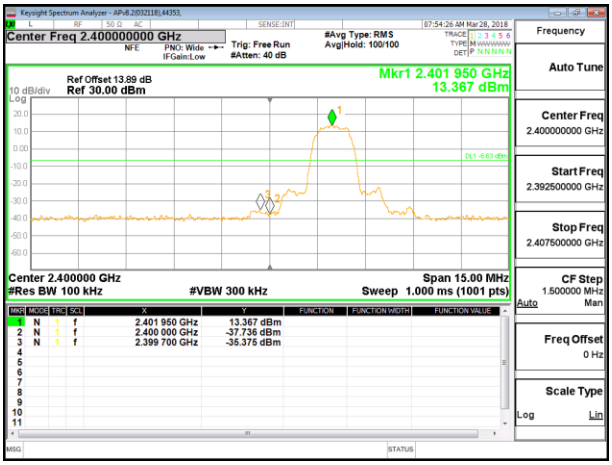
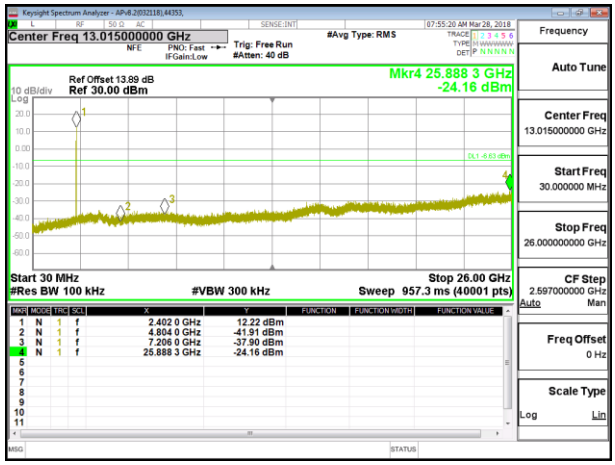
8.8.2. HIGH POWER ENCHANCED DATA RATE 8PSK MODULATION

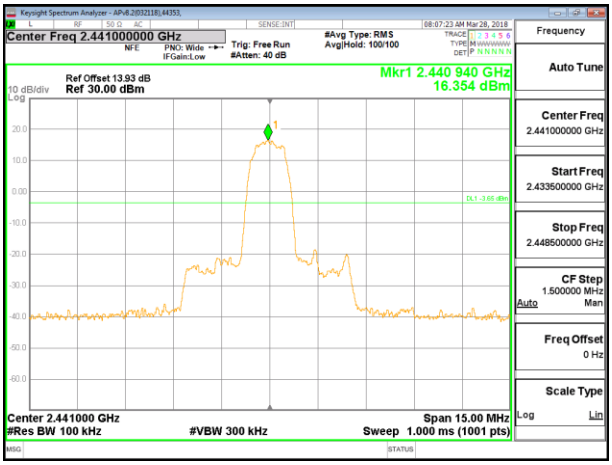
ANTENNA 4 SPURIOUS EMISSIONS, NON-HOPPING



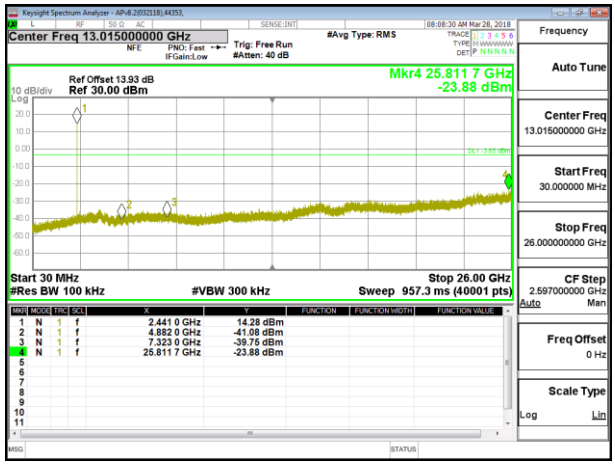
LOW CHANNEL BANDEDGE



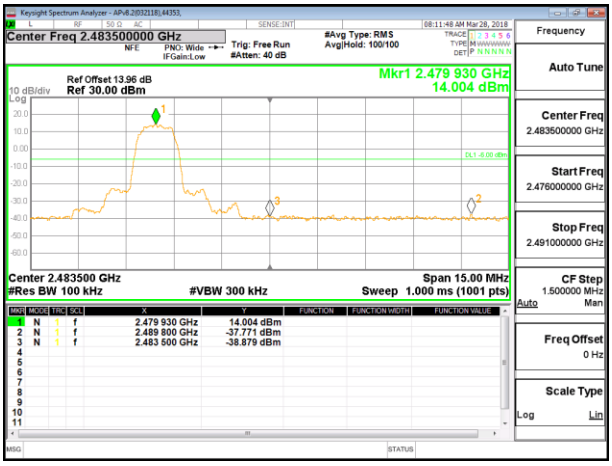
LOW CHANNEL BANDEDGE



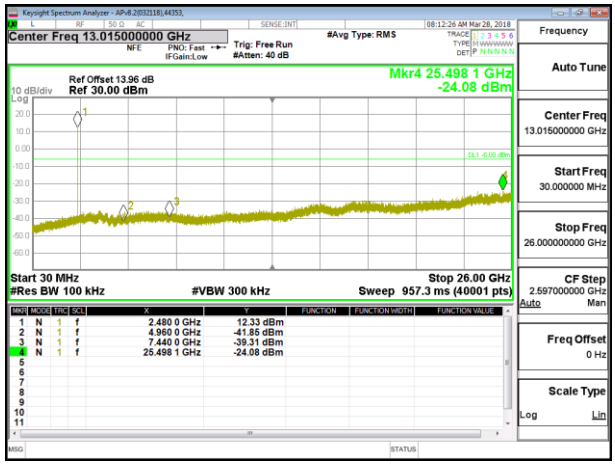
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE

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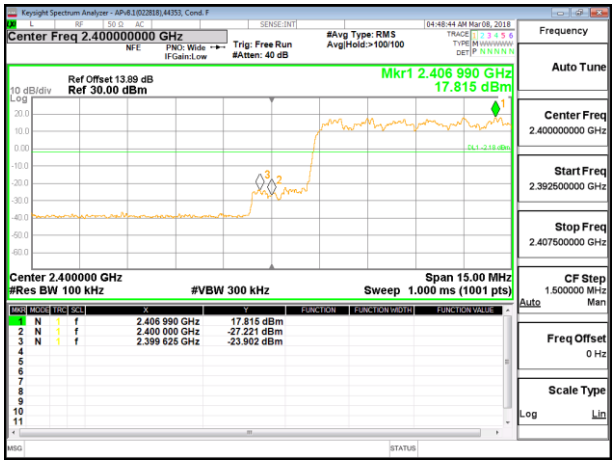
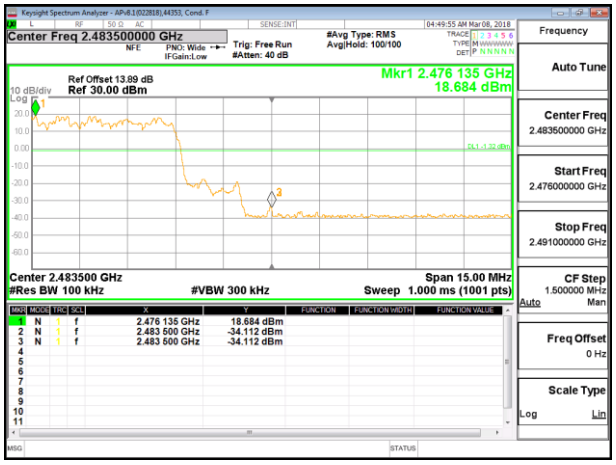
ANTENNA 4 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



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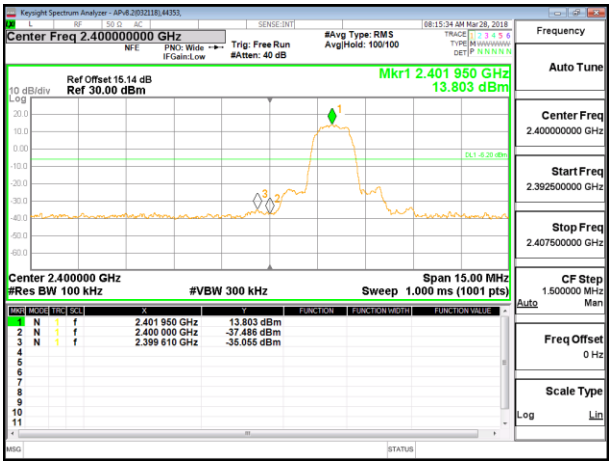
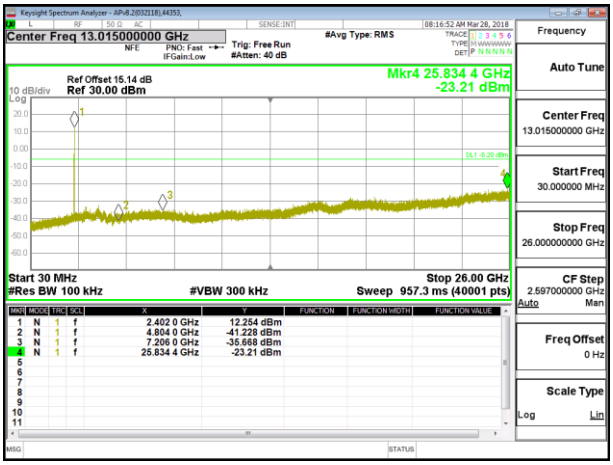
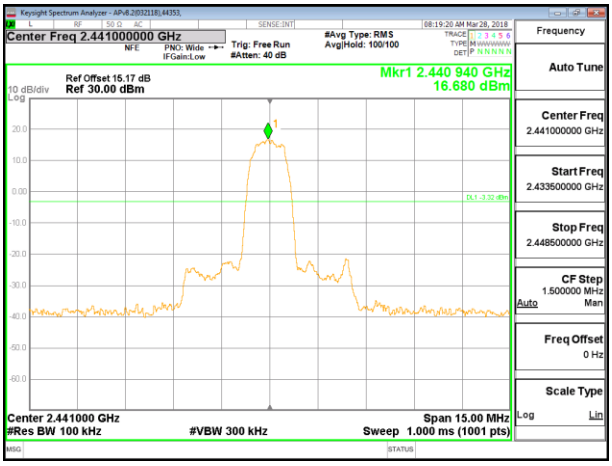
ANTENNA 3 SPURIOUS EMISSIONS, NON-HOPPING



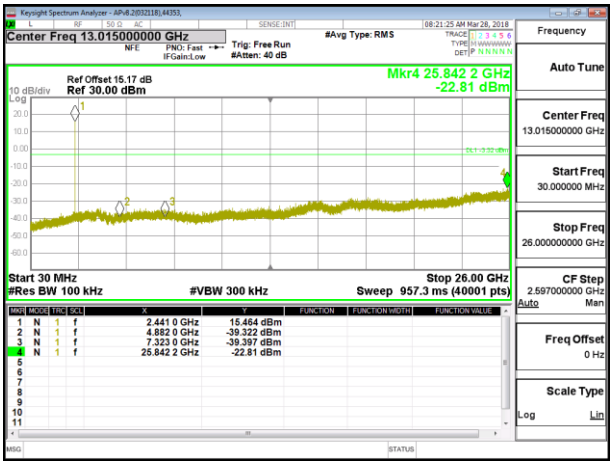
LOW CHANNEL BANDEDGE



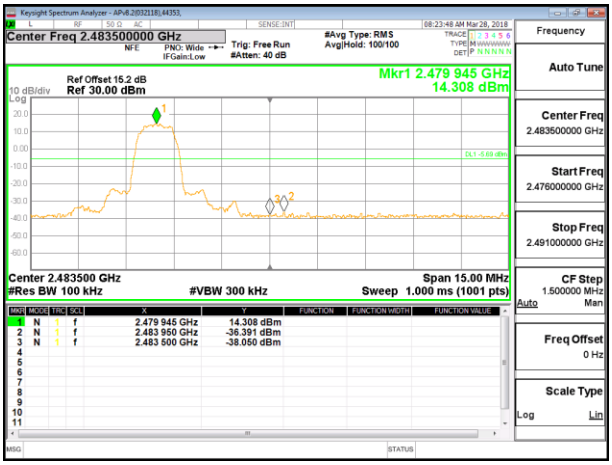
LOW CHANNEL BANDEDGE



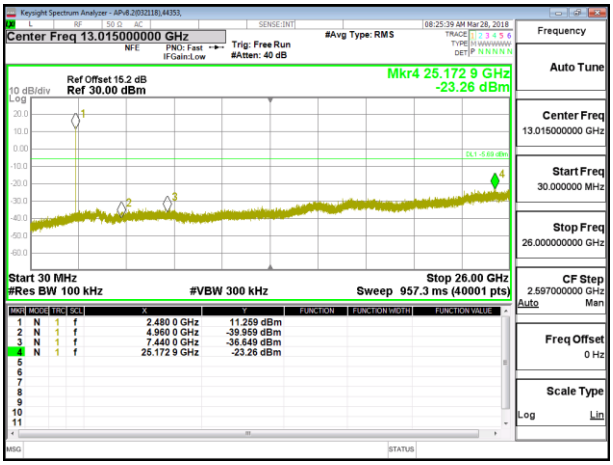
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE

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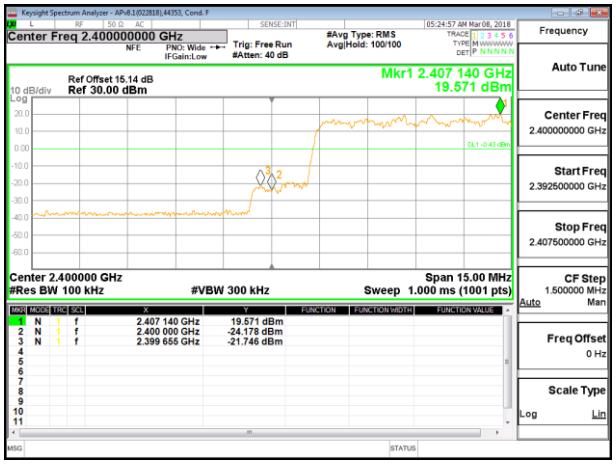
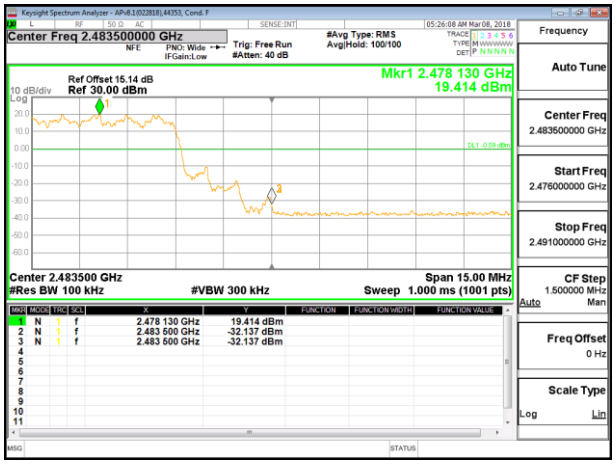
ANTENNA 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



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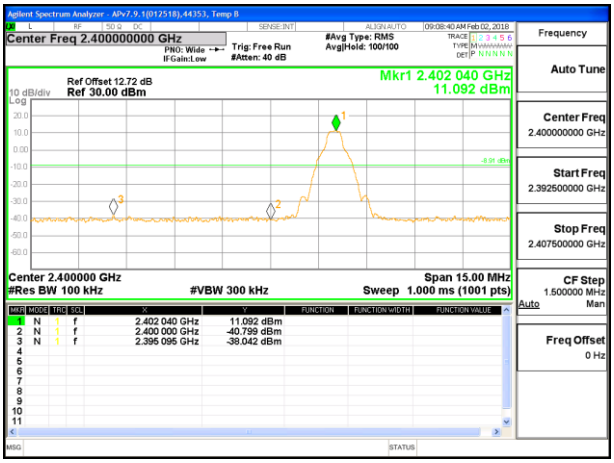
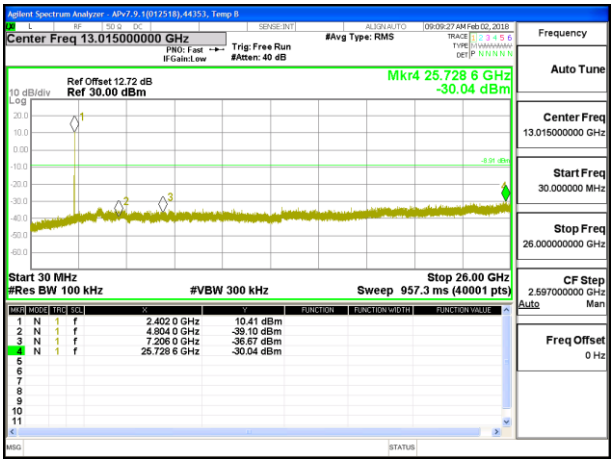
8.8.3. LOW POWER BASIC DATA RATE GFSK MODULATION

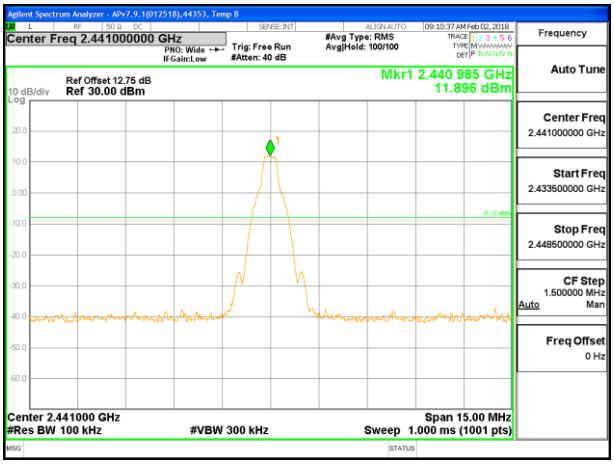
ANTENNA 4 SPURIOUS EMISSIONS, NON-HOPPING



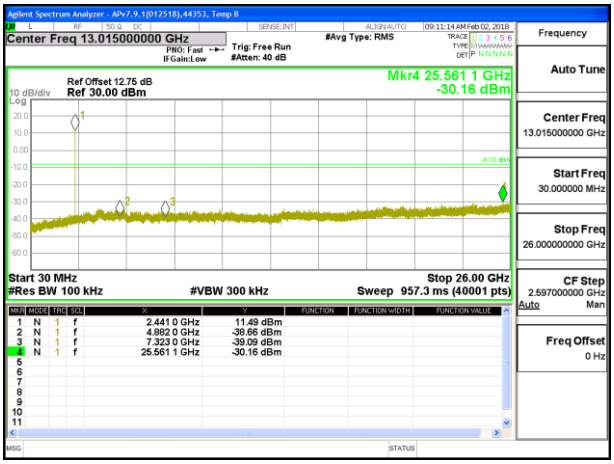
LOW CHANNEL BANDEDGE



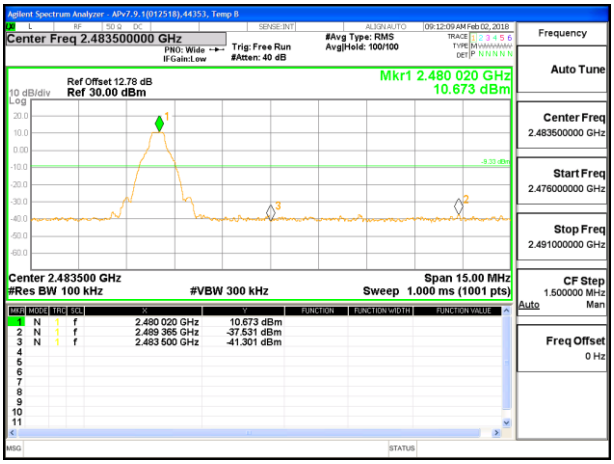
LOW CHANNEL BANDEDGE



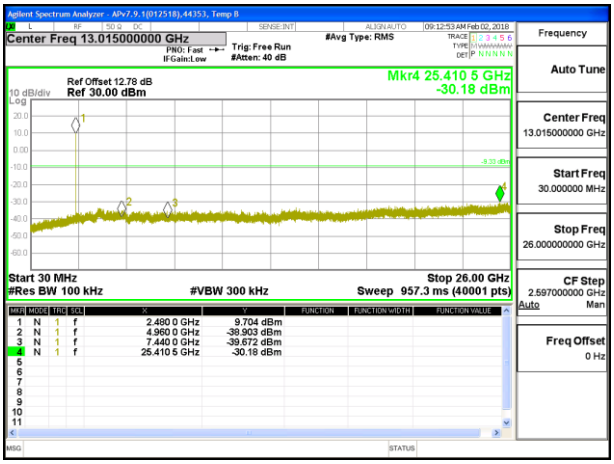
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE

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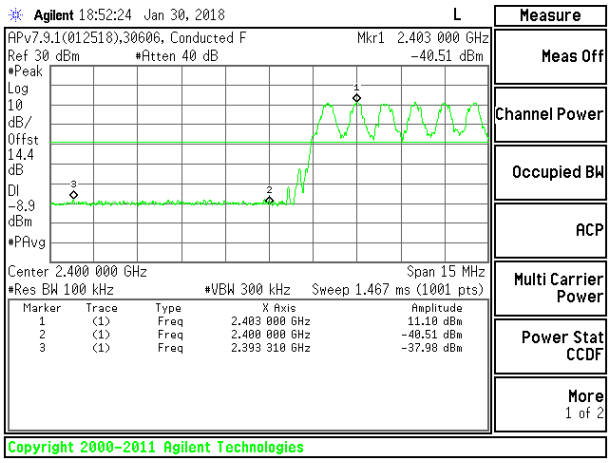
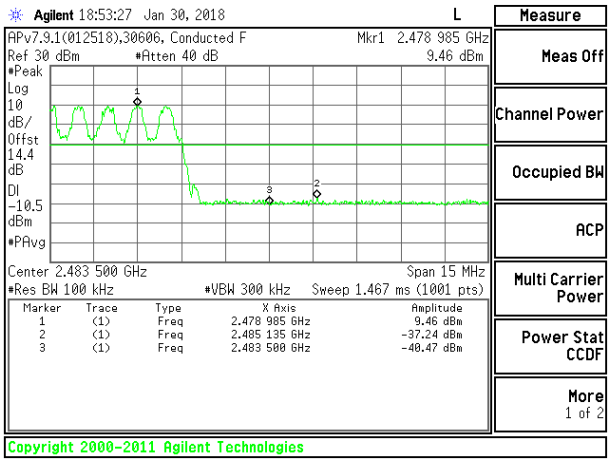
ANTENNA 4 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



