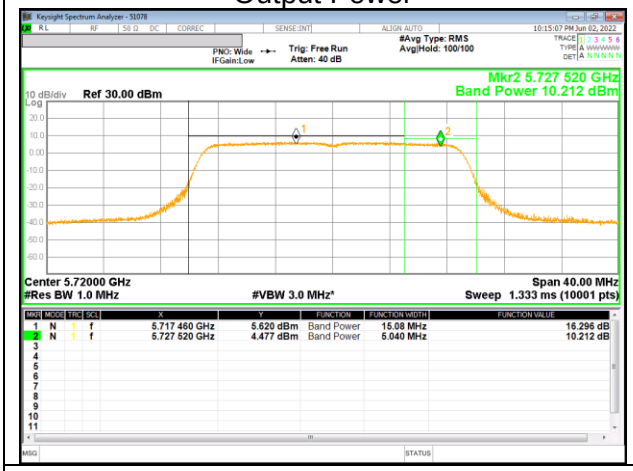
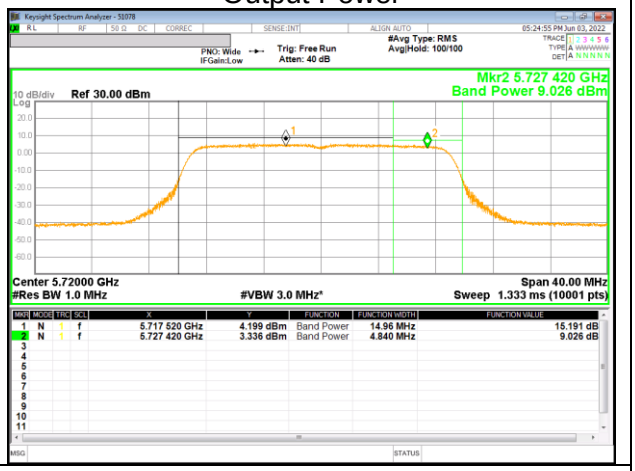
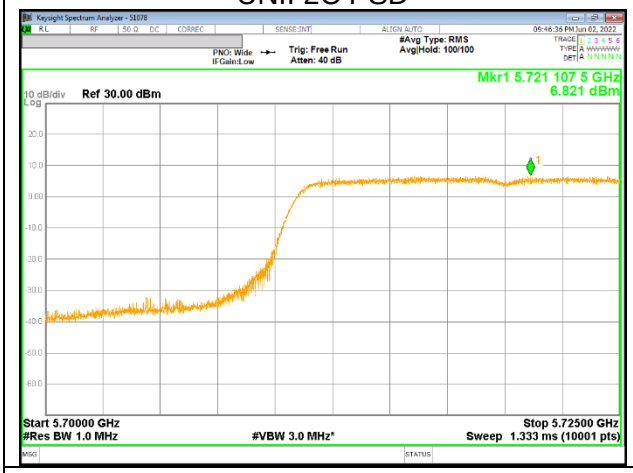
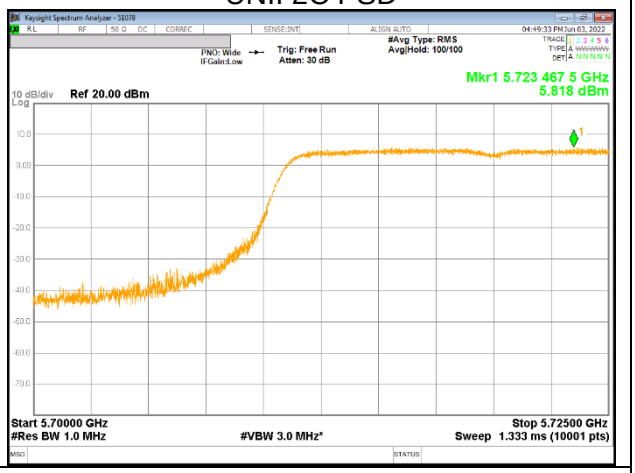
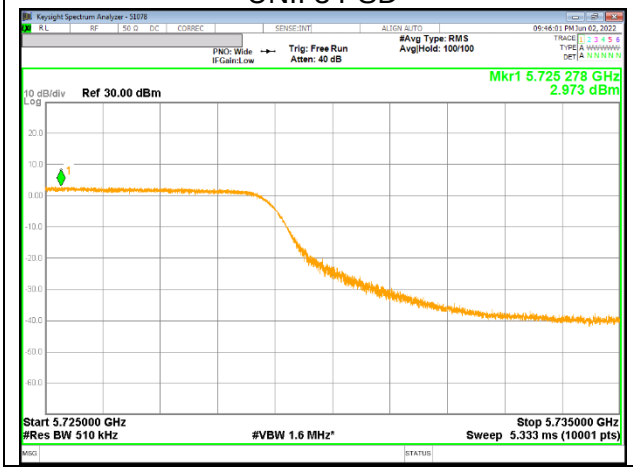
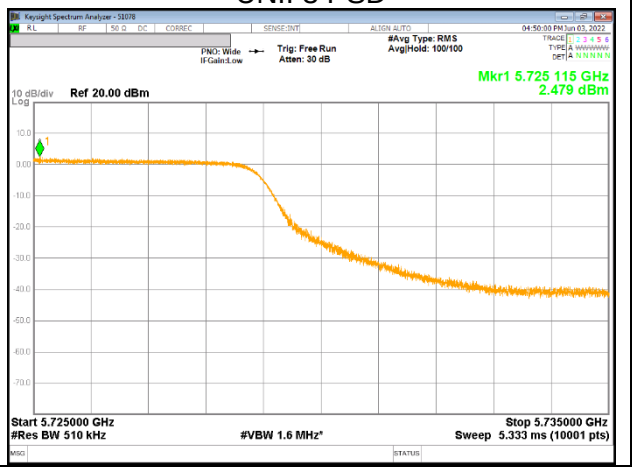
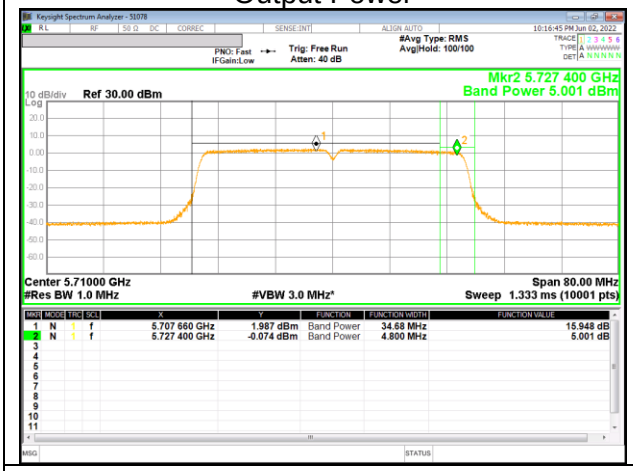
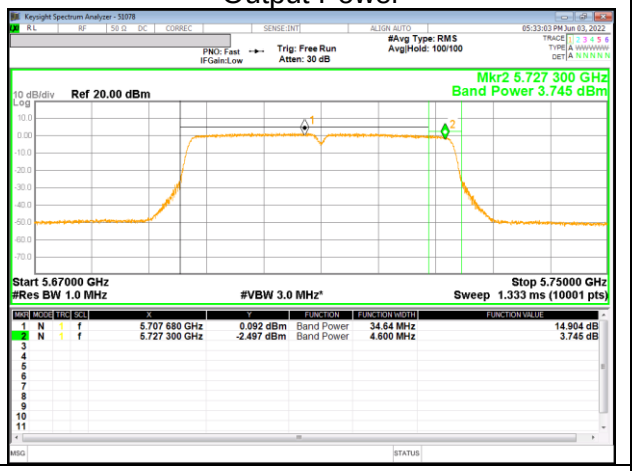
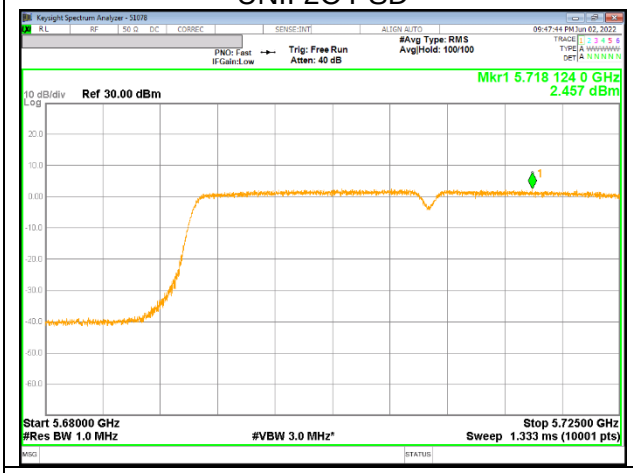
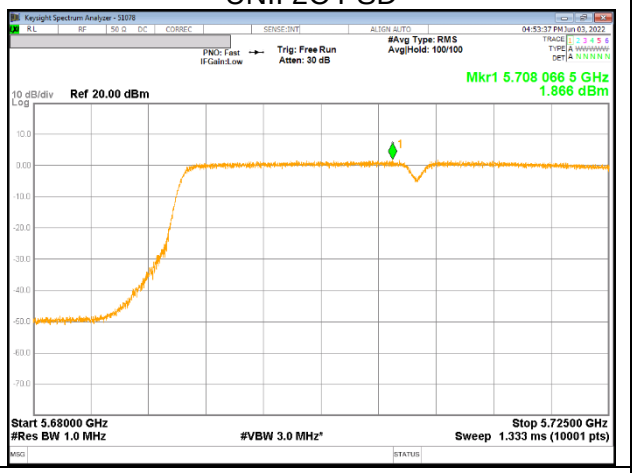
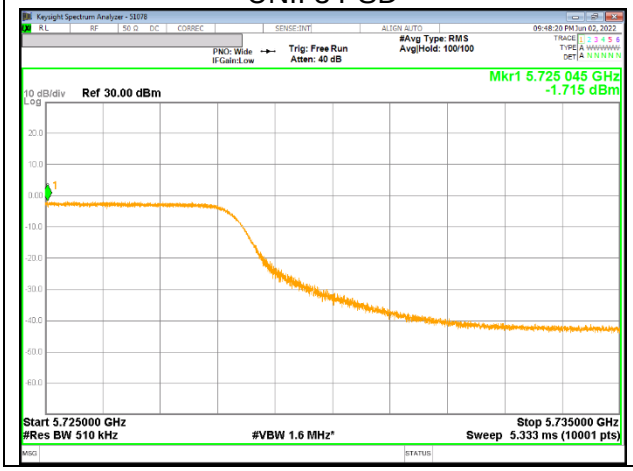
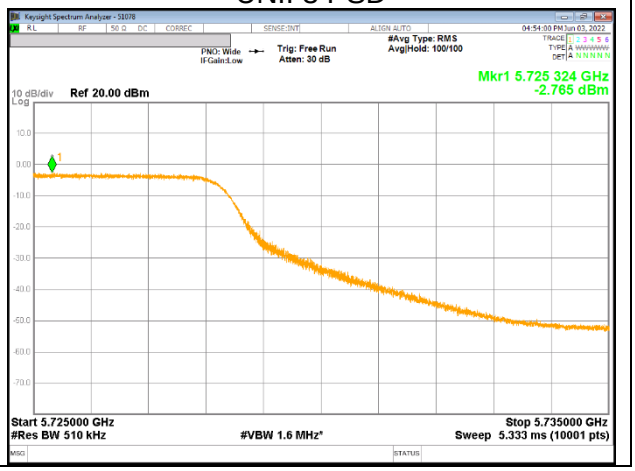
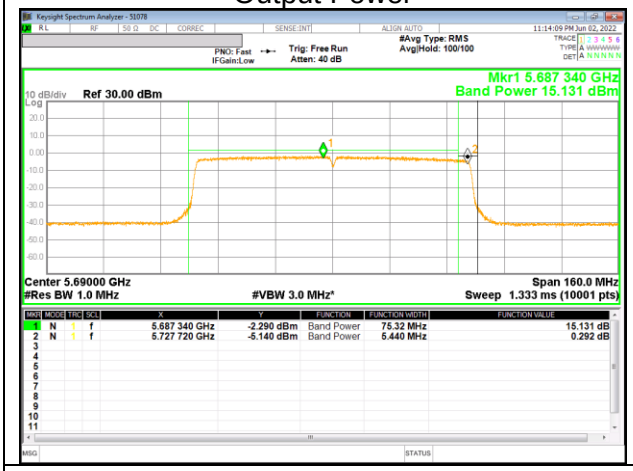
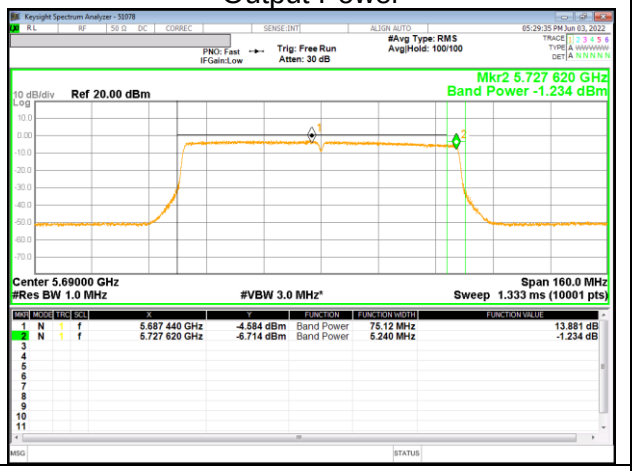
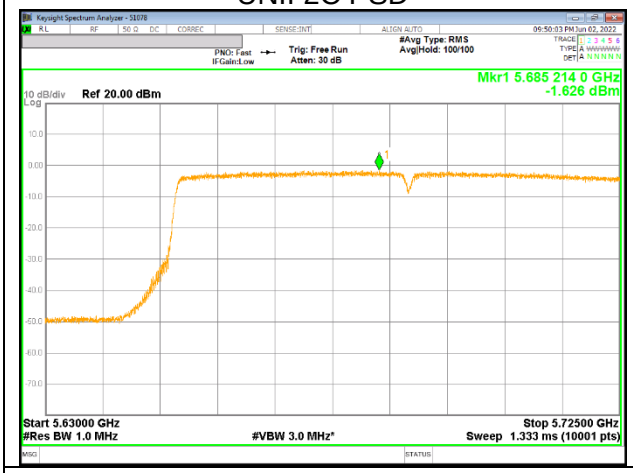
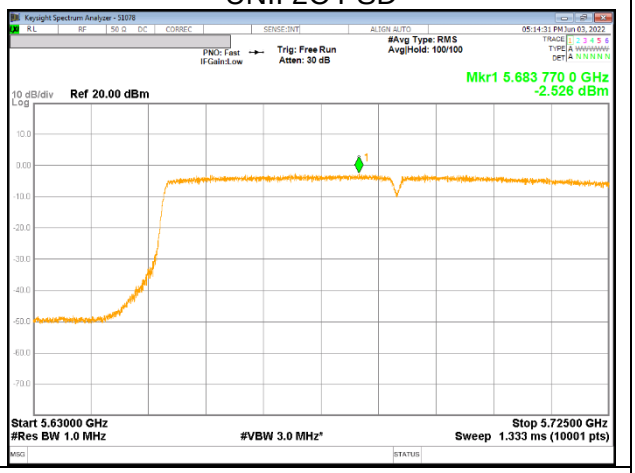
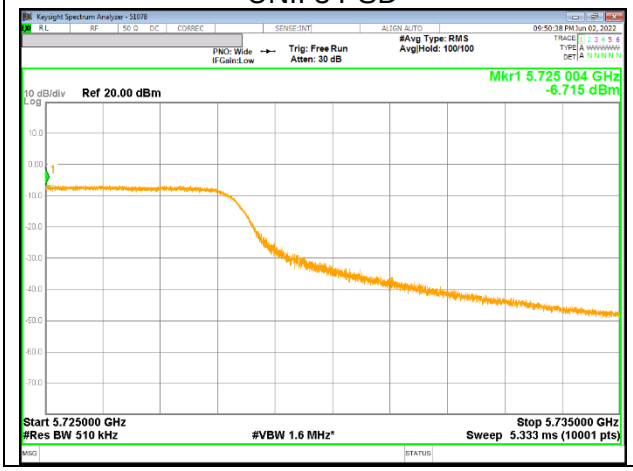
UNII Straddle Ch. IEEE 802.11n HT20 mode Output Power and PSD

ANT1	ANT2
Output Power	Output Power
	
UNII 2C PSD	UNII 2C PSD
	
UNII 3 PSD	UNII 3 PSD
	

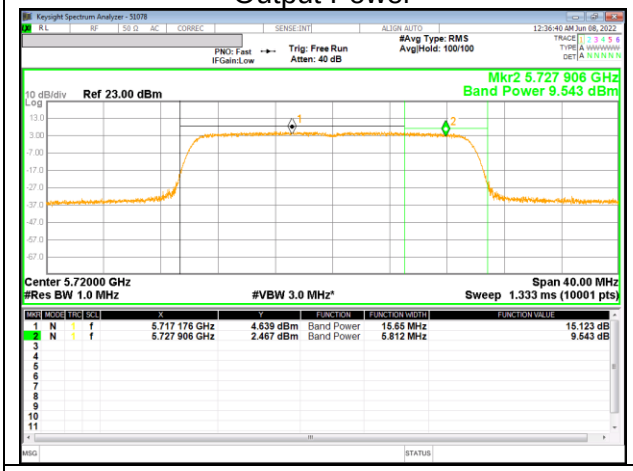
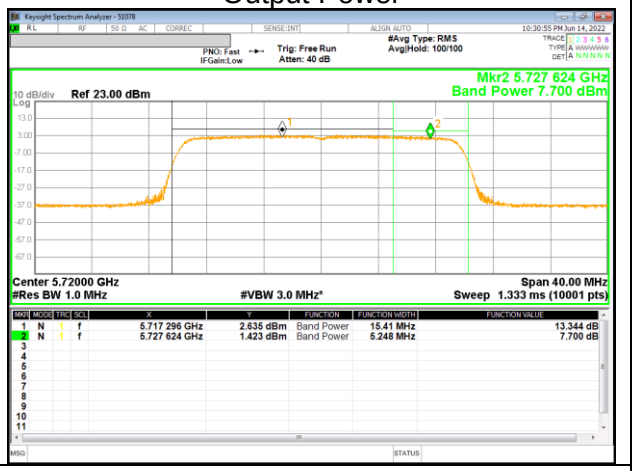
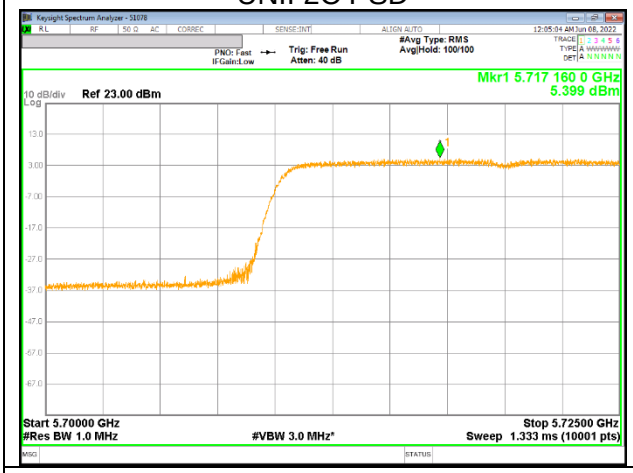
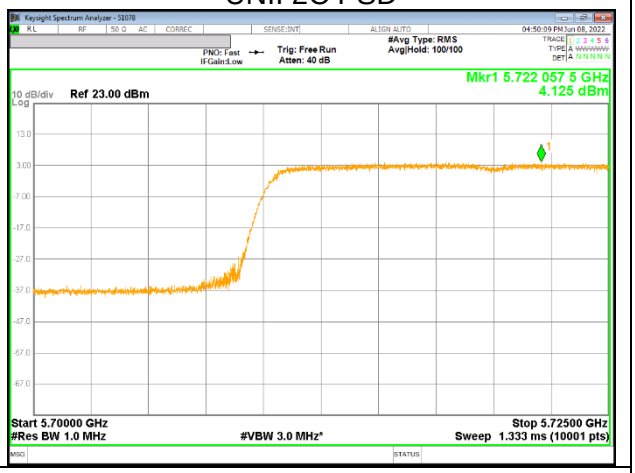
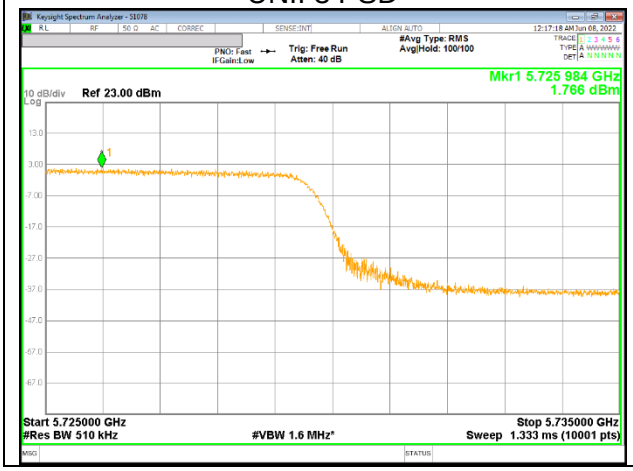
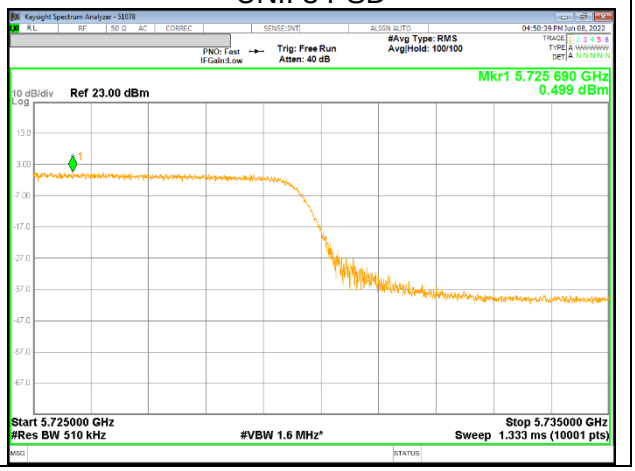
UNII Straddle Ch. IEEE 802.11n HT40 mode Output Power and PSD

