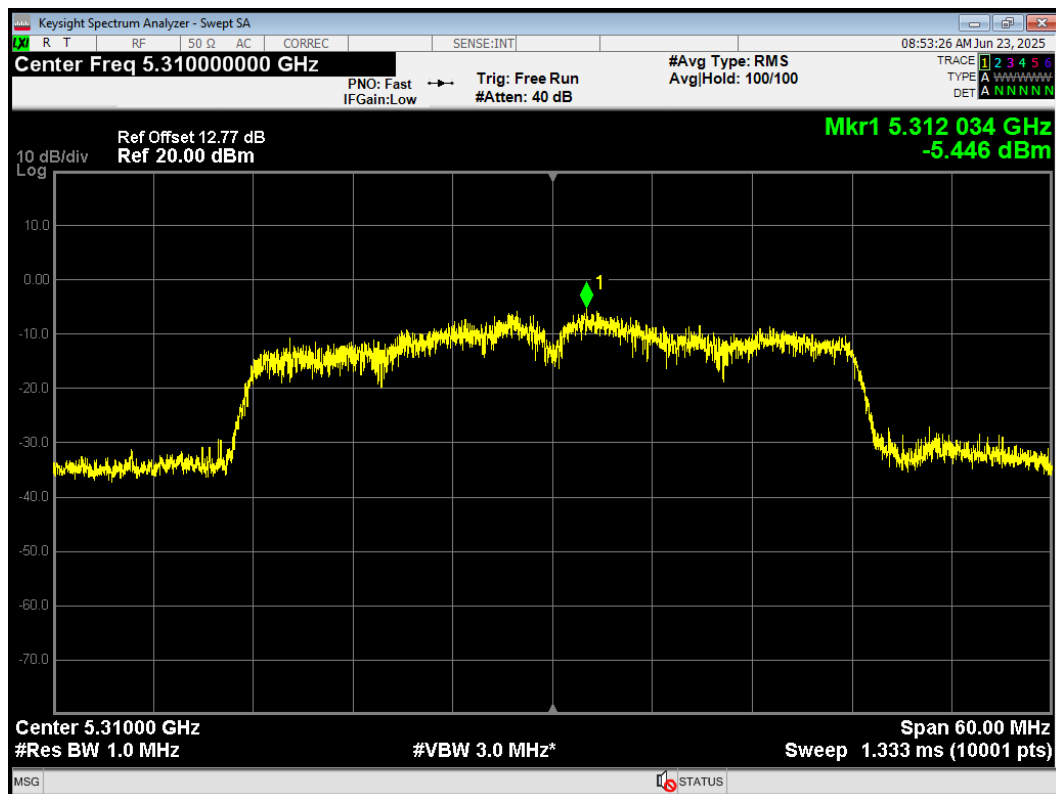
PSD 802.11ac(VHT20) 5320MHz



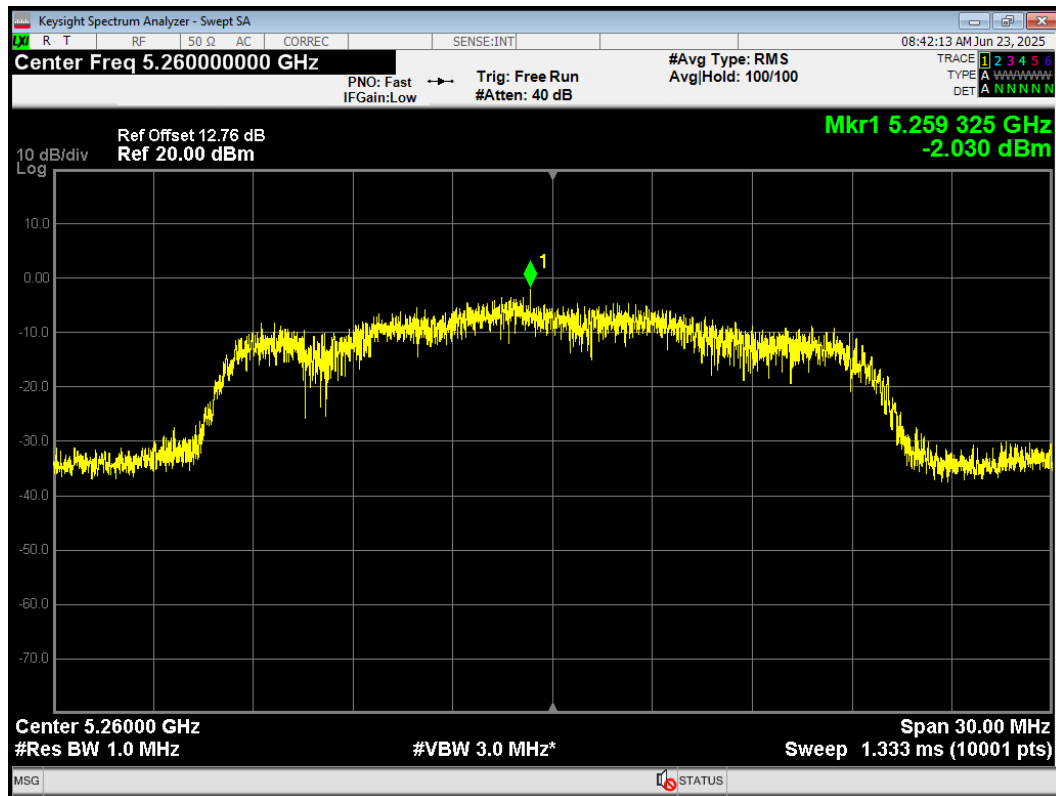
PSD 802.11ac(VHT40) 5270MHz



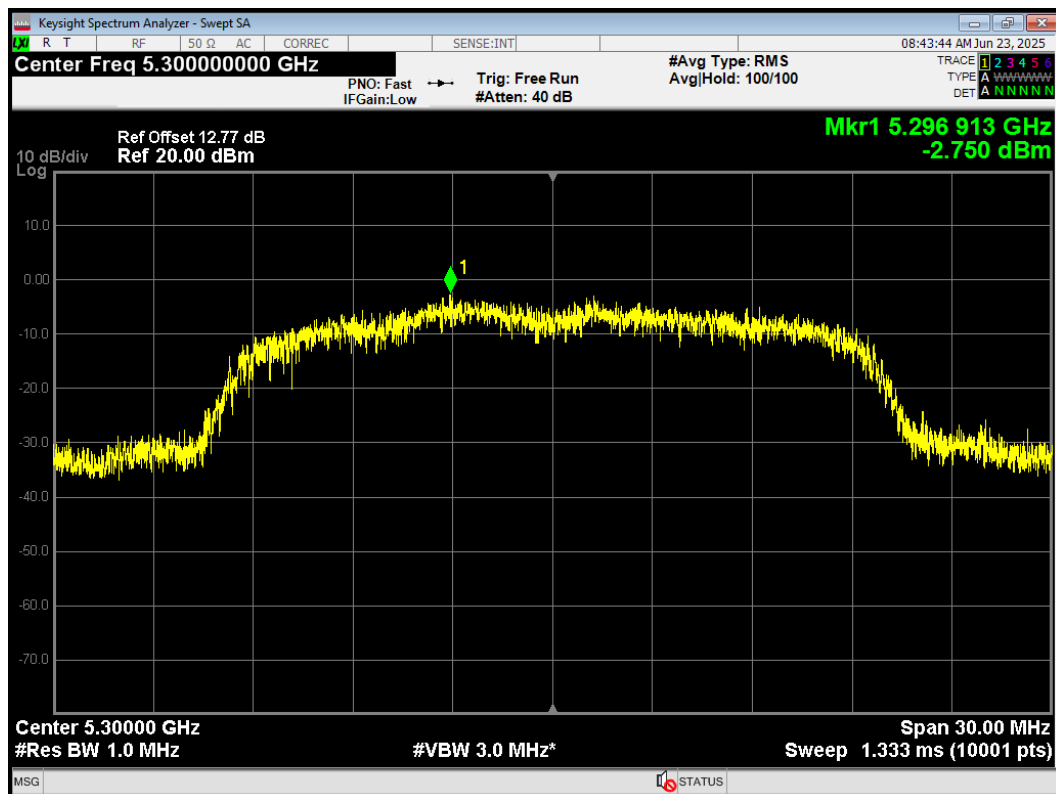
PSD 802.11ac(VHT40) 5310MHz



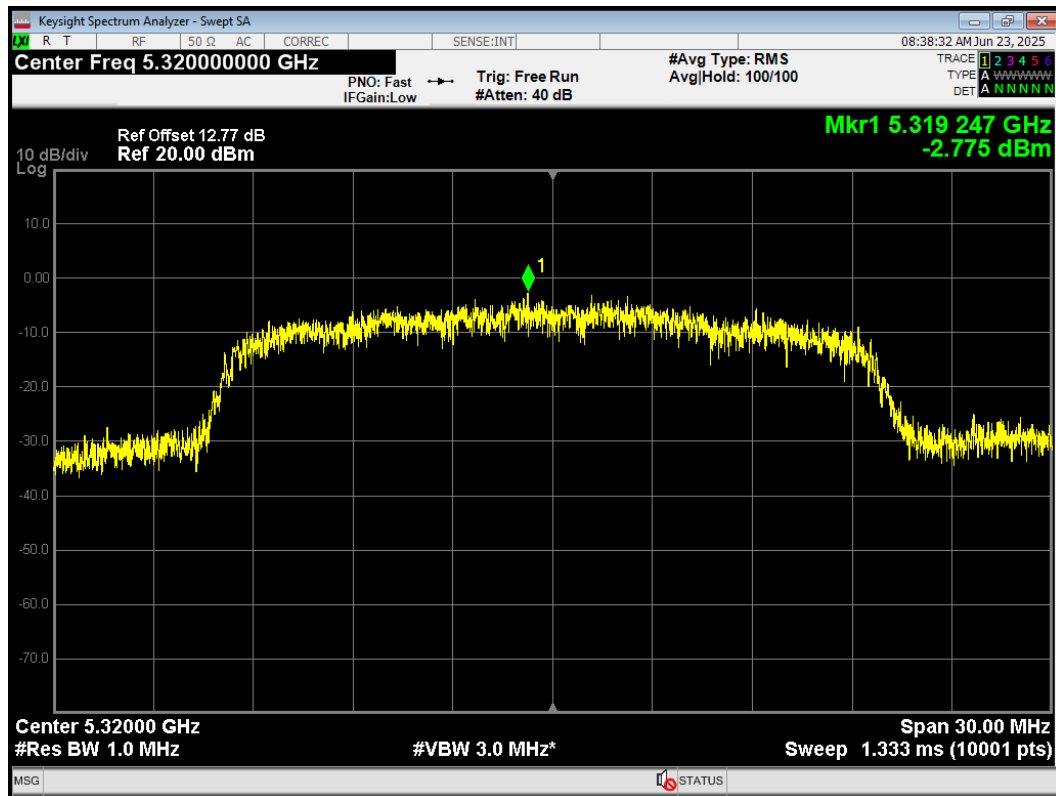
PSD 802.11ax(HE20) 5260MHz



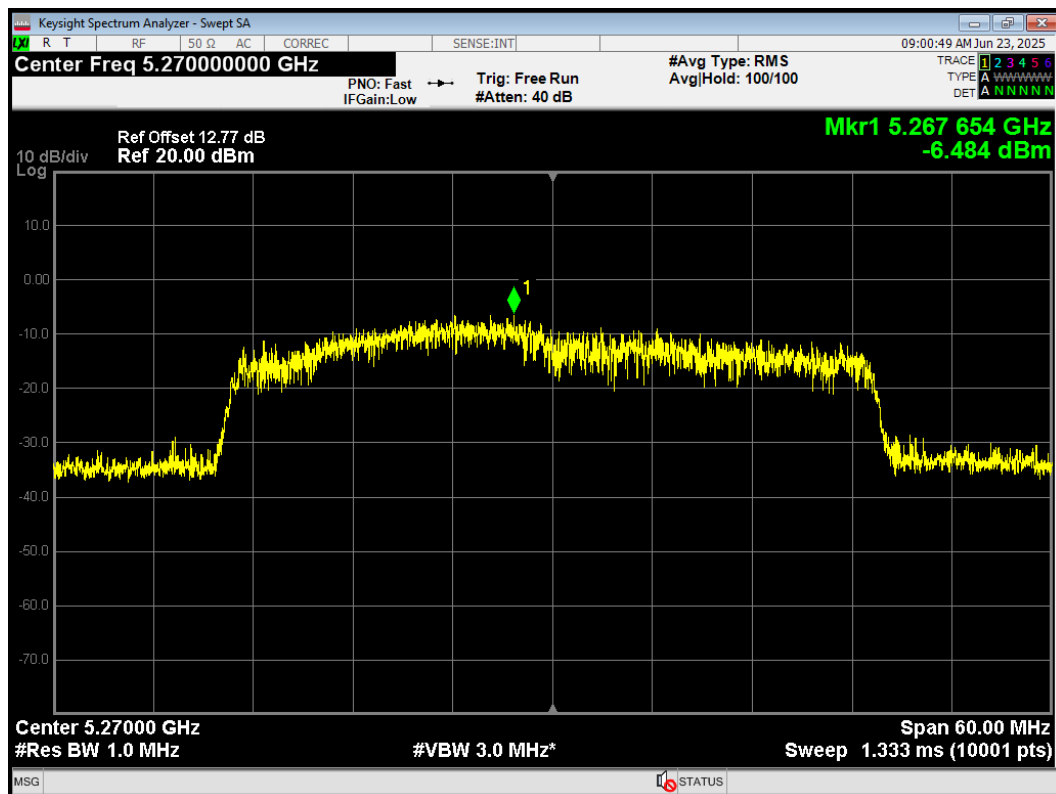
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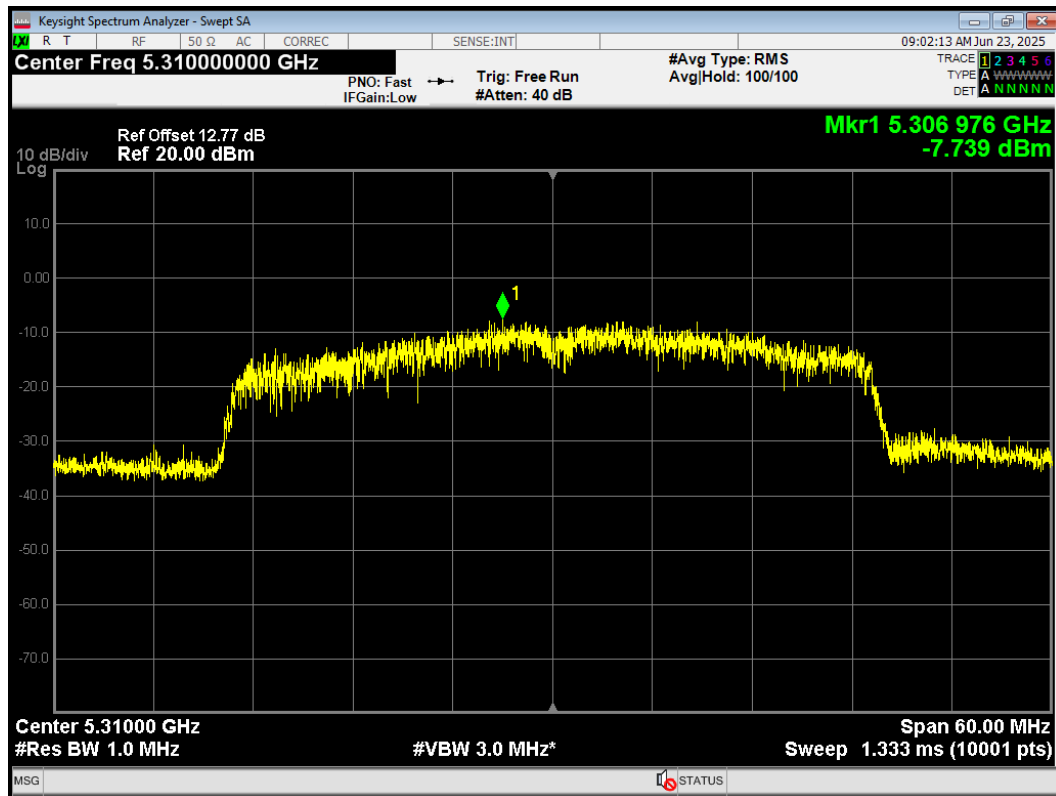
PSD 802.11ax(HE20) 5320MHz