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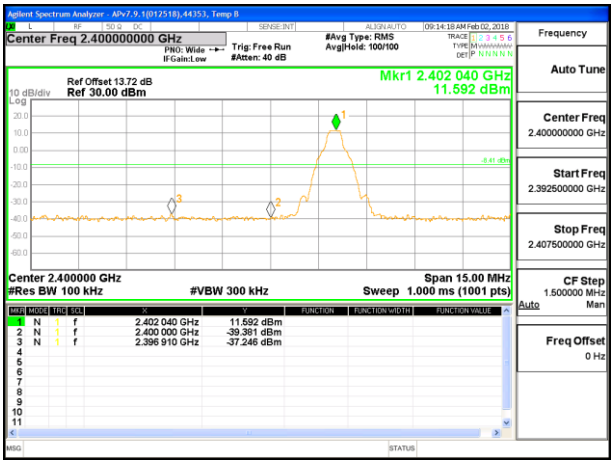
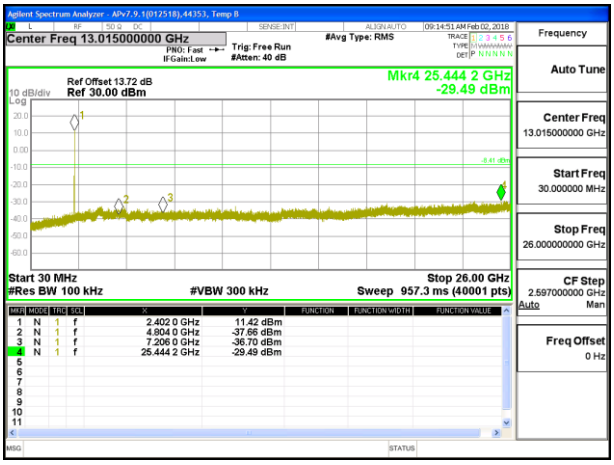
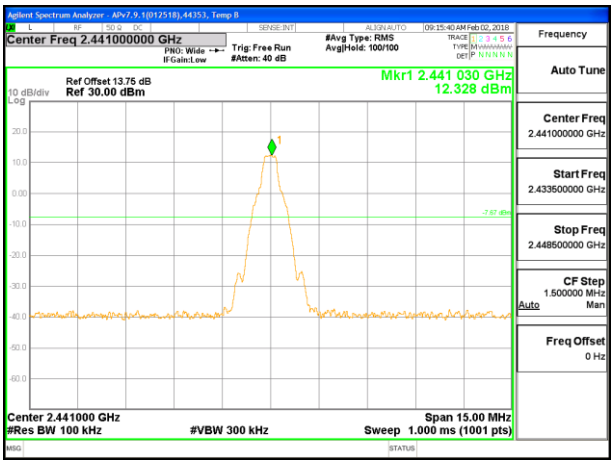
ANTENNA 3 SPURIOUS EMISSIONS, NON-HOPPING



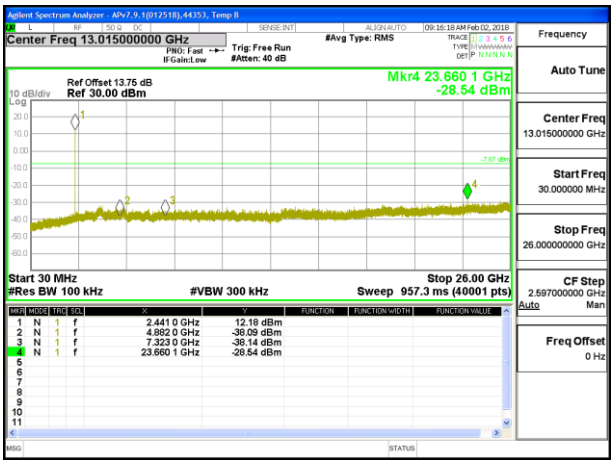
LOW CHANNEL BANDEDGE



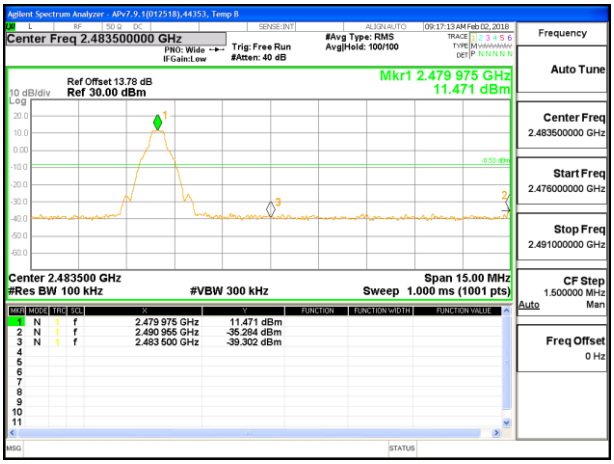
LOW CHANNEL BANDEDGE



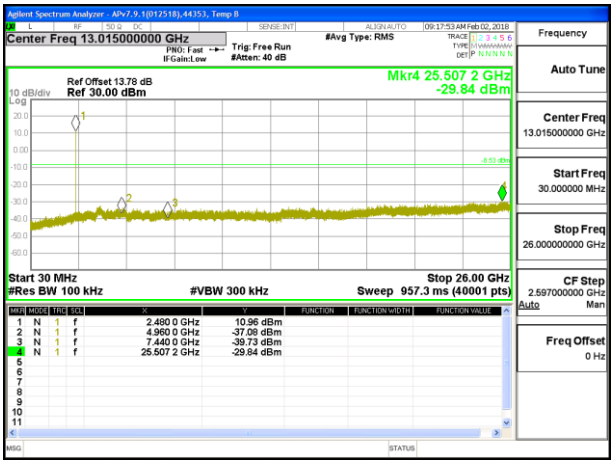
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE

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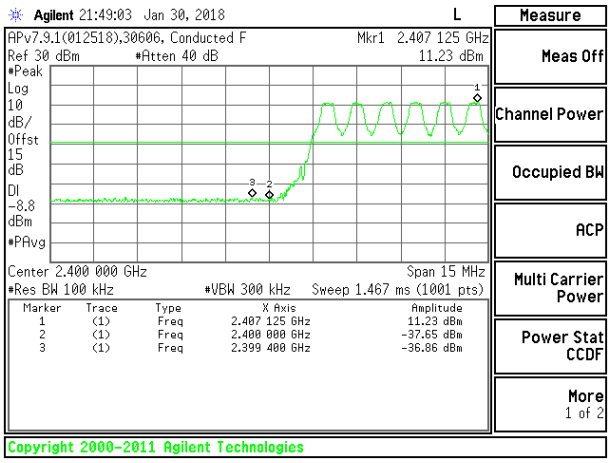
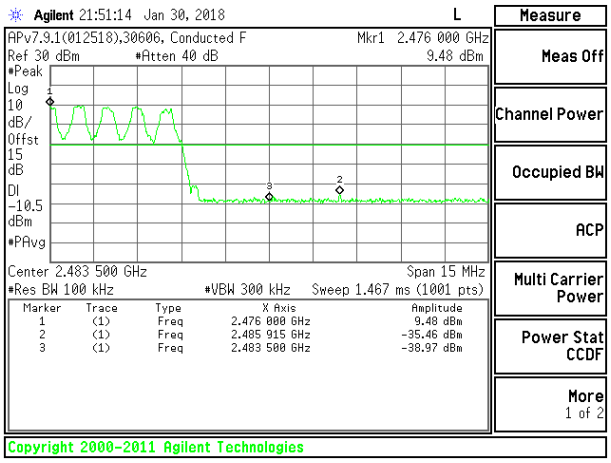
ANTENNA 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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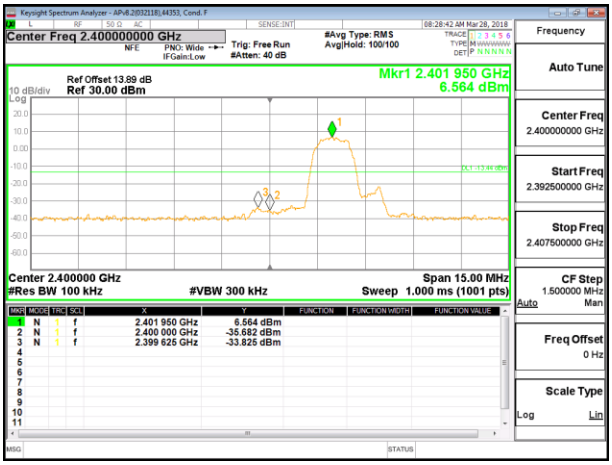
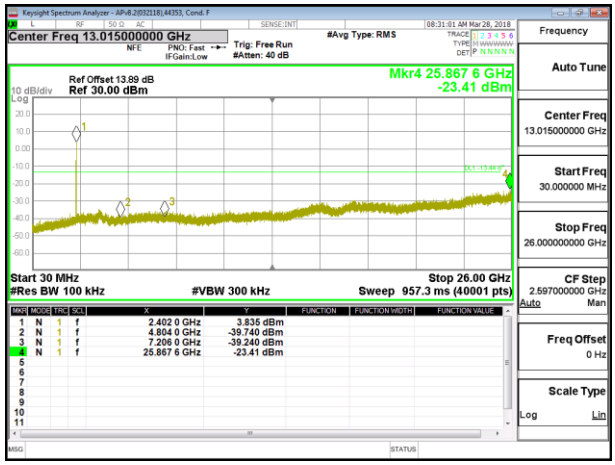
8.8.4. LOW POWER ENCHANCED DATA RATE 8PSK MODULATION

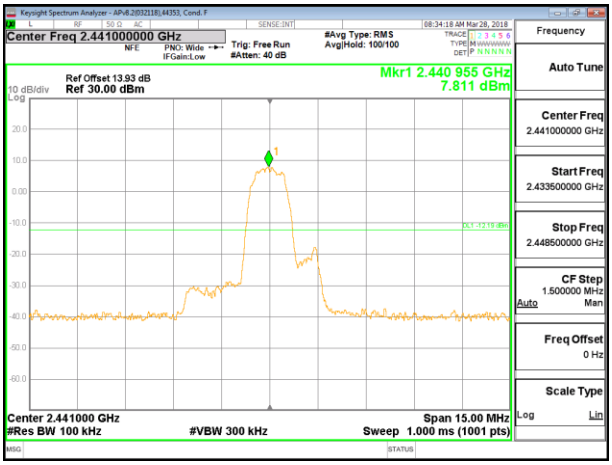
ANTENNA 4 SPURIOUS EMISSIONS, NON-HOPPING



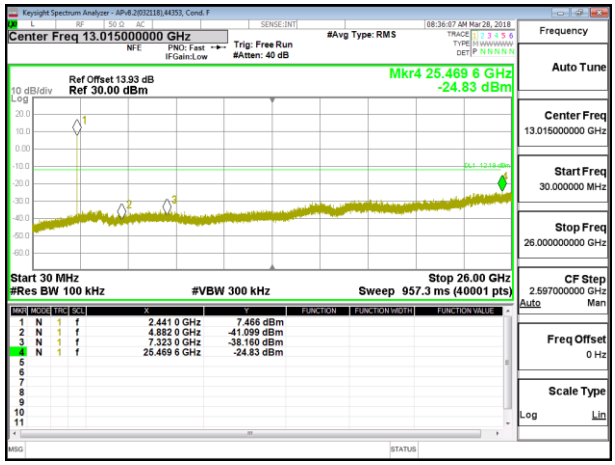
LOW CHANNEL BANDEDGE



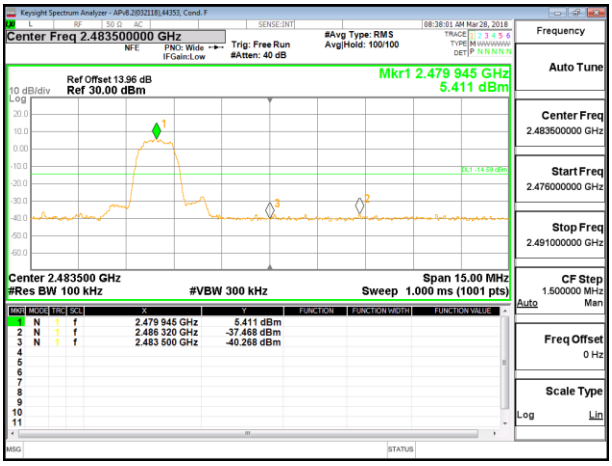
LOW CHANNEL BANDEDGE



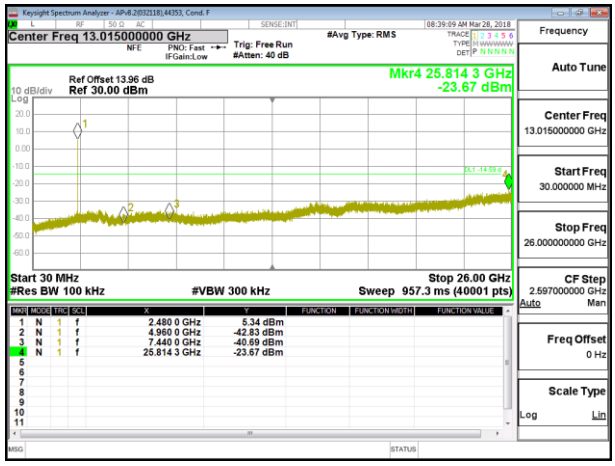
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE

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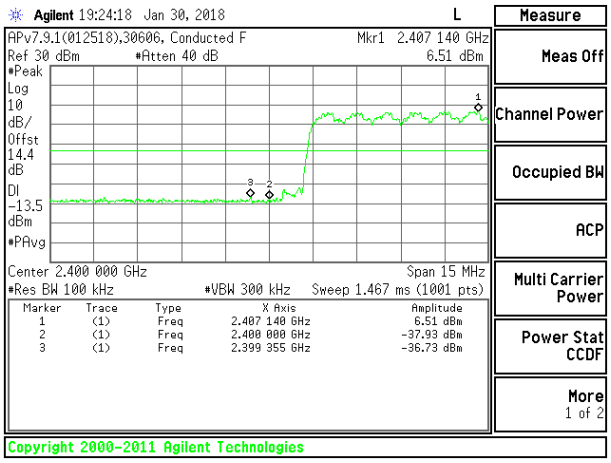
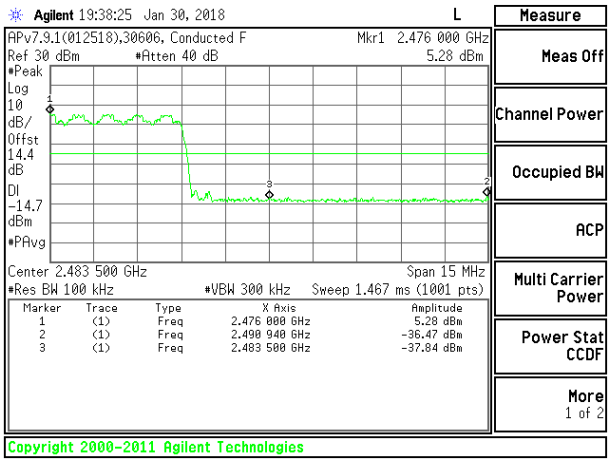
ANTENNA 4 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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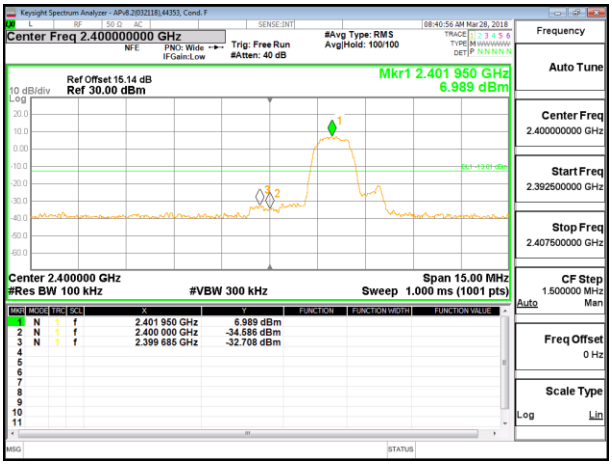
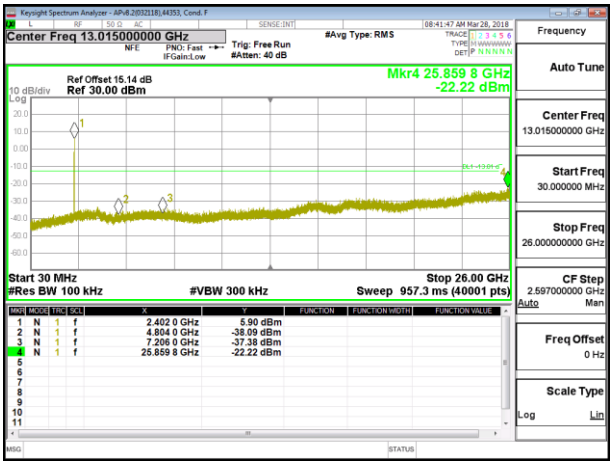
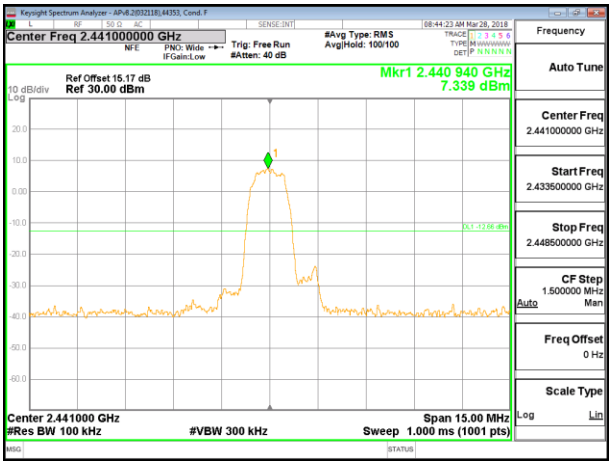
ANTENNA 3 SPURIOUS EMISSIONS, NON-HOPPING



LOW CHANNEL BANDEDGE

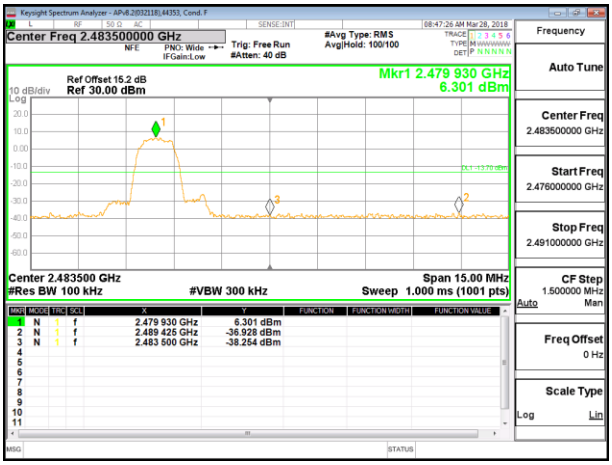


LOW CHANNEL BANDEDGE

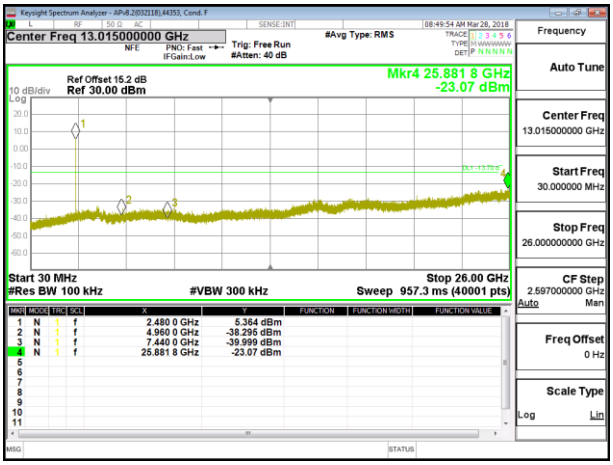


IN-BAND REFERENCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE

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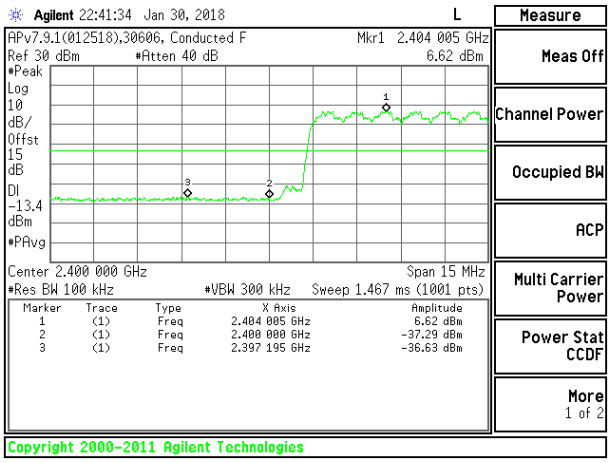
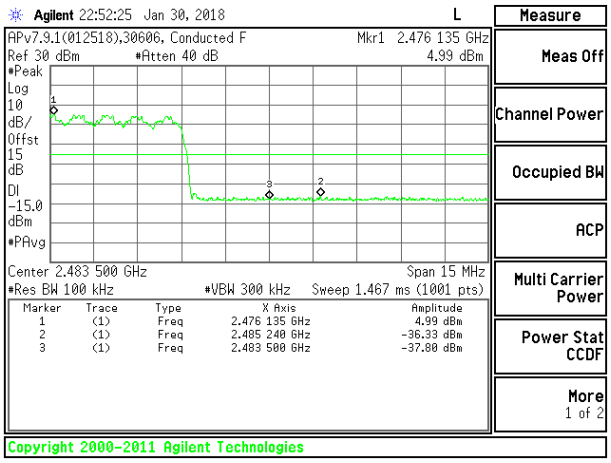
ANTENNA 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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9. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10.

