

5.2. Average Power Output

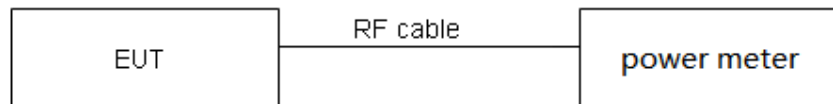
Ambient condition

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

Methods of Measurement

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

Test Setup



Limits

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

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude

the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Measurement Uncertainty

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

Test Results

Mode	Duty cycle	Duty cycle correction Factor (dB)
802.11a	0.97	0.13
802.11n HT20	0.97	0.14
802.11n HT40	0.94	0.28
802.11ac VHT20	0.97	0.14
802.11ac VHT40	0.94	0.28
802.11ac VHT80	0.88	0.55
Note: when Duty cycle ≥ 0.98 , Duty cycle correction Factor not required.		

Power Index								
Channel	802.11a	802.11n HT20	802.11ac VHT20	Channel	802.11n HT40	802.11ac VHT40	Channel	802.11ac VHT80
CH36	18	17	15	CH38	17	16	CH42	16
CH40	18	17	15.5	CH46	17	16	/	/
CH48	18	17	15.5	/	/	/	/	/
CH52	18	17	15.5	CH54	17	15.5	CH58	16
CH60	18	17	15.5	CH62	17	15.5	/	/
CH64	18	17	15.5	/	/	/	/	/
CH100	19.5	18	16.5	CH102	18	17	CH106	16.5
CH116	19.5	18	16.5	CH110	18	17	CH122	
CH140	19.5	18	16.5	CH134	18	17	CH138	
CH149	19.5	18	16.5	CH151	18.5	17.5	CH155	17
CH157	19.5	18	16.5	CH159	18.5	17.5	/	/
CH165	19.5	18	16.5	/	/	/	/	/

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	20.05	24.02	24
		60/5300	20.84	24.19	24
		64/5320	20.12	24.04	24
	802.11n HT20	52/5260	20.78	24.18	24
		60/5300	20.20	24.05	24
		64/5320	21.39	24.30	24
	802.11n HT40	54/5270	40.55	27.08	24
		62/5310	41.58	27.19	24
	802.11ac VHT20	52/5260	20.58	24.13	24
		60/5300	20.45	24.11	24
		64/5320	20.44	24.10	24
	802.11ac VHT40	54/5270	40.65	27.09	24
		62/5310	40.73	27.10	24
	802.11ac VHT80	58/5290	80.48	30.06	24
Note: 250mW=24dBm					

U-NII-1

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	16.84	16.97	24	PASS
	40/5200	16.68	16.81	24	PASS
	48/5240	16.45	16.58	24	PASS
802.11n HT20	36/5180	15.43	15.57	24	PASS
	40/5200	15.39	15.53	24	PASS
	48/5240	15.53	15.67	24	PASS
802.11n HT40	38/5190	15.09	15.37	24	PASS
	46/5230	15.21	15.49	24	PASS
802.11ac VHT20	36/5180	13.74	13.88	24	PASS
	40/5200	13.77	13.91	24	PASS
	48/5240	13.75	13.89	24	PASS
802.11ac VHT40	38/5190	14.17	14.45	24	PASS
	46/5230	14.30	14.58	24	PASS
802.11ac VHT80	42/5210	13.52	14.07	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	16.77	16.90	24	PASS
	60/5300	16.74	16.87	24	PASS
	64/5320	16.79	16.92	24	PASS
802.11n HT20	52/5260	15.37	15.51	24	PASS
	60/5300	15.52	15.66	24	PASS
	64/5320	15.54	15.68	24	PASS
802.11n HT40	54/5270	15.34	15.62	24	PASS
	62/5310	15.39	15.67	24	PASS
802.11ac VHT20	52/5260	13.75	13.89	24	PASS
	60/5300	14.03	14.17	24	PASS
	64/5320	14.09	14.23	24	PASS
802.11ac VHT40	54/5270	13.86	14.14	24	PASS
	62/5310	13.90	14.17	24	PASS
802.11ac VHT80	58/5290	14.02	14.57	24	PASS

Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor

U-NII-3

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	149/5745	16.68	16.81	30	PASS
	157/5785	16.75	16.88	30	PASS
	165/5825	16.71	16.84	30	PASS
802.11n HT20	149/5745	15.43	15.57	30	PASS
	157/5785	15.30	15.44	30	PASS
	165/5825	15.11	15.25	30	PASS
802.11n HT40	151/5755	15.31	15.59	30	PASS
	159/5795	15.42	15.70	30	PASS
802.11ac VHT20	149/5745	13.93	14.07	30	PASS
	157/5785	13.97	14.11	30	PASS
	165/5825	13.92	14.06	30	PASS
802.11ac VHT40	151/5755	14.05	14.33	30	PASS
	159/5795	14.28	14.56	30	PASS
802.11ac VHT80	155/5775	13.80	14.35	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
3.8	-30	5199.992529	5199.987877	5199.987015	5199.981625
3.8	-20	5199.987892	5199.984620	5199.979994	5199.976185
3.8	-10	5199.986501	5199.981021	5199.979488	5199.974059
3.8	0	5199.987529	5199.976260	5199.973786	5199.970541
3.8	10	5199.981276	5199.970706	5199.966800	5199.963316
3.8	20	5199.976778	5199.960737	5199.963145	5199.959819
3.8	30	5199.967767	5199.950975	5199.953607	5199.956707
3.8	40	5199.960718	5199.941062	5199.952001	5199.955295
3.8	50	5199.955229	5199.939814	5199.943068	5199.955254
3.45	20	5199.947251	5199.939583	5199.933106	5199.953180
4.35	20	5199.940220	5199.931032	5199.928476	5199.944526
Max. ΔMHz		-0.059780	-0.068968	-0.071524	-0.055474
PPM		-11.496154	-13.263077	-13.754615	-10.668077

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
3.8	-30	5300.008499	5300.004658	5300.003416	5299.996744
3.8	-20	5300.008095	5299.996505	5299.998704	5299.992190
3.8	-10	5300.000786	5299.996302	5299.995785	5299.987447
3.8	0	5300.003680	5299.991669	5299.990211	5299.987383
3.8	10	5299.998210	5299.982029	5299.984948	5299.978925
3.8	20	5299.988704	5299.974325	5299.980600	5299.970511
3.8	30	5299.980372	5299.968034	5299.980160	5299.969041
3.8	40	5299.980001	5299.963580	5299.974647	5299.966413
3.8	50	5299.972568	5299.959238	5299.973378	5299.960952
3.45	20	5299.965085	5299.951305	5299.965262	5299.955191
4.35	20	5299.957220	5299.949045	5299.964787	5299.948461
Max. ΔMHz		-0.042780	-0.050955	-0.035213	-0.051539
PPM		-8.071698	-9.614151	-6.643962	-9.724340

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
3.8	-30	5784.992202	5784.984047	5784.977516	5784.972890
3.8	-20	5784.983951	5784.982534	5784.971794	5784.964148
3.8	-10	5784.982900	5784.974510	5784.970979	5784.955282
3.8	0	5784.982269	5784.978933	5784.967502	5784.957160
3.8	10	5784.972468	5784.975573	5784.962092	5784.948805
3.8	20	5784.965471	5784.974403	5784.961791	5784.941239
3.8	30	5784.958820	5784.972067	5784.953312	5784.931359
3.8	40	5784.957506	5784.969250	5784.945246	5784.931055
3.8	50	5784.956916	5784.964952	5784.941874	5784.922004
3.45	20	5784.952111	5784.958735	5784.938464	5784.914199
4.35	20	5784.947982	5784.955775	5784.938084	5784.910039
Max. ΔMHz		-0.052018	-0.044225	-0.061916	-0.089961
PPM		-8.991876	-7.644771	-10.702852	-15.550735

5.4. Power Spectral Density

Ambient condition

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

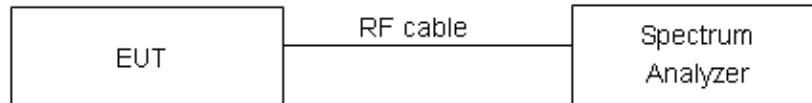
Method of Measurement

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	7.23	7.36	11	PASS
	40/5200	6.99	7.12	11	PASS
	48/5240	6.96	7.09	11	PASS
802.11n HT20	36/5180	6.12	6.26	11	PASS
	40/5200	5.95	6.09	11	PASS
	48/5240	6.02	6.16	11	PASS
802.11n HT40	38/5190	2.73	3.01	11	PASS
	46/5230	2.66	2.94	11	PASS
802.11ac VHT20	36/5180	4.17	4.31	11	PASS
	40/5200	4.14	4.28	11	PASS
	48/5240	4.11	4.25	11	PASS
802.11ac VHT40	38/5190	1.45	1.73	11	PASS
	46/5230	1.61	1.89	11	PASS
802.11ac VHT80	42/5210	-2.39	-1.84	11	PASS

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

U-NII-2A

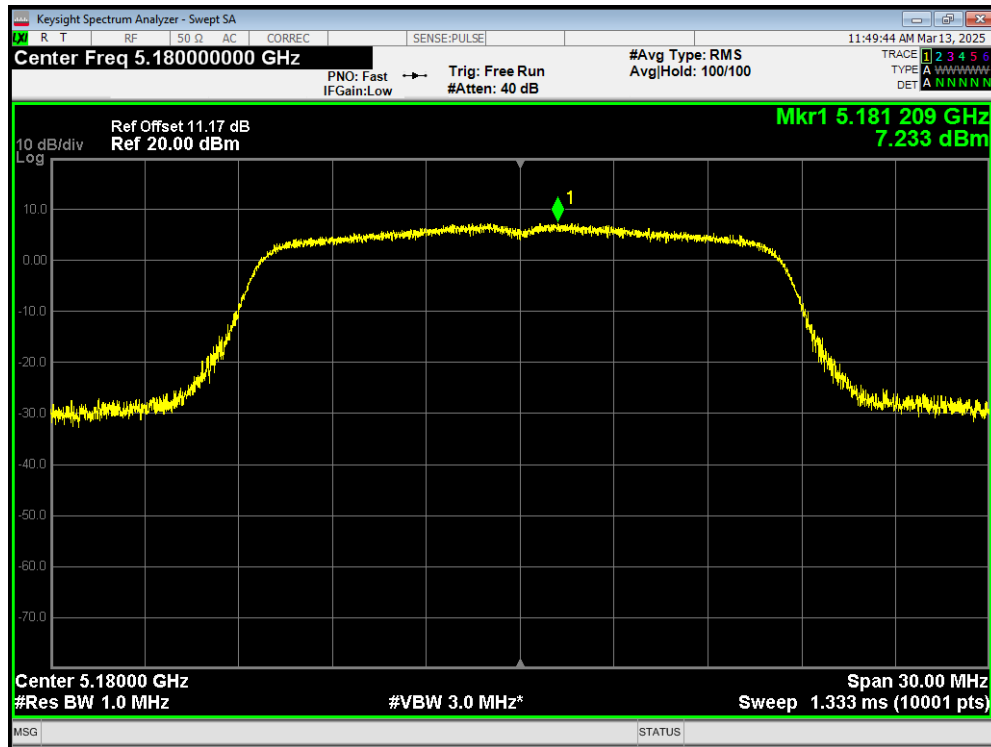
Mode	Channel /Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	52/5260	7.08	7.21	11	PASS
	60/5300	7.45	7.58	11	PASS
	64/5320	6.95	7.08	11	PASS
802.11n HT20	52/5260	6.03	6.17	11	PASS
	60/5300	5.88	6.02	11	PASS
	64/5320	4.58	4.72	11	PASS
802.11n HT40	54/5270	2.76	3.04	11	PASS
	62/5310	3.02	3.30	11	PASS
802.11ac VHT20	52/5260	4.10	4.24	11	PASS
	60/5300	4.19	4.33	11	PASS
	64/5320	4.44	4.58	11	PASS
802.11ac VHT40	54/5270	1.16	1.44	11	PASS
	62/5310	1.38	1.66	11	PASS
802.11ac VHT80	58/5290	-1.61	-1.06	11	PASS

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

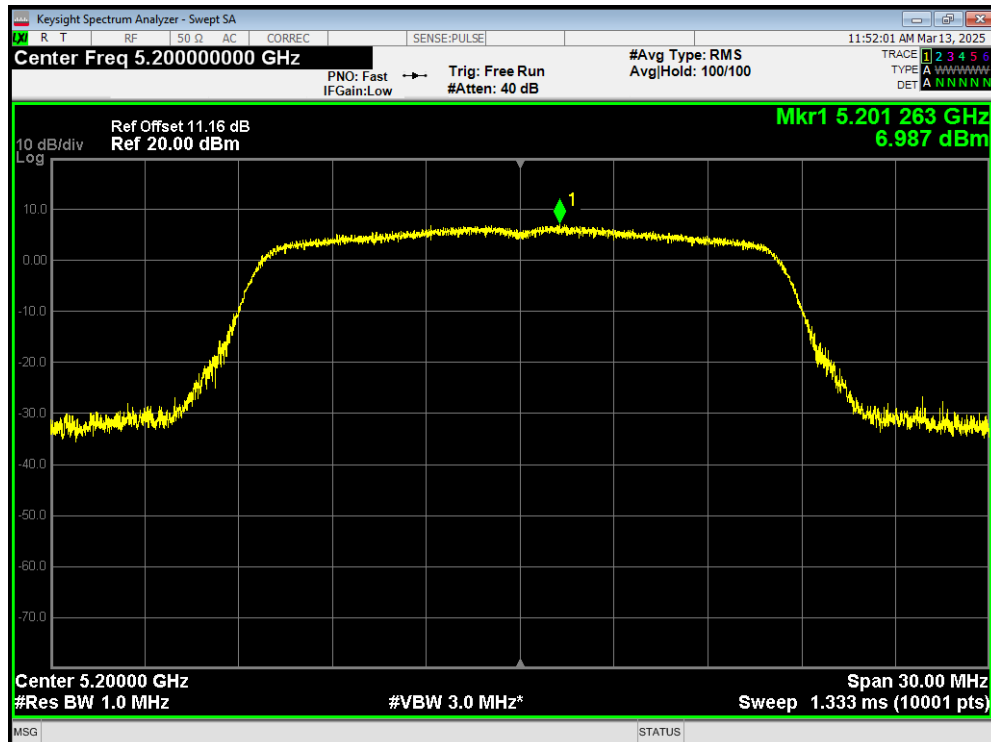
U-NII-3

Mode	Channel /Frequency (MHz)	Read Value (dBm/470kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	149/5745	3.61	4.01	30	PASS
	157/5785	3.90	4.30	30	PASS
	165/5825	4.11	4.51	30	PASS
802.11n HT20	149/5745	2.72	3.13	30	PASS
	157/5785	2.22	2.63	30	PASS
	165/5825	2.48	2.89	30	PASS
802.11n HT40	151/5755	-0.64	-0.09	30	PASS
	159/5795	-0.90	-0.35	30	PASS
802.11ac VHT20	149/5745	1.07	1.48	30	PASS
	157/5785	0.97	1.38	30	PASS
	165/5825	1.08	1.49	30	PASS
802.11ac VHT40	151/5755	-1.91	-1.36	30	PASS
	159/5795	-1.24	-0.69	30	PASS
802.11ac VHT80	155/5775	-5.06	-4.24	30	PASS
Note: PSD=Read Value+Duty cycle correction factor +10*log(500/470)					

