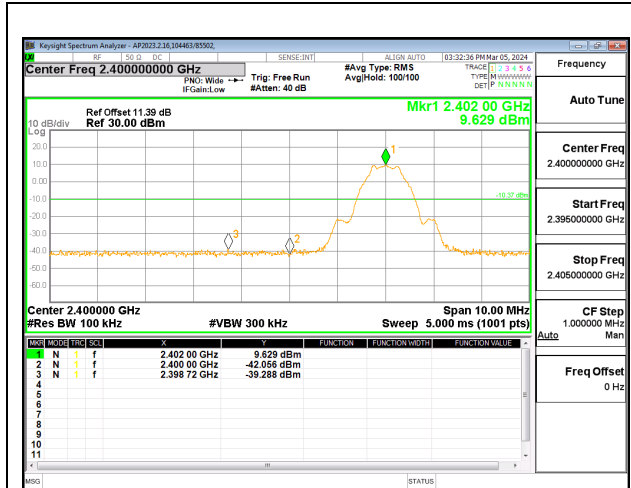
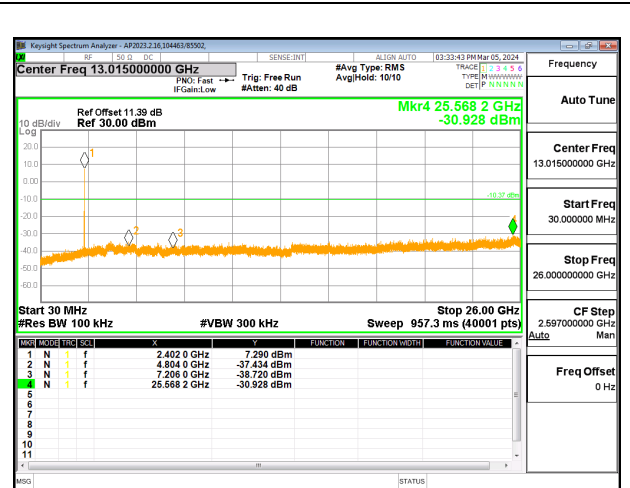


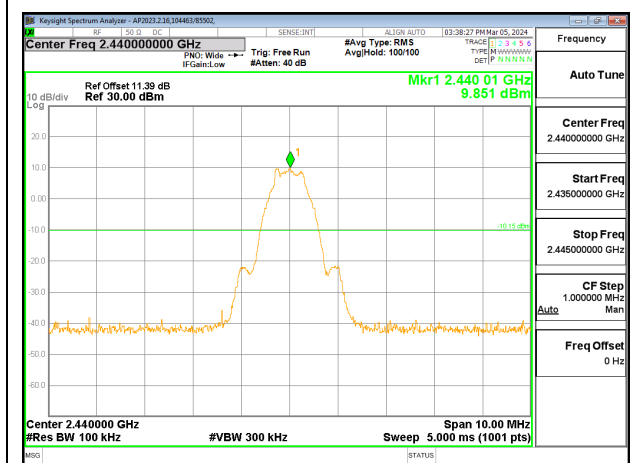
Chain 1



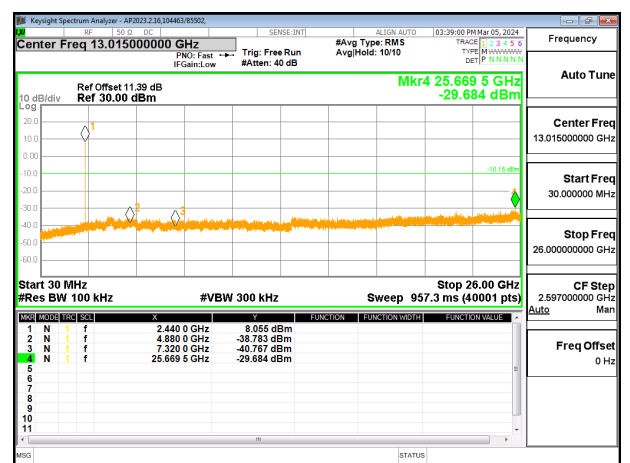
LOW CHANNEL BANDEDGE



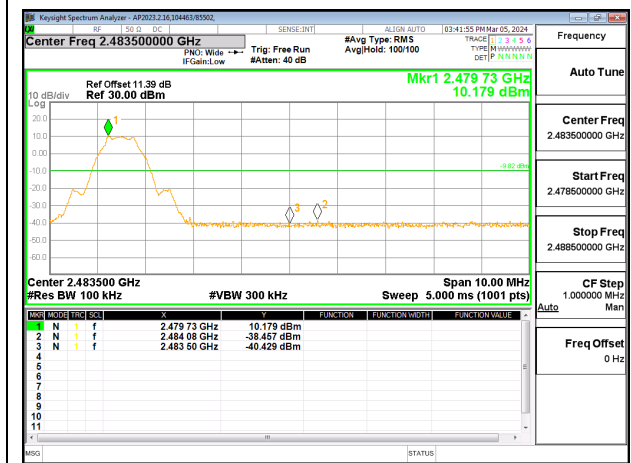
OUT-OF-BAND LOW CHANNEL



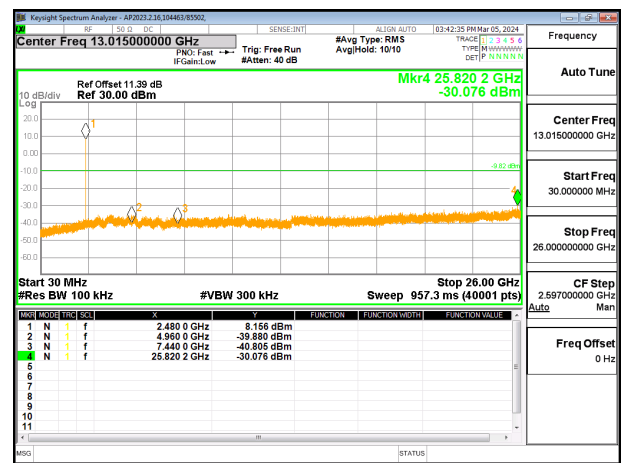
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement 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 in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak or average (9-90kHz and 110-490kHz).

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements. Linear Voltage Averaging was used.

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest power spectral density was tested.

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.

3D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel).

Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

KDB 414788 Open Field Site (OFS) and Chamber Correlation Justification

OFS and chamber correlation testing had been performed and chamber measured test result is the worst-case test result.

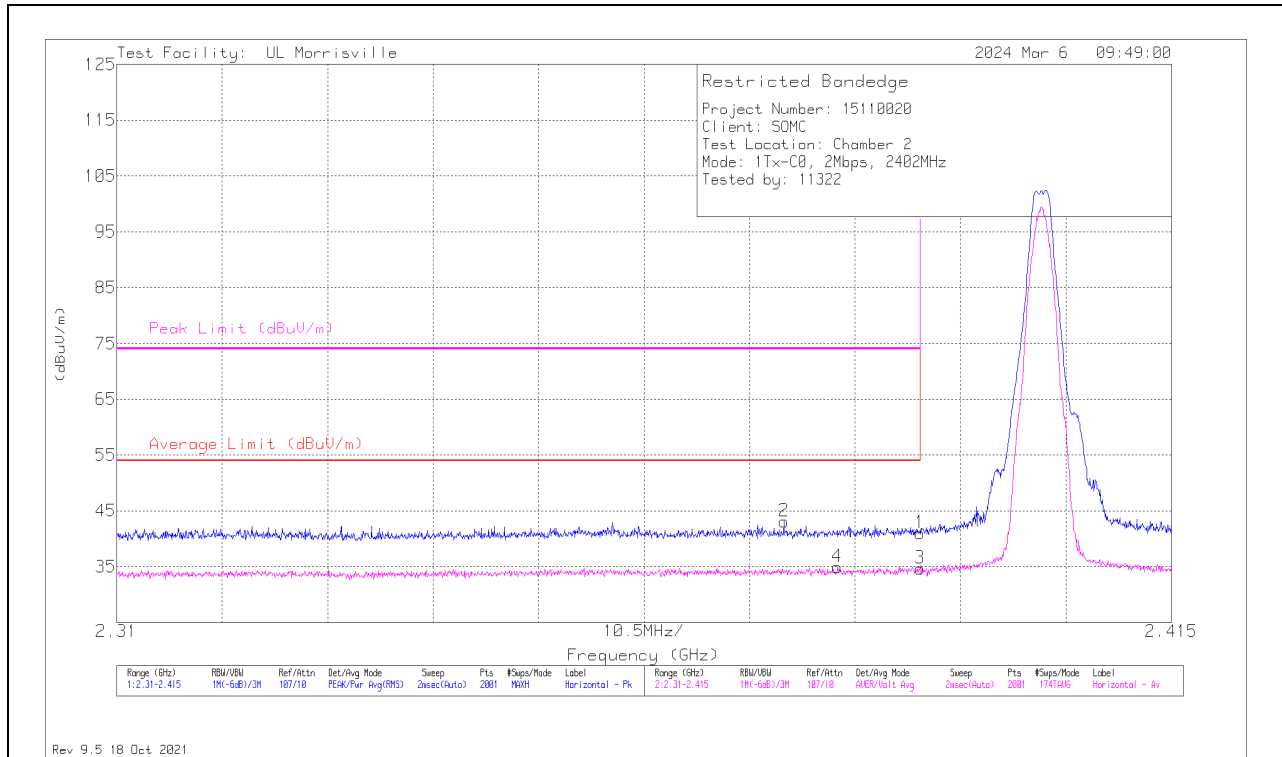
10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. BLE (2Mbps)

Chain 0

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	32.89	Pk	32.3	-24.2	0	40.99	-	-	74	-33.01	167	125	H
2	*** 2.37641	34.95	Pk	32.2	-24.1	0	43.05	-	-	74	-30.95	167	125	H
3	*** 2.38996	21.68	ADV	32.3	-24.2	4.83	34.61	54	-19.39	-	-	167	124	H
4	*** 2.38177	21.97	ADV	32.2	-24.1	4.83	34.90	54	-19.10	-	-	167	124	H

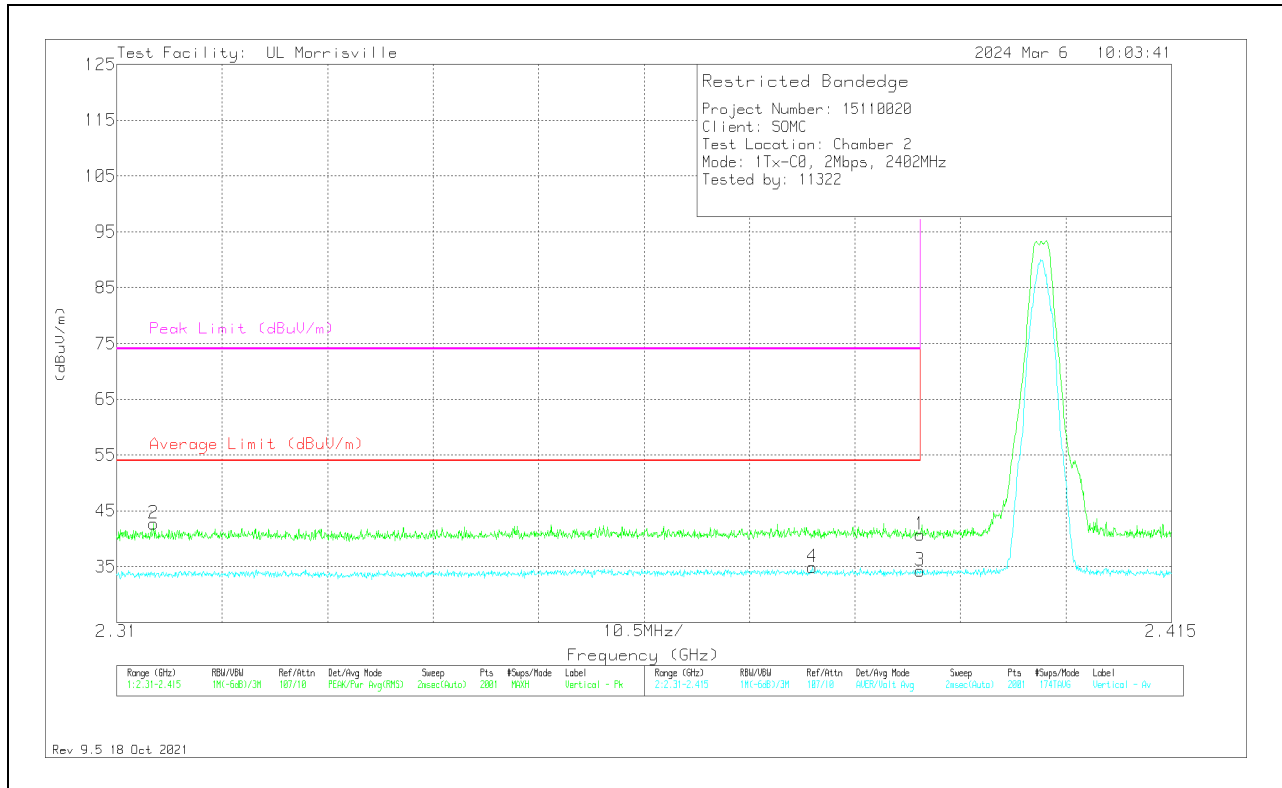
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT

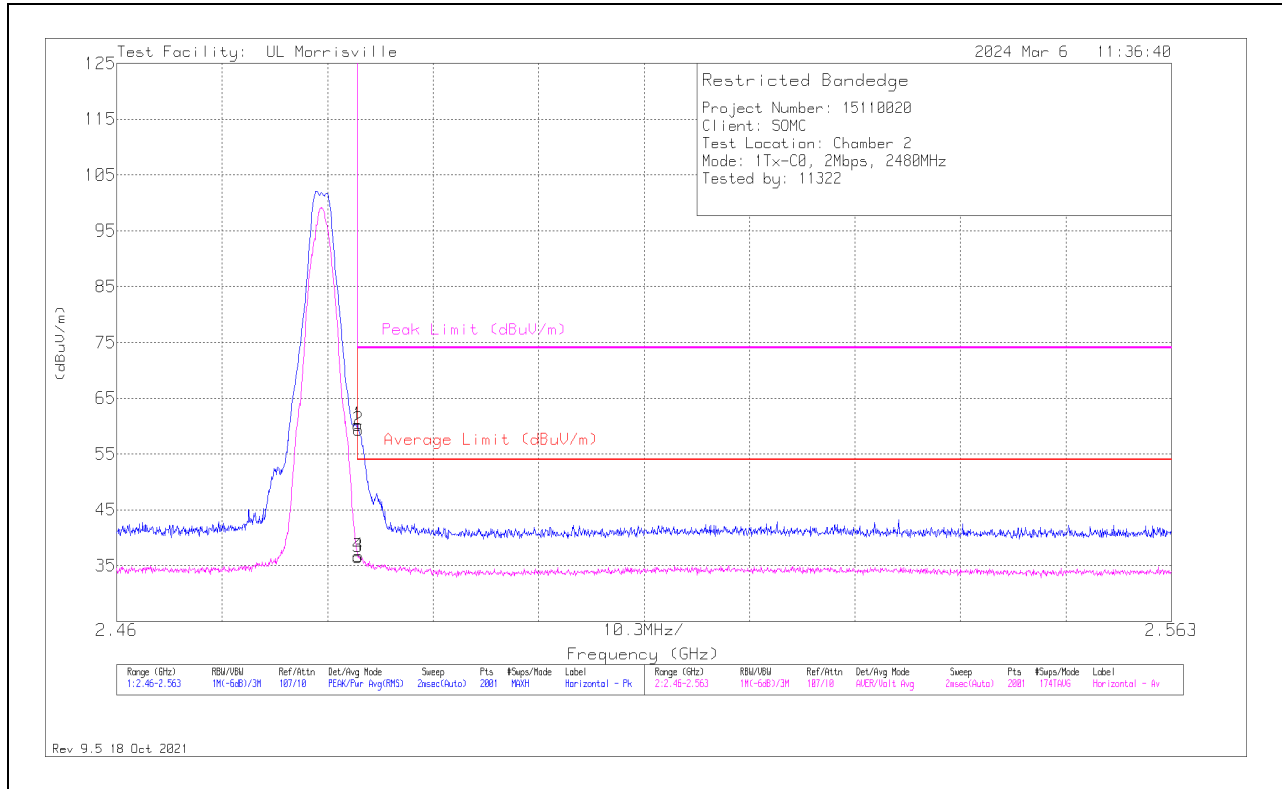


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	32.67	Pk	32.3	-24.2	0	40.77	-	-	74	-33.23	66	101	V
2	*** 2.31368	34.6	Pk	32.1	-24	0	42.7	-	-	74	-31.3	66	101	V
3	*** 2.38996	21.34	ADV	32.3	-24.2	4.83	34.27	54	-19.73	-	-	66	101	V
4	*** 2.37925	21.9	ADV	32.2	-24.1	4.83	34.83	54	-19.17	-	-	66	101	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	52.19	Pk	32.5	-24.5	0	60.19	-	-	74	-13.81	182	244	H
2	*** 2.48364	51.36	Pk	32.5	-24.5	0	59.36	-	-	74	-14.64	182	244	H
3	*** 2.48354	23.73	ADV	32.5	-24.5	4.83	36.56	54	-17.44	-	-	182	244	H
4	*** 2.48359	23.87	ADV	32.5	-24.5	4.83	36.70	54	-17.30	-	-	182	244	H

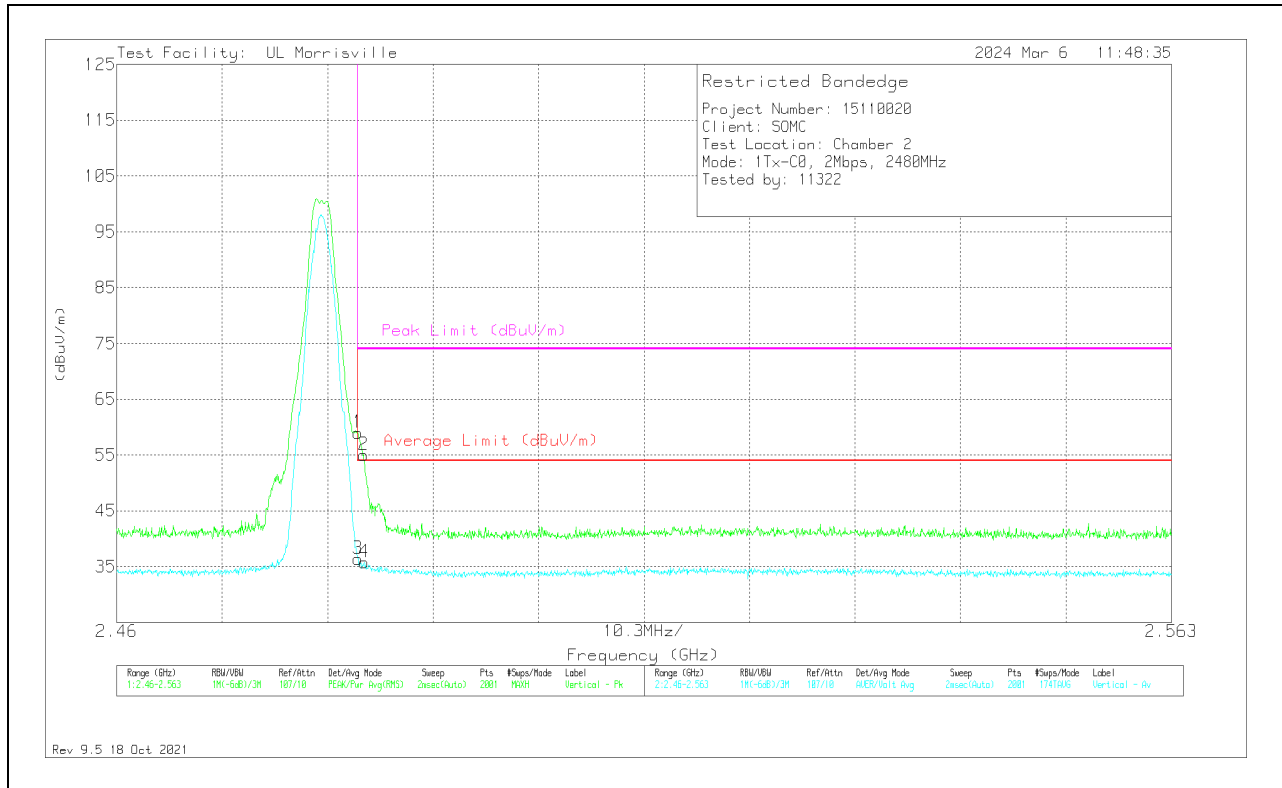
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



