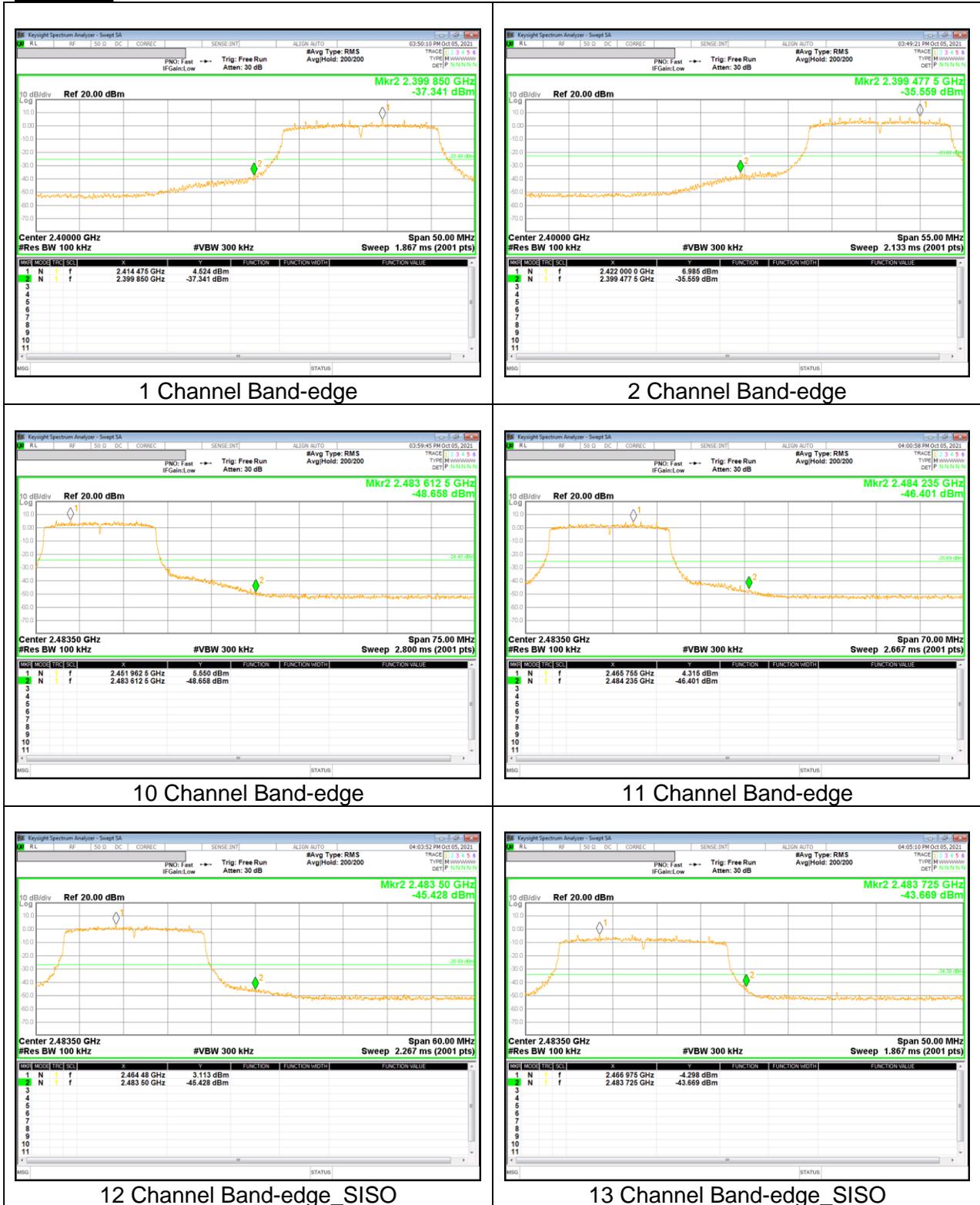
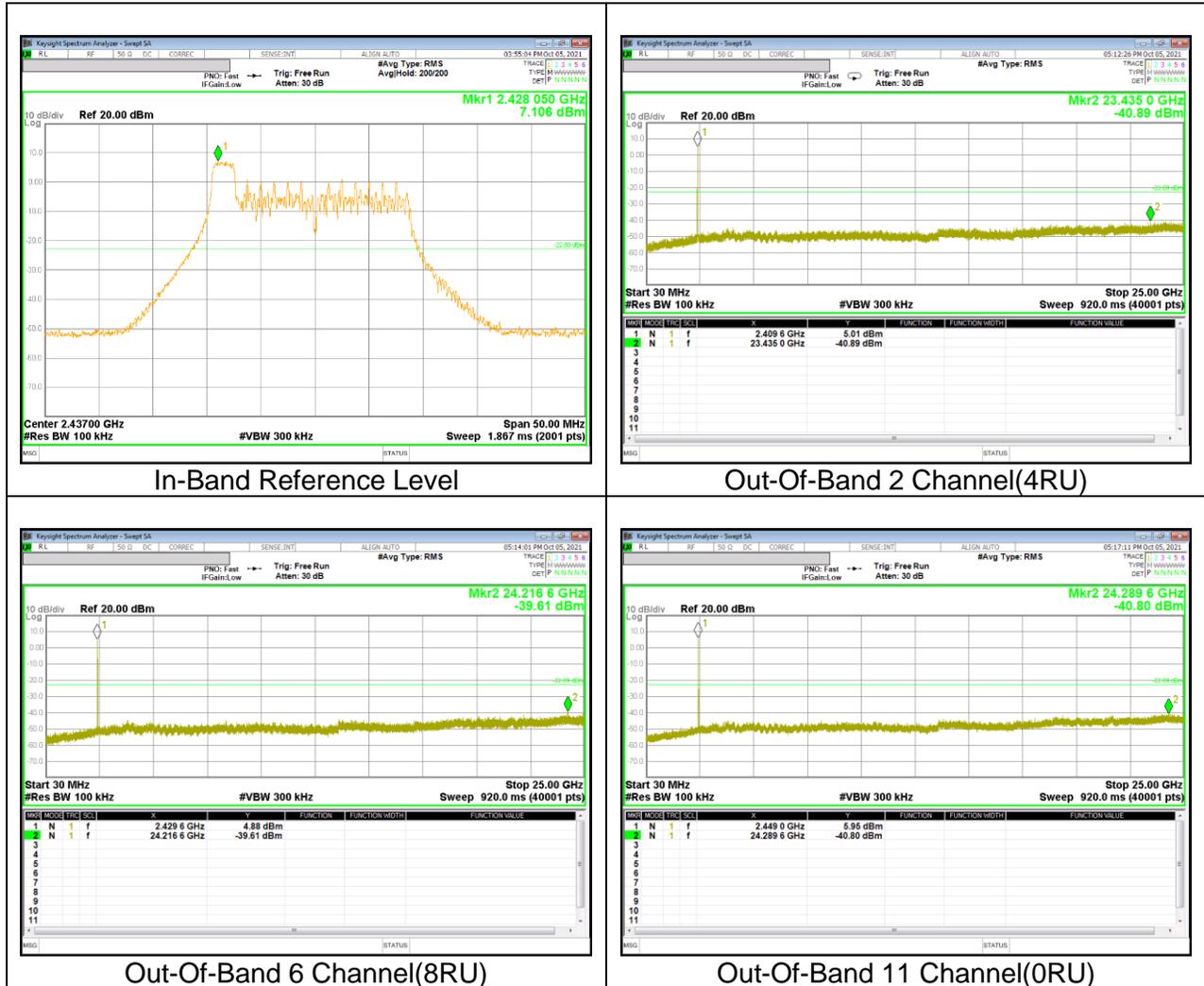


Antenna 2



9.5.5. 802.11ax HE20(RU) MODE

Antenna 1



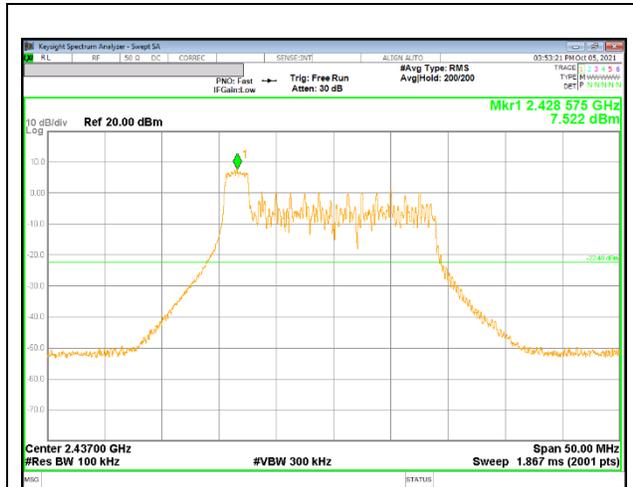
In-Band Reference Level

Out-Of-Band 2 Channel(4RU)

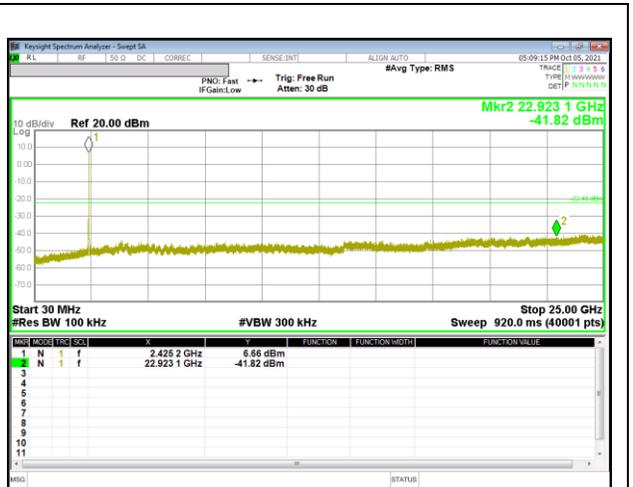
Out-Of-Band 6 Channel(8RU)

Out-Of-Band 11 Channel(0RU)

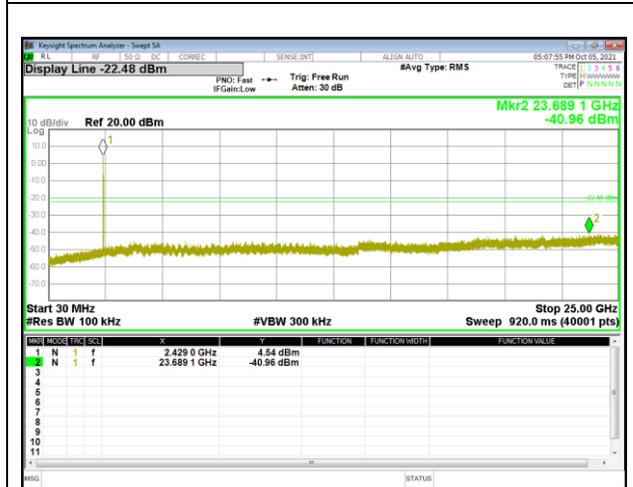
Antenna 2



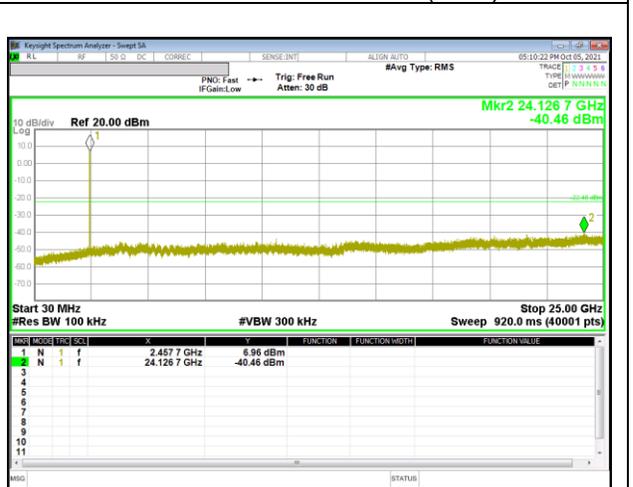
In-Band Reference Level



Out-Of-Band 2 Channel(4RU)



Out-Of-Band 6 Channel(0RU)



Out-Of-Band 11 Channel(8RU)

10. RADIATED TEST RESULTS

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 ~	1660 ~ 1710	8.025 ~ 8.5	22.01 ~ 23.12
4.17725 ~ 4.17775	13.36 ~ 13.41	156.52525	1718.8 ~ 1722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.20725 ~ 4.20775	16.42 ~ 16.423	156.7 ~ 156.9	2200 ~ 2300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.69475 ~ 16.69525	162.0125 ~	2310 ~ 2390	10.6 ~ 12.7	36.43 ~ 36.5
6.26775 ~ 6.26825	16.80425 ~ 16.80475	167.17	2483.5 ~ 2500	13.25 ~ 13.4	Above 38.6
6.31175 ~ 6.31225	25.5 ~ 25.67	167.72 ~ 173.2	2655 ~ 2900		
8.291 ~ 8.294	37.5 ~ 38.25	240 ~ 285	3260 ~ 3267		
8.362 ~ 8.366	73 ~ 74.6	322 ~ 335.4	3332 ~ 3339		
8.37625 ~ 8.38675	74.8 ~ 75.2	399.90 ~ 410	3345.8 ~ 3358		
		608 ~ 614	3600 ~ 4400		
		960 ~ 1240			

▪ 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.