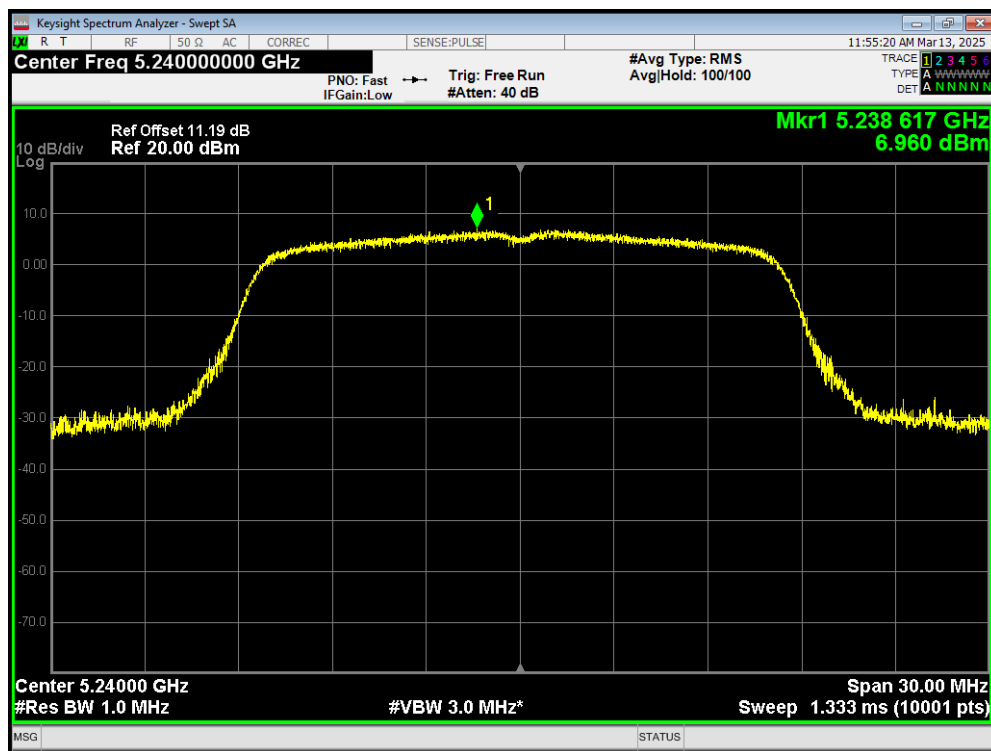
PSD 802.11a 5180MHz



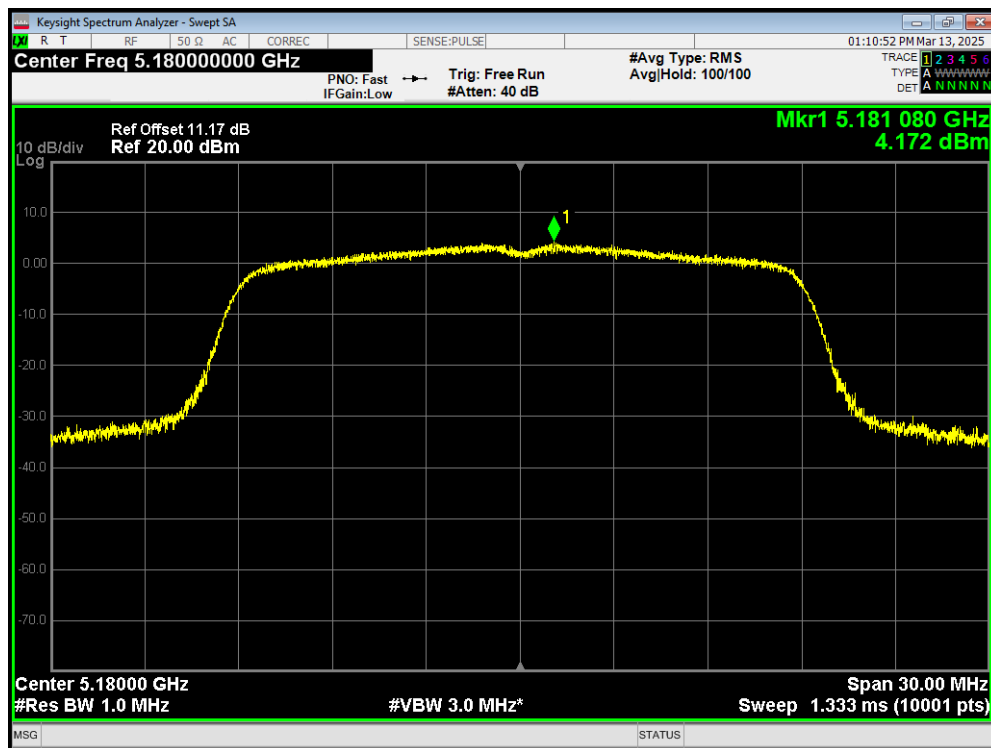
PSD 802.11a 5200MHz



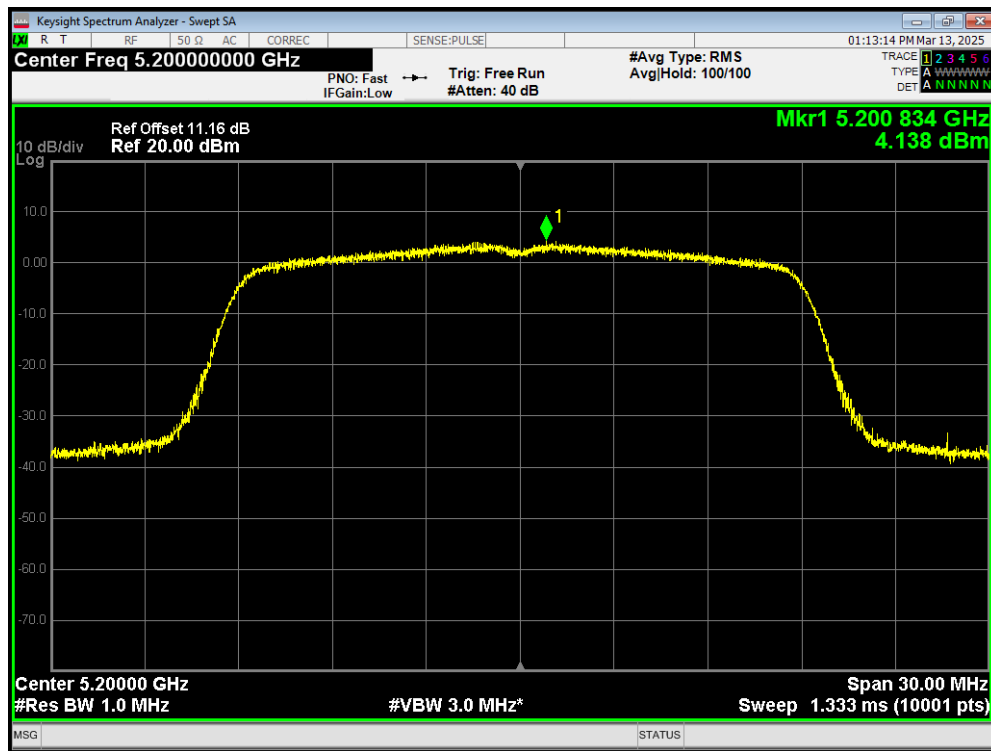
PSD 802.11a 5240MHz



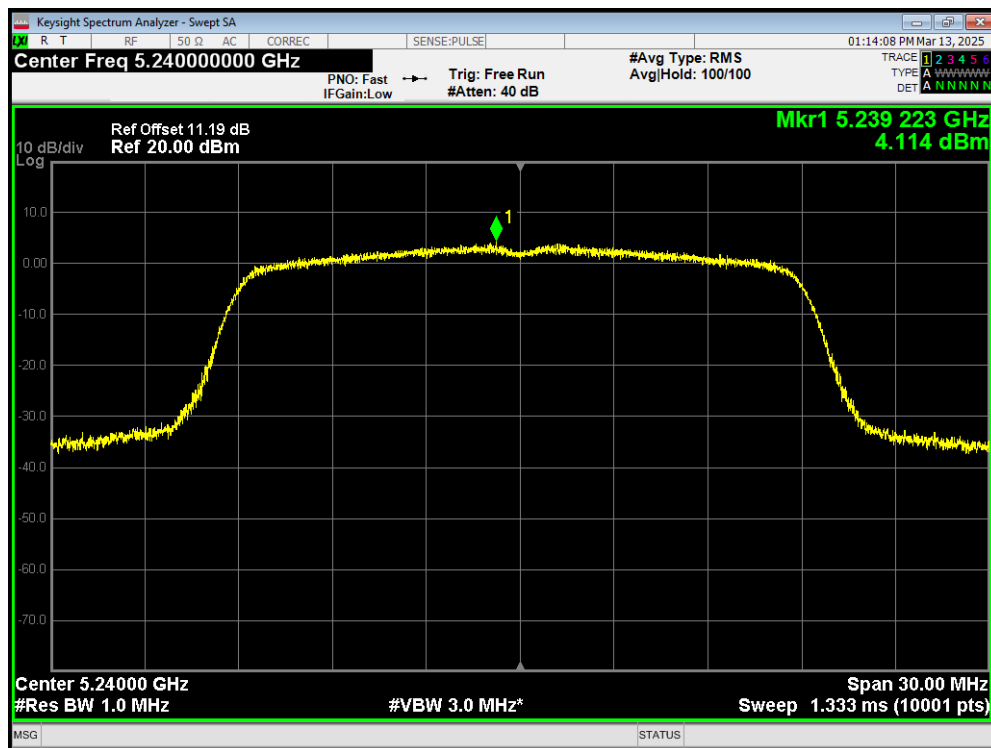
PSD 802.11ac(VHT20) 5180MHz



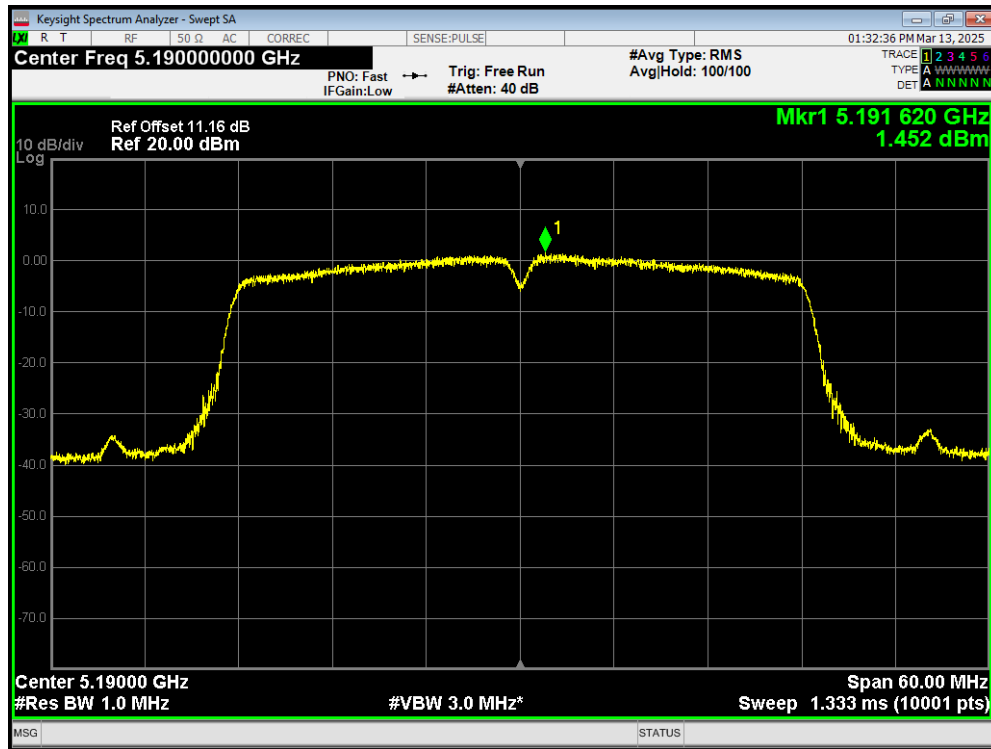
PSD 802.11ac(VHT20) 5200MHz



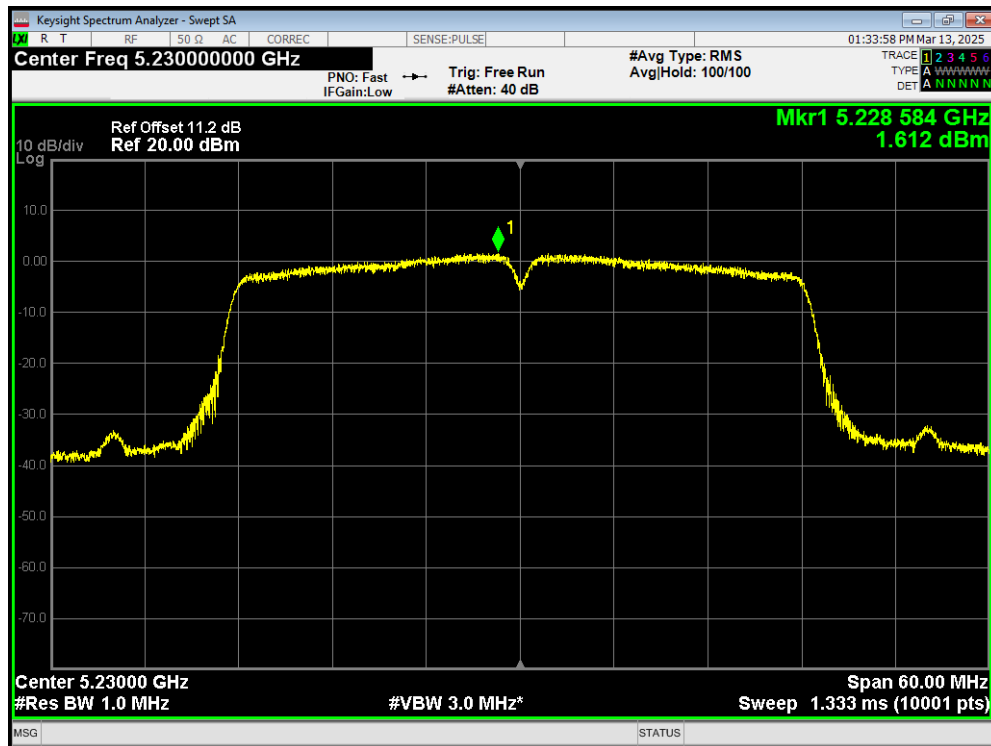
PSD 802.11ac(VHT20) 5240MHz



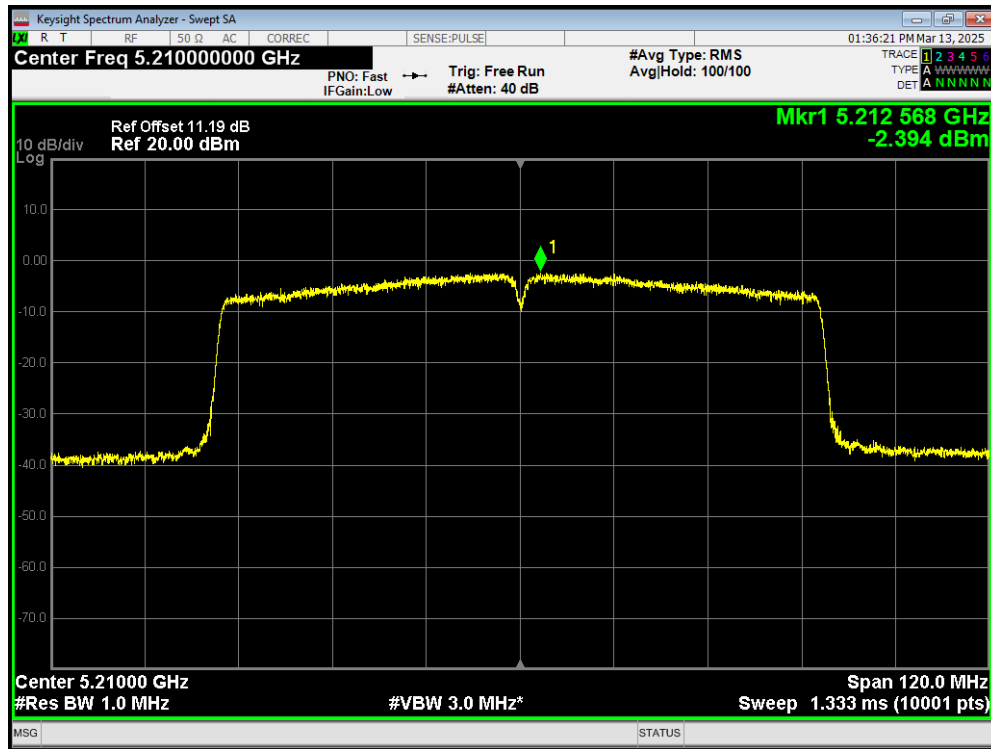
PSD 802.11ac(VHT40) 5190MHz



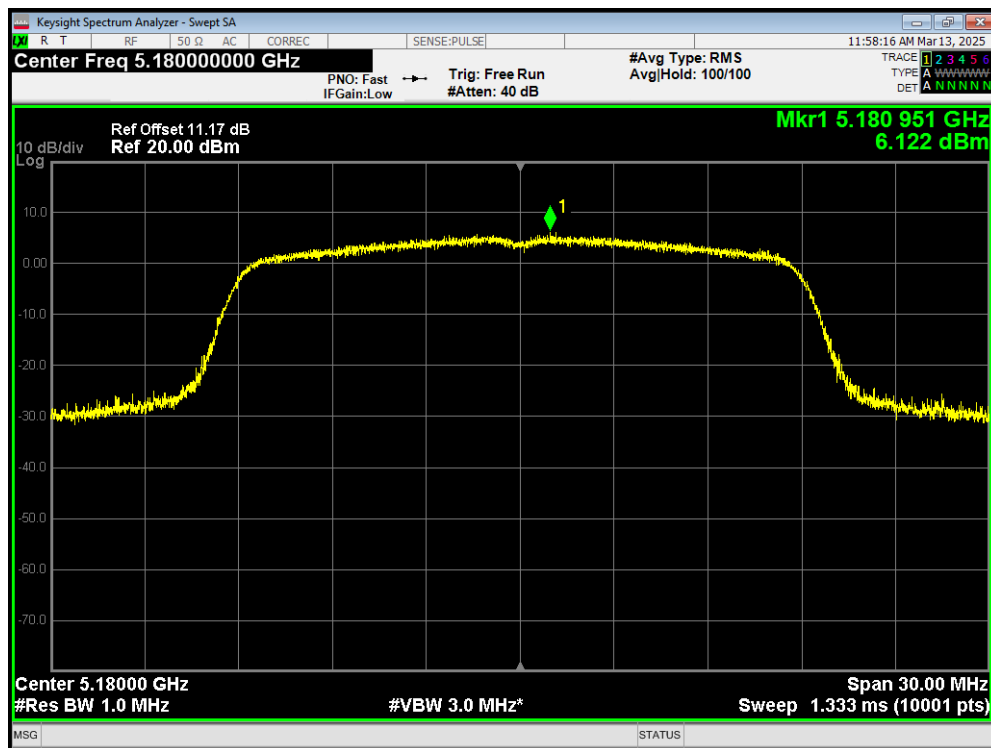
PSD 802.11ac(VHT40) 5230MHz



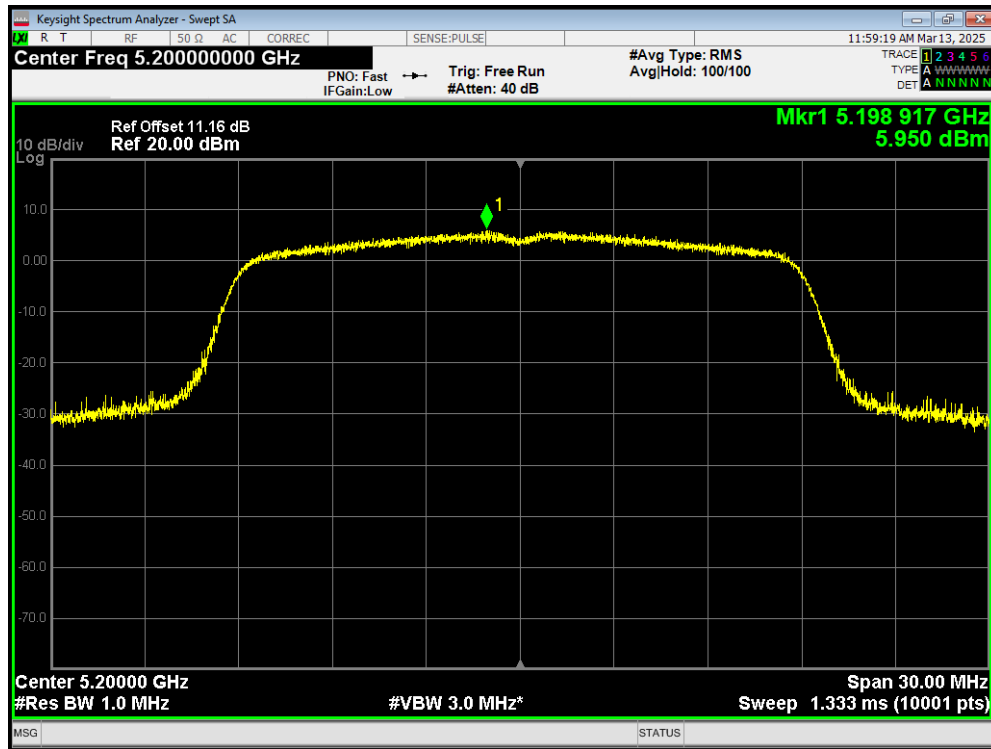
PSD 802.11ac(VHT80) 5210MHz



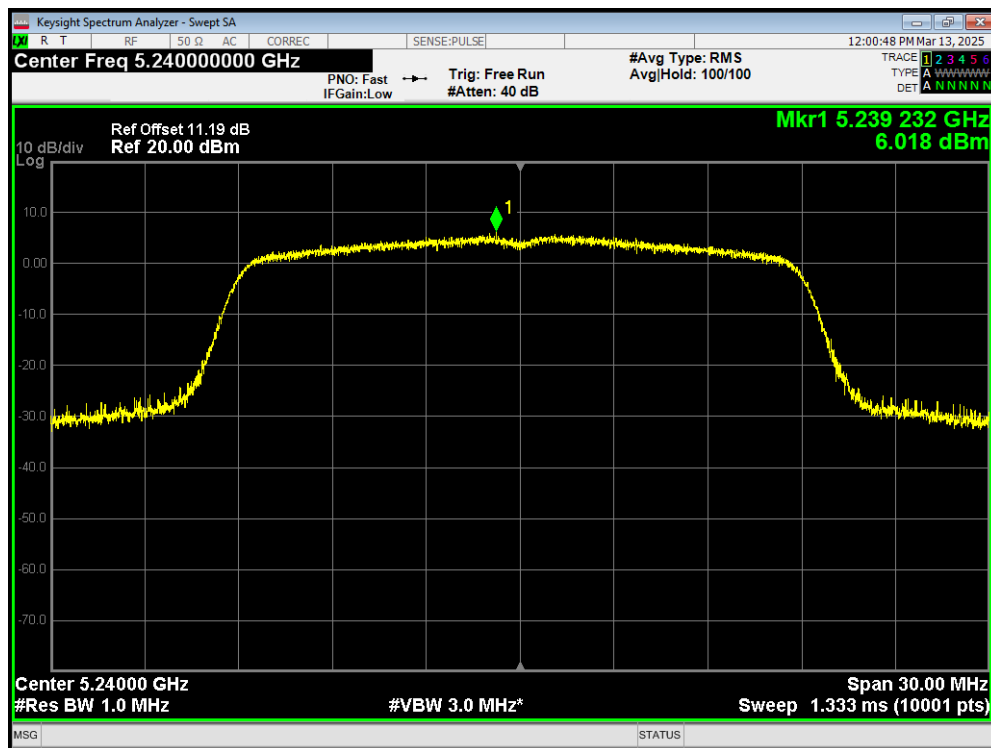
PSD 802.11n(HT20) 5180MHz



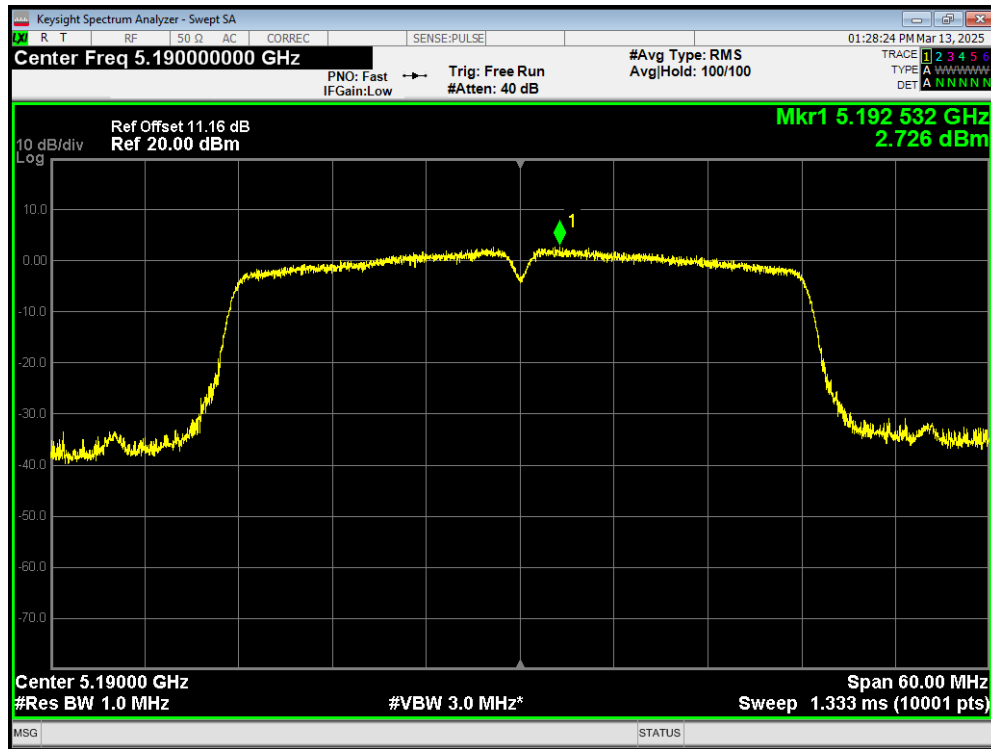
PSD 802.11n(HT20) 5200MHz



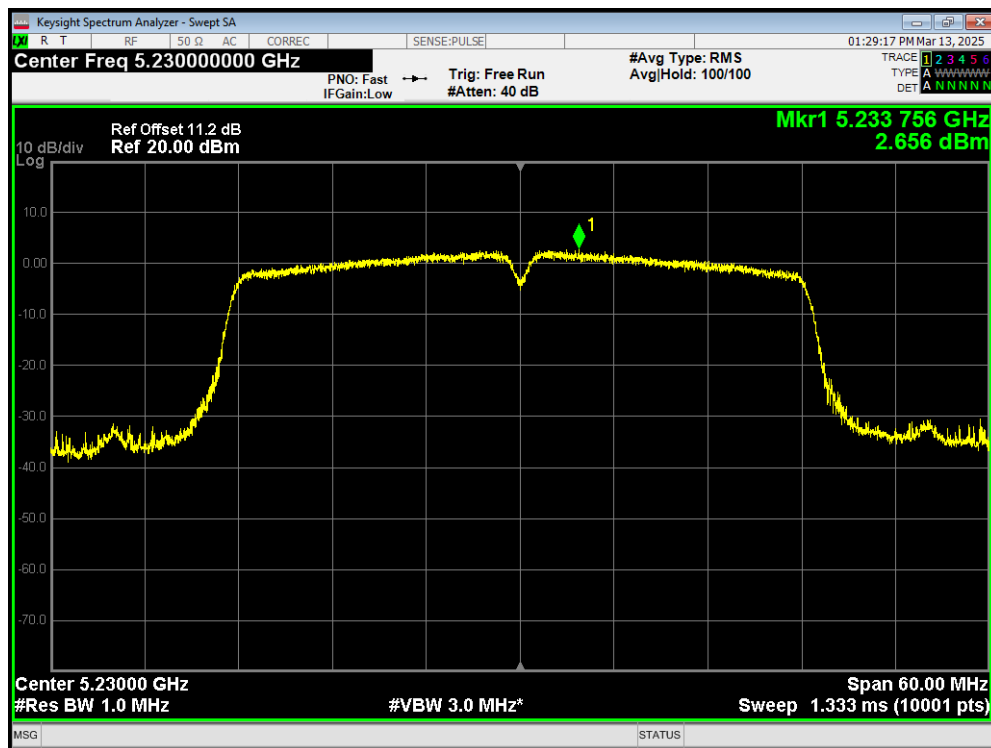
PSD 802.11n(HT20) 5240MHz



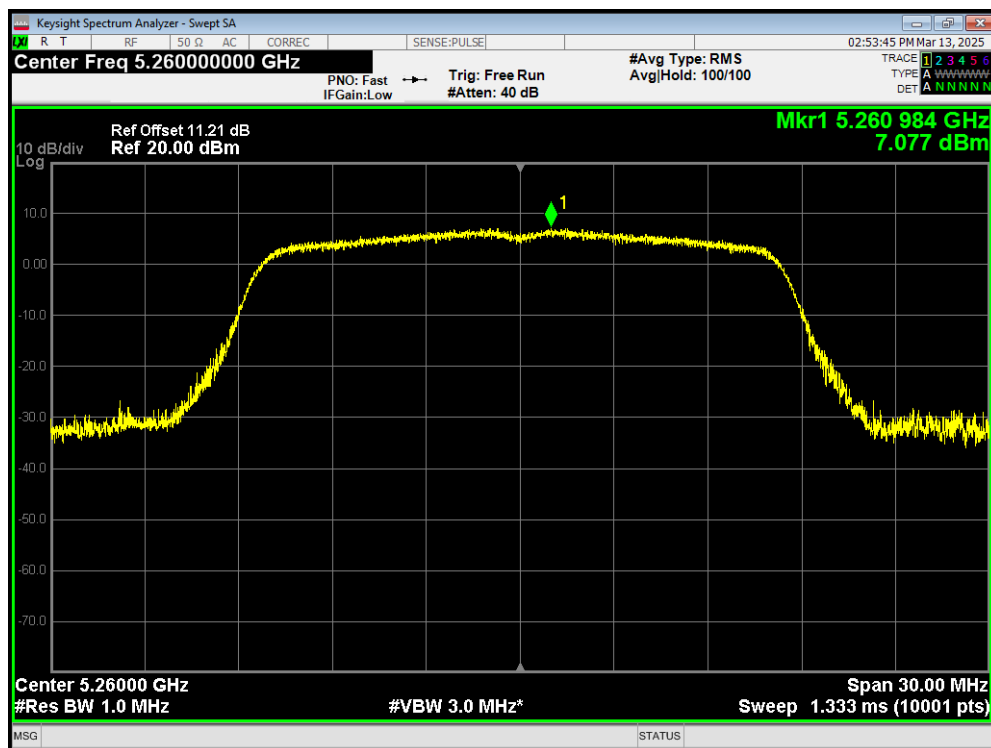
PSD 802.11n(HT40) 5190MHz



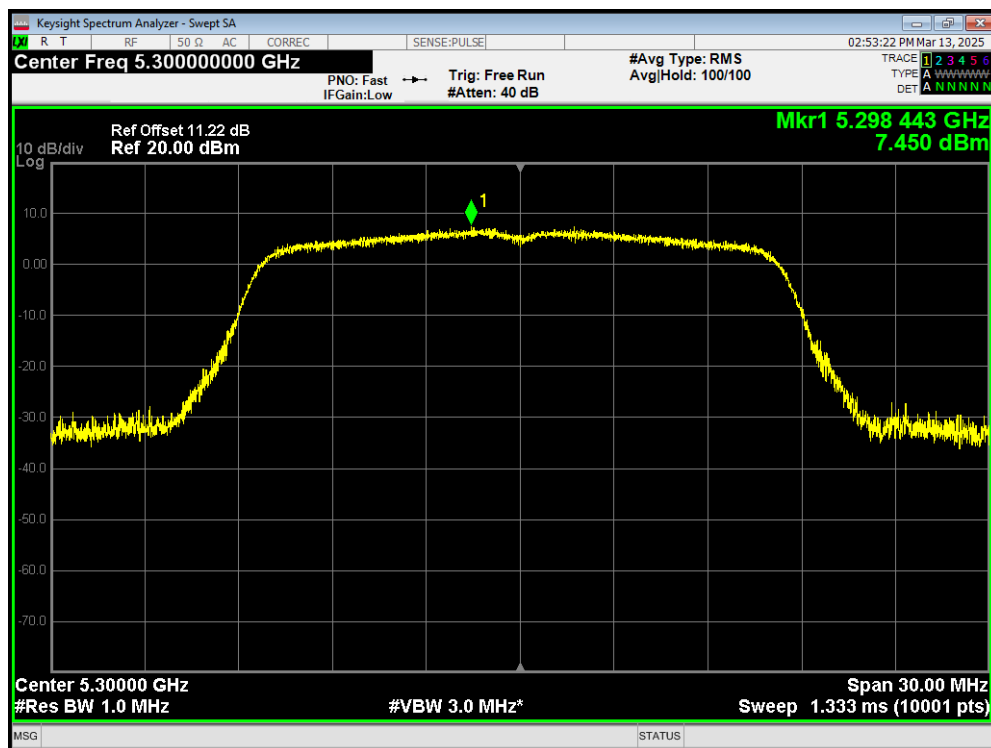
PSD 802.11n(HT40) 5230MHz



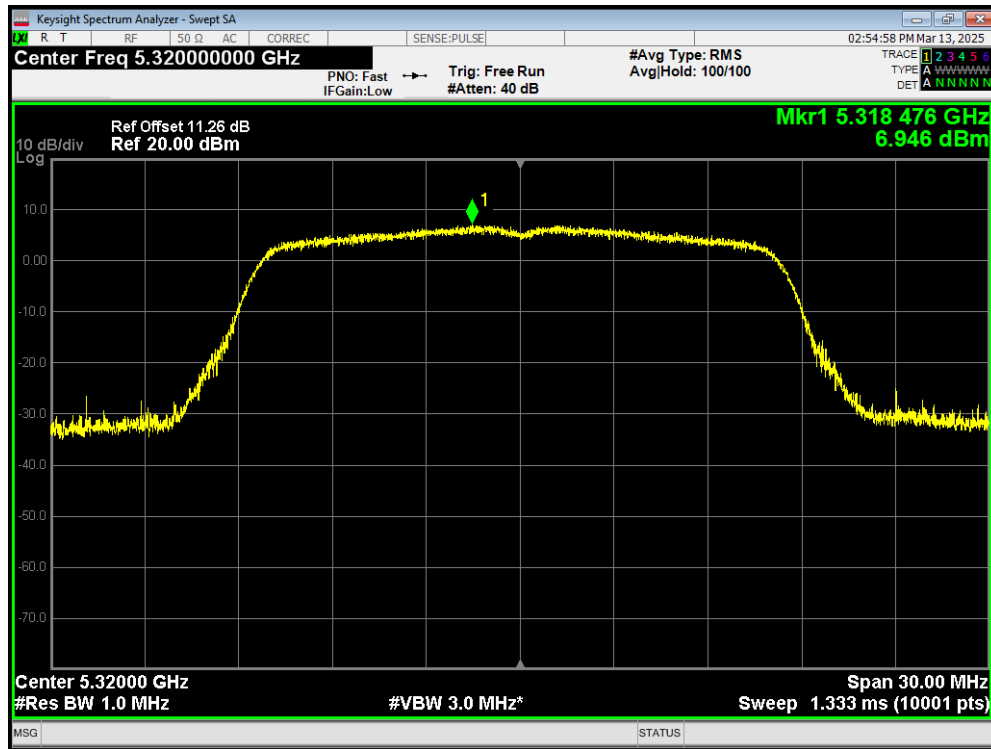
PSD 802.11a 5260MHz



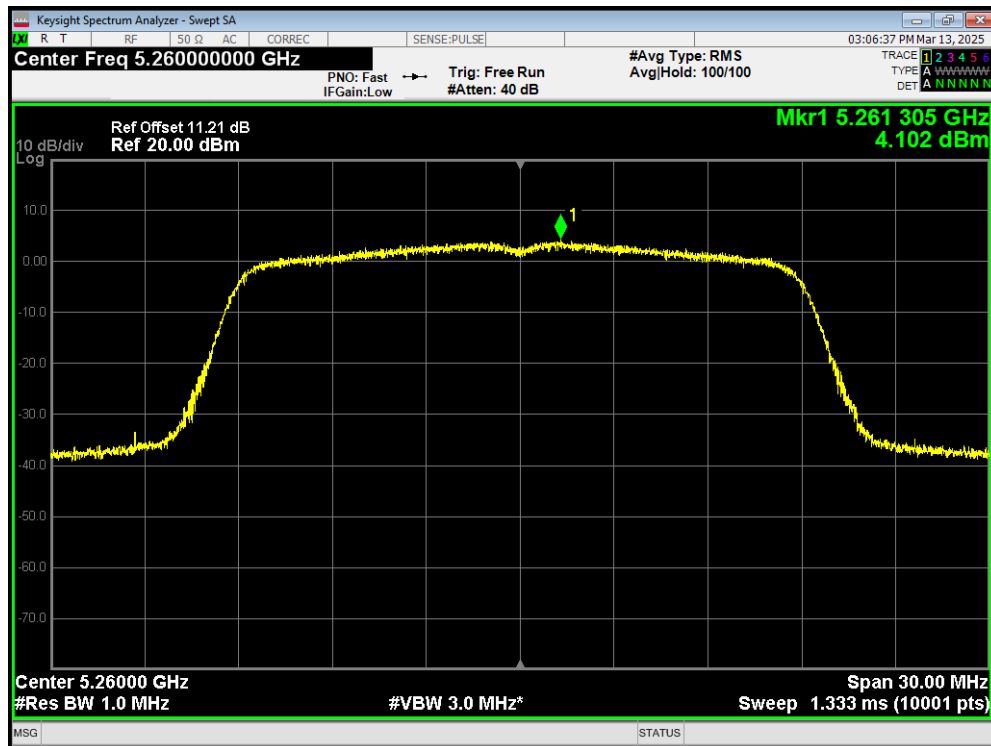
PSD 802.11a 5300MHz



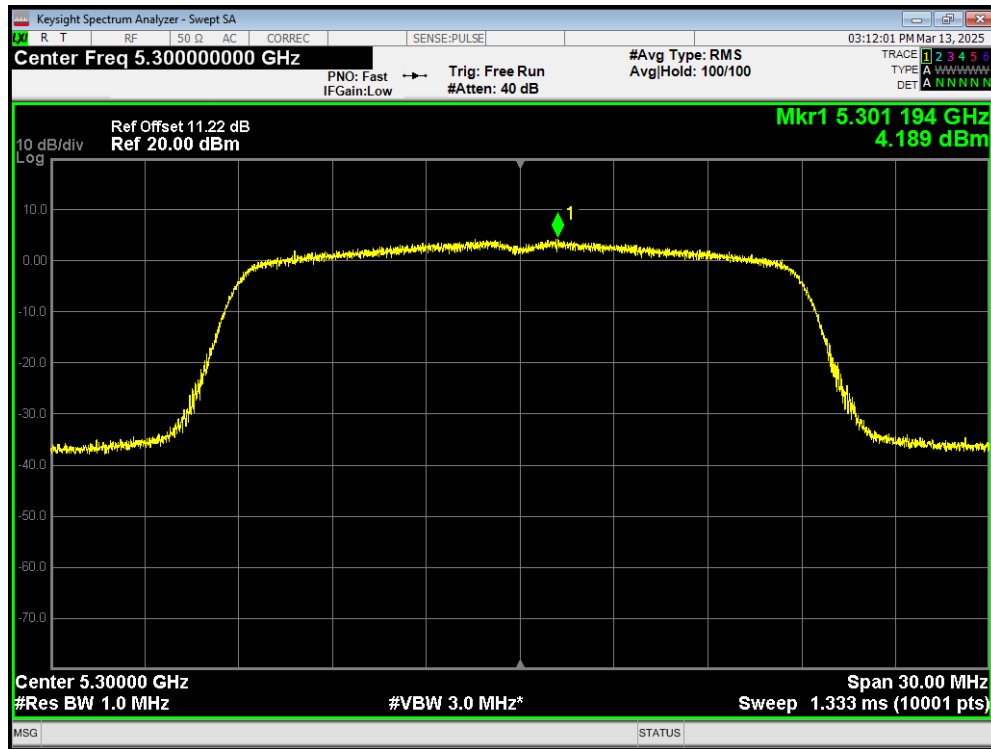
PSD 802.11a 5320MHz



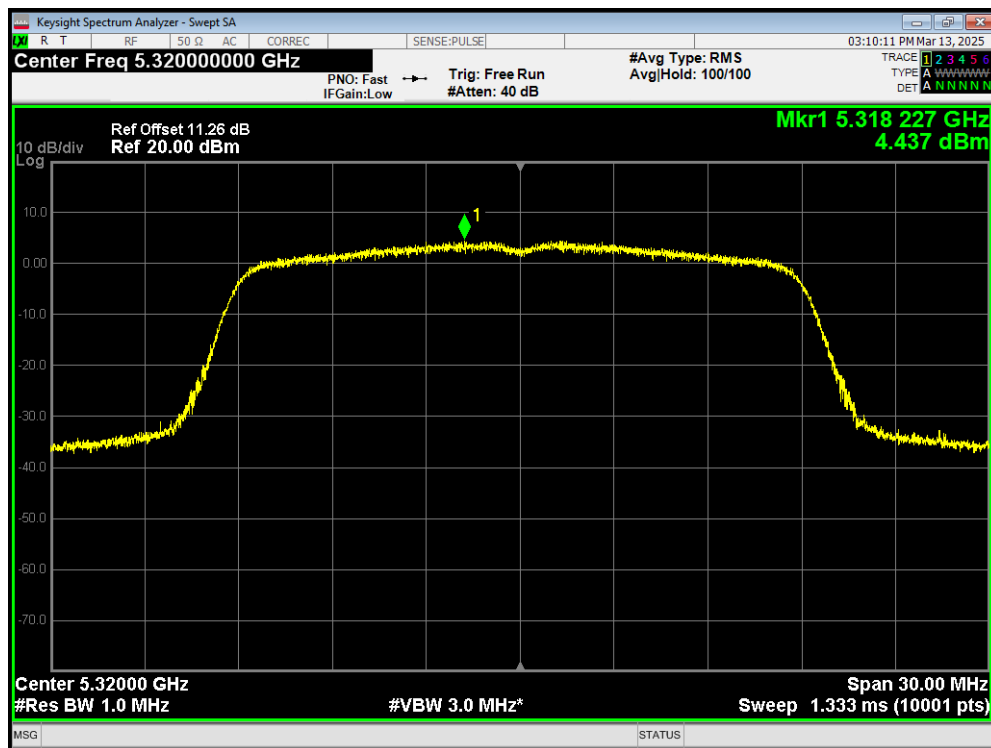
PSD 802.11ac(VHT20) 5260MHz



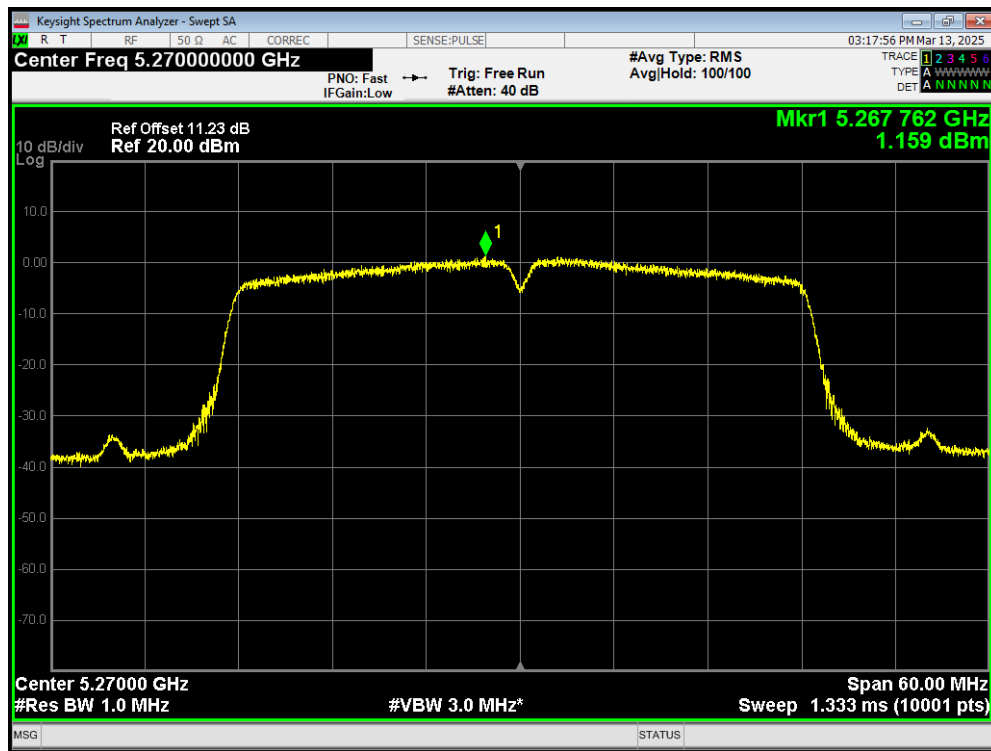
PSD 802.11ac(VHT20) 5300MHz



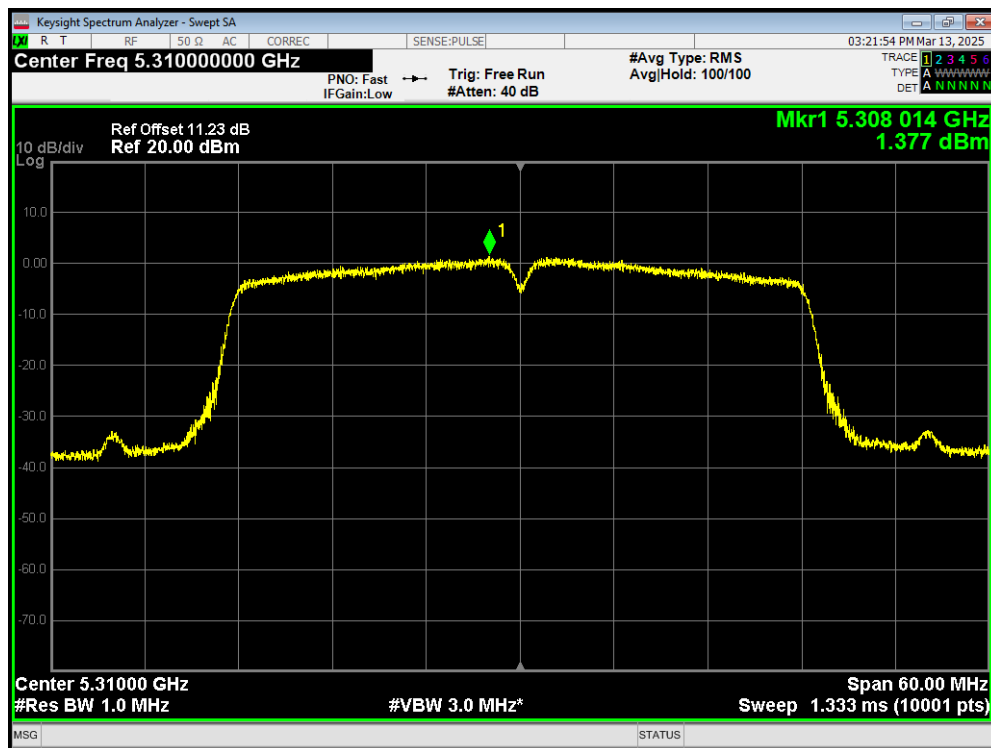
PSD 802.11ac(VHT20) 5320MHz



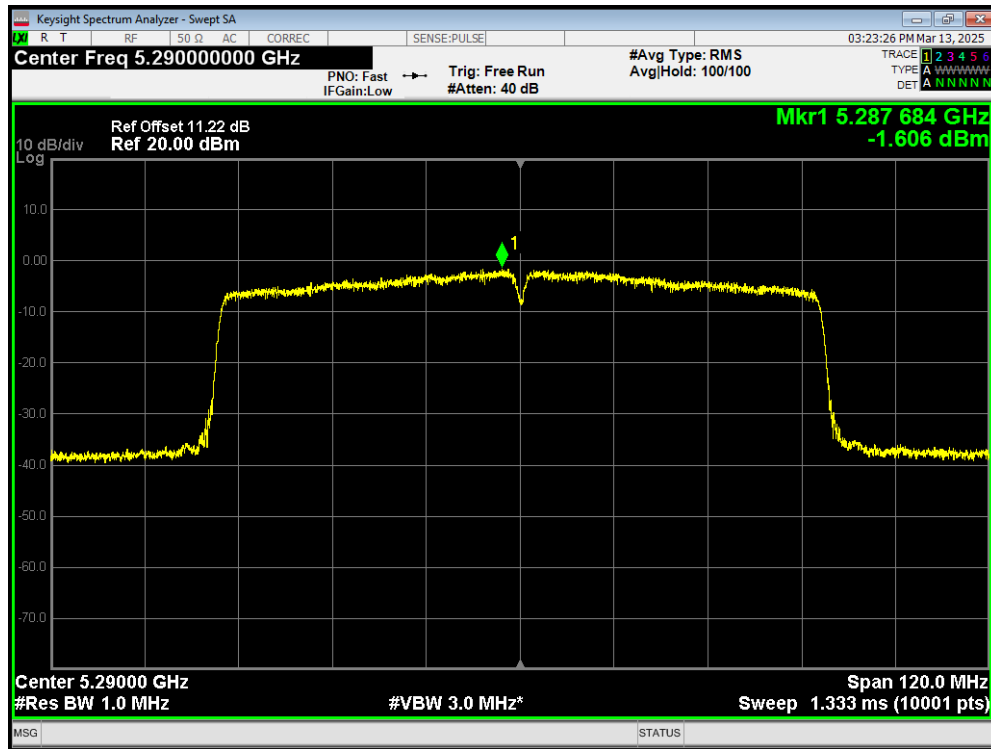
PSD 802.11ac(VHT40) 5270MHz



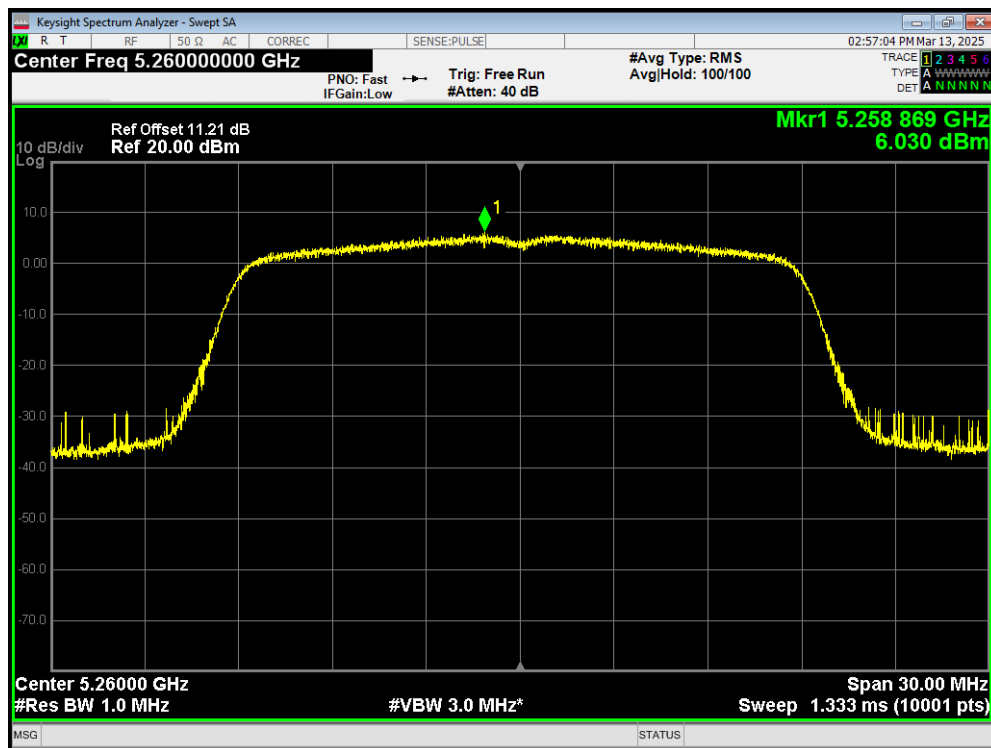