ANT1	ANT2
Output Power	Output Power
	
UNII 2C PSD	UNII 2C PSD
	
UNII 3 PSD	UNII 3 PSD
	

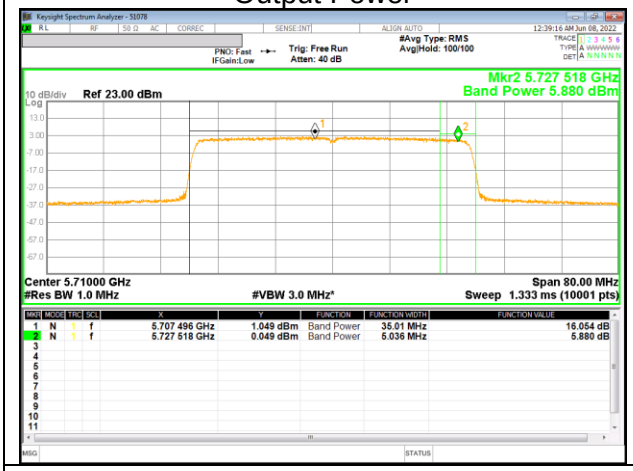
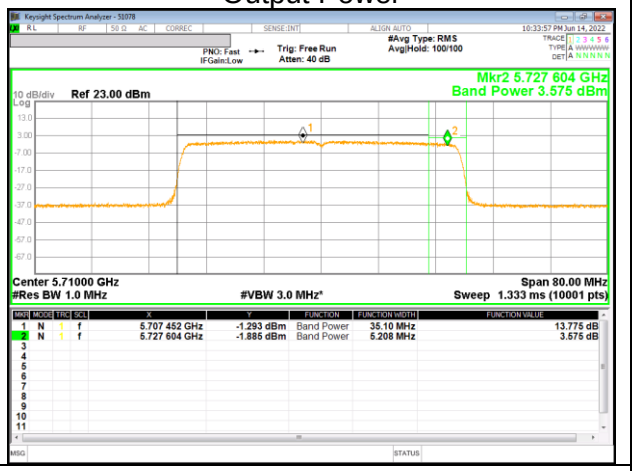
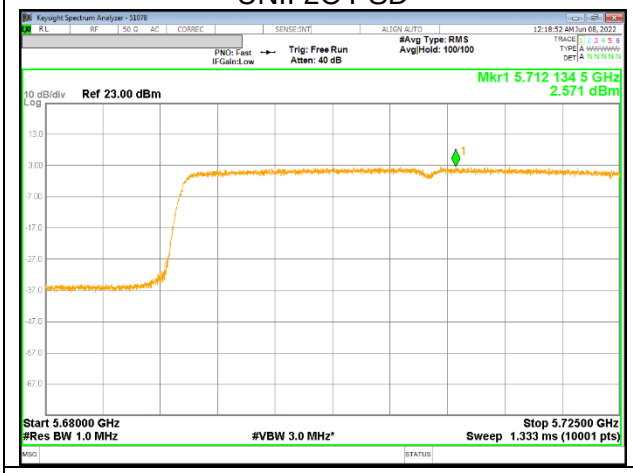
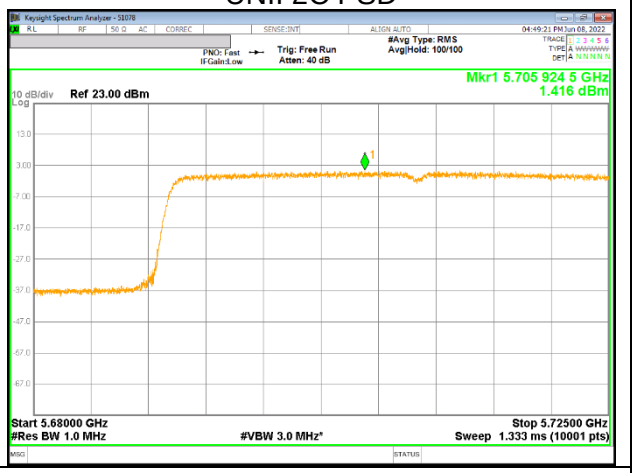
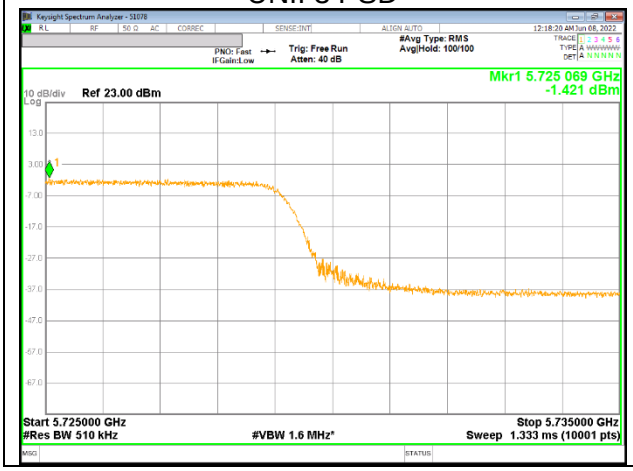
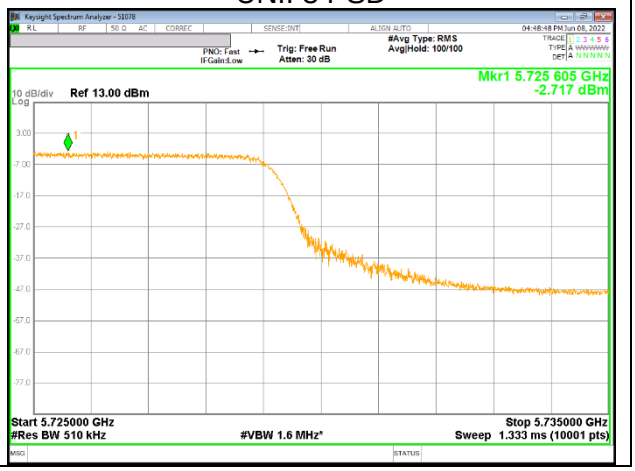
UNII Straddle Ch. IEEE 802.11ac VHT80 mode Output Power and PSD

ANT1	ANT2
Output Power	Output Power
	
UNII 2C PSD	UNII 2C PSD
	
UNII 3 PSD	UNII 3 PSD
	

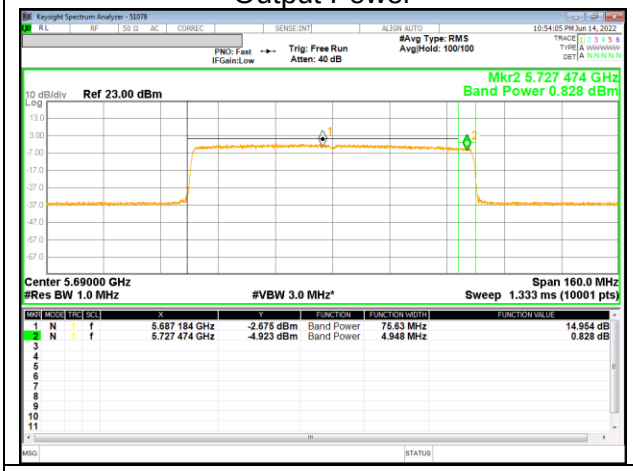
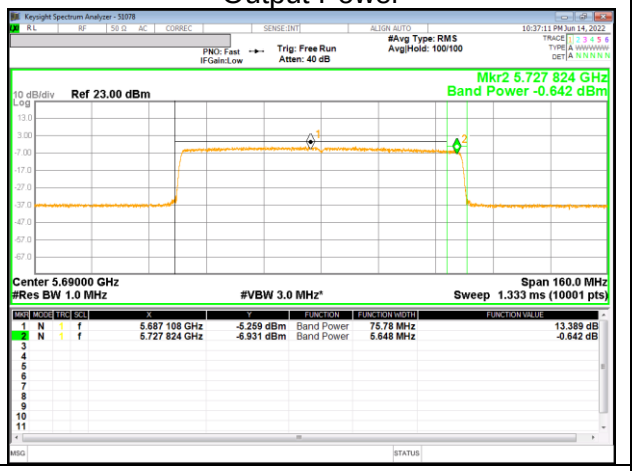
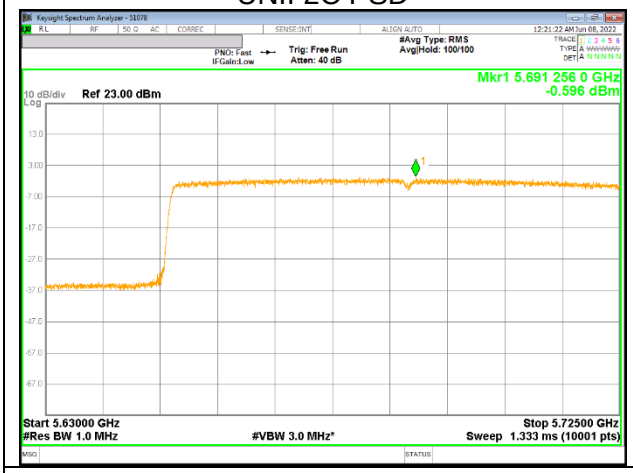
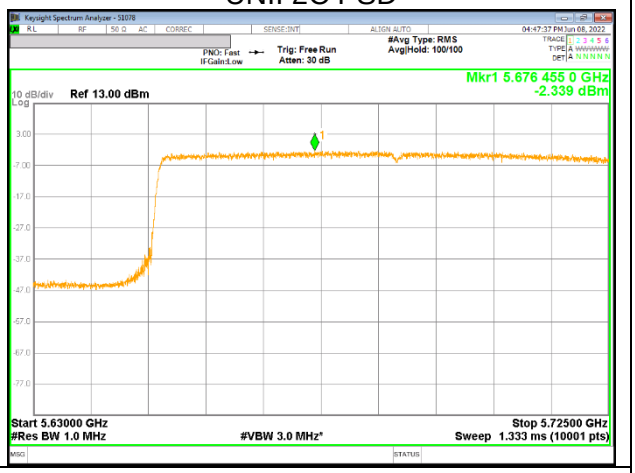
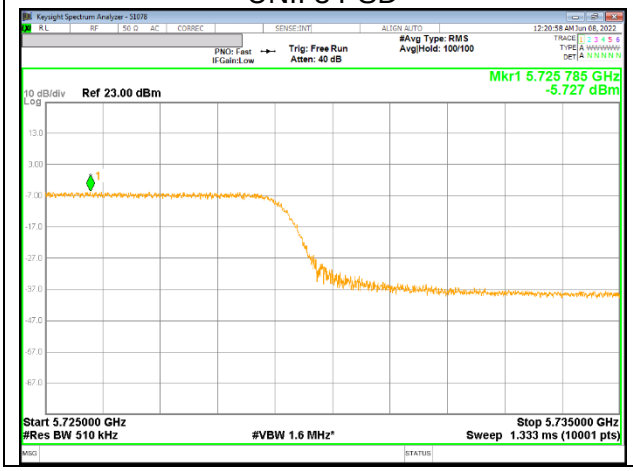
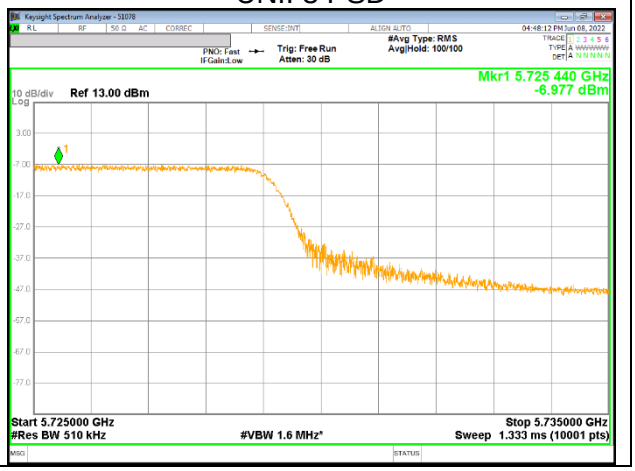
UNII Straddle Ch. IEEE 802.11ax HE20(SU) mode PSD

ANT1	ANT2
Output Power	Output Power
	
UNII 2C PSD	UNII 2C PSD
	
UNII 3 PSD	UNII 3 PSD
	

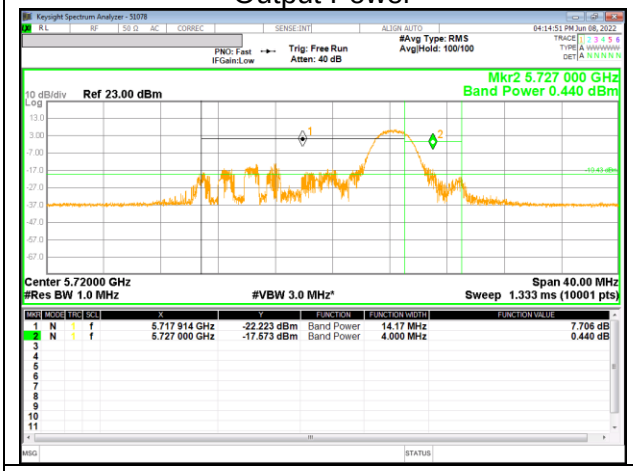
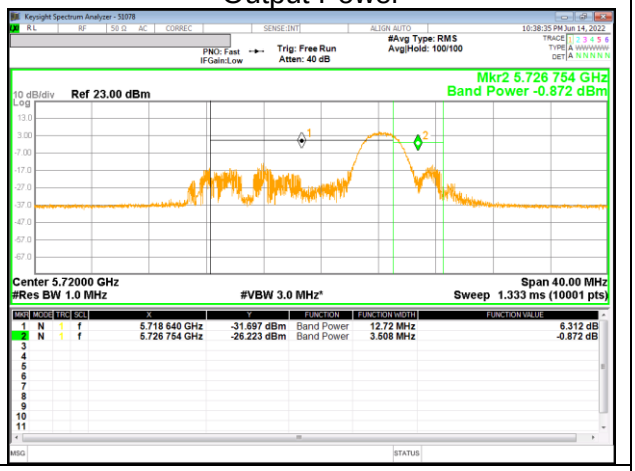
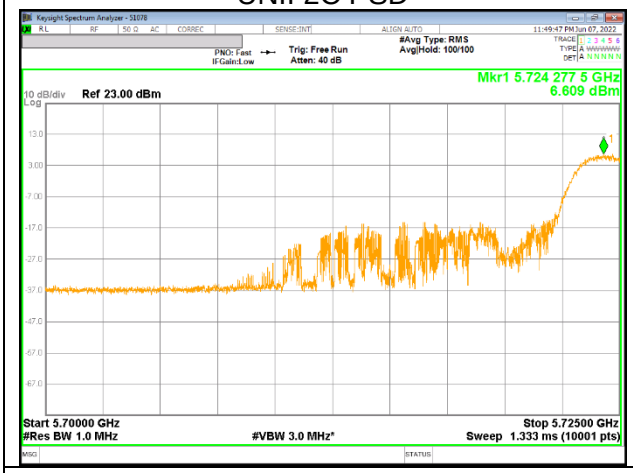
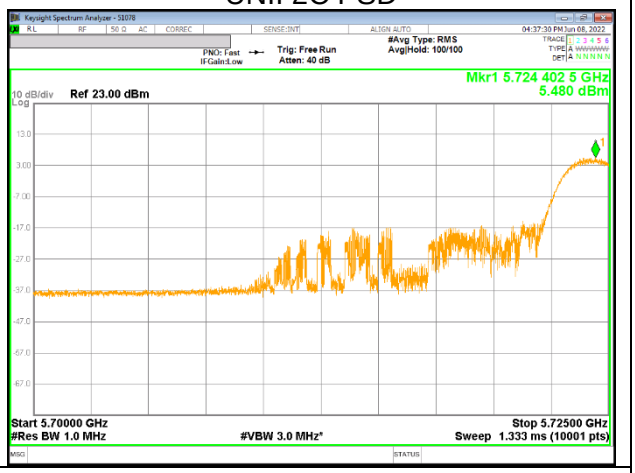
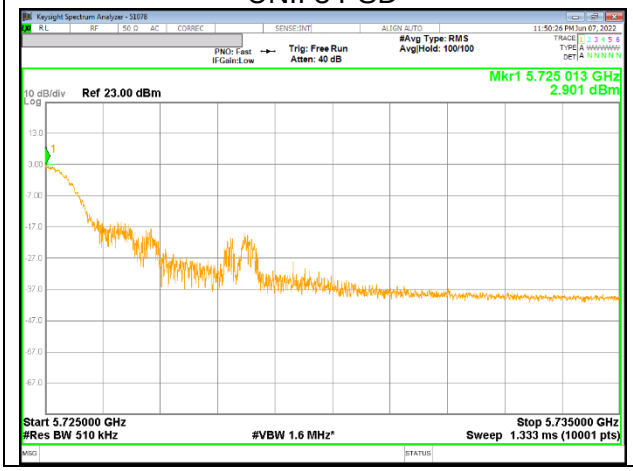
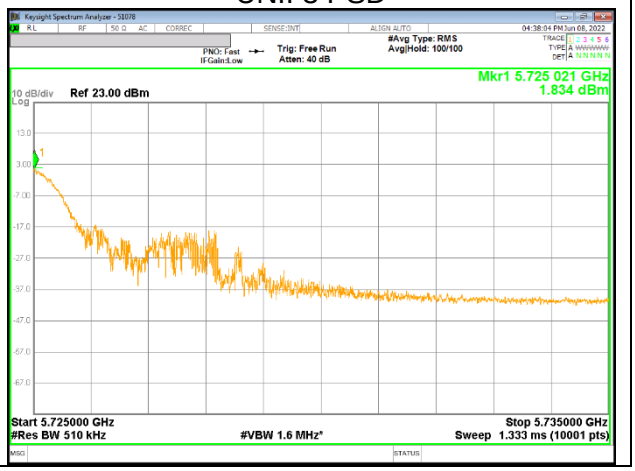
UNII Straddle Ch. IEEE 802.11ax HE40(SU) mode PSD

ANT1	ANT2
Output Power	Output Power
	
UNII 2C PSD	UNII 2C PSD
	
UNII 3 PSD	UNII 3 PSD
	

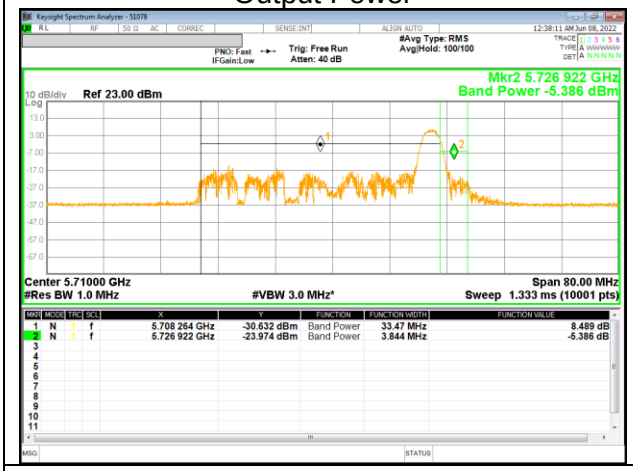
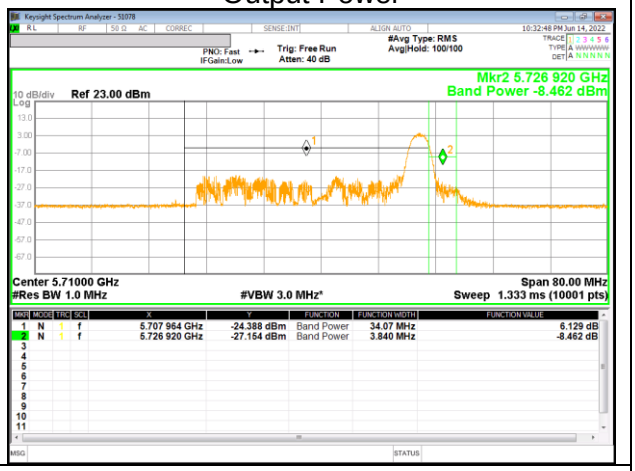
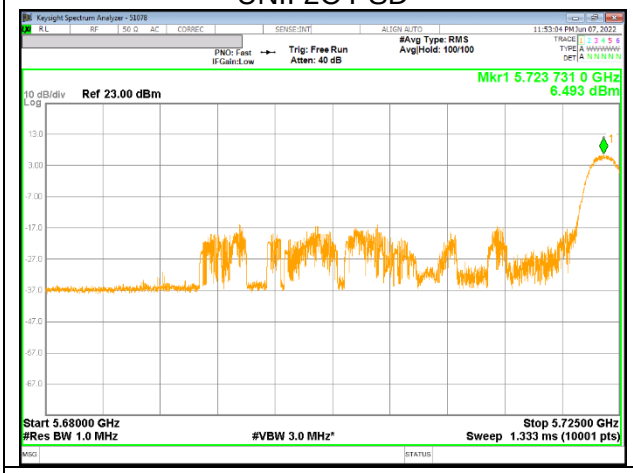
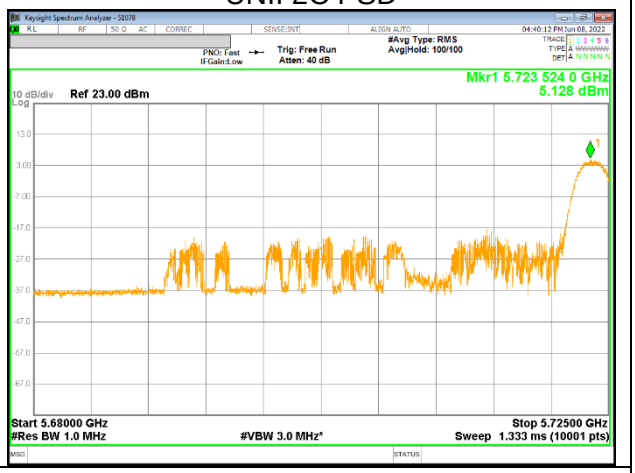
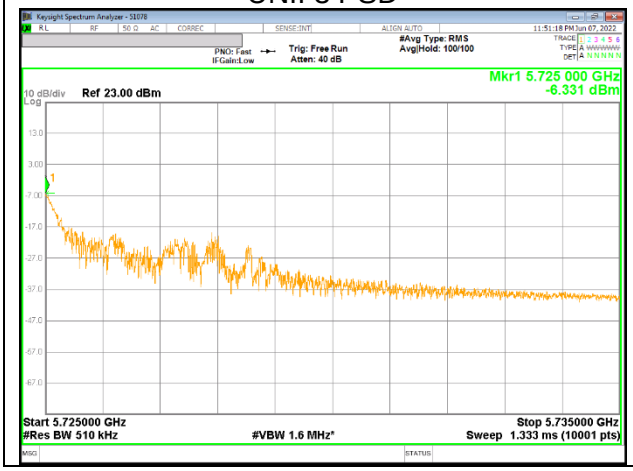
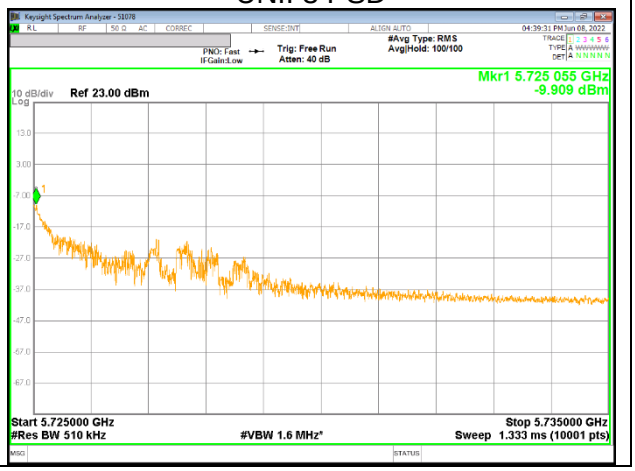
UNII Straddle Ch. IEEE 802.11ax HE80(SU) mode PSD