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. Peak detection is used unless otherwise noted as quasi-peak.

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

For final scans above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T (10 Hz) video bandwidth with peak detector for average measurements

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 output power 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.

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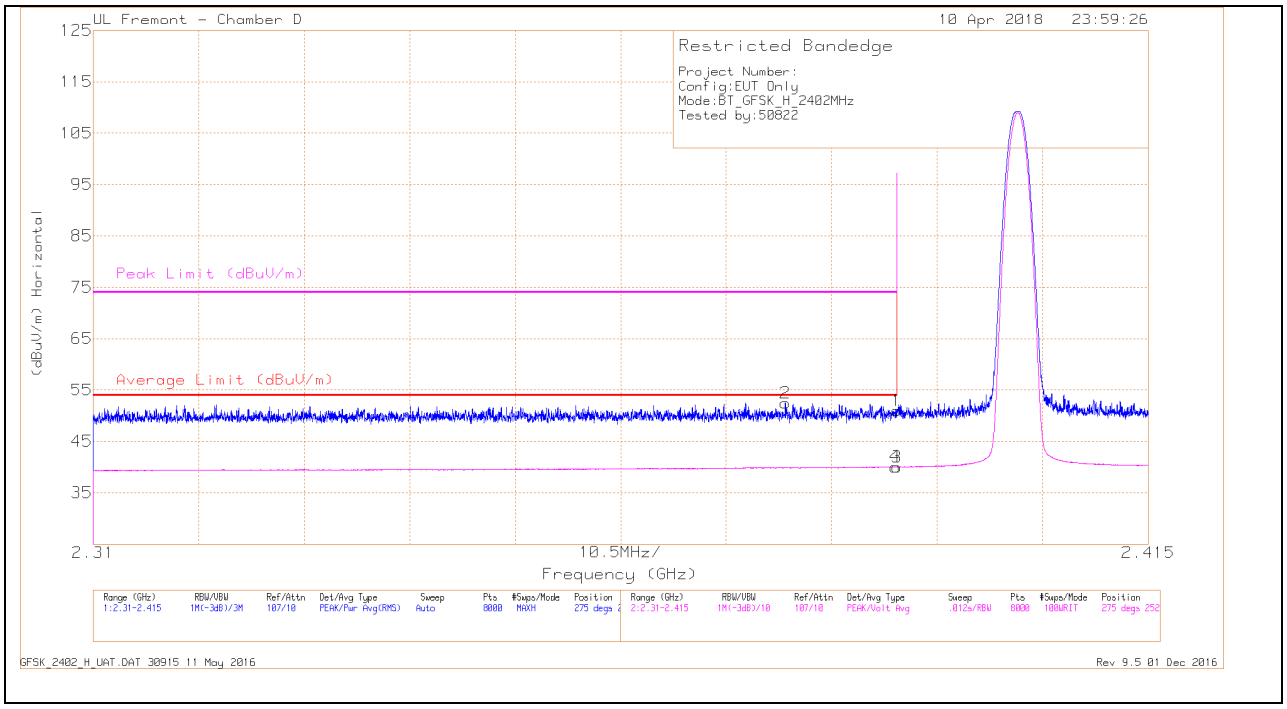
9.1. TRANSMITTER ABOVE 1 GHz

9.1.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

ANTENNA 4

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl /Fltr/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	39.6	Pk	31.9	-20.5	51	-	-	74	-23	275	252	H
2	* 2.379	41.04	Pk	31.8	-20.4	52.44	-	-	74	-21.56	275	252	H
3	* 2.39	28.59	VA1T	31.9	-20.5	39.99	54	-14.01	-	-	275	252	H
4	* 2.39	28.65	VA1T	31.9	-20.5	40.05	54	-13.95	-	-	275	252	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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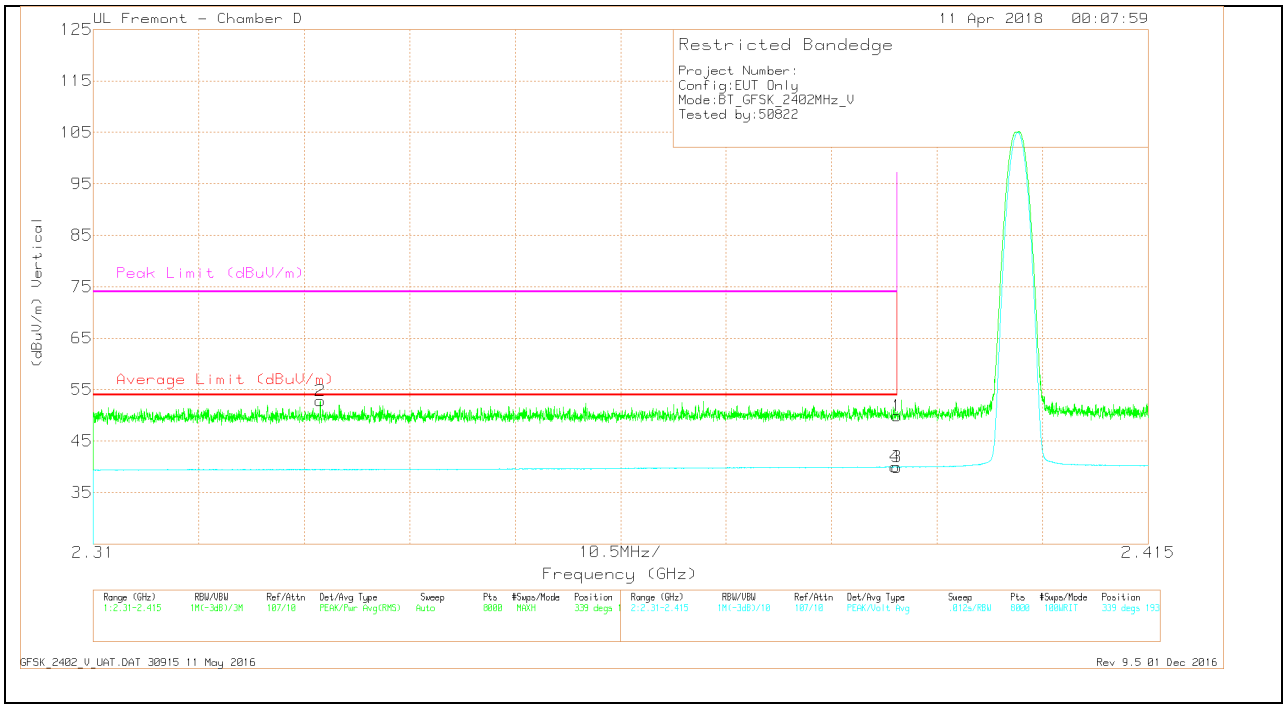
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl /Fltr/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	38.48	Pk	31.9	-20.5	49.88	-	-	74	-24.12	339	194	V
2	* 2.333	41.8	Pk	31.6	-20.6	52.8	-	-	74	-21.2	339	194	V
3	* 2.39	28.54	VA1T	31.9	-20.5	39.94	54	-14.06	-	-	339	193	V
4	* 2.39	28.59	VA1T	31.9	-20.5	39.99	54	-14.01	-	-	339	193	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
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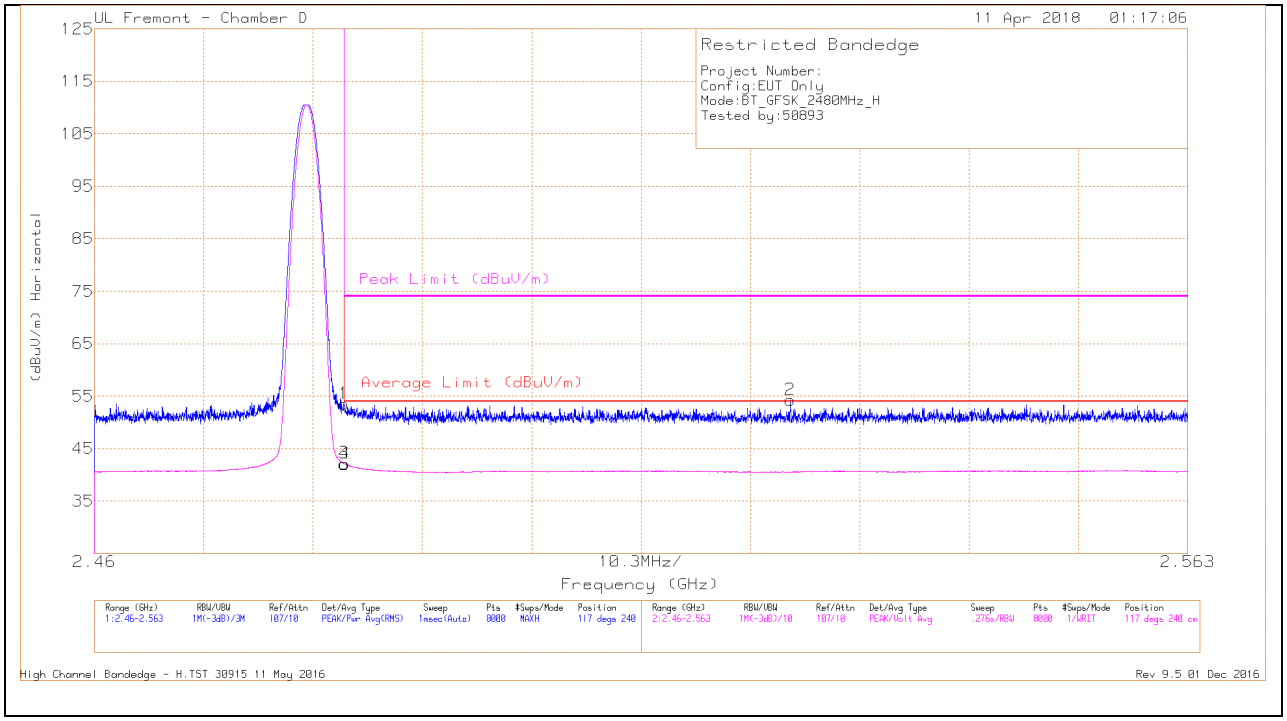
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl /Fltr/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	41.49	Pk	32.4	-20.4	53.49	-	-	74	-20.51	117	240	H
3	* 2.484	30.16	VA1T	32.4	-20.4	42.16	54	-11.84	-	-	117	240	H
4	* 2.484	30.14	VA1T	32.4	-20.5	42.04	54	-11.96	-	-	117	240	H
2	2.526	42.24	Pk	32.4	-20.4	54.24	-	-	74	-19.76	117	240	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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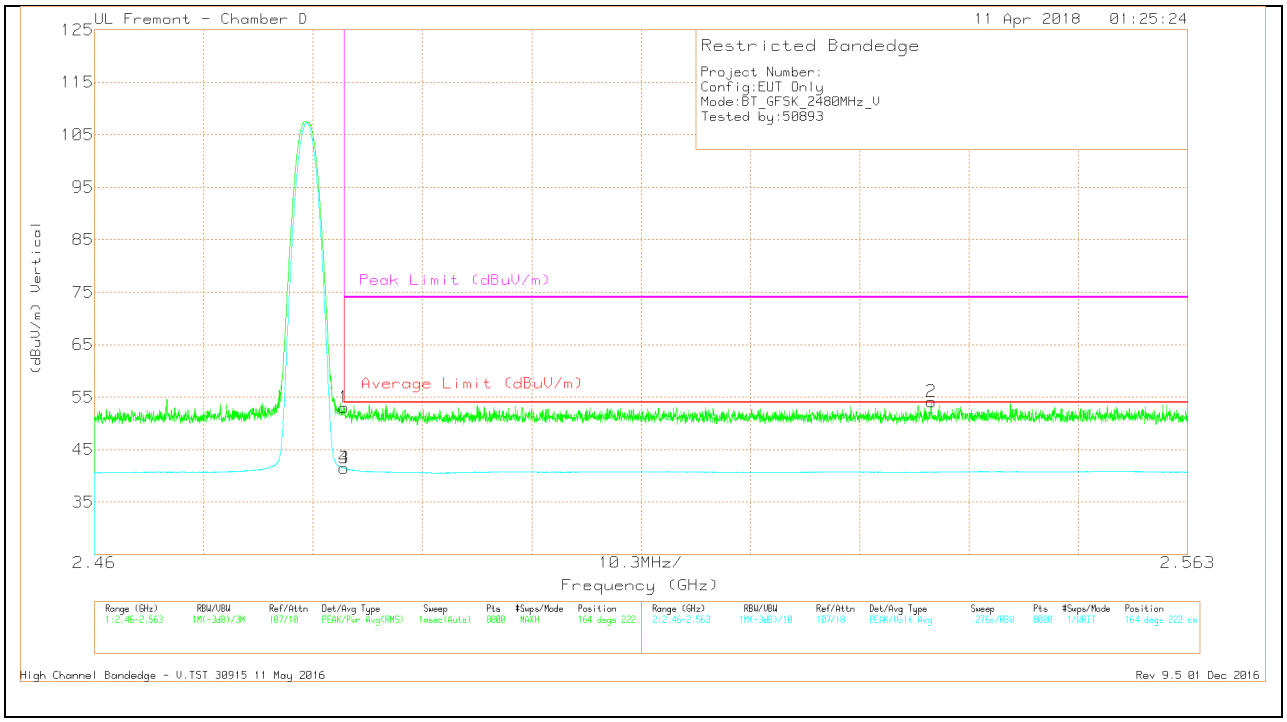
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl /Fltr/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	40.97	Pk	32.4	-20.4	52.97	-	-	74	-21.03	164	222	V
3	* 2.484	29.47	VA1T	32.4	-20.4	41.47	54	-12.53	-	-	164	222	V
4	* 2.484	29.54	VA1T	32.4	-20.5	41.44	54	-12.56	-	-	164	222	V
2	2.539	42.09	Pk	32.4	-20.4	54.09	-	-	74	-19.91	164	222	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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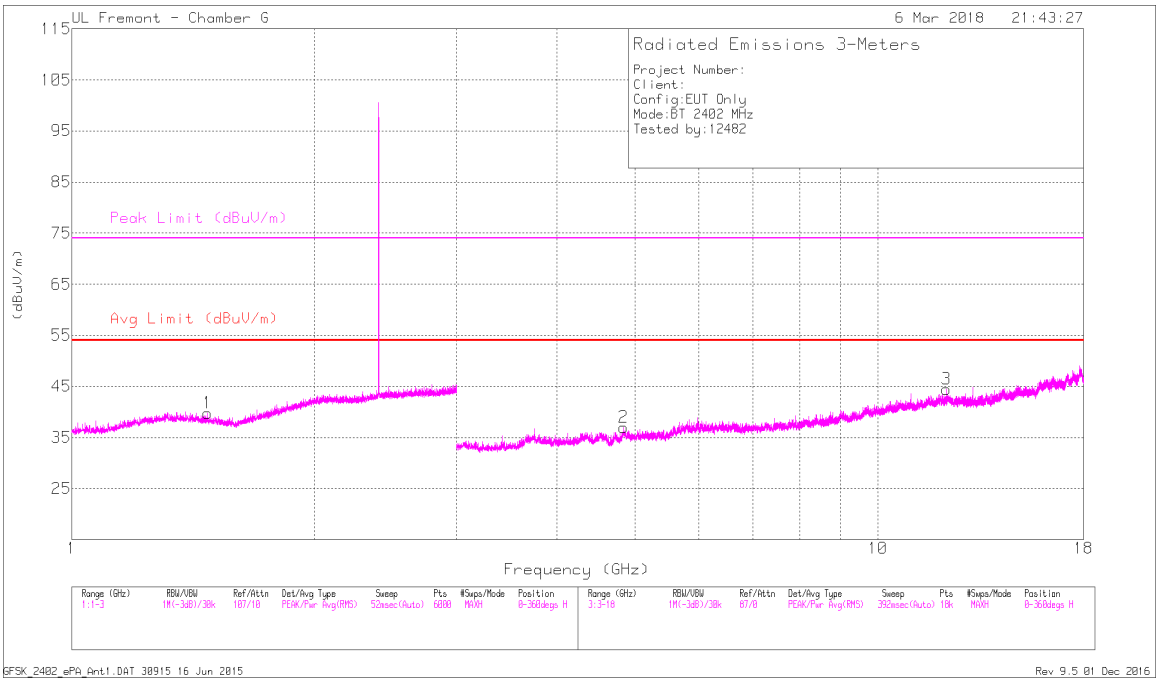
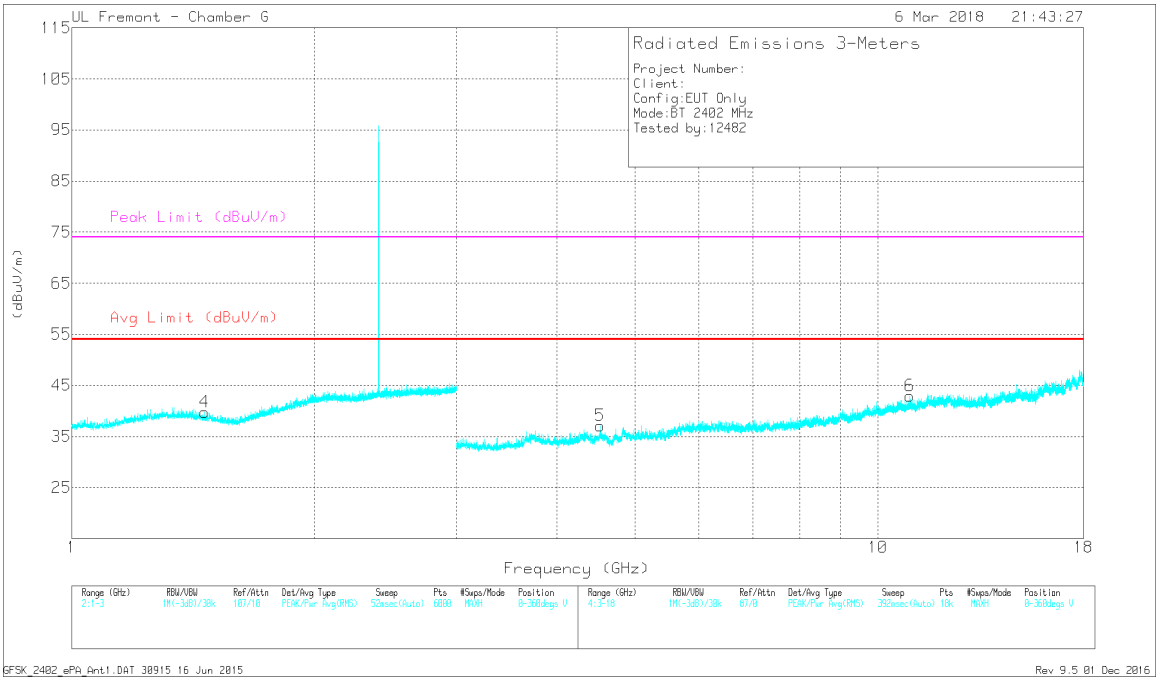
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZTONAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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	* 1.474	42.68	PKFH	28.2	-25.1	45.78	-	-	74	-28.22	241	317	H
	* 1.475	30.36	VA1T	28.2	-25.1	33.46	54	-20.54	-	-	241	317	H
4	* 1.462	42.3	PKFH	28.3	-25.1	45.5	-	-	74	-28.5	98	139	V
	* 1.46	30.29	VA1T	28.3	-25.1	33.49	54	-20.51	-	-	98	139	V
2	* 4.84	39.91	PKFH	34.1	-32.2	41.81	-	-	74	-32.19	20	321	H
	* 4.841	28.28	VA1T	34.1	-32.2	30.18	54	-23.82	-	-	20	321	H
3	* 12.159	35.47	PKFH	38.7	-25.6	48.57	-	-	74	-25.43	205	308	H
	* 12.157	23.85	VA1T	38.7	-25.5	37.05	54	-16.95	-	-	205	308	H
5	* 4.525	39.49	PKFH	34.2	-32.4	41.29	-	-	74	-32.71	197	377	V
	* 4.528	27.96	VA1T	34.2	-32.4	29.76	54	-24.24	-	-	197	377	V
6	* 10.962	35.65	PKFH	38	-25.8	47.85	-	-	74	-26.15	301	226	V
	* 10.962	23.86	VA1T	38	-25.8	36.06	54	-17.94	-	-	301	226	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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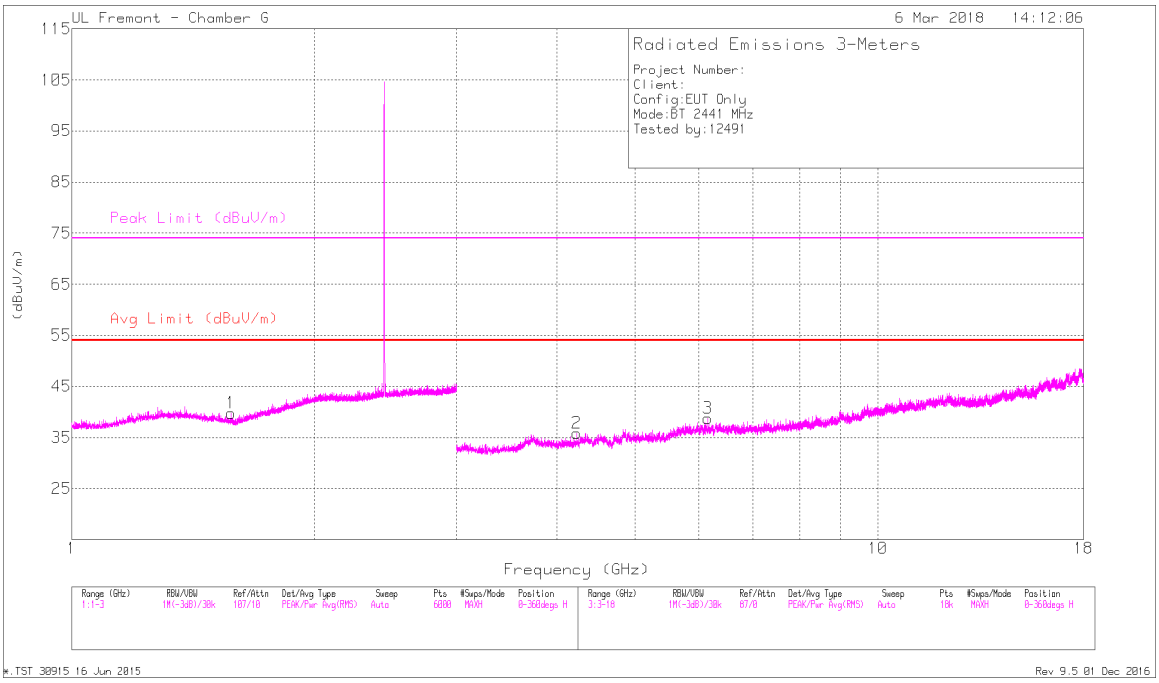
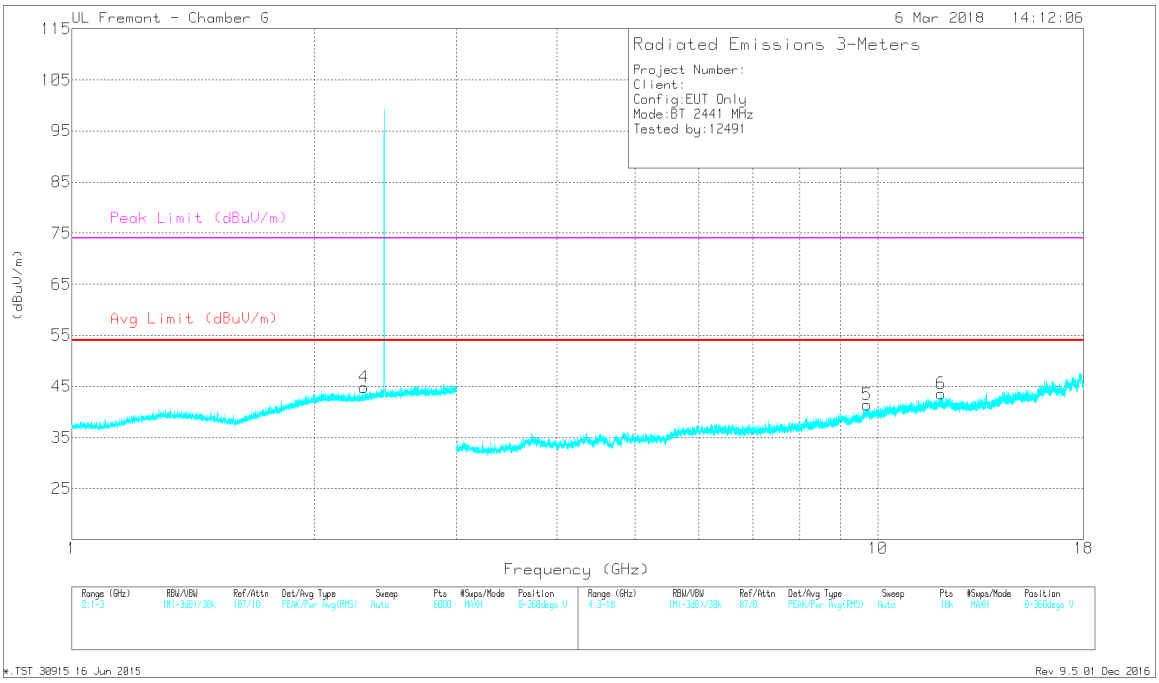
MID CHANNEL RESULTS



HORIZTONAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/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	* 1.575	42.41	PKFH	27.6	-25	45.01	-	-	74	-28.99	132	214	H
	* 1.577	30.41	VA1T	27.6	-25	33.01	54	-20.99	-	-	132	214	H
2	* 4.231	39.86	PKFH	33.7	-32.2	41.36	-	-	74	-32.64	80	329	H
	* 4.231	27.44	VA1T	33.7	-32.2	28.94	54	-25.06	-	-	80	329	H
6	* 11.973	35.35	PKFH	38.7	-24.8	49.25	-	-	74	-24.75	360	231	V
	* 11.977	23.02	VA1T	38.7	-24.9	36.82	54	-17.18	-	-	360	231	V
4	2.302	41.91	PKFH	31.7	-24.4	49.21	-	-	-	-	196	317	V
3	6.157	40.24	PKFH	35.5	-31.9	43.84	-	-	-	-	52	123	H
5	9.694	37.52	PKFH	37.1	-27.1	47.52	-	-	-	-	3	235	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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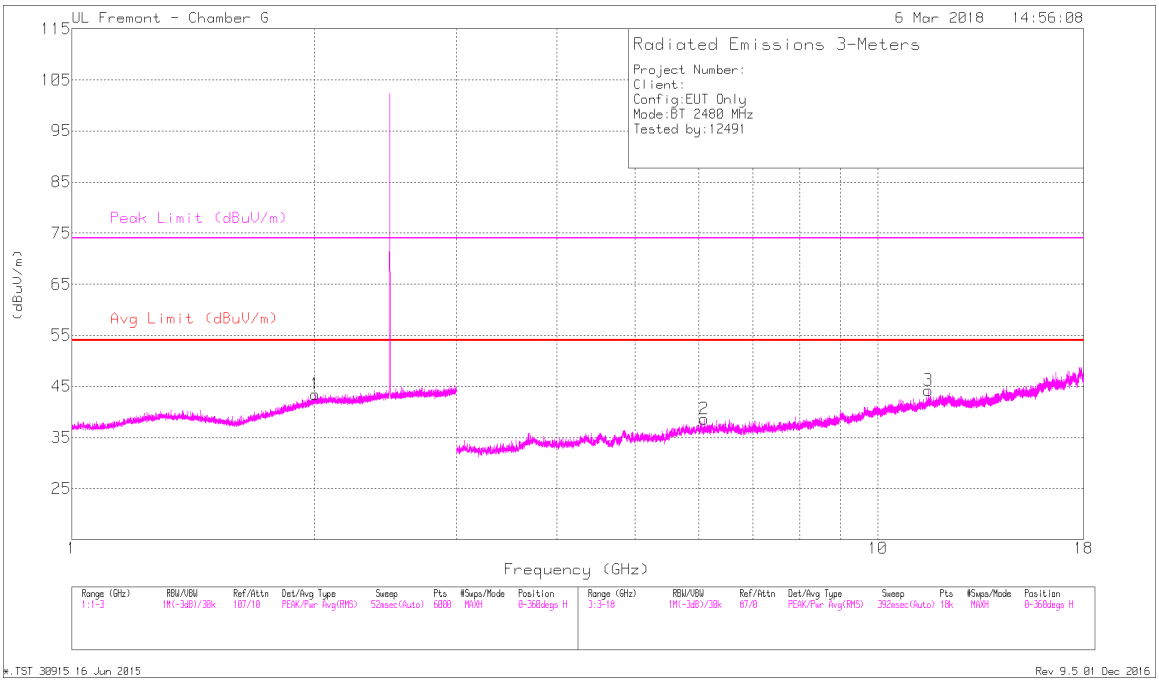
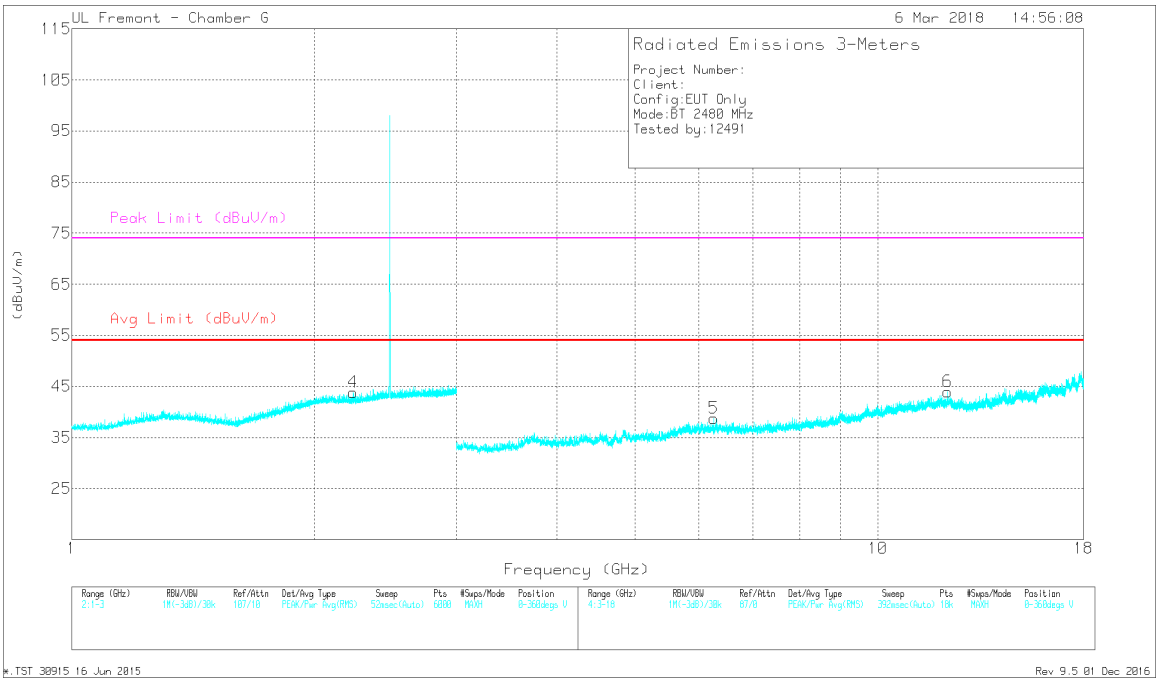
HIGH CHANNEL RESULTS



HORIZTONAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.23	42.08	PKFH	31.6	-24.5	49.18	-	-	74	-24.82	347	397	V
	* 2.233	30.29	VA1T	31.6	-24.5	37.39	54	-16.61	-	-	347	397	V
3	* 11.548	35.95	PKFH	38.4	-25.5	48.85	-	-	74	-25.15	253	201	H
	* 11.547	23.73	VA1T	38.4	-25.5	36.63	54	-17.37	-	-	253	201	H
6	* 12.22	34.97	PKFH	38.7	-24.9	48.77	-	-	74	-25.23	123	228	V
	* 12.217	23.29	VA1T	38.7	-24.9	37.09	54	-16.91	-	-	123	228	V
1	2.007	42.04	PKFH	31.7	-24.7	49.04	-	-	-	-	60	312	H
2	6.087	39.2	PKFH	35.5	-31.6	43.1	-	-	-	-	217	274	H
5	6.264	38.24	PKFH	35.5	-31.2	42.54	-	-	-	-	64	200	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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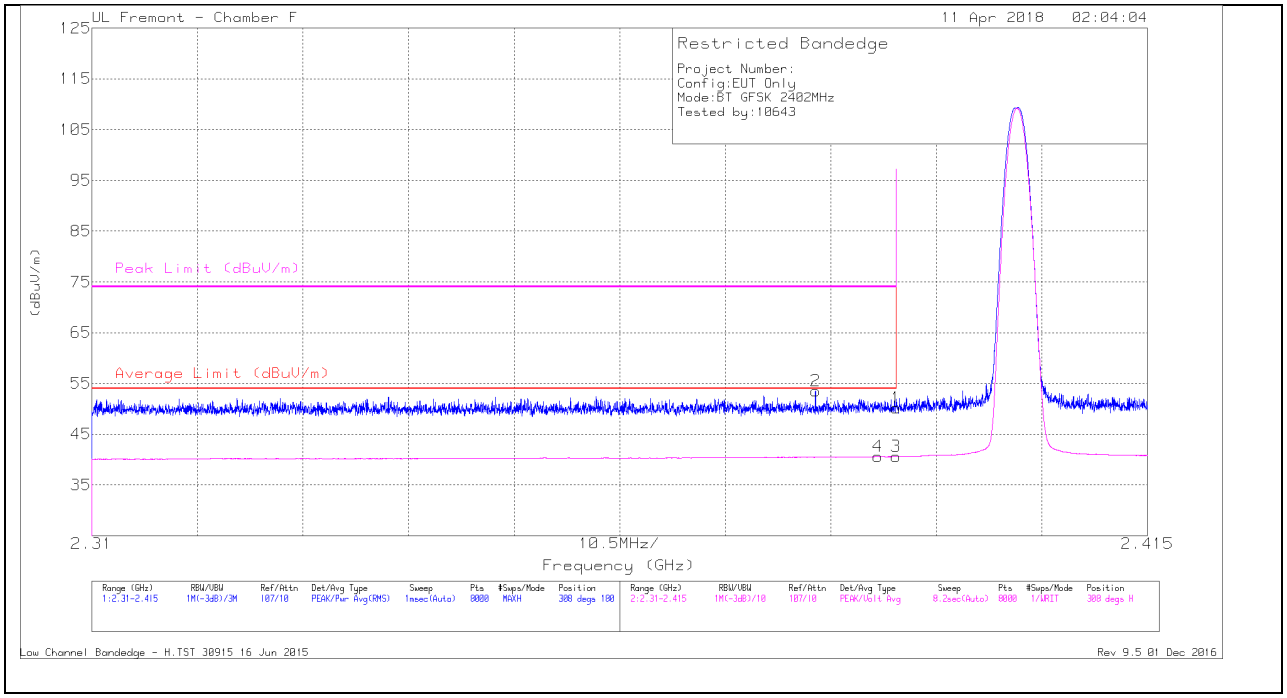
ANTENNA 3

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	38.89	Pk	31.9	-20.6	50.19	-	-	74	-23.81	308	180	H
2	* 2.382	42.31	Pk	31.8	-20.6	53.51	-	-	74	-20.49	308	180	H
3	* 2.39	29.26	VA1T	31.9	-20.6	40.56	54	-13.44	-	-	308	180	H
4	* 2.388	29.33	VA1T	31.9	-20.6	40.63	54	-13.37	-	-	308	180	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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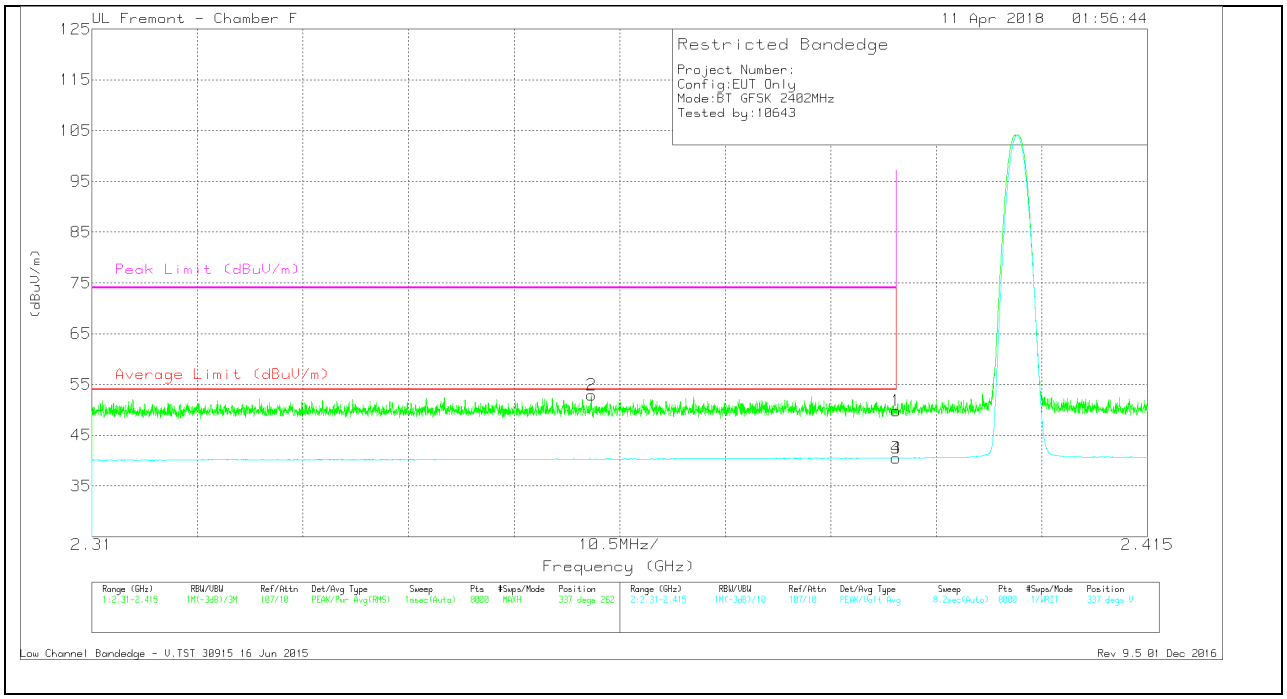
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl /Fltr/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	38.51	Pk	31.9	-20.6	49.81	-	-	74	-24.19	337	262	V
2	* 2.36	41.83	Pk	31.8	-20.7	52.93	-	-	74	-21.07	337	262	V
3	* 2.39	29.2	VA1T	31.9	-20.6	40.5	54	-13.5	-	-	337	262	V
4	* 2.39	29.22	VA1T	31.9	-20.6	40.52	54	-13.48	-	-	337	262	V

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

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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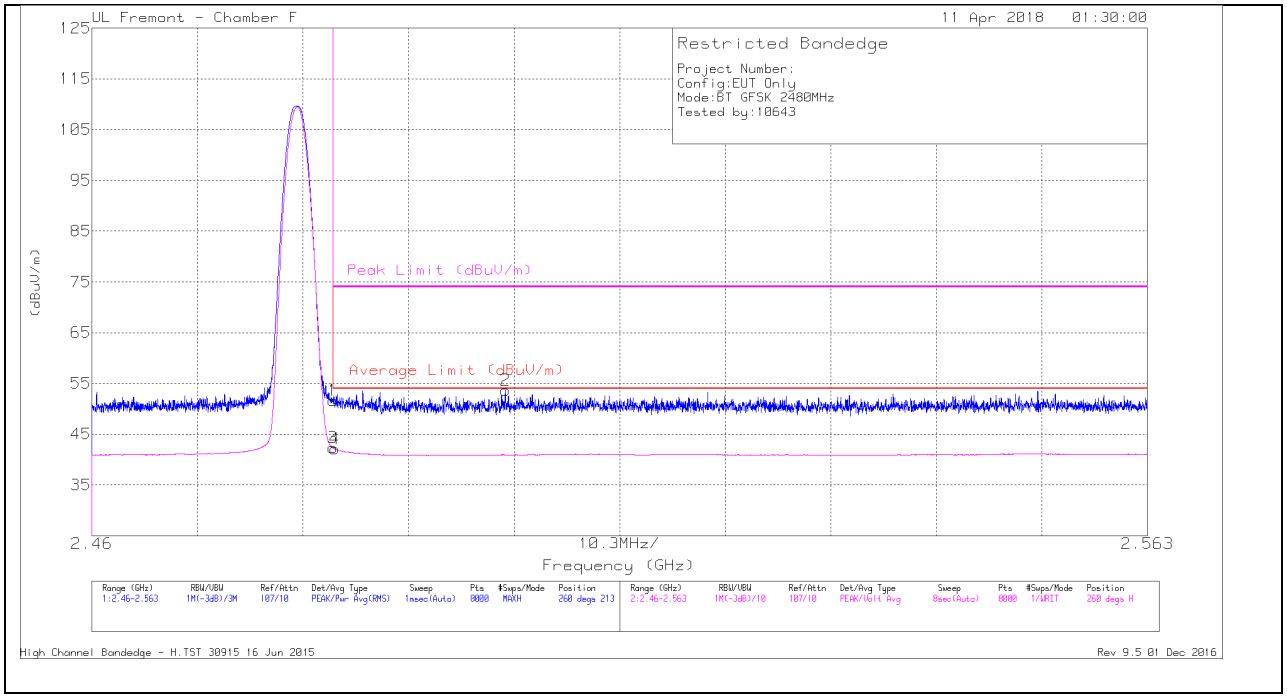
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	40.31	Pk	32.1	-20.7	51.71	-	-	74	-22.29	260	213	H
2	2.5	42.09	Pk	32.2	-20.7	53.59	-	-	74	-20.41	260	213	H
3	* 2.484	30.9	VA1T	32.1	-20.7	42.3	54	-11.7	-	-	260	213	H
4	* 2.484	30.71	VA1T	32.1	-20.7	42.11	54	-11.89	-	-	260	213	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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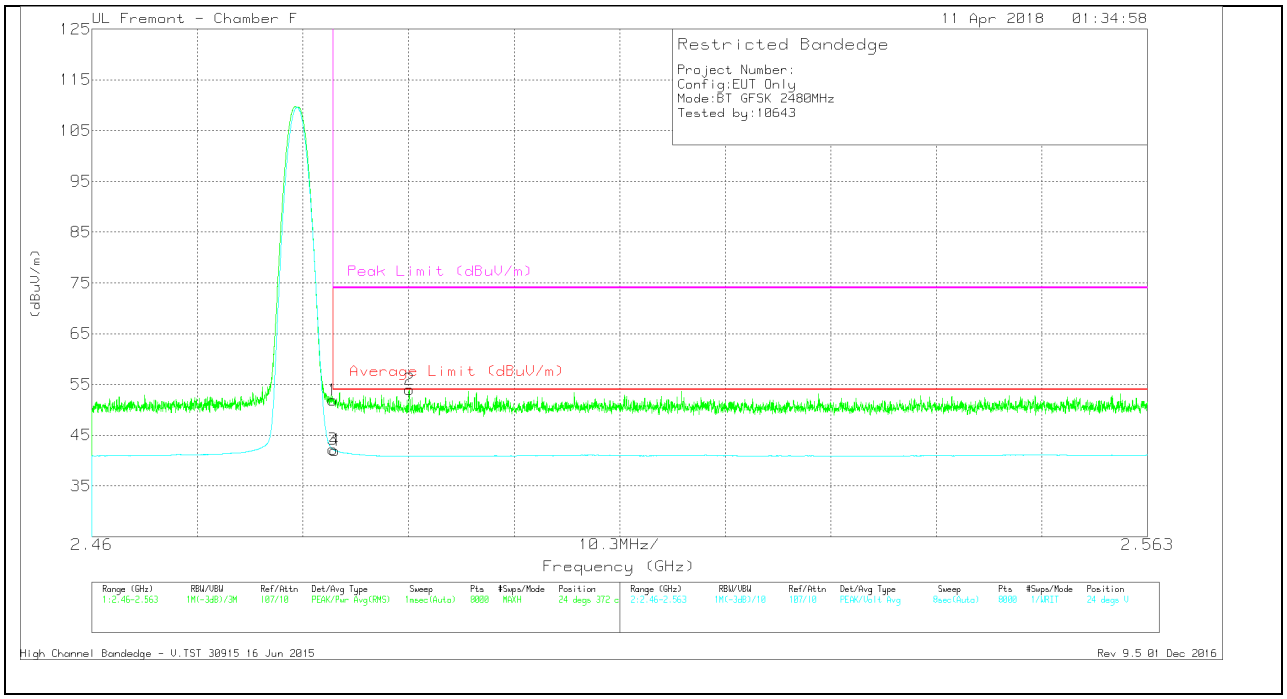
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	40.46	Pk	32.1	-20.7	51.86	-	-	74	-22.14	24	372	V
2	* 2.491	42.5	Pk	32.2	-20.7	54	-	-	74	-20	24	372	V
3	* 2.484	30.86	VA1T	32.1	-20.7	42.26	54	-11.74	-	-	24	372	V
4	* 2.484	30.63	VA1T	32.1	-20.7	42.03	54	-11.97	-	-	24	372	V