PSD 802.11ac(VHT40) 5310MHz



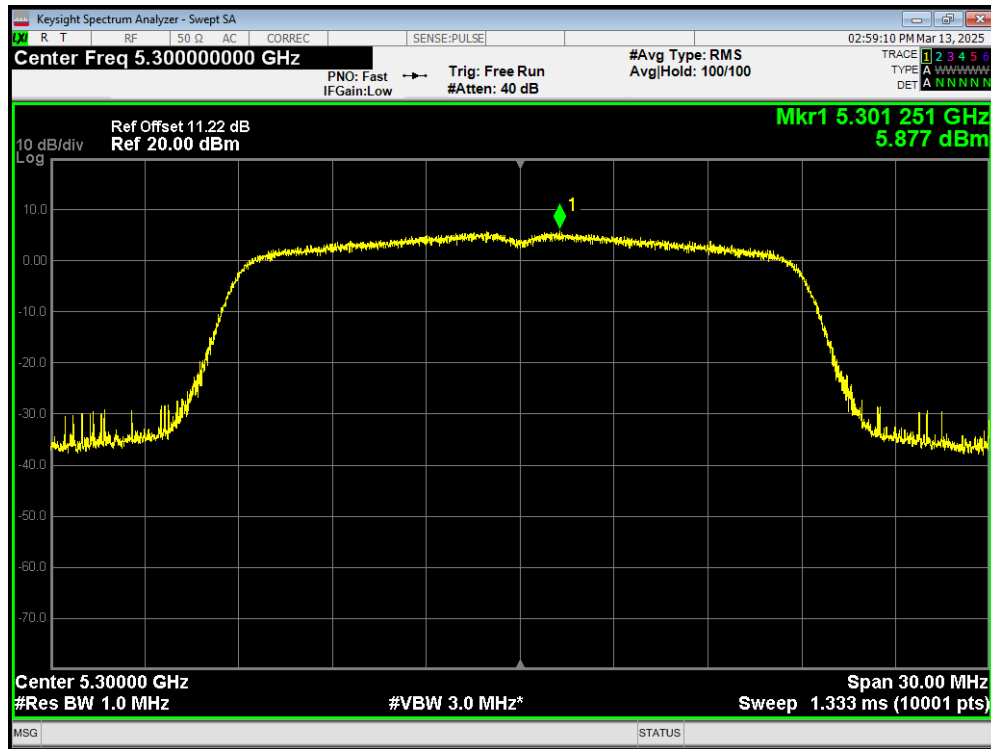
PSD 802.11ac(VHT80) 5290MHz



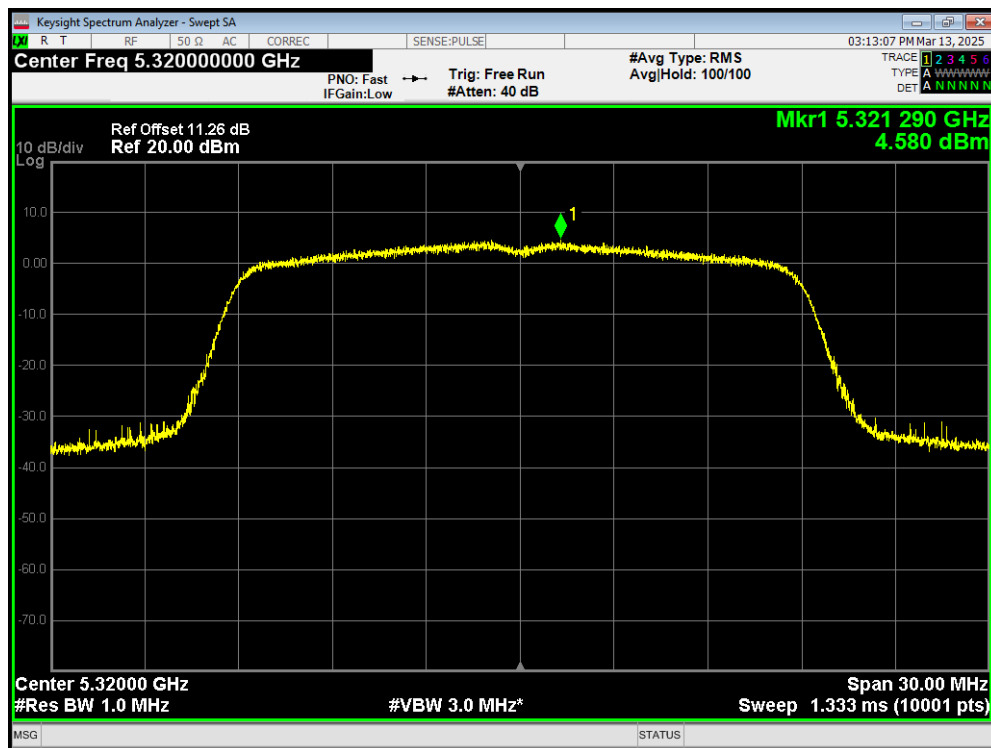
PSD 802.11n(HT20) 5260MHz



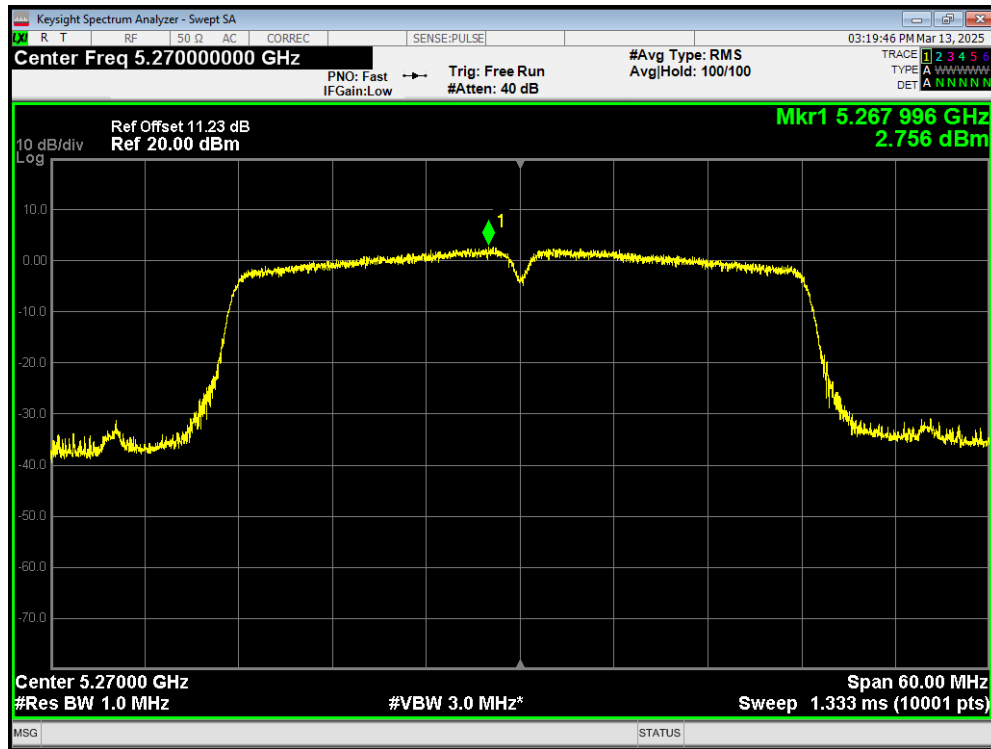
PSD 802.11n(HT20) 5300MHz



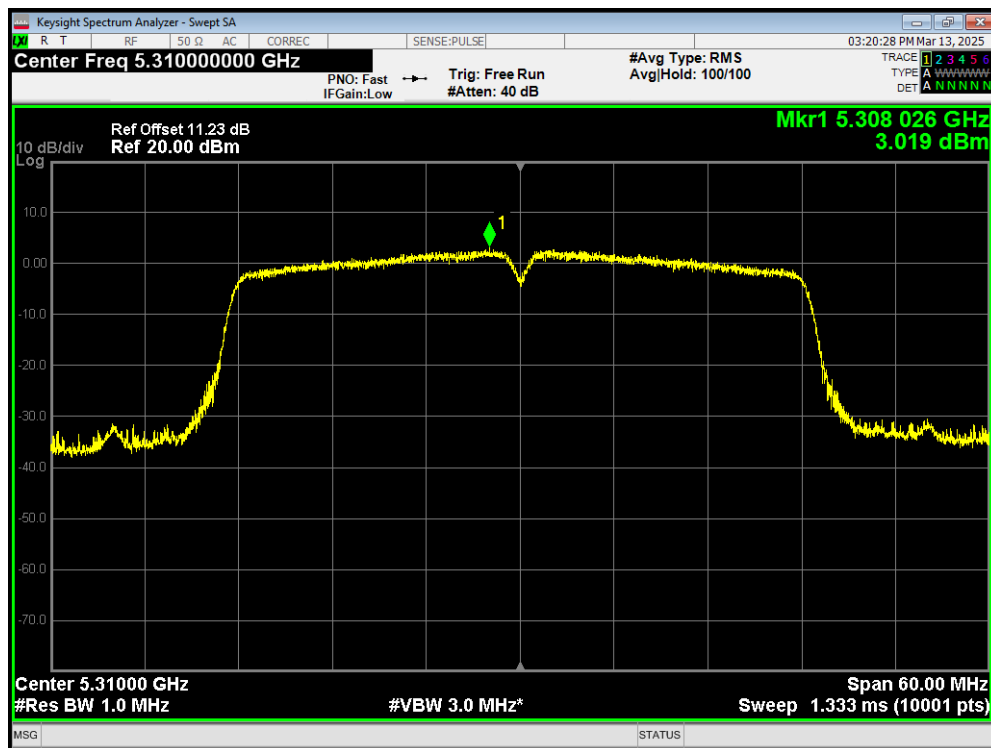
PSD 802.11n(HT20) 5320MHz



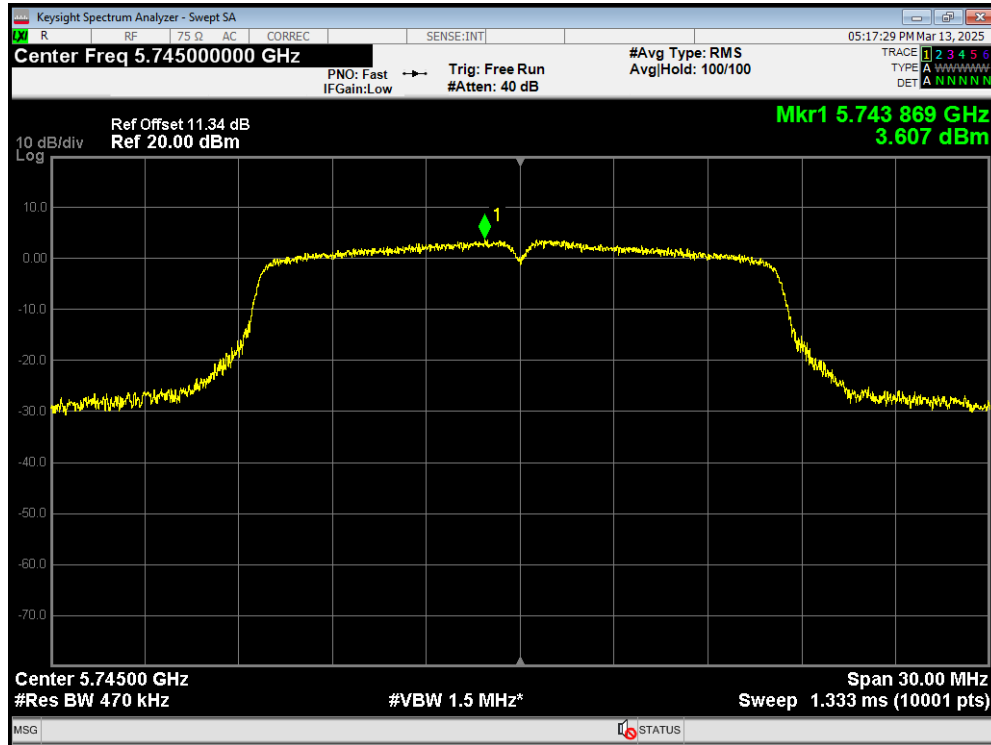
PSD 802.11n(HT40) 5270MHz



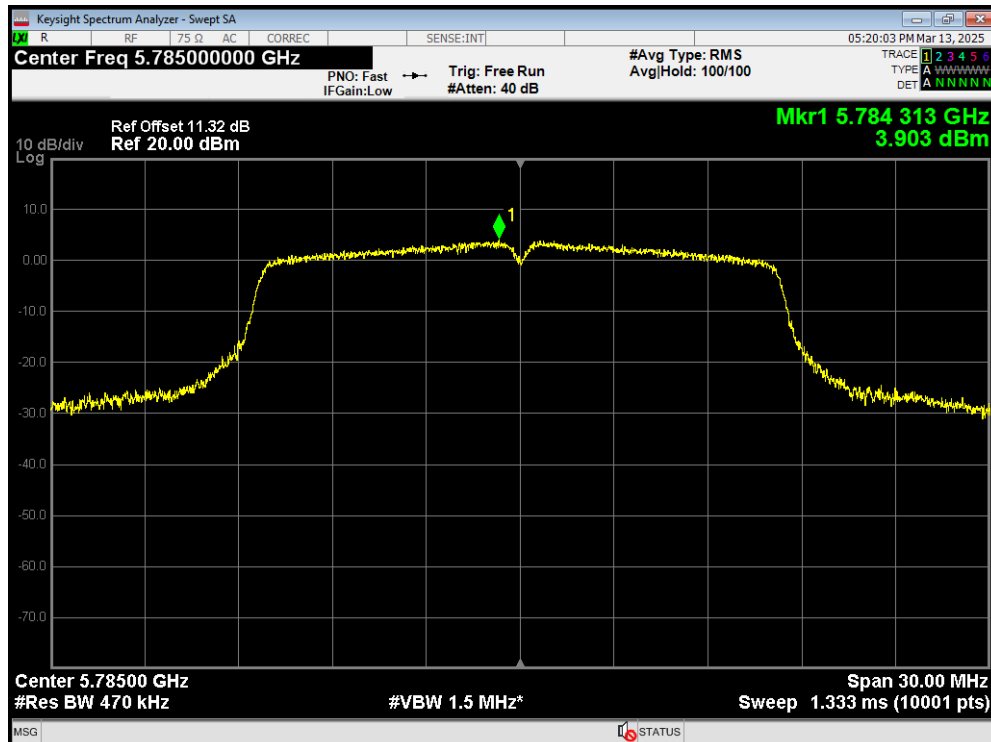
PSD 802.11n(HT40) 5310MHz



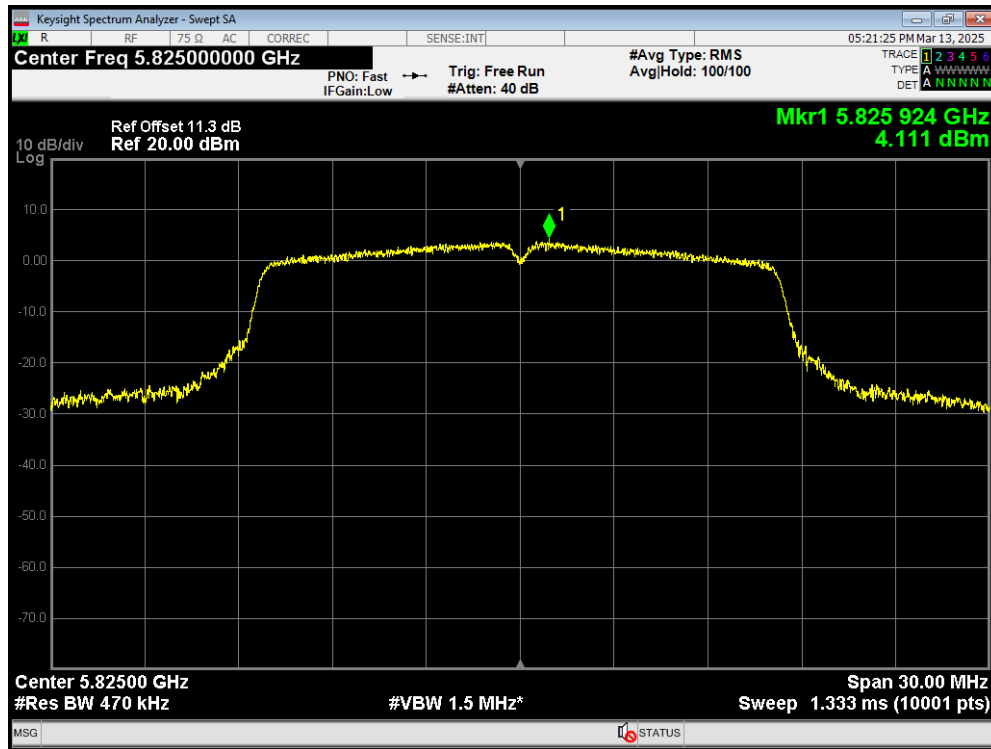
PSD 802.11a 5745MHz



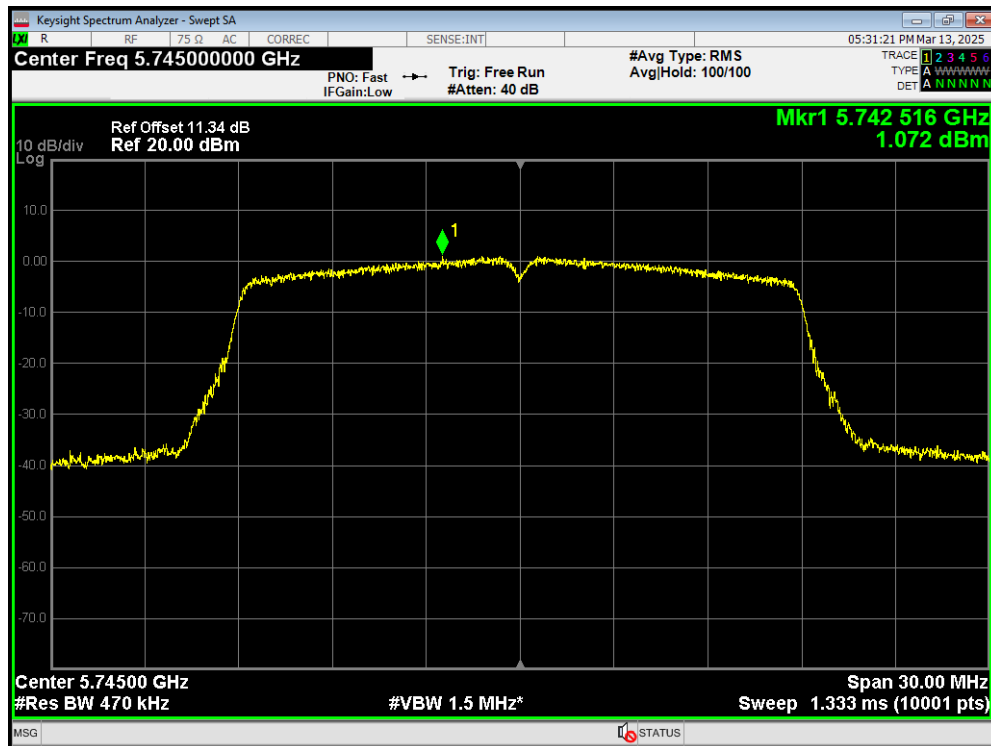
PSD 802.11a 5785MHz



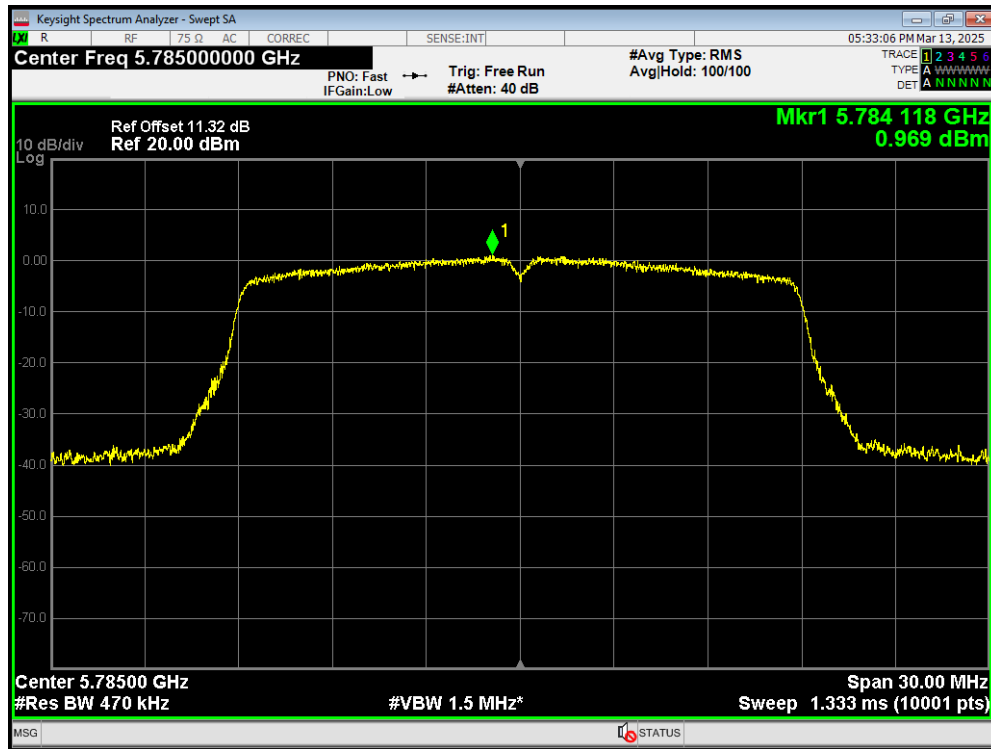
PSD 802.11a 5825MHz



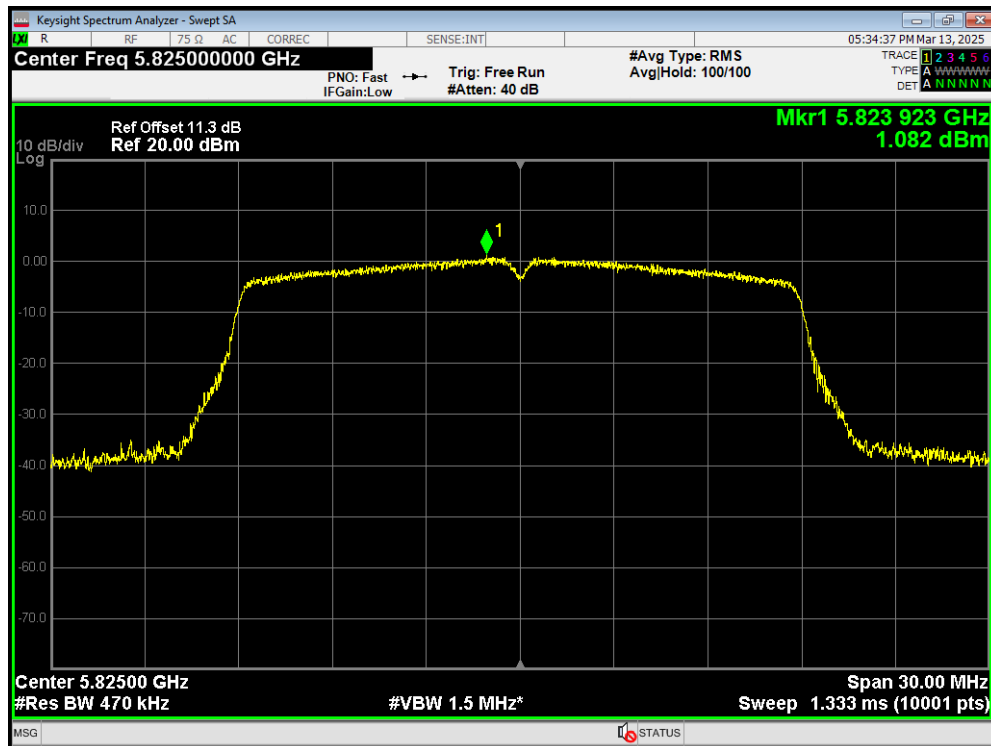
PSD 802.11ac(VHT20) 5745MHz



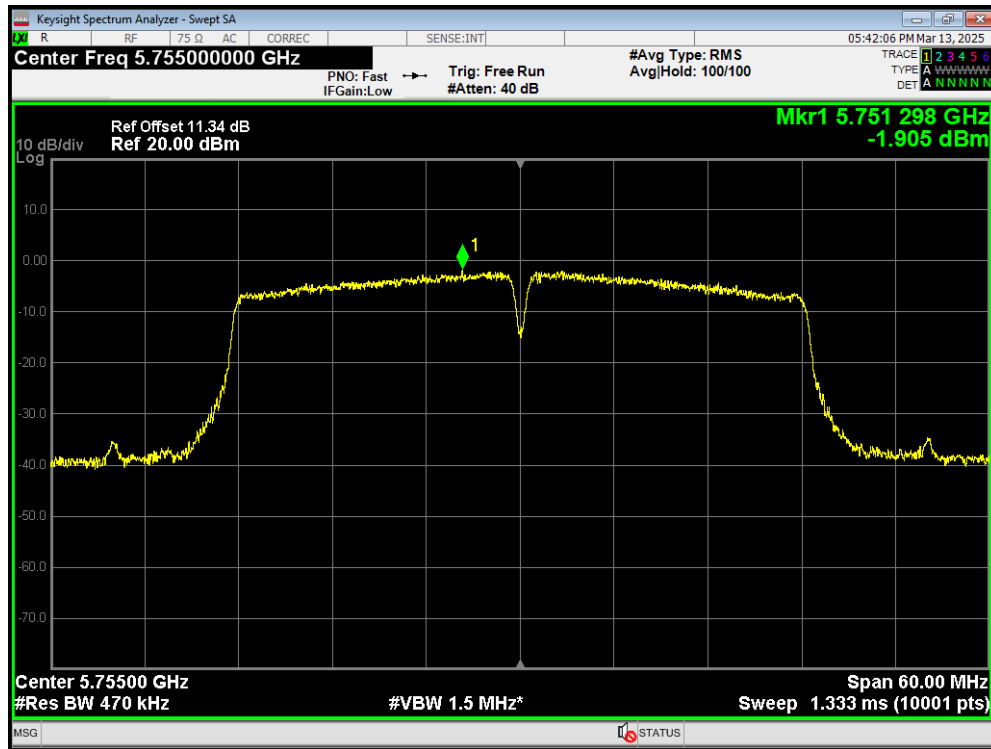
PSD 802.11ac(VHT20) 5785MHz



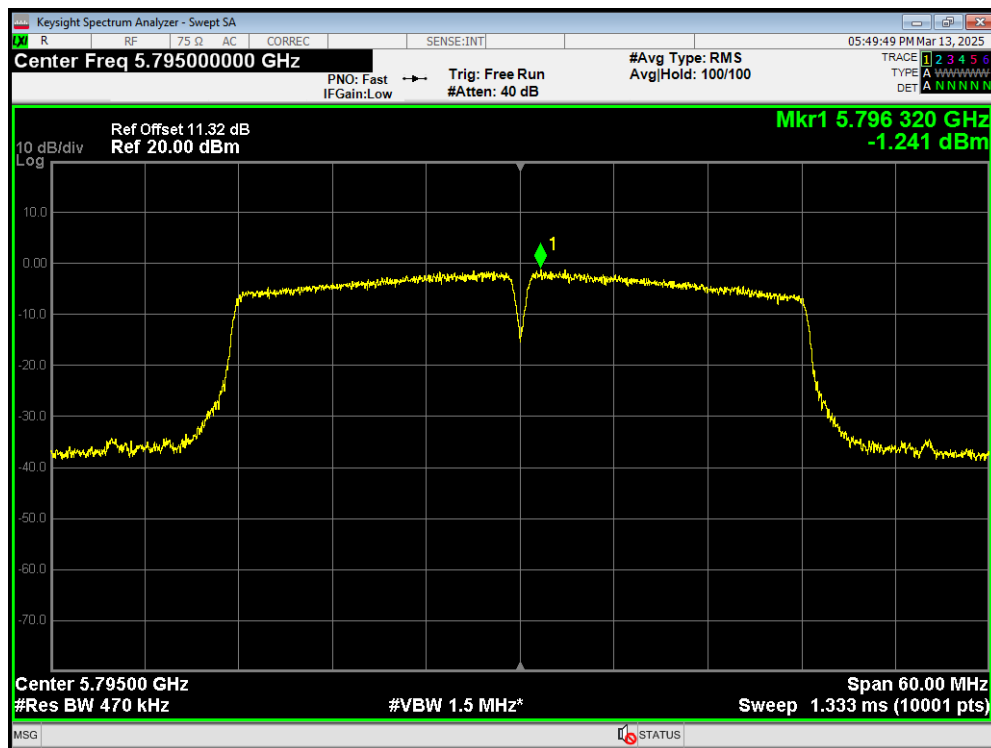
PSD 802.11ac(VHT20) 5825MHz



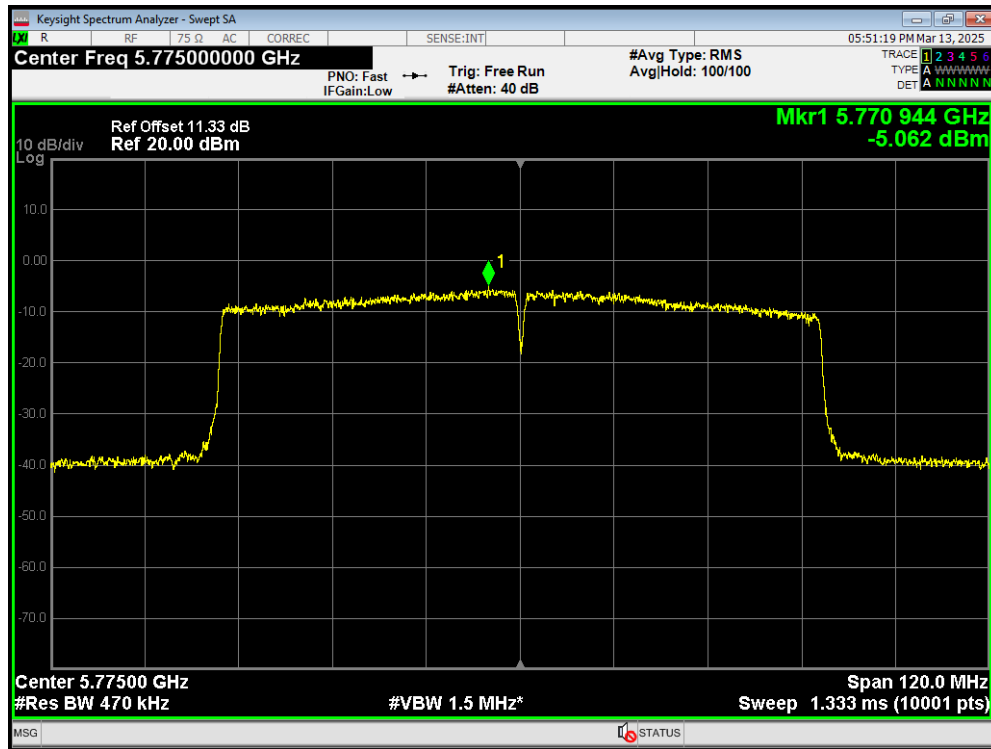
PSD 802.11ac(VHT40) 5755MHz



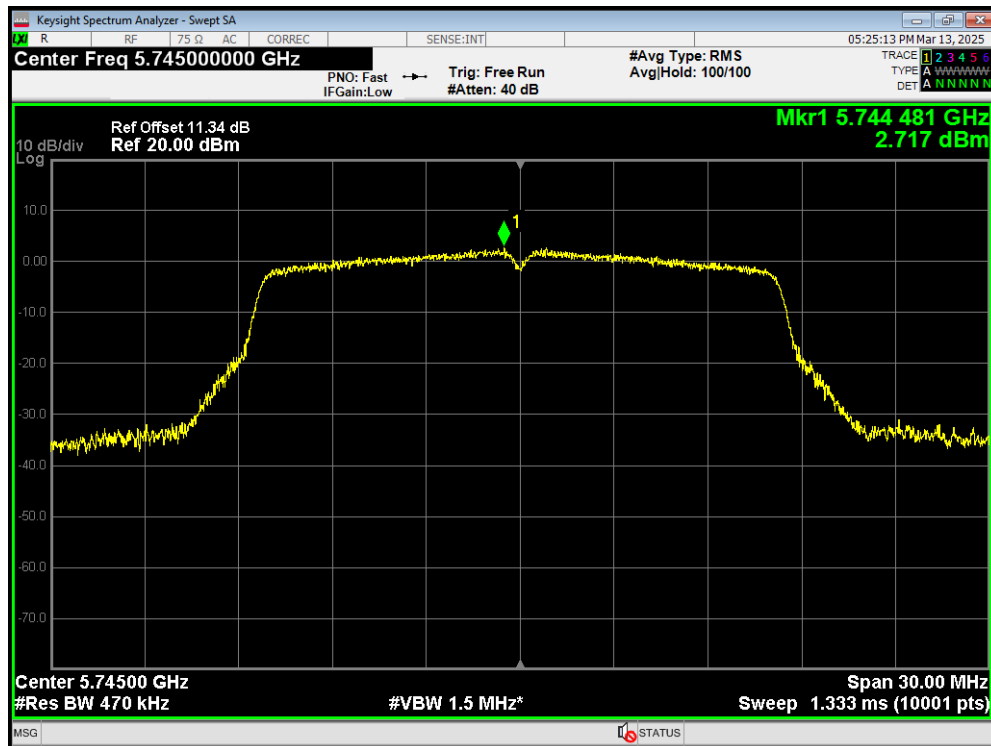
PSD 802.11ac(VHT40) 5795MHz



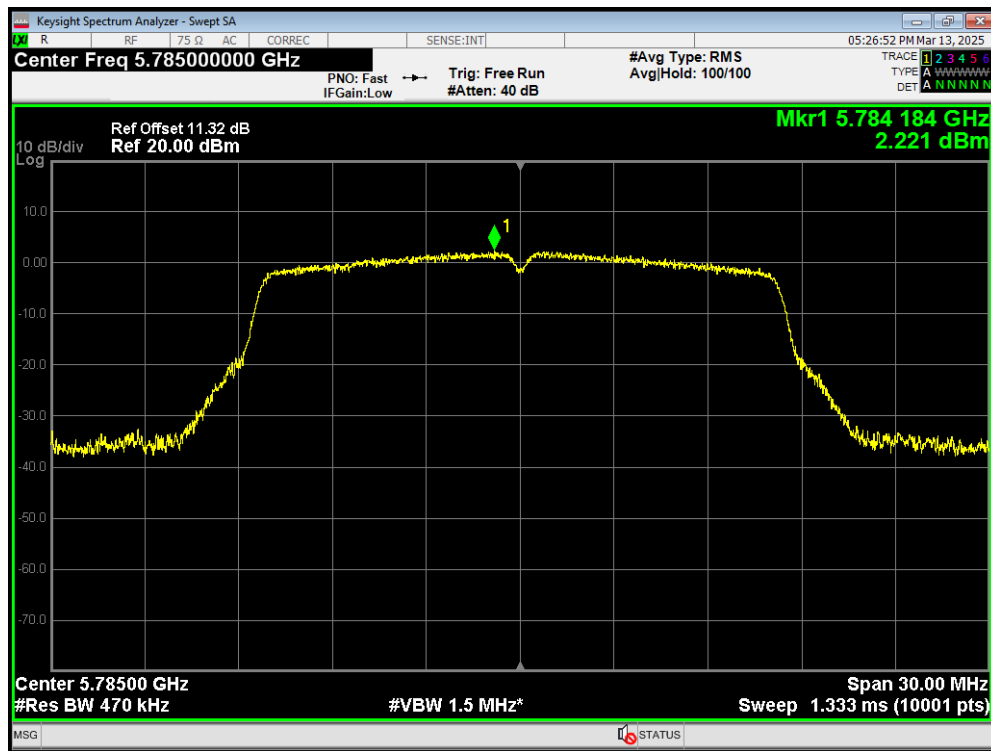
PSD 802.11ac(VHT80) 5775MHz



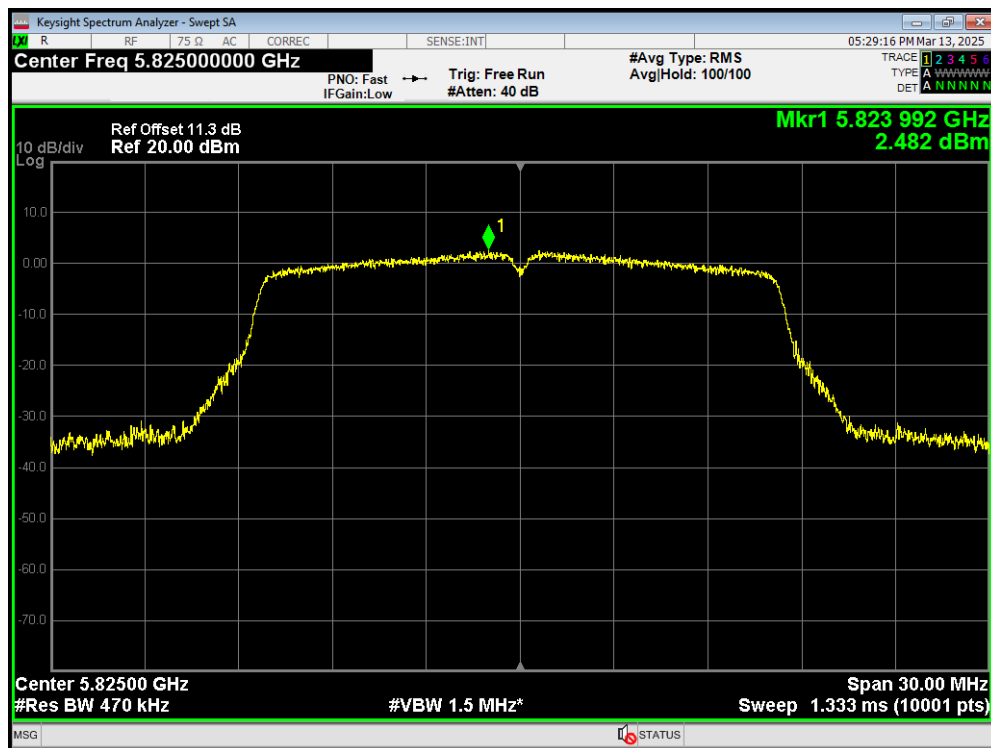
PSD 802.11n(HT20) 5745MHz



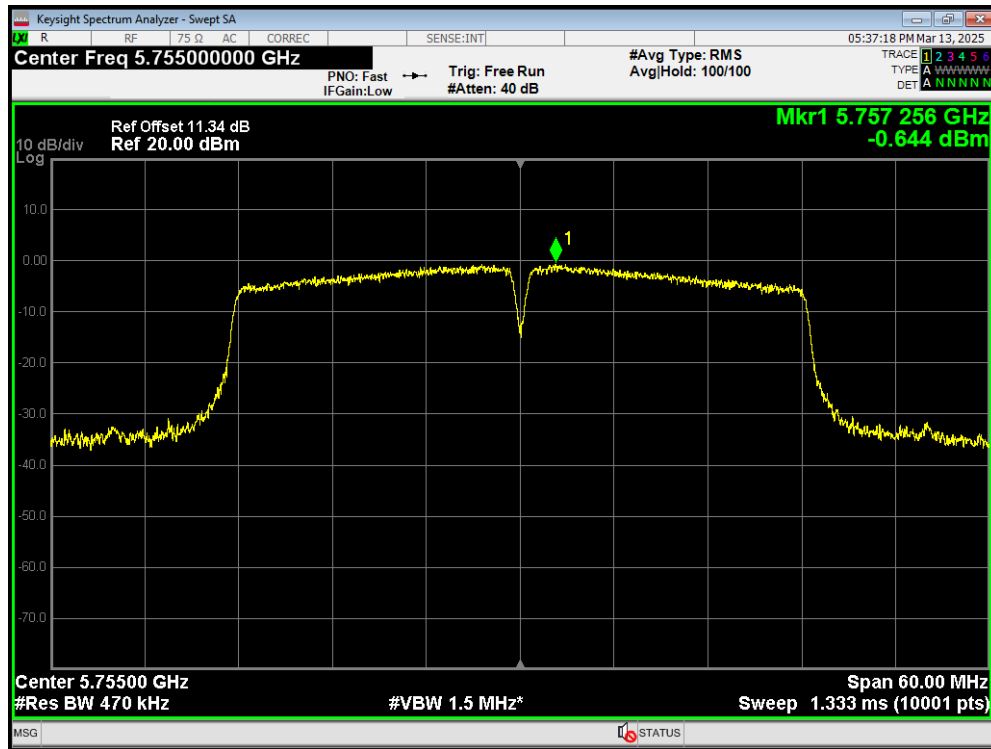
PSD 802.11n(HT20) 5785MHz



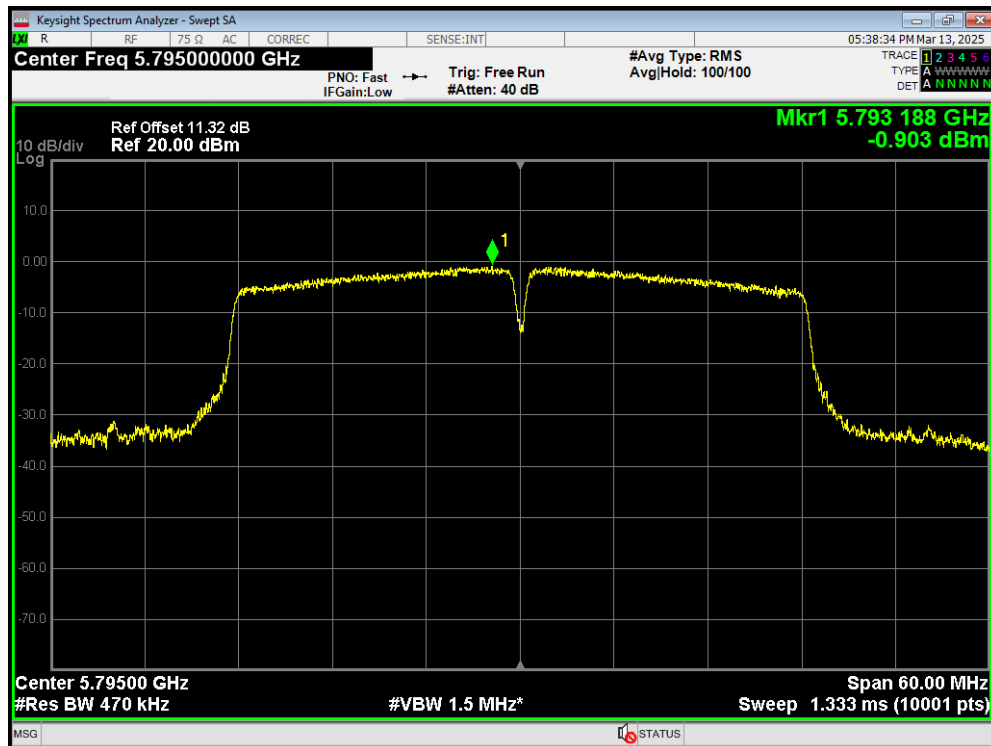
PSD 802.11n(HT20) 5825MHz



PSD 802.11n(HT40) 5755MHz



PSD 802.11n(HT40) 5795MHz



5.5. Unwanted Emission

Ambient condition

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