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1 GHz and 150 cm for above 1 GHz. 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.

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 for average measurements. (Restricted bandedge, Final detection of spurious harmonic emissions)

Duty cycle factor = $10\log(1/x)$ For this sample:

802.11b MIMO mode = 0 dB (duty cycle > 98%);
802.11g MIMO mode = 0.16 dB (96.27%);
802.11n(HT20) MIMO mode = 0.19 dB (95.81%);
802.11ax(HE20) MIMO SU mode = 0 dB (duty cycle > 98%);
802.11ax(HE20) MIMO 26 Tone mode = 0 dB (duty cycle > 98%);

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 1 GHz to 26 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 9 kHz to 30 MHz; 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.

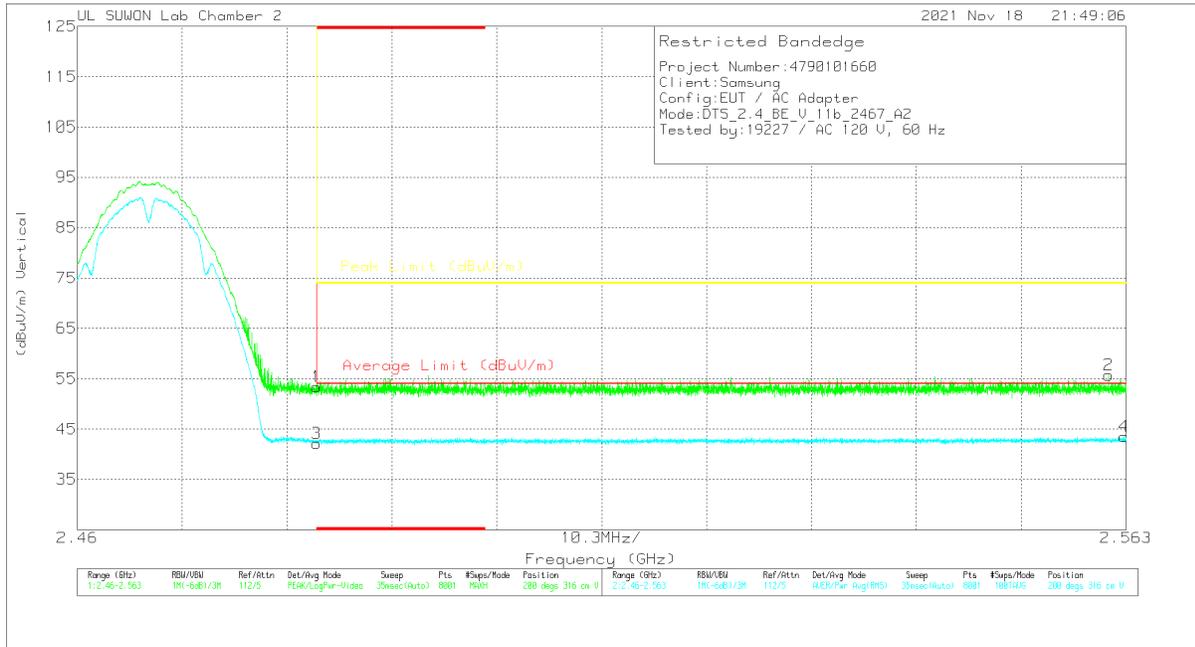
Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

BANDEDGE (ANT2 WORST CASE: 12 CHANNEL)

VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	* 2.48351	41.84	Pk	32	-20.4	0	53.44	-	-	74	-20.56	200	316	V
2	* 2.56127	43.81	Pk	32.2	-20.3	0	55.74	-	-	74	-18.29	200	316	V
3	* 2.48351	30.61	RMS	32	-20.4	0	42.21	54	-11.79	-	-	200	316	V
4	* 2.56279	34.57	RMS	32.2	-20.3	0	43.47	54	-10.53	-	-	200	316	V

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

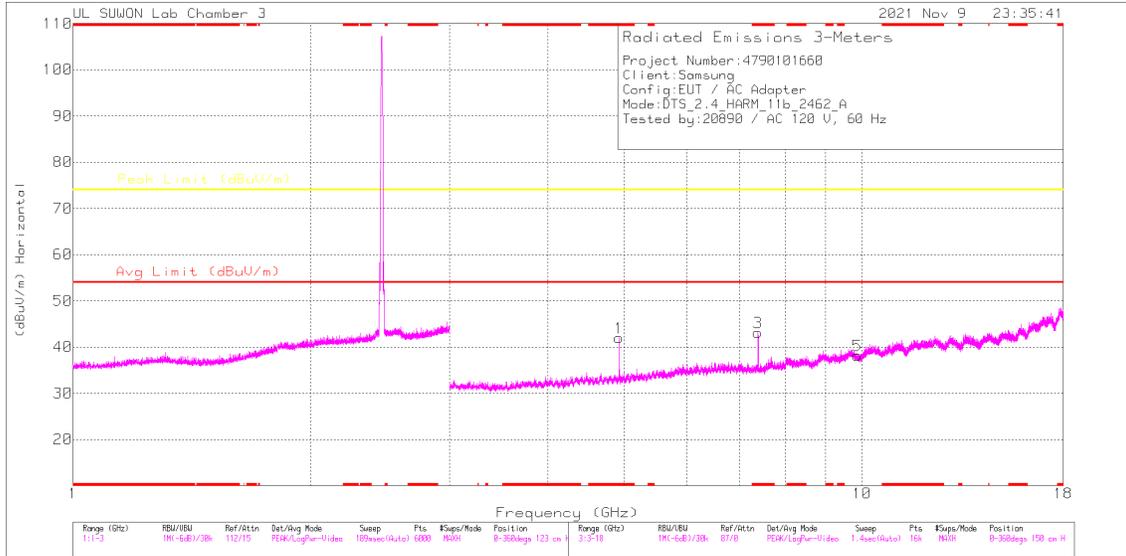
BANEDGE TEST DATA

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
2467	ANT2	* 2.48351	39.02	Pk	32.00	-20.40	0.00	50.62	-	-	74.00	-23.38	146	106	H
		2.545	43.47	Pk	32.10	-20.40	0.00	55.17	-	-	74.00	-18.83	146	106	H
		* 2.48351	30.35	RMS	32.00	-20.40	0.00	41.95	54.00	-12.05	-	-	146	106	H
		2.544	31.41	RMS	32.10	-20.30	0.00	43.21	54.00	-10.79	-	-	146	106	H
		* 2.48351	41.84	Pk	32.00	-20.40	0.00	53.44	-	-	74.00	-20.56	200	316	V
		2.561	43.81	Pk	32.20	-20.30	0.00	55.71	-	-	74.00	-18.29	200	316	V
		* 2.48351	30.61	RMS	32.00	-20.40	0.00	42.21	54.00	-11.79	-	-	200	316	V
		2.563	31.57	RMS	32.20	-20.30	0.00	43.47	54.00	-10.53	-	-	200	316	V
2472	ANT2	* 2.48351	39.22	Pk	32.00	-20.40	0.00	50.82	-	-	74.00	-23.18	151	169	H
		2.544	43.97	Pk	32.10	-20.30	0.00	55.77	-	-	74.00	-18.23	151	169	H
		* 2.48351	31.10	RMS	32.00	-20.40	0.00	42.70	54.00	-11.30	-	-	151	169	H
		2.561	31.31	RMS	32.20	-20.30	0.00	43.21	54.00	-10.79	-	-	151	169	H
		* 2.48351	41.19	Pk	32.00	-20.40	0.00	52.79	-	-	74.00	-21.21	203	318	V
		2.48361	44.59	Pk	32.00	-20.40	0.00	56.19	-	-	74.00	-17.81	203	318	V
		* 2.48351	31.30	RMS	32.00	-20.40	0.00	42.90	54.00	-11.10	-	-	203	318	V
		2.507	31.62	RMS	32.10	-20.40	0.00	43.32	54.00	-10.68	-	-	203	318	V

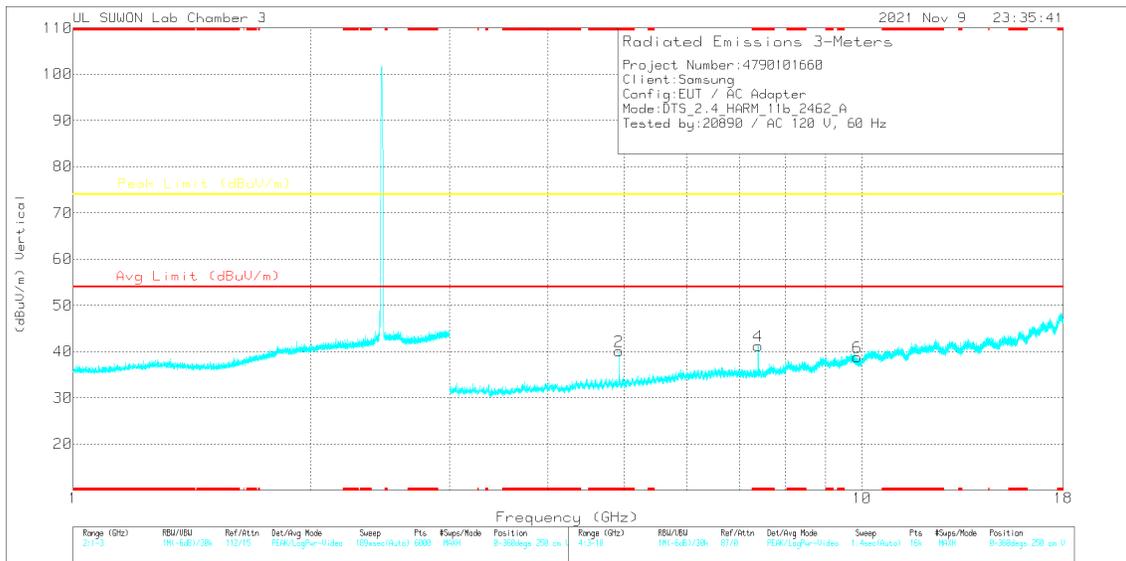
Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
2412	MIMO	* 2.39	42.40	Pk	32.80	-25.40	0.00	49.80	-	-	74.00	-24.20	58	135	H
		* 2.3895	44.37	Pk	32.80	-25.40	0.00	51.77	-	-	74.00	-22.23	58	135	H
		2.39	32.03	RMS	32.80	-25.40	0.00	39.43	54.00	-14.57	-	-	58	135	H
		* 2.38876	33.50	RMS	32.80	-25.40	0.00	40.90	54.00	-13.10	-	-	58	135	H
		* 2.39	42.58	Pk	32.80	-25.40	0.00	49.98	-	-	74.00	-24.02	86	220	V
		* 2.38925	44.66	Pk	32.80	-25.40	0.00	52.06	-	-	74.00	-21.94	86	220	V
		2.39	32.09	RMS	32.80	-25.40	0.00	39.49	54.00	-14.51	-	-	86	220	V
		* 2.38665	33.40	RMS	32.70	-25.40	0.00	40.70	54.00	-13.30	-	-	86	220	V
2462	MIMO	* 2.4835	44.65	Pk	32.90	-25.30	0.00	52.25	-	-	74.00	-21.75	59	129	H
		2.540	44.63	Pk	32.90	-25.20	0.00	52.33	-	-	74.00	-21.67	59	129	H
		* 2.4835	32.30	RMS	32.90	-25.30	0.00	39.90	54.00	-14.10	-	-	59	129	H
		* 2.48672	33.26	RMS	32.90	-25.30	0.00	40.86	54.00	-13.14	-	-	59	129	H
		* 2.4835	41.93	Pk	32.90	-25.30	0.00	49.53	-	-	74.00	-24.47	94	206	V
		2.549	44.57	Pk	32.90	-25.20	0.00	52.27	-	-	74.00	-21.73	94	206	V
		* 2.4835	32.53	RMS	32.90	-25.30	0.00	40.13	54.00	-13.87	-	-	94	206	V
		2.563	33.10	RMS	32.90	-25.20	0.00	40.80	54.00	-13.20	-	-	94	206	V
2467	MIMO	* 2.4835	42.33	Pk	32.90	-25.30	0.00	49.93	-	-	74.00	-24.07	61	107	H
		2.530	45.02	Pk	32.90	-25.20	0.00	52.72	-	-	74.00	-21.28	61	107	H
		* 2.4835	32.42	RMS	32.90	-25.30	0.00	40.02	54.00	-13.98	-	-	61	107	H
		2.531	33.14	RMS	32.90	-25.20	0.00	40.84	54.00	-13.16	-	-	61	107	H
		* 2.4835	41.79	Pk	32.90	-25.30	0.00	49.39	-	-	74.00	-24.61	92	204	V
		2.540	44.44	Pk	32.90	-25.20	0.00	52.14	-	-	74.00	-21.86	92	204	V
		* 2.4835	31.62	RMS	32.90	-25.30	0.00	39.22	54.00	-14.78	-	-	92	204	V
		2.524	33.22	RMS	32.90	-25.30	0.00	40.82	54.00	-13.18	-	-	92	204	V
2472	MIMO	* 2.4835	42.86	Pk	32.90	-25.30	0.00	50.46	-	-	74.00	-23.54	60	104	H
		* 2.4838	46.71	Pk	32.90	-25.30	0.00	54.31	-	-	74.00	-19.69	60	104	H
		* 2.4835	32.06	RMS	32.90	-25.30	0.00	39.66	54.00	-14.34	-	-	60	104	H
		2.502	33.13	RMS	32.90	-25.20	0.00	40.83	54.00	-13.17	-	-	60	104	H
		* 2.4835	42.77	Pk	32.90	-25.30	0.00	50.37	-	-	74.00	-23.63	94	203	V
		2.528	44.23	Pk	32.90	-25.10	0.00	52.03	-	-	74.00	-21.97	94	203	V
		* 2.4835	31.78	RMS	32.90	-25.30	0.00	39.38	54.00	-14.62	-	-	94	203	V
		* 2.48381	33.27	RMS	32.90	-25.30	0.00	40.87	54.00	-13.13	-	-	94	203	V

