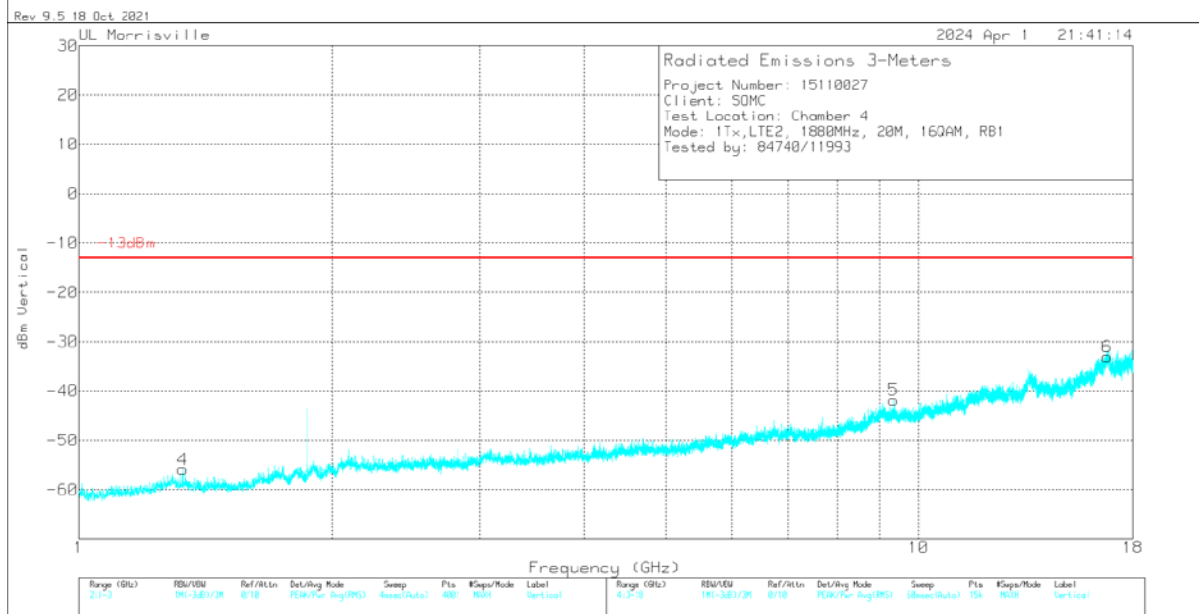
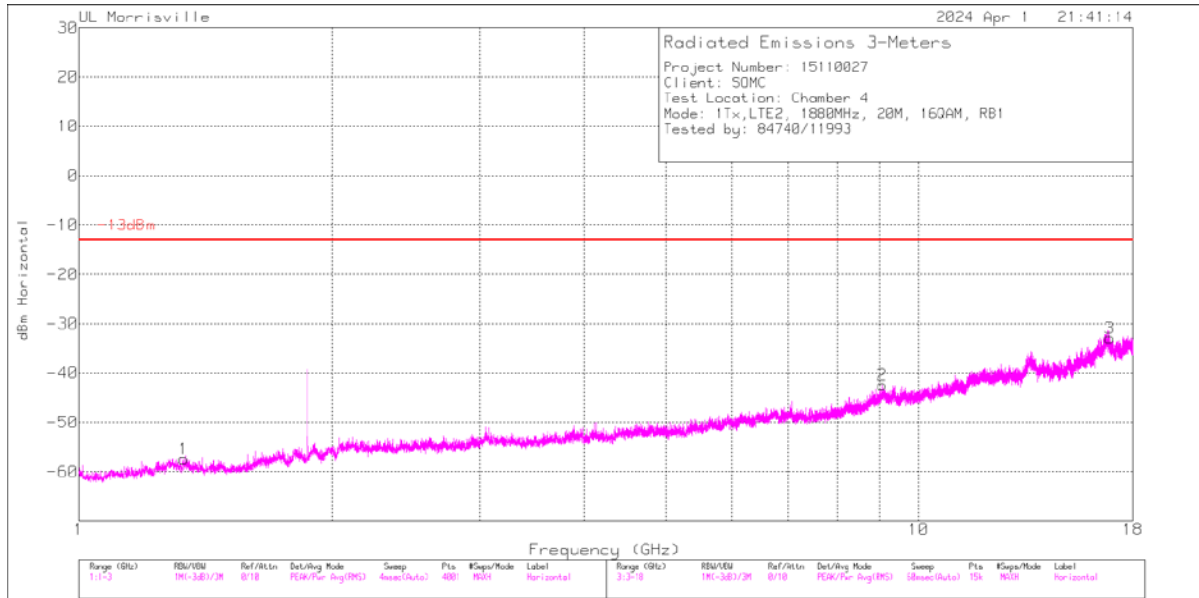


### 16QAM LTE2 (20MHz, Mid Channel)

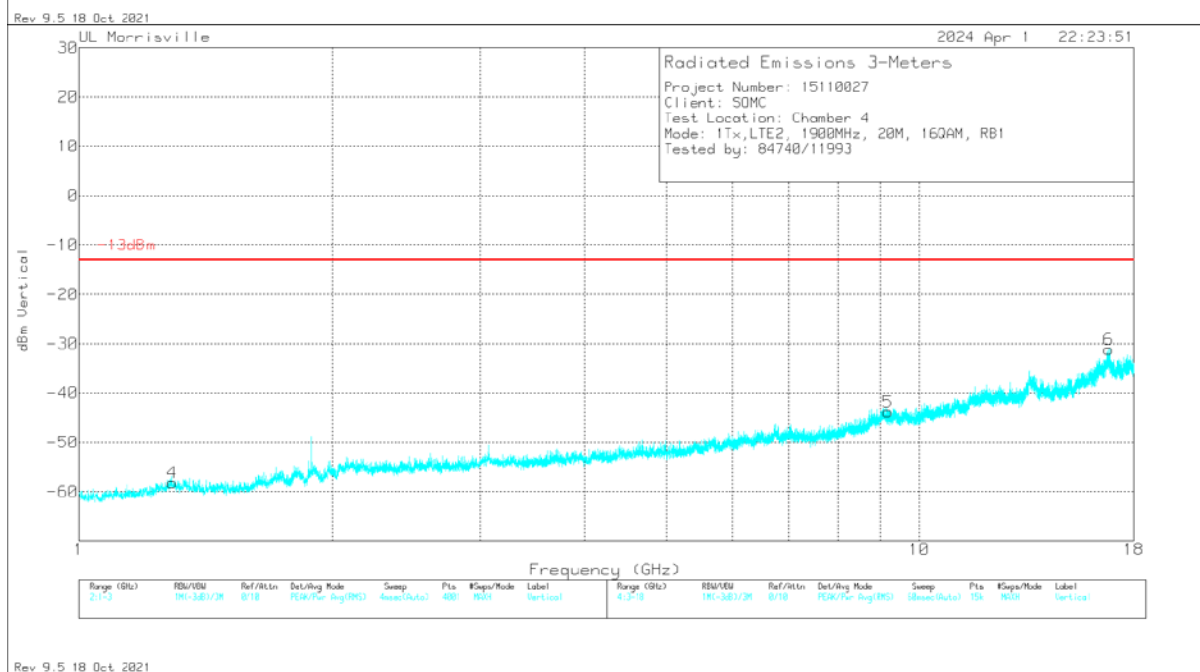
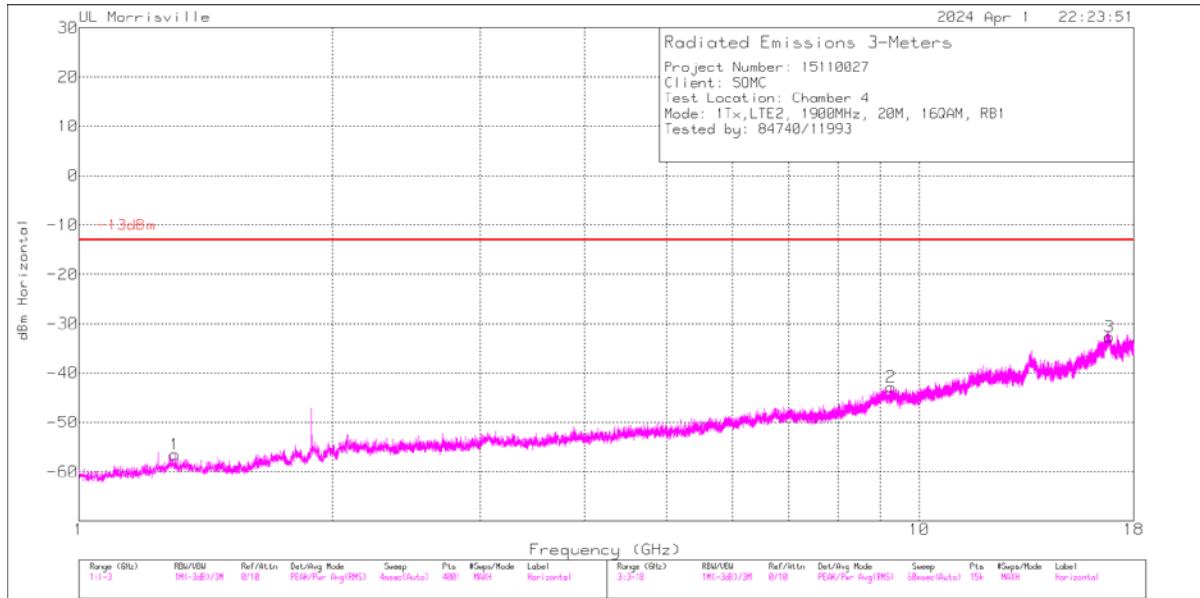