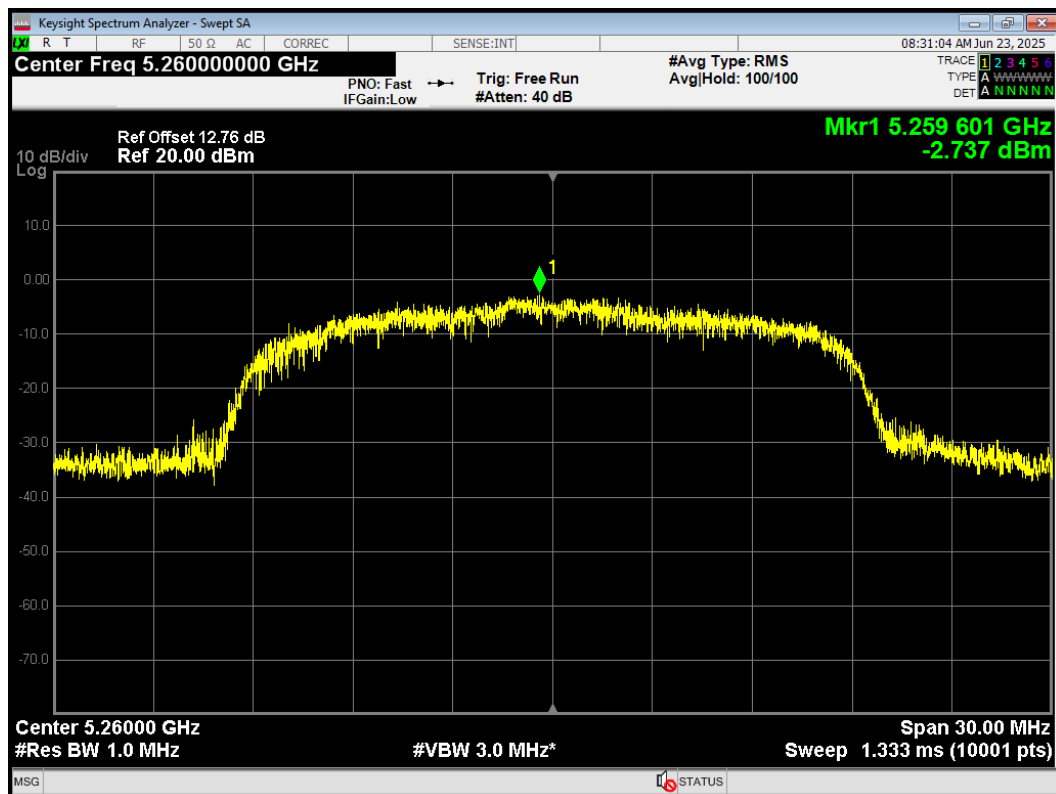
PSD 802.11ax(HE40) 5270MHz



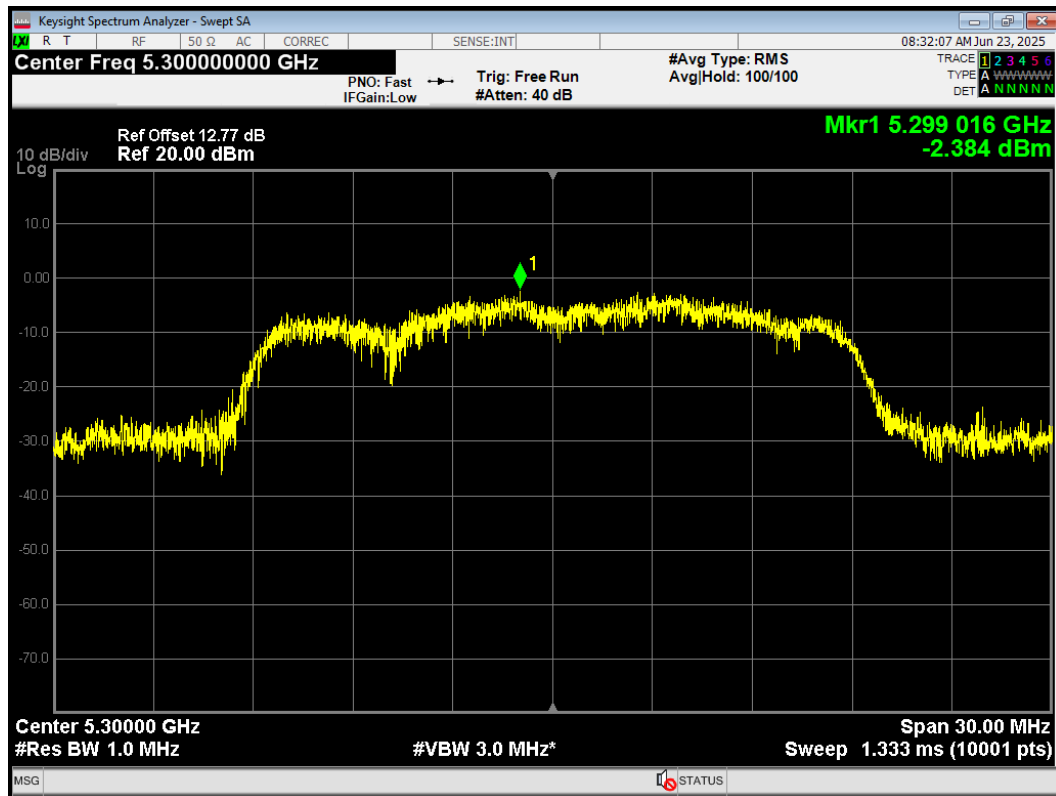
PSD 802.11ax(HE40) 5310MHz



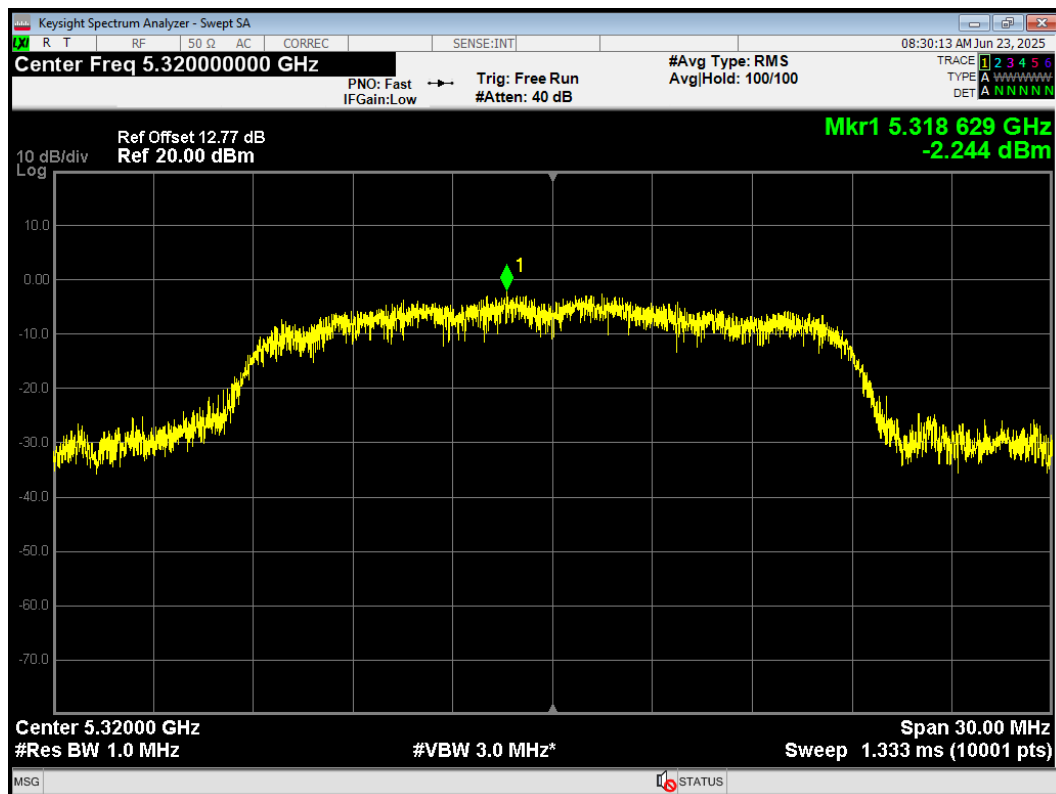
PSD 802.11n(HT20) 5260MHz



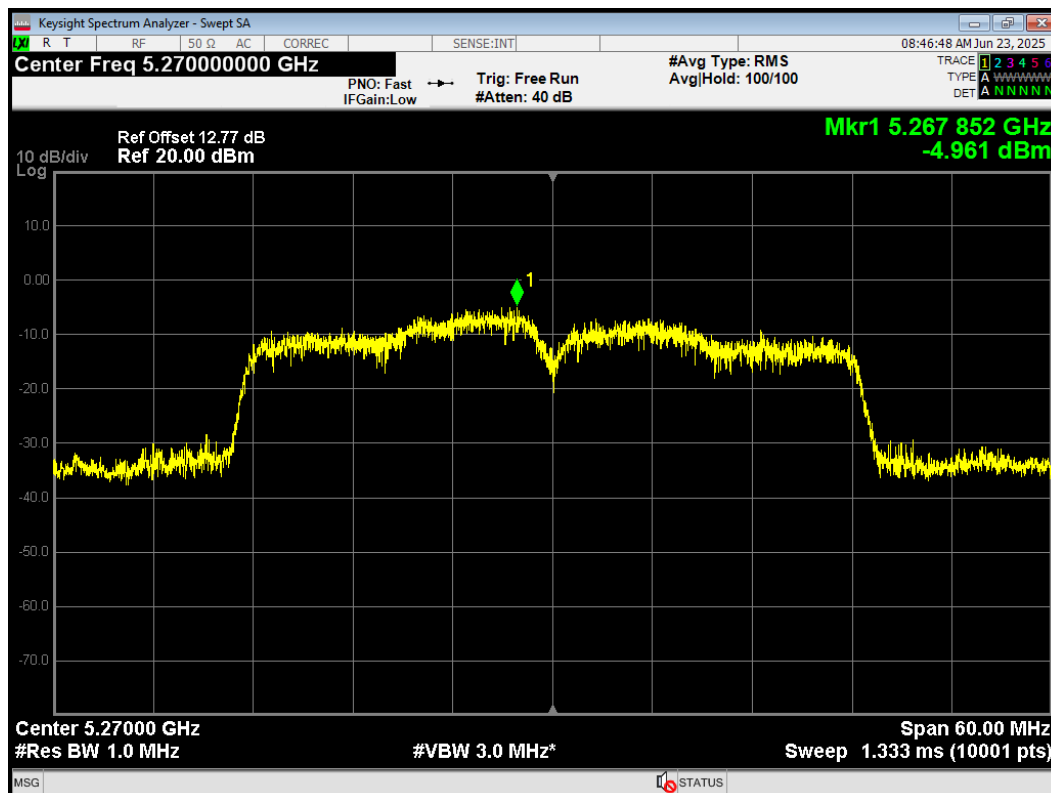
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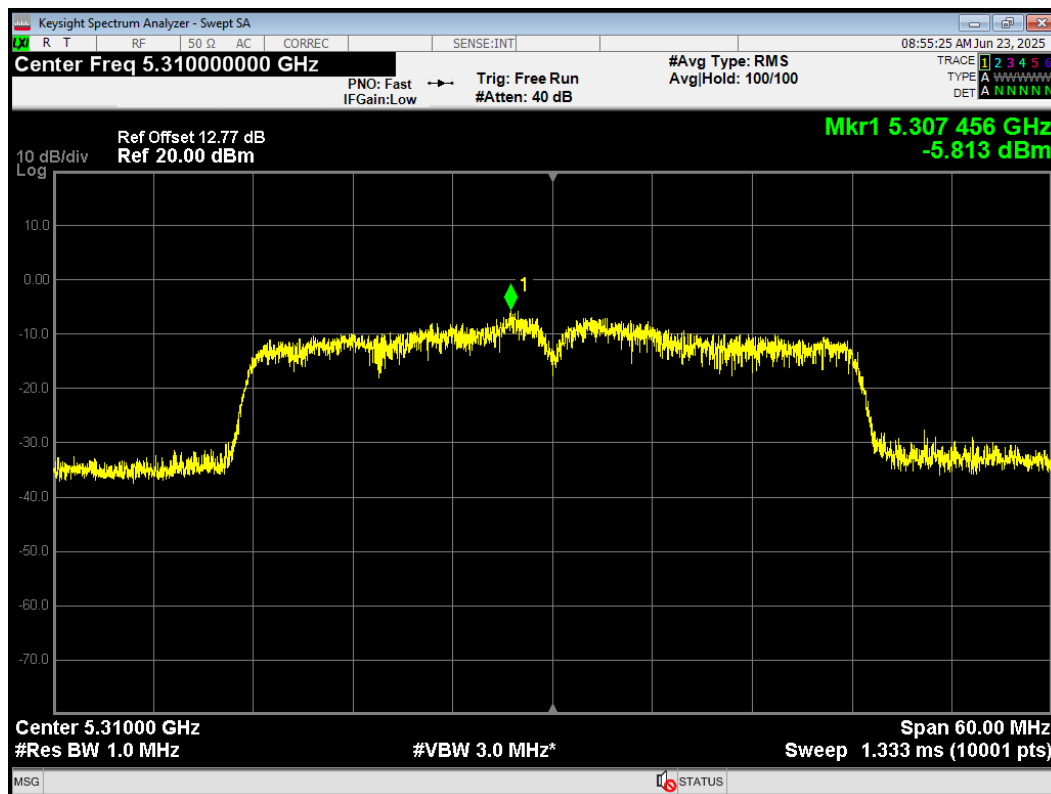
PSD 802.11n(HT20) 5320MHz