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

HARMONICS AND SPURIOUS EMISSIONS (ANT ALL WORST CASE: 11 CHANNEL) RESULTS



HORIZONTAL



VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0021895_7	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.9241	44.68	PK2	34.7	-31.2	0	48.18	54	-	74	-25.82	111	156	H
* 4.92392	39.13	MAv1	34.7	-31.2	0	42.63	54	-11.37	-	-	111	156	H
* 4.9241	43.42	PK2	34.7	-31.2	0	46.92	54	-	74	-27.08	91	266	V
* 4.92402	37.01	MAv1	34.7	-31.2	0	40.51	54	-13.49	-	-	91	266	V
* 7.38734	39.53	PK2	36	-25	0	50.53	54	-	74	-23.47	188	216	H
* 7.38692	32.82	MAv1	36	-25	0	43.82	54	-10.18	-	-	188	216	H
* 7.38496	37.6	PK2	36	-25	0	48.6	54	-	74	-25.4	260	275	V
* 7.38518	29.69	MAv1	36	-25	0	40.69	54	-13.31	-	-	260	275	V
9.84394	31.79	PK2	37.7	-21.9	0	47.59	54	-	74	-26.41	0	100	H
9.849	31.9	PK2	37.7	-21.9	0	47.7	54	-	74	-26.3	0	100	V

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

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

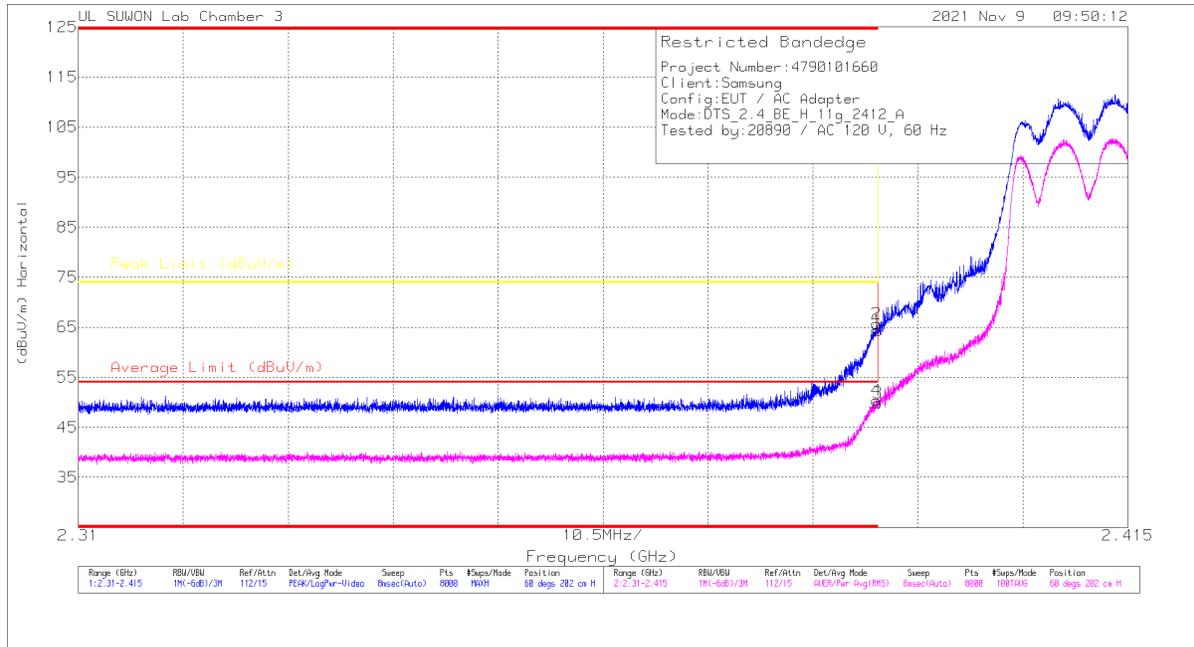
Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
2412	MIMO	* 4.82393	43.58	PK2	34.60	-30.70	0.00	47.48	-	-	74.00	-26.52	111	161	H
		* 4.82397	38.12	MAv1	34.60	-30.70	0.00	42.02	54.00	-11.98	-	-	111	161	H
		* 4.82391	42.04	PK2	34.60	-30.70	0.00	45.94	-	-	74.00	-28.06	91	124	V
		* 4.82401	35.39	MAv1	34.60	-30.70	0.00	39.29	54.00	-14.71	-	-	91	124	V
		7.237	37.11	PK2	36.00	-26.10	0.00	47.01	-	-	74.00	-26.99	109	285	H
		7.237	27.49	MAv1	36.00	-26.10	0.00	37.39	-	-	-	-	109	285	H
		7.235	36.64	PK2	36.00	-26.10	0.00	46.54	-	-	74.00	-27.46	15	161	V
		7.237	26.82	MAv1	36.00	-26.10	0.00	36.72	-	-	-	-	15	161	V
		9.657	33.31	PK2	37.40	-21.80	0.00	48.91	-	-	74.00	-25.09	0	100	H
		9.643	32.84	PK2	37.40	-22.00	0.00	48.24	-	-	74.00	-25.76	0	100	V
2437	MIMO	* 4.874	42.63	PK2	34.60	-31.10	0.00	46.13	-	-	74.00	-27.87	109	159	H
		* 4.87402	36.41	MAv1	34.60	-31.10	0.00	39.91	54.00	-14.09	-	-	109	159	H
		* 4.87402	41.95	PK2	34.60	-31.10	0.00	45.45	-	-	74.00	-28.55	90	123	V
		* 4.874	34.45	MAv1	34.60	-31.10	0.00	37.95	54.00	-16.05	-	-	90	123	V
		* 7.31036	38.55	PK2	36.00	-25.70	0.00	48.85	-	-	74.00	-25.15	200	240	H
		* 7.31014	30.71	MAv1	36.00	-25.70	0.00	41.01	54.00	-12.99	-	-	200	240	H
		* 7.31042	37.23	PK2	36.00	-25.70	0.00	47.53	-	-	74.00	-26.47	278	282	V
		* 7.31018	28.35	MAv1	36.00	-25.70	0.00	38.65	54.00	-15.35	-	-	278	282	V
		9.748	32.21	PK2	37.50	-21.70	0.00	48.01	-	-	74.00	-25.99	0	100	H
		9.747	32.50	PK2	37.50	-21.60	0.00	48.40	-	-	74.00	-25.60	0	100	V
2462	MIMO	* 4.9241	44.68	PK2	34.70	-31.20	0.00	48.18	-	-	74.00	-25.82	111	156	H
		* 4.92392	39.13	MAv1	34.70	-31.20	0.00	42.63	54.00	-11.37	-	-	111	156	H
		* 4.9241	43.42	PK2	34.70	-31.20	0.00	46.92	-	-	74.00	-27.08	91	266	V
		* 4.92402	37.01	MAv1	34.70	-31.20	0.00	40.51	54.00	-13.49	-	-	91	266	V
		* 7.38734	39.53	PK2	36.00	-25.00	0.00	50.53	-	-	74.00	-23.47	188	216	H
		* 7.38692	32.82	MAv1	36.00	-25.00	0.00	43.82	54.00	-10.18	-	-	188	216	H
		* 7.38496	37.60	PK2	36.00	-25.00	0.00	48.60	-	-	74.00	-25.40	260	275	V
		* 7.38518	29.69	MAv1	36.00	-25.00	0.00	40.69	54.00	-13.31	-	-	260	275	V
		9.844	31.79	PK2	37.70	-21.90	0.00	47.59	-	-	74.00	-26.41	0	100	H
		9.849	31.90	PK2	37.70	-21.90	0.00	47.70	-	-	74.00	-26.30	0	100	V

Note1. PK2 - KDB558074 Method: Maximum Peak / MAv1 - KDB558074 Option 1 Maximum RMS Average
 Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

10.1.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

BANDEDGE (ANT ALL WORST CASE: 1 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBu/m)	Det	3117_00218657	10dB_ATT(dB)	DC Corr (dB)	Corrected Reading (dBu/m)	Average Limit (dBu/m)	Margin (dB)	Peak Limit (dBu/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	56.94	PK		-25.4	0	64.34	-	-	74	-9.66	60	202	H
2	* 2.38984	58.3	PK		-25.4	0	65.7	-	-	74	-8.3	60	202	H
3	* 2.39	42.33	RMS		-25.4	.16	49.89	54	-4.11	-	-	60	202	H
4	* 2.38983	42.87	RMS		-25.4	.16	50.43	54	-3.97	-	-	60	202	H

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

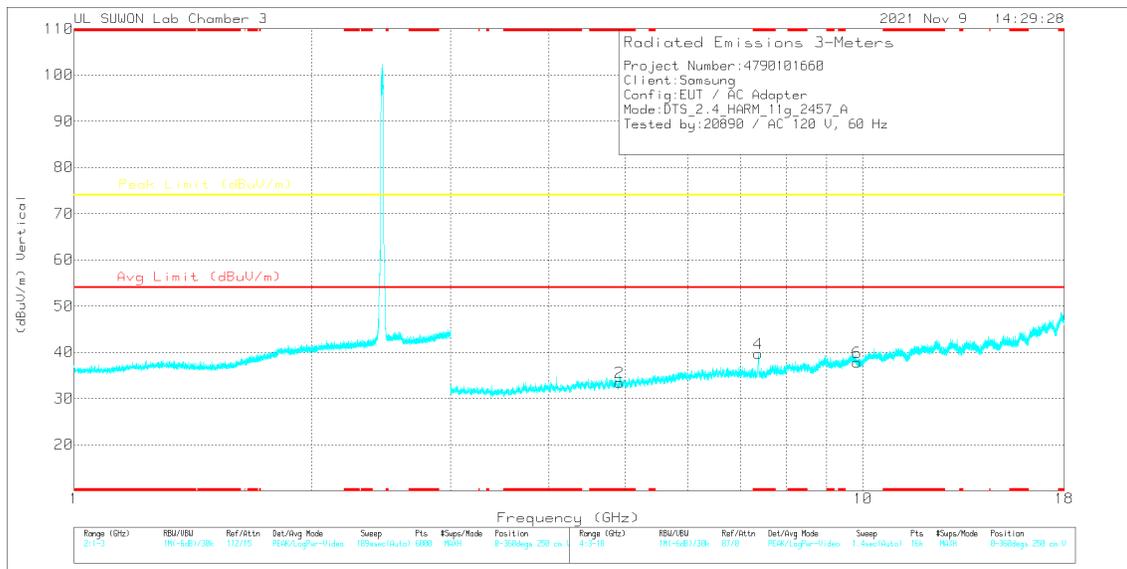
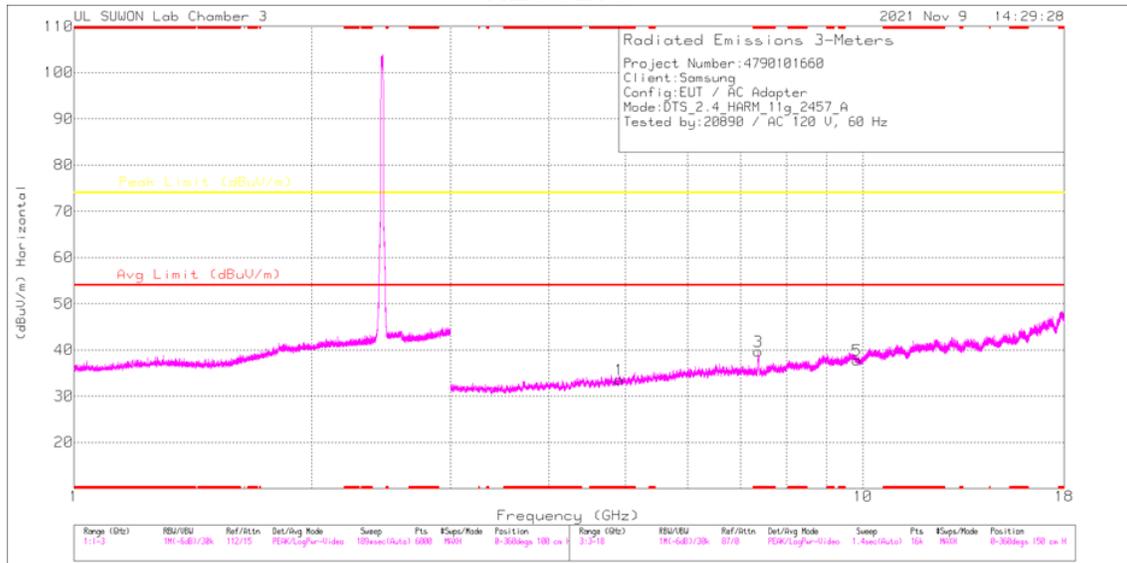
BANDEDGE TEST DATA