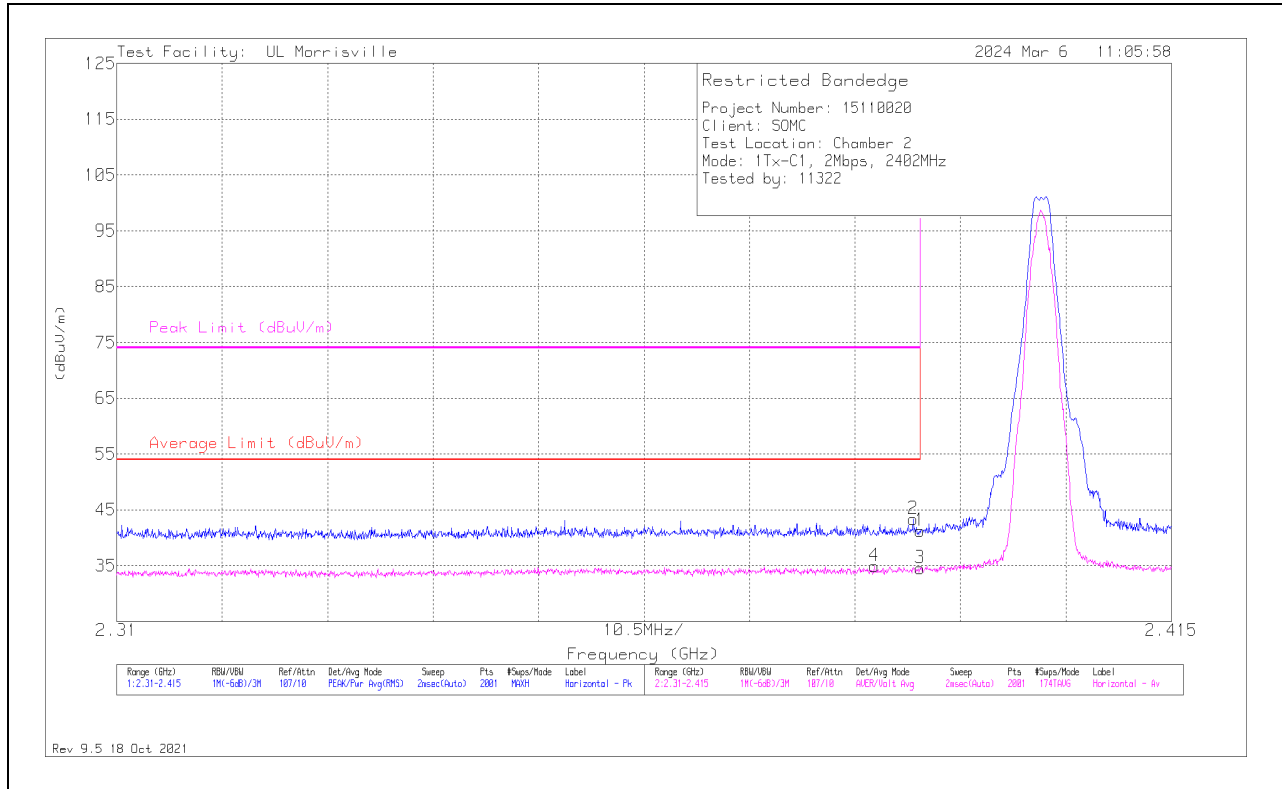
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	50.93	Pk	32.5	-24.5	0	58.93	-	-	74	-15.07	233	396	V
2	*** 2.4841	47.05	Pk	32.5	-24.5	0	55.05	-	-	74	-18.95	233	396	V
3	*** 2.48354	23.6	ADV	32.5	-24.5	4.83	36.43	54	-17.57	-	-	233	396	V
4	*** 2.48415	22.96	ADV	32.5	-24.5	4.83	35.79	54	-18.21	-	-	233	396	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 ADV - Linear Voltage Average

Chain 1

BANEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	33.18	Pk	32.3	-24.2	0	41.28	-	-	74	-32.72	165	101	H
2	*** 2.38928	35.28	Pk	32.3	-24.2	0	43.38	-	-	74	-30.62	165	101	H
3	*** 2.38996	21.61	ADV	32.3	-24.2	4.83	34.54	54	-19.46	-	-	165	101	H
4	*** 2.38544	22.01	ADV	32.2	-24.2	4.83	34.84	54	-19.16	-	-	165	101	H

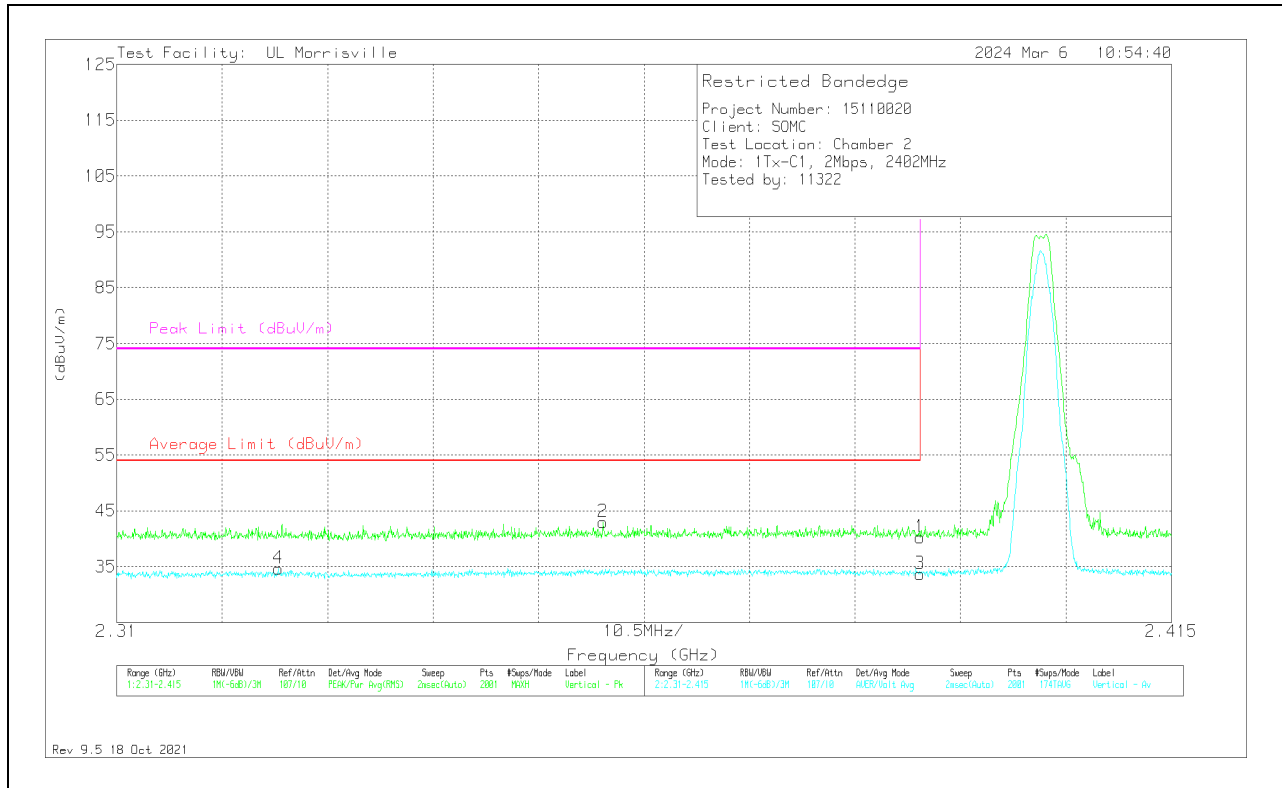
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	32.17	Pk	32.3	-24.2	0	40.27	-	-	74	-33.73	69	101	V
2	** 2.35841	34.92	Pk	32.1	-24	0	43.02	-	-	74	-30.98	69	101	V
3	*** 2.38996	20.71	ADV	32.3	-24.2	4.83	33.64	54	-20.34	-	-	69	101	V
4	*** 2.32607	21.59	ADV	32.1	-23.9	4.83	34.62	54	-19.38	-	-	69	101	V

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

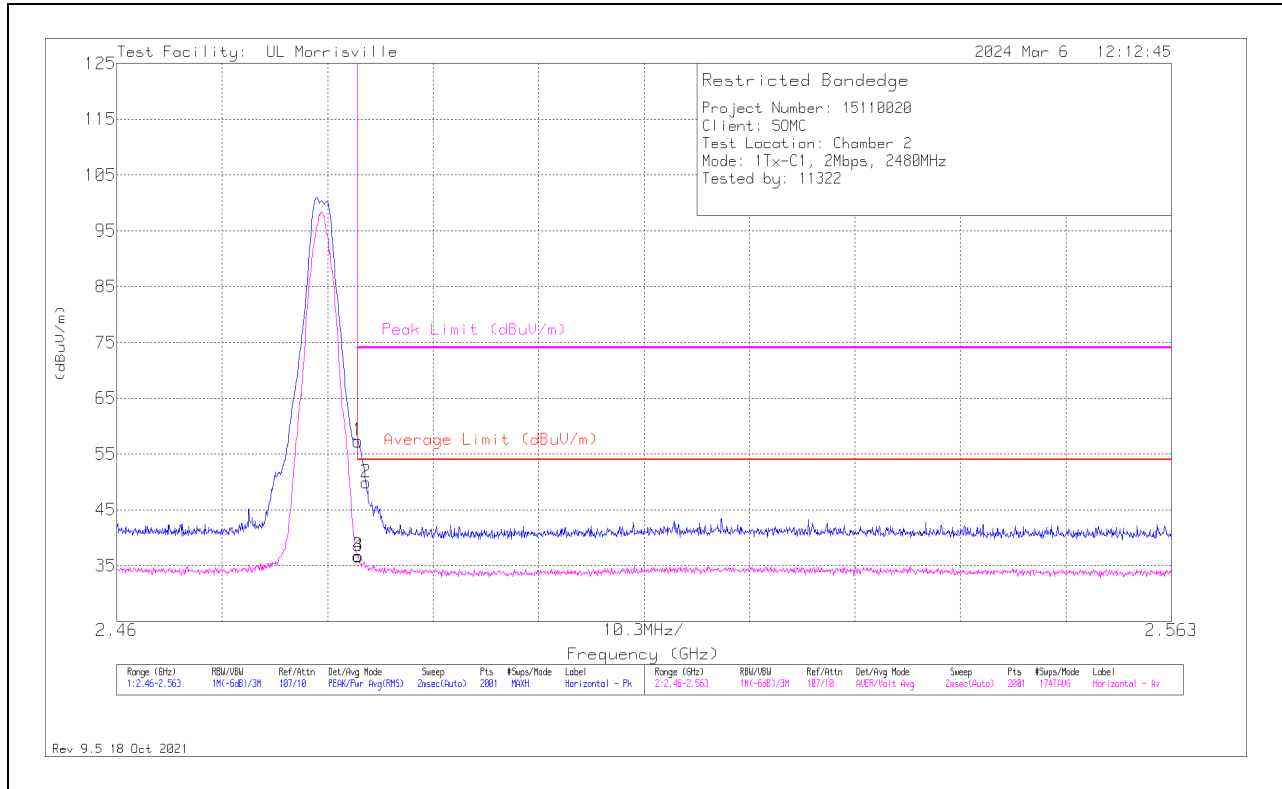
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	49.31	Pk	32.5	-24.5	0	57.31	-	-	74	-16.69	177	170	H
2	*** 2.48436	41.97	Pk	32.5	-24.5	0	49.97	-	-	74	-24.03	177	170	H
3	*** 2.48354	23.89	ADV	32.5	-24.5	4.83	36.72	54	-17.28	-	-	177	170	H
4	*** 2.48364	23.79	ADV	32.5	-24.5	4.83	36.62	54	-17.38	-	-	177	170	H

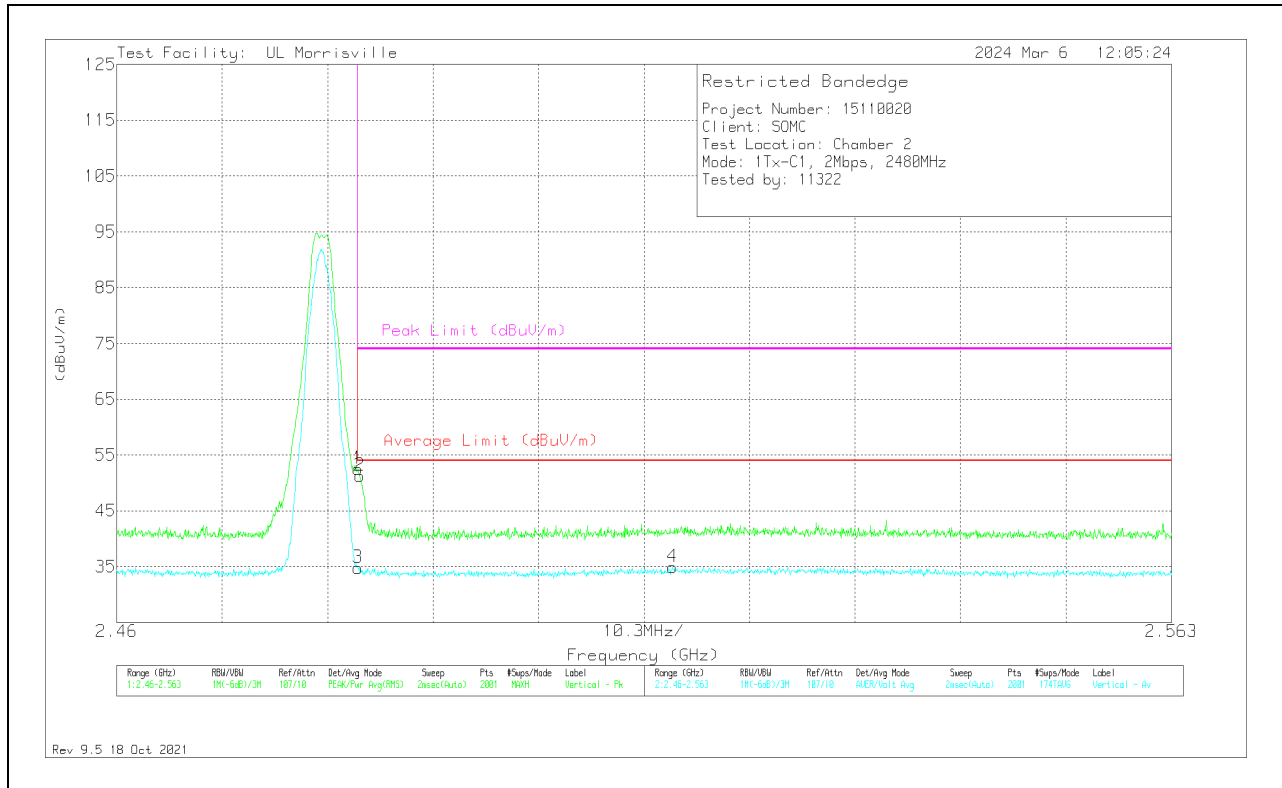
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	44.48	Pk	32.5	-24.5	0	52.48	-	-	74	-21.52	285	211	V
2	** 2.48374	43.34	Pk	32.5	-24.5	0	51.34	-	-	74	-22.66	285	211	V
3	*** 2.48354	21.98	ADV	32.5	-24.5	4.83	34.81	54	-19.19	-	-	285	211	V
4	** 2.51428	22.18	ADV	32.5	-24.6	4.83	34.91	54	-19.09	-	-	285	211	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

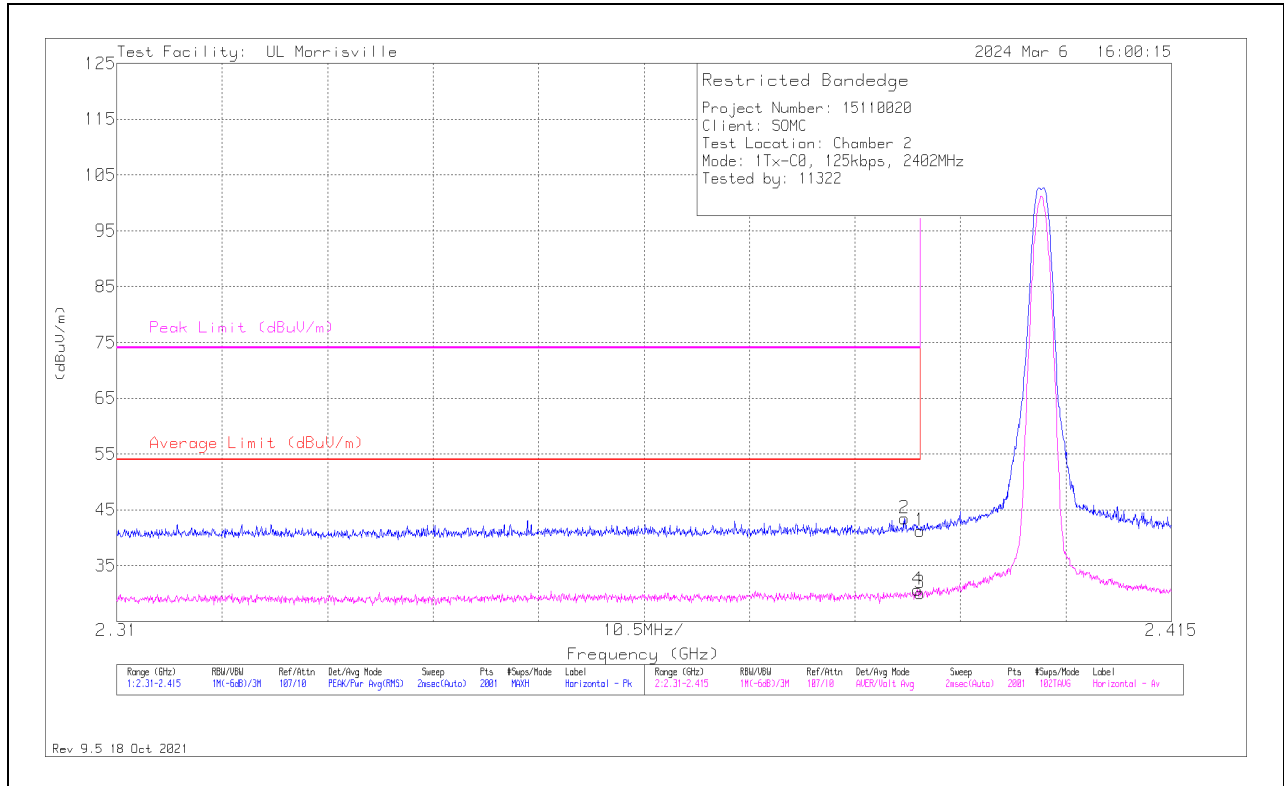
ADV - Linear Voltage Average

10.2.2. BLE (125Kbps)

Chain 0

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	33.08	Pk	32.3	-24.2	0	41.18	-	-	74	-32.82	171	148	H
2	*** 2.38844	35.33	Pk	32.3	-24.2	0	43.43	-	-	74	-30.57	171	148	H
3	*** 2.38996	21.75	ADV	32.3	-24.2	.23	30.08	54	-23.92	-	-	171	148	H
4	*** 2.38975	22.33	ADV	32.3	-24.2	.23	30.66	54	-23.34	-	-	171	148	H

