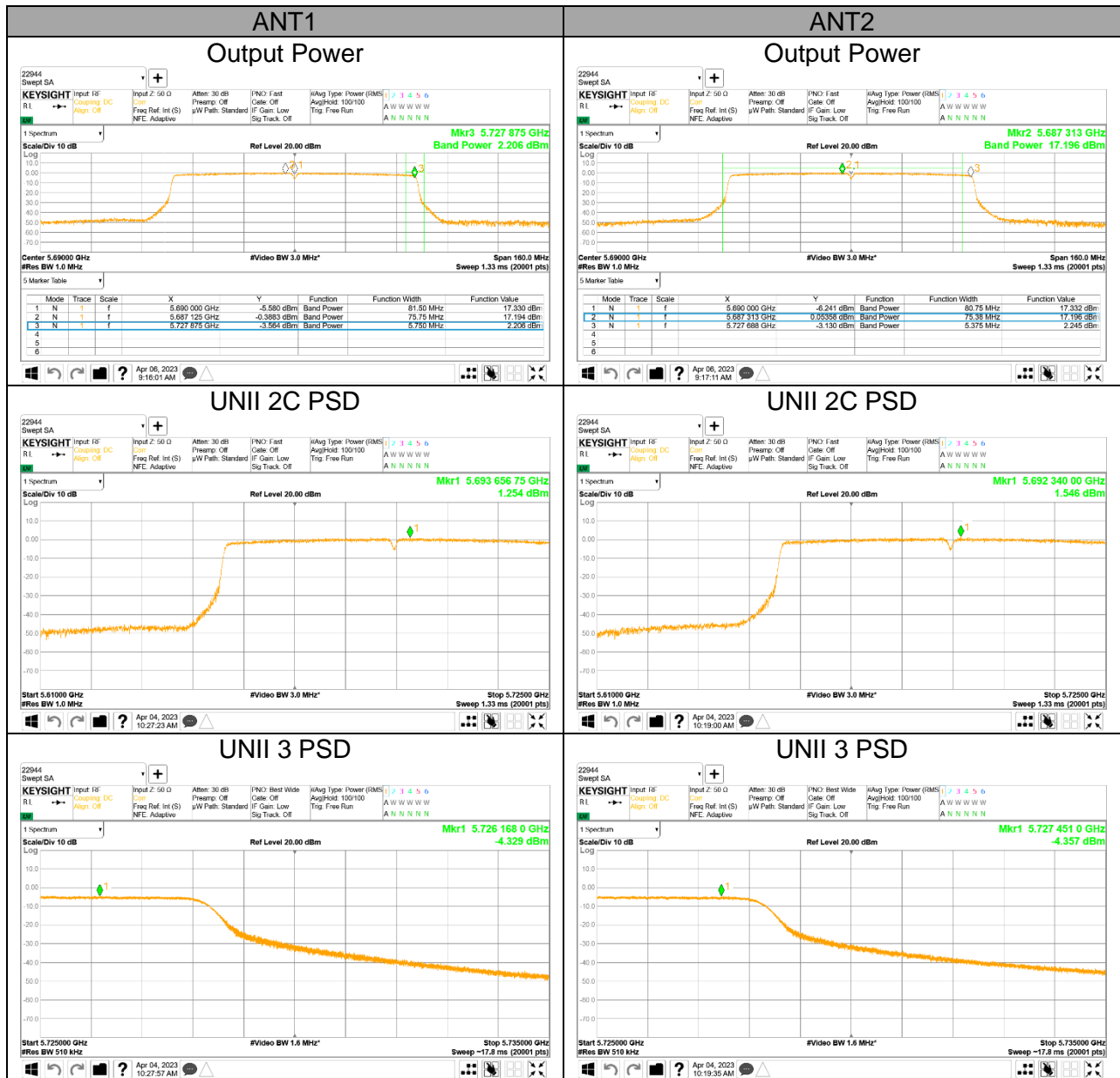
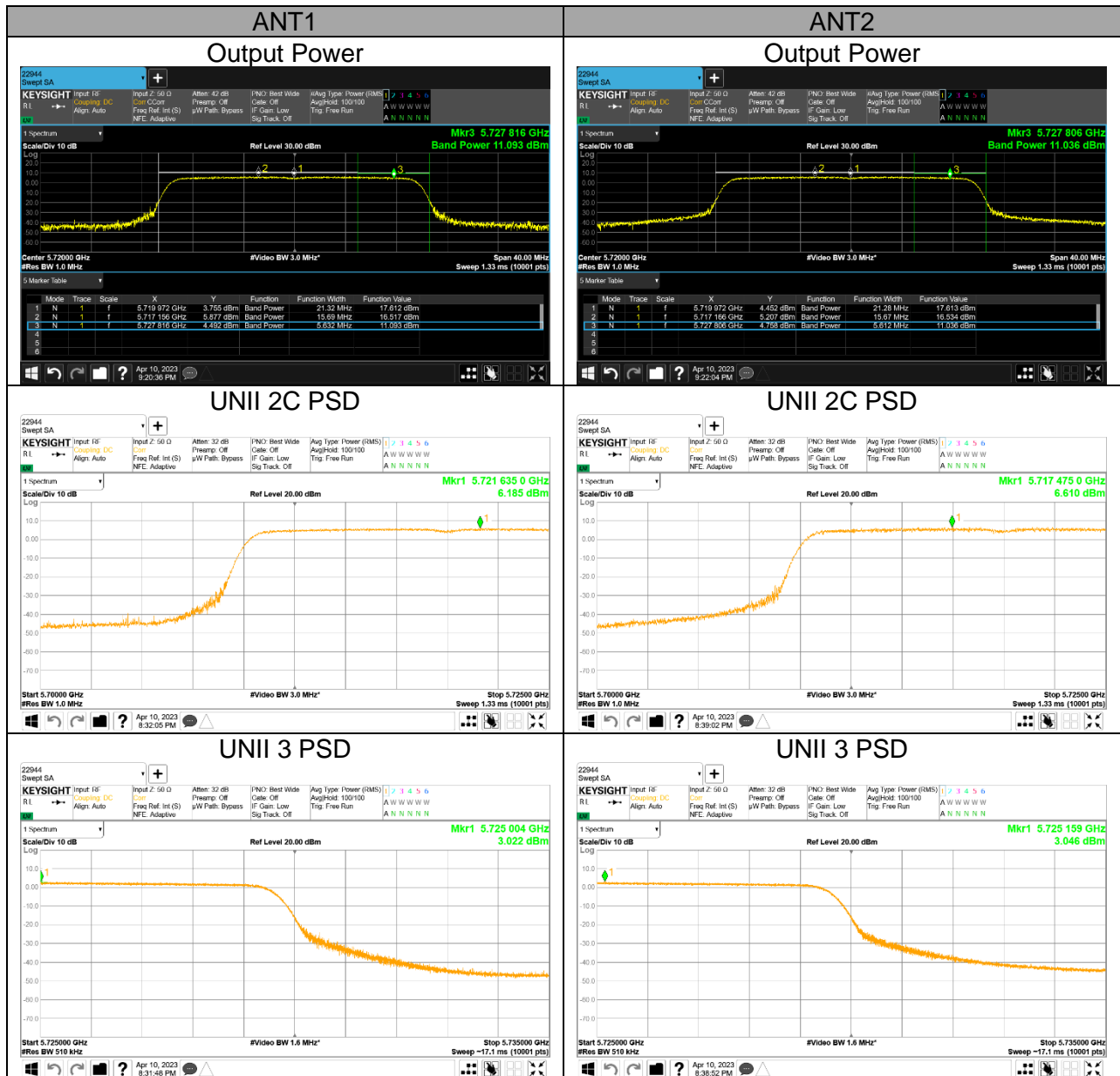


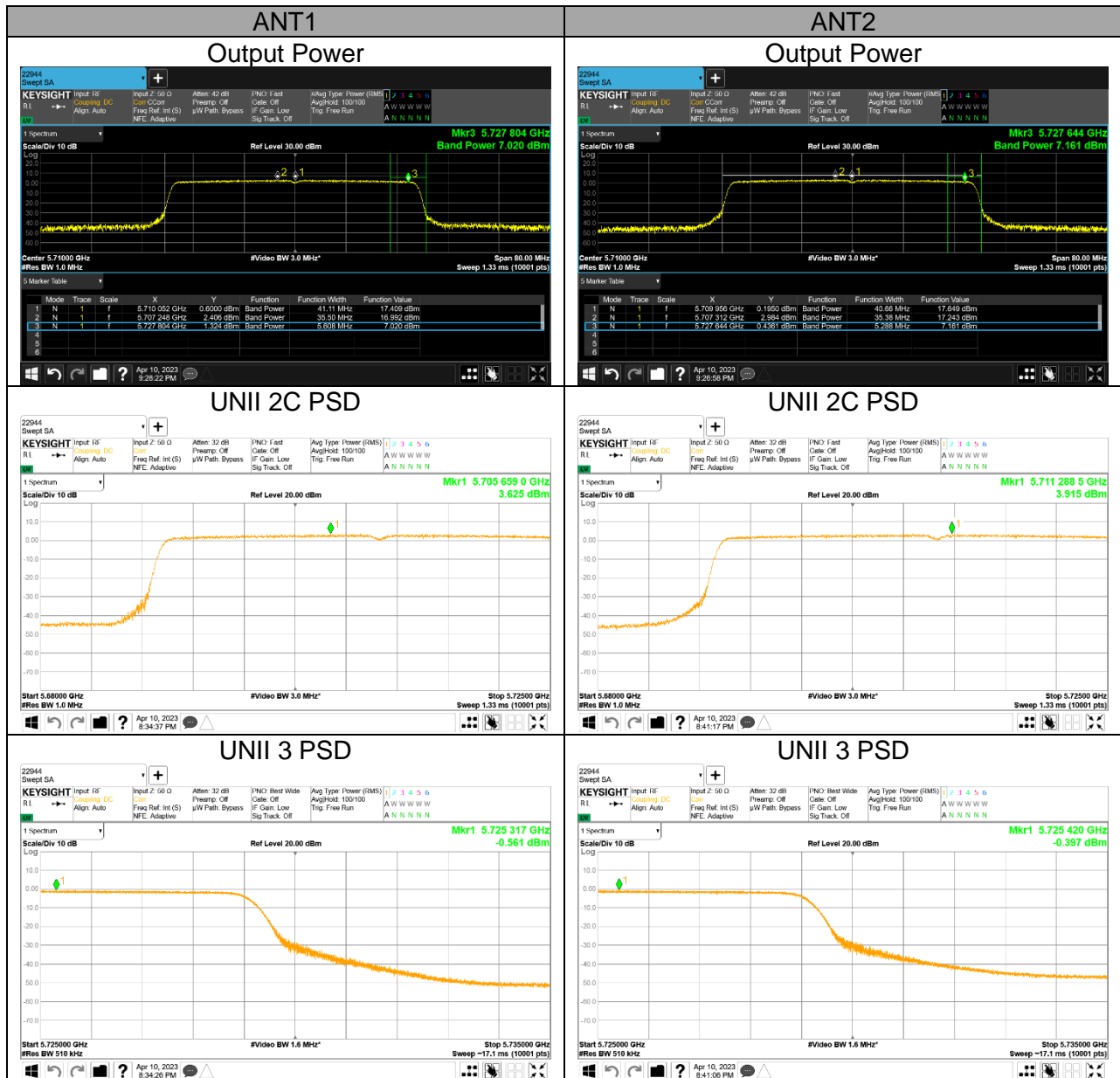
**UNII Straddle Ch. IEEE 802.11ac VHT80 mode Output Power and PSD**



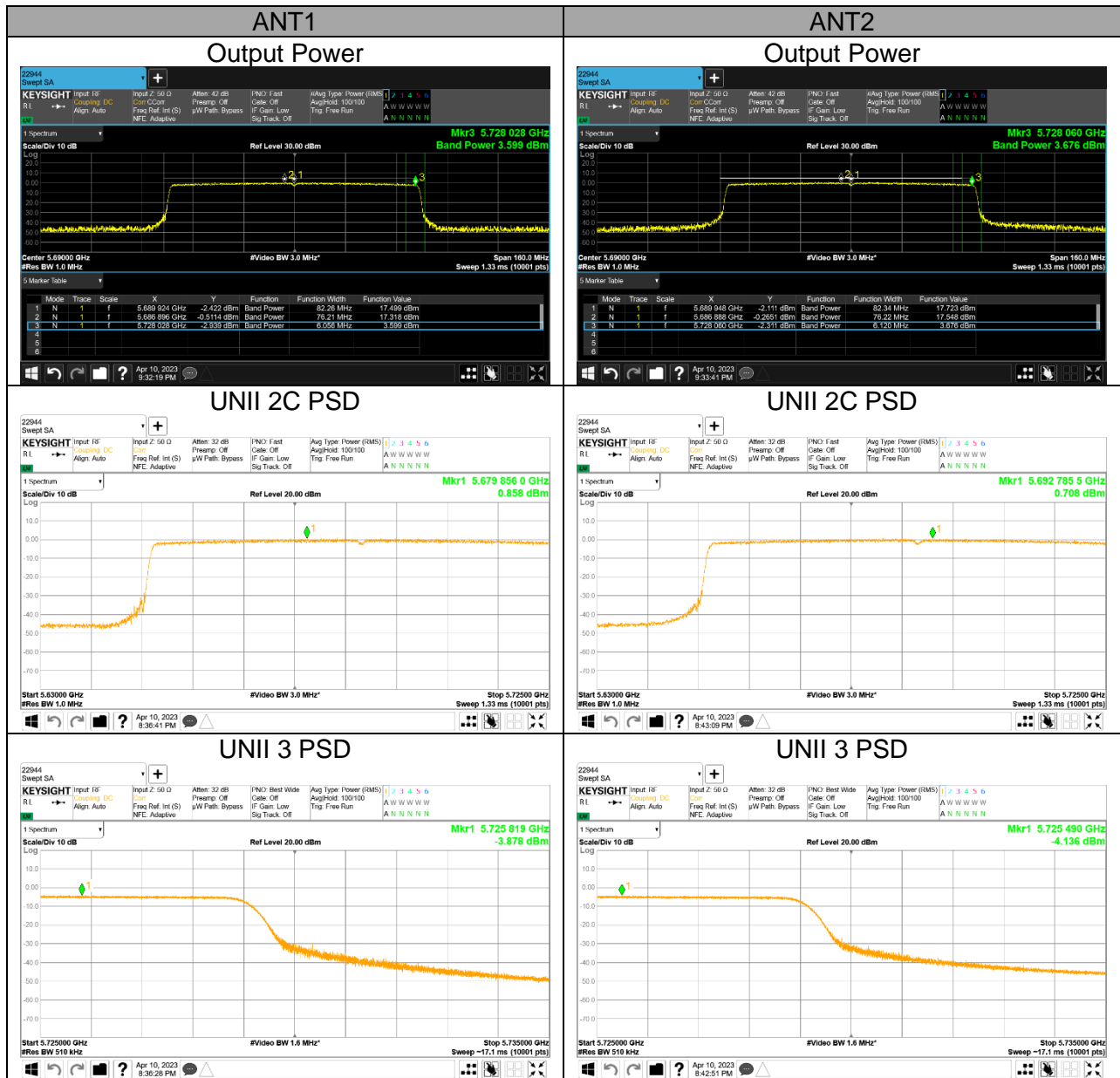
**UNII Straddle Ch. IEEE 802.11ax HE20(SU) mode Output Power and PSD**