PSD 802.11n(HT40) 5270MHz

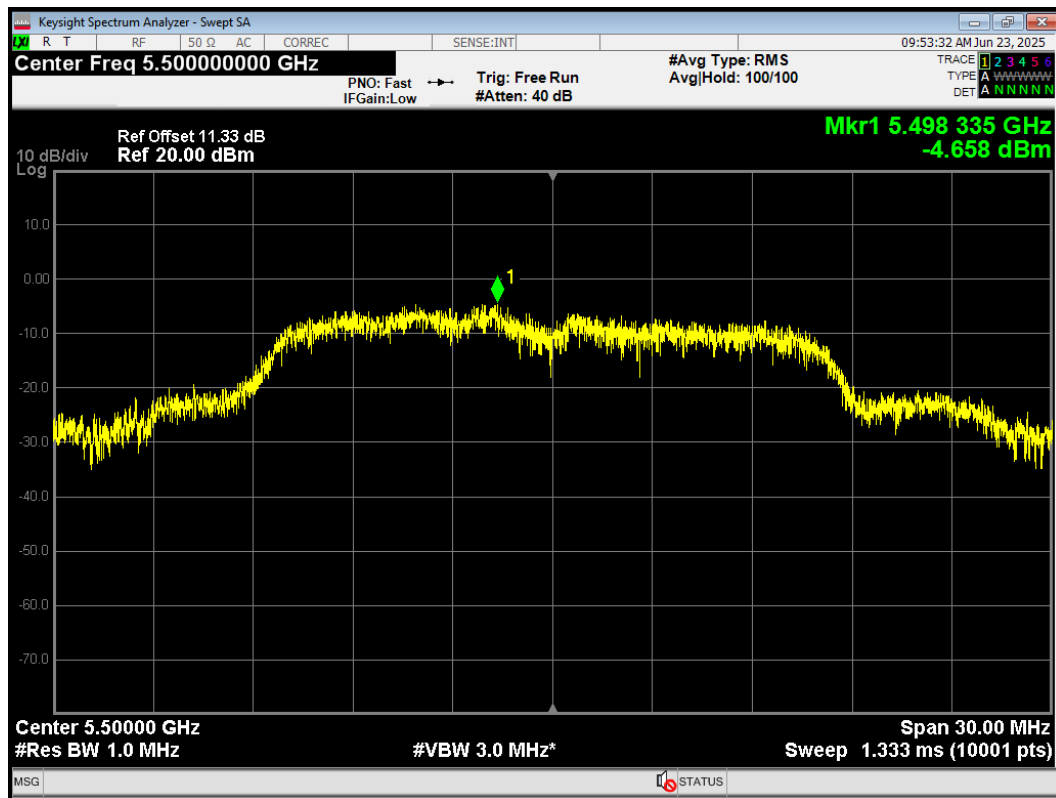


PSD 802.11n(HT40) 5310MHz

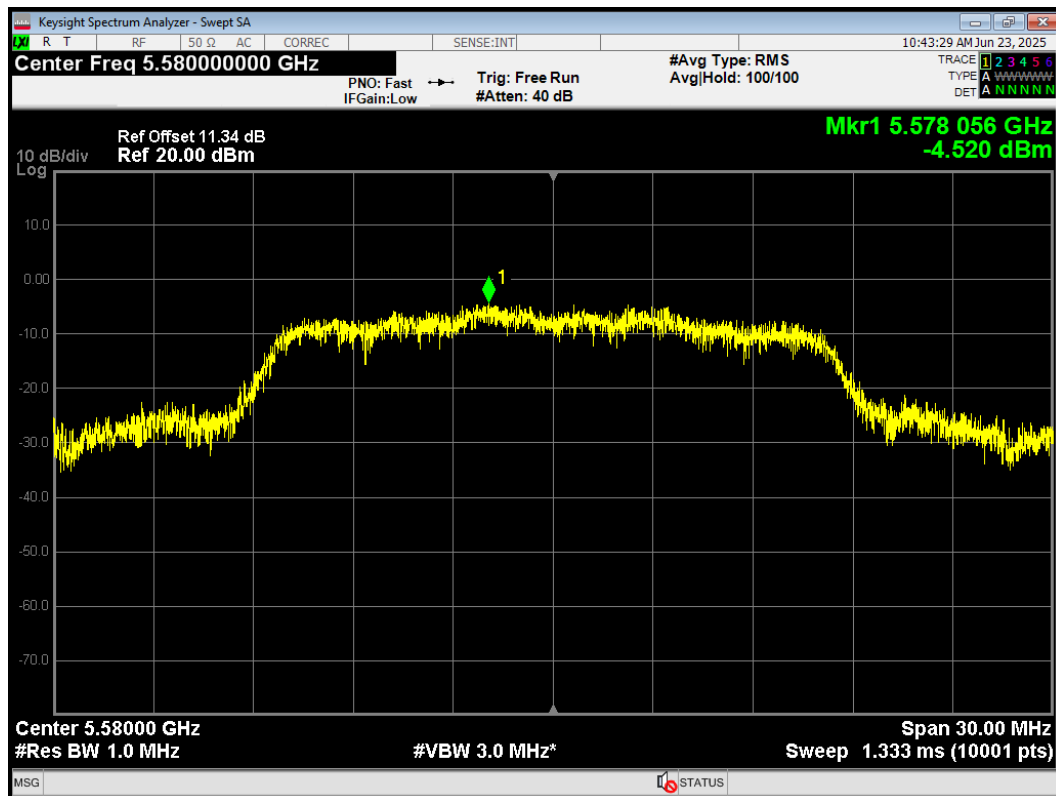


U-NII-2C

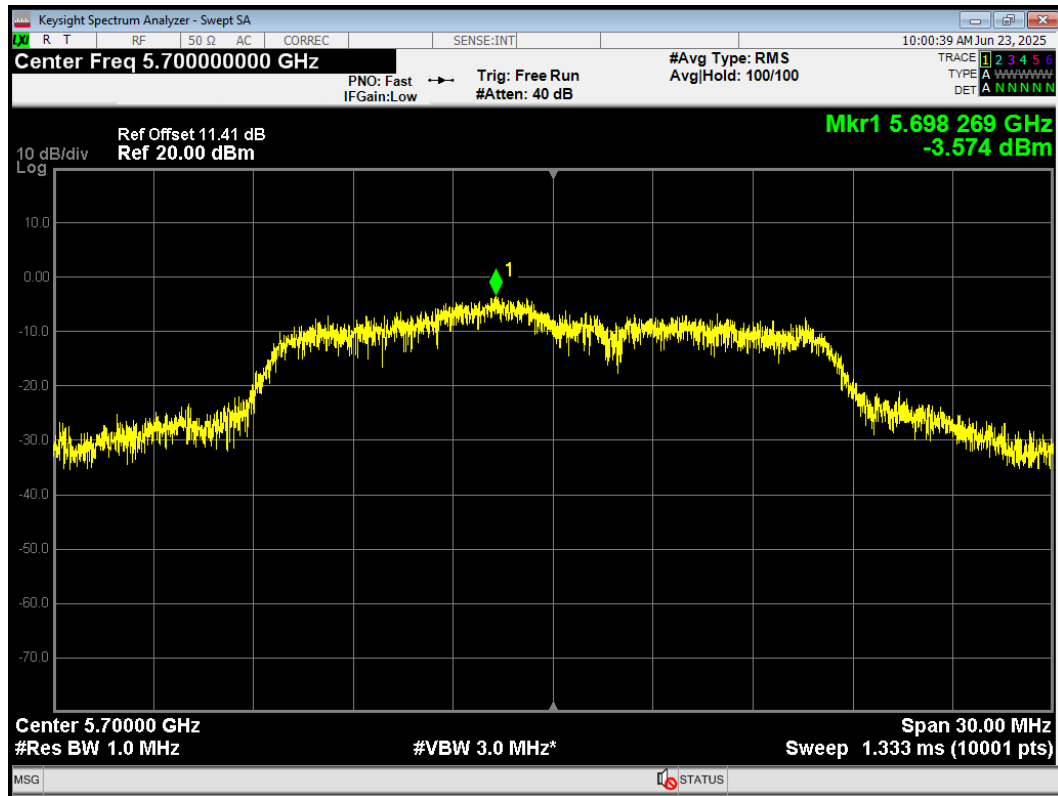
PSD 802.11a 5500MHz



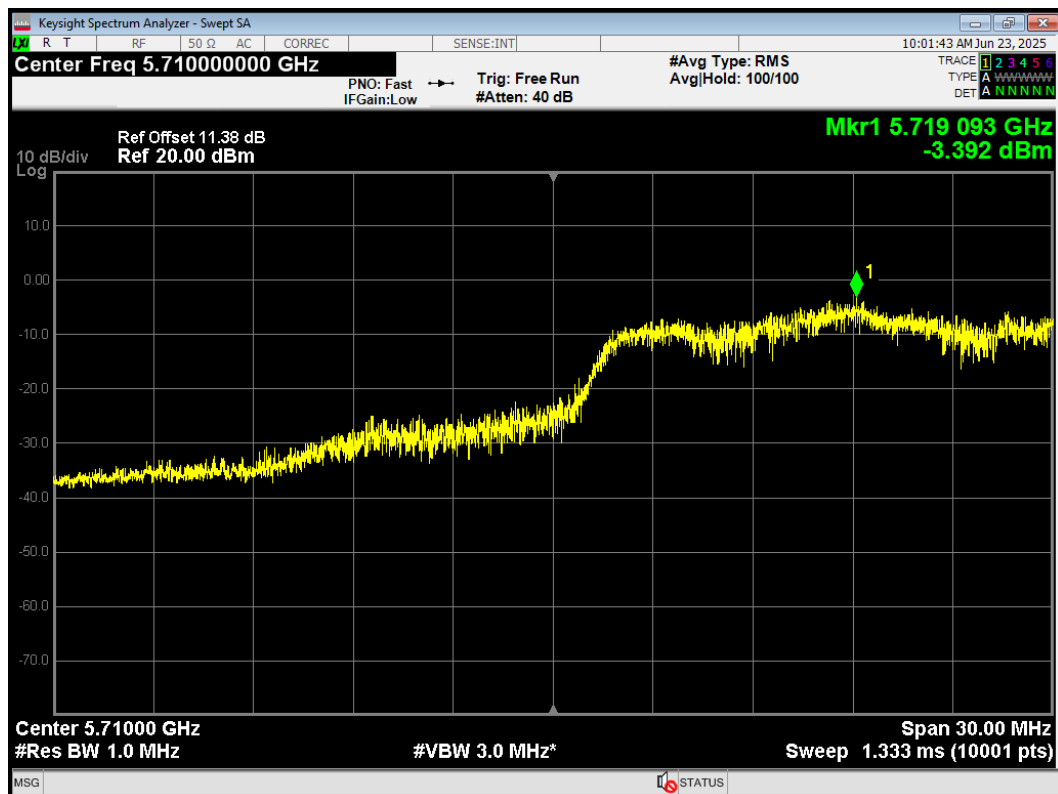
PSD NVNT 802.11a 5580MHz Ant1



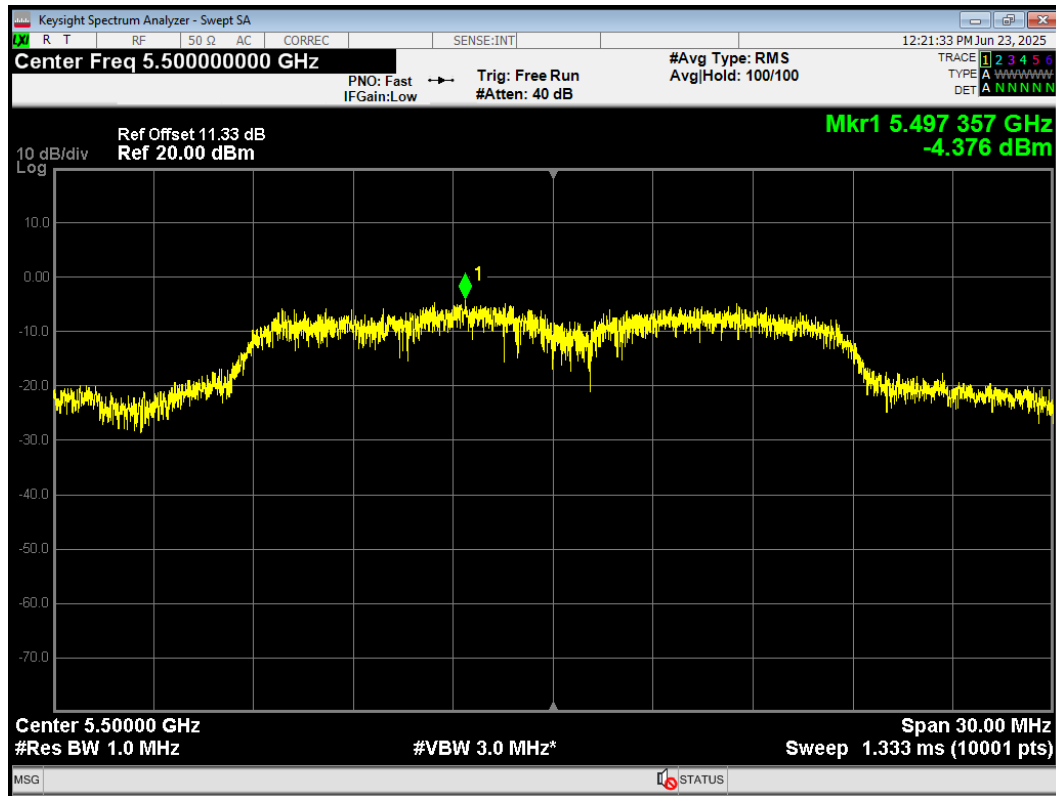
PSD NVNT 802.11a 5700MHz Ant1



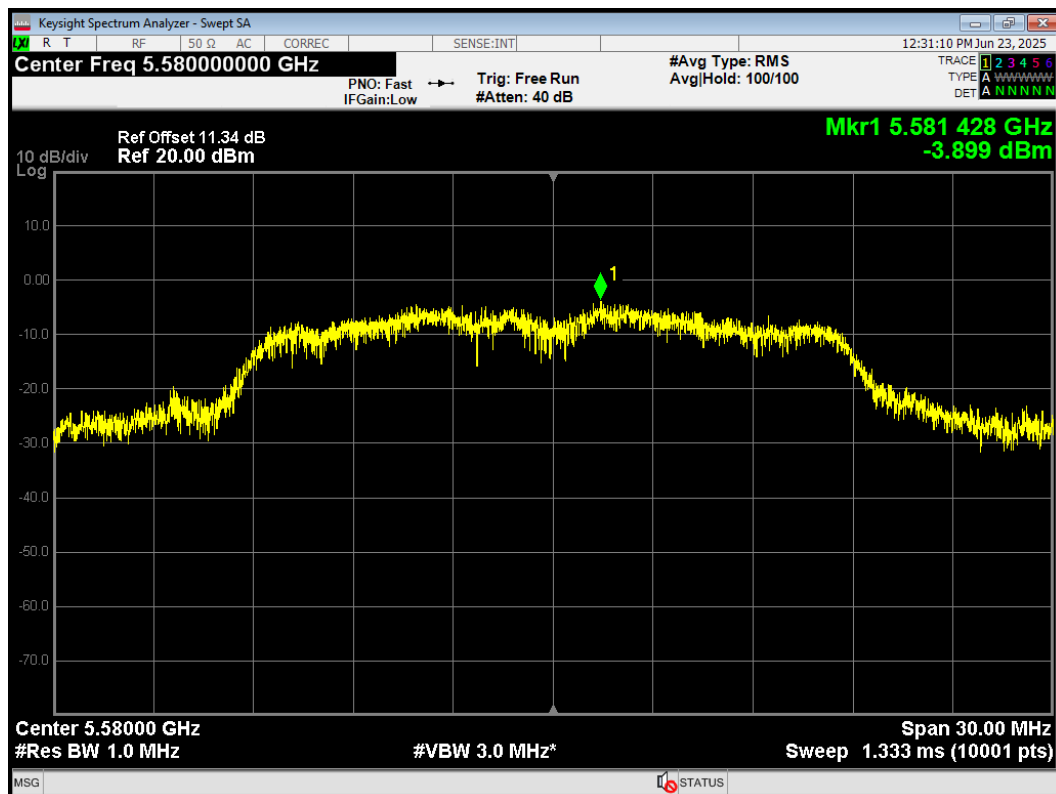
PSD NVNT 802.11a 5710MHz Ant1