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.

Sweep the whole frequency band range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

9kHz~150 kHz

RBW=200Hz, VBW=1kHz/ Sweep=AUTO

150 kHz~30MHz

RBW=9kHz, VBW=30kHz,/ Sweep=AUTO

Below 1GHz

RBW=100kHz / VBW=300kHz / Sweep=AUTO

a) Peak emission levels are measured by setting the instrument as follows:

Above 1GHz

PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

b) Average emission levels are measured by setting the instrument as follows:

Above 1GHz

AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

c) Detector: The measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)

e) Sweep time = auto.

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and

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

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

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

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

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

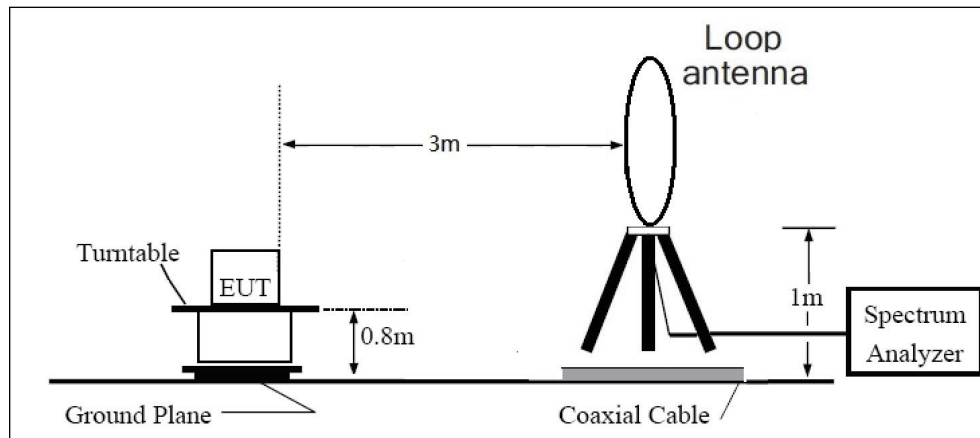
Reduce the video bandwidth until no significant variations in the displayed signal are observed in subsequent traces, provided the video bandwidth is no less than 1 Hz. For regulatory requirements that specify averaging only over the transmit duration (e.g., digital transmission system [DTS] and Unlicensed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

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