Rev 9.5 18 Oct 2021

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	CF (dB)	Filter (dB)	Corrected Reading dBm	-13dBm	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.3285	-61.24	Pk	29	-36	11.8	.5	-55.94	-13	-42.94	0-360	300	V
1	1.332	-62.74	Pk	29	-36	11.8	.5	-57.44	-13	-44.44	0-360	100	H
2	9.058	-65.8	Pk	36.2	-24.6	11.8	0	-42.4	-13	-29.4	0-360	100	H
5	9.347	-65.05	Pk	36.5	-25.1	11.8	0	-41.85	-13	-28.85	0-360	200	V
6	16.785	-67.12	Pk	41.9	-19.6	11.8	0	-33.02	-13	-20.02	0-360	200	V
3	16.888	-66.9	Pk	41.8	-19.6	11.8	0	-32.9	-13	-19.9	0-360	100	H

Pk - Peak detector

### 16QAM LTE2 (20MHz, High Channel)

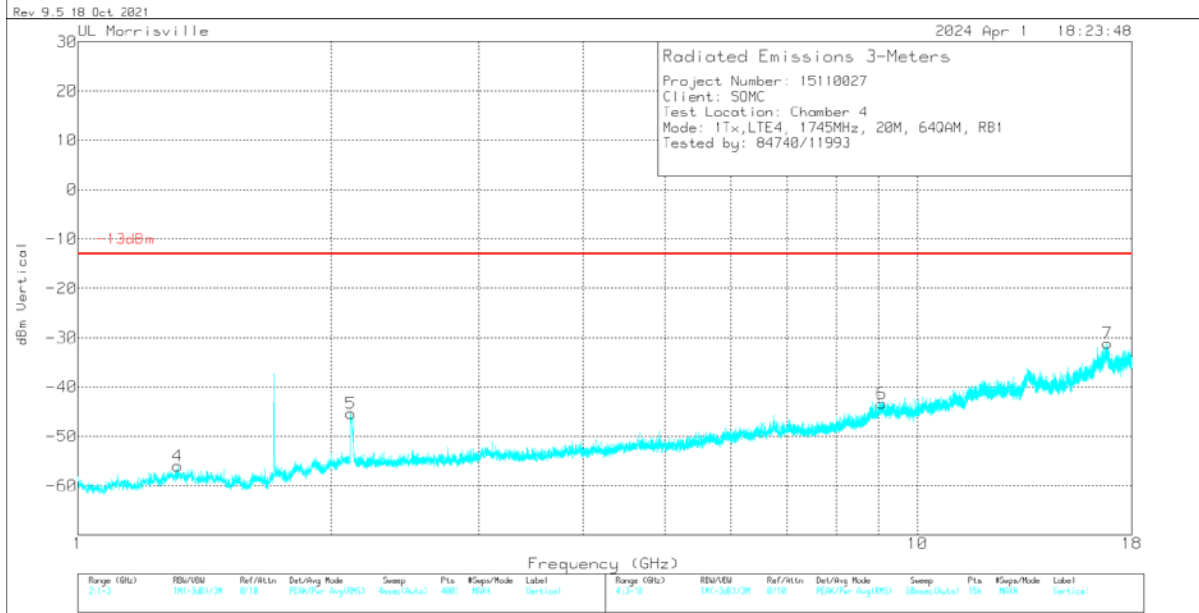
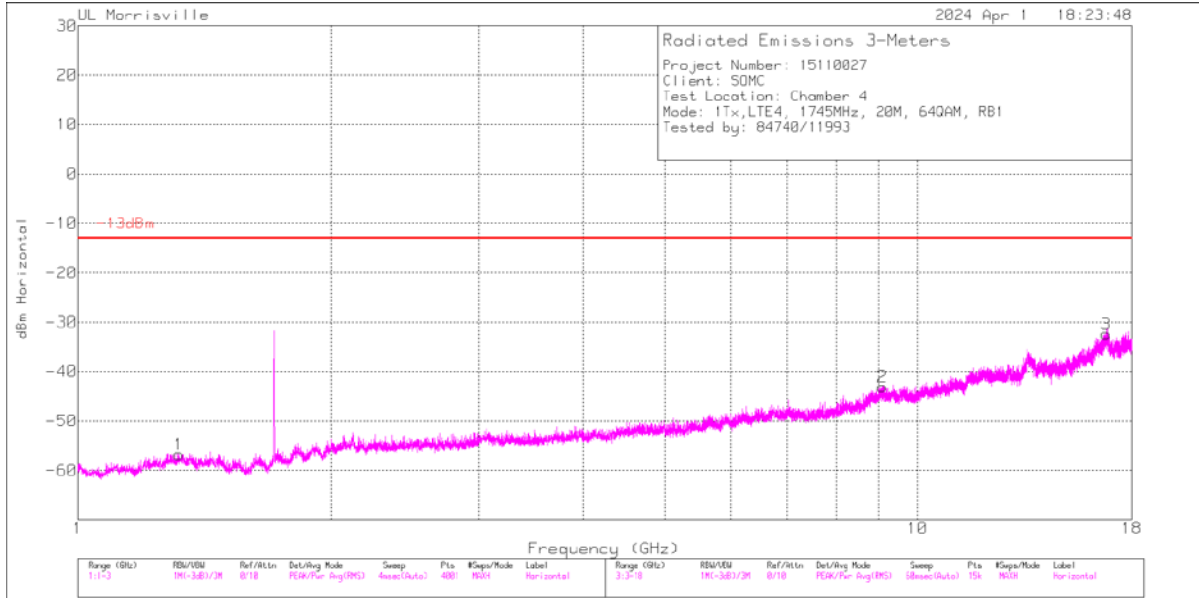


Marker	Frequency (GHz)	Meter Reading (dBm)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	CF (dB)	Filter (dB)	Corrected Reading dBm	-13dBm	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.292	-63.74	Pk	29.2	-35.9	11.8	.5	-58.14	-13	-45.14	0-360	200	V
1	1.3005	-62.11	Pk	29.2	-35.9	11.8	.5	-56.51	-13	-43.51	0-360	100	H
5	9.173	-66.06	Pk	36.3	-25.9	11.8	0	-43.86	-13	-30.86	0-360	300	V
2	9.264	-65.1	Pk	36.4	-25.9	11.8	0	-42.8	-13	-29.8	0-360	100	H
6	16.807	-64.83	Pk	41.9	-20	11.8	0	-31.13	-13	-18.13	0-360	300	V
3	16.829	-67.01	Pk	41.9	-19.4	11.8	0	-32.71	-13	-19.71	0-360	100	H

