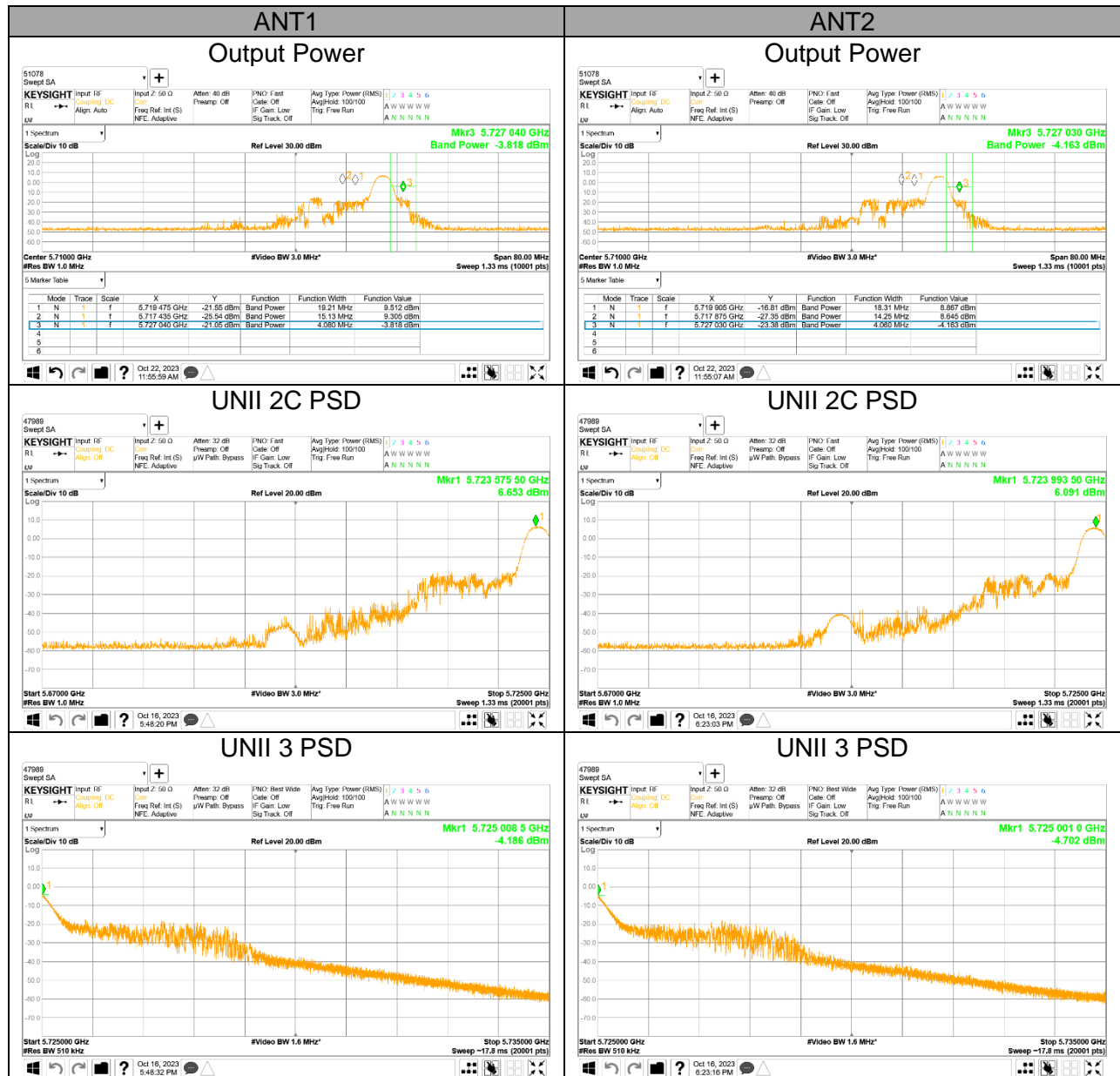
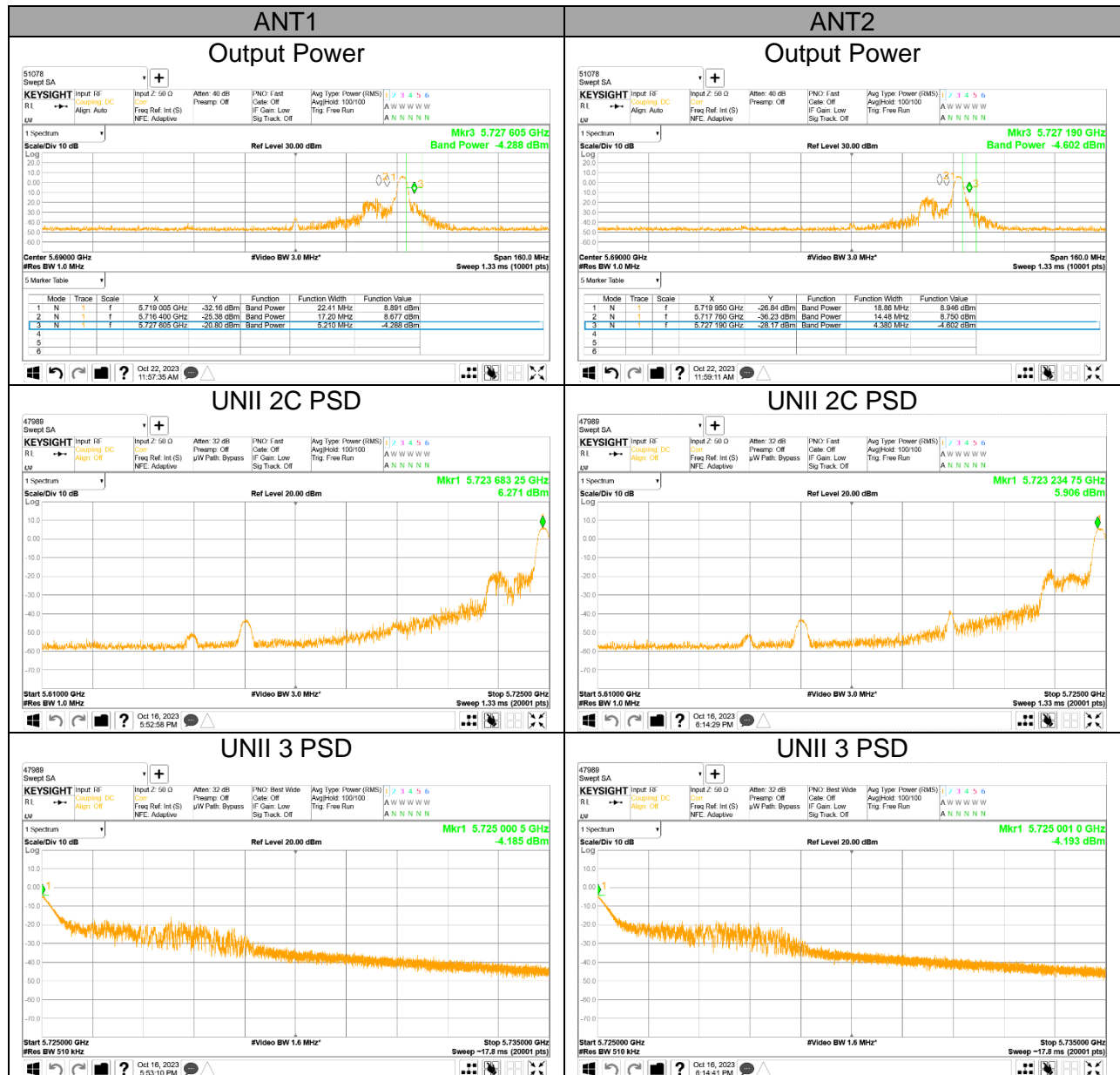


**UNII Straddle Ch. IEEE 802.11ax HE40(15RU) mode Output Power and PSD**



**UNII Straddle Ch. IEEE 802.11ax HE80(34RU) 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:
  - (ii) For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of -5 dBm/MHz and shall decrease linearly to an e.i.r.p. of -27 dBm/MHz at or above 5.925 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. EUT is set 3 meters away from the receiving antenna and scan from 1m to 4m to find out the highest emission.

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.

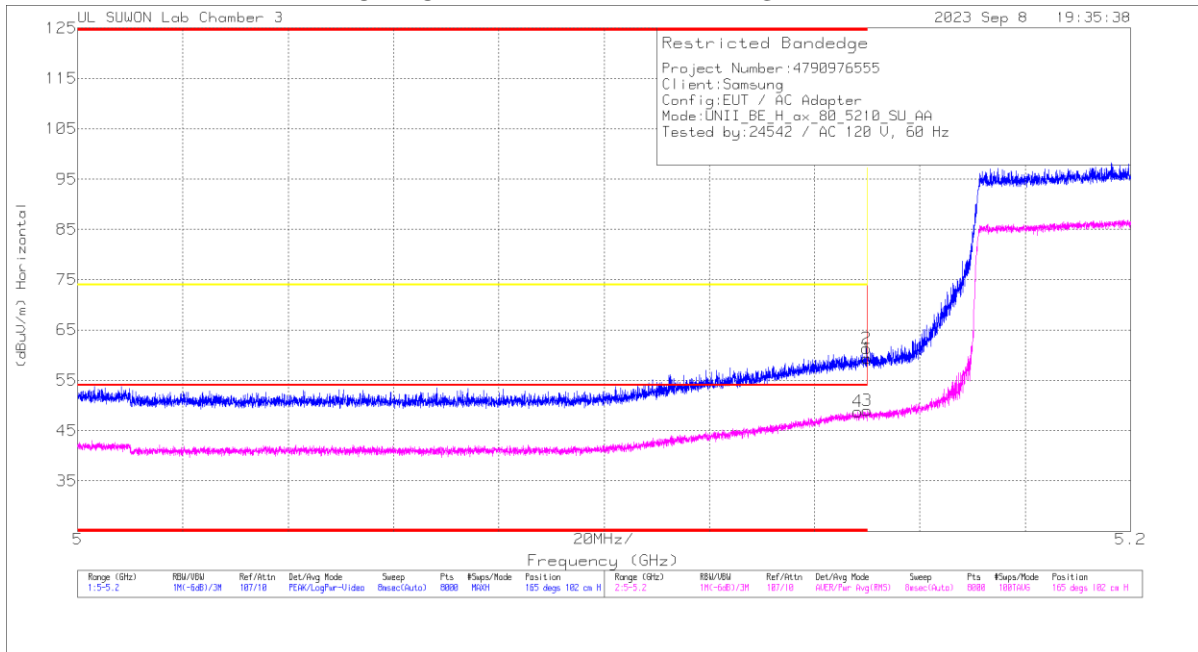
Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open area test site.

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 HE80 / 5210 MHz)**

#### HORIZONTAL PEAK AND AVERAGE DATA



#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor (dB[ref])	Loss(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	* 5.14999	45.6	Pk	34.4	-20.6	0	59.4	-	-	74	-14.6	165	102	H
2	* 5.14987	47.52	Pk	34.4	-20.6	0	61.32	-	-	74	-12.68	165	102	H
3	* 5.14999	35.22	RMS	34.4	-20.6	0	49.02	54	-4.98	-	-	165	102	H
4	* 5.14817	35.22	RMS	34.4	-20.8	0	48.82	54	-5.18	-	-	165	102	H

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

Pk - Peak detector

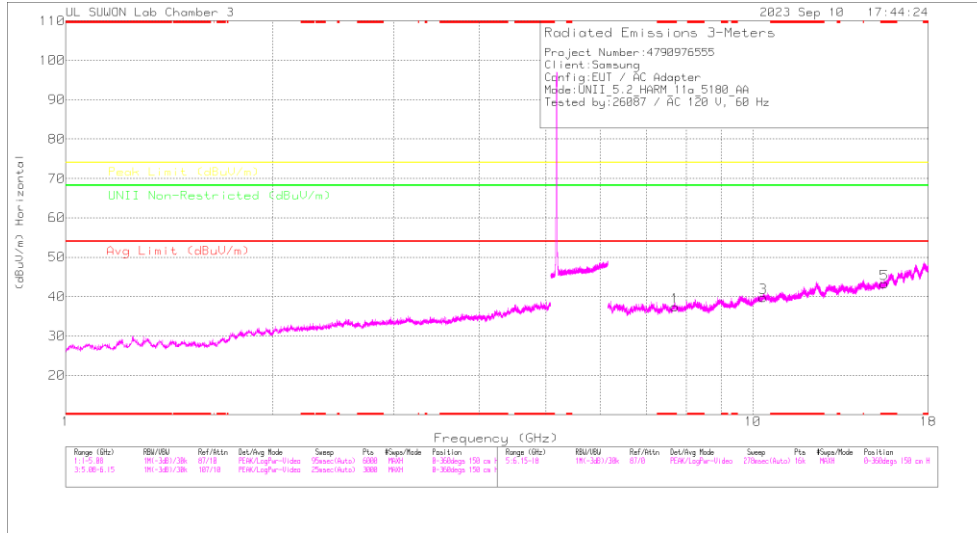
RMS - RMS detection

**BANDEDGE TEST DATA**

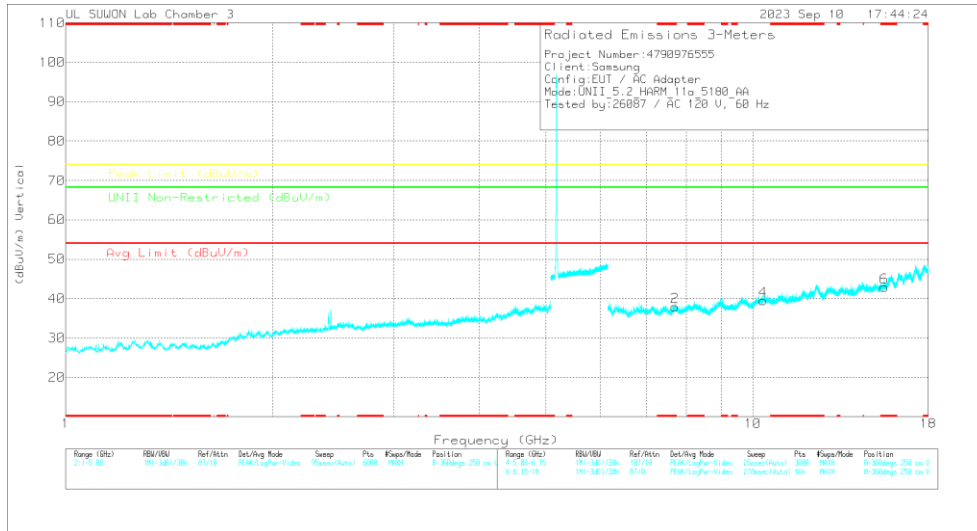
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB(1/m)]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5180	MIMO	* 5.14999	40.81	Pk	34.40	-20.60	0.00	54.61	-	-	74.00	-19.39	173	367	H
			* 5.14989	40.19	Pk	34.40	-20.60	0.00	53.99	-	-	74.00	-20.01	173	367	H
			* 5.14999	28.74	RMS	34.40	-20.60	0.15	42.69	54.00	-11.31	-	-	173	367	H
			* 5.14954	29.44	RMS	34.40	-20.70	0.15	43.29	54.00	-10.71	-	-	173	367	H
			* 5.14999	39.47	Pk	34.40	-20.60	0.00	53.27	-	-	74.00	-20.73	171	368	V
			* 5.14877	40.77	Pk	34.40	-20.70	0.00	54.47	-	-	74.00	-19.53	171	368	V
			* 5.14999	28.34	RMS	34.40	-20.60	0.15	42.29	54.00	-11.71	-	-	171	368	V
			* 5.14969	29.77	RMS	34.40	-20.60	0.15	43.72	54.00	-10.28	-	-	171	368	V
802.11n (HT20)	5180	MIMO	* 5.14999	37.38	Pk	34.40	-20.60	0.00	51.18	-	-	74.00	-22.82	145	121	H
			* 5.13274	40.08	Pk	34.40	-20.80	0.00	53.68	-	-	74.00	-20.32	145	121	H
			* 5.14999	28.63	RMS	34.40	-20.60	0.00	42.43	54.00	-11.57	-	-	145	121	H
			* 5.11659	29.16	RMS	34.30	-20.80	0.00	42.66	54.00	-11.34	-	-	145	121	H
			* 5.14999	38.21	Pk	34.40	-20.60	0.00	52.01	-	-	74.00	-21.99	189	107	V
			* 5.14087	40.50	Pk	34.40	-20.80	0.00	54.10	-	-	74.00	-19.90	189	107	V
			* 5.14999	28.91	RMS	34.40	-20.60	0.00	42.71	54.00	-11.29	-	-	189	107	V
			* 5.14904	29.42	RMS	34.40	-20.70	0.00	43.12	54.00	-10.88	-	-	189	107	V
802.11n (HT40)	5190	MIMO	* 5.14999	37.50	Pk	34.40	-20.60	0.00	51.30	-	-	74.00	-22.70	152	105	H
			* 5.00028	40.59	Pk	34.30	-20.90	0.00	53.99	-	-	74.00	-20.01	152	105	H
			* 5.14999	28.09	RMS	34.40	-20.60	0.00	41.89	54.00	-12.11	-	-	152	105	H
			* 5.00007	29.46	RMS	34.30	-20.80	0.00	42.96	54.00	-11.04	-	-	152	105	H
			* 5.14999	38.77	Pk	34.40	-20.60	0.00	52.57	-	-	74.00	-21.43	166	371	V
			* 5.13014	41.26	Pk	34.40	-20.80	0.00	54.86	-	-	74.00	-19.14	166	371	V
			* 5.14999	29.58	RMS	34.40	-20.60	0.00	43.38	54.00	-10.62	-	-	166	371	V
			* 5.14989	29.89	RMS	34.40	-20.60	0.00	43.69	54.00	-10.31	-	-	166	371	V
802.11ac (VHT80)	5210	MIMO	* 5.14999	39.97	Pk	34.40	-20.60	0.00	53.77	-	-	74.00	-20.23	153	106	H
			* 5.13977	40.99	Pk	34.40	-20.80	0.00	54.59	-	-	74.00	-19.41	153	106	H
			* 5.14999	29.42	RMS	34.40	-20.60	0.25	43.47	54.00	-10.53	-	-	153	106	H
			* 5.14949	29.66	RMS	34.40	-20.70	0.25	43.61	54.00	-10.39	-	-	153	106	H
			* 5.14999	41.48	Pk	34.40	-20.60	0.00	55.28	-	-	74.00	-18.72	180	103	V
			* 5.14647	42.54	Pk	34.40	-20.80	0.00	56.14	-	-	74.00	-17.86	180	103	V
			* 5.14999	30.71	RMS	34.40	-20.60	0.25	44.76	54.00	-9.24	-	-	180	103	V
			* 5.14994	30.98	RMS	34.40	-20.60	0.25	45.03	54.00	-8.97	-	-	180	103	V
802.11ac (VHT160)	5250 Lower	MIMO	* 5.14999	39.69	Pk	34.40	-20.60	0.00	53.49	-	-	74.00	-20.51	146	106	H
			* 5.14662	45.37	Pk	34.40	-20.80	0.00	58.97	-	-	74.00	-15.03	146	106	H
			* 5.14999	29.21	RMS	34.40	-20.60	0.24	43.25	54.00	-10.75	-	-	146	106	H
			* 5.14939	29.74	RMS	34.40	-20.70	0.24	43.68	54.00	-10.32	-	-	146	106	H
			* 5.14999	39.89	Pk	34.40	-20.60	0.00	53.69	-	-	74.00	-20.31	180	104	V
			* 5.14532	47.91	Pk	34.40	-20.80	0.00	61.51	-	-	74.00	-12.49	180	104	V
			* 5.14999	29.76	RMS	34.40	-20.60	0.24	43.80	54.00	-10.20	-	-	180	104	V
			* 5.12381	31.00	RMS	34.30	-20.80	0.24	44.74	54.00	-9.26	-	-	180	104	V
802.11ax (HE20) SU mode	5180	MIMO	* 5.14999	39.36	Pk	34.40	-20.60	0.00	53.16	-	-	74.00	-20.84	151	105	H
			* 5.14749	42.41	Pk	34.40	-20.80	0.00	56.01	-	-	74.00	-17.99	151	105	H
			* 5.14999	29.16	RMS	34.40	-20.60	0.00	42.96	54.00	-11.04	-	-	151	105	H
			* 5.14789	29.74	RMS	34.40	-20.80	0.00	43.34	54.00	-10.66	-	-	151	105	H
			* 5.14999	40.03	Pk	34.40	-20.60	0.00	53.83	-	-	74.00	-20.17	179	105	V
			* 5.14704	42.17	Pk	34.40	-20.80	0.00	55.77	-	-	74.00	-18.23	179	105	V
			* 5.14999	28.84	RMS	34.40	-20.60	0.00	42.64	54.00	-11.36	-	-	179	105	V
			* 5.14967	30.33	RMS	34.40	-20.60	0.00	44.13	54.00	-9.87	-	-	179	105	V
802.11ax (HE40) SU mode	5190	MIMO	* 5.14999	40.15	Pk	34.40	-20.60	0.00	53.95	-	-	74.00	-20.05	149	109	H
			* 5.14697	42.78	Pk	34.40	-20.80	0.00	56.38	-	-	74.00	-17.62	149	109	H
			* 5.14999	30.38	RMS	34.40	-20.60	0.00	44.18	54.00	-9.82	-	-	149	109	H
			* 5.14982	31.11	RMS	34.40	-20.60	0.00	44.91	54.00	-9.09	-	-	149	109	H
			* 5.14999	37.71	Pk	34.40	-20.60	0.00	51.51	-	-	74.00	-22.49	183	100	V
			* 5.14787	42.08	Pk	34.40	-20.80	0.00	55.68	-	-	74.00	-18.32	183	100	V
			* 5.14999	29.18	RMS	34.40	-20.60	0.00	42.98	54.00	-11.02	-	-	183	100	V
			* 5.14972	30.01	RMS	34.40	-20.60	0.00	43.81	54.00	-10.19	-	-	183	100	V
802.11ax (HE80) SU mode	5210	MIMO	* 5.14999	45.60	Pk	34.40	-20.60	0.00	59.40	-	-	74.00	-14.60	165	102	H
			* 5.14987	47.52	Pk	34.40	-20.60	0.00	61.32	-	-	74.00	-12.68	165	102	H
			* 5.14999	35.22	RMS	34.40	-20.60	0.00	49.02	54.00	-4.98	-	-	165	102	H
			* 5.14817	35.22	RMS	34.40	-20.80	0.00	48.82	54.00	-5.18	-	-	165	102	H
			* 5.14999	44.04	Pk	34.40	-20.60	0.00	57.84	-	-	74.00	-16.16	188	103	V
			* 5.14809	45.37	Pk	34.40	-20.80	0.00	58.97	-	-	74.00	-15.03	188	103	V
			* 5.14999	33.24	RMS	34.40	-20.60	0.00	47.04	54.00	-6.96	-	-	188	103	V
			* 5.14939	34.46	RMS	34.40	-20.70	0.00	48.16	54.00	-5.84	-	-	188	103	V
802.11ax (HE160) SU mode	5250 Lower	MIMO	* 5.14999	40.26	Pk	34.40	-20.60	0.00	54.06	-	-	74.00	-19.94	153	101	H
			* 5.14784	43.37	Pk	34.40	-20.80	0.00	56.97	-	-	74.00	-17.03	153	101	H
			* 5.14999	29.06	RMS	34.40	-20.60	0.00	42.86	54.00	-11.14	-	-	153	101	H
			* 5.13969	30.51	RMS	34.40	-20.80	0.00	44.11	54.00	-9.89	-	-	153	101	H
			* 5.14999	38.52	Pk	34.40	-20.60	0.00	52.32	-	-	74.00	-21.68	182	107	V
			* 5.12957	44.87	Pk	34.40	-20.80	0.00	58.47	-	-	74.00	-15.53	182	107	V
			* 5.14999	30.92	RMS	34.40	-20.60	0.00	44.72	54.00	-9.28	-	-	182	107	V
			* 5.14982	31.06	RMS	34.40	-20.60	0.00	44.86	54.00	-9.14	-	-	182	107	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: 802.11a / 5180 MHz)**  
**5180 MHz HORIZONTAL**