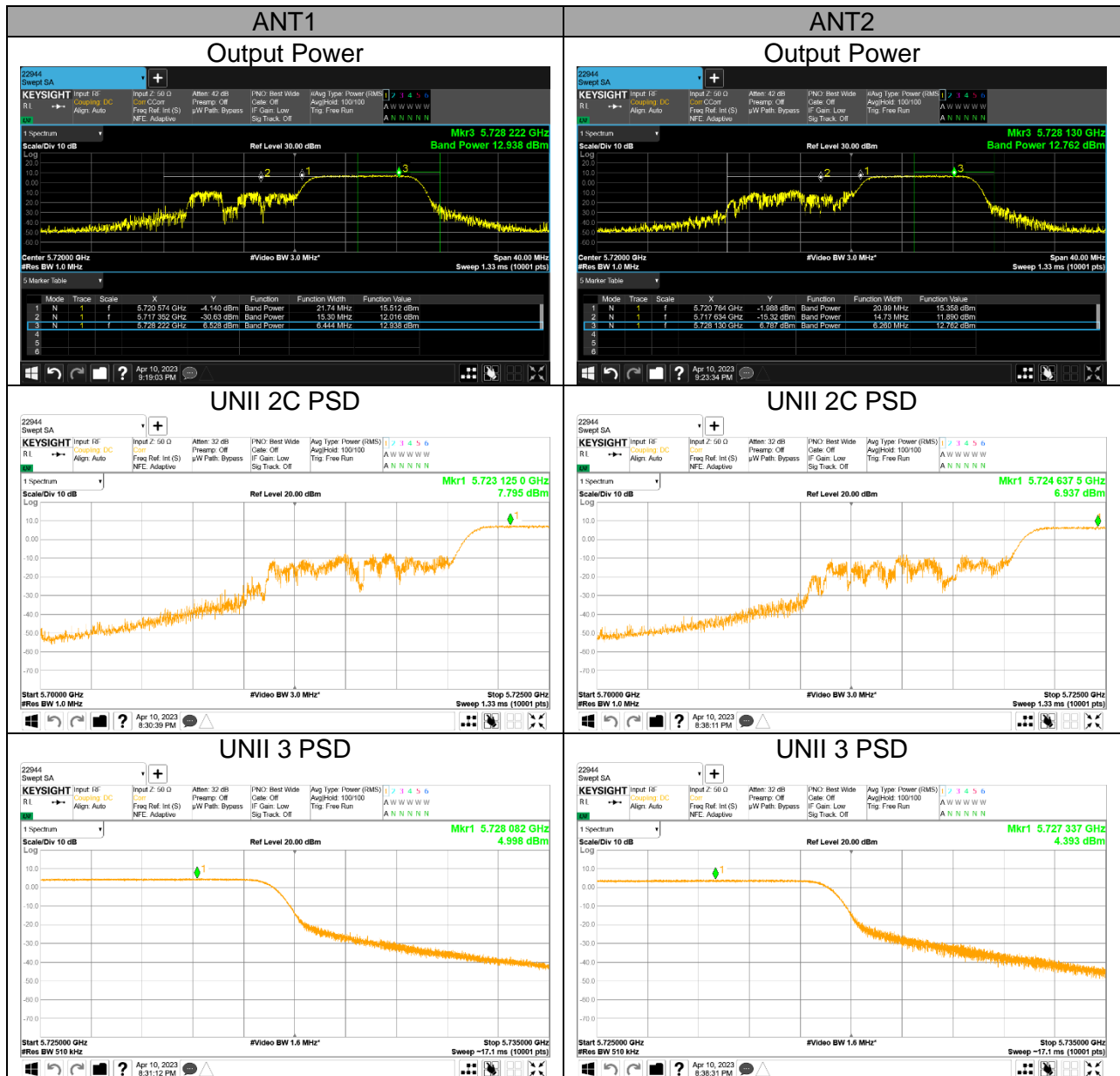
**UNII Straddle Ch. IEEE 802.11ax HE40(SU) mode Output Power and PSD**



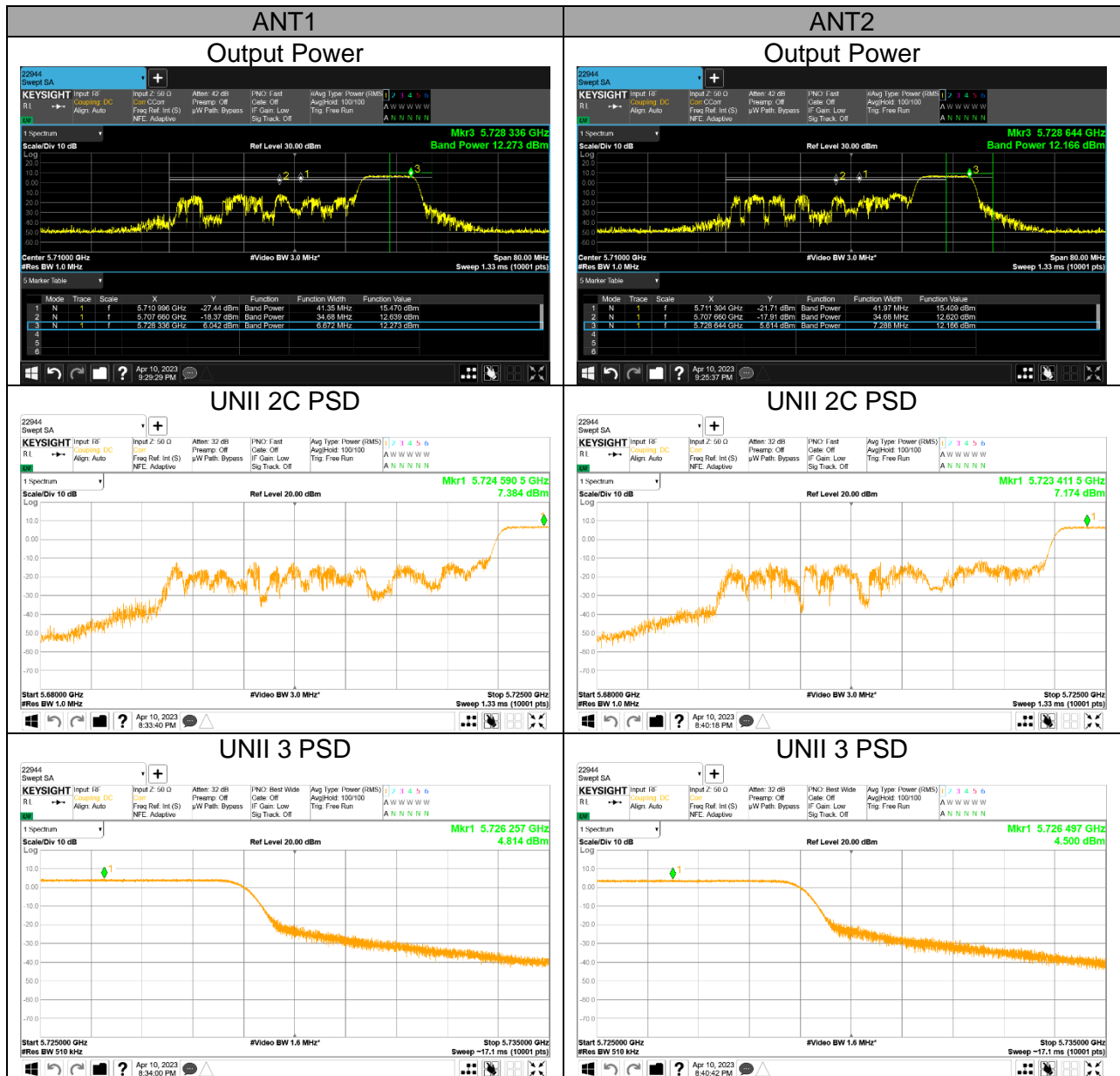
**UNII Straddle Ch. IEEE 802.11ax HE80(SU) mode Output Power and PSD**



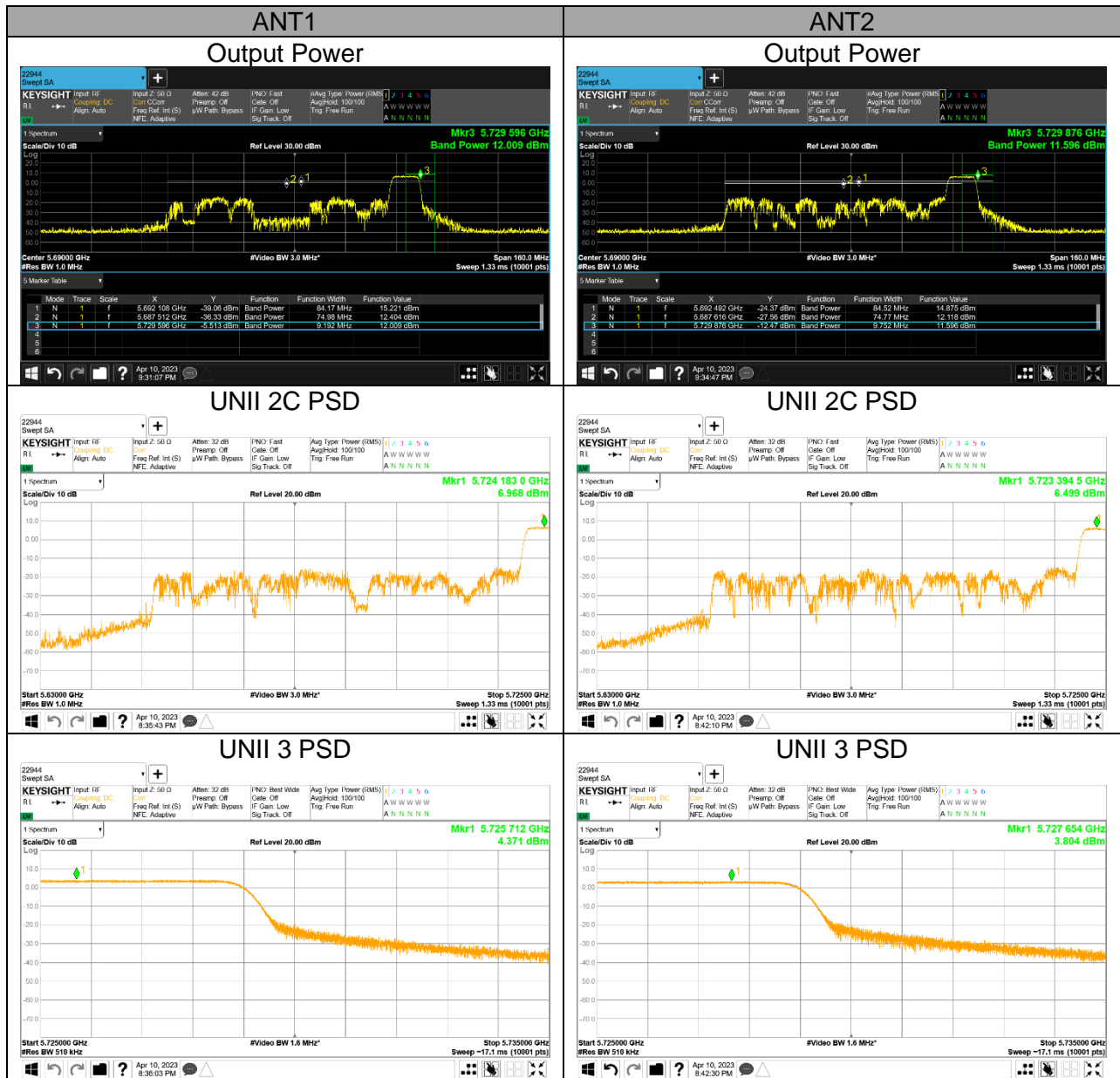
**UNII Straddle Ch. IEEE 802.11ax HE20(54RU) mode Output Power and PSD**



**UNII Straddle Ch. IEEE 802.11ax HE40(56RU) mode Output Power and PSD**



**UNII Straddle Ch. IEEE 802.11ax HE80(60RU) mode Output Power and PSD**



# 11. TRANSMITTER ABOVE 1 GHz

## LIMITS

FCC §15.205 and §15.209

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

\*\* Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

FCC Part 15.205 (a) : Only spurious emissions are permitted in any of the frequency bands listed below :

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.1735 ~ 2.1905	12.51975 ~ 12.52025	149.9 ~ 150.05	1645.5 ~ 1646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.57675 ~ 12.57725	156.52475 ~ 156.52525	1660 ~ 1710	8.025 ~ 8.5	22.01 ~ 23.12
4.17725 ~ 4.17775	13.36 ~ 13.41	156.7 ~ 156.9	1718.8 ~ 1722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.20725 ~ 4.20775	16.42 ~ 16.423	162.0125 ~ 167.17	2200 ~ 2300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.69475 ~ 16.69525	167.72 ~ 173.2	2310 ~ 2390	10.6 ~ 12.7	36.43 ~ 36.5
6.26775 ~ 6.26825	16.80425 ~ 16.80475	240 ~ 285	2483.5 ~ 2500	13.25 ~ 13.4	Above 38.6
6.31175 ~ 6.31225	25.5 ~ 25.67	322 ~ 335.4	2655 ~ 2900		
8.291 ~ 8.294	37.5 ~ 38.25	399.90 ~ 410	3260 ~ 3267		
8.362 ~ 8.366	73 ~ 74.6	608 ~ 614	3332 ~ 3339		
8.37625 ~ 8.38675	74.8 ~ 75.2	960 ~ 1240	3345.8 ~ 3358 3600 ~ 4400		

▪ FCC Part 15.205(b) : The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.



