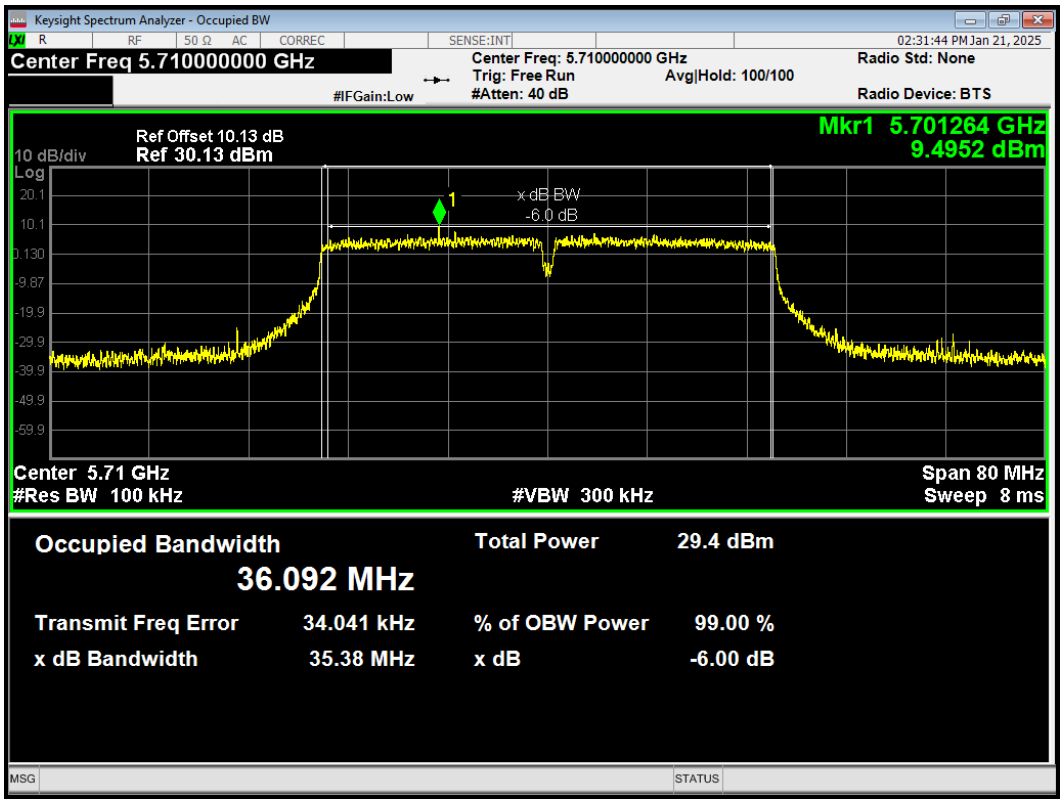
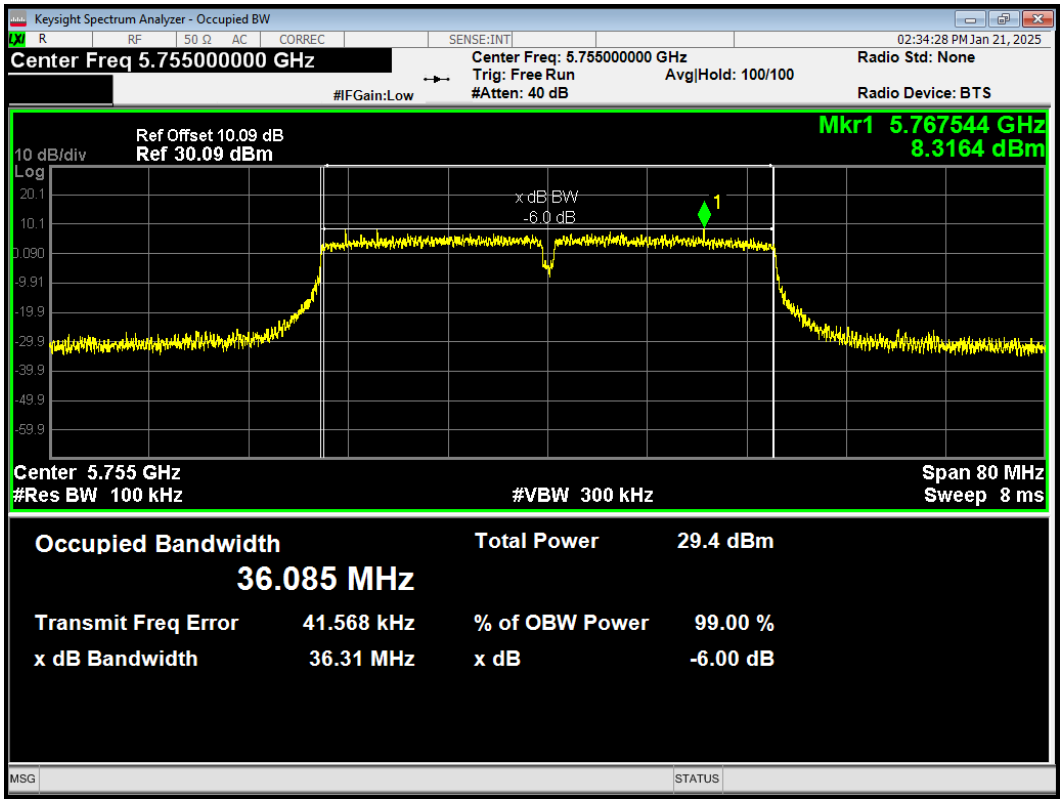
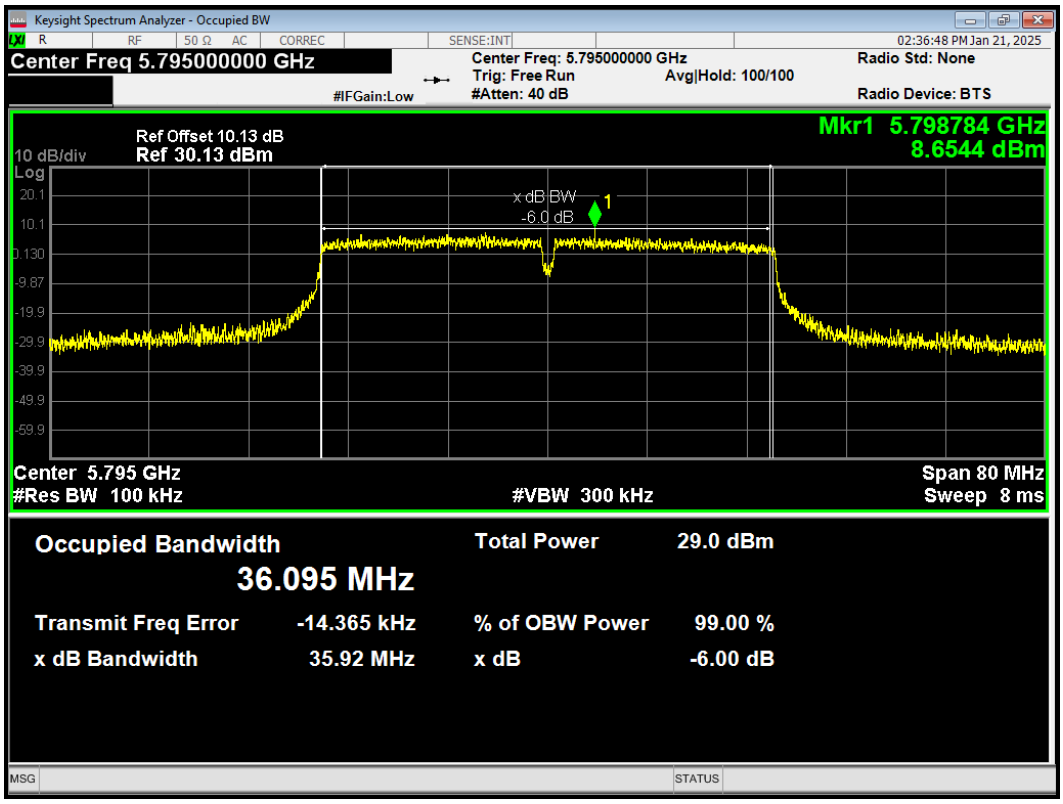
-6dB Bandwidth 802.11ac(VHT40) 5710MHz