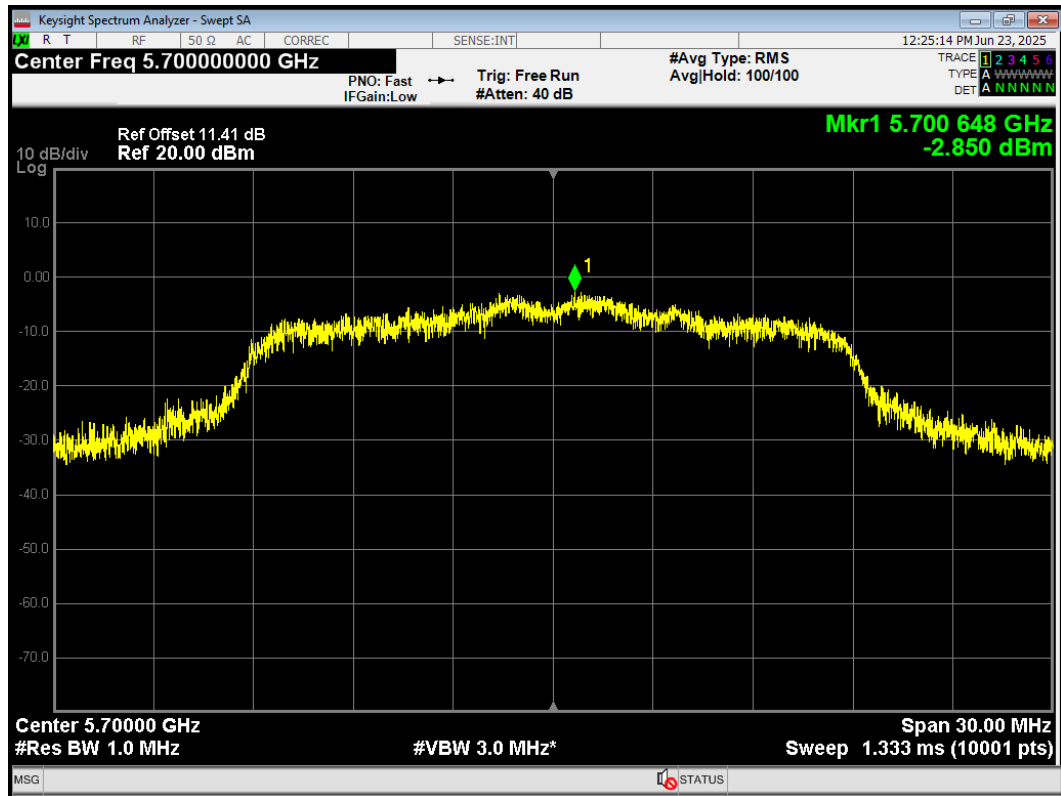
PSD NVNT 802.11ac(VHT20) 5500MHz Ant1



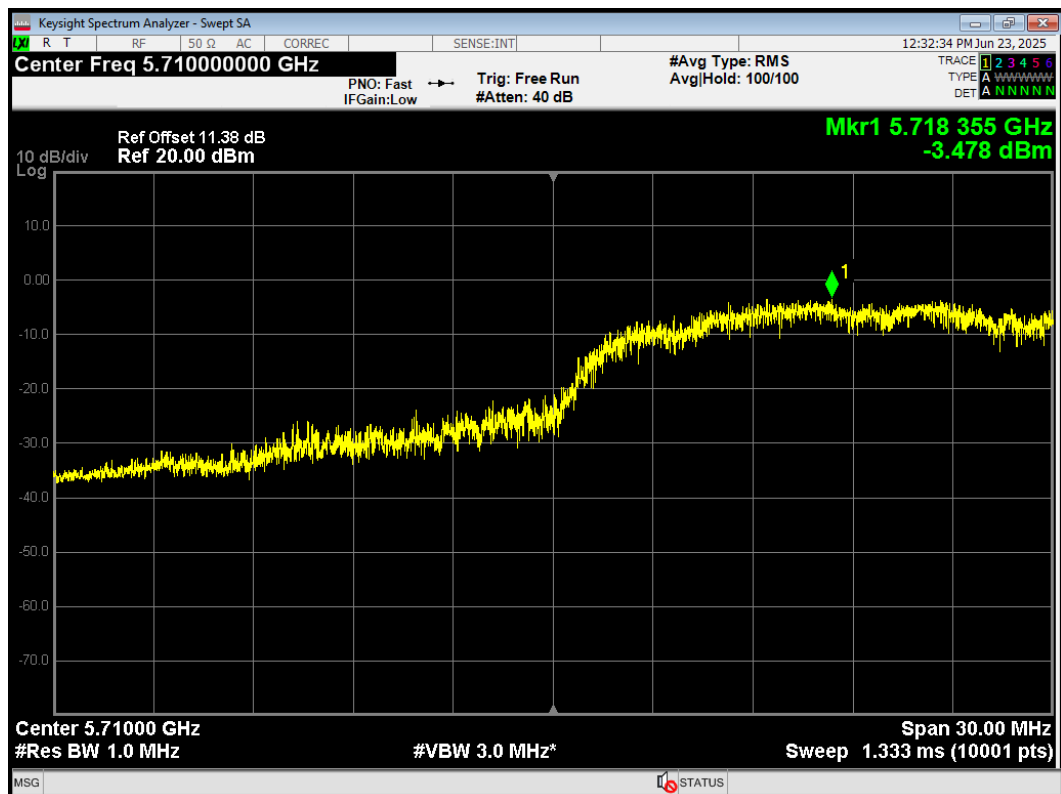
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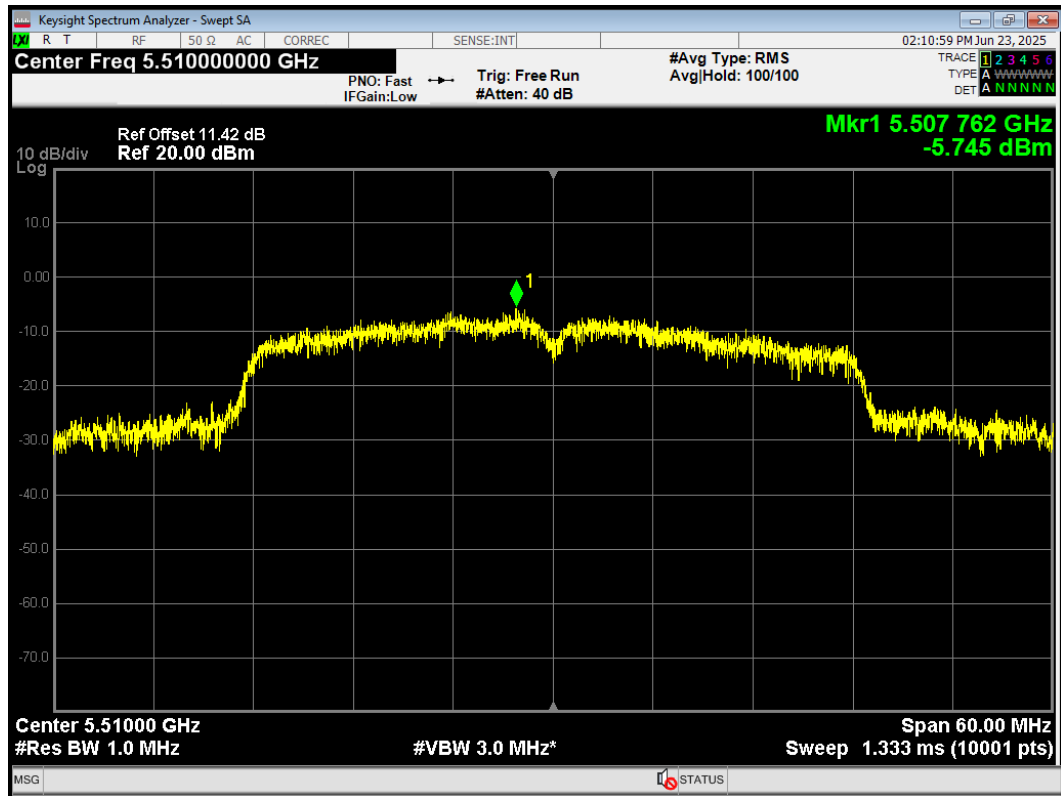
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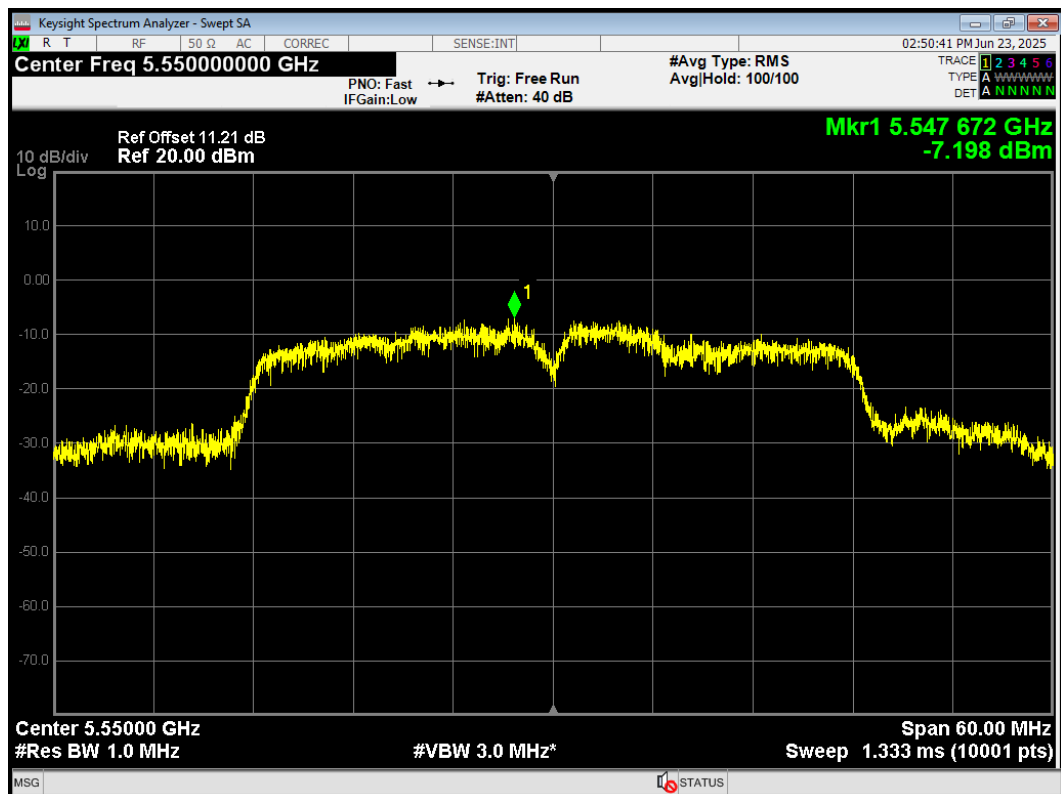
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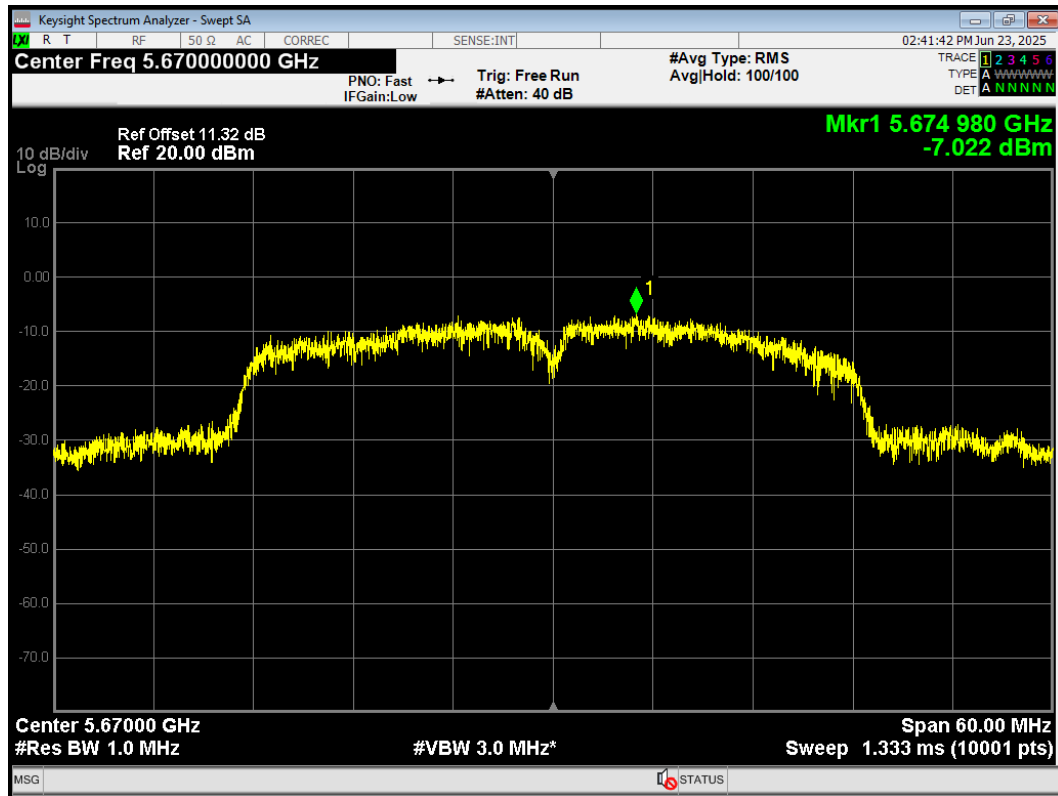
PSD NVNT 802.11ac(VHT40) 5510MHz Ant1