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

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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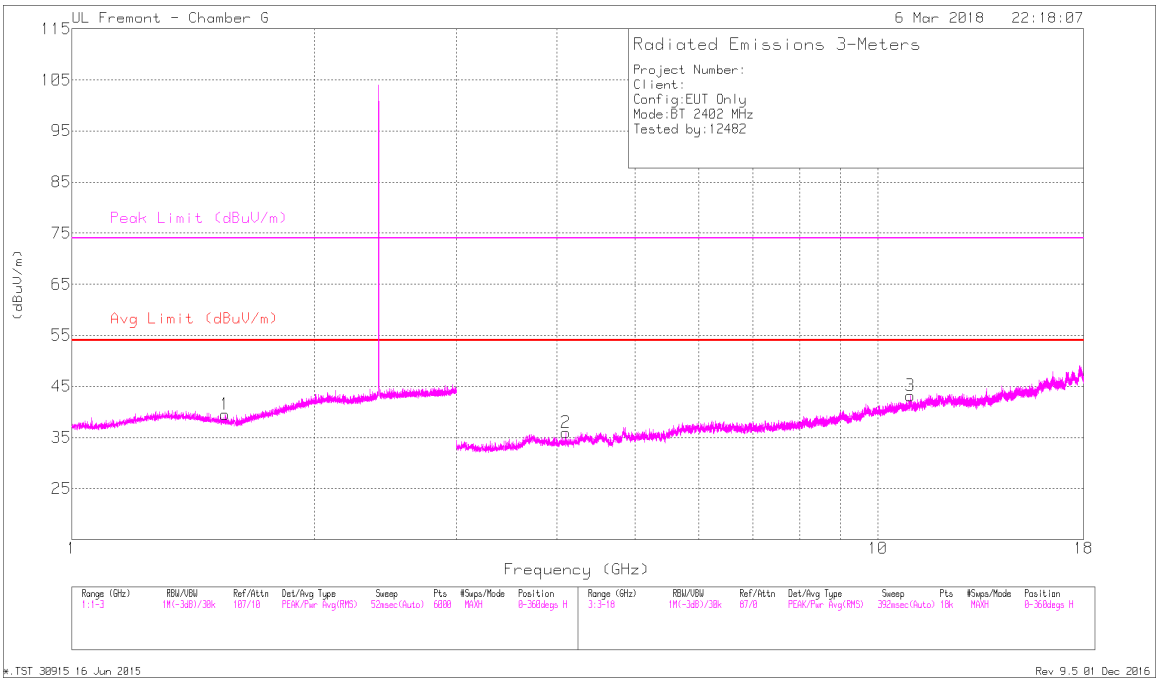
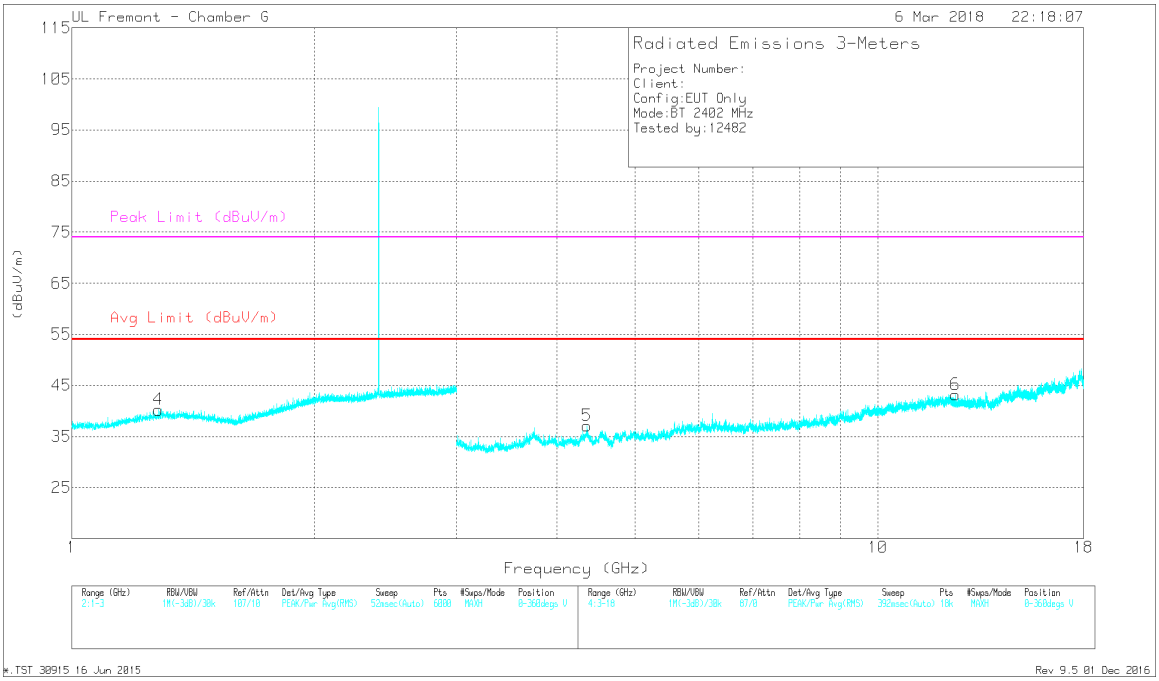
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZTONAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/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	* 1.549	42.57	PKFH	27.7	-25	45.27	-	-	74	-28.73	243	272	H
	* 1.548	30.47	VA1T	27.7	-25	33.17	54	-20.83	-	-	243	272	H
4	* 1.279	43.24	PKFH	28.7	-25.6	46.34	-	-	74	-27.66	24	272	V
	* 1.279	30.68	VA1T	28.7	-25.6	33.78	54	-20.22	-	-	24	272	V
2	* 4.105	39.83	PKFH	33.6	-32.4	41.03	-	-	74	-32.97	305	134	H
	* 4.104	27.71	VA1T	33.6	-32.4	28.91	54	-25.09	-	-	305	134	H
3	* 10.976	35.77	PKFH	38	-25.8	47.97	-	-	74	-26.03	325	157	H
	* 10.975	23.86	VA1T	38	-25.9	35.96	54	-18.04	-	-	325	157	H
5	* 4.354	39.71	PKFH	34	-31.8	41.91	-	-	74	-32.09	281	238	V
	* 4.353	27.79	VA1T	34	-31.8	29.99	54	-24.01	-	-	281	238	V
6	* 12.48	35	PKFH	38.7	-25.8	47.9	-	-	74	-26.1	324	255	V
	* 12.48	23.52	VA1T	38.7	-25.8	36.42	54	-17.58	-	-	324	255	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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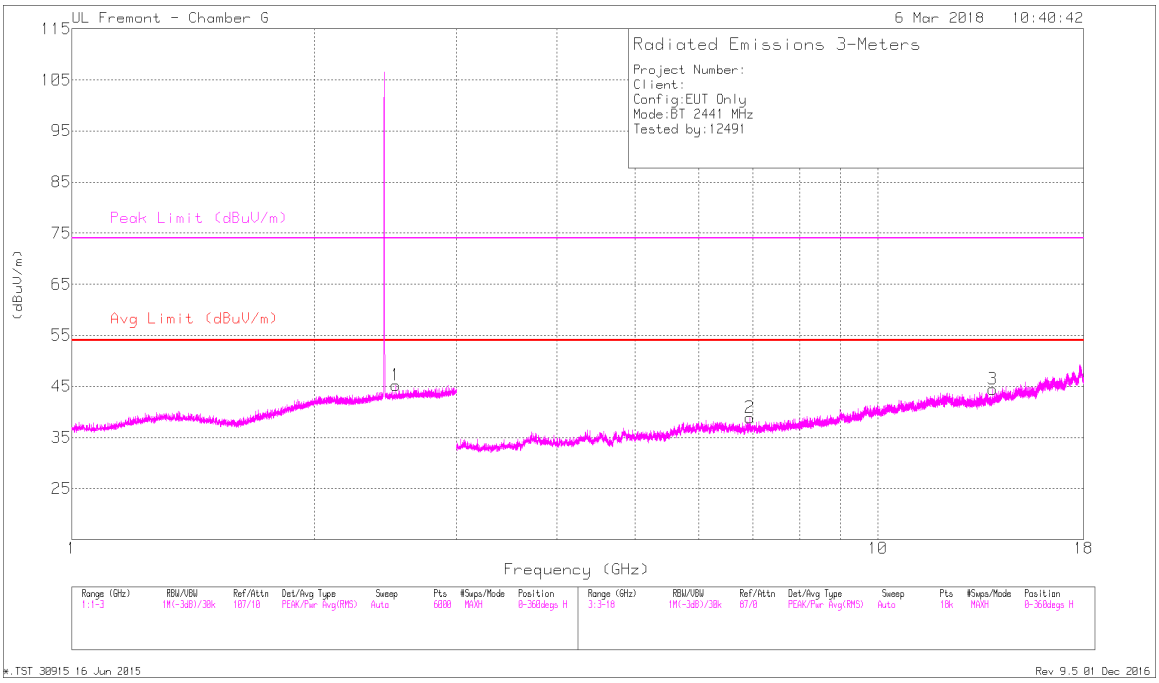
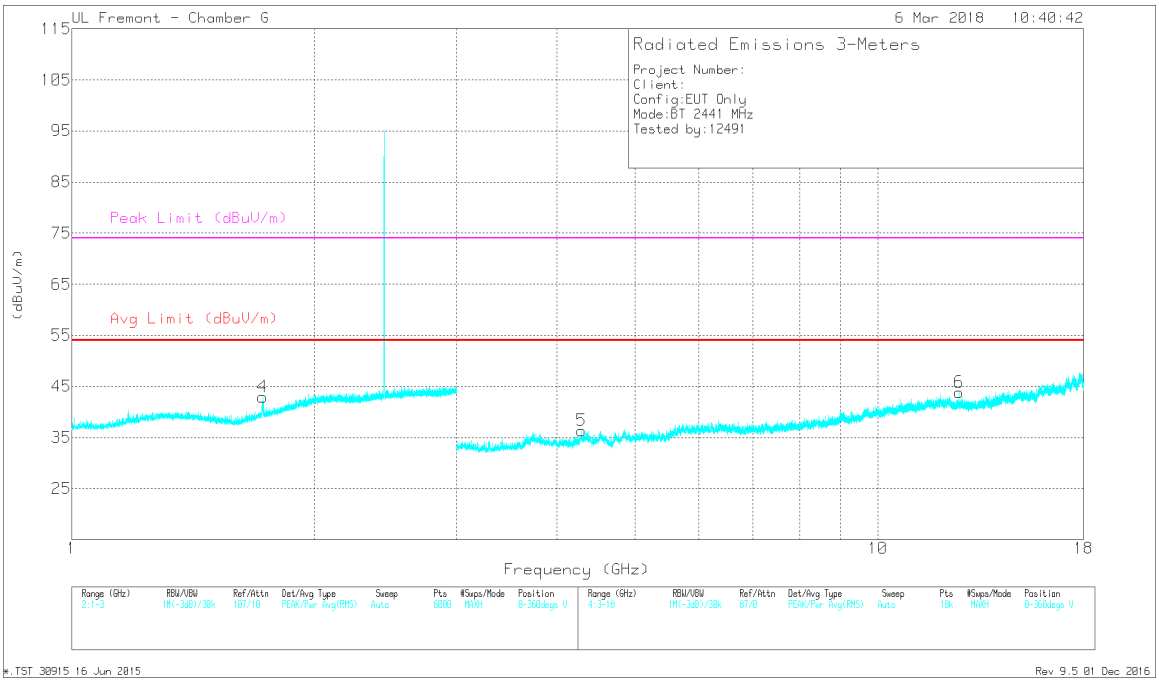
MID CHANNEL RESULTS



HORIZTONAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 4.289	39.13	PKFH	33.9	-31.7	41.33	-	-	74	-32.67	94	319	V
	* 4.288	27.12	VA1T	33.9	-31.7	29.32	54	-24.68	-	-	94	319	V
6	* 12.622	35.1	PKFH	38.8	-25.6	48.3	-	-	74	-25.7	256	216	V
	* 12.622	22.82	VA1T	38.8	-25.6	36.02	54	-17.98	-	-	256	216	V
4	1.726	41.63	PKFH	29	-24.8	45.83	-	-	-	-	252	317	V
1	2.524	41.81	PKFH	32.1	-24.3	49.61	-	-	-	-	52	322	H
2	6.945	38.73	PKFH	35.4	-30.3	43.83	-	-	-	-	360	127	H
3	13.881	37.48	PKFH	39.1	-26.8	49.78	-	-	-	-	358	250	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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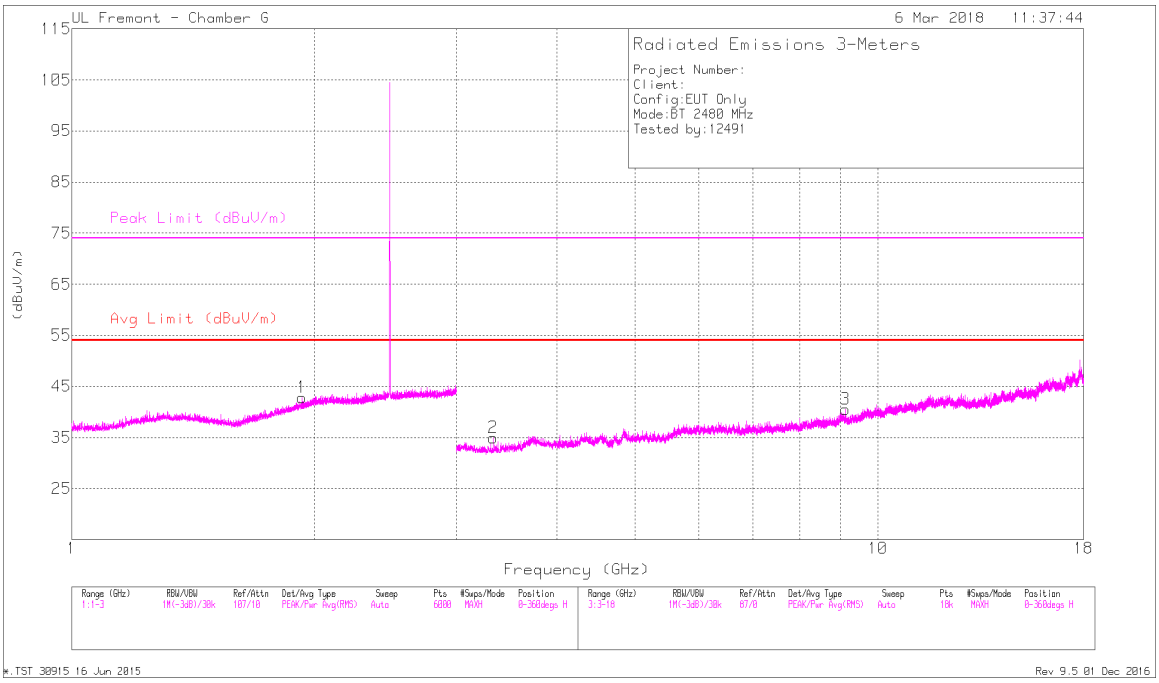
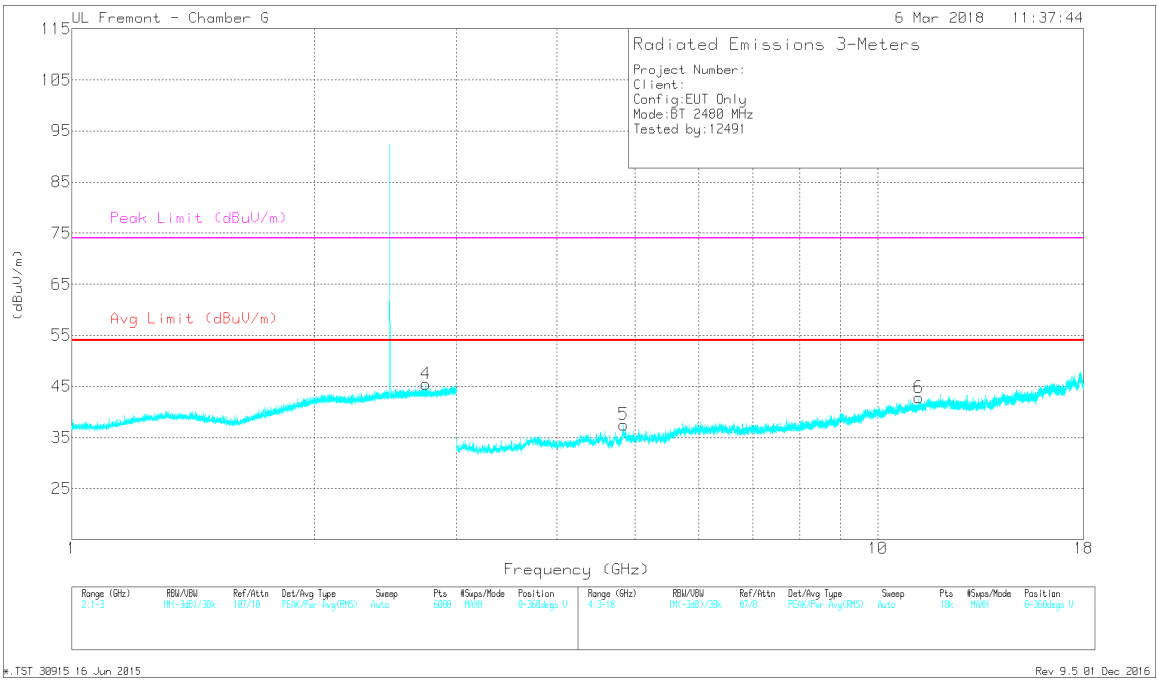
HIGH CHANNEL RESULTS



HORIZTONAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.752	41.62	PKFH	32.4	-24.2	49.82	-	-	74	-24.18	349	145	V
	* 2.751	30.14	VA1T	32.4	-24.1	38.44	54	-15.56	-	-	349	145	V
2	* 3.333	39.32	PKFH	32.7	-32.9	39.12	-	-	74	-34.88	229	310	H
	* 3.339	27.93	VA1T	32.7	-32.9	27.73	54	-26.27	-	-	229	310	H
3	* 9.116	36.49	PKFH	36.6	-28.4	44.69	-	-	74	-29.31	250	370	H
	* 9.114	25.17	VA1T	36.6	-28.4	33.37	54	-20.63	-	-	250	370	H
5	* 4.843	40.89	PKFH	34.1	-32.2	42.79	-	-	74	-31.21	334	207	V
	* 4.841	28.7	VA1T	34.1	-32.2	30.6	54	-23.4	-	-	334	207	V
6	* 11.242	35.51	PKFH	38.1	-25.3	48.31	-	-	74	-25.69	343	200	V
	* 11.241	23.24	VA1T	38.1	-25.3	36.04	54	-17.96	-	-	343	200	V
1	1.932	42.6	PKFH	31.2	-24.9	48.9	-	-	-	-	186	279	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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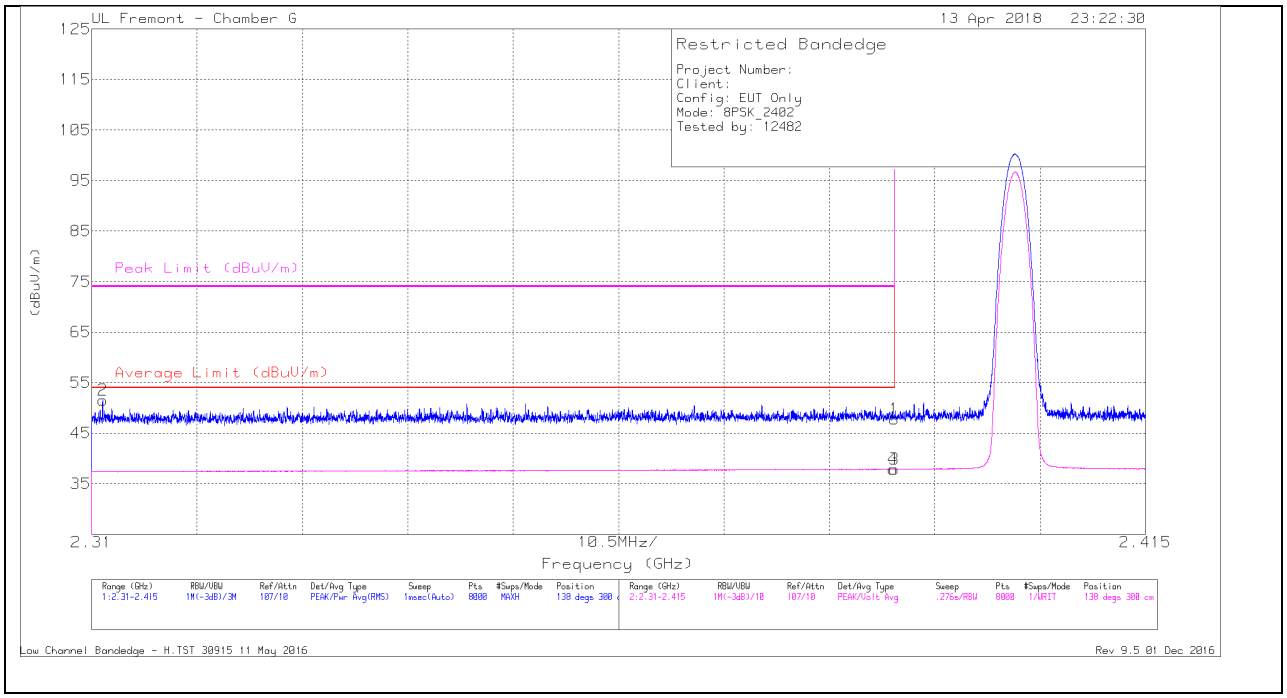
9.1.2. HIGH POWER ENCHANCED DATA RATE 8PSK MODULATION

ANTENNA 4

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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	40.08	Pk	32	-24.3	47.78	-	-	74	-26.22	138	300	H
2	* 2.311	44.2	Pk	31.7	-24.4	51.5	-	-	74	-22.5	138	300	H
3	* 2.39	30.13	VA1T	32	-24.3	37.83	54	-16.17	-	-	138	300	H
4	* 2.39	30.2	VA1T	32	-24.3	37.9	54	-16.1	-	-	138	300	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration
Low Channel Bandedge - H.TST 30915 11 May 2016
Rev 9.5 01 Dec 2016

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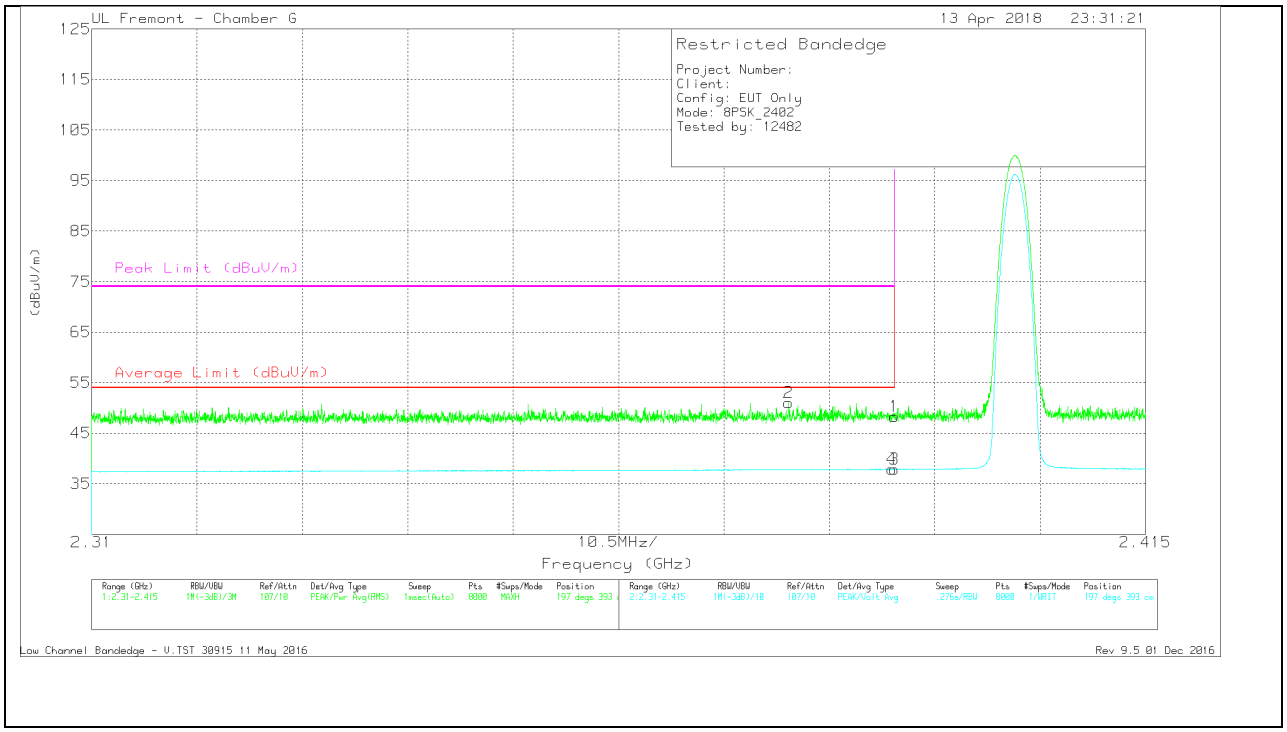
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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	40.6	Pk	32	-24.3	48.3	-	-	74	-25.7	197	393	V
2	* 2.379	43.31	Pk	32	-24.3	51.01	-	-	74	-22.99	197	393	V
3	* 2.39	30.19	VA1T	32	-24.3	37.89	54	-16.11	-	-	197	393	V
4	* 2.39	30.17	VA1T	32	-24.3	37.87	54	-16.13	-	-	197	393	V

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

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

Low Channel Bandedge - V.TST 30915 11 May 2016

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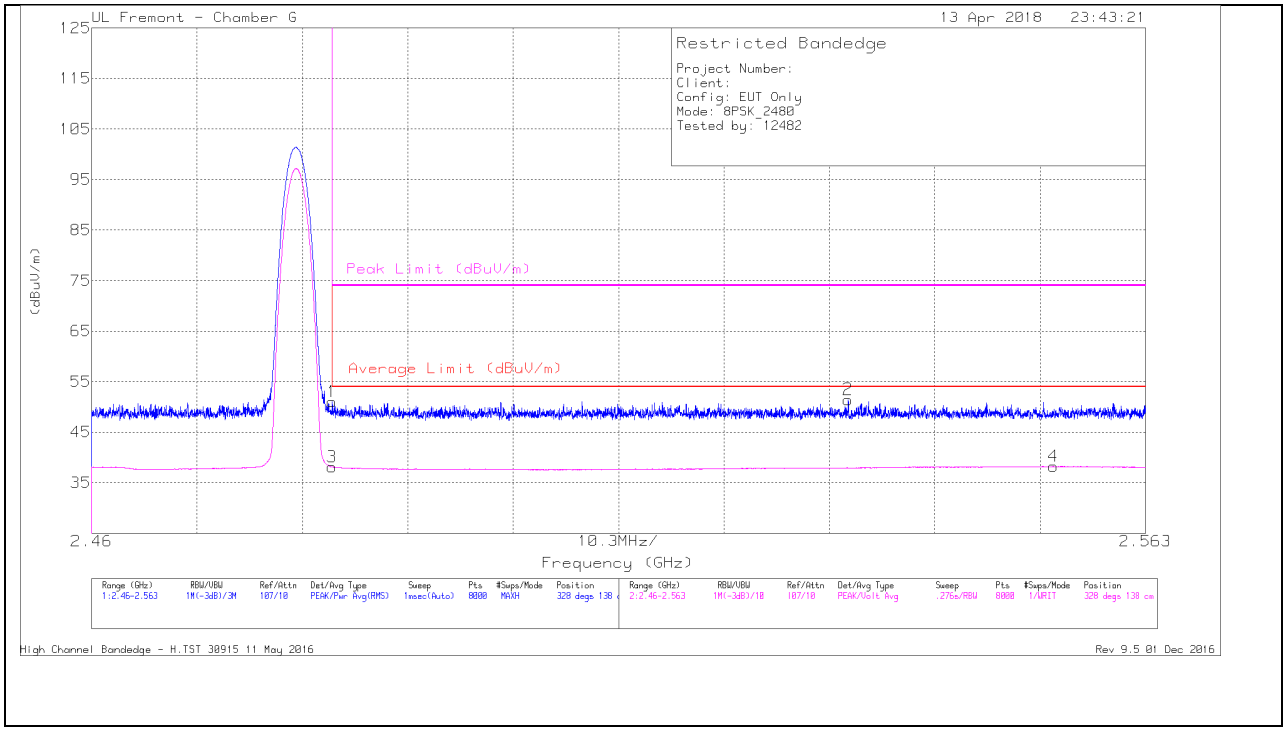
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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	43.29	Pk	32.1	-24.3	51.09	-	-	74	-22.91	328	138	H
3	* 2.484	30.3	VA1T	32.1	-24.3	38.1	54	-15.9	-	-	328	138	H
2	2.534	43.57	Pk	32.2	-24.3	51.47	-	-	74	-22.53	328	138	H
4	2.554	30.2	VA1T	32.2	-24.2	38.2	54	-15.8	-	-	328	138	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration
High Channel Bandedge - H.TST 30915 11 May 2016
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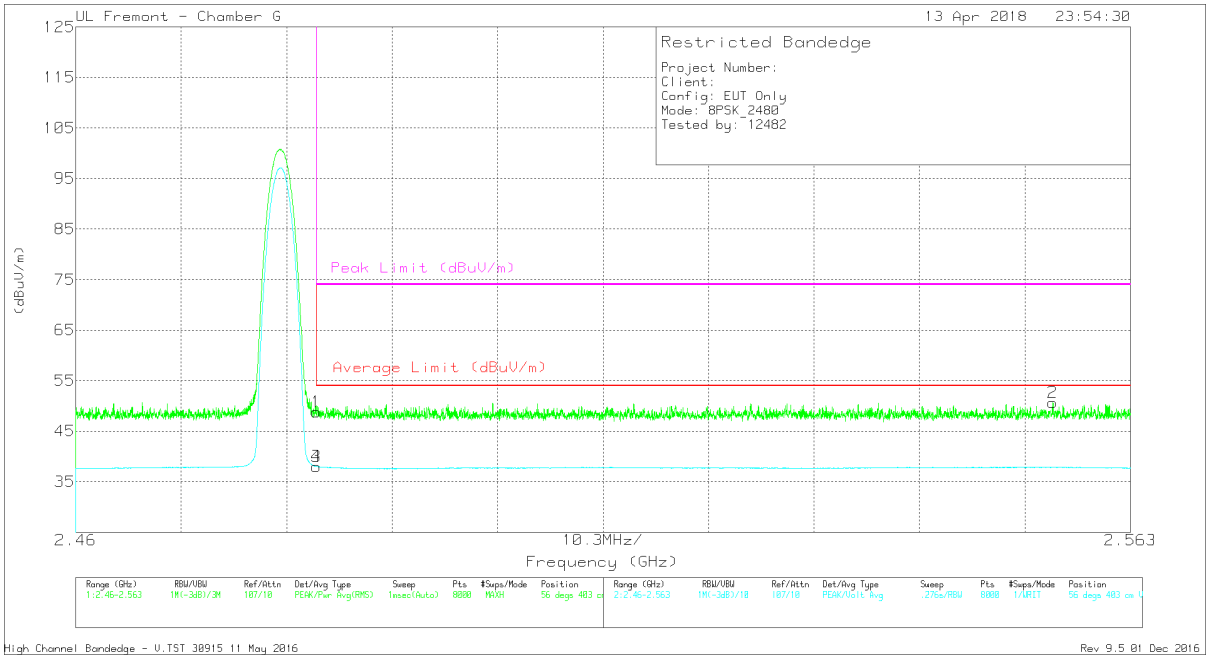
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	Pk	32.1	-24.3	48.8	-	-	74	-25.2	56	403	V
3	* 2.484	30.23	VA1T	32.1	-24.3	38.03	54	-15.97	-	-	56	403	V
4	* 2.484	30.23	VA1T	32.1	-24.3	38.03	54	-15.97	-	-	56	403	V
2	2.555	42.61	Pk	32.2	-24.2	50.61	-	-	74	-23.39	56	403	V

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

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

High Channel Bandedge - V.TST 30915 11 May 2016

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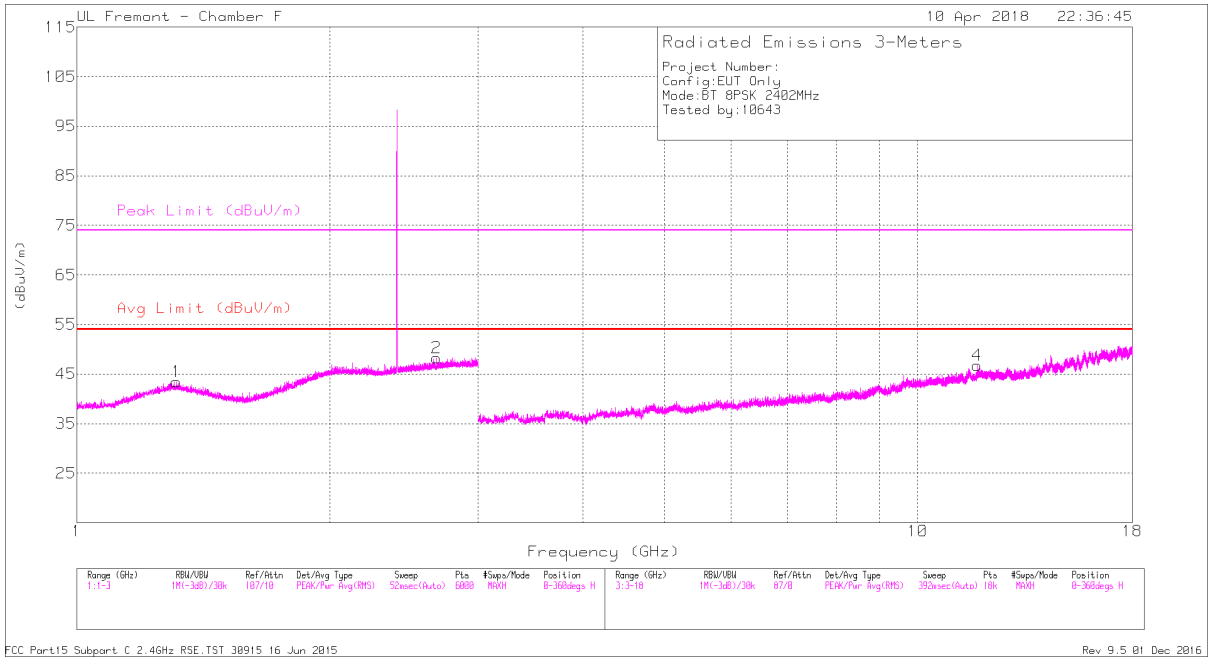
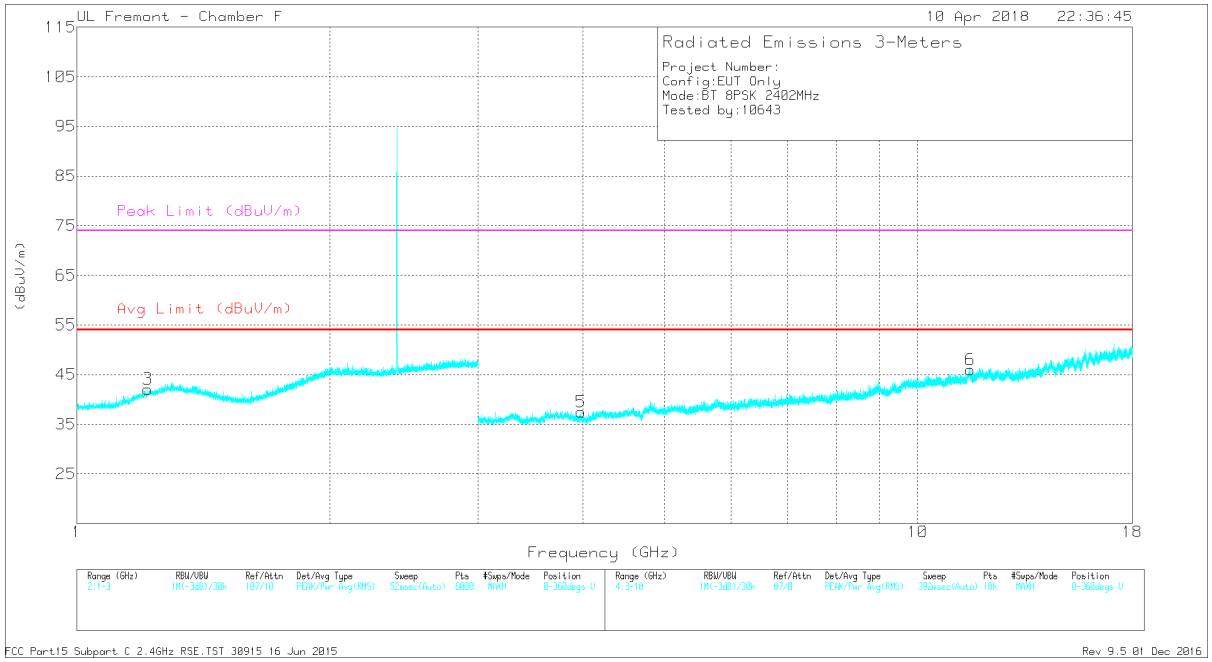
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZTONAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	* 1.312	40.86	PKFH	30	-21.9	48.96	-	-	74	-25.04	255	181	H
	* 1.315	28.93	VA1T	30	-21.9	37.03	54	-16.97	-	-	255	181	H
2	* 2.677	40.3	PKFH	32.5	-20.4	52.4	-	-	74	-21.6	159	223	H
	* 2.678	28.88	VA1T	32.5	-20.4	40.98	54	-13.02	-	-	159	223	H
3	* 1.215	40.88	PKFH	29	-22.2	47.68	-	-	74	-26.32	221	206	V
	* 1.215	29.06	VA1T	29	-22.2	35.86	54	-18.14	-	-	221	206	V
4	* 11.772	34.18	PKFH	39	-21.7	51.48	-	-	74	-22.52	131	257	H
	* 11.77	22.43	VA1T	39	-21.7	39.73	54	-14.27	-	-	131	257	H
5	* 3.978	37.75	PKFH	33.3	-28.7	42.35	-	-	74	-31.65	286	202	V
	* 3.975	26.36	VA1T	33.3	-28.7	30.96	54	-23.04	-	-	286	202	V
6	* 11.54	33.52	PKFH	38.5	-20.4	51.62	-	-	74	-22.38	222	245	V
	* 11.539	21.99	VA1T	38.5	-20.4	40.09	54	-13.91	-	-	222	245	V