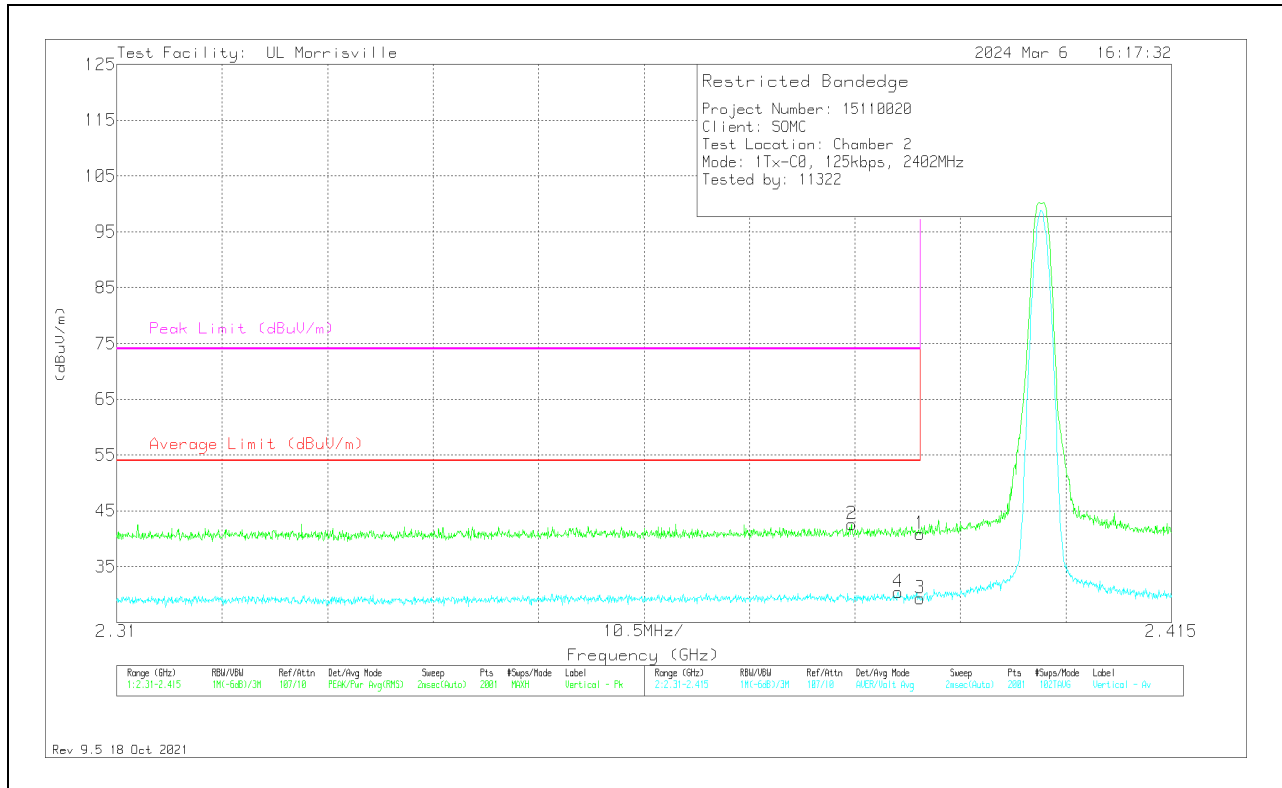
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	32.73	Pk	32.3	-24.2	0	40.83	-	-	74	-33.17	244	367	V
2	*** 2.38319	34.64	Pk	32.2	-24.2	0	42.64	-	-	74	-31.36	244	367	V
3	** 2.38996	20.98	ADV	32.3	-24.2	.23	29.31	54	-24.69	-	-	244	367	V
4	*** 2.38781	22.08	ADV	32.3	-24.2	.23	30.41	54	-23.59	-	-	244	367	V

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

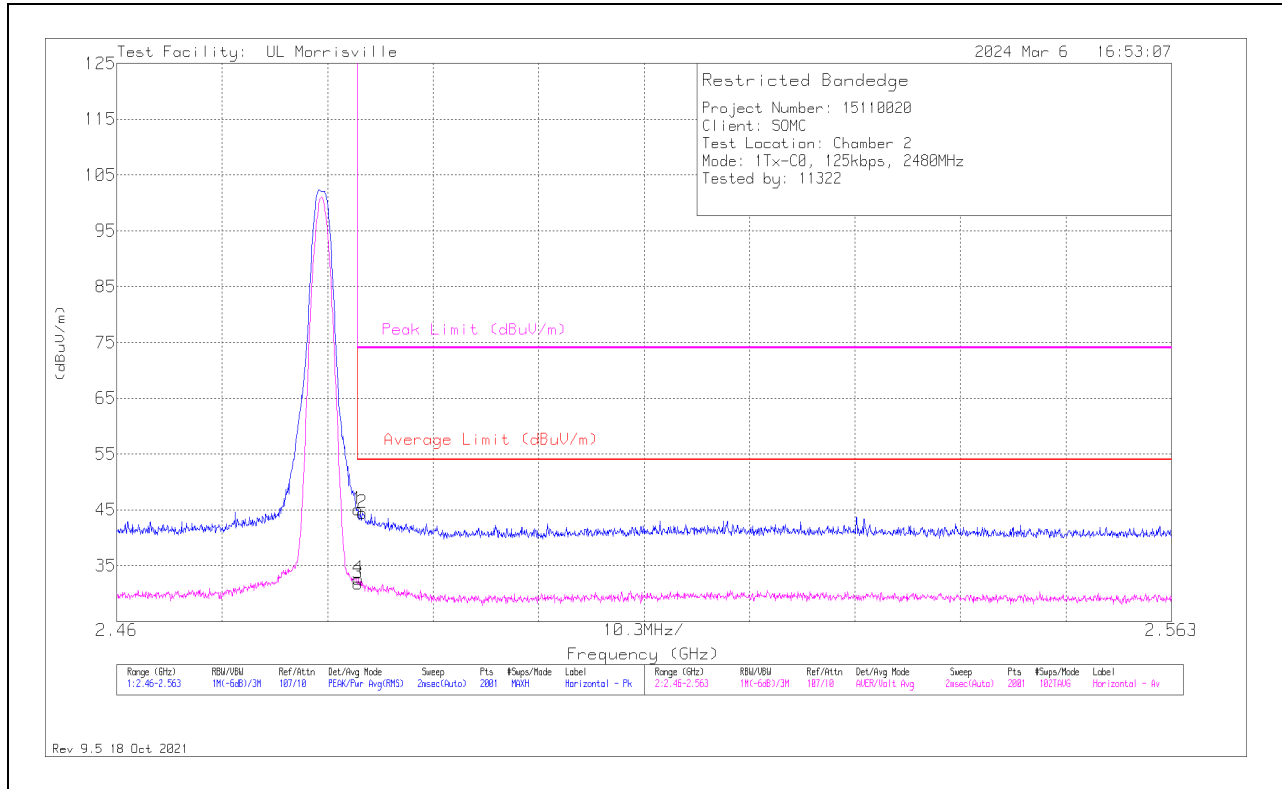
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	37.02	Pk	32.5	-24.5	0	45.02	-	-	74	-28.98	173	340	H
2	*** 2.484	36.42	Pk	32.5	-24.5	0	44.42	-	-	74	-29.58	173	340	H
3	*** 2.48354	23.62	ADV	32.5	-24.5	.23	31.85	54	-22.15	-	-	173	340	H
4	*** 2.48359	24.43	ADV	32.5	-24.5	.23	32.66	54	-21.34	-	-	173	340	H

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

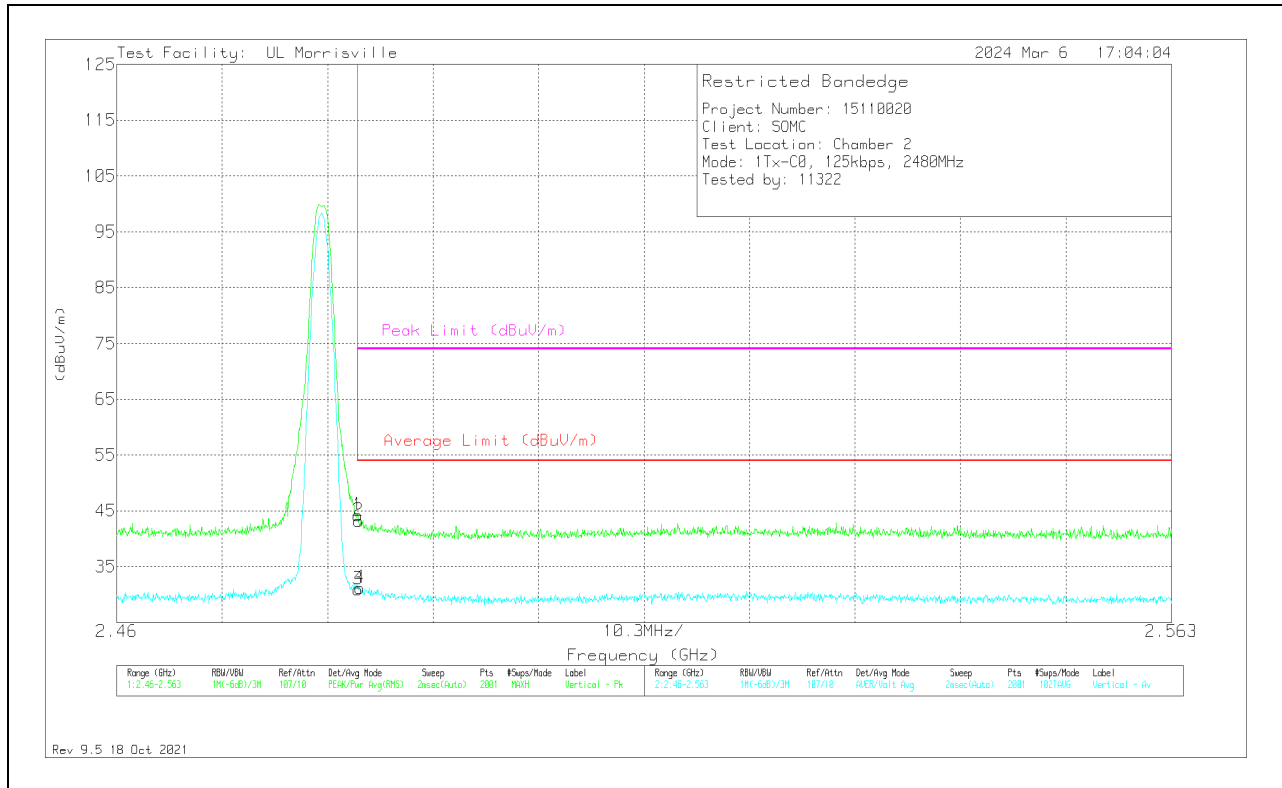
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

r

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	36.23	Pk	32.5	-24.5	0	44.23	-	-	74	-29.77	217	345	V
2	** 2.48364	35.26	Pk	32.5	-24.5	0	43.26	-	-	74	-30.74	217	345	V
3	** 2.48354	22.7	ADV	32.5	-24.5	.23	30.93	54	-23.07	-	-	217	345	V
4	** 2.48374	22.99	ADV	32.5	-24.5	.23	31.22	54	-22.78	-	-	217	345	V

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

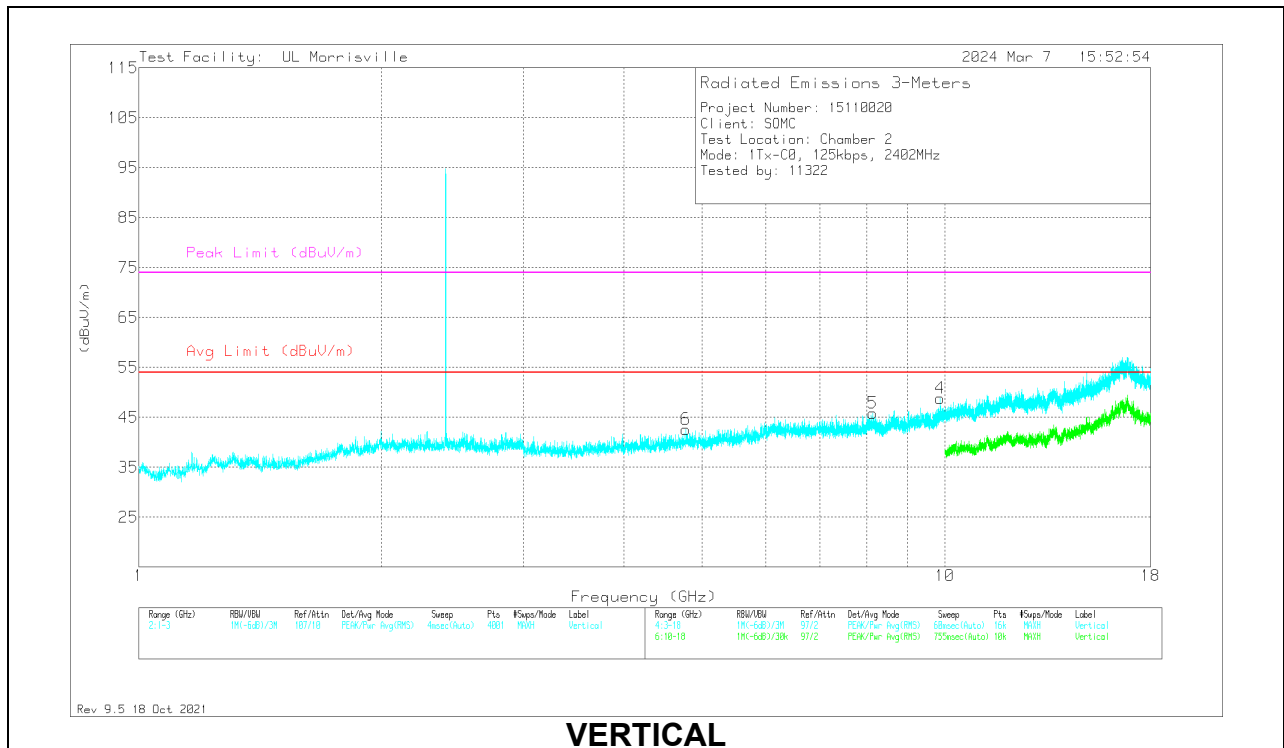
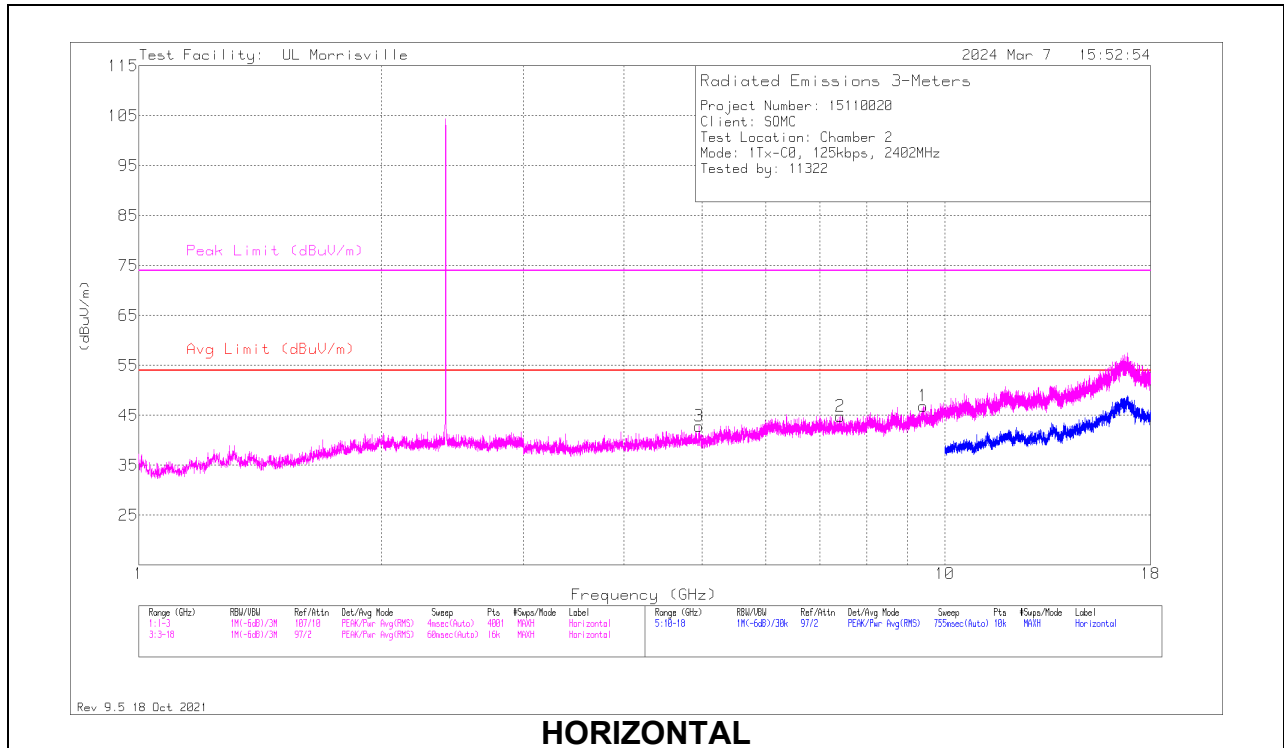
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



RADIATED EMISSIONS

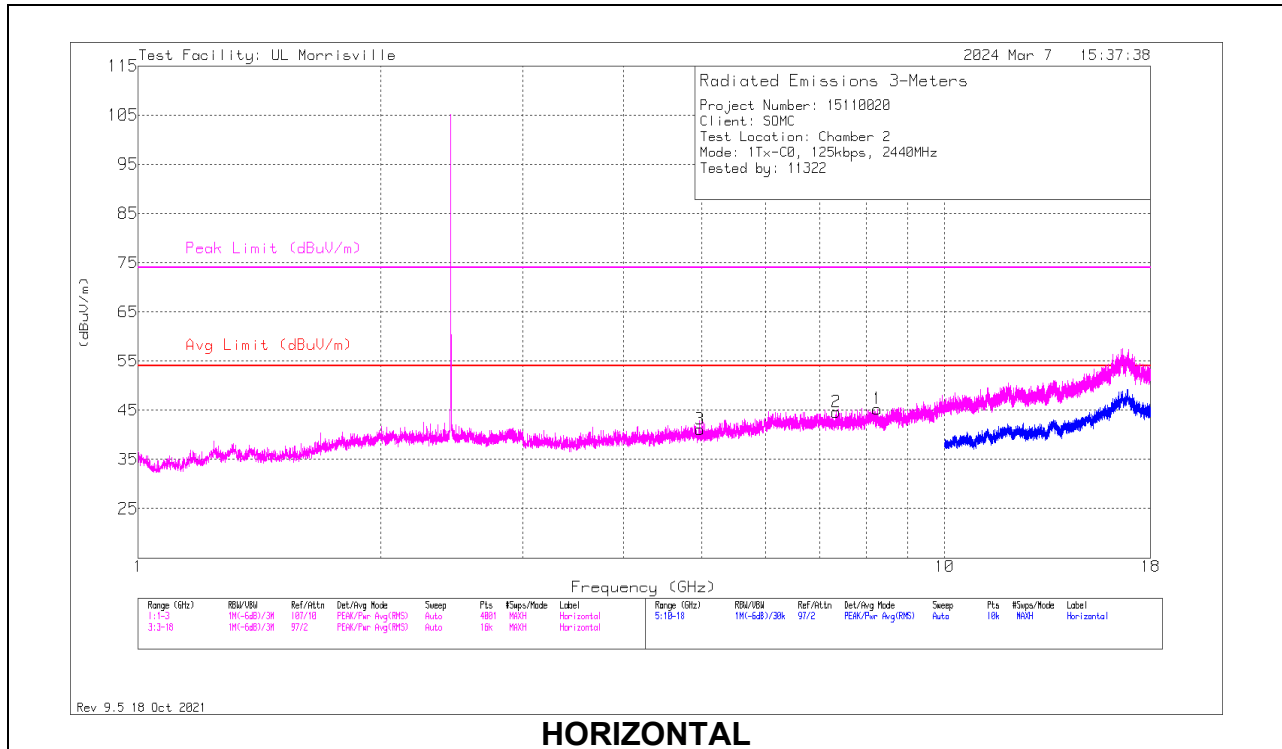
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 9.40688	35.91	Pk	36.2	-25.2	46.91	54	-7.09	74	-27.09	0-360	101	H
2	* ** 7.41375	35.94	Pk	35.6	-26.8	44.74	54	-9.26	74	-29.26	0-360	101	H
3	* ** 4.95938	39.15	Pk	34	-30.3	42.85	54	-11.15	74	-31.15	0-360	101	H
5	* ** 8.14688	36.27	Pk	35.8	-26.2	45.87	54	-8.13	74	-28.13	0-360	101	V
6	* ** 4.77188	39.06	Pk	34.2	-30.7	42.56	54	-11.44	74	-31.44	0-360	199	V
4	9.87188	36.54	Pk	37	-24.7	48.84	-	-	-	-	0-360	199	V

