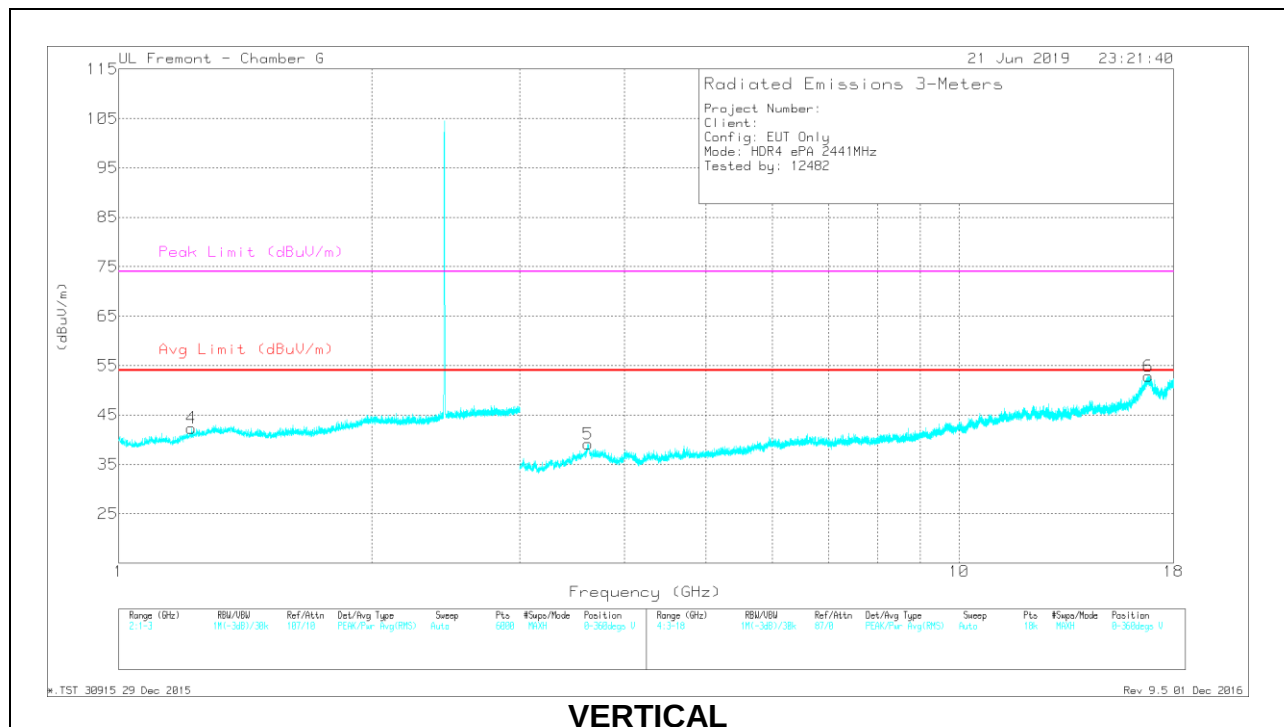
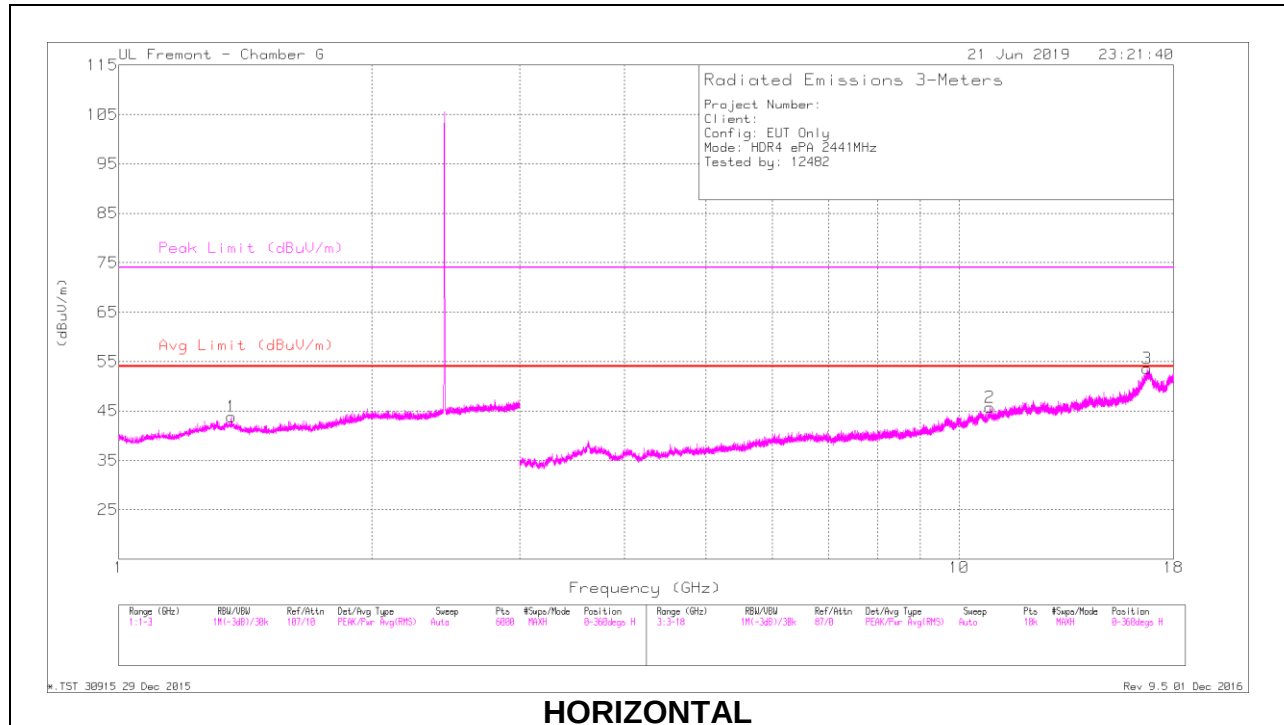


MID CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.361	43.7	PK2	29.9	-23.3	50.3	-	-	74	-23.7	124	133	H
	* 1.36	31.68	MAv1	29.9	-23.3	38.28	54	-15.72	-	-	124	133	H
4	* 1.221	43.35	PK2	29	-23.7	48.65	-	-	74	-25.35	75	202	V
	* 1.219	31.8	MAv1	29	-23.7	37.1	54	-16.9	-	-	75	202	V
2	* 10.881	37.63	PK2	38.3	-23	52.93	-	-	74	-21.07	23	355	H
	* 10.881	25.8	MAv1	38.3	-23	41.1	54	-12.9	-	-	23	355	H
5	* 3.621	41.18	PK2	35.7	-30	46.88	-	-	74	-27.12	174	179	V
	* 3.621	30.05	MAv1	35.7	-30	35.75	54	-18.25	-	-	174	179	V
3	16.734	36.59	PK2	41.8	-18.2	60.19	-	-	-	-	258	190	H
6	16.8	36.86	PK2	41.8	-17.5	61.16	-	-	-	-	213	168	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

UL Fremont - Chamber 6

22 Jun 2019 08:02:38

Radiated Emissions 3-Meters

Project Number:
Client:
Config: EUT Only
Mode: HDR4 ePA 2478MHz
Tested by: 12482

(dBuV/m)

Peak Limit (dBuV/m)

Avg Limit (dBuV/m)

Frequency (GHz)

Range (GHz)	Res/BW	Ref/Antn	Det/Avg Type	Sweep	Pts	#Swe/Mode	Position	Range (GHz)	Res/BW	Ref/Antn	Det/Avg Type	Sweep	Pts	#Swe/Mode	Position
1-18	100 kHz	0 dB	FEM/Par Avg(RMS)	50sec/Auto	6000	10/10	0-30deg H	1-18	100 kHz	0 dB	FEM/Par Avg(RMS)	200sec/Auto	10k	10/1	0-30deg H

* TST 30915 29 Dec 2015

Rev 9.5 01 Dec 2015

UL Fremont - Chamber 6

22 Jun 2019 00:02:38

Radiated Emissions 3-Meters

Project Number:
Client:
Config: EUT Only
Mode: HDR4 ePA 2478MHz
Tested by: 12482

Peak Limit (dBuV/m)

Avg Limit (dBuV/m)

Frequency (GHz)

Range (GHz)	RSU/UBW	Ref/Att'n	Det/Avg Type	Sweep	Pls	#Swe/Mode	Position	Range (GHz)	RSU/UBW	Ref/Att'n	Det/Avg Type	Sweep	Pls	#Swe/Mode	Position
2.1-3	100-300/30k	101/10	FSK/Pre Avg(RMS)	50sec(Auto)	1000	10/10	0-300Segs U	4.2-18	100-300/30k	97/1	FSK/Pre Avg(RMS)	500sec(Auto)	100	10/1	0-300Segs V

Rev 9.5 01 Dec 2015

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

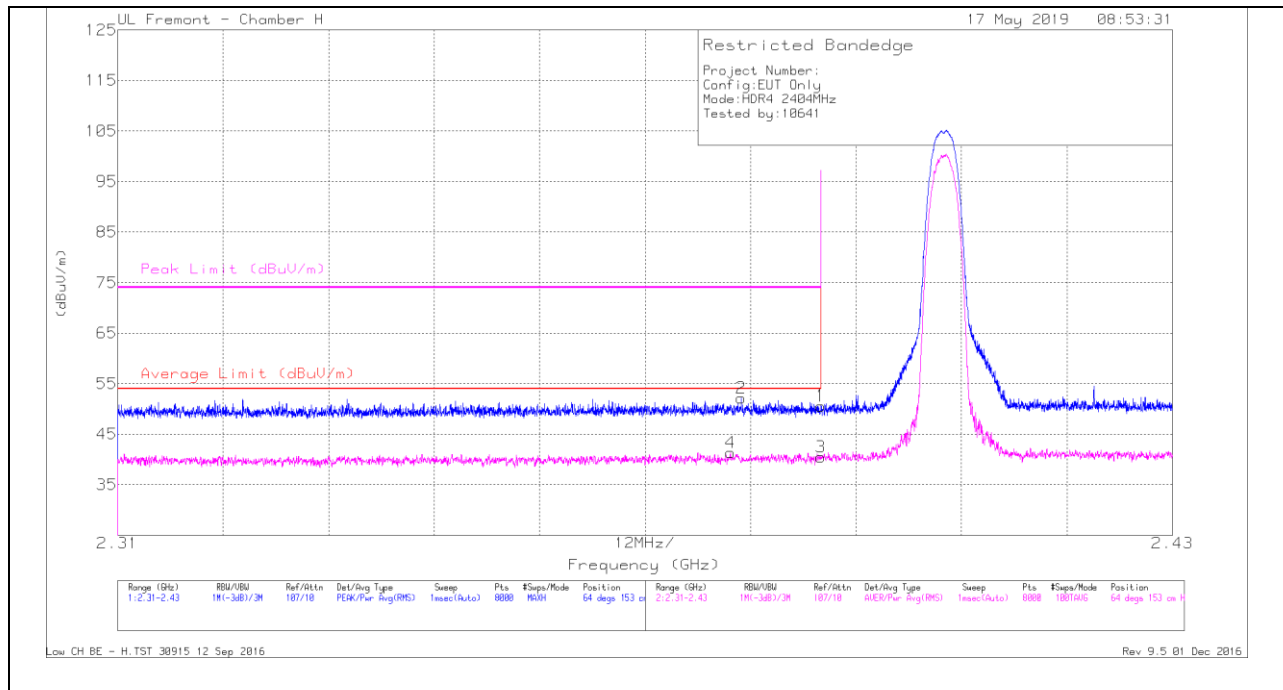
RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.346	44.32	PK2	29.8	-23.3	50.82	-	-	74	-23.18	308	390	H
	* 1.346	32.3	MAv1	29.8	-23.3	38.8	54	-15.2	-	-	308	390	H
4	* 1.324	43.23	PK2	29.8	-23.5	49.53	-	-	74	-24.47	251	122	V
	* 1.321	31.85	MAv1	29.7	-23.5	38.05	54	-15.95	-	-	251	122	V
2	* 11.187	37.32	PK2	38.5	-23.1	52.72	-	-	74	-21.28	65	225	H
	* 11.185	25.69	MAv1	38.5	-23.2	40.99	54	-13.01	-	-	65	225	H
5	* 4.019	41.54	PK2	33.6	-29.3	45.84	-	-	74	-28.16	168	202	V
	* 4.022	29.09	MAv1	33.6	-29.3	33.39	54	-20.61	-	-	168	202	V
3	16.79	36.21	PK2	41.7	-17.4	60.51	-	-	-	-	81	332	H
6	16.8	35.67	PK2	41.8	-17.5	59.97	-	-	-	-	298	216	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

Antenna 5**BANDEDGE (LOW CHANNEL)****HORIZONTAL RESULT**

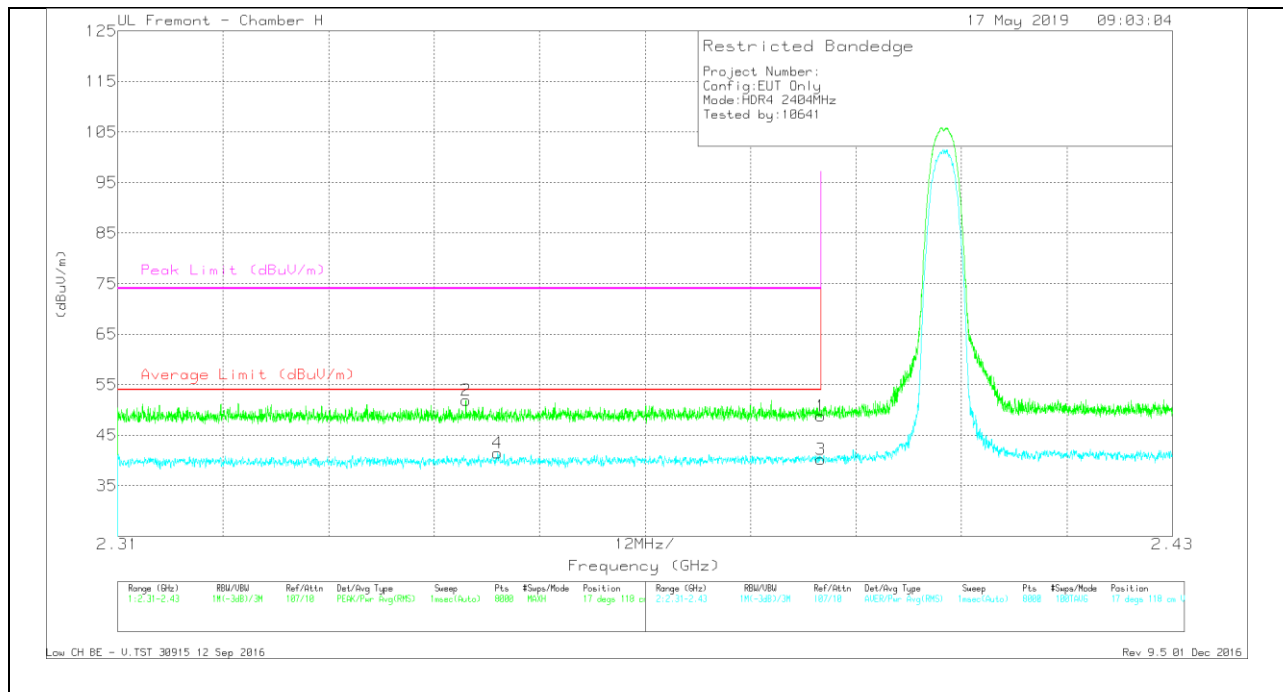
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.5	Pk	31.6	-23.5	50.6	-	-	74	-23.4	64	153	H
2	* 2.381	44.04	Pk	31.6	-23.5	52.14	-	-	74	-21.86	64	153	H
3	* 2.39	32.39	RMS	31.6	-23.5	40.49	54	-13.51	-	-	64	153	H
4	* 2.38	33.26	RMS	31.6	-23.5	41.36	54	-12.64	-	-	64	153	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

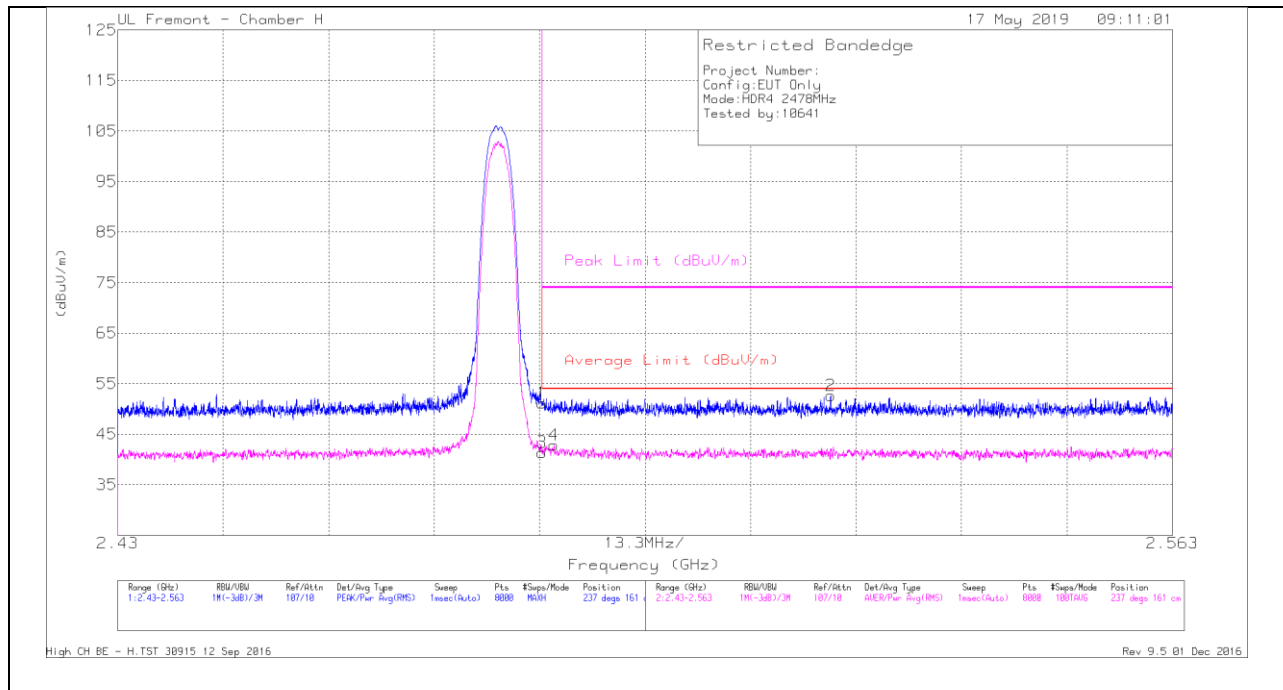


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.7	Pk	31.6	-23.5	48.8	-	-	74	-25.2	17	118	V
2	* 2.35	44.23	Pk	31.3	-23.6	51.93	-	-	74	-22.07	17	118	V
3	* 2.39	32.08	RMS	31.6	-23.5	40.18	54	-13.82	-	-	17	118	V
4	* 2.353	33.66	RMS	31.4	-23.6	41.46	54	-12.54	-	-	17	118	V