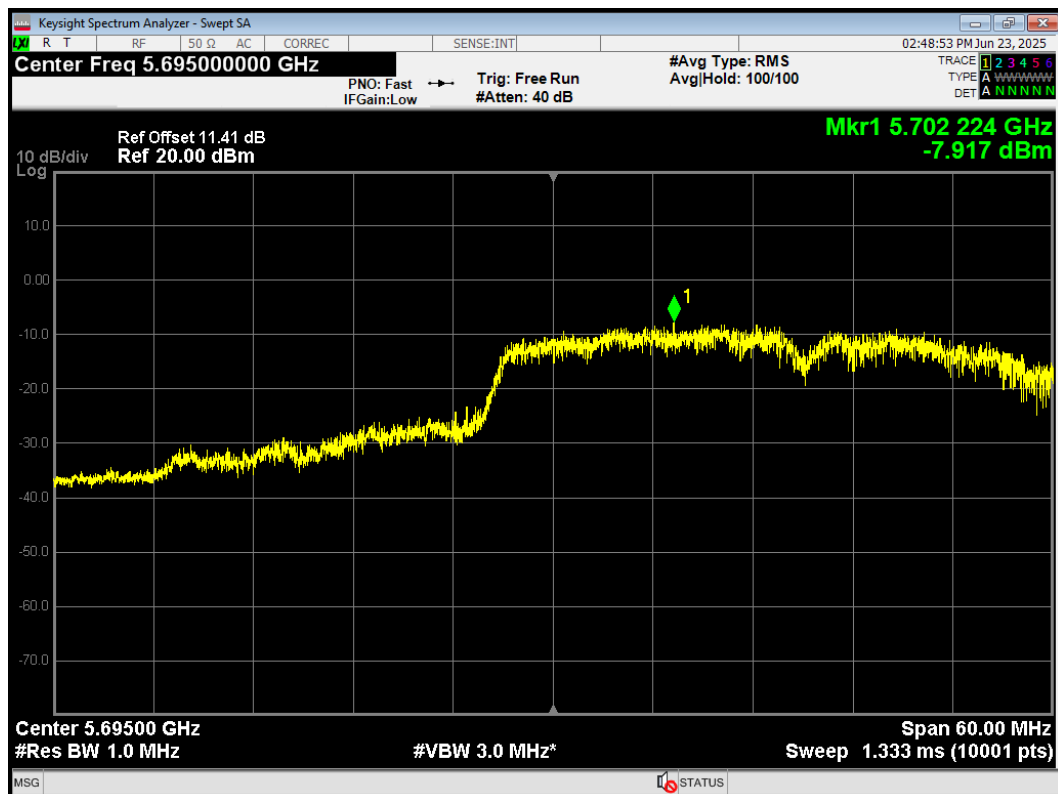
PSD NVNT 802.11ac(VHT40) 5550MHz Ant1



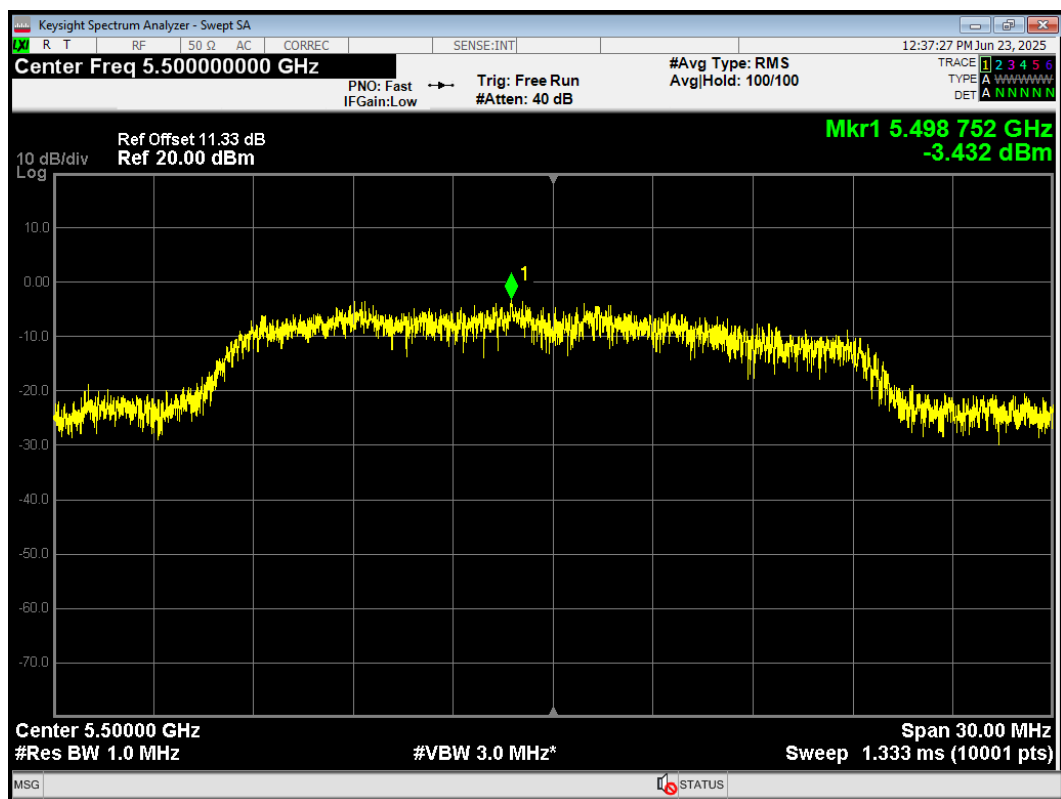
PSD NVNT 802.11ac(VHT40) 5670MHz Ant1



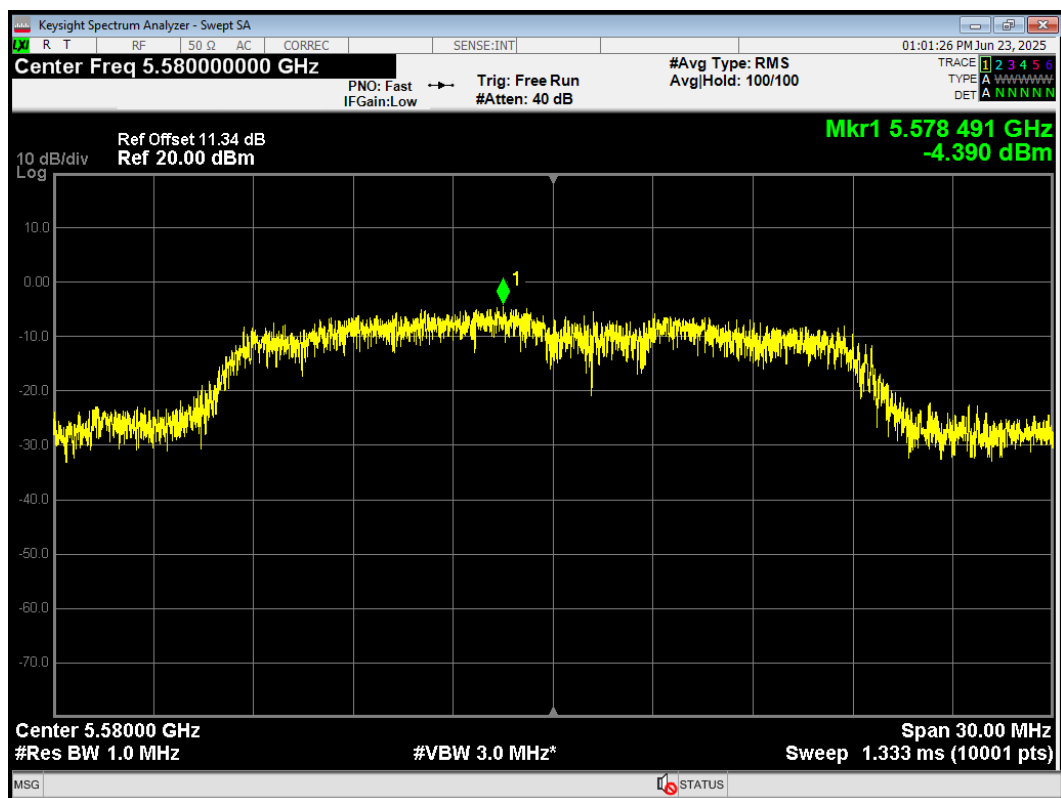
PSD NVNT 802.11ac(VHT40) 5695MHz Ant1



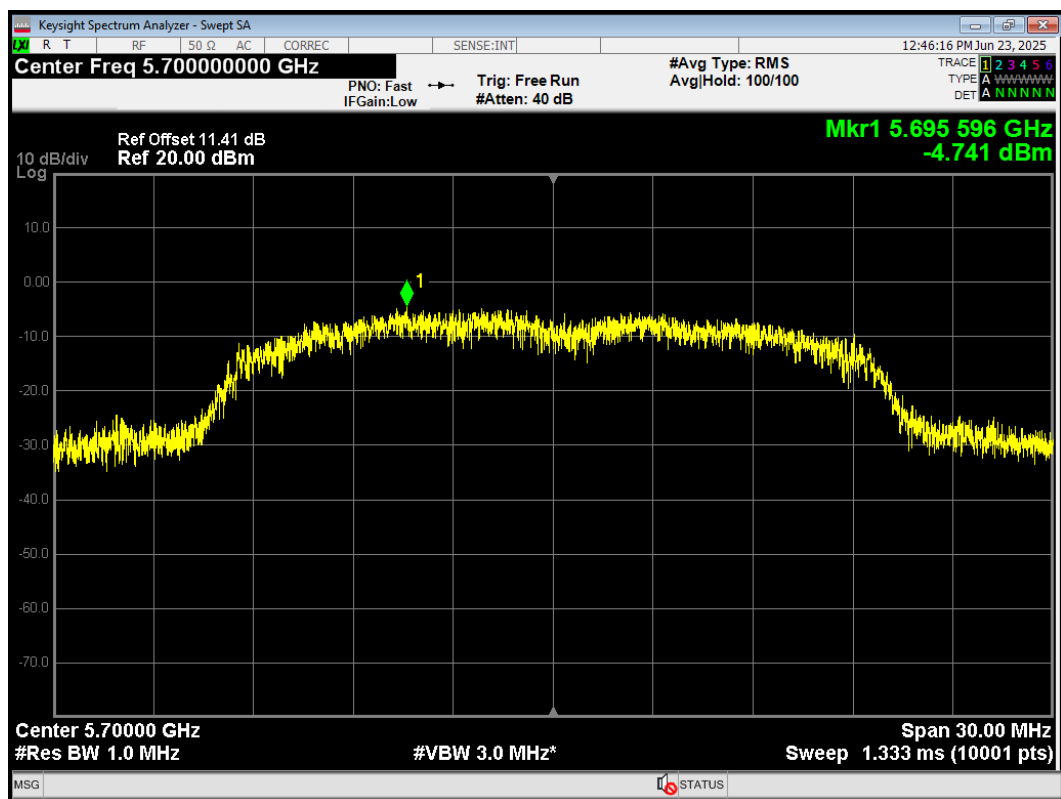
PSD NVNT 802.11ax(HE20) 5500MHz Ant1



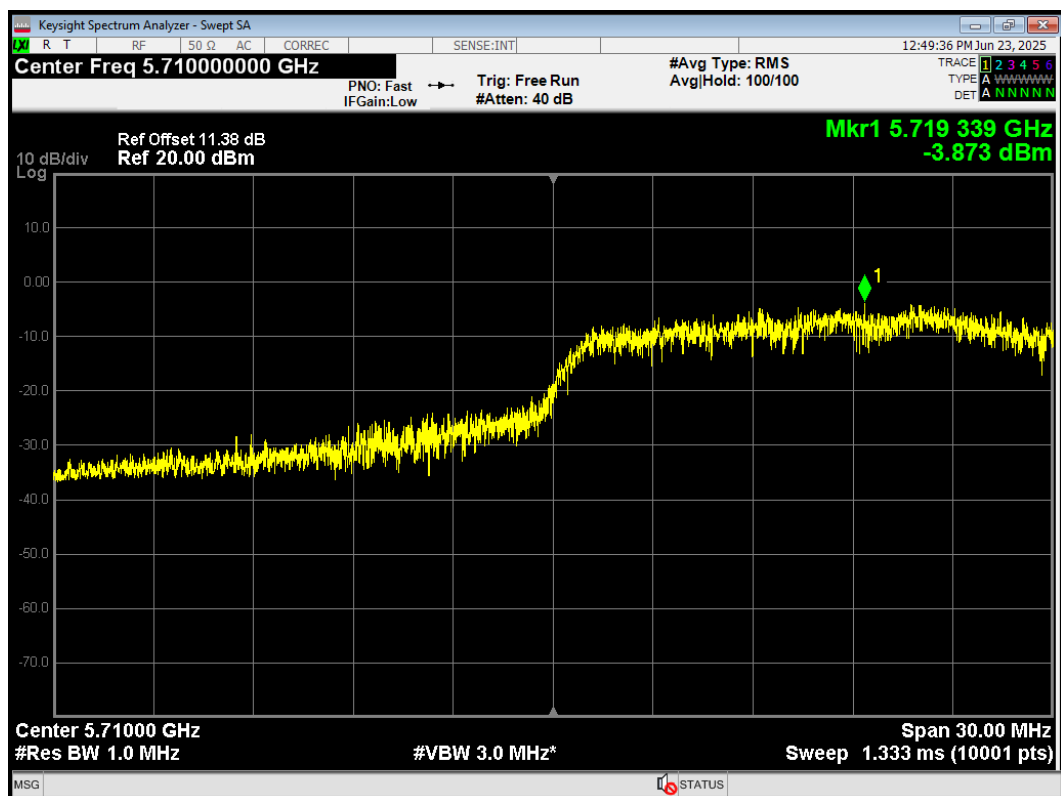
PSD NVNT 802.11ax(HE20) 5580MHz Ant1



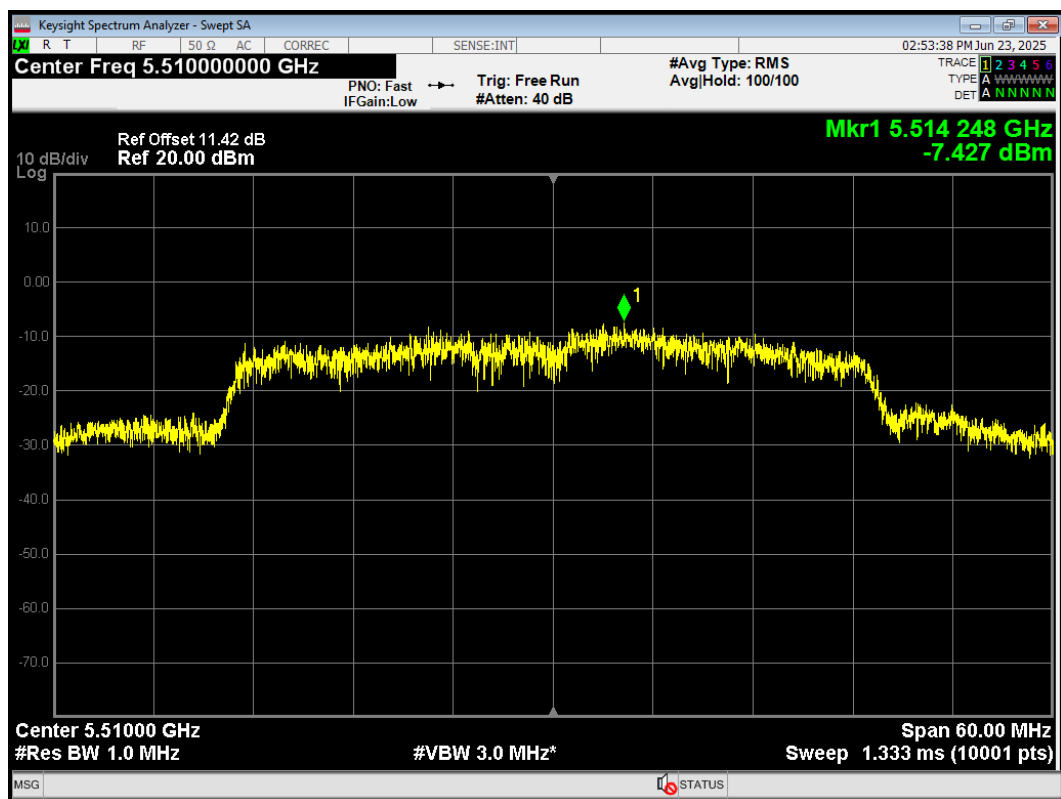
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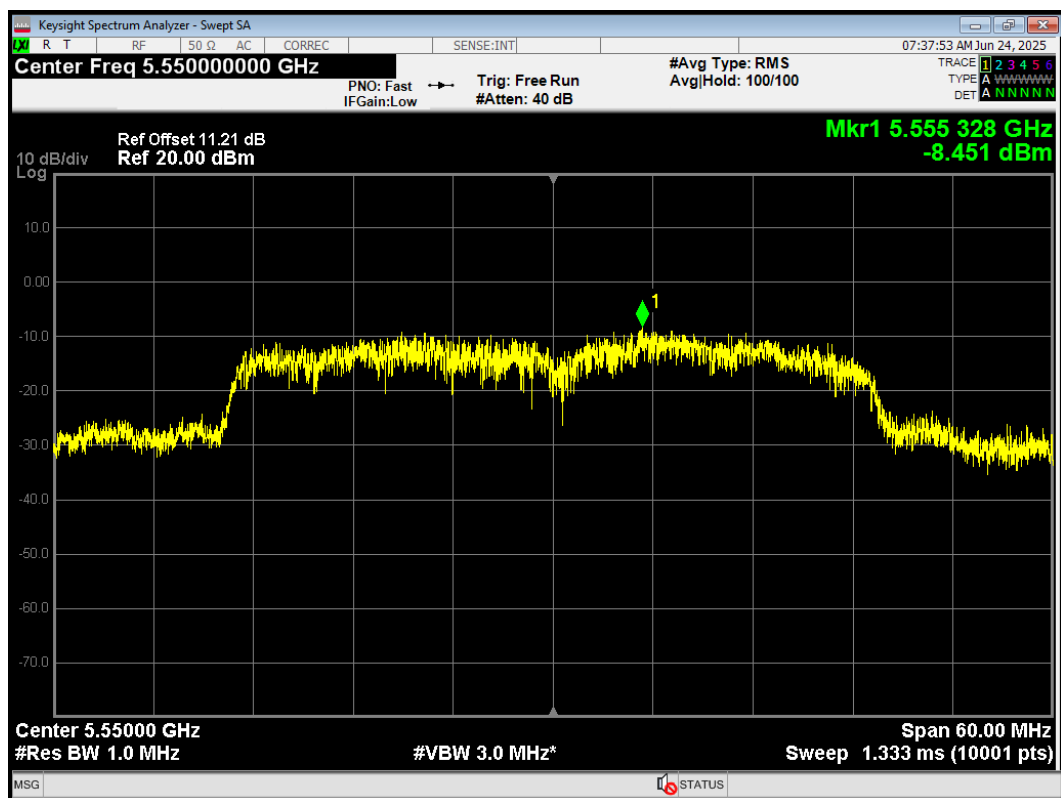
PSD NVNT 802.11ax(HE20) 5710MHz Ant1