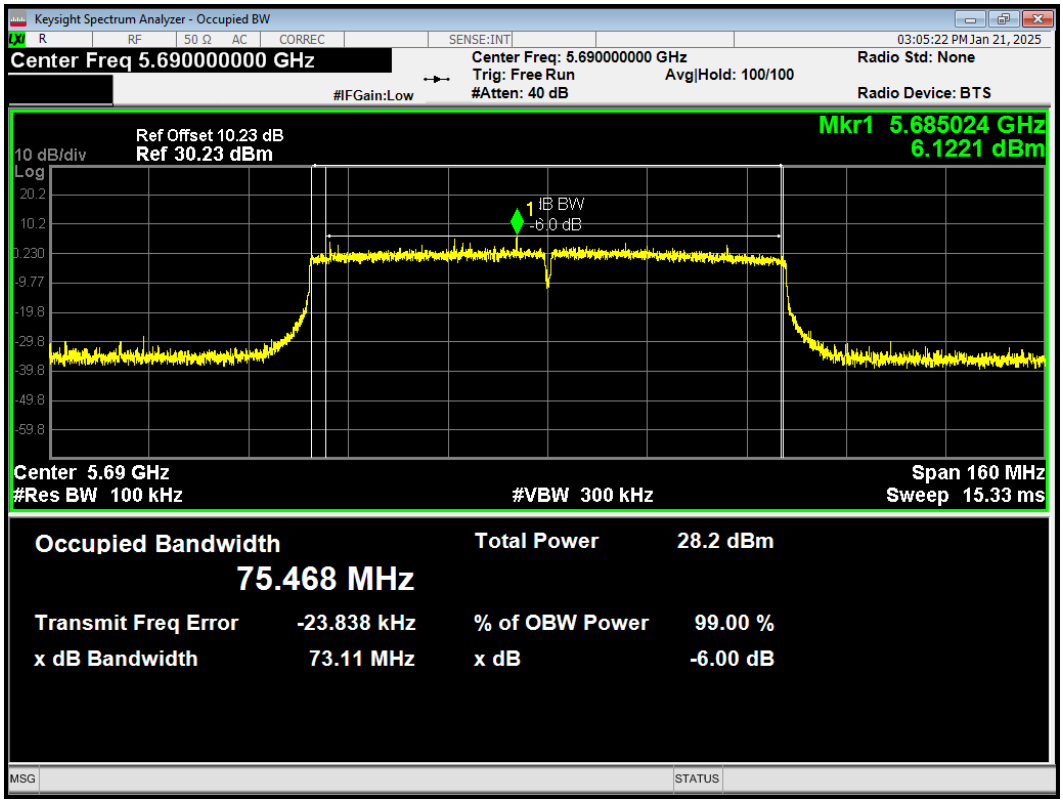
-6dB Bandwidth 802.11ac(VHT40) 5755MHz



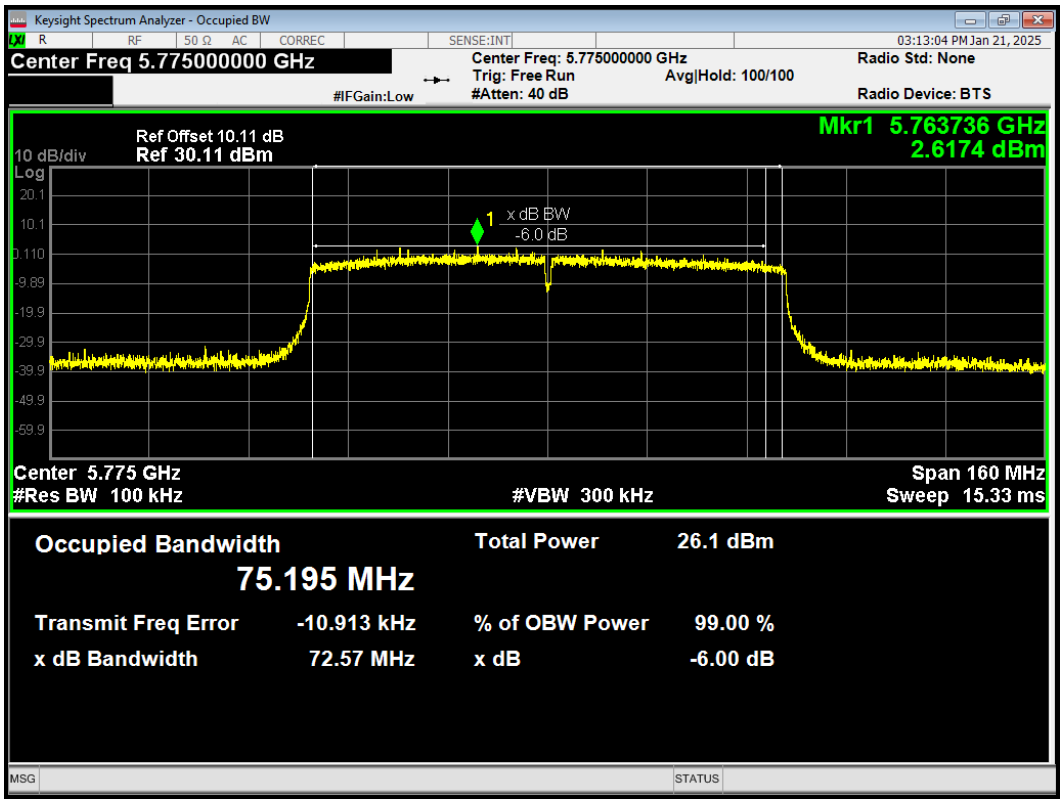
-6dB Bandwidth 802.11ac(VHT40) 5795MHz



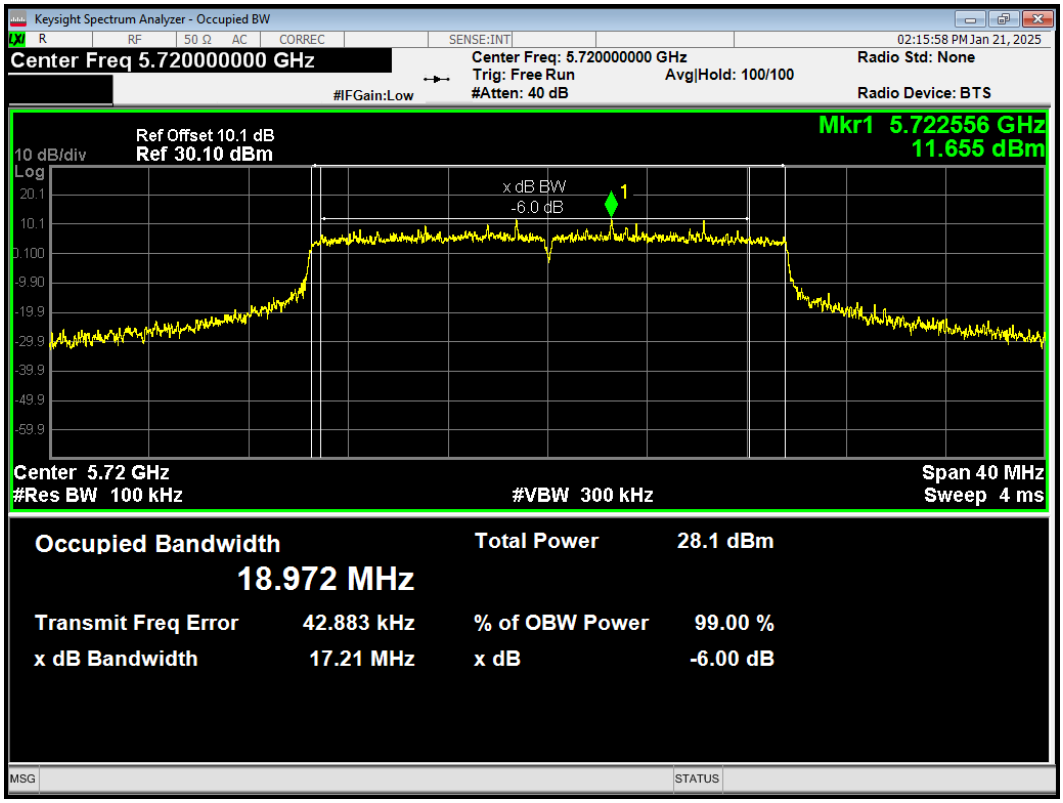
-6dB Bandwidth 802.11ac(VHT80) 5690MHz



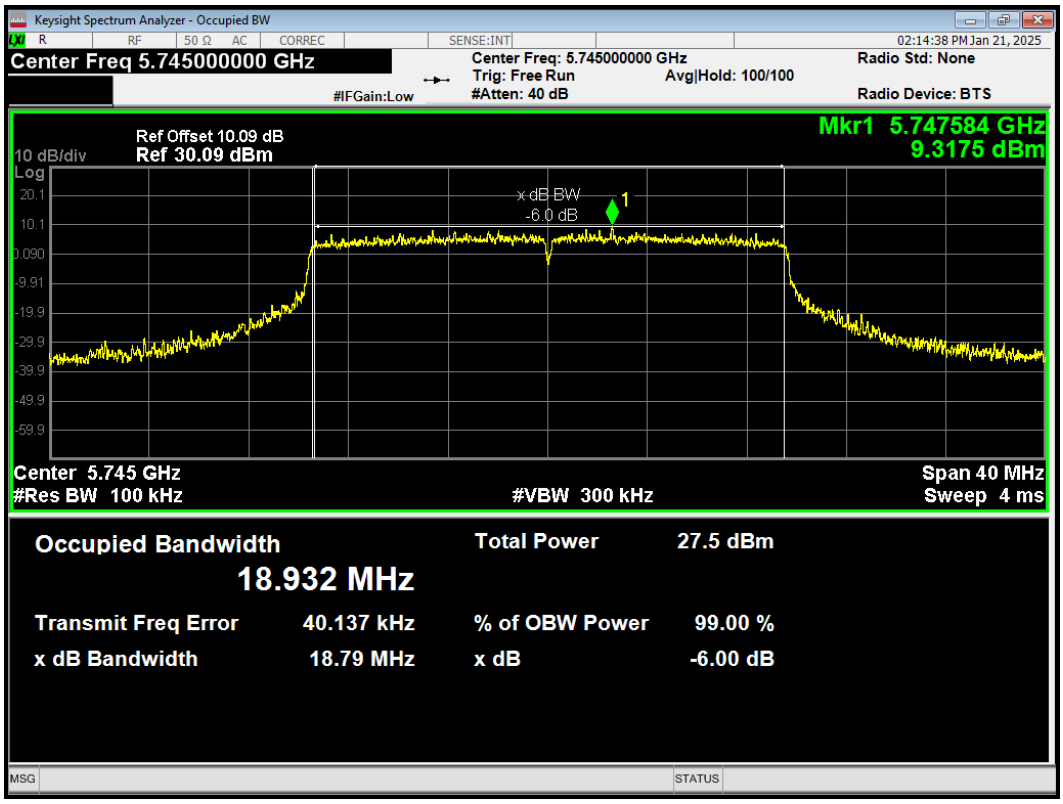
-6dB Bandwidth 802.11ac(VHT80) 5775MHz



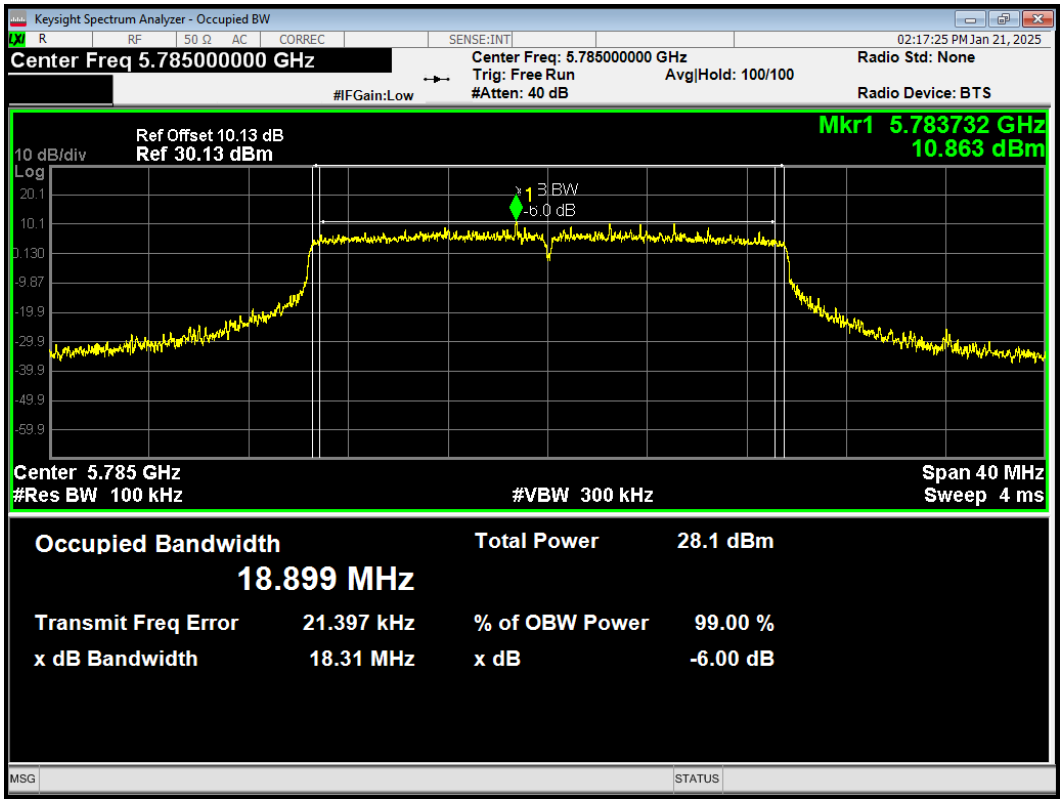
-6dB Bandwidth 802.11ax(HE20) 5720MHz



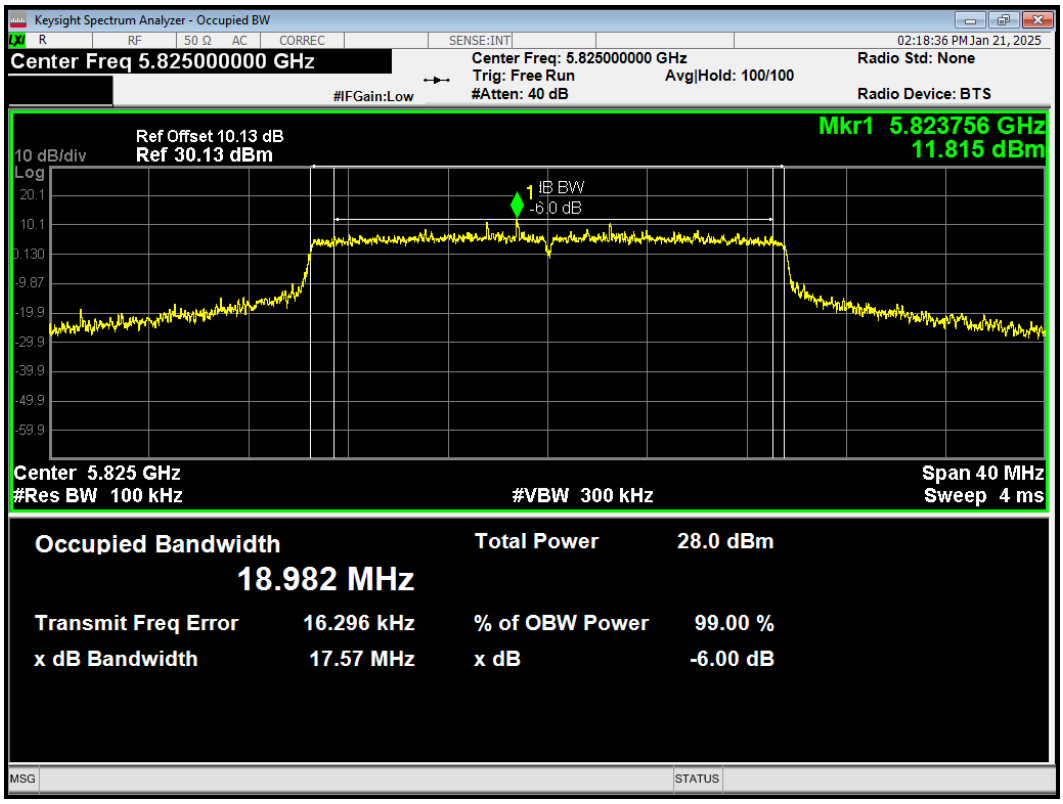
-6dB Bandwidth 802.11ax(HE20) 5745MHz



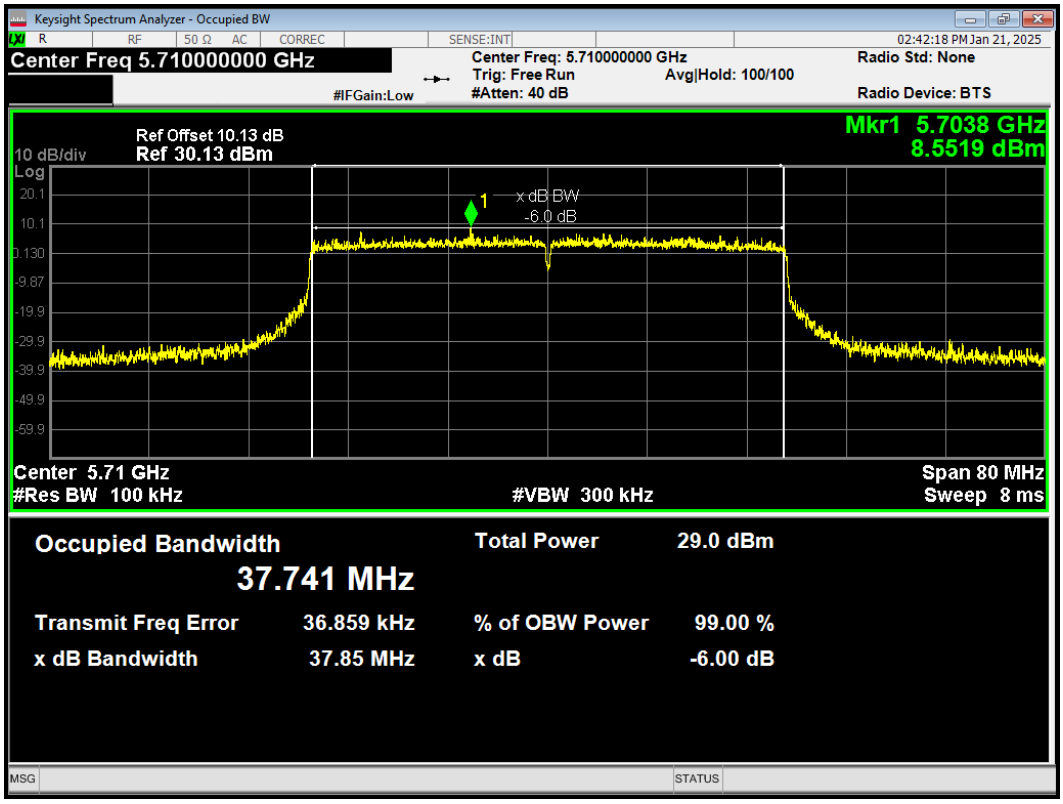
-6dB Bandwidth 802.11ax(HE20) 5785MHz



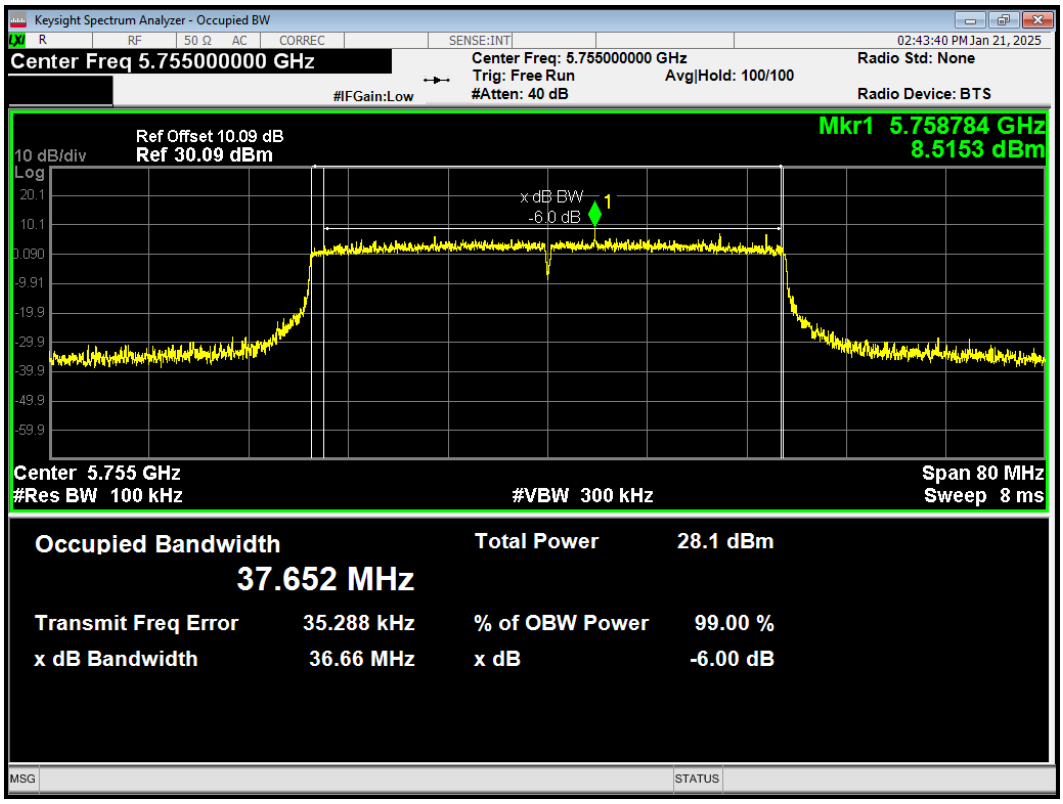
-6dB Bandwidth 802.11ax(HE20) 5825MHz



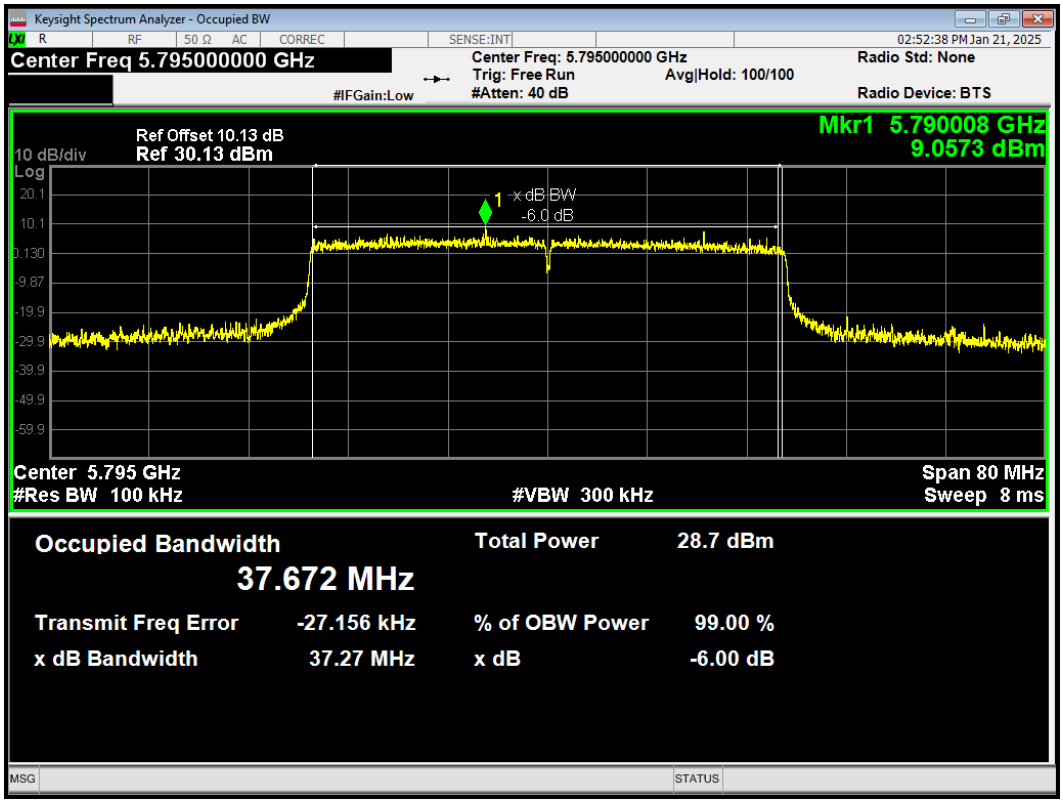
-6dB Bandwidth 802.11ax(HE40) 5710MHz



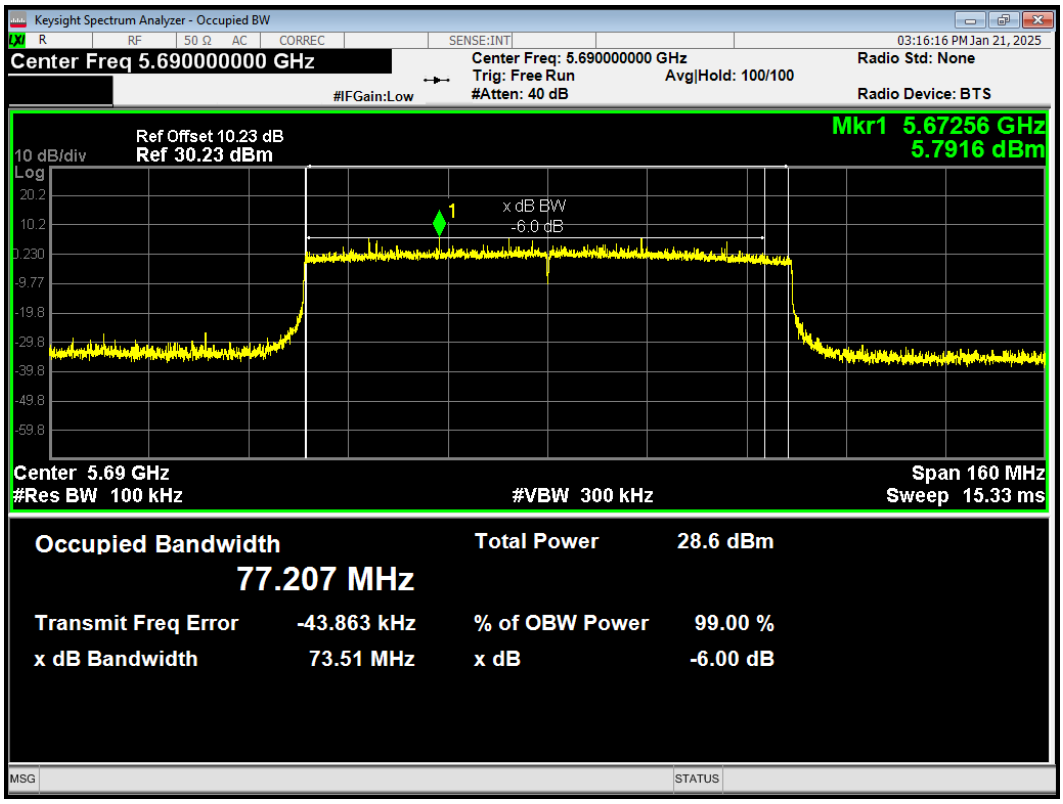
-6dB Bandwidth 802.11ax(HE40) 5755MHz



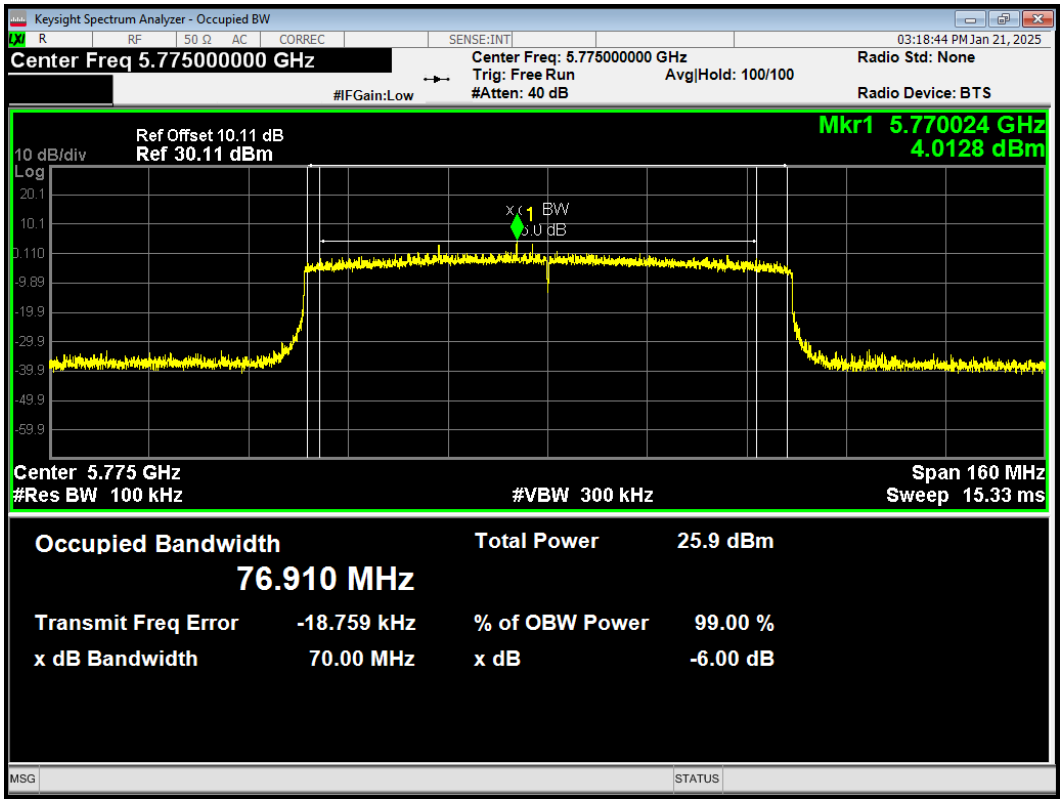
-6dB Bandwidth 802.11ax(HE40) 5795MHz



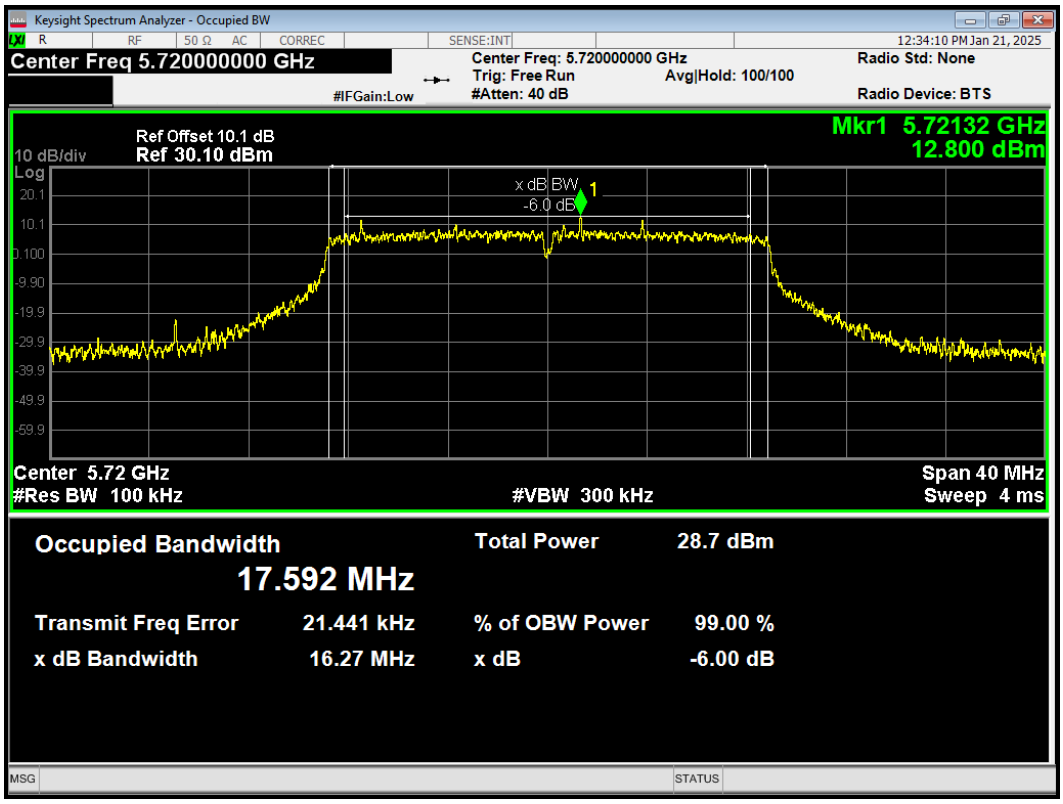
-6dB Bandwidth 802.11ax(HE80) 5690MHz



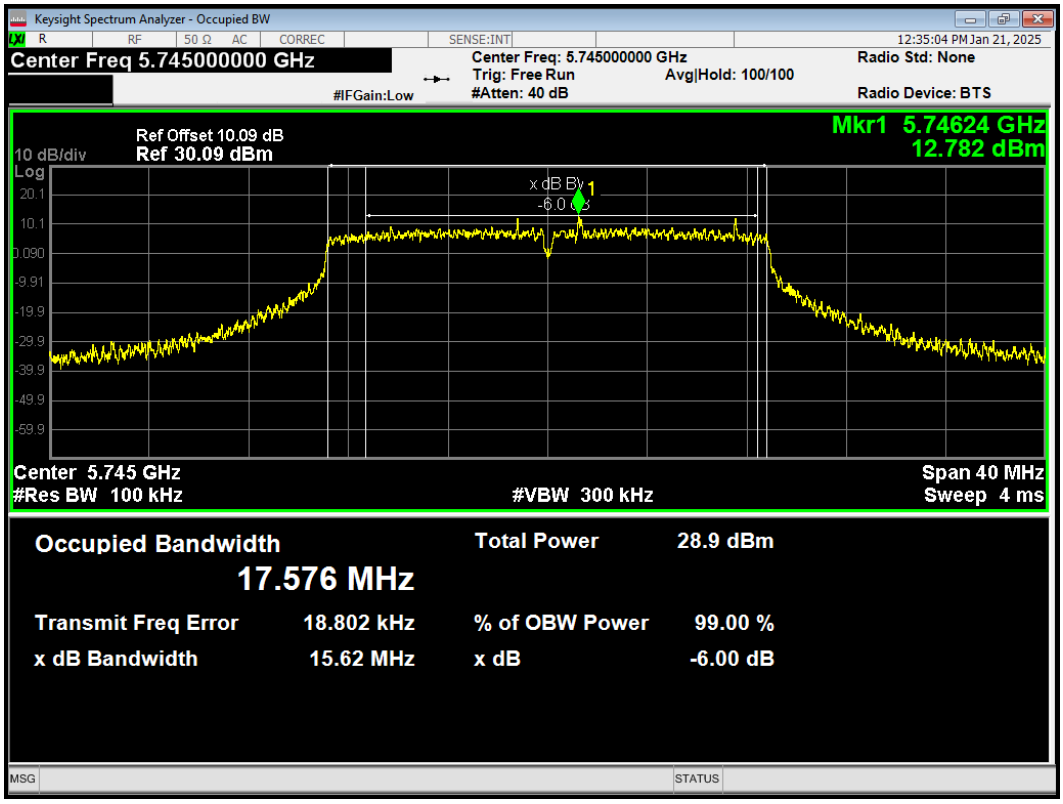
-6dB Bandwidth 802.11ax(HE80) 5775MHz



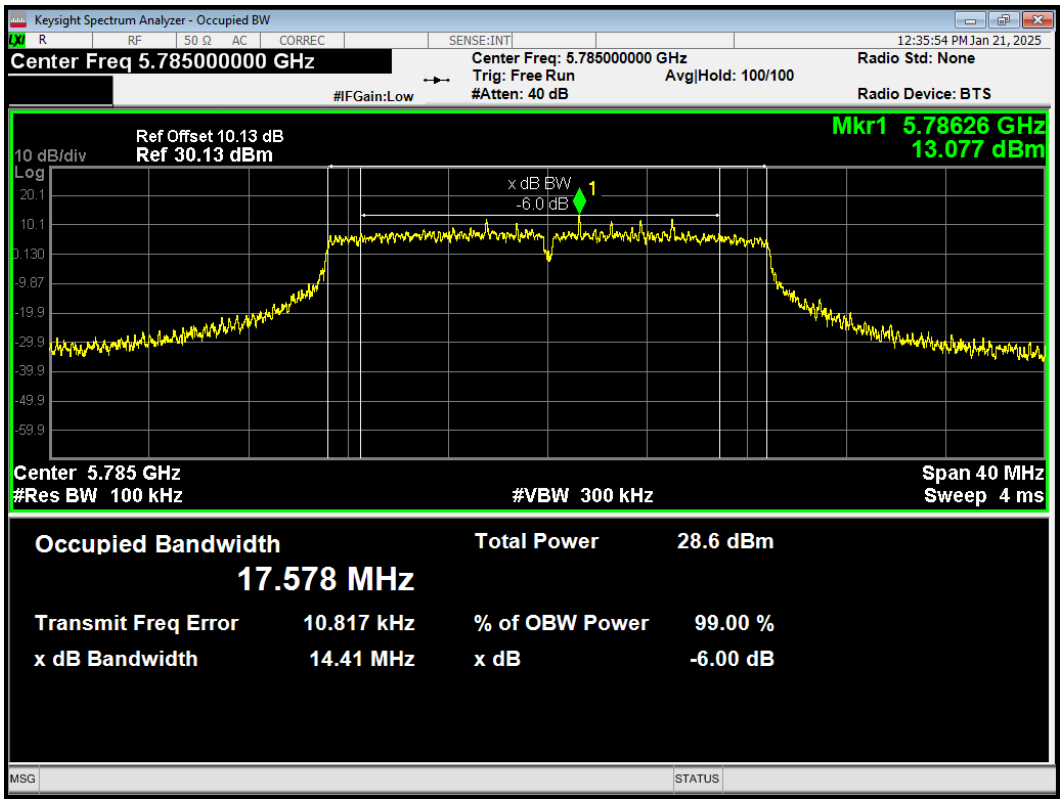
-6dB Bandwidth 802.11n(HT20) 5720MHz



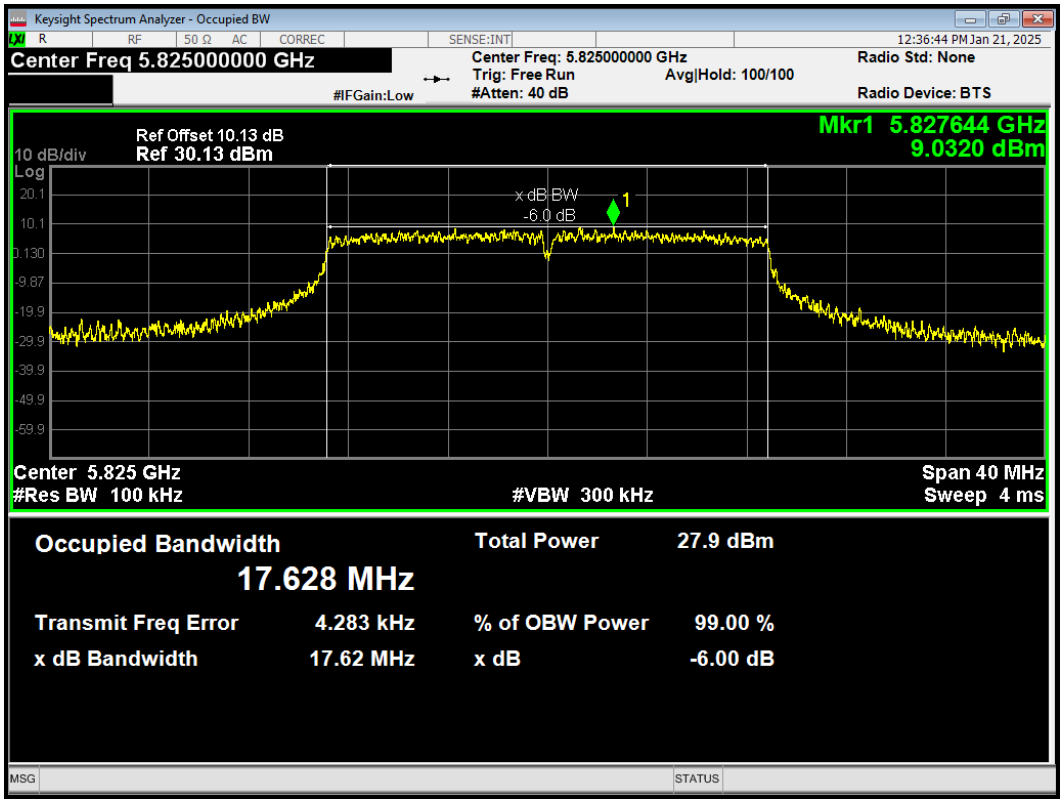
-6dB Bandwidth 802.11n(HT20) 5745MHz



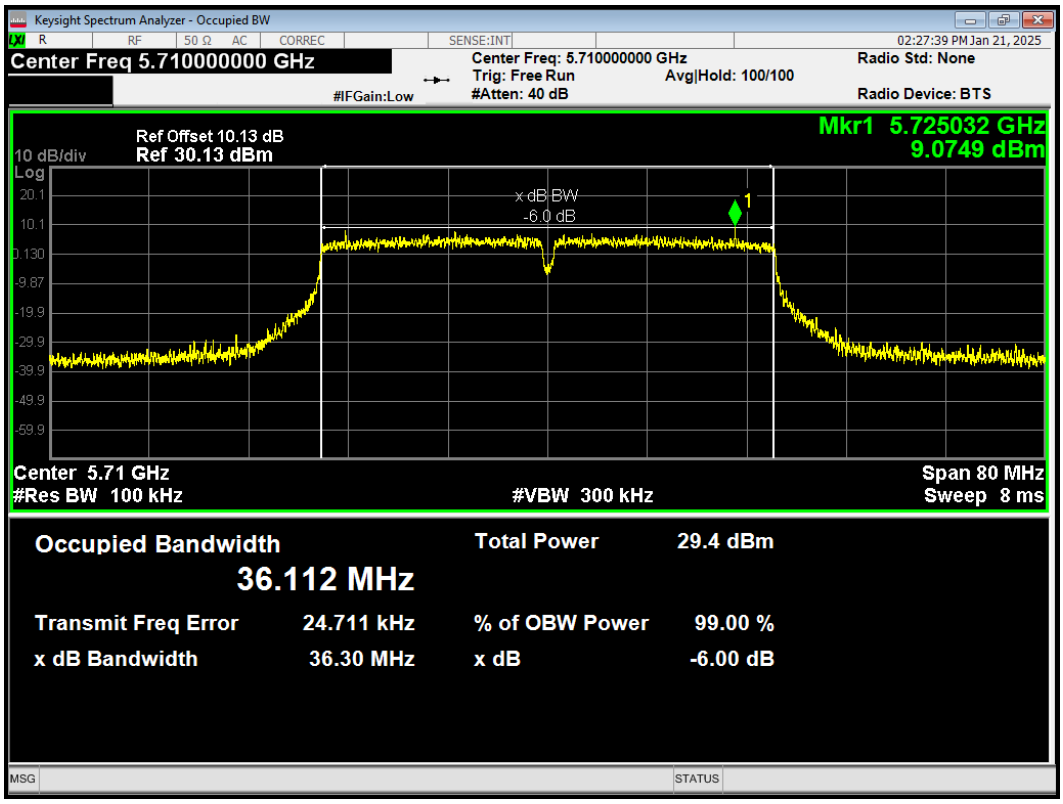
-6dB Bandwidth 802.11n(HT20) 5785MHz



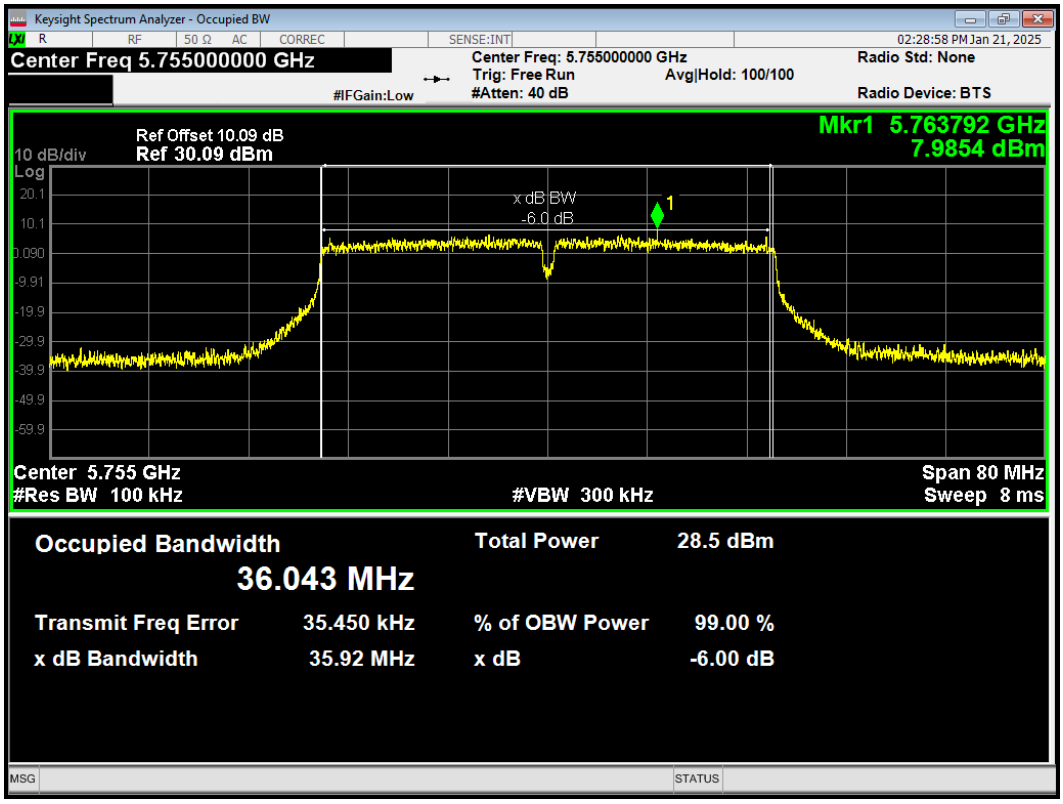
-6dB Bandwidth 802.11n(HT20) 5825MHz



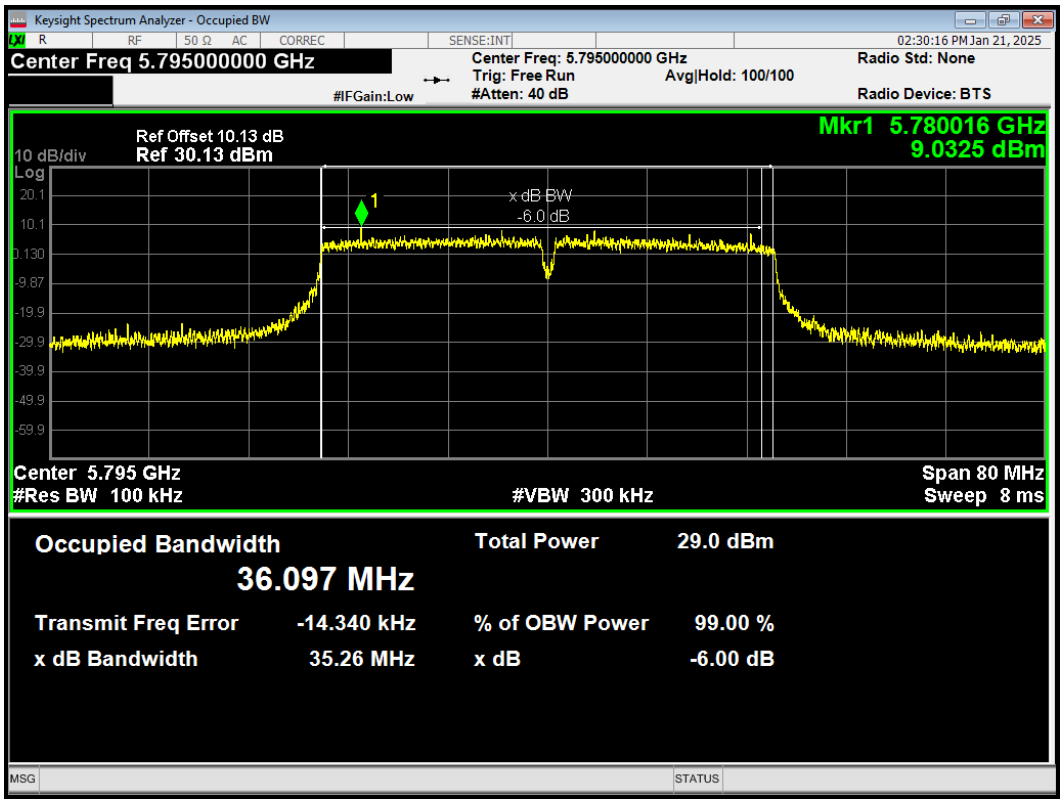
-6dB Bandwidth 802.11n(HT40) 5710MHz



-6dB Bandwidth 802.11n(HT40) 5755MHz



-6dB Bandwidth 802.11n(HT40) 5795MHz



5.2. Average Power Output

Ambient condition

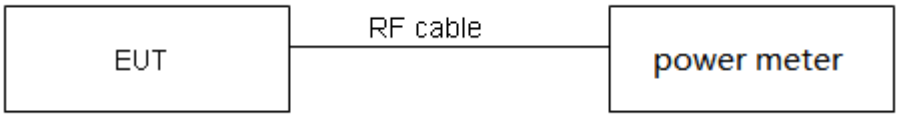
Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

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

The conducted Power 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)
(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	0.925	0.340
802.11n HT20	0..801	0.960
802.11n HT40	0.800	0.970
802.11ac VHT20	0.801	0.960
802.11ac VHT40	0.800	0.970
802.11ac VHT80	0.797	0.990
802.11ax HE20	0.802	0.960
802.11ax HE40	0.802	0.960
802.11ax HE80	0.798	0.980
Note: when Duty cycle⩾0.98, Duty cycle correction Factor not required.		

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Network Standards	Channel/ Frequency (MHz)	Power Index		
		SISO Antenna 1	SISO Antenna 2	MIMO
802.11a	36/5180	23	23	23
	40/5200	24	24	23
	48/5240	24	24	22
802.11n HT20	36/5180	23	23	23
	40/5200	24	24	23
	48/5240	24	24	23
802.11n HT40	38/5190	18	18	18
	46/5230	24	24	24
802.11ac VHT20	36/5180	24	24	23
	40/5200	24	24	23
	48/5240	24	24	23
802.11ac VHT40	38/5190	24	24	24
	46/5230	24	24	24
802.11ac VHT80	42/5210	19	19	19
802.11ax HE20	36/5180	22	22	22
	40/5200	24	24	23
	48/5240	24	24	24
802.11ax HE40	38/5190	21	21	21
	46/5230	24	24	24
802.11ax HE80	42/5210	17	17	17

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Network Standards	Channel/ Frequency (MHz)	Power Index		
		SISO Antenna 1	SISO Antenna 2	MIMO
802.11a	52/5260	22	22	16
	60/5300	22	22	16
	64/5320	22	22	16
802.11n T20	52/5260	23	22	16
	60/5300	23	23	17
	64/5320	22	23	17
802.11n HT40	54/5270	24	23	19
	62/5310	19	19	19
802.11ac VHT20	52/5260	22	22	17
	60/5300	22	23	17
	64/5320	22	23	17
802.11ac VHT40	54/5270	24	23	19
	62/5310	24	24	19
802.11ac VHT80	58/5290	19	19	19
802.11ax HE20	52/5260	22	22	17
	60/5300	22	23	17
	64/5320	22	23	17
802.11ax HE40	54/5270	24	24	19
	62/5310	22	22	19
802.11ax HE80	58/5290	17	17	17

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Network Standards	Channel/ Frequency (MHz)	Power Index		
		SISO Antenna 1	SISO Antenna 2	MIMO
802.11a	100/5500	22	20	16
	120/5600	21	20	16
	140/5700	20	20	16
	144/5720	21	21	16
802.11n HT20	100/5500	22	21	17
	120/5600	21	21	17
	140/5700	17	17	17
	144/5720	21	21	17
802.11n HT40	102/5510	15	15	15
	118/5590	24	23	19
	134/5670	23	23	19
	142/5710	24	24	19
802.11ac VHT20	100/5500	22	21	17
	120/5600	22	21	16
	140/5700	22	21	16
	144/5720	22	22	17
802.11ac VHT40	102/5510	24	24	19
	118/5590	24	23	19
	134/5670	24	24	19
	142/5710	24	24	19
802.11ac VHT80	122/5610	23	23	21
	138/5690	24	24	21
802.11ax HE20	100/5500	22	21	17
	120/5600	22	21	17
	140/5700	17	17	17
	144/5720	22	22	17
802.11ax HE40	102/5510	15	15	15
	118/5590	24	24	19
	134/5670	20	20	20
	142/5710	24	24	20
802.11ax HE80	122/5610	22	22	21
	138/5690	24	24	21

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Network Standards	Channel/ Frequency (MHz)	Power Index		
		SISO Antenna 1	SISO Antenna 2	MIMO
802.11a	144/5720	24	24	24
	149/5745	24	24	24
	157/5785	24	24	24
	165/5825	24	24	24
802.11n HT20	144/5720	24	24	24
	149/5745	24	24	24
	157/5785	24	24	24
	165/5825	24	24	24
802.11n HT40	142/5720	24	24	24
	151/5755	23	23	23
	159/5795	24	24	24
802.11ac VHT20	144/5720	24	24	24
	149/5745	24	24	24
	157/5785	24	24	24
	165/5825	24	24	24
802.11ac VHT40	142/5710	24	24	24
	151/5755	24	24	24
	159/5795	24	24	24
802.11ac VHT80	138/5690	24	24	24
	155/5775	21	21	21
802.11ax HE20	144/5720	24	24	24
	149/5745	24	24	24
	157/5785	24	24	24
	165/5825	24	24	24
802.11ax HE40	142/5710	24	24	24
	151/5755	23	23	23
	159/5795	24	24	24
802.11ax HE80	138/5690	24	24	24
	155/5775	21	21	21

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	21.51	24.33 >24	24.00
		60/5300	20.34	24.08 >24	24.00
		64/5320	19.81	23.97 <24	23.97
	802.11n HT20	52/5260	21.11	24.25 >24	24.00
		60/5300	22.71	24.56 >24	24.00
		64/5320	21.15	24.25 >24	24.00
	802.11n HT40	54/5270	41.21	27.15 >24	24.00
		62/5310	40.59	27.08 >24	24.00
	802.11ac VHT20	52/5260	22.82	24.58 >24	24.00
		60/5300	21.13	24.25 >24	24.00
		64/5320	21.18	24.26 >24	24.00
	802.11ac VHT40	54/5270	40.85	27.11 >24	24.00
		62/5310	40.51	27.08 >24	24.00
	802.11ac VHT80	58/5290	82.13	30.14 >24	24.00
	802.11ax HE20	52/5260	21.19	24.26 >24	24.00
		60/5300	21.92	24.41 >24	24.00
		64/5320	21.63	24.35 >24	24.00
	802.11ax HE40	54/5270	40.58	27.08 >24	24.00
		62/5310	41.08	27.14 >24	24.00
	802.11ax HE80	58/5290	81.61	30.12 >24	24.00
U-NII-2C	802.11a	100/5500	22.53	24.53 >24	24.00
		120/5600	21.19	24.26 >24	24.00
		140/5700	20.21	24.06 >24	24.00
		144/5720	21.09	24.24 >24	24.00
	802.11n HT20	100/5500	20.98	24.22 >24	24.00
		120/5600	19.97	24.00 =24	24.00
		140/5700	19.74	23.95 <24	23.95
		144/5720	20.14	24.04 >24	24.00
	802.11n HT40	102/5510	40.85	27.11 >24	24.00
		118/5590	40.38	27.06 >24	24.00
		134/5670	40.60	27.09 >24	24.00
		142/5710	40.76	27.10 >24	24.00
	802.11ac VHT20	100/5500	19.94	24.00 =24	24.00
		120/5600	20.15	24.04 >24	24.00
		140/5700	20.04	24.02 >24	24.00
		144/5720	19.81	23.97 >24	23.97

	802.11ac VHT40	102/5510	40.75	27.10 >24	24.00
		118/5590	40.52	27.08 >24	24.00
		134/5670	40.67	27.09 >24	24.00
		142/5710	41.47	27.18 >24	24.00
	802.11ac VHT80	122/5610	81.26	30.10 >24	24.00
		138/5690	82.76	30.18 >24	24.00
	802.11ax HE20	100/5500	20.84	24.19 >24	24.00
		120/5600	21.83	24.39 >24	24.00
		140/5700	21.66	24.36 >24	24.00
		144/5720	21.58	24.34 >24	24.00
	802.11ax HE40	102/5510	40.17	27.04 >24	24.00
		118/5590	40.70	27.10 >24	24.00
		134/5670	41.08	27.14 >24	24.00
		142/5710	41.11	27.14 >24	24.00
	802.11ax HE80	122/5610	82.20	30.15 >24	24.00
		138/5690	82.51	30.17 >24	24.00
Note: 250mW=24dBm					

SISO Antenna 1

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	20.61	20.95	30	PASS
	40/5200	22.18	22.52	30	PASS
	48/5240	22.11	22.45	30	PASS
802.11n HT20	36/5180	20.47	21.43	30	PASS
	40/5200	21.16	22.12	30	PASS
	48/5240	21.36	22.32	30	PASS
802.11n HT40	38/5190	16.64	17.61	30	PASS
	46/5230	22.17	23.14	30	PASS
802.11ac VHT20	36/5180	21.30	22.26	30	PASS
	40/5200	21.26	22.22	30	PASS
	48/5240	21.17	22.13	30	PASS
802.11ac VHT40	38/5190	22.59	23.56	30	PASS
	46/5230	22.47	23.44	30	PASS
802.11ac VHT80	42/5210	17.20	18.19	30	PASS
802.11ax HE20	36/5180	19.37	20.33	30	PASS
	40/5200	21.06	22.02	30	PASS
	48/5240	21.32	22.28	30	PASS
802.11ax HE40	38/5190	18.69	19.65	30	PASS
	46/5230	22.43	23.39	30	PASS
802.11ax HE80	42/5210	15.27	16.25	30	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	20.86	21.20	24.00	PASS
	60/5300	20.90	21.24	24.00	PASS
	64/5320	20.95	21.29	23.97	PASS
802.11n HT20	52/5260	20.71	21.67	24.00	PASS
	60/5300	20.67	21.63	24.00	PASS
	64/5320	20.24	21.20	24.00	PASS
802.11n HT40	54/5270	22.82	23.79	24.00	PASS
	62/5310	17.61	18.58	24.00	PASS
802.11ac VHT20	52/5260	19.70	20.66	24.00	PASS
	60/5300	19.56	20.52	24.00	PASS
	64/5320	19.42	20.38	24.00	PASS
802.11ac VHT40	54/5270	22.56	23.53	24.00	PASS
	62/5310	22.95	23.92	24.00	PASS
802.11ac VHT80	58/5290	17.67	18.66	24.00	PASS
802.11ax HE20	52/5260	19.60	20.56	24.00	PASS
	60/5300	19.92	20.88	24.00	PASS
	64/5320	19.49	20.45	24.00	PASS
802.11ax HE40	54/5270	22.23	23.19	24.00	PASS
	62/5310	20.11	21.07	24.00	PASS
802.11ax HE80	58/5290	15.65	16.63	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	20.88	21.22	24.00	PASS
	120/5600	20.37	20.71	24.00	PASS
	140/5700	19.55	19.89	24.00	PASS
	144/5720	19.71	20.05	24.00	PASS
802.11n HT20	100/5500	19.57	20.53	24.00	PASS
	120/5600	19.76	20.72	24.00	PASS
	140/5700	16.17	17.13	23.95	PASS
	144/5720	19.03	19.99	24.00	PASS
802.11n HT40	102/5510	13.61	14.58	24.00	PASS
	118/5590	22.84	23.81	24.00	PASS
	134/5670	21.48	22.45	24.00	PASS
	142/5710	22.01	22.98	24.00	PASS
802.11ac VHT20	100/5500	19.91	20.87	24.00	PASS
	120/5600	20.04	21.00	24.00	PASS
	140/5700	20.16	21.12	24.00	PASS
	144/5720	19.35	20.32	23.97	PASS
802.11ac VHT40	102/5510	22.17	23.14	24.00	PASS
	118/5590	22.30	23.27	24.00	PASS
	134/5670	19.74	20.71	24.00	PASS
	142/5710	22.30	23.27	24.00	PASS
802.11ac VHT80	122/5610	21.27	22.26	24.00	PASS
	138/5690	21.12	22.11	24.00	PASS
802.11ax HE20	100/5500	19.18	20.14	24.00	PASS
	120/5600	19.43	20.39	24.00	PASS
	140/5700	14.77	15.73	24.00	PASS
	144/5720	18.48	19.44	24.00	PASS
802.11ax HE40	102/5510	13.39	14.35	24.00	PASS
	118/5590	22.38	23.34	24.00	PASS
	134/5670	18.51	19.47	24.00	PASS
	142/5710	21.50	22.46	24.00	PASS
802.11ax HE80	122/5610	19.95	20.93	24.00	PASS
	138/5690	21.65	22.63	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

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Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	144/5720	15.51	15.85	30	PASS
	149/5745	22.91	23.25	30	PASS
	157/5785	22.37	22.71	30	PASS
	165/5825	21.92	22.26	30	PASS
802.11n HT20	144/5720	14.78	15.74	30	PASS
	149/5745	21.76	22.72	30	PASS
	157/5785	21.64	22.60	30	PASS
	165/5825	21.14	22.10	30	PASS
802.11n HT40	142/5720	11.43	12.40	30	PASS
	151/5755	21.48	22.45	30	PASS
	159/5795	22.12	23.09	30	PASS
802.11ac VHT20	144/5720	14.66	15.62	30	PASS
	149/5745	21.53	22.49	30	PASS
	157/5785	21.48	22.44	30	PASS
	165/5825	21.05	22.01	30	PASS
802.11ac VHT40	142/5710	11.22	12.19	30	PASS
	151/5755	22.25	23.22	30	PASS
	159/5795	22.20	23.17	30	PASS
802.11ac VHT80	138/5690	6.54	7.53	30	PASS
	155/5775	19.03	20.02	30	PASS
802.11ax HE20	144/5720	14.83	15.79	30	PASS
	149/5745	21.66	22.62	30	PASS
	157/5785	20.95	21.91	30	PASS
	165/5825	21.08	22.04	30	PASS
802.11ax HE40	142/5710	11.16	12.12	30	PASS
	151/5755	20.69	21.65	30	PASS
	159/5795	21.77	22.73	30	PASS
802.11ax HE80	138/5690	7.09	8.07	30	PASS
	155/5775	18.97	19.95	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

SISO Antenna 2

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Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	20.75	21.09	30	PASS
	40/5200	21.93	22.27	30	PASS
	48/5240	23.18	23.52	30	PASS
802.11n HT20	36/5180	20.25	21.21	30	PASS
	40/5200	21.88	22.84	30	PASS
	48/5240	21.66	22.62	30	PASS
802.11n HT40	38/5190	16.96	17.93	30	PASS
	46/5230	23.40	24.37	30	PASS
802.11ac VHT20	36/5180	22.39	23.35	30	PASS
	40/5200	22.72	23.68	30	PASS
	48/5240	22.28	23.24	30	PASS
802.11ac VHT40	38/5190	22.23	23.20	30	PASS
	46/5230	23.02	23.99	30	PASS
802.11ac VHT80	42/5210	18.04	19.03	30	PASS
802.11ax HE20	36/5180	19.78	20.74	30	PASS
	40/5200	22.49	23.45	30	PASS
	48/5240	21.85	22.81	30	PASS
802.11ax HE40	38/5190	19.50	20.46	30	PASS
	46/5230	22.26	23.22	30	PASS
802.11ax HE80	42/5210	14.99	15.97	30	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	20.56	20.90	24.00	PASS
	60/5300	20.48	20.82	24.00	PASS
	64/5320	20.26	20.60	23.97	PASS
802.11n HT20	52/5260	20.23	21.19	24.00	PASS
	60/5300	20.19	21.15	24.00	PASS
	64/5320	20.27	21.23	24.00	PASS
802.11n HT40	54/5270	21.62	22.59	24.00	PASS
	62/5310	17.26	18.23	24.00	PASS
802.11ac VHT20	52/5260	20.31	21.27	24.00	PASS
	60/5300	20.43	21.39	24.00	PASS
	64/5320	20.39	21.35	24.00	PASS
802.11ac VHT40	54/5270	21.70	22.67	24.00	PASS
	62/5310	22.12	23.09	24.00	PASS
802.11ac VHT80	58/5290	17.55	18.54	24.00	PASS
802.11ax HE20	52/5260	20.21	21.17	24.00	PASS
	60/5300	20.12	21.08	24.00	PASS
	64/5320	20.29	21.25	24.00	PASS
802.11ax HE40	54/5270	22.75	23.71	24.00	PASS
	62/5310	19.62	20.58	24.00	PASS
802.11ax HE80	58/5290	15.64	16.62	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	19.63	19.97	24.00	PASS
	120/5600	20.06	20.40	24.00	PASS
	140/5700	19.06	19.40	24.00	PASS
	144/5720	18.53	18.87	24.00	PASS
802.11n HT20	100/5500	19.58	20.54	24.00	PASS
	120/5600	20.41	21.37	24.00	PASS
	140/5700	15.33	16.29	23.95	PASS
	144/5720	17.33	18.29	24.00	PASS
802.11n HT40	102/5510	14.73	15.70	24.00	PASS
	118/5590	22.94	23.91	24.00	PASS
	134/5670	22.12	23.09	24.00	PASS
	142/5710	22.08	23.05	24.00	PASS
802.11ac VHT20	100/5500	19.73	20.69	24.00	PASS
	120/5600	20.01	20.97	24.00	PASS
	140/5700	19.03	19.99	24.00	PASS
	144/5720	18.61	19.57	23.97	PASS
802.11ac VHT40	102/5510	22.37	23.34	24.00	PASS
	118/5590	22.37	23.34	24.00	PASS
	134/5670	22.98	23.95	24.00	PASS
	142/5710	21.80	22.77	24.00	PASS
802.11ac VHT80	122/5610	22.38	23.37	24.00	PASS
	138/5690	22.62	23.61	24.00	PASS
802.11ax HE20	100/5500	19.45	20.41	24.00	PASS
	120/5600	19.98	20.94	24.00	PASS
	140/5700	15.03	15.99	24.00	PASS
	144/5720	18.12	19.08	24.00	PASS
802.11ax HE40	102/5510	13.49	14.45	24.00	PASS
	118/5590	22.70	23.66	24.00	PASS
	134/5670	18.99	19.95	24.00	PASS
	142/5710	21.67	22.63	24.00	PASS
802.11ax HE80	122/5610	21.13	22.11	24.00	PASS
	138/5690	22.12	23.10	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	15.87	16.21	30	PASS
	149/5745	22.55	22.89	30	PASS
	157/5785	22.12	22.46	30	PASS
	165/5825	20.08	20.42	30	PASS
802.11n HT20	144/5720	15.38	16.34	30	PASS
	149/5745	21.98	22.94	30	PASS
	157/5785	21.45	22.41	30	PASS
	165/5825	19.88	20.84	30	PASS
802.11n HT40	142/5720	11.84	12.81	30	PASS
	151/5755	21.37	22.34	30	PASS
	159/5795	21.62	22.59	30	PASS
802.11ac VHT20	144/5720	15.43	16.39	30	PASS
	149/5745	21.71	22.67	30	PASS
	157/5785	21.67	22.63	30	PASS
	165/5825	20.10	21.06	30	PASS
802.11ac VHT40	142/5710	12.01	12.98	30	PASS
	151/5755	22.38	23.35	30	PASS
	159/5795	21.85	22.82	30	PASS
802.11ac VHT80	138/5690	7.46	8.45	30	PASS
	155/5775	19.54	20.53	30	PASS
802.11ax HE20	144/5720	15.52	16.48	30	PASS
	149/5745	22.12	23.08	30	PASS
	157/5785	21.24	22.20	30	PASS
	165/5825	19.70	20.66	30	PASS
802.11ax HE40	142/5710	12.52	13.48	30	PASS
	151/5755	21.26	22.22	30	PASS
	159/5795	21.60	22.56	30	PASS
802.11ax HE80	138/5690	8.51	9.49	30	PASS
	155/5775	19.15	20.13	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

MIMO

U-NII-1

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	36/5180	21.42	21.76	21.51	21.85	24.82	30.00	PASS
	40/5200	22.80	23.14	22.45	22.79	25.98	30.00	PASS
	48/5240	21.64	21.98	21.57	21.91	24.96	30.00	PASS
802.11n HT20	36/5180	20.87	21.83	21.88	22.84	25.38	30.00	PASS
	40/5200	22.10	23.06	21.64	22.60	25.85	30.00	PASS
	48/5240	21.93	22.89	21.43	22.39	25.66	30.00	PASS
802.11n HT40	38/5190	16.46	17.43	17.02	17.99	20.73	30.00	PASS
	46/5230	22.26	23.23	23.57	24.54	26.94	30.00	PASS
802.11ac VHT20	36/5180	21.88	22.84	21.68	22.64	25.75	30.00	PASS
	40/5200	21.68	22.64	21.80	22.76	25.71	30.00	PASS
	48/5240	21.68	22.64	21.47	22.43	25.54	30.00	PASS
802.11ac VHT40	38/5190	22.63	23.60	23.85	24.82	27.26	30.00	PASS
	46/5230	22.36	23.33	22.82	23.79	26.57	30.00	PASS
802.11ac VHT80	42/5210	16.61	17.60	16.96	17.95	20.79	30.00	PASS
802.11ax HE20	36/5180	19.15	20.11	20.07	21.03	23.60	30.00	PASS
	40/5200	22.08	23.04	21.52	22.48	25.78	30.00	PASS
	48/5240	21.75	22.71	21.54	22.50	25.62	30.00	PASS
802.11ax HE40	38/5190	19.17	20.13	18.69	19.65	22.91	30.00	PASS
	46/5230	21.46	22.42	22.38	23.34	25.92	30.00	PASS
802.11ax HE80	42/5210	14.62	15.60	14.83	15.81	18.72	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power =$10\log(10^{(\text{Power antenna1 in dBm/10})}+10^{(\text{Power antenna2 in dBm/10})}$.

2. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

So Directional gain = G_{ANT} + Array Gain =4.30+0=4.30 dBi<6dBi. So the power limit is 30dBm.

U-NII-2A

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	52/5260	15.66	16.00	16.01	16.35	19.19	24.00	PASS
	60/5300	15.69	16.03	15.04	15.38	18.73	24.00	PASS
	64/5320	15.57	15.91	14.98	15.32	18.64	23.97	PASS
802.11n HT20	52/5260	14.42	15.38	15.35	16.31	18.88	24.00	PASS
	60/5300	14.90	15.86	14.60	15.56	18.72	24.00	PASS
	64/5320	14.82	15.78	14.64	15.60	18.70	24.00	PASS
802.11n HT40	54/5270	17.33	18.30	18.43	19.40	21.89	24.00	PASS
	62/5310	17.95	18.92	17.88	18.85	21.89	24.00	PASS
802.11ac VHT20	52/5260	14.99	15.95	15.69	16.65	19.33	24.00	PASS
	60/5300	15.25	16.21	14.81	15.77	19.01	24.00	PASS
	64/5320	14.97	15.93	14.93	15.89	18.92	24.00	PASS
802.11ac VHT40	54/5270	17.61	18.58	18.33	19.30	21.96	24.00	PASS
	62/5310	17.95	18.92	17.17	18.14	21.55	24.00	PASS
802.11ac VHT80	58/5290	17.38	18.37	17.55	18.54	21.47	24.00	PASS
802.11ax HE20	52/5260	14.54	15.50	16.17	17.13	19.40	24.00	PASS
	60/5300	15.84	16.80	15.86	16.82	19.82	24.00	PASS
	64/5320	15.13	16.09	14.86	15.82	18.96	24.00	PASS
802.11ax HE40	54/5270	17.58	18.54	18.04	19.00	21.78	24.00	PASS
	62/5310	17.76	18.72	17.25	18.21	21.48	24.00	PASS
802.11ax HE80	58/5290	15.40	16.38	15.57	16.55	19.48	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm/10})}+10^{(\text{Power antenna2 in dBm/10})}$.

2. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

So Directional gain = G_{ANT} + Array Gain =4.66+0=4.66 dBi<6dBi. So the power limit is 24dBm.

U-NII-2C

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	100/5500	15.08	15.42	16.07	16.41	18.95	24.00	PASS
	120/5600	14.79	15.13	15.58	15.92	18.55	24.00	PASS
	140/5700	15.69	16.03	15.62	15.96	19.01	24.00	PASS
	144/5720	14.62	14.96	13.76	14.10	17.56	24.00	PASS
802.11n HT20	100/5500	15.12	16.08	15.93	16.89	19.51	24.00	PASS
	120/5600	15.18	16.14	16.05	17.01	19.61	24.00	PASS
	140/5700	15.50	16.46	15.54	16.50	19.49	23.95	PASS
	144/5720	14.99	15.95	13.43	14.39	18.25	24.00	PASS
802.11n HT40	102/5510	13.91	14.88	14.63	17.12	19.15	24.00	PASS
	118/5590	18.36	19.33	18.90	19.87	22.62	24.00	PASS
	134/5670	18.24	19.21	18.24	19.21	22.22	24.00	PASS
	142/5710	18.18	19.15	17.17	18.14	21.68	24.00	PASS
802.11ac VHT20	100/5500	15.45	16.41	15.86	16.82	19.63	24.00	PASS
	120/5600	14.65	15.61	15.46	16.42	19.05	24.00	PASS
	140/5700	14.48	15.44	14.52	15.48	18.47	24.00	PASS
	144/5720	15.03	15.99	13.70	14.66	18.39	23.97	PASS
802.11ac VHT40	102/5510	18.06	19.03	18.74	19.71	22.39	24.00	PASS
	118/5590	18.44	19.41	18.92	19.89	22.67	24.00	PASS
	134/5670	17.78	18.75	18.93	19.90	22.37	24.00	PASS
	142/5710	18.23	19.20	17.77	18.74	21.99	24.00	PASS
802.11ac VHT80	122/5610	19.85	20.84	20.11	21.10	23.98	24.00	PASS
	138/5690	19.40	20.39	19.56	20.55	23.48	24.00	PASS
802.11ax HE20	100/5500	14.88	15.84	15.63	16.59	19.24	24.00	PASS
	120/5600	15.49	16.45	16.23	17.19	19.84	24.00	PASS
	140/5700	15.66	16.62	15.39	16.35	19.50	24.00	PASS
	144/5720	14.96	15.92	13.40	14.36	18.22	24.00	PASS
802.11ax HE40	102/5510	13.82	14.78	14.28	15.24	18.03	24.00	PASS
	118/5590	17.94	18.90	18.65	19.61	22.28	24.00	PASS
	134/5670	18.68	19.64	19.09	20.05	22.86	24.00	PASS
	142/5710	18.26	19.22	17.97	18.93	22.08	24.00	PASS
802.11ax HE80	122/5610	19.67	20.65	20.25	21.23	23.96	24.00	PASS
	138/5690	19.42	20.40	19.65	19.65	23.05	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power =$10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)}$.

2. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

So Directional gain = G_{ANT} + Array Gain =4.72+0=4.72 dBi<6dBi. So the power limit is 24dBm.

U-NII-3

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	144/5720	16.23	16.57	16.34	16.68	19.63	30.00	PASS
	149/5745	23.33	23.67	23.27	23.61	26.65	30.00	PASS
	157/5785	23.11	23.45	22.47	22.81	26.15	30.00	PASS
	165/5825	22.24	22.58	18.57	18.91	24.13	30.00	PASS
802.11n HT20	144/5720	14.97	15.93	15.86	16.82	19.41	30.00	PASS
	149/5745	22.28	23.24	22.10	23.06	26.16	30.00	PASS
	157/5785	21.83	22.79	21.34	22.30	25.56	30.00	PASS
	165/5825	21.60	22.56	19.70	20.66	24.73	30.00	PASS
802.11n HT40	142/5710	11.95	12.92	11.88	12.85	15.90	30.00	PASS
	151/5755	22.07	23.04	21.03	22.00	25.56	30.00	PASS
	159/5795	22.67	23.64	21.77	22.74	26.22	30.00	PASS
802.11ac VHT20	144/5720	15.47	16.43	15.50	16.46	19.46	30.00	PASS
	149/5745	22.46	23.42	22.20	23.16	26.30	30.00	PASS
	157/5785	21.79	22.75	21.26	22.22	25.50	30.00	PASS
	165/5825	21.82	22.78	19.43	20.39	24.76	30.00	PASS
802.11ac VHT40	142/5710	12.74	13.71	11.84	12.81	16.30	30.00	PASS
	151/5755	22.91	23.88	22.88	23.85	26.87	30.00	PASS
	159/5795	22.91	23.88	21.55	22.52	26.26	30.00	PASS
802.11ac VHT80	138/5690	7.76	8.75	7.81	8.80	11.78	30.00	PASS
	155/5775	19.25	20.24	19.31	20.30	23.28	30.00	PASS
802.11ax HE20	144/5720	16.02	16.98	15.86	16.82	19.91	30.00	PASS
	149/5745	22.13	23.09	22.33	23.29	26.20	30.00	PASS
	157/5785	21.44	22.40	21.15	22.11	25.27	30.00	PASS
	165/5825	21.45	22.41	19.53	20.49	24.56	30.00	PASS
802.11ax HE40	142/5710	12.30	13.26	12.66	13.62	16.46	30.00	PASS
	151/5755	21.62	22.58	21.40	22.36	25.48	30.00	PASS
	159/5795	22.40	23.36	21.82	22.78	26.09	30.00	PASS
802.11ax HE80	138/5690	8.77	9.75	7.58	8.56	12.21	30.00	PASS
	155/5775	19.37	20.35	19.37	20.35	23.36	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)}$.

2. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

So Directional gain = G_{ANT} + Array Gain =4.43+0=4.43 dBi<6dBi. So the power limit is 30dBm.

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 (V)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
24	-30	5200.006818	5200.005753	5200.004356	5199.999619
24	-20	5200.006776	5199.998192	5199.997802	5199.990443
24	-10	5200.016225	5199.993289	5199.989748	5199.981406
24	0	5200.002164	5199.992556	5199.991178	5199.982866
24	10	5199.996289	5199.988784	5199.985835	5199.982844
24	20	5199.990685	5199.988609	5199.982560	5199.981308
24	30	5199.987632	5199.988234	5199.977756	5199.977700
24	40	5199.987079	5199.983917	5199.976311	5199.977364
24	50	5199.983720	5199.981971	5199.975935	5199.972204
12	20	5199.983592	5199.972082	5199.974777	5199.964160
36	20	5199.981705	5199.963809	5199.974234	5199.963525
Max. ΔMHz		-0.018295	-0.036191	-0.025766	-0.036475
PPM		-3.518269	-6.959808	-4.955000	-7.014423

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
24	-30	5299.999071	5299.989077	5299.986220	5299.980739
24	-20	5299.990206	5299.983154	5299.978632	5299.976564
24	-10	5299.985007	5299.974993	5299.970036	5299.974517
24	0	5299.983372	5299.980028	5299.975770	5299.968381
24	10	5299.979345	5299.971108	5299.969855	5299.967334
24	20	5299.975559	5299.965305	5299.967343	5299.961435
24	30	5299.967732	5299.964285	5299.962288	5299.956672
24	40	5299.966413	5299.960041	5299.956587	5299.947429
24	50	5299.966010	5299.955700	5299.955811	5299.946314
12	20	5299.965789	5299.945897	5299.954590	5299.940945
36	20	5299.963920	5299.938568	5299.947221	5299.935858
Max. ΔMHz		-0.036080	-0.061432	-0.052779	-0.064142
PPM		-6.807547	-11.590943	-9.958302	-12.102264

Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
24	-30	5579.996633	5579.989760	5579.983297	5579.979681
24	-20	5579.986828	5579.986291	5579.976009	5579.977839
24	-10	5579.978990	5579.980144	5579.972790	5579.975319
24	0	5579.981275	5579.976567	5579.966713	5579.973564
24	10	5579.974107	5579.966596	5579.964576	5579.971772
24	20	5579.971942	5579.960968	5579.955345	5579.964483
24	30	5579.965901	5579.960754	5579.950420	5579.957580
24	40	5579.960625	5579.956119	5579.950224	5579.954823
24	50	5579.958646	5579.948979	5579.947366	5579.950782
12	20	5579.951491	5579.944117	5579.942043	5579.945135
36	20	5579.942167	5579.939228	5579.940456	5579.940288
Max. ΔMHz		-0.057833	-0.060772	-0.059544	-0.059712
PPM		-10.364337	-10.891039	-10.670968	-10.701075

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
24	-30	5784.990390	5784.989939	5784.988956	5784.986094
24	-20	5784.981336	5784.980308	5784.984635	5784.978348
24	-10	5784.977415	5784.971331	5784.977241	5784.977382
24	0	5784.979339	5784.970941	5784.983118	5784.969628
24	10	5784.973850	5784.961147	5784.978089	5784.968845
24	20	5784.968852	5784.953534	5784.968602	5784.959388
24	30	5784.966703	5784.953497	5784.963967	5784.958814
24	40	5784.962693	5784.947453	5784.956920	5784.951934
24	50	5784.955022	5784.943240	5784.953499	5784.943833
12	20	5784.954205	5784.938381	5784.951802	5784.933910
36	20	5784.948534	5784.928605	5784.949305	5784.925197
Max. ΔMHz		-0.051466	-0.071395	-0.050695	-0.074803
PPM		-8.896456	-12.341400	-8.763181	-12.930510

5.4. Power Spectral Density

Ambient condition

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

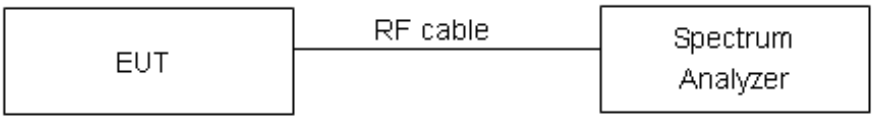
Method of Measurement

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:

SISO Antenna 1

U-NII-1

Mode	Channel/ Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36/5180	9.70	10.04	17	PASS
	40/5200	11.59	11.93	17	PASS
	48/5240	12.01	12.35	17	PASS
802.11n HT20	36/5180	9.33	10.29	17	PASS
	40/5200	10.54	11.50	17	PASS
	48/5240	10.84	11.80	17	PASS
802.11n HT40	38/5190	3.22	4.19	17	PASS
	46/5230	8.77	9.74	17	PASS
802.11ac VHT20	36/5180	10.20	11.16	17	PASS
	40/5200	10.74	11.70	17	PASS
	48/5240	10.84	11.80	17	PASS
802.11ac VHT40	38/5190	8.58	9.55	17	PASS
	46/5230	8.61	9.58	17	PASS
802.11ac VHT80	42/5210	0.87	1.86	17	PASS
802.11ax HE20	36/5180	9.19	10.15	17	PASS
	40/5200	10.25	11.21	17	PASS
	48/5240	10.70	11.66	17	PASS
802.11ax HE40	38/5190	5.62	6.58	17	PASS
	46/5230	8.60	9.56	17	PASS
802.11ax HE80	42/5210	-1.24	-0.26	17	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	10.41	10.75	11	PASS
	60/5300	10.50	10.84	11	PASS
	64/5320	10.56	10.90	11	PASS
802.11n HT20	52/5260	9.76	10.72	11	PASS
	60/5300	10.03	10.99	11	PASS
	64/5320	9.16	10.12	11	PASS
802.11n HT40	54/5270	9.38	10.35	11	PASS
	62/5310	4.08	5.05	11	PASS
802.11ac VHT20	52/5260	9.09	10.05	11	PASS
	60/5300	9.54	10.50	11	PASS
	64/5320	9.52	10.48	11	PASS
802.11ac VHT40	54/5270	8.96	9.93	11	PASS
	62/5310	9.00	9.97	11	PASS
802.11ac VHT80	58/5290	0.62	1.61	11	PASS
802.11ax HE20	52/5260	8.92	9.88	11	PASS
	60/5300	9.07	10.03	11	PASS
	64/5320	8.58	9.54	11	PASS
802.11ax HE40	54/5270	8.68	9.64	11	PASS
	62/5310	6.66	7.62	11	PASS
802.11ax HE80	58/5290	-0.96	0.02	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	10.52	10.86	11	PASS
	120/5600	10.02	10.36	11	PASS
	140/5700	9.27	9.61	11	PASS
	144/5720	10.46	10.80	11	PASS
802.11n HT20	100/5500	9.67	10.63	11	PASS
	120/5600	9.37	10.33	11	PASS
	140/5700	5.92	6.88	11	PASS
	144/5720	9.94	10.90	11	PASS
802.11n HT40	102/5510	0.11	1.08	11	PASS
	118/5590	8.66	9.63	11	PASS
	134/5670	7.96	8.93	11	PASS
	142/5710	9.09	10.06	11	PASS
802.11ac VHT20	100/5500	9.71	10.67	11	PASS
	120/5600	9.44	10.40	11	PASS
	140/5700	9.88	10.84	11	PASS
	144/5720	9.99	10.95	11	PASS
802.11ac VHT40	102/5510	8.47	9.44	11	PASS
	118/5590	8.90	9.87	11	PASS
	134/5670	8.74	9.71	11	PASS
	142/5710	9.13	10.10	11	PASS
802.11ac VHT80	122/5610	4.64	5.63	11	PASS
	138/5690	5.34	6.33	11	PASS
802.11ax HE20	100/5500	8.09	9.05	11	PASS
	120/5600	8.67	9.63	11	PASS
	140/5700	4.57	5.53	11	PASS
	144/5720	8.88	9.84	11	PASS
802.11ax HE40	102/5510	-0.42	0.54	11	PASS
	118/5590	8.74	9.70	11	PASS
	134/5670	4.45	5.41	11	PASS
	142/5710	8.36	9.32	11	PASS
802.11ax HE80	122/5610	3.97	4.95	11	PASS
	138/5690	5.19	6.17	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	8.37	8.98	30	PASS
	149/5745	9.16	9.77	30	PASS
	157/5785	8.60	9.21	30	PASS
	165/5825	8.07	8.68	30	PASS
802.11n HT20	144/5720	7.51	8.74	30	PASS
	149/5745	8.16	9.39	30	PASS
	157/5785	7.15	8.38	30	PASS
	165/5825	6.95	8.18	30	PASS
802.11n HT40	142/5720	3.87	5.11	30	PASS
	151/5755	4.18	5.42	30	PASS
	159/5795	4.93	6.17	30	PASS
802.11ac VHT20	144/5720	7.24	8.47	30	PASS
	149/5745	7.77	9.00	30	PASS
	157/5785	7.49	8.72	30	PASS
	165/5825	6.89	8.12	30	PASS
802.11ac VHT40	142/5710	4.44	5.68	30	PASS
	151/5755	5.66	6.90	30	PASS
	159/5795	5.10	6.34	30	PASS
802.11ac VHT80	138/5690	-1.33	-0.07	30	PASS
	155/5775	-0.94	0.32	30	PASS
802.11ax HE20	144/5720	6.32	7.55	30	PASS
	149/5745	6.29	7.52	30	PASS
	157/5785	6.99	8.22	30	PASS
	165/5825	6.89	8.12	30	PASS
802.11ax HE40	142/5710	4.05	5.28	30	PASS
	151/5755	3.93	5.16	30	PASS
	159/5795	4.79	6.02	30	PASS
802.11ax HE80	138/5690	-0.78	0.47	30	PASS
	155/5775	-0.54	0.71	30	PASS
Note: PSD=Read Value+Duty cycle correction factor +10*log(500/470)					

SISO Antenna 2

U-NII-1

Mode	Channel/ Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36/5180	10.15	10.49	17	PASS
	40/5200	11.47	11.81	17	PASS
	48/5240	12.53	12.87	17	PASS
802.11n HT20	36/5180	9.13	10.09	17	PASS
	40/5200	10.70	11.66	17	PASS
	48/5240	10.82	11.78	17	PASS
802.11n HT40	38/5190	3.58	4.55	17	PASS
	46/5230	9.81	10.78	17	PASS
802.11ac VHT20	36/5180	12.13	13.09	17	PASS
	40/5200	12.28	13.24	17	PASS
	48/5240	11.70	12.66	17	PASS
802.11ac VHT40	38/5190	9.74	10.71	17	PASS
	46/5230	9.73	10.70	17	PASS
802.11ac VHT80	42/5210	1.03	2.02	17	PASS
802.11ax HE20	36/5180	9.45	10.41	17	PASS
	40/5200	11.64	12.60	17	PASS
	48/5240	10.89	11.85	17	PASS
802.11ax HE40	38/5190	6.33	7.29	17	PASS
	46/5230	9.54	10.50	17	PASS
802.11ax HE80	42/5210	-0.85	0.13	17	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	10.17	10.51	11	PASS
	60/5300	10.17	10.51	11	PASS
	64/5320	10.01	10.35	11	PASS
802.11n HT20	52/5260	9.62	10.58	11	PASS
	60/5300	9.67	10.63	11	PASS
	64/5320	9.84	10.80	11	PASS
802.11n HT40	54/5270	8.43	9.40	11	PASS
	62/5310	3.58	4.55	11	PASS
802.11ac VHT20	52/5260	10.01	10.97	11	PASS
	60/5300	9.99	10.95	11	PASS
	64/5320	9.45	10.41	11	PASS
802.11ac VHT40	54/5270	8.60	9.57	11	PASS
	62/5310	8.37	9.34	11	PASS
802.11ac VHT80	58/5290	0.95	1.94	11	PASS
802.11ax HE20	52/5260	9.34	10.30	11	PASS
	60/5300	9.20	10.16	11	PASS
	64/5320	9.53	10.49	11	PASS
802.11ax HE40	54/5270	9.31	10.27	11	PASS
	62/5310	6.44	7.40	11	PASS
802.11ax HE80	58/5290	-0.74	0.24	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	9.14	9.48	11	PASS
	120/5600	9.75	10.09	11	PASS
	140/5700	8.69	9.03	11	PASS
	144/5720	9.15	9.49	11	PASS
802.11n HT20	100/5500	8.86	9.82	11	PASS
	120/5600	9.29	10.25	11	PASS
	140/5700	4.89	5.85	11	PASS
	144/5720	8.32	9.28	11	PASS
802.11n HT40	102/5510	0.71	1.68	11	PASS
	118/5590	9.38	10.35	11	PASS
	134/5670	8.77	9.74	11	PASS
	142/5710	8.74	9.71	11	PASS
802.11ac VHT20	100/5500	9.28	10.24	11	PASS
	120/5600	9.60	10.56	11	PASS
	140/5700	8.53	9.49	11	PASS
	144/5720	8.85	9.81	11	PASS
802.11ac VHT40	102/5510	8.73	9.70	11	PASS
	118/5590	9.22	10.19	11	PASS
	134/5670	9.46	10.43	11	PASS
	142/5710	8.97	9.94	11	PASS
802.11ac VHT80	122/5610	5.28	6.27	11	PASS
	138/5690	6.34	7.33	11	PASS
802.11ax HE20	100/5500	8.36	9.32	11	PASS
	120/5600	9.51	10.47	11	PASS
	140/5700	4.76	5.72	11	PASS
	144/5720	8.61	9.57	11	PASS
802.11ax HE40	102/5510	0.08	1.04	11	PASS
	118/5590	9.41	10.37	11	PASS
	134/5670	5.18	6.14	11	PASS
	142/5710	8.22	9.18	11	PASS
802.11ax HE80	122/5610	4.80	5.78	11	PASS
	138/5690	6.10	7.08	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	9.09	9.70	30	PASS
	149/5745	8.85	9.46	30	PASS
	157/5785	8.47	9.08	30	PASS
	165/5825	6.69	7.30	30	PASS
802.11n HT20	144/5720	7.21	8.44	30	PASS
	149/5745	7.88	9.11	30	PASS
	157/5785	7.42	8.65	30	PASS
	165/5825	6.46	7.69	30	PASS
802.11n HT40	142/5720	4.55	5.79	30	PASS
	151/5755	5.07	6.31	30	PASS
	159/5795	4.76	6.00	30	PASS
802.11ac VHT20	144/5720	7.53	8.76	30	PASS
	149/5745	8.12	9.35	30	PASS
	157/5785	7.39	8.62	30	PASS
	165/5825	6.08	7.31	30	PASS
802.11ac VHT40	142/5710	4.23	5.47	30	PASS
	151/5755	5.52	6.76	30	PASS
	159/5795	4.92	6.16	30	PASS
802.11ac VHT80	138/5690	-0.09	1.17	30	PASS
	155/5775	-0.82	0.44	30	PASS
802.11ax HE20	144/5720	7.80	9.03	30	PASS
	149/5745	8.15	9.38	30	PASS
	157/5785	7.07	8.30	30	PASS
	165/5825	5.85	7.08	30	PASS
802.11ax HE40	142/5710	4.56	5.79	30	PASS
	151/5755	4.28	5.51	30	PASS
	159/5795	4.53	5.76	30	PASS
802.11ax HE80	138/5690	-0.04	1.21	30	PASS
	155/5775	-0.86	0.39	30	PASS
Note: PSD=Read Value+Duty cycle correction factor +10*log(500/470)					

MIMO

U-NII-1

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	36/5180	11.43	11.77	11.18	11.52	14.66	15.69	PASS
	40/5200	12.36	12.70	12.11	12.45	15.59	15.69	PASS
	48/5240	11.34	11.68	11.56	11.90	14.80	15.69	PASS
802.11n HT20	36/5180	10.15	11.11	11.13	12.09	14.64	15.69	PASS
	40/5200	11.49	12.45	11.61	12.57	15.52	15.69	PASS
	48/5240	11.11	12.07	11.34	12.30	15.20	15.69	PASS
802.11n HT40	38/5190	3.25	4.22	4.12	5.09	7.69	15.69	PASS
	46/5230	8.74	9.71	10.31	11.28	13.58	15.69	PASS
802.11ac VHT20	36/5180	11.51	12.47	11.59	12.55	15.52	15.69	PASS
	40/5200	11.52	12.48	11.44	12.40	15.45	15.69	PASS
	48/5240	11.51	12.47	11.80	12.76	15.63	15.69	PASS
802.11ac VHT40	38/5190	8.94	9.91	10.15	11.12	13.57	15.69	PASS
	46/5230	8.94	9.91	9.82	10.79	13.38	15.69	PASS
802.11ac VHT80	42/5210	0.36	1.35	0.55	1.54	4.46	15.69	PASS
802.11ax HE20	36/5180	8.86	9.82	9.62	10.58	13.23	15.69	PASS
	40/5200	11.38	12.34	11.08	12.04	15.20	15.69	PASS
	48/5240	11.19	12.15	11.78	12.74	15.47	15.69	PASS
802.11ax HE40	38/5190	5.92	6.88	5.01	5.97	9.46	15.69	PASS
	46/5230	8.41	9.37	9.21	10.17	12.80	15.69	PASS
802.11ax HE80	42/5210	-1.81	-0.83	-1.45	-0.47	2.36	15.69	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=$10\log(10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})})$

3. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain,

Directional gain = G_{ANT} + Array Gain, For PSD measurements on all devices, Array Gain=10log(Nant/Nss)dB,

so Directional gain=G_{ANT}+Array Gain=4.30+10log(4/1)=7.31>6 dBi.

So the PSD limit is 17-(Directional gain-6 dBi) =17-(7.31-6)=15.96 dBm.

U-NII-2A

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	52/5260	5.30	5.64	6.26	6.60	9.16	9.33	PASS
	60/5300	5.72	6.06	5.19	5.53	8.81	9.33	PASS
	64/5320	5.61	5.95	5.36	5.70	8.84	9.33	PASS
802.11n HT20	52/5260	4.11	5.07	5.51	6.47	8.84	9.33	PASS
	60/5300	4.86	5.82	5.26	6.22	9.03	9.33	PASS
	64/5320	5.24	6.20	4.91	5.87	9.05	9.33	PASS
802.11n HT40	54/5270	4.45	5.42	5.76	6.73	9.13	9.33	PASS
	62/5310	4.49	5.46	4.66	5.63	8.55	9.33	PASS
802.11ac VHT20	52/5260	4.88	5.84	5.64	6.60	9.25	9.33	PASS
	60/5300	5.25	6.21	5.28	6.24	9.24	9.33	PASS
	64/5320	5.01	5.97	4.91	5.87	8.93	9.33	PASS
802.11ac VHT40	54/5270	4.14	5.11	5.98	6.95	9.14	9.33	PASS
	62/5310	4.57	5.54	4.84	5.81	8.69	9.33	PASS
802.11ac VHT80	58/5290	0.90	1.89	1.39	2.38	5.15	9.33	PASS
802.11ax HE20	52/5260	4.22	5.18	5.47	6.43	8.86	9.33	PASS
	60/5300	5.25	6.21	4.90	5.86	9.05	9.33	PASS
	64/5320	4.82	5.78	4.36	5.32	8.57	9.33	PASS
802.11ax HE40	54/5270	3.77	4.73	5.39	6.35	8.63	9.33	PASS
	62/5310	4.09	5.05	4.40	5.36	8.22	9.33	PASS
802.11ax HE80	58/5290	-0.91	0.07	-0.67	0.31	3.20	9.33	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=$10\log(10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})})$

3. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain,

Directional gain = G_{ANT} + Array Gain, For PSD measurements on all devices, Array Gain=10log(Nant/Nss)dB,

so Directional gain=G_{ANT}+Array Gain=4.66+10log(4/1)=7.67>6 dBi.

So the PSD limit is 11-(Directional gain-6 dBi) =11-(7.67-6)=9.33 dBm.

U-NII-2C

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	100/5500	5.06	5.40	5.46	5.80	8.61	9.27	PASS
	120/5600	4.91	5.25	5.43	5.77	8.53	9.27	PASS
	140/5700	5.74	6.08	5.42	5.76	8.93	9.27	PASS
	144/5720	5.68	6.02	4.59	4.93	8.52	9.27	PASS
802.11n HT20	100/5500	4.56	5.52	5.48	6.44	9.01	9.27	PASS
	120/5600	5.21	6.17	5.25	6.21	9.20	9.27	PASS
	140/5700	4.99	5.95	4.96	5.92	8.95	9.27	PASS
	144/5720	5.13	6.09	4.25	5.21	8.68	9.27	PASS
802.11n HT40	102/5510	1.00	1.97	1.10	2.07	5.03	9.27	PASS
	118/5590	4.65	5.62	5.63	6.60	9.15	9.27	PASS
	134/5670	5.18	6.15	4.95	5.92	9.05	9.27	PASS
	142/5710	5.14	6.11	4.52	5.49	8.82	9.27	PASS
802.11ac VHT20	100/5500	4.84	5.80	5.43	6.39	9.12	9.27	PASS
	120/5600	4.81	5.77	5.22	6.18	8.99	9.27	PASS
	140/5700	4.29	5.25	4.06	5.02	8.15	9.27	PASS
	144/5720	5.51	6.47	3.91	4.87	8.75	9.27	PASS
802.11ac VHT40	102/5510	4.80	5.77	5.40	6.37	9.09	9.27	PASS
	118/5590	4.51	5.48	5.38	6.35	8.95	9.27	PASS
	134/5670	4.94	5.91	5.27	6.24	9.09	9.27	PASS
	142/5710	4.67	5.64	4.97	5.94	8.80	9.27	PASS
802.11ac VHT80	122/5610	3.52	4.51	3.97	4.96	7.75	9.27	PASS
	138/5690	3.23	4.22	3.27	4.26	7.25	9.27	PASS
802.11ax HE20	100/5500	4.54	5.50	5.44	6.40	8.98	9.27	PASS
	120/5600	5.11	6.07	5.31	6.27	9.18	9.27	PASS
	140/5700	4.68	5.64	4.70	5.66	8.66	9.27	PASS
	144/5720	5.48	6.44	4.14	5.10	8.83	9.27	PASS
802.11ax HE40	102/5510	0.33	1.29	0.99	1.95	4.64	9.27	PASS
	118/5590	4.46	5.42	4.81	5.77	8.61	9.27	PASS
	134/5670	5.21	6.17	5.34	6.30	9.25	9.27	PASS
	142/5710	5.57	6.53	4.55	5.51	9.06	9.27	PASS
802.11ax HE80	122/5610	3.67	4.65	3.87	4.85	7.76	9.27	PASS
	138/5690	3.15	4.13	3.09	4.07	7.11	9.27	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=10log($10^{(\text{PSD antenna 1 in dBm/10})}$+$10^{(\text{PSD antenna 2 in dBm/10})}$)

3. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain,

Directional gain = G_{ANT} + Array Gain, For PSD measurements on all devices, Array Gain=10log(Nant/Nss)dB,

so Directional gain=G_{ANT}+Array Gain=4.72+10log(4/1)=7.73>6 dBi.

So the PSD limit is 11-(Directional gain-6 dBi) =11-(7.73-6)=9.27 dBm.