**FCC §15.407 (b)**

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) 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.
- (2) 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.
- (3) 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.
- (4) For transmitters operating solely in the 5.850-5.895 GHz band or operating on a channel that spans across 5.725-5.895 GHz:

(iii) For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz

- (5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary,  
provided the measured energy is integrated to show the total power over 1 MHz.
- (6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
- (7) The provisions of §15.205 apply to intentional radiators operating under this section.
- (8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

**Note**

- Limit translation to field strength level (FCC §15.407)

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 = -27\text{dBm} + 95.2 = 68.2\text{dBuV/m}$$

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 = -17\text{dBm} + 95.2 = 78.2\text{dBuV/m}$$

## **TEST PROCEDURE**

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 100 cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Reference to KDB 789033 D02 v02r01 UNII part G) 6) c) Method AD:

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements. In UNII-4, unwanted emissions outside of restricted bands are measured with an RMS detector.

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.

The spectrum from 1GHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

Note : Emission was pre-scanned from 9kHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).  
Per FCC part 15.31(o), test results were not reported.

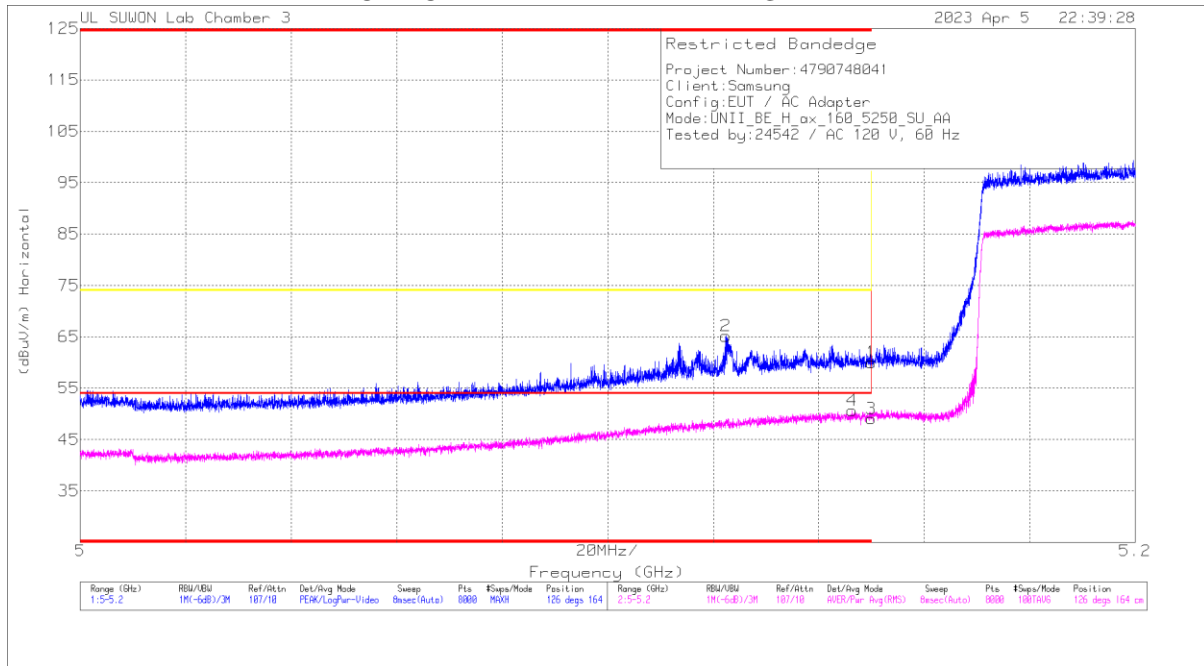
Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open area test site.

Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

## 11.1. TX ABOVE 1GHz 2Tx MODE IN THE 5.2GHz BAND

### BANDEDGE (WORST CASE: 802.11ax HE160 / 5250 MHz Lower)

#### HORIZONTAL PEAK AND AVERAGE DATA



#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Acimuth (Degs)	Height (cm)	Polarity
1	* 5.14999	46.42	Pk	34.4	-20.8	0	60.02	-	-	74	-13.98	126	164	H
2	* 5.12239	51.65	Pk	34.3	-20.8	0	65.15	-	-	74	-8.85	126	164	H
3	* 5.14999	35.45	RMS	34.4	-20.8	0	49.05	54	-4.95	-	-	126	164	H
4	* 5.14632	37.05	RMS	34.4	-20.8	0	50.65	54	-3.35	-	-	126	164	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

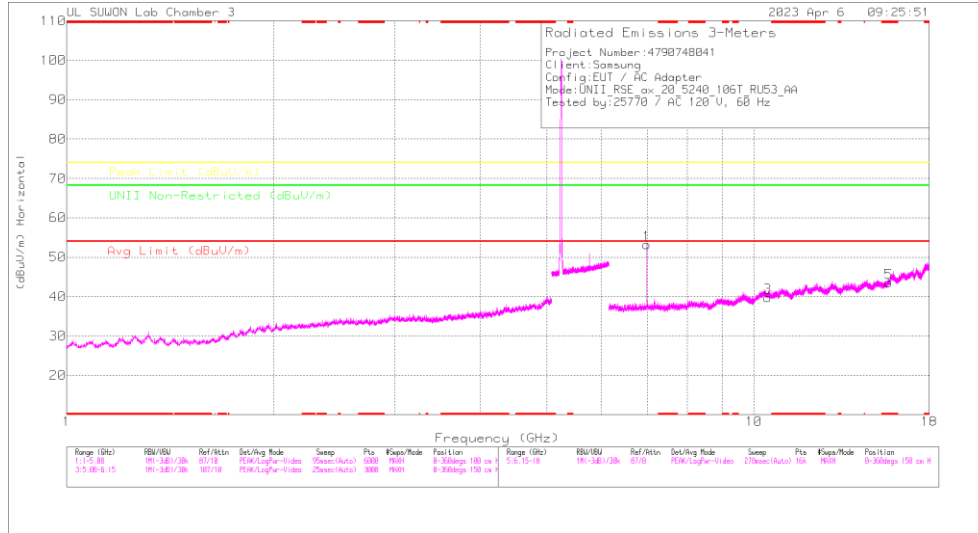
RMS - RMS detection

**BANDEDGE TEST DATA**

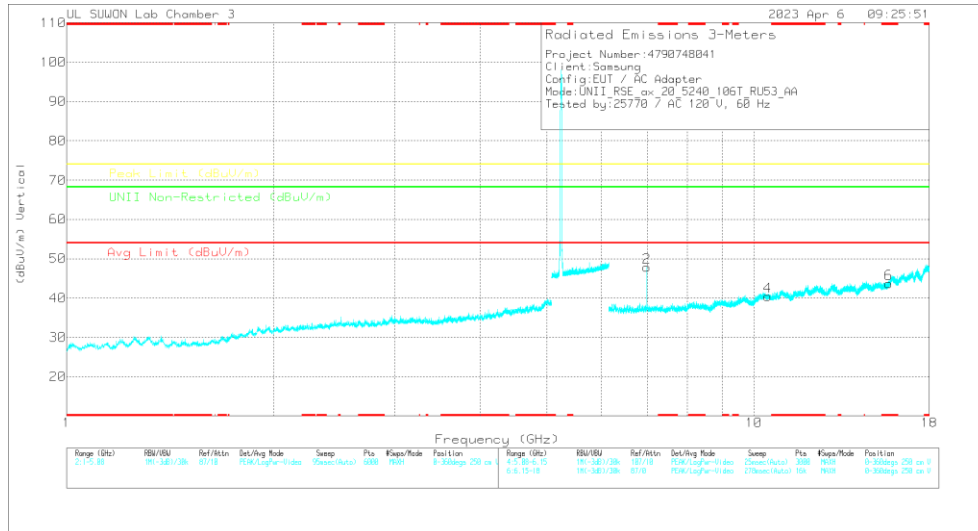
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity	
802.11a	5180	MIMO	* 5.14999	38.86	Pk	34.40	-20.80	0.00	52.46	-	-	74.00	-21.54	119	100	H	
			* 5.11189	41.13	Pk	34.30	-20.80	0.00	54.63	-	-	74.00	-19.37	119	100	H	
			* 5.14999	27.66	RMS	34.40	-20.80	0.15	41.41	54.00	-12.59	-	-	119	100	H	
			* 5.00525	29.66	RMS	34.30	-20.90	0.15	43.21	54.00	-10.79	-	-	119	100	H	
			* 5.14999	39.82	Pk	34.40	-20.80	0.00	53.42	-	-	-	74.00	-20.58	191	305	V
			* 5.04451	40.85	Pk	34.30	-20.80	0.00	54.35	-	-	-	74.00	-19.65	191	305	V
			* 5.14999	28.07	RMS	34.40	-20.80	0.15	41.82	54.00	-12.18	-	-	191	305	V	
			* 5.00533	29.41	RMS	34.30	-20.90	0.15	42.96	54.00	-11.04	-	-	191	305	V	
802.11n (HT20)	5180	MIMO	* 5.14999	44.53	Pk	34.40	-20.80	0.00	58.13	-	-	74.00	-15.87	126	100	H	
			* 5.14777	45.83	Pk	34.40	-20.80	0.00	59.43	-	-	74.00	-14.57	126	100	H	
			* 5.14999	30.83	RMS	34.40	-20.80	0.00	44.43	54.00	-9.57	-	-	126	100	H	
			* 5.14957	31.73	RMS	34.40	-20.80	0.00	45.33	54.00	-8.67	-	-	126	100	H	
			* 5.14999	44.36	Pk	34.40	-20.80	0.00	57.96	-	-	74.00	-16.04	188	235	V	
			* 5.14874	46.04	Pk	34.40	-20.80	0.00	59.64	-	-	74.00	-14.36	188	235	V	
			* 5.14999	31.62	RMS	34.40	-20.80	0.00	45.22	54.00	-8.78	-	-	188	235	V	
			* 5.14967	32.18	RMS	34.40	-20.80	0.00	45.78	54.00	-8.22	-	-	188	235	V	
802.11n (HT40)	5190	MIMO	* 5.14999	44.31	Pk	34.40	-20.80	0.00	57.91	-	-	74.00	-16.09	124	107	H	
			* 5.14567	50.61	Pk	34.40	-20.80	0.00	64.21	-	-	74.00	-9.79	124	107	H	
			* 5.14999	33.21	RMS	34.40	-20.80	0.00	46.81	54.00	-7.19	-	-	124	107	H	
			* 5.14592	36.66	RMS	34.40	-20.80	0.00	50.26	54.00	-3.74	-	-	124	107	H	
			* 5.14999	47.03	Pk	34.40	-20.80	0.00	60.63	-	-	74.00	-13.37	233	100	V	
			* 5.14934	51.09	Pk	34.40	-20.80	0.00	64.69	-	-	74.00	-9.31	233	100	V	
			* 5.14999	35.33	RMS	34.40	-20.80	0.00	48.93	54.00	-5.07	-	-	233	100	V	
			* 5.14987	36.02	RMS	34.40	-20.80	0.00	49.62	54.00	-4.38	-	-	233	100	V	
802.11ac (VHT80)	5210	MIMO	* 5.14999	43.16	Pk	34.40	-20.80	0.00	56.76	-	-	74.00	-17.24	115	185	H	
			* 5.14752	46.46	Pk	34.40	-20.80	0.00	60.06	-	-	74.00	-13.94	115	185	H	
			* 5.14999	32.67	RMS	34.40	-20.80	0.12	46.39	54.00	-7.61	-	-	115	185	H	
			* 5.14747	33.50	RMS	34.40	-20.80	0.12	47.22	54.00	-6.78	-	-	115	185	H	
			* 5.14999	39.86	Pk	34.40	-20.80	0.00	53.46	-	-	74.00	-20.54	111	187	V	
			* 5.13764	42.95	Pk	34.40	-20.70	0.00	56.65	-	-	74.00	-17.35	111	187	V	
			* 5.14999	28.58	RMS	34.40	-20.80	0.12	42.30	54.00	-11.70	-	-	111	187	V	
			* 5.14649	29.99	RMS	34.40	-20.80	0.12	43.71	54.00	-10.29	-	-	111	187	V	
802.11ac (VHT160)	5250 Lower	MIMO	* 5.14999	42.90	Pk	34.40	-20.80	0.00	56.50	-	-	74.00	-17.50	115	172	H	
			* 5.11301	46.85	Pk	34.30	-20.80	0.00	60.35	-	-	74.00	-13.65	115	172	H	
			* 5.14999	32.59	RMS	34.40	-20.80	0.12	46.31	54.00	-7.69	-	-	115	172	H	
			* 5.14362	33.28	RMS	34.40	-20.80	0.12	47.00	54.00	-7.00	-	-	115	172	H	
			* 5.14999	41.41	Pk	34.40	-20.80	0.00	55.01	-	-	74.00	-18.99	167	235	V	
			* 5.11619	44.82	Pk	34.30	-20.80	0.00	58.32	-	-	74.00	-15.68	167	235	V	
			* 5.14999	31.09	RMS	34.40	-20.80	0.12	44.81	54.00	-9.19	-	-	167	235	V	
			* 5.14724	31.91	RMS	34.40	-20.80	0.12	45.63	54.00	-8.37	-	-	167	235	V	
802.11ax (HE20)	5180	MIMO	* 5.14999	47.33	Pk	34.40	-20.80	0.00	60.93	-	-	74.00	-13.07	118	185	H	
			* 5.14974	50.81	Pk	34.40	-20.80	0.00	64.41	-	-	74.00	-9.59	118	185	H	
			* 5.14999	31.26	RMS	34.40	-20.80	0.00	44.86	54.00	-9.14	-	-	118	185	H	
			* 5.14954	31.90	RMS	34.40	-20.80	0.00	45.50	54.00	-8.50	-	-	118	185	H	
			* 5.14999	44.51	Pk	34.40	-20.80	0.00	58.11	-	-	74.00	-15.89	203	100	V	
			* 5.14972	47.88	Pk	34.40	-20.80	0.00	61.48	-	-	74.00	-12.52	203	100	V	
			* 5.14999	29.25	RMS	34.40	-20.80	0.00	42.85	54.00	-11.15	-	-	203	100	V	
			* 5.14942	30.54	RMS	34.40	-20.80	0.00	44.14	54.00	-9.86	-	-	203	100	V	
802.11ax (HE40)	5190	MIMO	* 5.14999	42.90	Pk	34.40	-20.80	0.00	56.50	-	-	74.00	-17.50	121	194	H	
			* 5.14874	52.60	Pk	34.40	-20.80	0.00	66.20	-	-	74.00	-7.80	121	194	H	
			* 5.14999	32.81	RMS	34.40	-20.80	0.00	46.41	54.00	-7.59	-	-	121	194	H	
			* 5.14989	32.86	RMS	34.40	-20.80	0.00	46.46	54.00	-7.54	-	-	121	194	H	
			* 5.14999	41.77	Pk	34.40	-20.80	0.00	55.37	-	-	74.00	-18.63	203	100	V	
			* 5.14647	46.82	Pk	34.40	-20.80	0.00	60.42	-	-	74.00	-13.58	203	100	V	
			* 5.14999	31.27	RMS	34.40	-20.80	0.00	44.87	54.00	-9.13	-	-	203	100	V	
			* 5.14924	31.30	RMS	34.40	-20.80	0.00	44.90	54.00	-9.10	-	-	203	100	V	
802.11ax (HE80)	5210	MIMO	* 5.14999	45.73	Pk	34.40	-20.80	0.00	59.33	-	-	74.00	-14.67	124	186	H	
			* 5.13622	50.48	Pk	34.40	-20.70	0.00	64.18	-	-	74.00	-9.82	124	186	H	
			* 5.14999	34.40	RMS	34.40	-20.80	0.00	48.00	54.00	-6.00	-	-	124	186	H	
			* 5.14814	35.95	RMS	34.40	-20.80	0.00	49.55	54.00	-4.45	-	-	124	186	H	
			* 5.14999	42.82	Pk	34.40	-20.80	0.00	56.42	-	-	74.00	-17.58	202	100	V	
			* 5.14532	46.81	Pk	34.40	-20.80	0.00	60.41	-	-	74.00	-13.59	202	100	V	
			* 5.14999	30.66	RMS	34.40	-20.80	0.00	44.26	54.00	-9.74	-	-	202	100	V	
			* 5.14927	32.03	RMS	34.40	-20.80	0.00	45.63	54.00	-8.37	-	-	202	100	V	
802.11ax (HE160)	5250 Lower	MIMO	* 5.14999	46.42	Pk	34.40	-20.80	0.00	60.02	-	-	74.00	-13.98	126	164	H	
			* 5.12239	51.65	Pk	34.30	-20.80	0.00	65.15	-	-	74.00	-8.85	126	164	H	
			* 5.14999	35.45	RMS	34.40	-20.80	0.00	49.05	54.00	-4.95	-	-	126	164	H	
			* 5.14632	37.05	RMS	34.40	-20.80	0.00	50.65	54.00	-3.35	-	-	126	164	H	
			* 5.14999	46.11	Pk	34.40	-20.80	0.00	59.71	-	-	74.00	-14.29	205	100	V	
			* 5.12589	47.36	Pk	34.40	-20.80	0.00	60.96	-	-	74.00	-13.04	205	100	V	
			* 5.14999	33.29	RMS	34.40	-20.80	0.00	46.89	54.00	-7.11	-	-	205	100	V	
			* 5.14439	34.37	RMS	34.40	-20.80	0.00	47.97	54.00	-6.03	-	-	205	100	V	