Pk - Peak detector

10.1.4. LTE BAND 4

64QAM LTE4 (20MHz, Low Channel)

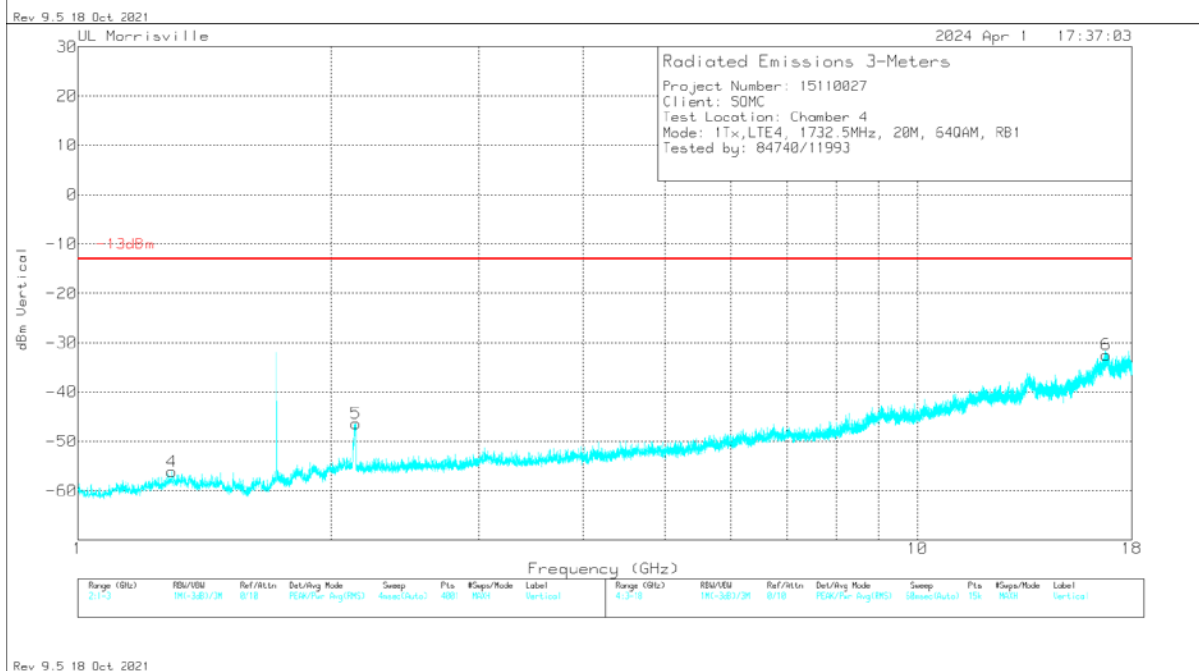
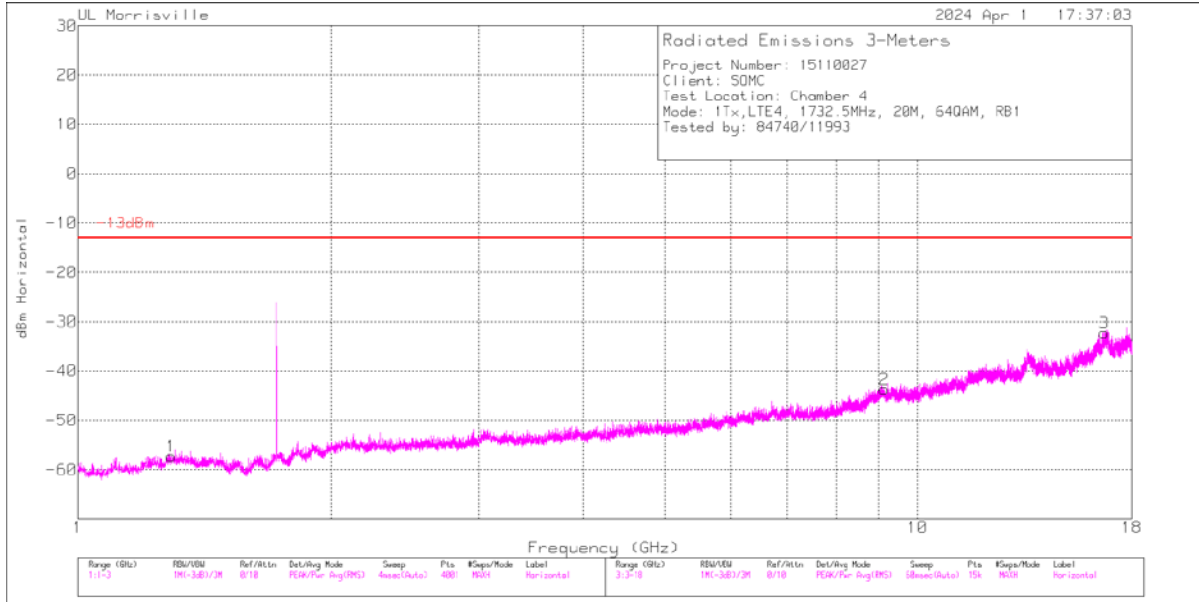


Rev 9.5 18 Oct 2021

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	CF (dB)	Filter (dB)	Corrected Reading dBm	-13dBm	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.3145	-62.05	Pk	29.1	-36	11.8	1.1	-56.05	-13	-43.05	0-360	300	V
1	1.3185	-62.81	Pk	29	-35.9	11.8	1.1	-56.81	-13	-43.81	0-360	200	H
5	2.1125	-53.96	Pk	31.6	-36.2	11.8	1.4	-45.36	-13	-32.36	0-360	200	V
6	9.074	-66.35	Pk	36.2	-25	11.8	0	-43.35	-13	-30.35	0-360	300	V
2	9.083	-66.38	Pk	36.3	-24.8	11.8	0	-43.08	-13	-30.08	0-360	100	H
3	16.779	-65.79	Pk	41.9	-20.3	11.8	0	-32.39	-13	-19.39	0-360	100	H
7	16.819	-65.99	Pk	41.9	-18.8	11.8	0	-31.09	-13	-18.09	0-360	300	V