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

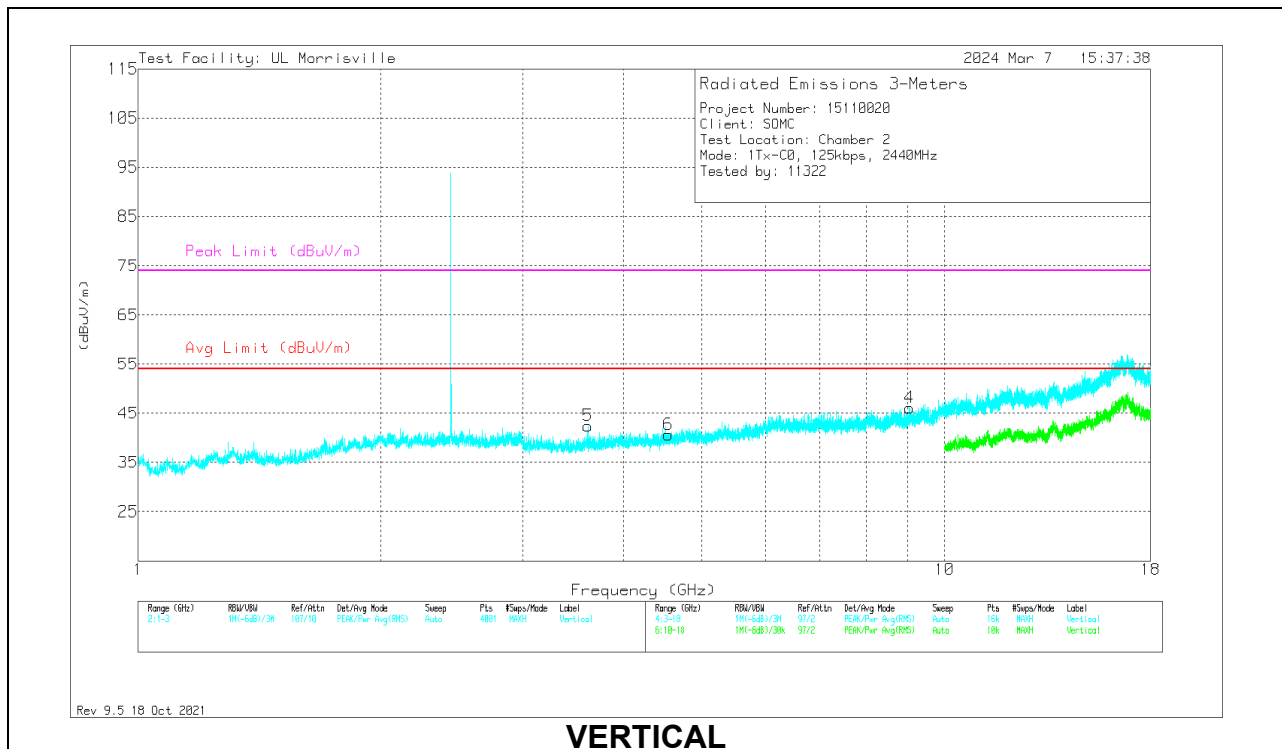
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

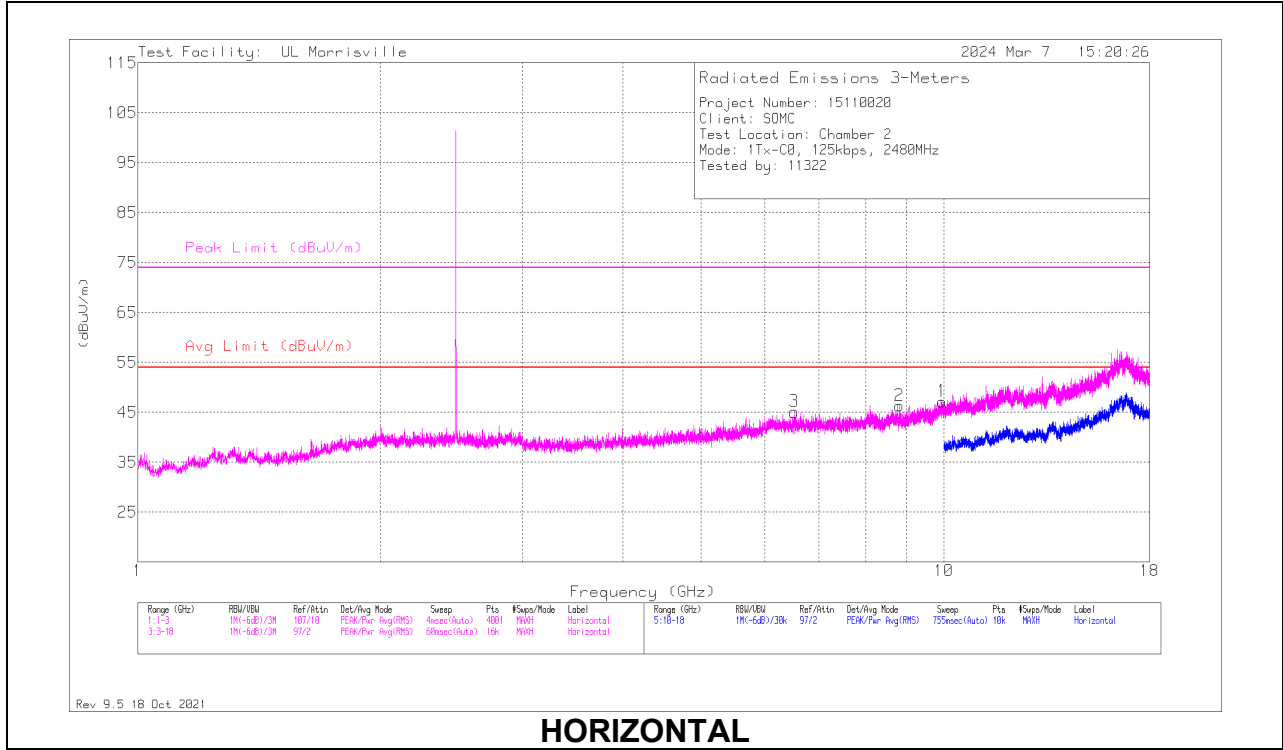
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 8.25094	36.16	Pk	35.8	-26.7	45.26	54	-8.74	74	-28.74	0-360	199	H
2	* ** 7.33406	35.44	Pk	35.6	-26.4	44.64	54	-9.36	74	-29.36	0-360	101	H
3	* ** 4.97344	37.4	Pk	34	-30.3	41.1	54	-12.9	74	-32.9	0-360	101	H
4	* ** 9.04875	36.08	Pk	35.9	-25.9	46.08	54	-7.92	74	-27.92	0-360	101	V
5	* ** 3.61031	40.92	Pk	33	-31.5	42.42	54	-11.58	74	-31.58	0-360	101	V
6	* ** 4.54031	37.47	Pk	34	-30.8	40.67	54	-13.33	74	-33.33	0-360	101	V

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

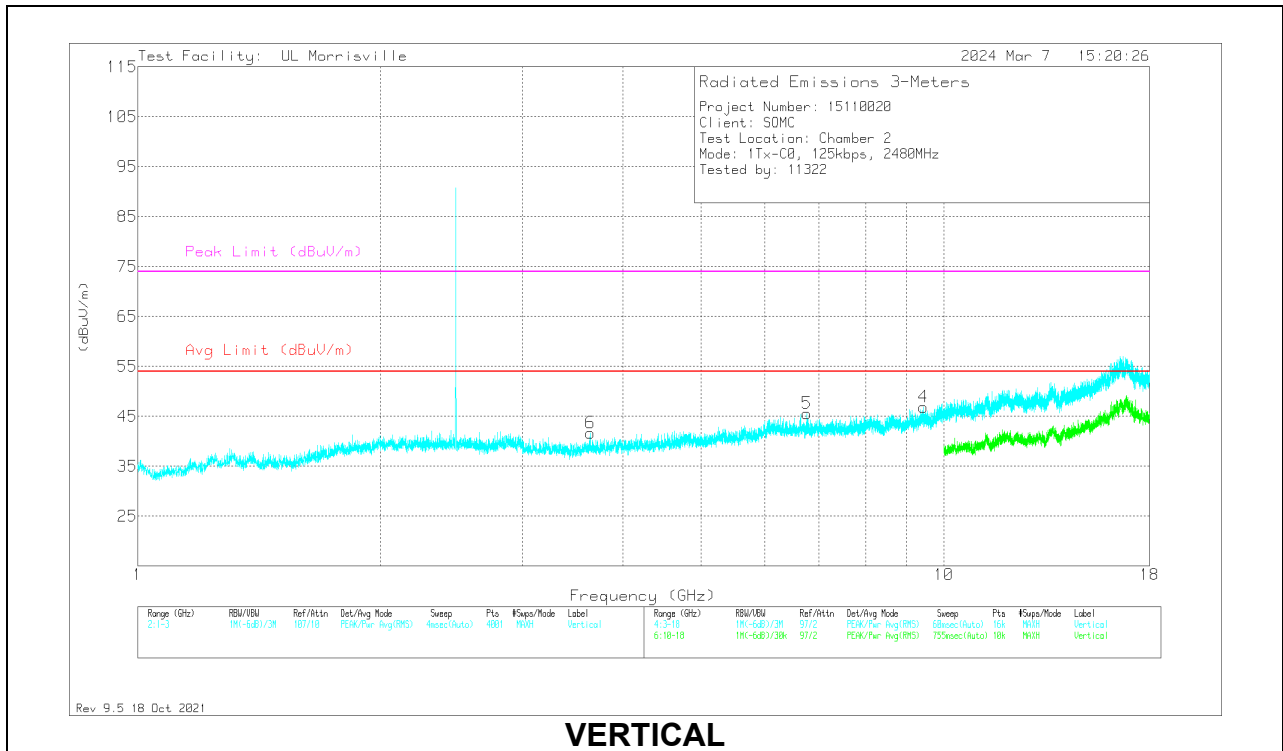
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* ** 9.42938	36.21	Pk	36.3	-25.7	0	46.81	54	-7.19	74	-27.19	0-360	199	V
6	* ** 3.64125	40.12	Pk	33.1	-31.6	0	41.62	54	-12.38	74	-32.38	0-360	199	V
3	6.525	37.92	Pk	35.6	-28.4	0	45.12	54	-8.88	74	-28.88	0-360	199	H
5	6.765	37.72	Pk	35.7	-27.9	0	45.52	54	-8.48	74	-28.48	0-360	101	V
2	8.81438	36.3	Pk	35.9	-25.9	0	46.3	54	-7.7	74	-27.7	0-360	199	H
1	9.95813	35.19	Pk	37.2	-25.2	0	47.19	54	-6.81	74	-26.81	0-360	199	H

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

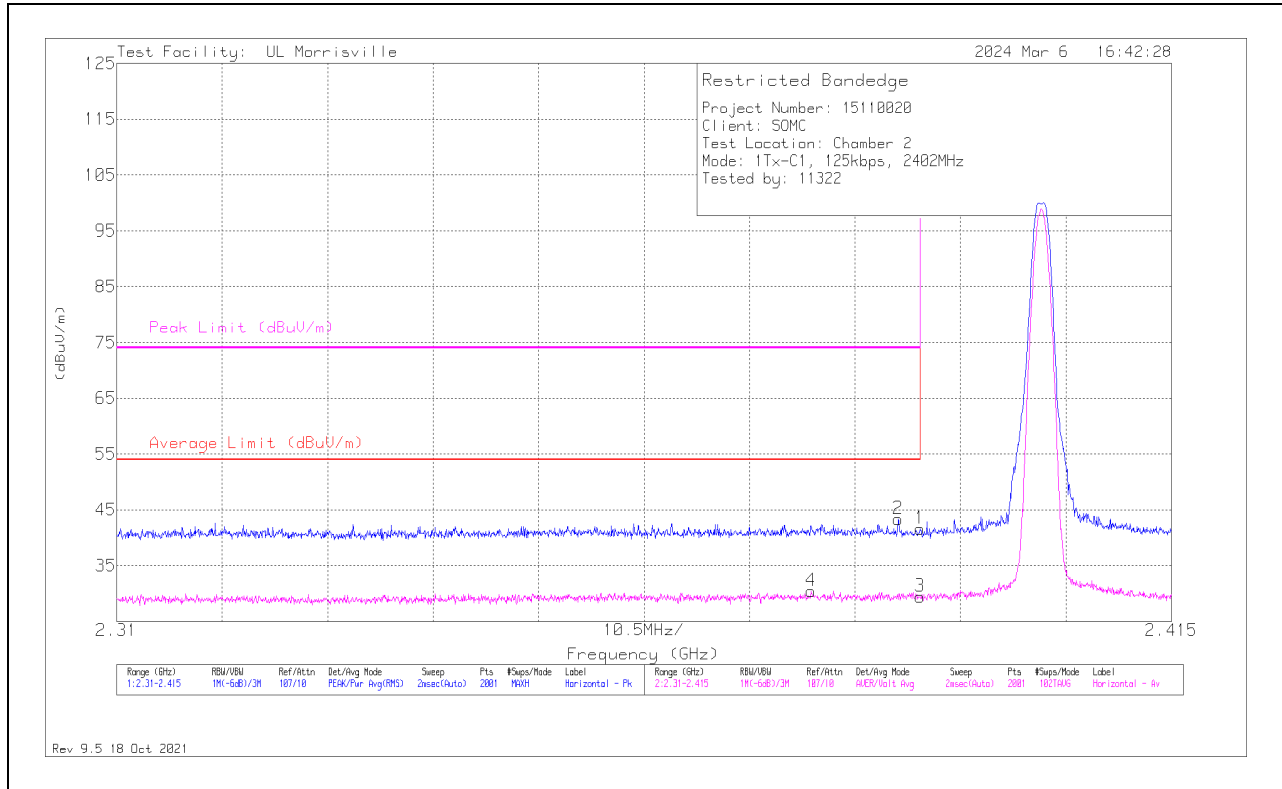
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Chain 1

BANEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	33.52	Pk	32.3	-24.2	0	41.62	-	-	74	-32.38	190	100	H
2	*** 2.38781	35.23	Pk	32.3	-24.2	0	43.33	-	-	74	-30.67	190	100	H
3	*** 2.38996	21.1	ADV	32.3	-24.2	.23	29.43	54	-24.57	-	-	190	100	H
4	*** 2.37914	22.1	ADV	32.2	-24.1	.23	30.43	54	-23.57	-	-	190	100	H

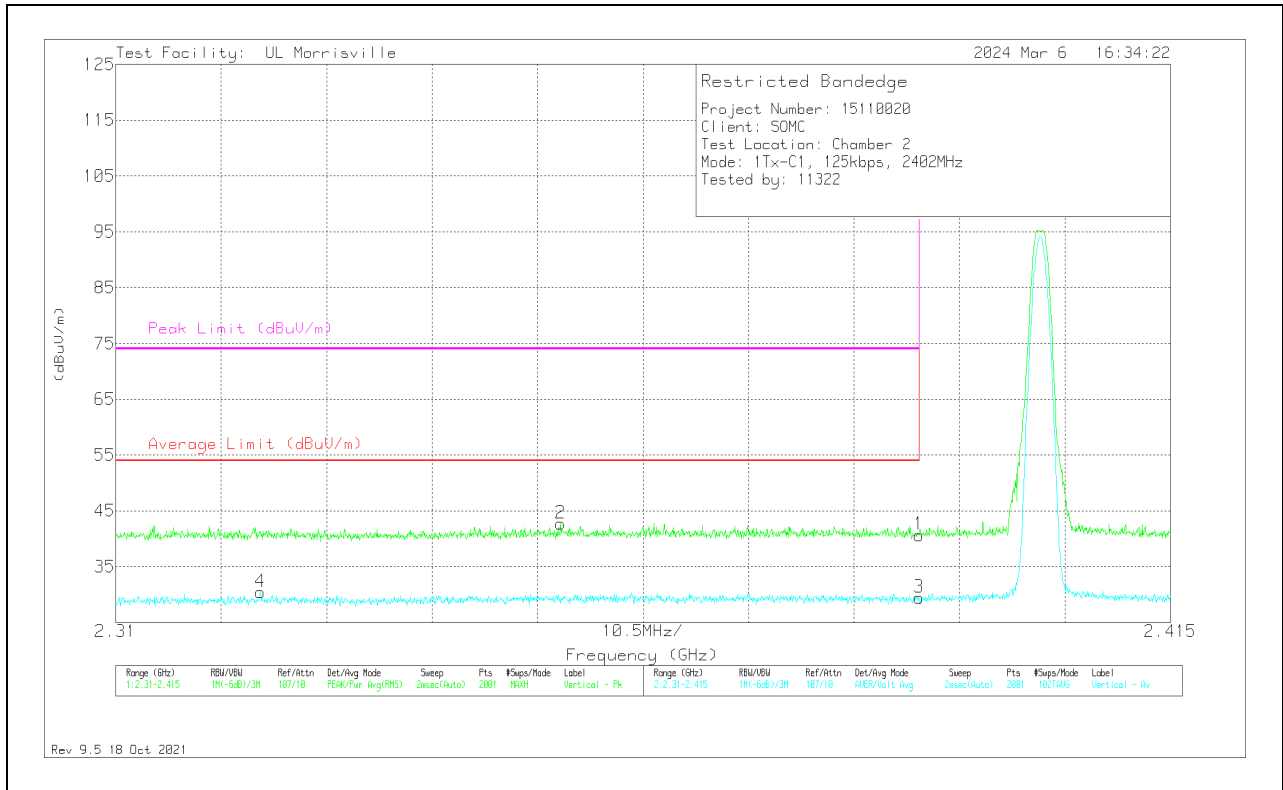
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	32.57	Pk	32.3	-24.2	0	40.67	-	-	74	-33.33	292	365	V
2	*** 2.35431	34.56	Pk	32.1	-23.9	0	42.76	-	-	74	-31.24	292	365	V
3	*** 2.38996	21.14	ADV	32.3	-24.2	.23	29.47	54	-24.53	-	-	292	365	V
4	*** 2.32439	21.86	ADV	32.1	-23.8	.23	30.39	54	-23.61	-	-	292	365	V