**5180 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.

**5180 MHz DATA**

**Radiated Emissions**

Frequency (GHz)	Meas Reading (dBuV)	Det	Antenna Correction Factor (dB/m)	Loss(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 (Deg)	Height (cm)	Polarity
* 7.70044	36.54	PK-U	36.9	-24.7	0	47.74	-	-	74	-26.26	-	-	0	100	H
* 7.70036	36.63	PK-U	36.9	-24.7	0	47.83	-	-	74	-26.17	-	-	0	100	V
10.36056	34.13	PK-U	37.5	-21	0	50.83	-	-	-	-	68.2	-17.57	0	100	H
10.36084	35.06	PK-U	37.5	-21	0	51.56	-	-	-	-	68.2	-16.64	0	100	V
* 15.54114	35.15	PK-U	40.1	-21	0	54.25	-	-	74	-19.75	-	-	0	100	H
* 15.54118	35.14	PK-U	40.1	-21	0	54.24	-	-	74	-19.76	-	-	0	100	V
* 15.54114	23.02	ADR	40.1	-21	0.15	42.87	54	-11.73	-	-	-	0	100	H	
* 15.54118	23.06	ADR	40.1	-21	0.15	42.91	54	-11.69	-	-	-	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 [dB(1/m)]	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	* 7.70044	36.54	PK-U	35.90	-24.70	0.00	47.74	-	-	74.00	-26.26	-	-	0	100	H
			** 7.70036	36.63	PK-U	35.90	-24.70	0.00	47.83	-	-	74.00	-26.17	-	-	0	100	V
			10.361	34.13	PK-U	37.50	-21.00	0.00	50.63	-	-	-	-	68.20	-17.57	0	100	H
			10.361	35.06	PK-U	37.50	-21.00	0.00	51.56	-	-	-	-	68.20	-16.64	0	100	V
			* 15.54114	35.15	PK-U	40.10	-21.00	0.00	54.25	-	-	74.00	-19.75	-	-	0	100	H
			* 15.54118	35.14	PK-U	40.10	-21.00	0.00	54.24	-	-	74.00	-19.76	-	-	0	100	V
			* 15.54114	23.02	ADR	40.10	-21.00	0.15	42.27	54.00	-11.73	-	-	-	-	0	100	H
			* 15.54118	23.06	ADR	40.10	-21.00	0.15	42.31	54.00	-11.69	-	-	-	-	0	100	V
	5200	MIMO	7.800	36.24	PK-U	35.90	-24.60	0.00	47.54	-	-	-	-	68.20	-20.66	0	100	H
			7.806	36.27	PK-U	35.90	-24.60	0.00	47.57	-	-	-	-	68.20	-20.63	0	100	V
			10.404	33.91	PK-U	37.50	-20.90	0.00	50.51	-	-	-	-	68.20	-17.69	0	100	H
			10.399	33.97	PK-U	37.50	-20.80	0.00	50.67	-	-	-	-	68.20	-17.53	0	100	V
			* 15.60115	34.84	PK-U	40.20	-20.80	0.00	54.24	-	-	74.00	-19.76	-	-	0	100	H
			* 15.6043	34.41	PK-U	40.20	-20.80	0.00	53.81	-	-	74.00	-20.19	-	-	0	100	V
			* 15.60115	22.14	ADR	40.20	-20.80	0.15	41.69	54.00	-12.31	-	-	-	-	0	100	H
			* 15.6043	22.18	ADR	40.20	-20.80	0.15	41.73	54.00	-12.27	-	-	-	-	0	100	V
	5240	MIMO	7.864	35.56	PK-U	35.90	-24.50	0.00	46.96	-	-	-	-	68.20	-21.24	0	100	H
			7.856	35.86	PK-U	35.90	-24.50	0.00	47.26	-	-	-	-	68.20	-20.94	0	100	V
			10.477	34.30	PK-U	37.60	-21.10	0.00	50.80	-	-	-	-	68.20	-17.40	0	100	H
			10.482	33.91	PK-U	37.60	-21.20	0.00	50.31	-	-	-	-	68.20	-17.89	0	100	V
			* 15.71719	34.27	PK-U	40.40	-20.60	0.00	54.07	-	-	74.00	-19.93	-	-	0	100	H
			* 15.72155	34.73	PK-U	40.40	-20.60	0.00	54.53	-	-	74.00	-19.47	-	-	0	100	V
			* 15.71719	22.32	ADR	40.40	-20.60	0.15	42.27	54.00	-11.73	-	-	-	-	0	100	H
			* 15.72155	22.30	ADR	40.40	-20.60	0.15	42.25	54.00	-11.75	-	-	-	-	0	100	V
802.11ax (HE20) RU mode 26 Tone offset 0	5180	MIMO	7.773	36.74	PK-U	35.90	-24.70	0.00	47.94	-	-	-	-	68.20	-20.26	0	100	H
			7.770	36.60	PK-U	35.90	-24.60	0.00	47.90	-	-	-	-	68.20	-20.30	0	100	V
			10.359	34.34	PK-U	37.50	-21.00	0.00	50.84	-	-	-	-	68.20	-17.56	0	100	H
			10.357	34.42	PK-U	37.50	-21.10	0.00	50.82	-	-	-	-	68.20	-17.58	0	100	V
			* 15.54197	34.95	PK-U	40.10	-21.00	0.00	54.05	-	-	74.00	-19.95	-	-	0	100	H
			* 15.54065	34.49	PK-U	40.10	-21.00	0.00	53.59	-	-	74.00	-20.41	-	-	0	100	V
			* 15.54197	22.67	ADR	40.10	-21.00	0.00	41.77	54.00	-12.23	-	-	-	-	0	100	H
			* 15.54065	22.42	ADR	40.10	-21.00	0.00	41.52	54.00	-12.48	-	-	-	-	0	100	V

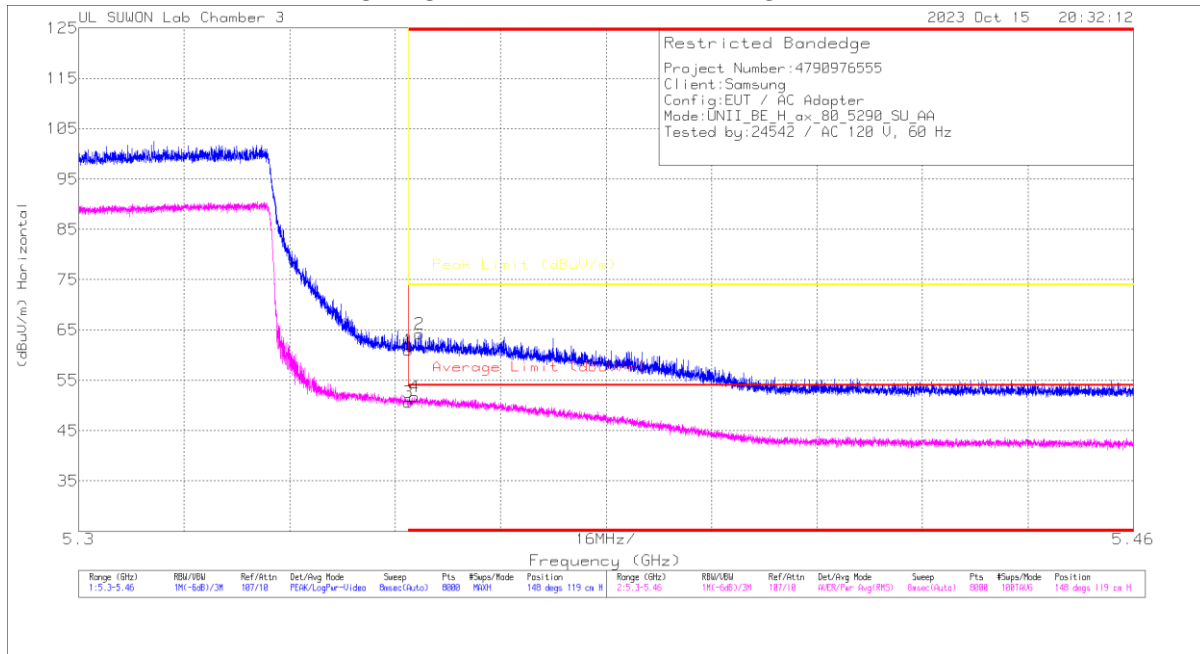
Note1. PK-U - U-NII: Maximum Peak

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 HE80 / 5290 MHz)

#### HORIZONTAL PEAK AND AVERAGE DATA



#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Average Correction Factor (dB(1/m))	Loss (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	46.71	Pk	34.7	-20.4	0	61.01	-	-	74	-12.99	148	119	H
2	* 5.35173	49.84	Pk	34.7	-20.3	0	64.24	-	-	74	-9.76	148	119	H
3	* 5.35001	36.36	RMS	34.7	-20.4	0	50.66	54	-3.34	-	-	148	119	H
4	* 5.35093	37.4	RMS	34.7	-20.4	0	51.7	54	-2.3	-	-	148	119	H

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

Pk - Peak detector

RMS - RMS detection

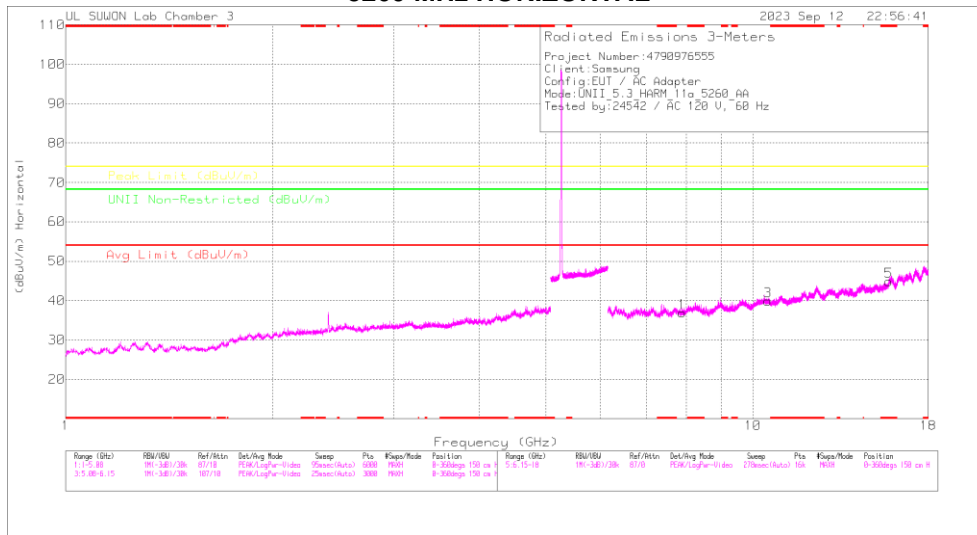
**BANDEDGE TEST DATA**

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB(1/m)]	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	38.34	Pk	34.70	-20.40	0.00	52.64	-	-	74.00	-21.36	154	146	H
			* 5.35035	42.08	Pk	34.70	-20.40	0.00	56.38	-	-	74.00	-17.62	154	146	H
			* 5.35001	29.25	RMS	34.70	-20.40	0.15	43.70	54.00	-10.30	-	-	154	146	H
			* 5.37287	29.86	RMS	34.70	-20.30	0.15	44.41	54.00	-9.59	-	-	154	146	H
			* 5.35001	38.42	Pk	34.70	-20.40	0.00	52.72	-	-	74.00	-21.28	157	106	V
			* 5.41824	40.81	Pk	34.80	-20.20	0.00	55.41	-	-	74.00	-18.59	157	106	V
			* 5.35001	28.49	RMS	34.70	-20.40	0.15	42.94	54.00	-11.06	-	-	157	106	V
			* 5.37447	29.52	RMS	34.70	-20.20	0.15	44.17	54.00	-9.83	-	-	157	106	V
802.11n (HT20)	5320	MIMO	* 5.35001	40.35	Pk	34.70	-20.40	0.00	54.65	-	-	74.00	-19.35	145	115	H
			* 5.35075	41.08	Pk	34.70	-20.40	0.00	55.38	-	-	74.00	-18.62	145	115	H
			* 5.35001	29.28	RMS	34.70	-20.40	0.00	43.58	54.00	-10.42	-	-	145	115	H
			* 5.35073	30.34	RMS	34.70	-20.40	0.00	44.64	54.00	-9.36	-	-	145	115	H
			* 5.35001	39.72	Pk	34.70	-20.40	0.00	54.02	-	-	74.00	-19.98	191	122	V
			* 5.35327	40.42	Pk	34.70	-20.30	0.00	54.82	-	-	74.00	-19.18	191	122	V
			* 5.35001	29.42	RMS	34.70	-20.40	0.00	43.72	54.00	-10.28	-	-	191	122	V
			* 5.35409	29.74	RMS	34.70	-20.30	0.00	44.14	54.00	-9.86	-	-	191	122	V
802.11n (HT40)	5310	MIMO	* 5.35001	39.71	Pk	34.70	-20.40	0.00	54.01	-	-	74.00	-19.99	155	107	H
			* 5.35155	42.15	Pk	34.70	-20.30	0.00	56.55	-	-	74.00	-17.45	155	107	H
			* 5.35001	30.28	RMS	34.70	-20.40	0.00	44.58	54.00	-9.42	-	-	155	107	H
			* 5.35003	30.66	RMS	34.70	-20.40	0.00	44.96	54.00	-9.04	-	-	155	107	H
			* 5.35001	38.39	Pk	34.70	-20.40	0.00	52.69	-	-	74.00	-21.31	171	385	V
			* 5.35103	40.62	Pk	34.70	-20.30	0.00	55.02	-	-	74.00	-18.98	171	385	V
			* 5.35001	29.16	RMS	34.70	-20.40	0.00	43.46	54.00	-10.54	-	-	171	385	V
			* 5.35015	29.93	RMS	34.70	-20.40	0.00	44.23	54.00	-9.77	-	-	171	385	V
802.11ac (VHT80)	5290	MIMO	* 5.35001	40.95	Pk	34.70	-20.40	0.00	55.25	-	-	74.00	-18.75	156	117	H
			* 5.36345	42.94	Pk	34.70	-20.20	0.00	57.44	-	-	74.00	-16.56	156	117	H
			* 5.35001	31.13	RMS	34.70	-20.40	0.25	45.68	54.00	-8.32	-	-	156	117	H
			* 5.35115	31.21	RMS	34.70	-20.30	0.25	45.86	54.00	-8.14	-	-	156	117	H
			* 5.35001	40.78	Pk	34.70	-20.40	0.00	55.08	-	-	74.00	-18.92	175	109	V
			* 5.35047	42.28	Pk	34.70	-20.40	0.00	56.58	-	-	74.00	-17.42	175	109	V
			* 5.35001	30.36	RMS	34.70	-20.40	0.25	44.91	54.00	-9.09	-	-	175	109	V
			* 5.35125	30.93	RMS	34.70	-20.30	0.25	45.58	54.00	-8.42	-	-	175	109	V
802.11ac (VHT160)	5250 Upper	MIMO	* 5.35001	38.56	Pk	34.70	-20.40	0.00	52.86	-	-	74.00	-21.14	156	181	H
			* 5.35103	48.51	Pk	34.70	-20.30	0.00	62.91	-	-	74.00	-11.09	156	181	H
			* 5.35001	28.22	RMS	34.70	-20.40	0.24	42.76	54.00	-11.24	-	-	156	181	H
			* 5.40732	30.22	RMS	34.80	-20.30	0.24	44.96	54.00	-9.04	-	-	156	181	H
			* 5.35001	41.87	Pk	34.70	-20.40	0.00	56.17	-	-	74.00	-17.83	180	100	V
			* 5.35513	48.03	Pk	34.70	-20.30	0.00	62.43	-	-	74.00	-11.57	180	100	V
			* 5.35001	30.13	RMS	34.70	-20.40	0.24	44.67	54.00	-9.33	-	-	180	100	V
			* 5.36205	31.09	RMS	34.70	-20.30	0.24	45.73	54.00	-8.27	-	-	180	100	V
802.11ax (HE20) SU mode	5320	MIMO	* 5.35001	46.61	Pk	34.70	-20.40	0.00	60.91	-	-	74.00	-13.09	148	115	H
			* 5.35081	47.58	Pk	34.70	-20.40	0.00	61.88	-	-	74.00	-12.12	148	115	H
			* 5.35001	33.49	RMS	34.70	-20.40	0.00	47.79	54.00	-6.21	-	-	148	115	H
			* 5.35035	33.68	RMS	34.70	-20.40	0.00	47.98	54.00	-6.02	-	-	148	115	H
			* 5.35001	42.47	Pk	34.70	-20.40	0.00	56.77	-	-	74.00	-17.23	177	105	V
			* 5.35423	44.59	Pk	34.70	-20.30	0.00	58.99	-	-	74.00	-15.01	177	105	V
			* 5.35001	31.71	RMS	34.70	-20.40	0.00	46.01	54.00	-7.99	-	-	177	105	V
			* 5.35007	31.94	RMS	34.70	-20.40	0.00	46.24	54.00	-7.76	-	-	177	105	V
802.11ax (HE40) SU mode	5310	MIMO	* 5.35001	42.69	Pk	34.70	-20.40	0.00	56.99	-	-	74.00	-17.01	151	105	H
			* 5.35187	44.69	Pk	34.70	-20.30	0.00	59.09	-	-	74.00	-14.91	151	105	H
			* 5.35001	32.64	RMS	34.70	-20.40	0.00	46.94	54.00	-7.06	-	-	151	105	H
			* 5.35071	33.34	RMS	34.70	-20.40	0.00	47.64	54.00	-6.36	-	-	151	105	H
			* 5.35001	42.50	Pk	34.70	-20.40	0.00	56.80	-	-	74.00	-17.20	177	391	V
			* 5.35091	43.48	Pk	34.70	-20.40	0.00	57.78	-	-	74.00	-16.22	177	391	V
			* 5.35001	30.03	RMS	34.70	-20.40	0.00	44.33	54.00	-9.67	-	-	177	391	V
			* 5.35051	31.01	RMS	34.70	-20.40	0.00	45.31	54.00	-8.69	-	-	177	391	V
802.11ax (HE80) SU mode	5290	MIMO	* 5.35001	46.71	Pk	34.70	-20.40	0.00	61.01	-	-	74.00	-12.99	148	119	H
			* 5.35173	49.84	Pk	34.70	-20.30	0.00	64.24	-	-	74.00	-9.76	148	119	H
			* 5.35001	36.36	RMS	34.70	-20.40	0.00	50.66	54.00	-3.34	-	-	148	119	H
			* 5.35093	37.40	RMS	34.70	-20.40	0.00	51.70	54.00	-2.30	-	-	148	119	H
			* 5.35001	42.34	Pk	34.70	-20.40	0.00	56.64	-	-	74.00	-17.36	194	112	V
			* 5.35365	44.19	Pk	34.70	-20.30	0.00	58.59	-	-	74.00	-15.41	194	112	V
			* 5.35001	32.33	RMS	34.70	-20.40	0.00	46.63	54.00	-7.37	-	-	194	112	V
			* 5.35349	32.93	RMS	34.70	-20.30	0.00	47.33	54.00	-6.67	-	-	194	112	V
802.11ax (HE160) SU mode	5250 Upper	MIMO	* 5.35001	39.14	Pk	34.70	-20.40	0.00	53.44	-	-	74.00	-20.56	151	107	H
			* 5.35451	47.09	Pk	34.70	-20.30	0.00	61.49	-	-	74.00	-12.51	151	107	H
			* 5.35001	29.03	RMS	34.70	-20.40	0.00	43.33	54.00	-10.67	-	-	151	107	H
			* 5.36547	30.53	RMS	34.70	-20.30	0.00	44.93	54.00	-9.07	-	-	151	107	H
			* 5.35001	39.07	Pk	34.70	-20.40	0.00	53.37	-	-	74.00	-20.63	192	115	V
			* 5.35133	47.32	Pk	34.70	-20.30	0.00	61.72	-	-	74.00	-12.28	192	115	V
			* 5.35001	29.14	RMS	34.70	-20.40	0.00	43.44	54.00	-10.56	-	-	192	115	V
			* 5.38273	30.00	RMS	34.80	-20.20	0.00	44.60	54.00	-9.40	-	-	192	115	V