Note1. Pk - Peak detector, RMS - RMS detector  
 Note2. \* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

**HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11ax HE20 53RU / 5240 MHz)**  
**5240 MHz HORIZONTAL**



**5240 MHz VERTICAL**



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**5240 MHz DATA**

**Radiated Emissions**

Frequency (GHz)	Meas Reading (dBuV)	Det	317_0021867	60Hz HF(dB)	DC Corr (dB)	Corrected Reading (dBuV)	Avg Limit (dBuV/m)	Meas (dB)	Peak Limit (dBuV/m)	Meas (dB)	UNII Non-Restricted (dBuV/m)	Meas (dB)	Azimuth (Deg)	Height (cm)	Polarity
6.98661	46.51	PK-U	36	-26	0	56.51	-	-	-	-	68.2	-11.69	214	168	H
6.98656	40.52	PK-U	36	-26	0	50.52	-	-	-	-	68.2	-17.68	135	100	V
10.47574	33.03	PK-U	37.6	-20.9	0	49.73	-	-	-	-	68.2	-18.47	0	100	H
10.47792	33.59	PK-U	37.6	-21	0	50.19	-	-	-	-	68.2	-18.01	0	100	V
* 15.71924	34.44	PK-U	40.4	-21.2	0	53.64	-	-	74	-20.36	-	-	0	100	H
* 15.72083	34.01	PK-U	40.4	-21.2	0	53.21	-	-	74	-20.79	-	-	0	100	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK-U - U-NII: Maximum Peak

**HARMONICS AND SPURIOUS EMISSIONS TEST DATA**

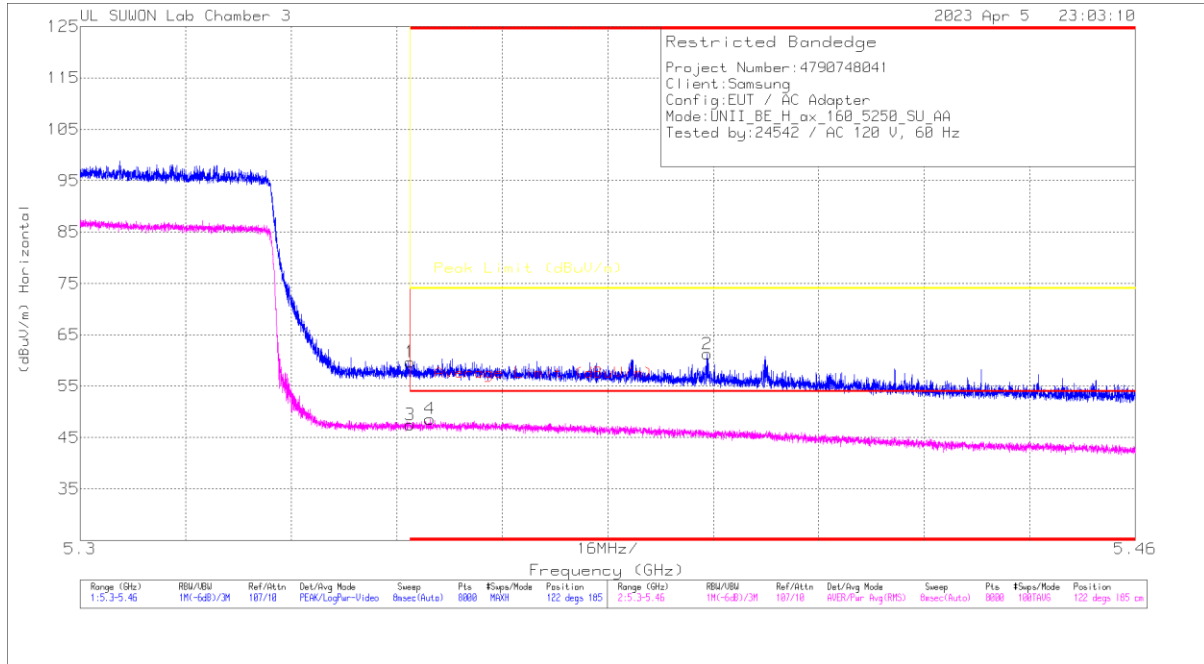
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity	
802.11a	5180	MIMO	6.907	46.10	PK-U	36.00	-26.60	0.00	55.50	-	-	-	-	68.20	-12.70	190	143	H	
			6.907	42.74	PK-U	36.00	-26.60	0.00	52.14	-	-	-	-	-	68.20	-16.06	190	175	V
			10.359	34.08	PK-U	37.50	-20.80	0.00	50.78	-	-	-	-	-	68.20	-17.42	0	100	H
			10.359	33.71	PK-U	37.50	-20.80	0.00	50.41	-	-	-	-	-	68.20	-17.79	0	100	V
			* 15.5411	34.27	PK-U	40.10	-21.70	0.00	52.67	-	-	74.00	-21.33	-	-	-	0	100	H
	* 15.53989	34.23	PK-U	40.10	-21.70	0.00	52.63	-	-	74.00	-21.37	-	-	-	0	100	V		
	5200	MIMO	6.933	45.82	PK-U	36.00	-26.50	0.00	55.32	-	-	-	-	-	68.20	-12.88	190	150	H
			6.933	42.20	PK-U	36.00	-26.50	0.00	51.70	-	-	-	-	-	68.20	-16.50	191	165	V
			10.398	33.97	PK-U	37.50	-20.90	0.00	50.57	-	-	-	-	-	68.20	-17.63	0	100	H
			10.398	33.69	PK-U	37.50	-20.90	0.00	50.29	-	-	-	-	-	68.20	-17.91	0	100	V
			* 15.59794	33.30	PK-U	40.20	-21.50	0.00	52.00	-	-	74.00	-22.00	-	-	-	0	100	H
	* 15.59971	33.96	PK-U	40.20	-21.50	0.00	52.66	-	-	74.00	-21.34	-	-	-	0	100	V		
	5240	MIMO	6.987	45.41	PK-U	36.00	-26.00	0.00	55.41	-	-	-	-	-	68.20	-12.79	217	179	H
			6.987	38.83	PK-U	36.00	-26.00	0.00	48.83	-	-	-	-	-	68.20	-19.37	133	108	V
			10.476	33.45	PK-U	37.60	-21.00	0.00	50.05	-	-	-	-	-	68.20	-18.15	0	100	H
10.484			32.93	PK-U	37.60	-20.90	0.00	49.63	-	-	-	-	-	68.20	-18.57	0	100	V	
* 15.71752			33.86	PK-U	40.40	-21.30	0.00	52.96	-	-	74.00	-21.04	-	-	-	0	100	H	
* 15.72135	33.59	PK-U	40.40	-21.30	0.00	52.69	-	-	74.00	-21.31	-	-	-	0	100	V			
802.11n HT20	5180	MIMO	6.907	46.09	PK-U	36.00	-26.60	0.00	55.49	-	-	-	-	68.20	-12.71	208	169	H	
			6.907	41.53	PK-U	36.00	-26.60	0.00	50.93	-	-	-	-	-	68.20	-17.27	196	282	V
			10.354	34.13	PK-U	37.50	-20.80	0.00	50.83	-	-	-	-	-	68.20	-17.37	0	100	H
			10.366	34.42	PK-U	37.50	-20.60	0.00	51.32	-	-	-	-	-	68.20	-16.88	0	100	V
			* 15.54014	33.89	PK-U	40.10	-21.70	0.00	52.29	-	-	74.00	-21.71	-	-	-	0	100	H
* 15.53814	34.03	PK-U	40.10	-21.70	0.00	52.43	-	-	74.00	-21.57	-	-	-	0	100	V			
802.11n HT40	5190	MIMO	6.920	45.45	PK-U	36.00	-26.60	0.00	54.85	-	-	-	-	68.20	-13.35	227	108	H	
			6.920	40.21	PK-U	36.00	-26.60	0.00	49.61	-	-	-	-	-	68.20	-18.59	138	103	V
			10.379	33.72	PK-U	37.50	-20.70	0.00	50.52	-	-	-	-	-	68.20	-17.58	0	100	H
			10.381	33.99	PK-U	37.50	-20.70	0.00	50.79	-	-	-	-	-	68.20	-17.41	0	100	V
			* 15.5723	33.33	PK-U	40.10	-21.60	0.00	51.83	-	-	74.00	-22.17	-	-	-	0	100	H
* 15.5693	33.63	PK-U	40.10	-21.60	0.00	52.13	-	-	74.00	-21.87	-	-	-	0	100	V			
802.11ac VHT80	5210	MIMO	6.947	45.21	PK-U	36.00	-26.30	0.00	54.91	-	-	-	-	68.20	-13.29	226	108	H	
			6.946	40.83	PK-U	36.00	-26.30	0.00	50.53	-	-	-	-	-	68.20	-17.67	138	101	V
			10.421	34.85	PK-U	37.50	-21.00	0.00	51.35	-	-	-	-	-	68.20	-16.85	0	100	H
			10.420	33.69	PK-U	37.50	-21.10	0.00	50.09	-	-	-	-	-	68.20	-18.11	0	100	V
			* 15.63151	33.35	PK-U	40.30	-21.50	0.00	52.15	-	-	74.00	-21.85	-	-	-	0	100	H
* 15.63253	32.96	PK-U	40.30	-21.60	0.00	51.66	-	-	74.00	-22.34	-	-	-	0	100	V			
802.11ac VHT160	5250	MIMO	7.000	43.78	PK-U	36.00	-25.90	0.00	53.88	-	-	-	-	68.20	-14.32	211	107	H	
			7.000	40.51	PK-U	36.00	-25.90	0.00	50.61	-	-	-	-	-	68.20	-17.59	138	100	V
			10.499	32.91	PK-U	37.60	-20.70	0.00	49.81	-	-	-	-	-	68.20	-18.39	0	100	H
			10.500	33.12	PK-U	37.60	-20.70	0.00	50.02	-	-	-	-	-	68.20	-18.18	0	100	V
			* 15.75265	33.42	PK-U	40.50	-21.10	0.00	52.82	-	-	74.00	-21.18	-	-	-	0	100	H
* 15.75123	33.36	PK-U	40.50	-21.10	0.00	52.76	-	-	74.00	-21.24	-	-	-	0	100	V			
802.11ax (HE20) 54RU	5180	MIMO	6.907	45.64	PK-U	36.00	-26.60	0.00	55.04	-	-	-	-	68.20	-13.16	177	116	H	
			6.907	40.95	PK-U	36.00	-26.60	0.00	50.35	-	-	-	-	-	68.20	-17.85	136	168	V
			10.362	33.74	PK-U	37.50	-20.70	0.00	50.54	-	-	-	-	-	68.20	-17.66	0	100	H
			10.360	33.56	PK-U	37.50	-20.80	0.00	50.26	-	-	-	-	-	68.20	-17.94	0	100	V
			* 15.54256	34.18	PK-U	40.10	-21.70	0.00	52.58	-	-	74.00	-21.42	-	-	-	0	100	H
* 15.54256	34.38	PK-U	40.10	-21.70	0.00	52.78	-	-	74.00	-21.22	-	-	-	0	100	V			
802.11ax (HE20) 54RU	5200	MIMO	6.933	46.71	PK-U	36.00	-26.50	0.00	56.21	-	-	-	-	68.20	-11.99	180	161	H	
			6.933	40.67	PK-U	36.00	-26.50	0.00	50.17	-	-	-	-	-	68.20	-18.03	132	172	V
			10.402	34.40	PK-U	37.50	-21.00	0.00	50.90	-	-	-	-	-	68.20	-17.30	0	100	H
			10.401	34.30	PK-U	37.50	-21.00	0.00	50.80	-	-	-	-	-	68.20	-17.40	0	100	V
			* 15.59937	33.57	PK-U	40.20	-21.50	0.00	52.27	-	-	74.00	-21.73	-	-	-	0	100	H
* 15.60128	33.46	PK-U	40.20	-21.50	0.00	52.16	-	-	74.00	-21.84	-	-	-	0	100	V			
802.11ax (HE20) 53RU	5240	MIMO	6.987	46.51	PK-U	36.00	-26.00	0.00	56.51	-	-	-	-	68.20	-11.69	214	168	H	
			6.987	40.52	PK-U	36.00	-26.00	0.00	50.52	-	-	-	-	-	68.20	-17.68	135	100	V
			10.480	33.03	PK-U	37.60	-20.90	0.00	49.73	-	-	-	-	-	68.20	-18.47	0	100	H
			10.478	33.59	PK-U	37.60	-21.00	0.00	50.19	-	-	-	-	-	68.20	-18.01	0	100	V
			* 15.71924	34.44	PK-U	40.40	-21.20	0.00	53.64	-	-	74.00	-20.36	-	-	-	0	100	H
* 15.72083	34.01	PK-U	40.40	-21.20	0.00	53.21	-	-	74.00	-20.79	-	-	-	0	100	V			