Pk - Peak detector

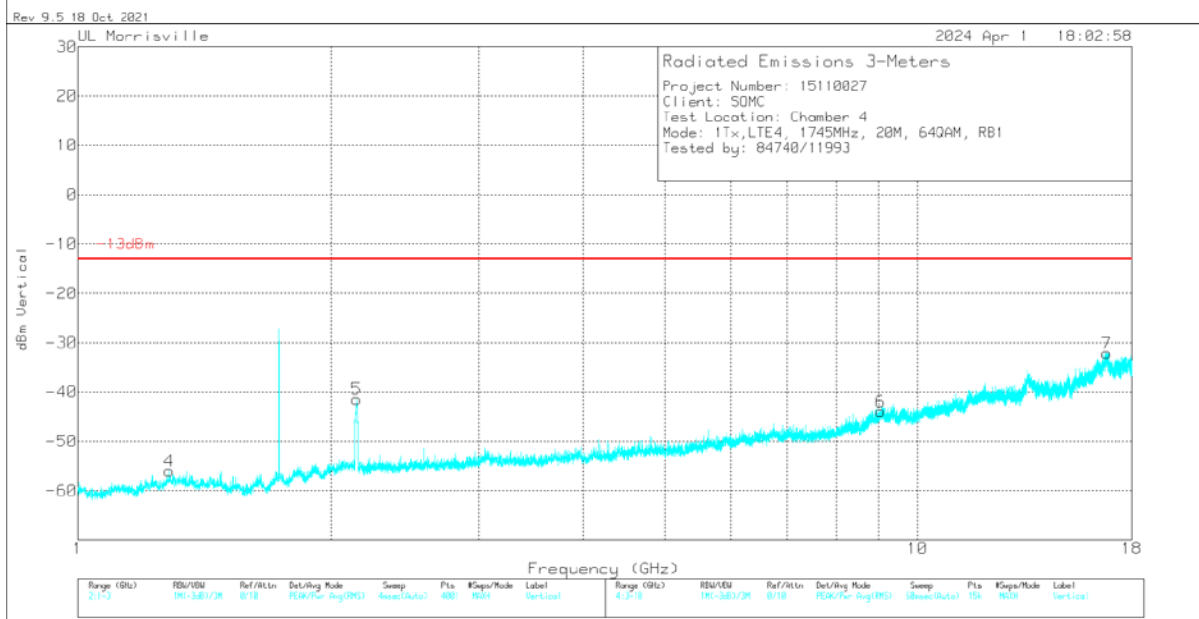
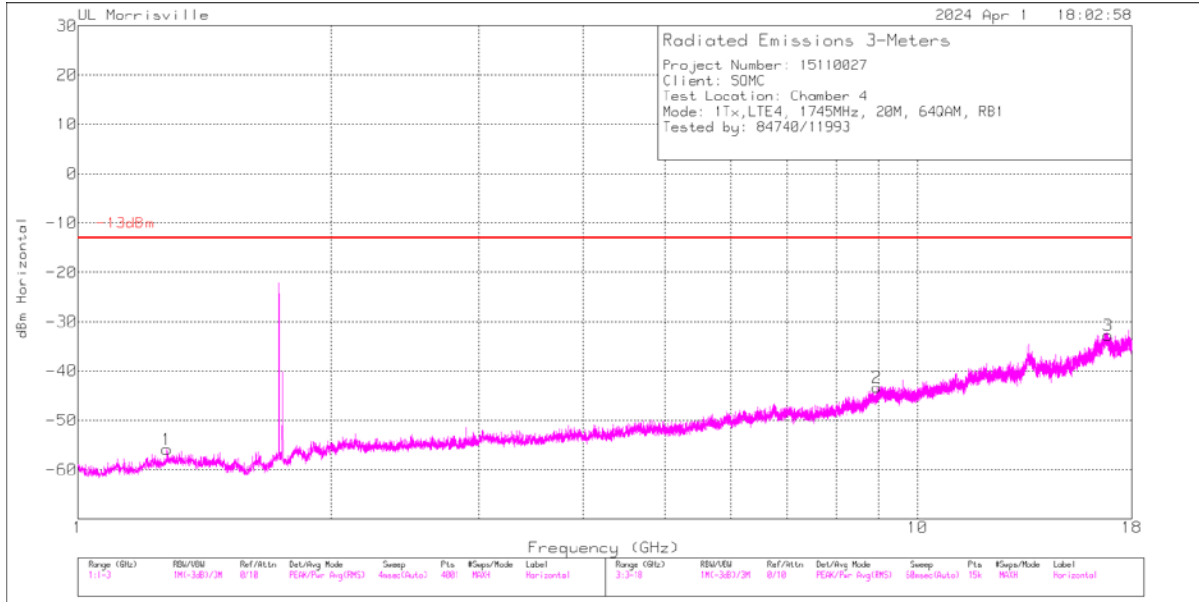
**64QAM LTE4 (20MHz, Mid Channel)**



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	CF (dB)	Filter (dB)	Corrected Reading dBm	-13dBm	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.291	-63.45	Pk	29.2	-35.9	11.8	1.1	-57.25	-13	-44.25	0-360	100	H
4	1.294	-62.34	Pk	29.2	-35.9	11.8	1.1	-56.14	-13	-43.14	0-360	300	V
5	2.142	-54.6	Pk	31.5	-36.3	11.8	1.2	-46.4	-13	-33.4	0-360	200	V
2	9.128	-66.67	Pk	36.3	-25.1	11.8	0	-43.67	-13	-30.67	0-360	100	H
3	16.693	-65.84	Pk	41.8	-20.1	11.8	0	-32.34	-13	-19.34	0-360	100	H
6	16.766	-65.88	Pk	41.9	-20.3	11.8	0	-32.48	-13	-19.48	0-360	200	V

Pk - Peak detector

**64QAM LTE4 (20MHz, High Channel)**



Rev 9.5 18 Oct 2021

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	CF (dB)	Filter (dB)	Corrected Reading dBm	-13dBm	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.277	-61.86	Pk	29.1	-35.9	11.8	1	-55.86	-13	-42.86	0-360	200	H
4	1.2845	-62.11	Pk	29.2	-35.9	11.8	1	-56.01	-13	-43.01	0-360	300	V
5	2.1465	-49.73	Pk	31.6	-36.3	11.8	1.2	-41.43	-13	-28.43	0-360	200	V
2	8.945	-65.49	Pk	36.2	-25.9	11.8	0	-43.39	-13	-30.39	0-360	100	H
6	9.042	-67.39	Pk	36.2	-24.6	11.8	0	-43.99	-13	-30.99	0-360	300	V
7	16.799	-66.88	Pk	41.9	-19	11.8	0	-32.18	-13	-19.18	0-360	300	V
3	16.859	-66.18	Pk	41.9	-20.3	11.8	0	-32.78	-13	-19.78	0-360	100	H

Pk - Peak detector

## 10.2. WORST CASE EMISSIONS

### LIMITS - BAND 2

FCC: §24.238

The minimum permissible attenuation level of any spurious emissions is  $43 + 10 \log (P)$  dB where transmitting power (P) in Watts

### LIMITS – BAND 4

FCC: §27.53 (m),

The minimum permissible attenuation level of any spurious emissions is  $43 + 10 \log (P)$  dB where transmitting power (P) in Watts.

### TEST PROCEDURE

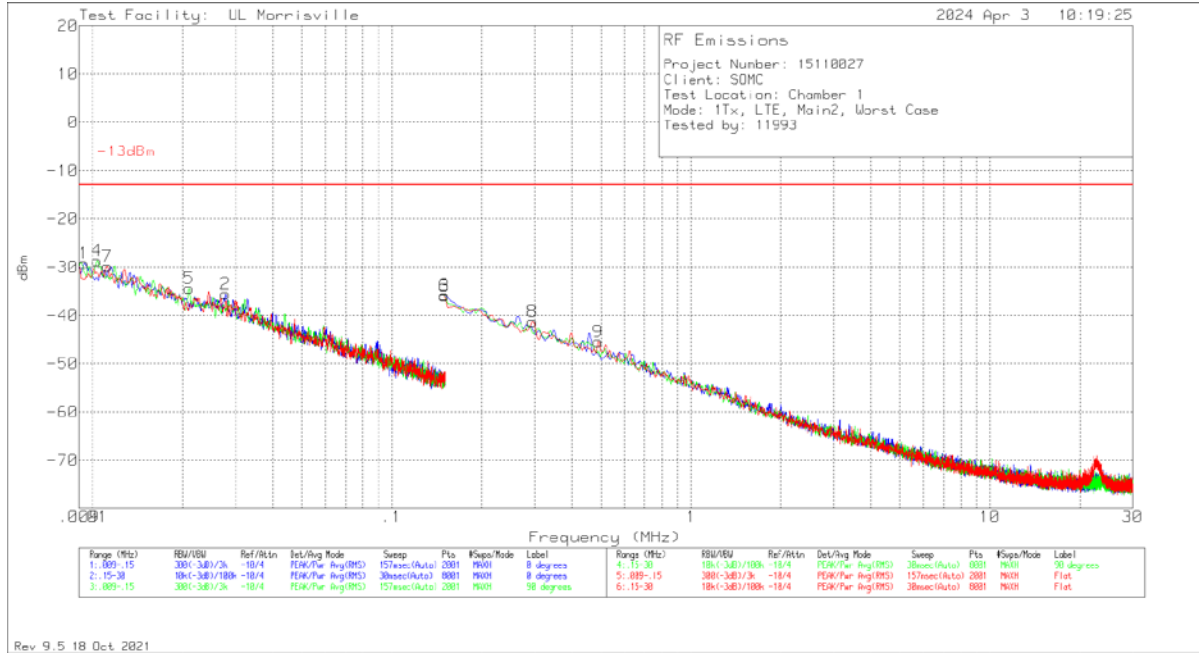
KDB 971168 D01 v02r02/D02 v02

### RESULTS

Antenna being tested	S/N of EUT
Main 2 Worst-Case	QV7700GJLQ
Sub Antenna Worst-Case	QV770051L2