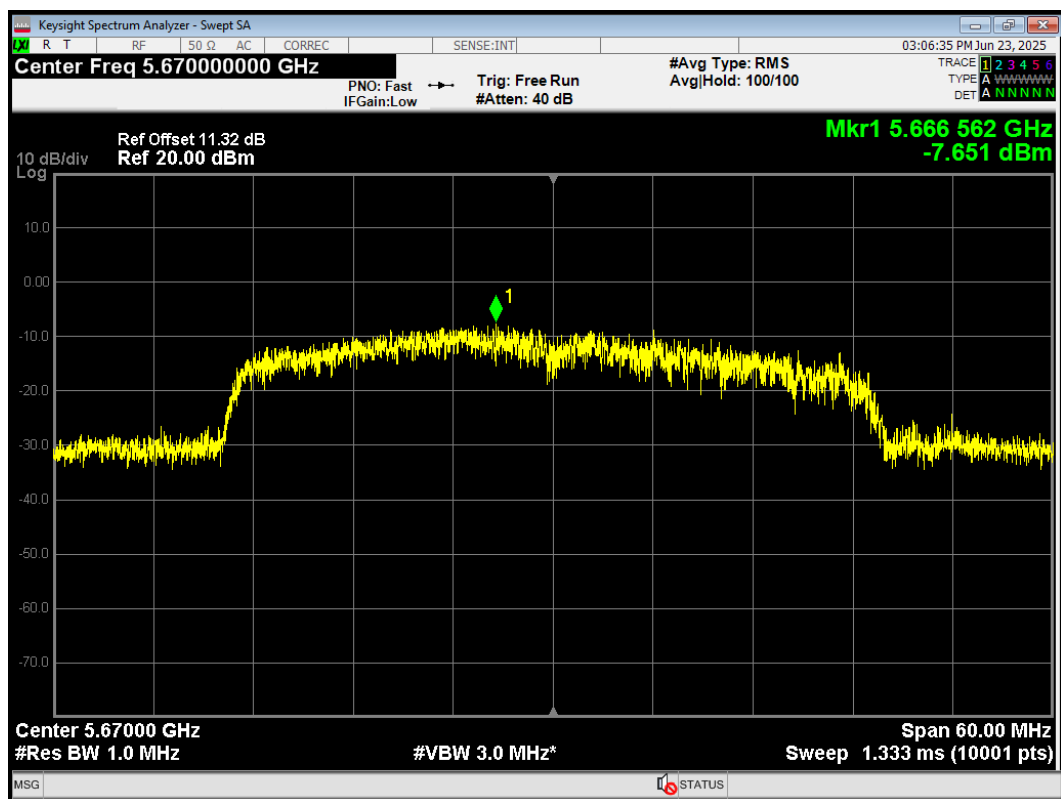
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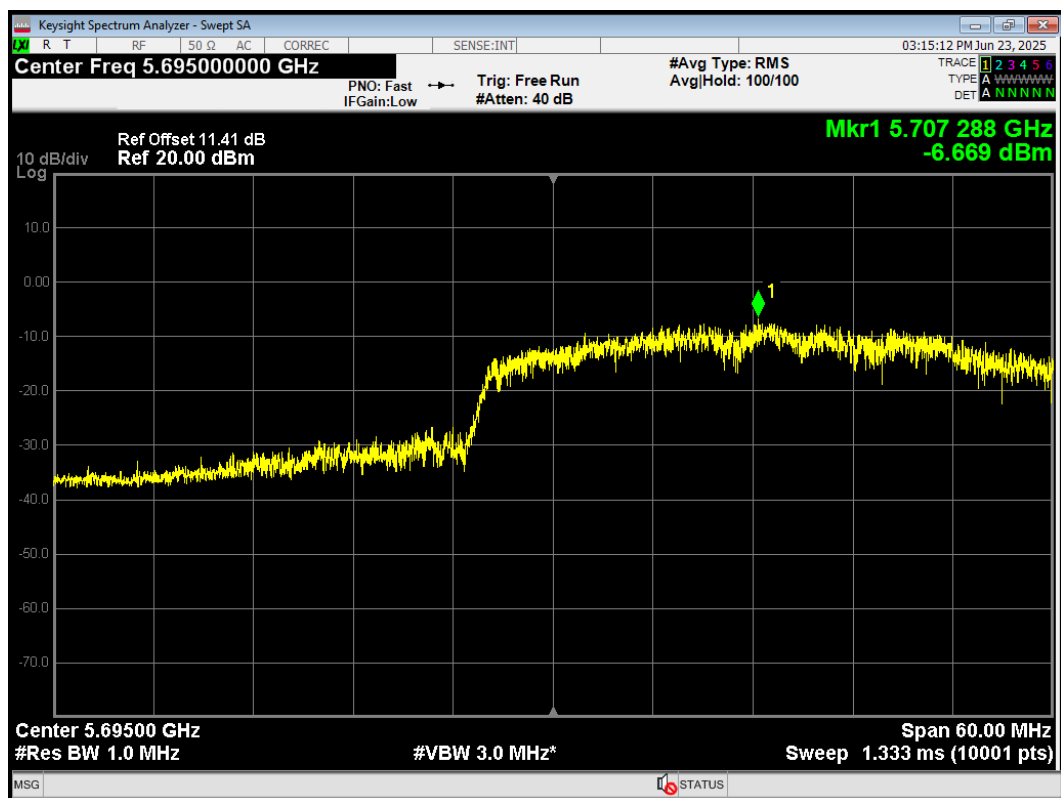
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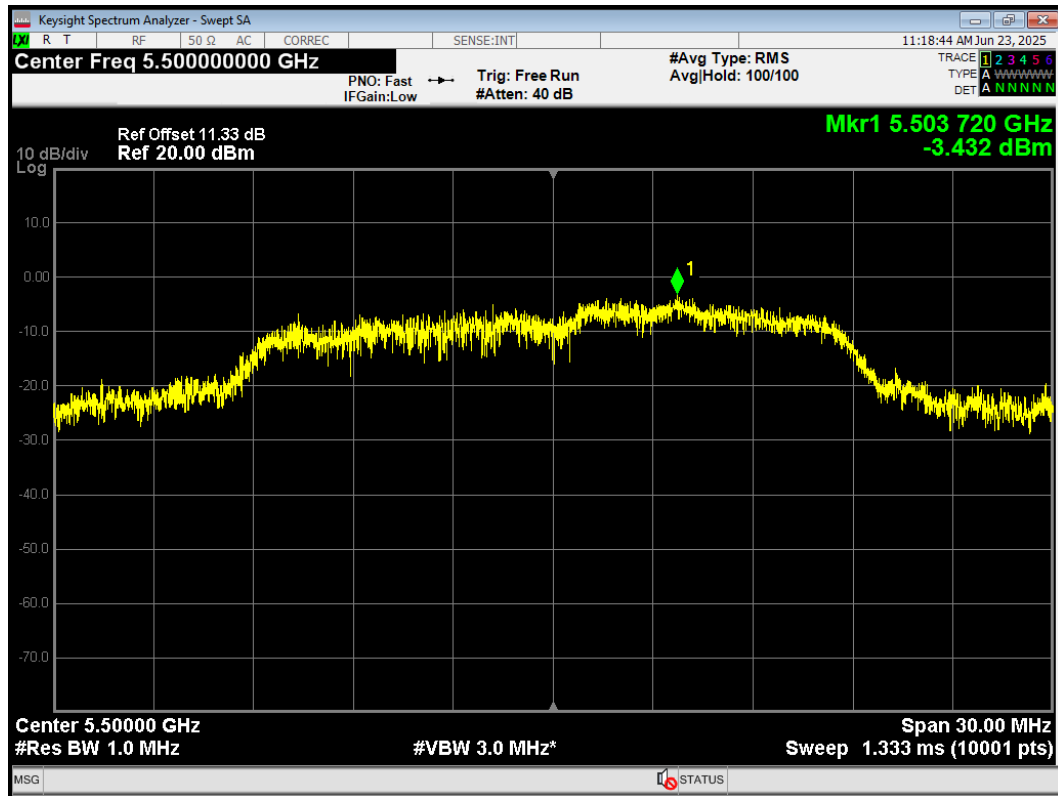
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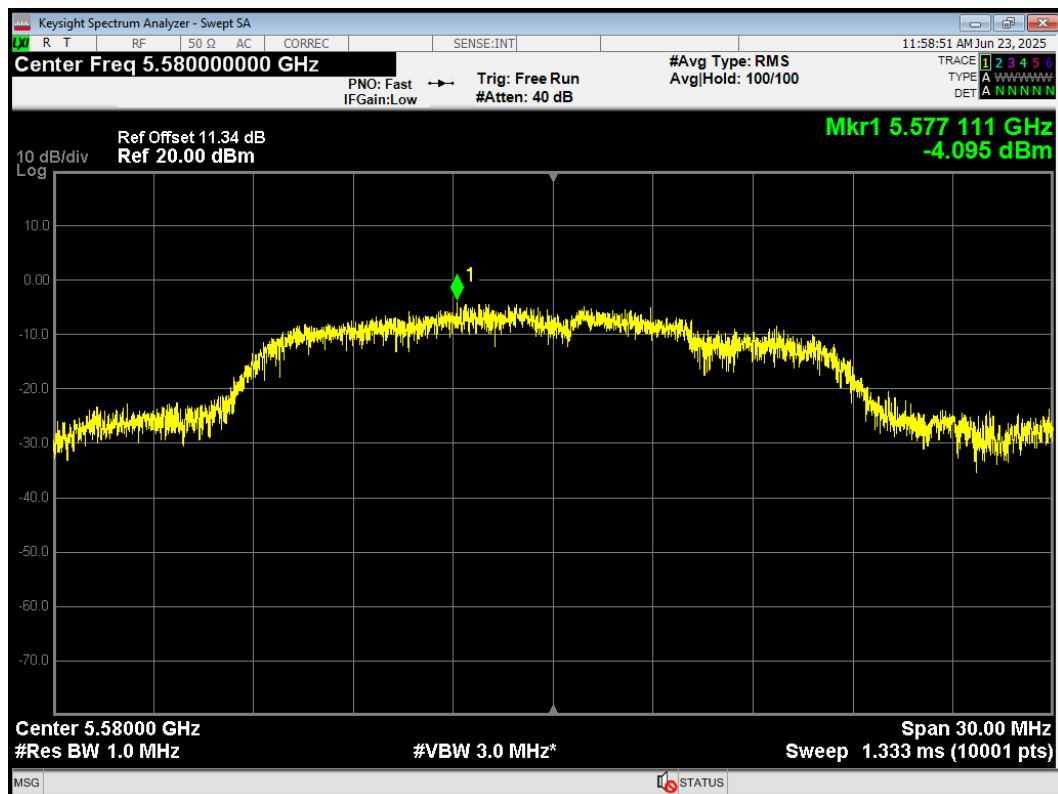
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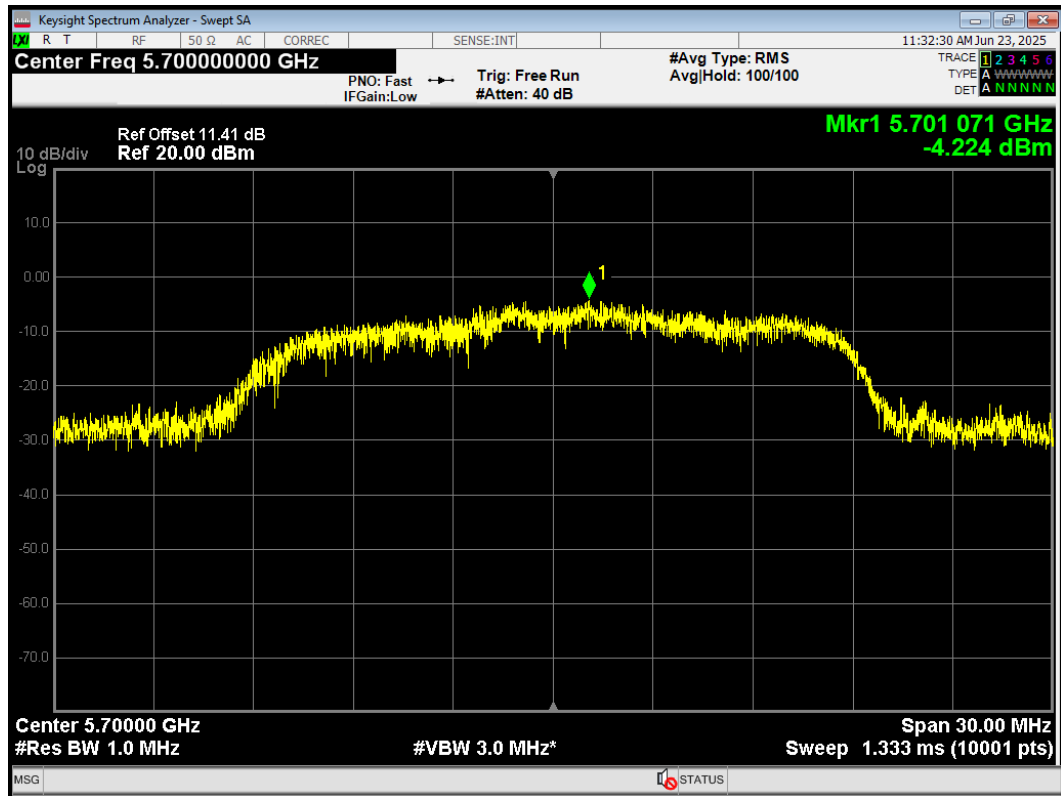
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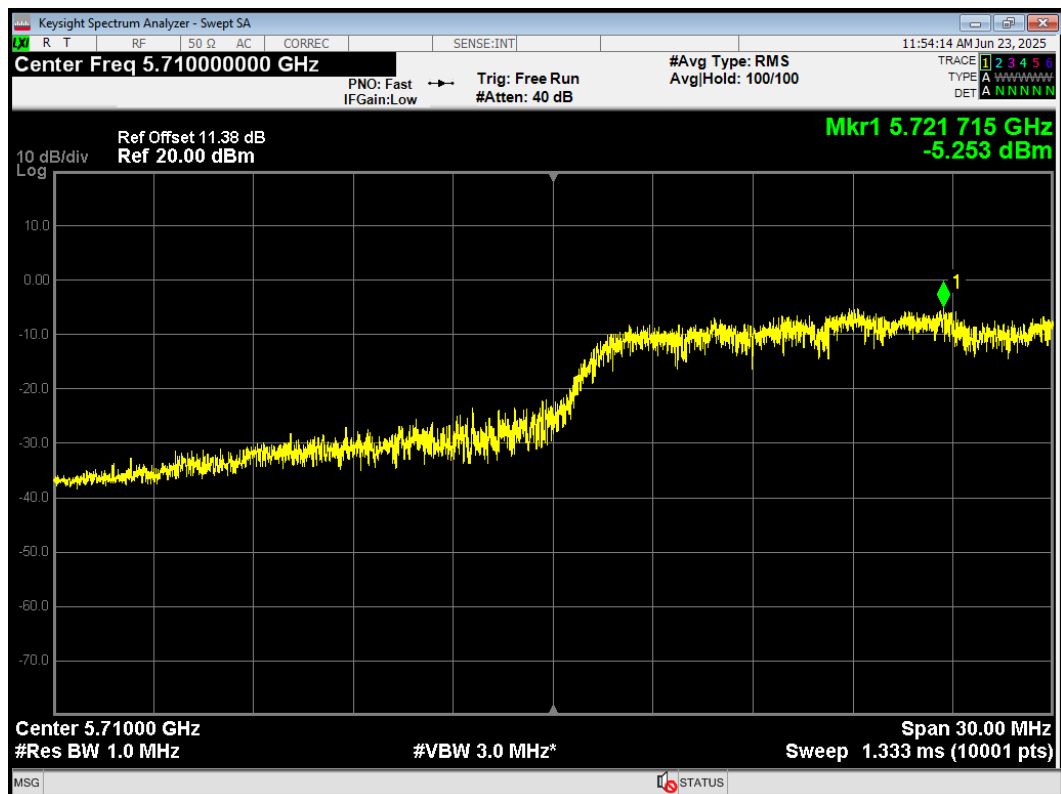
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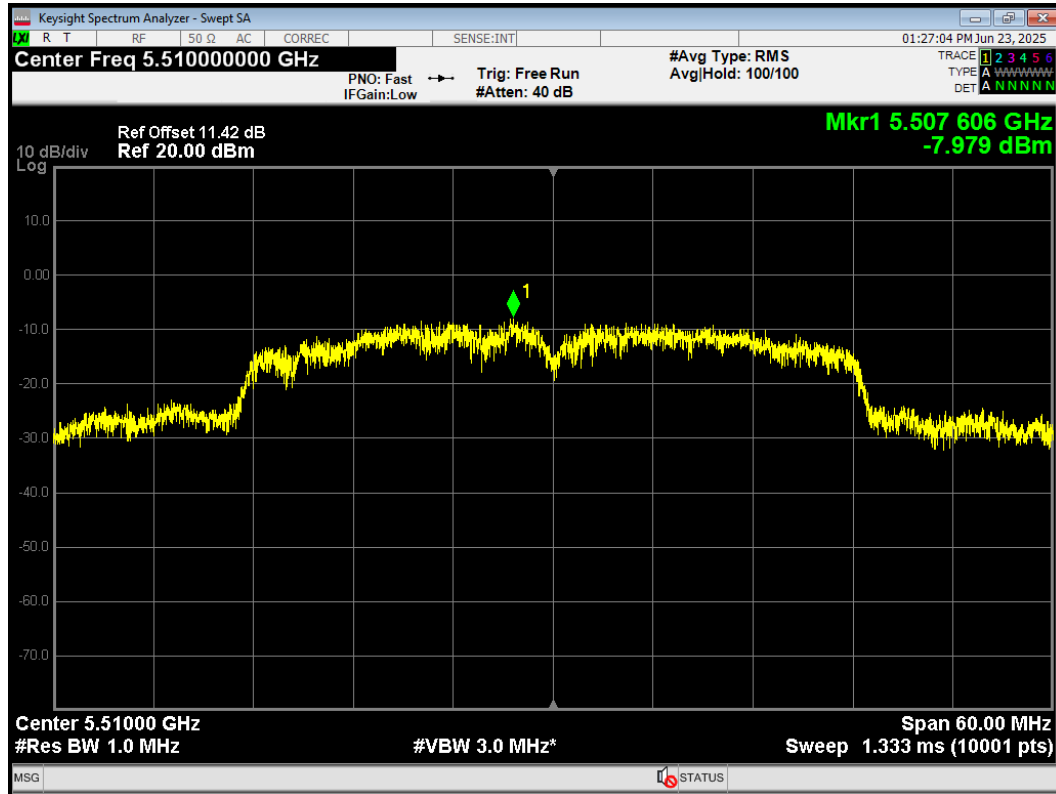
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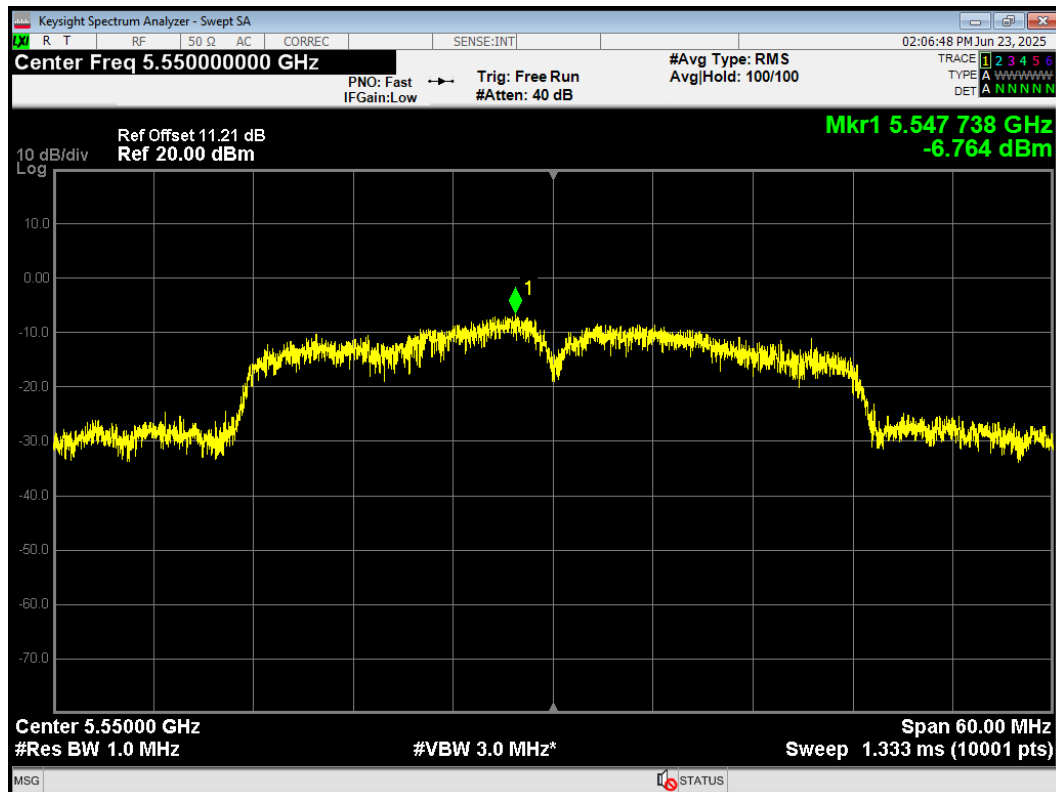
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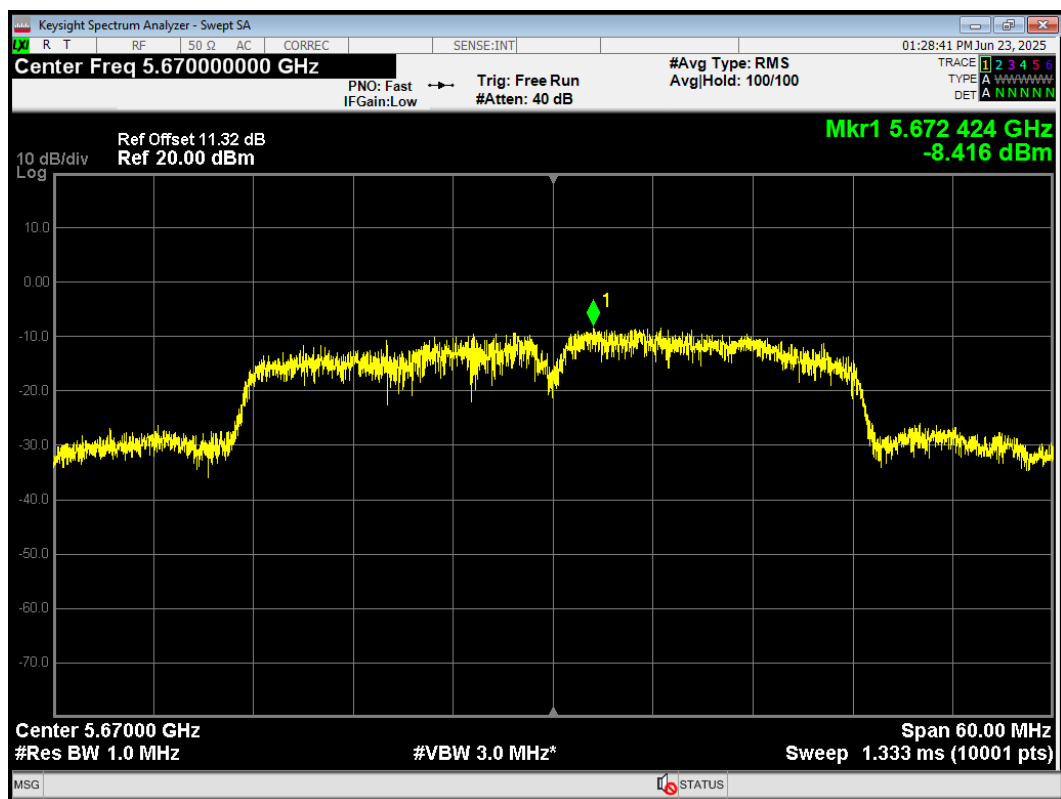
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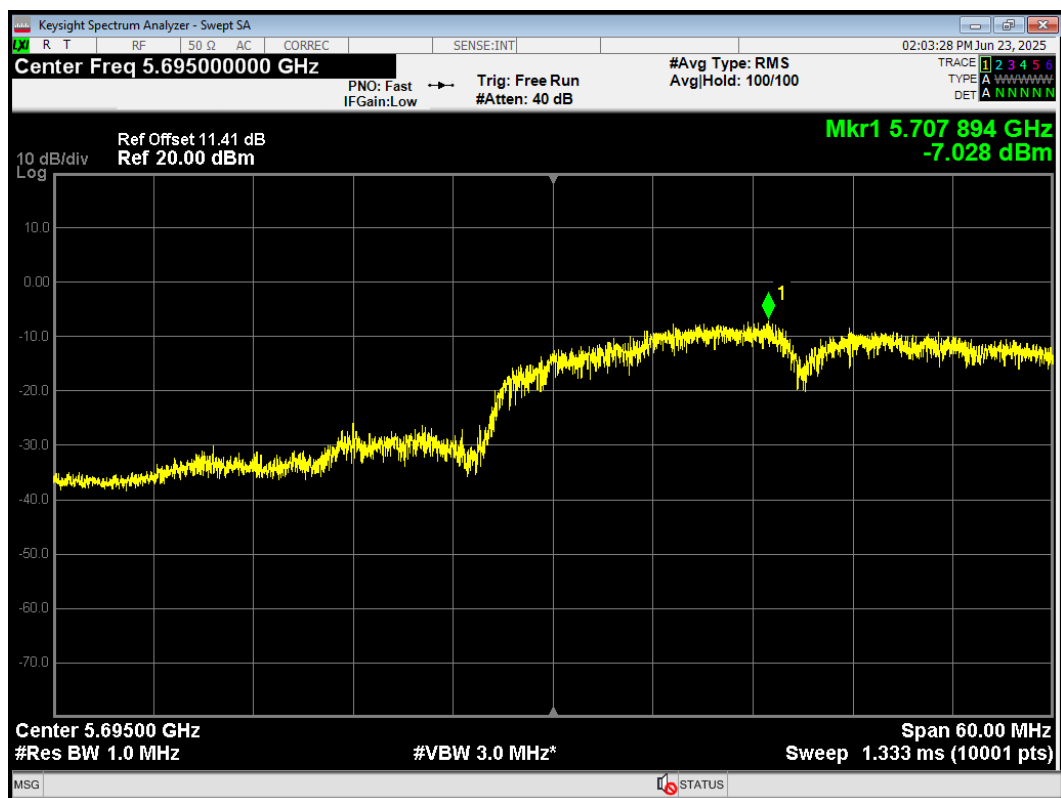
PSD NVNT 802.11n(HT40) 5550MHz Ant1