Note1. PK-U - U-NII: Maximum Peak  
 Note2. \* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

## 11.2. TX ABOVE 1GHz 2Tx MODE IN THE 5.3GHz BAND

### BANDEDGE (WORST CASE: 802.11ax HE160 / 5250 MHz Upper )

#### HORIZONTAL PEAK AND AVERAGE DATA



#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35001	45.51	Pk	34.7	-20.5	0	59.71	-	-	74	-14.29	122	185	H
2	* 5.39507	46.87	Pk	34.8	-20.4	0	61.27	-	-	74	-12.73	122	185	H
3	* 5.35001	33.29	RMS	34.7	-20.5	0	47.49	54	-6.51	-	-	122	185	H
4	* 5.35303	34.43	RMS	34.7	-20.5	0	48.63	54	-5.37	-	-	122	185	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

**BANDEDGE TEST DATA**

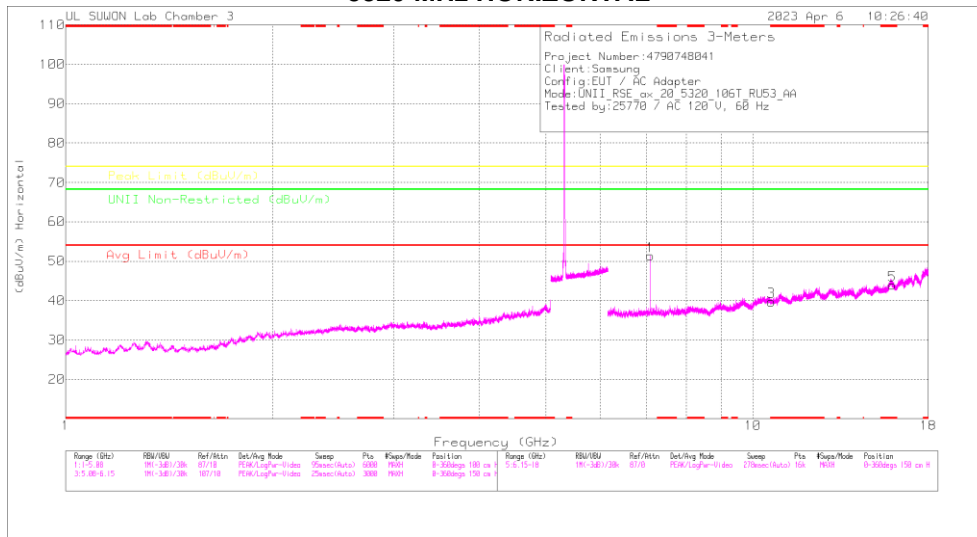
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity	
802.11a	5320	MIMO	* 5.35001	39.03	Pk	34.70	-20.50	0.00	53.23	-	-	74.00	-20.77	117	107	H	
			* 5.44554	40.80	Pk	34.90	-20.40	0.00	55.30	-	-	74.00	-18.70	117	107	H	
			* 5.35001	28.30	RMS	34.70	-20.50	0.15	42.65	54.00	-11.35	-	-	117	107	H	
			* 5.35045	29.59	RMS	34.70	-20.50	0.15	43.94	54.00	-10.06	-	-	117	107	H	
			* 5.35001	37.54	Pk	34.70	-20.50	0.00	51.74	-	-	-	74.00	-22.26	158	220	V
			* 5.35071	40.97	Pk	34.70	-20.50	0.00	55.17	-	-	-	74.00	-18.83	158	220	V
			* 5.35001	27.37	RMS	34.70	-20.50	0.15	41.72	54.00	-12.28	-	-	158	220	V	
			* 5.37307	28.79	RMS	34.70	-20.50	0.15	43.14	54.00	-10.86	-	-	158	220	V	
			* 5.35001	38.92	Pk	34.70	-20.50	0.00	53.12	-	-	-	74.00	-20.88	216	170	H
			* 5.39611	40.34	Pk	34.80	-20.50	0.00	54.64	-	-	-	74.00	-19.36	216	170	H
802.11n (HT20)	5320	MIMO	* 5.35001	28.34	RMS	34.70	-20.50	0.00	42.54	54.00	-11.46	-	-	216	170	H	
			* 5.35037	29.03	RMS	34.70	-20.50	0.00	43.23	54.00	-10.77	-	-	216	170	H	
			* 5.35001	37.89	Pk	34.70	-20.50	0.00	52.09	-	-	-	74.00	-21.91	144	159	V
			* 5.35895	40.67	Pk	34.70	-20.50	0.00	54.87	-	-	-	74.00	-19.13	144	159	V
			* 5.35001	27.78	RMS	34.70	-20.50	0.00	41.98	54.00	-12.02	-	-	144	159	V	
			* 5.41184	28.61	RMS	34.80	-20.40	0.00	43.01	54.00	-10.99	-	-	144	159	V	
			* 5.35001	41.73	Pk	34.70	-20.50	0.00	55.93	-	-	-	74.00	-18.07	214	197	H
			* 5.35241	42.91	Pk	34.70	-20.50	0.00	57.11	-	-	-	74.00	-16.89	214	197	H
			* 5.35001	30.43	RMS	34.70	-20.50	0.00	44.63	54.00	-9.37	-	-	214	197	H	
			* 5.35019	31.03	RMS	34.70	-20.50	0.00	45.23	54.00	-8.77	-	-	214	197	H	
802.11a (VHT80)	5290	MIMO	* 5.35001	39.18	Pk	34.70	-20.50	0.00	53.38	-	-	74.00	-20.62	199	177	V	
			* 5.35051	41.58	Pk	34.70	-20.50	0.00	55.78	-	-	74.00	-18.22	199	177	V	
			* 5.35001	29.20	RMS	34.70	-20.50	0.00	43.40	54.00	-10.60	-	-	199	177	V	
			* 5.35167	30.18	RMS	34.70	-20.50	0.00	44.38	54.00	-9.62	-	-	199	177	V	
			* 5.35001	42.91	Pk	34.70	-20.50	0.00	57.11	-	-	-	74.00	-16.89	116	102	H
			* 5.35351	48.99	Pk	34.70	-20.50	0.00	63.19	-	-	-	74.00	-10.81	116	102	H
			* 5.35001	31.46	RMS	34.70	-20.50	0.12	45.78	54.00	-8.22	-	-	116	102	H	
			* 5.35121	32.86	RMS	34.70	-20.50	0.12	47.18	54.00	-6.82	-	-	116	102	H	
			* 5.35001	42.37	Pk	34.70	-20.50	0.00	56.57	-	-	-	74.00	-17.43	192	103	V
			* 5.36767	46.39	Pk	34.70	-20.50	0.00	60.59	-	-	-	74.00	-13.41	192	103	V
802.11a (VHT160)	5250 Upper	MIMO	* 5.35001	30.59	RMS	34.70	-20.50	0.12	44.91	54.00	-9.09	-	-	192	103	V	
			* 5.35025	31.37	RMS	34.70	-20.50	0.12	45.69	54.00	-8.31	-	-	192	103	V	
			* 5.35001	40.67	Pk	34.70	-20.50	0.00	54.87	-	-	-	74.00	-19.13	119	107	H
			* 5.36243	44.09	Pk	34.70	-20.50	0.00	58.29	-	-	-	74.00	-15.71	119	107	H
			* 5.35001	30.99	RMS	34.70	-20.50	0.12	45.31	54.00	-8.69	-	-	119	107	H	
			* 5.35387	31.98	RMS	34.70	-20.50	0.12	46.30	54.00	-7.70	-	-	119	107	H	
			* 5.35001	40.14	Pk	34.70	-20.50	0.00	54.34	-	-	-	74.00	-19.66	202	248	V
			* 5.37597	41.67	Pk	34.80	-20.50	0.00	55.97	-	-	-	74.00	-18.03	202	248	V
			* 5.35001	29.30	RMS	34.70	-20.50	0.12	43.62	54.00	-10.38	-	-	202	248	V	
			* 5.37187	30.19	RMS	34.70	-20.50	0.12	44.51	54.00	-9.49	-	-	202	248	V	
802.11a (HE20)	5320	MIMO	* 5.35001	39.66	Pk	34.70	-20.50	0.00	53.86	-	-	74.00	-20.14	119	105	H	
			* 5.35057	42.66	Pk	34.70	-20.50	0.00	56.86	-	-	-	74.00	-17.14	119	105	H
			* 5.35001	29.18	RMS	34.70	-20.50	0.00	43.38	54.00	-10.62	-	-	119	105	H	
			* 5.35351	29.15	RMS	34.70	-20.50	0.00	43.35	54.00	-10.65	-	-	119	105	H	
			* 5.35001	37.44	Pk	34.70	-20.50	0.00	51.64	-	-	-	74.00	-22.36	201	103	V
			* 5.37733	39.88	Pk	34.80	-20.40	0.00	54.28	-	-	-	74.00	-19.72	201	103	V
			* 5.35001	27.76	RMS	34.70	-20.50	0.00	41.96	54.00	-12.04	-	-	201	103	V	
			* 5.45046	28.57	RMS	34.90	-20.40	0.00	43.07	54.00	-10.93	-	-	201	103	V	
			* 5.35001	42.02	Pk	34.70	-20.50	0.00	56.22	-	-	-	74.00	-17.78	127	177	H
			* 5.36061	46.46	Pk	34.70	-20.50	0.00	60.66	-	-	-	74.00	-13.34	127	177	H
802.11a (HE40)	5310	MIMO	* 5.35001	30.38	RMS	34.70	-20.50	0.00	44.58	54.00	-9.42	-	-	127	177	H	
			* 5.35129	31.34	RMS	34.70	-20.50	0.00	45.54	54.00	-8.46	-	-	127	177	H	
			* 5.35001	37.62	Pk	34.70	-20.50	0.00	51.82	-	-	-	74.00	-22.18	203	103	V
			* 5.36035	41.65	Pk	34.70	-20.50	0.00	55.85	-	-	-	74.00	-18.15	203	103	V
			* 5.35001	28.14	RMS	34.70	-20.50	0.00	42.34	54.00	-11.66	-	-	203	103	V	
			* 5.35075	29.27	RMS	34.70	-20.50	0.00	43.47	54.00	-10.53	-	-	203	103	V	
			* 5.35001	46.20	Pk	34.70	-20.50	0.00	60.40	-	-	-	74.00	-13.60	123	185	H
			* 5.35329	45.90	Pk	34.70	-20.50	0.00	60.10	-	-	-	74.00	-13.90	123	185	H
			* 5.35001	32.70	RMS	34.70	-20.50	0.00	46.90	54.00	-7.10	-	-	123	185	H	
			* 5.35019	34.00	RMS	34.70	-20.50	0.00	48.20	54.00	-5.80	-	-	123	185	H	
802.11a (HE80)	5290	MIMO	* 5.35001	41.59	Pk	34.70	-20.50	0.00	55.79	-	-	74.00	-18.21	156	282	V	
			* 5.35105	43.75	Pk	34.70	-20.50	0.00	57.95	-	-	-	74.00	-16.05	156	282	V
			* 5.35001	31.07	RMS	34.70	-20.50	0.00	45.27	54.00	-8.73	-	-	156	282	V	
			* 5.35049	31.20	RMS	34.70	-20.50	0.00	45.40	54.00	-8.60	-	-	156	282	V	
			* 5.35001	45.51	Pk	34.70	-20.50	0.00	59.71	-	-	-	74.00	-14.29	122	185	H
			* 5.39507	46.87	Pk	34.80	-20.40	0.00	61.27	-	-	-	74.00	-12.73	122	185	H
			* 5.35001	33.29	RMS	34.70	-20.50	0.00	47.49	54.00	-6.51	-	-	122	185	H	
			* 5.35303	34.43	RMS	34.70	-20.50	0.00	48.63	54.00	-5.37	-	-	122	185	H	
			* 5.35001	41.67	Pk	34.70	-20.50	0.00	55.87	-	-	-	74.00	-18.13	204	103	V
			* 5.35381	43.44	Pk	34.70	-20.50	0.00	57.64	-	-	-	74.00	-16.36	204	103	V
802.11a (HE160)	5250 Upper	MIMO	* 5.35001	30.20	RMS	34.70	-20.50	0.00	44.40	54.00	-9.60	-	-	204	103	V	
			* 5.35159	31.66	RMS	34.70	-20.50	0.00	45.86	54.00	-8.14	-	-	204	103	V	