### 10.2.1. Main 2

#### 9kHz – 30MHz Worst-Case Emissions

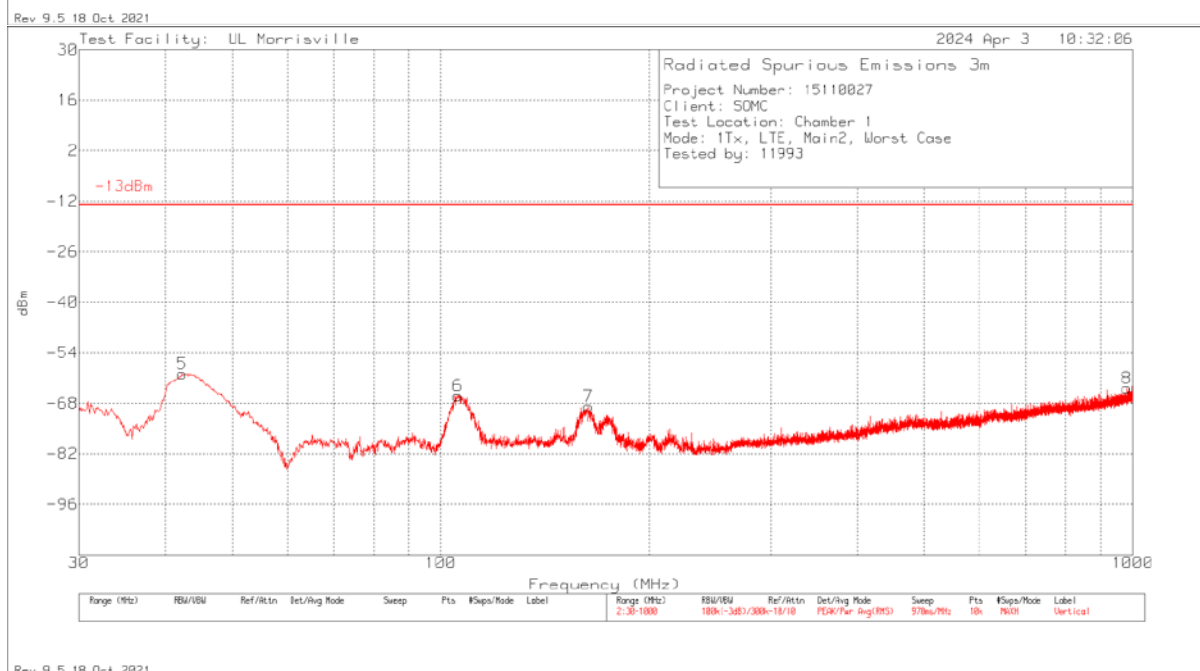
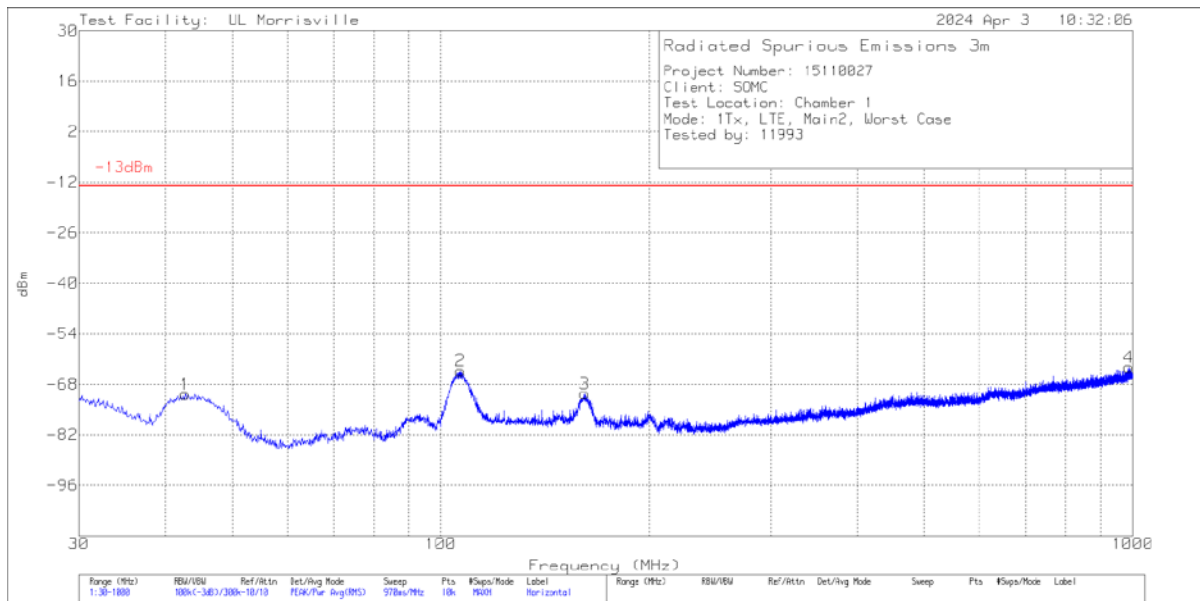


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Marker	Frequency (MHz)	Meter Reading (dBm)	Det	135144 (dBuV/m)	Gain/Loss (dB)	Conversion Factor (dB)	Corrected Reading dBm	-13dBm	PK Margin (dB)	Azimuth (Degs)	Loop Angle
1	.00936	-59.84	Pk	18.8	.1	11.8	-29.14	-13	-16.14	0-360	0 degs
4	.01035	-58.89	Pk	18.3	.1	11.8	-28.69	-13	-15.69	0-360	90 degs
7	.0112	-59.62	Pk	17.9	.1	11.8	-29.82	-13	-16.82	0-360	Flat
5	.021	-60.16	Pk	13.9	.1	11.8	-34.36	-13	-21.36	0-360	90 degs
2	.02782	-61.01	Pk	13.6	.1	11.8	-35.51	-13	-22.51	0-360	0 degs
3	.15	-58.92	Pk	11.1	.1	11.8	-35.92	-13	-22.92	0-360	0 degs
6	.15	-58.74	Pk	11.1	.1	11.8	-35.74	-13	-22.74	0-360	90 degs
8	.29551	-64.21	Pk	11.1	.1	11.8	-41.21	-13	-28.21	0-360	Flat
9	.48952	-68.4	Pk	11.1	.1	11.8	-45.4	-13	-32.4	0-360	Flat