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	
2467	ANT2	* 2.48351	41.37	Pk	32.00	-20.40	0.00	52.97	-	-	74.00	-21.03	150	106	H	
		2.536	43.71	Pk	32.10	-20.40	0.00	55.41	-	-	74.00	-18.59	150	106	H	
		* 2.48351	31.25	RMS	32.00	-20.40	0.16	43.01	54.00	-10.99	-	-	-	150	106	H
		* 2.49202	31.63	RMS	32.10	-20.40	0.16	43.49	54.00	-10.51	-	-	-	150	106	H
		* 2.48351	41.18	Pk	32.00	-20.40	0.00	52.78	-	-	74.00	-21.22	194	315	V	
		2.514	43.70	Pk	32.10	-20.40	0.00	55.40	-	-	74.00	-18.60	194	315	V	
		* 2.48351	31.22	RMS	32.00	-20.40	0.16	42.98	54.00	-11.02	-	-	-	194	315	V
		* 2.521	31.43	RMS	32.10	-20.30	0.16	43.39	54.00	-10.61	-	-	-	194	315	V
2472	ANT2	* 2.48351	45.81	Pk	32.00	-20.40	0.00	57.41	-	-	74.00	-16.59	152	108	H	
		* 2.48364	47.11	Pk	32.00	-20.40	0.00	58.71	-	-	74.00	-15.29	152	108	H	
		* 2.48351	33.08	RMS	32.00	-20.40	0.16	44.84	54.00	-9.16	-	-	-	152	108	H
		* 2.48354	33.47	RMS	32.00	-20.40	0.16	45.23	54.00	-8.77	-	-	-	152	108	H
		* 2.48351	45.11	Pk	32.00	-20.40	0.00	56.71	-	-	74.00	-17.29	190	320	V	
		* 2.48386	45.84	Pk	32.00	-20.40	0.00	57.44	-	-	74.00	-16.56	190	320	V	
		* 2.48351	33.12	RMS	32.00	-20.40	0.16	44.88	54.00	-9.12	-	-	-	190	320	V
		* 2.48356	32.90	RMS	32.00	-20.40	0.16	44.66	54.00	-9.34	-	-	-	190	320	V

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	
2412	MIMO	* 2.39	56.94	Pk	32.80	-25.40	0.00	64.34	-	-	74.00	-9.66	60	202	H	
		* 2.38984	58.30	Pk	32.80	-25.40	0.00	65.70	-	-	74.00	-8.30	60	202	H	
		* 2.39	42.33	RMS	32.80	-25.40	0.16	49.89	54.00	-4.11	-	-	-	60	202	H
		* 2.38983	42.87	RMS	32.80	-25.40	0.16	50.43	54.00	-3.57	-	-	-	60	202	H
		* 2.39	52.62	Pk	32.80	-25.40	0.00	60.02	-	-	74.00	-13.98	90	108	V	
		* 2.38976	52.85	Pk	32.80	-25.40	0.00	60.25	-	-	74.00	-13.75	90	108	V	
		* 2.39	37.74	RMS	32.80	-25.40	0.16	45.30	54.00	-8.70	-	-	-	90	108	V
		* 2.38997	38.70	RMS	32.80	-25.40	0.16	46.26	54.00	-7.74	-	-	-	90	108	V
2417	MIMO	* 2.39	50.64	Pk	32.80	-25.40	0.00	58.04	-	-	74.00	-15.96	58	202	H	
		* 2.38811	53.53	Pk	32.80	-25.30	0.00	61.03	-	-	74.00	-12.97	58	202	H	
		* 2.39	38.03	RMS	32.80	-25.40	0.16	45.59	54.00	-8.41	-	-	-	58	202	H
		* 2.38946	39.24	RMS	32.80	-25.40	0.16	46.80	54.00	-7.20	-	-	-	58	202	H
		* 2.39	47.23	Pk	32.80	-25.40	0.00	54.63	-	-	74.00	-19.37	84	108	V	
		* 2.38938	49.87	Pk	32.80	-25.40	0.00	57.27	-	-	74.00	-16.73	84	108	V	
		* 2.39	34.82	RMS	32.80	-25.40	0.16	42.38	54.00	-11.62	-	-	-	84	108	V
		* 2.38976	36.44	RMS	32.80	-25.40	0.16	44.00	54.00	-10.00	-	-	-	84	108	V
2457	MIMO	* 2.4835	53.17	Pk	32.90	-25.30	0.00	60.77	-	-	74.00	-13.23	60	190	H	
		* 2.48445	53.33	Pk	32.90	-25.30	0.00	60.93	-	-	74.00	-13.07	60	190	H	
		* 2.4835	37.35	RMS	32.90	-25.30	0.16	45.11	54.00	-8.89	-	-	-	60	190	H
		* 2.48391	38.99	RMS	32.90	-25.30	0.16	46.75	54.00	-7.25	-	-	-	60	190	H
		* 2.4835	50.17	Pk	32.90	-25.30	0.00	57.77	-	-	74.00	-16.23	85	103	V	
		* 2.48354	51.56	Pk	32.90	-25.30	0.00	59.16	-	-	74.00	-14.84	85	103	V	
		* 2.4835	36.32	RMS	32.90	-25.30	0.16	44.08	54.00	-9.92	-	-	-	85	103	V
		* 2.4838	37.38	RMS	32.90	-25.30	0.16	45.14	54.00	-8.86	-	-	-	85	103	V
2462	MIMO	* 2.4835	55.16	Pk	32.90	-25.30	0.00	62.76	-	-	74.00	-11.24	59	191	H	
		* 2.48355	59.10	Pk	32.90	-25.30	0.00	66.70	-	-	74.00	-7.30	59	191	H	
		* 2.4835	40.37	RMS	32.90	-25.30	0.16	48.13	54.00	-5.87	-	-	-	59	191	H
		* 2.48353	42.44	RMS	32.90	-25.30	0.16	50.20	54.00	-3.80	-	-	-	59	191	H
		* 2.4835	54.45	Pk	32.90	-25.30	0.00	62.05	-	-	74.00	-11.95	82	102	V	
		* 2.48368	53.07	Pk	32.90	-25.30	0.00	60.67	-	-	74.00	-13.33	82	102	V	
		* 2.4835	38.02	RMS	32.90	-25.30	0.16	45.78	54.00	-8.22	-	-	-	82	102	V
		* 2.48376	38.30	RMS	32.90	-25.30	0.16	46.06	54.00	-7.94	-	-	-	82	102	V
2467	MIMO	* 2.4835	42.30	Pk	32.90	-25.30	0.00	49.90	-	-	74.00	-24.10	62	101	H	
		2.516	44.94	Pk	32.90	-25.30	0.00	52.54	-	-	74.00	-21.46	62	101	H	
		* 2.4835	32.59	RMS	32.90	-25.30	0.16	40.35	54.00	-13.65	-	-	-	62	100	H
		* 2.48599	33.55	RMS	32.90	-25.30	0.16	41.31	54.00	-12.69	-	-	-	62	100	H
		* 2.4835	42.95	Pk	32.90	-25.30	0.00	50.55	-	-	74.00	-23.45	81	100	V	
		* 2.48412	45.07	Pk	32.90	-25.30	0.00	52.67	-	-	74.00	-21.33	81	100	V	
		* 2.4835	32.75	RMS	32.90	-25.30	0.16	40.51	54.00	-13.49	-	-	-	81	100	V
		* 2.48372	33.68	RMS	32.90	-25.30	0.16	41.44	54.00	-12.56	-	-	-	81	100	V
2472	MIMO	* 2.4835	49.71	Pk	32.90	-25.30	0.00	57.31	-	-	74.00	-16.69	62	242	H	
		* 2.48354	52.32	Pk	32.90	-25.30	0.00	59.92	-	-	74.00	-14.08	62	242	H	
		* 2.4835	34.65	RMS	32.90	-25.30	0.16	42.41	54.00	-11.59	-	-	-	62	242	H
		* 2.48351	36.59	RMS	32.90	-25.30	0.16	44.35	54.00	-9.65	-	-	-	62	242	H
		* 2.4835	48.82	Pk	32.90	-25.30	0.00	56.42	-	-	74.00	-17.58	79	120	V	
		* 2.48354	50.07	Pk	32.90	-25.30	0.00	57.67	-	-	74.00	-16.33	79	120	V	
		* 2.4835	34.66	RMS	32.90	-25.30	0.16	42.42	54.00	-11.58	-	-	-	79	120	V
		* 2.48364	36.08	RMS	32.90	-25.30	0.16	43.84	54.00	-10.16	-	-	-	79	120	V

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

HARMONICS AND SPURIOUS EMISSIONS (ANT ALL WORST CASE: 10 CHANNEL) RESULTS



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0021895 7	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.92216	40.44	PK2	34.7	-31.3	0	43.84	-	-	74	-30.16	0	100	H
* 4.9213	40.16	PK2	34.7	-31.3	0	43.56	-	-	74	-30.44	0	100	V
* 7.3703	42.74	PK2	36	-25.1	0	53.64	-	-	74	-20.36	211	226	H
* 7.36906	29.58	MAv1	36	-25.1	16	40.64	54	-13.36	-	-	211	226	H
* 7.37464	41.79	PK2	36	-25.1	0	52.69	-	-	74	-21.31	261	269	V
* 7.36919	27.77	MAv1	36	-25.1	16	38.83	54	-15.17	-	-	261	269	V
9.82391	32.23	PK2	37.6	-21.8	0	48.03	-	-	74	-25.97	0	100	H
9.81767	32.24	PK2	37.6	-21.9	0	47.94	-	-	74	-26.06	0	100	V

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

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

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
2417	MIMO	* 4.83976	40.17	PK2	34.60	-30.80	0.00	43.97	-	-	74.00	-30.03	0	100	H
		* 4.83201	39.27	PK2	34.60	-30.70	0.00	43.17	-	-	74.00	-30.83	0	100	V
		* 7.2522	35.79	PK2	36.00	-25.90	0.00	45.89	-	-	74.00	-28.11	0	100	H
		* 7.25169	35.28	PK2	36.00	-25.90	0.00	45.38	-	-	74.00	-28.62	0	100	V
		9.673	32.79	PK2	37.40	-21.70	0.00	48.49	-	-	74.00	-25.51	0	100	H
		9.674	32.88	PK2	37.40	-21.70	0.00	48.58	-	-	74.00	-25.42	0	100	V
2437	MIMO	* 4.87946	40.25	PK2	34.70	-31.20	0.00	43.75	-	-	74.00	-30.25	0	100	H
		* 4.88444	40.14	PK2	34.70	-31.30	0.00	43.54	-	-	74.00	-30.46	0	100	V
		* 7.3095	40.01	PK2	36.00	-25.70	0.00	50.31	-	-	74.00	-23.69	195	221	H
		* 7.31012	27.47	MAV1	36.00	-25.70	0.16	37.93	54.00	-16.07	-	-	195	221	H
		* 7.30908	39.11	PK2	36.00	-25.70	0.00	49.41	-	-	74.00	-24.59	262	251	V
		* 7.30862	26.69	MAV1	36.00	-25.60	0.16	37.25	54.00	-16.75	-	-	262	251	V
		9.752	32.78	PK2	37.50	-21.70	0.00	48.58	-	-	74.00	-25.42	0	100	H
		9.751	32.15	PK2	37.50	-21.70	0.00	47.95	-	-	74.00	-26.05	0	100	V
2457	MIMO	* 4.92216	40.44	PK2	34.70	-31.30	0.00	43.84	-	-	74.00	-30.16	0	100	H
		* 4.9213	40.16	PK2	34.70	-31.30	0.00	43.56	-	-	74.00	-30.44	0	100	V
		* 7.3703	42.74	PK2	36.00	-25.10	0.00	53.64	-	-	74.00	-20.36	211	226	H
		* 7.36906	29.58	MAV1	36.00	-25.10	0.16	40.64	54.00	-13.36	-	-	211	226	H
		* 7.37464	41.79	PK2	36.00	-25.10	0.00	52.69	-	-	74.00	-21.31	261	269	V
		* 7.36919	27.77	MAV1	36.00	-25.10	0.16	38.83	54.00	-15.17	-	-	261	269	V
		9.824	32.23	PK2	37.60	-21.80	0.00	48.03	-	-	74.00	-25.97	0	100	H
		9.818	32.24	PK2	37.60	-21.90	0.00	47.94	-	-	74.00	-26.06	0	100	V