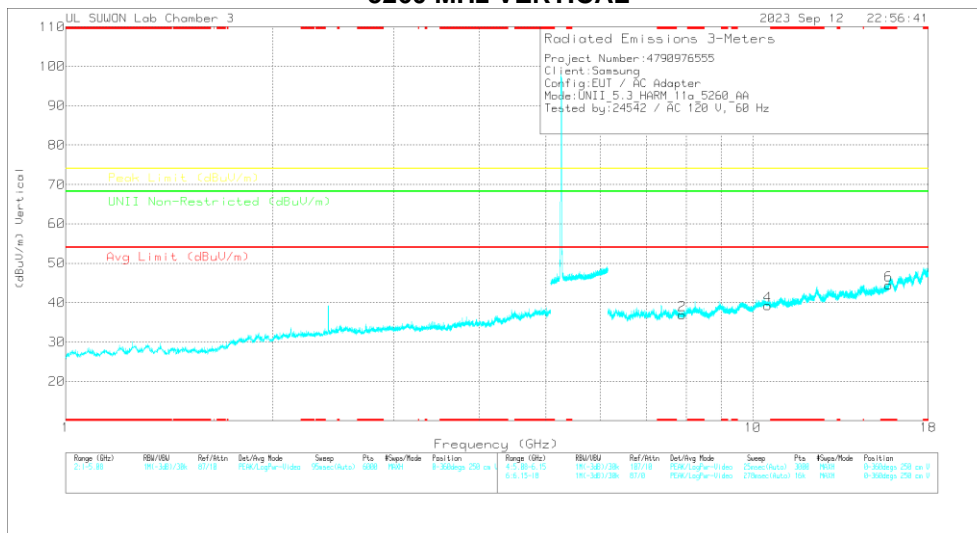
Note1. Pk - Peak detector, RMS - RMS detector  
 Note2. \* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

**HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5260 MHz)**

**5260 MHz HORIZONTAL**



**5260 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.

**5260 MHz DATA**

**Radiated Emissions**

Frequency (GHz)	Mean Reading (dBuV)	Det	Antenna Correction Factor (dB/m)	Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margn (dB)	Peak Limit (dBuV/m)	Margn (dB)	UNII Non-Restricted (dBuV/m)	Margn (dB)	Azimuth (Deg)	Height (m)	Polarity
7.88859	35.94	PK-U	35.9	-24.5	0	47.34	-	-	-	-	68.2	-20.86	0	100	H
7.89095	35.99	PK-U	35.9	-24.4	0	47.49	-	-	-	-	68.2	-20.71	0	100	V
10.52103	32.98	PK-U	37.6	-21.1	0	49.48	-	-	-	-	68.2	-18.72	0	100	H
10.51349	34.51	PK-U	37.6	-21.1	0	51.01	-	-	-	-	68.2	-17.19	0	100	V
* 15.78495	35.18	PK-U	40.6	-20.5	0	55.28	-	-	74	-18.72	-	-	0	100	H
* 15.78364	35.05	PK-U	40.6	-20.5	0	55.15	-	-	74	-18.86	-	-	0	100	V
* 15.78495	23.89	ADR	40.6	-20.5	0.15	44.14	54	-9.86	-	-	-	-	0	100	H
* 15.78364	23.82	ADR	40.6	-20.5	0.15	44.07	54	-9.93	-	-	-	-	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**

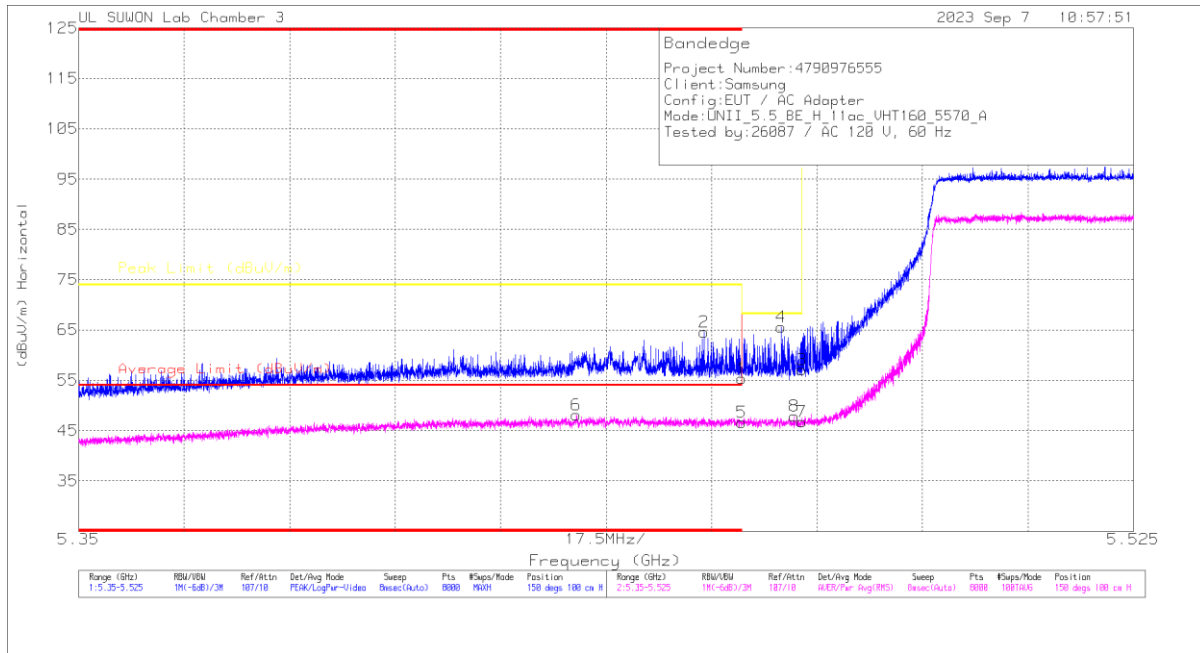
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB(1/m)]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity		
802.11a	5260	MIMO	7.889	35.94	PK-U	35.90	-24.50	0.00	47.34	-	-	-	-	68.20	-20.86	0	100	H		
			7.891	35.99	PK-U	35.90	-24.40	0.00	47.49	-	-	-	-	-	68.20	-20.71	0	100	V	
			10.521	32.98	PK-U	37.60	-21.10	0.00	49.48	-	-	-	-	-	68.20	-18.72	0	100	H	
			10.518	34.51	PK-U	37.60	-21.10	0.00	51.01	-	-	-	-	-	68.20	-17.19	0	100	V	
			*15.78495	35.18	PK-U	40.60	-20.50	0.00	55.28	-	-	74.00	-18.72	-	-	-	0	100	H	
			*15.78364	35.05	PK-U	40.60	-20.50	0.00	55.15	-	-	74.00	-18.85	-	-	-	0	100	V	
			*15.78495	23.89	ADR	40.60	-20.50	0.15	44.14	-	-	54.00	-9.86	-	-	-	0	100	H	
			*15.78364	23.82	ADR	40.60	-20.50	0.15	44.07	-	-	54.00	-9.93	-	-	-	0	100	V	
	5300	MIMO	7.953	36.33	PK-U	35.90	-24.40	0.00	47.83	-	-	-	-	68.20	-20.37	0	100	H		
			7.955	36.11	PK-U	35.90	-24.40	0.00	47.61	-	-	-	-	68.20	-20.59	0	100	V		
			10.600	33.35	PK-U	37.70	-21.20	0.00	49.85	-	-	-	-	68.20	-18.35	0	100	H		
			10.600	32.94	PK-U	37.70	-21.20	0.00	49.44	-	-	-	-	68.20	-18.76	0	100	V		
			*15.9044	34.77	PK-U	40.80	-19.90	0.00	55.67	-	-	74.00	-18.33	-	-	-	0	100	H	
			*15.90493	34.68	PK-U	40.80	-19.90	0.00	55.58	-	-	74.00	-18.42	-	-	-	0	100	V	
			*15.9044	23.04	ADR	40.80	-19.90	0.15	44.09	-	-	54.00	-9.91	-	-	-	0	100	H	
			*15.90493	23.00	ADR	40.80	-19.90	0.15	44.05	-	-	54.00	-9.95	-	-	-	0	100	V	
			7.980	36.48	PK-U	35.90	-24.40	0.00	47.98	-	-	-	-	-	68.20	-20.22	0	100	H	
			7.986	36.04	PK-U	35.90	-24.40	0.00	47.54	-	-	-	-	-	68.20	-20.66	0	100	V	
			*10.64117	33.03	PK-U	37.70	-21.10	0.00	49.63	-	-	74.00	-24.37	-	-	-	0	100	H	
			*10.64078	33.74	PK-U	37.70	-21.10	0.00	50.34	-	-	74.00	-23.66	-	-	-	0	100	V	
	*15.95278	34.40	PK-U	40.90	-19.70	0.00	55.60	-	-	74.00	-18.40	-	-	-	0	100	H			
	*15.9593	34.72	PK-U	40.90	-19.80	0.00	55.82	-	-	74.00	-18.18	-	-	-	0	100	V			
	*15.95278	22.01	ADR	40.90	-19.70	0.15	43.36	-	-	54.00	-10.64	-	-	-	0	100	H			
	*15.9593	22.05	ADR	40.90	-19.80	0.15	43.30	-	-	54.00	-10.70	-	-	-	0	100	V			
	802.11ax (HE20) RU mode 26 Tone offset 0 Spot-Check	5320	MIMO	6.384	41.73	PK-U	35.90	-27.30	0.00	50.33	-	-	-	-	68.20	-17.87	153	105	H	
				6.381	39.65	PK-U	35.90	-27.30	0.00	48.25	-	-	-	-	68.20	-19.95	174	100	V	
				*10.64188	33.50	PK-U	37.70	-21.10	0.00	50.10	-	-	74.00	-23.90	-	-	-	0	100	H
				*10.64476	32.93	PK-U	37.70	-21.10	0.00	49.53	-	-	74.00	-24.47	-	-	-	0	100	V
*15.9625				34.18	PK-U	40.90	-19.80	0.00	55.28	-	-	74.00	-18.72	-	-	-	0	100	H	
*15.96383				34.81	PK-U	40.90	-19.80	0.00	55.91	-	-	74.00	-18.09	-	-	-	0	100	V	
*15.9625				22.14	ADR	40.90	-19.80	0.00	43.24	-	-	54.00	-10.76	-	-	-	0	100	H	
*15.96383				22.18	ADR	40.90	-19.80	0.00	43.28	-	-	54.00	-10.72	-	-	-	0	100	V	
802.11ax RU mode 26 Tone offset 0 Spot-Check	5310	MIMO	7.961	36.18	PK-U	35.90	-24.40	0.00	47.68	-	-	-	-	68.20	-20.52	0	100	H		
			7.970	36.95	PK-U	35.90	-24.40	0.00	48.45	-	-	-	-	68.20	-19.75	0	100	V		
			*10.62058	33.60	PK-U	37.70	-21.10	0.00	50.20	-	-	74.00	-23.80	-	-	-	0	100	H	
			*10.62455	33.16	PK-U	37.70	-21.10	0.00	49.76	-	-	74.00	-24.24	-	-	-	0	100	V	
			*15.9316	34.10	PK-U	40.90	-19.90	0.00	55.10	-	-	74.00	-18.90	-	-	-	0	100	H	
			*15.92969	34.23	PK-U	40.90	-19.90	0.00	55.23	-	-	74.00	-18.77	-	-	-	0	100	V	
			*15.9316	22.19	ADR	40.90	-19.90	0.00	43.19	-	-	54.00	-10.81	-	-	-	0	100	H	
			*15.92969	22.17	ADR	40.90	-19.90	0.00	43.17	-	-	54.00	-10.83	-	-	-	0	100	V	
802.11ax (HE80) RU mode 26 Tone offset 36	5290	MIMO	6.348	41.45	PK-U	36.00	-27.30	0.00	50.15	-	-	-	-	68.20	-18.05	159	108	H		
			6.348	41.66	PK-U	36.00	-27.30	0.00	50.36	-	-	-	-	68.20	-17.84	179	110	V		
			10.580	32.82	PK-U	37.70	-21.10	0.00	49.42	-	-	-	-	68.20	-18.78	0	100	H		
			10.585	33.04	PK-U	37.70	-21.10	0.00	49.64	-	-	-	-	68.20	-18.56	0	100	V		
			*15.87124	34.12	PK-U	40.70	-20.20	0.00	54.62	-	-	74.00	-19.38	-	-	-	0	100	H	
			*15.87551	34.30	PK-U	40.80	-20.10	0.00	55.00	-	-	74.00	-19.00	-	-	-	0	100	V	
			*15.87124	22.05	ADR	40.70	-20.20	0.00	42.55	-	-	54.00	-11.45	-	-	-	0	100	H	
			*15.87551	22.06	ADR	40.80	-20.10	0.00	42.76	-	-	54.00	-11.24	-	-	-	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: 802.11ac VHT160 / 5570 MHz Lower)**