Note1. Pk - Peak detector, RMS - RMS detector  
 Note2. \* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

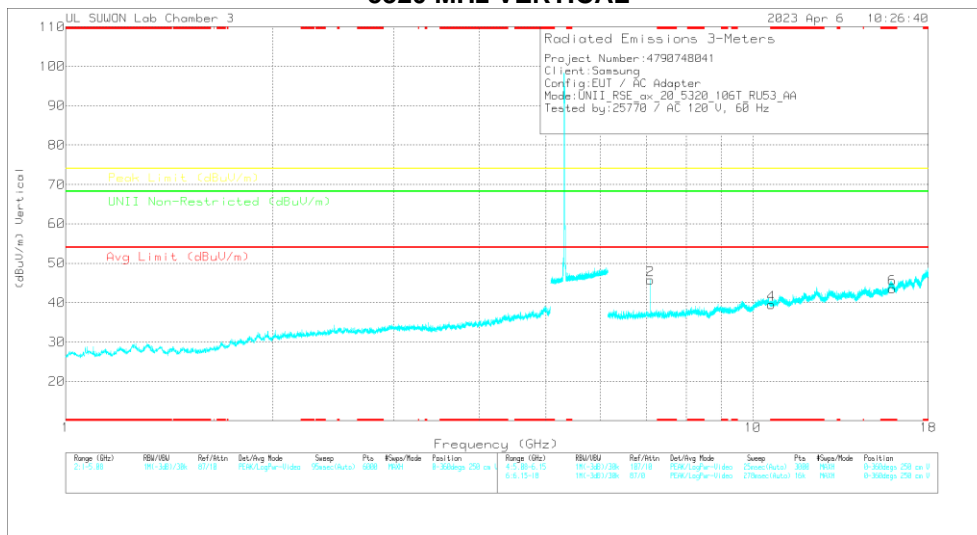


**HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11ax HE20 53RU / 5320 MHz)**

**5320 MHz HORIZONTAL**



**5320 MHz VERTICAL**



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**5320 MHz DATA**

**Radiated Emissions**

Frequency (GHz)	Meas. Reading (dBuV)	Det.	317_0021857	6GHz_HPI(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
7.09323	45.99	PK-U	35.9	-26.1	0	55.79	-	-	-	-	68.2	-12.41	212	171	H
7.09322	40.06	PK-U	35.9	-26.1	0	49.86	-	-	-	-	68.2	-18.34	138	103	V
*10.63894	32.41	PK-U	37.7	-20.9	0	49.21	-	-	74	-24.79	-	-	0	100	H
*10.6407	32.78	PK-U	37.7	-20.9	0	49.53	-	-	74	-24.42	-	-	0	100	V
*15.96192	34.2	PK-U	40.9	-20.7	0	54.4	-	-	74	-19.6	-	-	0	100	H
*15.9615	33.18	PK-U	40.9	-20.7	0	53.38	-	-	74	-20.62	-	-	0	100	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK-U - U-NII: Maximum Peak

**HARMONICS AND SPURIOUS EMISSIONS TEST DATA**

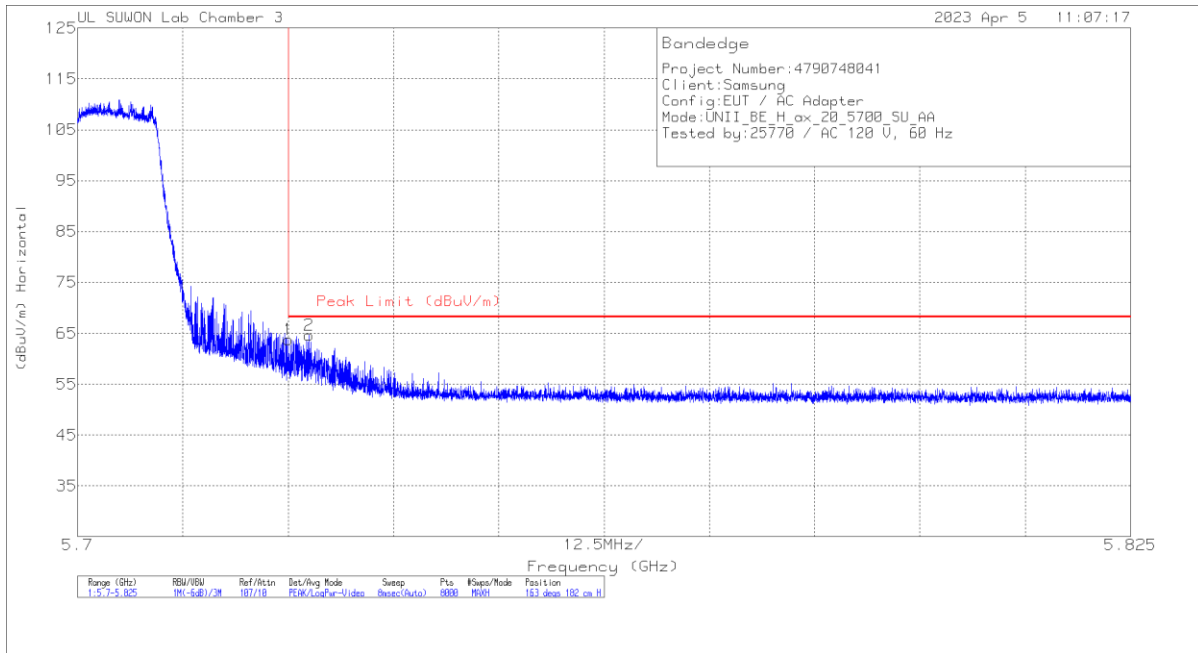
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity		
802.11a	5260	MIMO	7.013	45.36	PK-U	36.00	-25.90	0.00	55.46	-	-	-	-	68.20	-12.74	225	104	H		
			7.013	40.77	PK-U	36.00	-25.90	0.00	50.87	-	-	-	-	-	68.20	-17.33	133	105	V	
			10.523	32.78	PK-U	37.60	-20.90	0.00	49.48	-	-	-	-	-	68.20	-18.72	0	100	H	
			10.520	33.34	PK-U	37.60	-20.90	0.00	50.04	-	-	-	-	-	68.20	-18.16	0	100	V	
			* 15.77041	34.48	PK-U	40.50	-21.10	0.00	53.88	-	-	-	-	74.00	-20.12	-	-	0	100	H
			* 15.78167	34.54	PK-U	40.60	-21.10	0.00	54.04	-	-	-	-	74.00	-19.96	-	-	0	100	V
	5300	MIMO	7.067	45.22	PK-U	35.90	-26.00	0.00	55.12	-	-	-	-	68.20	-13.08	197	212	H		
			7.067	39.96	PK-U	35.90	-26.00	0.00	49.86	-	-	-	-	68.20	-18.34	133	103	V		
			10.599	33.04	PK-U	37.70	-21.00	0.00	49.74	-	-	-	-	68.20	-18.46	0	100	H		
			10.598	32.37	PK-U	37.70	-21.00	0.00	49.07	-	-	-	-	68.20	-19.13	0	100	V		
			* 15.9017	33.88	PK-U	40.80	-20.60	0.00	54.08	-	-	-	-	74.00	-19.92	-	-	0	100	H
			* 15.90087	33.79	PK-U	40.80	-20.60	0.00	53.99	-	-	-	-	74.00	-20.01	-	-	0	100	V
	5320	MIMO	7.093	44.39	PK-U	35.90	-26.10	0.00	54.19	-	-	-	-	68.20	-14.01	223	103	H		
			7.093	39.49	PK-U	35.90	-26.10	0.00	49.29	-	-	-	-	68.20	-18.91	133	110	V		
			* 10.63988	32.43	PK-U	37.70	-20.90	0.00	49.23	-	-	-	-	74.00	-24.77	-	-	0	100	H
			* 10.63848	33.07	PK-U	37.70	-20.90	0.00	49.87	-	-	-	-	74.00	-24.13	-	-	0	100	V
			* 15.96179	33.18	PK-U	40.90	-20.70	0.00	53.38	-	-	-	-	74.00	-20.62	-	-	0	100	H
			* 15.96028	33.49	PK-U	40.90	-20.80	0.00	53.59	-	-	-	-	74.00	-20.41	-	-	0	100	V
802.11ax (HE20) 53RU Spot-Check	5320	MIMO	7.093	45.99	PK-U	35.90	-26.10	0.00	55.79	-	-	-	-	68.20	-12.41	212	171	H		
			7.093	40.06	PK-U	35.90	-26.10	0.00	49.86	-	-	-	-	68.20	-18.34	138	103	V		
			* 10.63894	32.41	PK-U	37.70	-20.90	0.00	49.21	-	-	-	-	74.00	-24.79	-	-	0	100	H
			* 10.6407	32.78	PK-U	37.70	-20.90	0.00	49.58	-	-	-	-	74.00	-24.42	-	-	0	100	V
			* 15.96192	34.20	PK-U	40.90	-20.70	0.00	54.40	-	-	-	-	74.00	-19.60	-	-	0	100	H
			* 15.9615	33.18	PK-U	40.90	-20.70	0.00	53.38	-	-	-	-	74.00	-20.62	-	-	0	100	V

Note1. PK-U - U-NII: Maximum Peak / ADR - U-NII AD primary method, RMS average  
 Note2. \* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

### 11.3. TX ABOVE 1GHz 2Tx MODE IN THE 5.5 GHz BAND

**BANDEDGE (WORST CASE: 802.11ax HE20 / 5700 MHz)**

**HORIZONTAL PEAK AND AVERAGE DATA**



**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	48.46	Pk	35	-19.7	0	63.76	68.2	-4.44	163	182	H
2	5.72749	49.38	Pk	35	-19.7	0	64.68	68.2	-3.52	163	182	H