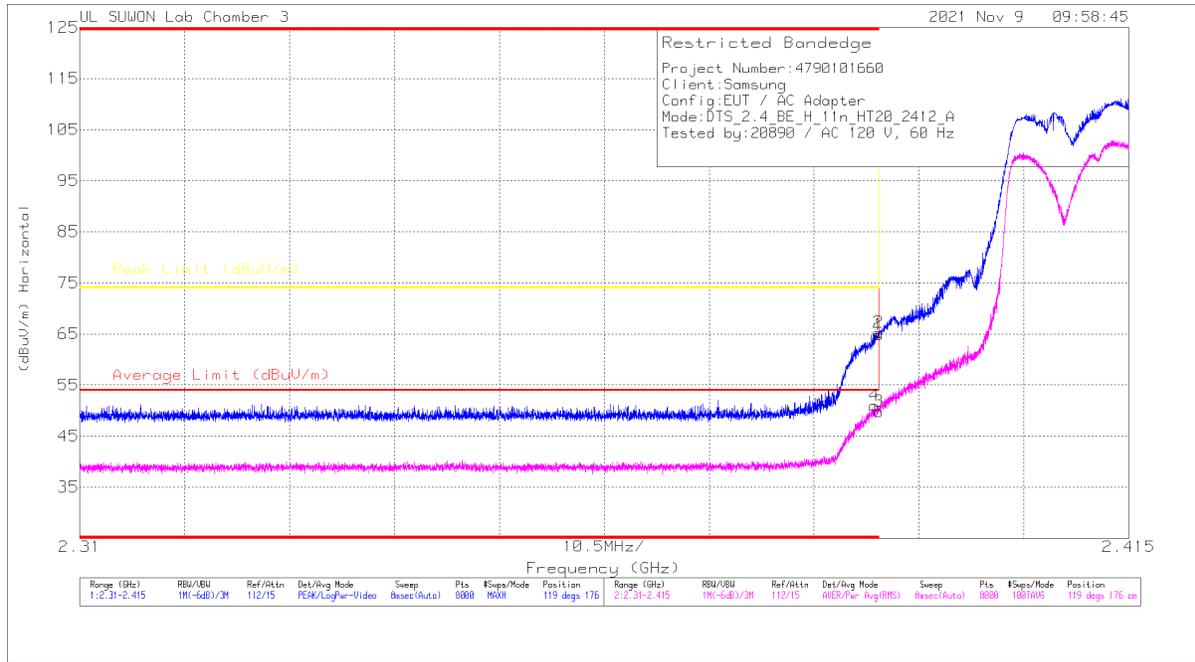
Note1. PK2 - KDB558074 Method: Maximum Peak / MAV1 - KDB558074 Option 1 Maximum RMS Average

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

10.1.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

BANDEDGE (ANT ALL WORST CASE: 1 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meas Reading (dBuV)	Det	3117_00218657	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	* 2.39	57.47	Pk		-25.4	0	64.87	-	-	74	-9.13	119	176	H
2	* 2.38994	57.85	Pk		-25.4	0	65.25	-	-	74	-8.75	119	176	H
3	* 2.39	42.29	RMS		-25.4	-19	49.89	54	-4.12	-	-	119	176	H
4	* 2.38955	43.41	RMS		-25.4	-19	51	54	-3	-	-	119	176	H

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

BANDEDGE TEST DATA

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	
2467	ANT1	* 2.48351	39.83	Pk	32.00	-20.40	0.00	51.43	-	-	74.00	-22.57	199	129	H	
		2.554	43.14	Pk	32.20	-20.30	0.00	55.04	-	-	74.00	-18.96	199	129	H	
		* 2.48351	30.82	RMS	32.00	-20.40	0.19	42.61	54.00	-11.39	-	-	-	199	129	H
		2.560	31.20	RMS	32.20	-20.20	0.19	43.39	54.00	-10.61	-	-	-	199	129	H
		* 2.48351	40.76	Pk	32.00	-20.40	0.00	52.36	-	-	74.00	-21.64	144	345	V	
		2.533	43.43	Pk	32.10	-20.30	0.00	55.23	-	-	74.00	-18.77	144	345	V	
		* 2.48351	30.69	RMS	32.00	-20.40	0.19	42.48	54.00	-11.52	-	-	-	144	345	V
		2.527	31.47	RMS	32.10	-20.40	0.19	43.36	54.00	-10.64	-	-	-	144	345	V
		* 2.48351	44.09	Pk	32.00	-20.40	0.00	55.69	-	-	74.00	-18.31	199	249	H	
		* 2.48363	45.78	Pk	32.00	-20.40	0.00	57.38	-	-	74.00	-16.62	199	249	H	
2472	ANT1	* 2.48351	32.16	RMS	32.00	-20.40	0.19	43.95	54.00	-10.05	-	-	199	249	H	
		* 2.48357	32.91	RMS	32.00	-20.40	0.19	44.70	54.00	-9.30	-	-	199	249	H	
		* 2.48351	45.72	Pk	32.00	-20.40	0.00	57.32	-	-	74.00	-16.68	146	314	V	
		* 2.48363	47.10	Pk	32.00	-20.40	0.00	58.70	-	-	74.00	-15.30	146	314	V	
		* 2.48351	33.39	RMS	32.00	-20.40	0.19	45.18	54.00	-8.82	-	-	-	146	314	V
		* 2.48361	33.16	RMS	32.00	-20.40	0.19	44.95	54.00	-9.05	-	-	-	146	314	V

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	
2467	ANT2	* 2.48351	40.22	Pk	32.00	-20.40	0.00	51.82	-	-	74.00	-22.18	153	107	H	
		2.559	43.95	Pk	32.20	-20.30	0.00	55.85	-	-	74.00	-18.15	153	107	H	
		* 2.48351	31.43	RMS	32.00	-20.40	0.19	43.22	54.00	-10.78	-	-	-	153	107	H
		2.526	31.52	RMS	32.10	-20.30	0.19	43.51	54.00	-10.49	-	-	-	153	107	H
		* 2.48351	41.53	Pk	32.00	-20.40	0.00	53.13	-	-	74.00	-20.87	200	318	V	
		2.536	44.08	Pk	32.10	-20.40	0.00	55.78	-	-	74.00	-18.22	200	318	V	
		* 2.48351	31.18	RMS	32.00	-20.40	0.19	42.97	54.00	-11.03	-	-	-	200	318	V
		2.554	31.33	RMS	32.20	-20.30	0.19	43.42	54.00	-10.58	-	-	-	200	318	V
		* 2.48351	49.83	Pk	32.00	-20.40	0.00	61.43	-	-	74.00	-12.57	148	107	H	
		* 2.48355	49.52	Pk	32.00	-20.40	0.00	61.12	-	-	74.00	-12.88	148	107	H	
2472	ANT2	* 2.48351	34.43	RMS	32.00	-20.40	0.19	46.22	54.00	-7.78	-	-	148	107	H	
		* 2.4836	34.63	RMS	32.00	-20.40	0.19	46.42	54.00	-7.58	-	-	148	107	H	
		* 2.48351	46.52	Pk	32.00	-20.40	0.00	58.12	-	-	74.00	-15.88	183	311	V	
		* 2.48378	47.49	Pk	32.00	-20.40	0.00	59.09	-	-	74.00	-14.91	183	311	V	
		* 2.48351	33.60	RMS	32.00	-20.40	0.19	45.39	54.00	-8.61	-	-	-	183	311	V
		* 2.4837	33.30	RMS	32.00	-20.40	0.19	45.09	54.00	-8.91	-	-	-	183	311	V

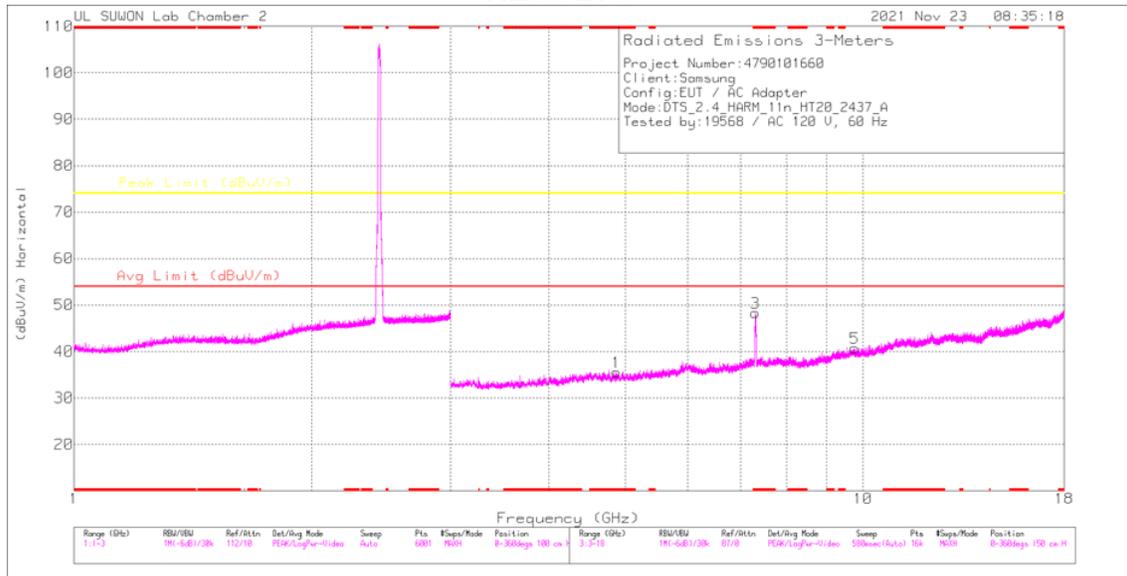
Note1. Pk - Peak detector, RMS - RMS detector