#### HORIZONTAL PEAK AND AVERAGE DATA



#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor (dB(1m))	Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (m)	Polarity
1	* 5.45998	40.62	PK	34.9	-20.1	0	55.42	-	-	74	-18.58	150	100	H
2	* 5.45377	49.76	PK	34.9	-20.1	0	64.56	-	-	74	-9.44	150	100	H
3	5.46998	42.45	PK	34.9	-20.2	0	57.15	-	-	68.2	-11.05	150	100	H
4	5.46654	50.91	PK	34.9	-20.2	0	65.61	-	-	68.2	-2.59	150	100	H
5	* 5.45998	31.62	RMS	34.9	-20.1	24	46.66	54	-7.34	-	-	150	100	H
6	* 5.43259	33.15	RMS	34.9	-20.2	24	48.09	54	-5.91	-	-	150	100	H
7	5.46998	31.79	RMS	34.9	-20.2	24	46.73	-	-	-	-	150	100	H
8	5.48875	32.96	RMS	34.9	-20.2	24	47.9	-	-	-	-	150	100	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 [dB(1/m)]	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	5500	MIMO	* 5.45998	38.19	Pk	34.90	-20.10	0.00	52.99	-	-	74.00	-21.01	148	100	H		
			* 5.44882	41.12	Pk	34.90	-20.20	0.00	55.82	-	-	74.00	-18.18	148	100	H		
			5.46998	39.75	Pk	34.90	-20.20	0.00	54.45	-	-	68.20	-13.75	148	100	H		
			5.46748	41.49	Pk	34.90	-20.20	0.00	56.19	-	-	68.20	-12.01	148	100	H		
			* 5.45998	29.20	RMS	34.90	-20.10	0.15	44.15	54.00	-9.85	-	-	-	-	148	100	H
			* 5.45849	29.91	RMS	34.90	-20.10	0.15	44.86	54.00	-9.14	-	-	-	-	148	100	H
			5.46998	29.46	RMS	34.90	-20.20	0.15	44.31	-	-	-	-	-	-	148	100	H
			5.46678	30.36	RMS	34.90	-20.20	0.15	45.21	-	-	-	-	-	-	148	100	H
			* 5.45998	37.43	Pk	34.90	-20.10	0.00	52.23	-	-	74.00	-21.77	208	100	V		
			* 5.44055	40.70	Pk	34.90	-20.10	0.00	55.50	-	-	74.00	-18.50	208	100	V		
	5.46998	38.16	Pk	34.90	-20.20	0.00	52.86	-	-	68.20	-15.34	208	100	V				
	5.46994	40.21	Pk	34.90	-20.20	0.00	54.91	-	-	68.20	-13.29	208	100	V				
	* 5.45998	27.40	RMS	34.90	-20.10	0.15	42.35	54.00	-11.65	-	-	-	-	208	100	V		
	* 5.43508	28.94	RMS	34.90	-20.20	0.15	43.79	54.00	-10.21	-	-	-	-	208	100	V		
	5.46998	28.45	RMS	34.90	-20.20	0.15	43.30	-	-	-	-	-	-	208	100	V		
	5.46991	29.11	RMS	34.90	-20.20	0.15	43.96	-	-	-	-	-	-	208	100	V		
	5.72500	40.67	Pk	35.00	-19.80	0.00	55.87	-	-	68.20	-12.33	148	105	H				
	5.72863	41.60	Pk	35.00	-19.80	0.00	56.80	-	-	68.20	-11.40	148	105	H				
	5.72500	38.23	Pk	35.00	-19.80	0.00	53.43	-	-	68.20	-14.77	211	100	V				
	5.72936	40.54	Pk	35.00	-19.80	0.00	55.74	-	-	68.20	-12.46	211	100	V				
802.11n (HT20)	5500	MIMO	* 5.45998	38.73	Pk	34.90	-20.10	0.00	53.53	-	-	74.00	-20.47	148	100	H		
			* 5.44611	41.21	Pk	34.90	-20.10	0.00	56.01	-	-	74.00	-17.99	148	100	H		
			5.46998	40.58	Pk	34.90	-20.20	0.00	55.28	-	-	68.20	-12.92	148	100	H		
			5.46810	43.85	Pk	34.90	-20.20	0.00	58.55	-	-	68.20	-9.65	148	100	H		
			* 5.45998	29.16	RMS	34.90	-20.10	0.00	43.96	54.00	-10.04	-	-	-	-	148	100	H
			* 5.45757	30.05	RMS	34.90	-20.10	0.00	44.85	54.00	-9.15	-	-	-	-	148	100	H
			5.46998	30.23	RMS	34.90	-20.20	0.00	44.93	-	-	-	-	-	-	148	100	H
			5.46904	31.31	RMS	34.90	-20.20	0.00	46.01	-	-	-	-	-	-	148	100	H
			* 5.45998	38.37	Pk	34.90	-20.10	0.00	53.17	-	-	74.00	-20.83	190	380	V		
			* 5.45795	39.95	Pk	34.90	-20.10	0.00	54.75	-	-	74.00	-19.25	190	380	V		
	5.46998	39.46	Pk	34.90	-20.20	0.00	54.16	-	-	68.20	-14.04	190	380	V				
	5.46939	41.72	Pk	34.90	-20.20	0.00	56.42	-	-	68.20	-11.78	190	380	V				
	* 5.45998	28.76	RMS	34.90	-20.10	0.00	43.56	54.00	-10.44	-	-	-	-	190	380	V		
	* 5.45893	29.23	RMS	34.90	-20.10	0.00	44.03	54.00	-9.97	-	-	-	-	190	380	V		
	5.46998	29.31	RMS	34.90	-20.20	0.00	44.01	-	-	-	-	-	-	190	380	V		
	5.46950	30.15	RMS	34.90	-20.20	0.00	44.85	-	-	-	-	-	-	190	380	V		
	5.72500	39.95	Pk	35.00	-19.80	0.00	55.15	-	-	68.20	-13.05	149	101	H				
	5.72521	42.21	Pk	35.00	-19.80	0.00	57.41	-	-	68.20	-10.79	149	101	H				
	5.72500	38.05	Pk	35.00	-19.80	0.00	53.25	-	-	68.20	-14.95	181	112	V				
	5.73288	39.93	Pk	35.00	-19.80	0.00	55.13	-	-	68.20	-13.07	181	112	V				
802.11n (HT40)	5510	MIMO	* 5.45998	40.98	Pk	34.90	-20.10	0.00	55.78	-	-	74.00	-18.22	154	121	H		
			* 5.45165	42.18	Pk	34.90	-20.10	0.00	56.98	-	-	74.00	-17.02	154	121	H		
			5.46998	46.64	Pk	34.90	-20.20	0.00	61.34	-	-	68.20	-6.86	154	121	H		
			5.46980	48.11	Pk	34.90	-20.20	0.00	62.81	-	-	68.20	-5.39	154	121	H		
			* 5.45998	30.23	RMS	34.90	-20.10	0.00	45.03	54.00	-8.97	-	-	-	-	154	121	H
			* 5.45941	30.92	RMS	34.90	-20.10	0.00	45.72	54.00	-8.28	-	-	-	-	154	121	H
			5.46998	33.96	RMS	34.90	-20.20	0.00	48.66	-	-	-	-	-	-	154	121	H
			5.46985	35.21	RMS	34.90	-20.20	0.00	49.91	-	-	-	-	-	-	154	121	H
			* 5.45998	37.56	Pk	34.90	-20.10	0.00	52.36	-	-	74.00	-21.64	218	100	V		
			* 5.44788	40.54	Pk	34.90	-20.10	0.00	55.34	-	-	74.00	-18.66	218	100	V		
	5.46998	42.26	Pk	34.90	-20.20	0.00	56.96	-	-	68.20	-11.24	218	100	V				
	5.46915	44.45	Pk	34.90	-20.20	0.00	59.15	-	-	68.20	-9.05	218	100	V				
	* 5.45998	27.89	RMS	34.90	-20.10	0.00	42.69	54.00	-11.31	-	-	-	-	218	100	V		
	* 5.45381	29.03	RMS	34.90	-20.10	0.00	43.83	54.00	-10.17	-	-	-	-	218	100	V		
	5.46998	32.57	RMS	34.90	-20.20	0.00	47.27	-	-	-	-	-	-	218	100	V		
	5.46945	32.96	RMS	34.90	-20.20	0.00	47.66	-	-	-	-	-	-	218	100	V		
	5.72500	39.86	Pk	35.00	-19.80	0.00	55.06	-	-	68.20	-13.14	150	109	H				
	5.73018	41.54	Pk	35.00	-19.80	0.00	56.74	-	-	68.20	-11.46	150	109	H				
	5.72500	39.62	Pk	35.00	-19.80	0.00	54.82	-	-	68.20	-13.38	214	100	V				
	5.72543	41.85	Pk	35.00	-19.80	0.00	57.05	-	-	68.20	-11.15	214	100	V				
802.11ac (VHT80)	5530	MIMO	* 5.45998	41.70	Pk	34.90	-20.10	0.00	56.50	-	-	74.00	-17.50	159	100	H		
			* 5.44611	43.35	Pk	34.90	-20.10	0.00	58.15	-	-	74.00	-15.85	159	100	H		
			5.46998	42.04	Pk	34.90	-20.20	0.00	56.74	-	-	68.20	-11.46	159	100	H		
			5.46934	43.66	Pk	34.90	-20.20	0.00	58.36	-	-	68.20	-9.84	159	100	H		
			* 5.45998	30.67	RMS	34.90	-20.10	0.25	45.72	54.00	-8.28	-	-	-	-	159	100	H
			* 5.45867	31.48	RMS	34.90	-20.10	0.25	46.53	54.00	-7.47	-	-	-	-	159	100	H
			5.46998	31.51	RMS	34.90	-20.20	0.25	46.46	-	-	-	-	-	-	159	100	H
			5.46991	32.14	RMS	34.90	-20.20	0.25	47.09	-	-	-	-	-	-	159	100	H
			* 5.45998	39.85	Pk	34.90	-20.10	0.00	54.65	-	-	74.00	-19.35	182	379	V		
			* 5.45843	42.06	Pk	34.90	-20.10	0.00	56.86	-	-	74.00	-17.14	182	379	V		
	5.46998	40.31	Pk	34.90	-20.20	0.00	55.01	-	-	68.20	-13.19	182	379	V				
	5.46980	43.12	Pk	34.90	-20.20	0.00	57.82	-	-	68.20	-10.38	182	379	V				
	* 5.45998	29.86	RMS	34.90	-20.10	0.25	44.91	54.00	-9.09	-	-	-	-	182	379	V		
	* 5.45707	30.21	RMS	34.90	-20.10	0.25	45.26	54.00	-8.74	-	-	-	-	182	379	V		
	5.46998	30.86	RMS	34.90	-20.20	0.25	45.81	-	-	-	-	-	-	182	379	V		
	5.46829	31.25	RMS	34.90	-20.20	0.25	46.20	-	-	-	-	-	-	182	379	V		
	5.72500	38.58	Pk	35.00	-19.80	0.00	53.78	-	-	68.20	-14.42	149	103	H				
	5.73671	41.28	Pk	35.00	-19.80	0.00	56.48	-	-	68.20	-11.72	149	103	H				
	5.72500	36.60	Pk	35.00	-19.80	0.00	51.80	-	-	68.20	-16.40	216	100	V				
	5.75677	40.77	Pk	35.00	-19.70	0.00	56.07	-	-	68.20	-12.13	216	100	V				

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB(1/m)]	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	
802.11ac (VHT 160)	5570 Lower	MIMO	* 5.45998	40.62	Pk	34.90	-20.10	0.00	55.42	-	-	74.00	-18.58	150	100	H	
			* 5.45377	49.76	Pk	34.90	-20.10	0.00	64.56	-	-	74.00	-9.44	150	100	H	
			5.46998	42.45	Pk	34.90	-20.20	0.00	57.15	-	-	68.20	-11.05	150	100	H	
			5.46654	50.91	Pk	34.90	-20.20	0.00	65.61	-	-	68.20	-2.59	150	100	H	
			* 5.45998	31.62	RMS	34.90	-20.10	0.24	46.66	54.00	-7.34	-	-	150	100	H	
			* 5.43259	33.15	RMS	34.90	-20.20	0.24	48.09	54.00	-5.91	-	-	150	100	H	
			5.46998	31.79	RMS	34.90	-20.20	0.24	46.73	-	-	-	-	150	100	H	
			5.46875	32.96	RMS	34.90	-20.20	0.24	47.90	-	-	-	-	150	100	H	
			5.45998	39.96	Pk	34.90	-20.10	0.00	54.76	-	-	74.00	-19.24	182	379	V	
			* 5.45346	44.82	Pk	34.90	-20.10	0.00	59.62	-	-	74.00	-14.38	182	379	V	
			5.46998	45.54	Pk	34.90	-20.20	0.00	60.24	-	-	68.20	-7.96	182	379	V	
			5.46821	47.37	Pk	34.90	-20.20	0.00	62.07	-	-	68.20	-6.13	182	379	V	
	* 5.45998	29.70	RMS	34.90	-20.10	0.24	44.74	54.00	-9.26	-	-	182	379	V			
	* 5.45985	30.53	RMS	34.90	-20.10	0.24	45.57	54.00	-8.43	-	-	182	379	V			
	5.46998	30.22	RMS	34.90	-20.20	0.24	45.16	-	-	-	-	182	379	V			
	5.46335	31.25	RMS	34.90	-20.20	0.24	46.19	-	-	-	-	182	379	V			
	5.72501	40.57	Pk	35.00	-19.80	0.00	55.77	-	-	68.20	-12.43	148	103	H			
	5.73600	45.14	Pk	35.00	-19.80	0.00	60.34	-	-	68.20	-7.86	148	103	H			
	5.72501	38.57	Pk	35.00	-19.80	0.00	53.77	-	-	68.20	-14.43	218	100	V			
	5.73167	41.78	Pk	35.00	-19.80	0.00	56.98	-	-	68.20	-11.22	218	100	V			
	802.11ax (HE20) SU mode	5500	MIMO	* 5.45998	42.84	Pk	34.90	-20.10	0.00	57.64	-	-	74.00	-16.36	151	100	H
				* 5.45987	46.96	Pk	34.90	-20.10	0.00	61.76	-	-	74.00	-12.24	151	100	H
				5.46998	46.84	Pk	34.90	-20.20	0.00	61.54	-	-	68.20	-6.66	151	100	H
				5.46783	50.08	Pk	34.90	-20.20	0.00	64.78	-	-	68.20	-3.42	151	100	H
* 5.45998				30.37	RMS	34.90	-20.10	0.00	45.17	54.00	-8.83	-	-	151	100	H	
* 5.45976				31.25	RMS	34.90	-20.10	0.00	46.05	54.00	-7.95	-	-	151	100	H	
5.46998				34.02	RMS	34.90	-20.20	0.00	48.72	-	-	-	-	151	100	H	
5.46937				34.67	RMS	34.90	-20.20	0.00	49.37	-	-	-	-	151	100	H	
* 5.45998				40.28	Pk	34.90	-20.10	0.00	55.08	-	-	74.00	-18.92	178	379	V	
* 5.45992				42.13	Pk	34.90	-20.10	0.00	56.93	-	-	74.00	-17.07	178	379	V	
5.46998				44.49	Pk	34.90	-20.20	0.00	59.19	-	-	68.20	-9.01	178	379	V	
5.46884				46.26	Pk	34.90	-20.20	0.00	60.96	-	-	68.20	-7.24	178	379	V	
* 5.45998		29.02	RMS	34.90	-20.10	0.00	43.82	54.00	-10.18	-	-	178	379	V			
* 5.45939		29.42	RMS	34.90	-20.10	0.00	44.22	54.00	-9.78	-	-	178	379	V			
5.46998		30.86	RMS	34.90	-20.20	0.00	45.56	-	-	-	-	178	379	V			
5.46950		32.68	RMS	34.90	-20.20	0.00	47.38	-	-	-	-	178	379	V			
5.72500		48.28	Pk	35.00	-19.80	0.00	63.48	-	-	68.20	-4.72	149	107	H			
5.72528		48.76	Pk	35.00	-19.80	0.00	63.96	-	-	68.20	-4.24	149	107	H			
5.72500		42.02	Pk	35.00	-19.80	0.00	57.22	-	-	68.20	-10.98	214	100	V			
5.72522		44.66	Pk	35.00	-19.80	0.00	59.86	-	-	68.20	-8.34	214	100	V			
802.11ax (HE40) SU mode		5510	MIMO	* 5.45998	42.85	Pk	34.90	-20.10	0.00	57.65	-	-	74.00	-16.35	156	126	H
				* 5.45727	43.27	Pk	34.90	-20.10	0.00	58.07	-	-	74.00	-15.93	156	126	H
				5.46998	45.61	Pk	34.90	-20.20	0.00	60.31	-	-	68.20	-7.89	156	126	H
				5.46786	47.85	Pk	34.90	-20.20	0.00	62.55	-	-	68.20	-5.65	156	126	H
	* 5.45998			31.32	RMS	34.90	-20.10	0.00	46.12	54.00	-7.88	-	-	156	126	H	
	* 5.45972			31.15	RMS	34.90	-20.10	0.00	45.95	54.00	-8.05	-	-	156	126	H	
	5.46998			33.23	RMS	34.90	-20.20	0.00	47.93	-	-	-	-	156	126	H	
	5.46847			34.53	RMS	34.90	-20.20	0.00	49.23	-	-	-	-	156	126	H	
	* 5.45998			38.09	Pk	34.90	-20.10	0.00	52.89	-	-	74.00	-21.11	179	362	V	
	* 5.45928			40.01	Pk	34.90	-20.10	0.00	54.81	-	-	74.00	-19.19	179	362	V	
	5.46998			41.84	Pk	34.90	-20.20	0.00	56.54	-	-	68.20	-11.66	179	362	V	
	5.46748			43.85	Pk	34.90	-20.20	0.00	58.55	-	-	68.20	-9.65	179	362	V	
	* 5.45998	27.98	RMS	34.90	-20.10	0.00	42.78	54.00	-11.22	-	-	179	362	V			
	* 5.45972	29.18	RMS	34.90	-20.10	0.00	43.98	54.00	-10.02	-	-	179	362	V			
	5.46998	30.74	RMS	34.90	-20.20	0.00	45.44	-	-	-	-	179	362	V			
	5.46963	31.70	RMS	34.90	-20.20	0.00	46.40	-	-	-	-	179	362	V			
	5.72500	37.69	Pk	35.00	-19.80	0.00	52.89	-	-	68.20	-15.31	216	100	H			
	5.75412	39.99	Pk	35.00	-19.70	0.00	55.29	-	-	68.20	-12.91	216	100	H			
	5.72500	36.41	Pk	35.00	-19.80	0.00	51.61	-	-	68.20	-16.59	222	100	V			
	5.72541	39.92	Pk	35.00	-19.80	0.00	55.12	-	-	68.20	-13.08	222	100	V			
	802.11ax (HE80) SU mode	5530	MIMO	* 5.45998	43.03	Pk	34.90	-20.10	0.00	57.83	-	-	74.00	-16.17	153	100	H
				* 5.45235	45.89	Pk	34.90	-20.10	0.00	60.69	-	-	74.00	-13.31	153	100	H
				5.46998	44.61	Pk	34.90	-20.20	0.00	59.31	-	-	68.20	-8.89	153	100	H
				5.46991	46.22	Pk	34.90	-20.20	0.00	60.92	-	-	68.20	-7.28	153	100	H
* 5.45998				32.26	RMS	34.90	-20.10	0.00	47.06	54.00	-6.94	-	-	153	100	H	
* 5.45302				33.41	RMS	34.90	-20.10	0.00	48.21	54.00	-5.79	-	-	153	100	H	
5.46998				33.74	RMS	34.90	-20.20	0.00	48.44	-	-	-	-	153	100	H	
5.46565				34.20	RMS	34.90	-20.10	0.00	49.00	-	-	-	-	153	100	H	
* 5.45998				39.96	Pk	34.90	-20.10	0.00	54.76	-	-	74.00	-19.24	190	380	V	
* 5.45981				44.04	Pk	34.90	-20.10	0.00	58.84	-	-	74.00	-15.16	190	380	V	
5.46998				42.19	Pk	34.90	-20.20	0.00	56.89	-	-	68.20	-11.31	190	380	V	
5.46886				44.71	Pk	34.90	-20.20	0.00	59.41	-	-	68.20	-8.79	190	380	V	
* 5.45998		30.74	RMS	34.90	-20.10	0.00	45.54	54.00	-8.46	-	-	190	380	V			
* 5.4565		31.70	RMS	34.90	-20.20	0.00	46.40	54.00	-7.60	-	-	190	380	V			
5.46998		32.57	RMS	34.90	-20.20	0.00	47.27	-	-	-	-	190	380	V			
5.46814		33.16	RMS	34.90	-20.20	0.00	47.86	-	-	-	-	190	380	V			
5.72500		36.70	Pk	35.00	-19.80	0.00	51.90	-	-	68.20	-16.30	148	107	H			
5.78701		39.68	Pk	35.10	-19.70	0.00	55.08	-	-	68.20	-13.12	148	107	H			
5.72500		37.72	Pk	35.00	-19.80	0.00	52.92	-	-	68.20	-15.28	163	103	V			
5.73193		40.01	Pk	35.00	-19.80	0.00	55.21	-	-	68.20	-12.99	163	103	V			

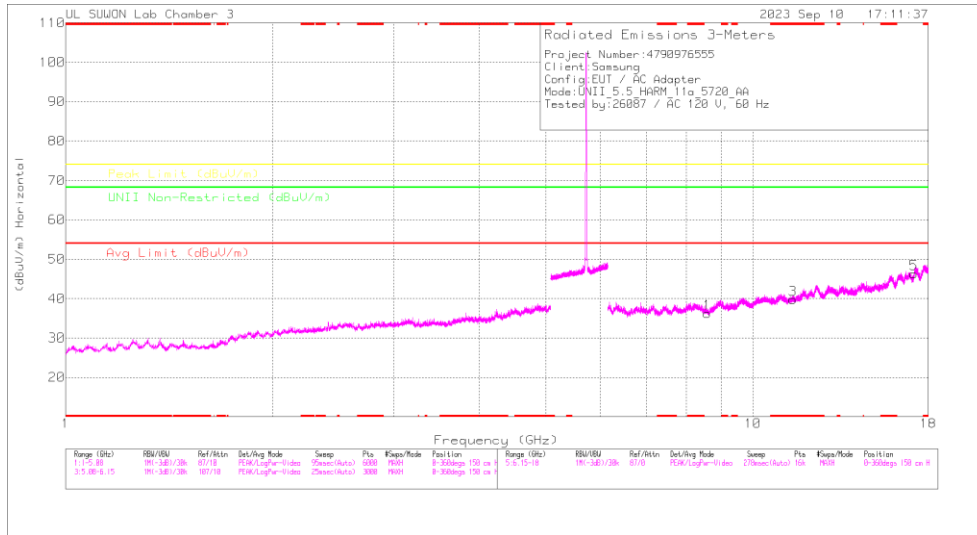


Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB(1/m)]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity		
802.11ax (HE160) SU mode	5570 Lower	MIMO	* 5.45998	41.54	Pk	34.90	-20.10	0.00	56.34	-	-	74.00	-17.66	151	100	H		
			* 5.45186	46.36	Pk	34.90	-20.10	0.00	61.16	-	-	74.00	-12.84	151	100	H		
			5.46998	42.95	Pk	34.90	-20.20	0.00	57.65	-	-	68.20	-10.55	151	100	H		
			5.46788	48.47	Pk	34.90	-20.20	0.00	63.17	-	-	68.20	-5.03	151	100	H		
			* 5.45998	31.22	RMS	34.90	-20.10	0.00	46.02	54.00	-7.98	-	-	-	-	151	100	H
			* 5.43854	32.62	RMS	34.90	-20.10	0.00	47.42	54.00	-6.58	-	-	-	-	151	100	H
			5.46998	31.39	RMS	34.90	-20.20	0.00	46.09	-	-	-	-	-	-	151	100	H
			5.46786	32.67	RMS	34.90	-20.20	0.00	47.37	-	-	-	-	-	-	151	100	H
			5.45998	39.88	Pk	34.90	-20.10	0.00	54.68	-	-	74.00	-19.32	189	380	V		
			* 5.45361	42.59	Pk	34.90	-20.10	0.00	57.39	-	-	74.00	-16.61	189	380	V		
			5.46998	42.85	Pk	34.90	-20.20	0.00	57.55	-	-	68.20	-10.65	189	380	V		
			5.46797	46.09	Pk	34.90	-20.20	0.00	60.79	-	-	68.20	-7.41	189	380	V		
			* 5.45998	29.71	RMS	34.90	-20.10	0.00	44.51	54.00	-9.49	-	-	-	-	189	380	V
			* 5.45989	30.89	RMS	34.90	-20.10	0.00	45.69	54.00	-8.31	-	-	-	-	189	380	V
			5.46998	29.98	RMS	34.90	-20.20	0.00	44.68	-	-	-	-	-	-	189	380	V
			5.46700	31.17	RMS	34.90	-20.20	0.00	45.87	-	-	-	-	-	-	189	380	V
			5570 Upper	MIMO	5.72501	41.64	Pk	35.00	-19.80	0.00	56.84	-	-	68.20	-11.36	154	104	H
					5.73758	44.20	Pk	35.00	-19.80	0.00	59.40	-	-	68.20	-8.80	154	104	H
	5.72501	39.55			Pk	35.00	-19.80	0.00	54.75	-	-	68.20	-13.45	164	100	V		
	5.72984	41.89			Pk	35.00	-19.80	0.00	57.09	-	-	68.20	-11.11	164	100	V		