Pk - Peak detector





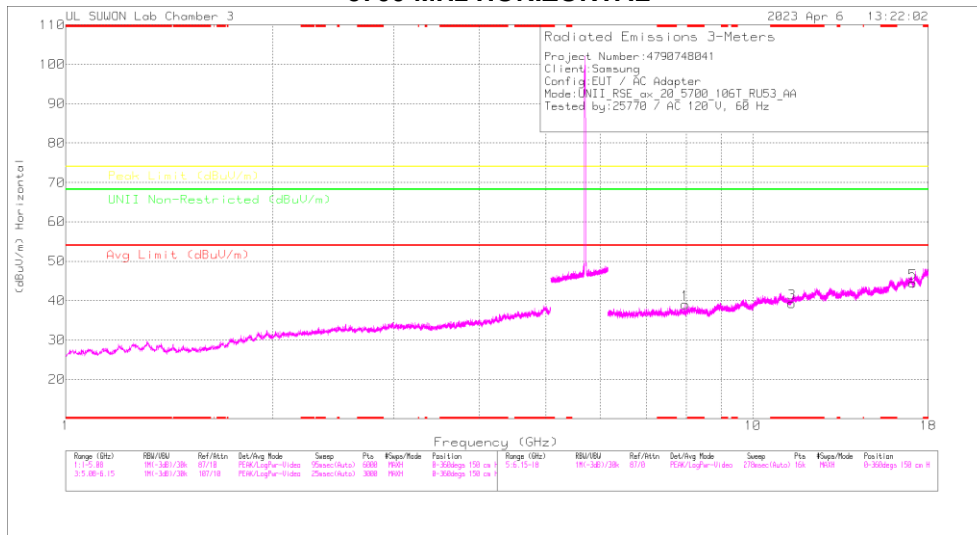
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result dBuV/m	AV Limit dBuV/m	AV Margin [dB]	PK Limit dBuV/m	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity	
802.11ax (HE160)	5570 Lower	MIMO	* 5.45998	42.20	Pk	34.90	-20.40	0.00	56.70	-	-	74.00	-17.30	157	175	H	
			* 5.44235	45.38	Pk	34.90	-20.40	0.00	59.88	-	-	74.00	-14.12	157	175	H	
			5.46998	42.97	Pk	34.90	-20.30	0.00	57.57	-	-	68.20	-10.63	157	175	H	
			5.46412	44.94	Pk	34.90	-20.30	0.00	59.54	-	-	68.20	-8.66	157	175	H	
			* 5.45998	31.40	RMS	34.90	-20.40	0.00	45.90	54.00	-8.10	-	-	-	157	175	H
			* 5.4551	32.95	RMS	34.90	-20.40	0.00	47.45	54.00	-6.55	-	-	-	157	175	H
			5.46998	32.25	RMS	34.90	-20.30	0.00	46.85	-	-	-	-	-	157	175	H
			5.46753	33.18	RMS	34.90	-20.40	0.00	47.68	-	-	-	-	-	157	175	H
			* 5.45998	39.10	Pk	34.90	-20.40	0.00	53.60	-	-	74.00	-20.40	254	200	V	
			* 5.44696	42.15	Pk	34.90	-20.40	0.00	56.65	-	-	74.00	-17.35	254	200	V	
			5.46998	39.60	Pk	34.90	-20.30	0.00	54.20	-	-	68.20	-14.00	254	200	V	
			5.46320	41.31	Pk	34.90	-20.30	0.00	55.91	-	-	68.20	-12.29	254	200	V	
			* 5.45998	28.75	RMS	34.90	-20.40	0.00	43.25	54.00	-10.75	-	-	-	254	200	V
			* 5.45705	30.10	RMS	34.90	-20.40	0.00	44.60	54.00	-9.40	-	-	-	254	200	V
			5.46998	28.98	RMS	34.90	-20.30	0.00	43.58	-	-	-	-	-	254	200	V
			5.46961	30.04	RMS	34.90	-20.30	0.00	44.64	-	-	-	-	-	254	200	V
			5.72501	40.27	Pk	35.00	-19.70	0.00	55.57	-	-	68.20	-12.63	179	178	H	
			5.72658	41.73	Pk	35.00	-19.70	0.00	57.03	-	-	68.20	-11.17	179	178	H	
	5.72501	37.35	Pk	35.00	-19.70	0.00	52.65	-	-	68.20	-15.55	150	211	V			
	5.73502	39.90	Pk	35.00	-19.70	0.00	55.20	-	-	68.20	-13.00	150	211	V			
	5570 Upper	MIMO															

Note1. Pk - Peak detector, RMS - RMS detector

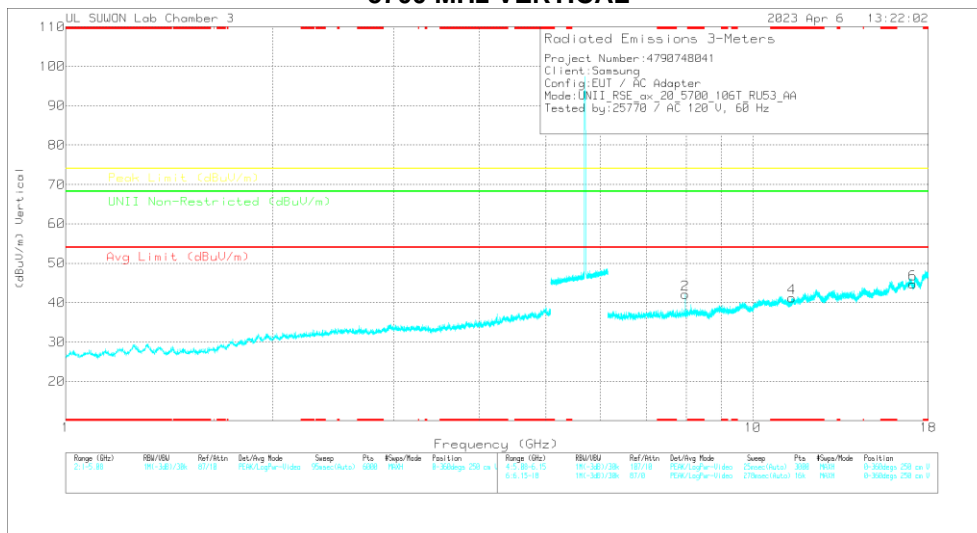
Note2. \* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

**HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11ax HE20 53RU / 5700 MHz)**

**5700 MHz HORIZONTAL**



**5700 MHz VERTICAL**



Note. Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**5700 MHz DATA**

**Radiated Emissions**

Frequency (GHz)	Meas. Reading (dBuV)	Det.	317_0021867	6GHz_HF(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Altitude (Digits)	Height (cm)	Polarity
7.97351	38.39	PK-U	35.9	-24.4	0	49.89	-	-	-	-	68.2	-18.31	162	297	H
7.97196	41.2	PK-U	35.9	-24.4	0	52.7	-	-	-	-	68.2	-15.5	191	113	V
* 11.39922	32.23	PK-U	38.1	-21.3	0	49.02	-	-	74	-24.98	-	-	0	100	H
* 11.40012	32.54	PK-U	38.1	-21.3	0	49.34	-	-	74	-24.66	-	-	0	100	V
17.09905	31.56	PK-U	41.4	-18.4	0	54.56	-	-	-	-	68.2	-13.64	0	100	H
17.10086	32.36	PK-U	41.4	-18.4	0	55.36	-	-	-	-	68.2	-12.84	0	100	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK-U - U-NII: Maximum Peak

**HARMONICS AND SPURIOUS EMISSIONS TEST DATA**

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity		
802.11a	5500	MIMO	* 8.24679	35.71	PK-U	36.00	-23.80	0.00	47.91	-	-	74.00	-26.09	-	-	0	100	H		
			* 8.2474	35.99	PK-U	36.00	-23.70	0.00	48.29	-	-	74.00	-25.71	-	-	-	0	100	V	
			* 11.00104	33.26	PK-U	38.00	-21.00	0.00	50.26	-	-	74.00	-23.74	-	-	-	0	100	H	
			* 11.00089	33.66	PK-U	38.00	-21.00	0.00	50.66	-	-	74.00	-23.34	-	-	-	0	100	V	
			* 16.501	32.84	PK-U	41.60	-19.80	0.00	54.64	-	-	-	-	-	-	68.20	-13.56	0	100	H
			* 16.802	31.61	PK-U	41.90	-19.00	0.00	54.51	-	-	-	-	-	-	68.20	-13.69	0	100	V
	5580	MIMO	* 8.36803	35.40	PK-U	36.00	-23.70	0.00	47.70	-	-	74.00	-26.30	-	-	-	0	100	H	
			* 8.36989	35.66	PK-U	36.00	-23.70	0.00	47.96	-	-	74.00	-26.04	-	-	-	0	100	V	
			* 11.16172	33.66	PK-U	38.10	-21.30	0.00	50.46	-	-	74.00	-23.54	-	-	-	0	100	H	
			* 11.16037	34.51	PK-U	38.10	-21.40	0.00	51.21	-	-	74.00	-22.79	-	-	-	0	100	V	
			* 16.738	31.60	PK-U	41.80	-19.20	0.00	54.20	-	-	-	-	-	-	68.20	-14.00	0	100	H
			* 16.739	31.92	PK-U	41.80	-19.20	0.00	54.52	-	-	-	-	-	-	68.20	-13.68	0	100	V
	5700	MIMO	* 7.982	37.16	PK-U	35.90	-24.30	0.00	48.76	-	-	-	-	-	68.20	-19.44	165	164	H	
			* 7.979	39.22	PK-U	35.90	-24.40	0.00	50.72	-	-	-	-	-	68.20	-17.48	192	162	V	
			* 11.39955	32.39	PK-U	38.10	-21.30	0.00	49.19	-	-	74.00	-24.81	-	-	-	0	100	H	
			* 11.40601	32.45	PK-U	38.10	-21.40	0.00	49.15	-	-	74.00	-24.85	-	-	-	0	100	V	
			* 17.100	31.93	PK-U	41.40	-18.40	0.00	54.93	-	-	-	-	-	-	68.20	-13.27	0	100	H
			* 17.106	31.96	PK-U	41.40	-18.50	0.00	54.86	-	-	-	-	-	-	68.20	-13.34	0	100	V
	5720	MIMO	* 8.009	38.02	PK-U	35.90	-24.30	0.00	49.62	-	-	-	-	-	68.20	-18.58	164	138	H	
			* 8.005	40.04	PK-U	35.90	-24.30	0.00	51.64	-	-	-	-	-	68.20	-16.56	188	157	V	
			* 11.4011	32.78	PK-U	38.10	-21.30	0.00	49.58	-	-	74.00	-24.42	-	-	-	0	100	H	
			* 11.39788	32.60	PK-U	38.10	-21.40	0.00	49.30	-	-	74.00	-24.70	-	-	-	0	100	V	
			* 17.159	32.20	PK-U	41.30	-18.50	0.00	55.00	-	-	-	-	-	-	68.20	-13.20	0	100	H
			* 17.160	32.22	PK-U	41.30	-18.40	0.00	55.12	-	-	-	-	-	-	68.20	-13.08	0	100	V
802.11ax (HE20) 53RU Spot-Check	5700	MIMO	* 7.974	38.39	PK-U	35.90	-24.40	0.00	49.89	-	-	-	-	-	68.20	-18.31	162	297	H	
			* 7.972	41.20	PK-U	35.90	-24.40	0.00	52.70	-	-	-	-	-	68.20	-15.50	191	113	V	
			* 11.39922	32.22	PK-U	38.10	-21.30	0.00	49.02	-	-	74.00	-24.98	-	-	-	0	100	H	
			* 11.40012	32.54	PK-U	38.10	-21.30	0.00	49.34	-	-	74.00	-24.66	-	-	-	0	100	V	
			* 17.099	31.56	PK-U	41.40	-18.40	0.00	54.56	-	-	-	-	-	-	68.20	-13.64	0	100	H
			* 17.101	32.36	PK-U	41.40	-18.40	0.00	55.36	-	-	-	-	-	-	68.20	-12.84	0	100	V

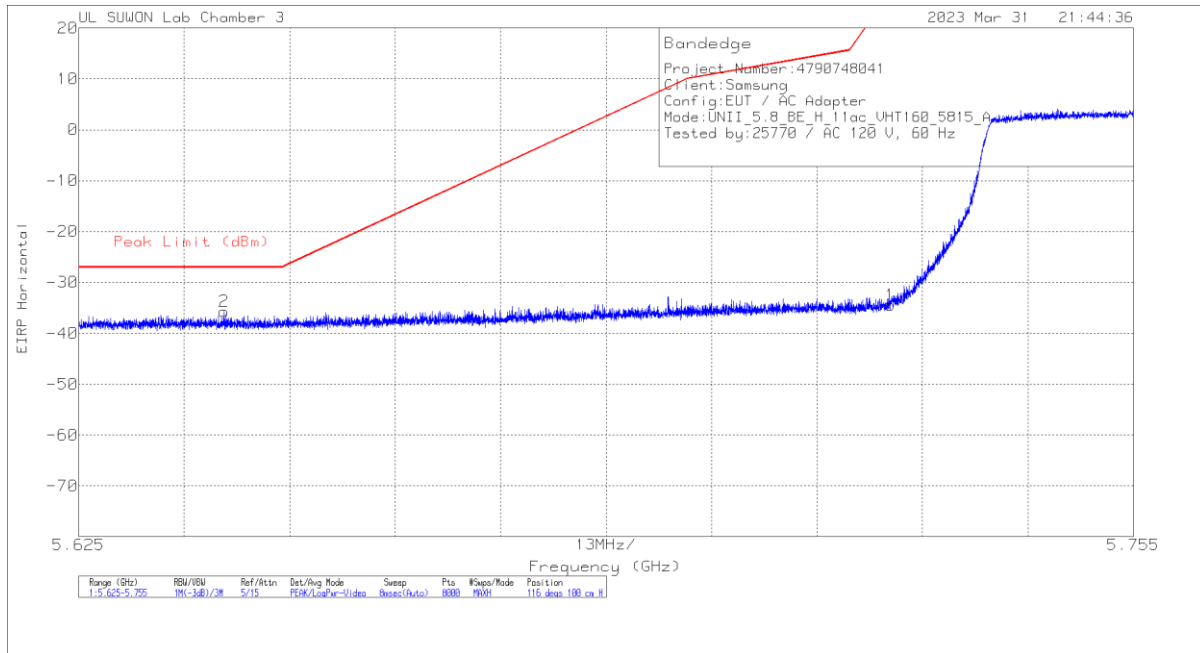
Note1. PK-U - U-NII: Maximum Peak / ADR - U-NII AD primary method, RMS average  
 Note2. \* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band



### 11.4. TX ABOVE 1GHz 2Tx MODE IN THE 5.8 GHz BAND

**BANDEDGE (WORST CASE: 802.11ac VHT160 / 5815 MHz Lower)**

**HORIZONTAL PEAK DATA**



**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117_00218957	10dB_ATT(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-61.48	Pk	34.9	-19.7	11.8	0	-34.48	27	-61.48	116	100	H
2	5.64289	-62.42	Pk	34.9	-20	11.8	0	-35.72	-27	-8.72	116	100	H