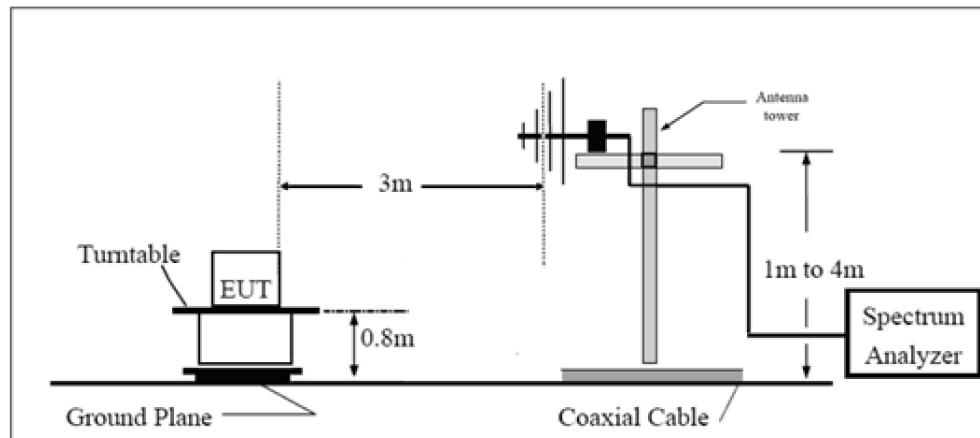
The test is in transmitting mode.

Test setup

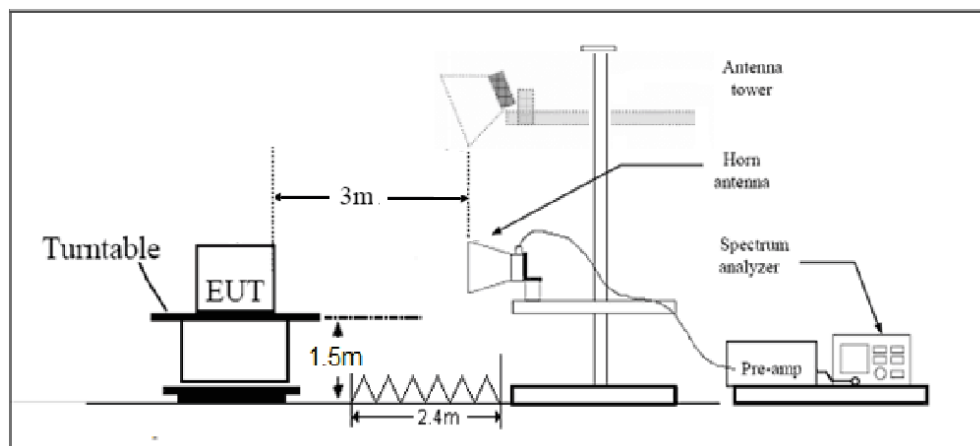
9kHz~ 30MHz



30MHz~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

- (1) For transmitters operating in the 5725-5850 MHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
- (2) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz(68.2dBμV/m).
- (3) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz(68.2dBμV/m).
- (4) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz(68.2dBμV/m).

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

§1、 $E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{meters}]) + 104.77$, where E = field strength and

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

§2、 $E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] + 95.2$, for d = 3 meters

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

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

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

Measurement Uncertainty

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

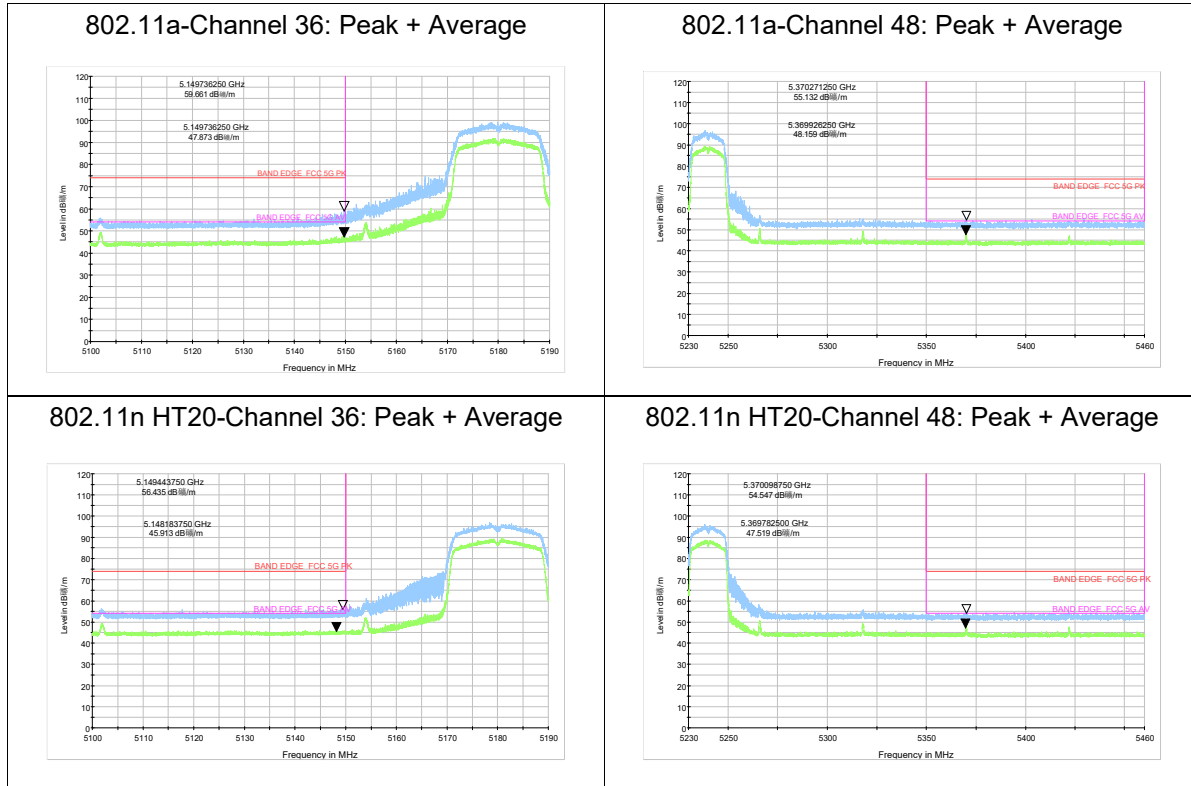
Frequency	Uncertainty
9kHz-30MHz	3.55 dB
30MHz-200MHz	4.17 dB
200MHz-1GHz	4.84 dB
1-18GHz	4.35 dB
18-26.5GHz	5.90 dB
26.5GHz~40GHz	5.92 dB

Test Results:

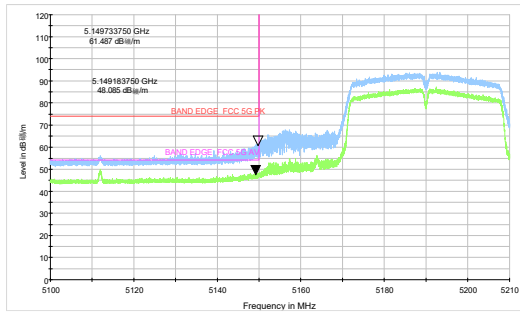
The following graphs display the maximum values of horizontal and vertical by software.
Blue trace uses the peak detection, Green trace uses the average detection.