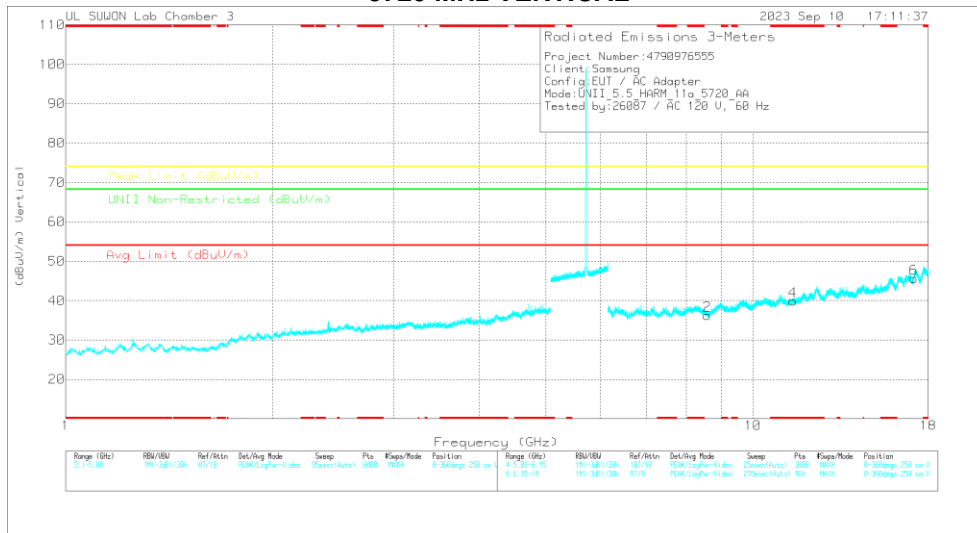
Note1. Pk - Peak detector, RMS - RMS detector  
 Note2. \* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

**HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5720 MHz)**

**5720 MHz HORIZONTAL**



**5720 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.

**5720 MHz DATA**

**Radiated Emissions**

Frequency (GHz)	Main Reading (dBuV)	Det	Antenna Correction Factor (dB/corr)	Loss(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 (Deg)	Height (cm)	Polarity
8.58084	34.78	PK-U	36	-23.4	0	47.38	-	-	-	-	68.2	-20.82	0	100	H
8.58075	34.51	PK-U	36	-23.4	0	47.11	-	-	-	-	68.2	-21.09	0	100	V
*11.44052	33.11	PK-U	38.2	-21.3	0	50.01	-	-	74	-23.99	-	-	0	100	H
*11.44068	33.28	PK-U	38.2	-21.3	0	50.18	-	-	74	-23.82	-	-	0	100	V
17.16102	32.46	PK-U	41.3	-17	0	56.76	-	-	-	-	68.2	-11.44	0	100	H
17.16087	32.35	PK-U	41.3	-17	0	56.65	-	-	-	-	68.2	-11.55	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 [dB(1/m)]	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	* 8.25078	36.32	PK-U	36.00	-23.80	0.00	48.52	-	-	74.00	-25.48	-	-	0	100	H	
			** 8.2505	36.35	PK-U	36.00	-23.80	0.00	48.55	-	-	74.00	-25.45	-	-	0	100	V	
			* 11.00061	34.49	PK-U	38.00	-21.10	0.00	51.39	-	-	74.00	-22.61	-	-	0	100	H	
			* 11.00077	33.85	PK-U	38.00	-21.00	0.00	50.85	-	-	74.00	-23.15	-	-	0	100	V	
			16.501	33.58	PK-U	41.60	-18.80	0.00	56.38	-	-	-	-	-	68.20	-11.82	0	100	H
			16.501	33.67	PK-U	41.60	-18.70	0.00	56.57	-	-	-	-	-	68.20	-11.63	0	100	V
	5580	MIMO	* 8.37074	36.12	PK-U	36.00	-23.70	0.00	48.42	-	-	74.00	-25.58	-	-	0	100	H	
			* 8.37044	35.73	PK-U	36.00	-23.70	0.00	48.03	-	-	74.00	-25.97	-	-	0	100	V	
			* 11.1607	34.16	PK-U	38.10	-21.40	0.00	50.86	-	-	74.00	-23.14	-	-	0	100	H	
			* 11.16042	33.92	PK-U	38.10	-21.40	0.00	50.62	-	-	74.00	-23.38	-	-	0	100	V	
			16.741	32.59	PK-U	41.80	-18.20	0.00	56.19	-	-	-	-	-	68.20	-12.01	0	100	H
			16.741	32.25	PK-U	41.80	-18.20	0.00	55.85	-	-	-	-	-	68.20	-12.35	0	100	V
	5700	MIMO	6.840	39.66	PK-U	36.00	-26.60	0.00	49.06	-	-	-	-	68.20	-19.14	154	106	H	
			6.840	39.17	PK-U	36.00	-26.60	0.00	48.57	-	-	-	-	68.20	-19.63	246	100	V	
			* 11.39588	31.99	PK-U	38.10	-21.40	0.00	48.69	-	-	74.00	-25.31	-	-	0	100	H	
			* 11.40525	33.24	PK-U	38.10	-21.30	0.00	50.04	-	-	74.00	-23.96	-	-	0	100	V	
			17.101	31.75	PK-U	41.40	-17.30	0.00	55.85	-	-	-	-	-	68.20	-12.35	0	100	H
			17.099	31.64	PK-U	41.40	-17.30	0.00	55.74	-	-	-	-	-	68.20	-12.46	0	100	V
	5720	MIMO	8.581	34.78	PK-U	36.00	-23.40	0.00	47.38	-	-	-	-	68.20	-20.62	0	100	H	
			8.581	34.51	PK-U	36.00	-23.40	0.00	47.11	-	-	-	-	68.20	-21.09	0	100	V	
			* 11.44052	33.11	PK-U	38.20	-21.30	0.00	50.01	-	-	74.00	-23.99	-	-	0	100	H	
			* 11.44058	33.28	PK-U	38.20	-21.30	0.00	50.18	-	-	74.00	-23.82	-	-	0	100	V	
			17.161	32.46	PK-U	41.30	-17.00	0.00	56.76	-	-	-	-	-	68.20	-11.44	0	100	H
			17.161	32.35	PK-U	41.30	-17.00	0.00	56.65	-	-	-	-	-	68.20	-11.55	0	100	V
802.11n (HT20) Spot-Check	5700	MIMO	8.551	35.39	PK-U	36.00	-23.40	0.00	47.99	-	-	-	-	68.20	-20.21	360	100	H	
			8.550	35.19	PK-U	36.00	-23.40	0.00	47.79	-	-	-	-	68.20	-20.41	360	100	V	
			* 11.40045	33.63	PK-U	38.10	-21.30	0.00	50.43	-	-	74.00	-23.57	-	-	0	100	H	
			* 11.40056	33.38	PK-U	38.10	-21.30	0.00	50.18	-	-	74.00	-23.82	-	-	0	100	V	
			17.100	31.89	PK-U	41.40	-17.30	0.00	55.98	-	-	-	-	-	68.20	-12.21	360	100	H
			17.100	31.79	PK-U	41.40	-17.30	0.00	55.89	-	-	-	-	-	68.20	-12.31	360	100	V
802.11n (HT40) Spot-Check	5710	MIMO	8.566	35.38	PK-U	36.00	-23.40	0.00	47.98	-	-	-	-	68.20	-20.22	0	100	H	
			8.565	34.93	PK-U	36.00	-23.40	0.00	47.53	-	-	-	-	68.20	-20.67	0	100	V	
			* 11.42047	33.44	PK-U	38.10	-21.30	0.00	50.24	-	-	74.00	-23.76	-	-	0	100	H	
			* 11.42074	33.44	PK-U	38.10	-21.30	0.00	50.24	-	-	74.00	-23.76	-	-	0	100	V	
			17.130	32.67	PK-U	41.30	-17.30	0.00	56.67	-	-	-	-	-	68.20	-11.53	0	100	H
			17.131	33.25	PK-U	41.30	-17.20	0.00	57.35	-	-	-	-	-	68.20	-10.85	0	100	V
802.11ac (VHT80) Spot-Check	5690	MIMO	6.828	39.55	PK-U	36.00	-26.60	0.00	48.95	-	-	-	-	68.20	-19.25	154	107	H	
			6.827	39.17	PK-U	36.00	-26.60	0.00	48.57	-	-	-	-	68.20	-19.63	151	100	V	
			* 11.38082	32.69	PK-U	38.10	-21.30	0.00	49.49	-	-	74.00	-24.51	-	-	0	100	H	
			* 11.37916	33.09	PK-U	38.10	-21.40	0.00	49.79	-	-	74.00	-24.21	-	-	0	100	V	
			17.072	32.76	PK-U	41.50	-17.30	0.00	56.96	-	-	-	-	-	68.20	-11.24	0	100	H
			17.071	32.34	PK-U	41.50	-17.30	0.00	56.54	-	-	-	-	-	68.20	-11.66	0	100	V
802.11ac (VHT160) Spot-Check	5570	MIMO	6.684	39.41	PK-U	36.00	-27.10	0.00	48.31	-	-	-	-	68.20	-19.89	154	106	H	
			6.684	38.54	PK-U	36.00	-27.10	0.00	47.44	-	-	-	-	68.20	-20.76	150	100	V	
			* 11.13447	33.64	PK-U	38.10	-21.40	0.00	50.34	-	-	74.00	-23.66	-	-	0	100	H	
			* 11.14569	33.69	PK-U	38.10	-21.40	0.00	50.39	-	-	74.00	-23.61	-	-	0	100	V	
			16.716	32.14	PK-U	41.80	-18.30	0.00	55.64	-	-	-	-	-	68.20	-12.56	0	100	H
			16.705	32.88	PK-U	41.80	-18.30	0.00	56.38	-	-	-	-	-	68.20	-11.82	0	100	V
802.11ax (HE20) RU mode 26 Tone offset 8	5500	MIMO	* 8.25302	37.56	PK-U	36.00	-23.80	0.00	49.76	-	-	74.00	-24.24	-	-	0	100	H	
			* 8.24937	36.42	PK-U	36.00	-23.80	0.00	48.62	-	-	74.00	-25.38	-	-	0	100	V	
			* 11.00559	33.22	PK-U	38.00	-21.10	0.00	50.12	-	-	74.00	-23.88	-	-	0	100	H	
			* 11.00351	33.28	PK-U	38.00	-21.10	0.00	50.18	-	-	74.00	-23.82	-	-	0	100	V	
			16.499	33.28	PK-U	41.60	-18.70	0.00	56.18	-	-	-	-	-	68.20	-12.02	0	100	H
			16.502	33.38	PK-U	41.60	-18.80	0.00	56.18	-	-	-	-	-	68.20	-12.02	0	100	V
802.11ax (HE20) RU mode 26 Tone offset 0	5580	MIMO	7.170	37.91	PK-U	35.90	-25.60	0.00	48.21	-	-	-	-	68.20	-19.99	129	369	H	
			7.167	37.84	PK-U	35.90	-25.60	0.00	48.14	-	-	-	-	68.20	-20.06	99	310	V	
			* 11.16482	33.58	PK-U	38.10	-21.40	0.00	50.28	-	-	74.00	-23.72	-	-	0	100	H	
			* 11.15833	34.17	PK-U	38.10	-21.50	0.00	50.77	-	-	74.00	-23.23	-	-	0	100	V	
			16.745	32.39	PK-U	41.80	-18.30	0.00	55.89	-	-	-	-	-	68.20	-12.31	0	100	H
			16.740	32.02	PK-U	41.80	-18.20	0.00	55.62	-	-	-	-	-	68.20	-12.58	0	100	V
802.11ax (HE20) RU mode 26 Tone offset 0	5700	MIMO	8.550	35.37	PK-U	36.00	-23.40	0.00	47.97	-	-	-	-	68.20	-20.23	0	100	H	
			8.549	35.42	PK-U	36.00	-23.50	0.00	47.92	-	-	-	-	68.20	-20.28	0	100	V	
			* 11.40138	32.89	PK-U	38.10	-21.30	0.00	49.69	-	-	74.00	-24.31	-	-	0	100	H	
			* 11.39841	33.25	PK-U	38.10	-21.30	0.00	50.05	-	-	74.00	-23.95	-	-	0	100	V	
			17.101	32.16	PK-U	41.40	-17.30	0.00	56.26	-	-	-	-	-	68.20	-11.94	0	100	H
			17.096	32.08	PK-U	41.40	-17.40	0.00	56.08	-	-	-	-	-	68.20	-12.12	0	100	V

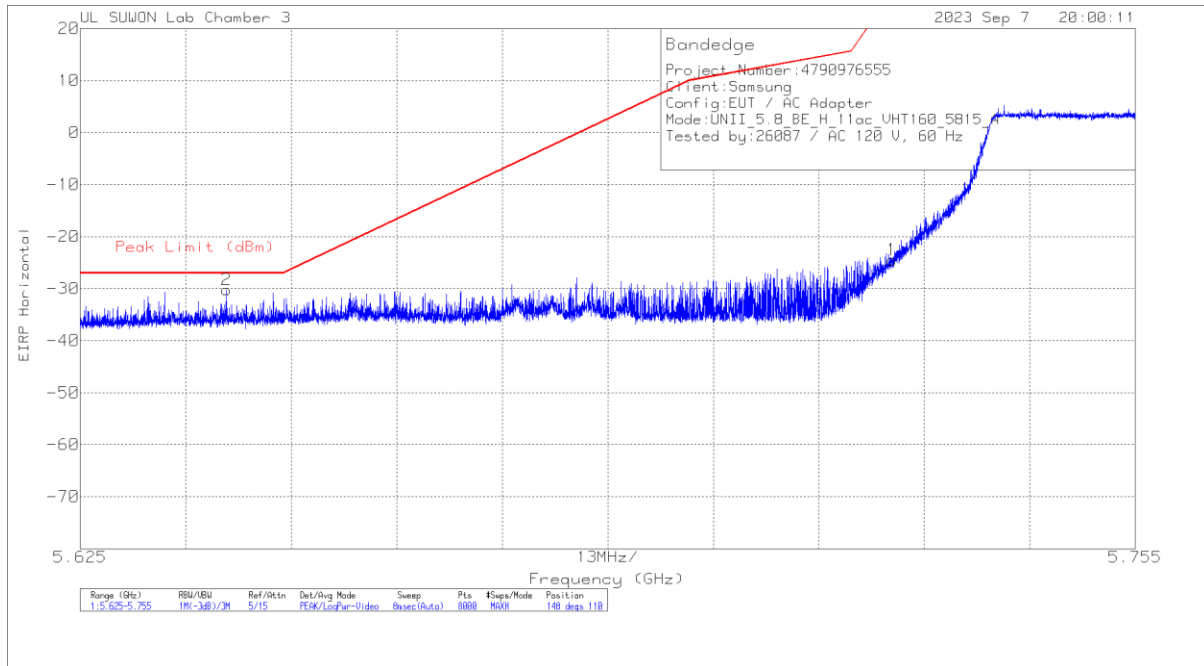
Note1. PK-U - U-NII: Maximum Peak / ADR - U-NII AD primary method, RMS average

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	Antenna Correction Factor(dB/1m)	Loss(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-51.38	Pk	34.9	-19.8	11.8	0	-24.48	27	-51.48	148	110	H
2	5.64301	-56.91	Pk	34.9	-20	11.8	0	-30.21	-27	-3.21	148	110	H

Pk - Peak detector

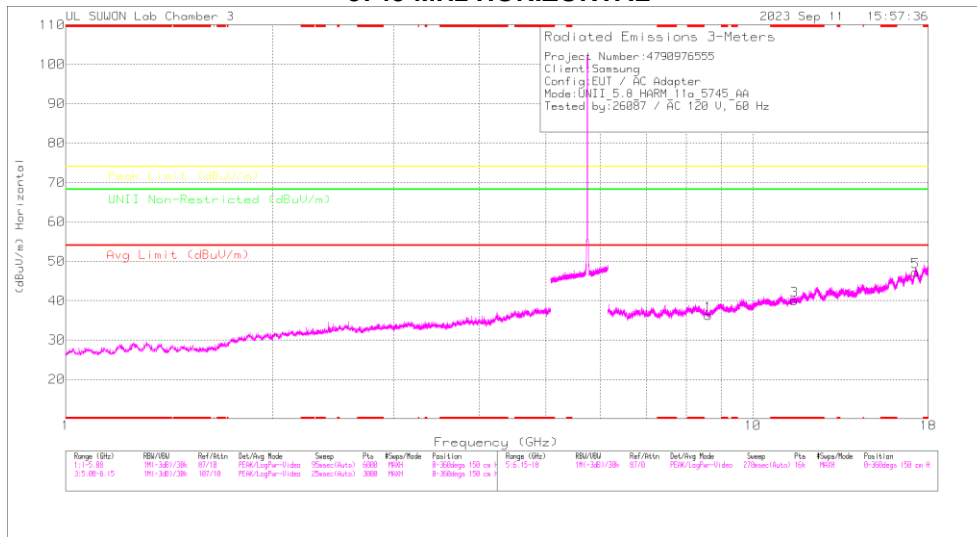
**BANDEDGE TEST DATA**

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBm]	Detector Mode	ANT Factor [dB(1/m)]	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	-60.58	Pk	34.90	-19.80	11.80	0.00	-33.68	27.00	-60.68	149	101	H
			5.63342	-63.88	Pk	34.90	-19.90	11.80	0.00	-37.08	-27.00	-10.08	149	101	H
			5.72500	-61.53	Pk	34.90	-19.80	11.80	0.00	-34.63	27.00	-61.63	210	100	V
			5.62554	-63.75	Pk	34.90	-20.00	11.80	0.00	-37.05	-27.00	-10.05	210	100	V
802.11n (HT20)	5745	MIMO	5.72500	-59.91	Pk	34.90	-19.80	11.80	0.00	-33.01	27.00	-60.01	159	101	H
			5.64255	-63.45	Pk	34.90	-20.00	11.80	0.00	-36.75	-27.00	-9.75	159	101	H
			5.72500	-63.84	Pk	34.90	-19.80	11.80	0.00	-36.94	27.00	-63.94	181	363	V
			5.62739	-63.76	Pk	34.90	-20.00	11.80	0.00	-37.06	-27.00	-10.06	181	363	V
802.11n (HT40)	5755	MIMO	5.72500	-62.45	Pk	34.90	-19.80	11.80	0.00	-35.55	27.00	-62.55	149	107	H
			5.64245	-63.05	Pk	34.90	-20.00	11.80	0.00	-36.35	-27.00	-9.35	149	107	H
			5.72500	-64.23	Pk	34.90	-19.80	11.80	0.00	-37.33	27.00	-64.33	209	100	V
			5.63275	-63.11	Pk	34.90	-20.00	11.80	0.00	-36.41	-27.00	-9.41	209	100	V
802.11ac (VHT80)	5775 (Lower Side)	MIMO	5.72500	-50.41	Pk	34.90	-19.80	11.80	0.00	-23.51	27.00	-50.51	152	100	H
			5.62521	-63.06	Pk	34.90	-20.00	11.80	0.00	-36.36	-27.00	-9.36	152	100	H
			5.72500	-54.65	Pk	34.90	-19.80	11.80	0.00	-27.75	27.00	-54.75	211	100	V
			5.64345	-63.08	Pk	34.90	-20.00	11.80	0.00	-36.38	-27.00	-9.38	211	100	V
802.11ac (VHT160)	5815 (Lower Side)	MIMO	5.72500	-51.38	Pk	34.90	-19.80	11.80	0.00	-24.48	27.00	-51.48	148	110	H
			5.64301	-56.91	Pk	34.90	-20.00	11.80	0.00	-30.21	-27.00	-3.21	148	110	H
			5.72500	-56.01	Pk	34.90	-19.80	11.80	0.00	-29.11	27.00	-56.11	208	100	V
			5.64159	-61.13	Pk	34.90	-20.00	11.80	0.00	-34.43	-27.00	-7.43	208	100	V
802.11ax (HE20) SU mode	5745	MIMO	5.72500	-56.33	Pk	34.90	-19.80	11.80	0.00	-29.43	27.00	-56.43	153	101	H
			5.63239	-62.99	Pk	34.90	-20.00	11.80	0.00	-36.29	-27.00	-9.29	153	101	H
			5.72500	-60.42	Pk	34.90	-19.80	11.80	0.00	-33.52	27.00	-60.52	210	101	V
			5.64845	-63.59	Pk	34.90	-20.00	11.80	0.00	-36.89	-27.00	-9.89	210	101	V
802.11ax (HE40) SU mode	5755	MIMO	5.72500	-59.99	Pk	34.90	-19.80	11.80	0.00	-33.09	27.00	-60.09	151	101	H
			5.64280	-62.97	Pk	34.90	-20.00	11.80	0.00	-36.27	-27.00	-9.27	151	101	H
			5.72500	-64.28	Pk	34.90	-19.80	11.80	0.00	-37.38	27.00	-64.38	218	105	V
			5.63259	-63.94	Pk	34.90	-20.00	11.80	0.00	-37.24	-27.00	-10.24	218	105	V
802.11ax (HE80) SU mode	5775 (Lower Side)	MIMO	5.72500	-52.37	Pk	34.90	-19.80	11.80	0.00	-25.47	27.00	-52.47	151	106	H
			5.64632	-63.20	Pk	34.90	-20.00	11.80	0.00	-36.50	-27.00	-9.50	151	106	H
			5.72500	-55.57	Pk	34.90	-19.80	11.80	0.00	-28.57	27.00	-55.67	164	100	V
			5.62848	-63.93	Pk	34.90	-20.00	11.80	0.00	-37.23	-27.00	-10.23	164	100	V
802.11ax (HE160) SU mode	5815 Lower	MIMO	5.72500	-53.76	Pk	34.90	-19.80	11.80	0.00	-26.86	27.00	-53.86	151	108	H
			5.64397	-59.08	Pk	34.90	-20.00	11.80	0.00	-32.38	-27.00	-5.38	151	108	H
			5.72500	-59.35	Pk	34.90	-19.80	11.80	0.00	-32.45	27.00	-59.45	164	100	V
			5.64219	-62.05	Pk	34.90	-20.00	11.80	0.00	-35.35	-27.00	-8.35	164	100	V