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

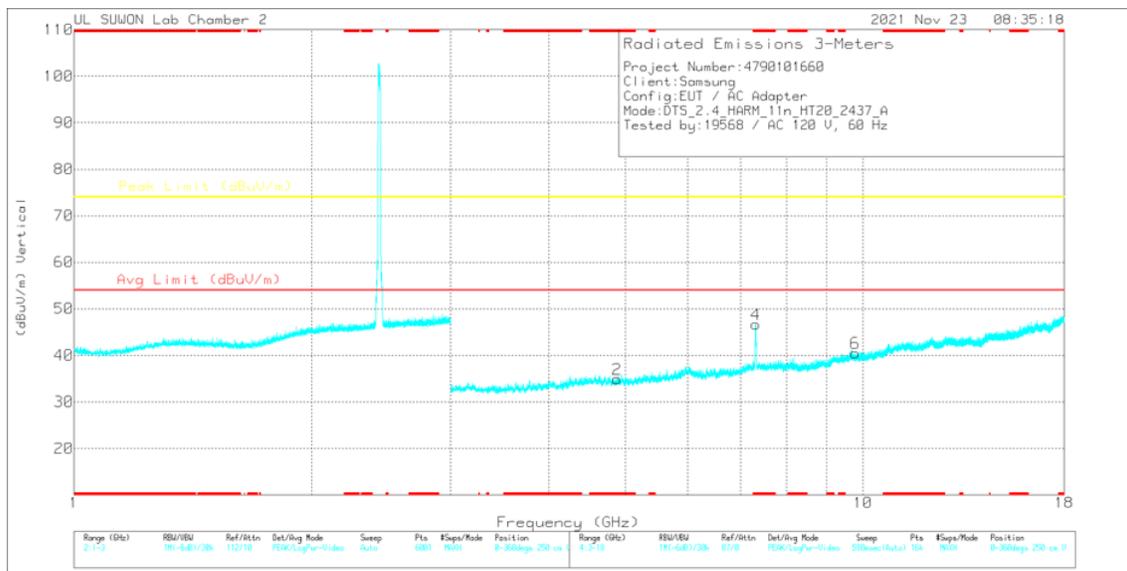
Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result dBuV/m	AV Limit dBuV/m	AV Margin [dB]	PK Limit dBuV/m	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity	
2412	MIMO	* 2.39	57.47	Pk	32.80	-25.40	0.00	64.87	-	-	74.00	-9.13	119	176	H	
		* 2.38994	57.85	Pk	32.80	-25.40	0.00	65.25	-	-	74.00	-8.75	119	176	H	
		* 2.39	42.29	RMS	32.80	-25.40	0.19	49.88	54.00	-4.12	-	-	-	119	176	H
		* 2.38955	43.41	RMS	32.80	-25.40	0.19	51.00	54.00	-3.00	-	-	-	119	176	H
		* 2.39	53.50	Pk	32.80	-25.40	0.00	60.90	-	-	74.00	-13.10	-	87	100	V
		* 2.38984	53.49	Pk	32.80	-25.40	0.00	60.89	-	-	74.00	-13.11	-	87	100	V
		* 2.39	39.16	RMS	32.80	-25.40	0.19	46.75	54.00	-7.25	-	-	-	87	100	V
		* 2.38996	40.36	RMS	32.80	-25.40	0.19	47.95	54.00	-6.05	-	-	-	87	100	V
		* 2.39	52.40	Pk	32.80	-25.40	0.00	59.80	-	-	74.00	-14.20	-	119	178	H
		* 2.38836	53.26	Pk	32.80	-25.30	0.00	60.76	-	-	74.00	-13.24	-	119	178	H
2417	MIMO	* 2.39	37.15	RMS	32.80	-25.40	0.19	44.74	54.00	-9.26	-	-	119	178	H	
		* 2.38964	38.10	RMS	32.80	-25.40	0.19	45.69	54.00	-8.31	-	-	119	178	H	
		* 2.39	49.73	Pk	32.80	-25.40	0.00	57.13	-	-	74.00	-16.87	-	89	106	V
		* 2.3891	51.78	Pk	32.80	-25.40	0.00	59.18	-	-	74.00	-14.82	-	89	106	V
		* 2.39	35.60	RMS	32.80	-25.40	0.19	43.19	54.00	-10.81	-	-	-	89	106	V
		* 2.38948	36.77	RMS	32.80	-25.40	0.19	44.36	54.00	-9.64	-	-	-	89	106	V
		* 2.48351	42.38	Pk	32.00	-20.40	0.00	53.98	-	-	74.00	-20.02	-	57	100	H
		* 2.48402	45.61	Pk	32.00	-20.40	0.00	57.21	-	-	74.00	-16.79	-	57	100	H
		* 2.48351	32.14	RMS	32.00	-20.40	0.19	43.93	54.00	-10.07	-	-	-	57	100	H
		* 2.48357	32.68	RMS	32.00	-20.40	0.19	44.47	54.00	-9.53	-	-	-	57	100	H
2457	MIMO	* 2.48351	41.74	Pk	32.00	-20.40	0.00	53.34	-	-	74.00	-20.66	-	83	208	V
		* 2.48823	47.52	Pk	32.10	-20.40	0.00	59.22	-	-	74.00	-14.78	-	83	208	V
		* 2.48351	32.13	RMS	32.00	-20.40	0.19	43.92	54.00	-10.08	-	-	-	83	208	V
		* 2.48357	32.30	RMS	32.00	-20.40	0.19	44.09	54.00	-9.91	-	-	-	83	208	V
		* 2.4835	53.94	Pk	32.90	-25.30	0.00	61.54	-	-	74.00	-12.46	-	62	104	H
		* 2.48355	56.74	Pk	32.90	-25.30	0.00	64.34	-	-	74.00	-9.66	-	62	104	H
		* 2.4835	39.86	RMS	32.90	-25.30	0.19	47.65	54.00	-6.35	-	-	-	62	104	H
		* 2.48382	41.41	RMS	32.90	-25.30	0.19	49.20	54.00	-4.80	-	-	-	62	104	H
		* 2.4835	49.81	Pk	32.90	-25.30	0.00	57.41	-	-	74.00	-16.59	-	81	188	V
		* 2.48381	51.15	Pk	32.90	-25.30	0.00	58.75	-	-	74.00	-15.25	-	81	188	V
2462	MIMO	* 2.4835	36.57	RMS	32.90	-25.30	0.19	44.36	54.00	-9.64	-	-	81	188	V	
		* 2.48356	37.48	RMS	32.90	-25.30	0.19	45.27	54.00	-8.73	-	-	81	188	V	
		* 2.4835	43.07	Pk	32.90	-25.30	0.00	50.67	-	-	74.00	-23.33	-	59	105	H
		* 2.48474	45.71	Pk	32.90	-25.30	0.00	53.31	-	-	74.00	-20.69	-	59	105	H
		* 2.4835	32.70	RMS	32.90	-25.30	0.19	40.49	54.00	-13.51	-	-	-	59	105	H
		* 2.48754	33.70	RMS	32.90	-25.20	0.19	41.59	54.00	-12.41	-	-	-	59	105	H
		* 2.4835	40.92	Pk	32.90	-25.30	0.00	48.52	-	-	74.00	-25.48	-	95	207	V
		* 2.48852	44.31	Pk	32.90	-25.20	0.00	52.01	-	-	74.00	-21.99	-	95	207	V
		* 2.4835	31.08	RMS	32.90	-25.30	0.19	38.87	54.00	-15.13	-	-	-	95	207	V
		* 2.48686	33.38	RMS	32.90	-25.30	0.19	41.17	54.00	-12.83	-	-	-	95	207	V
2472	MIMO	* 2.4835	53.17	Pk	32.90	-25.30	0.00	60.77	-	-	74.00	-13.23	62	100	H	
		* 2.48354	54.18	Pk	32.90	-25.30	0.00	61.78	-	-	74.00	-12.22	62	100	H	
		* 2.4835	38.60	RMS	32.90	-25.30	0.19	46.39	54.00	-7.61	-	-	62	100	H	
		* 2.48371	39.18	RMS	32.90	-25.30	0.19	46.97	54.00	-7.03	-	-	62	100	H	
		* 2.4835	50.33	Pk	32.90	-25.30	0.00	57.93	-	-	74.00	-16.07	-	89	202	V
		* 2.48351	50.80	Pk	32.90	-25.30	0.00	58.40	-	-	74.00	-15.60	-	89	202	V
		* 2.4835	36.11	RMS	32.90	-25.30	0.19	43.90	54.00	-10.10	-	-	-	89	202	V
		* 2.48372	36.82	RMS	32.90	-25.30	0.19	44.61	54.00	-9.39	-	-	-	89	202	V

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

HARMONICS AND SPURIOUS EMISSIONS (ANT ALL WORST CASE: 6 CHANNEL) RESULTS



HORIZONTAL



VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016872 4	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.87171	37.3	PK2	34.1	-27.9	0	43.5	-	-	74	-30.5	360	100	H
* 4.86897	37.53	PK2	34.1	-28	0	43.63	-	-	74	-30.37	360	100	V
* 7.3088	49.96	PK2	36.2	-25	0	61.16	-	-	74	-12.84	197	251	H
* 7.3091	35.27	MAV1	36.2	-25	-19	46.66	54	-7.34	-	-	197	251	H
* 7.3082	46.89	PK2	36.2	-25	0	58.09	-	-	74	-15.91	257	273	V
* 7.30705	32.42	MAV1	36.2	-25	-19	43.81	54	-10.19	-	-	257	273	V
9.77113	32.67	PK2	37.2	-21.6	0	48.27	-	-	74	-25.73	360	100	H
9.77292	32.94	PK2	37.2	-21.6	0	48.54	-	-	74	-25.46	360	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAV1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

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
2417	MIMO	* 4.83726	37.88	PK2	34.10	-28.10	0.00	43.88	-	-	74.00	-30.12	0	100	H
		* 4.83475	37.45	PK2	34.10	-28.10	0.00	43.45	-	-	74.00	-30.55	0	100	V
		7.247	36.71	PK2	36.20	-25.50	0.00	47.41	-	-	74.00	-26.59	0	100	H
		7.242	35.77	PK2	36.20	-25.50	0.00	46.47	-	-	74.00	-27.53	0	100	V
		9.665	32.50	PK2	37.10	-21.40	0.00	48.20	-	-	74.00	-25.80	360	100	H
		9.669	33.26	PK2	37.10	-21.30	0.00	49.06	-	-	74.00	-24.94	0	100	V
2437	MIMO	* 4.87171	37.30	PK2	34.10	-27.90	0.00	43.50	-	-	74.00	-30.50	360	100	H
		* 4.86897	37.53	PK2	34.10	-28.00	0.00	43.63	-	-	74.00	-30.37	360	100	V
		* 7.3088	49.96	PK2	36.20	-25.00	0.00	61.16	-	-	74.00	-12.84	197	251	H
		* 7.3091	35.27	MAv1	36.20	-25.00	0.19	46.66	54.00	-7.34	-	-	197	251	H
		* 7.3082	46.89	PK2	36.20	-25.00	0.00	58.09	-	-	74.00	-15.91	257	273	V
		* 7.30705	32.42	MAv1	36.20	-25.00	0.19	43.81	54.00	-10.19	-	-	257	273	V
		9.771	32.67	PK2	37.20	-21.60	0.00	48.27	-	-	74.00	-25.73	360	100	H
		9.773	32.94	PK2	37.20	-21.60	0.00	48.54	-	-	74.00	-25.46	360	100	V
		* 4.9188	36.75	PK2	34.10	-27.40	0.00	43.45	-	-	74.00	-30.55	360	100	H
2457	MIMO	* 4.92108	36.51	PK2	34.10	-27.40	0.00	43.21	-	-	74.00	-30.79	360	100	V
		* 7.3692	46.36	PK2	36.10	-24.30	0.00	58.16	-	-	74.00	-15.84	76	145	H
		* 7.37174	32.07	MAv1	36.10	-24.30	0.19	44.06	54.00	-9.94	-	-	76	145	H
		* 7.37644	46.91	PK2	36.10	-24.30	0.00	58.71	-	-	74.00	-15.29	297	102	V
		* 7.3752	31.79	MAv1	36.10	-24.30	0.19	43.78	54.00	-10.22	-	-	297	102	V
		9.834	33.02	PK2	37.30	-21.80	0.00	48.52	-	-	74.00	-25.48	360	100	H
		9.834	32.74	PK2	37.30	-21.80	0.00	48.24	-	-	74.00	-25.76	360	100	V

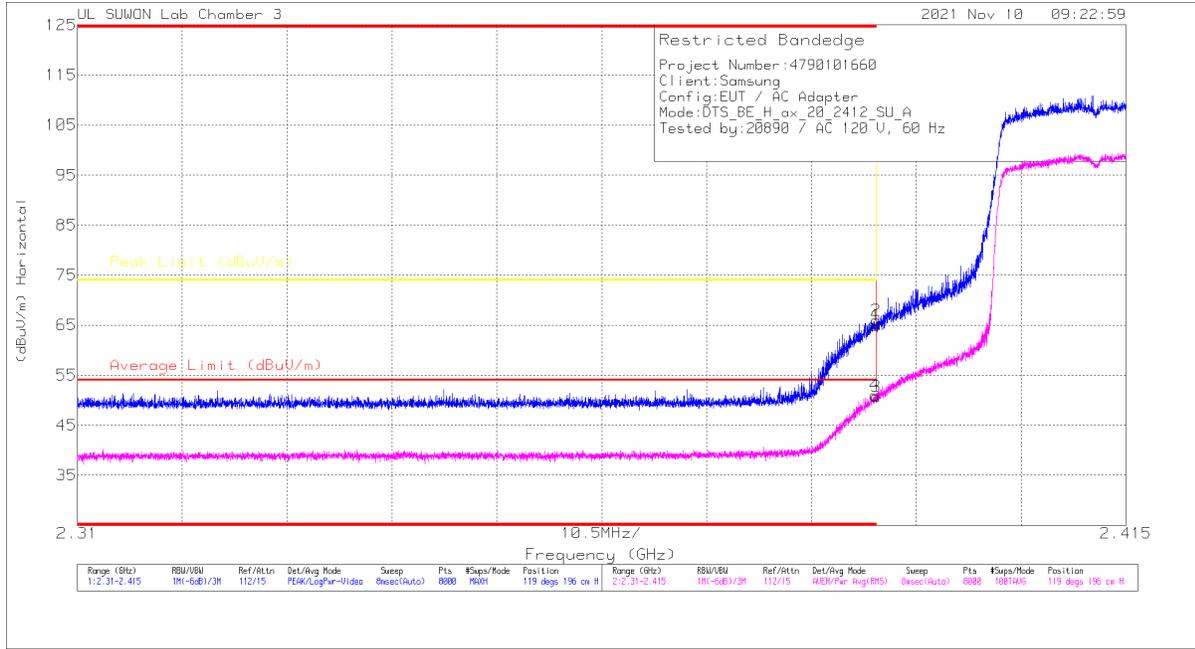
Note1. PK2 - KDB58074 Method: Maximum Peak / MAv1 - KDB58074 Option 1 Maximum RMS Average

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

10.1.4. TX ABOVE 1 GHz 802.11ax HE20 MODE IN THE 2.4 GHz BAND

BANDEDGE (1 CHANNEL, SU MODE)

HORIZONTAL RESULT



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 (Deg)	Height (m)	Polarity
1	* 2.39	57.59	Pk	32.8	-25.4	0	64.99	-	-	74	-8.01	119	196	H
2	* 2.38988	58.58	Pk	32.8	-25.4	0	65.98	-	-	74	-8.02	119	196	H
3	* 2.39	43.35	RMS	32.8	-25.4	0	50.75	54	-3.25	-	-	119	196	H
4	* 2.38988	43.57	RMS	32.8	-25.4	0	50.97	54	-3.03	-	-	119	196	H