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

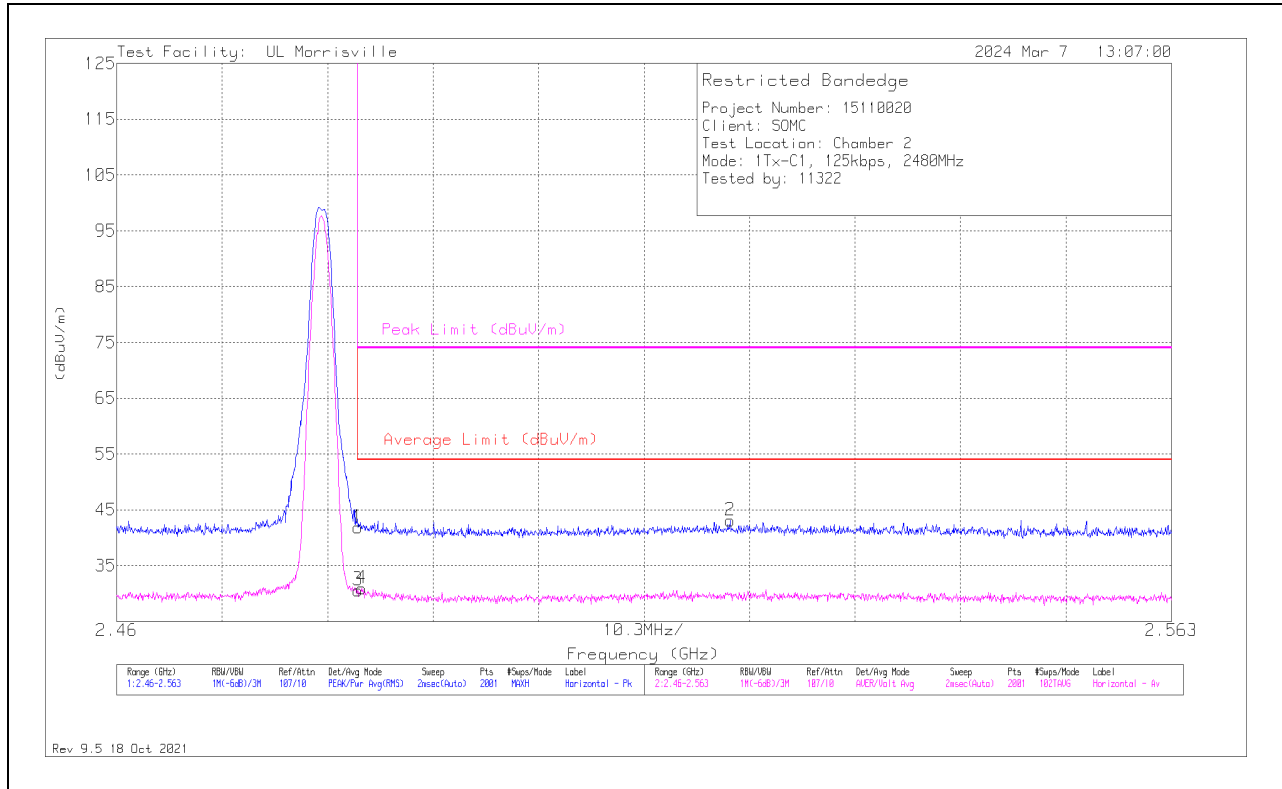
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.48354	33.82	Pk	32.5	-24.5	0	41.82	-	-	74	-32.18	190	166	H
2	** 2.51989	35.34	Pk	32.5	-24.7	0	43.14	-	-	74	-30.86	190	166	H
3	* ** 2.48354	22.39	ADV	32.5	-24.5	.23	30.62	54	-23.38	-	-	190	166	H
4	* ** 2.4839	22.71	ADV	32.5	-24.5	.23	30.94	54	-23.06	-	-	190	166	H

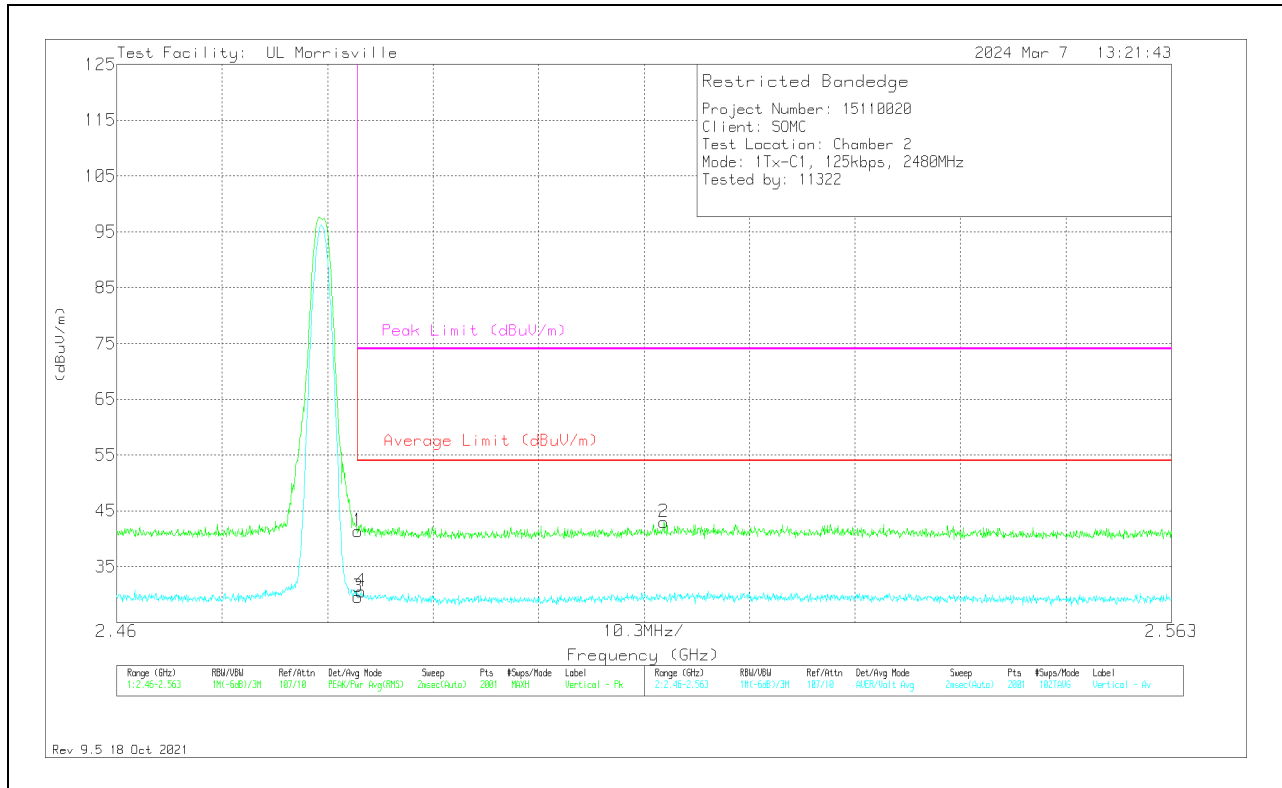
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	33.32	Pk	32.5	-24.5	0	41.32	-	-	74	-32.68	228	300	V
2	** 2.51341	35.07	Pk	32.5	-24.6	0	42.97	-	-	74	-31.03	228	300	V
3	*** 2.48354	21.36	ADV	32.5	-24.5	.23	29.59	54	-24.41	-	-	228	300	V
4	*** 2.48384	22.36	ADV	32.5	-24.5	.23	30.59	54	-23.41	-	-	228	300	V

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

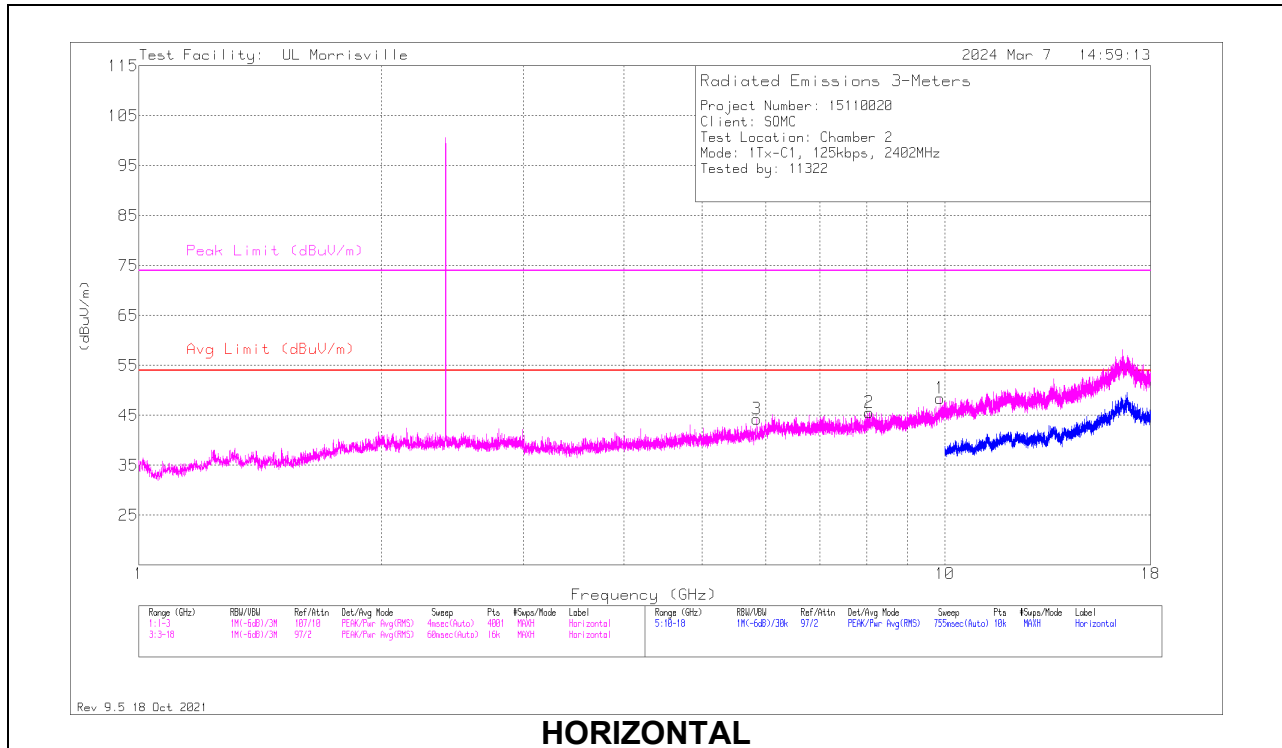
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

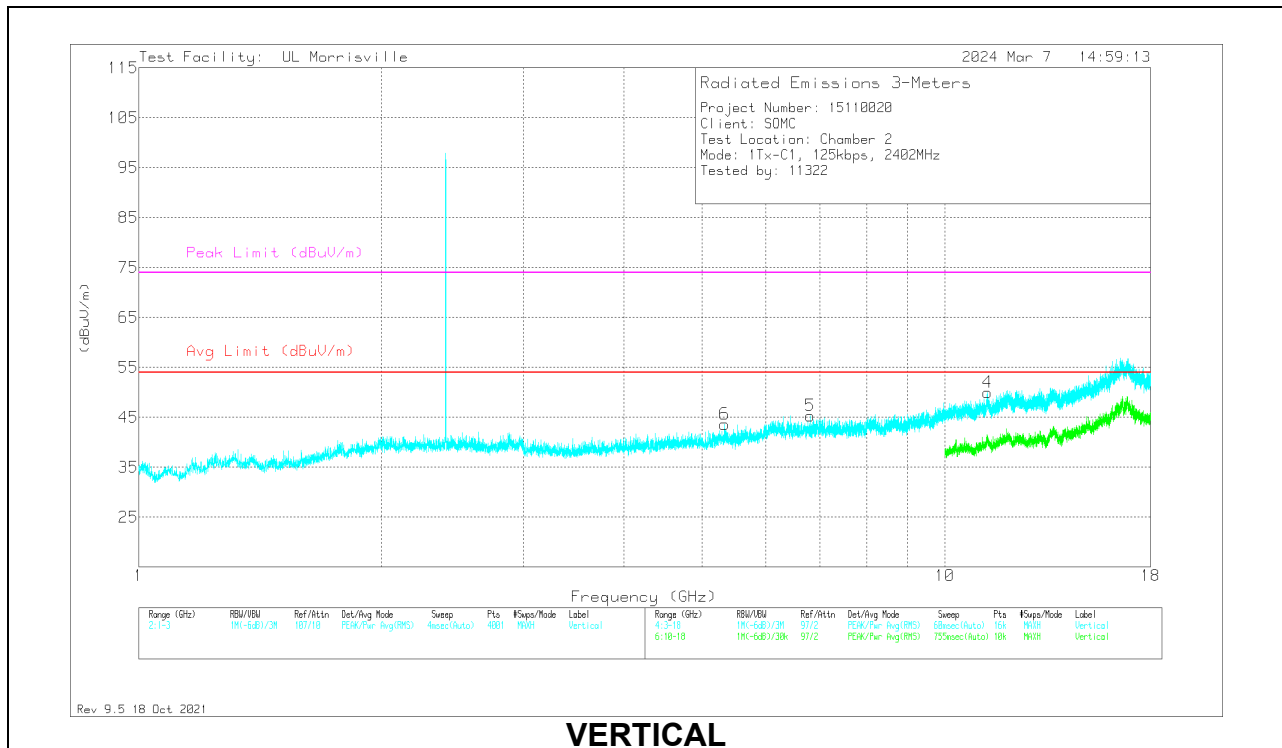
ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* ** 8.05594	36.27	Pk	35.8	-26.5	0	45.57	54	-8.43	74	-28.43	0-360	200	H
4	* ** 11.29971	35.2	PK2	37.8	-22.1	0	50.9	-	-	74	-23.1	292	382	V
	* ** 11.30219	22.7	ADV	37.8	-22.1	.23	38.63	54	-15.37	-	-	292	382	V
6	5.33063	37.47	Pk	34.4	-28.3	0	43.57	54	-10.43	74	-30.43	0-360	200	V
3	5.84813	39.06	Pk	34.9	-29.7	0	44.26	54	-9.74	74	-29.74	0-360	200	H
5	6.81	37.87	Pk	35.6	-28.2	0	45.27	54	-8.73	74	-28.73	0-360	200	V
1	9.8625	36.28	Pk	37	-24.9	0	48.38	-	-	-	-	0-360	101	H

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

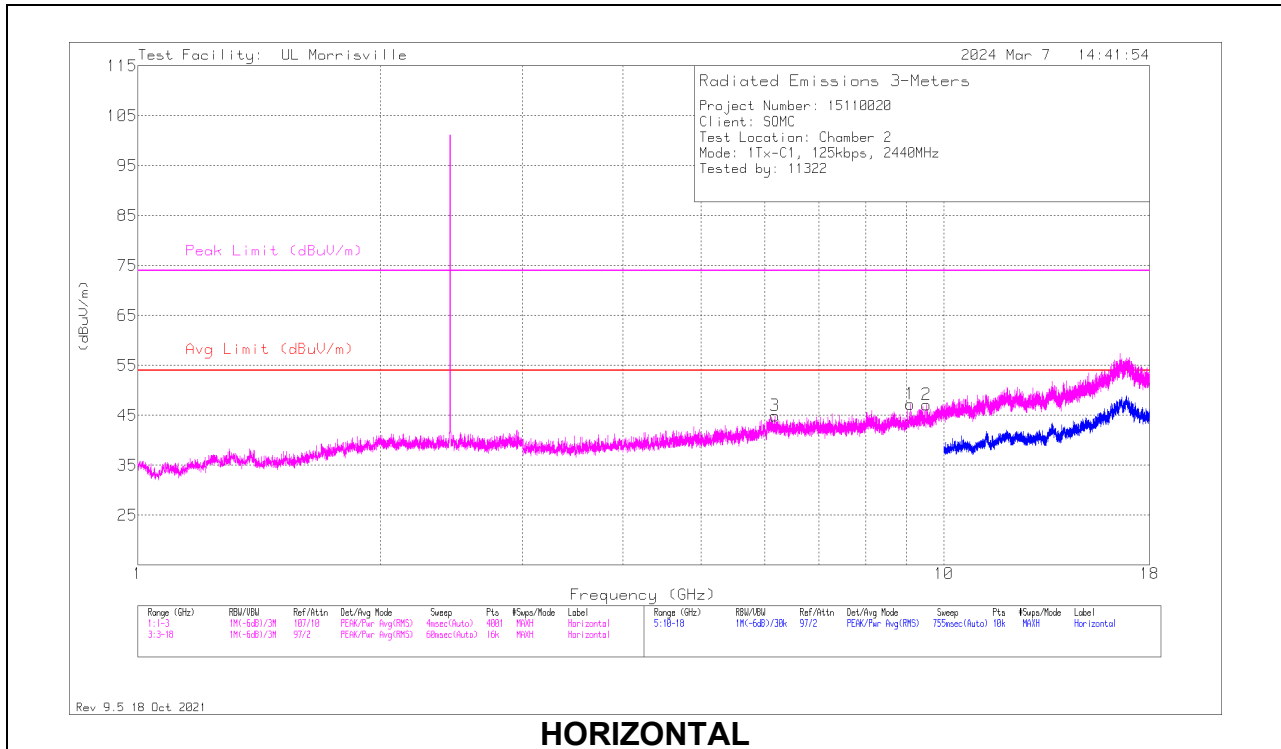
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

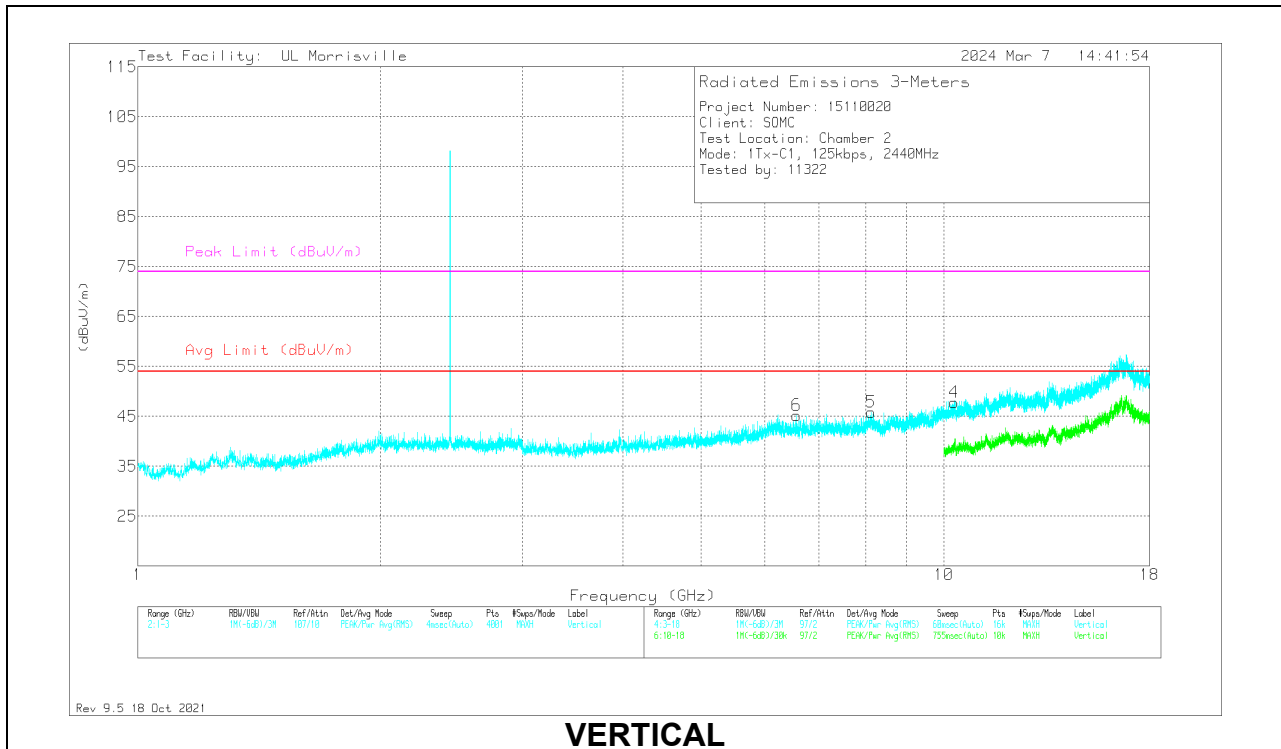
PK2 - Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