U-NII-3

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm/ 500kHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/ 500kHz)		
		Read Value (dBm/ 470kHz)	PSD (dBm/ 470kHz)	Read Value (dBm/ 470kHz)	PSD (dBm/ 470kHz)			
802.11a	144/5720	9.43	10.04	9.41	10.02	13.04	29.56	PASS
	149/5745	9.56	10.17	9.70	10.31	13.25	29.56	PASS
	157/5785	9.29	9.90	8.70	9.31	12.63	29.56	PASS
	165/5825	8.56	9.17	5.87	6.48	11.04	29.56	PASS
802.11n HT20	144/5720	8.08	9.31	8.37	9.60	12.47	29.56	PASS
	149/5745	8.43	9.66	8.47	9.70	12.69	29.56	PASS
	157/5785	8.37	9.60	7.55	8.78	12.22	29.56	PASS
	165/5825	7.57	8.80	6.37	7.60	11.25	29.56	PASS
802.11n HT40	142/5710	5.06	6.30	4.30	5.54	8.95	29.56	PASS
	151/5755	5.51	6.75	4.94	6.18	9.48	29.56	PASS
	159/5795	6.11	7.35	5.17	6.41	9.92	29.56	PASS
802.11ac VHT20	144/5720	8.04	9.27	8.72	9.95	12.63	29.56	PASS
	149/5745	8.41	9.64	8.22	9.45	12.56	29.56	PASS
	157/5785	8.34	9.57	7.25	8.48	12.07	29.56	PASS
	165/5825	8.03	9.26	5.84	7.07	11.31	29.56	PASS
802.11ac VHT40	142/5710	5.16	6.40	4.91	6.15	9.29	29.56	PASS
	151/5755	6.15	7.39	5.66	6.90	10.16	29.56	PASS
	159/5795	5.87	7.11	4.87	6.11	9.65	29.56	PASS
802.11ac VHT80	138/5690	0.34	1.60	1.01	2.27	4.96	29.56	PASS
	155/5775	-0.65	0.61	-0.89	0.37	3.50	29.56	PASS
802.11ax HE20	144/5720	7.97	9.20	7.37	8.60	11.92	29.56	PASS
	149/5745	8.07	9.30	8.43	9.66	12.49	29.56	PASS
	157/5785	8.50	9.73	7.24	8.47	12.16	29.56	PASS
	165/5825	7.69	8.92	5.71	6.94	11.05	29.56	PASS
802.11ax HE40	142/5710	4.39	5.62	5.55	6.78	9.25	29.56	PASS
	151/5755	4.56	5.79	4.45	5.68	8.75	29.56	PASS
	159/5795	5.35	6.58	4.59	5.82	9.23	29.56	PASS
802.11ax HE80	138/5690	0.58	1.83	0.21	1.46	4.66	29.56	PASS
	155/5775	-0.02	1.23	-0.94	0.31	3.80	29.56	PASS

Note: 1. PSD=Read Value+Duty cycle correction factor +10*log(500/470)

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=$10\log(10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})})$

3. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain,

Directional gain = G_{ANT} + Array Gain, For PSD measurements on all devices, Array Gain=10log(Nant/Nss)dB,

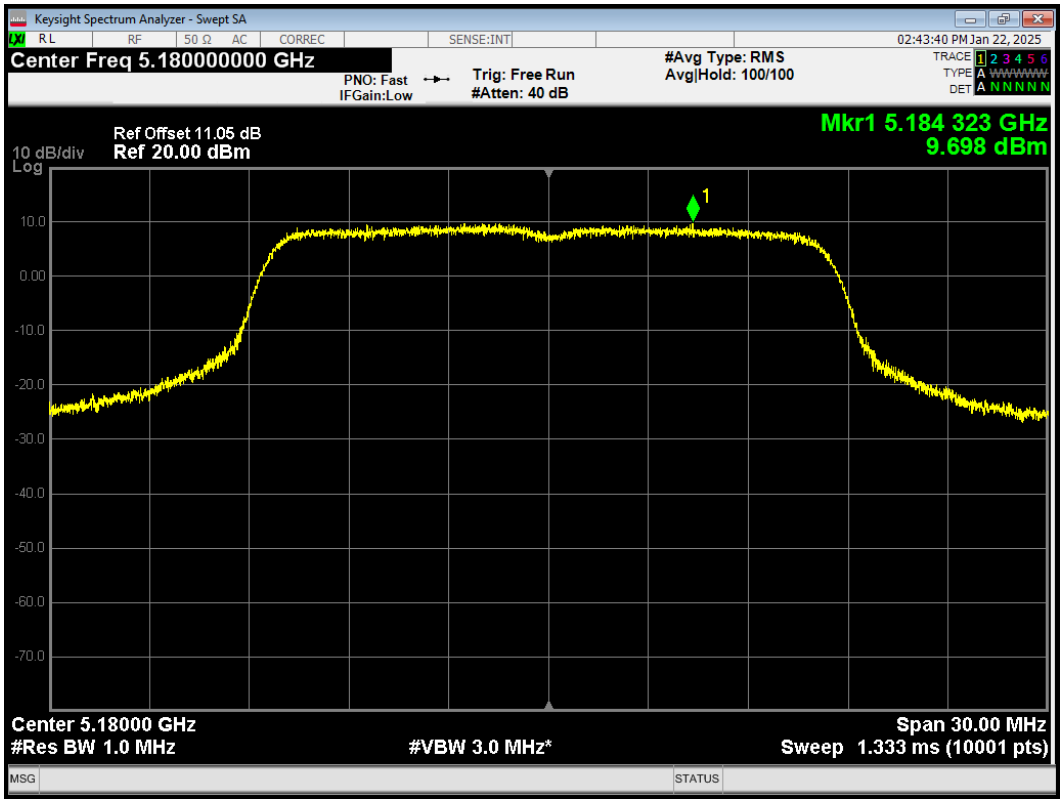
so Directional gain=G_{ANT}+Array Gain=3.43+10log(4/1)=6.44>6 dBi.

So the PSD limit is 30-(Directional gain-6 dBi) =30-(6.11-6)=29.56 dBm.