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

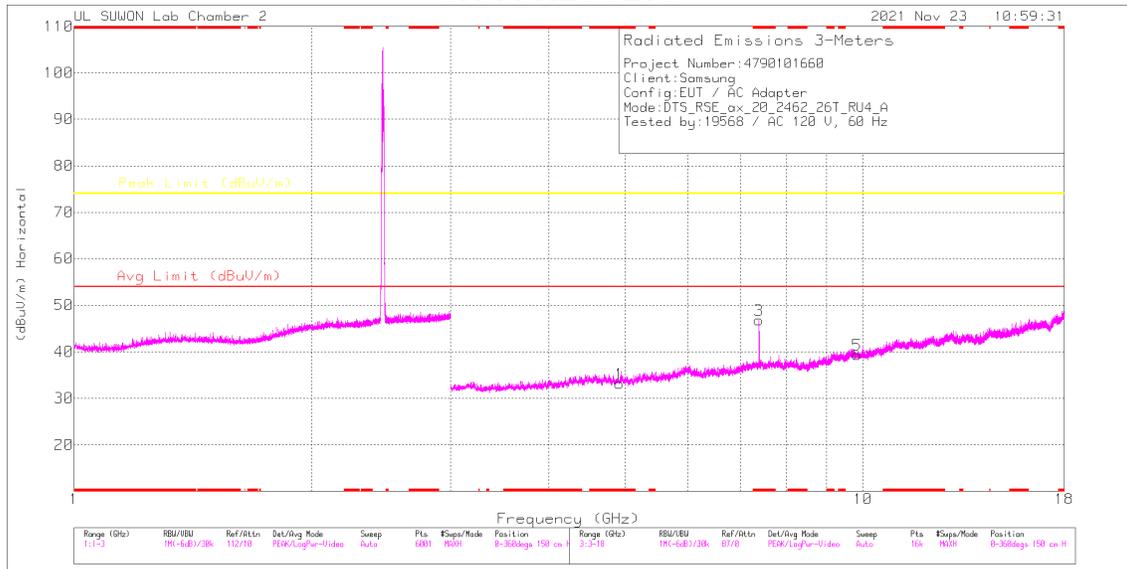
BANDEDGE TEST DATA

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	
2467 8RU	ANT2	* 2.48351	45.80	Pk	32.00	-20.40	0.00	57.40	-	-	74.00	-16.60	152	170	H	
		* 2.48354	47.65	Pk	32.00	-20.40	0.00	59.25	-	-	74.00	-14.75	152	170	H	
		* 2.48351	31.54	RMS	32.00	-20.40	0.00	43.14	54.00	-10.86	-	-	-	152	170	H
		* 2.48366	31.93	RMS	32.00	-20.40	0.00	43.53	54.00	-10.47	-	-	-	152	170	H
		* 2.48351	44.99	Pk	32.00	-20.40	0.00	56.59	-	-	74.00	-17.41	-	192	310	V
		* 2.48481	46.88	Pk	32.00	-20.50	0.00	58.38	-	-	74.00	-15.62	-	192	310	V
		* 2.48351	31.56	RMS	32.00	-20.40	0.00	43.16	54.00	-10.84	-	-	-	192	310	V
		* 2.48409	31.67	RMS	32.00	-20.40	0.00	43.27	54.00	-10.73	-	-	-	192	310	V
2472 8RU	ANT2	* 2.48351	58.86	Pk	32.00	-20.40	0.00	70.46	-	-	74.00	-3.54	154	125	H	
		* 2.48418	59.30	Pk	32.00	-20.40	0.00	70.90	-	-	74.00	-3.10	154	125	H	
		* 2.48351	37.59	RMS	32.00	-20.40	0.00	49.19	54.00	-4.81	-	-	-	154	125	H
		* 2.48359	38.71	RMS	32.00	-20.40	0.00	50.31	54.00	-3.69	-	-	-	154	125	H
		* 2.48402	58.87	Pk	32.00	-20.40	0.00	70.47	-	-	74.00	-3.53	-	192	311	V
		* 2.484	59.10	Pk	32.00	-20.40	0.00	70.70	-	-	74.00	-3.30	-	192	311	V
		* 2.48351	38.04	RMS	32.00	-20.40	0.00	49.64	54.00	-4.36	-	-	-	192	311	V
		* 2.48356	39.04	RMS	32.00	-20.40	0.00	50.64	54.00	-3.36	-	-	-	192	311	V

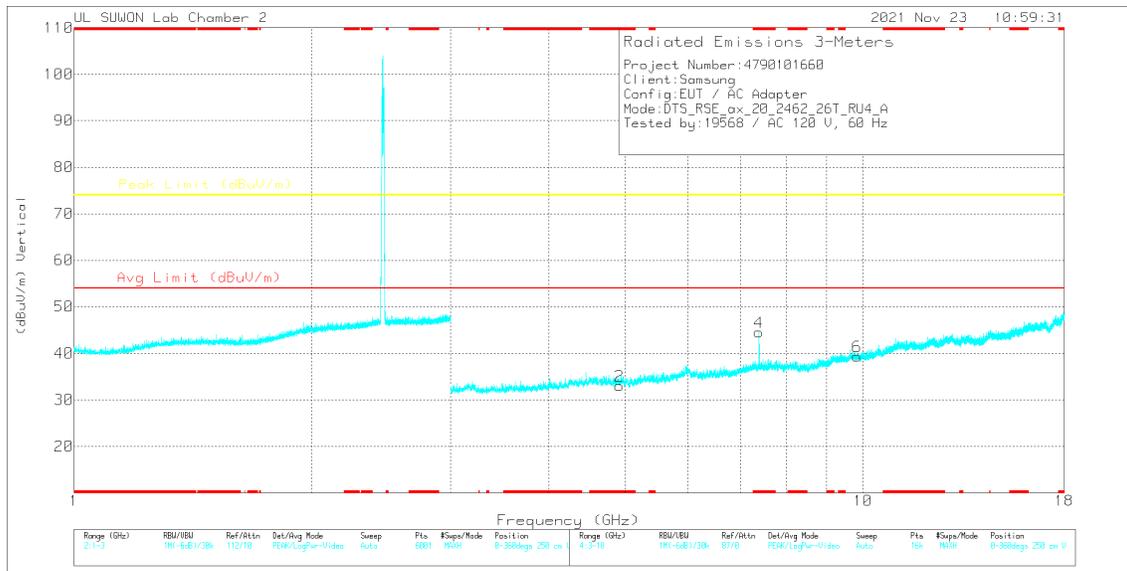
Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity	
2412 SU mode	MIMO	* 2.39	57.59	Pk	32.80	-25.40	0.00	64.99	-	-	74.00	-9.01	119	196	H	
		* 2.38998	58.58	Pk	32.80	-25.40	0.00	65.98	-	-	74.00	-8.02	119	196	H	
		* 2.39	43.35	RMS	32.80	-25.40	0.00	50.75	54.00	-3.25	-	-	-	119	196	H
		* 2.38998	43.57	RMS	32.80	-25.40	0.00	50.97	54.00	-3.03	-	-	-	119	196	H
		* 2.39	52.09	Pk	32.80	-25.40	0.00	59.49	-	-	74.00	-14.51	-	86	143	V
		* 2.38977	55.26	Pk	32.80	-25.40	0.00	62.66	-	-	74.00	-11.34	-	86	143	V
		* 2.39	39.13	RMS	32.80	-25.40	0.00	46.53	54.00	-7.47	-	-	-	86	143	V
		* 2.38994	40.08	RMS	32.80	-25.40	0.00	47.48	54.00	-6.52	-	-	-	86	143	V
2462 SU mode	MIMO	* 2.4835	56.06	Pk	32.90	-25.30	0.00	63.66	-	-	74.00	-10.34	119	127	H	
		* 2.48462	58.60	Pk	32.90	-25.30	0.00	66.20	-	-	74.00	-7.80	119	127	H	
		* 2.4835	41.67	RMS	32.90	-25.30	0.00	49.27	54.00	-4.73	-	-	-	119	127	H
		* 2.48371	42.04	RMS	32.90	-25.30	0.00	49.64	54.00	-4.36	-	-	-	119	127	H
		* 2.4835	50.01	Pk	32.90	-25.30	0.00	57.61	-	-	74.00	-16.39	-	93	120	V
		* 2.48493	53.07	Pk	32.90	-25.30	0.00	60.67	-	-	74.00	-13.33	-	93	120	V
		* 2.4835	38.12	RMS	32.90	-25.30	0.00	45.72	54.00	-8.28	-	-	-	93	120	V
		* 2.48375	38.50	RMS	32.90	-25.30	0.00	46.10	54.00	-7.90	-	-	-	93	120	V
2467 SU mode	MIMO	* 2.4835	44.11	Pk	32.90	-25.30	0.00	51.71	-	-	74.00	-22.29	60	126	H	
		* 2.48484	47.14	Pk	32.90	-25.30	0.00	54.74	-	-	74.00	-19.26	60	126	H	
		* 2.4835	33.17	RMS	32.90	-25.30	0.00	40.77	54.00	-13.23	-	-	-	60	126	H
		* 2.48497	34.26	RMS	32.90	-25.30	0.00	41.86	54.00	-12.14	-	-	-	60	126	H
		* 2.4835	42.44	Pk	32.90	-25.30	0.00	50.04	-	-	74.00	-23.96	-	91	119	V
		* 2.48426	45.69	Pk	32.90	-25.30	0.00	53.29	-	-	74.00	-20.71	-	91	119	V
		* 2.4835	33.17	RMS	32.90	-25.30	0.00	40.77	54.00	-13.23	-	-	-	91	119	V
		* 2.48443	33.88	RMS	32.90	-25.30	0.00	41.48	54.00	-12.52	-	-	-	91	119	V
2472 SU mode	MIMO	* 2.4835	53.50	Pk	32.90	-25.30	0.00	61.10	-	-	74.00	-12.90	59	105	H	
		* 2.48359	54.58	Pk	32.90	-25.30	0.00	62.18	-	-	74.00	-11.82	59	105	H	
		* 2.4835	34.79	RMS	32.90	-25.30	0.00	42.39	54.00	-11.61	-	-	-	59	105	H
		* 2.4836	36.43	RMS	32.90	-25.30	0.00	44.03	54.00	-9.97	-	-	-	59	105	H
		* 2.4835	53.63	Pk	32.90	-25.30	0.00	61.23	-	-	74.00	-12.77	-	84	101	V
		* 2.48369	54.03	Pk	32.90	-25.30	0.00	61.63	-	-	74.00	-12.37	-	84	101	V
		* 2.4835	34.32	RMS	32.90	-25.30	0.00	41.92	54.00	-12.08	-	-	-	84	100	V
		* 2.48355	36.38	RMS	32.90	-25.30	0.00	43.98	54.00	-10.02	-	-	-	84	100	V

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

HARMONICS AND SPURIOUS EMISSIONS (ANT ALL WORST CASE: 11 CH, 4RU) CH 11 RESULTS



HORIZONTAL



VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016872 4	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.91135	36.18	PK2	34.1	-27.5	0	42.78	-	-	74	-31.22	0	100	H
* 4.90574	36.57	PK2	34.1	-27.6	0	43.07	-	-	74	-30.93	0	100	V
* 7.38719	48.88	PK2	36.1	-24.2	0	60.78	-	-	74	-13.22	73	154	H
* 7.38671	30.58	MAV1	36.1	-24.2	0	42.48	54	-11.52	-	-	73	154	H
* 7.38715	49.3	PK2	36.1	-24.2	0	61.2	-	-	74	-12.8	285	269	V
* 7.38657	31.23	MAV1	36.1	-24.2	0	43.13	54	-10.87	-	-	285	269	V
9.82014	32.86	PK2	37.2	-21.8	0	48.26	-	-	74	-25.74	0	100	H
9.82993	32.62	PK2	37.3	-21.8	0	48.12	-	-	74	-25.88	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAV1 - KDB558074 Option 1 Maximum RMS Average