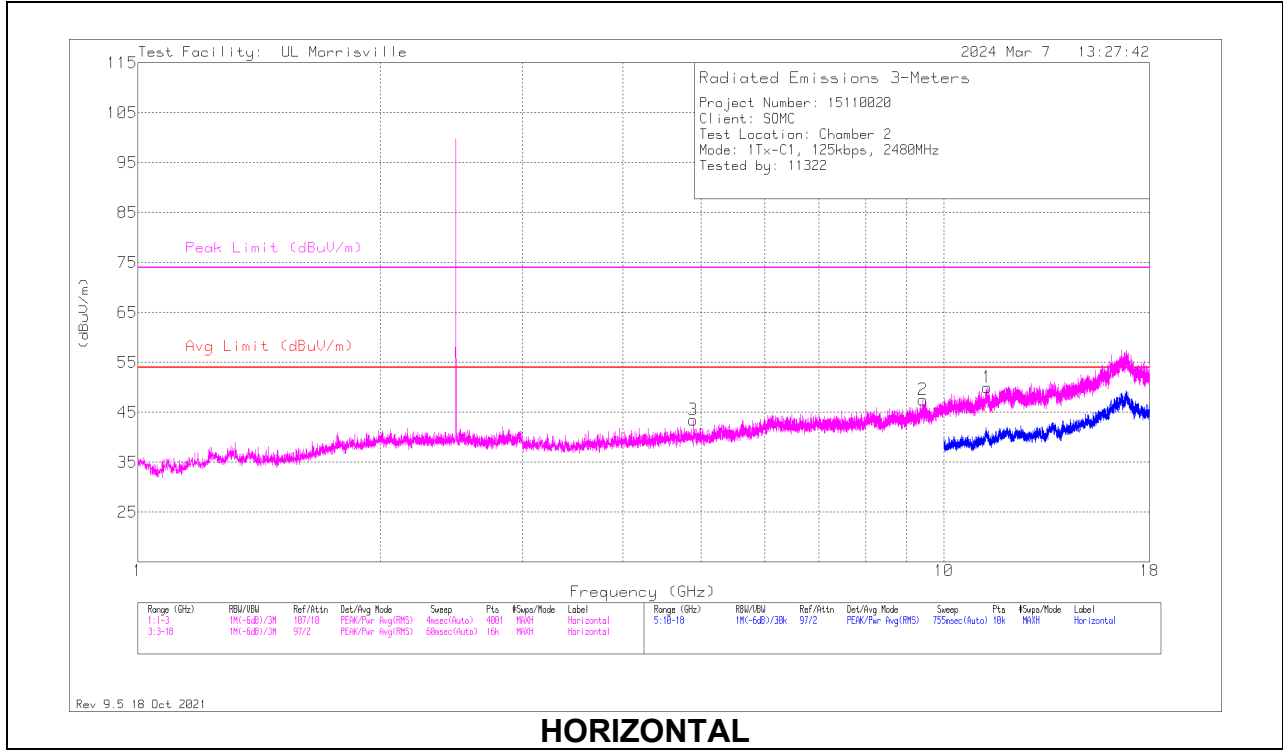
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 9.08156	36.51	Pk	35.9	-25.2	47.21	54	-6.79	74	-26.79	0-360	101	H
5	* ** 8.12344	36.56	Pk	35.8	-26.5	45.86	54	-8.14	74	-28.14	0-360	199	V
3	6.17719	38.28	Pk	35.6	-28.9	44.98	54	-9.02	74	-29.02	0-360	101	H
6	6.56344	37.86	Pk	35.6	-28.3	45.16	54	-8.84	74	-28.84	0-360	101	V
2	9.51844	36.03	Pk	36.4	-25.3	47.13	54	-6.87	74	-26.87	0-360	199	H
4	10.305	33.77	Pk	37.6	-23.6	47.77	54	-6.23	74	-26.23	0-360	101	V

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

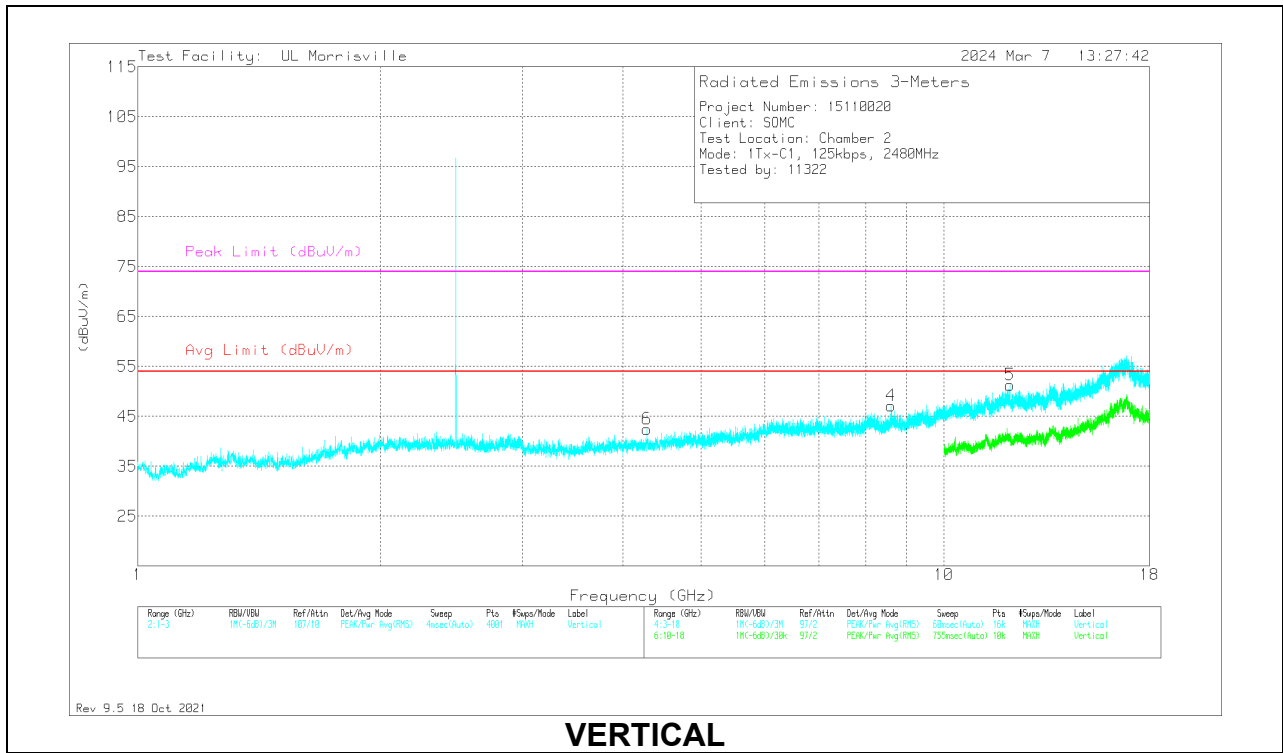
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 11.31313	34.99	PK2	37.8	-22.3	0	50.49	-	-	74	-23.51	105	262	H
	* ** 11.31375	22.4	ADV	37.8	-22.3	.23	38.13	54	-15.87	-	-	105	262	H
2	* ** 9.41906	36.68	Pk	36.2	-25.4	0	47.48	54	-6.52	74	-26.52	0-360	200	H
3	* ** 4.88813	39.46	Pk	34.1	-30.1	0	43.46	54	-10.54	74	-30.54	0-360	200	H
5	* ** 12.08371	34.32	PK2	39	-22.8	0	50.52	-	-	74	-23.48	132	231	V
	* ** 12.08454	22.27	ADV	39	-22.9	.23	38.60	54	-15.40	-	-	132	231	V
6	* ** 4.28438	39.79	Pk	33.5	-30.8	0	42.49	54	-11.51	74	-31.51	0-360	200	V
4	8.59594	37.45	Pk	35.8	-26.1	0	47.15	54	-6.85	74	-26.85	0-360	101	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

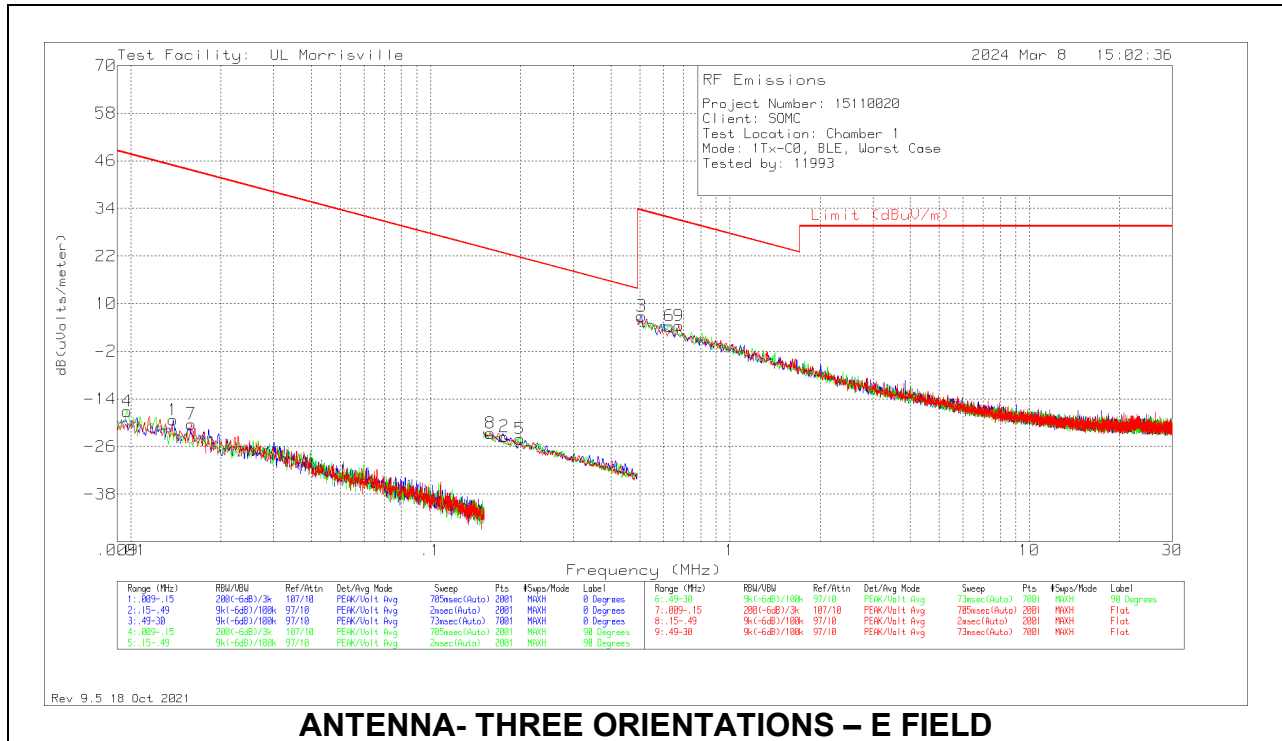
PK2 - Maximum Peak

ADV - Linear Voltage Average

10.3. WORST CASE BELOW 30MHZ

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION CHAIN 0)

Note: All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (test distance / specification distance).

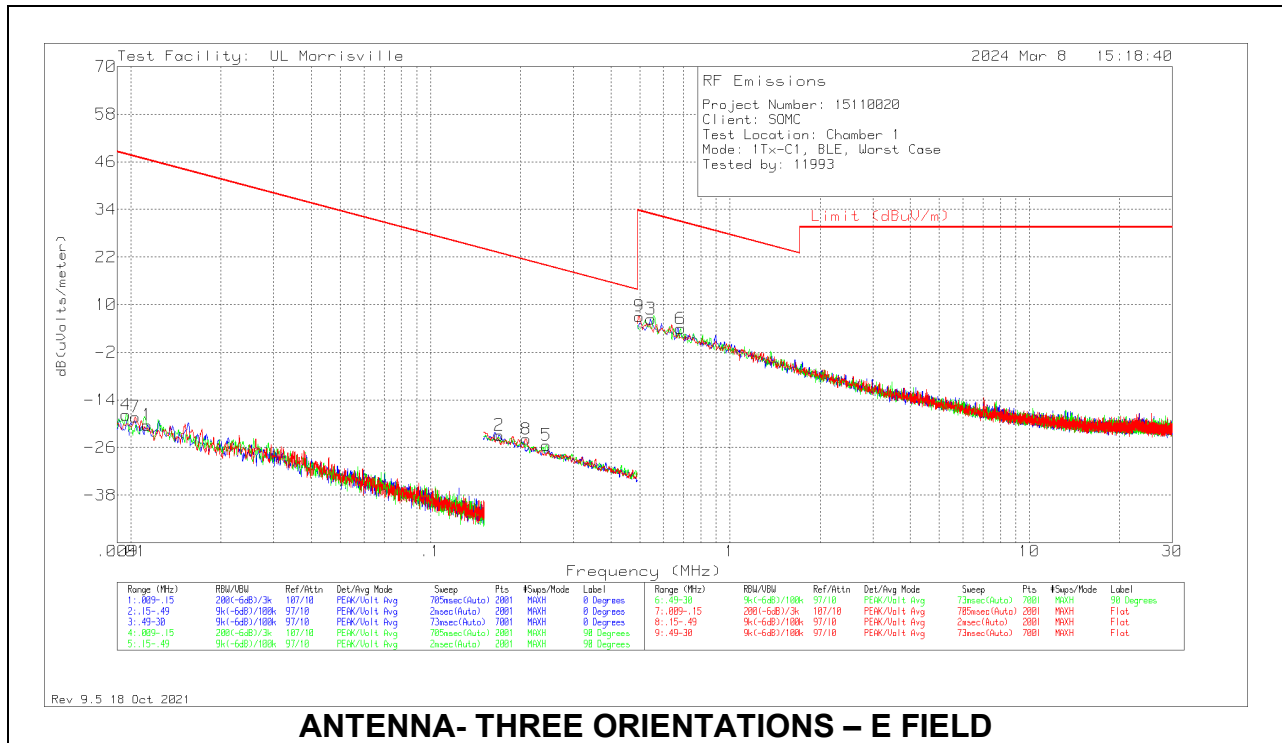


ANTENNA- THREE ORIENTATIONS – E FIELD

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dBuV/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	QP/AV Limit (dBuV/m)	PK Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
4	.00971	44.17	Pk	18.6	.1	-80	-17.13	47.86	67.86	-64.99	0-360	90 degs
1	.01383	43.87	Pk	16.7	.1	-80	-19.33	44.79	64.79	-64.12	0-360	0 degs
7	.01589	43.74	Pk	15.8	.1	-80	-20.36	43.58	63.58	-63.94	0-360	Flat
8	.1585	46.12	Pk	11.1	.1	-80	-22.68	23.6	43.6	-46.28	0-360	Flat
2	.17635	45.3	Pk	11.1	.1	-80	-23.5	22.68	42.68	-46.18	0-360	0 degs
5	.19913	44.7	Pk	11.1	.1	-80	-24.1	21.62	41.62	-45.72	0-360	90 degs
3	.50686	35.64	Pk	11.1	.1	-40	6.84	33.51	-	-26.67	0-360	0 degs
6	.62913	33.06	Pk	11.2	.1	-40	4.36	31.63	-	-27.27	0-360	90 degs
9	.6755	33.12	Pk	11.2	.1	-40	4.42	31.01	-	-26.59	0-360	Flat

Pk - Peak detector

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION CHAIN 1)



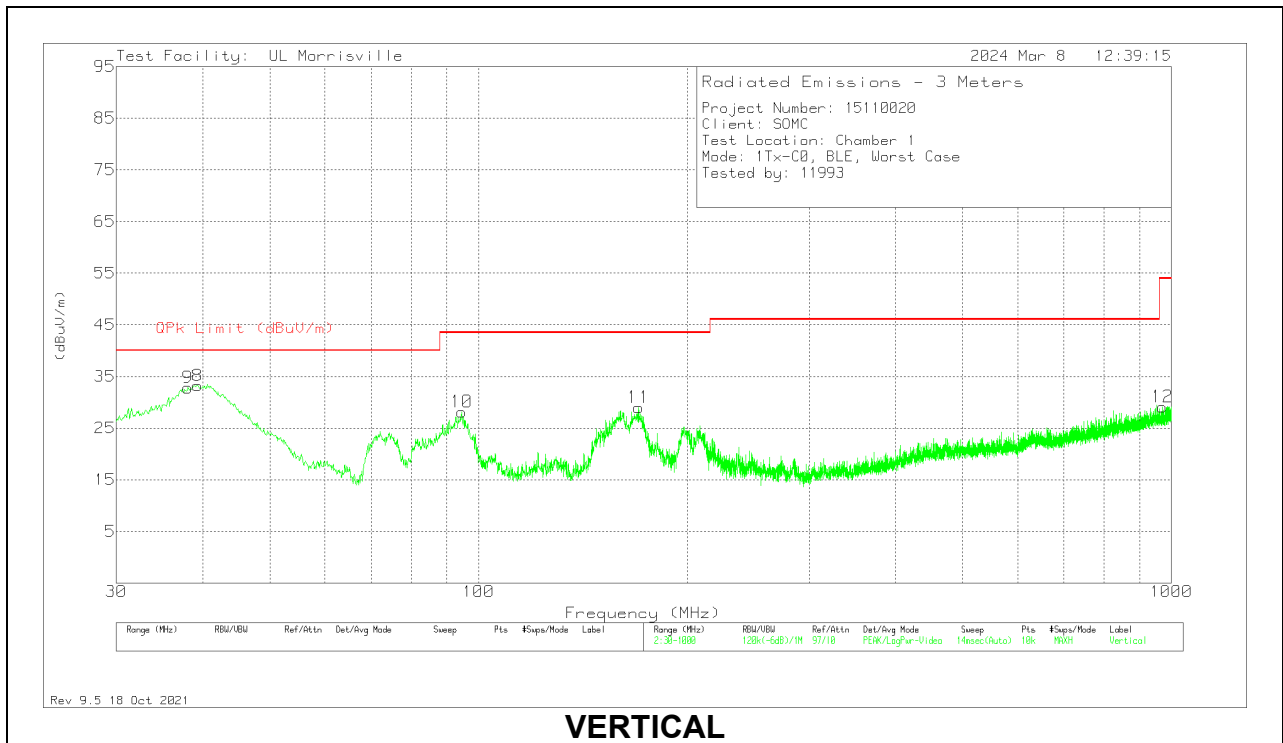
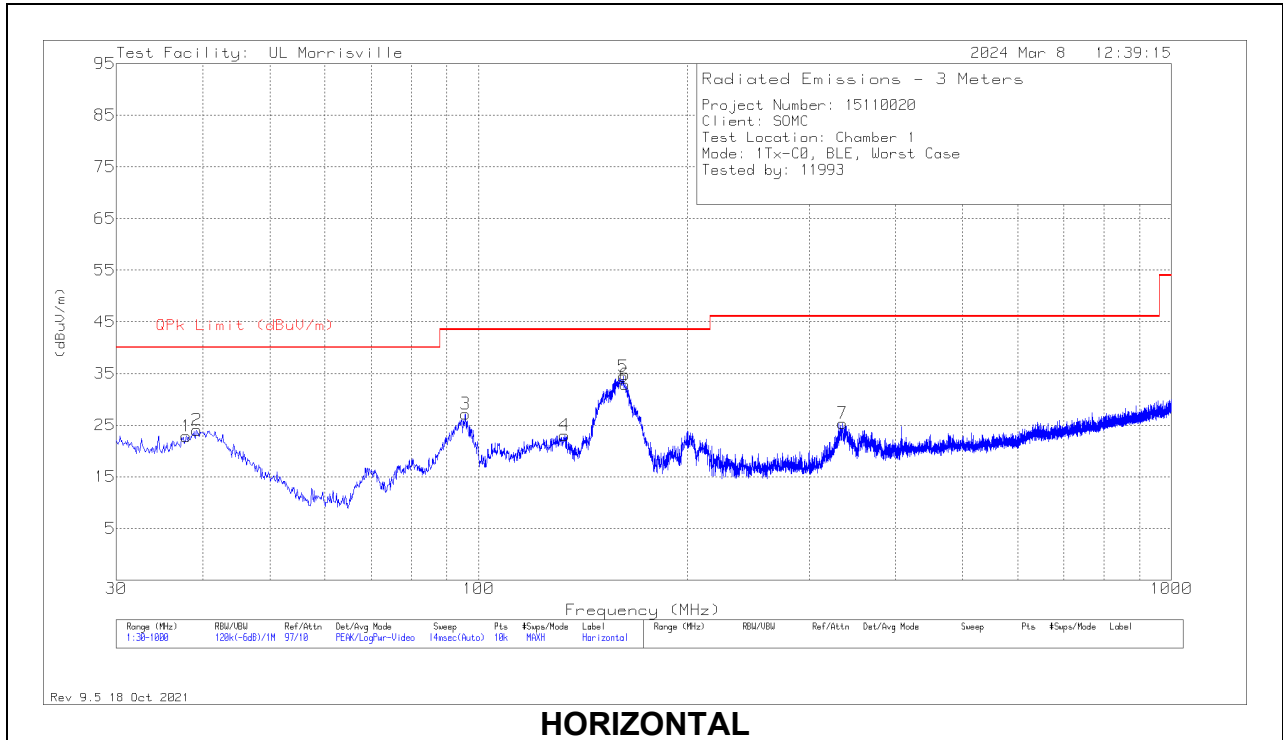
ANTENNA- THREE ORIENTATIONS – E FIELD