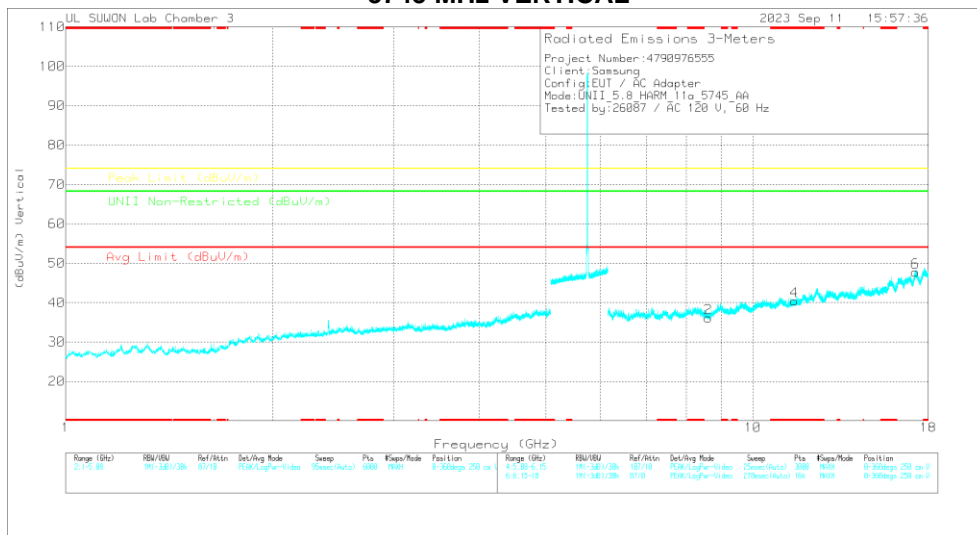
Note. Pk - Peak detector

**HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5745 MHz)**

**5745 MHz HORIZONTAL**



**5745 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.

**5745 MHz DATA**

**Radiated Emissions**

Frequency (GHz)	Max Reading (dBuV)	Det	Antenna Correction Factor (dB (1m))	Loss (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 (Deg)	Height (cm)	Polarity
8.61709	34.74	PK-U	36	-23.4	0	47.34	-	-	-	-	68.2	-20.86	0	100	H
8.61697	34.46	PK-U	36	-23.4	0	47.06	-	-	-	-	68.2	-21.14	0	100	V
* 11.49044	34.19	PK-U	38.2	-21.4	0	50.99	-	-	74	-23.01	-	-	0	100	H
* 11.49036	33.92	PK-U	38.2	-21.4	0	50.72	-	-	74	-23.28	-	-	0	100	V
17.23542	33.34	PK-U	41.1	-16.5	0	57.94	-	-	-	-	68.2	-10.26	0	100	H
17.23548	32.71	PK-U	41.1	-16.5	0	57.31	-	-	-	-	68.2	-10.89	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 [dB(1/m)]	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	5745	MIMO	8.617	34.74	PK-U	36.00	-23.40	0.00	47.34	-	-	-	-	68.20	-20.86	0	100	H		
			8.617	34.46	PK-U	36.00	-23.40	0.00	47.06	-	-	-	-	68.20	-21.14	0	100	V		
			*11.49044	34.19	PK-U	38.20	-21.40	0.00	50.99	-	-	74.00	-23.01	-	-	-	0	100	H	
			*11.49036	33.92	PK-U	38.20	-21.40	0.00	50.72	-	-	74.00	-23.28	-	-	-	0	100	V	
			17.235	33.34	PK-U	41.10	-16.50	0.00	57.94	-	-	-	-	-	-	68.20	-10.26	0	100	H
			17.235	32.71	PK-U	41.10	-16.50	0.00	57.31	-	-	-	-	-	-	68.20	-10.89	0	100	V
	5785	MIMO	8.677	34.83	PK-U	36.10	-23.20	0.00	47.73	-	-	-	-	68.20	-20.47	0	100	H		
			8.677	34.38	PK-U	36.10	-23.20	0.00	47.28	-	-	-	-	68.20	-20.92	0	100	V		
			*11.57016	34.26	PK-U	38.20	-21.50	0.00	50.96	-	-	74.00	-23.04	-	-	-	0	100	H	
			*11.57008	33.98	PK-U	38.20	-21.50	0.00	50.68	-	-	74.00	-23.32	-	-	-	0	100	V	
			17.356	32.18	PK-U	41.10	-16.70	0.00	56.58	-	-	-	-	-	-	68.20	-11.62	0	100	H
			17.356	32.44	PK-U	41.10	-16.70	0.00	56.84	-	-	-	-	-	-	68.20	-11.36	0	100	V
	5825	MIMO	8.738	34.81	PK-U	36.10	-23.10	0.00	47.81	-	-	-	-	68.20	-20.39	0	100	H		
			8.739	34.66	PK-U	36.10	-23.10	0.00	47.66	-	-	-	-	68.20	-20.54	0	100	V		
			*11.65114	34.01	PK-U	38.30	-21.60	0.00	50.71	-	-	74.00	-23.29	-	-	-	0	100	H	
			*11.64578	34.48	PK-U	38.30	-21.60	0.00	51.18	-	-	74.00	-22.82	-	-	-	0	100	V	
			17.471	31.21	PK-U	41.10	-16.30	0.00	56.01	-	-	-	-	-	-	68.20	-12.19	0	100	H
			17.477	31.49	PK-U	41.20	-16.40	0.00	56.29	-	-	-	-	-	-	68.20	-11.91	0	100	V
	802.11ax (HE20) RU mode 26 Tone offset 0 Spot-check	5745	MIMO	8.894	39.10	PK-U	36.00	-26.40	0.00	48.70	-	-	-	-	68.20	-19.50	156	105	H	
				8.894	38.49	PK-U	36.00	-26.40	0.00	48.09	-	-	-	-	68.20	-20.11	259	100	V	
				*11.48697	32.89	PK-U	38.20	-21.40	0.00	49.69	-	-	74.00	-24.31	-	-	-	0	100	H
*11.4951				33.02	PK-U	38.20	-21.40	0.00	49.82	-	-	74.00	-24.18	-	-	-	0	100	V	
17.237				32.49	PK-U	41.10	-16.50	0.00	57.09	-	-	-	-	-	-	68.20	-11.11	0	100	H
17.235				32.88	PK-U	41.10	-16.50	0.00	57.48	-	-	-	-	-	-	68.20	-10.72	0	100	V

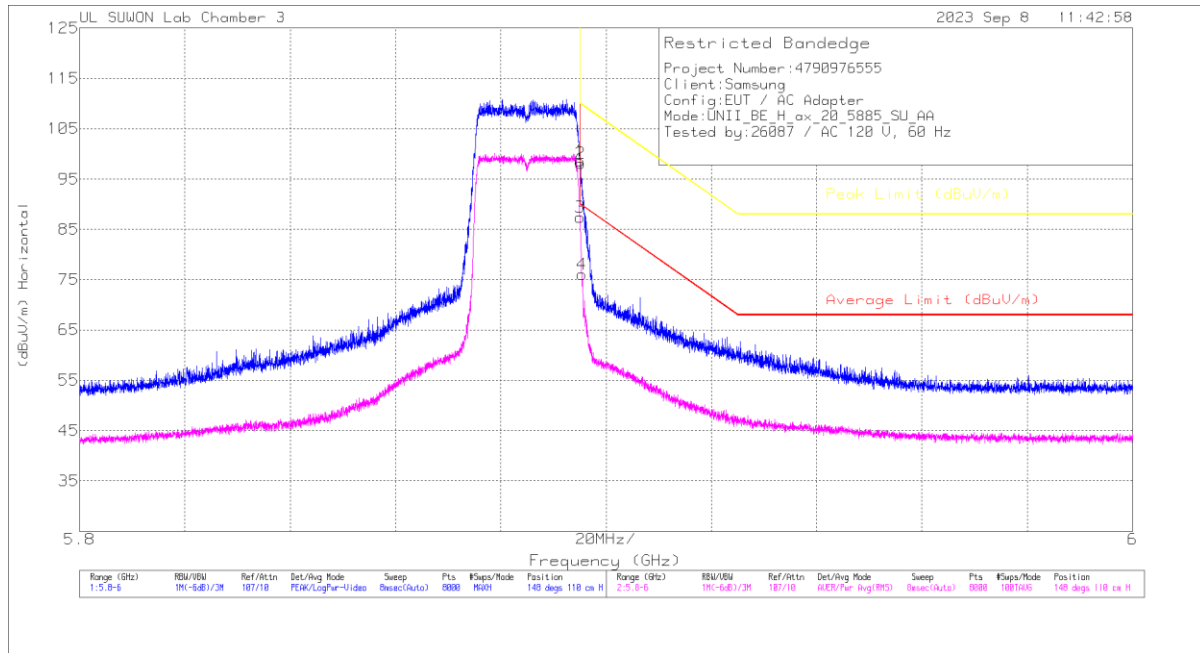
Note1. PK-U - U-NII: Maximum Peak / ADR - U-NII AD primary method, RMS average

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

### 11.5. 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 (dBuV)	Det	Antenna Correction Factor (dB(Hor))	Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (m)	Polarity
1	5.89501	82.61	Pk	35.4	-19.4	0	98.61	-	-	109.99	-11.36	148	110	H
2	5.89514	82.13	Pk	35.4	-19.4	0	98.13	-	-	109.9	-11.77	148	110	H
3	5.89501	71.35	RMS	35.4	-19.4	0	87.35	89.99	-2.64	-	-	148	110	H
4	5.89539	60.05	RMS	35.4	-19.4	0	76.05	89.72	-13.67	-	-	148	110	H

Pk - Peak detector  
 RMS - RMS detection



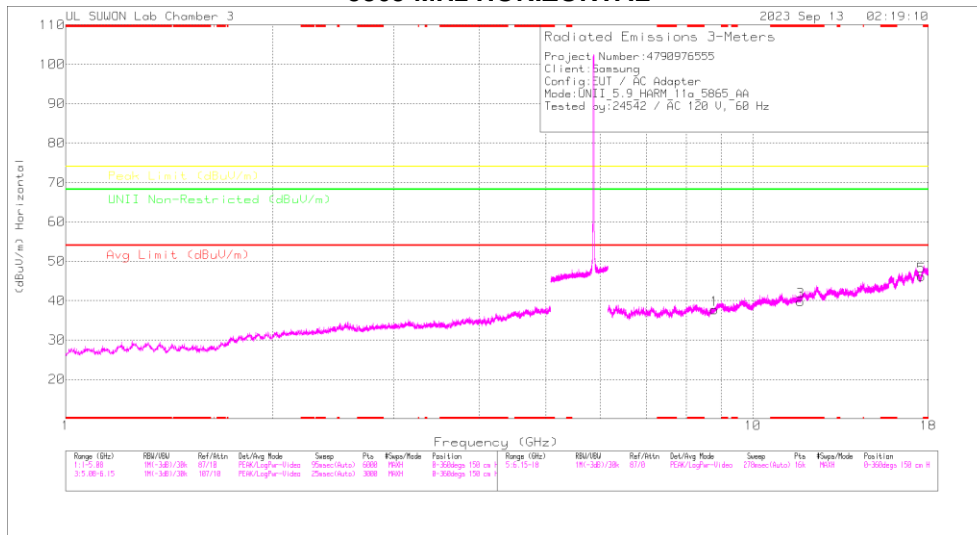
**BANDEDGE TEST DATA**

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB(1/m)]	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	5885	MIMO	5.895	73.04	Pk	35.40	-19.40	0.00	89.04	-	-	109.99	-20.95	148	111	H
			5.895	72.57	Pk	35.40	-19.40	0.00	88.57	-	-	109.94	-21.37	148	111	H
			5.895	57.10	RMS	35.40	-19.40	0.15	73.25	89.99	-16.74	-	-	148	111	H
			5.895	56.63	RMS	35.40	-19.40	0.15	72.78	89.86	-17.08	-	-	148	111	H
			5.895	72.22	Pk	35.40	-19.40	0.00	88.22	-	-	109.99	-21.77	210	101	V
			5.895	70.50	Pk	35.40	-19.40	0.00	86.50	-	-	109.83	-23.33	210	101	V
			5.895	54.11	RMS	35.40	-19.40	0.15	70.26	89.99	-19.73	-	-	210	101	V
			5.895	55.89	RMS	35.40	-19.40	0.15	72.04	89.86	-17.82	-	-	210	101	V
			5.895	78.44	Pk	35.40	-19.40	0.00	94.44	-	-	109.99	-15.55	153	101	H
802.11n (HT20)	5885	MIMO	5.895	77.86	Pk	35.40	-19.40	0.00	93.86	-	-	109.90	-16.04	153	101	H
			5.895	61.27	RMS	35.40	-19.40	0.00	77.27	89.99	-12.72	-	-	153	100	H
			5.895	62.62	RMS	35.40	-19.40	0.00	78.62	89.97	-11.35	-	-	153	100	H
			5.895	73.58	Pk	35.40	-19.40	0.00	89.58	-	-	109.99	-20.41	182	101	V
			5.895	73.07	Pk	35.40	-19.40	0.00	89.07	-	-	109.95	-20.88	182	101	V
			5.895	55.60	RMS	35.40	-19.40	0.00	71.60	89.99	-18.39	-	-	182	101	V
			5.895	56.79	RMS	35.40	-19.40	0.00	72.79	89.97	-17.18	-	-	182	101	V
			5.895	70.78	Pk	35.40	-19.40	0.00	86.78	-	-	109.99	-23.21	150	110	H
			5.895	71.03	Pk	35.40	-19.40	0.00	87.03	-	-	109.95	-22.92	150	110	H
802.11n (HT40)	5875	MIMO	5.895	53.57	RMS	35.40	-19.40	0.00	69.57	89.99	-20.42	-	-	150	110	H
			5.895	55.62	RMS	35.40	-19.40	0.00	71.62	89.97	-18.35	-	-	150	110	H
			5.895	69.27	Pk	35.40	-19.40	0.00	85.27	-	-	109.99	-24.72	210	100	V
			5.895	70.07	Pk	35.40	-19.40	0.00	86.07	-	-	109.97	-23.90	210	100	V
			5.895	53.37	RMS	35.40	-19.40	0.00	69.37	89.99	-20.62	-	-	210	100	V
			5.895	51.99	RMS	35.40	-19.40	0.00	67.99	89.88	-21.89	-	-	210	100	V
			5.895	68.99	Pk	35.40	-19.40	0.00	84.99	-	-	109.99	-25.00	148	110	H
			5.895	70.11	Pk	35.40	-19.40	0.00	86.11	-	-	109.92	-23.81	148	110	H
			5.895	53.33	RMS	35.40	-19.40	0.25	69.58	89.99	-20.41	-	-	148	110	H
802.11ac (VHT80)	5885	MIMO	5.895	52.89	RMS	35.40	-19.40	0.25	68.14	89.75	-20.61	-	-	148	110	H
			5.895	65.90	Pk	35.40	-19.40	0.00	81.90	-	-	109.99	-28.09	213	100	V
			5.895	66.67	Pk	35.40	-19.40	0.00	82.67	-	-	109.86	-27.19	213	100	V
			5.895	47.73	RMS	35.40	-19.40	0.25	63.98	89.99	-26.01	-	-	213	100	V
			5.895	51.00	RMS	35.40	-19.40	0.25	67.25	89.90	-22.65	-	-	213	100	V
			5.895	65.18	Pk	35.40	-19.40	0.00	81.18	-	-	109.99	-28.81	149	110	H
			5.933	48.54	Pk	35.50	-19.40	0.00	64.64	-	-	88.00	-23.36	149	110	H
			5.895	48.91	RMS	35.40	-19.40	0.24	65.15	89.99	-24.84	-	-	149	110	H
			5.932	31.15	RMS	35.50	-19.30	0.24	47.59	68.00	-20.41	-	-	149	110	H
802.11ac (VHT160)	5815 Upper	MIMO	5.895	64.43	Pk	35.40	-19.40	0.00	80.43	-	-	109.99	-29.56	210	101	V
			5.931	45.95	Pk	35.50	-19.40	0.00	62.05	-	-	88.00	-25.95	210	101	V
			5.895	46.35	RMS	35.40	-19.40	0.24	62.59	89.99	-27.40	-	-	210	101	V
			5.945	29.32	RMS	35.60	-19.30	0.24	45.86	68.00	-22.14	-	-	210	101	V
			5.895	82.61	Pk	35.40	-19.40	0.00	98.61	-	-	109.99	-11.38	148	110	H
			5.895	82.13	Pk	35.40	-19.40	0.00	98.13	-	-	109.90	-11.77	148	110	H
			5.895	71.35	RMS	35.40	-19.40	0.00	87.35	89.99	-2.64	-	-	148	110	H
			5.895	60.05	RMS	35.40	-19.40	0.00	76.05	89.72	-13.67	-	-	148	110	H
			5.895	79.42	Pk	35.40	-19.40	0.00	95.42	-	-	109.99	-14.57	208	105	V
802.11ax (HE20) SU mode	5885	MIMO	5.895	79.71	Pk	35.40	-19.40	0.00	95.71	-	-	109.95	-14.24	208	105	V
			5.895	68.91	RMS	35.40	-19.40	0.00	84.91	89.99	-5.08	-	-	208	105	V
			5.895	62.37	RMS	35.40	-19.40	0.00	78.37	89.83	-11.46	-	-	208	105	V
			5.895	73.29	Pk	35.40	-19.40	0.00	89.29	-	-	109.99	-20.70	153	100	H
			5.895	75.34	Pk	35.40	-19.40	0.00	91.34	-	-	109.88	-18.54	153	100	H
			5.895	56.37	RMS	35.40	-19.40	0.00	72.37	89.99	-17.62	-	-	153	100	H
			5.925	32.48	RMS	35.50	-19.40	0.00	48.58	68.00	-19.42	-	-	153	100	H
			5.895	70.92	Pk	35.40	-19.40	0.00	86.92	-	-	109.99	-23.07	209	101	V
			5.895	72.02	Pk	35.40	-19.40	0.00	88.02	-	-	109.97	-21.95	209	101	V
802.11ax (HE40) SU mode	5875	MIMO	5.895	52.07	RMS	35.40	-19.40	0.00	68.07	89.99	-21.92	-	-	209	101	V
			5.895	52.68	RMS	35.40	-19.40	0.00	68.68	89.97	-21.29	-	-	209	101	V
			5.895	69.33	Pk	35.40	-19.40	0.00	85.33	-	-	109.99	-24.66	149	110	H
			5.895	72.56	Pk	35.40	-19.40	0.00	88.56	-	-	109.84	-21.28	149	110	H
			5.895	53.55	RMS	35.40	-19.40	0.00	69.55	89.99	-20.44	-	-	149	110	H
			5.925	33.38	RMS	35.50	-19.40	0.00	49.48	68.00	-18.52	-	-	149	110	H
			5.895	69.61	Pk	35.40	-19.40	0.00	85.61	-	-	109.99	-24.38	213	100	V
			5.895	70.76	Pk	35.40	-19.40	0.00	86.76	-	-	109.97	-23.21	213	100	V
			5.895	49.07	RMS	35.40	-19.40	0.00	65.07	89.99	-24.92	-	-	213	100	V
802.11ax (HE80) SU mode	5855	MIMO	5.925	31.07	RMS	35.50	-19.40	0.00	47.17	68.04	-20.87	-	-	213	100	V
			5.895	68.50	Pk	35.40	-19.40	0.00	84.50	-	-	109.99	-25.49	154	100	H
			5.932	47.28	Pk	35.50	-19.30	0.00	63.48	-	-	88.00	-24.52	154	100	H
			5.895	48.53	RMS	35.40	-19.40	0.00	64.53	89.99	-25.46	-	-	154	100	H
			5.940	31.17	RMS	35.60	-19.40	0.00	47.37	68.00	-20.63	-	-	154	100	H
			5.895	65.29	Pk	35.40	-19.40	0.00	81.29	-	-	109.99	-28.70	194	295	V
			5.895	67.43	Pk	35.40	-19.40	0.00	83.43	-	-	109.94	-26.51	194	295	V
			5.895	47.89	RMS	35.40	-19.40	0.00	63.89	89.99	-26.10	-	-	194	295	V
			5.933	29.62	RMS	35.50	-19.40	0.00	45.72	68.00	-22.28	-	-	194	295	V