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

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)**HORIZONTAL RESULT**

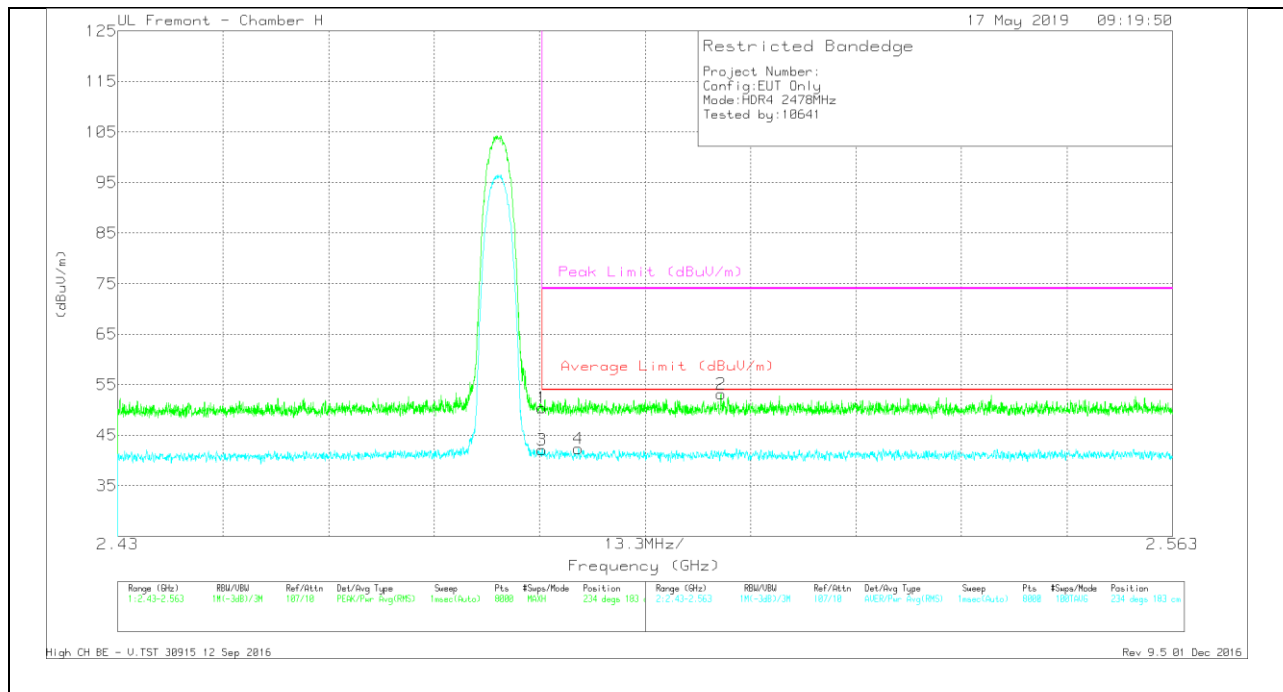
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dBm)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.14	Pk	32.3	-23.3	51.14	-	-	74	-22.86	237	161	H
3	* 2.484	32.41	RMS	32.3	-23.3	41.41	54	-12.59	-	-	237	161	H
4	* 2.485	33.89	RMS	32.3	-23.3	42.89	54	-11.11	-	-	237	161	H
2	2.52	43.52	Pk	32.3	-23.2	52.62	-	-	74	-21.38	237	161	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

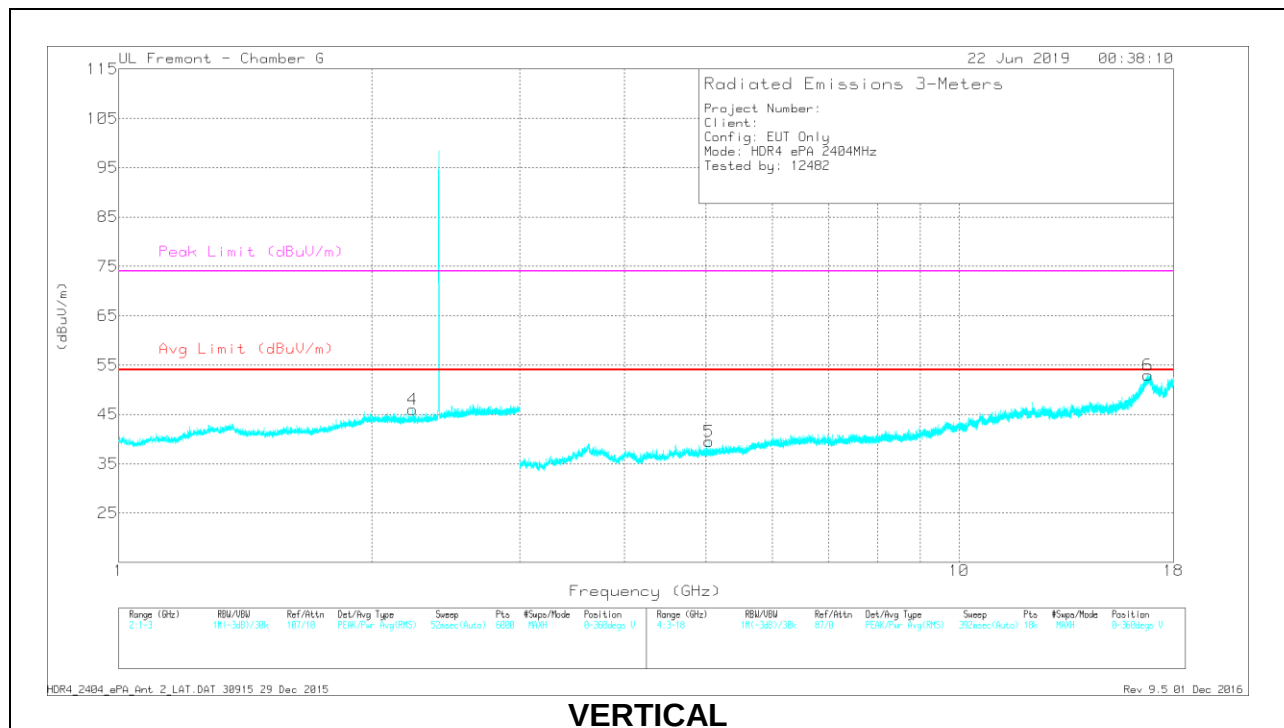
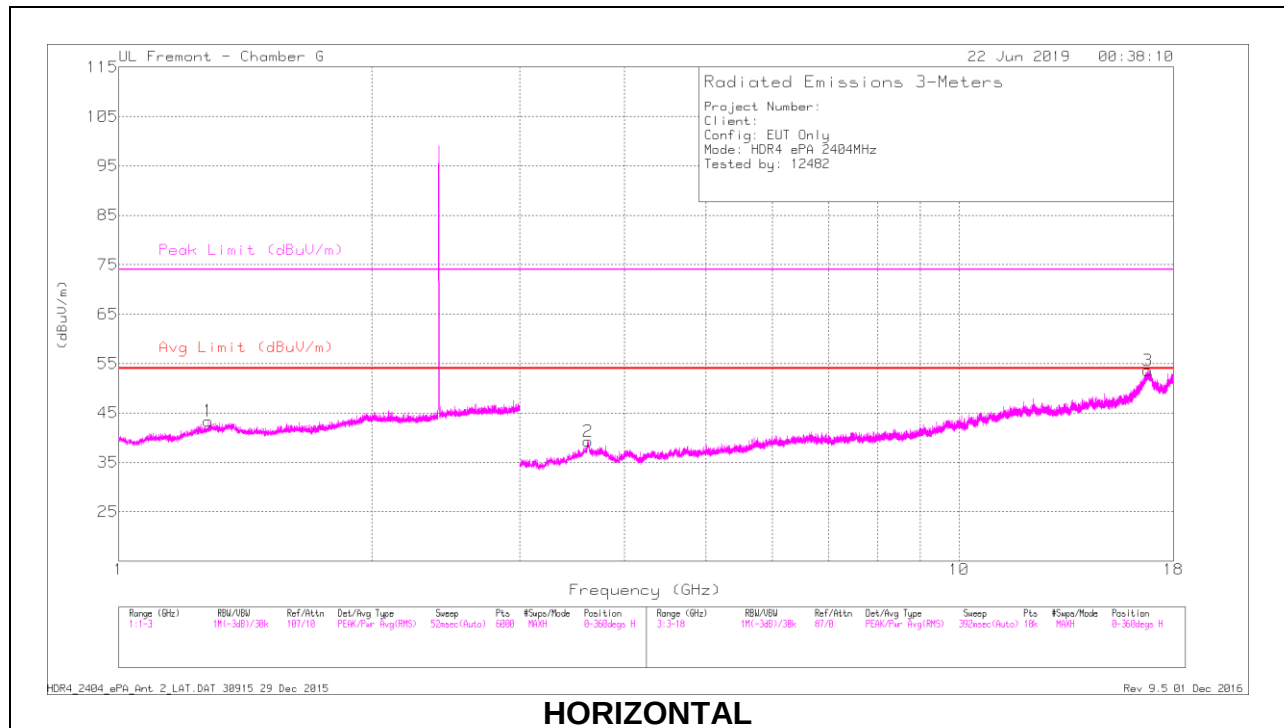


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.46	Pk	32.3	-23.3	50.46	-	-	74	-23.54	234	183	V
3	* 2.484	33.12	RMS	32.3	-23.3	42.12	54	-11.88	-	-	234	183	V
4	* 2.488	33.33	RMS	32.3	-23.3	42.33	54	-11.67	-	-	234	183	V
2	2.506	44.01	Pk	32.3	-23.2	53.11	-	-	74	-20.89	234	183	V

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

Pk - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL RESULTS**

RADIATED EMISSIONS

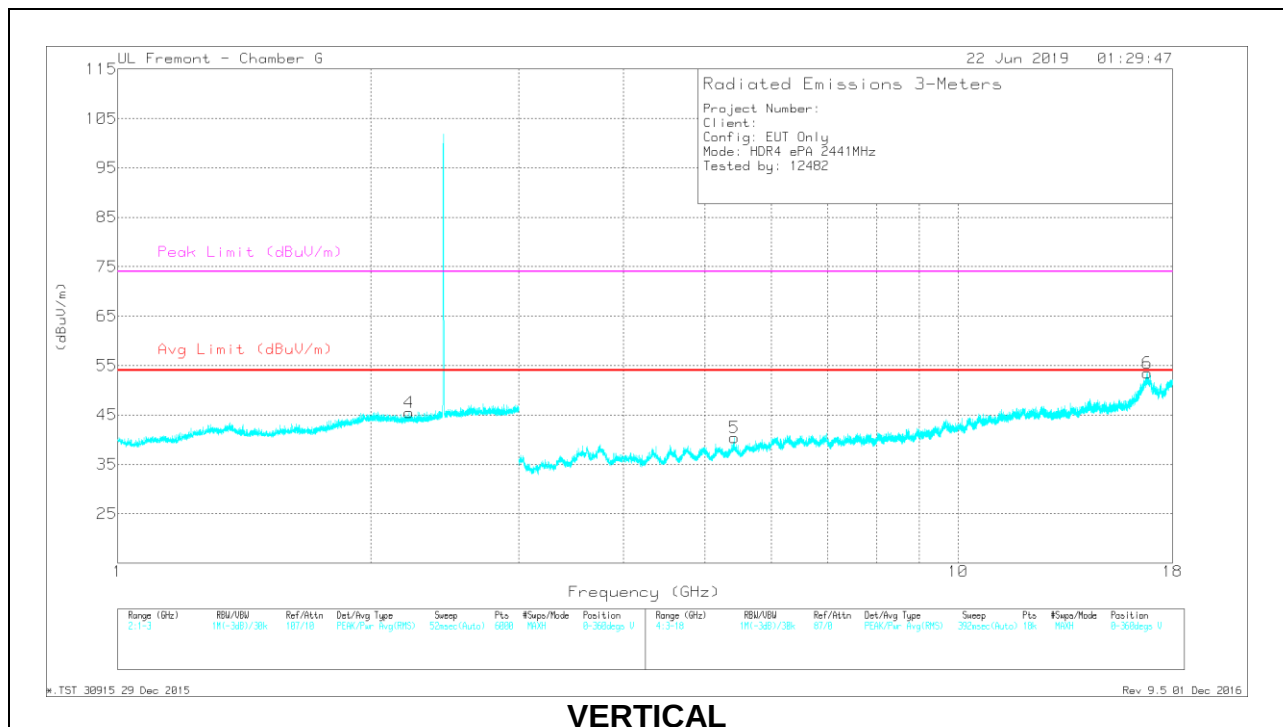
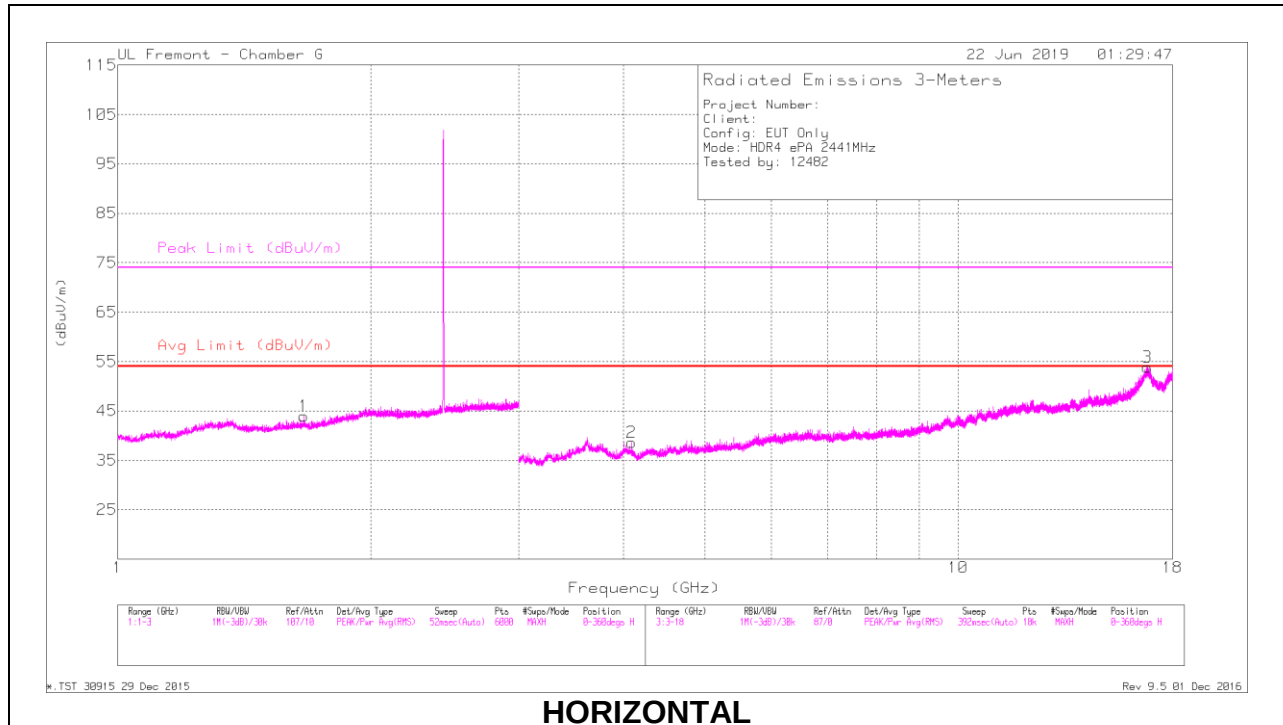
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.279	43.91	PK2	29.8	-23.6	50.11	-	-	74	-23.89	95	113	H
	* 1.277	31.83	MAv1	29.8	-23.6	38.03	54	-15.97	-	-	95	113	H
4	* 2.239	42.69	PK2	31.8	-22.4	52.09	-	-	74	-21.91	95	188	V
	* 2.239	30.85	MAv1	31.9	-22.4	40.35	54	-13.65	-	-	95	188	V
2	* 3.62	41.68	PK2	35.7	-30	47.38	-	-	74	-26.62	244	334	H
	* 3.618	30.25	MAv1	35.7	-30.1	35.85	54	-18.15	-	-	244	334	H
5	* 5.041	40.51	PK2	34.3	-29.3	45.51	-	-	74	-28.49	46	288	V
	* 5.039	29.06	MAv1	34.3	-29.2	34.16	54	-19.84	-	-	46	288	V
3	16.784	36.68	PK2	41.7	-17.5	60.88	-	-	-	-	312	158	H
6	16.79	36.48	PK2	41.7	-17.4	60.78	-	-	-	-	70	203	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