PSD NVNT 802.11n(HT40) 5670MHz Ant1

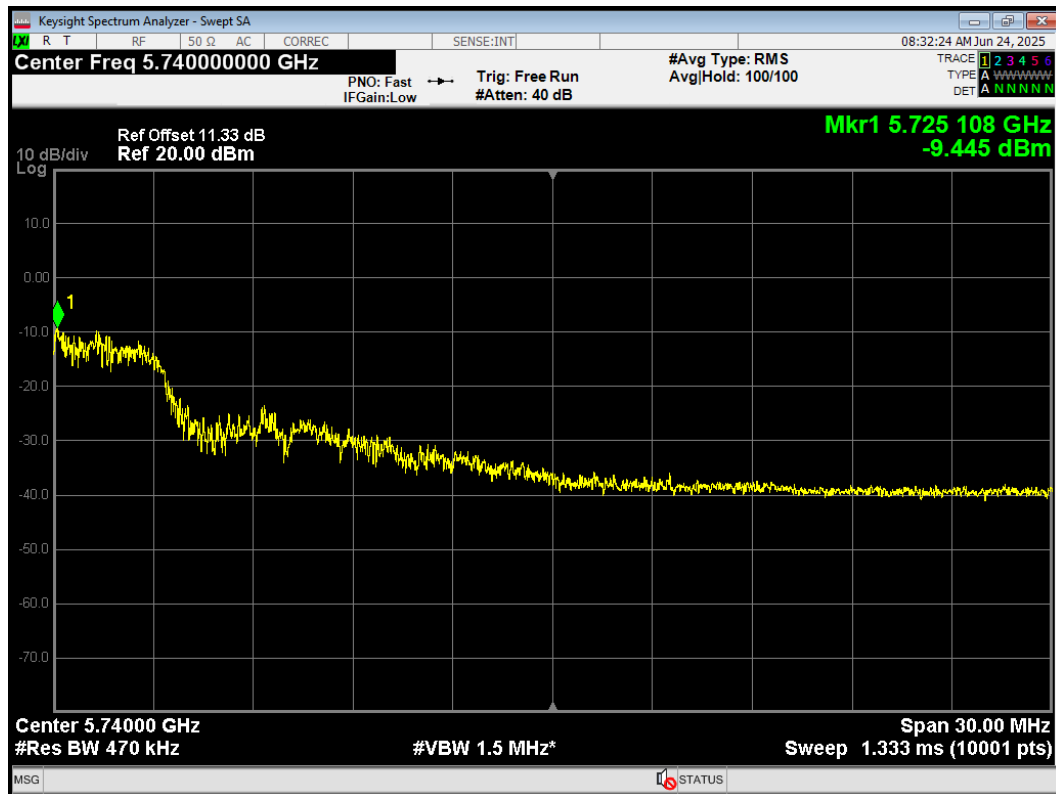


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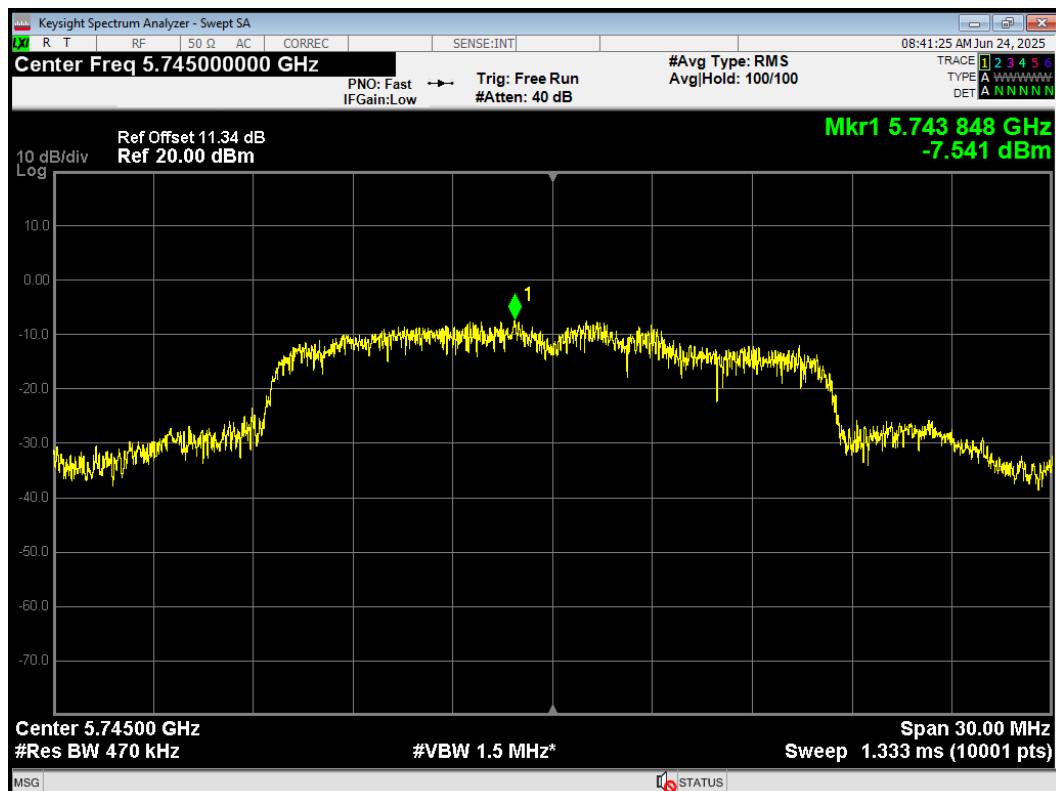