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dBuV/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	QP/AV Limit (dBuV/m)	PK Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
4	.00964	43.45	Pk	18.7	.1	-80	-17.75	47.92	67.92	-65.67	0-360	90 degs
7	.01035	43.27	Pk	18.3	.1	-80	-18.33	47.31	67.31	-65.64	0-360	Flat
1	.01134	41.64	Pk	17.9	.1	-80	-20.36	46.51	66.51	-66.87	0-360	0 degs
2	.16981	45.89	Pk	11.1	.1	-80	-22.91	23	43	-45.91	0-360	0 degs
8	.20899	44.88	Pk	11.1	.1	-80	-23.92	21.2	41.2	-45.12	0-360	Flat
5	.24384	43.38	Pk	11.1	.1	-80	-25.42	19.86	39.86	-45.28	0-360	90 degs
9	.49843	35.87	Pk	11.1	.1	-40	7.07	33.65	-	-26.58	0-360	Flat
3	.54481	35.18	Pk	11.1	.1	-40	6.38	32.88	-	-26.5	0-360	0 degs
6	.68394	32.67	Pk	11.2	.1	-40	3.97	30.9	-	-26.93	0-360	90 degs

Pk - Peak detector

10.4. WORST CASE BELOW 1 GHZ

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION CHAIN 0)



Below 1GHz Data

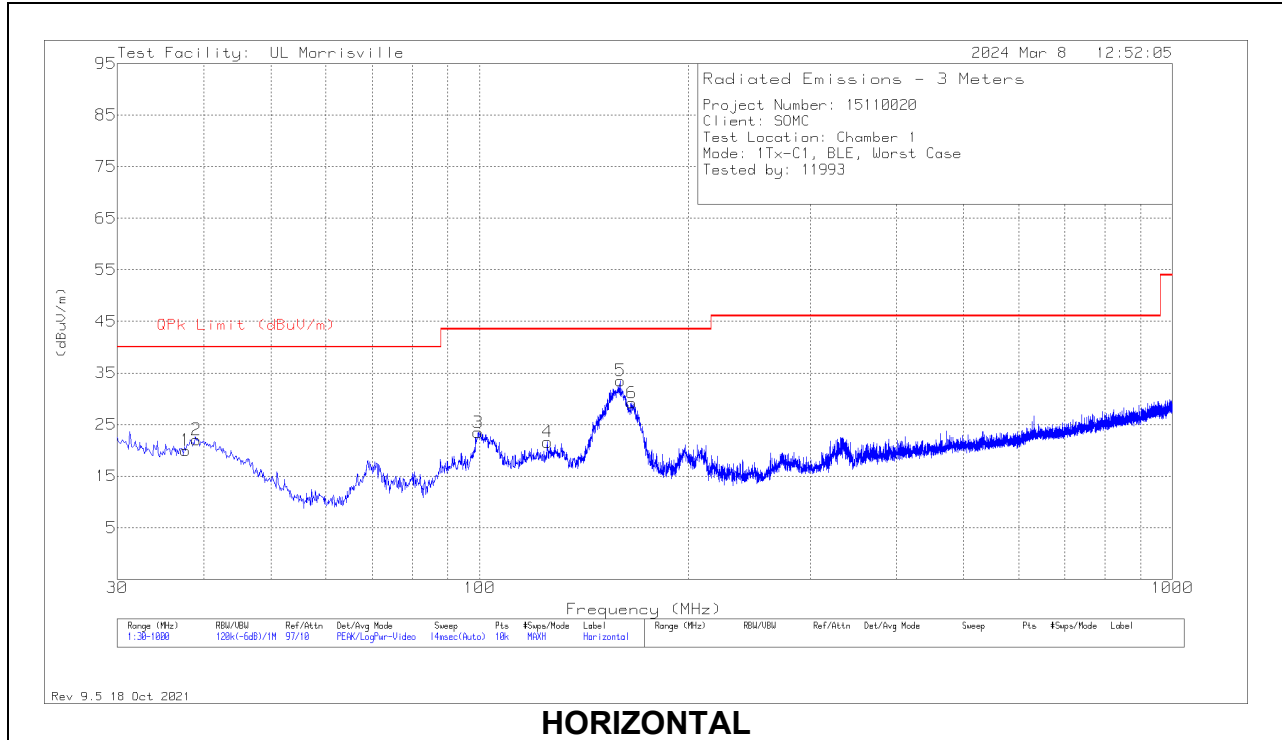
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90629 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 37.857	33.24	Pk	21.3	-31.7	22.84	40	-17.16	0-360	300	H
4	*** 133.111	33.74	Pk	19.9	-30.6	23.04	43.52	-20.48	0-360	200	H
6	*** 162.89	44.54	Pk	18.5	-30.2	32.84	43.52	-10.68	0-360	200	H
9	*** 38.051	43.32	Pk	21.2	-31.7	32.82	40	-7.18	0-360	100	V
11	*** 170.262	41.11	Pk	18.1	-30.2	29.01	43.52	-14.51	0-360	100	V
12	*** 970.706	25.63	Pk	29	-25.5	29.13	53.97	-24.84	0-360	100	V
2	39.215	35.14	Pk	20.4	-31.5	24.04	-	-	0-360	200	H
8	39.312	44.41	Pk	20.3	-31.5	33.21	-	-	0-360	100	V
10	94.602	43.83	Pk	15.2	-30.9	28.13	-	-	0-360	100	V
3	95.766	42.45	Pk	15.6	-30.9	27.15	-	-	0-360	300	H
5	161.8715	46.24	Pk	18.5	-30.3	34.44	-	-	0-360	200	H
7	335.55	34.54	Pk	20	-29.2	25.34	-	-	0-360	99	H

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

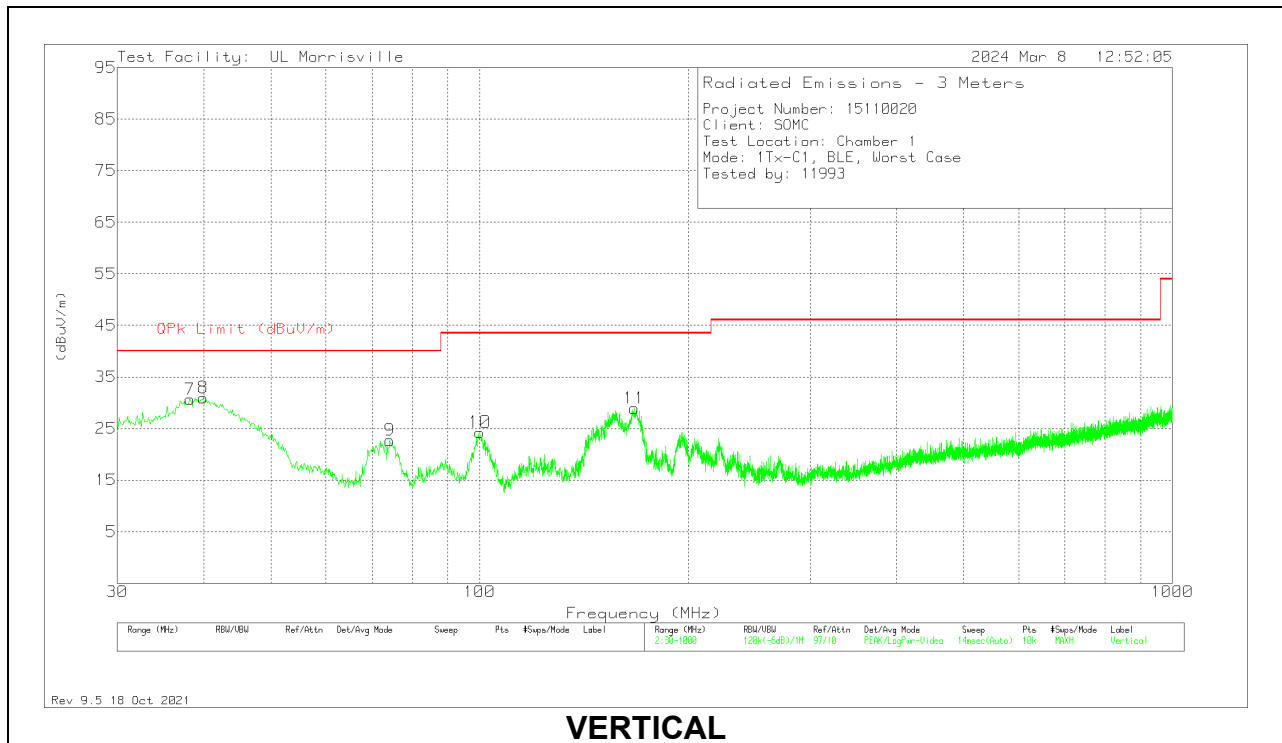
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION CHAIN 1)



HORIZONTAL



VERTICAL

Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90629 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 37.663	30.19	Pk	21.5	-31.7	19.99	40	-20.01	0-360	399	H
4	*** 125.351	32.11	Pk	20.1	-30.6	21.61	43.52	-21.91	0-360	200	H
6	*** 165.8	41.19	Pk	18.3	-30.3	29.19	43.52	-14.33	0-360	200	H
7	*** 38.1965	41.25	Pk	21.1	-31.7	30.65	40	-9.35	0-360	100	V
9	*** 74.232	39.4	Pk	14.4	-31.1	22.7	40	-17.3	0-360	100	V
2	39.021	33.04	Pk	20.5	-31.5	22.04	-	-	0-360	299	H
8	39.894	42.75	Pk	19.8	-31.6	30.95	-	-	0-360	100	V
3	99.549	37.67	Pk	16.6	-30.8	23.47	-	-	0-360	299	H
10	100.131	38.44	Pk	16.7	-30.9	24.24	-	-	0-360	100	V
5	159.786	45.61	Pk	18.5	-30.6	33.51	-	-	0-360	200	H
11	167.255	40.92	Pk	18.2	-30.2	28.92	-	-	0-360	100	V

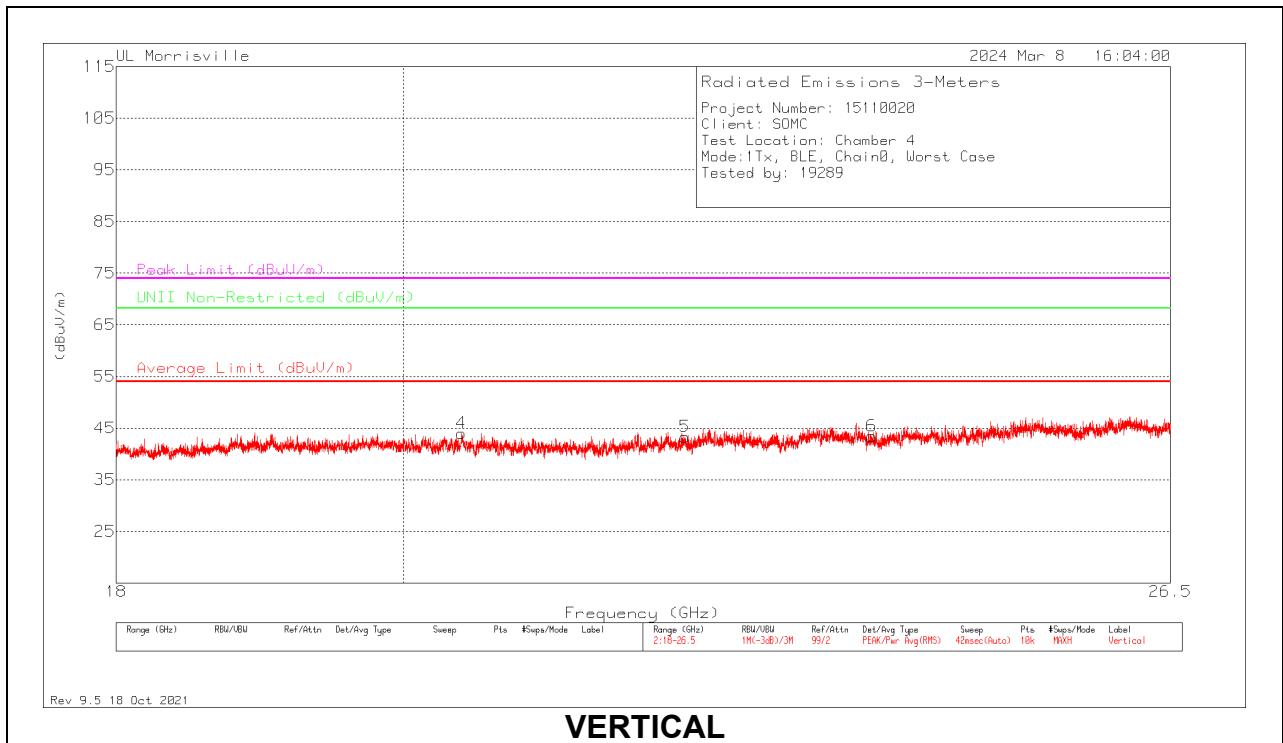
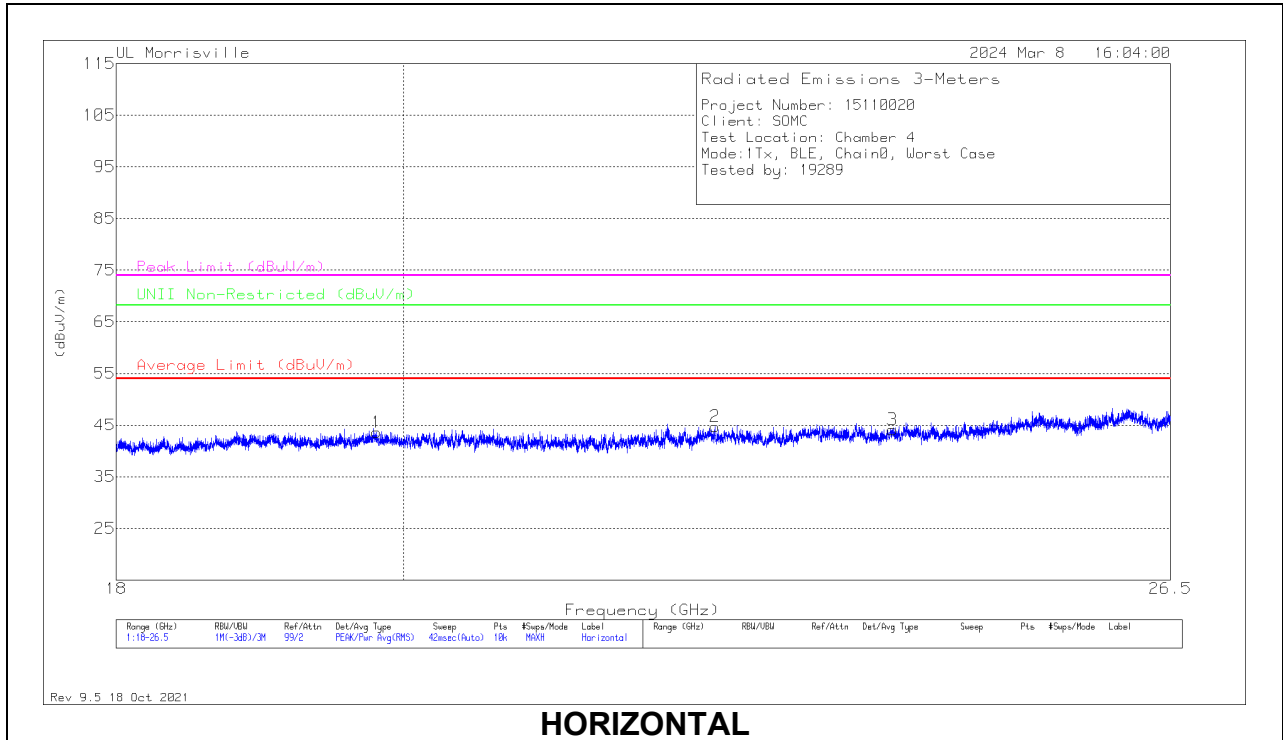
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

10.5. WORST CASE 18-26 GHZ

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION CHAIN 0)



18 – 26GHz Data

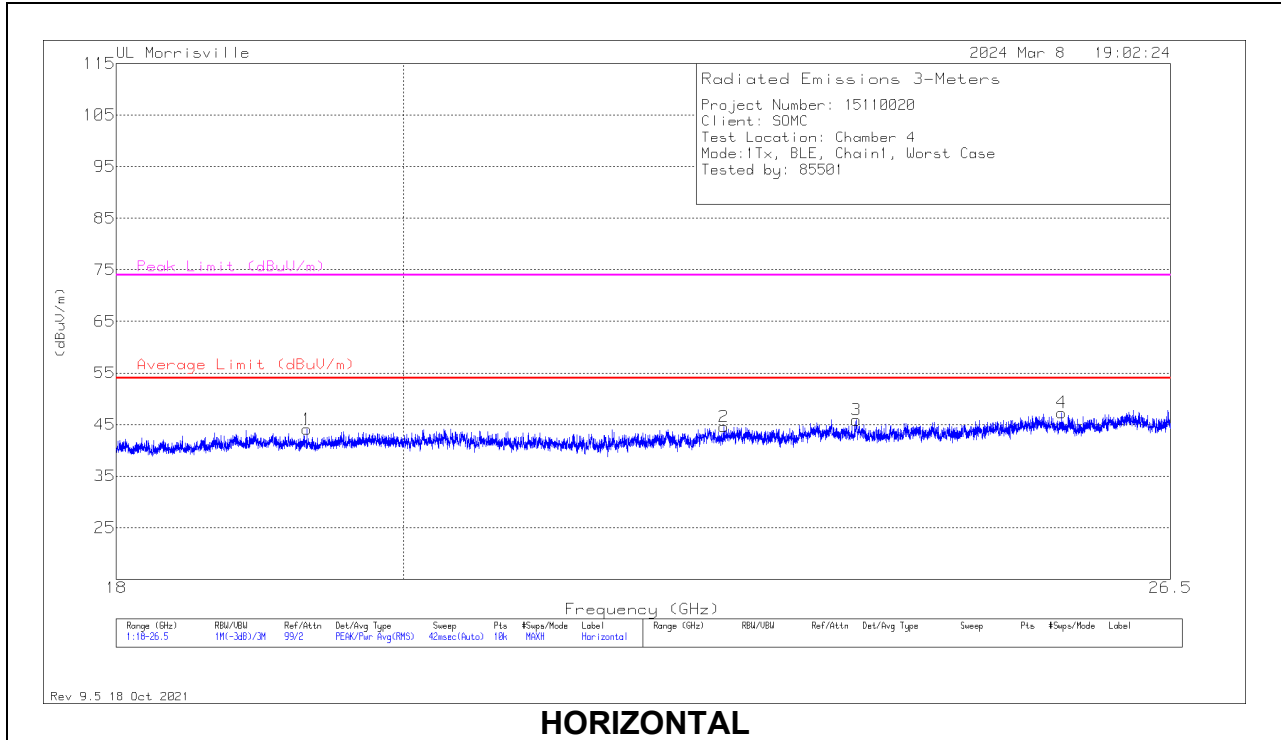
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	204704 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 19.80607	50.3	Pk	33.2	-39.9	43.6	54	-10.4	74	-30.4	0-360	100	H
2	* ** 22.42466	49.31	Pk	34.1	-38.7	44.71	54	-9.29	74	-29.29	0-360	100	H
3	* ** 23.93156	46.2	Pk	34.4	-36.5	44.1	54	-9.9	74	-29.9	0-360	100	H
4	* ** 20.42991	49.88	Pk	33.6	-39.5	43.98	54	-10.02	74	-30.02	0-360	250	V
5	* ** 22.17733	48.01	Pk	34.3	-39	43.31	54	-10.69	74	-30.69	0-360	250	V
6	* ** 23.74968	46.13	Pk	34.5	-37.2	43.43	54	-10.57	74	-30.57	0-360	200	V