RADIATED EMISSIONS

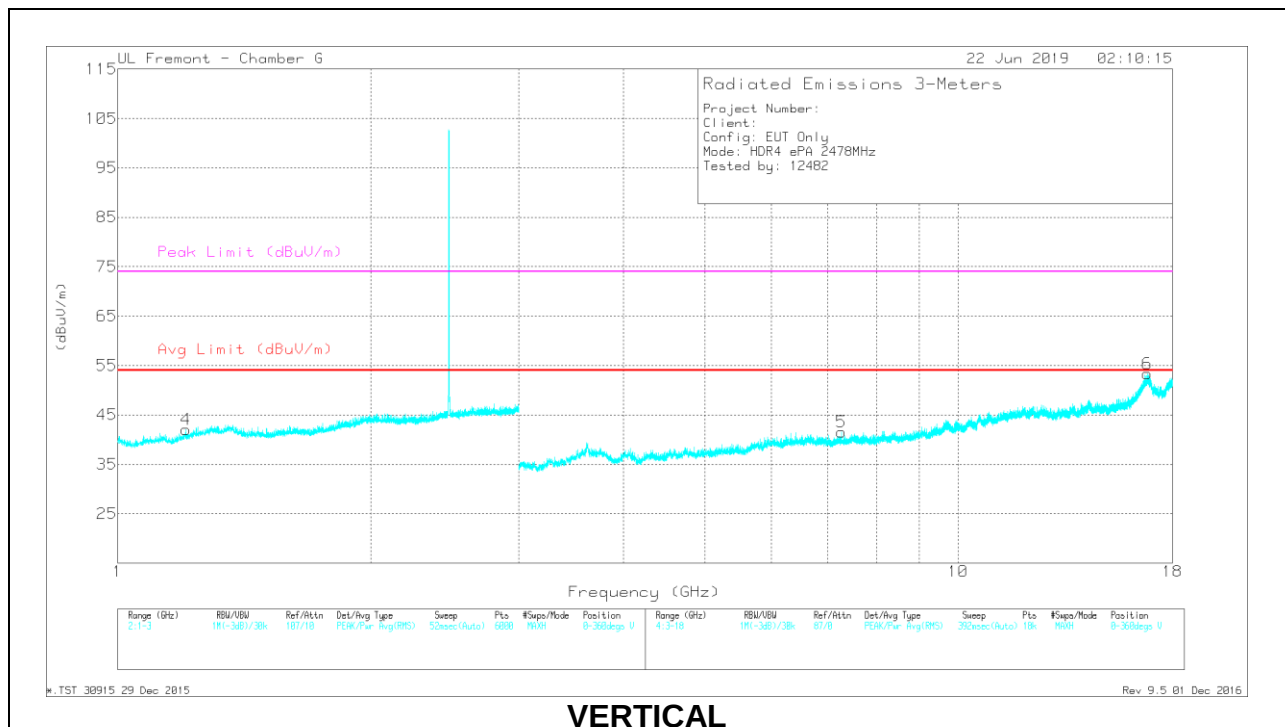
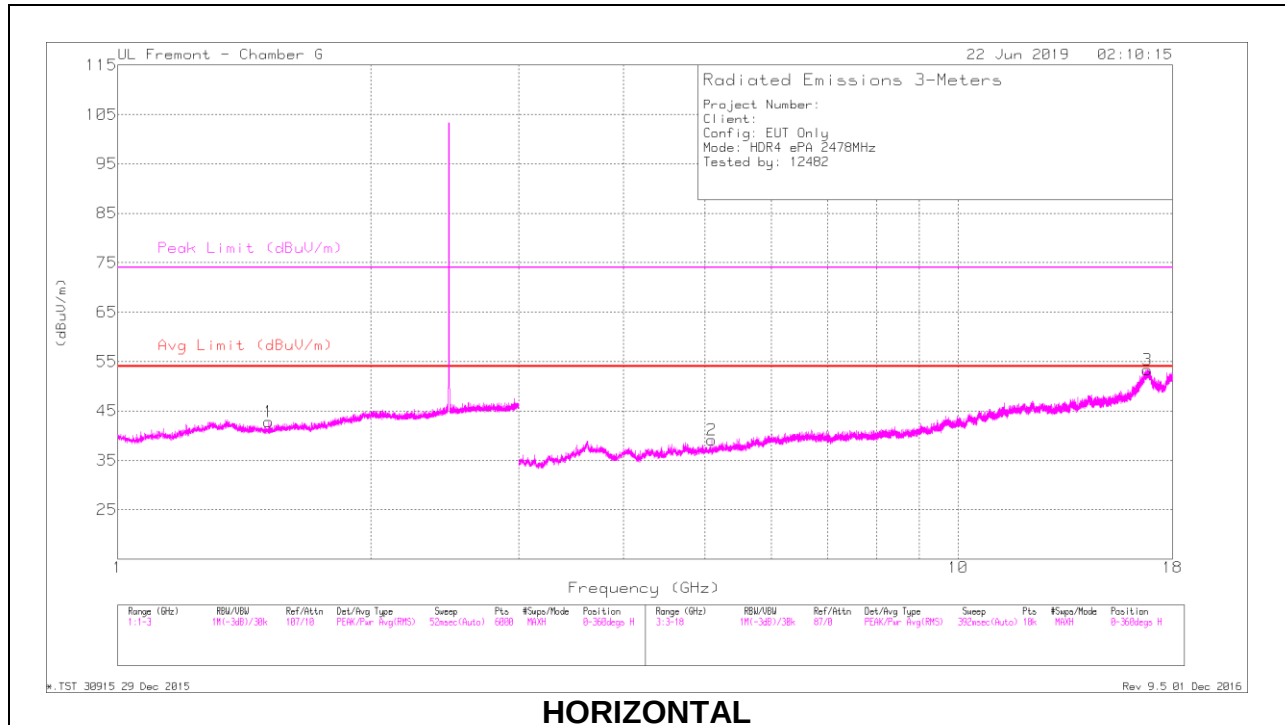
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.665	43.24	PK2	28.3	-21.5	50.04	-	-	74	-23.96	28	342	H
	* 1.666	31.84	MAv1	28.3	-21.5	38.64	54	-15.36	-	-	28	342	H
4	* 2.224	43.44	PK2	31.9	-22.4	52.94	-	-	74	-21.06	94	176	V
	* 2.224	31.91	MAv1	31.9	-22.4	41.41	54	-12.59	-	-	94	176	V
2	* 4.086	40.65	PK2	33.7	-29.8	44.55	-	-	74	-29.45	322	143	H
	* 4.085	29.59	MAv1	33.7	-29.7	33.59	54	-20.41	-	-	322	143	H
5	* 5.423	40.81	PK2	34.7	-29.1	46.41	-	-	74	-27.59	174	242	V
	* 5.42	29.35	MAv1	34.7	-29.1	34.95	54	-19.05	-	-	174	242	V
6	16.796	36.02	PK2	41.8	-17.5	60.32	-	-	-	-	72	218	V
3	16.803	37.03	PK2	41.8	-17.6	61.23	-	-	-	-	131	206	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



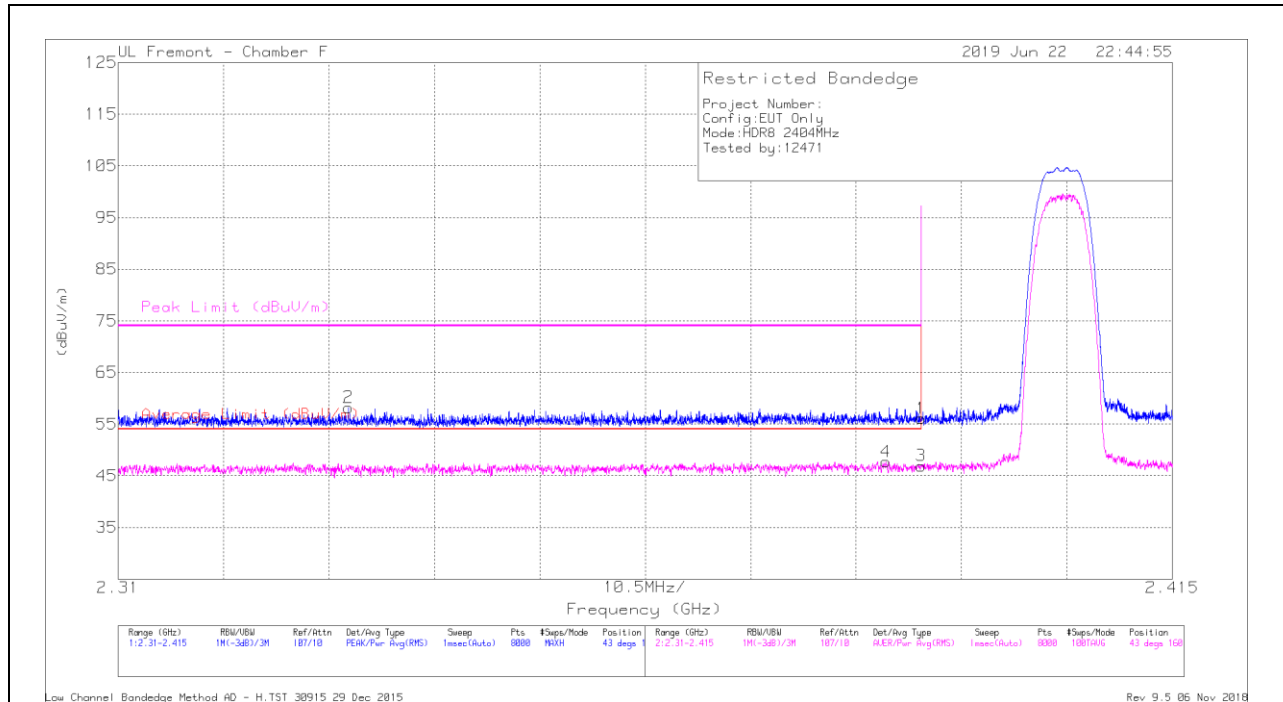
RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.513	42.93	PK2	27.8	-21.9	48.83	-	-	74	-25.17	358	256	H
	* 1.515	31.71	MAv1	27.7	-21.9	37.51	54	-16.49	-	-	358	256	H
4	* 1.205	44.38	PK2	28.6	-23.7	49.28	-	-	74	-24.72	301	155	V
	* 1.205	32.49	MAv1	28.6	-23.7	37.39	54	-16.61	-	-	301	155	V
2	* 5.094	39.68	PK2	34.3	-29.4	44.58	-	-	74	-29.42	155	105	H
	* 5.098	28.73	MAv1	34.4	-29.4	33.73	54	-20.27	-	-	155	105	H
5	* 7.274	39.05	PK2	35.9	-27.3	47.65	-	-	74	-26.35	14	268	V
	* 7.273	27.84	MAv1	35.9	-27.3	36.44	54	-17.56	-	-	14	268	V
3	16.793	36.97	PK2	41.7	-17.4	61.27	-	-	-	-	132	177	H
6	16.797	35.85	PK2	41.8	-17.5	60.15	-	-	-	-	264	212	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.2.2. HIGH POWER HDR (HDR8)**Antenna 2****BANDEDGE (LOW CHANNEL)****HORIZONTAL RESULT**

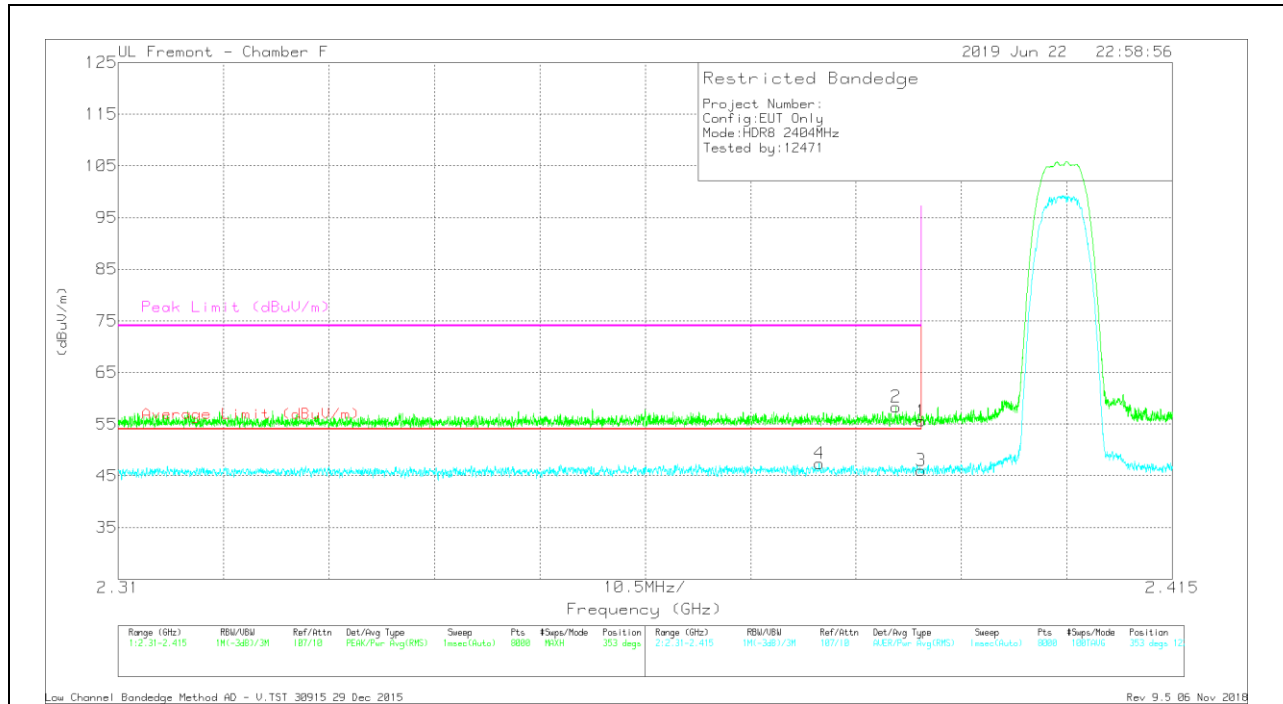
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dBm)	Amp/Cbl/Filtr /Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.6	Pk	32	-14.5	56.1	-	-	74	-17.9	43	160	H
2	* 2.333	41.12	Pk	31.6	-14.5	58.22	-	-	74	-15.78	43	160	H
3	* 2.39	29.42	RMS	32	-14.5	46.92	54	-7.08	-	-	43	160	H
4	* 2.386	30.29	RMS	31.9	-14.5	47.69	54	-6.31	-	-	43	160	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

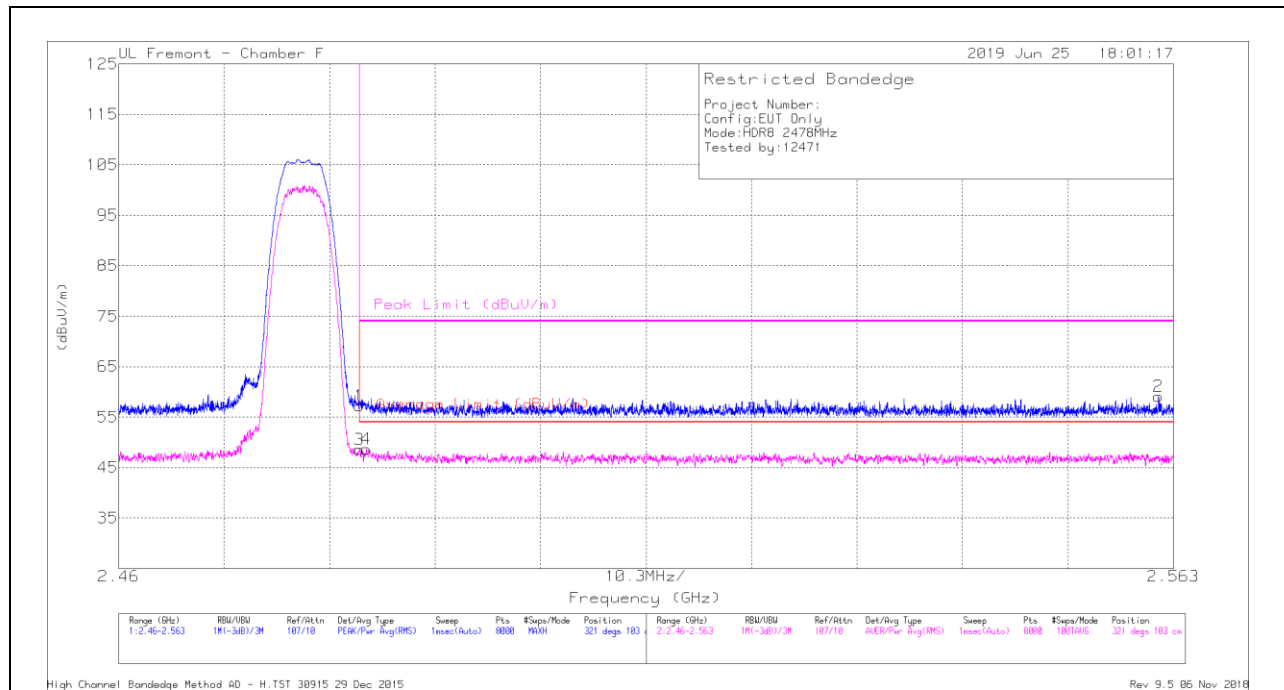


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.13	Pk	32	-14.5	55.63	-	-	74	-18.37	353	122	V
2	* 2.387	40.94	Pk	31.9	-14.5	58.34	-	-	74	-15.66	353	122	V
3	* 2.39	28.52	RMS	32	-14.5	46.02	54	-7.98	-	-	353	122	V
4	* 2.38	29.89	RMS	31.9	-14.4	47.39	54	-6.61	-	-	353	122	V