Pk - Peak detector

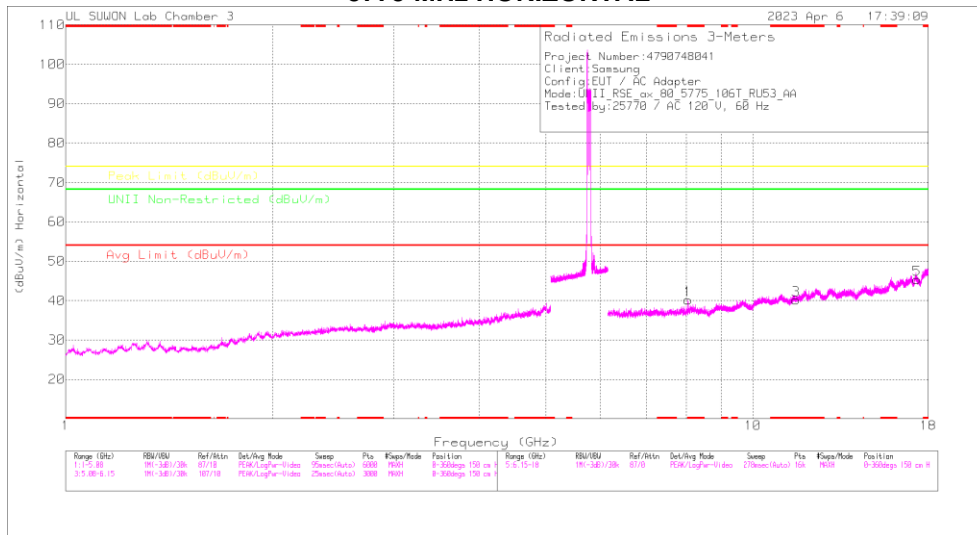
**BANDEDGE TEST DATA**

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBm]	Detector Mode	ANT Factor	Loss [dB]	Conv. F [dB]	DC Corr [dB]	Result [dBm]	PK Limit [dBm]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5745	MIMO	5.72500	-58.01	Pk	34.90	-19.70	11.80	0.00	-31.01	27.00	-58.01	207	179	H
			5.64965	-63.01	Pk	34.90	-20.00	11.80	0.00	-36.31	-27.00	-9.31	207	179	H
			5.72500	-65.00	Pk	34.90	-19.70	11.80	0.00	-38.00	27.00	-65.00	141	112	V
			5.64122	-63.66	Pk	34.90	-20.00	11.80	0.00	-36.96	-27.00	-9.96	141	112	V
802.11n (HT20)	5745	MIMO	5.72500	-58.71	Pk	34.90	-19.70	11.80	0.00	-31.71	27.00	-58.71	197	152	H
			5.63797	-63.35	Pk	34.90	-20.00	11.80	0.00	-36.65	-27.00	-9.65	197	152	H
			5.72500	-64.21	Pk	34.90	-19.70	11.80	0.00	-37.21	27.00	-64.21	145	124	V
			5.64952	-63.56	Pk	34.90	-20.00	11.80	0.00	-36.86	-27.00	-9.86	145	124	V
802.11n (HT40)	5755	MIMO	5.72500	-58.46	Pk	34.90	-19.70	11.80	0.00	-31.46	27.00	-58.46	191	177	H
			5.63581	-62.77	Pk	34.90	-20.00	11.80	0.00	-36.07	-27.00	-9.07	191	177	H
			5.72500	-65.87	Pk	34.90	-19.70	11.80	0.00	-38.87	27.00	-65.87	139	108	V
			5.64800	-63.03	Pk	34.90	-20.10	11.80	0.00	-36.43	-27.00	-9.43	139	108	V
802.11ac (VHT80)	5775 (Lower Side)	MIMO	5.72500	-59.43	Pk	34.90	-19.70	11.80	0.00	-32.43	27.00	-59.43	225	219	H
			5.63813	-62.68	Pk	34.90	-20.00	11.80	0.00	-35.98	-27.00	-8.98	225	219	H
			5.72500	-65.87	Pk	34.90	-19.70	11.80	0.00	-38.87	27.00	-65.87	159	188	V
			5.63860	-63.07	Pk	34.90	-20.00	11.80	0.00	-36.37	-27.00	-9.37	159	188	V
802.11ac (VHT160)	5815 (Lower Side)	MIMO	5.72500	-61.48	Pk	34.90	-19.70	11.80	0.00	-34.48	27.00	-61.48	116	100	H
			5.64289	-62.42	Pk	34.90	-20.00	11.80	0.00	-35.72	-27.00	-8.72	116	100	H
			5.72500	-64.61	Pk	34.90	-19.70	11.80	0.00	-37.61	27.00	-64.61	142	110	V
			5.62534	-62.97	Pk	34.90	-20.20	11.80	0.00	-36.47	-27.00	-9.47	142	110	V
802.11ax (HE20)	5745	MIMO	5.72500	-58.47	Pk	34.90	-19.70	11.80	0.00	-31.47	27.00	-58.47	224	100	H
			5.63904	-63.52	Pk	34.90	-20.00	11.80	0.00	-36.82	-27.00	-9.82	224	100	H
			5.72500	-64.02	Pk	34.90	-19.70	11.80	0.00	-37.02	27.00	-64.02	145	124	V
			5.63774	-63.66	Pk	34.90	-20.00	11.80	0.00	-36.96	-27.00	-9.96	145	124	V
802.11ax (HE40)	5755	MIMO	5.72500	-61.41	Pk	34.90	-19.70	11.80	0.00	-34.41	27.00	-61.41	153	175	H
			5.64878	-62.99	Pk	34.90	-20.10	11.80	0.00	-36.39	-27.00	-9.39	153	175	H
			5.72500	-65.29	Pk	34.90	-19.70	11.80	0.00	-38.29	27.00	-65.29	281	197	V
			5.63816	-63.74	Pk	34.90	-20.00	11.80	0.00	-37.04	-27.00	-10.04	281	197	V
802.11ax (HE80)	5775 (Lower Side)	MIMO	5.72500	-60.78	Pk	34.90	-19.70	11.80	0.00	-33.78	27.00	-60.78	195	122	H
			5.63004	-62.74	Pk	34.90	-20.00	11.80	0.00	-36.04	-27.00	-9.04	195	122	H
			5.72500	-65.41	Pk	34.90	-19.70	11.80	0.00	-38.41	27.00	-65.41	142	186	V
			5.63189	-63.45	Pk	34.90	-20.10	11.80	0.00	-36.85	-27.00	-9.85	142	186	V
802.11ax (HE160)	5815 Lower	MIMO	5.72500	-60.69	Pk	34.90	-19.70	11.80	0.00	-33.69	27.00	-60.69	206	164	H
			5.64379	-63.02	Pk	34.90	-20.00	11.80	0.00	-36.32	-27.00	-9.32	206	164	H
			5.72500	-65.04	Pk	34.90	-19.70	11.80	0.00	-38.04	27.00	-65.04	142	176	V
			5.62849	-62.93	Pk	34.90	-20.00	11.80	0.00	-36.23	-27.00	-9.23	142	176	V

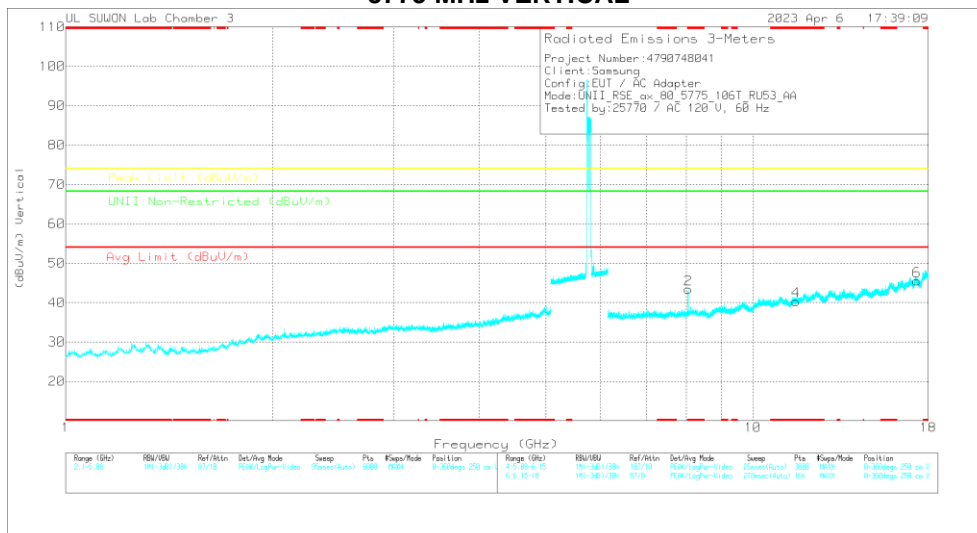
Note. Pk - Peak detector

**HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11ax HE80 53RU / 5775 MHz)**

**5775 MHz HORIZONTAL**



**5775 MHz VERTICAL**



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**5775 MHz DATA**

**Radiated Emissions**

Frequency (GHz)	Meas. Reading (dBu)	Det.	317_0021867	6GHz_HPI(dB)	DC Corr (dB)	Corrected Reading (dBu/m)	Avg Limit (dBu/m)	Margin (dB)	Peak Limit (dBu/m)	Margin (dB)	UNII Non-Restricted (dBu/m)	Margin (dB)	Azimuth (Deg)	Height (cm)	Polarity
* 8.04735	39.67	PK-U	35.9	-24.3	0	51.27	-	-	74	-22.73	-	-	164	143	H
* 8.04826	28.31	ADR	35.9	-24.2	0	40.01	54	-13.99	-	-	-	-	164	143	H
* 8.04719	42.16	PK-U	35.9	-24.3	0	53.76	-	-	74	-20.24	-	-	150	131	V
* 8.04869	31.3	ADR	35.9	-24.2	0	43	54	-11	-	-	-	-	150	131	V
* 11.54919	33.59	PK-U	38.2	-21.4	0	50.39	-	-	74	-23.61	-	-	0	100	H
* 11.55079	33.29	PK-U	38.2	-21.5	0	49.99	-	-	74	-24.01	-	-	0	100	V
17.32171	31.82	PK-U	41.1	-17.7	0	55.22	-	-	-	-	68.2	-12.98	0	100	H
17.32635	32.31	PK-U	41.1	-17.7	0	55.71	-	-	-	-	68.2	-12.49	0	100	V

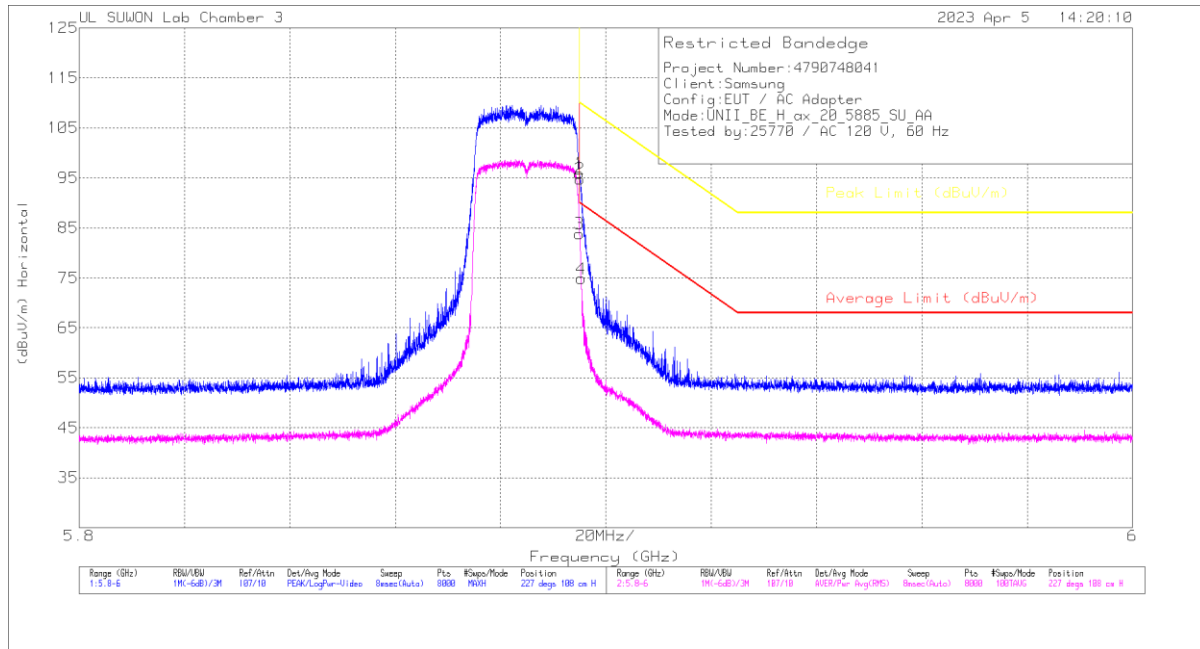
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK-U - U-NII: Maximum Peak  
 ADR - U-NII AD primary method, RMS average



### 11.5. TX ABOVE 1GHz 2Tx MODE IN THE 5.9 GHz BAND

**BANDEDGE (WORST CASE: 802.11ax HE20 / 5885 MHz)**

#### HORIZONTAL PEAK DATA



#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBu)	Det	3117_00218957	10dB_ATT(dB)	DC Corr (dB)	Corrected Reading (dBu/m)	Average Limit (dBu/m)	Margin (dB)	Peak Limit (dBu/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.89501	79.97	Pk	35.4	-19.5	0	95.87	-	-	109.99	-14.12	227	108	H
2	5.89514	78.9	Pk	35.4	-19.5	0	94.8	-	-	109.9	-15.1	227	108	H
3	5.89501	67.97	RMS	35.4	-19.5	0	83.87	89.99	-6.12	-	-	227	108	H
4	5.89531	58.92	RMS	35.4	-19.5	0	74.82	89.77	-14.95	-	-	227	108	H

Pk - Peak detector  
 RMS - RMS detection