Pk - Peak detector

**30MHz – 1000MHz Worst-Case Emissions**

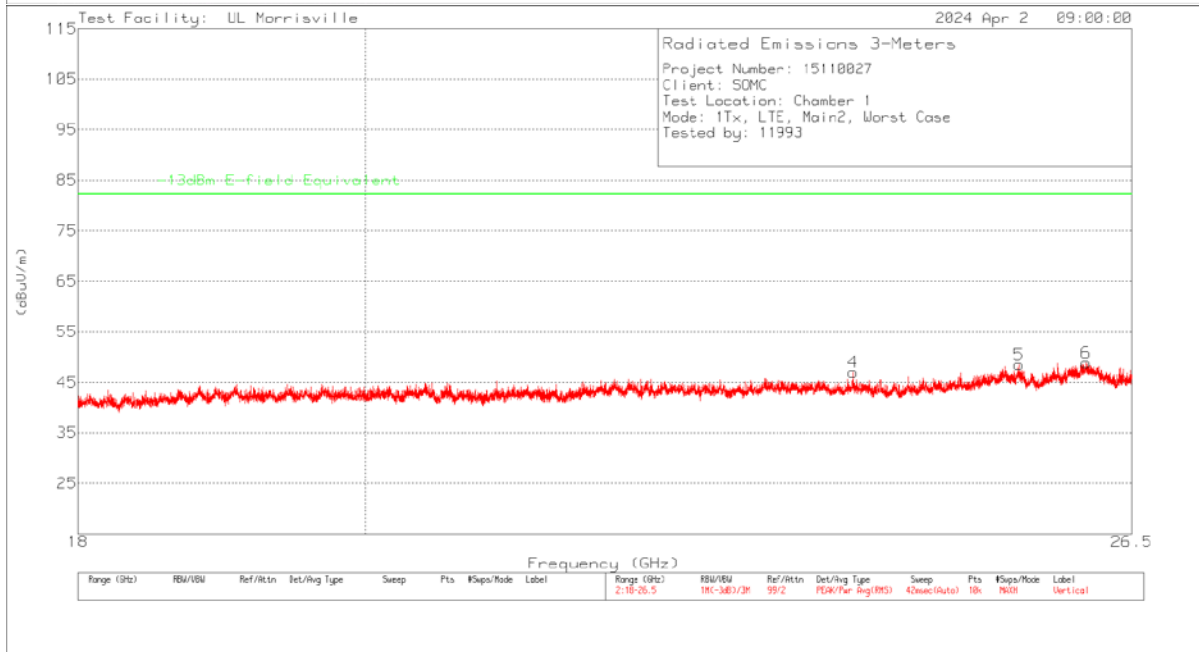
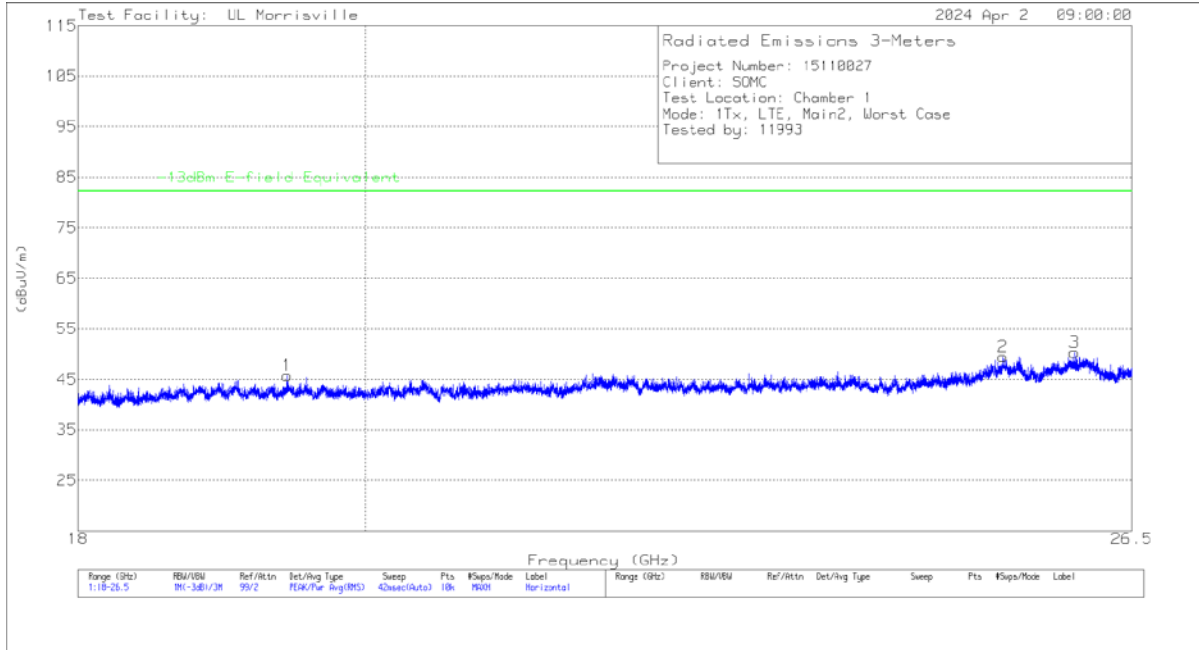


Marker	Frequency (MHz)	Meter Reading (dBm)	Det	90629 (dB/m)	Gain/Loss (dB)	Filter (dB)	Conversion Factor (dB)	Corrected Reading dBm	-13dBm	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	42.319	-58.29	Pk	18.1	-31.5	.1	11.8	-59.79	-13	-46.79	0-360	100	V
1	42.707	-68.97	Pk	17.8	-31.5	.1	11.8	-70.77	-13	-57.77	0-360	399	H
6	105.854	-65.08	PK	18.2	-30.9	.1	11.8	-65.88	-13	-52.88	0-360	100	V
2	106.63	-63.65	Pk	18.3	-30.8	.1	11.8	-64.25	-13	-51.25	0-360	299	H
3	161.629	-71.13	Pk	18.5	-30.2	.4	11.8	-70.63	-13	-57.63	0-360	199	H
7	163.666	-69.19	Pk	18.4	-30.3	.4	11.8	-68.89	-13	-55.89	0-360	100	V
8	981.085	-80.36	Pk	29.2	-25	.6	11.8	-63.76	-13	-50.76	0-360	100	V
4	986.711	-79.64	Pk	29.4	-25.4	.6	11.8	-63.24	-13	-50.24	0-360	99	H