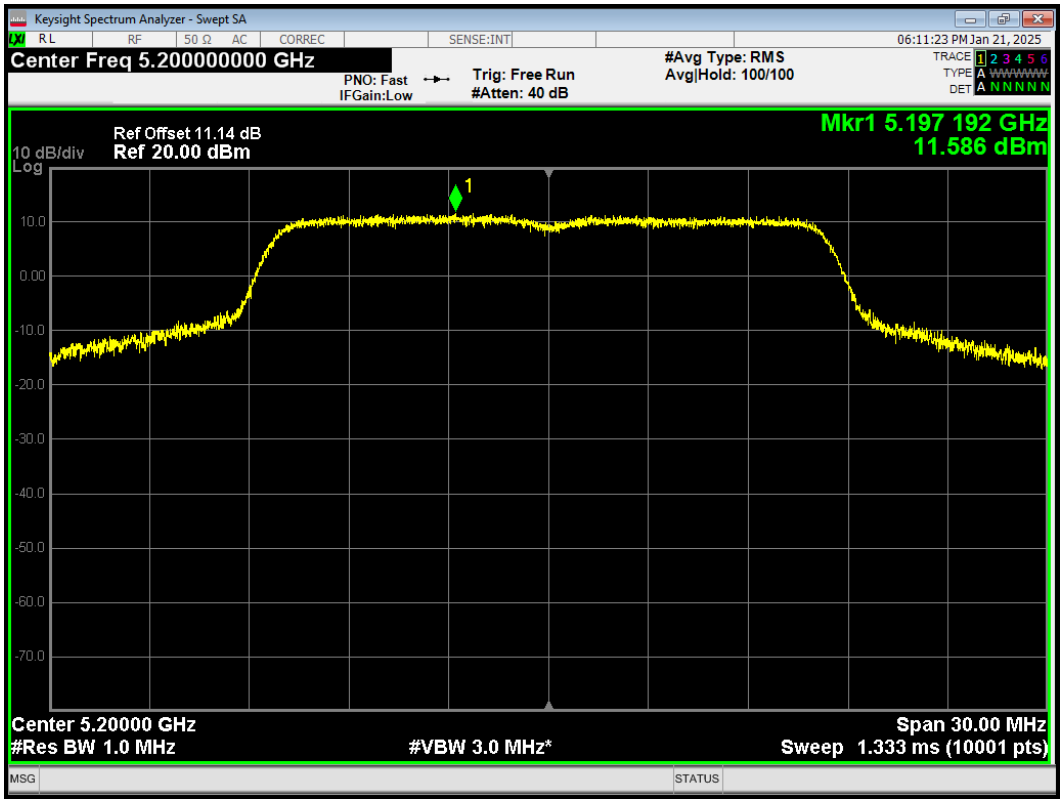
SISO Antenna 1

U-NII-1

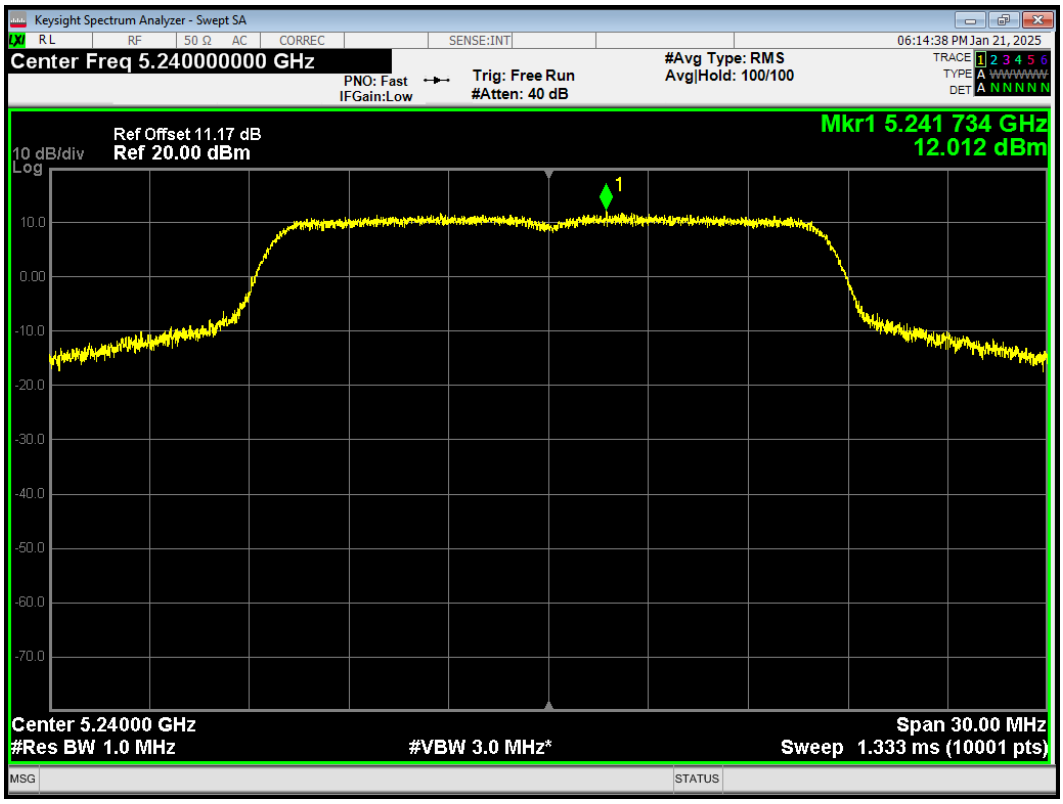
PSD 802.11a 5180MHz



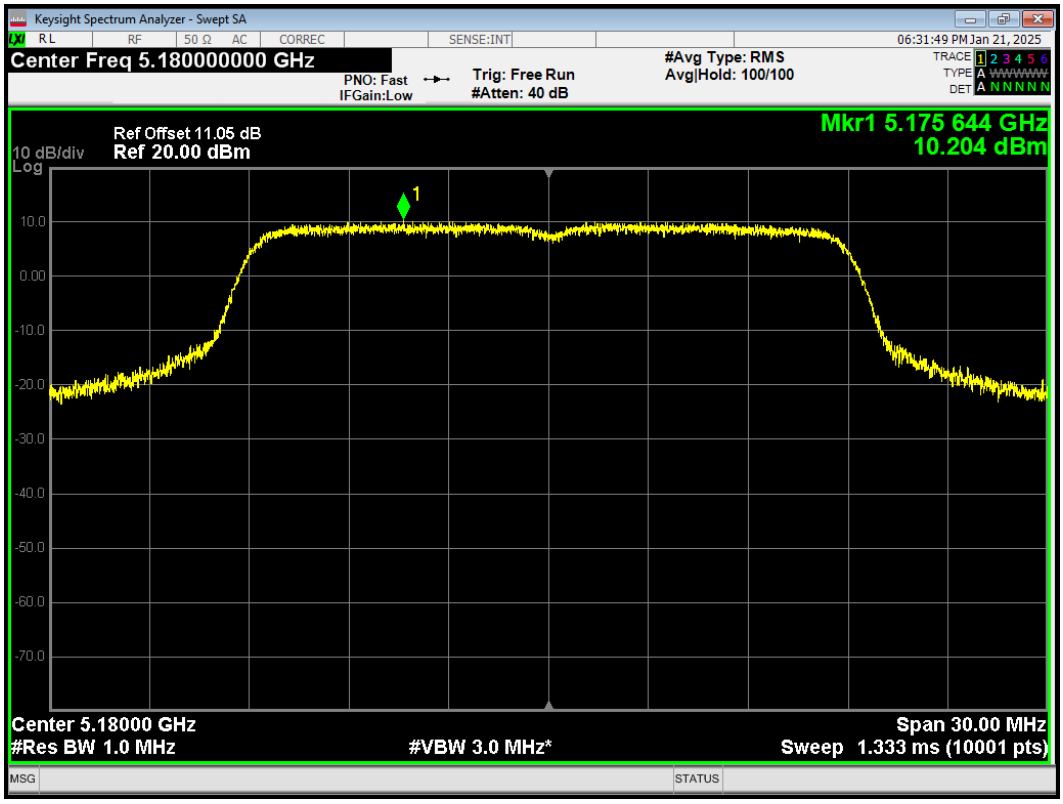
PSD 802.11a 5200MHz



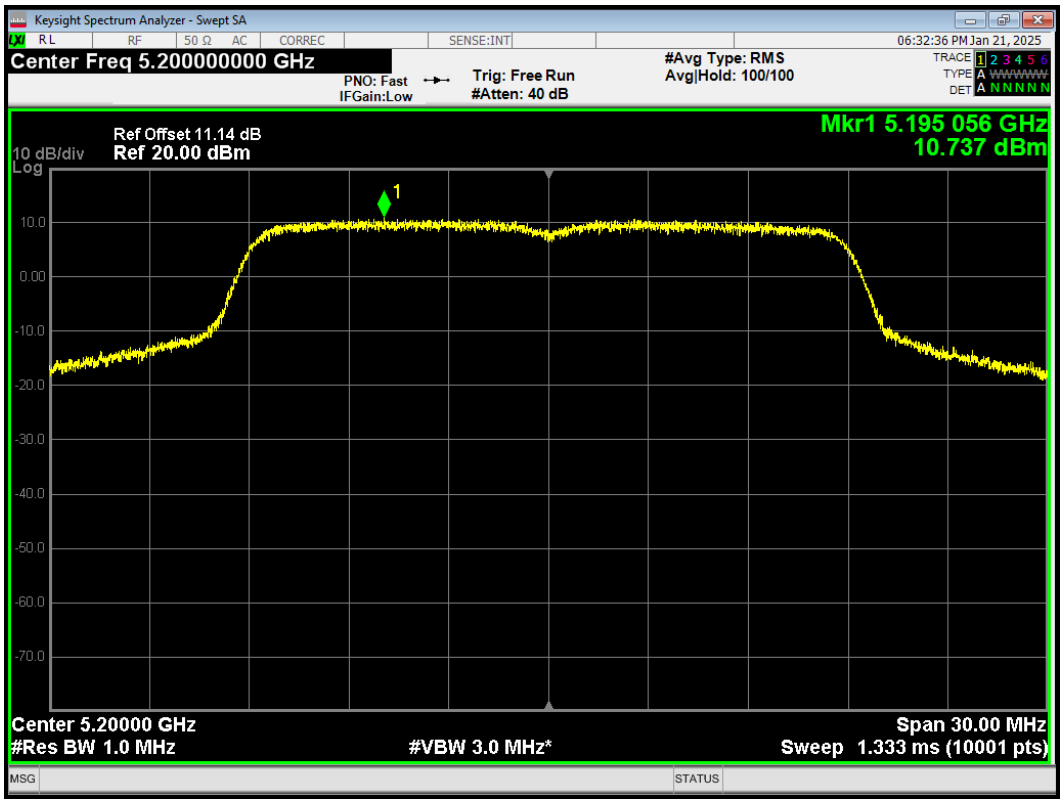
PSD 802.11a 5240MHz



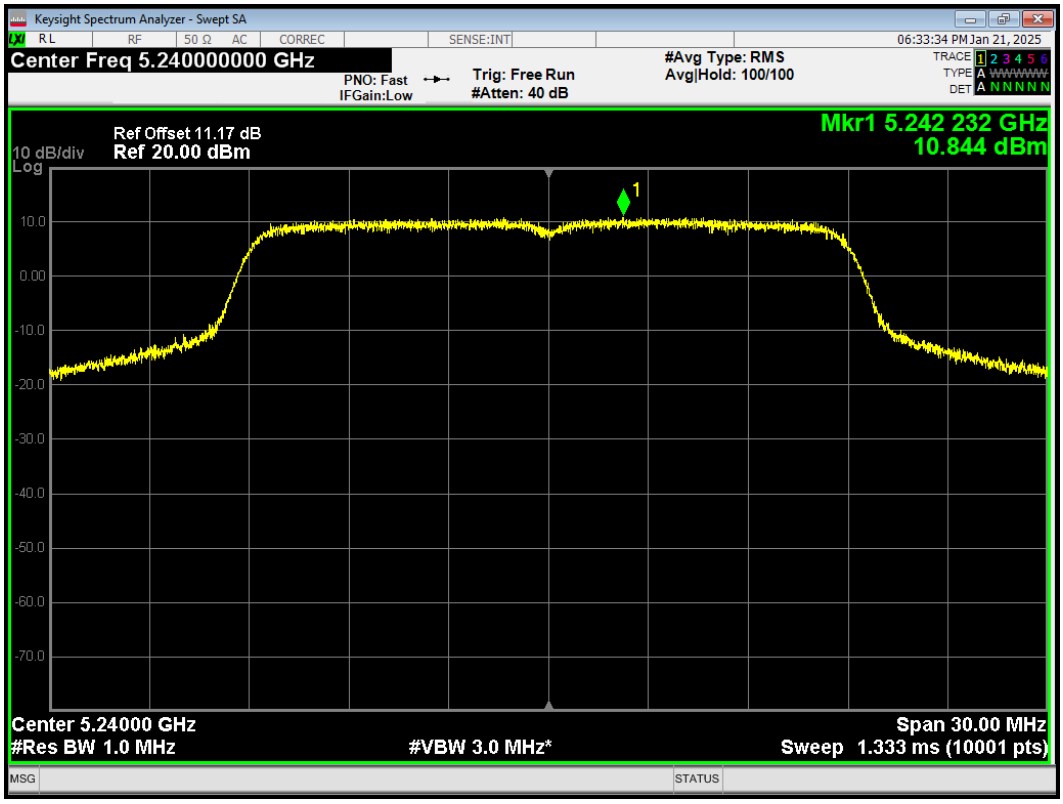
PSD 802.11ac(VHT20) 5180MHz



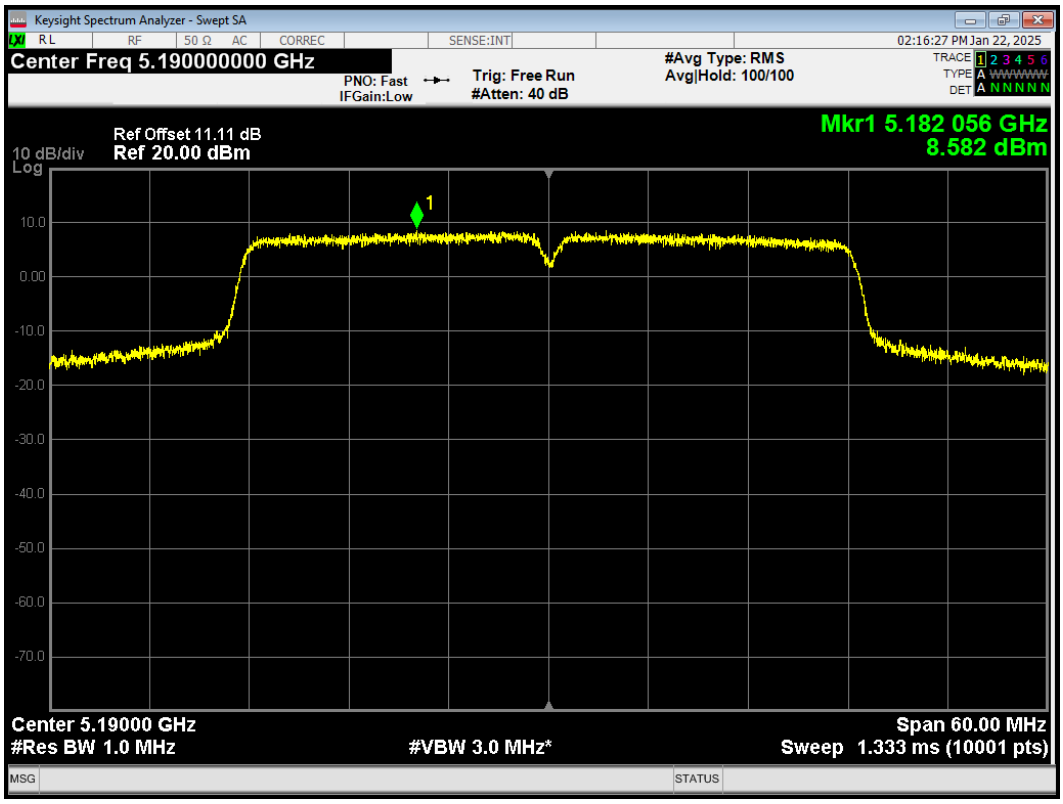
PSD 802.11ac(VHT20) 5200MHz



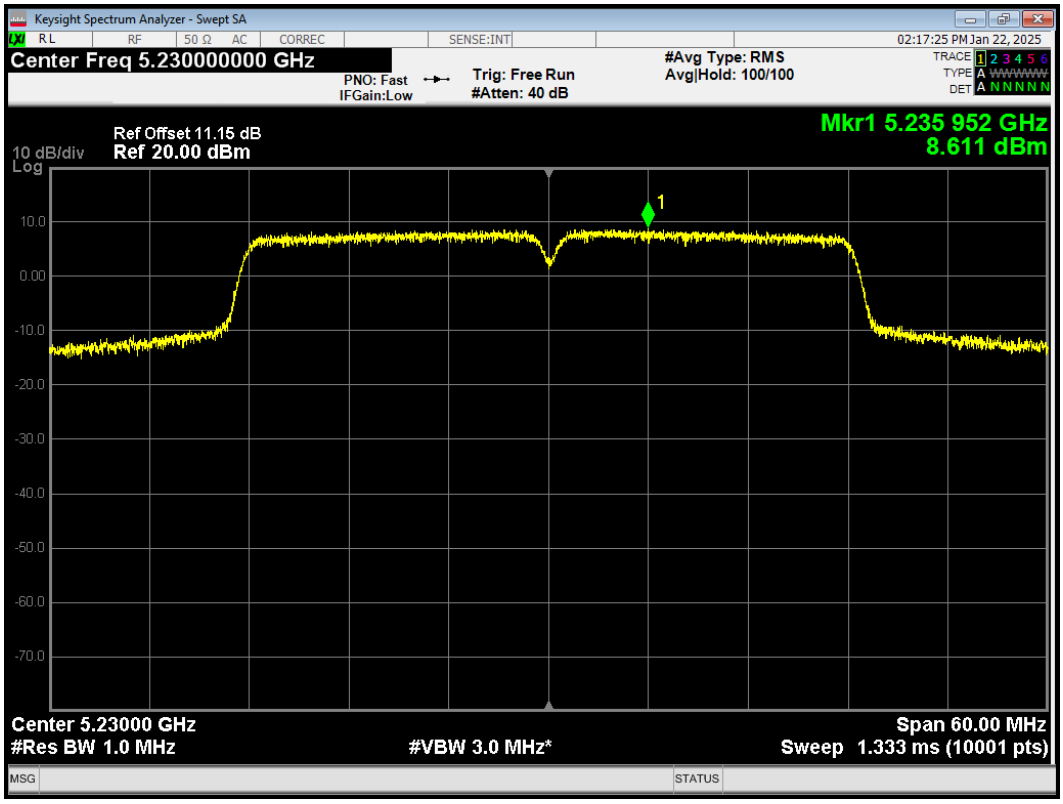
PSD 802.11ac(VHT20) 5240MHz



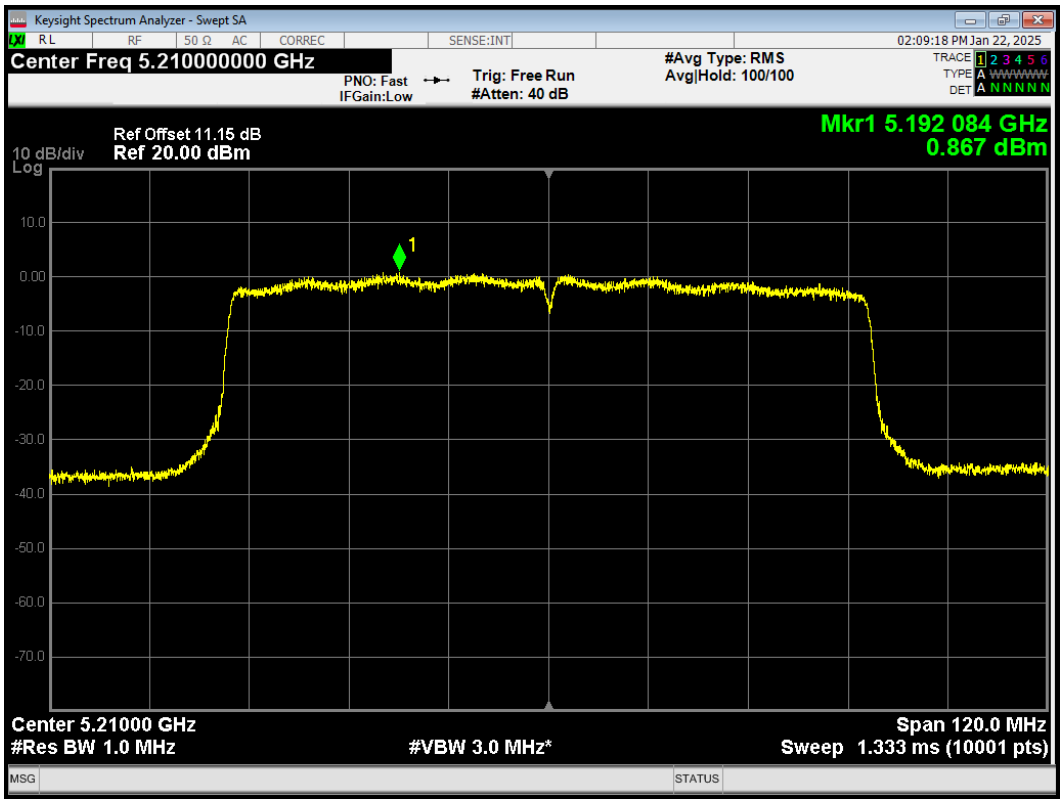
PSD 802.11ac(VHT40) 5190MHz



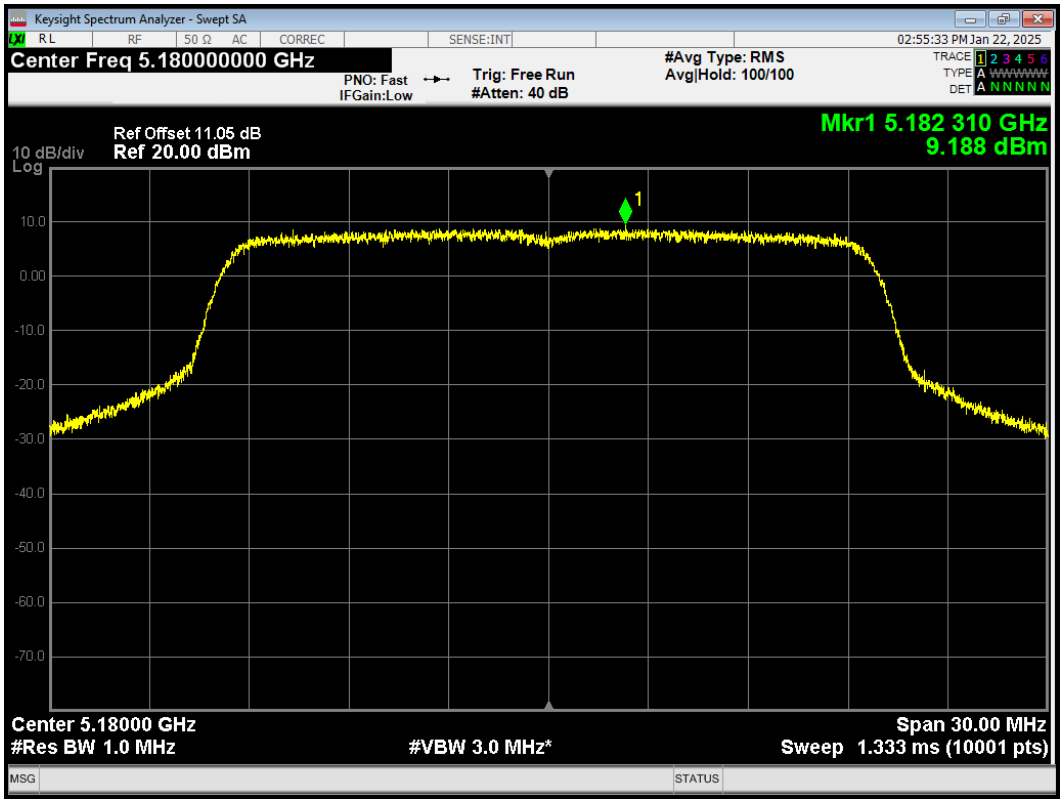
PSD 802.11ac(VHT40) 5230MHz



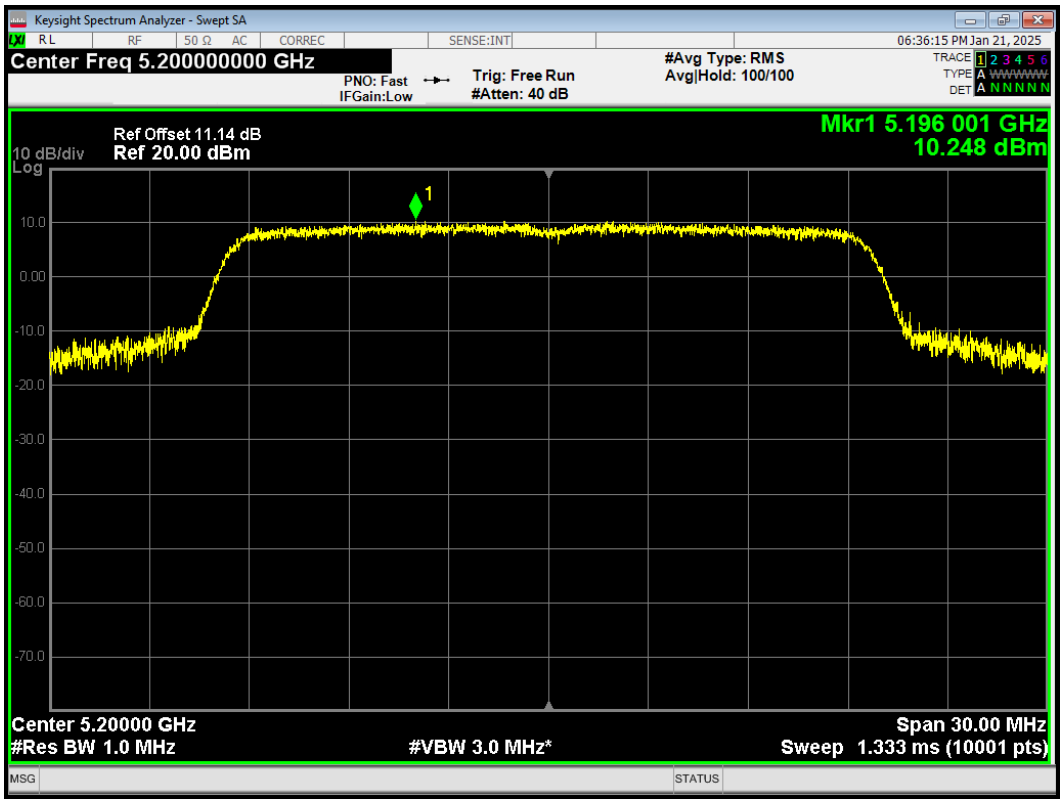
PSD 802.11ac(VHT80) 5210MHz



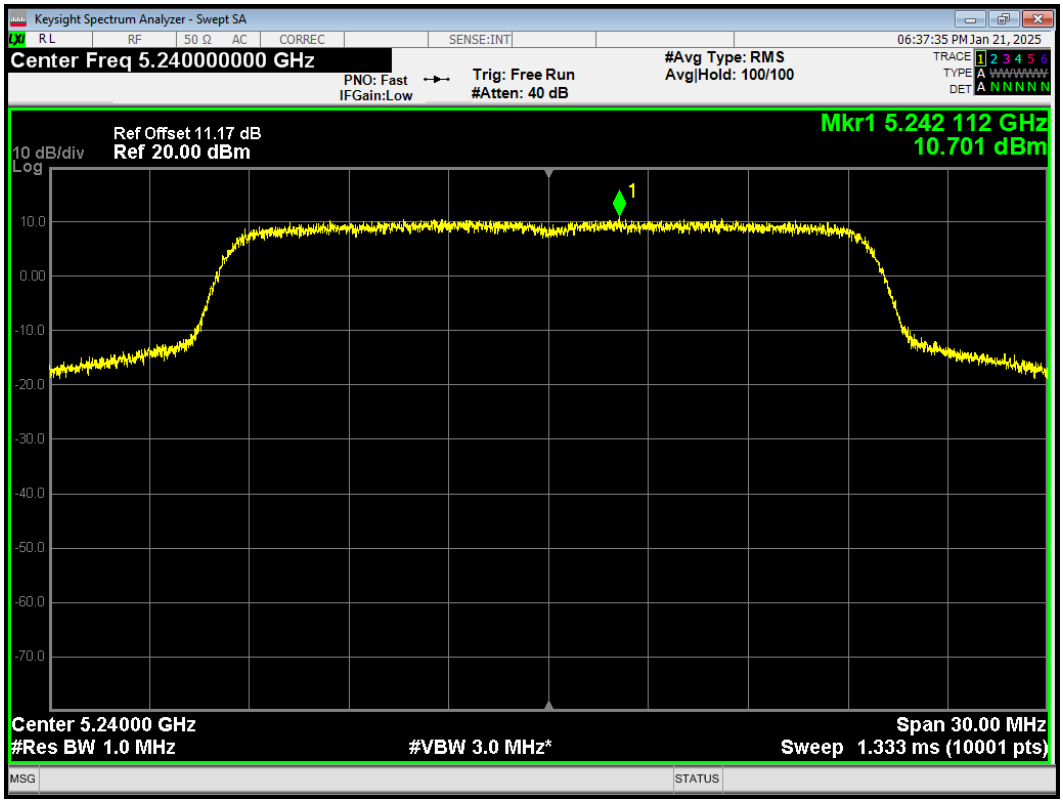
PSD 802.11ax(HE20) 5180MHz



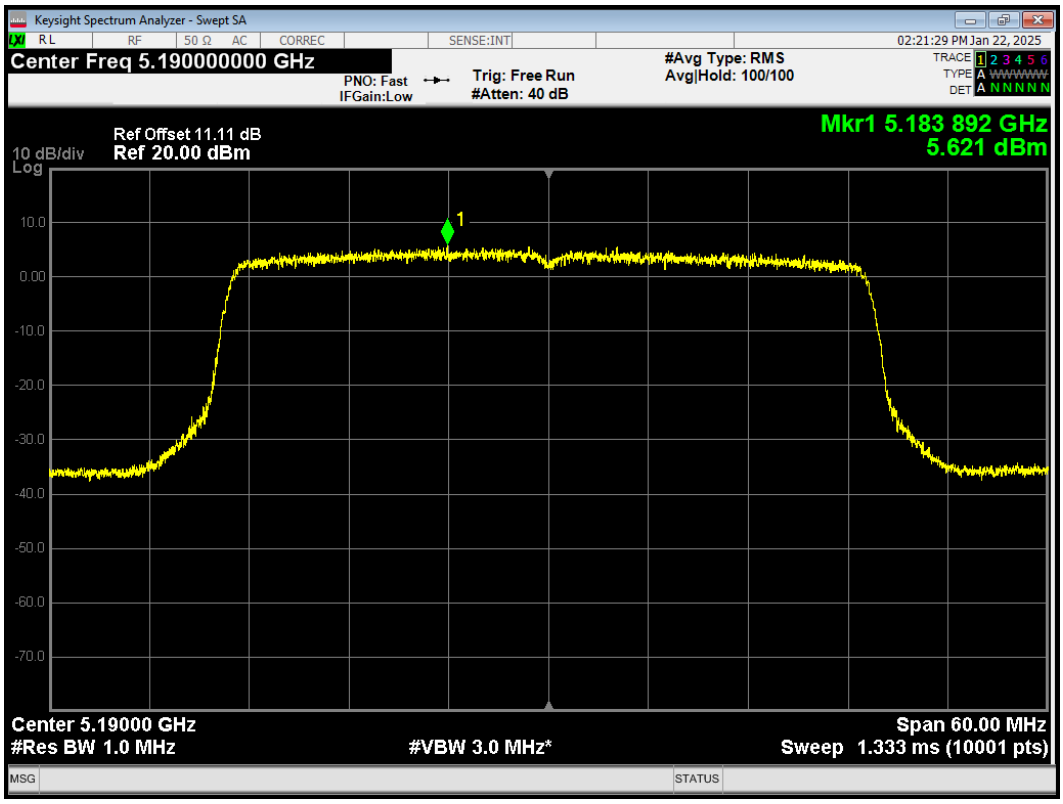
PSD 802.11ax(HE20) 5200MHz



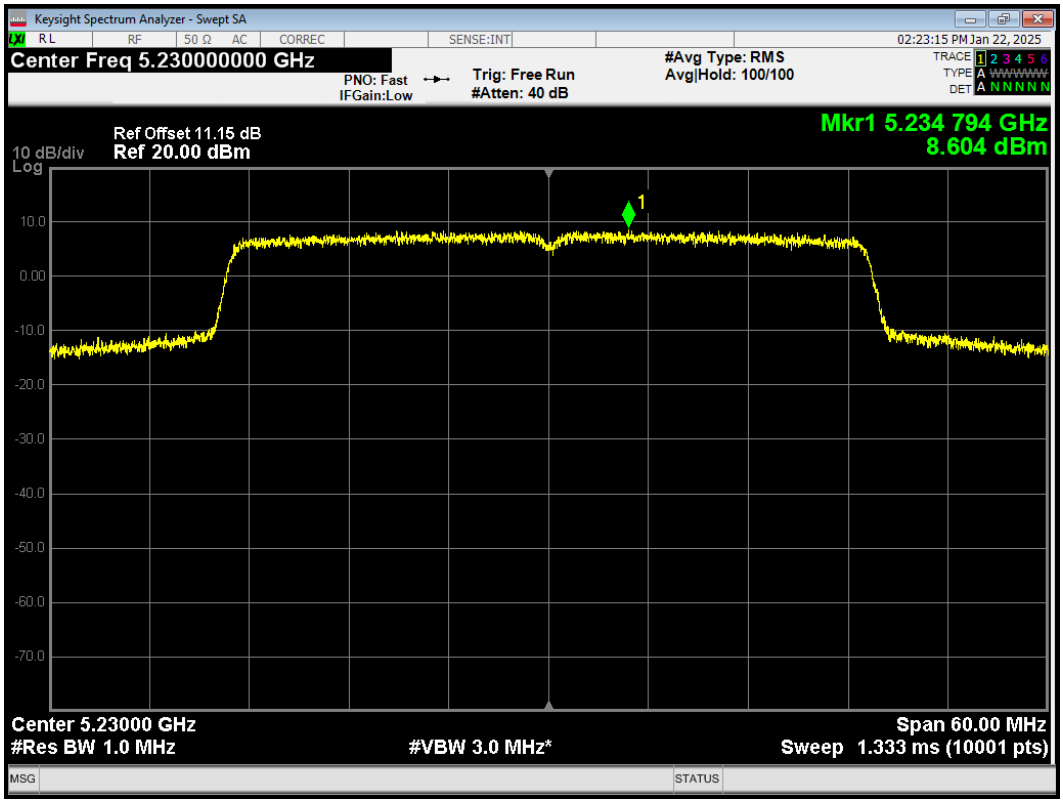
PSD 802.11ax(HE20) 5240MHz



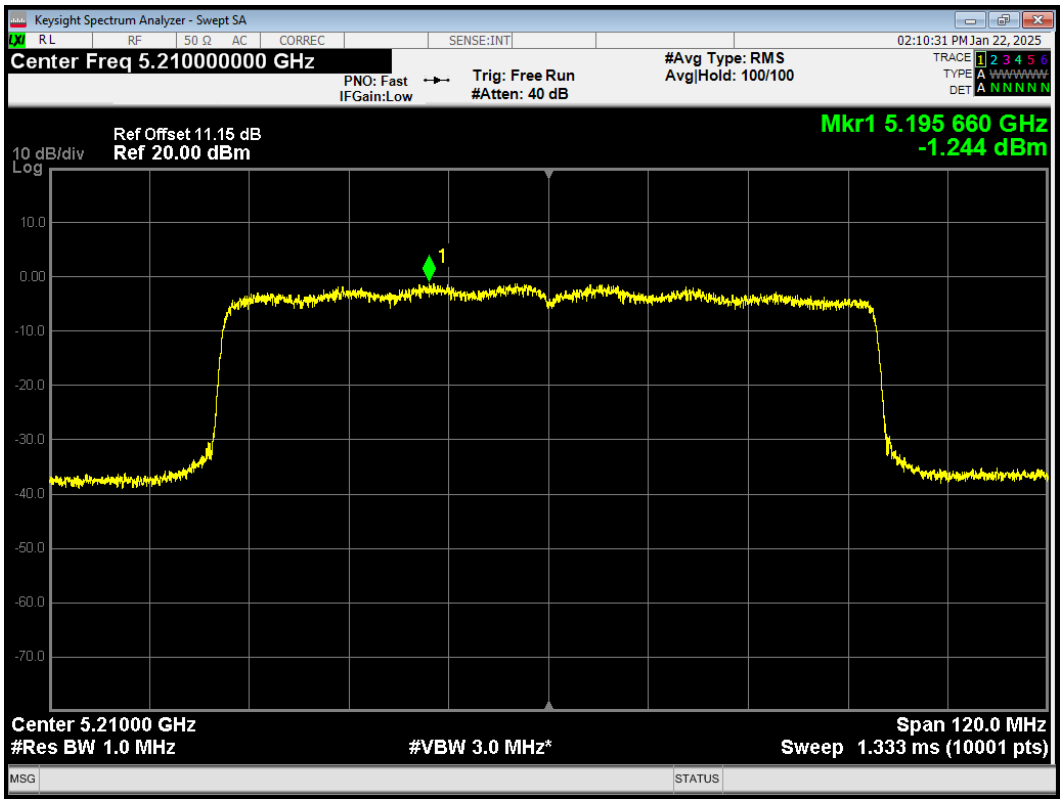
PSD 802.11ax(HE40) 5190MHz



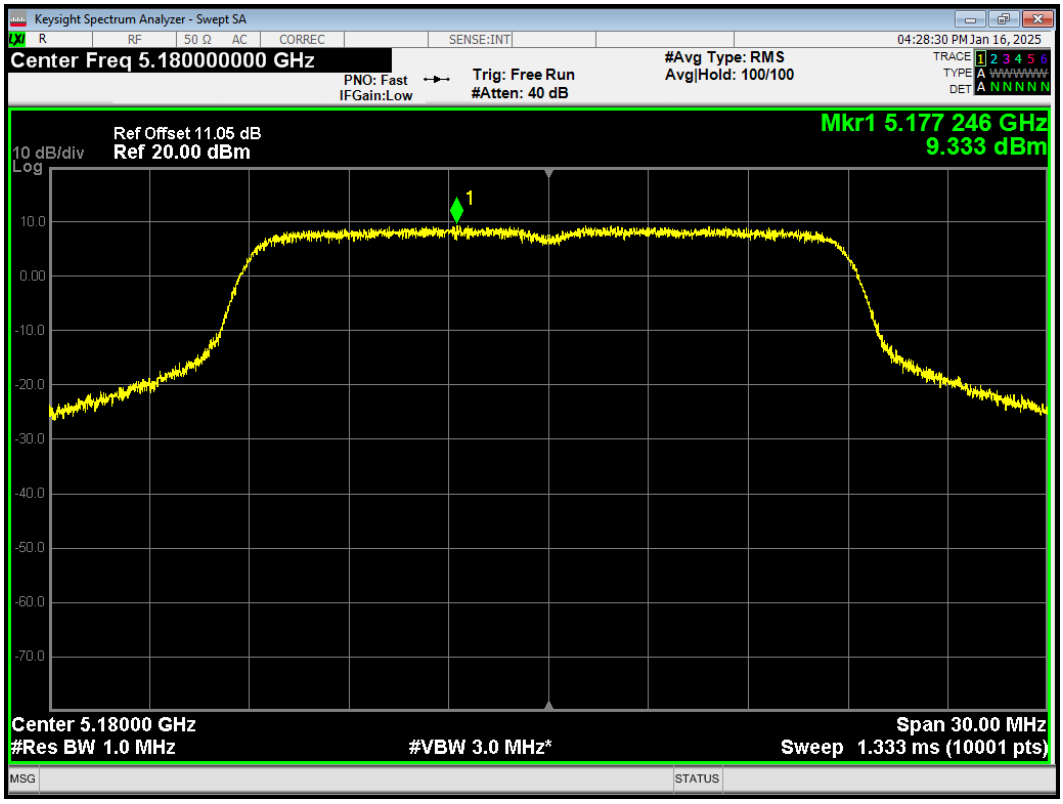
PSD 802.11ax(HE40) 5230MHz



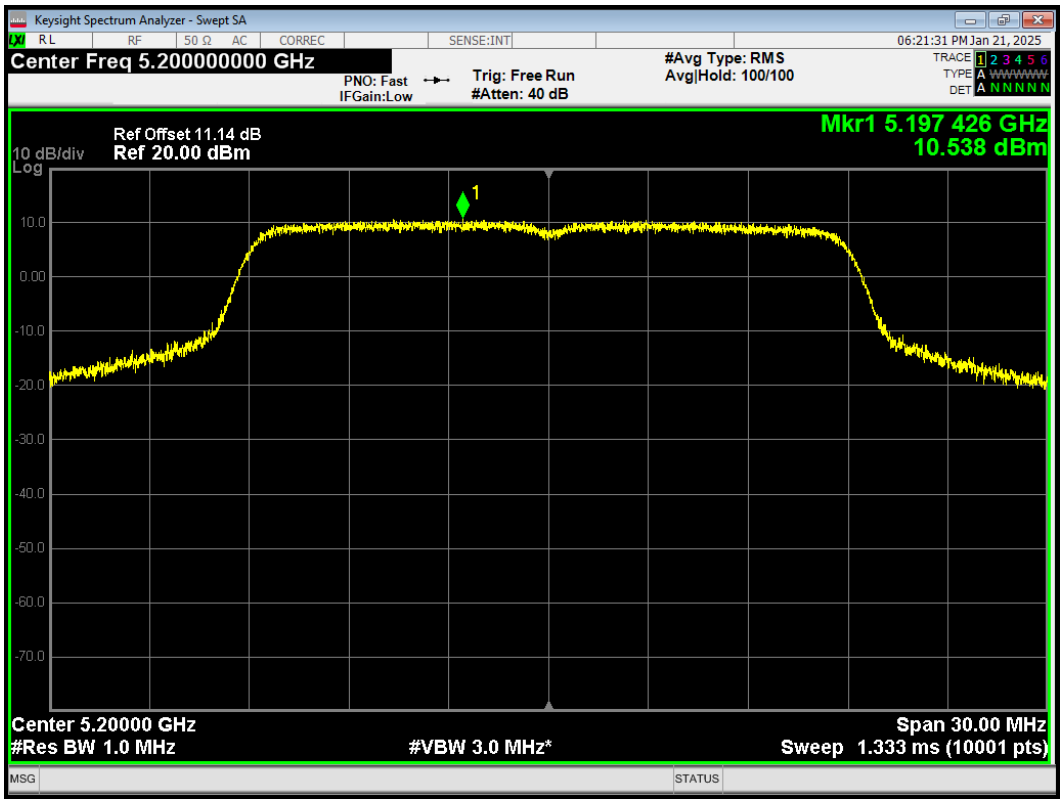
PSD 802.11ax(HE80) 5210MHz



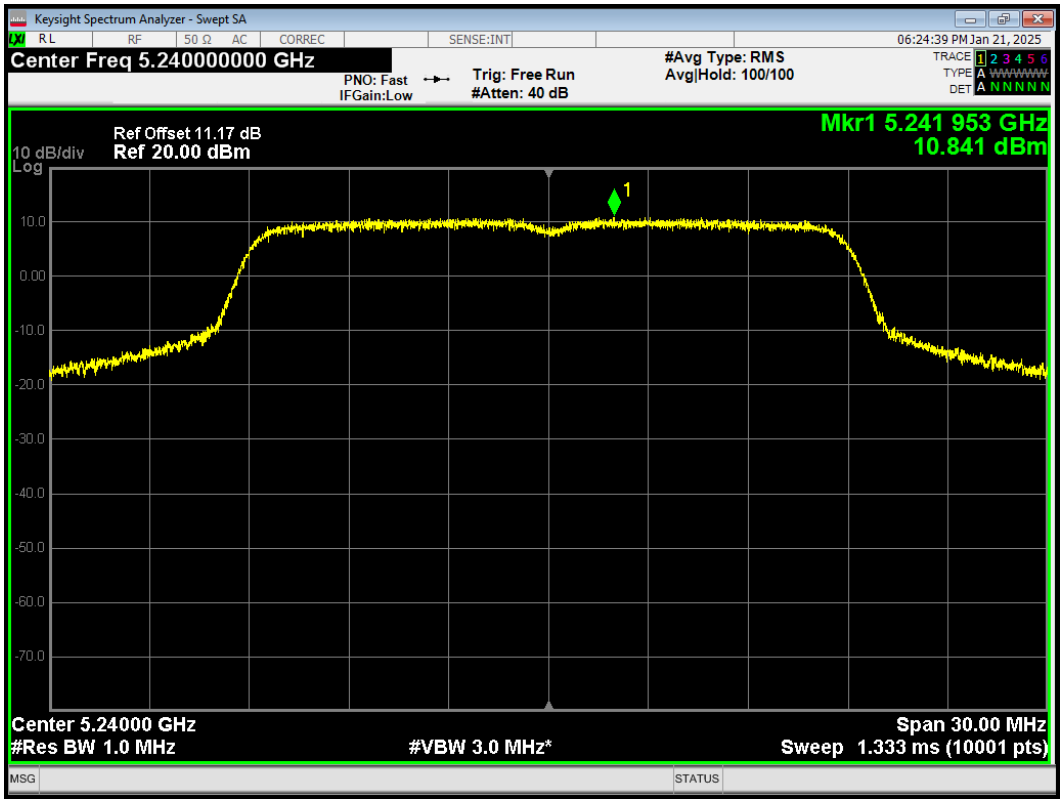
PSD 802.11n(HT20) 5180MHz