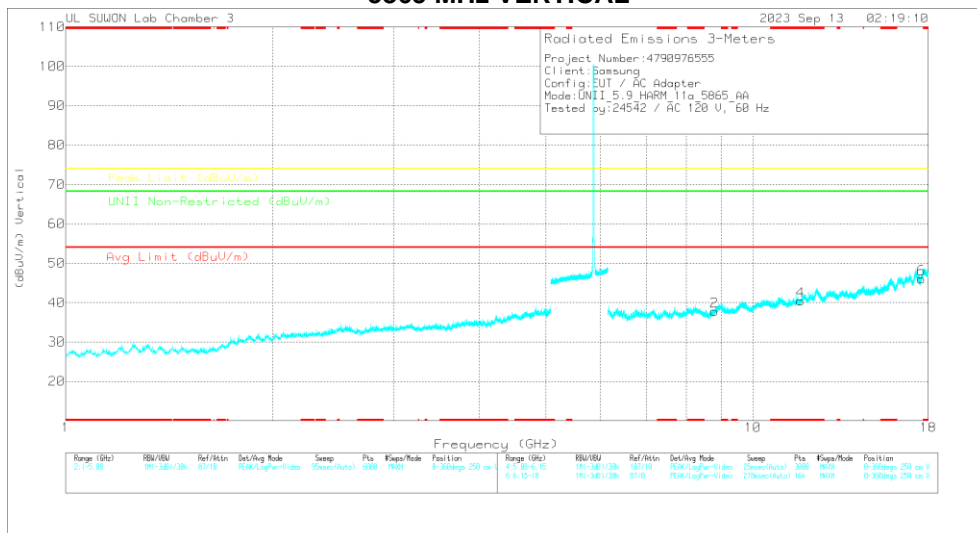
Note1. PK: Maximum Peak / ADR - U-NII AD primary method, RMS average  
 Note2. \* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

**HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5865 MHz)**

**5865 MHz HORIZONTAL**



**5865 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.

**5865 MHz DATA**

**Radiated Emissions**

Frequency (GHz)	Max Reading (dBuV)	Det	Antenna Correction Factor (dB (1m))	Loss (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 (Deg)	Height (cm)	Polarity
8.79559	34.79	PK-U	36.1	-22.9	0	47.99	-	-	-	-	68.2	-20.21	0	100	H
8.79573	35.38	PK-U	36.1	-22.9	0	48.58	-	-	-	-	68.2	-19.62	0	100	V
* 11.72855	34.92	PK-U	38.4	-21.5	0	51.82	-	-	74	-22.18	-	-	0	100	H
* 11.73348	34.77	PK-U	38.4	-21.5	0	51.67	-	-	74	-22.33	-	-	0	100	V
17.59932	31.71	PK-U	41.3	-16.2	0	56.81	-	-	-	-	68.2	-11.39	0	100	H
17.59874	31.96	PK-U	41.3	-16.2	0	57.06	-	-	-	-	68.2	-11.14	0	100	V

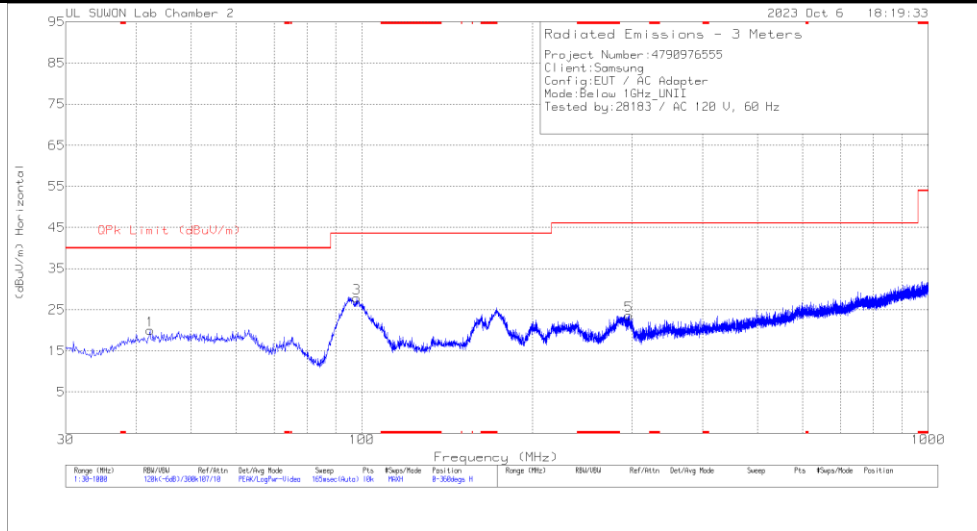
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK-U - U-NII: Maximum Peak

**HARMONICS AND SPURIOUS EMISSIONS TEST DATA**

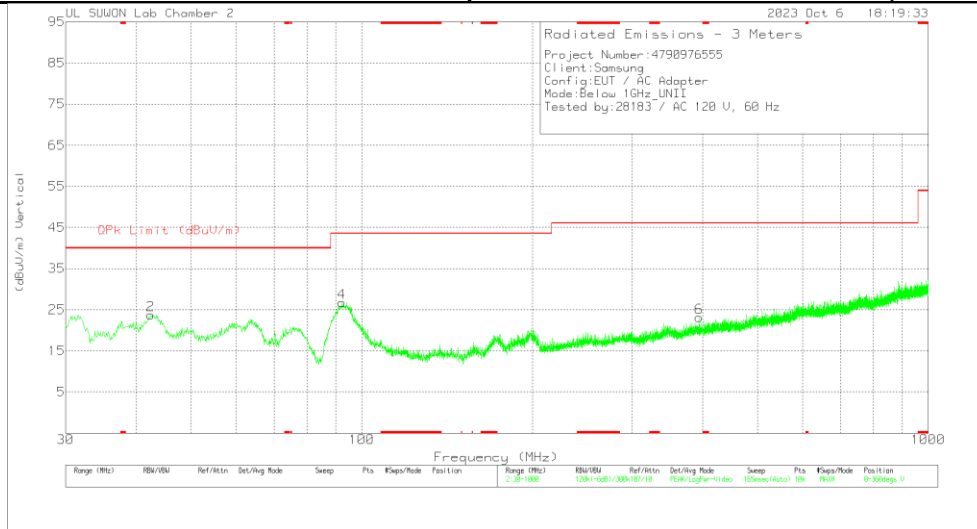
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB(1/m)]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity			
802.11a	5845	MIMO	8.772	34.74	PK-U	36.10	-23.00	0.00	47.84	-	-	-	-	68.20	-20.36	0	100	H			
			8.772	35.38	PK-U	36.10	-23.00	0.00	48.48	-	-	-	-	68.20	-19.72	0	100	V			
			*11.68807	34.66	PK-U	38.40	-21.60	0.00	51.46	-	-	74.00	-22.54	-	-	-	0	100	H		
			*11.68958	34.90	PK-U	38.40	-21.50	0.00	51.80	-	-	74.00	-22.20	-	-	-	0	100	V		
			17.532	31.41	PK-U	41.20	-16.30	0.00	56.31	-	-	-	-	-	-	68.20	-11.89	0	100	H	
			17.533	31.69	PK-U	41.20	-16.30	0.00	56.59	-	-	-	-	-	-	68.20	-11.61	0	100	V	
	5865	MIMO	8.796	34.79	PK-U	36.10	-22.90	0.00	47.99	-	-	-	-	68.20	-20.21	0	100	H			
			8.796	35.38	PK-U	36.10	-22.90	0.00	48.58	-	-	-	-	68.20	-19.62	0	100	V			
			*11.72855	34.92	PK-U	38.40	-21.50	0.00	51.82	-	-	74.00	-22.18	-	-	-	0	100	H		
			*11.73348	34.77	PK-U	38.40	-21.50	0.00	51.67	-	-	74.00	-22.33	-	-	-	0	100	V		
			17.599	31.71	PK-U	41.30	-16.20	0.00	56.81	-	-	-	-	-	-	68.20	-11.39	0	100	H	
			17.599	31.96	PK-U	41.30	-16.20	0.00	57.06	-	-	-	-	-	-	68.20	-11.14	0	100	V	
	5885	MIMO	8.828	35.18	PK-U	36.10	-22.70	0.00	48.58	-	-	-	-	68.20	-19.62	0	100	H			
			8.826	34.99	PK-U	36.10	-22.70	0.00	48.39	-	-	-	-	68.20	-19.81	0	100	V			
			*11.76853	34.16	PK-U	38.40	-21.40	0.00	51.16	-	-	74.00	-22.84	-	-	-	0	100	H		
			*11.76656	34.17	PK-U	38.40	-21.50	0.00	51.07	-	-	74.00	-22.93	-	-	-	0	100	V		
			17.659	31.17	PK-U	41.30	-15.60	0.00	56.87	-	-	-	-	-	-	68.20	-11.33	0	100	H	
			17.655	31.36	PK-U	41.30	-15.70	0.00	56.96	-	-	-	-	-	-	68.20	-11.24	0	100	V	
	802.11ax (HE20) RU mode 26 Tone offset 0 Spot-check	5885	MIMO	8.826	34.89	PK-U	36.10	-22.70	0.00	48.29	-	-	-	-	68.20	-19.91	0	100	H		
				8.827	35.05	PK-U	36.10	-22.70	0.00	48.45	-	-	-	-	68.20	-19.75	0	100	V		
				*11.76779	34.51	PK-U	38.40	-21.40	0.00	51.51	-	-	74.00	-22.49	-	-	-	0	100	H	
				*11.77225	34.25	PK-U	38.40	-21.50	0.00	51.15	-	-	74.00	-22.85	-	-	-	0	100	V	
				17.654	30.99	PK-U	41.30	-15.80	0.00	56.49	-	-	-	-	-	-	68.20	-11.71	0	100	H
				17.657	31.35	PK-U	41.30	-15.60	0.00	57.05	-	-	-	-	-	-	68.20	-11.15	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

## 12. WORST-CASE BELOW 1 GHz SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



## SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)



### Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor [dB(1/m)]	Loss(dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	42.319	32.44	Pk	19.4	-31.8	20.04	40	-19.96	0-360	100	H
3	97.9	42.01	Pk	17.2	-31.3	27.91	43.52	-15.61	0-360	200	H
5	295.877	34.62	Pk	19.1	-30.1	23.62	46.02	-22.4	0-360	100	H
2	42.416	36.1	Pk	19.4	-31.8	23.7	40	-16.3	0-360	100	V
4	92.274	41.65	Pk	16.3	-31.2	26.75	43.52	-16.77	0-360	100	V
6	393.75	31.82	Pk	21.1	-29.8	23.12	46.02	-22.9	0-360	200	V

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

### 13. AC POWER LINE CONDUCTED EMISSIONS

#### LIMITS

FCC §15.207 (a)  
IC RSS-GEN Clause 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 <sup>*</sup>	56 to 46 <sup>*</sup>
0.5-5	56	46
5-30	60	50

<sup>\*</sup>Decreases with the logarithm of the frequency.

#### TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

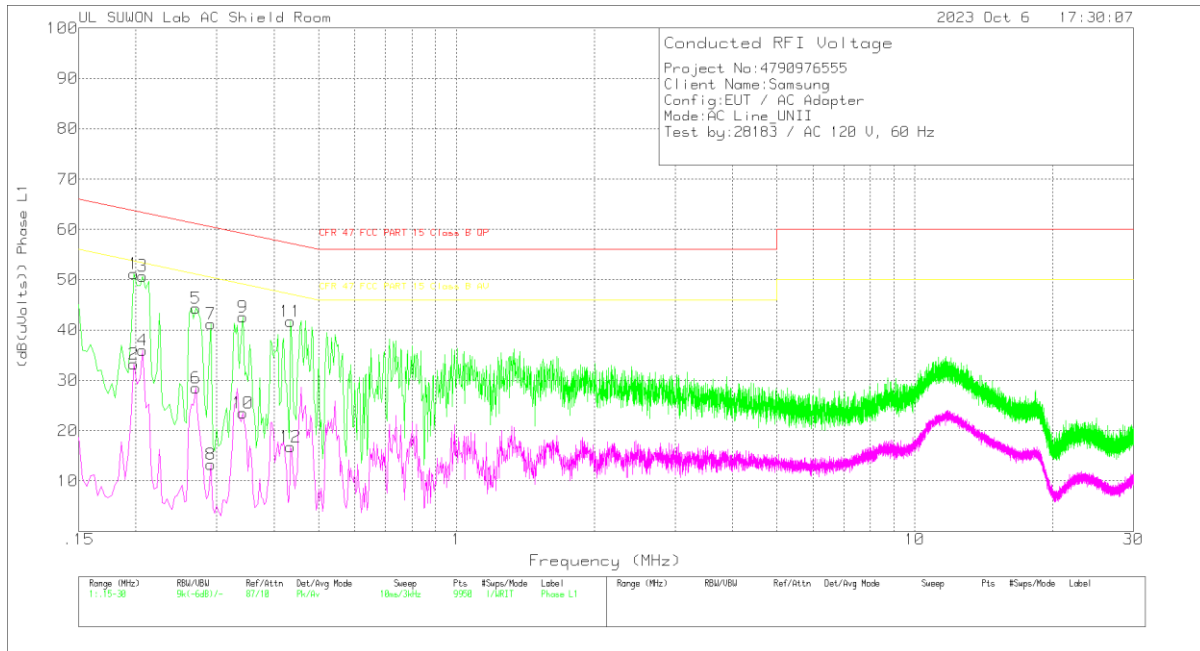
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

#### RESULTS

**WORST EMISSIONS**

**LINE 1 DATA**



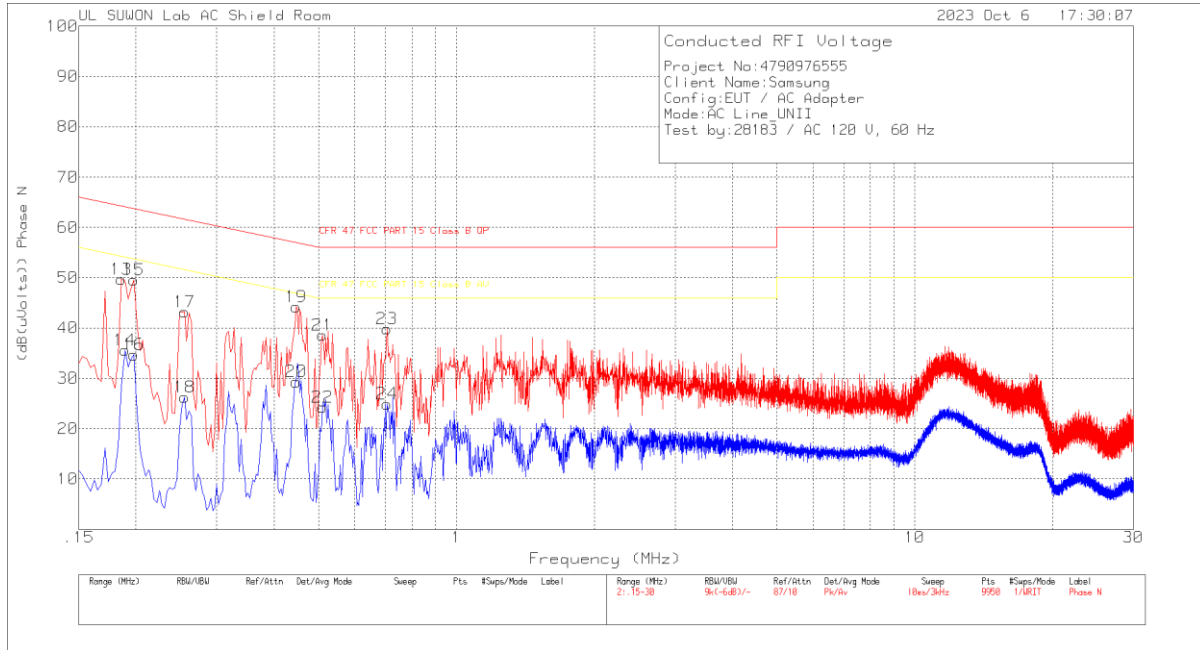
**Trace Markers**

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_AU TO_With EX_L1[dB]	CABLELOS S[dB]	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP (dB(uVolts))	Margin (dB)	CFR 47 FCC PART 15 Class B AV (dB(uVolts))	Margin (dB)
1	.198	41.47	Pk	9.5	.2	51.17	63.69	-12.52	-	-
2	.198	23.48	Av	9.5	.2	33.18	-	-	53.69	-20.51
3	.207	41.04	Pk	9.5	.2	50.74	63.32	-12.58	-	-
4	.207	26.33	Av	9.5	.2	36.03	-	-	53.32	-17.29
5	.27	34.63	Pk	9.5	.2	44.33	61.12	-16.79	-	-
6	.27	18.85	Av	9.5	.2	28.55	-	-	51.12	-22.57
7	.291	31.48	Pk	9.5	.2	41.18	60.5	-19.32	-	-
8	.291	3.56	Av	9.5	.2	13.26	-	-	50.5	-37.24
9	.342	32.85	Pk	9.5	.2	42.55	59.15	-16.6	-	-
10	.342	13.78	Av	9.5	.2	23.48	-	-	49.15	-25.67
11	.435	32.01	Pk	9.5	.2	41.71	57.16	-15.45	-	-
12	.435	7.04	Av	9.5	.2	16.74	-	-	47.16	-30.42

Pk - Peak detector  
 Av - Average detection

LINE 2 DATA



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_AU TO_With EX_N[dB]	CABLELOS S[dB]	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP (dB(uVolts))	Margin (dB)	CFR 47 FCC PART 15 Class B AV (dB(uVolts))	Margin (dB)
13	.186	39.93	Pk	9.5	.2	49.63	64.21	-14.58	-	-
14	.189	25.92	Av	9.5	.2	35.62	-	-	54.08	-18.46
15	.198	39.81	Pk	9.5	.2	49.51	63.69	-14.18	-	-
16	.198	24.97	Av	9.5	.2	34.67	-	-	53.69	-19.02
17	.255	33.54	Pk	9.5	.2	43.24	61.59	-18.35	-	-
18	.255	16.51	Av	9.5	.2	26.21	-	-	51.59	-25.38
19	.447	34.48	Pk	9.5	.2	44.18	56.93	-12.75	-	-
20	.447	19.61	Av	9.5	.2	29.31	-	-	46.93	-17.62
21	.51	28.75	Pk	9.6	.2	38.55	56	-17.45	-	-
22	.51	14.44	Av	9.6	.2	24.24	-	-	46	-21.76
23	.705	30.01	Pk	9.6	.2	39.81	56	-16.19	-	-
24	.705	15.14	Av	9.6	.2	24.94	-	-	46	-21.06

Pk - Peak detector  
 Av - Average detection

## 14. DYNAMIC FREQUENCY SELECTION

### 14.1. OVERVIEW

#### 14.1.1. LIMITS

#### FCC

§15.407 (h), FCC KDB 905462 D02 “COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVICES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION” and KDB 905462 D03 “U-NII CLIENT DEVICES WITHOUT RADAR DETECTION CAPABILITY”.

**Table 1: Applicability of DFS requirements prior to use of a channel**

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client (with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

**Table 2: Applicability of DFS requirements during normal operation**

Requirement	Operational Mode		
	Master	Client (without DFS)	Client (with DFS)
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar DFS	Client (without DFS)
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required

**Note:** Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in all 20 MHz channel blocks and a null frequency between the bonded 20 MHz channel blocks.