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

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)**HORIZONTAL RESULT**

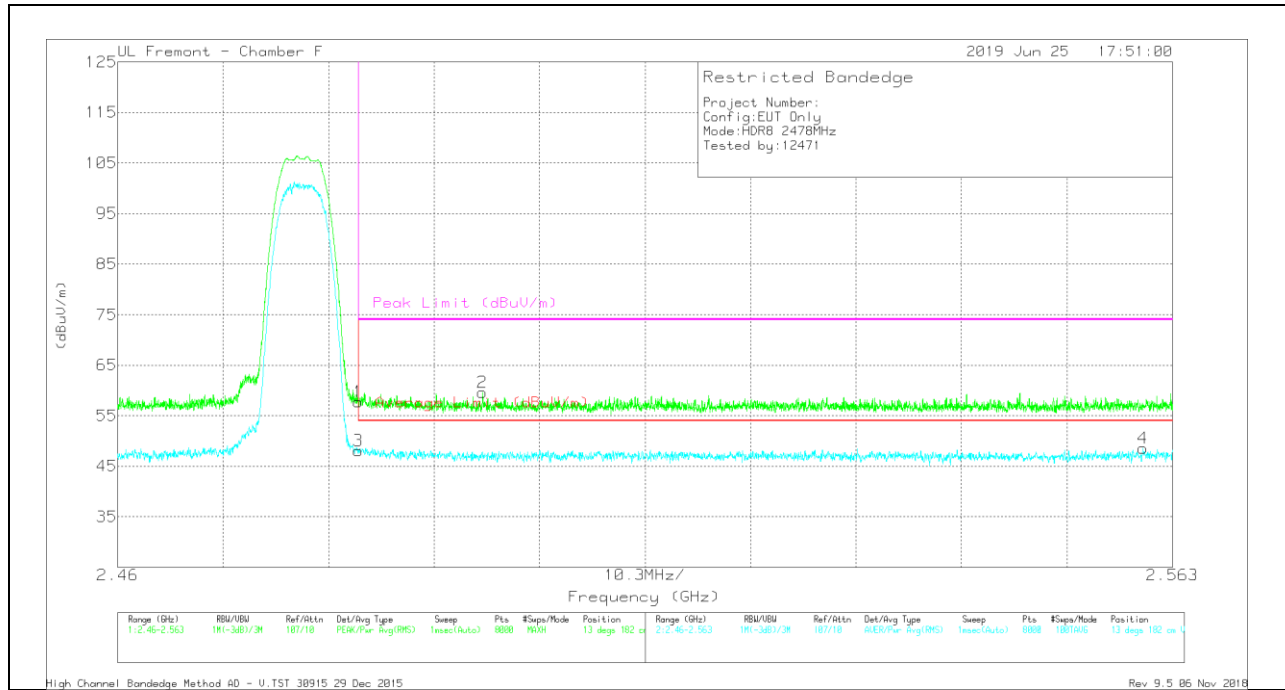
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.56	Pk	32.4	-14.7	57.26	-	-	74	-16.74	321	103	H
2	2.562	41.35	Pk	32.4	-14.6	59.15	-	-	74	-14.85	321	103	H
3	* 2.484	30.85	RMS	32.4	-14.7	48.55	54	-5.45	-	-	321	103	H
4	* 2.484	31.01	RMS	32.4	-14.7	48.71	54	-5.29	-	-	321	103	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

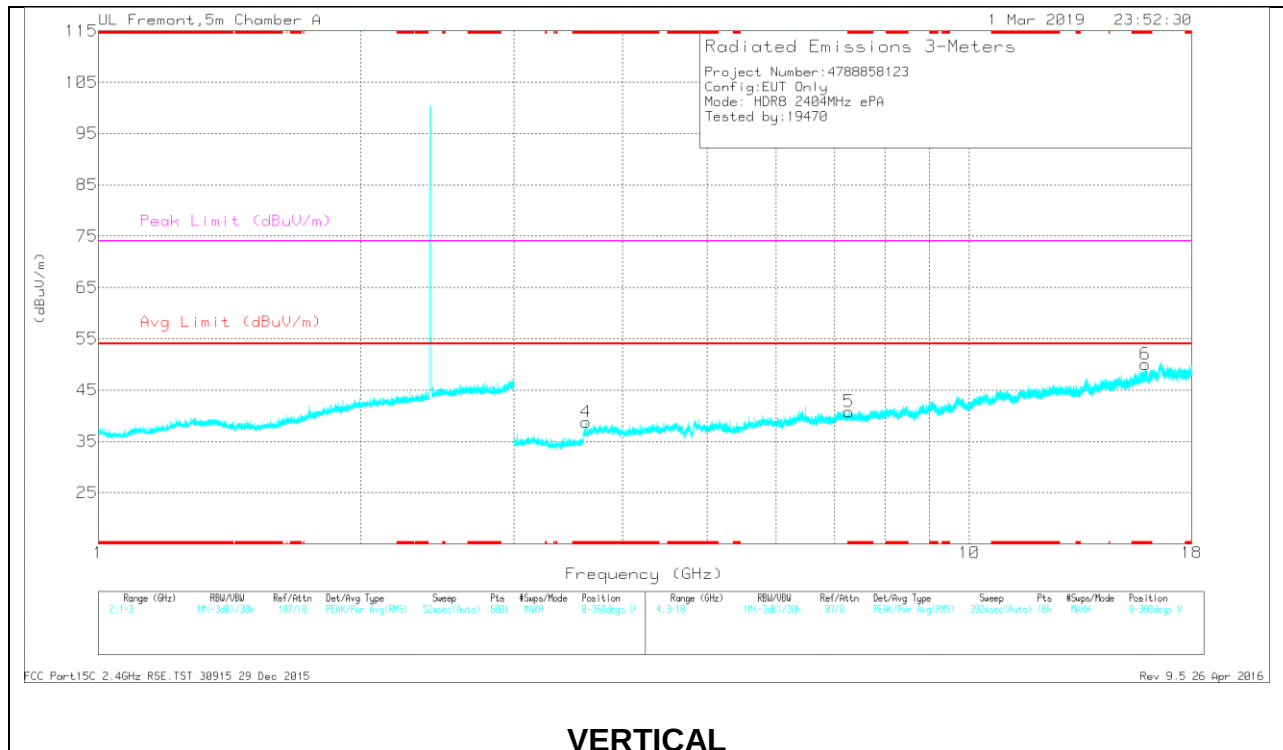
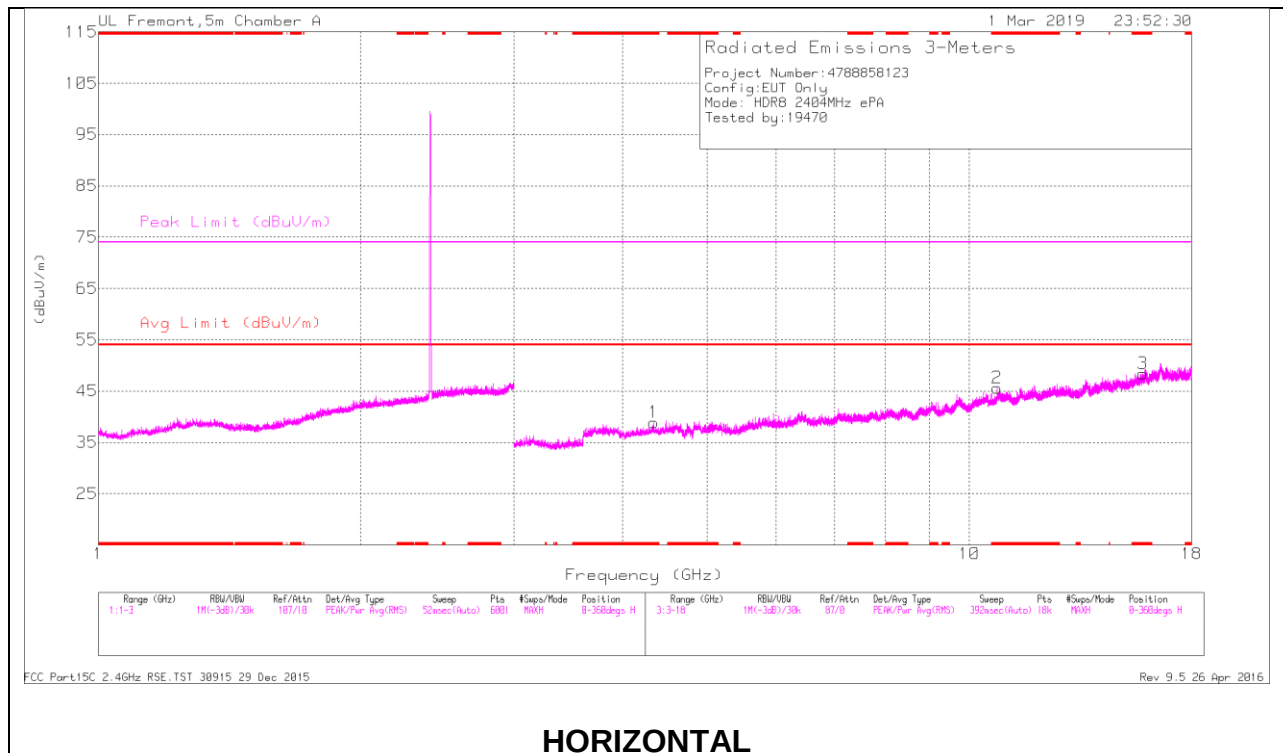


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.03	Pk	32.4	-14.7	57.73	-	-	74	-16.27	13	182	V
2	* 2.496	42.01	Pk	32.4	-14.8	59.61	-	-	74	-14.39	13	182	V
3	* 2.484	30.37	RMS	32.4	-14.7	48.07	54	-5.93	-	-	13	182	V
4	2.56	30.8	RMS	32.4	-14.6	48.6	54	-5.4	-	-	13	182	V

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

Pk - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL RESULTS**

RADIATED EMISSIONS

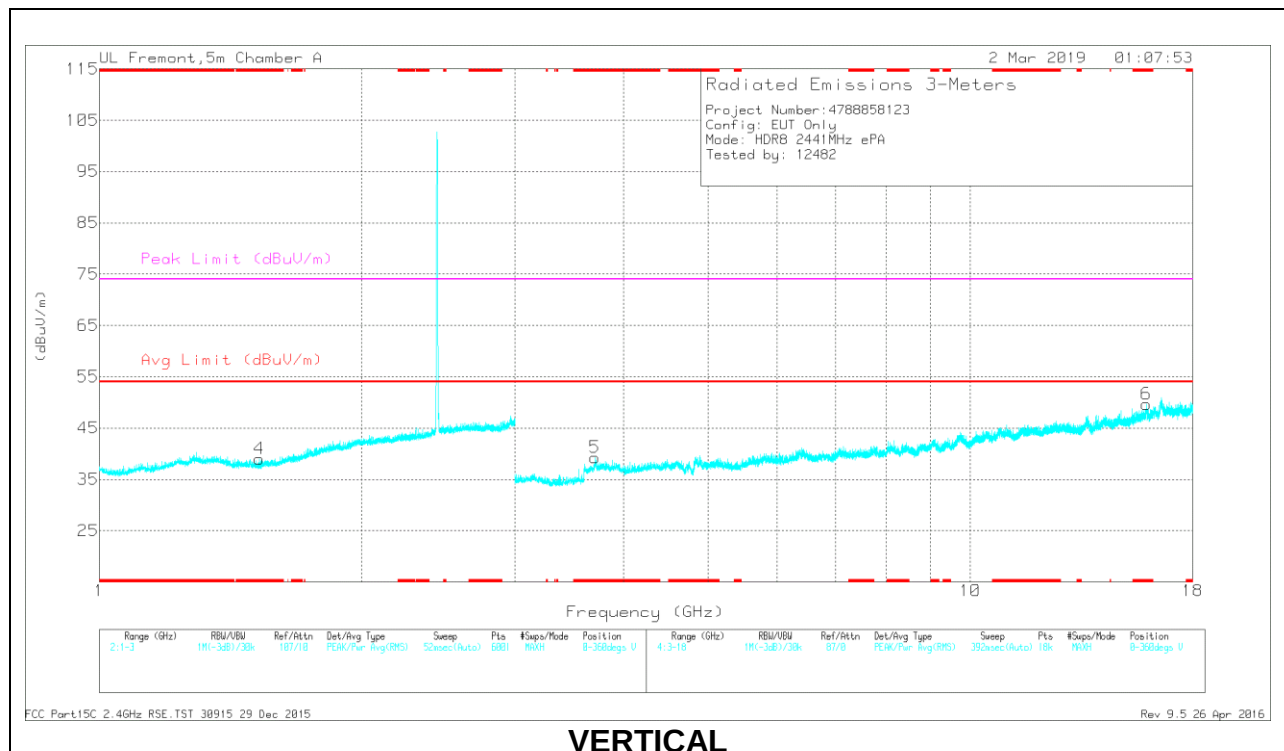
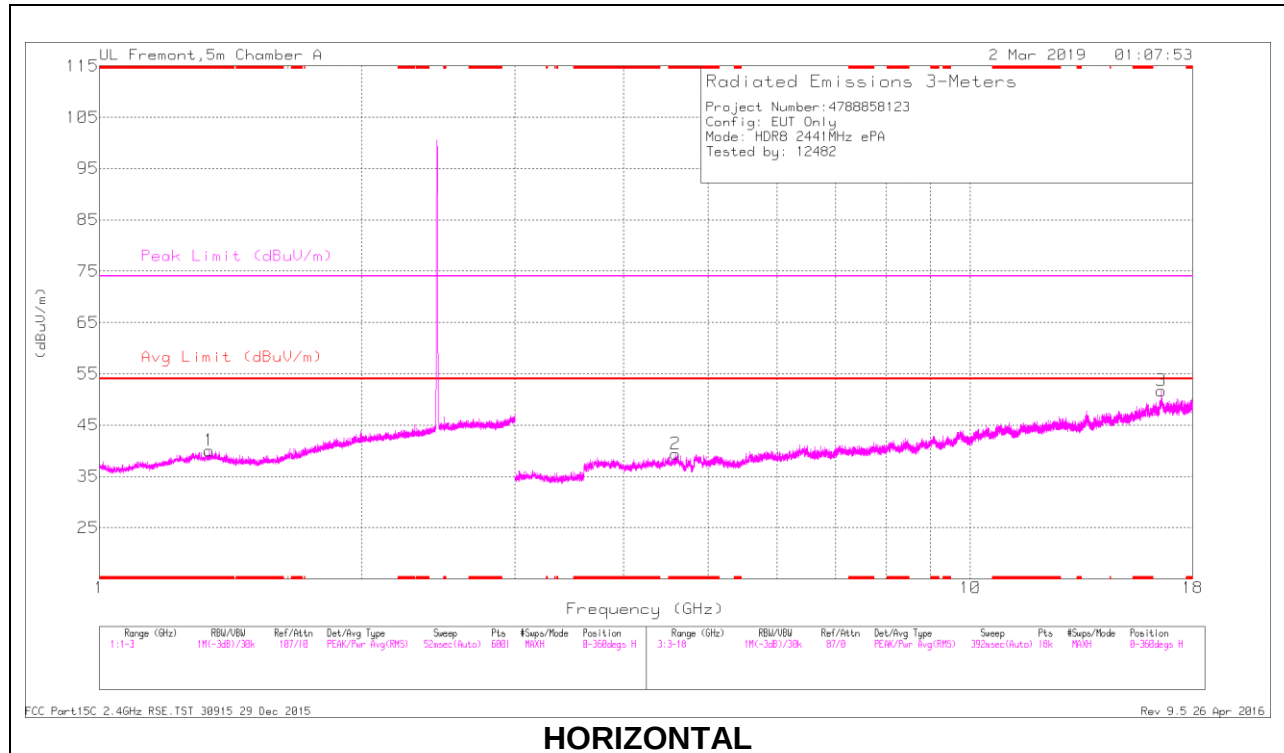
Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/ Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.338	38.88	PK2	34	-28.6	44.28	-	-	74	-29.72	109	102	H
	* 4.339	29.12	MAv1	34	-28.6	34.52	54	-19.48	-	-	109	102	H
2	* 10.77	32.66	PK2	37.9	-19.6	50.96	-	-	74	-23.04	122	144	H
	* 10.77	23.12	MAv1	37.9	-19.6	41.42	54	-12.58	-	-	122	144	H
3	* 15.831	33.29	PK2	40.7	-19.4	54.59	-	-	74	-19.41	207	199	H
	* 15.83	23.4	MAv1	40.7	-19.4	44.7	54	-9.3	-	-	207	199	H
4	* 3.629	38.91	PK2	33.1	-29.5	42.51	-	-	74	-31.49	114	188	V
	* 3.629	29.05	MAv1	33.1	-29.5	32.65	54	-21.35	-	-	114	188	V
5	* 7.27	35.78	PK2	35.6	-24.6	46.78	-	-	74	-27.22	177	128	V
	* 7.27	25.93	MAv1	35.6	-24.6	36.93	54	-17.07	-	-	177	128	V
6	* 15.931	33.6	PK2	40.8	-17.6	56.8	-	-	74	-17.2	219	216	V
	* 15.93	22.79	MAv1	40.8	-17.6	45.99	54	-8.01	-	-	219	216	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