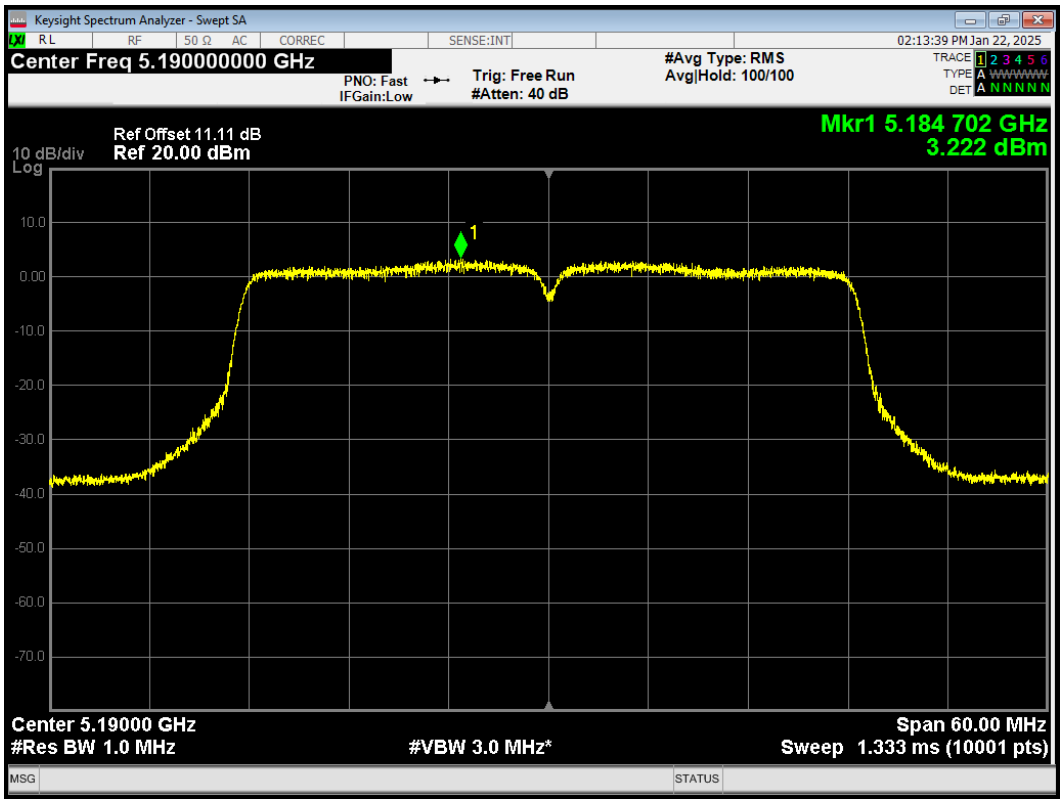
PSD 802.11n(HT20) 5200MHz



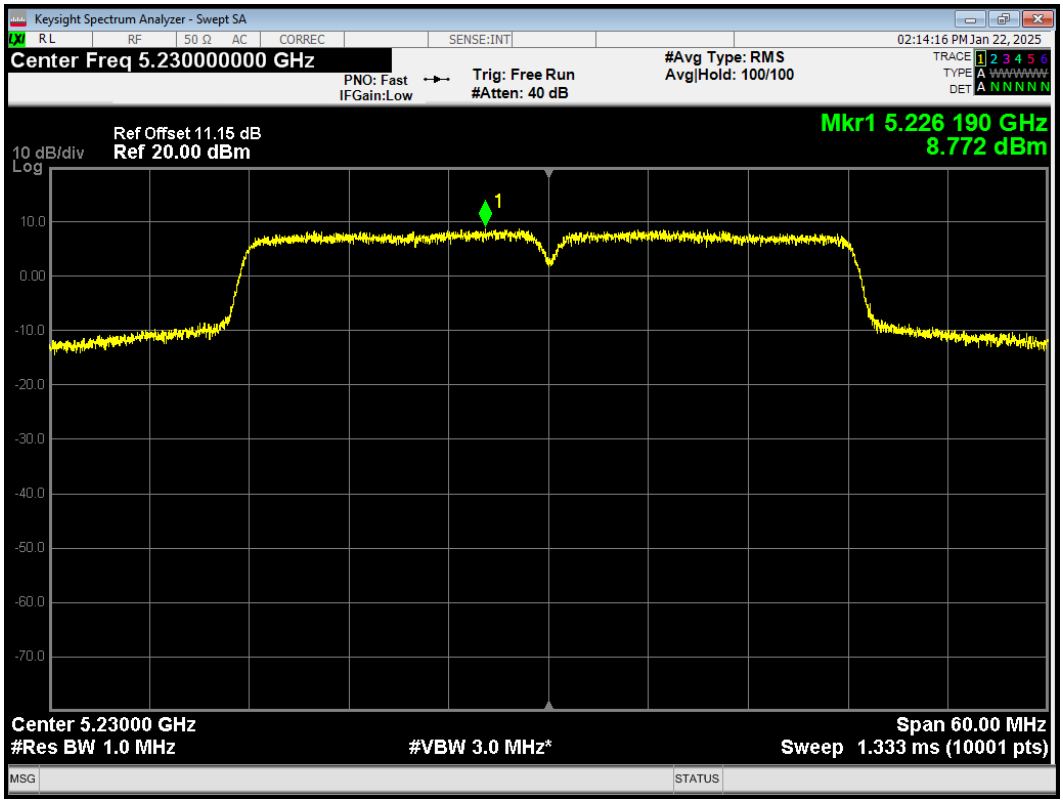
PSD 802.11n(HT20) 5240MHz



PSD 802.11n(HT40) 5190MHz

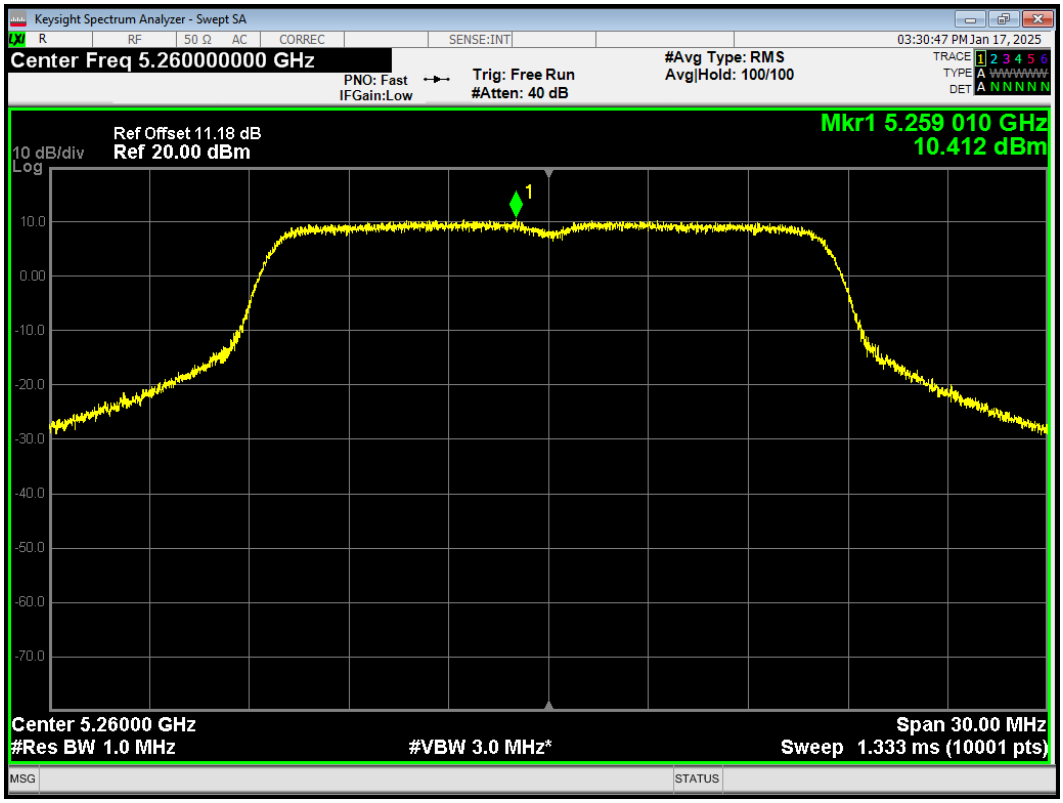


PSD 802.11n(HT40) 5230MHz

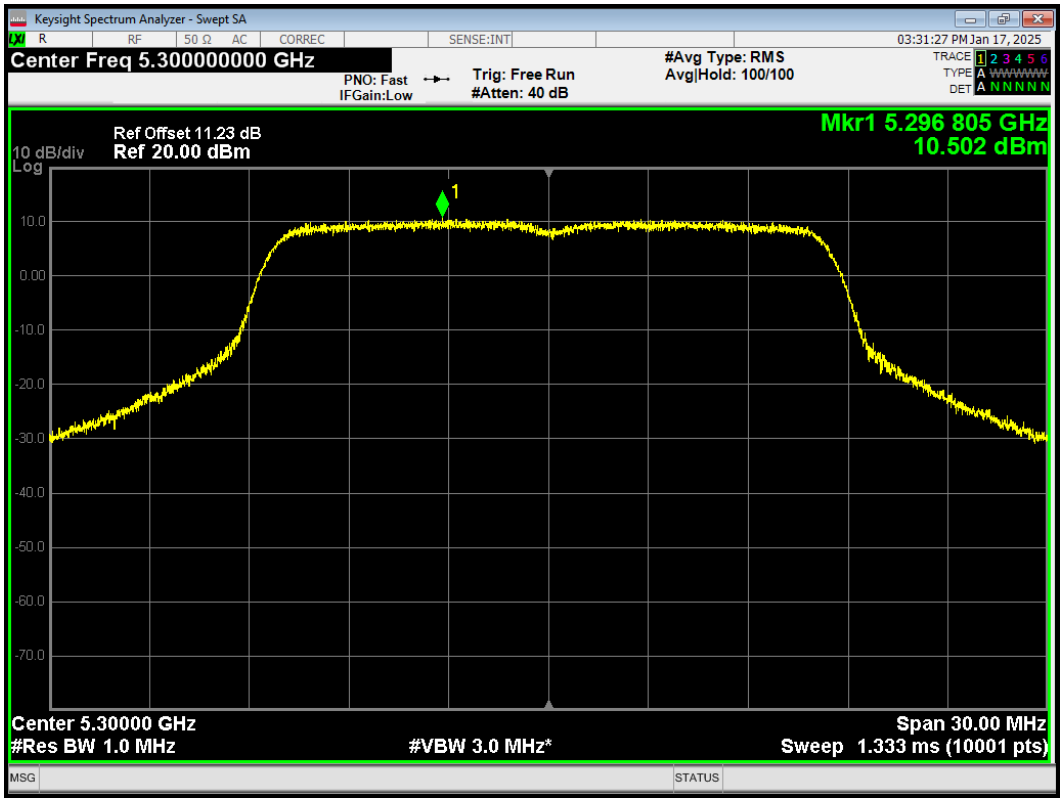


U-NII-2A

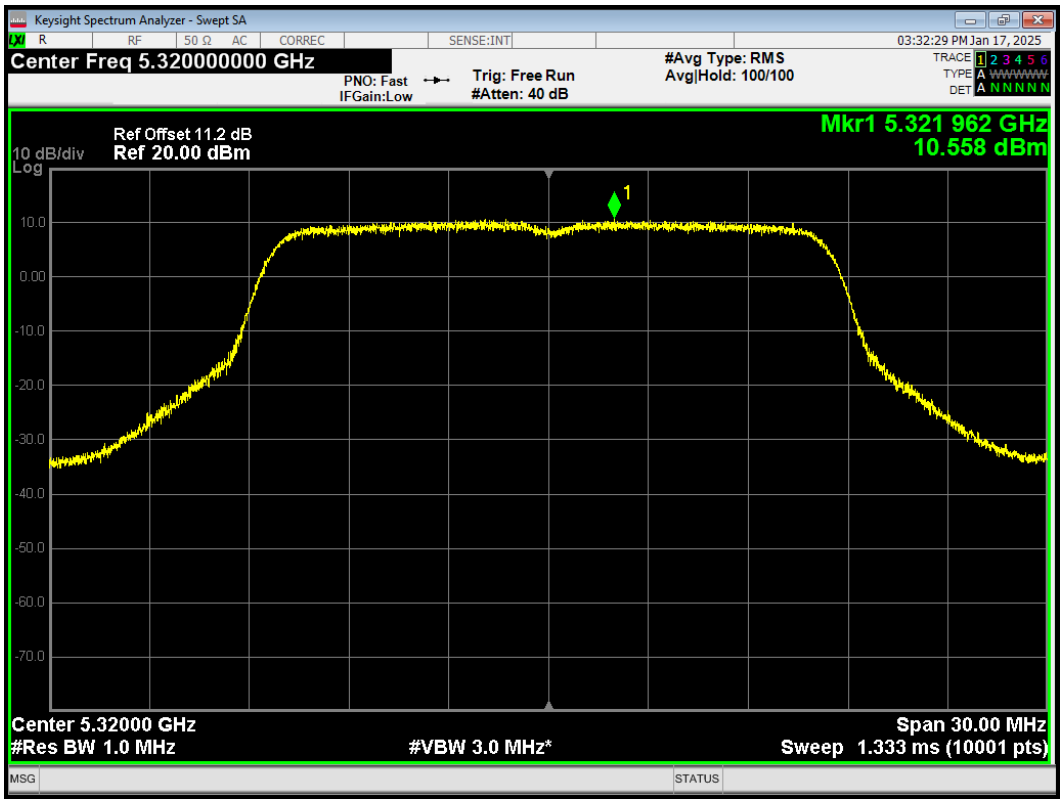
PSD 802.11a 5260MHz



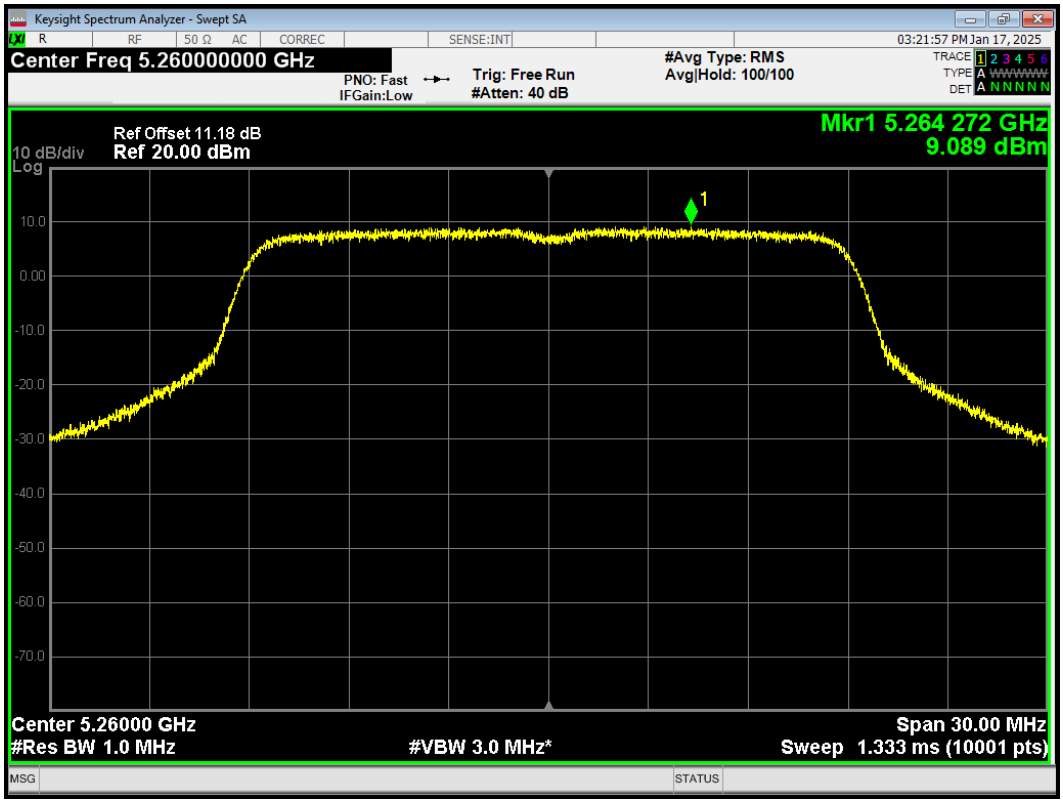
PSD 802.11a 5300MHz



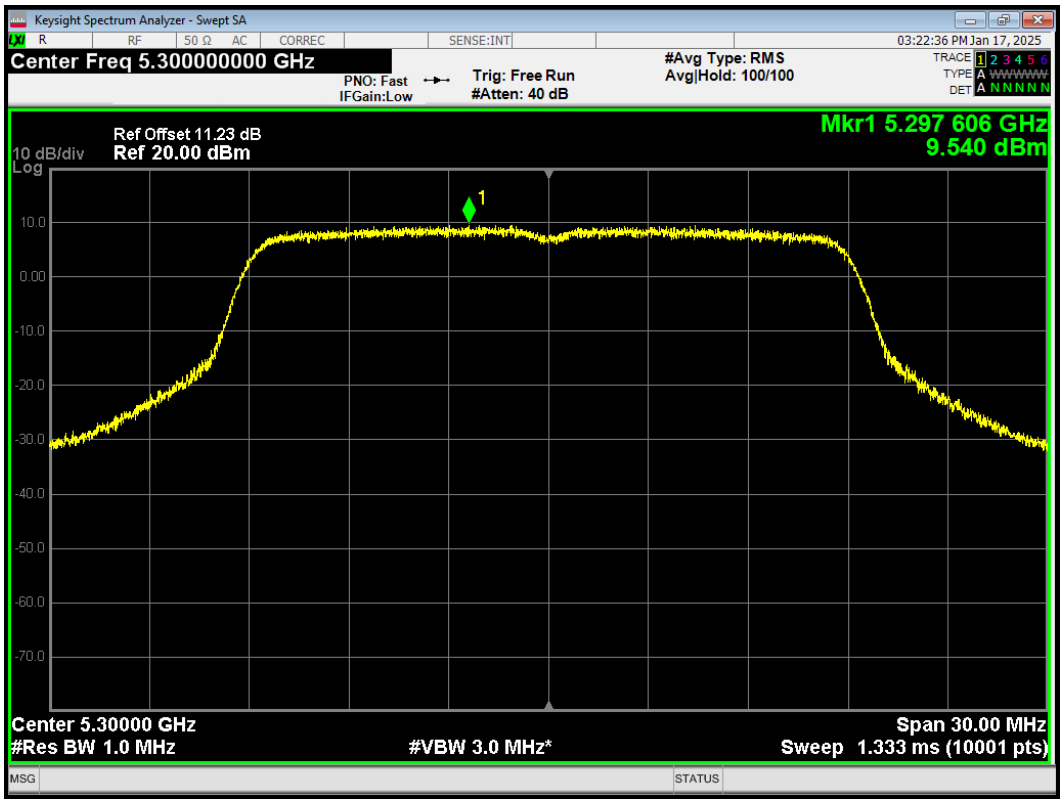
PSD 802.11a 5320MHz



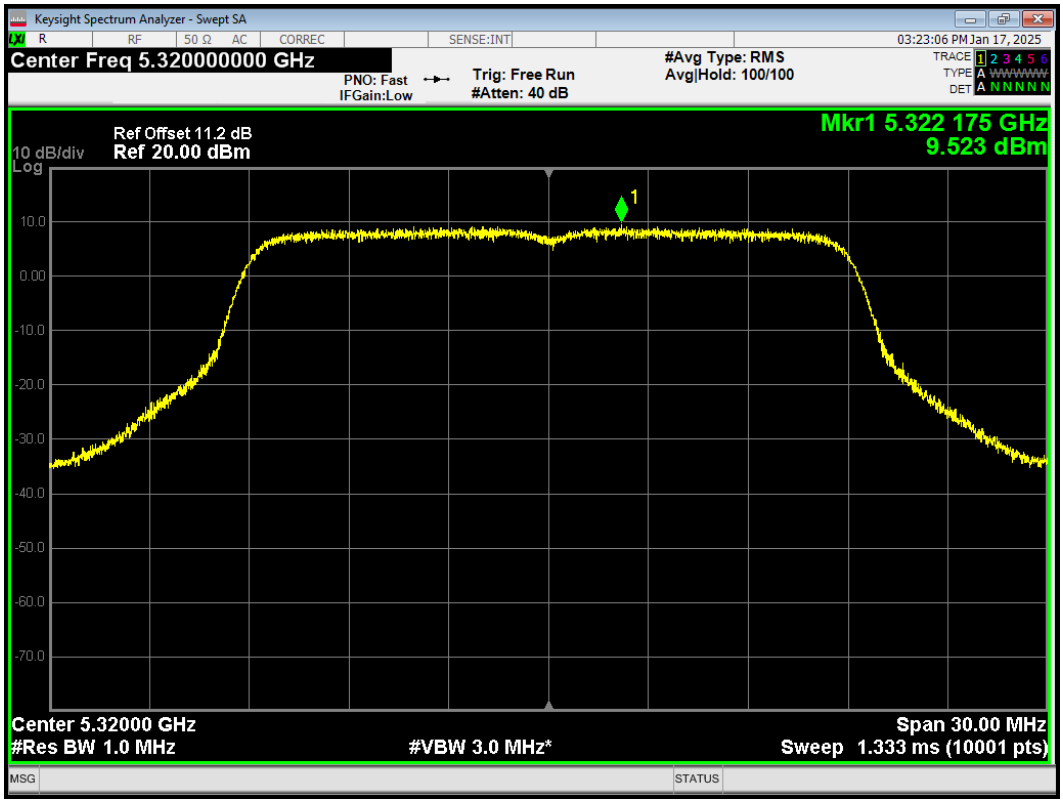
PSD 802.11ac(VHT20) 5260MHz



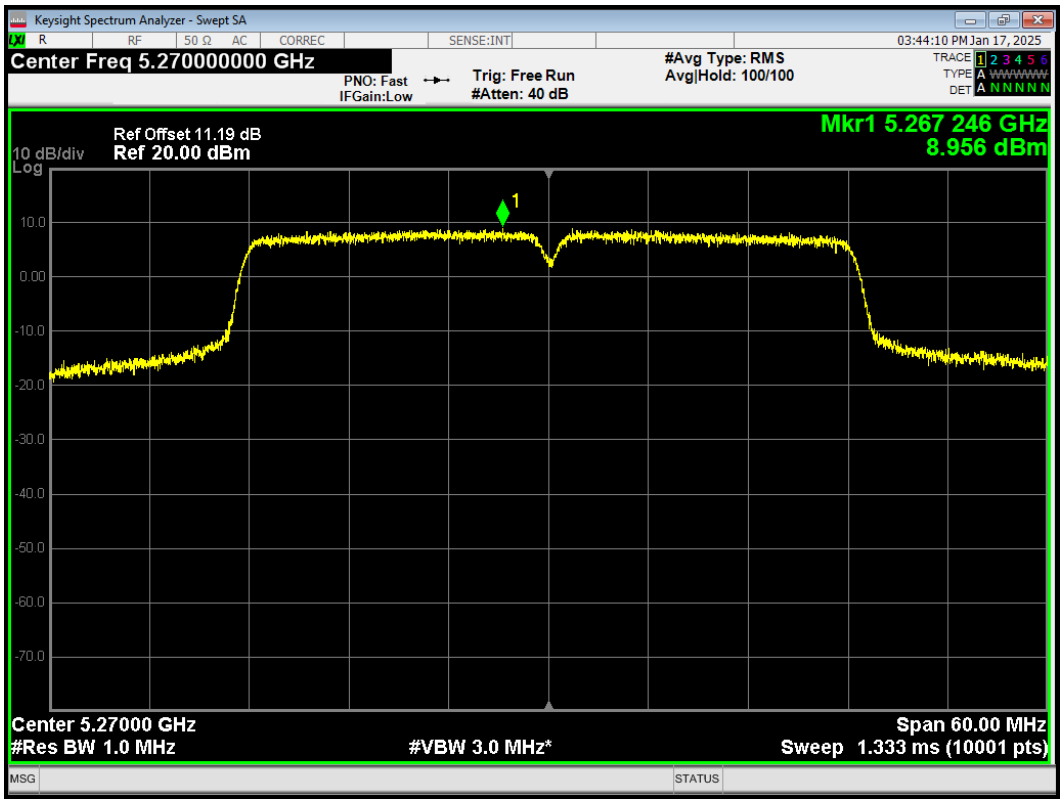
PSD 802.11ac(VHT20) 5300MHz



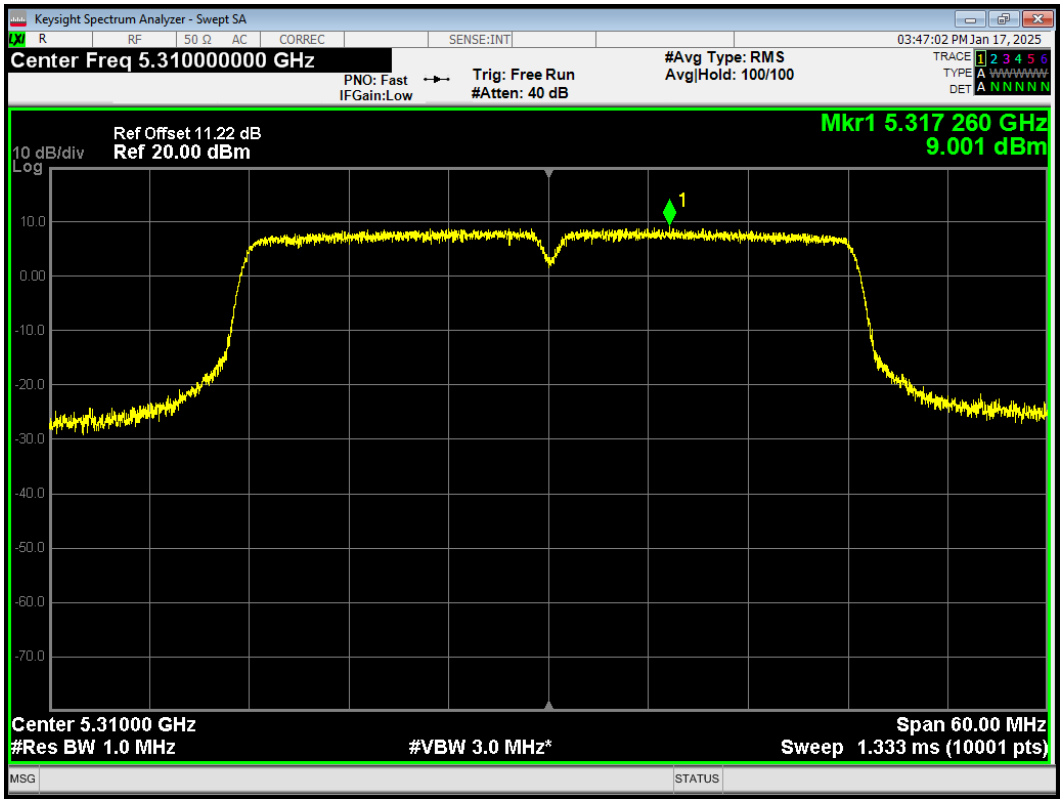
PSD 802.11ac(VHT20) 5320MHz



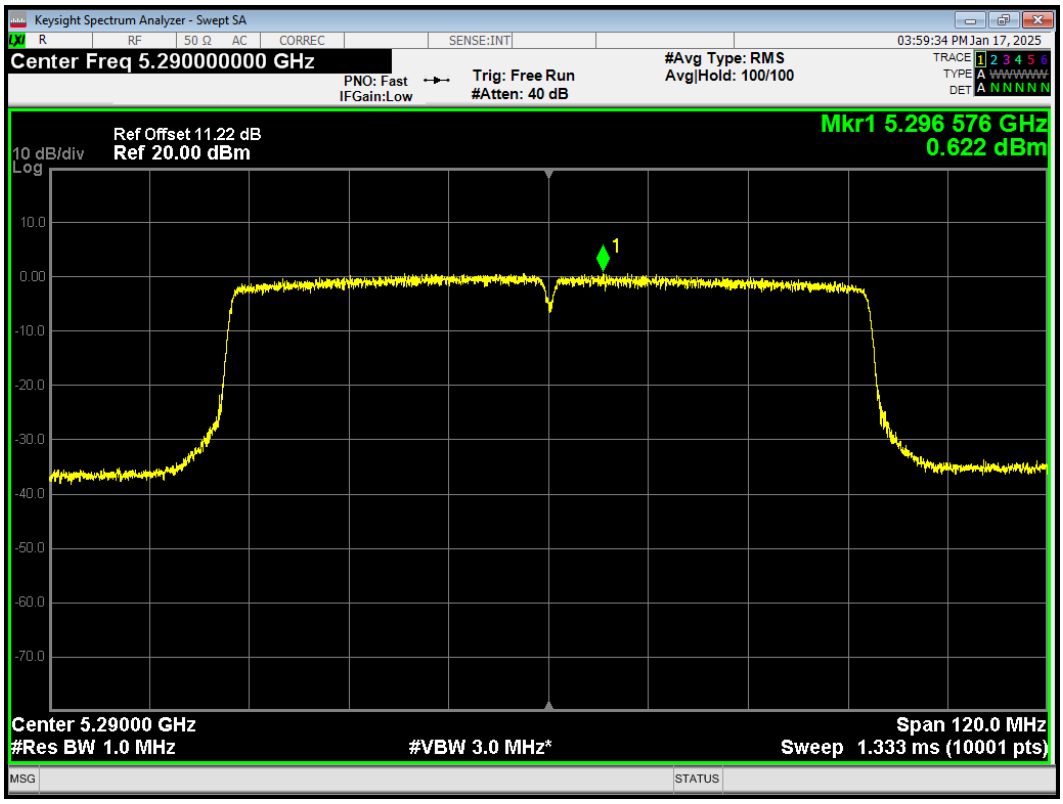
PSD 802.11ac(VHT40) 5270MHz



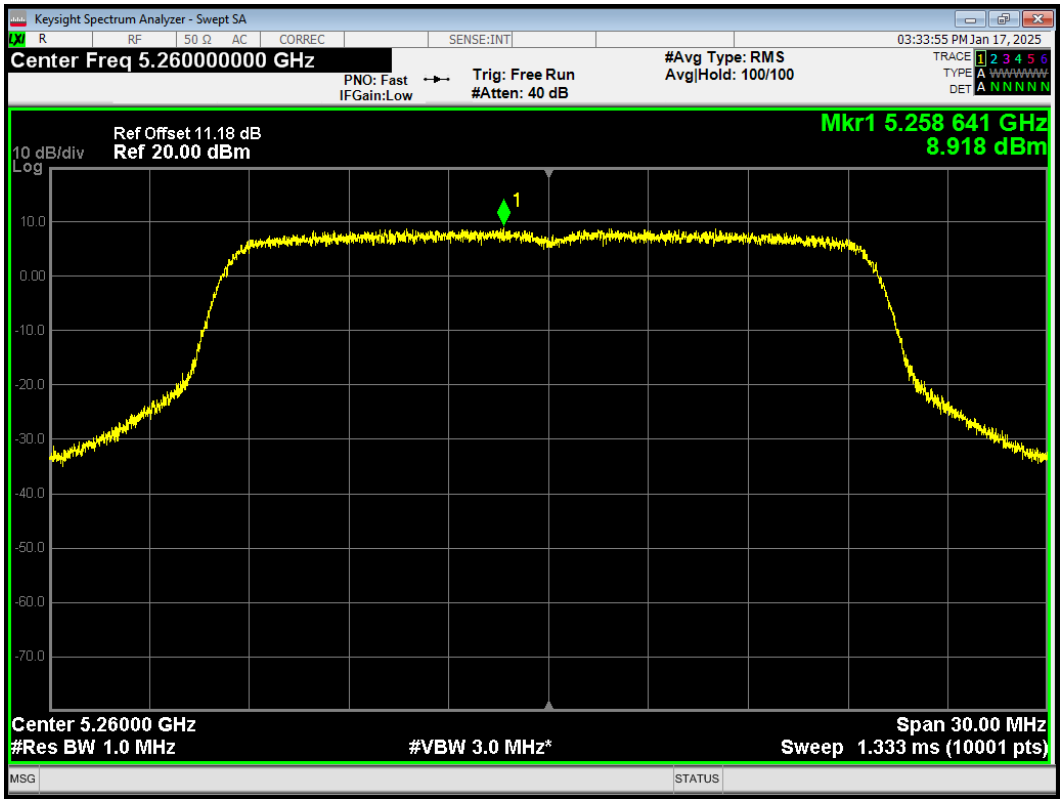
PSD 802.11ac(VHT40) 5310MHz



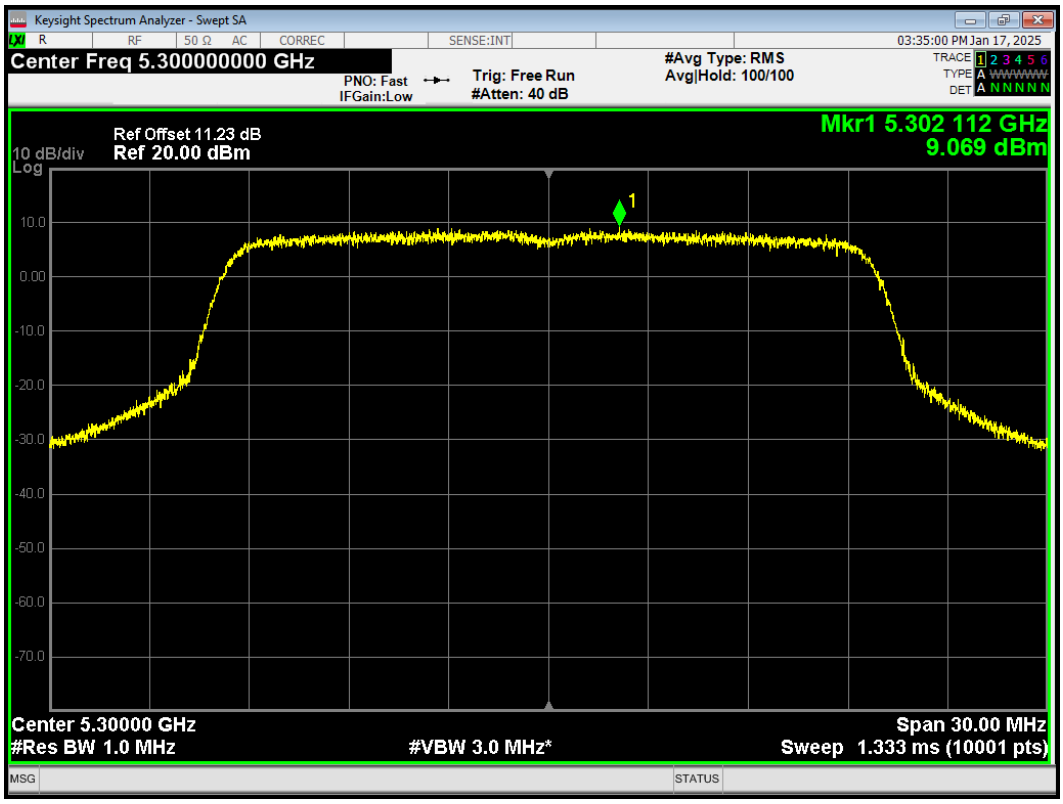
PSD 802.11ac(VHT80) 5290MHz



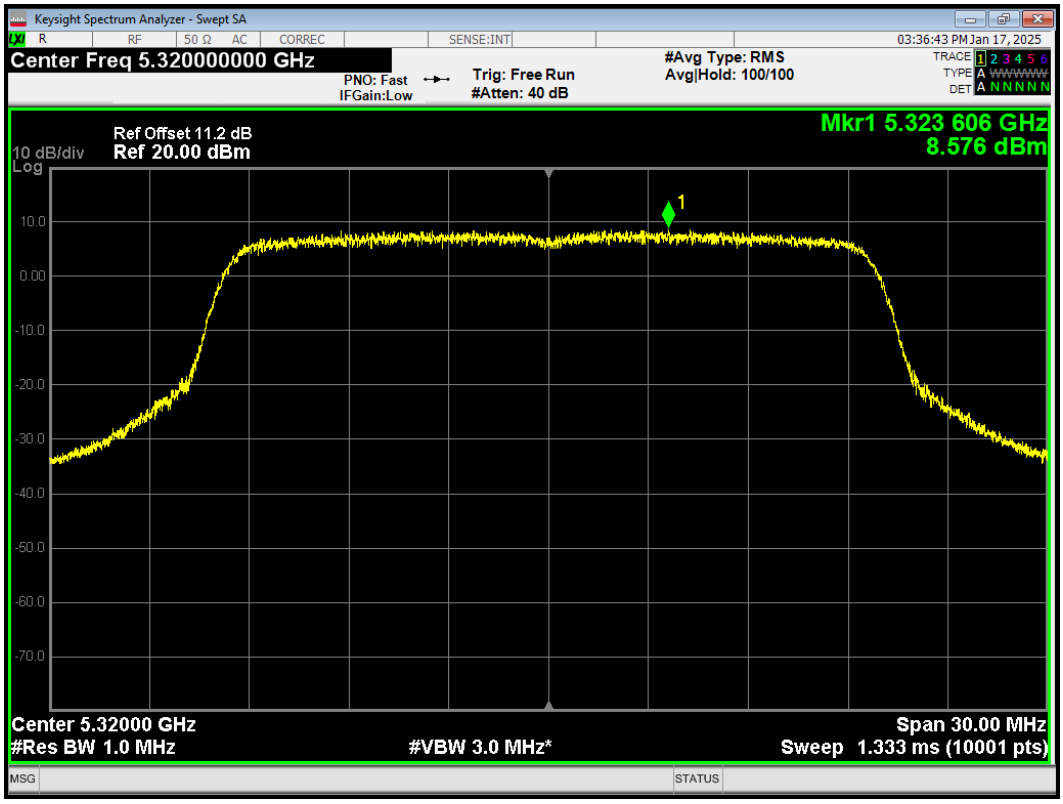
PSD 802.11ax(HE20) 5260MHz



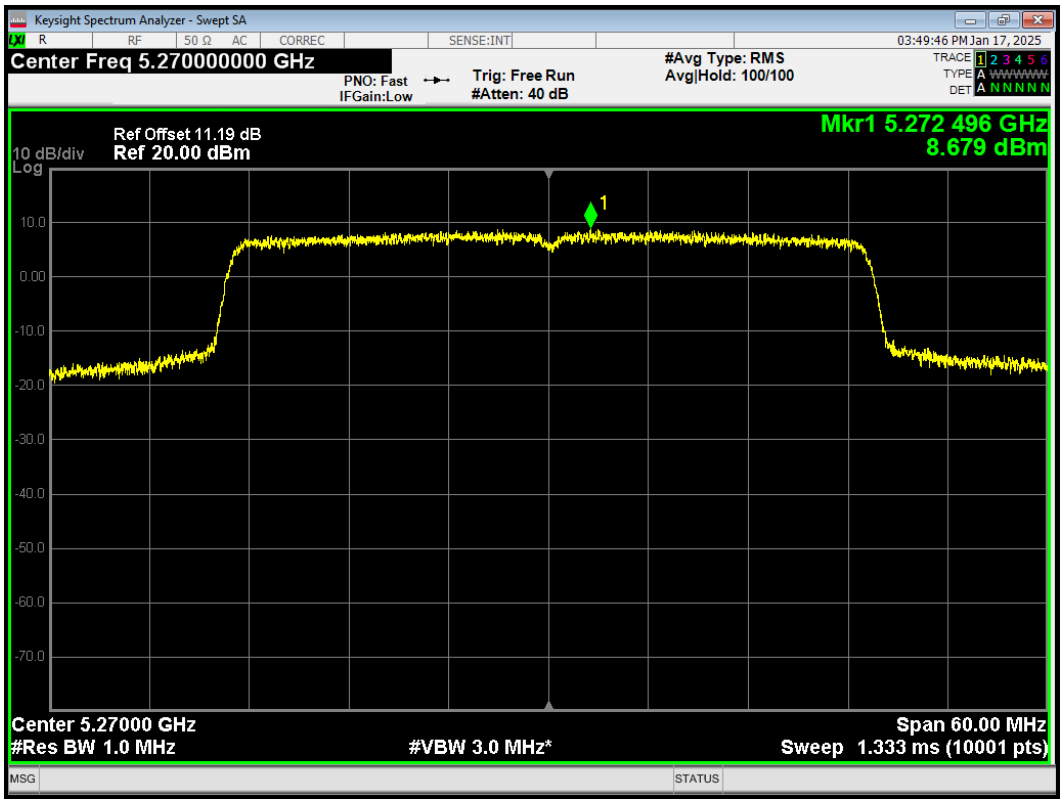
PSD 802.11ax(HE20) 5300MHz



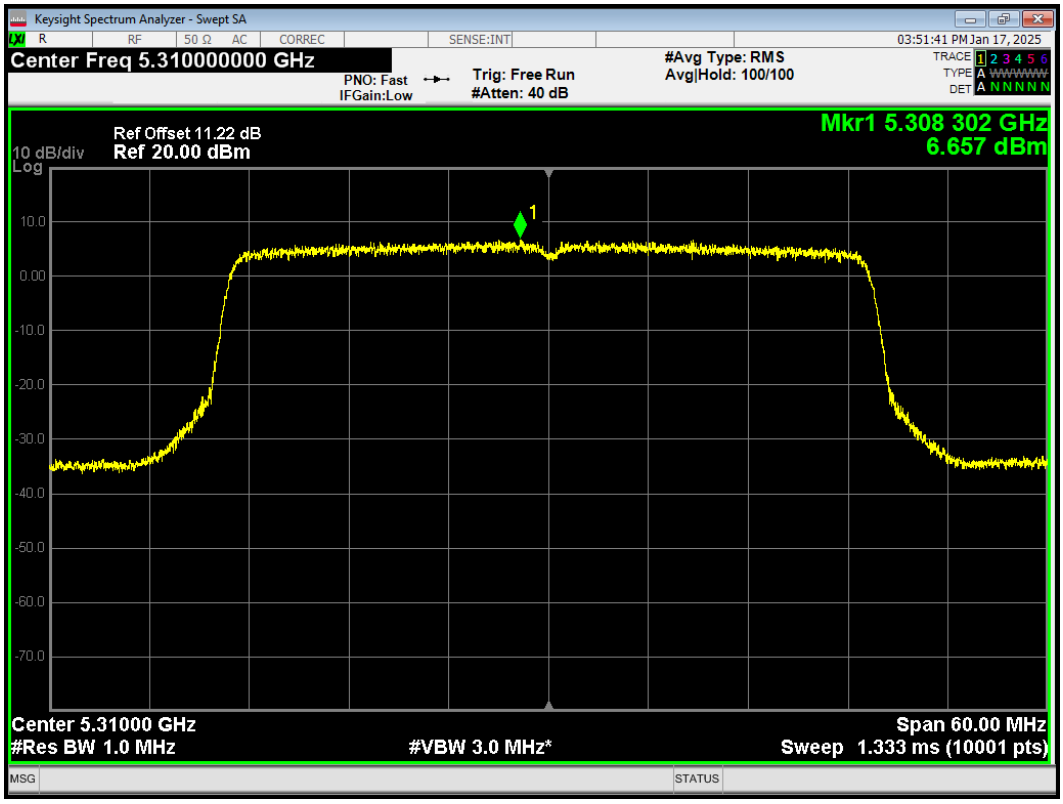
PSD 802.11ax(HE20) 5320MHz



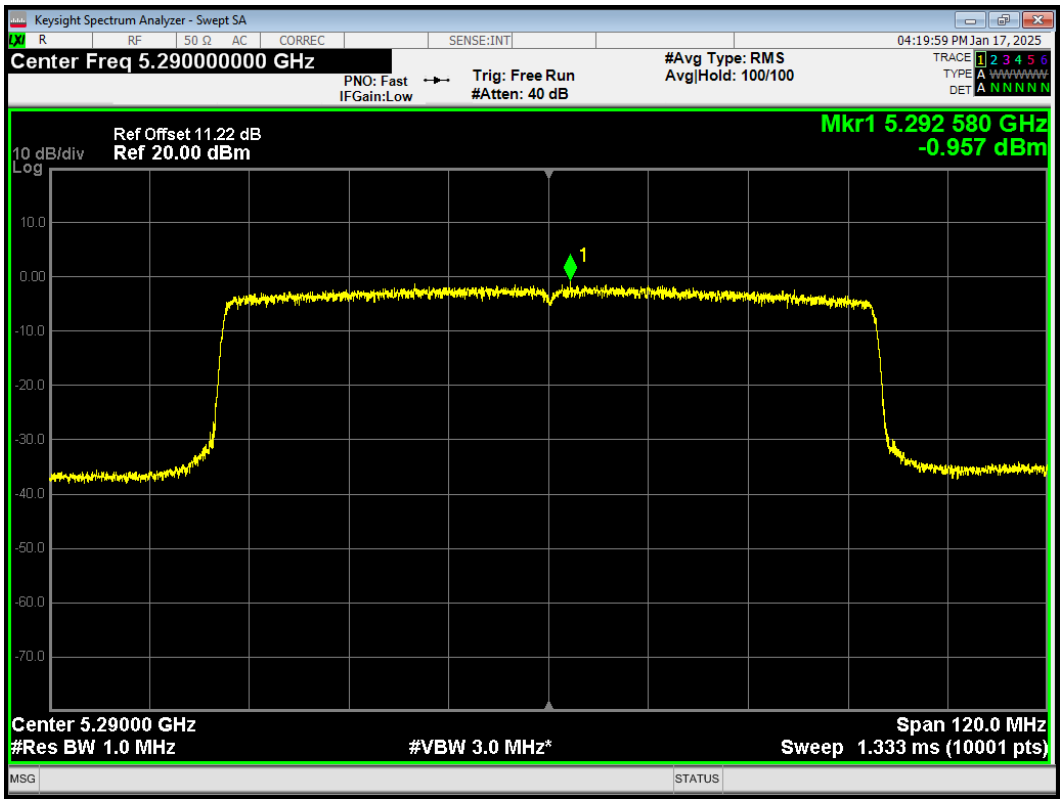