ANT1	ANT2
Output Power	Output Power
	
UNII 2C PSD	UNII 2C PSD
	
UNII 3 PSD	UNII 3 PSD
	

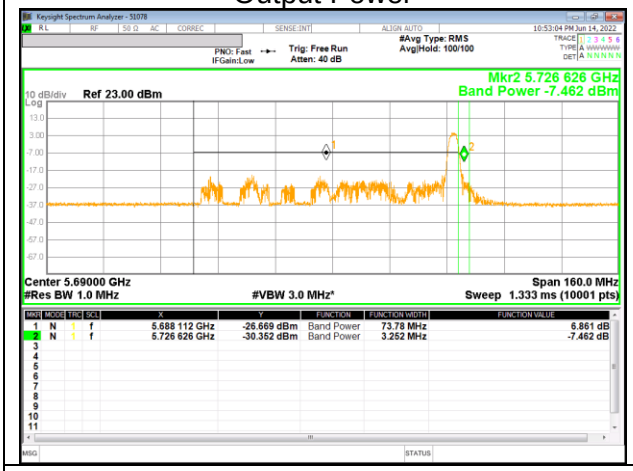
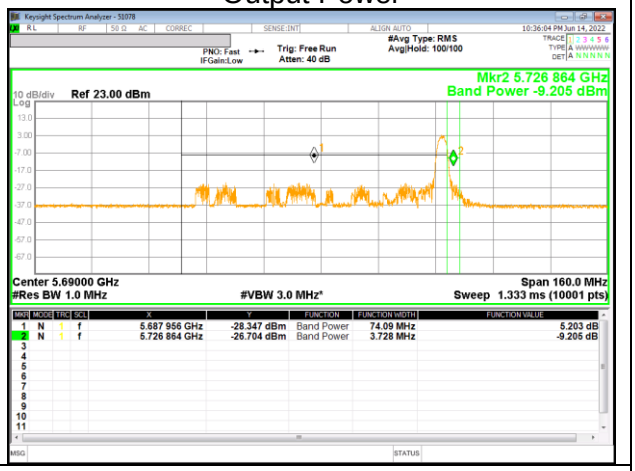
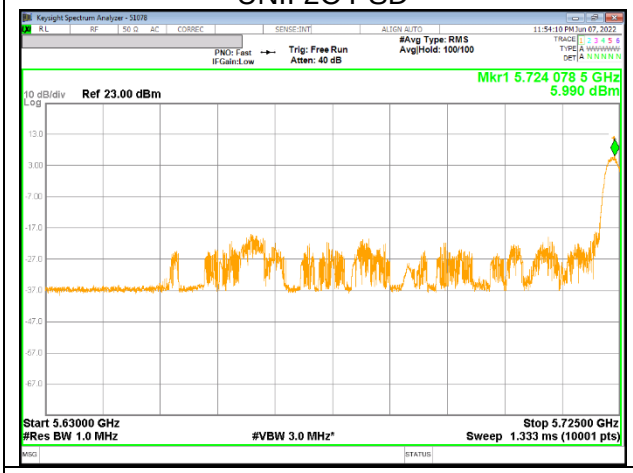
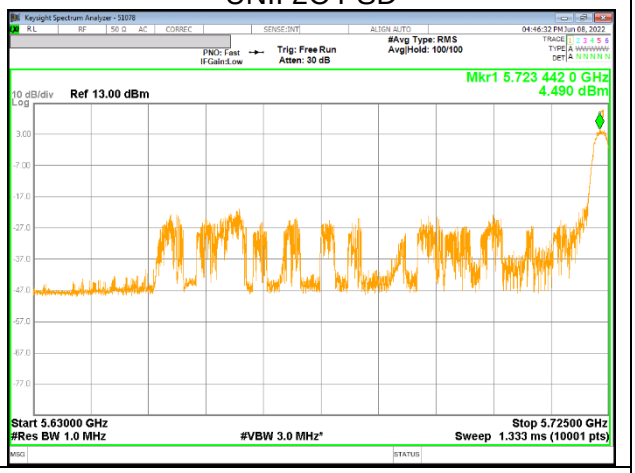
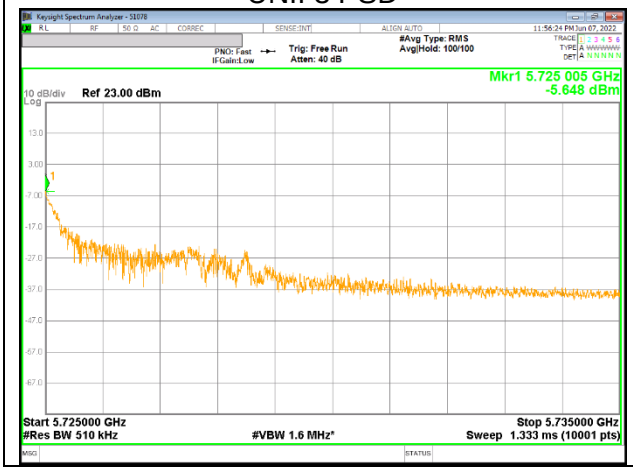
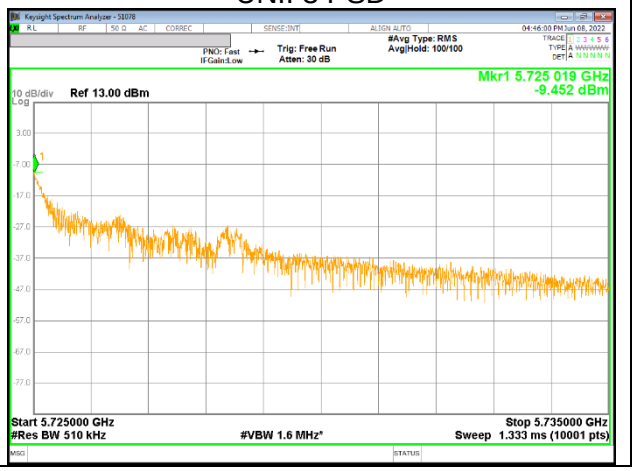
UNII Straddle Ch. IEEE 802.11ax HE20(6RU) mode PSD

ANT1	ANT2
Output Power	Output Power
	
UNII 2C PSD	UNII 2C PSD
	
UNII 3 PSD	UNII 3 PSD
	

UNII Straddle Ch. IEEE 802.11ax HE40(15RU) mode PSD

ANT1	ANT2
Output Power	Output Power
	
UNII 2C PSD	UNII 2C PSD
	
UNII 3 PSD	UNII 3 PSD
	

UNII Straddle Ch. IEEE 802.11ax HE80(34RU) mode PSD

ANT1	ANT2
Output Power	Output Power
	
UNII 2C PSD	UNII 2C PSD
	
UNII 3 PSD	UNII 3 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[dBuV/m] = EIRP[dBm] + 95.2 = -27dBm + 95.2 = 68.2dBuV/m

E[dBuV/m] = EIRP[dBm] + 95.2 = -17dBm + 95.2 = 78.2dBuV/m

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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 are 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.

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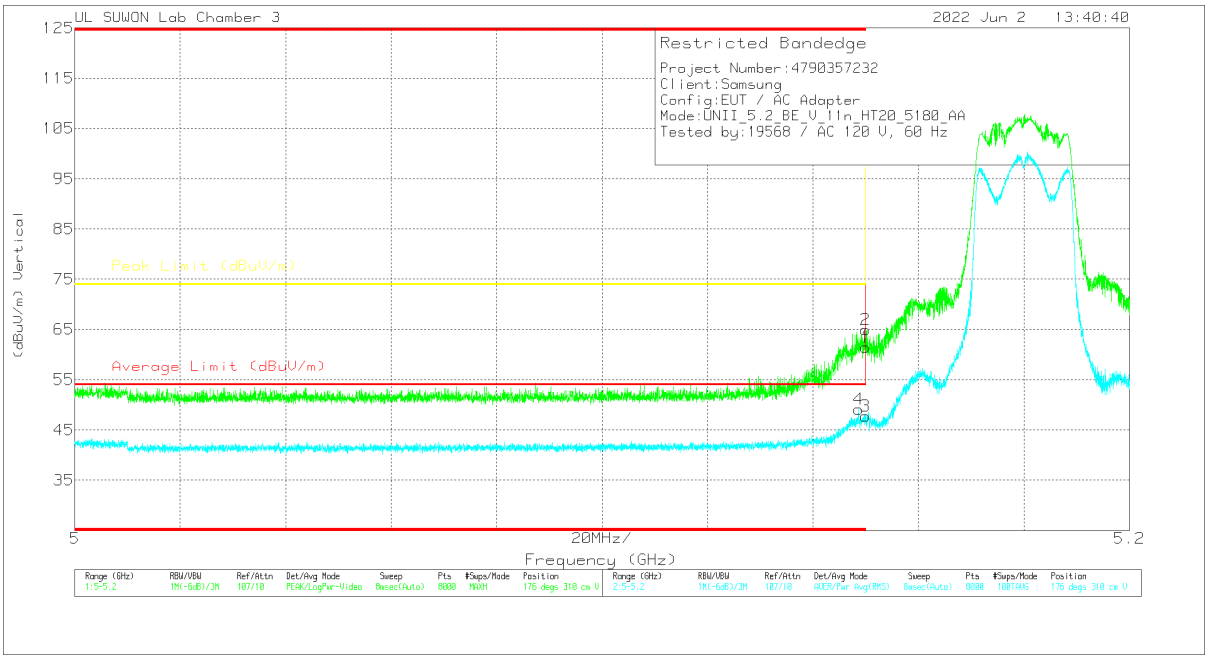
11.1. TX ABOVE 1GHz 2Tx MODE IN THE 5.2GHz BAND

BANDEDGE (WORST CASE: 802.11n HT20 / 5180 MHz)

VERTICAL 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	* 5.14999	47.33	Pk	34.8	-20.6	0	61.53	-	-	74	-12.47	176	310	V
2	* 5.14997	50.76	Pk	34.8	-20.6	0	64.96	-	-	74	-9.04	176	310	V
3	* 5.14999	33.51	RMS	34.8	-20.6	0	47.71	54	-6.29	-	-	176	310	V
4	* 5.14864	34.99	RMS	34.8	-20.6	0	49.19	54	-4.81	-	-	176	310	V

* - 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	45.33	Pk	34.80	-20.60	0.00	59.53	-	-	74.00	-14.47	153	110	H
			* 5.14989	47.96	Pk	34.80	-20.60	0.00	62.16	-	-	74.00	-11.84	153	110	H
			* 5.14999	32.94	RMS	34.80	-20.60	0.17	47.31	54.00	-6.69	-	-	153	110	H
			* 5.14932	33.21	RMS	34.80	-20.60	0.17	47.58	54.00	-6.42	-	-	153	110	H
			* 5.14999	44.80	Pk	34.80	-20.60	0.00	59.00	-	-	74.00	-15.00	178	280	V
			* 5.14897	45.60	Pk	34.80	-20.60	0.00	59.80	-	-	74.00	-14.20	178	280	V
			* 5.14999	29.72	RMS	34.80	-20.60	0.17	44.09	54.00	-9.91	-	-	178	280	V
			* 5.14922	31.53	RMS	34.80	-20.60	0.17	45.90	54.00	-8.10	-	-	178	280	V
802.11n (HT20)	5180	MIMO	* 5.14999	47.98	Pk	34.80	-20.60	0.00	62.18	-	-	74.00	-11.82	154	135	H
			* 5.14777	51.63	Pk	34.80	-20.60	0.00	65.83	-	-	74.00	**-8.17**	154	135	H
			* 5.14999	32.43	RMS	34.80	-20.60	0.00	46.63	54.00	-7.37	-	-	154	135	H
			* 5.14987	33.94	RMS	34.80	-20.60	0.00	48.14	54.00	-5.86	-	-	154	135	H
			* 5.14999	47.33	Pk	34.80	-20.60	0.00	61.53	-	-	74.00	-12.47	176	310	V
			* 5.14997	50.76	Pk	34.80	-20.60	0.00	64.96	-	-	74.00	-9.04	176	310	V
			* 5.14999	33.51	RMS	34.80	-20.60	0.00	47.71	54.00	-6.29	-	-	176	310	V
			* 5.14864	34.99	RMS	34.80	-20.60	0.00	49.19	54.00	**-4.81**	-	-	176	310	V
802.11ax (HE40) SU	5190	MIMO	* 5.14999	41.02	Pk	34.80	-20.60	0.00	55.22	-	-	74.00	-18.78	332	107	H
			* 5.14897	41.73	Pk	34.80	-20.60	0.00	55.93	-	-	74.00	-18.07	332	107	H
			* 5.14999	28.94	RMS	34.80	-20.60	0.00	43.14	54.00	-10.86	-	-	332	107	H
			* 5.14974	30.28	RMS	34.80	-20.60	0.00	44.48	54.00	-9.52	-	-	332	107	H
			* 5.14999	38.79	Pk	34.80	-20.60	0.00	52.99	-	-	74.00	-21.01	288	383	V
			* 5.14939	41.80	Pk	34.80	-20.60	0.00	56.00	-	-	74.00	-18.00	288	383	V
			* 5.14999	28.81	RMS	34.80	-20.60	0.00	43.01	54.00	-10.99	-	-	288	383	V
			* 5.14962	29.53	RMS	34.80	-20.60	0.00	43.73	54.00	-10.27	-	-	288	383	V
802.11ax (HE80) SU	5210	MIMO	* 5.14999	40.80	Pk	34.80	-20.60	0.00	55.00	-	-	74.00	-19.00	337	105	H
			* 5.14387	42.48	Pk	34.80	-20.60	0.00	56.68	-	-	74.00	-17.32	337	105	H
			* 5.14999	30.32	RMS	34.80	-20.60	0.00	44.52	54.00	-9.48	-	-	337	105	H
			* 5.14252	31.01	RMS	34.80	-20.60	0.00	45.21	54.00	-8.79	-	-	337	105	H
			* 5.14999	39.95	Pk	34.80	-20.60	0.00	54.15	-	-	74.00	-19.85	123	100	V
			* 5.14982	42.16	Pk	34.80	-20.60	0.00	56.36	-	-	74.00	-17.64	123	100	V
			* 5.14999	28.97	RMS	34.80	-20.60	0.00	43.17	54.00	-10.83	-	-	123	100	V
			* 5.14959	29.94	RMS	34.80	-20.60	0.00	44.14	54.00	-9.86	-	-	123	100	V
802.11ax (HE160) SU	5250	MIMO	* 5.14999	41.60	Pk	34.80	-20.60	0.00	55.80	-	-	74.00	-18.20	148	106	H
			* 5.14237	44.03	Pk	34.80	-20.60	0.00	58.23	-	-	74.00	-15.77	148	106	H
			* 5.14999	31.65	RMS	34.80	-20.60	0.00	45.85	54.00	-8.15	-	-	148	106	H
			* 5.14439	32.16	RMS	34.80	-20.60	0.00	46.36	54.00	-7.64	-	-	148	106	H
			* 5.14999	42.27	Pk	34.80	-20.60	0.00	56.47	-	-	74.00	-17.53	190	329	V
			* 5.14882	45.00	Pk	34.80	-20.60	0.00	59.20	-	-	74.00	-14.80	190	329	V
			* 5.14999	33.00	RMS	34.80	-20.60	0.00	47.20	54.00	-6.80	-	-	190	329	V
			* 5.14739	33.85	RMS	34.80	-20.60	0.00	48.05	54.00	-5.95	-	-	190	329	V

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

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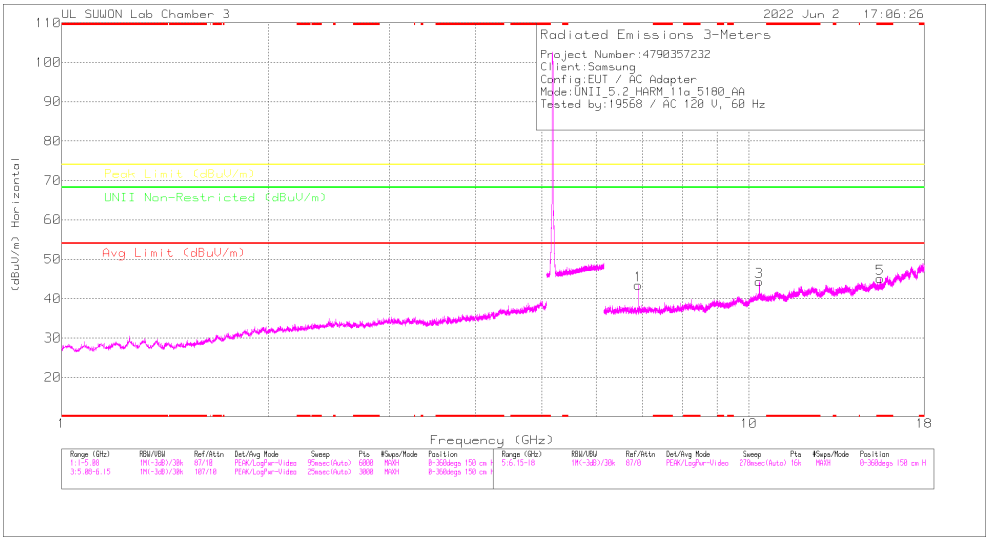
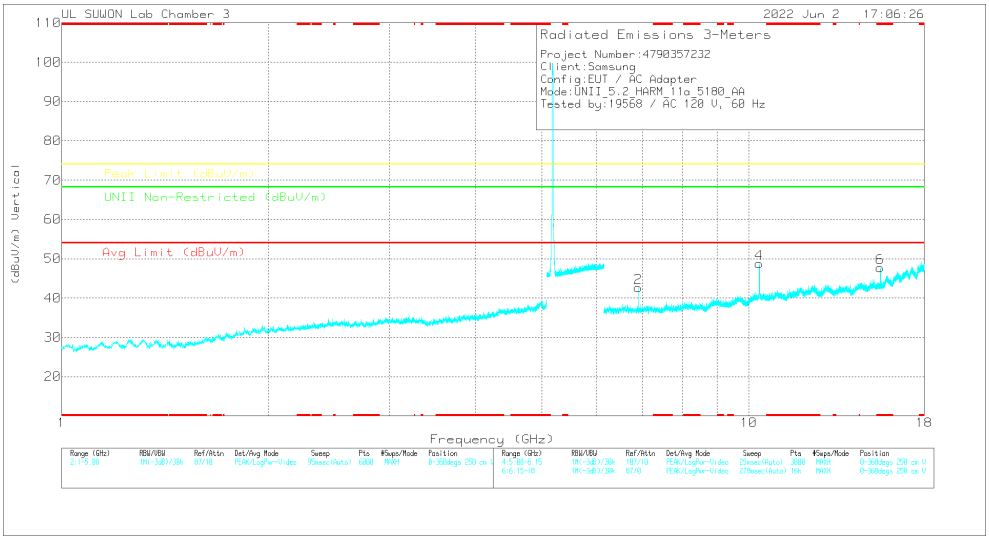
HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5180 MHz)

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)	Meter Reading (dBuV)	Det	3117_00218957	6GHz_HP[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
6.90661	40.8	PK-U	36.2	-26.5	0	50.5	-	-	-	-	68.2	-17.7	335	119	H
6.90673	40.63	PK-U	36.2	-26.5	0	50.33	-	-	-	-	68.2	-17.87	181	269	V
10.36222	39.73	PK-U	38.1	-21	0	56.83	-	-	-	-	68.2	-11.37	338	105	H
10.35658	44.88	PK-U	38.1	-21	0	61.98	-	-	-	-	68.2	-6.22	210	100	V
* 15.53396	39.19	PK-U	40.2	-21.4	0	57.99	-	-	74	-16.01	-	-	298	103	H
* 15.53522	26.66	ADR	40.2	-21.4	.17	45.63	54	-8.37	-	-	-	-	298	103	H
* 15.53423	43.7	PK-U	40.2	-21.4	0	62.5	-	-	74	-11.5	-	-	113	103	V
* 15.53917	30.59	ADR	40.2	-21.4	.17	49.56	54	-4.44	-	-	-	-	113	103	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