Pk - Peak detector



**18GHz – 26.5GHz Worst-Case Emissions**

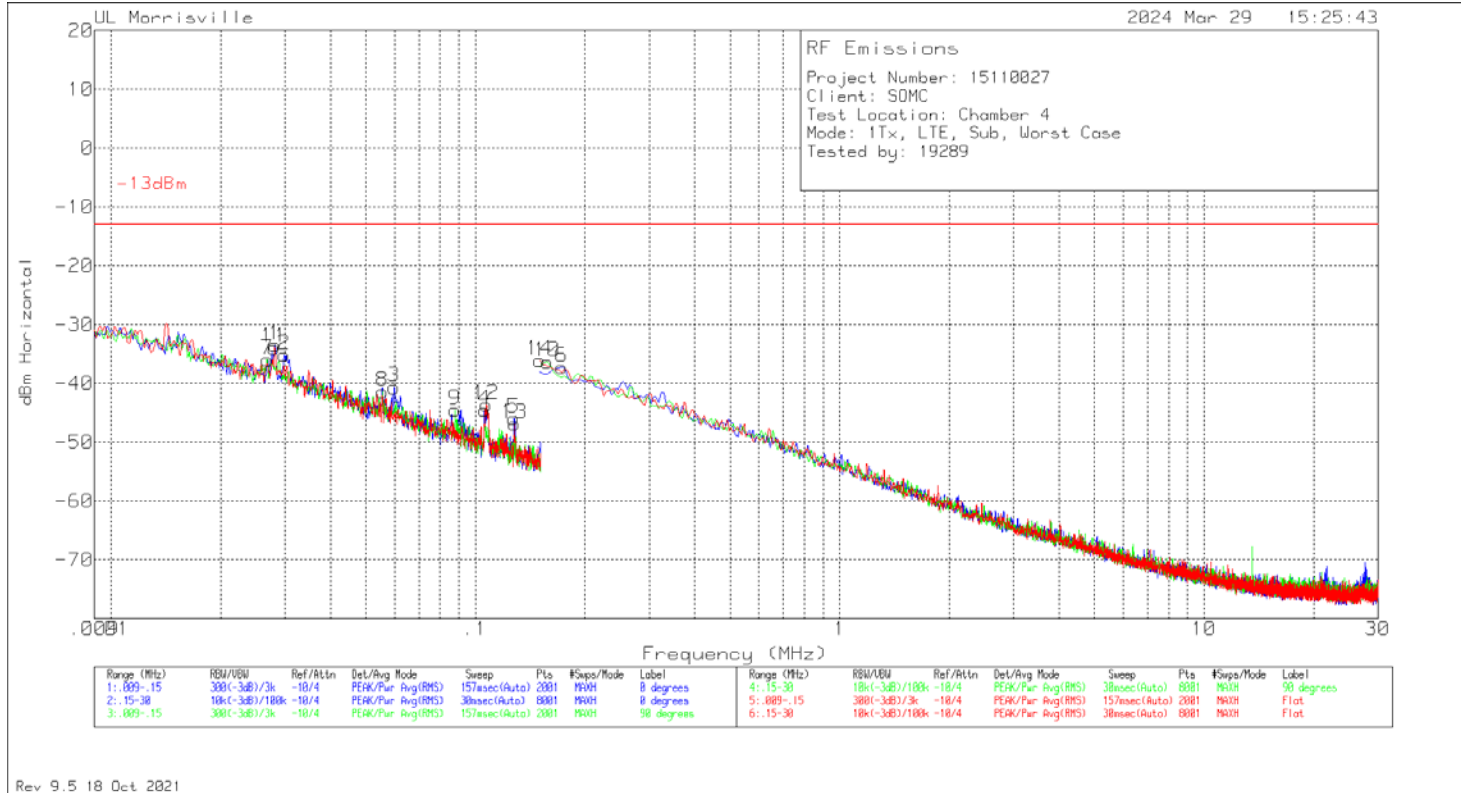


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	204704 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	-13dBm E-field Equivalent	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	19.43721	50.59	Pk	33.3	-38.1	45.79	82.2	-36.41	0-360	300	H
4	23.92476	49.66	Pk	34.4	-37.1	46.96	82.2	-35.24	0-360	200	V
2	25.27357	50.16	Pk	35.7	-36.4	49.46	82.2	-32.74	0-360	101	H
5	25.42571	49.14	Pk	35.5	-36.1	48.54	82.2	-33.66	0-360	250	V
3	25.94841	51.22	Pk	35.3	-36.2	50.32	82.2	-31.88	0-360	199	H
6	26.05719	49.61	Pk	35.2	-35.9	48.91	82.2	-33.29	0-360	250	V

Pk - Peak detector

### 10.2.2. Sub Antenna

#### 9kHz – 30MHz Worst-Case Emissions

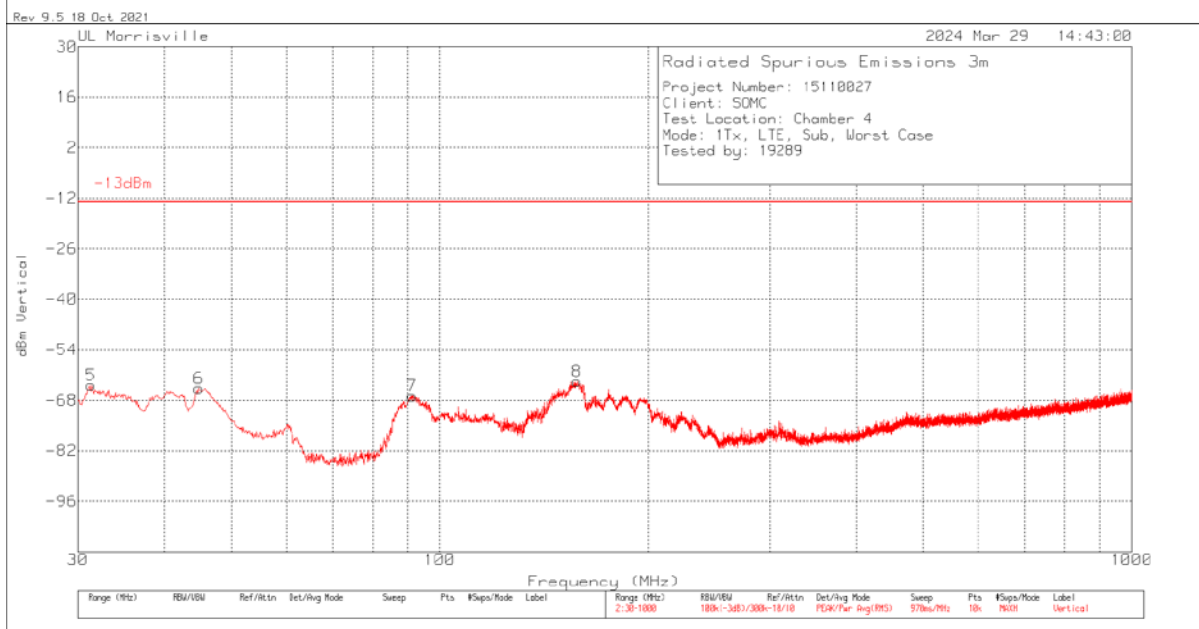
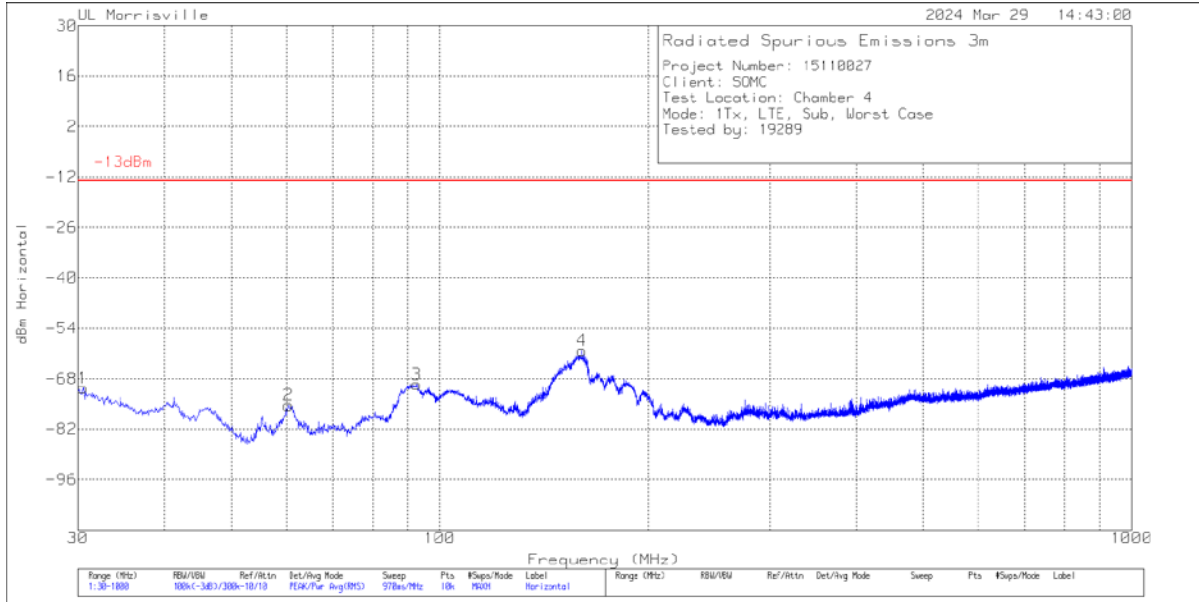


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Marker	Frequency (MHz)	Meter Reading (dBm)	Det	135144 (dBUV/m)	Gain/Loss (dB)	Conversion Factor (dB)	Corrected Reading dBm	-13dBm	PK Margin (dB)	Azimuth (Degs)	Loop Angle
7	.02682	-61.33	Pk	13.6	0	11.8	-35.93	-13	-22.93	0-360	90 degs
11	.0281	-59.31	Pk	13.6	0	11.8	-33.91	-13	-20.91	0-360	Flat
1	.02821	-58.9	Pk	13.6	0	11.8	-33.5	-13	-20.5	0-360	0 degs
2	.02984	-60.45	Pk	13.5	0	11.8	-35.15	-13	-22.15	0-360	0 degs
8	.05558	-64.8	Pk	11.6	0	11.8	-41.4	-13	-28.4	0-360	90 degs
3	.05991	-64.16	Pk	11.7	0	11.8	-40.66	-13	-27.66	0-360	0 degs
9	.08795	-67.79	Pk	11.5	0	11.8	-44.49	-13	-31.49	0-360	90 degs
4	.10613	-67.35	Pk	11.1	0	11.8	-44.45	-13	-31.45	0-360	0 degs
12	.10734	-66.53	Pk	11.1	0	11.8	-43.63	-13	-30.63	0-360	Flat
5	.12771	-68.8	Pk	11.1	0	11.8	-45.9	-13	-32.9	0-360	0 degs
13	.128	-69.77	Pk	11.1	0	11.8	-46.87	-13	-33.87	0-360	Flat
14	.15	-59.01	Pk	11.1	0	11.8	-36.11	-13	-23.11	0-360	Flat
10	.15746	-59.24	Pk	11.1	0	11.8	-36.34	-13	-23.34	0-360	90 degs
6	.17239	-60.15	Pk	11.1	0	11.8	-37.25	-13	-24.25	0-360	0 degs