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

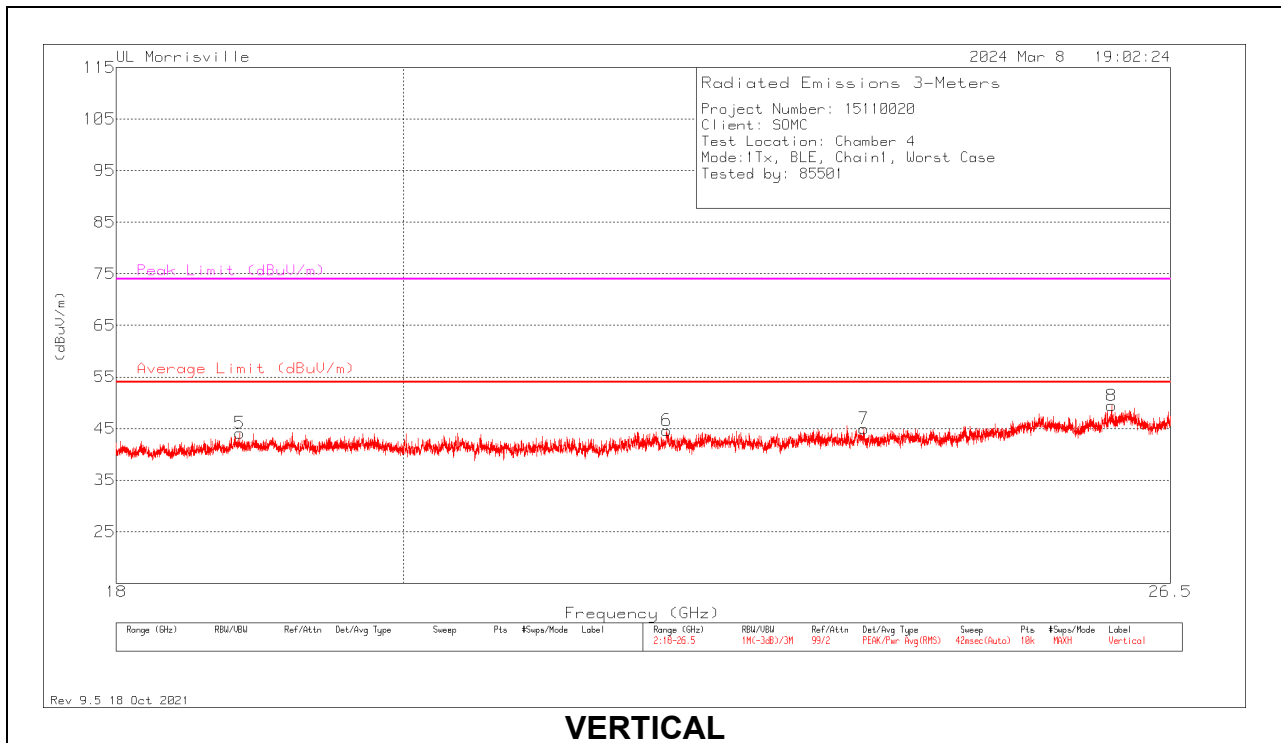
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION CHAIN 1)



HORIZONTAL



VERTICAL

18 – 26GHz Data

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	204704 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 19.30377	50.67	Pk	33.3	-39.9	44.07	54	-9.93	74	-29.93	0-360	250	H
2	* ** 22.4969	48.97	Pk	34.2	-38.6	44.57	54	-9.43	74	-29.43	0-360	100	H
3	* ** 23.61794	47.87	Pk	34.6	-36.6	45.87	54	-8.13	74	-28.13	0-360	100	H
5	* ** 18.83462	50.31	Pk	33.4	-39.6	44.11	54	-9.89	74	-29.89	0-360	250	V
6	* ** 22.02775	48.91	Pk	34.2	-38.5	44.61	54	-9.39	74	-29.39	0-360	200	V
7	* ** 23.68338	47.28	Pk	34.5	-36.8	44.98	54	-9.02	74	-29.02	0-360	250	V
4	25.46225	46.3	Pk	35.4	-34.4	47.3	-	-	-	-	0-360	250	H
8	25.93481	48.03	Pk	35.3	-33.9	49.43	-	-	-	-	0-360	150	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

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.

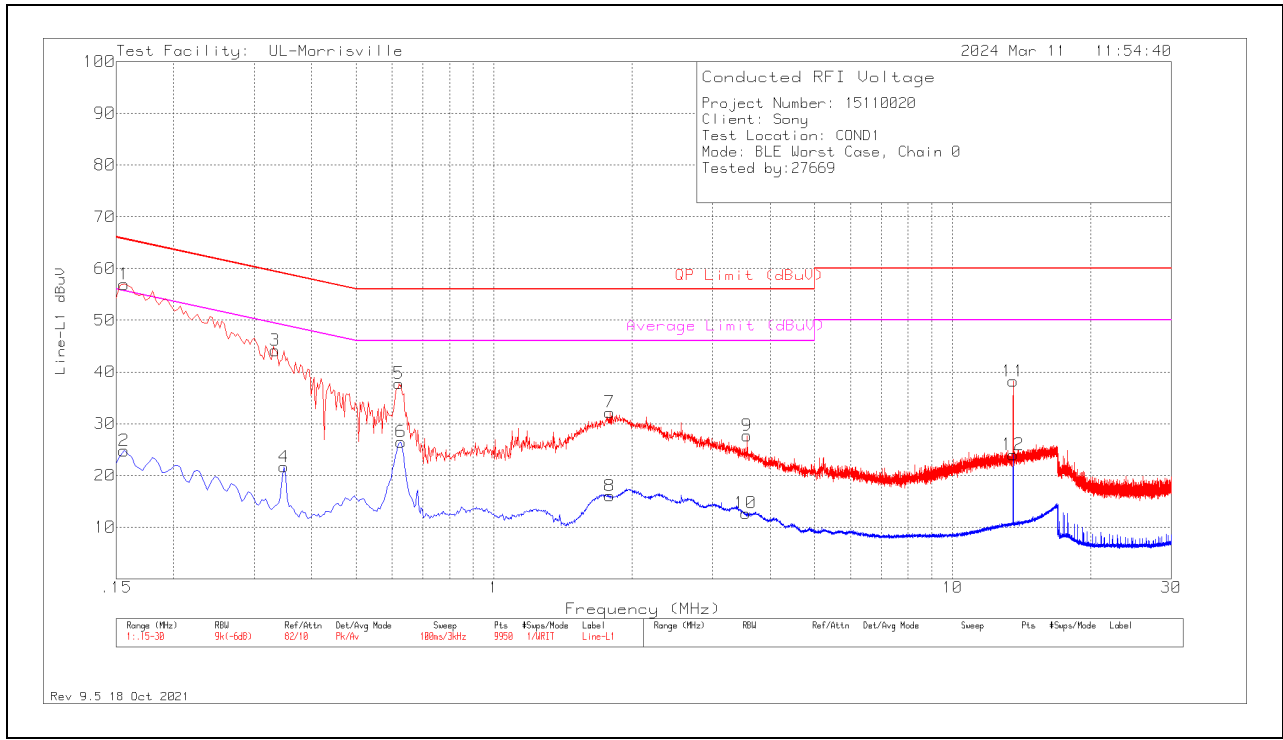
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both lines.

RESULTS

11.1.1. AC Power Line Norm - Chain 0

LINE 1 RESULTS

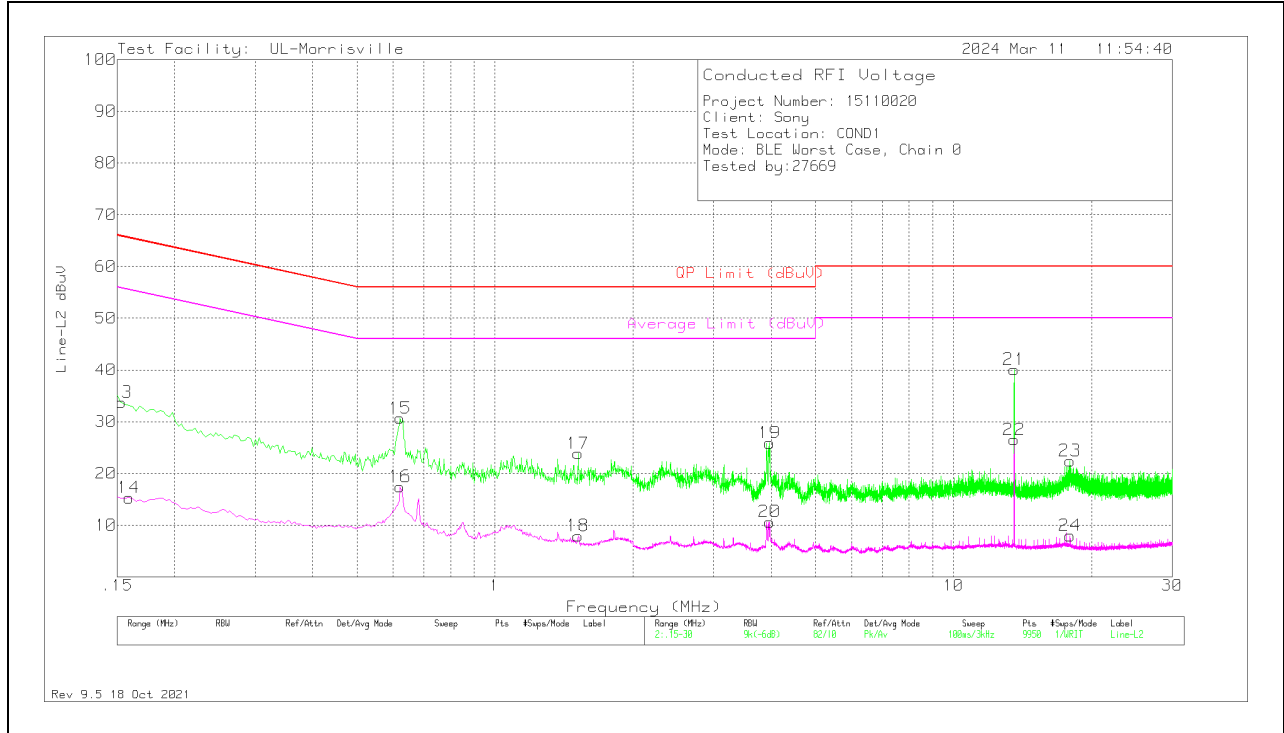


Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.156	46.84	Pk	.3	9.8	56.94	65.67	-8.73	-	-
2	.156	14.69	Av	.3	9.8	24.79	-	-	55.67	-30.88
3	.333	34.26	Pk	.1	9.8	44.16	59.38	-15.22	-	-
4	.348	11.75	Av	.1	9.8	21.65	-	-	49.01	-27.36
5	.621	27.86	Pk	.1	9.8	37.76	56	-18.24	-	-
6	.627	16.58	Av	.1	9.8	26.48	-	-	46	-19.52
7	1.788	22.29	Pk	.1	9.8	32.19	56	-23.81	-	-
8	1.788	6.15	Av	.1	9.8	16.05	-	-	46	-29.95
10	3.537	2.81	Av	.1	9.8	12.71	-	-	46	-33.29
9	3.564	17.8	Pk	.1	9.8	27.7	56	-28.3	-	-
11	13.56	28.01	Pk	.2	10	38.21	60	-21.79	-	-
12	13.56	13.82	Av	.2	10	24.02	-	-	50	-25.98

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS

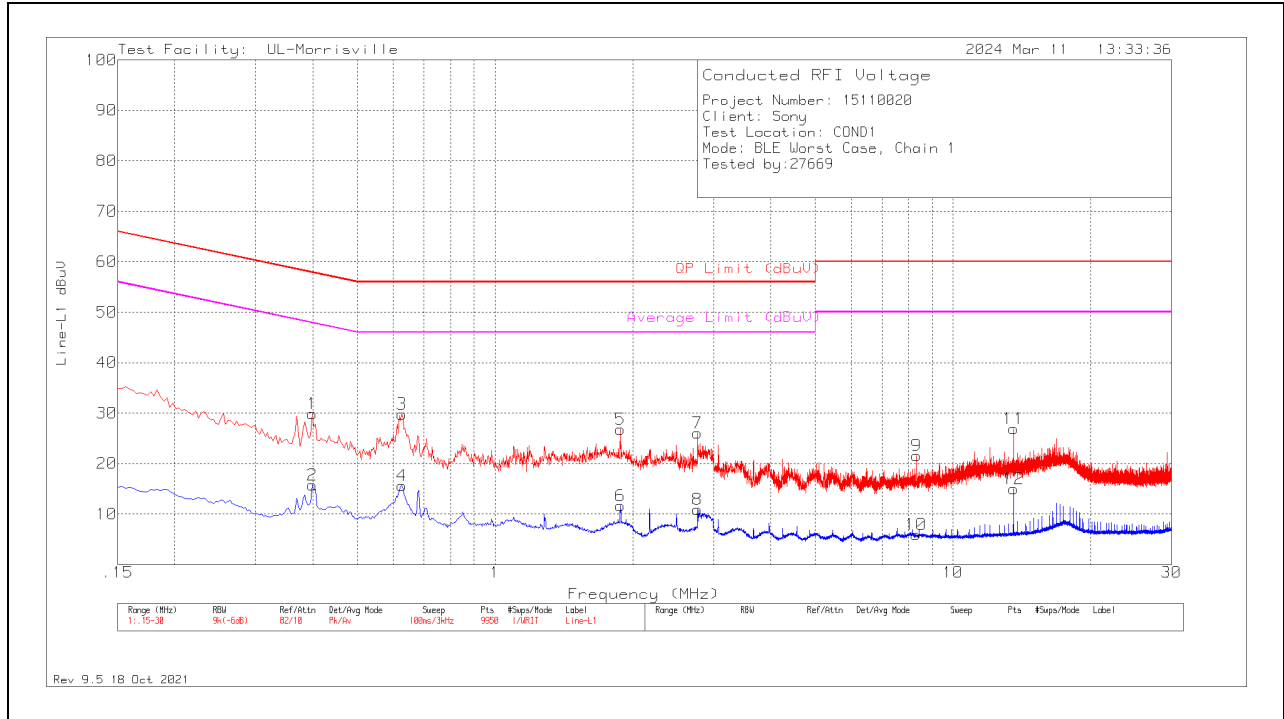


Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
13	.153	23.64	Pk	.3	9.8	33.74	65.84	-32.1	-	-
14	.159	5.19	Av	.3	9.8	15.29	-	-	55.52	-40.23
15	.621	20.78	Pk	.1	9.8	30.68	56	-25.32	-	-
16	.621	7.53	Av	.1	9.8	17.43	-	-	46	-28.57
17	1.518	13.93	Pk	.1	9.8	23.83	56	-32.17	-	-
18	1.518	-1.96	Av	.1	9.8	7.94	-	-	46	-38.06
19	3.972	15.89	Pk	.1	9.9	25.89	56	-30.11	-	-
20	3.972	.64	Av	.1	9.9	10.64	-	-	46	-35.36
21	13.563	29.87	Pk	.2	10	40.07	60	-19.93	-	-
22	13.563	16.34	Av	.2	10	26.54	-	-	50	-23.46
23	17.955	12.12	Pk	.2	10.1	22.42	60	-37.58	-	-
24	17.955	-2.33	Av	.2	10.1	7.97	-	-	50	-42.03

Pk - Peak detector
 Av - Average detection

11.1.1. AC Power Line Norm - Chain 1

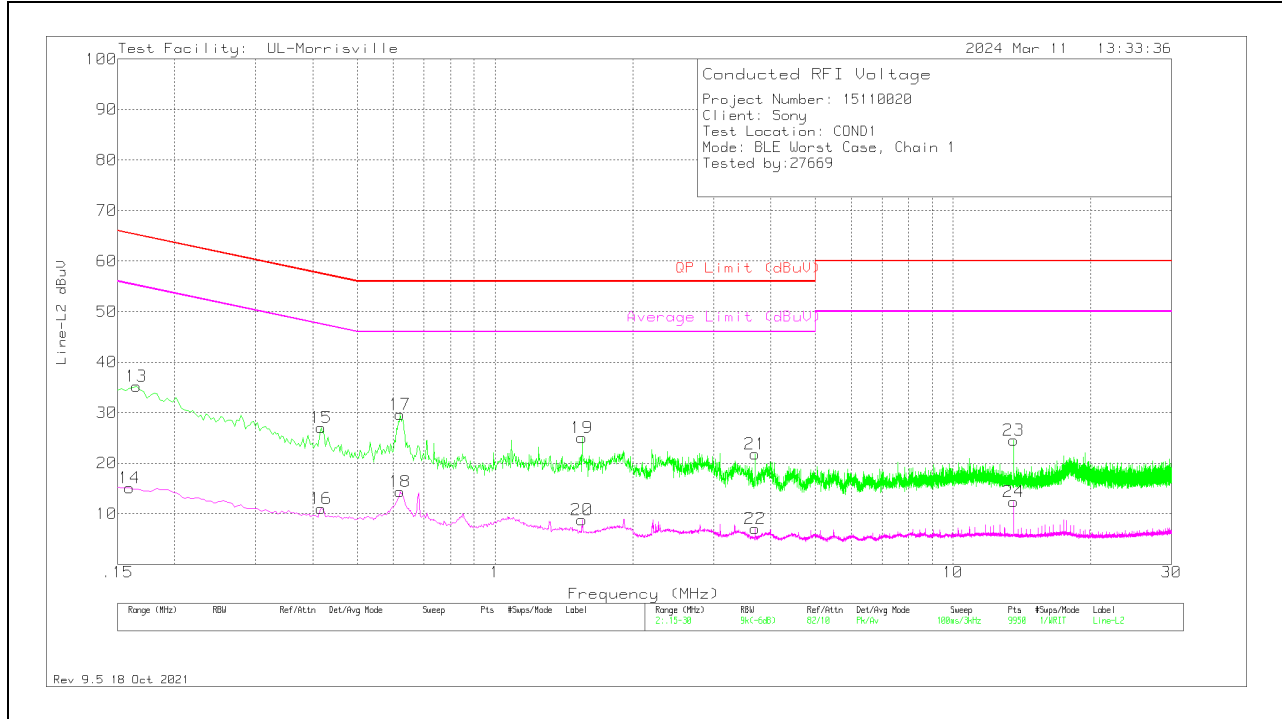
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)	
1	.399	19.97	Pk	.1	9.8	29.87	57.87	-28	-	-	
2	.399	5.85	Av	.1	9.8	15.75	-	-	47.87	-32.12	
4	.6255	5.73	Av	.1	9.8	15.63	-	-	46	-30.37	
3	.627	19.92	Pk	.1	9.8	29.82	56	-26.18	-	-	
5	1.878	16.92	Pk	.1	9.8	26.82	56	-29.18	-	-	
6	1.878	1.76	Av	.1	9.8	11.66	-	-	46	-34.34	
7	2.769	16.09	Pk	.1	9.8	25.99	56	-30.01	-	-	
8	2.769	.95	Av	.1	9.8	10.85	-	-	46	-35.15	
10	8.307	-4.15	Av	.1	10	5.95	-	-	50	-44.05	
9	8.331	11.49	Pk	.1	10	21.59	60	-38.41	-	-	
11	13.56	16.69	Pk	.2	10	26.89	60	-33.11	-	-	
12	13.56	4.82	Av	.2	10	15.02	-	-	50	-34.98	

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
14	.159	4.99	Av	.3	9.8	15.09	-	-	55.52	-40.43
13	.165	25.08	Pk	.3	9.8	35.18	65.21	-30.03	-	-
15	.417	17.08	Pk	.1	9.8	26.98	57.51	-30.53	-	-
16	.417	1.14	Av	.1	9.8	11.04	-	-	47.51	-36.47
17	.621	19.69	Pk	.1	9.8	29.59	56	-26.41	-	-
18	.621	4.52	Av	.1	9.8	14.42	-	-	46	-31.58
19	1.548	15.13	Pk	.1	9.8	25.03	56	-30.97	-	-
20	1.548	-1.09	Av	.1	9.8	8.81	-	-	46	-37.19
21	3.696	11.77	Pk	.1	9.9	21.77	56	-34.23	-	-
22	3.696	-2.96	Av	.1	9.9	7.04	-	-	46	-38.96
23	13.563	14.3	Pk	.2	10	24.5	60	-35.5	-	-
24	13.563	2.19	Av	.2	10	12.39	-	-	50	-37.61

Pk - Peak detector
 Av - Average detection

12. SETUP PHOTOS

Please refer to R15110020-EP3 for setup photos

END OF TEST REPORT