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

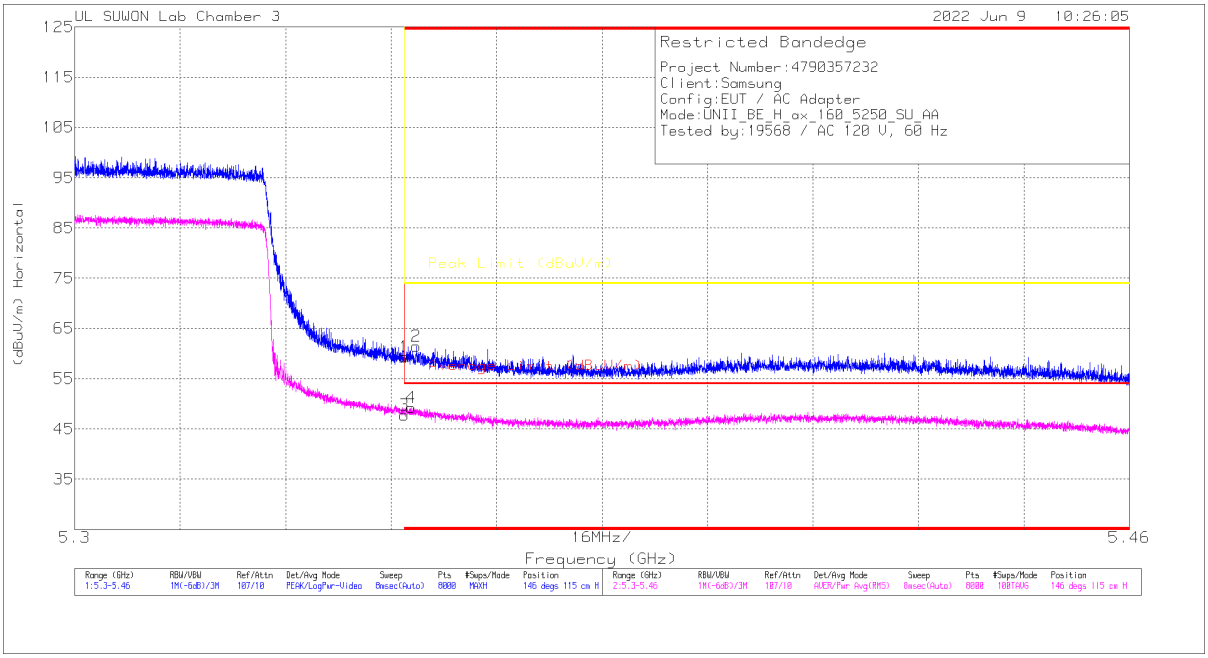
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5180	MIMO	6.907	40.80	PK-U	36.20	-26.50	0.00	50.50	-	-	-	-	68.20	-17.70	335	119	H
			6.907	40.63	PK-U	36.20	-26.50	0.00	50.33	-	-	-	-	68.20	-17.87	181	269	V
			10.362	39.73	PK-U	38.10	-21.00	0.00	56.83	-	-	-	-	68.20	-11.37	338	105	H
			10.357	44.88	PK-U	38.10	-21.00	0.00	61.98	-	-	-	-	68.20	-6.22	210	100	V
			* 15.53396	39.19	PK-U	40.20	-21.40	0.00	57.99	-	-	74.00	-16.01	-	-	298	103	H
			* 15.53522	26.66	ADR	40.20	-21.40	0.17	45.63	54.00	-8.37	-	-	-	-	298	103	H
			* 15.53423	43.70	PK-U	40.20	-21.40	0.00	62.50	-	-	74.00	-11.50	-	-	113	103	V
			* 15.53917	30.59	ADR	40.20	-21.40	0.17	49.56	54.00	-4.44	-	-	-	-	113	103	V
	5200	MIMO	6.933	40.79	PK-U	36.20	-26.40	0.00	50.59	-	-	-	-	68.20	-17.61	339	108	H
			6.933	40.78	PK-U	36.20	-26.40	0.00	50.58	-	-	-	-	68.20	-17.62	183	288	V
			10.403	38.59	PK-U	38.10	-21.10	0.00	55.59	-	-	-	-	68.20	-12.61	340	101	H
			10.393	42.51	PK-U	38.10	-21.00	0.00	59.61	-	-	-	-	68.20	-8.59	198	103	V
			* 15.59964	38.24	PK-U	40.30	-21.20	0.00	57.34	-	-	74.00	-16.66	-	-	296	104	H
			* 15.59909	26.16	ADR	40.30	-21.20	0.17	45.43	54.00	-8.57	-	-	-	-	296	104	H
			* 15.59424	42.28	PK-U	40.30	-21.20	0.00	61.38	-	-	74.00	-12.62	-	-	109	106	V
			* 15.59934	29.06	ADR	40.30	-21.20	0.17	48.33	54.00	-5.67	-	-	-	-	109	106	V
	5240	MIMO	6.987	40.92	PK-U	36.20	-26.00	0.00	51.12	-	-	-	-	68.20	-17.08	332	103	H
			6.987	41.39	PK-U	36.20	-26.00	0.00	51.59	-	-	-	-	68.20	-16.61	180	297	V
			10.474	35.35	PK-U	38.20	-21.20	0.00	52.35	-	-	-	-	68.20	-15.85	341	104	H
			10.482	43.41	PK-U	38.20	-21.20	0.00	60.41	-	-	-	-	68.20	-7.79	207	100	V
			* 15.7236	37.99	PK-U	40.50	-20.90	0.00	57.59	-	-	74.00	-16.41	-	-	357	103	H
			* 15.72361	25.92	ADR	40.50	-20.90	0.17	45.69	54.00	-8.31	-	-	-	-	357	103	H
			* 15.71951	40.90	PK-U	40.50	-21.00	0.00	60.40	-	-	74.00	-13.60	-	-	307	108	V
			* 15.71957	29.51	ADR	40.50	-21.00	0.17	49.18	54.00	-4.82	-	-	-	-	307	108	V
802.11ax (HE20) 8RU Spot-Check	5200	MIMO	6.933	42.30	PK-U	36.20	-26.40	0.00	52.10	-	-	-	-	68.20	-16.10	337	108	H
			6.933	42.01	PK-U	36.20	-26.40	0.00	51.81	-	-	-	-	68.20	-16.39	179	288	V
			10.392	33.20	PK-U	38.10	-20.90	0.00	50.40	-	-	-	-	68.20	-17.80	0	100	H
			10.405	34.09	PK-U	38.10	-21.10	0.00	51.09	-	-	-	-	68.20	-17.11	0	100	V
			* 15.6048	33.86	PK-U	40.30	-21.20	0.00	52.96	-	-	74.00	-21.04	-	-	0	100	H
			* 15.60878	33.51	PK-U	40.30	-21.20	0.00	52.61	-	-	74.00	-21.39	-	-	0	100	V
802.11ax (HE160) 0RU, Lower Spot-Check	5250	MIMO	7.000	41.65	PK-U	36.20	-25.90	0.00	51.95	-	-	-	-	68.20	-16.25	333	101	H
			7.000	41.41	PK-U	36.20	-25.90	0.00	51.71	-	-	-	-	68.20	-16.49	177	295	V
			* 7.68021	37.51	PK-U	36.20	-25.10	0.00	48.61	-	-	74.00	-25.39	-	-	52	100	H
			* 7.67991	29.14	ADR	36.20	-25.10	0.00	40.24	54.00	-13.76	-	-	-	-	52	100	H
			* 7.68006	38.01	PK-U	36.20	-25.10	0.00	49.11	-	-	74.00	-24.89	-	-	245	105	V
			* 7.68004	29.22	ADR	36.20	-25.10	0.00	40.32	54.00	-13.68	-	-	-	-	245	105	V
			* 15.74816	33.93	PK-U	40.50	-20.90	0.00	53.53	-	-	74.00	-20.47	-	-	52	100	H
			* 15.7533	34.03	PK-U	40.60	-20.80	0.00	53.83	-	-	74.00	-20.17	-	-	360	100	V
802.11ax (HE160) SU Spot-Check	5250	MIMO	7.000	40.88	PK-U	36.20	-25.90	0.00	51.18	-	-	-	-	68.20	-17.02	339	105	H
			7.000	41.16	PK-U	36.20	-25.90	0.00	51.46	-	-	-	-	68.20	-16.74	177	296	V
			10.495	33.49	PK-U	38.20	-21.10	0.00	50.59	-	-	-	-	68.20	-17.61	360	100	H
			10.492	33.57	PK-U	38.20	-21.10	0.00	50.67	-	-	-	-	68.20	-17.53	0	100	V
			* 15.75861	33.92	PK-U	40.60	-20.80	0.00	53.72	-	-	74.00	-20.28	-	-	360	100	H
			* 15.74657	34.86	PK-U	40.50	-20.90	0.00	54.46	-	-	74.00	-19.54	-	-	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)

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	44.51	Pk	35.1	-20.2	0	59.41	-	-	74	-14.59	146	115	H
2	* 5.35183	46.61	Pk	35.1	-20.2	0	61.51	-	-	74	-12.49	146	115	H
3	* 5.35001	32.89	RMS	35.1	-20.2	0	47.79	54	-6.21	-	-	146	115	H
4	* 5.35105	34.34	RMS	35.1	-20.2	0	49.24	54	-4.76	-	-	146	115	H

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

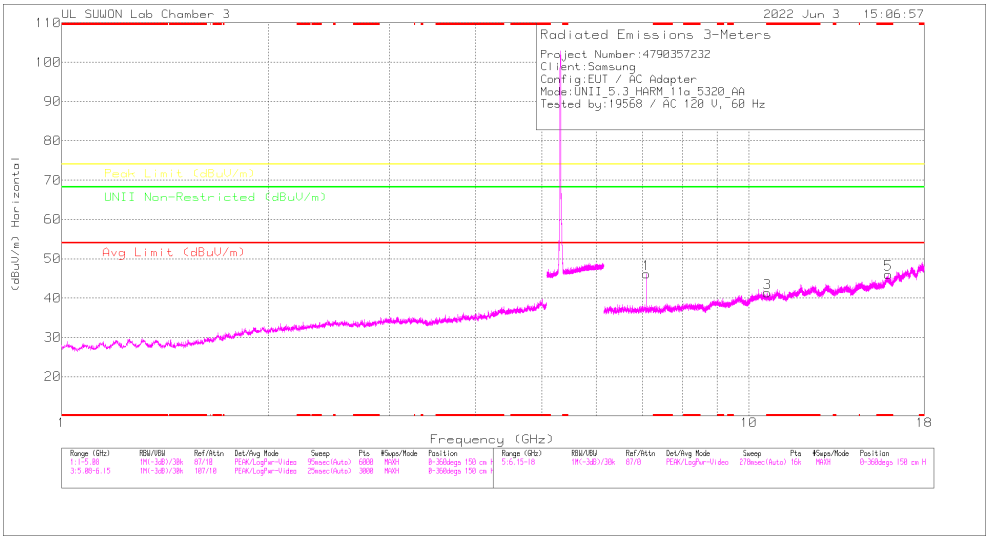
BANDEDGE TEST DATA

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	39.50	Pk	35.10	-20.20	0.00	54.40	-	-	74.00	-19.60	342	124	H
			* 5.35079	41.10	Pk	35.10	-20.20	0.00	56.00	-	-	74.00	-18.00	342	124	H
			* 5.35001	29.45	RMS	35.10	-20.20	0.17	44.52	54.00	-9.48	-	-	342	124	H
			* 5.35039	30.03	RMS	35.10	-20.20	0.17	45.10	54.00	-8.90	-	-	342	124	H
			* 5.35001	38.16	Pk	35.10	-20.20	0.00	53.06	-	-	74.00	-20.94	292	337	V
			* 5.43142	39.75	Pk	35.30	-20.20	0.00	54.85	-	-	74.00	-19.15	292	337	V
			* 5.35001	27.75	RMS	35.10	-20.20	0.17	42.82	54.00	-11.18	-	-	292	337	V
			* 5.42566	28.10	RMS	35.30	-20.10	0.17	43.47	54.00	-10.53	-	-	292	337	V
802.11n (HT20)	5320	MIMO	* 5.35001	48.19	Pk	35.10	-20.20	0.00	63.09	-	-	74.00	-10.91	157	114	H
			* 5.35011	49.08	Pk	35.10	-20.20	0.00	63.98	-	-	74.00	**-10.02**	157	114	H
			* 5.35001	32.81	RMS	35.10	-20.20	0.00	47.71	54.00	-6.29	-	-	157	114	H
			* 5.35015	33.43	RMS	35.10	-20.20	0.00	48.33	54.00	-5.67	-	-	157	114	H
			* 5.35001	46.47	Pk	35.10	-20.20	0.00	61.37	-	-	74.00	-12.63	178	346	V
			* 5.35173	48.26	Pk	35.10	-20.20	0.00	63.16	-	-	74.00	-10.84	178	346	V
			* 5.35001	30.04	RMS	35.10	-20.20	0.00	44.94	54.00	-9.06	-	-	178	346	V
			* 5.35019	31.65	RMS	35.10	-20.20	0.00	46.55	54.00	-7.45	-	-	178	346	V
802.11ax (HE40) SU	5310	MIMO	* 5.35001	37.69	Pk	35.10	-20.20	0.00	52.59	-	-	74.00	-21.41	344	107	H
			* 5.35051	40.78	Pk	35.10	-20.20	0.00	55.68	-	-	74.00	-18.32	344	107	H
			* 5.35001	28.37	RMS	35.10	-20.20	0.00	43.27	54.00	-10.73	-	-	344	107	H
			* 5.35003	29.17	RMS	35.10	-20.20	0.00	44.07	54.00	-9.93	-	-	344	107	H
			* 5.35001	36.77	Pk	35.10	-20.20	0.00	51.67	-	-	74.00	-22.33	128	110	V
			* 5.39691	40.44	Pk	35.20	-20.20	0.00	55.44	-	-	74.00	-18.56	128	110	V
			* 5.35001	26.73	RMS	35.10	-20.20	0.00	41.63	54.00	-12.37	-	-	128	110	V
			* 5.40048	28.67	RMS	35.20	-20.20	0.00	43.67	54.00	-10.33	-	-	128	110	V
802.11ax (HE80) SU	5290	MIMO	* 5.35001	41.21	Pk	35.10	-20.20	0.00	56.11	-	-	74.00	-17.89	344	105	H
			* 5.35267	42.82	Pk	35.10	-20.20	0.00	57.72	-	-	74.00	-16.28	344	105	H
			* 5.35001	29.69	RMS	35.10	-20.20	0.00	44.59	54.00	-9.41	-	-	344	105	H
			* 5.35609	30.76	RMS	35.10	-20.30	0.00	45.56	54.00	-8.44	-	-	344	105	H
			* 5.35001	38.16	Pk	35.10	-20.20	0.00	53.06	-	-	74.00	-20.94	133	100	V
			* 5.35733	40.88	Pk	35.10	-20.20	0.00	55.78	-	-	74.00	-18.22	133	100	V
			* 5.35001	28.61	RMS	35.10	-20.20	0.00	43.51	54.00	-10.49	-	-	133	100	V
			* 5.35333	29.26	RMS	35.10	-20.20	0.00	44.16	54.00	-9.84	-	-	133	100	V
802.11ax (HE160) SU	5250	ANT1	* 5.35001	44.51	Pk	35.10	-20.20	0.00	59.41	-	-	74.00	-14.59	146	115	H
			* 5.35183	46.61	Pk	35.10	-20.20	0.00	61.51	-	-	74.00	-12.49	146	115	H
			* 5.35001	32.89	RMS	35.10	-20.20	0.00	47.79	54.00	-6.21	-	-	146	115	H
			* 5.35105	34.34	RMS	35.10	-20.20	0.00	49.24	54.00	**-4.76**	-	-	146	115	H
			* 5.35001	42.40	Pk	35.10	-20.20	0.00	57.30	-	-	74.00	-16.70	188	328	V
			* 5.35261	44.71	Pk	35.10	-20.20	0.00	59.61	-	-	74.00	-14.39	188	328	V
			* 5.35001	31.49	RMS	35.10	-20.20	0.00	46.39	54.00	-7.61	-	-	188	328	V
			* 5.35025	32.11	RMS	35.10	-20.20	0.00	47.01	54.00	-6.99	-	-	188	328	V

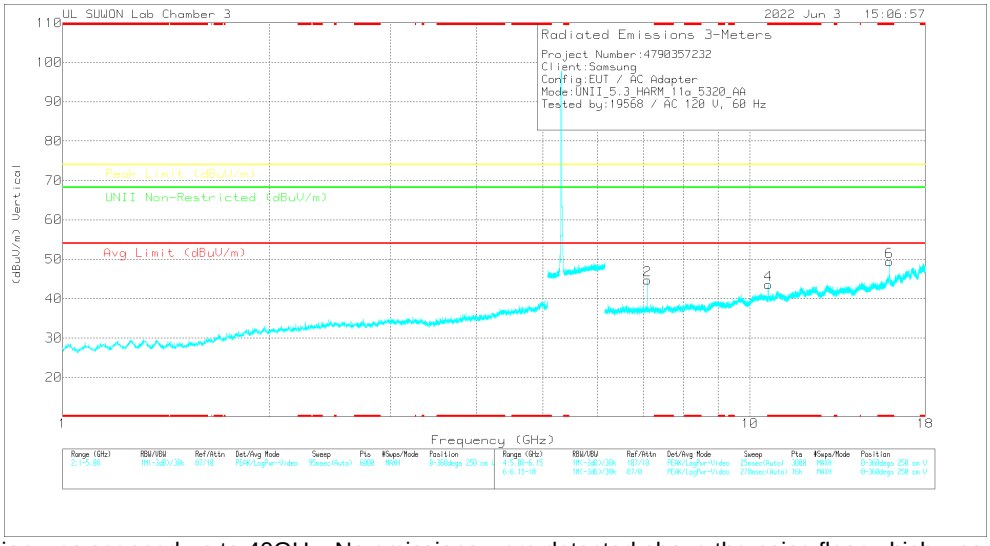
Note1. Pk - Peak detector, RMS - RMS detectior
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 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)	Meter Reading (dBuV)	Det	3117_00218957	6GHz_HP|SB	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
7.09326	41.64	PK-U	36.2	-26	0	51.84	-	-	-	-	68.2	-16.36	336	105	H
7.09314	41.09	PK-U	36.2	-26	0	51.29	-	-	-	-	68.2	-16.91	263	100	V
* 10.64139	33.2	PK-U	38.3	-21.1	0	50.4	-	-	74	-23.6	-	-	-	164	115	H
* 10.64177	22.06	ADR	38.3	-21.1	.17	39.43	54	-14.57	-	-	-	-	-	164	115	H
* 10.63762	40.07	PK-U	38.3	-21.1	0	57.27	-	-	74	-16.73	-	-	-	210	100	V
* 10.63731	29.35	ADR	38.3	-21.1	.17	46.72	54	-7.28	-	-	-	-	-	210	100	V
* 15.96011	36.62	PK-U	40.9	-20.4	0	57.12	-	-	74	-16.88	-	-	-	290	100	H
* 15.95913	24.65	ADR	40.9	-20.4	.17	45.32	54	-8.68	-	-	-	-	-	290	100	H
* 15.96149	40.94	PK-U	40.9	-20.4	0	61.44	-	-	74	-12.56	-	-	-	306	106	V
* 15.96056	29.91	ADR	40.9	-20.4	.17	50.58	54	-3.42	-	-	-	-	-	306	106	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