The signal beyond the limit is carrier.

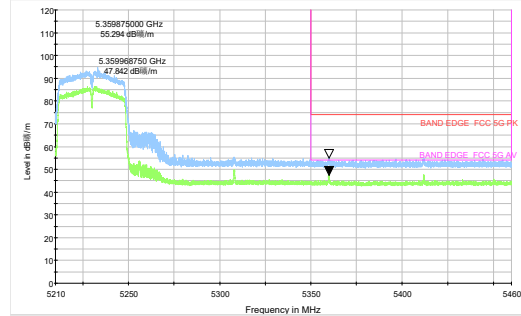
U-NII-1



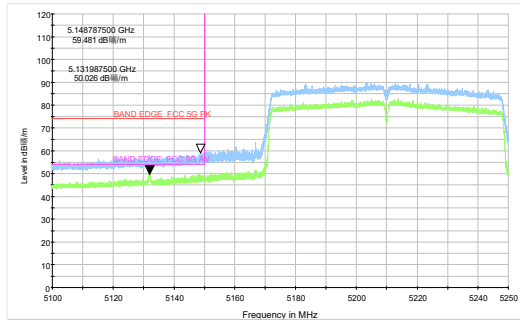
802.11n HT40-Channel 38: Peak + Average



802.11n HT40-Channel 46: Peak + Average

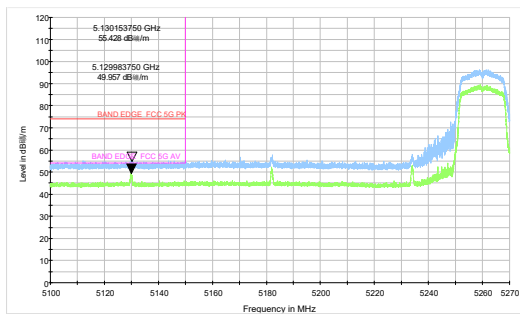


802.11ac VHT80 -Channel 42: Peak + Average

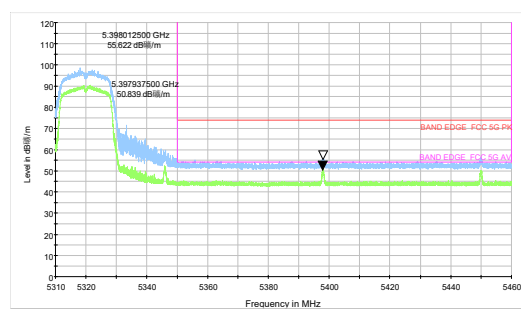


U-NII-2A

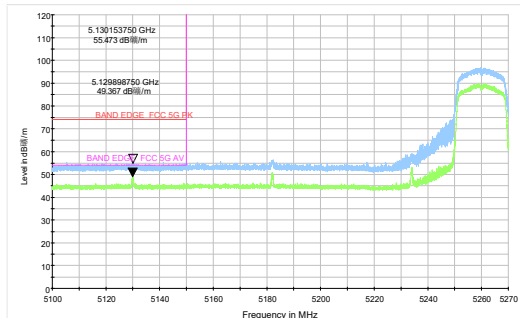
802.11a-Channel 52: Peak + Average



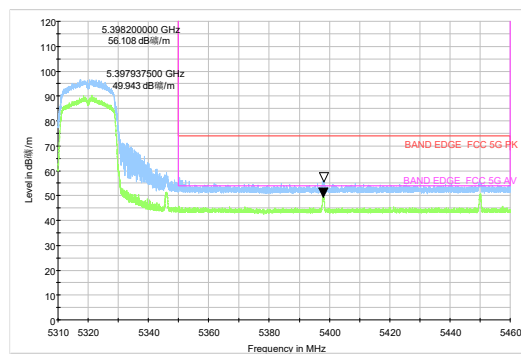
802.11a-Channel 64: Peak + Average



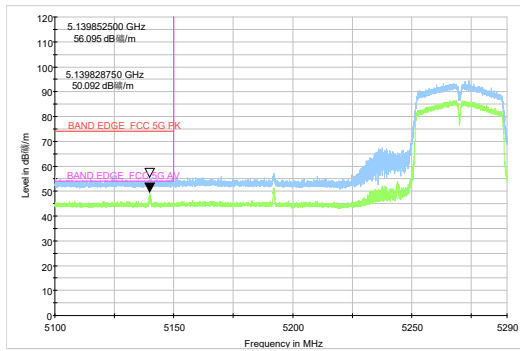
802.11n HT20-Channel 52: Peak + Average



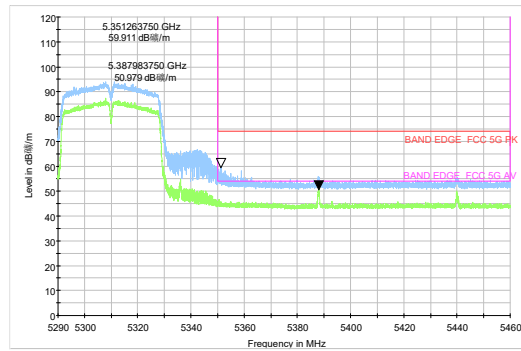
802.11n HT20-Channel 64: Peak + Average



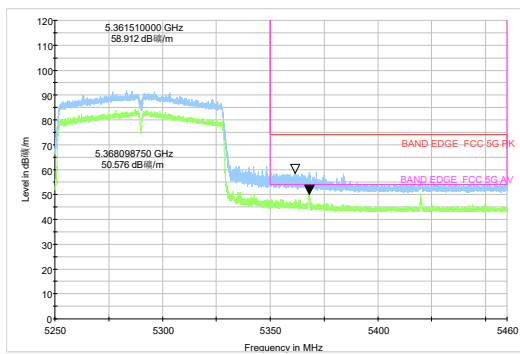
802.11n HT40-Channel 54: Peak + Average



802.11n HT40-Channel 62: Peak + Average

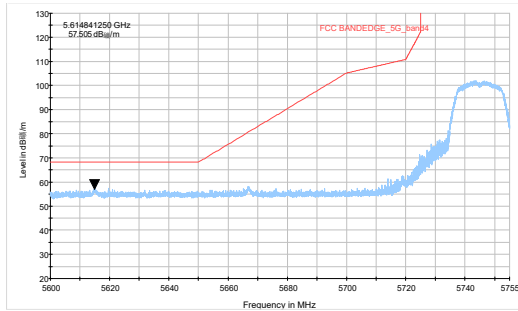


802.11ac VHT80 -Channel 58: Peak + Average

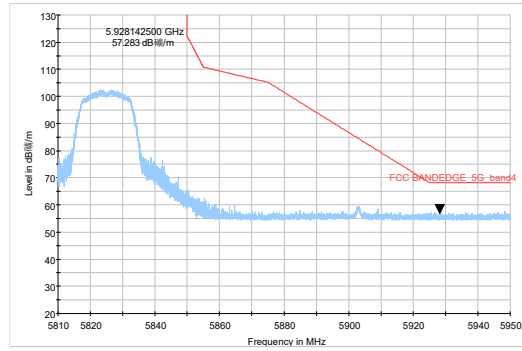


U-NII-3

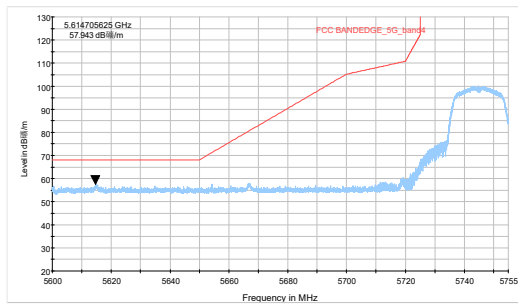
802.11a-Channel 149: Peak



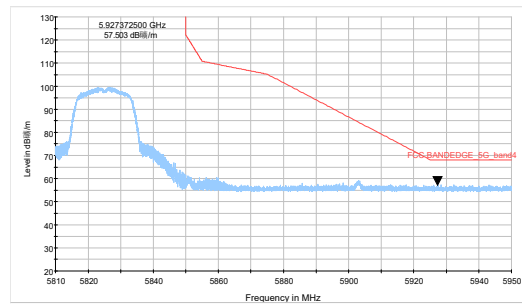
802.11a-Channel 165: Peak



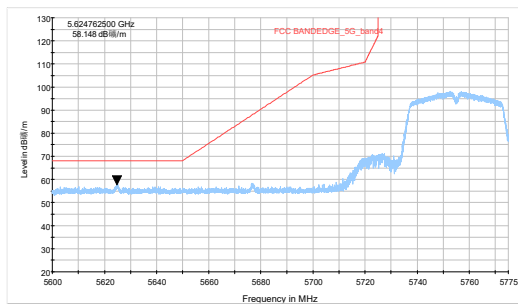
802.11n HT20-Channel 149: Peak



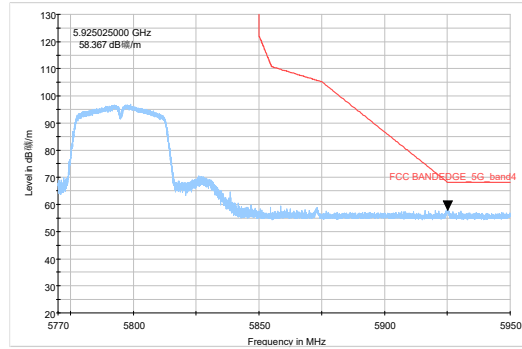
802.11n HT20-Channel 165: Peak



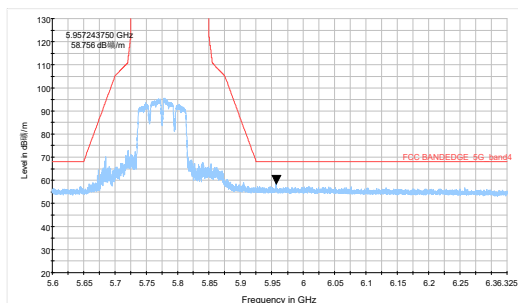
802.11n HT40-Channel 151: Peak



802.11n HT40-Channel 159: Peak



802.11ac VHT80- Channel 155: Peak



Result of RE

Test result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the Emissions in the frequency band 26.5GHz-40GHz are more than 20dB below the limit are not reported.





Continuous TX mode:





Remark:

1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit – Quasi-Peak/ MAX Peak/ Average
3. For below 1GHz

 QP Level @Spectrum Overview H
  QP Level @Spectrum Overview V
  QP Level @Final Results
  QP Limit

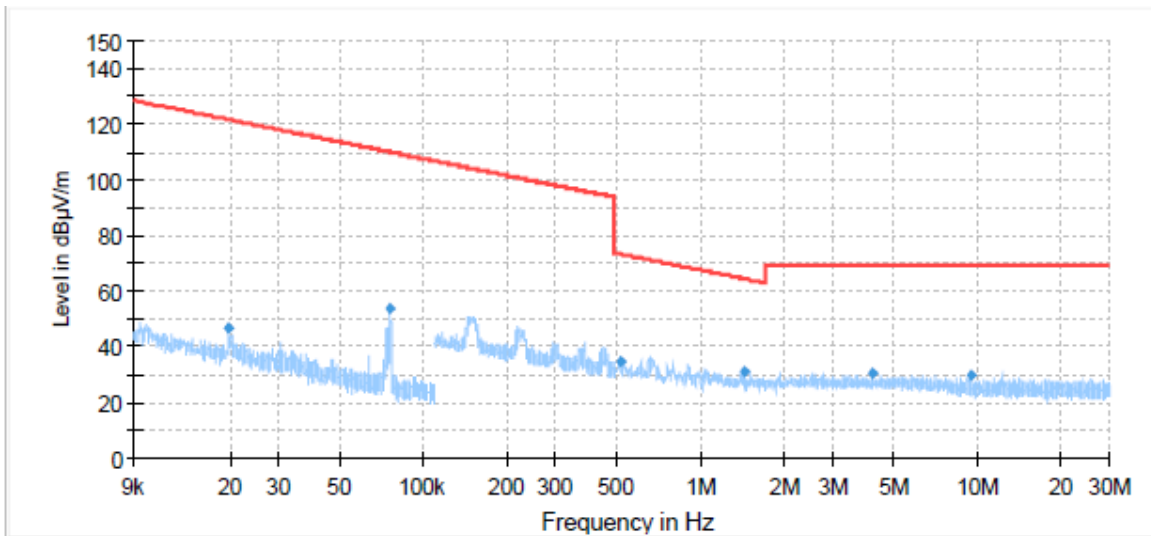
For above 1GHz

 PK Level @Spectrum Overview H
  PK Level @Spectrum Overview V
  PK Level @Final Results
  PK Limit

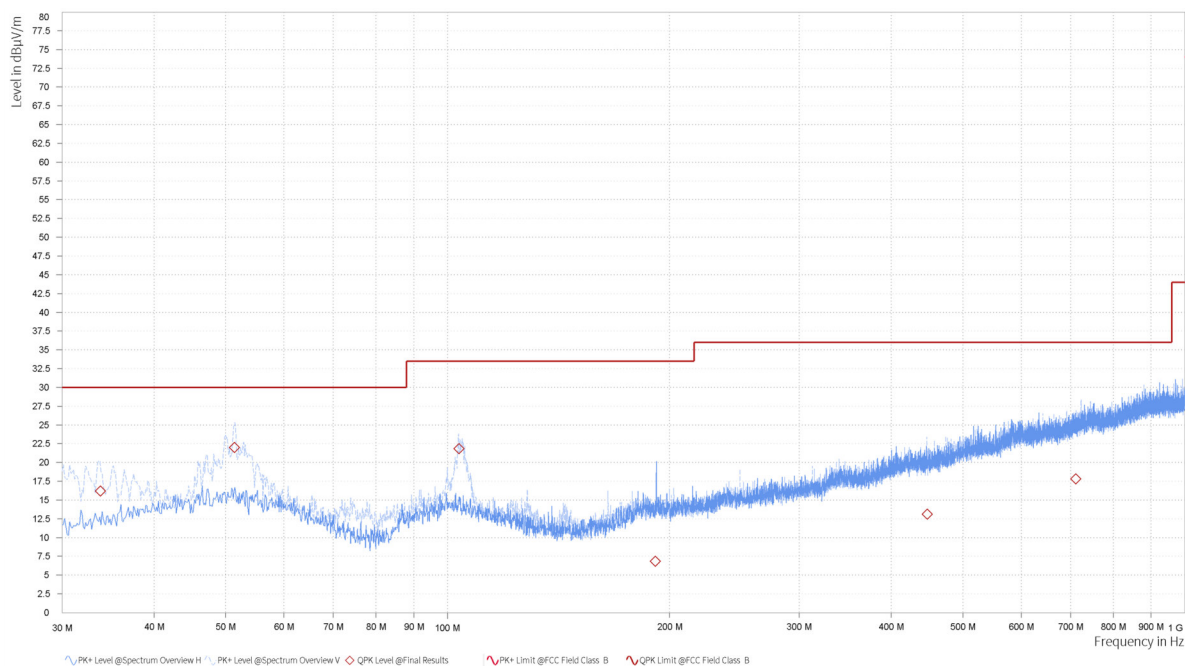
 AVG Level @Spectrum Overview H
  AVG Level @Spectrum Overview V
  AVG Level @Final Results
  AVG Limit

During the test, the Radiates Emission from 9kHz to 1GHz was performed in all modes with all channels. The test data of the worst-case condition was recorded in this report.

Continuous TX mode:



Radiates Emission from 9kHz to 30MHz



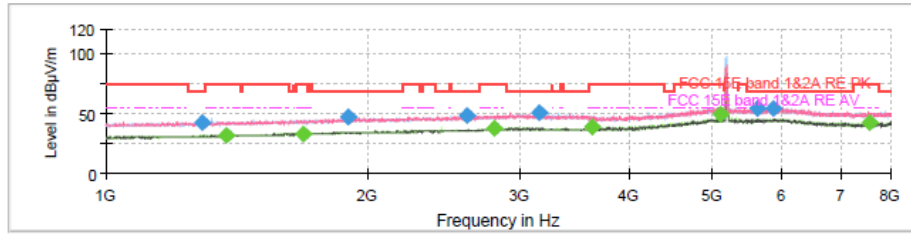
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (m)	Polarization	Azimuth (deg)	Correct Factor (dB)
33.840	16.21	30.00	13.79	1.95	V	162.5	-11.43
51.431	21.99	30.00	8.01	1.17	V	62.8	-8.49
103.688	21.86	33.50	11.64	1.02	V	152	-9.94
191.413	6.84	33.50	26.66	1.04	H	137.3	-10.55
447.304	13.10	36.00	22.90	2.04	V	122.1	-4.05
711.779	17.81	36.00	18.19	1.92	V	143.2	-0.15

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss)

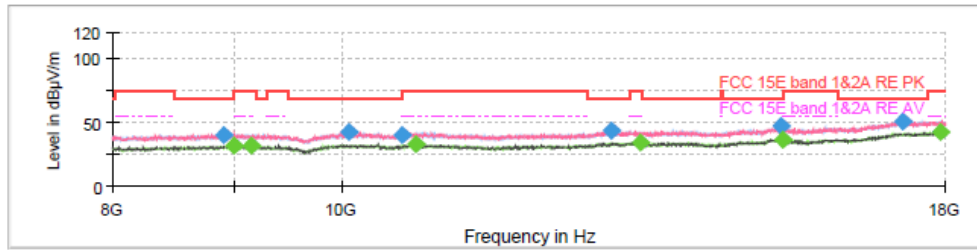
2. Margin = Limit – Quasi-Peak

802.11a CH36



Final Result

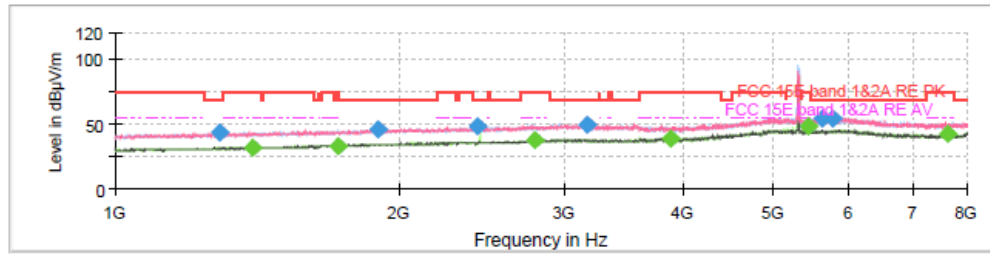
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1292.250000	42.40	---	68.20	25.80	150.0	100.0	H	272.0	-2.9
1375.375000	---	31.96	54.00	22.04	150.0	200.0	V	26.0	-2.3
1687.750000	---	33.44	54.00	20.56	150.0	100.0	V	252.0	-0.4
1903.875000	46.68	---	68.20	21.52	150.0	100.0	H	315.0	1.1
2601.250000	47.90	---	68.20	20.30	150.0	200.0	H	44.0	4.3
2793.750000	---	37.32	54.00	16.68	150.0	200.0	H	250.0	5.7
3156.875000	50.10	---	68.20	18.10	150.0	100.0	H	350.0	7.4
3632.875000	---	38.69	54.00	15.31	150.0	200.0	V	158.0	7.9
5102.000000	---	49.89	54.00	4.11	150.0	200.0	H	218.0	14.5
5610.375000	54.53	---	68.20	13.67	150.0	100.0	V	11.0	15.2
5872.000000	54.50	---	68.20	13.70	150.0	200.0	H	236.0	15.8
7557.250000	---	42.55	54.00	11.45	150.0	100.0	V	151.0	15.4



Final Result

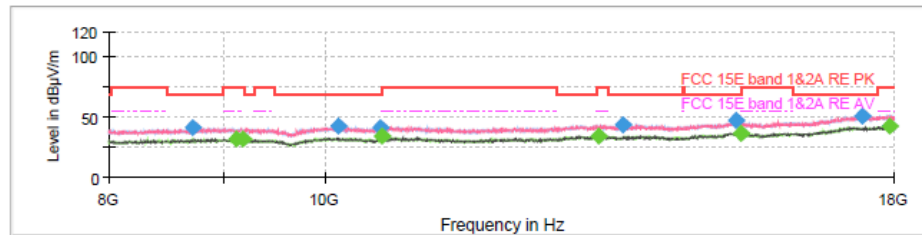
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8911.250000	40.44	---	68.20	27.76	150.0	100.0	H	207.0	5.1
9012.500000	---	32.33	54.00	21.67	150.0	200.0	H	331.0	5.0
9165.000000	---	31.69	54.00	22.31	150.0	100.0	H	114.0	5.1
10077.500000	42.78	---	68.20	25.42	150.0	100.0	V	96.0	6.1
10598.750000	40.33	---	68.20	27.87	150.0	200.0	H	171.0	6.5
10743.750000	---	33.03	54.00	20.97	150.0	100.0	H	274.0	7.4
12998.750000	43.22	---	68.20	24.98	150.0	200.0	H	212.0	10.9
13380.000000	---	34.10	54.00	19.90	150.0	200.0	V	102.0	11.1
15332.500000	46.50	---	68.20	21.70	150.0	100.0	H	88.0	13.5
15368.750000	---	36.59	54.00	17.41	150.0	200.0	H	285.0	13.5
17273.750000	50.93	---	68.20	17.27	150.0	200.0	V	175.0	20.1
17902.500000	---	42.23	54.00	11.77	150.0	200.0	V	30.0	20.6