PSD 802.11ax(HE40) 5270MHz



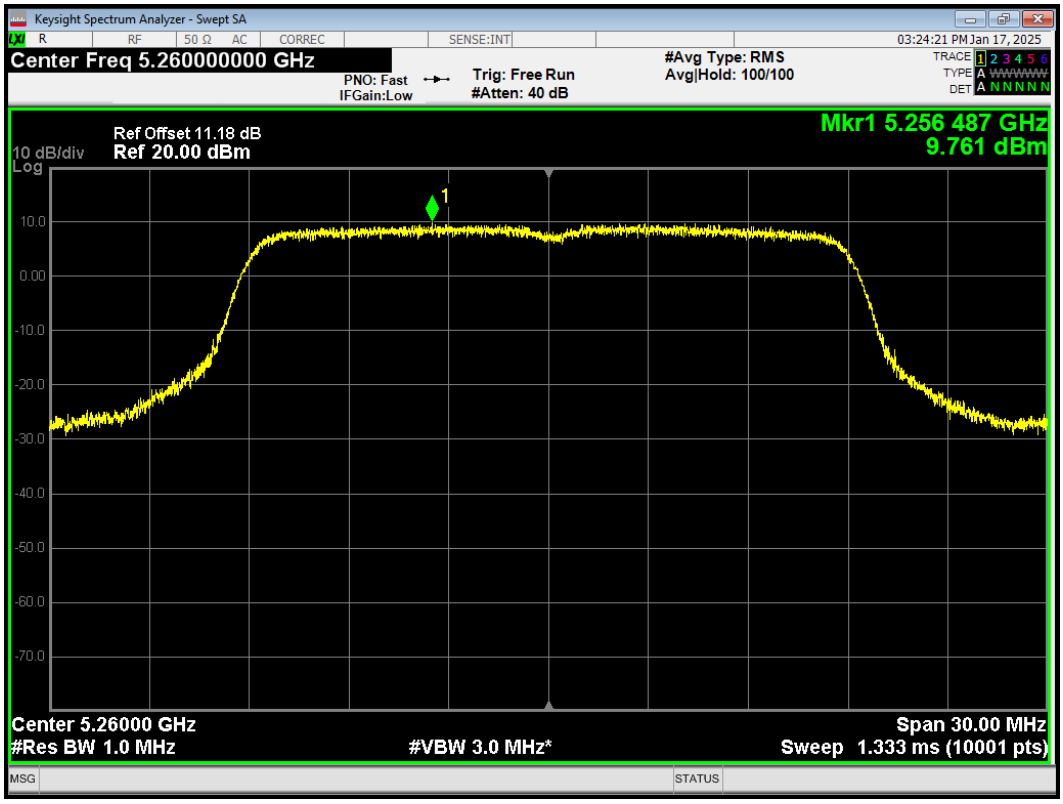
PSD 802.11ax(HE40) 5310MHz



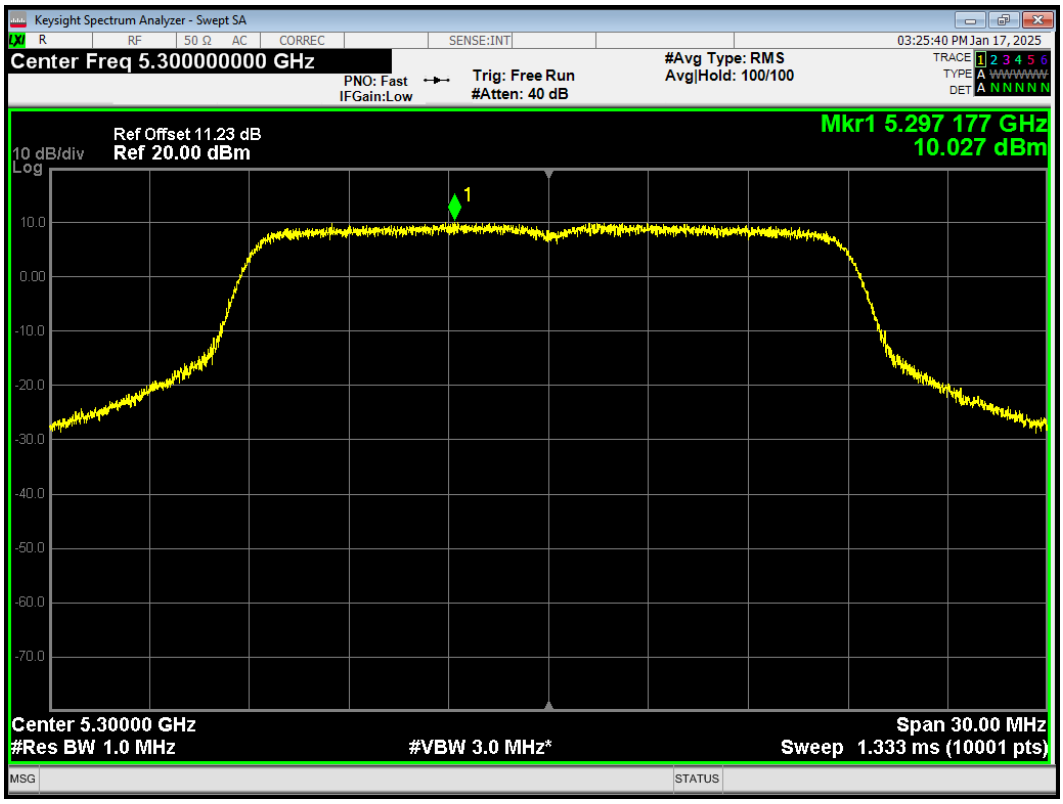
PSD 802.11ax(HE80) 5290MHz



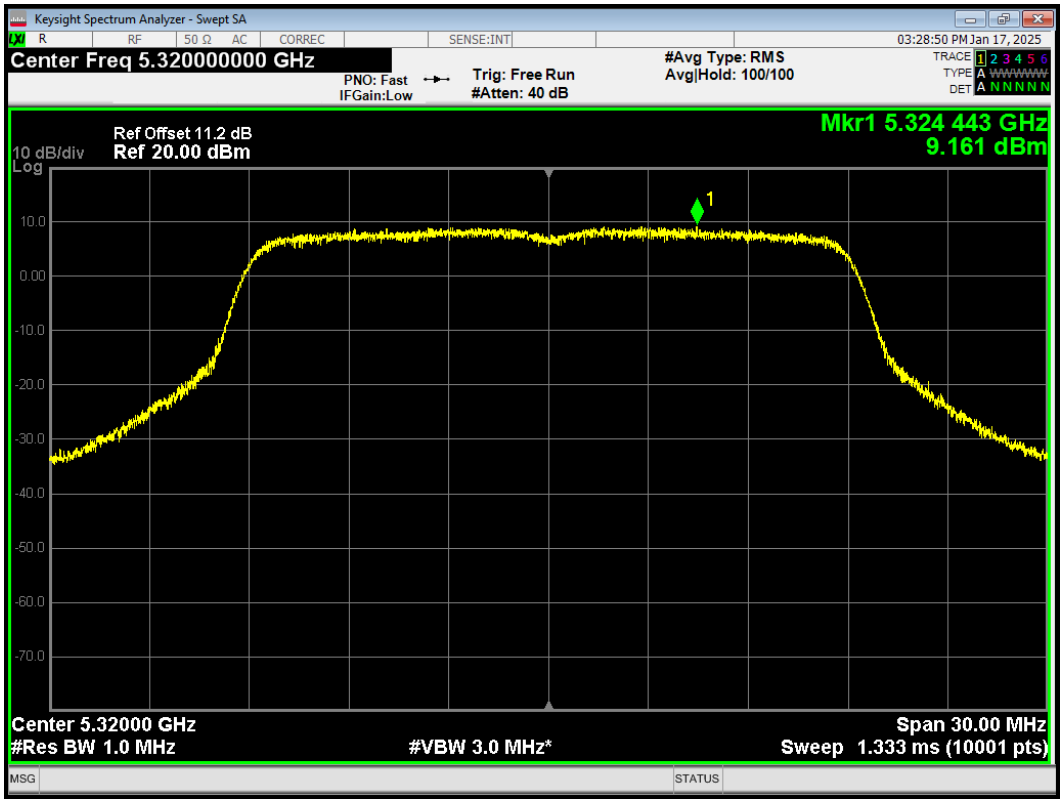
PSD 802.11n(HT20) 5260MHz



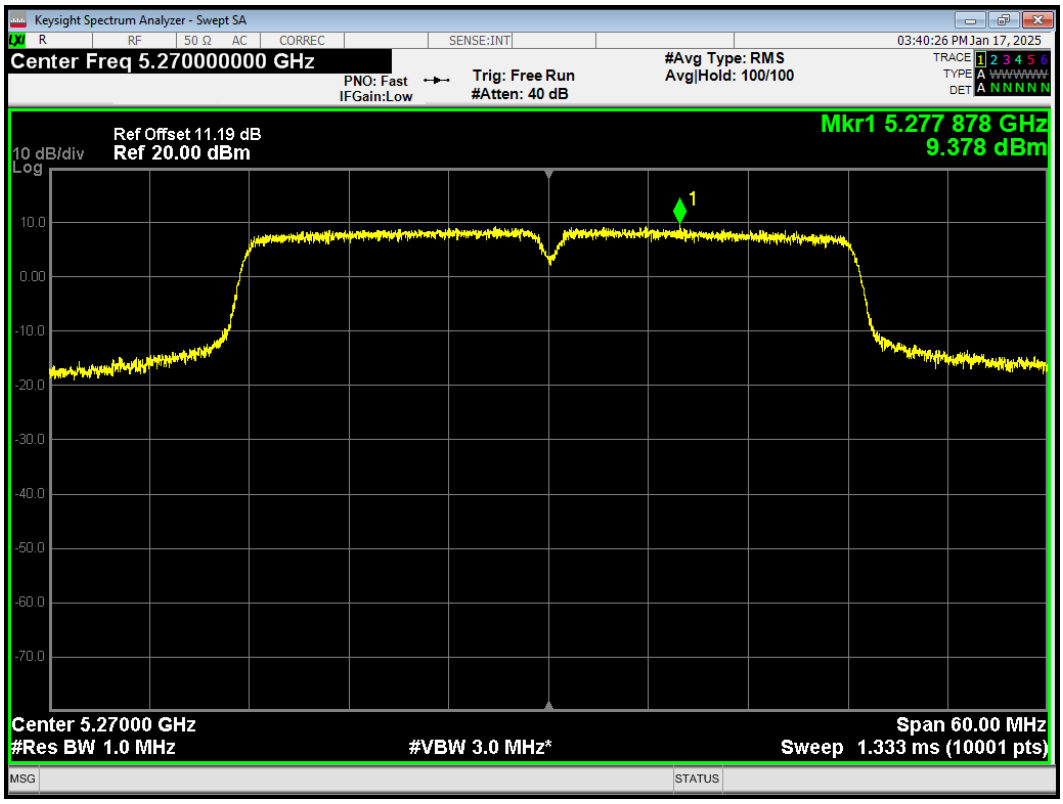
PSD 802.11n(HT20) 5300MHz



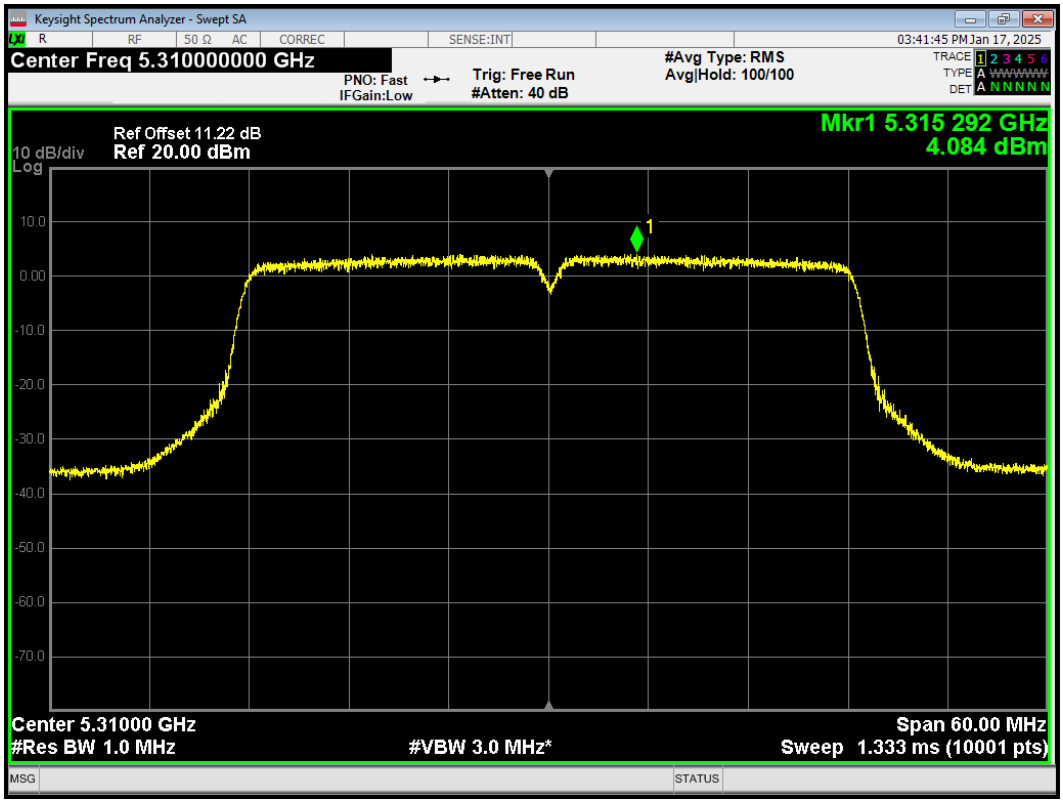
PSD 802.11n(HT20) 5320MHz



PSD 802.11n(HT40) 5270MHz

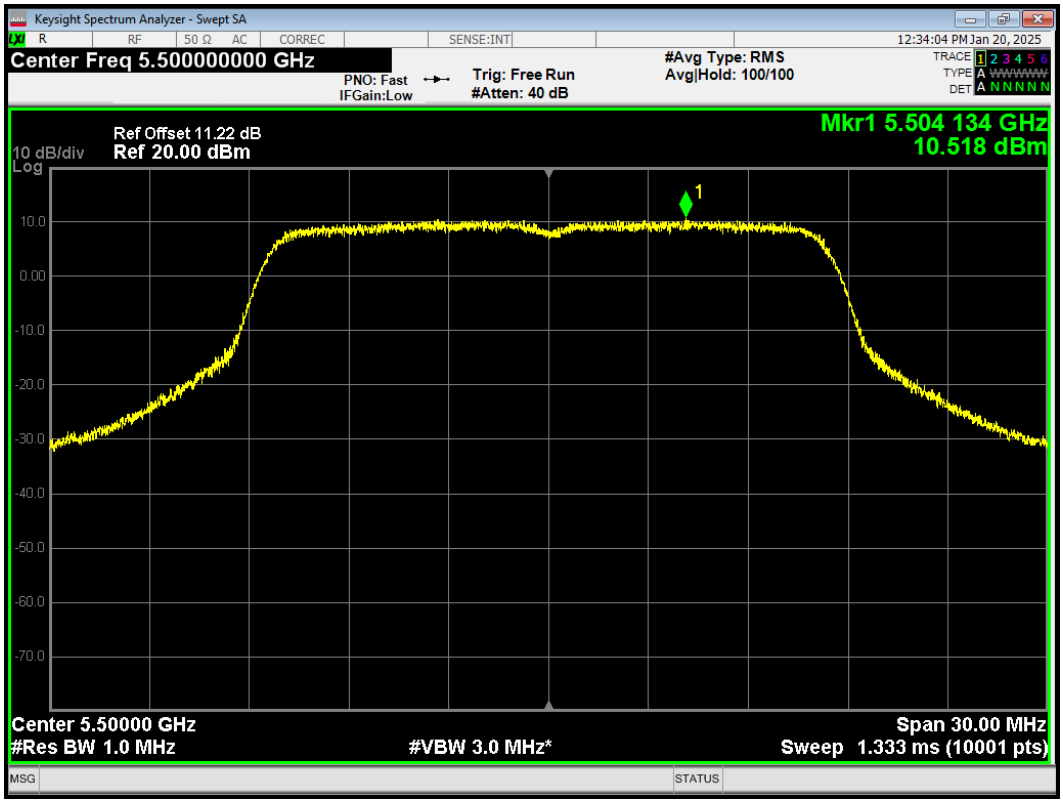


PSD 802.11n(HT40) 5310MHz

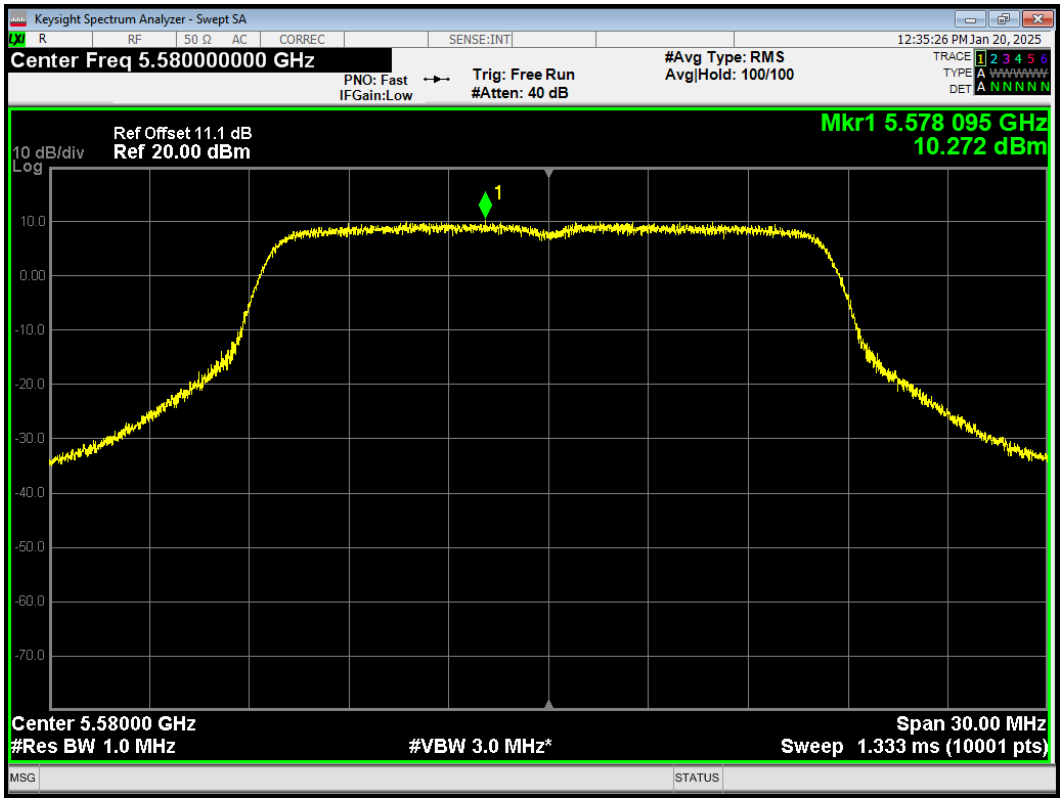


U-NII-2C

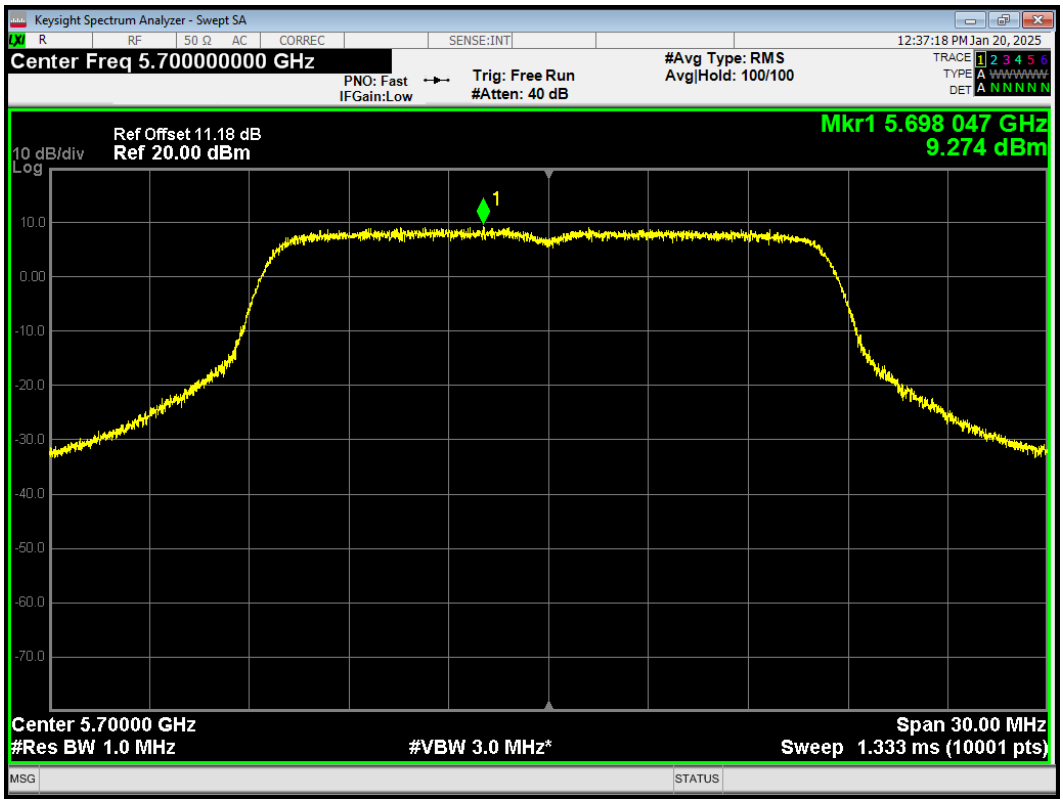
PSD 802.11a 5500MHz



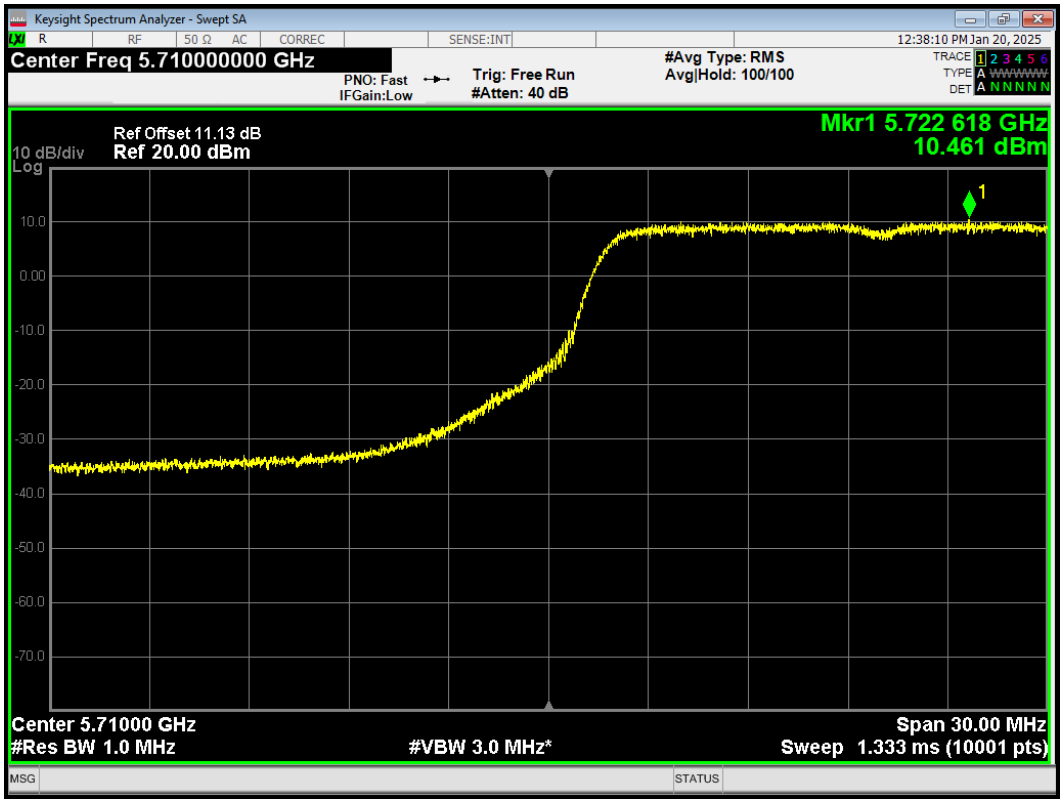
PSD 802.11a 5580MHz



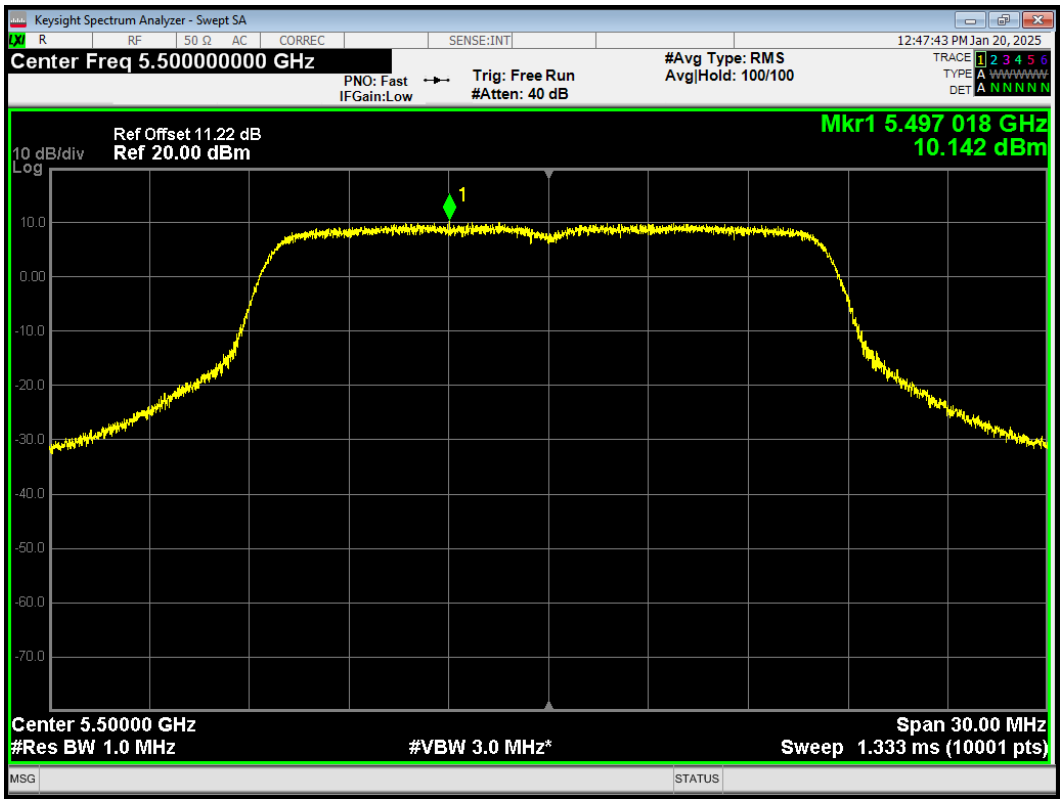
PSD 802.11a 5700MHz



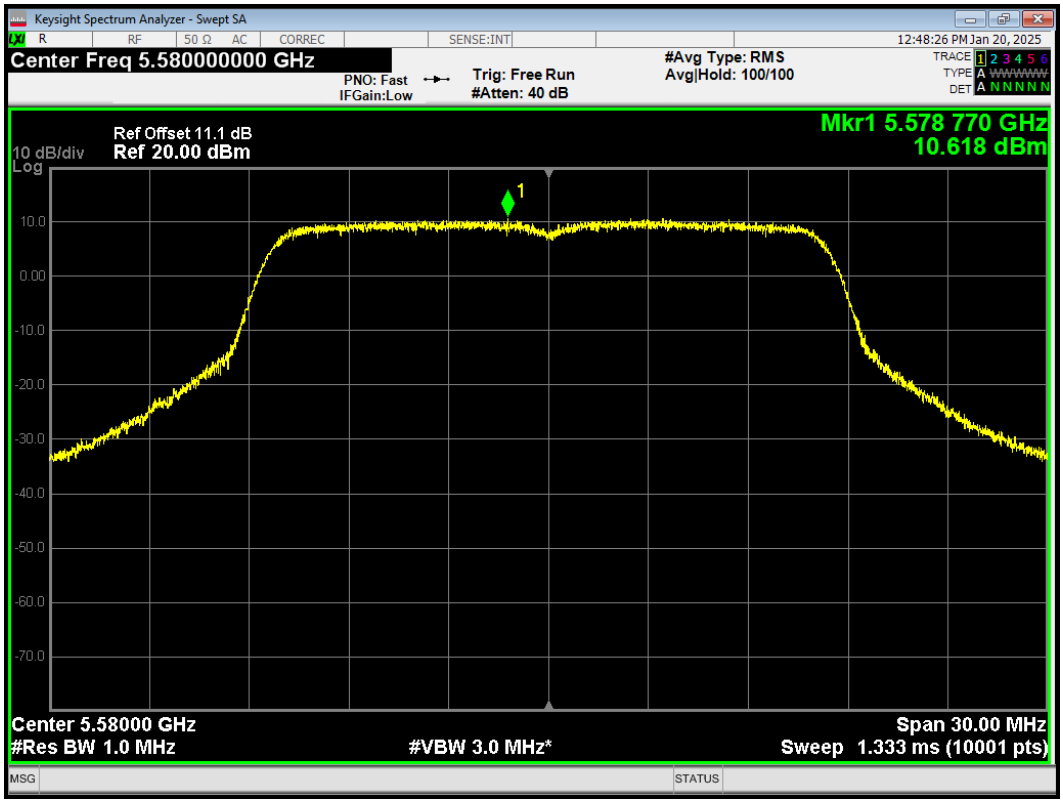
PSD 802.11a 5720MHz



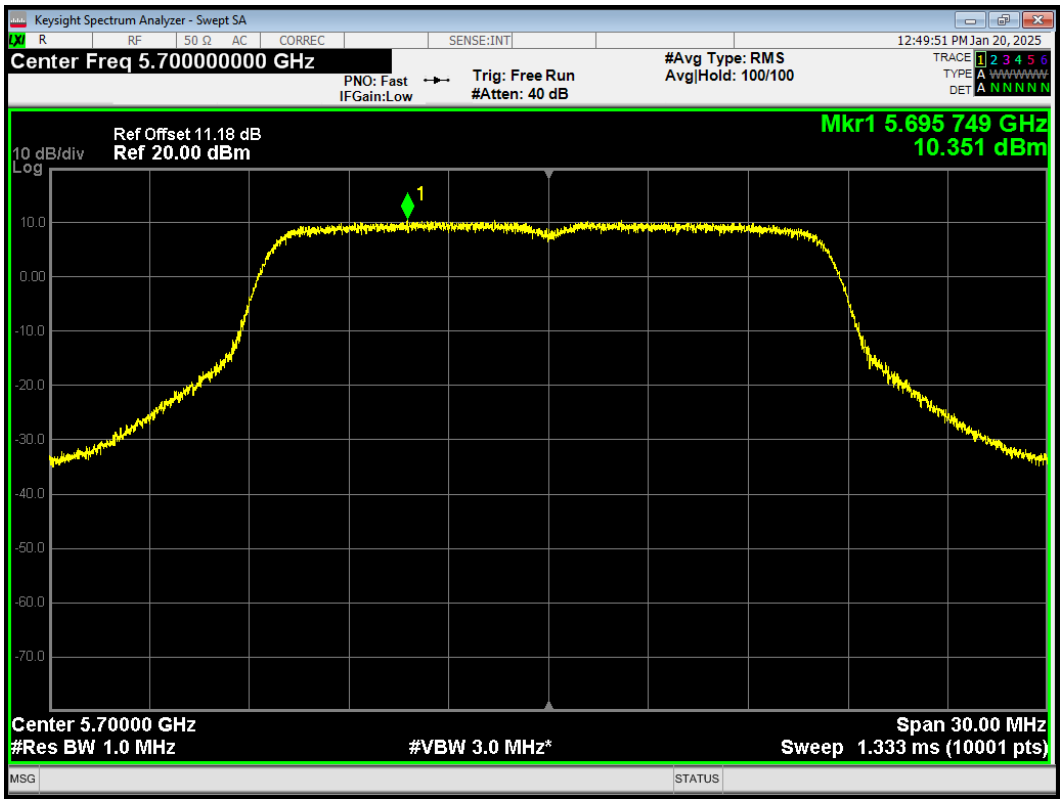
PSD 802.11ac(VHT20) 5500MHz



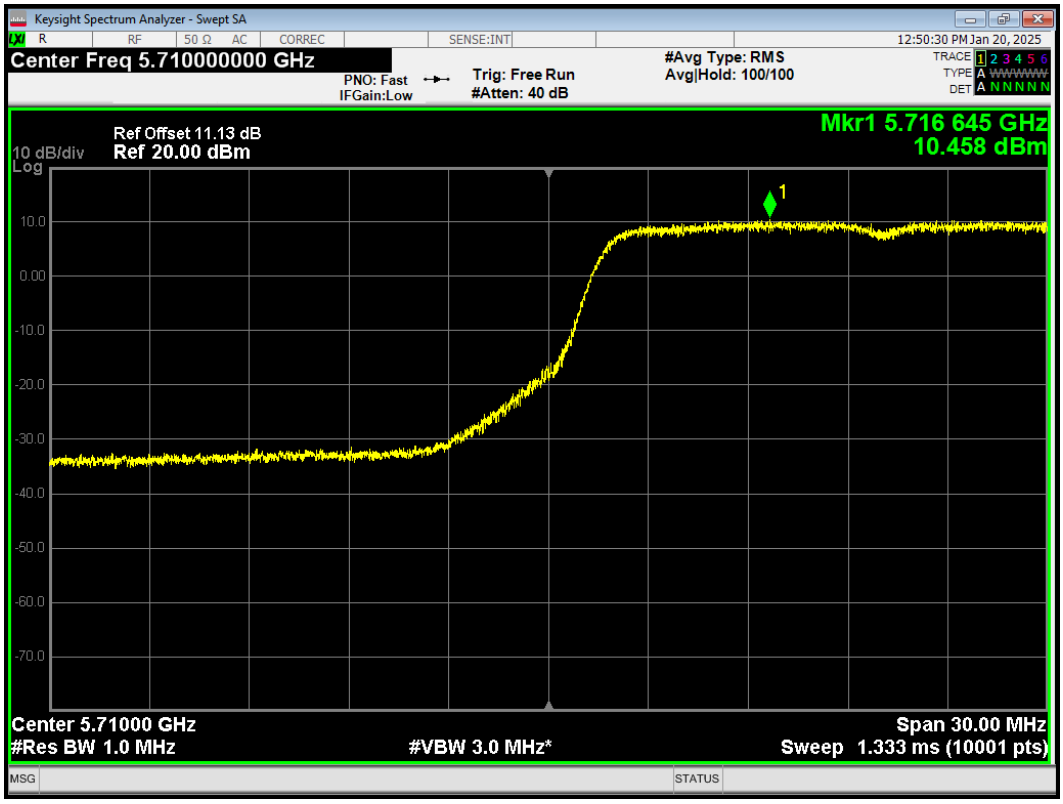
PSD 802.11ac(VHT20) 5580MHz



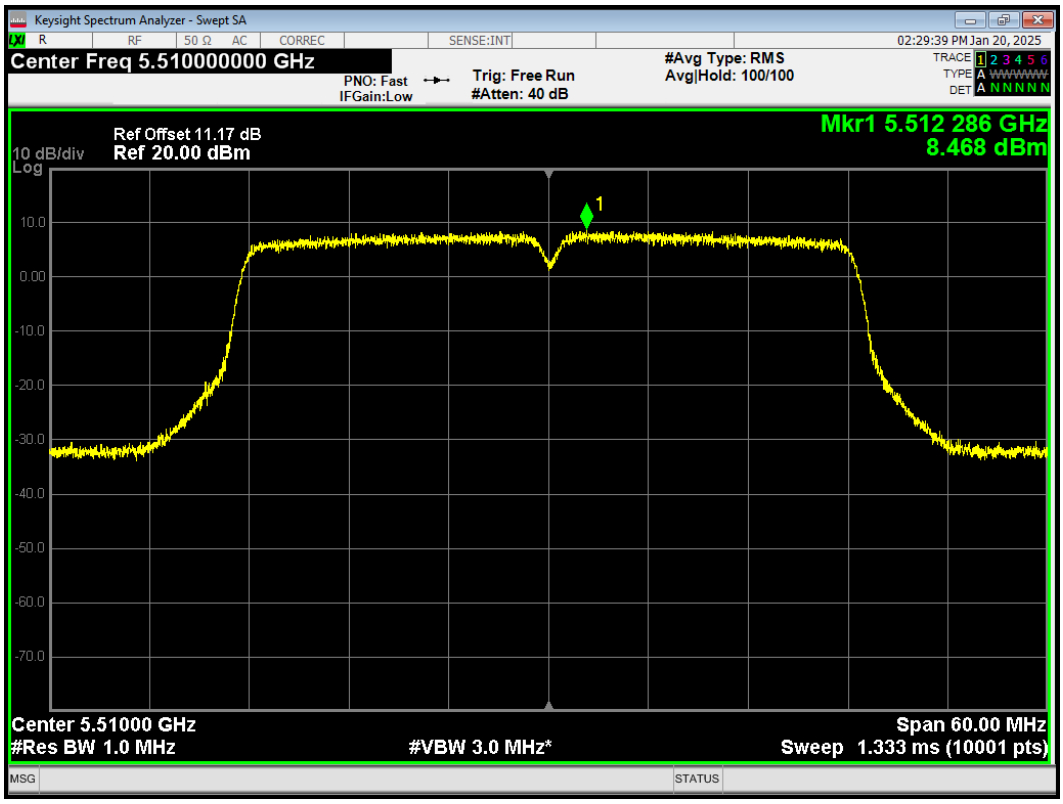
PSD 802.11ac(VHT20) 5700MHz



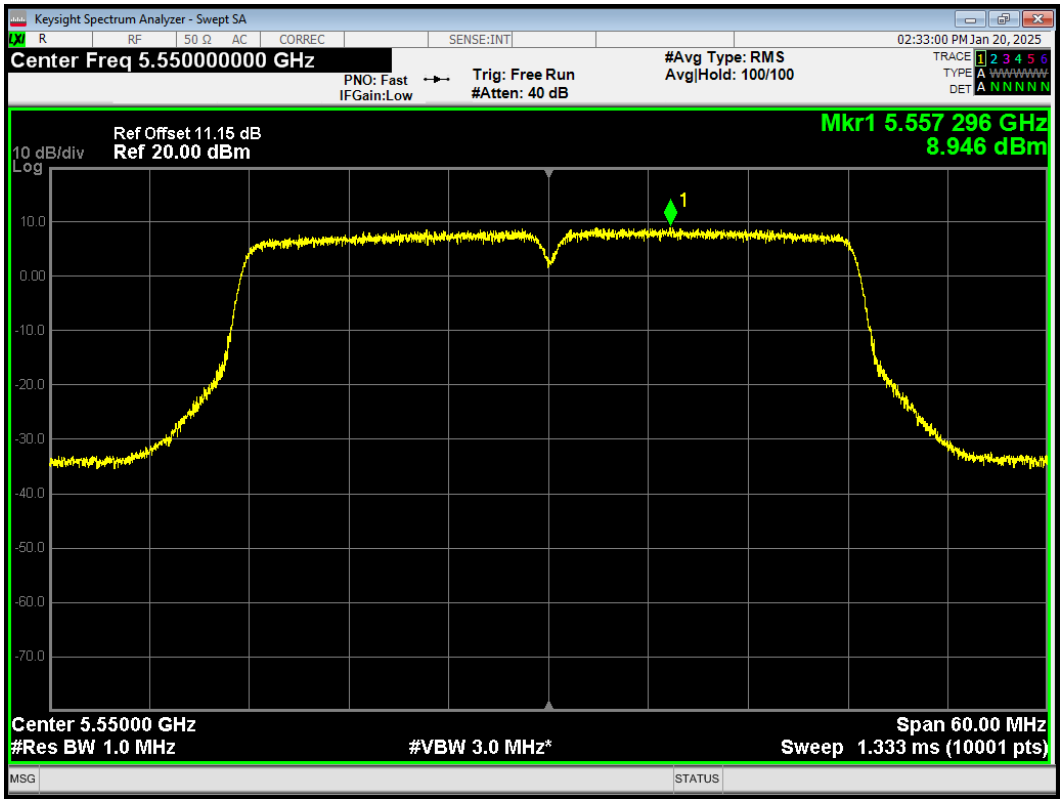
PSD 802.11ac(VHT20) 5720MHz



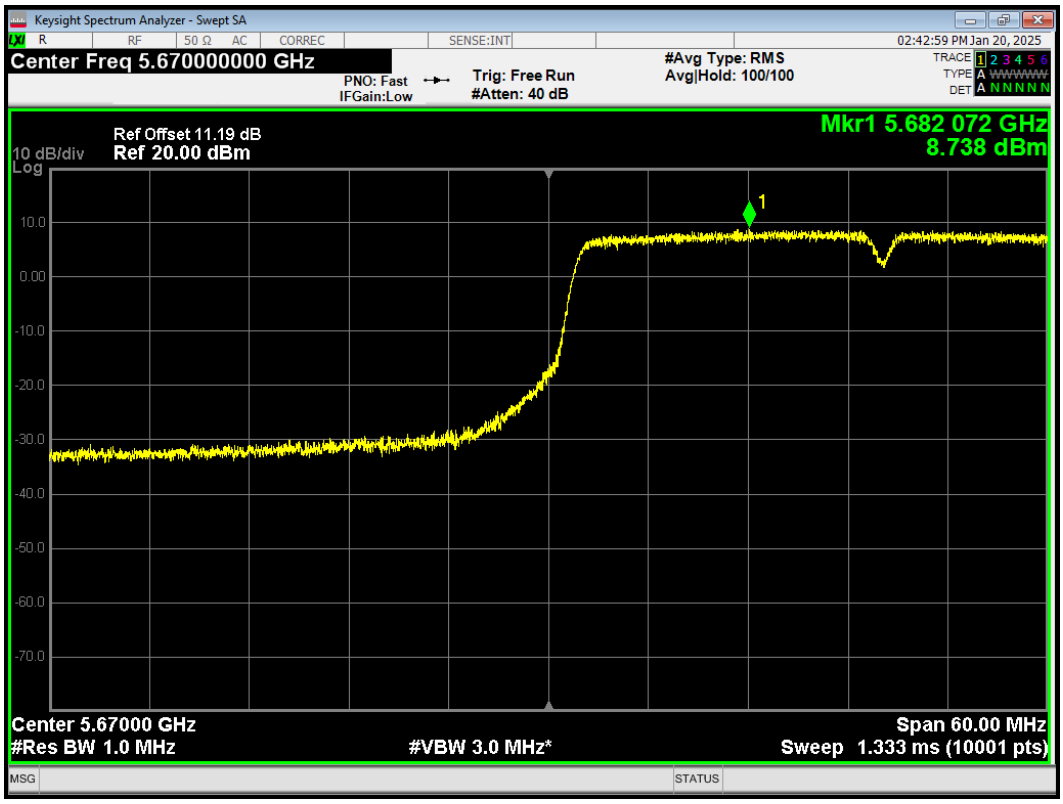
PSD 802.11ac(VHT40) 5510MHz



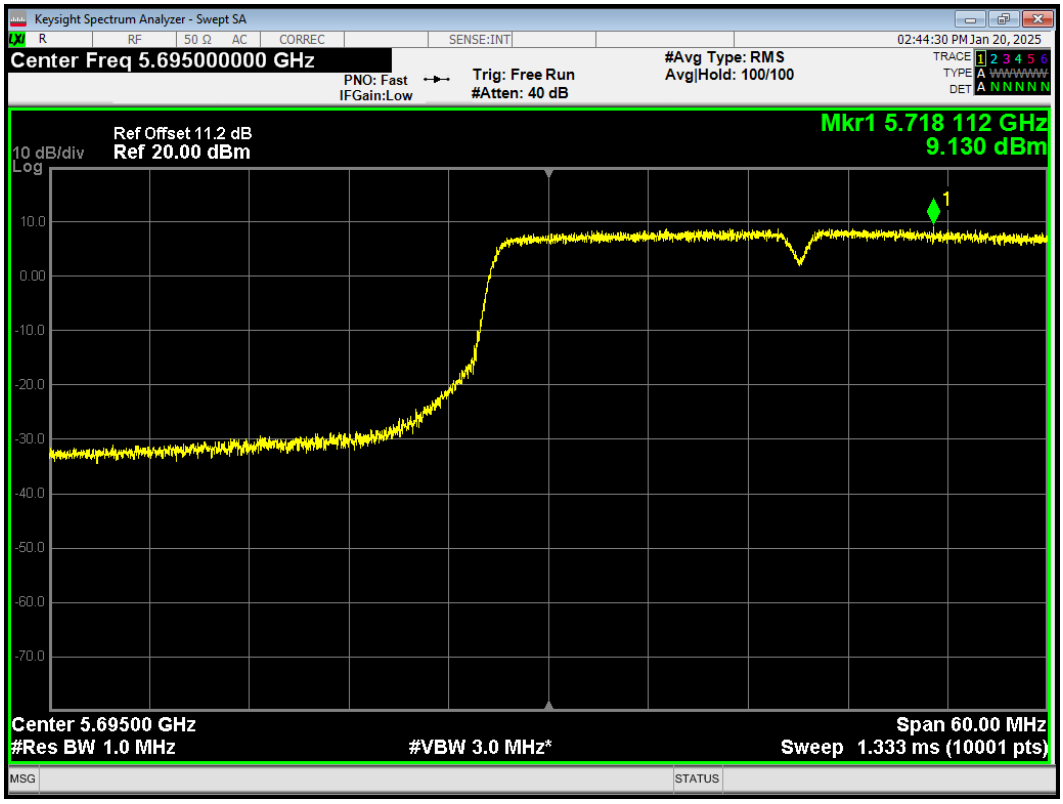