RADIATED EMISSIONS

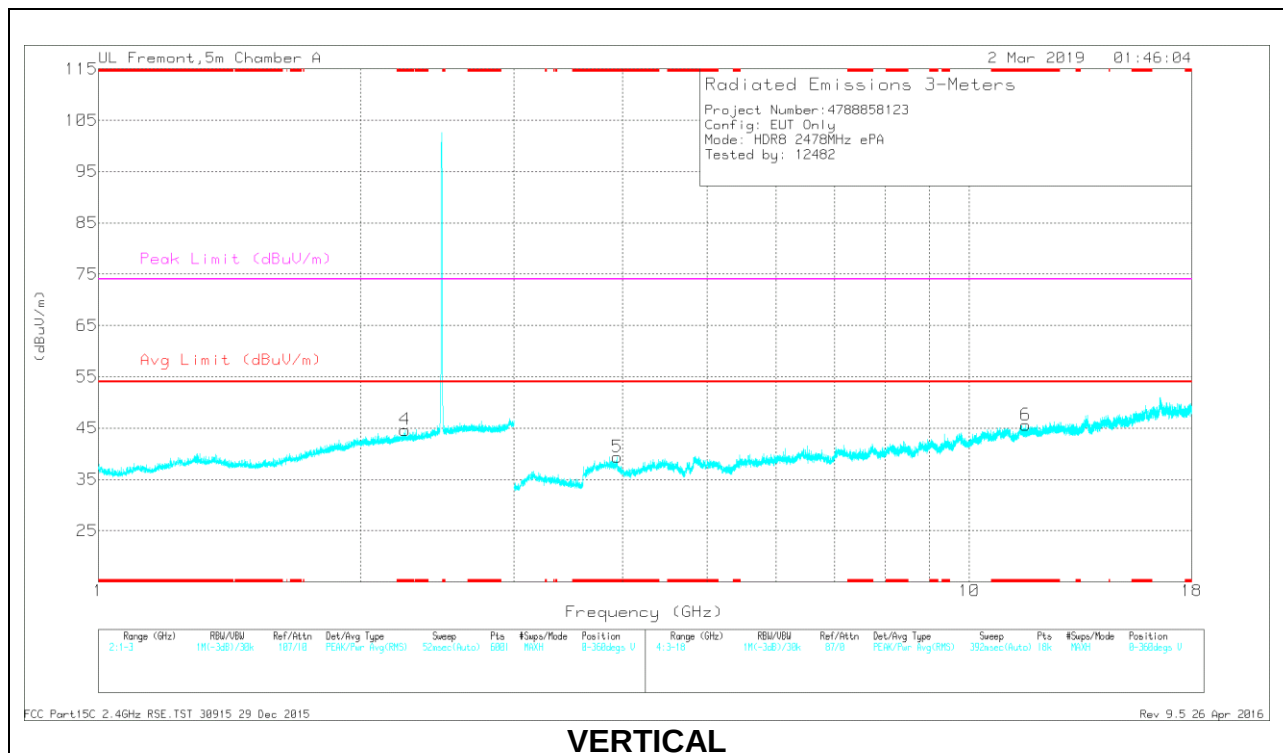
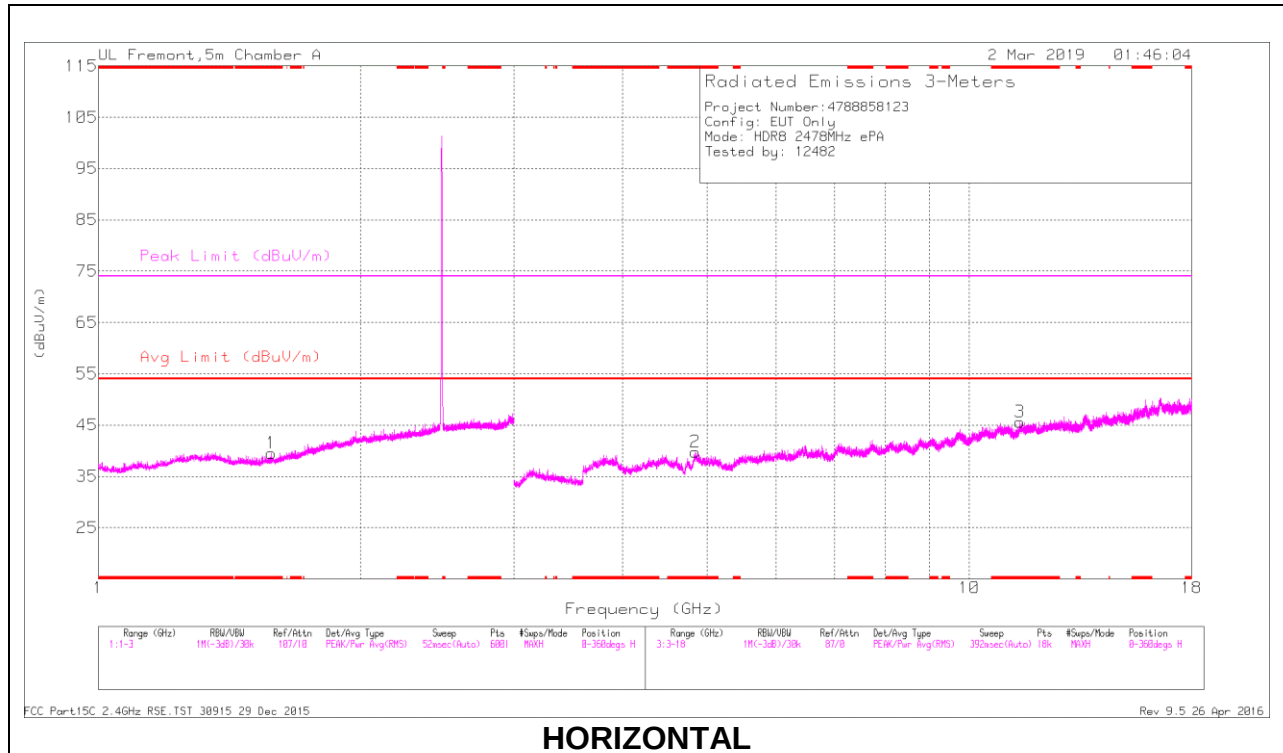
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.338	42.29	PK2	28.9	-25	46.19	-	-	74	-27.81	226	363	H
	* 1.336	30.81	MAv1	28.9	-24.9	34.81	54	-19.19	-	-	226	363	H
4	* 1.524	41.96	PK2	27.8	-24.4	45.36	-	-	74	-28.64	95	320	V
	* 1.524	31.24	MAv1	27.8	-24.5	34.54	54	-19.46	-	-	95	320	V
2	* 4.584	38.87	PK2	34.2	-27.9	45.17	-	-	74	-28.83	182	315	H
	* 4.583	27.94	MAv1	34.2	-27.9	34.24	54	-19.76	-	-	182	315	H
5	* 3.709	39.26	PK2	33.2	-28.6	43.86	-	-	74	-30.14	170	266	V
	* 3.709	28.75	MAv1	33.2	-28.6	33.35	54	-20.65	-	-	170	266	V
6	* 15.914	32.59	PK2	40.8	-17.9	55.49	-	-	74	-18.51	121	160	V
	* 15.914	22.06	MAv1	40.8	-17.9	44.96	54	-9.04	-	-	121	160	V
3	16.564	33.33	PK2	41.9	-18.4	56.83	-	-	74	-17.17	295	104	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



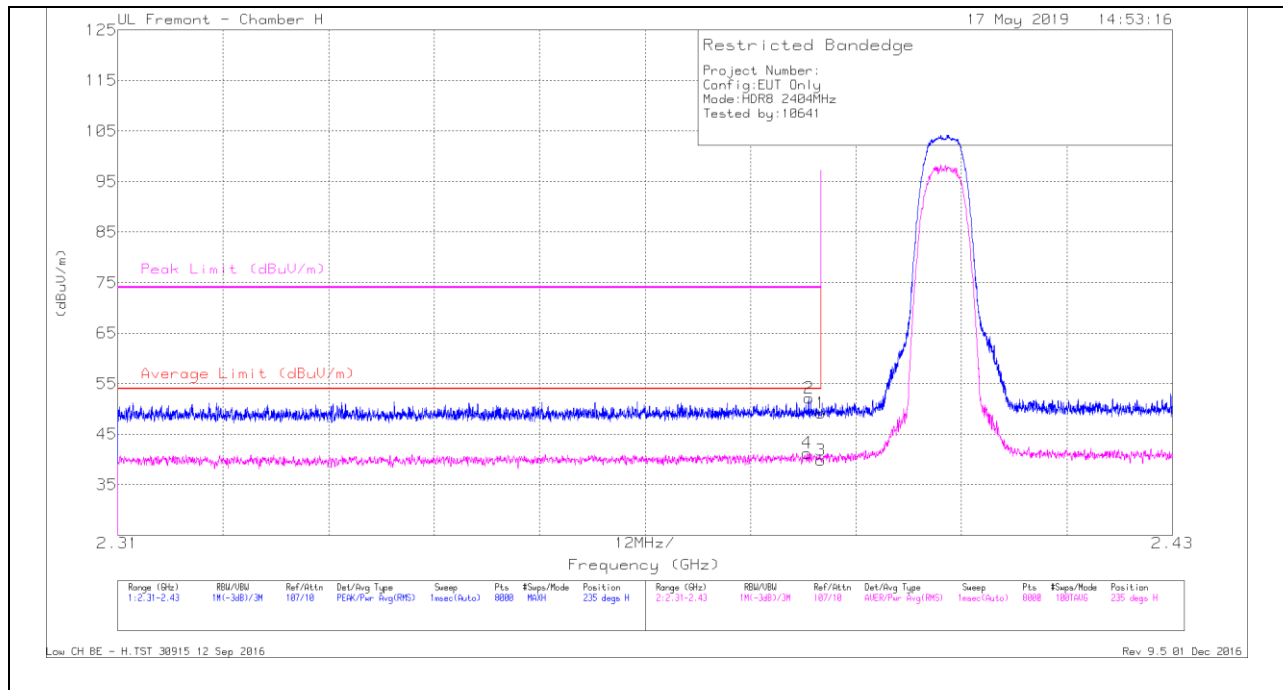
RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.577	42.11	PK2	28.1	-24.3	45.91	-	-	74	-28.09	344	199	H
	* 1.579	30.54	MAV1	28.1	-24.2	34.44	54	-19.56	-	-	344	199	H
4	* 2.249	41.87	PK2	31.6	-22.8	50.67	-	-	74	-23.33	206	114	V
	* 2.247	30.92	MAV1	31.6	-22.9	39.62	54	-14.38	-	-	206	114	V
2	* 4.85	37.53	PK2	34.1	-27.1	44.53	-	-	74	-29.47	246	321	H
	* 4.849	27.21	MAV1	34.1	-27.1	34.21	54	-19.79	-	-	246	321	H
3	* 11.438	32.83	PK2	38.2	-19.6	51.43	-	-	74	-22.57	85	214	H
	* 11.439	22.82	MAV1	38.1	-19.6	41.32	54	-12.68	-	-	85	214	H
5	* 3.943	39.22	PK2	33.6	-28.7	44.12	-	-	74	-29.88	118	358	V
	* 3.943	28.53	MAV1	33.6	-28.7	33.43	54	-20.57	-	-	118	358	V
6	* 11.614	33.1	PK2	38.3	-20.4	51	-	-	74	-23	35	278	V
	* 11.613	22.99	MAV1	38.3	-20.4	40.89	54	-13.11	-	-	35	278	V

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

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

Antenna 5**BANEDGE (LOW CHANNEL)****HORIZONTAL RESULT**

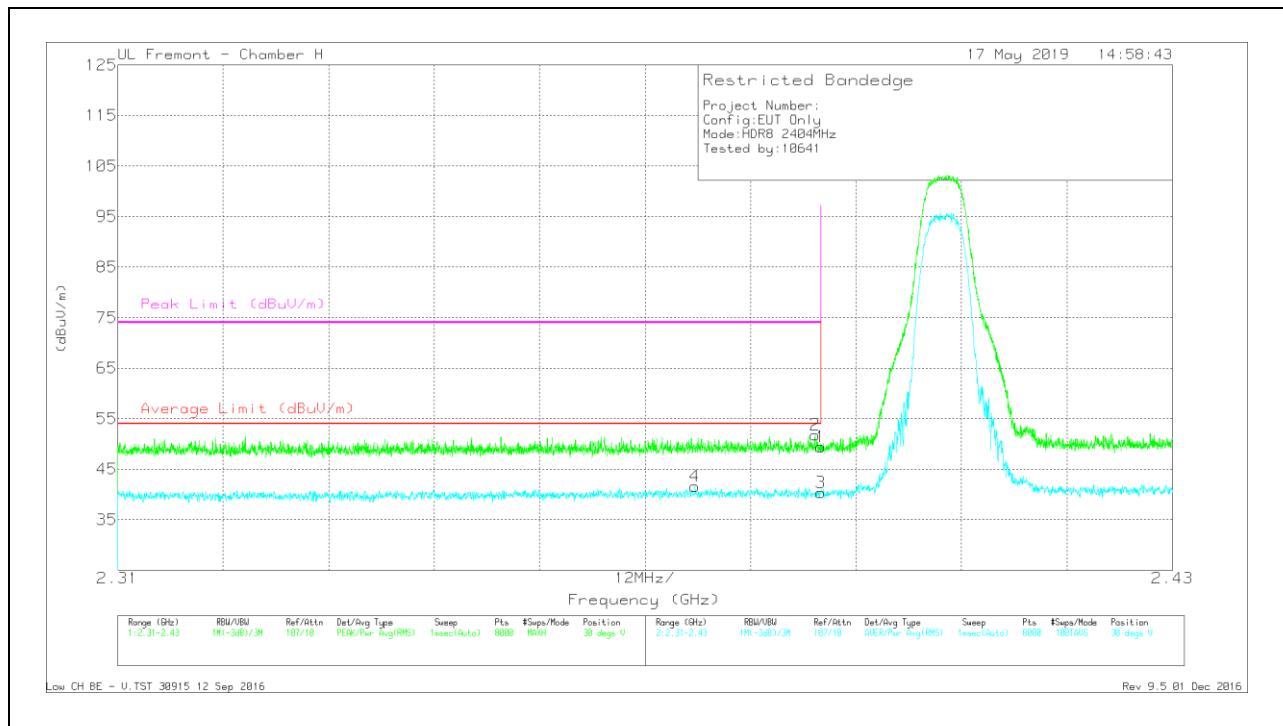
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/CbI/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.03	Pk	31.6	-23.5	49.13	-	-	74	-24.87	235	218	H
2	* 2.389	44.01	Pk	31.6	-23.5	52.11	-	-	74	-21.89	235	218	H
3	* 2.39	31.77	RMS	31.6	-23.5	39.87	54	-14.13	-	-	235	218	H
4	* 2.388	33.19	RMS	31.6	-23.5	41.29	54	-12.71	-	-	235	218	H

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

Pk - Peak detector

RMS - RMS detection

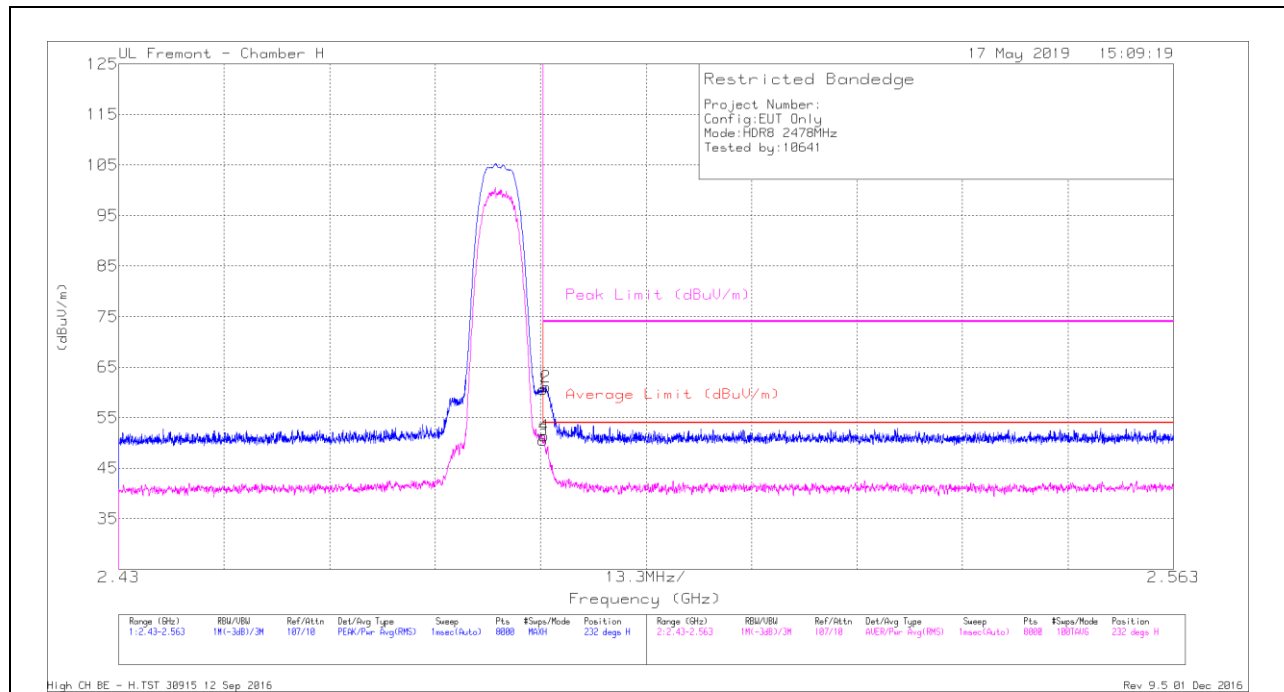
VERTICAL RESULT



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

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)**HORIZONTAL RESULT**

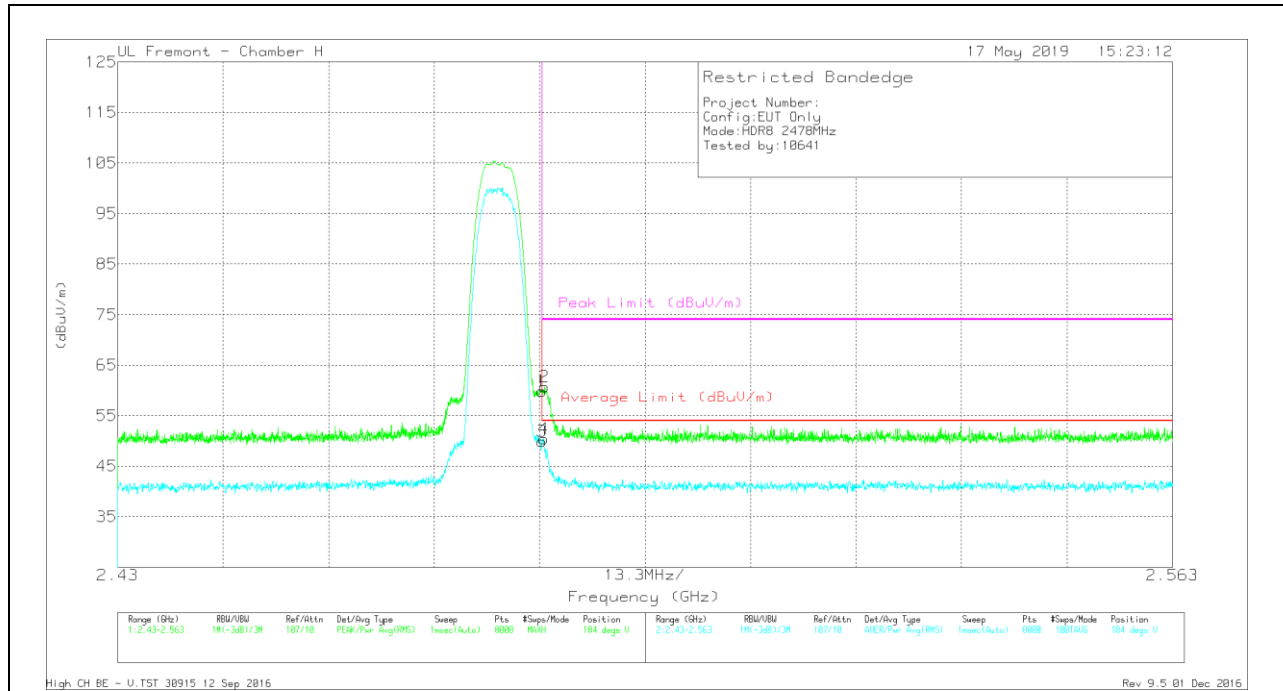
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	51.6	Pk	32.3	-23.3	60.6	-	-	74	-13.4	232	114	H
2	* 2.484	52.09	Pk	32.3	-23.3	61.09	-	-	74	-12.91	232	114	H
3	* 2.484	41.49	RMS	32.3	-23.3	50.49	54	-3.51	-	-	232	114	H
4	* 2.484	42.4	RMS	32.3	-23.3	51.4	54	-2.6	-	-	232	114	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