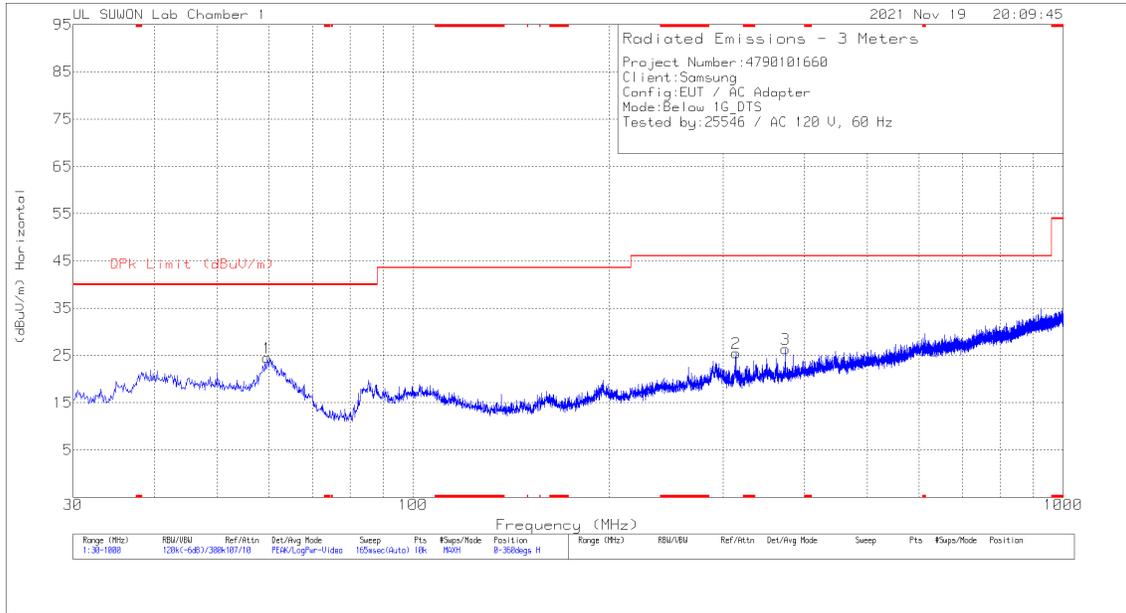
HARMONICS AND SPURIOUS EMISSIONS TEST DATA

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
2412 RU8	MIMO	* 4.83401	37.31	PK2	34.10	-28.10	0.00	43.31	-	-	74.00	-30.69	0	100	H
		* 4.82232	37.09	PK2	34.10	-28.10	0.00	43.09	-	-	74.00	-30.91	0	100	V
		7.237	46.75	PK2	36.20	-25.50	0.00	57.45	-	-	74.00	-16.55	190	239	H
		7.237	30.31	MAv1	36.20	-25.50	0.00	41.01	-	-	-	-	190	239	H
		7.237	43.63	PK2	36.20	-25.50	0.00	54.33	-	-	74.00	-19.67	256	210	V
		7.237	27.50	MAv1	36.20	-25.50	0.00	38.20	-	-	-	-	256	210	V
		9.653	32.80	PK2	37.00	-21.40	0.00	48.40	-	-	74.00	-25.60	0	100	H
		9.650	32.47	PK2	37.00	-21.50	0.00	47.97	-	-	74.00	-26.03	0	100	V
		2437 RU0	MIMO	* 4.88083	36.70	PK2	34.10	-27.80	0.00	43.00	-	-	74.00	-31.00	0
* 4.88292	36.93			PK2	34.10	-27.80	0.00	43.23	-	-	74.00	-30.77	0	100	V
* 7.31199	43.09			PK2	36.20	-25.00	0.00	54.29	-	-	74.00	-19.71	49	400	H
* 7.31025	28.10			MAv1	36.20	-25.00	0.00	39.30	54.00	-14.70	-	-	49	400	H
* 7.31045	44.24			PK2	36.20	-25.00	0.00	55.44	-	-	74.00	-18.56	255	267	V
* 7.31035	28.99			MAv1	36.20	-25.00	0.00	40.19	54.00	-13.81	-	-	255	267	V
9.763	32.37			PK2	37.20	-21.50	0.00	48.07	-	-	74.00	-25.93	0	100	H
9.750	32.99			PK2	37.20	-21.40	0.00	48.79	-	-	74.00	-25.21	360	100	V
2462 RU4	MIMO			* 4.91135	36.18	PK2	34.10	-27.50	0.00	42.78	-	-	74.00	-31.22	0
		* 4.90574	36.57	PK2	34.10	-27.60	0.00	43.07	-	-	74.00	-30.93	0	100	V
		* 7.38719	48.88	PK2	36.10	-24.20	0.00	60.78	-	-	74.00	-13.22	73	154	H
		* 7.38671	30.58	MAv1	36.10	-24.20	0.00	42.48	54.00	-11.52	-	-	73	154	H
		* 7.38715	49.30	PK2	36.10	-24.20	0.00	61.20	-	-	74.00	-12.80	285	269	V
		* 7.38657	31.23	MAv1	36.10	-24.20	0.00	43.13	54.00	-10.87	-	-	285	269	V
		9.820	32.86	PK2	37.20	-21.80	0.00	48.26	-	-	74.00	-25.74	0	100	H
		9.830	32.62	PK2	37.30	-21.80	0.00	48.12	-	-	74.00	-25.88	0	100	V

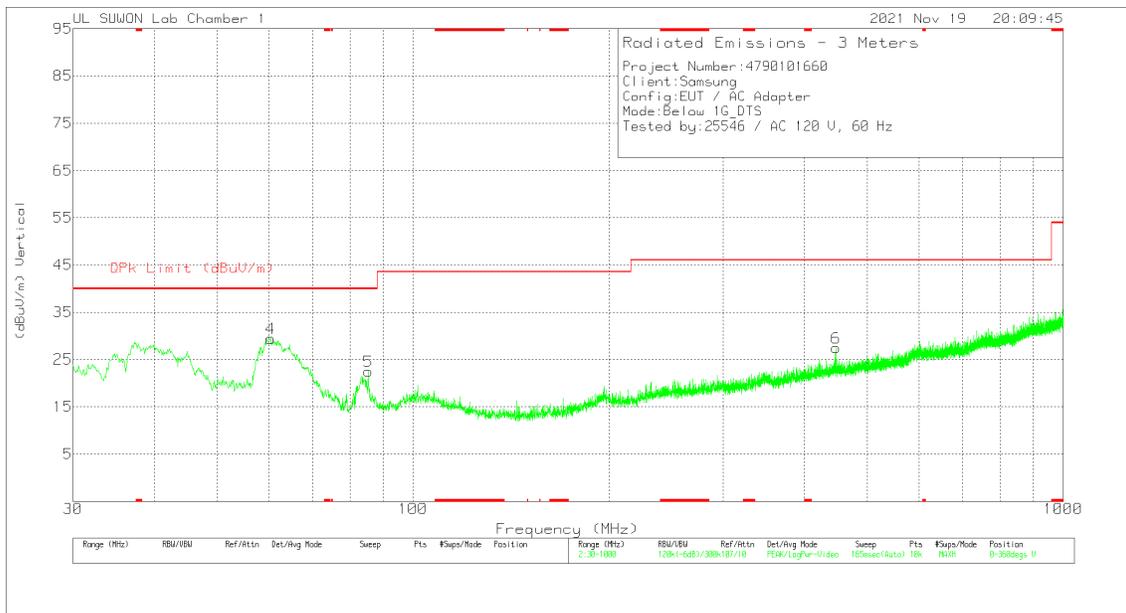
Note1. PK2 - KDB558074 Method: Maximum Peak / MAv1 - KDB558074 Option 1 Maximum RMS Average

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

10.2. WORST CASE BELOW 1 GHZ



HORIZONTAL



VERTICAL

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	59.682	36.54	Pk	18.7	-30.8	24.44	40	-15.56	0-360	300	H
2	313.628	34.54	Pk	19.4	-28.5	25.44	46.02	-20.58	0-360	100	H
3	373.865	33.56	Pk	20.9	-28.1	26.36	46.02	-19.66	0-360	100	H
4	60.361	41.62	Pk	18.5	-30.7	29.42	40	-10.58	0-360	200	V
5	85.29	38.69	Pk	14.1	-30.3	22.49	40	-17.51	0-360	200	V
6	447.1	33.08	Pk	22.1	-27.7	27.48	46.02	-18.54	0-360	200	V

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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.

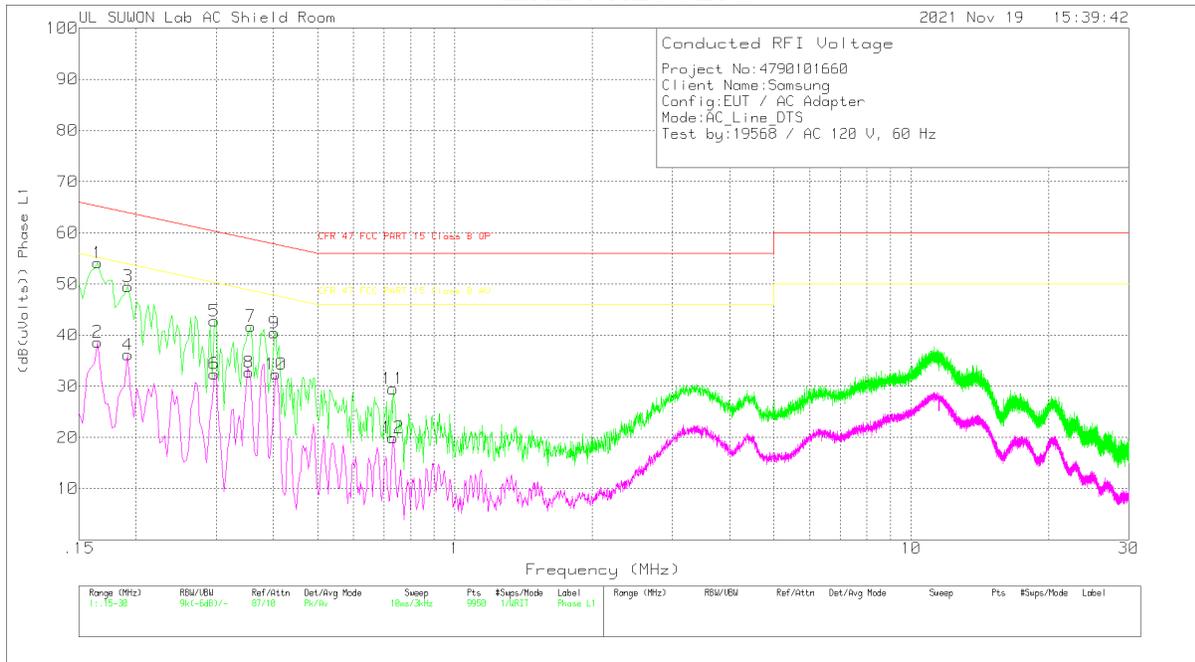
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

11.1.1. AC Power Line

LINE 1 RESULTS



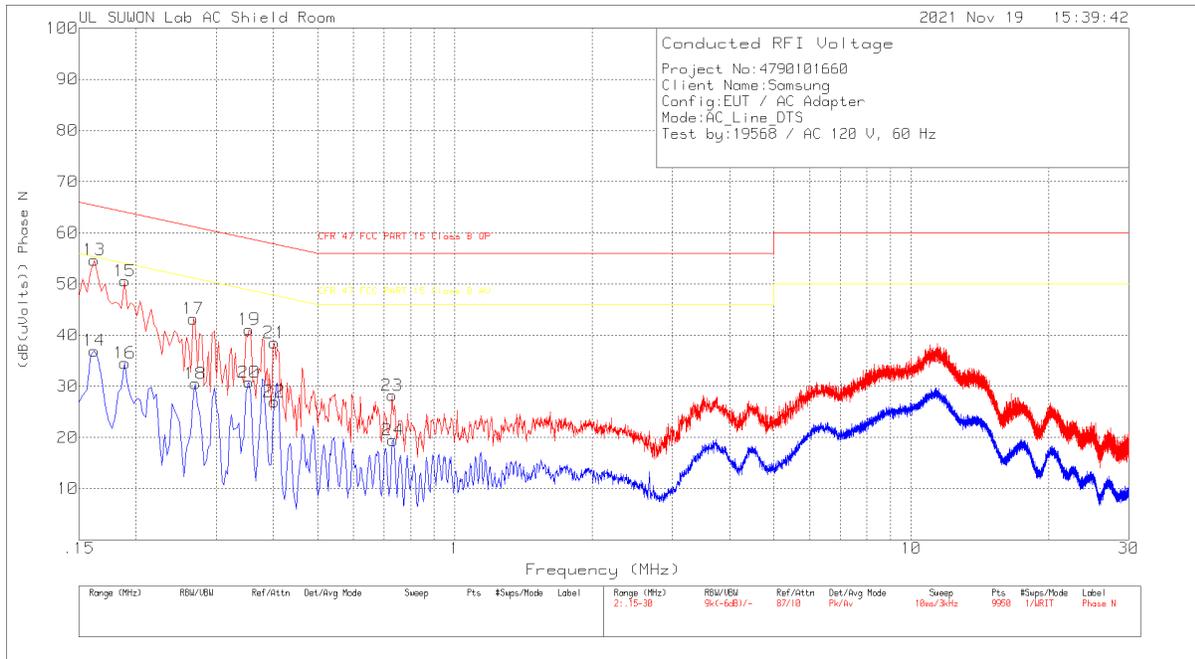
Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOS S(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	.165	44.14	Pk	9.9	.1	54.14	65.21	-11.07	-	-
2	.165	28.65	Av	9.9	.1	38.65	-	-	55.21	-16.56
3	.192	39.42	Pk	9.9	.2	49.52	63.95	-14.43	-	-
4	.192	26.05	Av	9.9	.2	36.15	-	-	53.95	-17.8
5	.297	32.85	Pk	9.7	.2	42.75	60.33	-17.58	-	-
6	.297	22.54	Av	9.7	.2	32.44	-	-	50.33	-17.89
7	.357	31.71	Pk	9.8	.2	41.71	58.8	-17.09	-	-
8	.354	22.74	Av	9.8	.2	32.74	-	-	48.87	-16.13
9	.402	30.42	Pk	9.8	.2	40.42	57.81	-17.39	-	-
10	.405	22.37	Av	9.8	.2	32.37	-	-	47.75	-15.38
11	.732	19.51	Pk	9.8	.2	29.51	56	-26.49	-	-
12	.732	9.95	Av	9.8	.2	19.95	-	-	46	-26.05

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_N[dB]	CABLELOS S(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	.162	44.69	Pk	9.9	.1	54.69	65.36	-10.67	-	-
14	.162	26.95	Av	9.9	.1	36.95	-	-	55.36	-18.41
15	.189	40.49	Pk	9.9	.2	50.59	64.08	-13.49	-	-
16	.189	24.43	Av	9.9	.2	34.53	-	-	54.08	-19.55
17	.267	33.41	Pk	9.6	.2	43.21	61.21	-18	-	-
18	.27	20.74	Av	9.6	.2	30.54	-	-	51.12	-20.58
19	.354	31.08	Pk	9.8	.2	41.08	58.87	-17.79	-	-
20	.354	20.76	Av	9.8	.2	30.76	-	-	48.87	-18.11
21	.402	28.5	Pk	9.8	.2	38.5	57.81	-19.31	-	-
22	.402	17.02	Av	9.8	.2	27.02	-	-	47.81	-20.79
23	.729	18.22	Pk	9.8	.2	28.22	56	-27.78	-	-
24	.732	9.5	Av	9.8	.2	19.5	-	-	46	-26.5

Pk - Peak detector
 Av - Average detection

END OF TEST REPORT