Pk - Peak detector

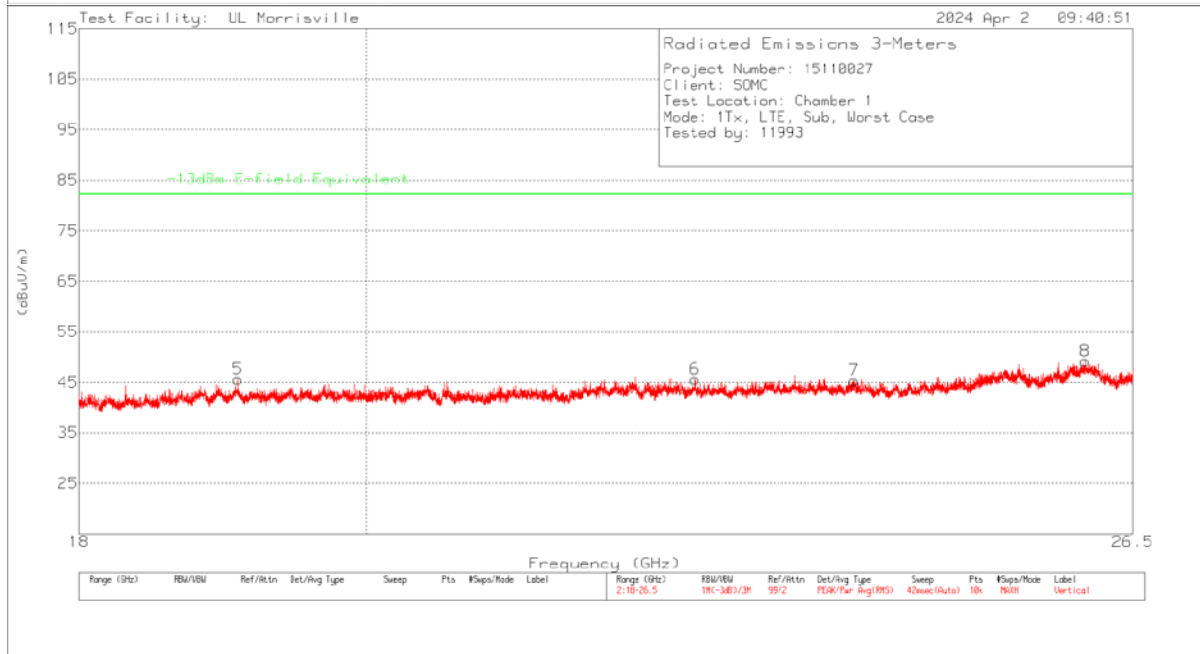
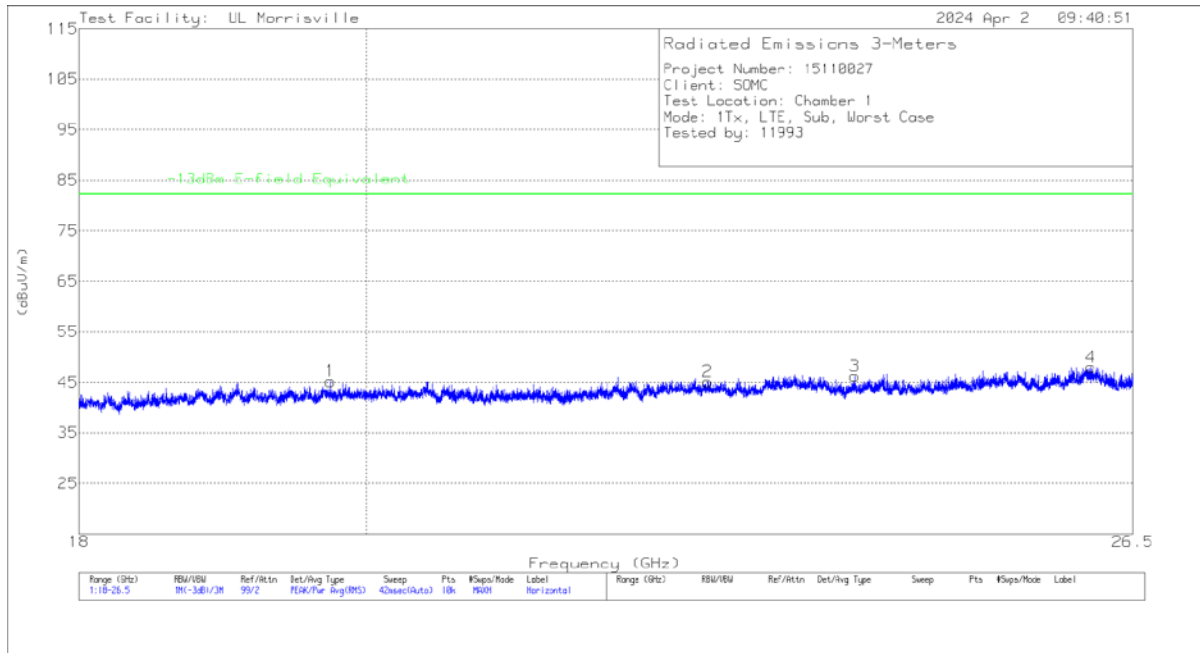
**30MHz – 1000MHz Worst-Case Emissions**



Marker	Frequency (MHz)	Meter Reading (dBm)	Det	90628 (dB/m)	Gain/Loss (dB)	Filter (dB)	Conversion Factor (dB)	Corrected Reading dBm	-13dBm	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.485	-76.89	Pk	26.5	-32.1	.1	11.8	-70.59	-13	-57.59	0-360	300	H
5	31.358	-69.47	Pk	25.9	-32.1	.1	11.8	-63.77	-13	-50.77	0-360	100	V
6	44.841	-61.18	Pk	16.6	-32	.1	11.8	-64.68	-13	-51.68	0-360	100	V
2	60.458	-69.27	Pk	13.8	-31.8	.1	11.8	-75.37	-13	-62.37	0-360	300	H
7	91.304	-61.1	Pk	14	-31.5	.1	11.8	-66.7	-13	-53.7	0-360	100	V
3	92.662	-64.28	Pk	14.4	-31.5	.1	11.8	-69.48	-13	-56.48	0-360	100	H
8	157.846	-62.4	Pk	18.4	-31	.4	11.8	-62.8	-13	-49.8	0-360	100	V
4	160.465	-59.75	Pk	18.4	-31	.4	11.8	-60.15	-13	-47.15	0-360	100	H

Pk - Peak detector

**18GHz – 26.5GHz Worst-Case Emissions**



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	204704 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	-13dBm E-field Equivalent	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	19.08024	49.89	Pk	33.7	-38	45.59	82.2	-36.61	0-360	250	V
1	19.74318	50	Pk	33.2	-38	45.2	82.2	-37	0-360	150	H
6	22.56914	49.02	Pk	34.3	-37.7	45.62	82.2	-36.58	0-360	101	V
2	22.67113	48.46	Pk	34.2	-37.5	45.16	82.2	-37.04	0-360	101	H
7	23.92221	47.95	Pk	34.4	-37	45.35	82.2	-36.85	0-360	151	V
3	23.93156	49.15	Pk	34.4	-37.3	46.25	82.2	-35.95	0-360	200	H
8	26.04105	50.05	Pk	35.3	-36.1	49.25	82.2	-32.95	0-360	151	V
4	26.09459	48.75	Pk	35.2	-36	47.95	82.2	-34.25	0-360	250	H

Pk - Peak detector

## 11. SETUP PHOTOS

See R15110027-EP2 for Setup Photos.

**END OF REPORT**