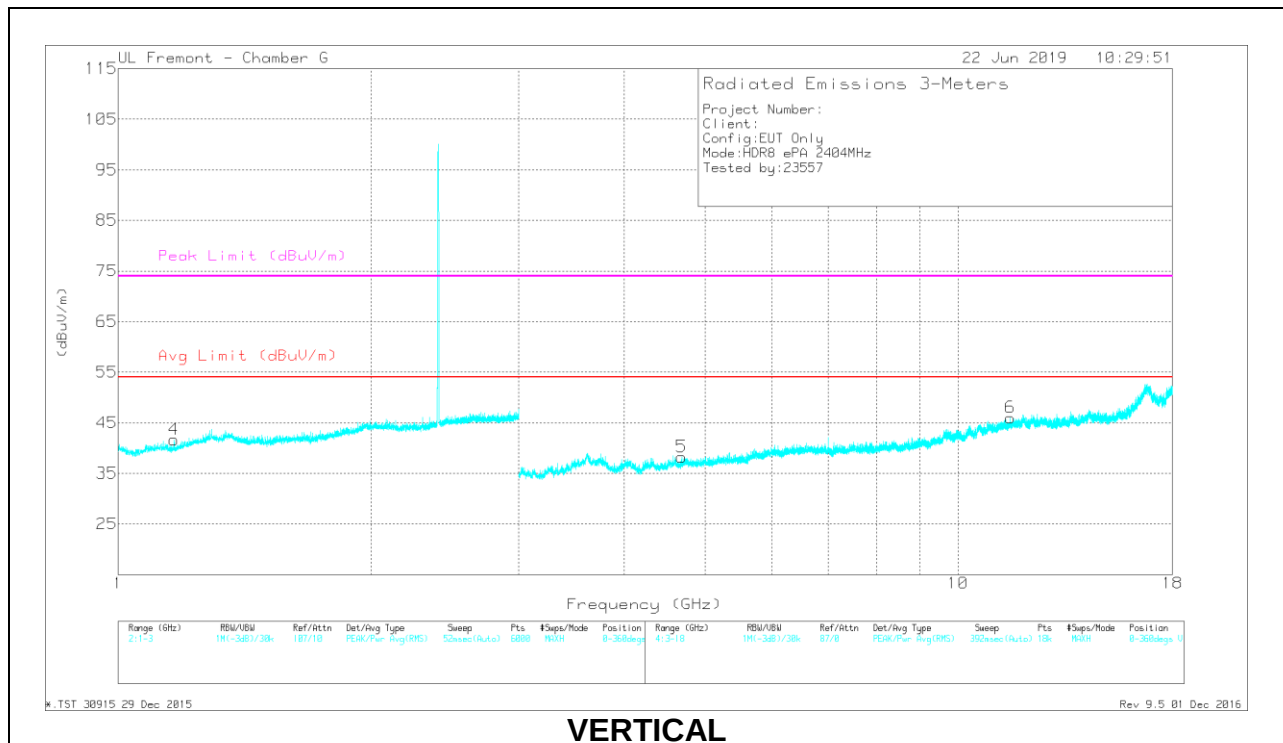
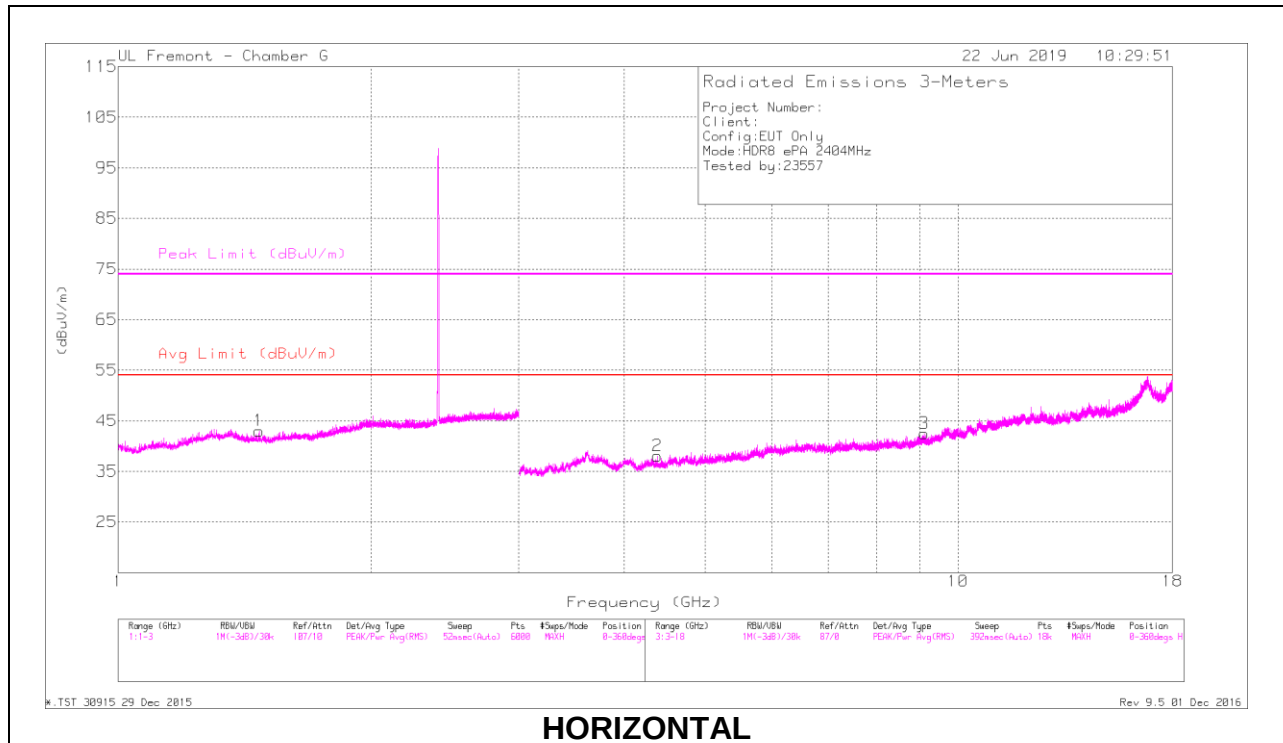


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	50.84	Pk	32.3	-23.3	59.84	-	-	74	-14.16	184	104	V
2	* 2.484	51.71	Pk	32.3	-23.3	60.71	-	-	74	-13.29	184	104	V
3	* 2.484	40.97	RMS	32.3	-23.3	49.97	54	-4.03	-	-	184	104	V
4	* 2.484	41.38	RMS	32.3	-23.3	50.38	54	-3.62	-	-	184	104	V

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

Pk - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL RESULTS**

RADIATED EMISSIONS

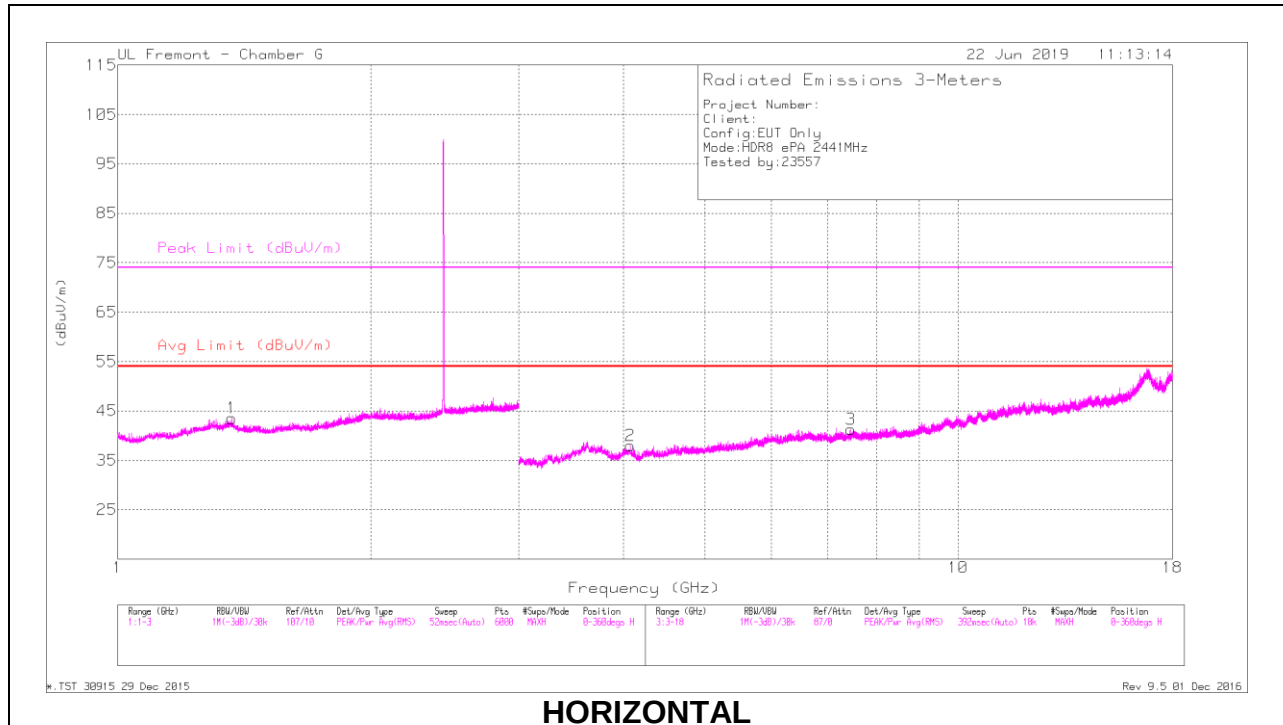
Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT120 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
	* 1.47	43.33	PK2	28.4	-22.4	49.33	-	-	74	-24.67	346	391	H
1	* 1.473	31.61	MAv1	28.4	-22.4	37.61	54	-16.39	-	-	346	391	H
	* 1.167	44.49	PK2	27.9	-23.7	48.69	-	-	74	-25.31	278	370	V
4	* 1.165	31.88	MAv1	27.8	-23.7	35.98	54	-18.02	-	-	278	370	V
	* 4.384	39.9	PK2	33.8	-29.7	44	-	-	74	-30	304	299	H
2	* 4.383	28.25	MAv1	33.8	-29.7	32.35	54	-21.65	-	-	304	299	H
	* 9.115	37.9	PK2	36.5	-25.6	48.8	-	-	74	-25.2	360	107	H
3	* 9.112	26.12	MAv1	36.5	-25.6	37.02	54	-16.98	-	-	360	107	H
	* 4.686	39.92	PK2	34.2	-29.6	44.52	-	-	74	-29.48	275	192	V
5	* 4.687	28.43	MAv1	34.2	-29.6	33.03	54	-20.97	-	-	275	192	V
	* 11.542	36.67	PK2	39.1	-22.9	52.87	-	-	74	-21.13	79	308	V
6	* 11.542	24.38	MAv1	39.1	-22.9	40.58	54	-13.42	-	-	79	308	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



RADIATED EMISSIONS

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT120 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
	* 1.368	44.84	PK2	30	-23.2	51.64	-	-	74	-22.36	219	283	H
1	* 1.366	31.25	MAv1	30	-23.2	38.05	54	-15.95	-	-	219	283	H
	* 1.705	42.43	PK2	28.7	-21.9	49.23	-	-	74	-24.77	257	310	V
4	* 1.702	30.76	MAv1	28.6	-21.8	37.56	54	-16.44	-	-	257	310	V
	* 4.078	40	PK2	33.7	-29.6	44.1	-	-	74	-29.9	200	205	H
2	* 4.076	28.47	MAv1	33.7	-29.5	32.67	54	-21.33	-	-	200	205	H
	* 7.454	39.27	PK2	36	-27.6	47.67	-	-	74	-26.33	305	365	H
3	* 7.453	27.46	MAv1	36	-27.6	35.86	54	-18.14	-	-	305	365	H
	* 3.864	41.15	PK2	33.6	-30.5	44.25	-	-	74	-29.75	225	205	V
5	* 3.866	29.5	MAv1	33.6	-30.5	32.6	54	-21.4	-	-	225	205	V
	* 4.871	40.08	PK2	34.3	-29.6	44.78	-	-	74	-29.22	96	185	V
6	* 4.873	28.18	MAv1	34.3	-29.6	32.88	54	-21.12	-	-	96	185	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

UL Fremont - Chamber G

22 Jun 2019 13:43:24

Radiated Emissions 3-Meters

Project Number:
Client:
Config: EUT Only
Mode: HDR8 ePA 2478MHz
Tested by: 23557

Peak Limit (dBuV/m)

Avg Limit (dBuV/m)

1

2

3

Frequency (GHz)

Range (GHz)	RBW/VBW	Ref/Att'n	Det/Avg Type	Sweep	Pls	#Sps/Mode	Position	Range (GHz)	RBW/VBW	Ref/Att'n	Det/Avg Type	Sweep	Pls	#Sps/Mode	Position
1-3	1Hz/30Hz	107dB	Peak/Avg	50sec/Auto	6000	1000	0-300MHz H	1-3	1Hz/30Hz	67dB	Peak/Avg	50sec/Auto	1k	1000	0-300MHz H

* TST 30915 29 Dec 2015

Rev 9.5 01 Dec 2015

UL Fremont - Chamber G

22 Jun 2019 13:43:24

Radiated Emissions 3-Meters

Project Number:
Client:
Config: EUT Only
Mode: HFR8 ePA 2478MHz
Tested by: 23557

Peak Limit (dBuV/m)

Avg Limit (dBuV/m)

dBuV/m

Frequency (GHz)

Range (GHz)	RBW/VBW	Ref/Attn	Det/Avg Type	Sweep	Flt	#Sps/Mode	Position	Range (GHz)	RBW/VBW	Ref/Attn	Det/Avg Type	Sweep	Flt	#Sps/Mode	Position
2.1-3	1M-300/30k	107/10	Peak/Avg Avg(RMS)	20sec/Auto	EN60	1000	0-30000 U	1.3-18	1M-300/30k	0/0	Peak/Avg Avg(RMS)	20sec/Auto	10k	1000	0-30000 U