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

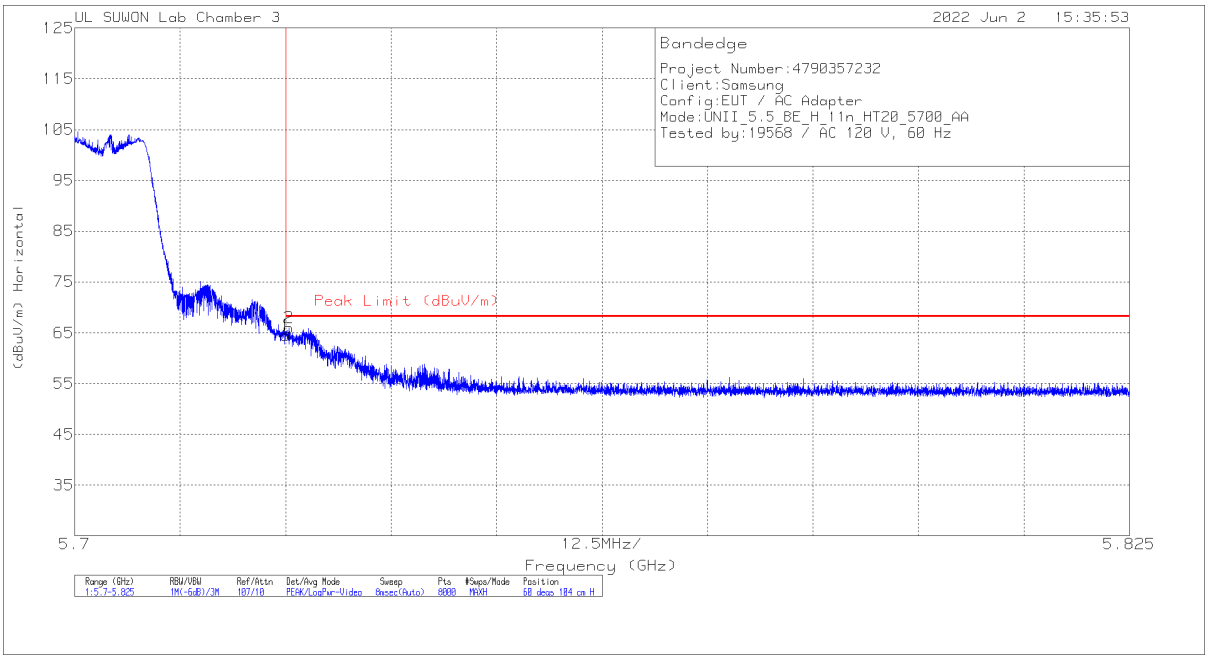
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5260	MIMO	7.013	40.90	PK-U	36.20	-25.90	0.00	51.20	-	-	-	-	68.20	-17.00	335	108	H
			7.013	40.61	PK-U	36.20	-25.90	0.00	50.91	-	-	-	-	68.20	-17.29	263	100	V
			10.521	35.10	PK-U	38.20	-21.10	0.00	52.20	-	-	-	-	68.20	-16.00	179	234	H
			10.517	42.19	PK-U	38.20	-21.10	0.00	59.29	-	-	-	-	68.20	**-8.91**	212	100	V
			* 15.78323	37.63	PK-U	40.60	-20.80	0.00	57.43	-	-	74.00	-16.57	-	-	351	102	H
			* 15.78306	25.34	ADR	40.60	-20.80	0.17	45.31	54.00	-8.69	-	-	-	-	351	102	H
			* 15.77439	42.80	PK-U	40.60	-20.80	0.00	62.60	-	-	74.00	**-11.40**	-	-	305	103	V
			* 15.77541	30.05	ADR	40.60	-20.80	0.17	50.02	54.00	-3.98	-	-	-	-	305	103	V
	5300	MIMO	7.067	42.21	PK-U	36.20	-25.90	0.00	52.51	-	-	-	-	68.20	-15.69	334	100	H
			7.067	41.81	PK-U	36.20	-25.90	0.00	52.11	-	-	-	-	68.20	-16.09	174	258	V
			10.596	33.30	PK-U	38.30	-21.20	0.00	50.40	-	-	-	-	68.20	-17.80	78	100	H
			10.593	40.24	PK-U	38.30	-21.20	0.00	57.34	-	-	-	-	68.20	-10.86	211	101	V
			* 15.90651	38.00	PK-U	40.80	-20.30	0.00	58.50	-	-	74.00	-15.50	-	-	264	100	H
			* 15.90086	25.68	ADR	40.80	-20.30	0.17	46.35	54.00	-7.65	-	-	-	-	264	100	H
			* 15.90607	41.64	PK-U	40.80	-20.30	0.00	62.14	-	-	74.00	-11.86	-	-	307	103	V
			* 15.90053	29.83	ADR	40.80	-20.30	0.17	50.50	54.00	-3.50	-	-	-	-	307	103	V
	5320	MIMO	7.093	41.64	PK-U	36.20	-26.00	0.00	51.84	-	-	-	-	68.20	-16.36	336	105	H
			7.093	41.09	PK-U	36.20	-26.00	0.00	51.29	-	-	-	-	68.20	-16.91	263	100	V
			* 10.64139	33.20	PK-U	38.30	-21.10	0.00	50.40	-	-	74.00	-23.60	-	-	164	115	H
			* 10.64177	22.06	ADR	38.30	-21.10	0.17	39.43	54.00	-14.57	-	-	-	-	164	115	H
			* 10.63762	40.07	PK-U	38.30	-21.10	0.00	57.27	-	-	74.00	-16.73	-	-	210	100	V
			* 10.63731	29.35	ADR	38.30	-21.10	0.17	46.72	54.00	-7.28	-	-	-	-	210	100	V
			* 15.96011	36.62	PK-U	40.90	-20.40	0.00	57.12	-	-	74.00	-16.88	-	-	290	100	H
			* 15.95913	24.65	ADR	40.90	-20.40	0.17	45.32	54.00	-8.68	-	-	-	-	290	100	H
			* 15.96149	40.94	PK-U	40.90	-20.40	0.00	61.44	-	-	74.00	-12.56	-	-	306	106	V
			* 15.96056	29.91	ADR	40.90	-20.40	0.17	50.58	54.00	**-3.42**	-	-	-	-	306	106	V
802.11ax (HE20) 8RU Spot-Check	5320	MIMO	7.093	42.96	PK-U	36.20	-26.00	0.00	53.16	-	-	-	-	68.20	-15.04	39	101	H
			7.093	42.72	PK-U	36.20	-26.00	0.00	52.92	-	-	-	-	68.20	-15.28	171	301	V
			* 10.64714	32.96	PK-U	38.30	-21.20	0.00	50.06	-	-	74.00	-23.94	-	-	0	100	H
			* 10.638	32.64	PK-U	38.30	-21.10	0.00	49.84	-	-	74.00	-24.16	-	-	0	100	V
			* 15.9704	33.60	PK-U	40.90	-20.40	0.00	54.10	-	-	74.00	-19.90	-	-	0	100	H
			* 15.95862	34.01	PK-U	40.90	-20.40	0.00	54.51	-	-	74.00	-19.49	-	-	0	100	V
802.11ax (HE40) 0RU Spot-Check	5310	MIMO	7.080	43.13	PK-U	36.20	-26.00	0.00	53.33	-	-	-	-	68.20	-14.87	39	105	H
			7.080	42.63	PK-U	36.20	-26.00	0.00	52.83	-	-	-	-	68.20	-15.37	171	302	V
			* 10.61539	32.56	PK-U	38.30	-21.10	0.00	49.76	-	-	74.00	-24.24	-	-	0	100	H
			* 10.62283	32.78	PK-U	38.30	-21.10	0.00	49.98	-	-	74.00	-24.02	-	-	0	100	V
			* 15.93501	33.66	PK-U	40.90	-20.30	0.00	54.26	-	-	74.00	-19.74	-	-	0	100	H
			* 15.92089	33.21	PK-U	40.80	-20.20	0.00	53.81	-	-	74.00	-20.19	-	-	0	100	V
802.11ax (HE80) 18RU Spot-Check	5290	MIMO	7.053	42.12	PK-U	36.20	-25.90	0.00	52.42	-	-	-	-	68.20	-15.78	277	108	H
			7.053	41.81	PK-U	36.20	-25.90	0.00	52.11	-	-	-	-	68.20	-16.09	171	304	V
			10.572	32.82	PK-U	38.30	-21.10	0.00	50.02	-	-	-	-	68.20	-18.18	360	100	H
			10.584	32.45	PK-U	38.30	-21.20	0.00	49.55	-	-	-	-	68.20	-18.65	0	100	V
			* 15.87085	34.58	PK-U	40.70	-20.40	0.00	54.88	-	-	74.00	-19.12	-	-	360	100	H
			* 15.86716	34.08	PK-U	40.70	-20.40	0.00	54.38	-	-	74.00	-19.62	-	-	0	100	V
802.11ax (HE80) SU Spot-Check	5290	MIMO	7.053	38.90	PK-U	36.20	-25.90	0.00	49.20	-	-	-	-	68.20	-19.00	284	105	H
			7.053	38.57	PK-U	36.20	-25.90	0.00	48.87	-	-	-	-	68.20	-19.33	172	269	V
			10.575	32.48	PK-U	38.30	-21.10	0.00	49.68	-	-	-	-	68.20	-18.52	360	100	H
			10.583	33.34	PK-U	38.30	-21.20	0.00	50.44	-	-	-	-	68.20	-17.76	360	100	V
			* 15.86263	33.32	PK-U	40.70	-20.40	0.00	53.62	-	-	74.00	-20.38	-	-	360	100	H
			* 15.86719	33.75	PK-U	40.70	-20.40	0.00	54.05	-	-	74.00	-19.95	-	-	360	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: 802.11n HT20 / 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	48.35	Pk	35.7	-19.5	0	64.55	68.2	-3.65	60	104	H
2	5.72543	49.82	Pk	35.7	-19.5	0	66.02	68.2	-2.18	60	104	H

Pk - Peak detector

BANDEDGE TEST DATA

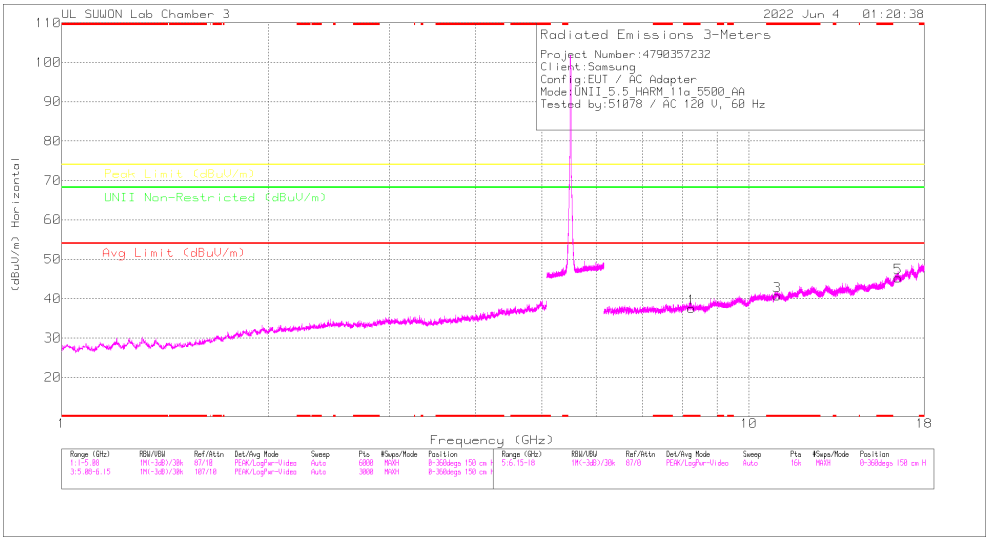
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5500	MIMO	* 5.45998	44.44	Pk	35.30	-20.10	0.00	59.64	-	-	74.00	-14.36	153	130	H
			* 5.45967	46.18	Pk	35.30	-20.10	0.00	61.38	-	-	74.00	-12.62	153	130	H
			5.46998	48.18	Pk	35.30	-20.10	0.00	63.38	-	-	68.20	-4.82	153	130	H
			5.46924	50.79	Pk	35.30	-20.10	0.00	65.99	-	-	68.20	-2.21	153	130	H
			* 5.45998	28.57	RMS	35.30	-20.10	0.17	43.94	54.00	-10.06	-	-	153	130	H
			* 5.4597	30.44	RMS	35.30	-20.10	0.17	45.81	54.00	-8.19	-	-	153	130	H
			5.46998	33.53	RMS	35.30	-20.10	0.17	48.90	-	-	-	-	153	130	H
			5.46974	34.45	RMS	35.30	-20.10	0.17	49.82	-	-	-	-	153	130	H
			* 5.45998	37.54	Pk	35.30	-20.10	0.00	52.74	-	-	74.00	-21.26	292	100	V
			* 5.45786	39.96	Pk	35.30	-20.10	0.00	55.16	-	-	74.00	-18.84	292	100	V
			5.46998	41.81	Pk	35.30	-20.10	0.00	57.01	-	-	68.20	-11.19	292	100	V
			5.46777	41.07	Pk	35.30	-20.10	0.00	56.27	-	-	68.20	-11.93	292	100	V
			* 5.45998	27.02	RMS	35.30	-20.10	0.17	42.39	54.00	-11.61	-	-	292	100	V
			* 5.43058	28.55	RMS	35.30	-20.20	0.17	43.82	54.00	-10.18	-	-	292	100	V
			5.46998	28.74	RMS	35.30	-20.10	0.17	44.11	-	-	-	-	292	100	V
			5.46932	29.43	RMS	35.30	-20.10	0.17	44.80	-	-	-	-	292	100	V
	5700	MIMO	5.72500	48.59	Pk	35.70	-19.50	0.00	64.79	-	-	68.20	-3.41	101	127	H
			5.72503	49.44	Pk	35.70	-19.50	0.00	65.64	-	-	68.20	-2.56	101	127	H
			5.72500	42.82	Pk	35.70	-19.50	0.00	59.02	-	-	68.20	-9.18	109	100	V
			5.72568	45.10	Pk	35.70	-19.50	0.00	61.30	-	-	68.20	-6.90	109	100	V
802.11n (HT20)	5500	MIMO	* 5.45998	42.66	Pk	35.30	-20.10	0.00	57.86	-	-	74.00	-16.14	153	106	H
			* 5.45935	45.76	Pk	35.30	-20.10	0.00	60.96	-	-	74.00	-13.04	153	106	H
			5.46998	48.06	Pk	35.30	-20.10	0.00	63.26	-	-	68.20	-4.94	153	106	H
			5.46854	49.84	Pk	35.30	-20.10	0.00	65.04	-	-	68.20	-3.16	153	106	H
			* 5.45998	28.47	RMS	35.30	-20.10	0.00	43.67	54.00	-10.33	-	-	153	106	H
			* 5.45786	29.23	RMS	35.30	-20.10	0.00	44.43	54.00	-9.57	-	-	153	106	H
			5.46998	31.55	RMS	35.30	-20.10	0.00	46.75	-	-	-	-	153	106	H
			5.46983	32.32	RMS	35.30	-20.10	0.00	47.52	-	-	-	-	153	106	H
			* 5.45998	37.33	Pk	35.30	-20.10	0.00	52.53	-	-	74.00	-21.47	285	100	V
			* 5.45943	41.06	Pk	35.30	-20.10	0.00	56.26	-	-	74.00	-17.74	285	100	V
			5.46998	40.57	Pk	35.30	-20.10	0.00	55.77	-	-	68.20	-12.43	285	100	V
			5.46934	42.72	Pk	35.30	-20.10	0.00	57.92	-	-	68.20	-10.28	285	100	V
			* 5.45998	27.17	RMS	35.30	-20.10	0.00	42.37	54.00	-11.63	-	-	285	100	V
			* 5.44804	28.38	RMS	35.30	-20.10	0.00	43.58	54.00	-10.42	-	-	285	100	V
			5.46998	28.03	RMS	35.30	-20.10	0.00	43.23	-	-	-	-	285	100	V
			5.46928	28.62	RMS	35.30	-20.10	0.00	43.82	-	-	-	-	285	100	V
	5700	MIMO	5.72500	48.35	Pk	35.70	-19.50	0.00	64.55	-	-	68.20	-3.65	60	104	H
			5.72543	49.82	Pk	35.70	-19.50	0.00	66.02	-	-	68.20	**-2.18**	60	104	H
			5.72500	38.99	Pk	35.70	-19.50	0.00	55.19	-	-	68.20	-13.01	130	103	V
			5.72782	42.87	Pk	35.70	-19.50	0.00	59.07	-	-	68.20	-9.13	130	103	V
802.11ax (HE40) SU	5510	MIMO	* 5.45998	36.84	Pk	35.30	-20.10	0.00	52.04	-	-	74.00	-21.96	303	110	H
			* 5.42786	40.75	Pk	35.30	-20.10	0.00	55.95	-	-	74.00	-18.05	303	110	H
			5.46998	37.68	Pk	35.30	-20.10	0.00	52.88	-	-	68.20	-15.32	303	110	H
			5.46994	40.32	Pk	35.30	-20.10	0.00	55.52	-	-	68.20	-12.68	303	110	H
			* 5.45998	27.34	RMS	35.30	-20.10	0.00	42.54	54.00	-11.46	-	-	303	110	H
			* 5.40717	28.24	RMS	35.20	-20.10	0.00	43.34	54.00	-10.66	-	-	303	110	H
			5.46998	28.33	RMS	35.30	-20.10	0.00	43.53	-	-	-	-	303	110	H
			5.46978	28.94	RMS	35.30	-20.10	0.00	44.14	-	-	-	-	303	110	H
			* 5.45998	38.89	Pk	35.30	-20.10	0.00	54.09	-	-	74.00	-19.91	134	100	V
			* 5.45666	39.62	Pk	35.30	-20.10	0.00	54.82	-	-	74.00	-19.18	134	100	V
			5.46998	37.76	Pk	35.30	-20.10	0.00	52.96	-	-	68.20	-15.24	134	100	V
			5.46293	39.18	Pk	35.30	-20.10	0.00	54.38	-	-	68.20	-13.82	134	100	V
			* 5.45998	27.34	RMS	35.30	-20.10	0.00	42.54	54.00	-11.46	-	-	134	100	V
			* 5.45587	28.19	RMS	35.30	-20.10	0.00	43.39	54.00	-10.61	-	-	134	100	V
			5.46998	27.35	RMS	35.30	-20.10	0.00	42.55	-	-	-	-	134	100	V
			5.46869	28.49	RMS	35.30	-20.10	0.00	43.69	-	-	-	-	134	100	V
	5670	MIMO	5.72500	36.38	Pk	35.70	-19.50	0.00	52.58	-	-	68.20	-15.62	99	100	H
			5.81872	40.40	Pk	35.80	-19.40	0.00	56.80	-	-	68.20	-11.40	99	100	H
			5.72500	35.84	Pk	35.70	-19.50	0.00	52.04	-	-	68.20	-16.16	130	110	V
			5.77431	39.86	Pk	35.70	-19.40	0.00	56.16	-	-	68.20	-12.04	130	110	V
802.11ax (HE80) SU	5530	MIMO	* 5.45998	39.18	Pk	35.30	-20.10	0.00	54.38	-	-	74.00	-19.62	302	108	H
			* 5.44784	40.26	Pk	35.30	-20.10	0.00	55.46	-	-	74.00	-18.54	302	108	H
			5.46998	39.35	Pk	35.30	-20.10	0.00	54.55	-	-	68.20	-13.65	302	108	H
			5.46584	41.27	Pk	35.30	-20.10	0.00	56.47	-	-	68.20	-11.73	302	108	H
			* 5.45998	28.25	RMS	35.30	-20.10	0.00	43.45	54.00	-10.55	-	-	302	108	H
			* 5.45862	29.46	RMS	35.30	-20.10	0.00	44.66	54.00	-9.34	-	-	302	108	H
			5.46998	29.08	RMS	35.30	-20.10	0.00	44.28	-	-	-	-	302	108	H
			5.46937	30.24	RMS	35.30	-20.10	0.00	45.44	-	-	-	-	302	108	H
			* 5.45998	36.73	Pk	35.30	-20.10	0.00	51.93	-	-	74.00	-22.07	137	100	V
			* 5.42379	39.67	Pk	35.20	-20.10	0.00	54.77	-	-	74.00	-19.23	137	100	V
			5.46998	37.62	Pk	35.30	-20.10	0.00	52.82	-	-	68.20	-15.38	137	100	V
			5.46016	39.99	Pk	35.30	-20.10	0.00	55.19	-	-	68.20	-13.01	137	100	V
			* 5.45998	26.75	RMS	35.30	-20.10	0.00	41.95	54.00	-12.05	-	-	137	100	V
			* 5.45049	28.52	RMS	35.30	-20.10	0.00	43.72	54.00	-10.28	-	-	137	100	V
			5.46998	27.47	RMS	35.30	-20.10	0.00	42.67	-	-	-	-	137	100	V
			5.46479	28.67	RMS	35.30	-20.10	0.00	43.87	-	-	-	-	137	100	V
	5610	MIMO	5.72500	37.45	Pk	35.70	-19.50	0.00	53.65	-	-	68.20	-14.55	301	108	H
			5.78648	39.36	Pk	35.80	-19.40	0.00	55.76	-	-	68.20	-12.44	301	108	H
			5.72500	37.05	Pk	35.70	-19.50	0.00	53.25	-	-	68.20	-14.95	135	100	V
			5.73905	40.04	Pk	35.70	-19.50	0.00	56.24	-	-	68.20	-11.96	135	100	V

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) SU	5570 Lower	MIMO	* 5.45998	45.43	Pk	35.30	-20.10	0.00	60.63	-	-	74.00	-13.37	150	116	H
			* 5.45615	48.58	Pk	35.30	-20.10	0.00	63.78	-	-	74.00	-10.22	150	116	H
			5.46998	45.58	Pk	35.30	-20.10	0.00	60.78	-	-	68.20	-7.42	150	116	H
			5.46094	48.47	Pk	35.30	-20.10	0.00	63.67	-	-	68.20	-4.53	150	116	H
			* 5.45998	34.76	RMS	35.30	-20.10	0.00	49.96	54.00	-4.04	-	-	150	116	H
			* 5.4574	35.47	RMS	35.30	-20.10	0.00	50.67	54.00	**-3.33**	-	-	150	116	H
			5.46998	34.70	RMS	35.30	-20.10	0.00	49.90	-	-	-	-	150	116	H
			5.46471	36.13	RMS	35.30	-20.10	0.00	51.33	-	-	-	-	150	116	H
			* 5.45998	38.93	Pk	35.30	-20.10	0.00	54.13	-	-	74.00	-19.87	291	103	V
			* 5.45372	41.74	Pk	35.30	-20.10	0.00	56.94	-	-	74.00	-17.06	291	103	V
			5.46998	39.70	Pk	35.30	-20.10	0.00	54.90	-	-	68.20	-13.30	291	103	V
			5.46230	41.75	Pk	35.30	-20.10	0.00	56.95	-	-	68.20	-11.25	291	103	V
			* 5.45998	28.79	RMS	35.30	-20.10	0.00	43.99	54.00	-10.01	-	-	291	103	V
			* 5.45585	30.35	RMS	35.30	-20.10	0.00	45.55	54.00	-8.45	-	-	291	103	V
			5.46998	28.64	RMS	35.30	-20.10	0.00	43.84	-	-	-	-	291	103	V
			5.46851	30.74	RMS	35.30	-20.10	0.00	45.94	-	-	-	-	291	103	V
	5570 Upper	MIMO	5.72501	47.31	Pk	35.70	-19.50	0.00	63.51	-	-	68.20	-4.69	102	103	H
			5.72621	49.44	Pk	35.70	-19.50	0.00	65.64	-	-	68.20	-2.56	102	103	H
			5.72501	38.05	Pk	35.70	-19.50	0.00	68.20	-	-	68.20	-13.95	133	100	V
			5.72666	41.72	Pk	35.70	-19.50	0.00	68.20	-	-	68.20	-10.28	133	100	V

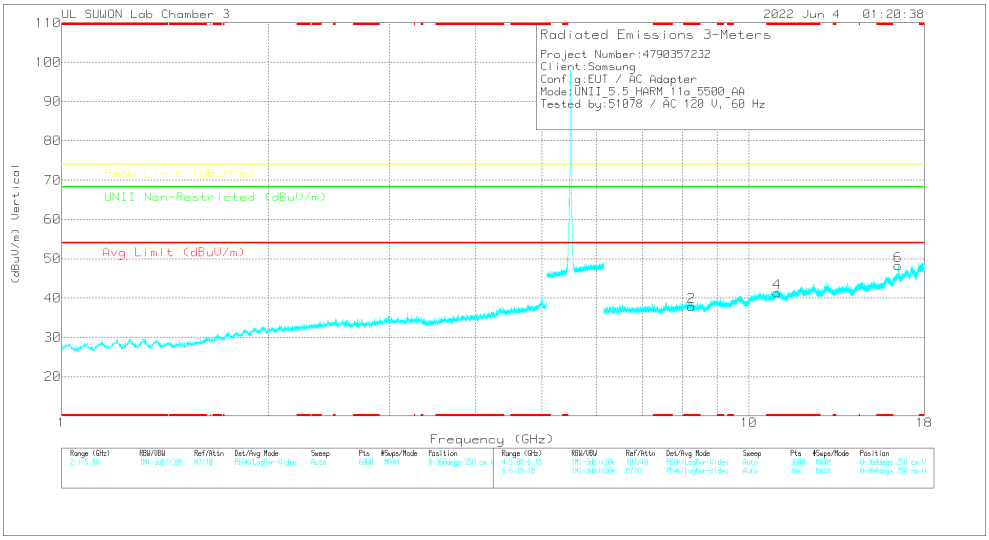
Note1. Pk - Peak detector, RMS - RMS detectior
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5500 MHz)

5500 MHz HORIZONTAL



5500 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.