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Final Result

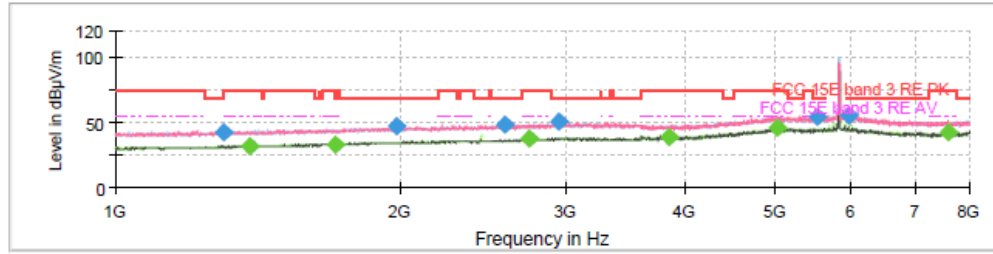
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1292.250000	42.98	---	68.20	25.22	150.0	200.0	H	319.0	-2.9
1398.125000	---	32.10	54.00	21.90	150.0	100.0	H	312.0	-2.2
1721.875000	---	33.26	54.00	20.74	150.0	200.0	H	227.0	-0.1
1898.625000	45.99	---	68.20	22.21	150.0	100.0	V	184.0	1.1
2426.250000	48.08	---	68.20	20.12	150.0	100.0	V	155.0	3.3
2792.000000	---	37.15	54.00	16.85	150.0	200.0	H	119.0	5.7
3163.000000	49.61	---	68.20	18.59	150.0	200.0	H	304.0	7.4
3888.375000	---	39.32	54.00	14.68	150.0	200.0	H	184.0	8.1
5430.125000	---	48.62	54.00	5.38	150.0	100.0	H	227.0	14.7
5627.875000	54.20	---	68.20	14.00	150.0	200.0	V	260.0	15.3
5755.625000	54.51	---	68.20	13.69	150.0	200.0	V	1.0	15.7
7639.500000	---	42.09	54.00	11.91	150.0	200.0	V	304.0	15.4



Final Result

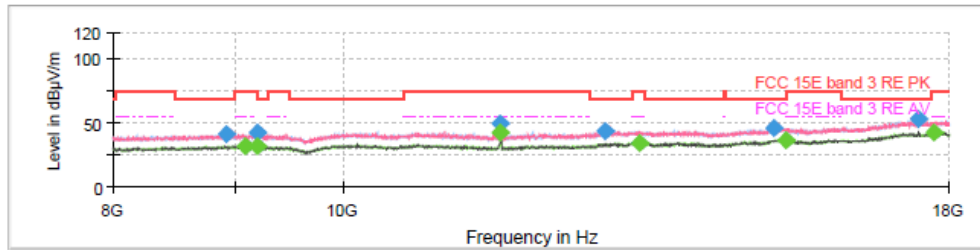
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8723.750000	40.78	---	68.20	27.42	150.0	200.0	H	176.0	5.0
9122.500000	---	31.78	54.00	22.22	150.0	100.0	H	0.0	5.1
9188.750000	---	31.56	54.00	22.44	150.0	200.0	H	243.0	5.2
10133.750000	41.86	---	68.20	26.34	150.0	100.0	H	259.0	6.2
10593.750000	41.54	---	68.20	26.66	150.0	100.0	H	327.0	6.5
10602.500000	---	33.88	54.00	20.12	150.0	200.0	V	85.0	6.5
13267.500000	---	34.34	54.00	19.66	150.0	200.0	V	232.0	10.7
13610.000000	43.18	---	68.20	25.02	150.0	200.0	V	90.0	10.1
15290.000000	46.67	---	68.20	21.53	150.0	100.0	V	206.0	13.3
15360.000000	---	36.98	54.00	17.02	150.0	100.0	H	254.0	13.6
17413.750000	50.90	---	68.20	17.30	150.0	200.0	V	117.0	20.3
17908.750000	---	42.30	54.00	11.70	150.0	200.0	H	233.0	20.6

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Final Result

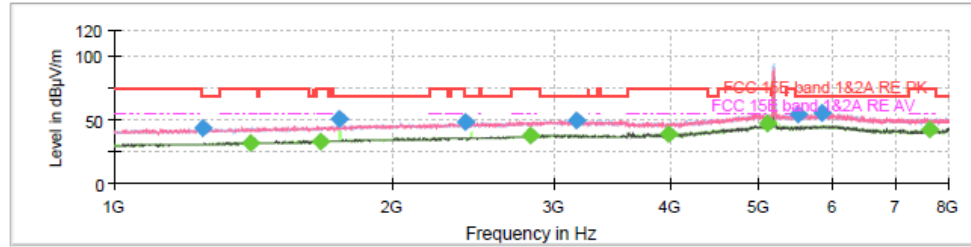
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1299.250000	42.93	---	68.20	25.27	150.0	100.0	V	214.0	-2.9
1389.375000	---	32.01	54.00	21.99	150.0	200.0	V	110.0	-2.2
1706.125000	---	33.30	54.00	20.70	150.0	100.0	H	260.0	-0.2
1981.750000	46.62	---	68.20	21.58	150.0	100.0	V	203.0	1.6
2578.500000	48.16	---	68.20	20.04	150.0	200.0	V	234.0	4.2
2737.750000	---	37.36	54.00	16.64	150.0	200.0	H	10.0	5.3
2948.625000	50.04	---	68.20	18.16	150.0	100.0	V	167.0	6.6
3845.500000	---	39.37	54.00	14.63	150.0	200.0	H	0.0	7.9
5002.250000	---	45.45	54.00	8.55	150.0	200.0	V	90.0	14.4
5536.000000	54.58	---	68.20	13.62	150.0	100.0	V	208.0	15.0
5955.125000	55.33	---	68.20	12.87	150.0	200.0	H	336.0	15.8
7607.125000	---	42.71	54.00	11.29	150.0	200.0	H	255.0	15.6



Final Result

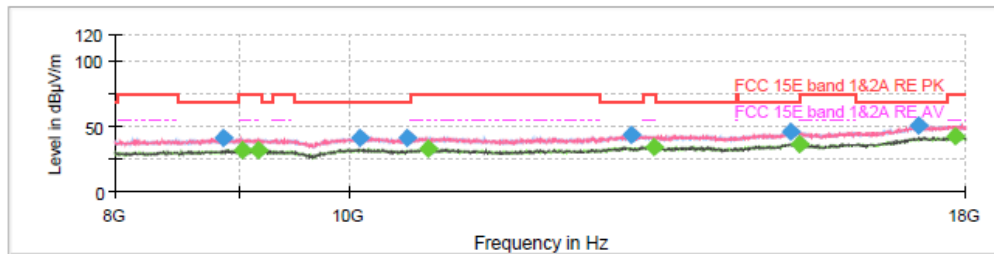
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8928.750000	41.16	---	68.20	27.04	150.0	100.0	V	32.0	5.2
9098.750000	---	31.80	54.00	22.20	150.0	200.0	H	54.0	5.0
9196.250000	---	31.66	54.00	22.34	150.0	200.0	H	344.0	5.2
9210.000000	41.94	---	68.20	26.26	150.0	100.0	H	171.0	5.2
11648.750000	---	42.74	54.00	11.26	150.0	200.0	V	98.0	7.4
11651.250000	49.64	---	74.00	24.36	150.0	100.0	V	323.0	7.4
12897.500000	43.90	---	68.20	24.30	150.0	200.0	V	47.0	10.5
13323.750000	---	34.40	54.00	19.60	150.0	200.0	H	0.0	10.9
15185.000000	45.94	---	68.20	22.26	150.0	100.0	V	62.0	12.5
15371.250000	---	36.84	54.00	17.16	150.0	200.0	H	256.0	13.5
17478.750000	53.05	---	68.20	15.15	150.0	200.0	H	296.0	20.1
17746.250000	---	42.61	54.00	11.39	150.0	200.0	V	241.0	20.4

802.11n (HT20) CH36



Final Result

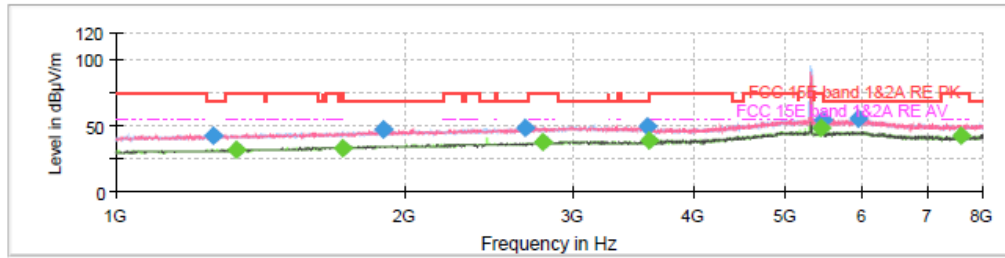
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1245.875000	43.18	---	68.20	25.02	150.0	100.0	H	240.0	-3.2
1402.500000	---	32.03	54.00	21.97	150.0	200.0	H	176.0	-2.2
1669.375000	---	33.34	54.00	20.66	150.0	100.0	H	162.0	-0.4
1756.000000	50.80	---	68.20	17.40	150.0	200.0	H	262.0	0.1
2400.000000	48.14	---	68.20	20.06	150.0	100.0	V	36.0	3.4
2820.000000	---	37.19	54.00	16.81	150.0	200.0	H	162.0	5.8
3161.250000	49.54	---	68.20	18.66	150.0	100.0	H	344.0	7.4
3989.000000	---	39.01	54.00	14.99	150.0	200.0	H	103.0	8.1
5102.000000	---	47.17	54.00	6.83	150.0	100.0	H	226.0	14.5
5497.500000	54.45	---	68.20	13.75	150.0	200.0	H	212.0	14.9
5839.625000	55.27	---	68.20	12.93	150.0	200.0	V	172.0	15.9
7629.875000	---	42.24	54.00	11.76	150.0	200.0	H	262.0	15.5



Final Result

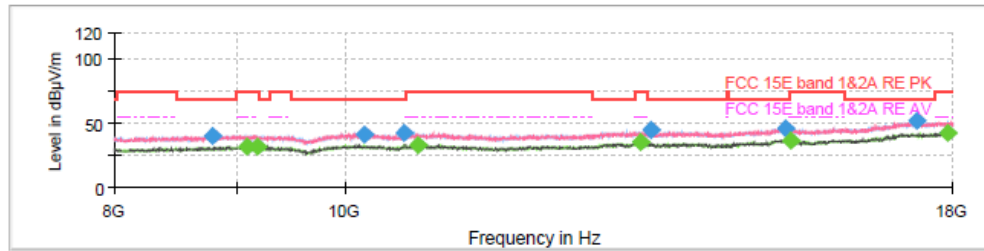
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8876.250000	40.80	---	68.20	27.40	150.0	100.0	V	271.0	5.0
9028.750000	---	32.10	54.00	21.90	150.0	200.0	H	79.0	5.0
9173.750000	---	31.73	54.00	22.27	150.0	100.0	V	116.0	5.1
10098.750000	41.68	---	68.20	26.52	150.0	200.0	H	306.0	6.1
10576.250000	40.79	---	68.20	27.41	150.0	100.0	V	126.0	6.4
10785.000000	---	33.22	54.00	20.78	150.0	200.0	H	357.0	7.3
13095.000000	43.86	---	68.20	24.34	150.0	200.0	V	29.0	10.5
13365.000000	---	34.14	54.00	19.86	150.0	100.0	V	24.0	11.0
15221.250000	46.09	---	68.20	22.11	150.0	200.0	H	0.0	12.8
15361.250000	---	36.77	54.00	17.23	150.0	200.0	V	70.0	13.6
17197.500000	50.46	---	68.20	17.74	150.0	100.0	V	1.0	19.9
17822.500000	---	42.18	54.00	11.82	150.0	100.0	V	65.0	20.5

802.11n (HT20) CH60



Final Result

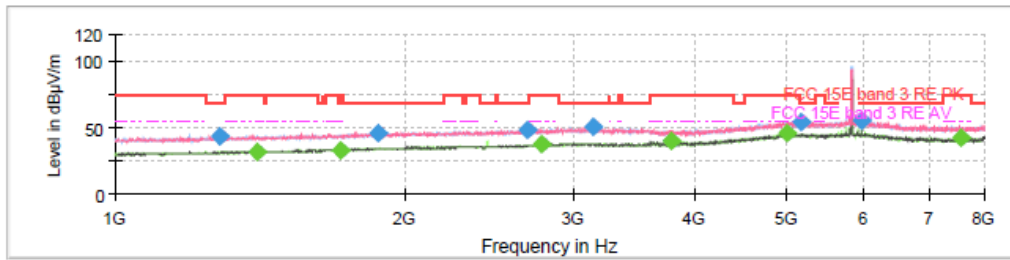
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1265.125000	42.77	---	68.20	25.43	150.0	100.0	V	39.0	-3.1
1337.750000	---	31.92	54.00	22.08	150.0	200.0	H	264.0	-2.6
1720.125000	---	33.38	54.00	20.62	150.0	100.0	V	82.0	-0.1
1899.500000	46.72	---	68.20	21.48	150.0	100.0	H	132.0	1.1
2673.875000	47.95	---	68.20	20.25	150.0	200.0	H	0.0	4.8
2788.500000	---	37.45	54.00	16.55	150.0	200.0	H	167.0	5.7
3583.875000	49.78	---	68.20	18.42	150.0	200.0	V	53.0	8.0
3600.500000	---	39.21	54.00	14.79	150.0	100.0	H	279.0	7.9
5430.125000	---	47.72	54.00	6.28	150.0	200.0	H	218.0	14.7
5465.125000	54.24	---	68.20	13.96	150.0	200.0	H	272.0	14.8
5949.875000	54.96	---	68.20	13.24	150.0	100.0	V	53.0	15.8
7591.375000	---	42.62	54.00	11.38	150.0	200.0	H	250.0	15.5



Final Result

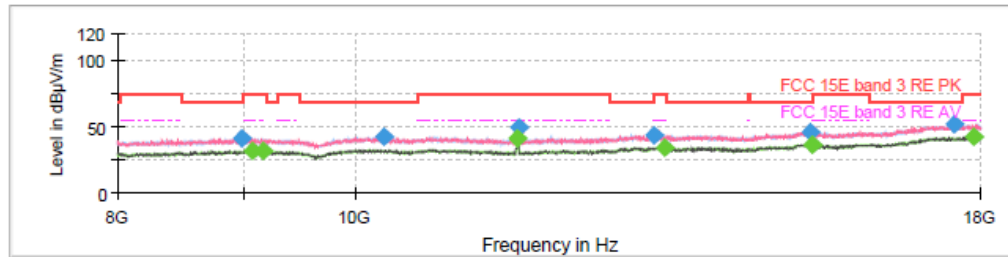
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8791.250000	40.55	---	68.20	27.65	150.0	100.0	V	236.0	5.0
9091.250000	---	32.17	54.00	21.83	150.0	200.0	V	268.0	5.0
9181.250000	---	31.73	54.00	22.27	150.0	100.0	H	359.0	5.1
10186.250000	41.65	---	68.20	26.55	150.0	100.0	H	279.0	6.2
10592.500000	42.74	---	68.20	25.46	150.0	200.0	H	326.0	6.5
10735.000000	---	33.40	54.00	20.60	150.0	200.0	H	310.0	7.3
13306.250000	---	35.03	54.00	18.97	150.0	100.0	H	300.0	10.8
13447.500000	44.42	---	68.20	23.78	150.0	200.0	V	8.0	11.0
15315.000000	45.89	---	68.20	22.31	150.0	200.0	H	153.0	13.5
15380.000000	---	36.93	54.00	17.07	150.0	100.0	V	174.0	13.5
17386.250000	51.37	---	68.20	16.83	150.0	200.0	H	180.0	20.3
17903.750000	---	42.28	54.00	11.72	150.0	200.0	H	331.0	20.6

802.11n (HT20) CH165



Final Result

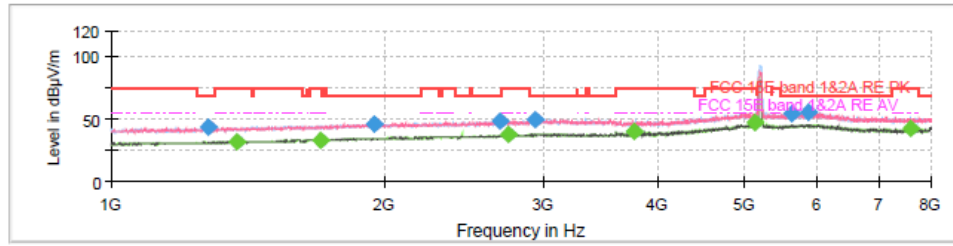
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1284.375000	43.37	---	68.20	24.83	150.0	100.0	V	244.0	-3.0
1406.875000	---	32.10	54.00	21.90	150.0	100.0	V	239.0	-2.1
1719.250000	---	33.40	54.00	20.60	150.0	200.0	H	257.0	-0.1
1875.875000	46.45	---	68.20	21.75	150.0	100.0	V	290.0	0.9
2687.000000	48.07	---	68.20	20.13	150.0	200.0	H	221.0	4.9
2770.125000	---	37.24	54.00	16.76	150.0	200.0	H	205.0	5.5
3138.500000	50.74	---	68.20	17.46	150.0	100.0	H	85.0	7.4
3780.750000	---	39.47	54.00	14.53	150.0	200.0	H	175.0	8.0
4997.000000	---	45.30	54.00	8.70	150.0	200.0	V	152.0	14.4
5167.625000	53.93	---	68.20	14.27	150.0	100.0	H	297.0	14.5
5955.125000	55.63	---	68.20	12.57	150.0	200.0	H	246.0	15.8
7554.625000	---	42.19	54.00	11.81	150.0	100.0	H	27.0	15.4



Final Result

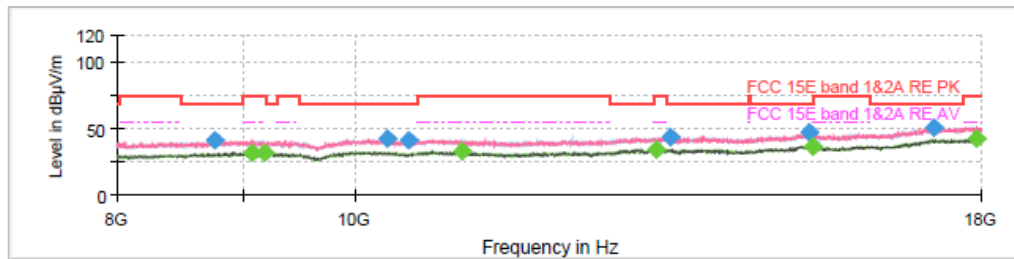
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8985.000000	41.75	---	68.20	26.45	150.0	100.0	V	228.0	5.0
9078.750000	---	31.70	54.00	22.30	150.0	200.0	H	180.0	5.0
9178.750000	---	32.17	54.00	21.83	150.0	100.0	H	283.0	5.1
10278.750000	42.76	---	68.20	25.44	150.0	100.0	V	258.0	6.4
11648.750000	---	40.60	54.00	13.40	150.0	200.0	V	87.0	7.4
11655.000000	49.80	---	74.00	24.20	150.0	200.0	V	94.0	7.4
13232.500000	43.48	---	68.20	24.72	150.0	100.0	V	135.0	10.5
13376.250000	---	34.45	54.00	19.55	150.0	200.0	H	234.0	11.1
15347.500000	46.29	---	68.20	21.91	150.0	200.0	V	165.0	13.6
15356.250000	---	36.88	54.00	17.12	150.0	100.0	V	57.0	13.6
17546.250000	51.21	---	68.20	16.99	150.0	200.0	V	80.0	20.0
17888.750000	---	42.48	54.00	11.52	150.0	200.0	H	128.0	20.5

802.11n (HT40) CH38



Final Result

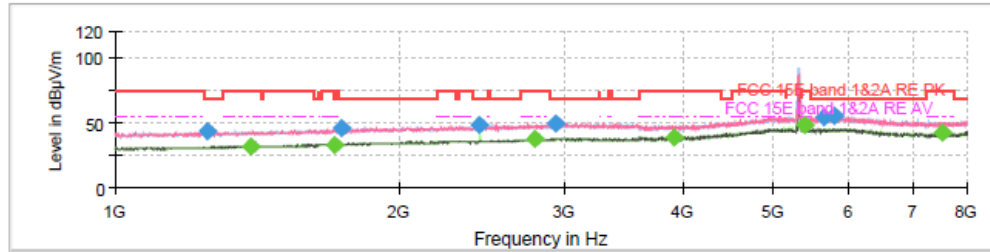
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1280.875000	42.95	---	68.20	25.25	150.0	100.0	H	319.0	-3.0
1376.250000	---	32.06	54.00	21.94	150.0	200.0	V	258.0	-2.3
1701.750000	---	33.46	54.00	20.54	150.0	100.0	V	128.0	-0.3
1947.625000	46.43	---	68.20	21.77	150.0	200.0	V	0.0	1.4
2685.250000	47.81	---	68.20	20.39	150.0	200.0	V	92.0	4.9
2744.750000	---	37.44	54.00	16.56	150.0	100.0	H	319.0	5.3
2935.500000	49.42	---	68.20	18.78	150.0	200.0	V	236.0	6.6
3770.250000	---	39.50	54.00	14.50	150.0	200.0	H	199.0	8.0
5111.625000	---	46.89	54.00	7.11	150.0	100.0	H	304.0	14.5
5611.250000	54.34	---	68.20	13.86	150.0	200.0	V	0.0	15.2
5858.000000	55.21	---	68.20	12.99	150.0	200.0	H	162.0	15.9
7595.750000	---	42.20	54.00	11.80	150.0	200.0	H	286.0	15.5



Final Result

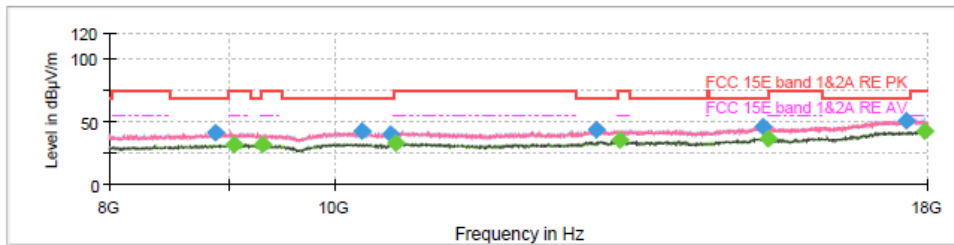
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8775.000000	40.66	---	68.20	27.54	150.0	100.0	V	126.0	5.0
9077.500000	---	31.72	54.00	22.28	150.0	200.0	H	278.0	5.0
9190.000000	---	31.84	54.00	22.16	150.0	100.0	H	0.0	5.2
10317.500000	42.08	---	68.20	26.12	150.0	100.0	V	95.0	6.4
10517.500000	41.10	---	68.20	27.10	150.0	200.0	V	0.0	6.2
11056.250000	---	32.88	54.00	21.12	150.0	200.0	V	42.0	7.2
13260.000000	---	34.65	54.00	19.35	150.0	100.0	V	184.0	10.6
13438.750000	43.52	---	68.20	24.68	150.0	200.0	H	341.0	11.1
15305.000000	46.51	---	68.20	21.69	150.0	200.0	V	142.0	13.4
15350.000000	---	36.83	54.00	17.17	150.0	100.0	V	64.0	13.6
17216.250000	51.07	---	68.20	17.13	150.0	200.0	H	273.0	20.1
17903.750000	---	42.58	54.00	11.42	150.0	200.0	H	59.0	20.6

802.11n (HT40) CH62



Final Result

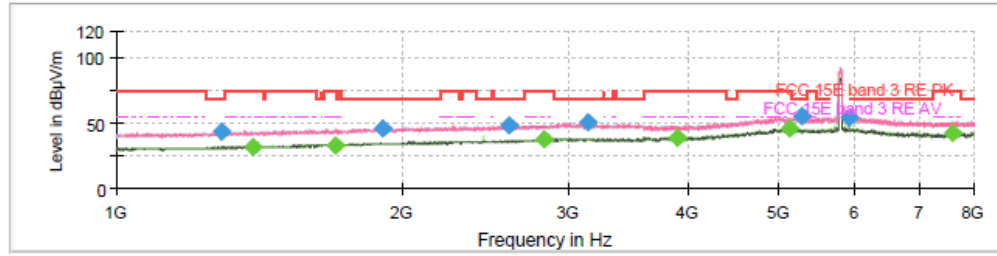
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1252.875000	43.57	---	68.20	24.63	150.0	100.0	H	0.0	-3.2
1394.625000	---	32.16	54.00	21.84	150.0	200.0	H	318.0	-2.2
1708.750000	---	33.29	54.00	20.71	150.0	100.0	V	163.0	-0.2
1735.875000	46.28	---	68.20	21.92	150.0	100.0	V	127.0	-0.1
2435.875000	48.46	---	68.20	19.74	150.0	200.0	H	333.0	3.5
2789.375000	---	37.41	54.00	16.59	150.0	100.0	H	333.0	5.7
2933.750000	49.78	---	68.20	18.42	150.0	200.0	H	177.0	6.6
3918.125000	---	39.31	54.00	14.69	150.0	200.0	V	0.0	8.0
5388.125000	---	47.70	54.00	6.30	150.0	100.0	H	97.0	14.6
5634.000000	54.21	---	68.20	13.99	150.0	200.0	H	250.0	15.3
5791.500000	54.82	---	68.20	13.38	150.0	200.0	H	359.0	15.8
7534.500000	---	42.46	54.00	11.54	150.0	200.0	H	89.0	15.3