**Table 3: Interference Threshold values, Master or Client incorporating In-Service Monitoring**

Maximum Transmit Power	Value (see notes)
E.I.R.P. $\geq$ 200 mill watt	-64 dBm
E.I.R.P. < 200 mill watt and power spectral density < 10 dBm/MHz	-62 dBm
E.I.R.P. < 200 mill watt that do not meet power spectral density requirement	-64 dBm
<p><b>Note 1:</b> This is the level at the input of the receiver assuming a 0 dBi receive antenna  <b>Note 2:</b> Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.  <b>Note 3:</b> E.I.R.P. is based on the highest antenna gain. For MIMO devices refer to KDB publication 662911 D01.</p>	

**Table 4: DFS Response requirement values**

Parameter	Value
<i>Non-occupancy period</i>	30 minutes
<i>Channel Availability Check Time</i>	60 seconds
<i>Channel Move Time</i>	10 seconds (See Note 1)
<i>Channel Closing Transmission Time</i>	200 milliseconds + approx. 60 milliseconds over remaining 10 second period. (See Notes 1 and 2)
<i>U-NII Detection Bandwidth</i>	Minimum 100% of the U- NII 99% transmission power bandwidth. (See Note 3)
<p><b>Note 1:</b> <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.  <b>Note 2:</b> The <i>Channel Closing Transmission Time</i> is comprised of 200 milliseconds starting at the beginning of the <i>Channel Move Time</i> plus any additional intermittent control signals required to facilitate a <i>Channel</i> move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.  <b>Note 3:</b> During the <i>U-NII Detection Bandwidth</i> detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.</p>	

**Table 5 – Short Pulse Radar Test Waveforms**

Radar Type	Pulse Width (usec)	PRI (usec)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in table 5a	Roundup: $\{(1/360) \times (19 \times 10^6 \text{ PRI}_{\text{usec}})\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 usec. With a minimum increment of 1 usec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
<b>Note 1:</b> Short Pulse Radar Type 0 should be used for the <i>Detection Bandwidth</i> test, <i>Channel Move Time</i> , and <i>Channel Closing Time</i> tests.					

**Table 6 – Long Pulse Radar Test Signal**

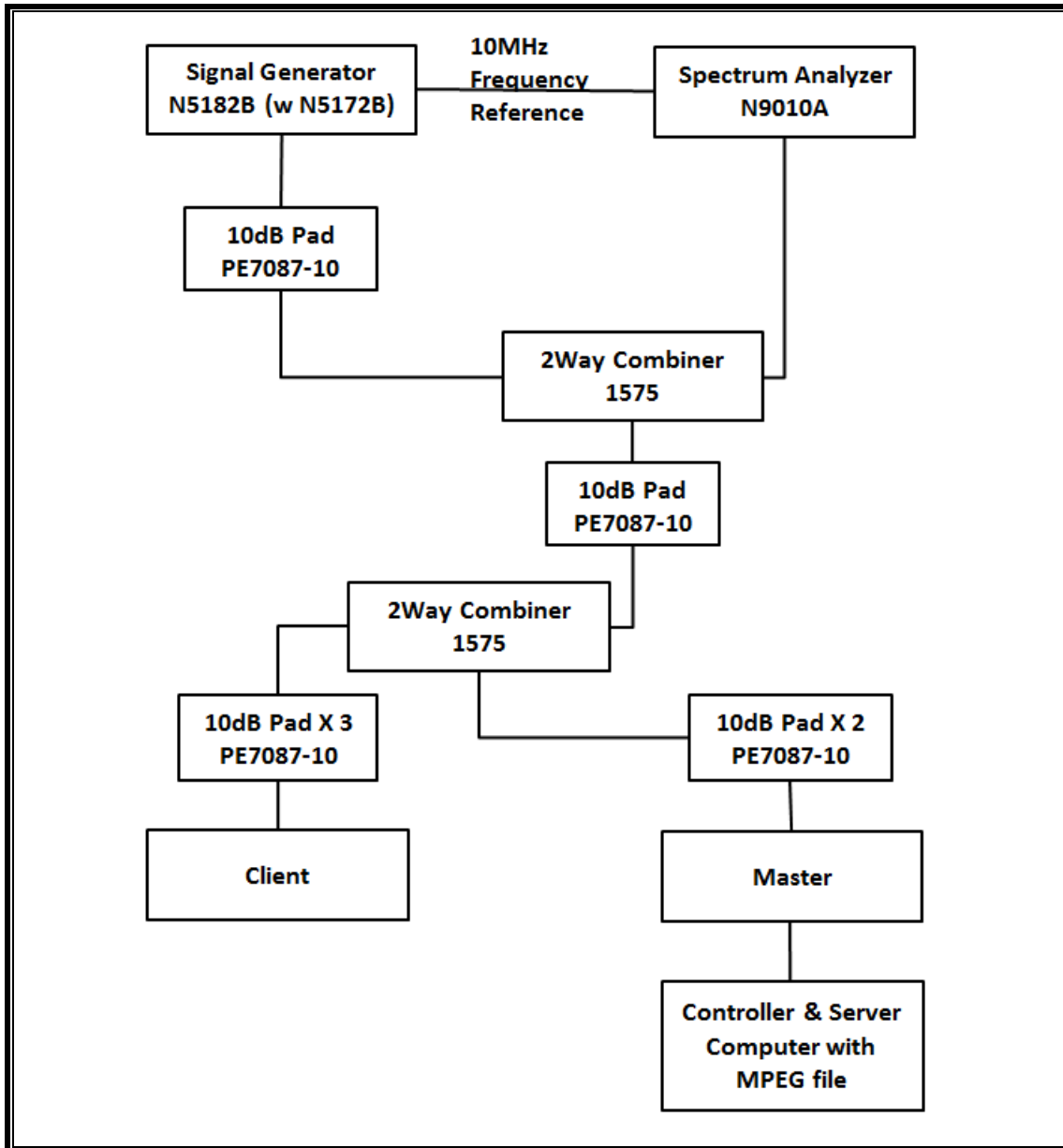
Radar Waveform Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

**Table 7 – Frequency Hopping Radar Test Signal**

Radar Waveform Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	0.333	300	70%	30

### 14.1.2. TEST AND MEASUREMENT SYSTEM

#### CONDUCTED METHOD SYSTEM BLOCK DIAGRAM



## **SYSTEM OVERVIEW**

The short pulse and long pulse signal generating system utilizes the Keysite Signal Studio for Pulse Building as N5172B. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

The short pulse types 1, 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of KDB 905462 D02. The frequency of the signal generator is incremented in 1 MHz steps from  $F_L$  to  $F_H$  for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold.

## **SYSTEM CALIBRATION**

A 50-ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to a horn antenna via a coaxial cable, with the reference level offset set to (horn antenna gain – coaxial cable loss). The signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of –64 dBm as measured on the spectrum analyzer.

Without changing any of the instrument settings, the spectrum analyzer is reconnected to the Common port of the Spectrum Analyzer Combiner/Divider. The Reference Level Offset of the spectrum analyzer is adjusted so that the displayed amplitude of the signal is –64 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –64 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

**ADJUSTMENT OF DISPLAYED TRAFFIC LEVEL**

A link is established between the Master and Slave and the distance between the units is adjusted as needed to provide a suitable received level at the Master and Slave devices. The video test file is streamed to generate WLAN traffic. The monitoring antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

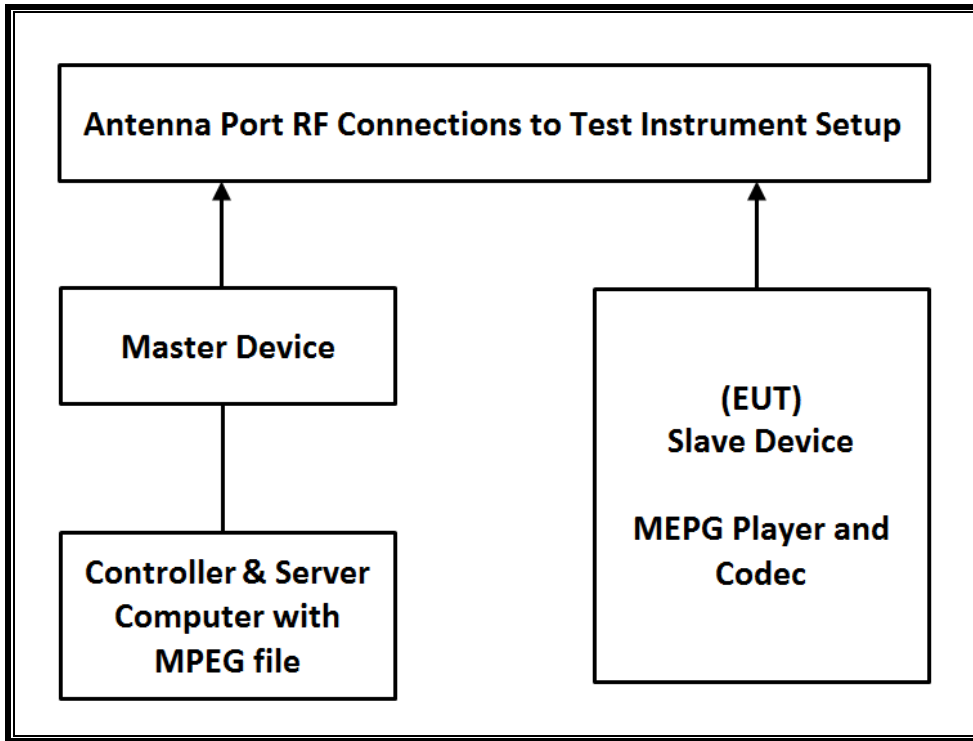
**TEST AND MEASUREMENT EQUIPMENT**

The following test and measurement equipment was utilized for the DFS tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	S/N	Next Cal Due
Spectrum Analyzer, 7 GHz	Agilent / HP	N9010A	MY54200580	07-23-24
Vector Signal Generator, 6GHz	Agilent / HP	N5182B	MY53051241	07-23-24
Combiner	WEINSCHTEL	WA1534	UL001	01-13-24
Combiner	WEINSCHTEL	WA1534	UL003	01-09-24

**14.1.3. SETUP OF EUT**

**CONDUCTED METHOD EUT TEST SETUP**



**SUPPORT EQUIPMENT**

The following support equipment was utilized for the DFS tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Wireless Access Point	ASUS	GT-AXE11000	M3IAJF200742	MSQ-RTAXJF00
Notebook PC (Controller/Server)	HP	HP EliteDesk 800 G1 TWR	CZC4125J25	DoC

#### **14.1.4. DESCRIPTION OF EUT**

The EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges.

The EUT is a Slave Device without Radar Detection.

The highest power level of the widest bandwidth (802.11ac VHT160) within these bands is 14.87 dBm in the 5250-5350 MHz band and 5470-5725 MHz band.

The antenna assembly utilized two antenna.

Gain of ANT1 : -3.30 dBi for UNII 2A and -2.90 dBi for UNII 2C.

Gain of ANT2 : -5.50 dBi for UNII 2A and -4.22 dBi for UNII 2C.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is -64 dBm. After correction for procedural adjustments, the required conducted threshold at the antenna port is  $-64 + 1 = -63$  dBm.

The calibrated radiated DFS Detection Threshold level is set to -64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

The EUT uses one transmitter/receiver chain connected to an antenna to perform radiated tests. WLAN traffic that meets or exceeds the minimum required loading was generated by transferring a data stream from the controller/server PC to the EUT using iPerf version 2.0.5 software package.

TPC is not required since the maximum EIRP is less than 500 mW (27 dBm).

The EUT utilizes the 802.11 architecture. One nominal channel bandwidth are implemented: 160 MHz.

The software installed in the access point is 12.4(25d)JA1.

#### **UNIFORM CHANNEL SPREADING**

This requirement is not applicable to Slave radio devices.

#### **CHANNEL PUNCTURING(802.11ax)**

This EUT does not support channel puncturing.

#### **OVERVIEW OF MASTER DEVICE WITH RESPECT TO §15.407 (h) REQUIREMENTS**

The Master Device is a ASUS Access Point, FCC ID: MSQ-RTAXJF00. The minimum antenna gain for the Master Device is 6 dBi.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is -64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is  $-64 + 1 = -63$  dBm.

The calibrated radiated DFS Detection Threshold level is set to -64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

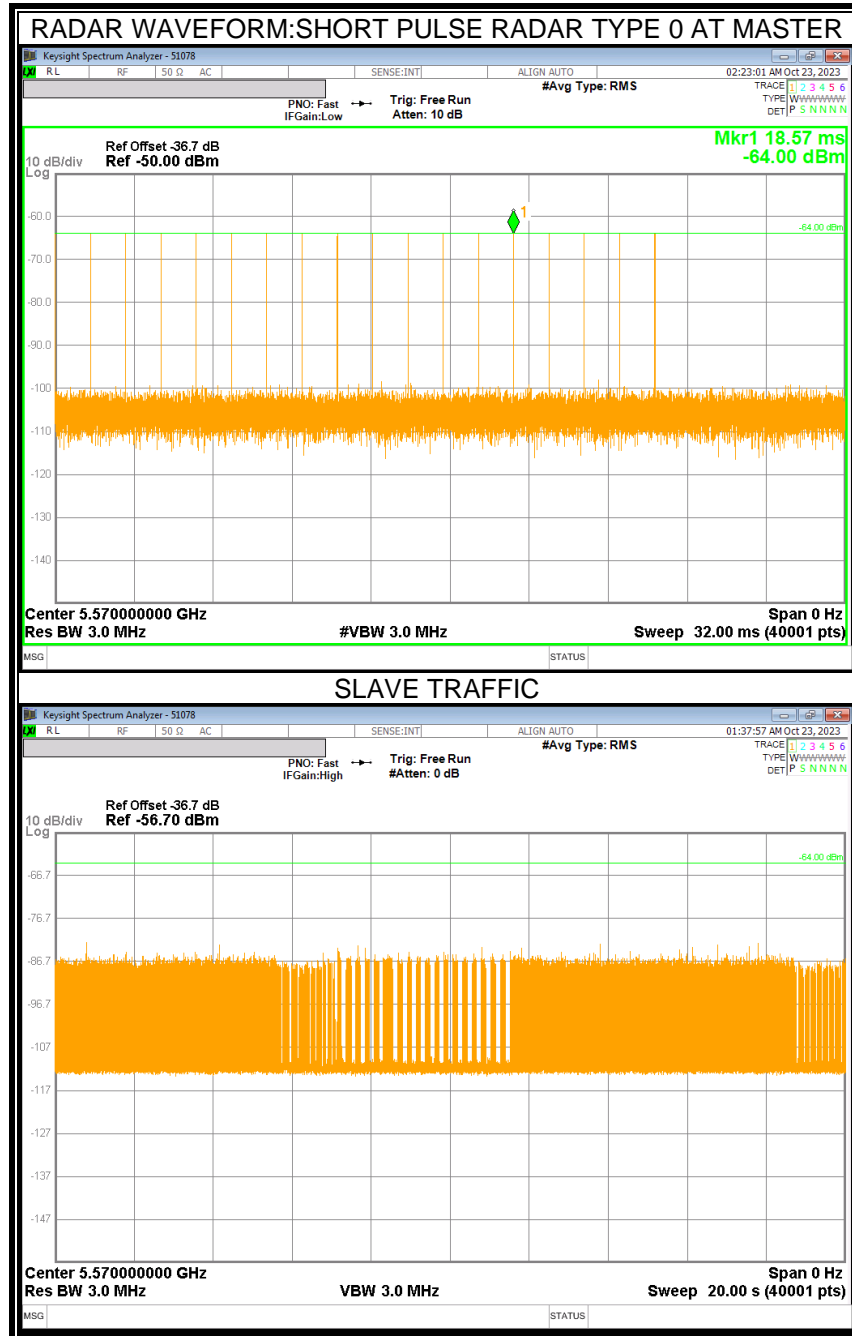
## 14.2. RESULTS FOR 160 MHz BANDWIDTH (UNII-2A & 2C BANDS)

### 14.2.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5570 MHz.

### 14.2.2. RADAR WAVEFORM AND TRAFFIC

#### RADAR WAVEFORM





### 14.2.3. OVERLAPPING CHANNEL TESTS

#### RESULTS

These tests are not applicable.

### 14.2.4. MOVE AND CLOSING TIME

#### REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =  
(Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### RESULTS

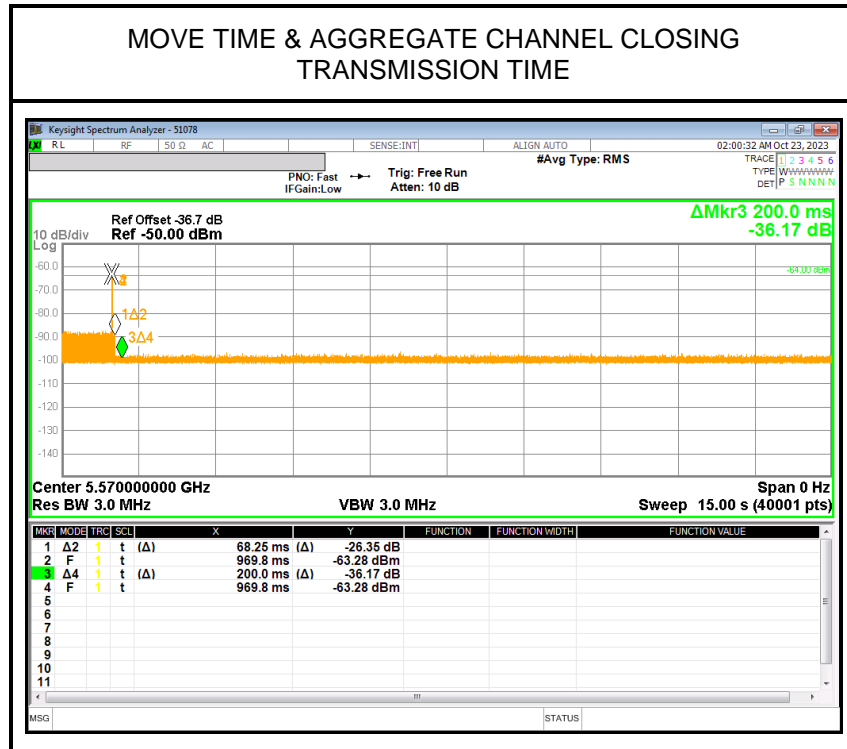
Channel Move Time (sec)	Limit (sec)
0.068	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0	60

**MOVE TIME & CHANNEL CLOSING TIME**

**AGGREGATE CHANNEL CLOSING TRANSMISSION TIME**

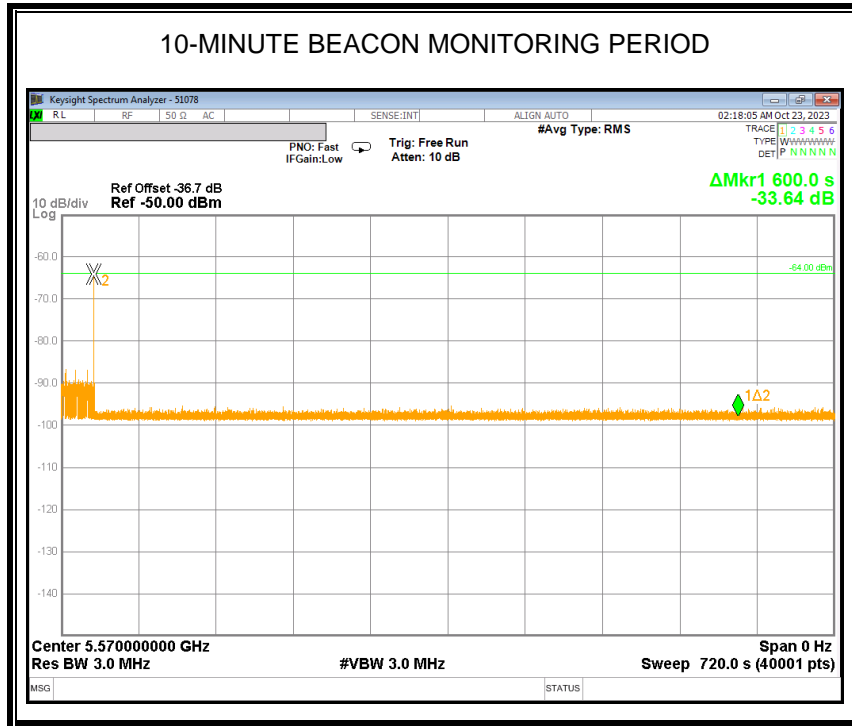
No transmissions are observed during the aggregate monitoring period.



**NON-OCCUPANCY PERIOD**

**RESULTS**

No EUT transmissions were observed on the test channel during the 10-minute observation time.



**END OF TEST REPORT**