5500 MHz DATA

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	6GHz_HP(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
* 8.24395	35.51	PK-U	36.2	-23.7	0	48.01	-	-	74	-25.99	-	-	360	100	H
* 8.25855	35.44	PK-U	36.2	-23.6	0	48.04	-	-	74	-25.96	-	-	360	100	V
* 10.99185	33.34	PK-U	38.5	-21.2	0	50.64	-	-	74	-23.36	-	-	360	100	H
* 10.99529	33.74	PK-U	38.5	-21.2	0	51.04	-	-	74	-22.96	-	-	360	100	V
16.49093	33.7	PK-U	42	-19.3	0	56.4	-	-	-	-	68.2	-11.8	249	103	H
16.50646	39.47	PK-U	42	-19.2	0	62.27	-	-	-	-	68.2	-5.93	302	108	V

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

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

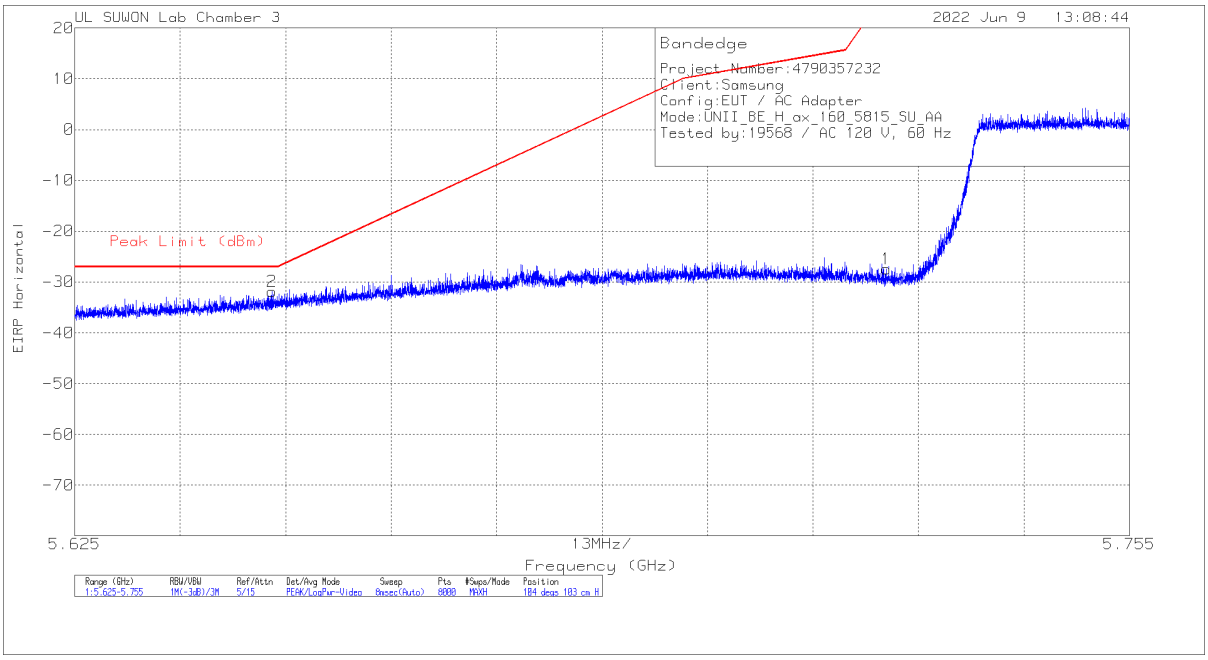
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5500	MIMO	* 8.24395	35.51	PK-U	36.20	-23.70	0.00	48.01	-	-	74.00	-25.99	-	-	360	100	H
			* 8.25855	35.44	PK-U	36.20	-23.60	0.00	48.04	-	-	74.00	-25.96	-	-	360	100	V
			* 10.99185	33.34	PK-U	38.50	-21.20	0.00	50.64	-	-	74.00	-23.36	-	-	360	100	H
			* 10.99529	33.74	PK-U	38.50	-21.20	0.00	51.04	-	-	74.00	-22.96	-	-	360	100	V
			16.491	33.70	PK-U	42.00	-19.30	0.00	56.40	-	-	-	-	68.20	-11.80	249	103	H
			16.506	39.47	PK-U	42.00	-19.20	0.00	62.27	-	-	-	-	68.20	**-5.93**	302	108	V
	5580	MIMO	* 8.37506	36.18	PK-U	36.30	-23.50	0.00	48.98	-	-	74.00	-25.02	-	-	360	100	H
			* 8.36608	35.49	PK-U	36.20	-23.60	0.00	48.09	-	-	74.00	-25.91	-	-	360	100	V
			* 11.16502	33.87	PK-U	38.60	-21.50	0.00	50.97	-	-	74.00	-23.03	-	-	360	100	H
			* 11.16802	34.55	PK-U	38.60	-21.40	0.00	51.75	-	-	74.00	**-22.25**	-	-	360	100	V
			16.737	32.07	PK-U	42.30	-18.80	0.00	55.57	-	-	-	-	68.20	-12.63	27	100	H
			16.747	35.12	PK-U	42.30	-18.80	0.00	58.62	-	-	-	-	68.20	-9.58	302	106	V
	5700	MIMO	8.537	34.77	PK-U	36.50	-23.00	0.00	48.27	-	-	-	-	68.20	-19.93	360	100	H
			8.553	34.61	PK-U	36.50	-22.90	0.00	48.21	-	-	-	-	68.20	-19.99	360	100	V
			* 11.39653	32.58	PK-U	38.60	-21.40	0.00	49.78	-	-	74.00	-24.22	-	-	360	100	H
			* 11.39701	33.16	PK-U	38.60	-21.40	0.00	50.36	-	-	74.00	-23.64	-	-	360	100	V
			17.091	31.55	PK-U	42.30	-17.90	0.00	55.95	-	-	-	-	68.20	-12.25	360	100	H
			17.106	31.88	PK-U	42.30	-18.00	0.00	56.18	-	-	-	-	68.20	-12.02	360	100	V
	5720	MIMO	8.586	34.45	PK-U	36.50	-23.10	0.00	47.85	-	-	-	-	68.20	-20.35	0	100	H
			8.580	34.10	PK-U	36.50	-23.00	0.00	47.60	-	-	-	-	68.20	-20.60	0	100	V
			* 11.43661	32.39	PK-U	38.60	-21.30	0.00	49.69	-	-	74.00	-24.31	-	-	0	100	H
			* 11.4384	32.75	PK-U	38.60	-21.30	0.00	50.05	-	-	74.00	-23.95	-	-	0	100	V
			17.163	32.51	PK-U	42.20	-17.90	0.00	56.81	-	-	-	-	68.20	-11.39	0	100	H
			17.166	32.61	PK-U	42.20	-17.90	0.00	56.91	-	-	-	-	68.20	-11.29	0	100	V
802.11ax (HE20) 8RU Spot-Check	5580	MIMO	* 8.36094	35.44	PK-U	36.20	-23.60	0.00	48.04	-	-	74.00	-25.96	-	-	0	100	H
			* 8.36654	35.36	PK-U	36.20	-23.60	0.00	47.96	-	-	74.00	-26.04	-	-	0	100	V
			* 11.15286	33.99	PK-U	38.60	-21.50	0.00	51.09	-	-	74.00	-22.91	-	-	0	100	H
			* 11.15597	34.24	PK-U	38.60	-21.40	0.00	51.44	-	-	74.00	-22.56	-	-	0	100	V
			16.750	31.45	PK-U	42.40	-18.70	0.00	55.15	-	-	-	-	68.20	-13.05	0	100	H
			16.739	31.89	PK-U	42.30	-18.80	0.00	55.39	-	-	-	-	68.20	-12.81	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: 802.11ax HE160 LOWER SIDE / 5815 MHz)

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	-55.34	Pk	35.6	-19.5	11.8	0	-27.44	27	-54.44	104	103	H
2	5.6493	-59.4	Pk	35.5	-19.8	11.8	0	-31.9	-27	-4.9	104	103	H

Pk - Peak detector

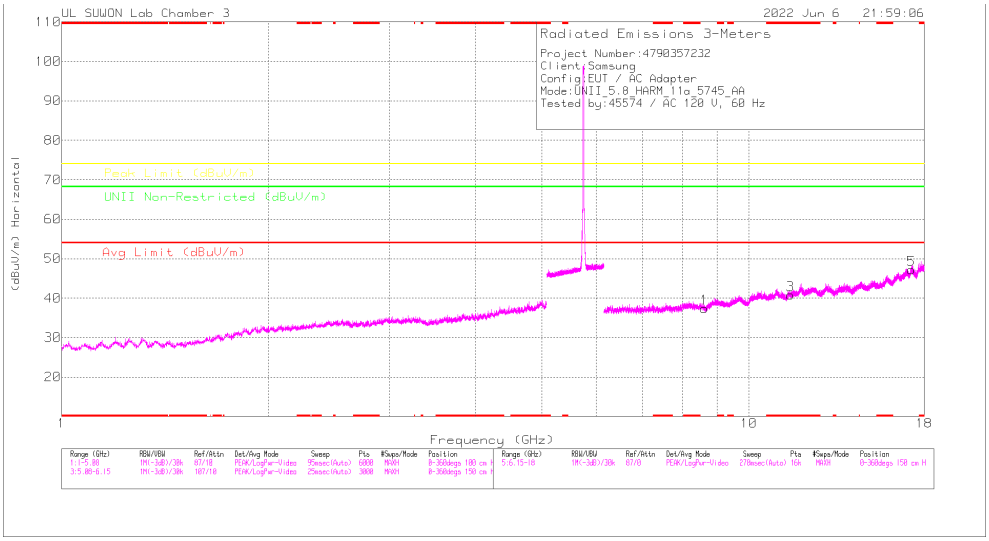
BANDEDGE TEST DATA

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	-48.17	Pk	35.60	-19.50	11.80	0.00	-20.27	27.00	-47.27	100	101	H
			5.64073	-63.34	Pk	35.50	-19.80	11.80	0.00	-35.84	-27.00	-8.84	100	101	H
			5.72500	-53.41	Pk	35.60	-19.50	11.80	0.00	-25.51	27.00	-52.51	112	100	V
			5.64299	-62.51	Pk	35.50	-19.80	11.80	0.00	-35.01	-27.00	-8.01	112	100	V
802.11n (HT20)	5745	MIMO	5.72500	-44.99	Pk	35.60	-19.50	11.80	0.00	-17.09	27.00	-44.09	99	101	H
			5.64169	-63.43	Pk	35.50	-19.80	11.80	0.00	-35.93	-27.00	-8.93	99	101	H
			5.72500	-50.68	Pk	35.60	-19.50	11.80	0.00	-22.78	27.00	-49.78	125	100	V
			5.64239	-63.19	Pk	35.50	-19.80	11.80	0.00	-35.69	-27.00	-8.69	125	100	V
802.11ax (HE40) SU	5755	MIMO	5.72500	-66.46	Pk	35.60	-19.50	11.80	0.00	-38.56	27.00	-65.56	102	117	H
			5.64741	-64.04	Pk	35.50	-19.80	11.80	0.00	-36.54	-27.00	-9.54	102	117	H
			5.72500	-66.02	Pk	35.60	-19.50	11.80	0.00	-38.12	27.00	-65.12	129	100	V
			5.62702	-63.73	Pk	35.50	-19.90	11.80	0.00	-36.33	-27.00	-9.33	129	100	V
802.11ax (HE80) SU	5775 (Lower Side)	MIMO	5.72500	-65.63	Pk	35.60	-19.50	11.80	0.00	-37.73	27.00	-64.73	149	101	H
			5.63994	-63.45	Pk	35.50	-19.80	11.80	0.00	-35.95	-27.00	-8.95	149	101	H
			5.72500	-64.90	Pk	35.60	-19.50	11.80	0.00	-37.00	27.00	-64.00	129	102	V
			5.64608	-63.05	Pk	35.50	-19.80	11.80	0.00	-35.55	-27.00	-8.55	129	102	V
802.11ax (HE160) SU	5815 (Lower Side)	MIMO	5.72500	-55.34	Pk	35.60	-19.50	11.80	0.00	-27.44	27.00	-54.44	104	103	H
			5.64930	-59.40	Pk	35.50	-19.80	11.80	0.00	-31.90	-27.00	**-4.90**	104	103	H
			5.72500	-62.83	Pk	35.60	-19.50	11.80	0.00	-34.93	27.00	-61.93	134	103	V
			5.63600	-62.69	Pk	35.50	-19.80	11.80	0.00	-35.19	-27.00	-8.19	134	103	V

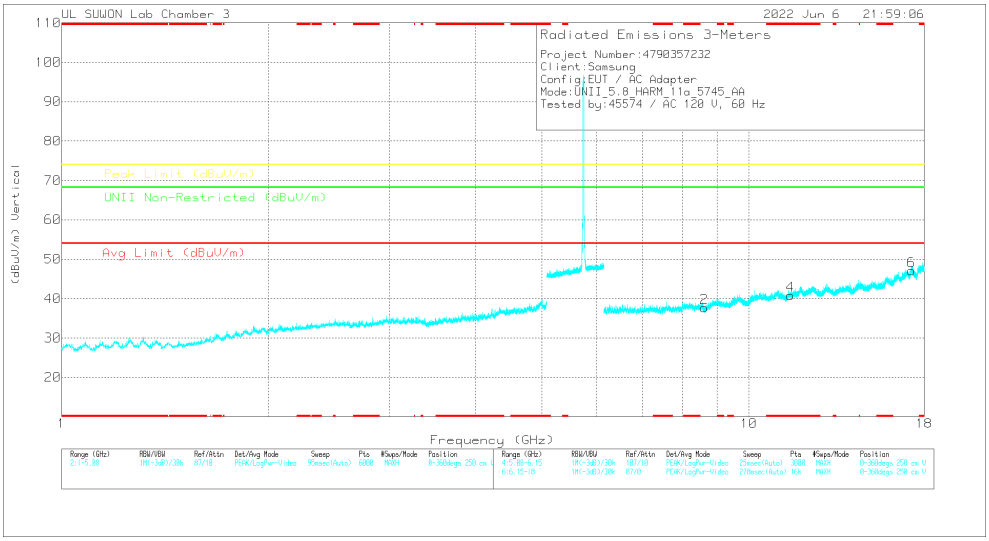
Note. Pk - Peak detector

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)	Meter Reading (dBuV)	Det	3117_00218957	6GHz_HP[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
8.61508	34.44	PK-U	36.5	-23.1	0	47.84	-	-	-	-	68.2	-20.36	360	100	H
8.62454	34.42	PK-U	36.5	-23.1	0	47.82	-	-	-	-	68.2	-20.38	360	100	V
* 11.4952	33.34	PK-U	38.7	-21.4	0	50.64	-	-	74	-23.36	-	-	360	100	H
* 11.50012	33.27	PK-U	38.7	-21.3	0	50.67	-	-	74	-23.33	-	-	360	100	V
17.24115	33.04	PK-U	42.1	-17.1	0	58.04	-	-	-	-	68.2	-10.16	360	100	H
17.2271	32.4	PK-U	42.1	-17.2	0	57.3	-	-	-	-	68.2	-10.9	360	100	V

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

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

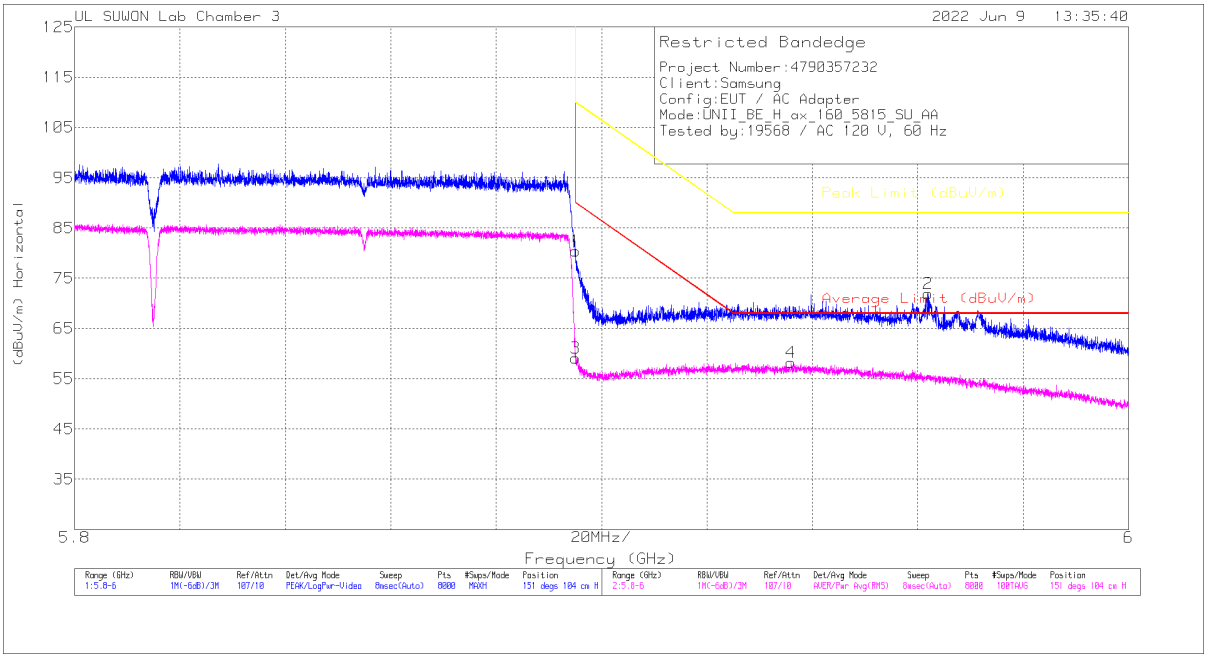
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5745	MIMO	8.615	34.44	PK-U	36.50	-23.10	0.00	47.84	-	-	-	-	68.20	-20.36	360	100	H
			8.625	34.42	PK-U	36.50	-23.10	0.00	47.82	-	-	-	-	68.20	-20.38	360	100	V
			* 11.4952	33.34	PK-U	38.70	-21.40	0.00	50.64	-	-	74.00	-23.36	-	-	360	100	H
			* 11.50012	33.27	PK-U	38.70	-21.30	0.00	50.67	-	-	74.00	-23.33	-	-	360	100	V
			17.241	33.04	PK-U	42.10	-17.10	0.00	58.04	-	-	-	-	68.20	**-10.16**	360	100	H
			17.227	32.40	PK-U	42.10	-17.20	0.00	57.30	-	-	-	-	68.20	-10.90	360	100	V
	5785	MIMO	8.676	34.36	PK-U	36.50	-23.00	0.00	47.86	-	-	-	-	68.20	-20.34	0	100	H
			8.680	34.18	PK-U	36.50	-23.00	0.00	47.68	-	-	-	-	68.20	-20.52	0	100	V
			* 11.56324	34.15	PK-U	38.80	-21.50	0.00	51.45	-	-	74.00	-22.55	-	-	0	100	H
			* 11.57853	34.23	PK-U	38.80	-21.60	0.00	51.43	-	-	74.00	-22.57	-	-	0	100	V
			17.376	31.92	PK-U	42.00	-17.20	0.00	56.72	-	-	-	-	68.20	-11.48	108	105	H
			17.372	32.17	PK-U	42.00	-17.20	0.00	56.97	-	-	-	-	68.20	-11.23	282	103	V
	5825	MIMO	7.767	43.84	PK-U	36.30	-24.60	0.00	55.54	-	-	-	-	68.20	-12.66	46	100	H
			7.767	43.37	PK-U	36.30	-24.60	0.00	55.07	-	-	-	-	68.20	-13.13	240	101	V
			* 11.65636	34.89	PK-U	38.90	-21.50	0.00	52.29	-	-	74.00	-21.71	-	-	360	100	H
			* 11.65224	35.03	PK-U	38.90	-21.50	0.00	52.43	-	-	74.00	**-21.57**	-	-	360	100	V
			17.482	31.18	PK-U	42.00	-16.80	0.00	56.38	-	-	-	-	68.20	-11.82	360	100	H
			17.482	32.13	PK-U	42.00	-16.80	0.00	57.33	-	-	-	-	68.20	-10.87	360	100	V
802.11ax (HE20) 8RU Spot-check	5785	MIMO	8.682	34.22	PK-U	36.50	-23.00	0.00	47.72	-	-	-	-	68.20	-20.48	360	100	H
			8.677	34.16	PK-U	36.50	-23.00	0.00	47.66	-	-	-	-	68.20	-20.54	360	100	V
			* 11.57387	33.67	PK-U	38.80	-21.60	0.00	50.87	-	-	74.00	-23.13	-	-	360	100	H
			* 11.57654	34.07	PK-U	38.80	-21.60	0.00	51.27	-	-	74.00	-22.73	-	-	360	100	V
			17.362	31.82	PK-U	42.00	-17.30	0.00	56.52	-	-	-	-	68.20	-11.68	360	100	H
			17.351	31.60	PK-U	42.00	-17.20	0.00	56.40	-	-	-	-	68.20	-11.80	360	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 HE160 SU / 5815 MHz Upper side)