Final Result

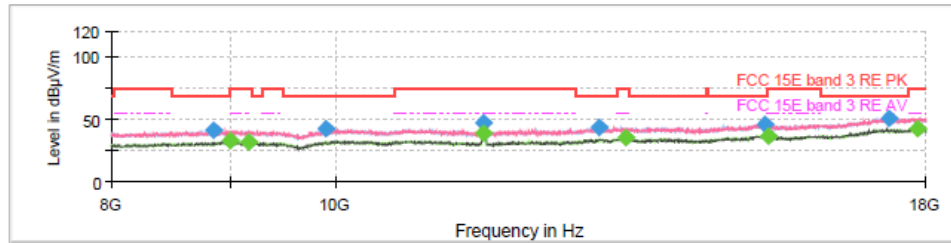
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8881.250000	41.16	---	68.20	27.04	150.0	100.0	V	113.0	5.1
9046.250000	---	32.00	54.00	22.00	150.0	200.0	H	318.0	5.0
9308.750000	---	32.10	54.00	21.90	150.0	100.0	H	261.0	5.2
10281.250000	42.43	---	68.20	25.77	150.0	100.0	V	258.0	6.4
10571.250000	40.34	---	68.20	27.86	150.0	200.0	H	131.0	6.4
10617.500000	---	33.04	54.00	20.96	150.0	200.0	H	313.0	6.6
12960.000000	43.37	---	68.20	24.83	150.0	100.0	H	358.0	10.7
13255.000000	---	34.73	54.00	19.27	150.0	200.0	V	82.0	10.6
15281.250000	46.33	---	68.20	21.87	150.0	200.0	V	72.0	13.3
15358.750000	---	36.86	54.00	17.14	150.0	100.0	V	326.0	13.6
17603.750000	50.73	---	68.20	17.47	150.0	200.0	H	276.0	20.1
17928.750000	---	42.06	54.00	11.94	150.0	200.0	V	154.0	20.3

802.11n (HT40) CH159



Final Result

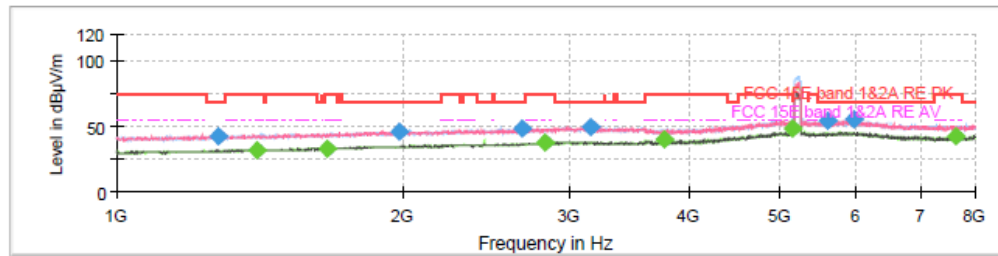
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1289.625000	43.24	---	68.20	24.96	150.0	100.0	H	344.0	-2.9
1393.750000	---	32.01	54.00	21.99	150.0	200.0	H	354.0	-2.2
1700.000000	---	33.34	54.00	20.66	150.0	200.0	H	324.0	-0.3
1904.750000	46.24	---	68.20	21.96	150.0	100.0	V	64.0	1.1
2587.250000	48.61	---	68.20	19.59	150.0	100.0	H	257.0	4.3
2820.875000	---	37.36	54.00	16.64	150.0	200.0	H	110.0	5.8
3135.000000	50.37	---	68.20	17.83	150.0	200.0	H	303.0	7.4
3899.750000	---	39.18	54.00	14.82	150.0	100.0	V	54.0	8.1
5129.125000	---	45.77	54.00	8.23	150.0	200.0	V	238.0	14.5
5263.875000	55.15	---	68.20	13.05	150.0	200.0	V	145.0	14.5
5925.375000	54.61	---	68.20	13.59	150.0	200.0	H	242.0	15.8
7606.250000	---	42.54	54.00	11.46	150.0	200.0	H	329.0	15.6



Final Result

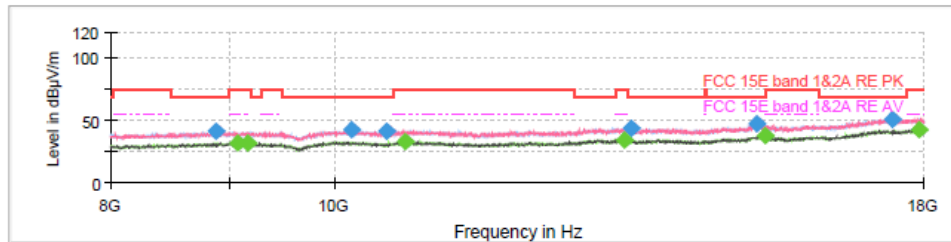
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8856.250000	40.84	---	68.20	27.36	150.0	100.0	V	14.0	5.0
9011.250000	---	32.67	54.00	21.33	150.0	200.0	H	279.0	5.0
9167.500000	---	31.71	54.00	22.29	150.0	100.0	H	286.0	5.1
9901.250000	41.94	---	68.20	26.26	150.0	100.0	V	85.0	5.8
11583.750000	---	39.24	54.00	14.76	150.0	200.0	V	100.0	7.5
11590.000000	47.22	---	74.00	26.78	150.0	100.0	V	96.0	7.5
12998.750000	43.88	---	68.20	24.32	150.0	200.0	H	58.0	10.9
13362.500000	---	35.04	54.00	18.96	150.0	200.0	V	162.0	11.0
15340.000000	45.99	---	68.20	22.21	150.0	100.0	H	294.0	13.6
15386.250000	---	36.87	54.00	17.13	150.0	200.0	H	205.0	13.5
17362.500000	51.07	---	68.20	17.13	150.0	200.0	V	22.0	20.3
17856.250000	---	42.43	54.00	11.57	150.0	200.0	V	162.0	20.5

802.11ac (VHT80) CH42



Final Result

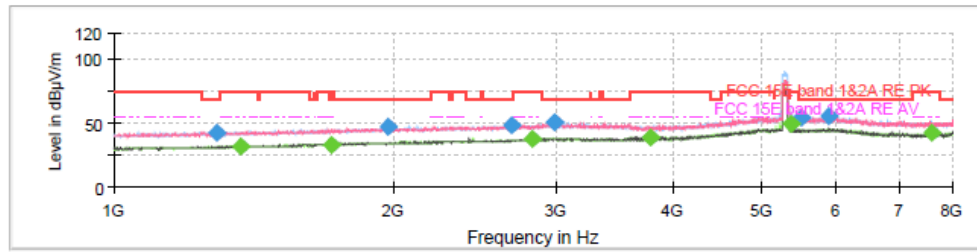
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1280.875000	42.85	---	68.20	25.35	150.0	100.0	H	104.0	-3.0
1404.250000	---	32.14	54.00	21.86	150.0	200.0	V	241.0	-2.2
1664.125000	---	33.41	54.00	20.59	150.0	100.0	H	265.0	-0.4
1980.875000	46.40	---	68.20	21.80	150.0	100.0	H	222.0	1.6
2675.625000	47.88	---	68.20	20.32	150.0	200.0	V	277.0	4.8
2820.875000	---	37.50	54.00	16.50	150.0	200.0	H	337.0	5.8
3155.125000	49.85	---	68.20	18.35	150.0	100.0	V	58.0	7.4
3771.125000	---	39.41	54.00	14.59	150.0	200.0	V	154.0	8.0
5146.625000	---	47.95	54.00	6.05	150.0	200.0	H	236.0	14.5
5600.750000	53.68	---	68.20	14.52	150.0	100.0	H	21.0	15.2
5957.750000	54.74	---	68.20	13.46	150.0	200.0	H	301.0	15.9
7632.500000	---	41.92	54.00	12.08	150.0	200.0	H	279.0	15.4



Final Result

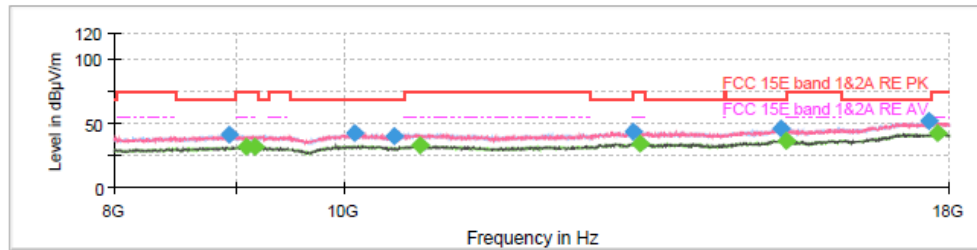
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8881.250000	40.82	---	68.20	27.38	150.0	100.0	V	208.0	5.1
9077.500000	---	31.71	54.00	22.29	150.0	200.0	H	293.0	5.0
9173.750000	---	31.51	54.00	22.49	150.0	100.0	V	62.0	5.1
10170.000000	42.37	---	68.20	25.83	150.0	100.0	H	204.0	6.2
10530.000000	40.73	---	68.20	27.47	150.0	200.0	H	77.0	6.2
10726.250000	---	32.76	54.00	21.24	150.0	200.0	H	345.0	7.3
13351.250000	---	34.35	54.00	19.65	150.0	100.0	H	0.0	11.0
13445.000000	43.63	---	68.20	24.57	150.0	200.0	H	256.0	11.1
15223.750000	46.56	---	68.20	21.64	150.0	100.0	V	135.0	12.8
15370.000000	---	37.14	54.00	16.86	150.0	200.0	V	56.0	13.5
17448.750000	51.00	---	68.20	17.20	150.0	200.0	V	246.0	20.2
17907.500000	---	42.49	54.00	11.51	150.0	200.0	V	15.0	20.6

802.11ac (VHT80) CH58



Final Result

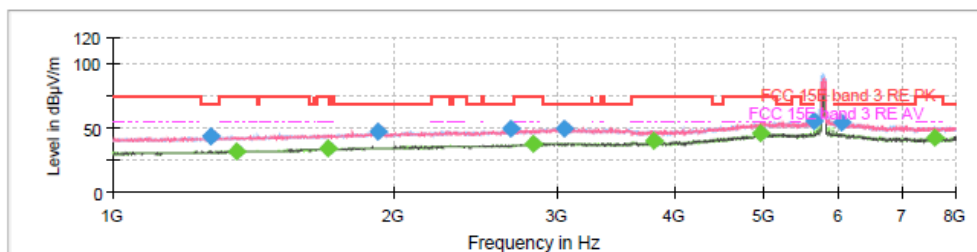
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1290.500000	42.58	---	68.20	25.62	150.0	100.0	V	0.0	-2.9
1371.875000	---	32.20	54.00	21.80	150.0	200.0	H	96.0	-2.4
1719.250000	---	33.34	54.00	20.66	150.0	100.0	H	331.0	-0.1
1975.625000	46.62	---	68.20	21.58	150.0	100.0	V	66.0	1.5
2680.000000	47.86	---	68.20	20.34	150.0	200.0	H	317.0	4.9
2820.875000	---	37.30	54.00	16.70	150.0	200.0	H	238.0	5.8
2986.250000	50.15	---	68.20	18.05	150.0	100.0	V	81.0	6.9
3788.625000	---	39.03	54.00	14.97	150.0	200.0	V	200.0	8.1
5368.000000	---	49.12	54.00	4.88	150.0	200.0	H	74.0	14.6
5507.125000	53.94	---	68.20	14.26	150.0	100.0	H	82.0	14.9
5893.000000	54.83	---	68.20	13.37	150.0	200.0	V	135.0	15.8
7612.375000	---	42.14	54.00	11.86	150.0	100.0	V	38.0	15.6



Final Result

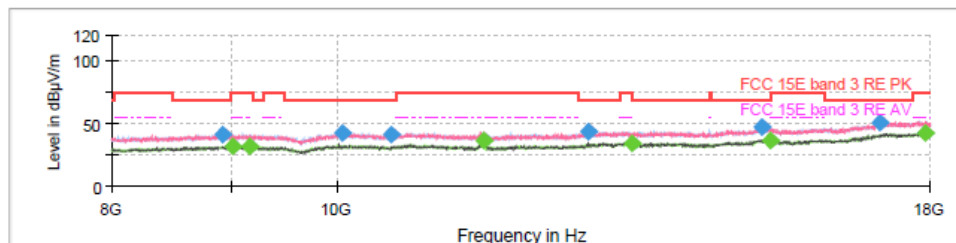
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8941.250000	40.88	---	68.20	27.32	150.0	200.0	V	27.0	5.2
9092.500000	---	31.48	54.00	22.52	150.0	100.0	V	235.0	5.0
9176.250000	---	31.89	54.00	22.11	150.0	200.0	H	355.0	5.1
10098.750000	42.42	---	68.20	25.78	150.0	200.0	H	216.0	6.1
10492.500000	40.57	---	68.20	27.63	150.0	100.0	V	182.0	6.2
10763.750000	---	33.04	54.00	20.96	150.0	200.0	V	331.0	7.4
13236.250000	43.61	---	68.20	24.59	150.0	200.0	V	321.0	10.5
13328.750000	---	34.56	54.00	19.44	150.0	200.0	H	263.0	10.9
15282.500000	46.34	---	68.20	21.86	150.0	100.0	V	182.0	13.3
15352.500000	---	36.70	54.00	17.30	150.0	200.0	H	126.0	13.6
17632.500000	51.25	---	68.20	16.95	150.0	200.0	V	146.0	20.2
17801.250000	---	42.24	54.00	11.76	150.0	100.0	V	16.0	20.5

802.11ac (VHT80) CH155



Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1273.000000	43.12	---	68.20	25.08	150.0	100.0	V	6.0	-3.0
1356.125000	---	32.07	54.00	21.93	150.0	200.0	H	347.0	-2.5
1704.375000	---	33.63	54.00	20.37	150.0	100.0	V	11.0	-0.2
1924.875000	46.71	---	68.20	21.49	150.0	100.0	V	146.0	1.2
2669.500000	49.12	---	68.20	19.08	150.0	200.0	H	117.0	4.8
2825.250000	---	37.52	54.00	16.48	150.0	200.0	V	27.0	5.8
3048.375000	49.89	---	68.20	18.31	150.0	100.0	V	11.0	6.9
3798.250000	---	39.75	54.00	14.25	150.0	200.0	H	144.0	8.1
4941.875000	---	45.34	54.00	8.66	150.0	200.0	H	266.0	14.0
5645.375000	55.07	---	68.20	13.13	150.0	100.0	H	235.0	15.3
6037.375000	54.70	---	68.20	13.50	150.0	200.0	H	291.0	15.9
7607.125000	---	42.11	54.00	11.89	150.0	100.0	V	115.0	15.6



Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8933.750000	40.78	---	68.20	27.42	150.0	100.0	V	38.0	5.2
9023.750000	---	32.03	54.00	21.97	150.0	200.0	H	317.0	5.0
9178.750000	---	31.71	54.00	22.29	150.0	100.0	H	57.0	5.1
10048.750000	42.63	---	68.20	25.57	150.0	200.0	V	52.0	6.1
10551.250000	41.66	---	68.20	26.54	150.0	200.0	V	8.0	6.2
11558.750000	---	35.96	54.00	18.04	150.0	100.0	H	295.0	7.5
12831.250000	43.39	---	68.20	24.81	150.0	200.0	V	5.0	10.3
13386.250000	---	34.54	54.00	19.46	150.0	200.0	V	301.0	11.1
15223.750000	46.77	---	68.20	21.43	150.0	100.0	H	122.0	12.8
15353.750000	---	36.91	54.00	17.09	150.0	200.0	H	269.0	13.6
17108.750000	51.17	---	68.20	17.03	150.0	200.0	H	262.0	19.3
17913.750000	---	42.24	54.00	11.76	150.0	100.0	V	52.0	20.6

5.6. Conducted Emission

Ambient condition

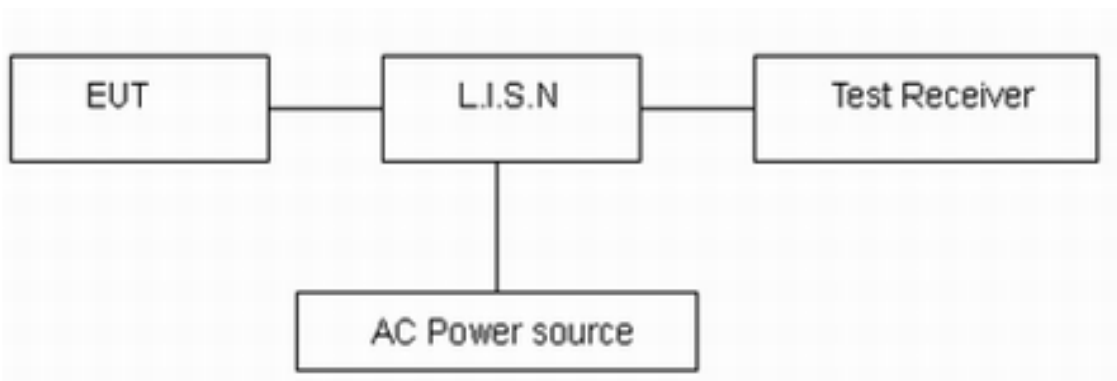
Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Methods of Measurement

The EUT IS placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10. Connect the AC power line of the EUT to the LISN Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9kHz, VBW is set to 30kHz The measurement result should include both L line and N line.

The test is in transmitting mode.

Test Setup



Note: AC Power source is used to change the voltage 110V/60Hz.

Limits

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 2.69$ dB.

Test Results:

Following plots, Blue trace uses the peak detection and Green trace uses the average detection. During the test, the Conducted Emission was performed in all modes with all channels. The test data of the worst-case condition was recorded in this report.

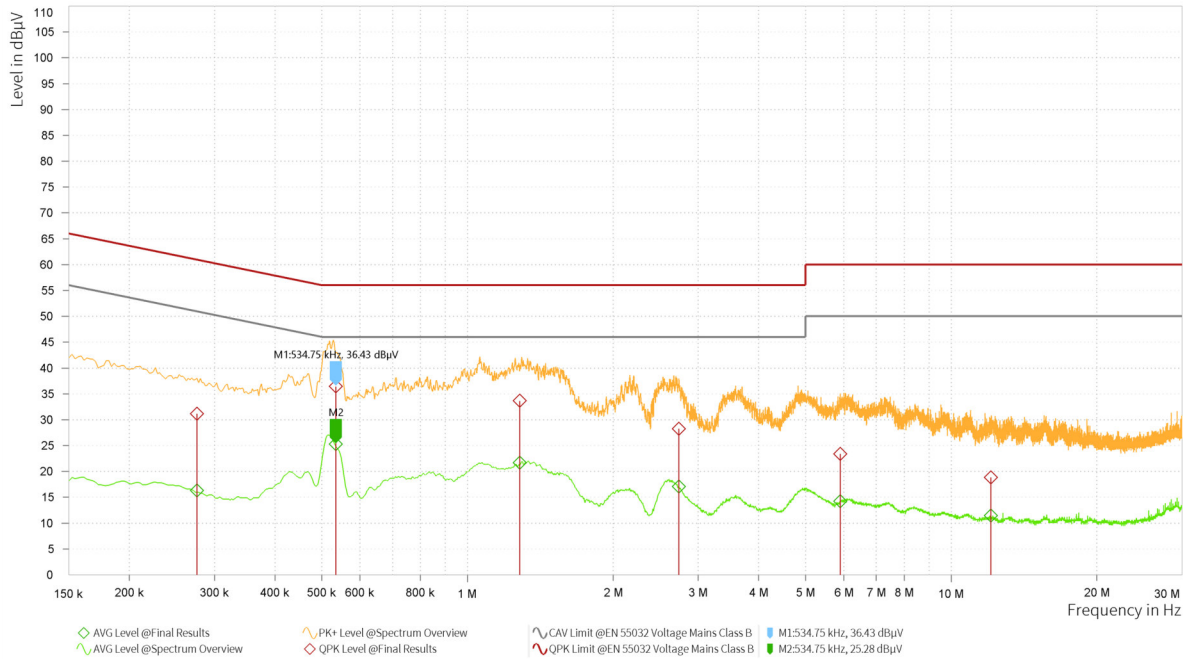


EMI Final Results

Rg	Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	AVG Level [dBμV]	AVG: CAV Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
1	0.245	30.89	61.94	31.05	22.41	51.94	29.53	20.98	L1	9.000	1.000
1	0.537	39.41	56.00	16.59	33.22	46.00	12.78	20.74	L1	9.000	1.000
1	1.156	33.42	56.00	22.58	28.04	46.00	17.96	20.05	L1	9.000	1.000
1	2.659	32.25	56.00	23.75	25.90	46.00	20.10	19.52	L1	9.000	1.000
1	6.902	22.88	60.00	37.12	16.97	50.00	33.03	19.41	L1	9.000	1.000
1	14.723	16.61	60.00	43.39	11.19	50.00	38.81	19.50	L1	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



EMI Final Results

Rg	Frequency [MHz]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	AVG Level [dBµV]	AVG: CAV Limit [dBµV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
1	0.276	31.15	60.94	29.79	16.26	50.94	34.67	20.97	N	9.000	1.000
1	0.535	36.43	56.00	19.57	25.28	46.00	20.72	20.75	N	9.000	1.000
1	1.282	33.63	56.00	22.37	21.66	46.00	24.34	19.97	N	9.000	1.000
1	2.738	28.25	56.00	27.75	17.06	46.00	28.94	19.52	N	9.000	1.000
1	5.901	23.39	60.00	36.61	14.21	50.00	35.79	19.41	N	9.000	1.000
1	12.073	18.82	60.00	41.18	11.41	50.00	38.59	19.45	N	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz

6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Power Sensor	R&S	NRP18S	101954	2024-05-07	2025-05-06
Signal Analyzer	KEYSIGHT	N9020A	MY51330870	2024-05-07	2025-05-06
DC Power Supply	UNI-T	UTP1306S+	2205D0517426	2024-12-02	2025-12-01
Climate Chamber	ESPEC	SU-242	93000506	2024-12-02	2025-12-01
Attenuator	HASCO	HA18A-10	0003	/	/
EMI Test Receiver	R&S	ESCI3	100948	2024-05-07	2025-05-06
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
EMI Test Receiver	R&S	ESR	102389	2024-05-07	2025-05-06
Signal Analyzer	R&S	FSV40	101298	2024-05-07	2025-05-06
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	01111	2022-10-25	2025-10-24
Horn Antenna	R&S	HF 907	102723	2023-11-24	2026-11-23
Amplifier	R&S	SCU18	10034	2024-05-08	2025-05-07
Horn Antenna	ETS-Lindgren	3160-09	00102643	2024-09-24	2027-09-23
Horn Antenna	STEATITE	QSH-SL-26-40-K-15	16779	2023-01-17	2026-01-16
Amplifier	MicroWave	KLNA-18040050	220826001	2024-05-08	2025-05-07
Software	R&S	EMC32	9.26.01	/	/
Artificial main network	R&S	ENV216	102191	2024-12-02	2026-12-01
EMI Test Receiver	R&S	ESR	101667	2024-05-07	2025-05-06
Software	R&S	EMC32	10.35.10	/	/

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.

***** END OF REPORT *****