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

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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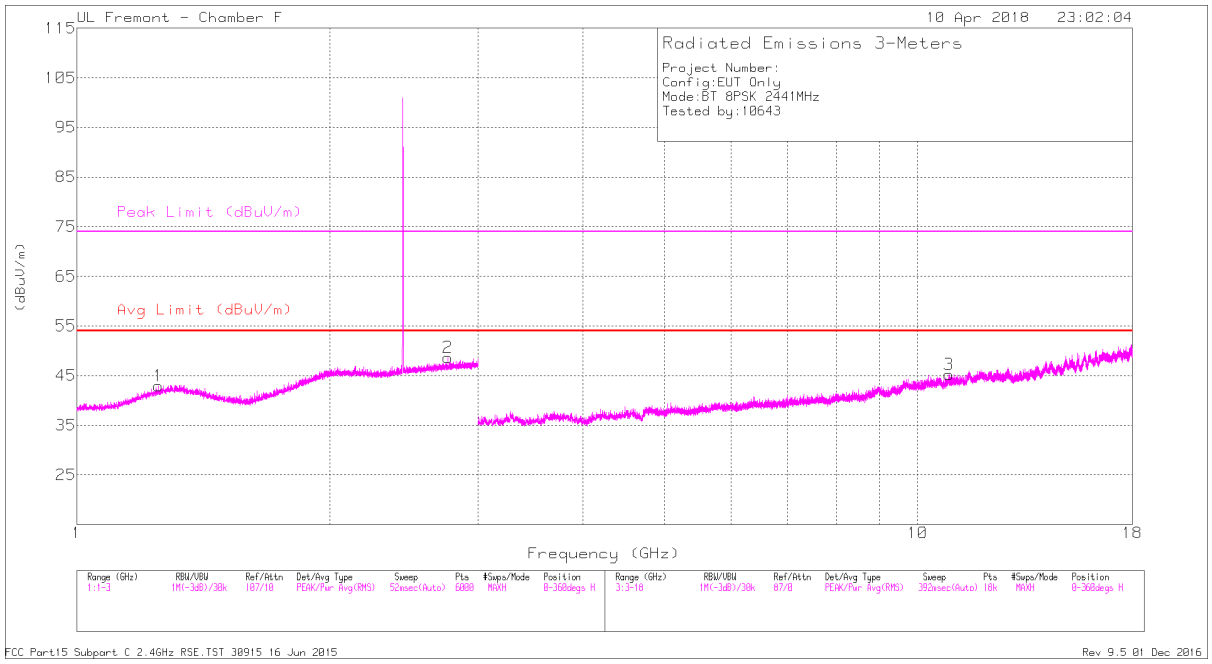
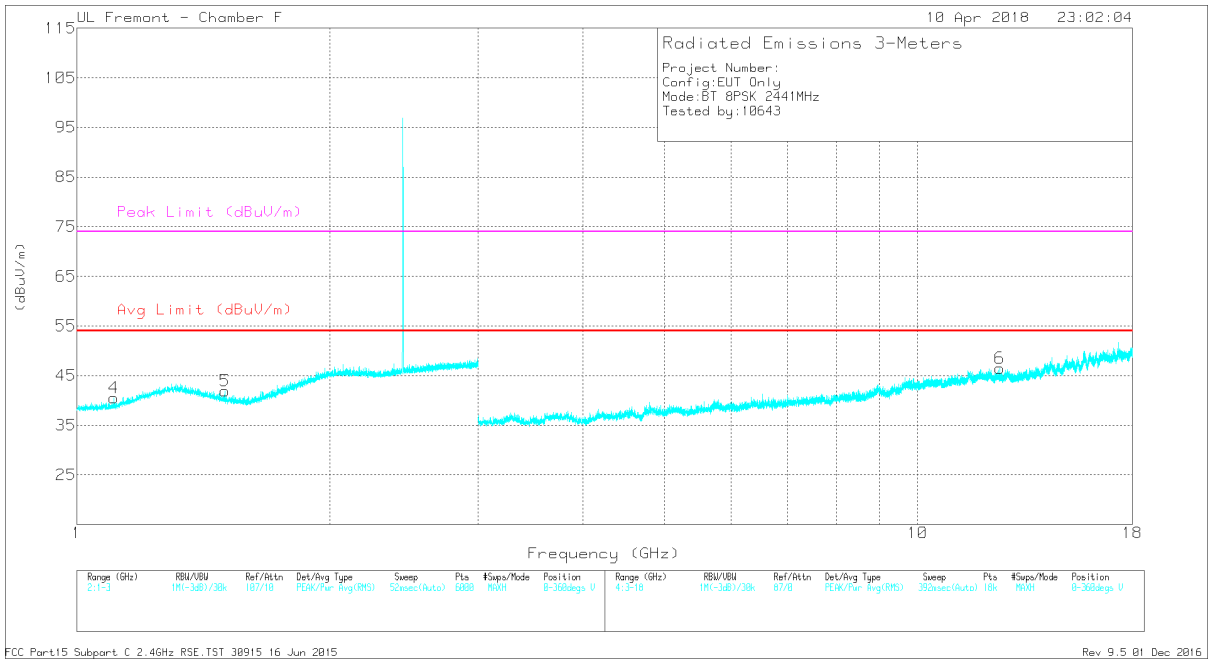
MID CHANNEL RESULTS



HORIZTONAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	* 1.251	40.06	PKFH	29.5	-22.1	47.46	-	-	74	-26.54	287	251	H
	* 1.252	28.98	VA1T	29.5	-22.1	36.38	54	-17.62	-	-	287	251	H
2	* 2.76	40.48	PKFH	32.6	-20.4	52.68	-	-	74	-21.32	333	185	H
	* 2.759	28.9	VA1T	32.6	-20.4	41.1	54	-12.9	-	-	333	185	H
4	* 1.106	41.05	PKFH	27	-22.5	45.55	-	-	74	-28.45	164	202	V
	* 1.104	29.09	VA1T	26.9	-22.5	33.49	54	-20.51	-	-	164	202	V
5	* 1.5	40.6	PKFH	27.7	-21.7	46.6	-	-	74	-27.4	295	227	V
	* 1.5	28.83	VA1T	27.7	-21.7	34.83	54	-19.17	-	-	295	227	V
3	* 10.896	35.1	PKFH	37.8	-20.9	52	-	-	74	-22	231	197	H
	* 10.895	21.71	VA1T	37.8	-20.9	38.61	54	-15.39	-	-	231	197	H
6	* 12.513	34.14	PKFH	38.9	-22.1	50.94	-	-	74	-23.06	310	234	V
	* 12.511	22.77	VA1T	38.9	-22.1	39.57	54	-14.43	-	-	310	234	V

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

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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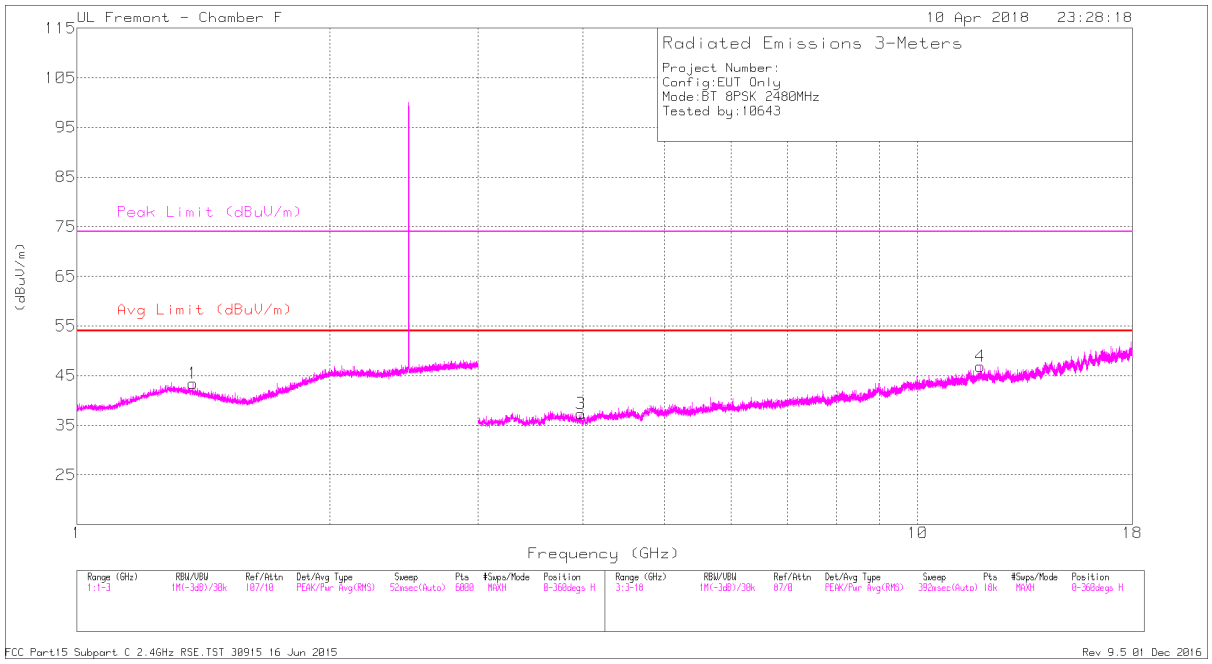
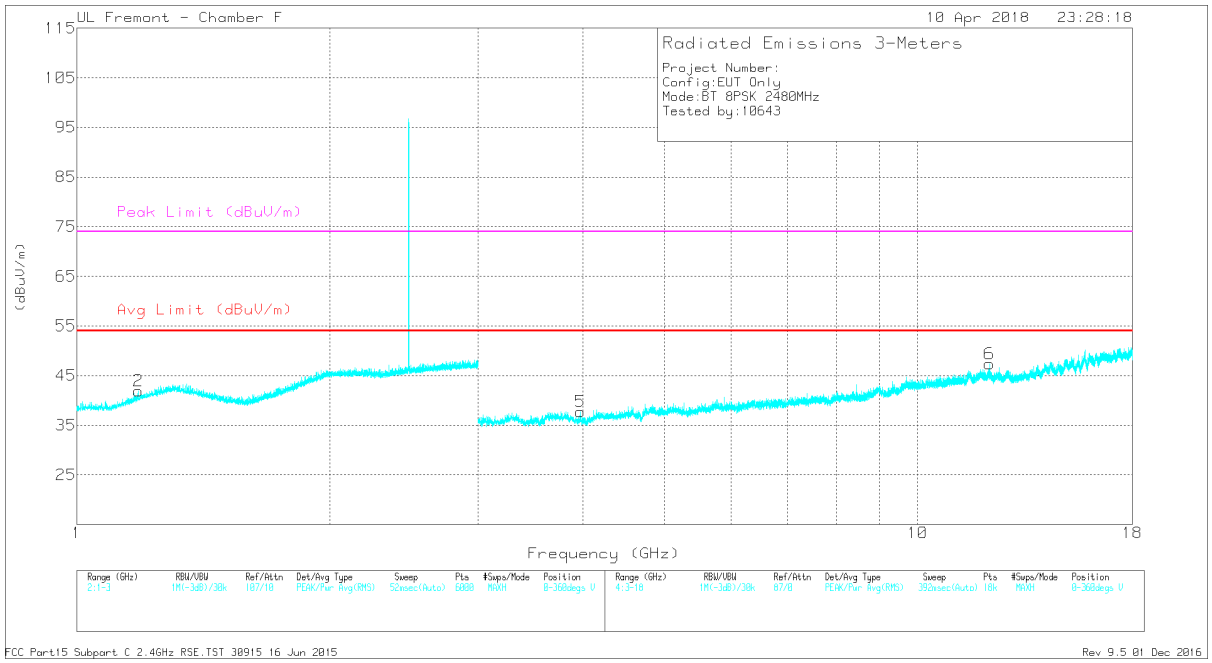
HIGH CHANNEL RESULTS



HORIZTONAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	* 1.376	42.22	PKFH	29.3	-21.8	49.72	-	-	74	-24.28	184	227	H
	* 1.375	28.89	VA1T	29.3	-21.8	36.39	54	-17.61	-	-	184	227	H
2	* 1.184	40.67	PKFH	28.5	-22.3	46.87	-	-	74	-27.13	184	227	V
	* 1.182	29.06	VA1T	28.5	-22.3	35.26	54	-18.74	-	-	184	227	V
3	* 3.978	37.68	PKFH	33.3	-28.7	42.28	-	-	74	-31.72	244	239	H
	* 3.98	26.22	VA1T	33.3	-28.7	30.82	54	-23.18	-	-	244	239	H
4	* 11.88	34.24	PKFH	38.9	-21.2	51.94	-	-	74	-22.06	300	187	H
	* 11.88	22.44	VA1T	38.9	-21.2	40.14	54	-13.86	-	-	300	187	H
5	* 3.974	38.5	PKFH	33.3	-28.6	43.2	-	-	74	-30.8	189	222	V
	* 3.974	26.42	VA1T	33.3	-28.6	31.12	54	-22.88	-	-	189	222	V
6	* 12.171	34.27	PKFH	38.7	-21.1	51.87	-	-	74	-22.13	229	195	V
	* 12.17	22.28	VA1T	38.7	-21.1	39.88	54	-14.12	-	-	229	195	V

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

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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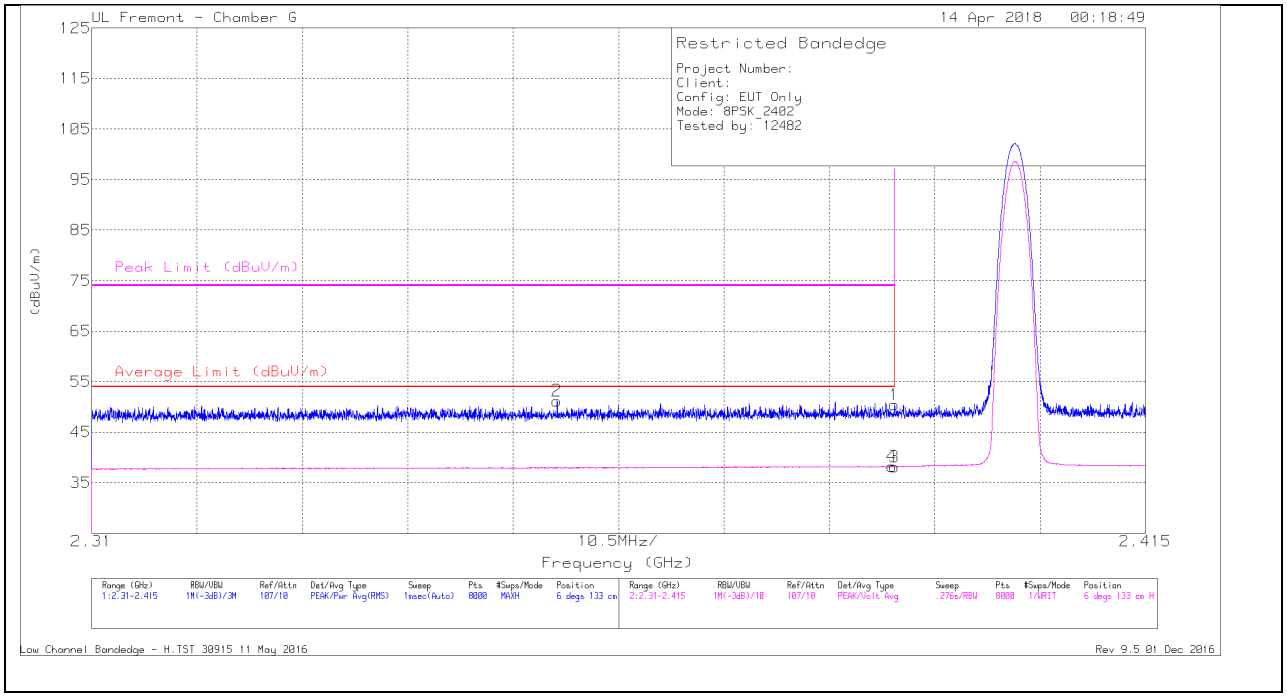
ANTENNA 3

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	42.77	Pk	32	-24.3	50.47	-	-	74	-23.53	6	133	H
2	* 2.356	43.62	Pk	31.9	-24.3	51.22	-	-	74	-22.78	6	133	H
3	* 2.39	30.47	VA1T	32	-24.3	38.17	54	-15.83	-	-	6	133	H
4	* 2.39	30.53	VA1T	32	-24.3	38.23	54	-15.77	-	-	6	133	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration
Low Channel Bandedge - H.TST 30915 11 May 2016
Rev 9.5 01 Dec 2016

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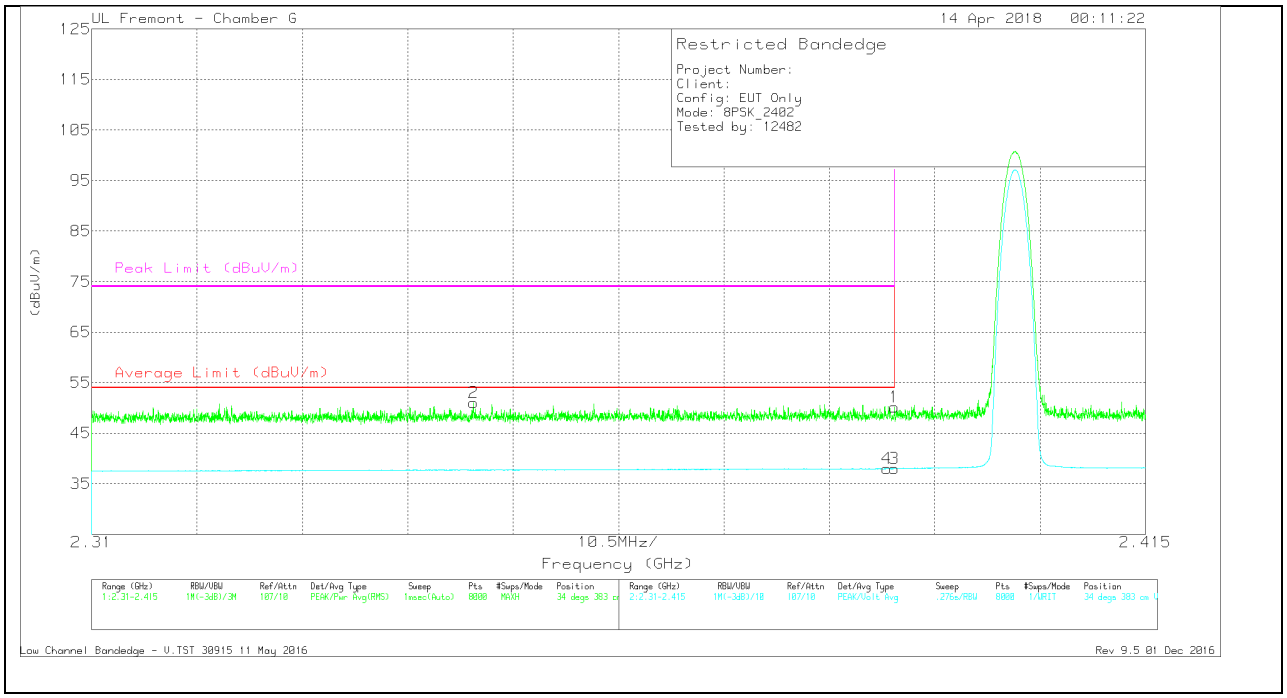
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	42.52	Pk	32	-24.3	50.22	-	-	74	-23.78	34	383	V
2	* 2.348	43.49	Pk	31.8	-24.3	50.99	-	-	74	-23.01	34	383	V
3	* 2.39	30.28	VA1T	32	-24.3	37.98	54	-16.02	-	-	34	383	V
4	* 2.389	30.29	VA1T	32	-24.3	37.99	54	-16.01	-	-	34	383	V

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

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

Low Channel Bandedge - V.TST 30915 11 May 2016

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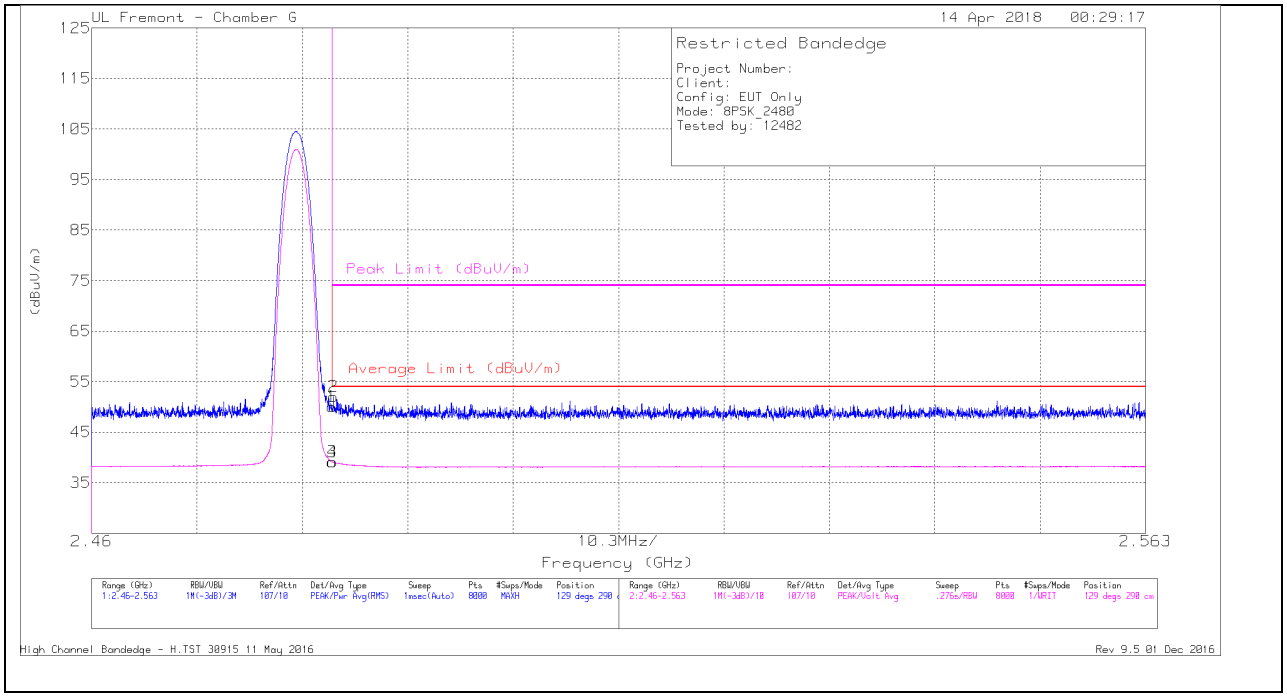
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	42.3	Pk	32.1	-24.3	50.1	-	-	74	-23.9	129	290	H
2	* 2.484	44.21	Pk	32.1	-24.3	52.01	-	-	74	-21.99	129	290	H
3	* 2.484	31.33	VA1T	32.1	-24.3	39.13	54	-14.87	-	-	129	290	H
4	* 2.484	31.27	VA1T	32.1	-24.3	39.07	54	-14.93	-	-	129	290	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration
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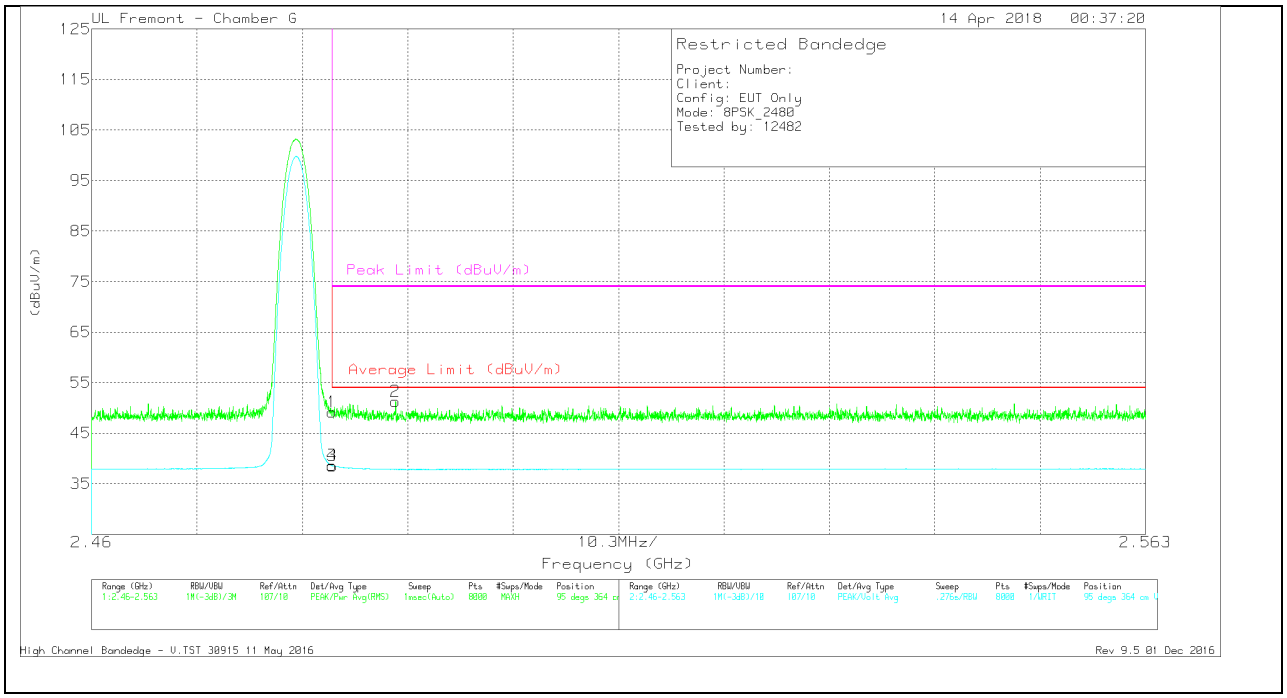
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	41.42	Pk	32.1	-24.3	49.22	-	-	74	-24.78	95	364	V
2	* 2.49	43.53	Pk	32.1	-24.3	51.33	-	-	74	-22.67	95	364	V
3	* 2.484	30.77	VA1T	32.1	-24.3	38.57	54	-15.43	-	-	95	364	V
4	* 2.484	30.76	VA1T	32.1	-24.3	38.56	54	-15.44	-	-	95	364	V