U-NII-3

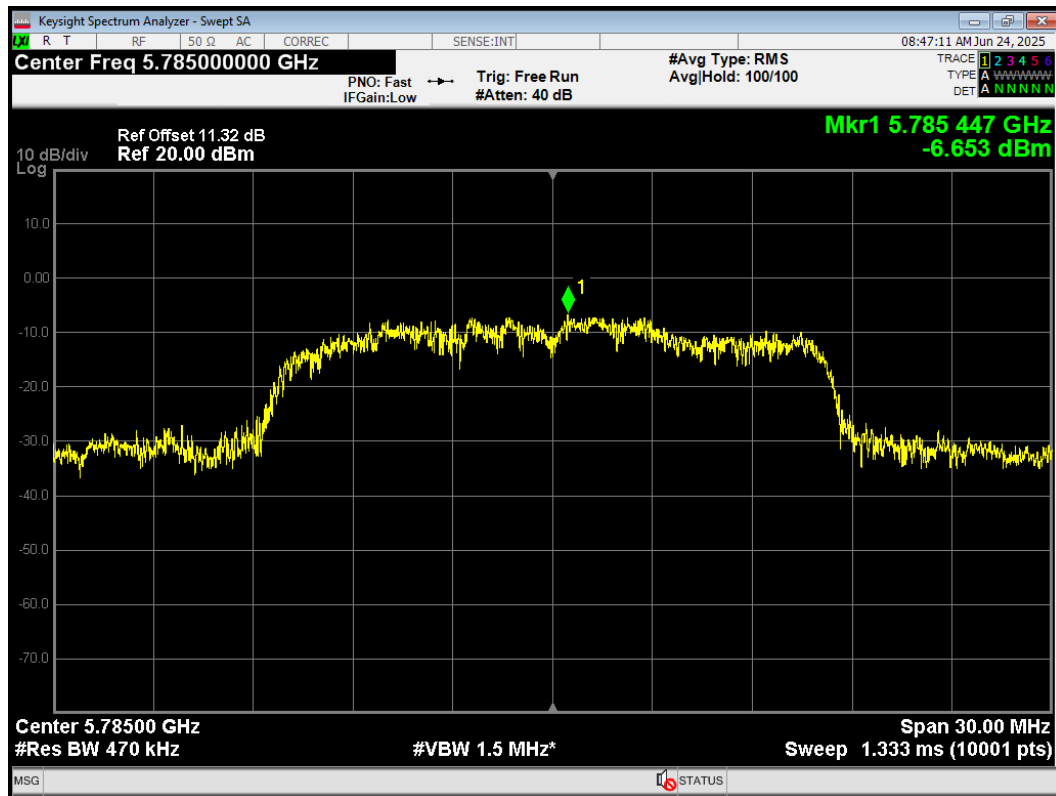
PSD 802.11a 5720MHz



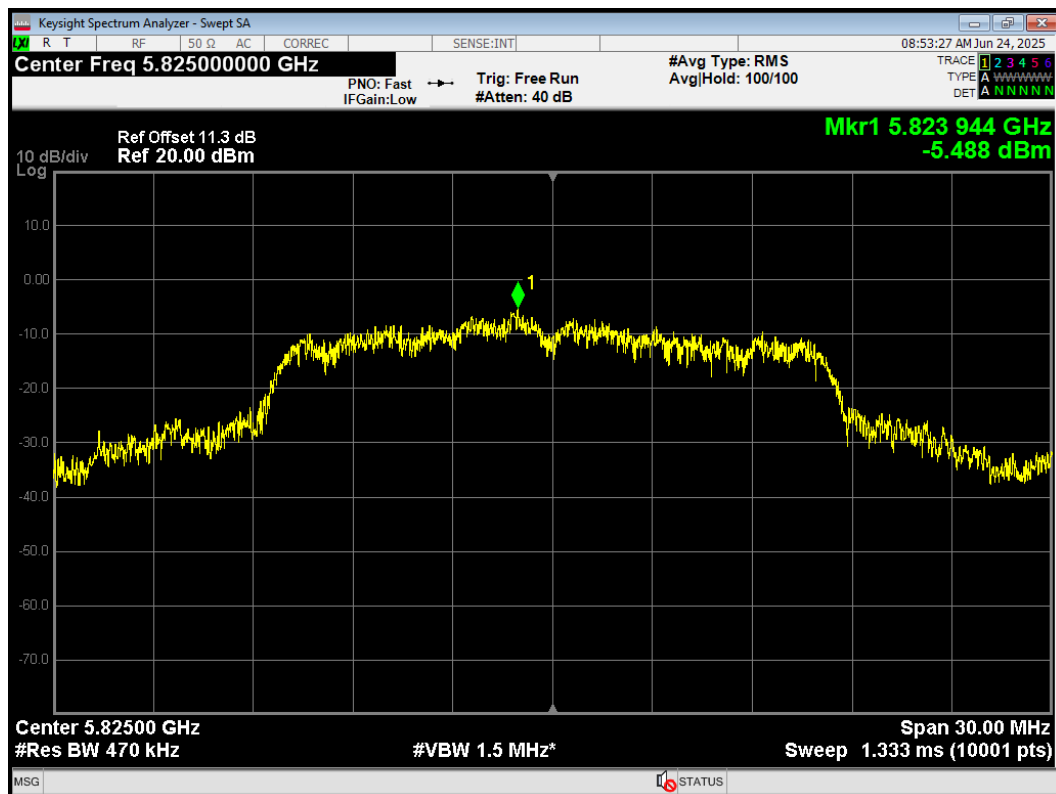
PSD 802.11a 5745MHz



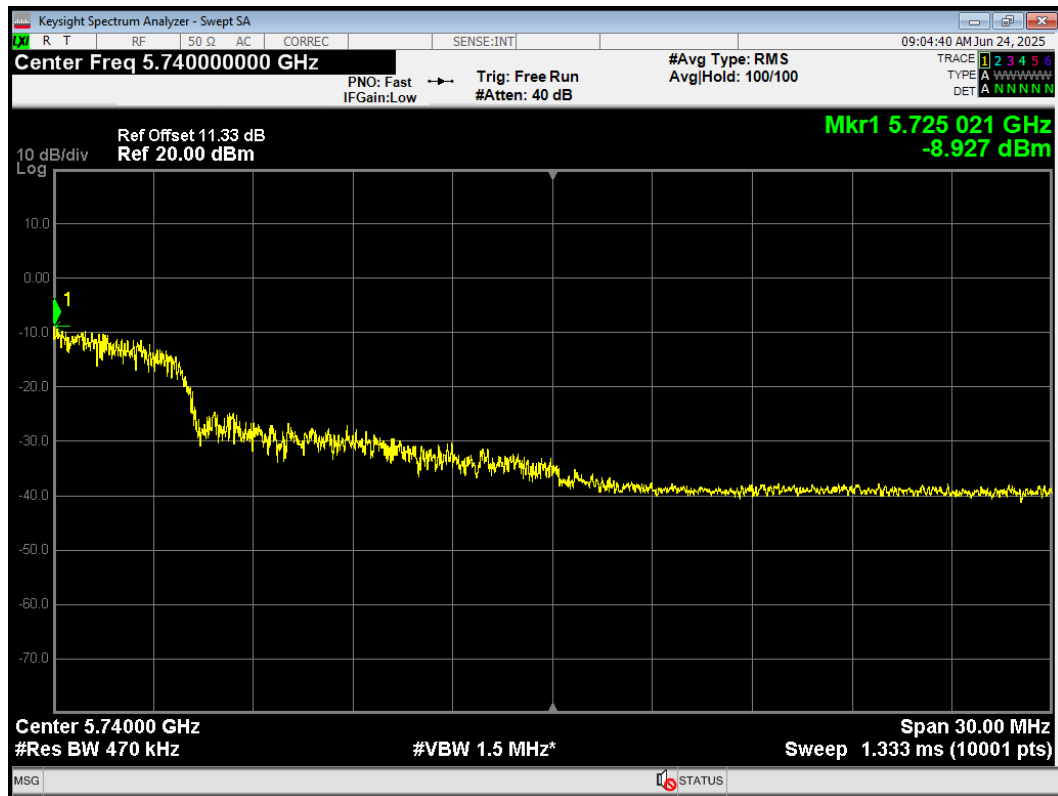
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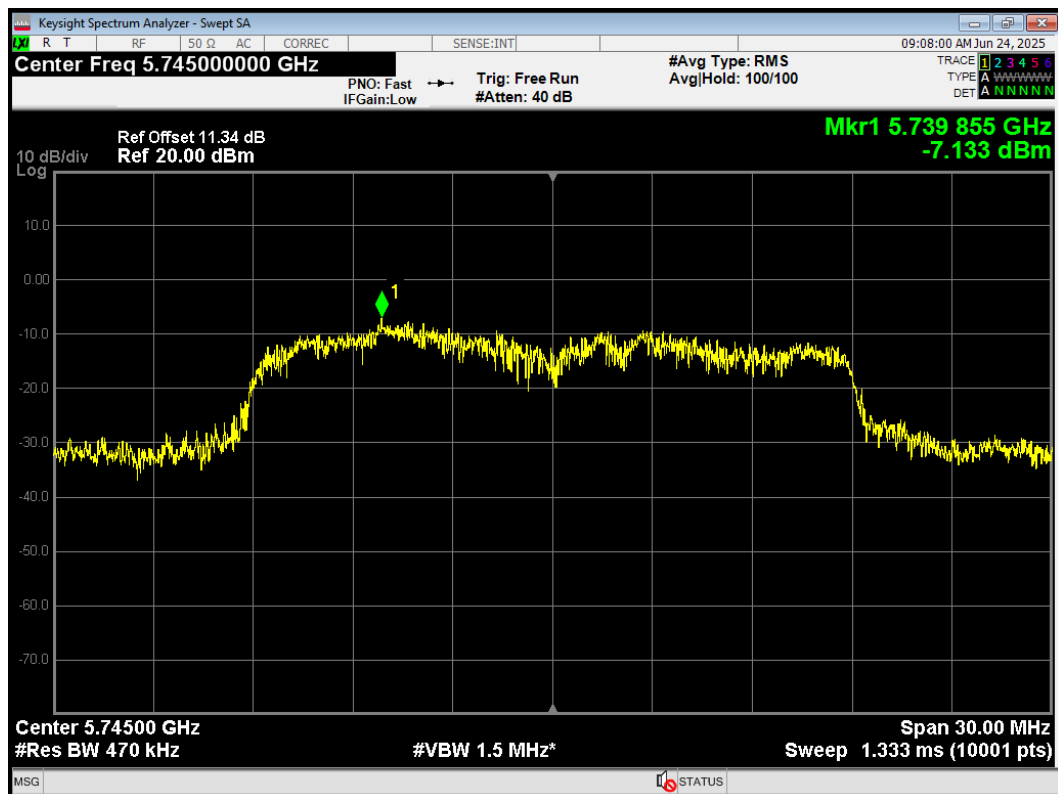
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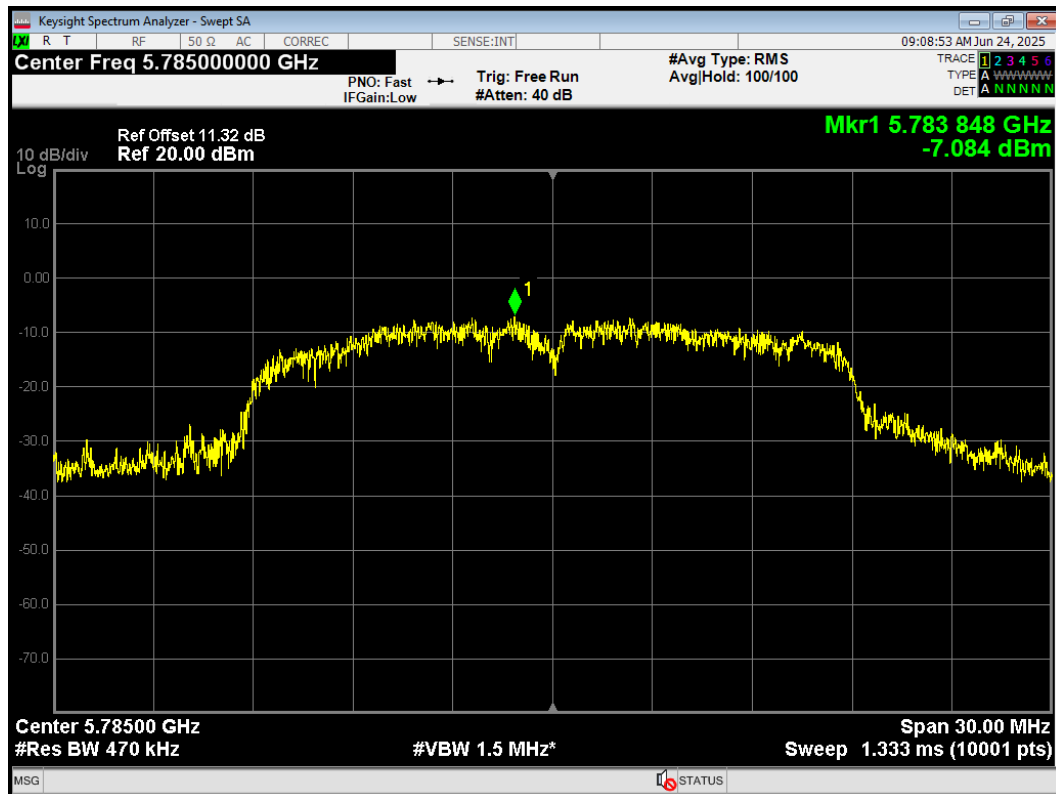
PSD 802.11ac(VHT20) 5740MHz



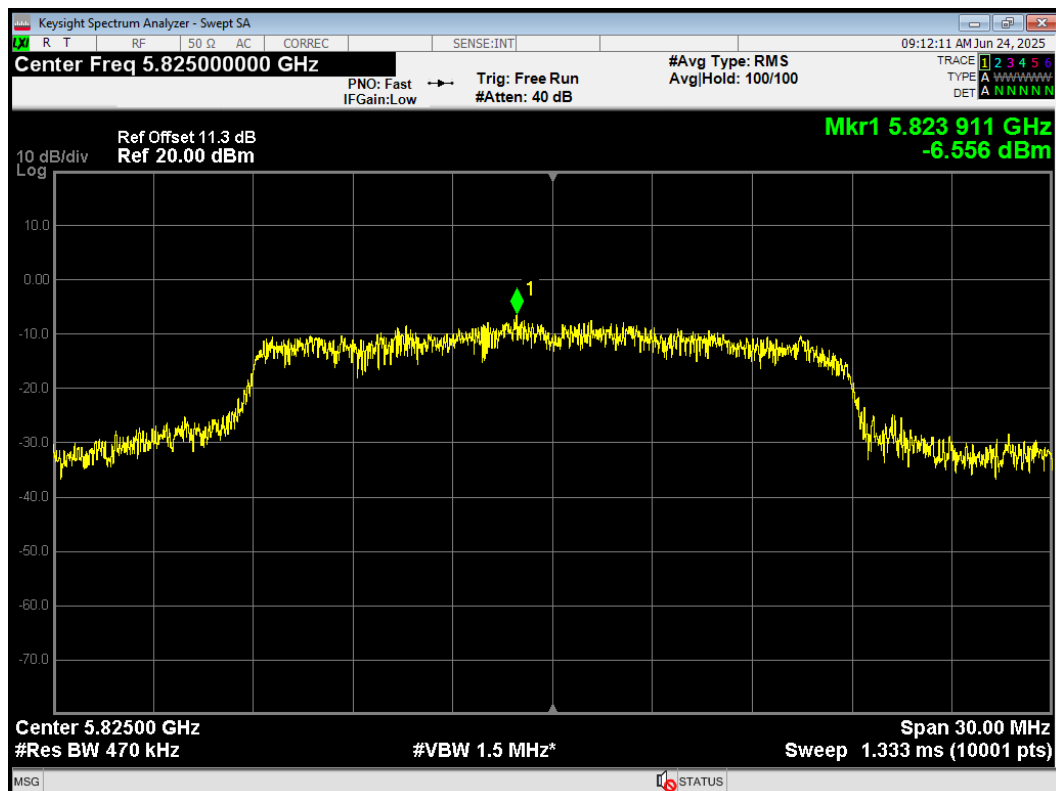
PSD 802.11ac(VHT20) 5745MHz



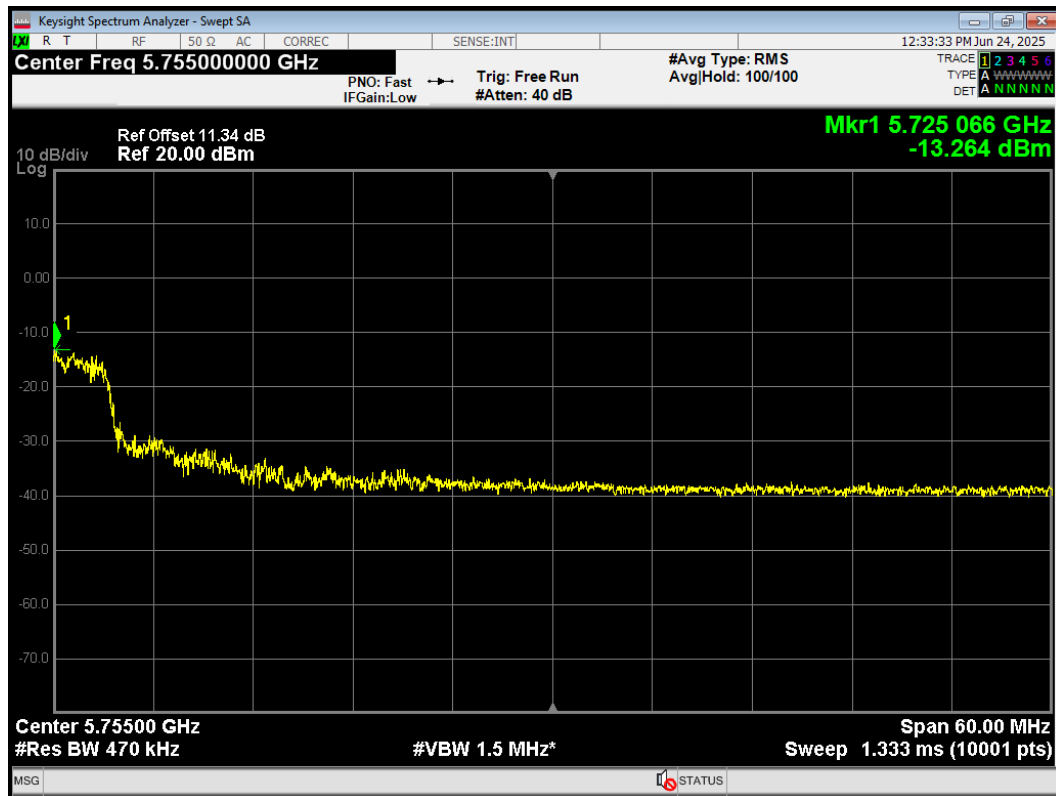
PSD 802.11ac(VHT20) 5785MHz



PSD 802.11ac(VHT20) 5825MHz



PSD 802.11ac(VHT40) 5755MHz



PSD 802.11ac(VHT40) 5755MHz