HORIZONTAL PEAK 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	5.89501	63.72	Pk	36	-19.3	0	80.42	-	-	109.99	-29.57	151	104	H
2	5.96192	55.19	Pk	36	-19.2	0	71.99	-	-	88	-16.01	151	104	H
3	5.89501	42.41	RMS	36	-19.3	0	59.11	89.99	-30.88	-	-	151	104	H
4	5.93599	41.51	RMS	36	-19.3	0	58.21	68	-9.79	-	-	151	104	H

Pk - Peak detector
RMS - RMS detection

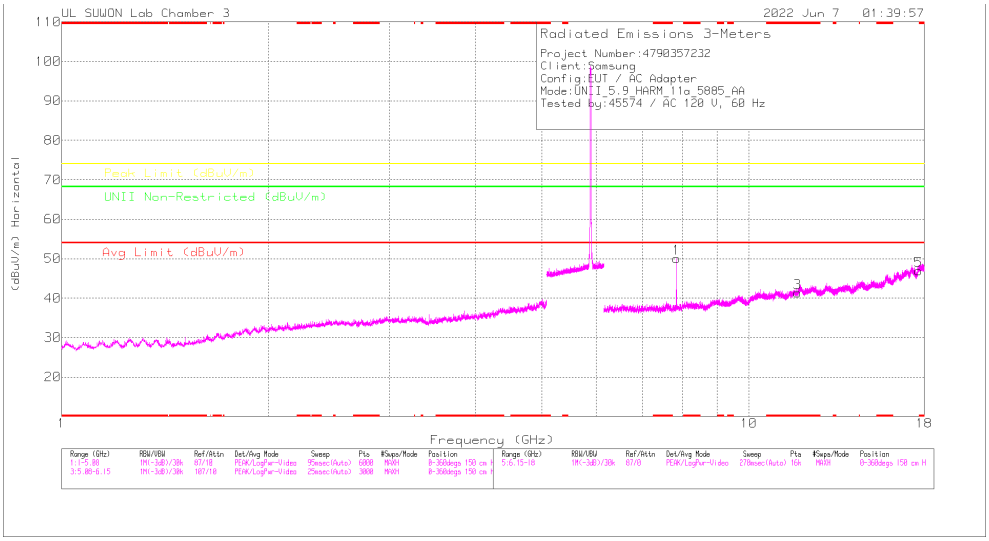
BANDEDGE TEST DATA

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	5885	MIMO	5.895	58.03	Pk	36.00	-19.30	0.00	74.73	-	-	109.99	-35.26	52	112	H
			5.963	38.62	Pk	36.00	-19.20	0.00	55.42	-	-	88.00	-32.58	52	112	H
			5.895	45.21	RMS	36.00	-19.30	0.17	62.08	89.99	-27.91	-	-	52	112	H
			5.996	27.67	RMS	36.00	-19.20	0.17	44.64	68.00	-23.36	-	-	52	112	H
			5.895	56.82	Pk	36.00	-19.30	0.00	73.52	-	-	109.99	-36.47	130	101	V
			5.966	39.15	Pk	36.00	-19.30	0.00	55.85	-	-	88.00	-32.15	130	101	V
			5.895	43.46	RMS	36.00	-19.30	0.17	60.33	89.99	-29.66	-	-	130	101	V
			5.977	27.59	RMS	36.00	-19.20	0.17	44.56	68.00	-23.44	-	-	130	101	V
802.11n (HT20)	5885	MIMO	5.895	68.84	Pk	36.00	-19.30	0.00	85.54	-	-	109.99	-24.45	54	110	H
			5.895	68.16	Pk	36.00	-19.30	0.00	84.86	-	-	109.92	-25.06	54	110	H
			5.895	50.72	RMS	36.00	-19.30	0.00	67.42	89.99	-22.57	-	-	54	110	H
			5.895	53.31	RMS	36.00	-19.30	0.00	70.01	89.95	-19.94	-	-	54	110	H
			5.895	63.34	Pk	36.00	-19.30	0.00	80.04	-	-	109.99	-29.95	130	105	V
			5.895	61.82	Pk	36.00	-19.30	0.00	78.52	-	-	109.83	-31.31	130	105	V
			5.895	47.43	RMS	36.00	-19.30	0.00	64.13	89.99	-25.86	-	-	130	105	V
			5.936	27.82	RMS	36.00	-19.30	0.00	44.52	68.00	-23.48	-	-	130	105	V
802.11ax (HE40) SU	5875	MIMO	5.895	54.94	Pk	36.00	-19.30	0.00	71.64	-	-	109.99	-38.35	150	103	H
			5.941	38.60	Pk	36.00	-19.30	0.00	55.30	-	-	88.00	-32.70	150	103	H
			5.895	36.35	RMS	36.00	-19.30	0.00	53.05	89.99	-36.94	-	-	150	103	H
			5.939	27.75	RMS	36.00	-19.30	0.00	44.45	68.00	-23.55	-	-	150	103	H
			5.895	50.40	Pk	36.00	-19.30	0.00	67.10	-	-	109.99	-42.89	130	104	V
			5.981	39.63	Pk	36.00	-19.20	0.00	56.43	-	-	88.00	-31.57	130	104	V
			5.895	32.03	RMS	36.00	-19.30	0.00	48.73	89.99	-41.26	-	-	130	104	V
			5.943	27.81	RMS	36.00	-19.30	0.00	44.51	68.00	-23.49	-	-	130	104	V
802.11ax (HE80) SU	5855	MIMO	5.895	54.58	Pk	36.00	-19.30	0.00	71.28	-	-	109.99	-38.71	151	103	H
			5.978	39.69	Pk	36.00	-19.20	0.00	56.49	-	-	88.00	-31.51	151	103	H
			5.895	37.10	RMS	36.00	-19.30	0.00	53.80	89.99	-36.19	-	-	151	103	H
			5.988	27.80	RMS	36.00	-19.20	0.00	44.60	68.00	-23.40	-	-	151	103	H
			5.895	49.81	Pk	36.00	-19.30	0.00	66.51	-	-	109.99	-43.48	131	100	V
			5.998	39.10	Pk	36.00	-19.20	0.00	55.90	-	-	88.00	-32.10	131	100	V
			5.895	30.28	RMS	36.00	-19.30	0.00	46.98	89.99	-43.01	-	-	131	100	V
			5.979	28.05	RMS	36.00	-19.20	0.00	44.85	68.00	-23.15	-	-	131	100	V
802.11ax (HE160) SU	5815 Upper	MIMO	5.895	63.72	Pk	36.00	-19.30	0.00	80.42	-	-	109.99	-29.57	151	104	H
			5.962	55.19	Pk	36.00	-19.20	0.00	71.99	-	-	88.00	**-16.01**	151	104	H
			5.895	42.41	RMS	36.00	-19.30	0.00	59.11	89.99	-30.88	-	-	151	104	H
			5.936	41.51	RMS	36.00	-19.30	0.00	58.21	68.00	**-9.79**	-	-	151	104	H
			5.895	57.28	Pk	36.00	-19.30	0.00	73.98	-	-	109.99	-36.01	131	106	V
			5.926	44.06	Pk	36.00	-19.30	0.00	60.76	-	-	88.00	-27.24	131	106	V
			5.895	38.07	RMS	36.00	-19.30	0.00	54.77	89.99	-35.22	-	-	131	106	V
			5.928	31.66	RMS	36.00	-19.30	0.00	48.36	68.00	-19.64	-	-	131	106	V

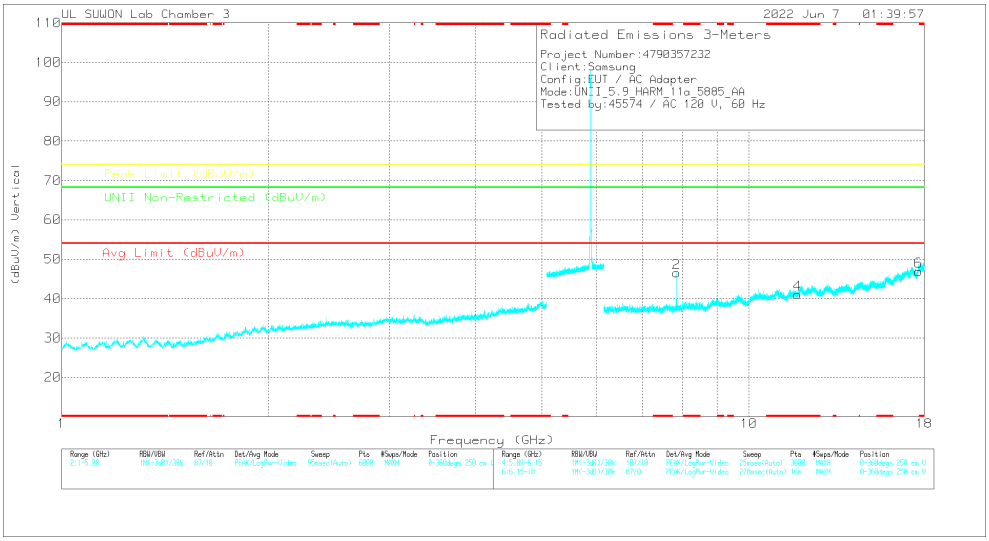
Note. RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5885 MHz)

5885 MHz HORIZONTAL



5885 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.

5885 MHz DATA

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	6GHz_HP[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
7.84664	42.63	PK-U	36.3	-24.2	0	54.73	-	-	-	-	68.2	-13.47	44	101	H
7.84651	42.02	PK-U	36.3	-24.2	0	54.12	-	-	-	-	68.2	-14.08	239	100	V
* 11.77067	34.6	PK-U	39	-21.5	0	52.1	-	-	74	-21.9	-	-	360	100	H
* 11.76553	34.57	PK-U	39	-21.5	0	52.07	-	-	74	-21.93	-	-	360	100	V
17.65194	32.48	PK-U	41.9	-15.7	0	58.68	-	-	-	-	68.2	-9.52	360	100	H
17.64817	30.97	PK-U	42	-15.8	0	57.17	-	-	-	-	68.2	-11.03	360	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	5845	MIMO	7.793	43.34	PK-U	36.30	-24.50	0.00	55.14	-	-	-	-	68.20	-13.06	42	104	H
			7.793	43.24	PK-U	36.30	-24.50	0.00	55.04	-	-	-	-	68.20	-13.16	239	101	V
			* 11.6979	34.69	PK-U	38.90	-21.50	0.00	52.09	-	-	74.00	-21.91	-	-	360	100	H
			* 11.68677	34.80	PK-U	38.90	-21.50	0.00	52.20	-	-	74.00	-21.80	-	-	360	100	V
			17.532	32.67	PK-U	42.00	-17.00	0.00	57.67	-	-	-	-	68.20	-10.53	360	100	H
			17.543	31.37	PK-U	42.00	-17.00	0.00	56.37	-	-	-	-	68.20	-11.83	360	100	V
	5865	MIMO	7.820	43.72	PK-U	36.30	-24.30	0.00	55.72	-	-	-	-	68.20	-12.48	43	105	H
			7.820	43.51	PK-U	36.30	-24.30	0.00	55.51	-	-	-	-	68.20	-12.69	240	100	V
			* 11.72935	34.47	PK-U	38.90	-21.60	0.00	51.77	-	-	74.00	-22.23	-	-	360	100	H
			* 11.72572	34.42	PK-U	38.90	-21.60	0.00	51.72	-	-	74.00	-22.28	-	-	360	100	V
			17.592	32.38	PK-U	42.00	-16.70	0.00	57.68	-	-	-	-	68.20	-10.52	360	100	H
			17.594	31.77	PK-U	42.00	-16.70	0.00	57.07	-	-	-	-	68.20	-11.13	360	100	V
	5885	MIMO	7.847	42.63	PK-U	36.30	-24.20	0.00	54.73	-	-	-	-	68.20	-13.47	44	101	H
			7.847	42.02	PK-U	36.30	-24.20	0.00	54.12	-	-	-	-	68.20	-14.08	239	100	V
			* 11.77067	34.60	PK-U	39.00	-21.50	0.00	52.10	-	-	74.00	-21.90	-	-	360	100	H
			* 11.76553	34.57	PK-U	39.00	-21.50	0.00	52.07	-	-	74.00	-21.93	-	-	360	100	V
			17.652	32.48	PK-U	41.90	-15.70	0.00	58.68	-	-	-	-	68.20	**-9.52**	360	100	H
			17.648	30.97	PK-U	42.00	-15.80	0.00	57.17	-	-	-	-	68.20	-11.03	360	100	V
802.11ax (HE20) 8RU Spot-check	5865	MIMO	7.820	42.93	PK-U	36.30	-24.30	0.00	54.93	-	-	-	-	68.20	-13.27	42	119	H
			7.820	42.61	PK-U	36.30	-24.30	0.00	54.61	-	-	-	-	68.20	-13.59	242	100	V
			* 11.72601	34.95	PK-U	38.90	-21.60	0.00	52.25	-	-	74.00	**-21.75**	-	-	360	100	H
			* 11.73177	34.69	PK-U	38.90	-21.60	0.00	51.99	-	-	74.00	-22.01	-	-	360	100	V
			17.589	31.15	PK-U	42.00	-16.70	0.00	56.45	-	-	-	-	68.20	-11.75	360	100	H
			17.598	30.93	PK-U	42.00	-16.60	0.00	56.33	-	-	-	-	68.20	-11.87	360	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

11.6. Spurious Emissions for Simultaneous Transmission

11.6.1. Worst test case RSDB condition

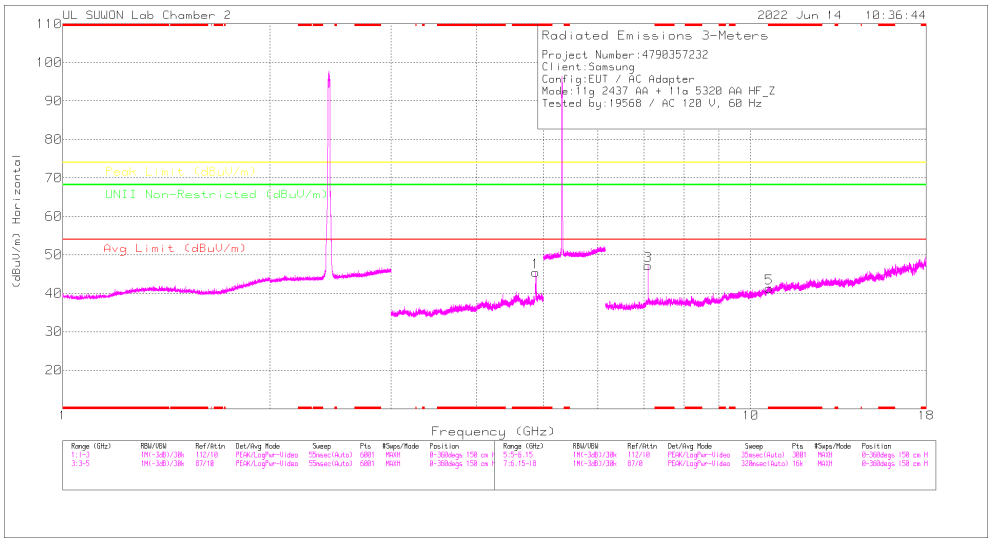
Case 1	2.4 GHz WLAN ANT1 + ANT2	5GHz WLAN ANT1 + ANT2
Mode	802.11g	802.11a
Channel	6	100
Frequency[MHz]	2437	5320
Tone	-	-
RU	-	-
Data Rate	6 Mbps	6 Mbps
Foldable condition & Axis (Worst)	Half-folded(X) & Open(Z)	

NOTE
The lowest margin condition among the channels and modes were selected for test.
Low, mid, and high channels of 2.4GH WLAN were tested, and the worst case configuration & data were listed in the test report.

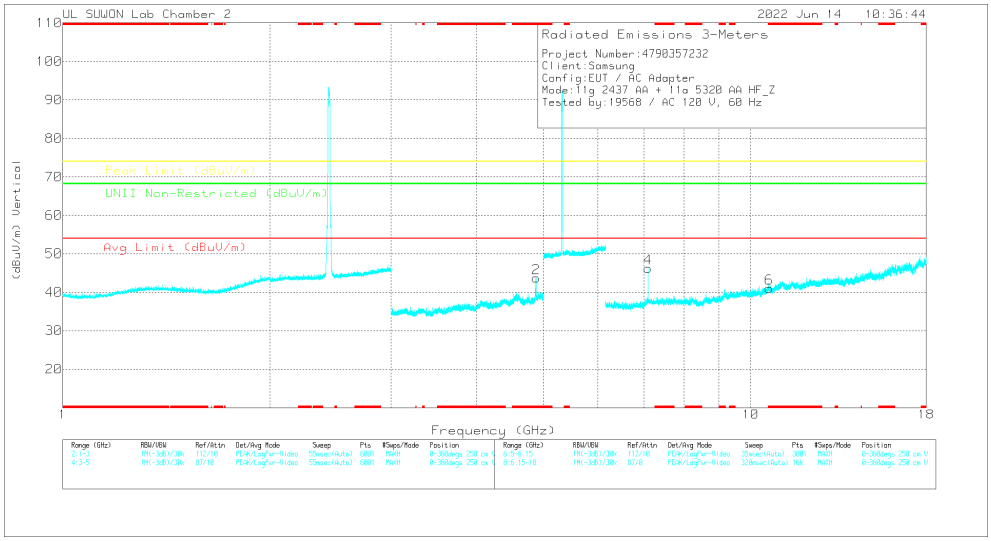
11.6.2. Test Results

Spurious emission for Simultaneous Transmission
Case1. – Half-folded(X)

HORIZONTAL



VERTICAL



Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	5GHz_LP[dB]	DTS Notch[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
* 4.8751	49.98	PK2	34.1	-26.6	.5	0	57.98	-	-	74	-16.02	-	-	79	100	H
* 4.8754	36.79	MAv1	34.1	-26.6	.5	.17	44.96	54	-9.04	-	-	-	-	79	100	H
* 4.8753	50.22	PK2	34.1	-26.6	.5	0	58.22	-	-	74	-15.78	-	-	266	376	V
* 4.8755	37.48	MAv1	34.1	-26.6	.5	.17	45.65	54	-8.35	-	-	-	-	266	376	V

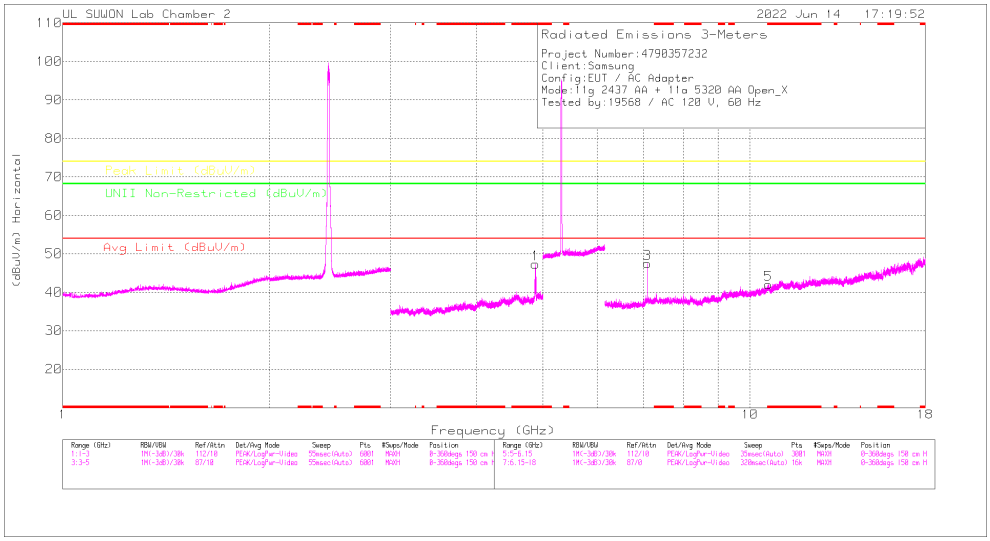
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	6GHz_HP[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
7.09308	41.3	PK-U	36.1	-23.5	0	53.9	-	-	-	-	68.2	-14.3	41	111	H
7.09329	40.2	PK-U	36.1	-23.5	0	52.8	-	-	-	-	68.2	-15.4	166	104	V
* 10.63768	33.33	PK-U	37.9	-19.3	0	51.93	-	-	74	-22.07	-	-	0	100	H
* 10.64861	33.35	PK-U	37.9	-19.4	0	51.85	-	-	74	-22.15	-	-	0	100	V