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

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

High Channel Bandedge - V.TST 30915 11 May 2016

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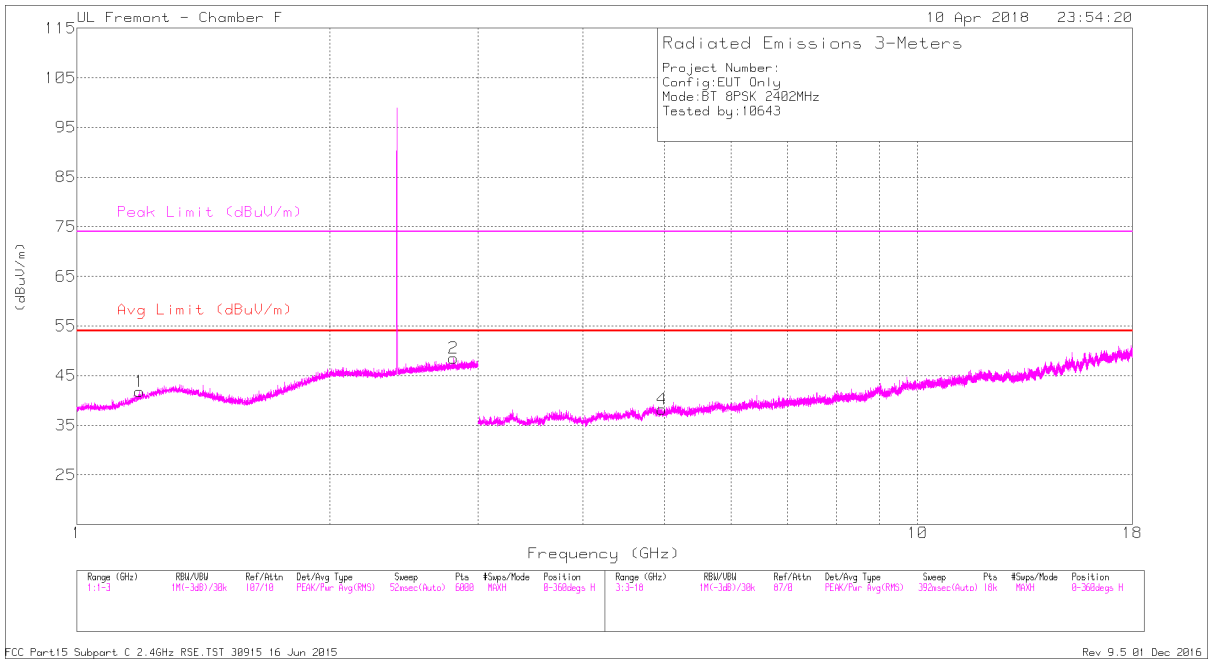
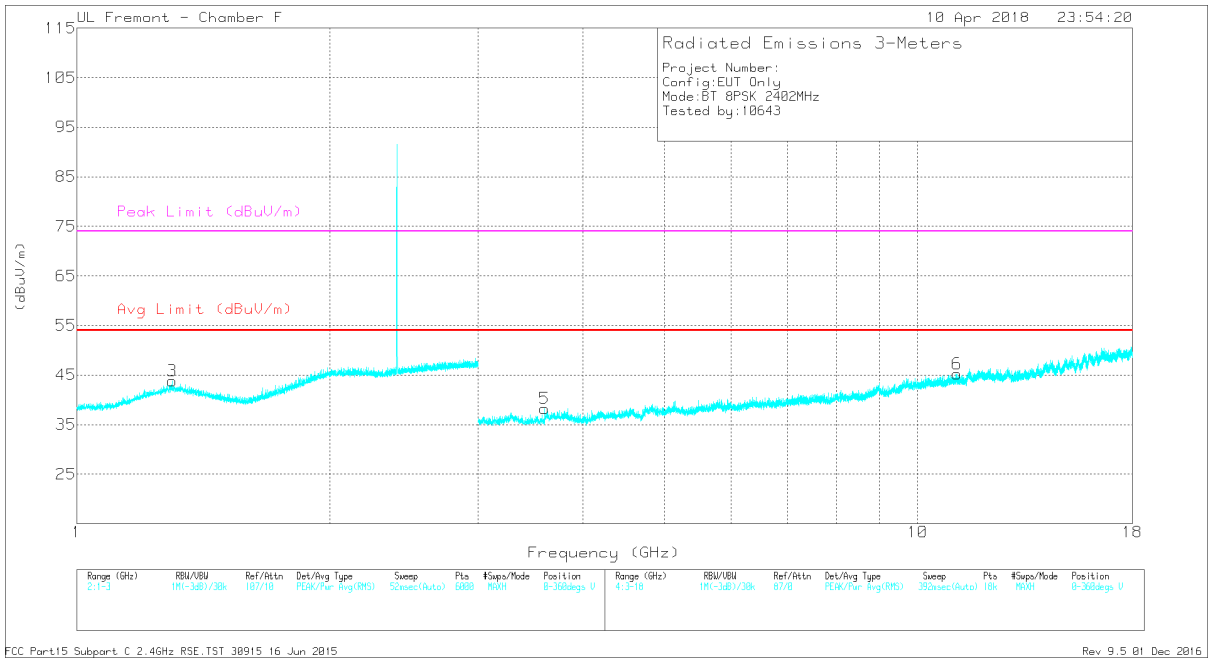
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZTONAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	* 1.187	41.38	PKFH	28.6	-22.3	47.68	-	-	74	-26.32	224	207	H
	* 1.187	29.05	VA1T	28.6	-22.3	35.35	54	-18.65	-	-	224	207	H
2	* 2.803	41.45	PKFH	32.7	-20.2	53.95	-	-	74	-20.05	263	177	H
	* 2.806	28.82	VA1T	32.7	-20.2	41.32	54	-12.68	-	-	263	177	H
3	* 1.299	40.8	PKFH	30.1	-22	48.9	-	-	74	-25.1	293	204	V
	* 1.299	28.87	VA1T	30.1	-22	36.97	54	-17.03	-	-	293	204	V
4	* 4.96	38.24	PKFH	34.2	-28.2	44.24	-	-	74	-29.76	181	176	H
	* 4.96	26.05	VA1T	34.2	-28.2	32.05	54	-21.95	-	-	181	176	H
5	* 3.601	38.27	PKFH	33.1	-28.7	42.67	-	-	74	-31.33	291	225	V
	* 3.601	26.02	VA1T	33.1	-28.7	30.42	54	-23.58	-	-	291	225	V
6	* 11.138	34.7	PKFH	38.1	-21.4	51.4	-	-	74	-22.6	248	179	V
	* 11.136	22.15	VA1T	38.1	-21.4	38.85	54	-15.15	-	-	248	179	V

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

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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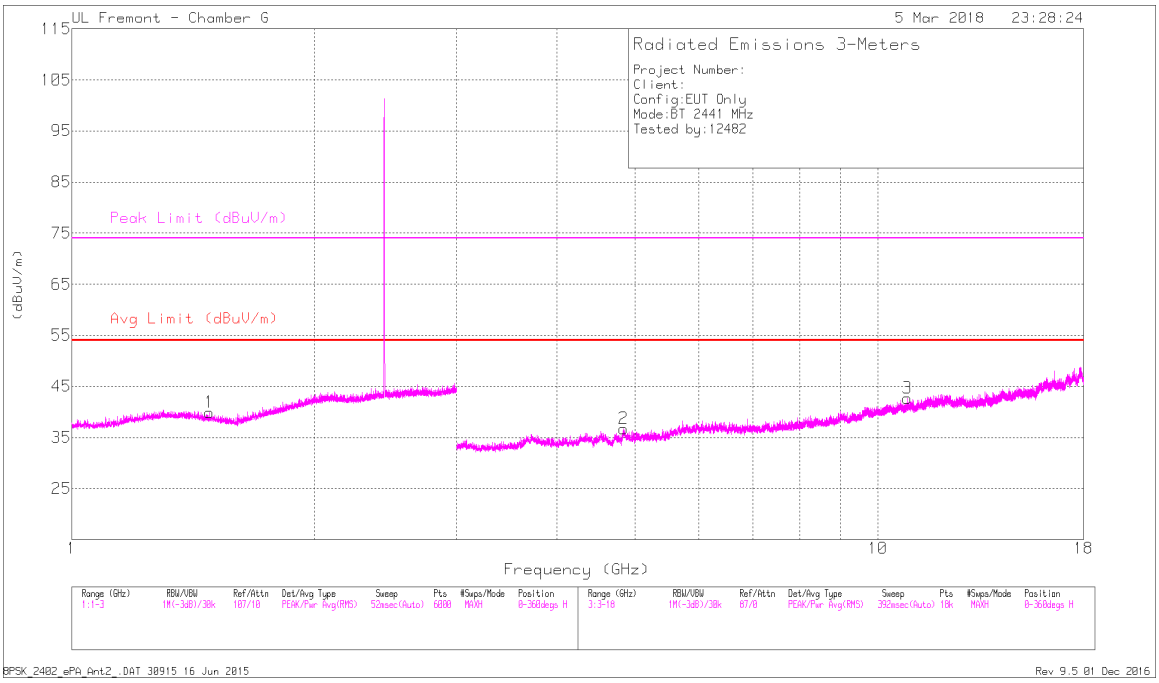
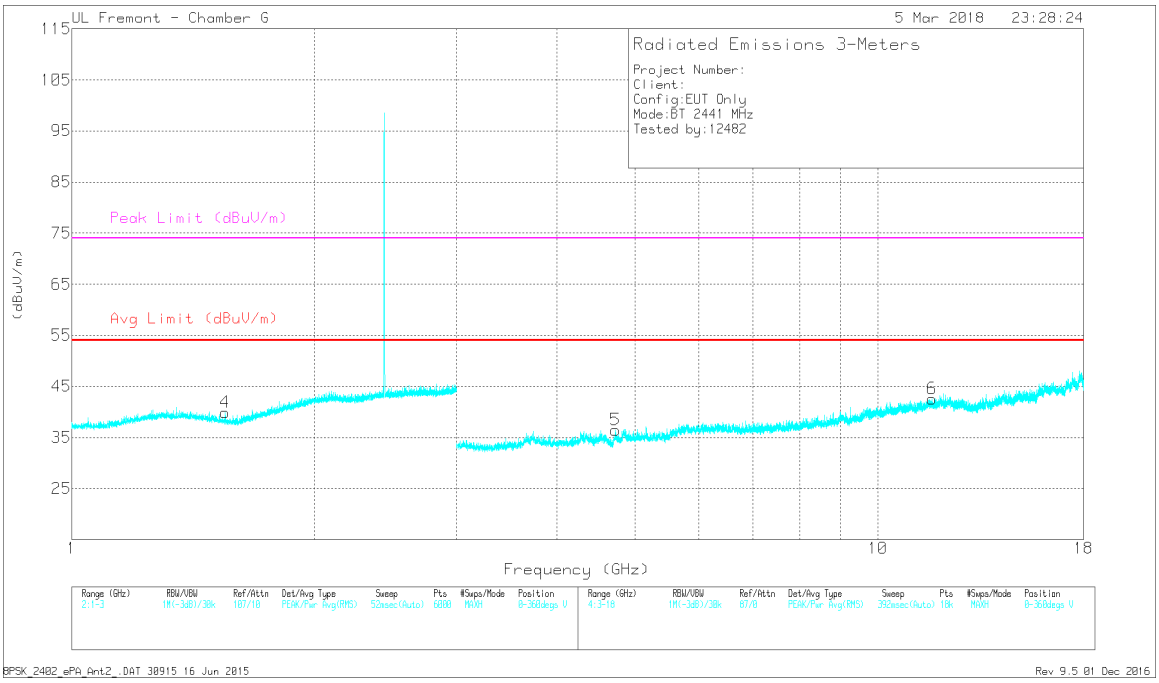
MID CHANNEL RESULTS



HORIZTONAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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	* 1.48	41.9	PKFH	28.2	-25.1	45	-	-	74	-29	239	213	H
	* 1.482	30.53	VA1T	28.1	-25.1	33.53	54	-20.47	-	-	239	213	H
4	* 1.548	41.68	PKFH	27.7	-25	44.38	-	-	74	-29.62	73	290	V
	* 1.547	30.24	VA1T	27.7	-25	32.94	54	-21.06	-	-	73	290	V
2	* 4.841	41.35	PKFH	34.1	-32.2	43.25	-	-	74	-30.75	161	156	H
	* 4.841	29.03	VA1T	34.1	-32.2	30.93	54	-23.07	-	-	161	156	H
3	* 10.89	35.83	PKFH	38	-26.1	47.73	-	-	74	-26.27	236	270	H
	* 10.889	23.83	VA1T	38	-26.1	35.73	54	-18.27	-	-	236	270	H
5	* 4.729	40.76	PKFH	34	-32	42.76	-	-	74	-31.24	265	202	V
	* 4.727	28.5	VA1T	34	-32.1	30.4	54	-23.6	-	-	265	202	V
6	* 11.666	35.53	PKFH	38.6	-25.6	48.53	-	-	74	-25.47	176	214	V
	* 11.668	23.44	VA1T	38.6	-25.6	36.44	54	-17.56	-	-	176	214	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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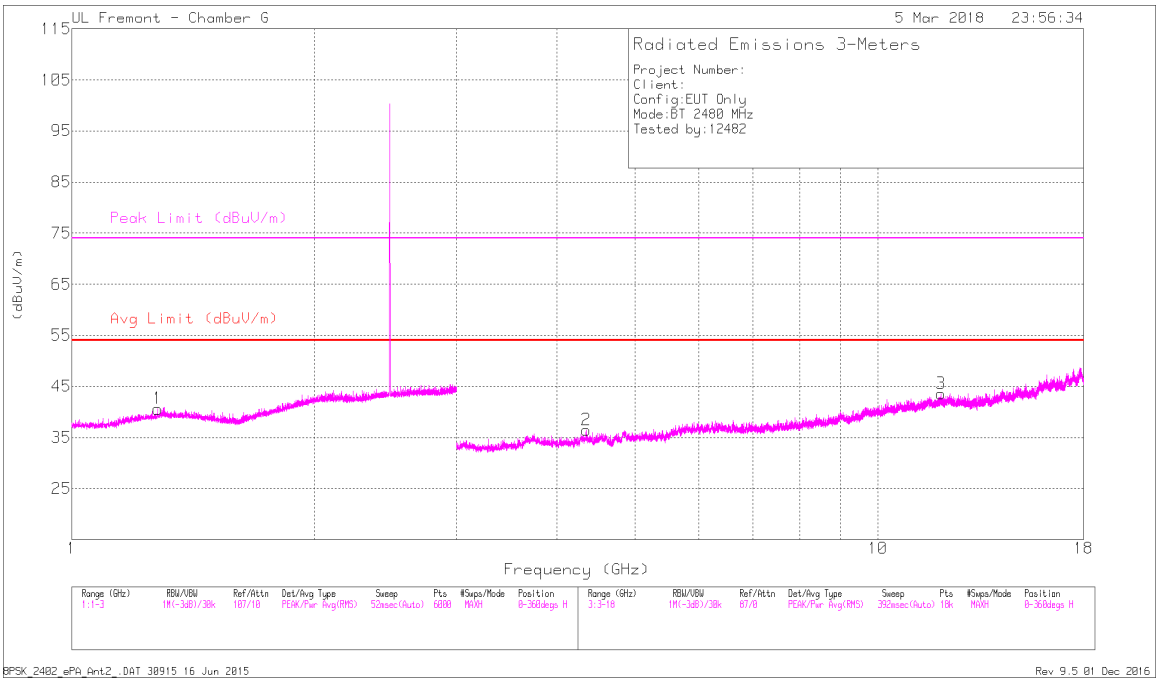
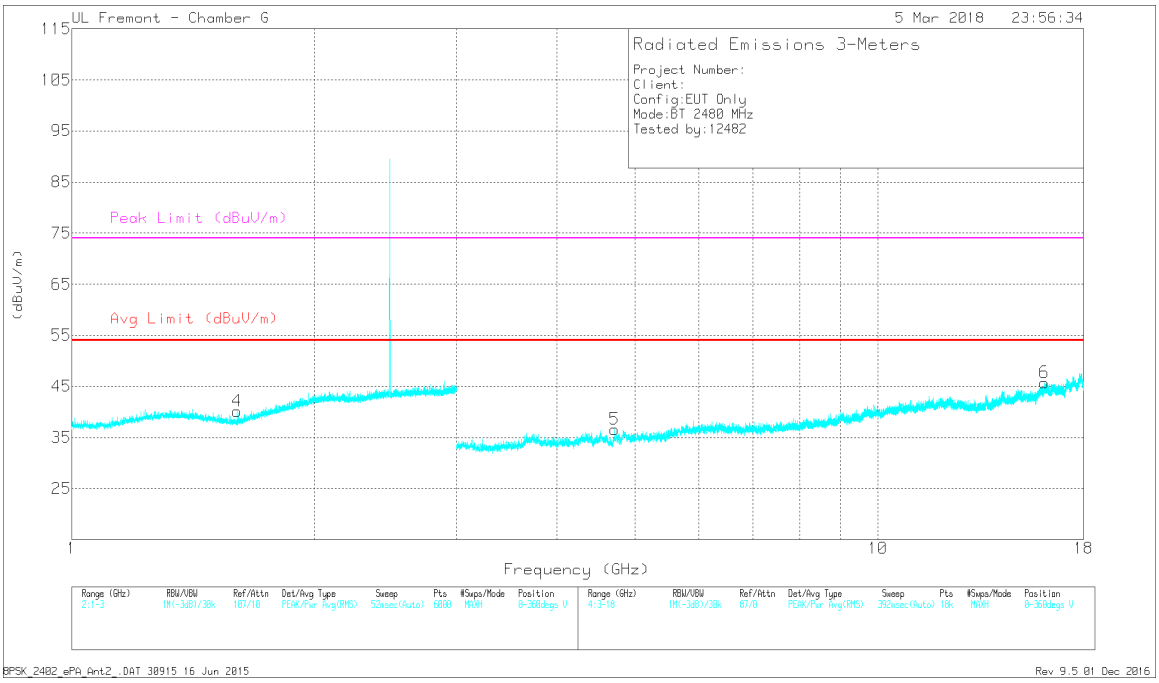
HIGH CHANNEL RESULTS



HORIZTONAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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	* 1.28	43.03	PKFH	28.7	-25.6	46.13	-	-	74	-27.87	111	310	H
	* 1.276	30.64	VA1T	28.7	-25.6	33.74	54	-20.26	-	-	111	310	H
4	* 1.604	42.07	PKFH	27.5	-25	44.57	-	-	74	-29.43	207	324	V
	* 1.604	30.07	VA1T	27.5	-25	32.57	54	-21.43	-	-	207	324	V
2	* 4.352	40.1	PKFH	34	-31.8	42.3	-	-	74	-31.7	19	296	H
	* 4.35	27.59	VA1T	33.9	-31.8	29.69	54	-24.31	-	-	19	296	H
3	* 11.981	35.86	PKFH	38.7	-25	49.56	-	-	74	-24.44	0	117	H
	* 11.979	23.38	VA1T	38.7	-25	37.08	54	-16.92	-	-	0	117	H
5	* 4.714	40.1	PKFH	34	-32.1	42	-	-	74	-32	196	176	V
	* 4.715	28.11	VA1T	34	-32.1	30.01	54	-23.99	-	-	196	176	V
6	* 16.105	35.17	PKFH	41.8	-25.9	51.07	-	-	74	-22.93	115	156	V
	* 16.104	23.48	VA1T	41.8	-25.8	39.48	54	-14.52	-	-	115	156	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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