* TST 30915 29 Dec 2015

Rev 9.5 01 Dec 2015

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

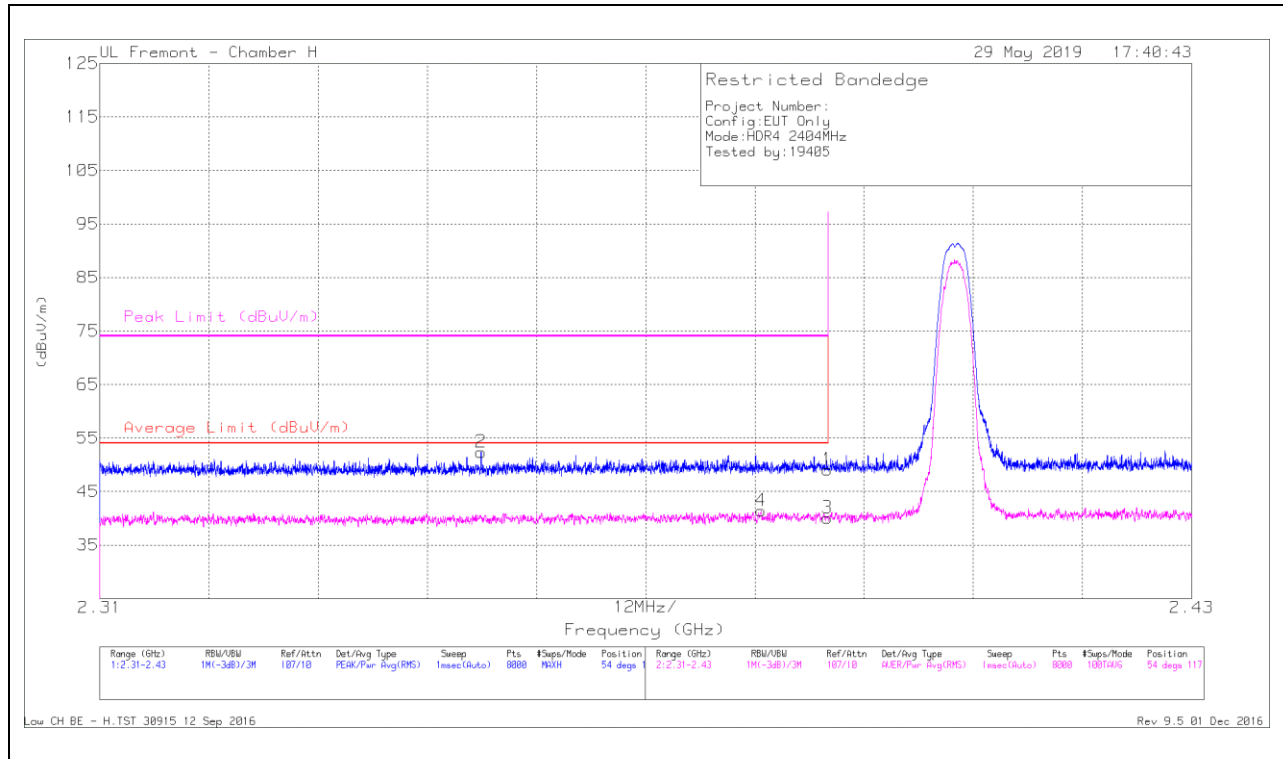
RADIATED EMISSIONS

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT120 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
	* 1.668	43.18	PK2	28.3	-21.5	49.98	-	-	74	-24.02	157	308	H
1	* 1.668	30.84	MAv1	28.3	-21.5	37.64	54	-16.36	-	-	157	308	H
	* 1.127	43.09	PK2	27.9	-23.7	47.29	-	-	74	-26.71	179	365	V
4	* 1.123	31.35	MAv1	27.9	-23.7	35.55	54	-18.45	-	-	179	365	V
	* 3.757	40.31	PK2	33.8	-29	45.11	-	-	74	-28.89	201	174	H
2	* 3.759	28.27	MAv1	33.8	-29	33.07	54	-20.93	-	-	201	174	H
	* 7.511	38.44	PK2	36	-27	47.44	-	-	74	-26.56	320	176	H
3	* 7.508	27	MAv1	36	-27	36	54	-18	-	-	320	176	H
	* 4.696	40.26	PK2	34.2	-29.4	45.06	-	-	74	-28.94	276	162	V
5	* 4.696	28.84	MAv1	34.2	-29.4	33.64	54	-20.36	-	-	276	162	V
	* 9.367	37.77	PK2	36.8	-25.4	49.17	-	-	74	-24.83	296	261	V
6	* 9.368	25.82	MAv1	36.8	-25.4	37.22	54	-16.78	-	-	296	261	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.2.3. LOW POWER HDR (HDR4)**Antenna 2****BANDEDGE (LOW CHANNEL)****HORIZONTAL RESULT**

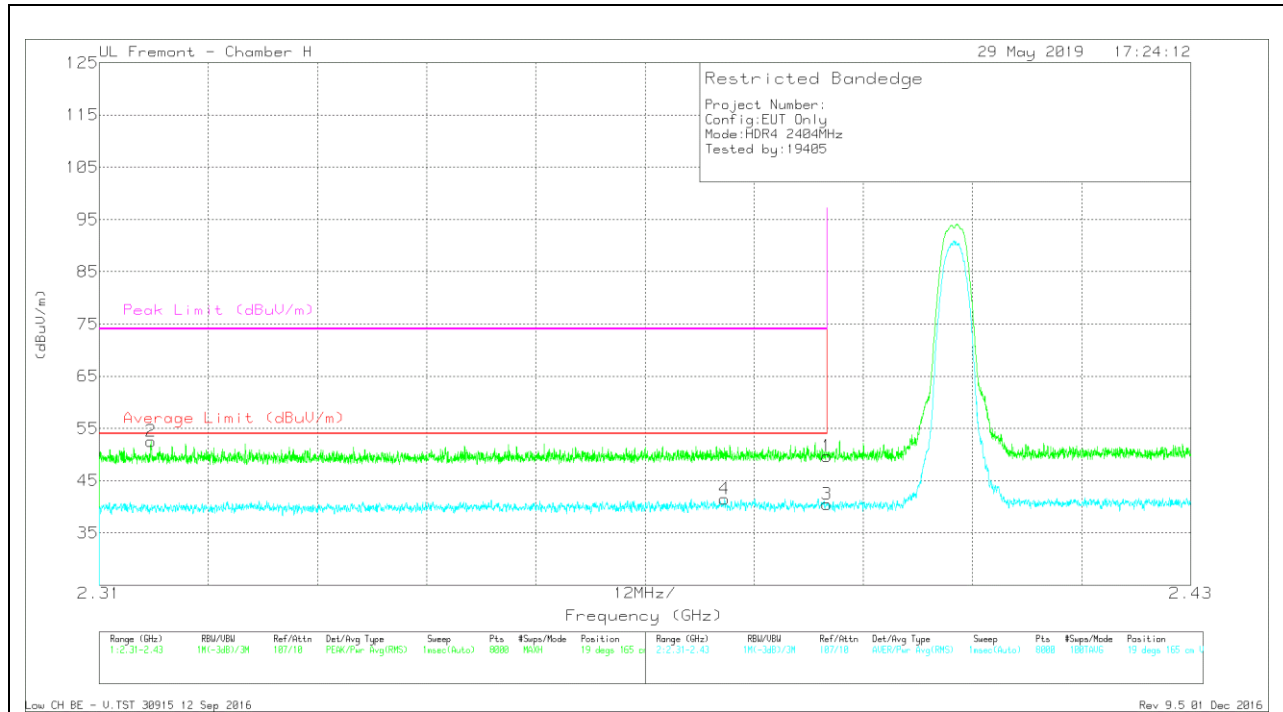
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dBm)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41	Pk	31.6	-23.5	49.1	-	-	74	-24.9	54	117	H
2	* 2.352	44.59	Pk	31.4	-23.6	52.39	-	-	74	-21.61	54	117	H
3	* 2.39	31.97	RMS	31.6	-23.5	40.07	54	-13.93	-	-	54	117	H
4	* 2.383	33.3	RMS	31.6	-23.5	41.4	54	-12.6	-	-	54	117	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

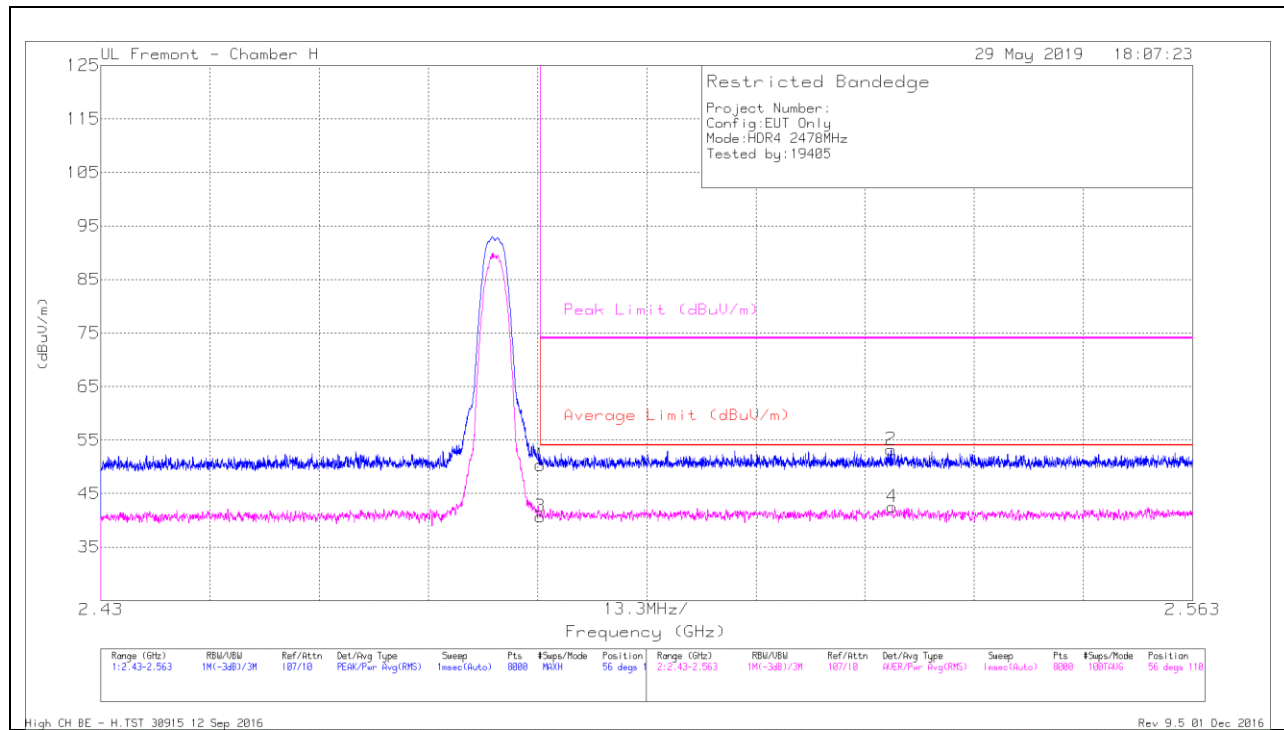


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.57	Pk	31.6	-23.5	49.67	-	-	74	-24.33	19	165	V
2	* 2.316	44.68	Pk	31.4	-23.6	52.48	-	-	74	-21.52	19	165	V
3	* 2.39	32.39	RMS	31.6	-23.5	40.49	54	-13.51	-	-	19	165	V
4	* 2.379	33.42	RMS	31.6	-23.5	41.52	54	-12.48	-	-	19	165	V

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

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)**HORIZONTAL RESULT**

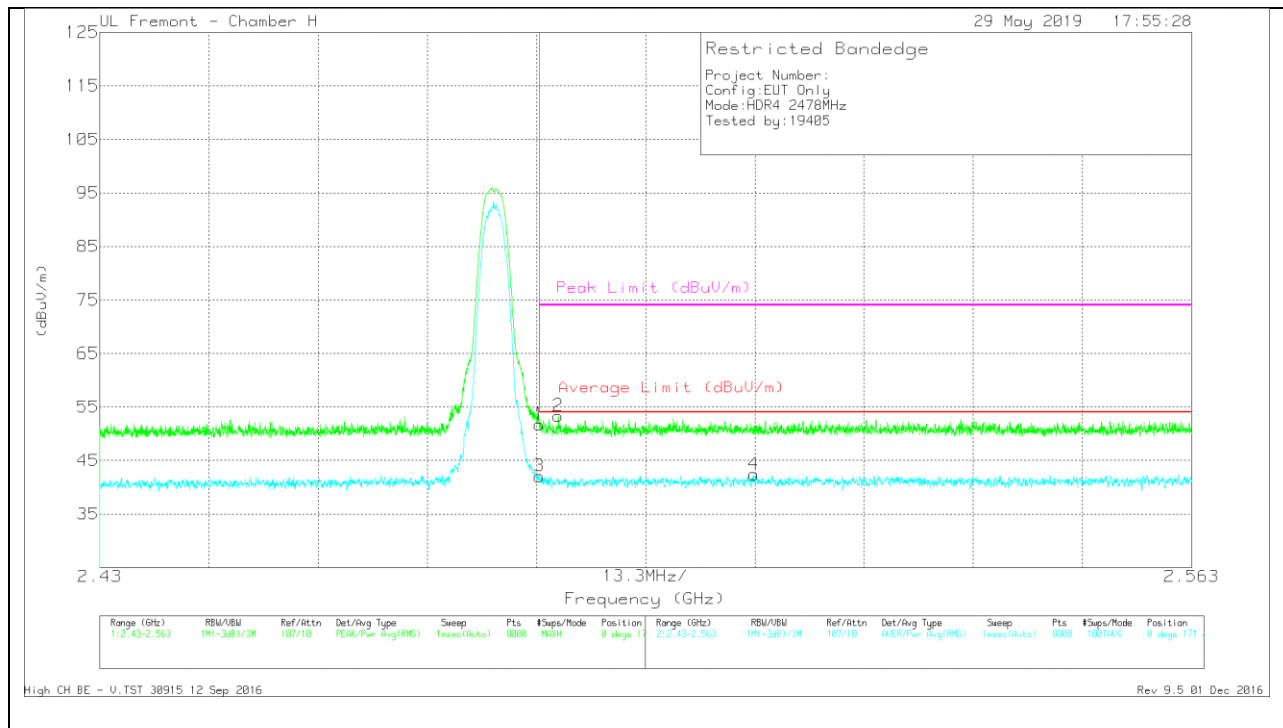
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dBm)	Amp/CbI/FiltriP ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.36	Pk	32.3	-23.3	50.36	-	-	74	-23.64	56	110	H
3	* 2.484	31.72	RMS	32.3	-23.3	40.72	54	-13.28	-	-	56	110	H
2	2.526	44.04	Pk	32.3	-23.1	53.24	-	-	74	-20.76	56	110	H
4	2.526	33.29	RMS	32.3	-23.1	42.49	54	-11.51	-	-	56	110	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

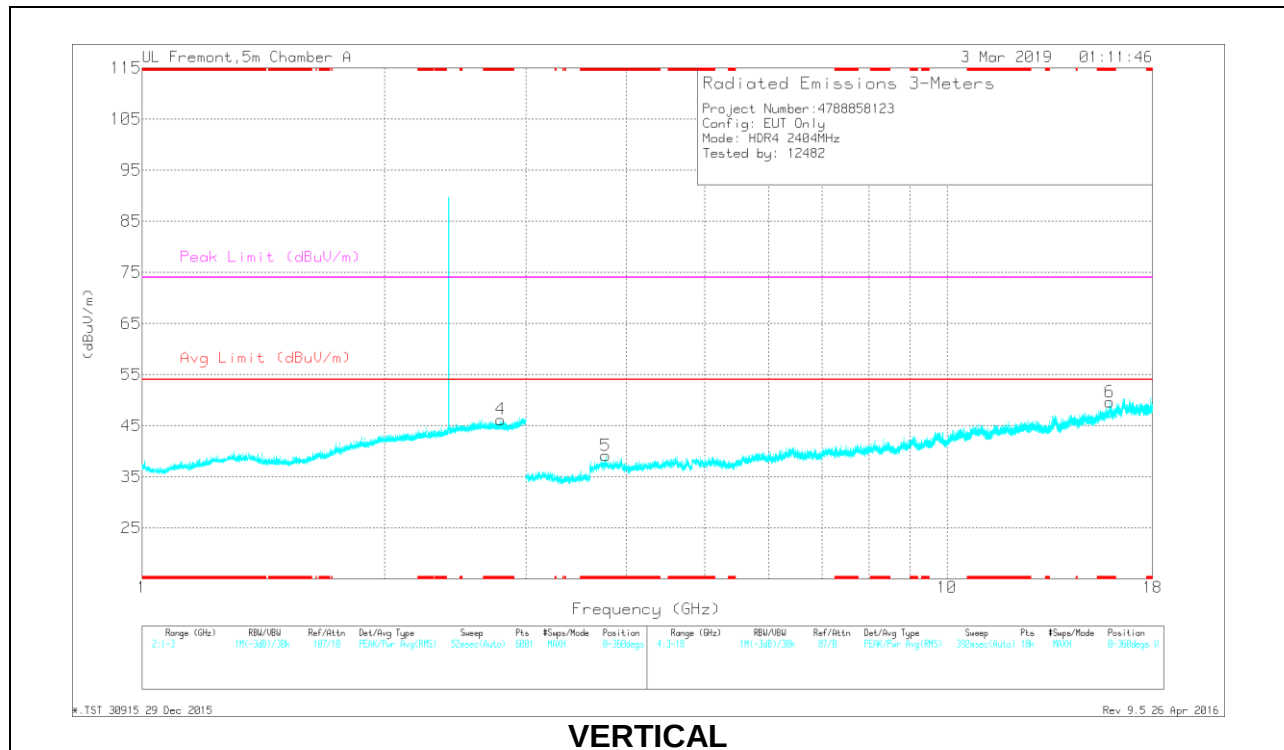
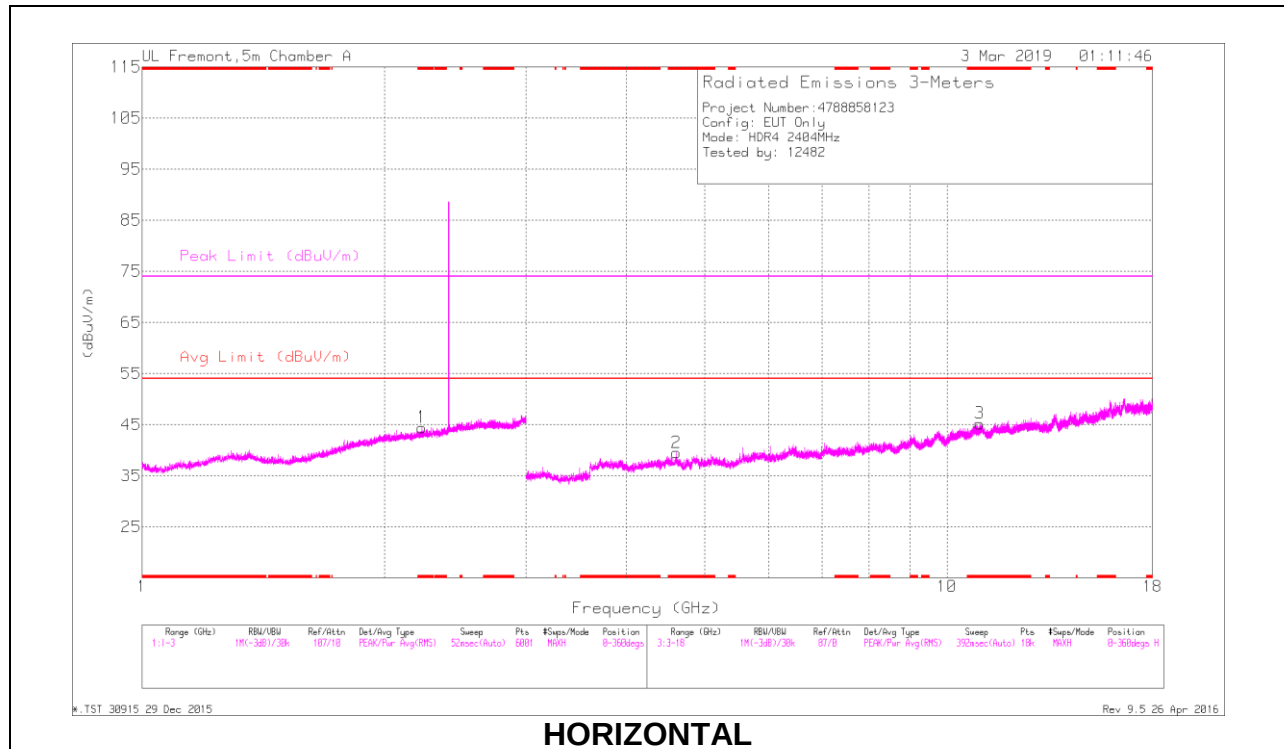