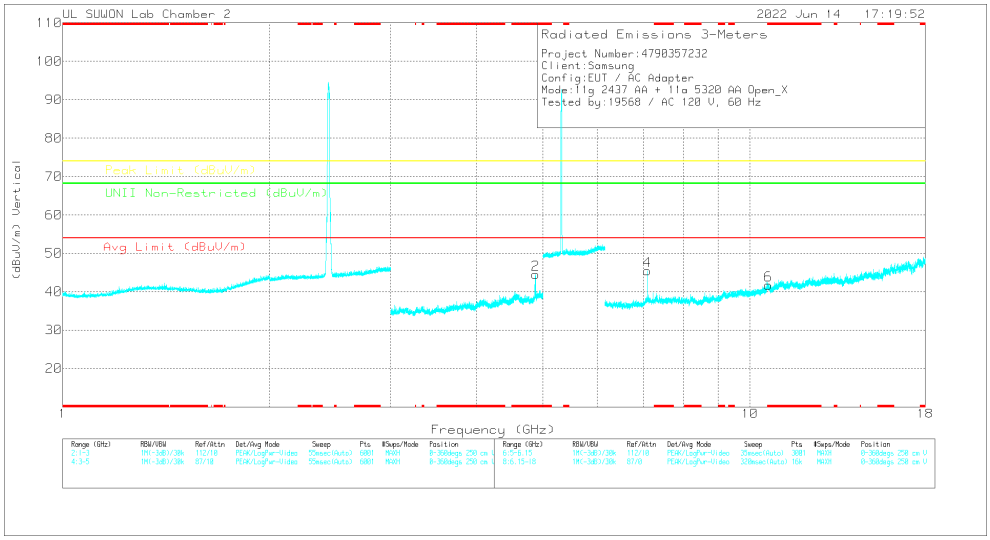
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak

Case1. – Open(Z)

HORIZONTAL



VERTICAL



Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	5GHz_LP[dB]	DTS Notch[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
* 4.87548	50.66	PK2	34.1	-26.6	.5	0	58.66	-	-	74	-15.34	-	-	160	100	H
* 4.87543	37.98	MAv1	34.1	-26.6	.5	.17	46.15	54	-7.85	-	-	-	-	160	100	H
* 4.87528	50.07	PK2	34.1	-26.6	.5	0	58.07	-	-	74	-15.93	-	-	279	317	V
* 4.87553	37.2	MAv1	34.1	-26.6	.5	.17	45.37	54	-8.63	-	-	-	-	279	317	V

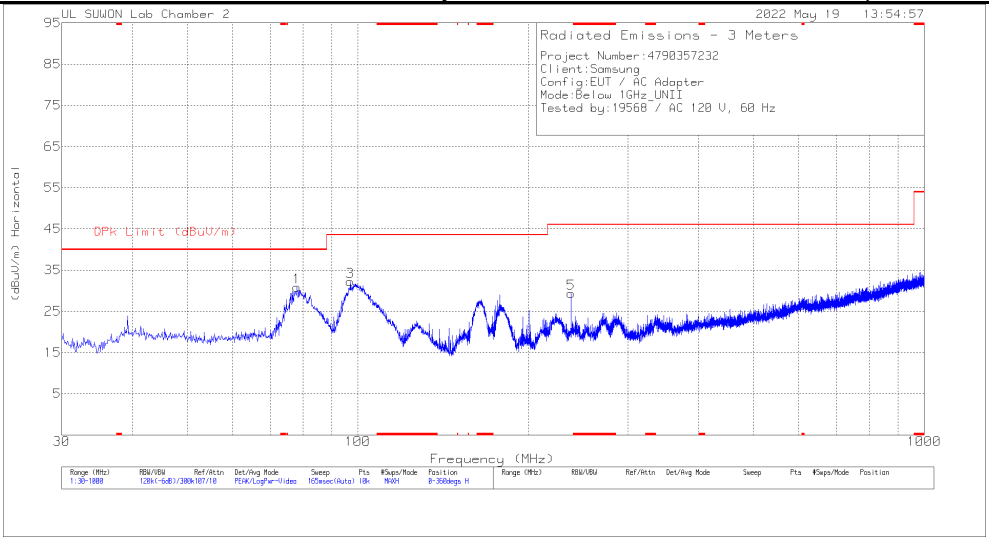
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	6GHz_HP[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
7.0933	40.86	PK-U	36.1	-23.5	0	53.46	-	-	-	-	68.2	-14.74	39	106	H
7.0935	39.9	PK-U	36.1	-23.5	0	52.5	-	-	-	-	68.2	-15.7	173	287	V
* 10.63781	33.45	PK-U	37.9	-19.3	0	52.05	-	-	74	-21.95	-	-	0	100	H
* 10.65025	33.38	PK-U	38	-19.4	0	51.98	-	-	74	-22.02	-	-	0	100	V

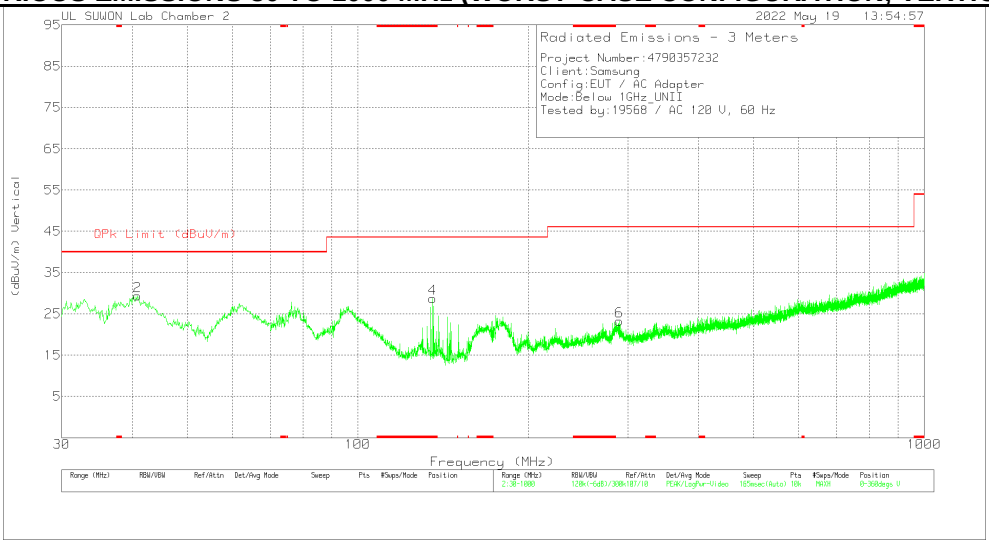
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak

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	VULB9163_749	Below 1G[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	78.015	49.17	Pk	12.5	-30.8	0	30.87	40	-9.13	0-360	200	H
3	96.93	45.93	Pk	17	-30.7	0	32.23	43.52	-11.29	0-360	200	H
5	237.968	40.77	Pk	18.1	-29.5	0	29.37	46.02	-16.65	0-360	100	H
2	40.864	41.75	Pk	18.9	-31.3	0	29.35	40	-10.65	0-360	100	V
4	* 135.633	45.2	Pk	13.8	-30.3	0	28.7	43.52	-14.82	0-360	100	V
6	289.184	33.28	Pk	19	-29	0	23.28	46.02	-22.74	0-360	100	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 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* 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.

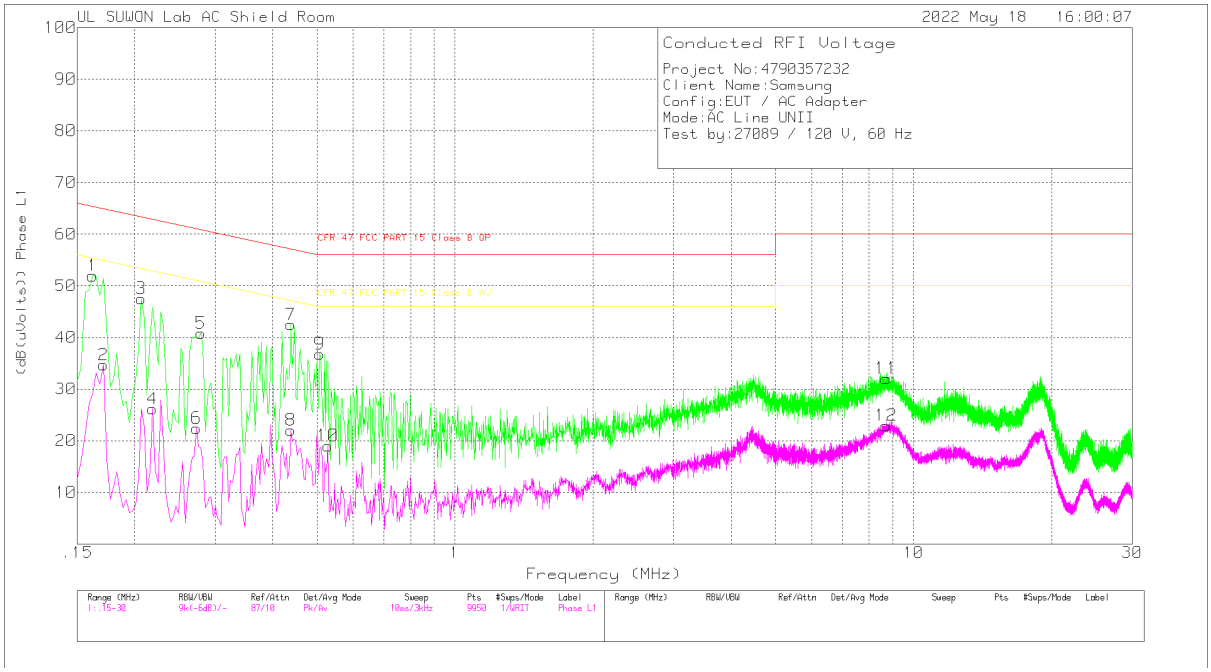
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

WORST EMISSIONS

LINE 1 DATA



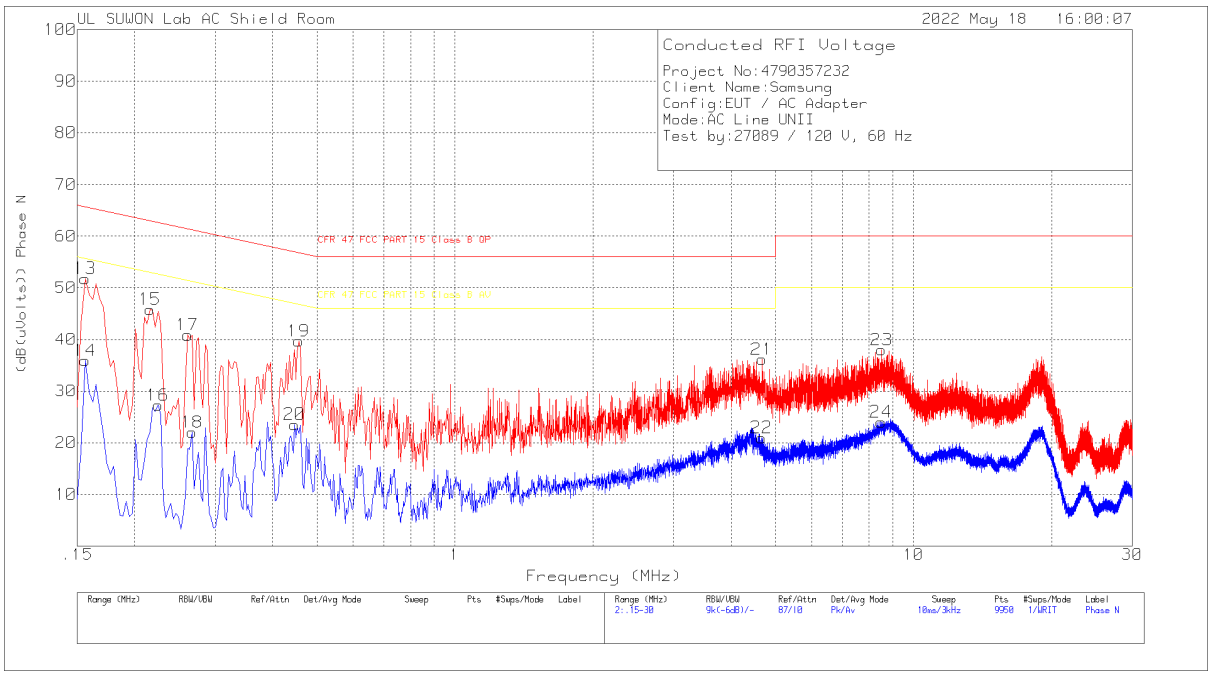
Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.162	41.96	Pk	9.9	.1	51.96	65.36	-13.4	-	-
2	.171	24.47	Av	10	.2	34.67	-	-	54.91	-20.24
3	.207	37.5	Pk	9.8	.2	47.5	63.32	-15.82	-	-
4	.219	16.26	Av	9.7	.2	26.16	-	-	52.86	-26.7
5	.279	30.9	Pk	9.7	.2	40.8	60.85	-20.05	-	-
6	.273	12.64	Av	9.6	.2	22.44	-	-	51.03	-28.59
7	.438	32.49	Pk	9.8	.2	42.49	57.1	-14.61	-	-
8	.438	12.04	Av	9.8	.2	22.04	-	-	47.1	-25.06
9	.507	26.69	Pk	9.9	.2	36.79	56	-19.21	-	-
10	.528	8.9	Av	9.9	.2	19	-	-	46	-27
11	8.718	21.84	Pk	9.8	.4	32.04	60	-27.96	-	-
12	8.715	12.74	Av	9.8	.4	22.94	-	-	50	-27.06

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_With EX_N[dB]	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
13	.156	41.87	Pk	9.8	.1	51.77	65.67	-13.9	-	-
14	.156	26.01	Av	9.8	.1	35.91	-	-	55.67	-19.76
15	.216	35.8	Pk	9.8	.2	45.8	62.97	-17.17	-	-
16	.225	17.35	Av	9.7	.2	27.25	-	-	52.63	-25.38
17	.261	31.07	Pk	9.6	.2	40.87	61.4	-20.53	-	-
18	.267	12.22	Av	9.6	.2	22.02	-	-	51.21	-29.19
19	.456	29.58	Pk	9.9	.2	39.68	56.77	-17.09	-	-
20	.447	13.42	Av	9.9	.2	23.52	-	-	46.93	-23.41
21	4.671	26.16	Pk	9.7	.3	36.16	56	-19.84	-	-
22	4.659	10.95	Av	9.7	.3	20.95	-	-	46	-25.05
23	8.523	27.89	Pk	9.8	.3	37.99	60	-22.01	-	-
24	8.502	13.9	Av	9.8	.3	24	-	-	50	-26

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. ≥ 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

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna
Note 2: 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.
Note 3: E.I.R.P. is based on the highest antenna gain. For MIMO devices refer to KDB publication 662911 D01.

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (See Note 1)
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period. (See Notes 1 and 2)
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. (See Note 3)

Note 1: *Channel Move Time* and the *Channel Closing Transmission Time* should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.
Note 2: The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* 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.
Note 3: During the *U-NII Detection Bandwidth* 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.

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) x (19 x 10^6 PRI_{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

Note 1: Short Pulse Radar Type 0 should be used for the *Detection Bandwidth* test, *Channel Move Time*, and *Channel Closing Time* tests.

Table 6 – Long Pulse Radar Test Signal

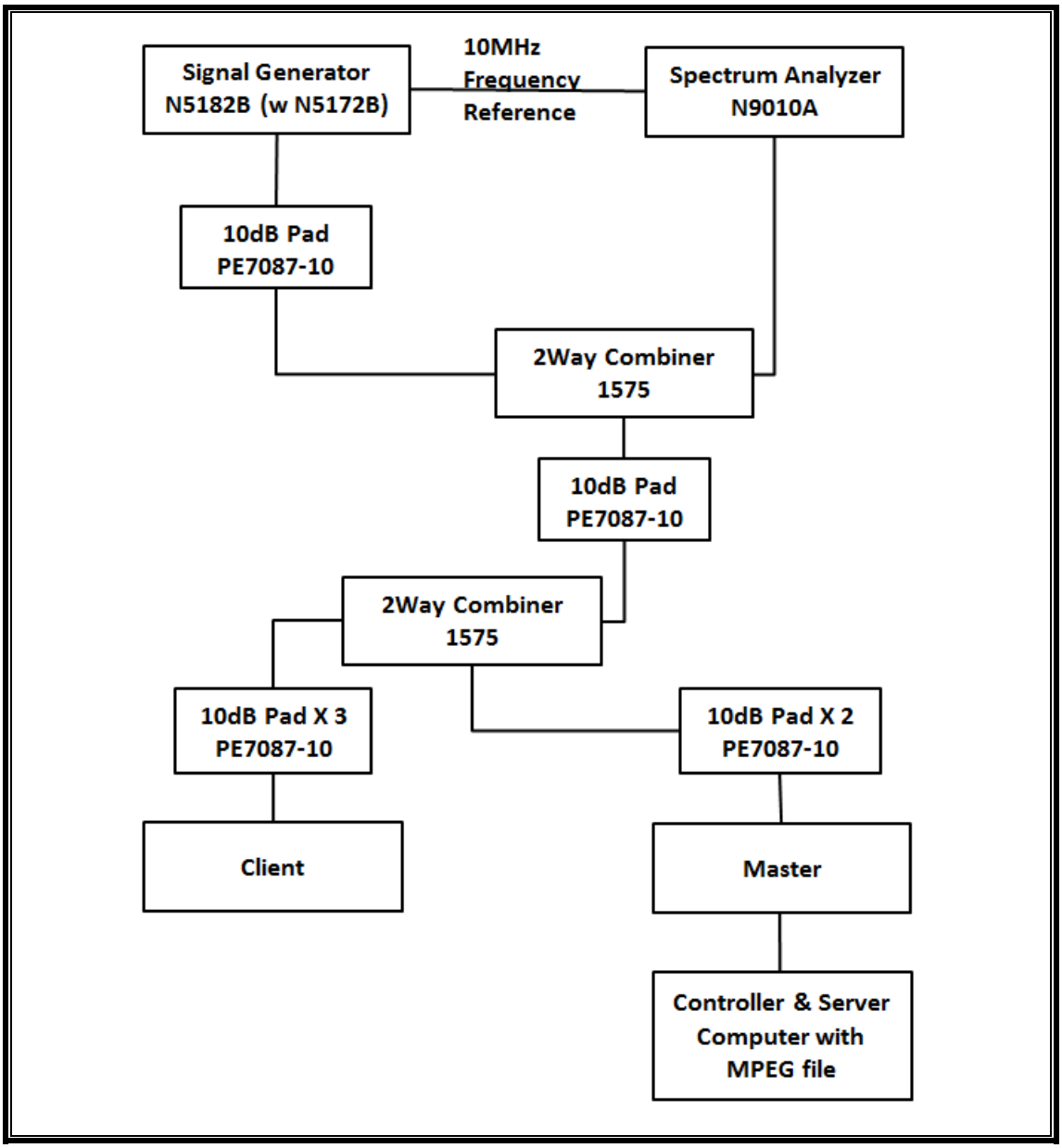
Radar Waveform Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

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.

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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.

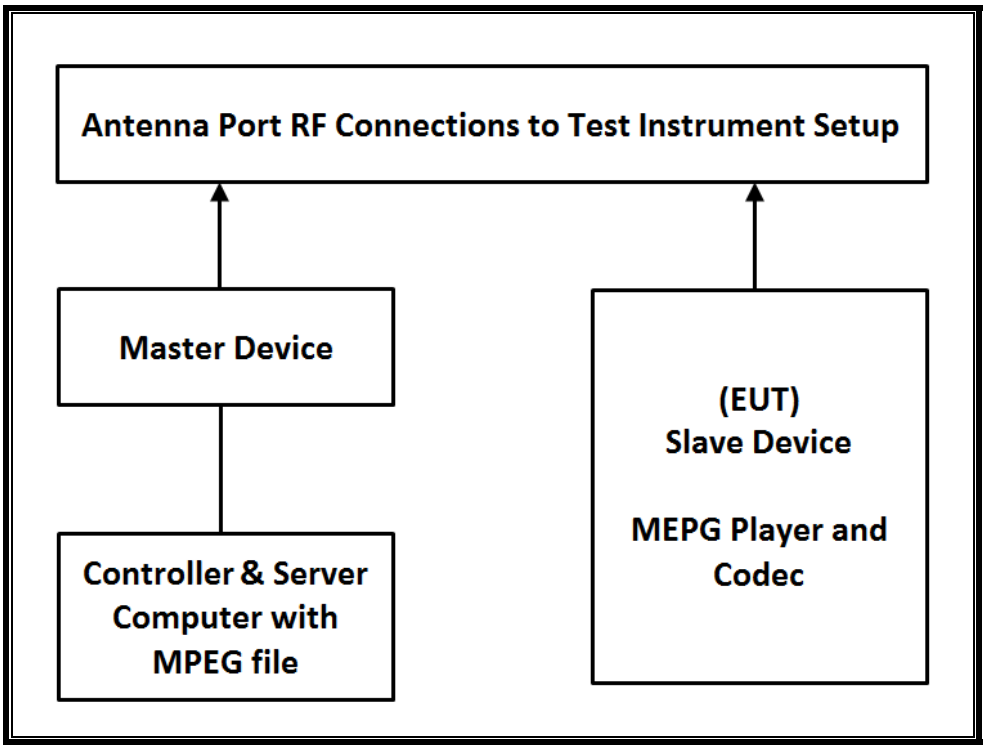
TEST AND MEASUREMENT EQUIPMENT

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	08-02-22
Vector Signal Generator, 6GHz	Agilent / HP	N5182B	MY53051241	08-02-22
Combiner	WEINSCHEL	WA1534	UL001	01-11-23
Combiner	WEINSCHEL	WA1535	UL002	01-11-23

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	Cisco	AIR-CAP3702E-A-K9	FTX182276QX	LDK102087
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 VHT80) within these bands is 14.84 dBm in the 5250-5350 MHz band and 14.97 dBm in the 5470-5725 MHz band.

The antenna assembly utilized two antenna.
Gain of ANT1 : -4.6 dBi for UNII 2A and -4.8 dBi for UNII 2C.
Gain of ANT2 : -6.1 dBi for UNII 2A and -6.0 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. Three nominal channel bandwidths are implemented: 20 MHz, 40 MHz and 80 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 Cisco Access Point, FCC ID: LDK102087. 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.