PSD 802.11ac(VHT40) 5550MHz



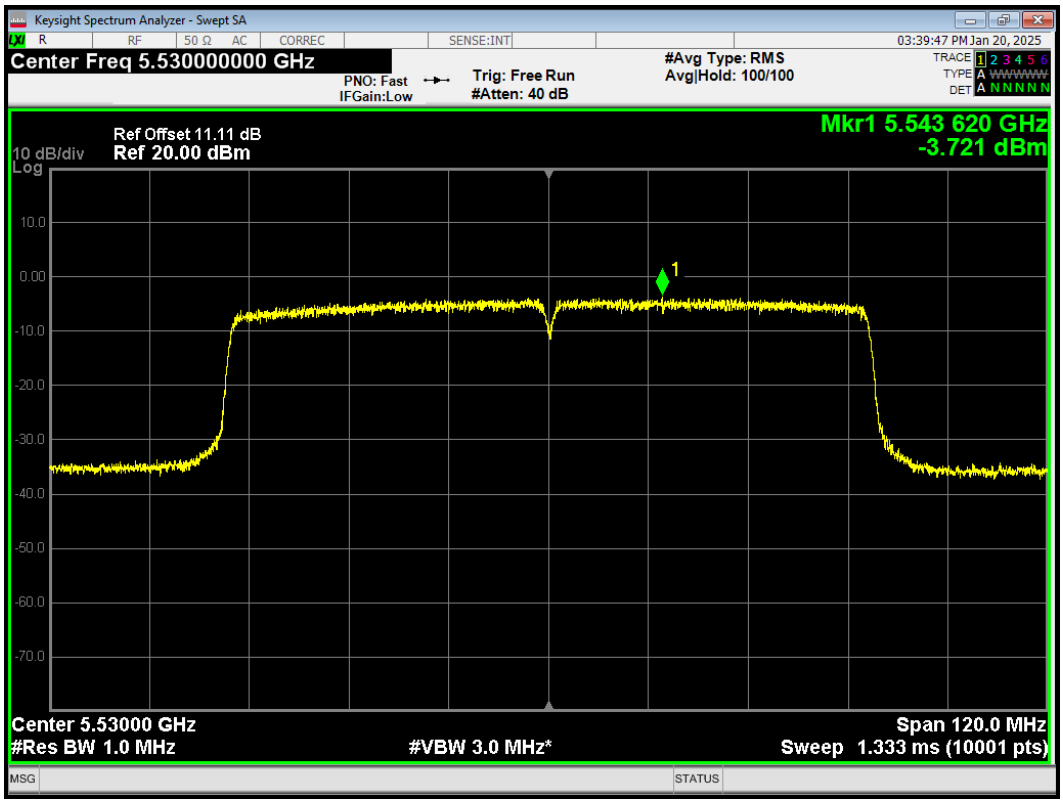
PSD 802.11ac(VHT40) 5710MHz



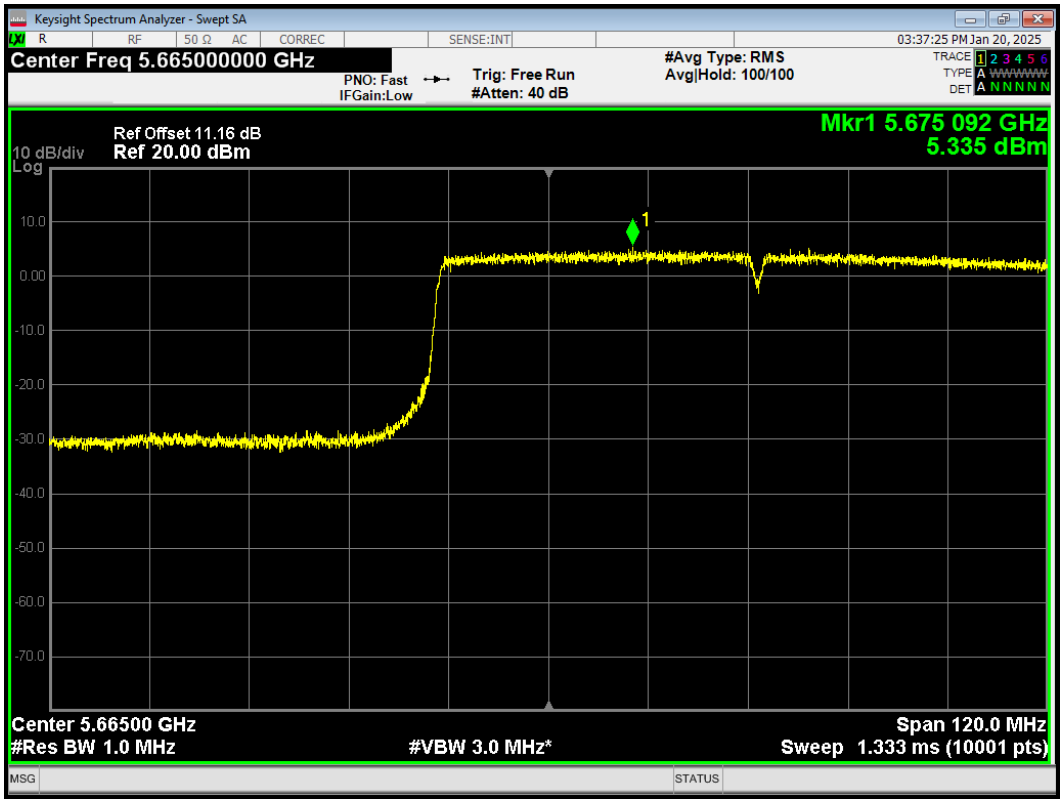
PSD 802.11ac(VHT40) 5710MHz



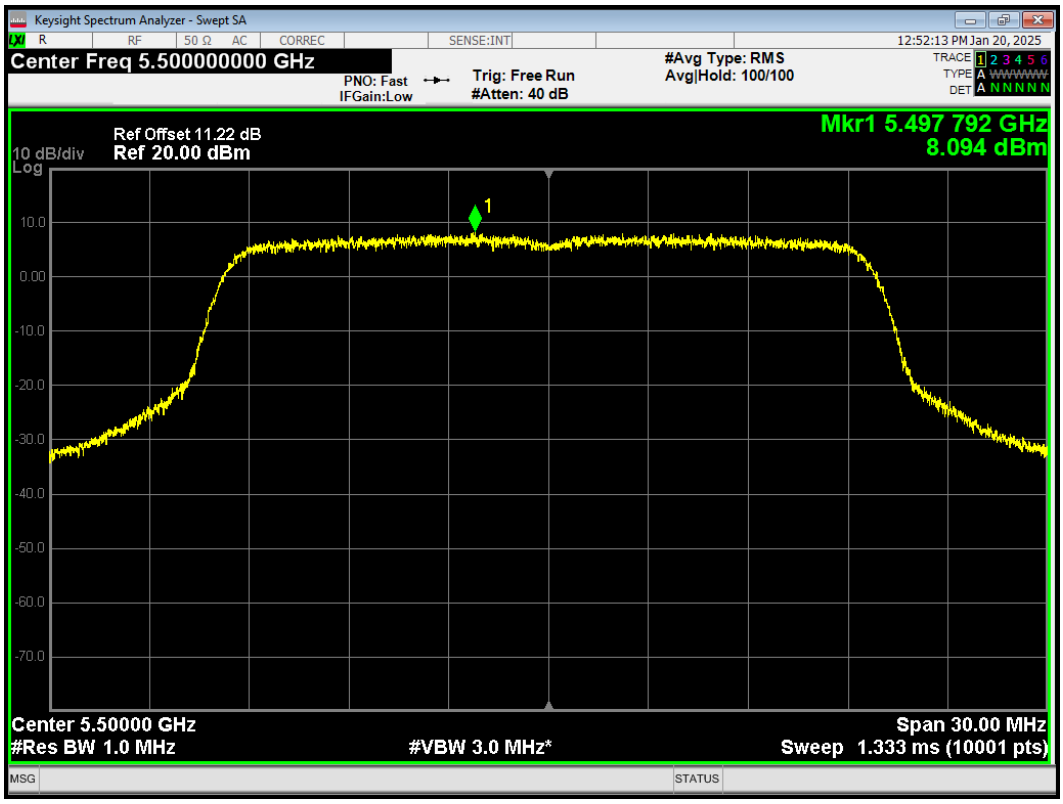
PSD 802.11ac(VHT80) 5530MHz



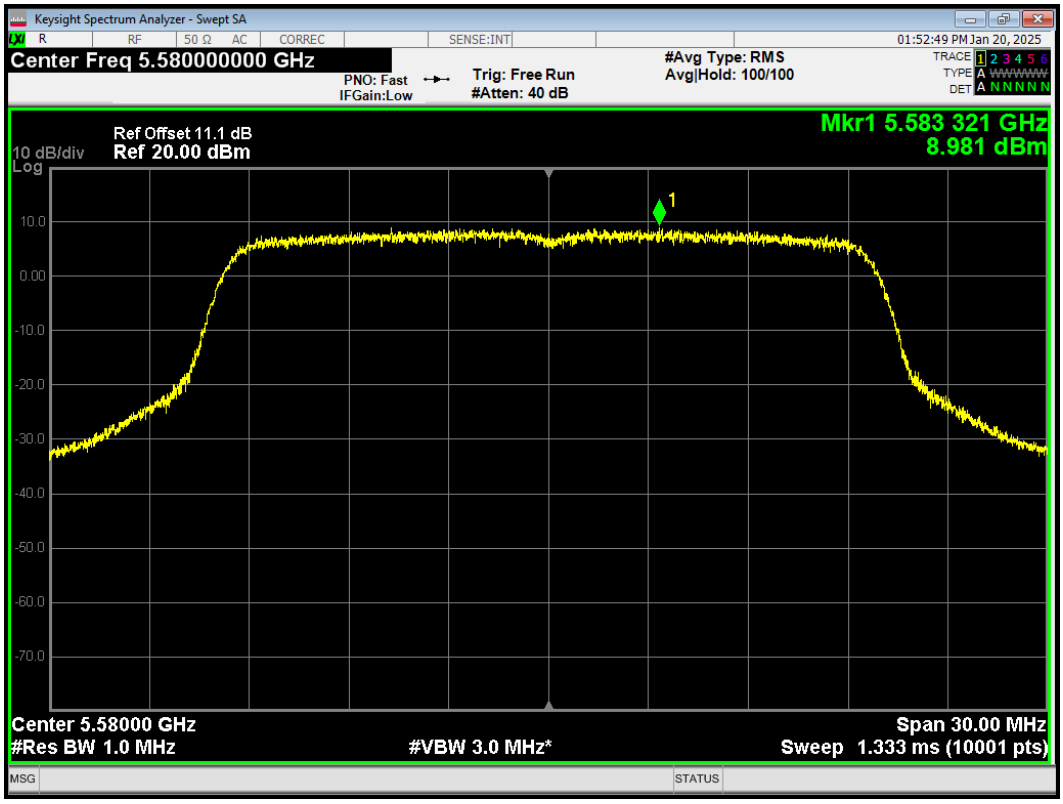
PSD 802.11ac(VHT80) 5690MHz



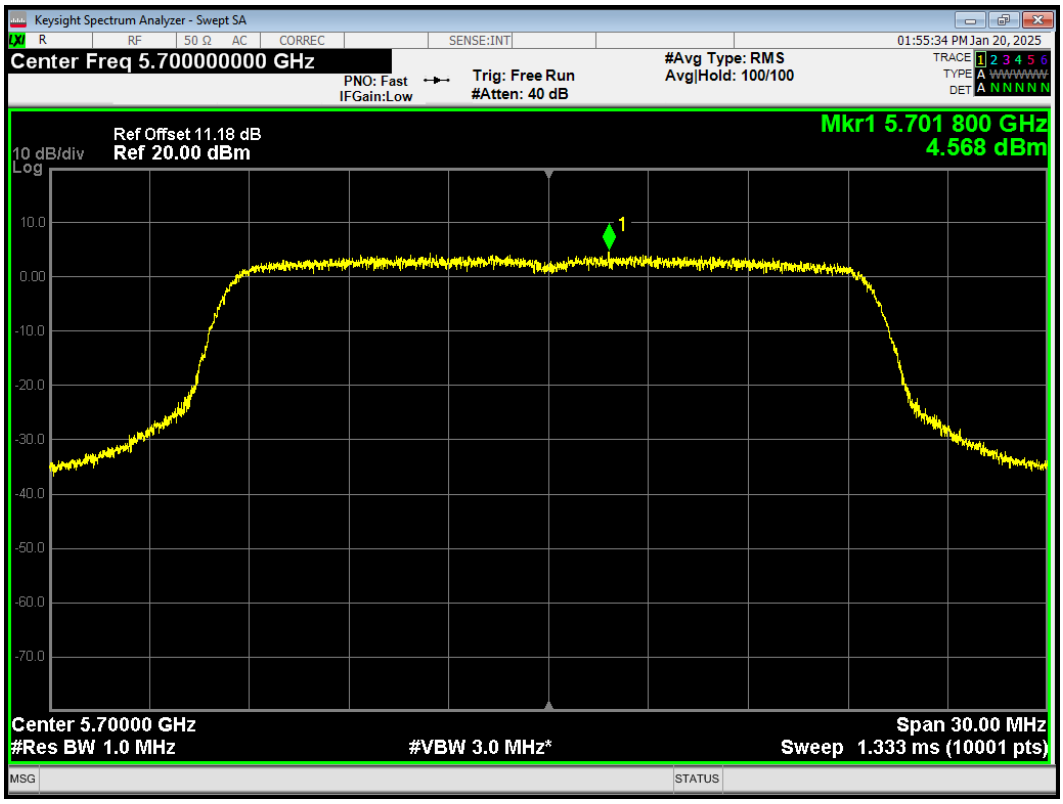
PSD 802.11ax(HE20) 5500MHz



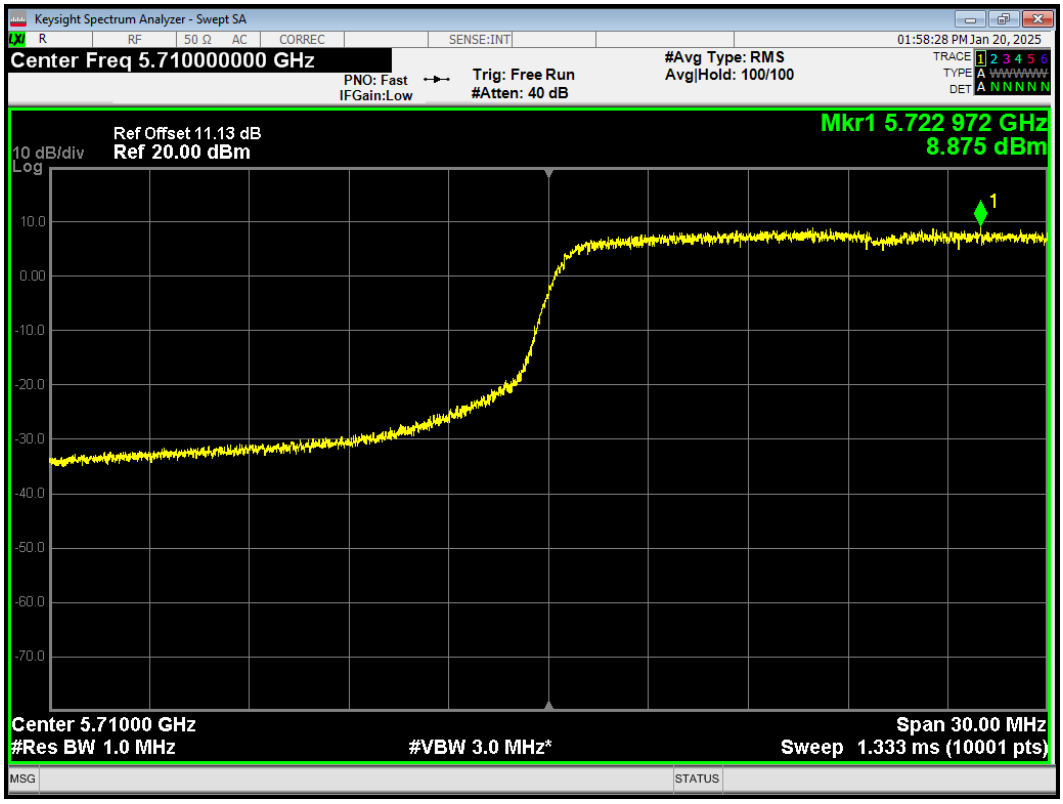
PSD 802.11ax(HE20) 5580MHz



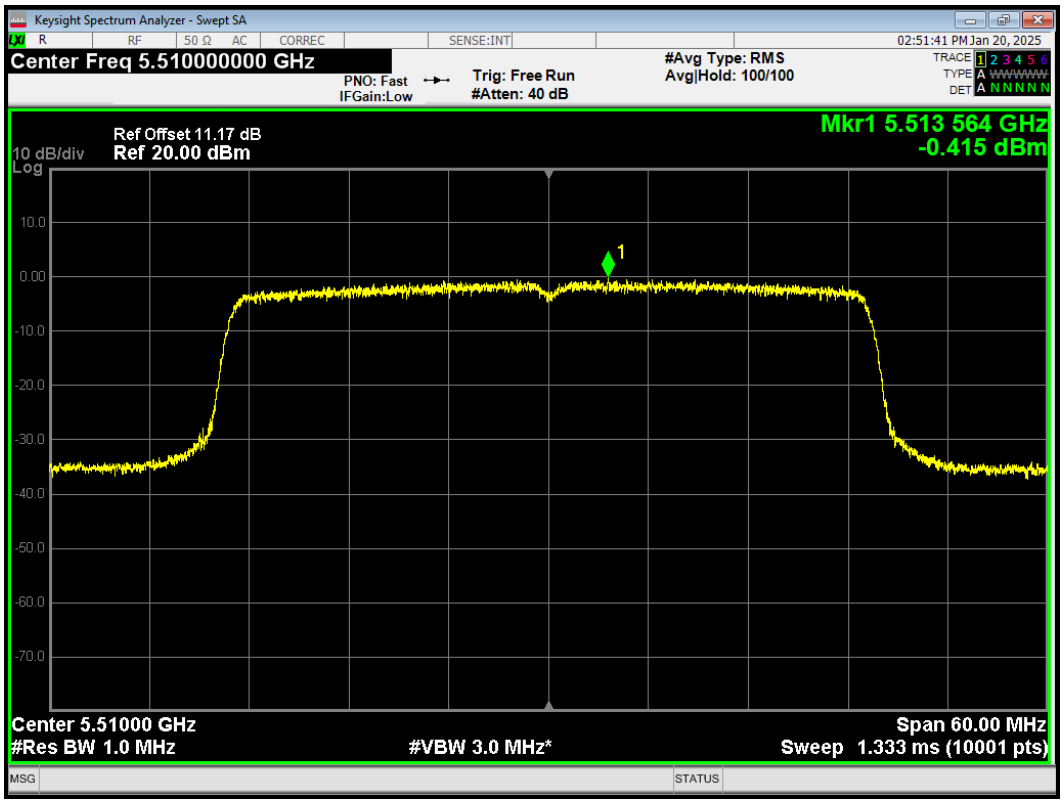
PSD 802.11ax(HE20) 5700MHz



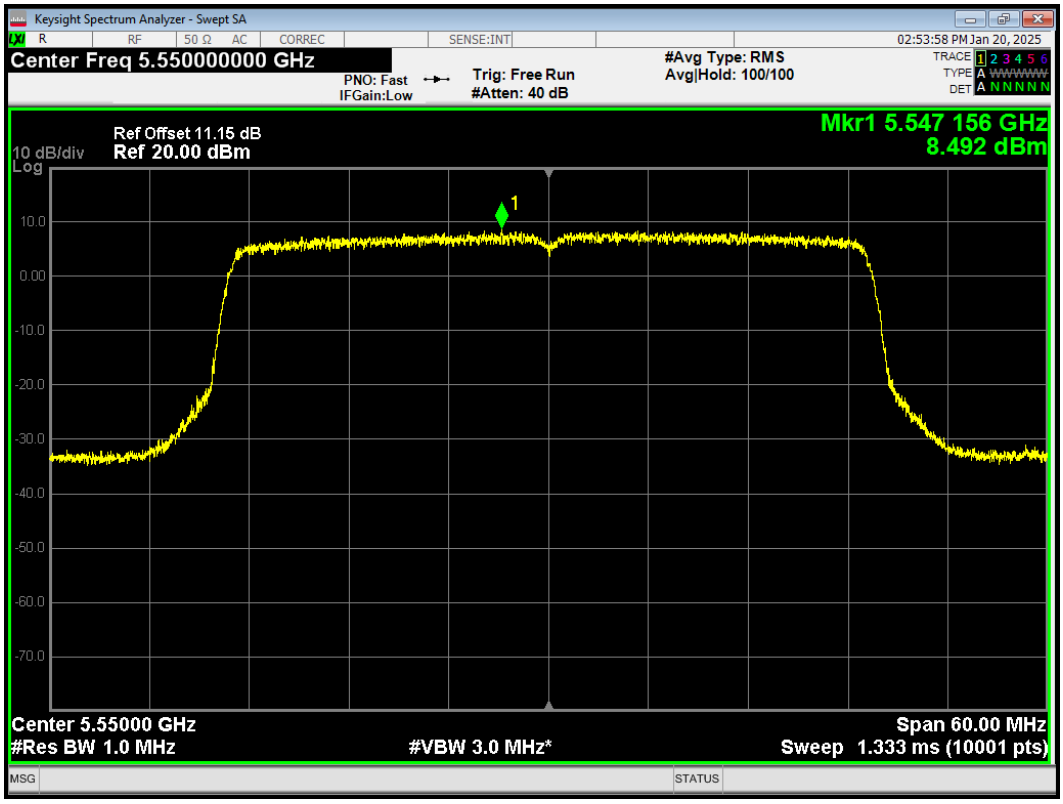
PSD 802.11ax(HE20) 5720MHz



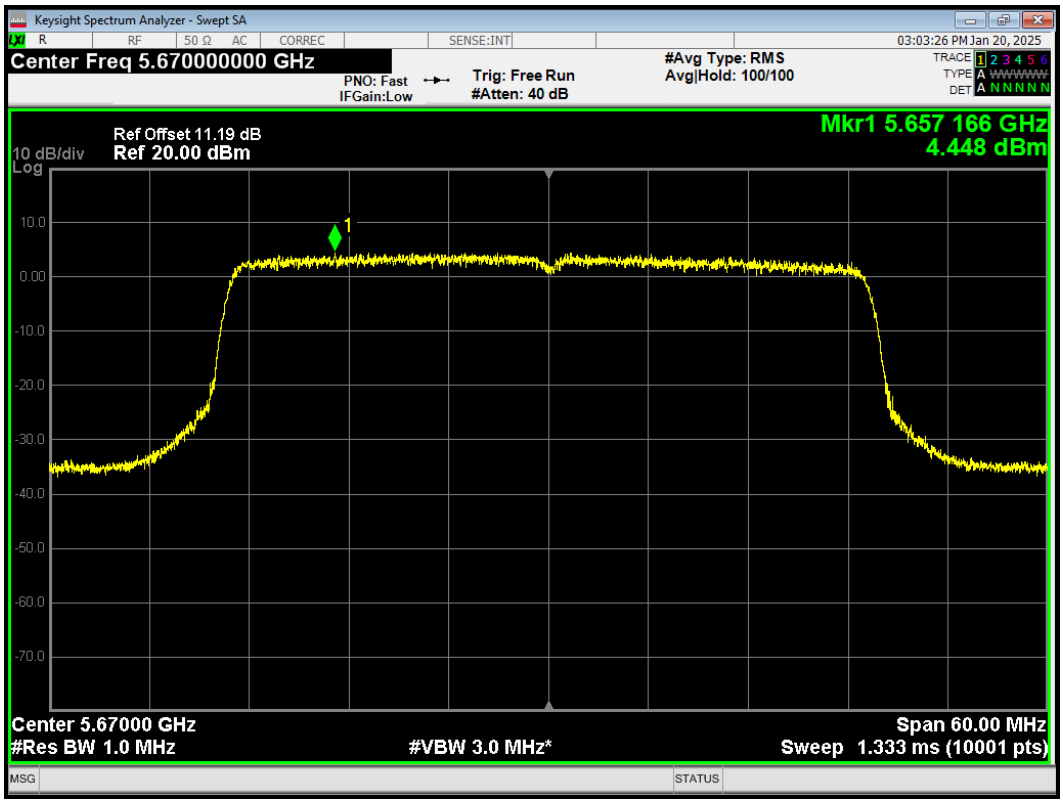
PSD 802.11ax(HE40) 5510MHz



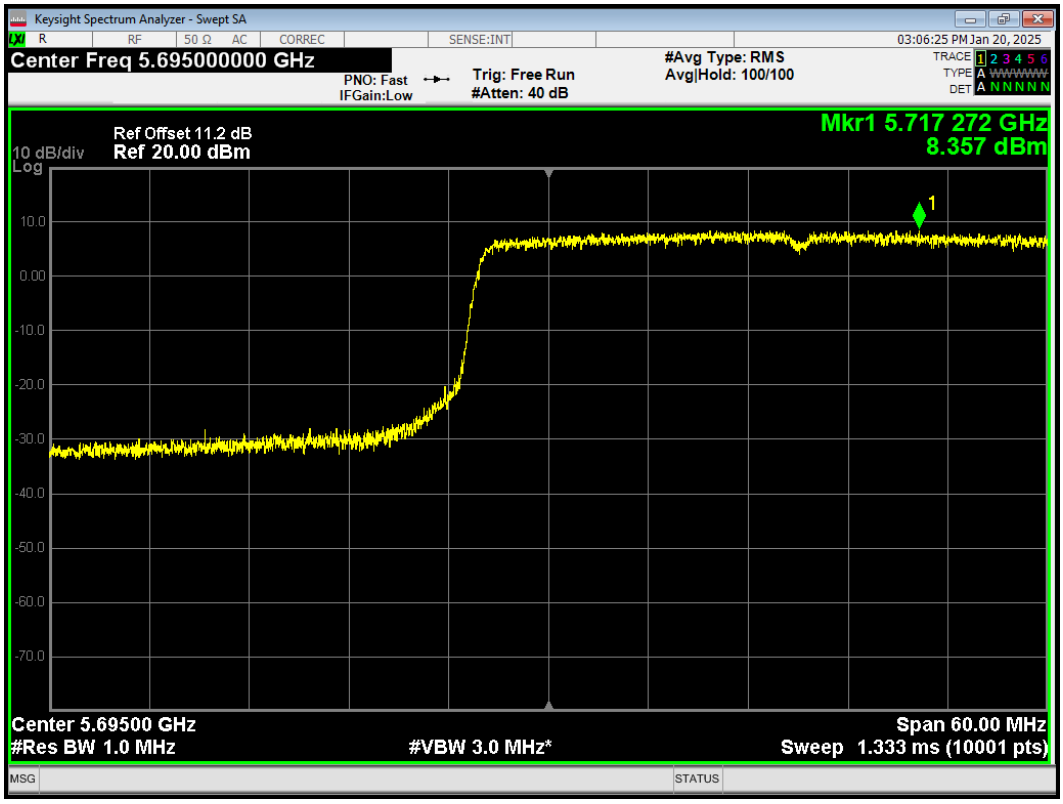
PSD 802.11ax(HE40) 5550MHz



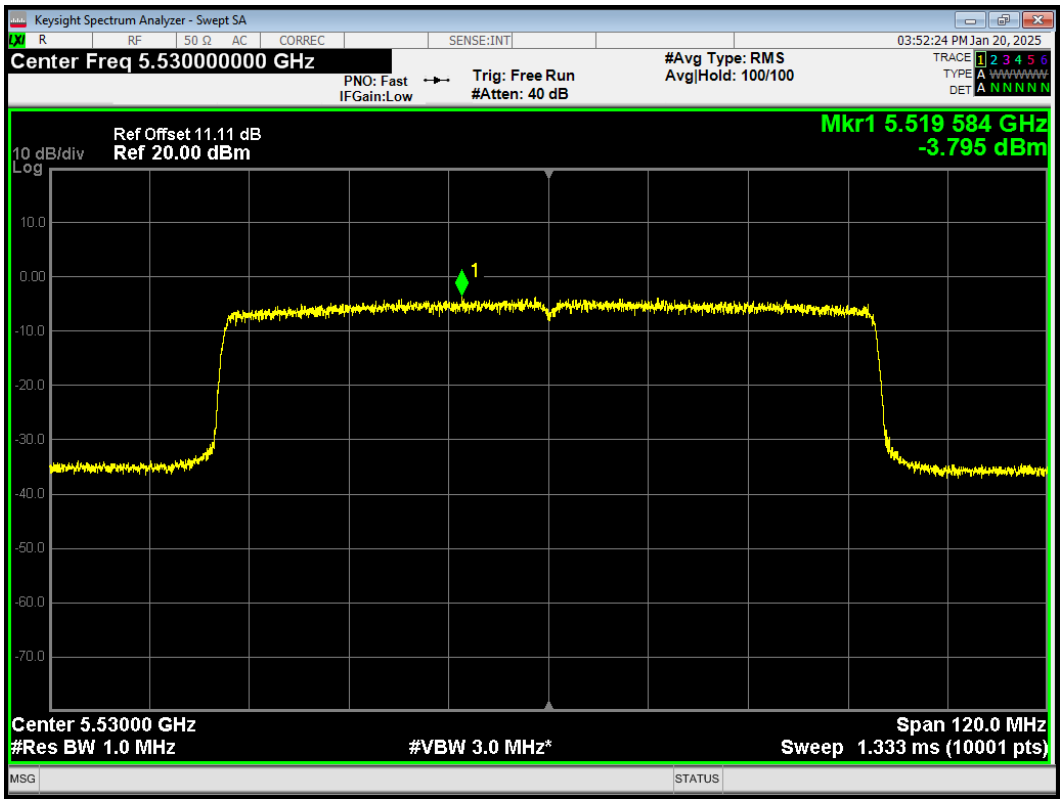
PSD 802.11ax(HE40) 5670MHz



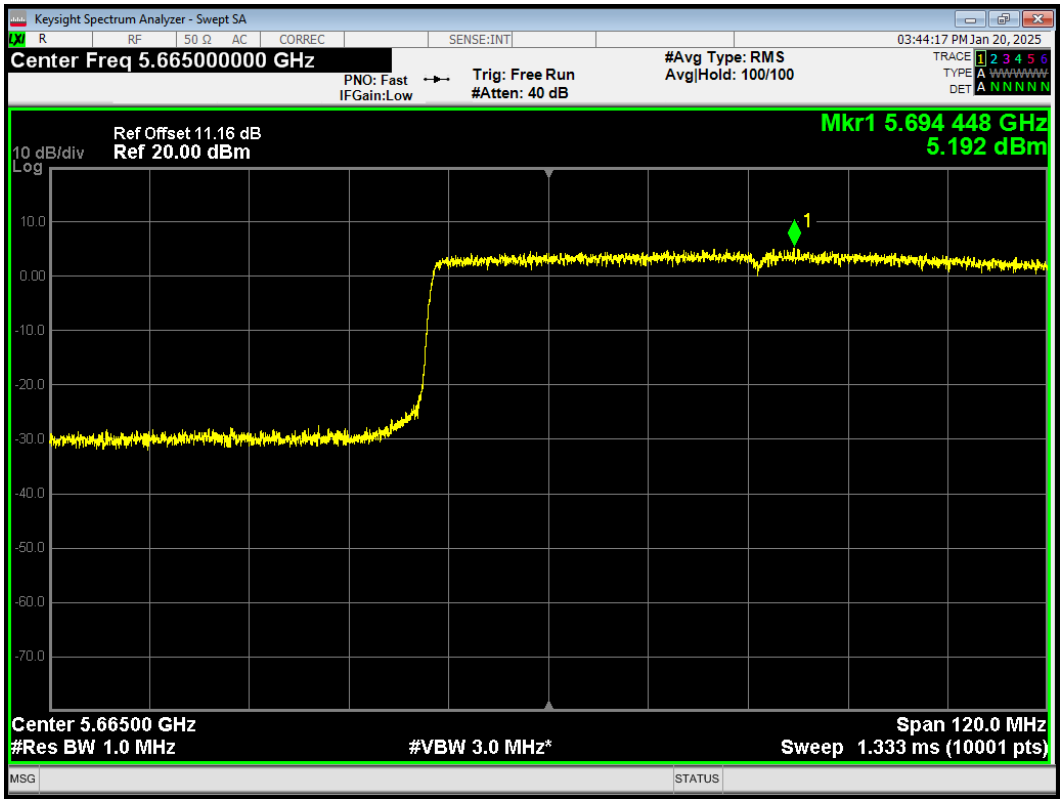
PSD 802.11ax(HE40) 5710MHz



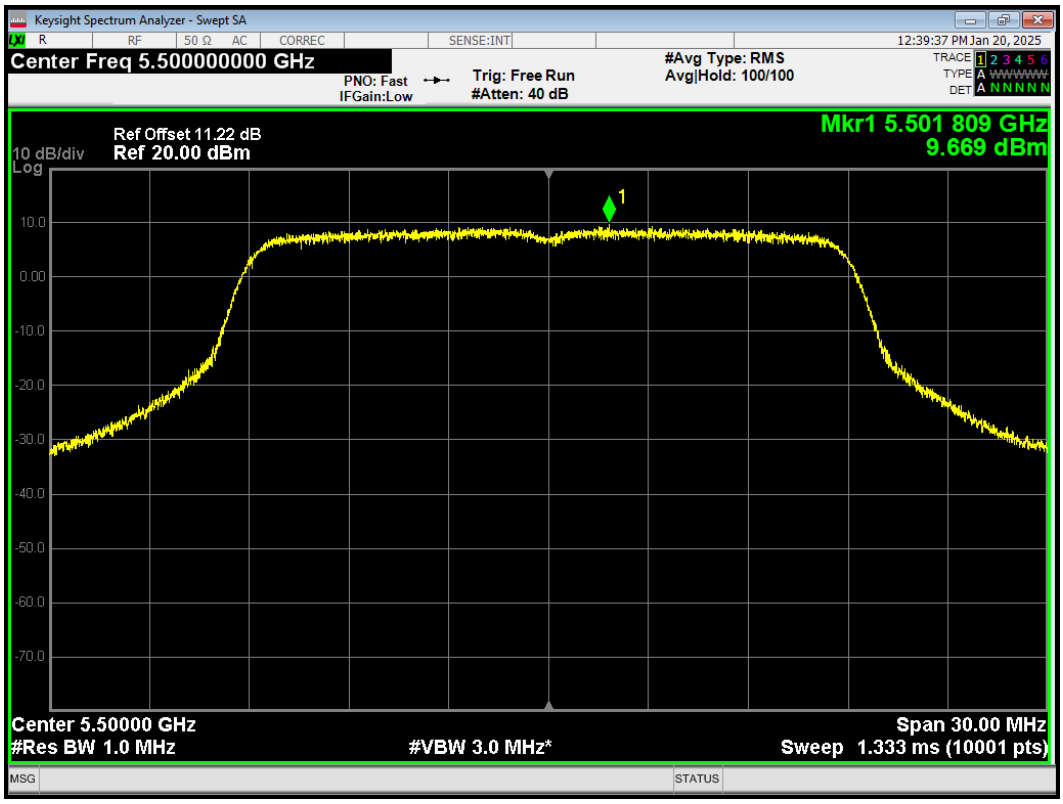
PSD 802.11ax(HE80) 5530MHz



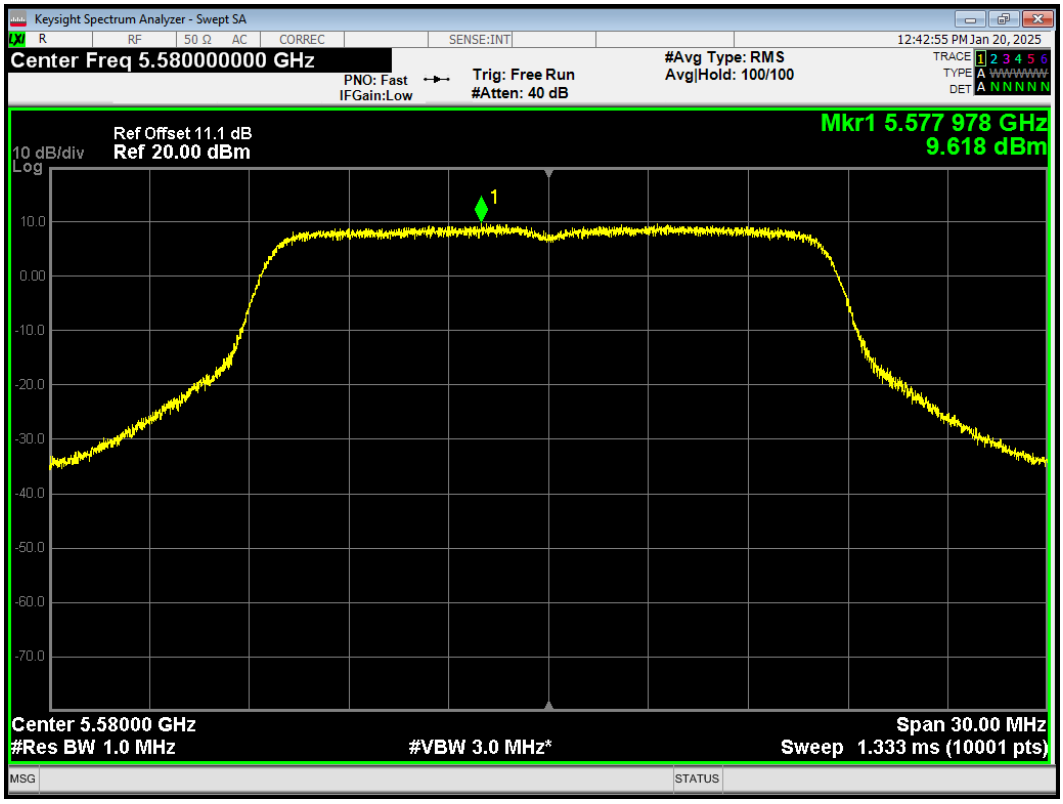
PSD 802.11ax(HE80) 5690MHz



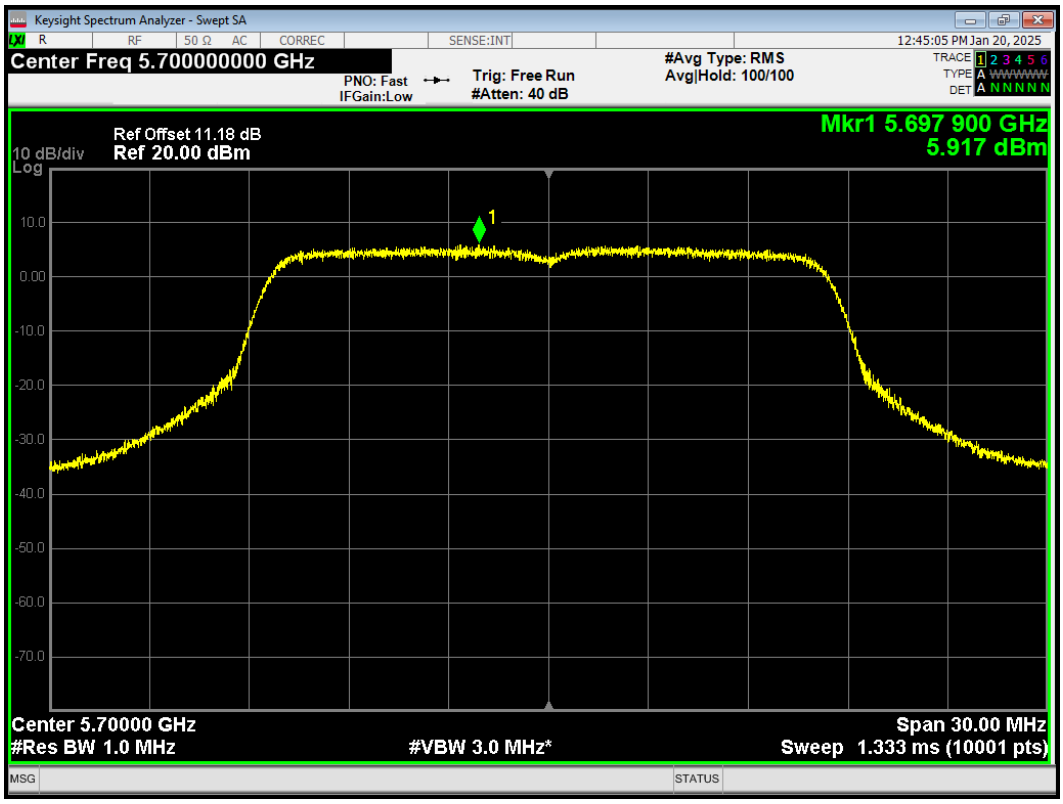
PSD 802.11n(HT20) 5500MHz



PSD 802.11n(HT20) 5580MHz



PSD 802.11n(HT20) 5700MHz



PSD 802.11n(HT20) 5720MHz