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.75	Pk	32.3	-23.3	51.75	-	-	74	-22.25	0	171	V
2	* 2.486	44.32	Pk	32.3	-23.3	53.32	-	-	74	-20.68	0	171	V
3	* 2.484	33.08	RMS	32.3	-23.3	42.08	54	-11.92	-	-	0	171	V
4	2.51	33.25	RMS	32.4	-23.2	42.45	54	-11.55	-	-	0	171	V

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

Pk - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL RESULTS**

RADIATED EMISSIONS

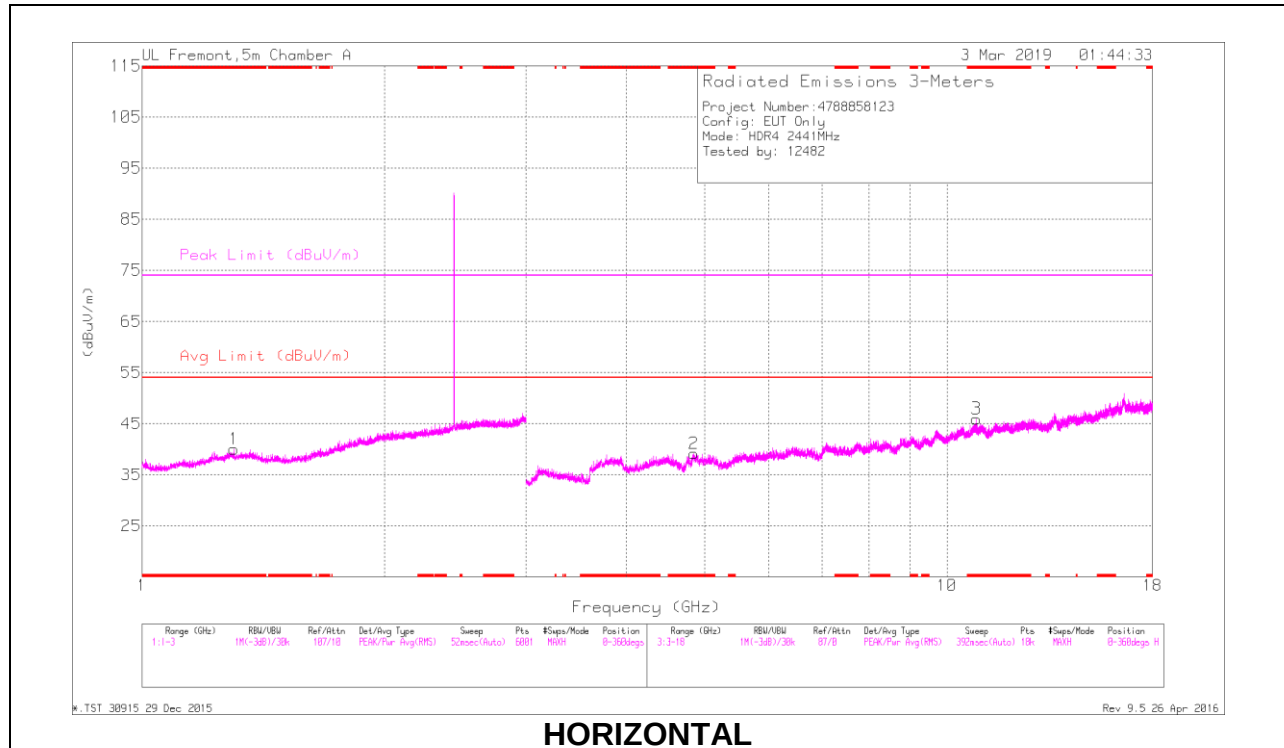
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.224	42.01	PK2	31.6	-22.8	50.81	-	-	74	-23.19	281	139	H
	* 2.228	30.54	MAV1	31.6	-22.9	39.24	54	-14.76	-	-	281	139	H
4	* 2.791	41.95	PK2	32.4	-22.1	52.25	-	-	74	-21.75	344	156	V
	* 2.793	31.28	MAV1	32.4	-22.1	41.58	54	-12.42	-	-	344	156	V
2	* 4.615	38.94	PK2	34.2	-28.3	44.84	-	-	74	-29.16	227	108	H
	* 4.616	28.26	MAV1	34.2	-28.3	34.16	54	-19.84	-	-	227	108	H
3	* 10.975	33.08	PK2	37.9	-20.6	50.38	-	-	74	-23.62	225	161	H
	* 10.973	22.62	MAV1	37.9	-20.5	40.02	54	-13.98	-	-	225	161	H
5	* 3.768	39.77	PK2	33.4	-29.1	44.07	-	-	74	-29.93	271	111	V
	* 3.767	29.64	MAV1	33.4	-29.1	33.94	54	-20.06	-	-	271	111	V
6	* 15.93	32.44	PK2	40.8	-17.6	55.64	-	-	74	-18.36	229	187	V
	* 15.931	22	MAV1	40.8	-17.6	45.2	54	-8.8	-	-	229	187	V

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

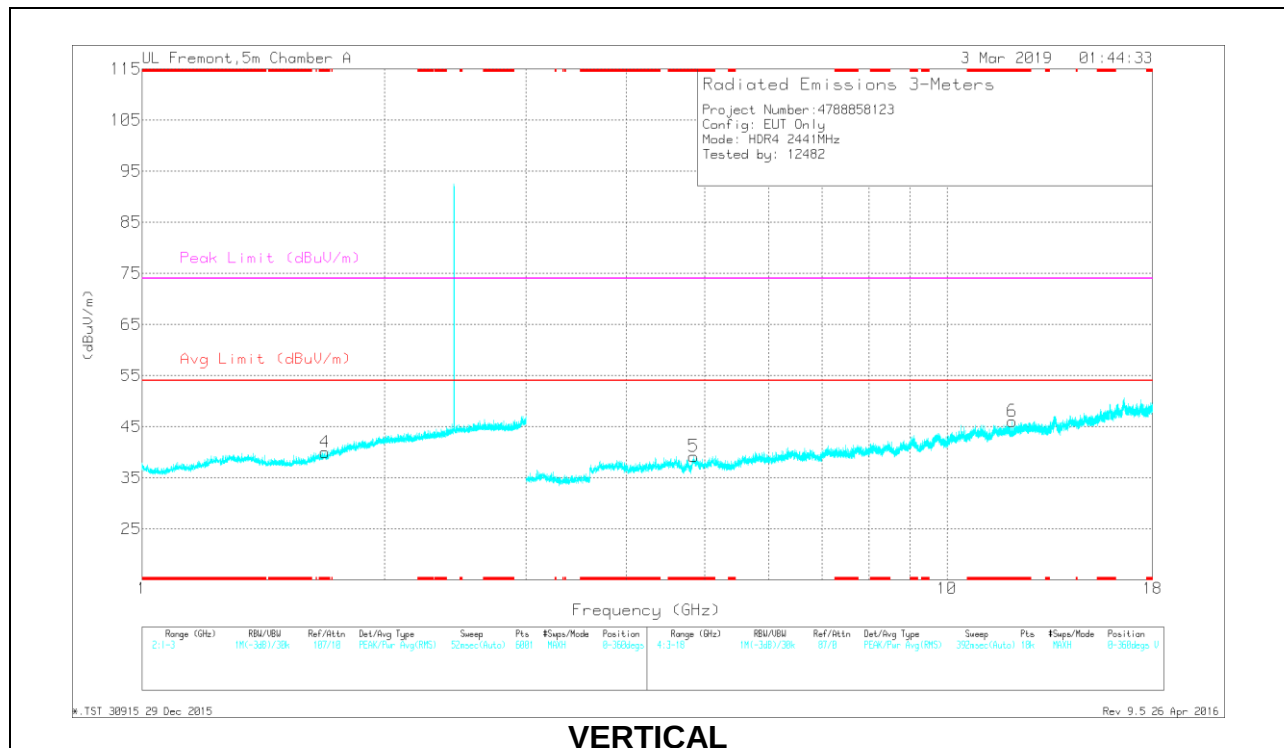
PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

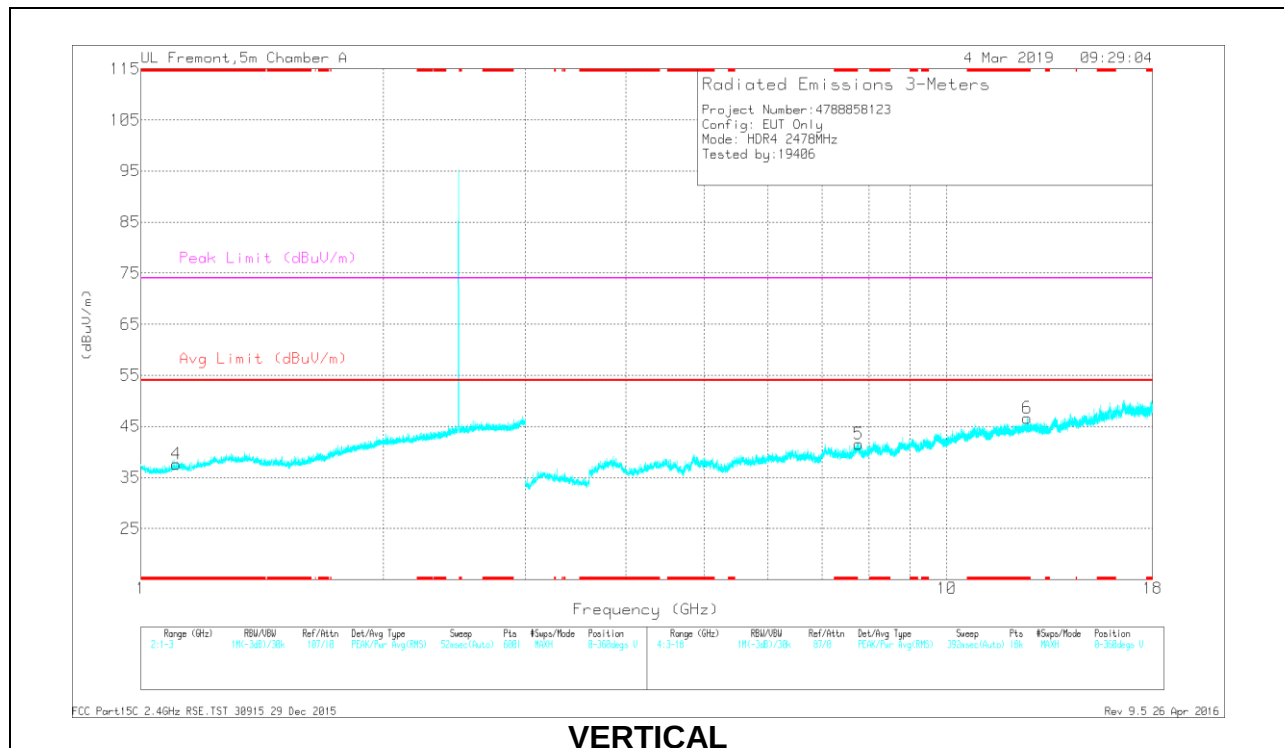
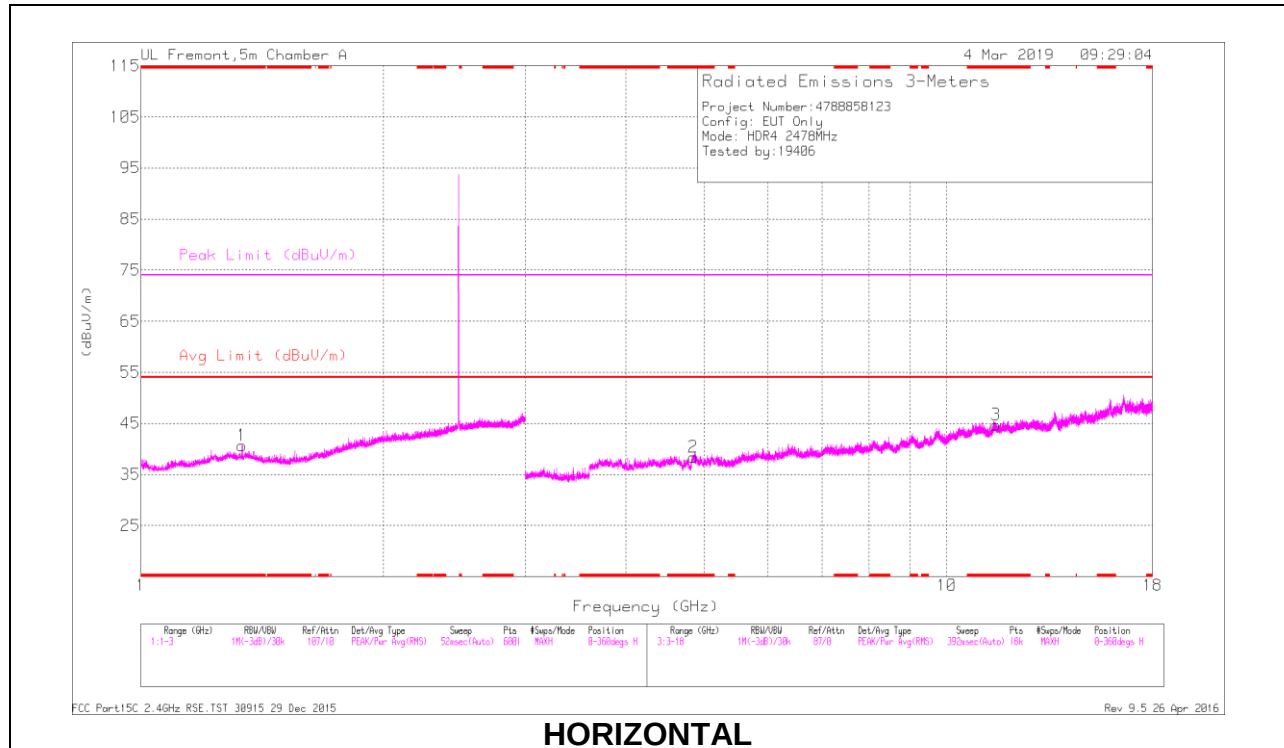
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.301	42.29	PK2	29.1	-24.9	46.49	-	-	74	-27.51	117	113	H
	* 1.301	31.08	MAV1	29.1	-24.9	35.28	54	-18.72	-	-	117	113	H
4	* 1.688	41.87	PK2	28.7	-23.9	46.67	-	-	74	-27.33	184	226	V
	* 1.69	30.53	MAV1	28.7	-23.9	35.33	54	-18.67	-	-	184	226	V
2	* 4.849	38.18	PK2	34.1	-27.1	45.18	-	-	74	-28.82	1	136	H
	* 4.85	27.41	MAV1	34.1	-27.1	34.41	54	-19.59	-	-	1	136	H
3	* 10.877	32.83	PK2	37.9	-20.3	50.43	-	-	74	-23.57	164	280	H
	* 10.875	22.32	MAV1	37.9	-20.4	39.82	54	-14.18	-	-	164	280	H
5	* 4.845	38.34	PK2	34.1	-27	45.44	-	-	74	-28.56	222	198	V
	* 4.845	28.06	MAV1	34.1	-27	35.16	54	-18.84	-	-	222	198	V
6	* 12.047	33.24	PK2	38.8	-20.3	51.74	-	-	74	-22.26	52	107	V
	* 12.048	22.72	MAV1	38.8	-20.3	41.22	54	-12.78	-	-	52	107	V

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

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.337	42.23	PK2	28.9	-25	46.13	-	-	74	-27.87	52	134	H
	* 1.335	30.98	MAv1	28.9	-24.9	34.98	54	-19.02	-	-	52	134	H
4	* 1.105	42.2	PK2	27.7	-25.3	44.6	-	-	74	-29.4	42	247	V
	* 1.105	31.02	MAv1	27.7	-25.3	33.42	54	-20.58	-	-	42	247	V
2	* 4.843	38.19	PK2	34.1	-27	45.29	-	-	74	-28.71	33	201	H
	* 4.842	27.61	MAv1	34.1	-27	34.71	54	-19.29	-	-	33	201	H
3	* 11.509	34.24	PK2	38.2	-19.8	52.64	-	-	74	-21.36	70	102	H
	* 11.508	22.26	MAv1	38.2	-19.8	40.66	54	-13.34	-	-	70	102	H
6	* 12.582	33.45	PK2	39.2	-20.2	52.45	-	-	74	-21.55	256	138	V
	* 12.578	21.93	MAv1	39.2	-20.2	40.93	54	-13.07	-	-	256	138	V
5	7.77	34.89	PK2	35.8	-23.2	47.49	-	-	-	-	240	154	V
	7.772	23.87	MAv1	35.8	-23.2	36.47	-	-	-	-	240	154	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average